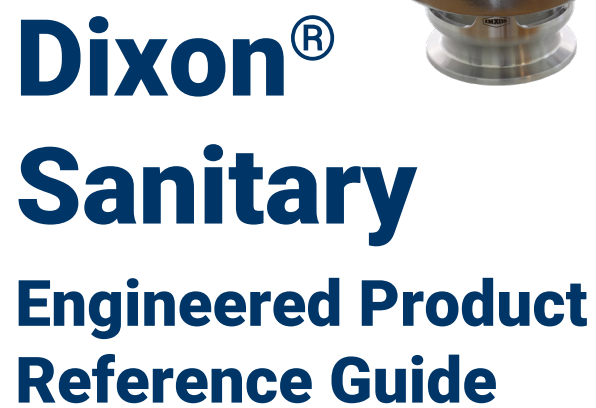




Customer Service  
800.789.1718

### Dixon Sanitary Engineered Product Reference Guide - Introduction

#### Designed for Performance, Engineered for Reliability

At Dixon® Sanitary, our engineering team is committed to developing high-quality, innovative solutions for sanitary processing applications. Every product featured in these guides has been carefully designed and engineered to meet the demands of the hygienic industries, ensuring performance, durability, and compliance with strict sanitary standards.

#### Your Essential Resource for Product Selection

These reference guides serve as a valuable tool for distributors, providing quick access to critical product details that streamline the selection and ordering process. Whether you need specifications for valves, pumps, actuators, or accessories, this resource simplifies decision-making by consolidating key information in one place.

#### How These Guides Help You

- Easily compare product options with detailed specifications
- Quickly locate part numbers and ordering details
- Gain insight into product applications and performance
- Access technical data to ensure the right fit for your system

#### What's Included

Each guide is organized by product category and includes:

- Technical specifications
- Part number keys
- Performance details
- Bill of materials
- Dimensions
- Repair kits

With these guides, you have the information you need at your fingertips to confidently select and recommend Dixon's engineered products.

If you would like to request a hard copy, contact Dixon Sanitary at 800.789.1718 or email [sanitarymarketing@dixonvalve.com](mailto:sanitarymarketing@dixonvalve.com).



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A

B

C

D

E

F

G

H

I

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K

HSG-Series Sanitary Sight Glass



Used in sanitary processes to view fluids. This 3A certified sight glass is clean-in-place.

They are found in the food processing, beverage, dairy, personal care, winery, brewery, pet product, and industrial markets.

Sizes

- 1/2" to 6"

Features

- Easy to assemble and disassemble
- Patented single clamp construction

Materials

- Product contact metal components: 316 stainless steel
- Non-product contact metal components: CF8

Specifications

- Product contact seal components:
  - EPDM and FKM: single pin clamp style sizes 1" to 6"
  - PTFE: bolted clamp style sizes 1/2" to 6"
- Surface finish technical data:
  - Product contact metal components: Ra ≤ 32
  - Other finishes available upon request



Maximum Line Pressure and Product Temperature

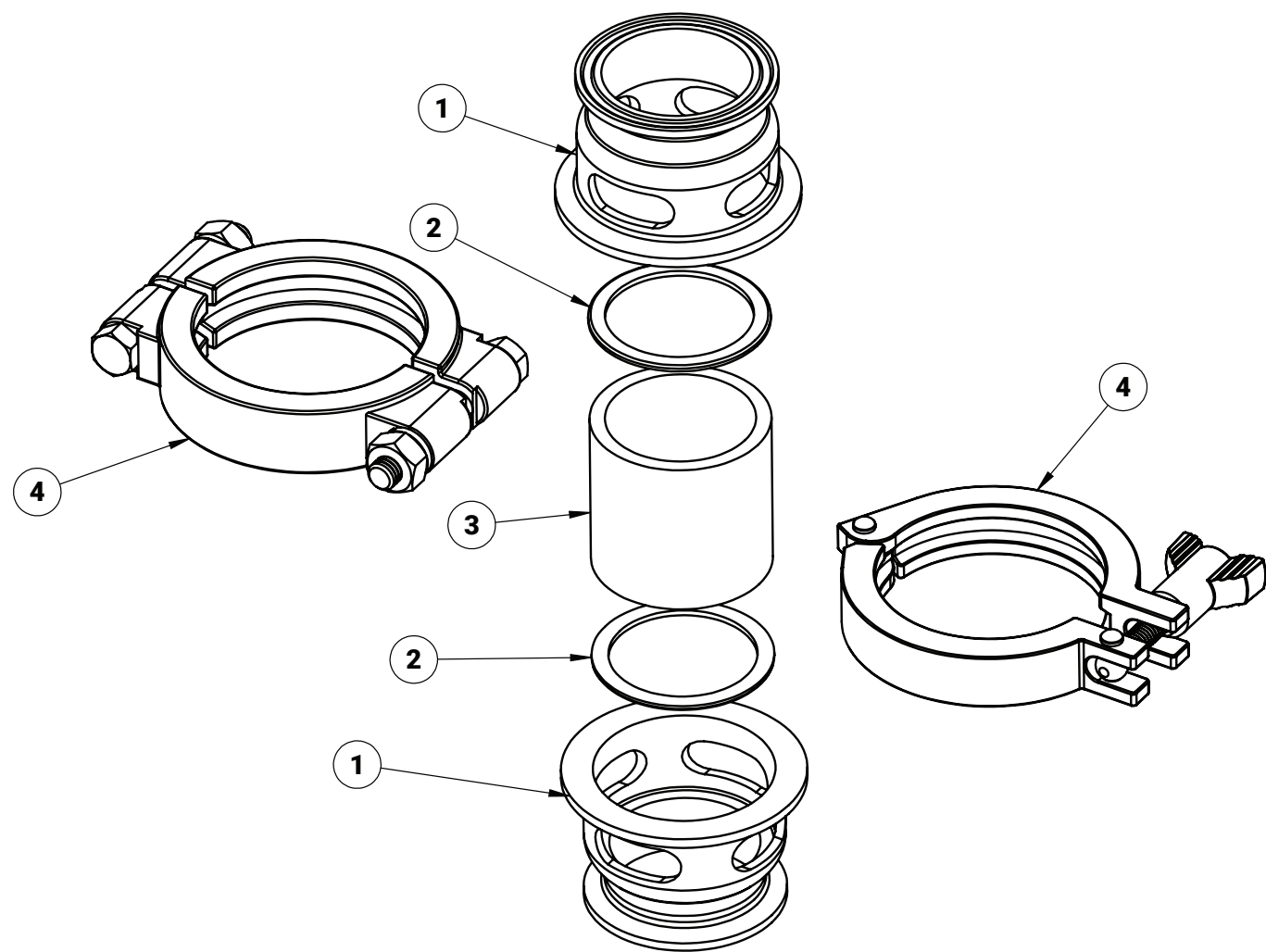
| Size   | Pressure at 70°F (21°C) | Pressure at 200°F (93°C) |
|--------|-------------------------|--------------------------|
| 1/2"   | 500                     | 300                      |
| 3/4"   | 500                     | 300                      |
| 1"     | 500                     | 300                      |
| 1-1/2" | 450                     | 250                      |
| 2"     | 400                     | 200                      |
| 2-1/2" | 350                     | 175                      |
| 3"     | 250                     | 125                      |
| 4"     | 80                      | 40                       |
| 6"     | 50                      | 25                       |

## HSG-Series Sanitary Sight Glass - Part Number Key

| HSG-Series Sanitary Sight Glass<br>Part Number Key<br>Example: HSGE100CCA |             | Series | Elastomers | Size | Body One<br>Connection | Body Two<br>Connection | Surface Finish |
|---------------------------------------------------------------------------|-------------|--------|------------|------|------------------------|------------------------|----------------|
|                                                                           |             | HSG    | E          | 100  | C                      | C                      | A              |
| <b>Elastomer</b>                                                          | <b>Code</b> |        |            |      |                        |                        |                |
| EPDM (1" - 6") single pin clamp                                           | E           |        |            |      |                        |                        |                |
| FKM (1" - 6") single pin clamp                                            | V           |        |            |      |                        |                        |                |
| PTFE (1/2" - 6") bolted clamp                                             | P           |        |            |      |                        |                        |                |
| <b>Size</b>                                                               | <b>Code</b> |        |            |      |                        |                        |                |
| 1/2" (only available in PTFE)                                             | 050         |        |            |      |                        |                        |                |
| 3/4" (only available in PTFE)                                             | 075         |        |            |      |                        |                        |                |
| 1"                                                                        | 100         |        |            |      |                        |                        |                |
| 1-1/2"                                                                    | 150         |        |            |      |                        |                        |                |
| 2"                                                                        | 200         |        |            |      |                        |                        |                |
| 2-1/2"                                                                    | 250         |        |            |      |                        |                        |                |
| 3"                                                                        | 300         |        |            |      |                        |                        |                |
| 4"                                                                        | 400         |        |            |      |                        |                        |                |
| 6"                                                                        | 600         |        |            |      |                        |                        |                |
| <b>Body One Connection</b>                                                | <b>Code</b> |        |            |      |                        |                        |                |
| Clamp (standard)                                                          | C           |        |            |      |                        |                        |                |
| Weld                                                                      | B           |        |            |      |                        |                        |                |
| Female I-Line                                                             | F           |        |            |      |                        |                        |                |
| Male I-Line                                                               | M           |        |            |      |                        |                        |                |
| Threaded Bevel                                                            | T           |        |            |      |                        |                        |                |
| Plain Bevel with Nut                                                      | P           |        |            |      |                        |                        |                |
| Q-Line                                                                    | Q           |        |            |      |                        |                        |                |
| <b>Body Two Connection</b>                                                | <b>Code</b> |        |            |      |                        |                        |                |
| Clamp (standard)                                                          | C           |        |            |      |                        |                        |                |
| Weld                                                                      | B           |        |            |      |                        |                        |                |
| Female I-Line                                                             | F           |        |            |      |                        |                        |                |
| Male I-Line                                                               | M           |        |            |      |                        |                        |                |
| Threaded Bevel                                                            | T           |        |            |      |                        |                        |                |
| Plain Bevel with Nut                                                      | P           |        |            |      |                        |                        |                |
| Q-Line                                                                    | Q           |        |            |      |                        |                        |                |
| <b>Surface Finish</b>                                                     | <b>Code</b> |        |            |      |                        |                        |                |
| 32 Ra (I.D. mechanical polish)                                            | A           |        |            |      |                        |                        |                |
| 25 Ra (I.D. mechanical polish)                                            | B           |        |            |      |                        |                        |                |
| 20 Ra (I.D. mechanical polish)                                            | C           |        |            |      |                        |                        |                |
| 15 Ra (I.D. mechanical polish)                                            | D           |        |            |      |                        |                        |                |
| 10 Ra (I.D. mechanical polish)                                            | E           |        |            |      |                        |                        |                |



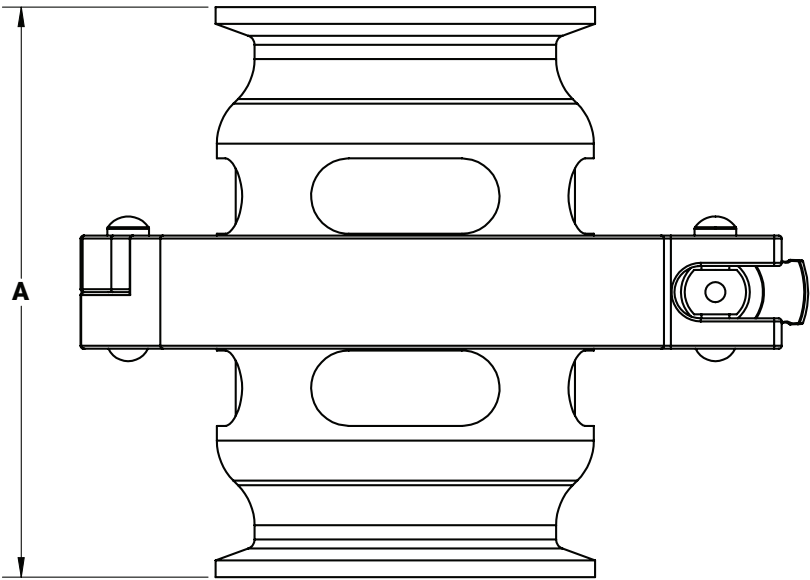
HSG-Series Sanitary Sight Glass - Bill of Materials



## HSG-Series Sanitary Sight Glass - Bill of Materials

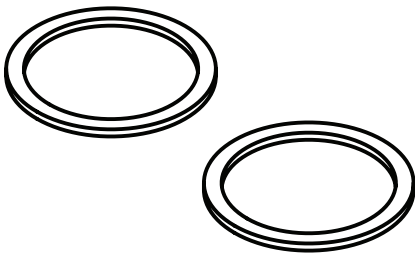
| Item # | Size   | Part #          | Description                 | Material      | Qty  |     |      |
|--------|--------|-----------------|-----------------------------|---------------|------|-----|------|
|        |        |                 |                             |               | EPDM | FKM | PTFE |
| 1      | 1/2"   | HSG-B050CA      | body, tri-clamp             | 316L SS       | 2    | 2   | 2    |
|        | 3/4"   | HSG-B075CA      |                             |               |      |     |      |
|        | 1"     | HSG-B100CA      |                             |               |      |     |      |
|        | 1-1/2" | HSG-B150CA      |                             |               |      |     |      |
|        | 2"     | HSG-B200CA      |                             |               |      |     |      |
|        | 2-1/2" | HSG-B250CA      |                             |               |      |     |      |
|        | 3"     | HSG-B300CA      |                             |               |      |     |      |
|        | 4"     | HSG-B400CA      |                             |               |      |     |      |
| 2      | 6"     | HSG-B600CA      |                             |               |      |     |      |
|        | 1/2"   | HSG-RKP050      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
|        | 3/4"   | HSG-RKP075      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
|        | 1"     | 40IE100         | I-line gasket, 3/32" thick  | EPDM          | 2    | -   | -    |
|        |        | 40IV100         |                             | FKM           | -    | 2   | -    |
|        |        | HSG-RKP100      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
|        | 1-1/2" | 40IE150         | I-line gasket, 3/32" thick  | EPDM          | 2    | -   | -    |
|        |        | 40IV150         |                             | FKM           | -    | 2   | -    |
|        |        | HSG-RKP150      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
|        | 2"     | 40IE200         | I-line gasket, 3/32" thick  | EPDM          | 2    | -   | -    |
|        |        | 40IV200         |                             | FKM           | -    | 2   | -    |
|        |        | HSG-RKP200      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
|        | 2-1/2" | 40IE250         | I-line gasket, 3/32" thick  | EPDM          | 2    | -   | -    |
|        |        | 40IV250         |                             | FKM           | -    | 2   | -    |
|        |        | HSG-RKP250      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
|        | 3"     | 40IE300         | I-line gasket, 3/32" thick  | EPDM          | 2    | -   | -    |
|        |        | 40IV300         |                             | FKM           | -    | 2   | -    |
|        |        | HSG-RKP300      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
|        | 4"     | 40IE400         | I-line gasket, 3/32" thick  | EPDM          | 2    | -   | -    |
|        |        | 40IV400         |                             | FKM           | -    | 2   | -    |
|        |        | HSG-RKP400      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
|        | 6"     | 40IE600         | I-line gasket, 3/32" thick  | EPDM          | 2    | -   | -    |
|        |        | 40IV600         |                             | FKM           | -    | 2   | -    |
|        |        | HSG-RKP600      | PTFE gasket kit (2 gaskets) | PTFE          | -    | -   | 1    |
| 3      | 1/2"   | HSG-POLY-050    | insert                      | Polycarbonate | 1    | 1   | 1    |
|        | 3/4"   | HSG-POLY-075    |                             |               |      |     |      |
|        | 1"     | HSG-POLY-100    |                             |               |      |     |      |
|        | 1-1/2" | HSG-POLY-150    |                             |               |      |     |      |
|        | 2"     | HSG-POLY-200    |                             |               |      |     |      |
|        | 2-1/2" | HSG-POLY-250    |                             |               |      |     |      |
|        | 3"     | HSG-POLY-300    |                             |               |      |     |      |
|        | 4"     | HSG-POLY-400    |                             |               |      |     |      |
| 4      | 6"     | HSG-POLY-600    |                             |               |      |     |      |
|        | 1/2"   | 13MHP100-150    | bolted clamp                | CF8           | -    | -   | 1    |
|        | 3/4"   | 13MHP100-150    | bolted clamp                | CF8           | -    | -   | 1    |
|        | 1"     | 13MHHM100-150SN | single pin clamp            | CF8           | 1    | 1   | -    |
|        |        | 13MHP100-150    | bolted clamp                |               | -    | -   | 1    |
|        | 1-1/2" | 13MHHM200SN     | single pin clamp            | CF8           | 1    | 1   | -    |
|        |        | 13MHP200        | bolted clamp                |               | -    | -   | 1    |
|        | 2"     | 13MHHM250SN     | single pin clamp            | CF8           | 1    | 1   | -    |
|        |        | 13MHP250        | bolted clamp                |               | -    | -   | 1    |
|        | 2-1/2" | 13MHHM300SN     | single pin clamp            | CF8           | 1    | 1   | -    |
|        |        | 13MHP300        | bolted clamp                |               | -    | -   | 1    |
|        | 3"     | 13MHHV300       | single pin clamp            | CF8           | 1    | 1   | -    |
|        |        | 13MHPV300       | bolted clamp                |               | -    | -   | 1    |
|        | 4"     | 13MHHV400       | single pin clamp            | CF8           | 1    | 1   | -    |
|        |        | 14MHPV400       | bolted clamp                |               | -    | -   | 1    |
|        | 6"     | 13MHHM800SN     | single pin clamp            | CF8           | 1    | 1   | -    |
|        |        | 13MHP800        | bolted clamp                |               | -    | -   | 1    |

HSG-Series Sanitary Sight Glass - Dimensions



| Size   | A (in) |
|--------|--------|
| 1/2"   | 3.8    |
| 3/4"   | 3.8    |
| 1"     | 3.8    |
| 1-1/2" | 3.8    |
| 2"     | 3.8    |
| 2-1/2" | 3.8    |
| 3"     | 3.8    |
| 4"     | 3.8    |
| 6"     | 6.0    |

HSG-Series Sanitary Sight Glass - Repair Kits



| Seal Material | Size   | Part #     | Seal Material | Size   | Part #     | Seal Material | Size   | Part #     |
|---------------|--------|------------|---------------|--------|------------|---------------|--------|------------|
| PTFE          | 1/2"   | HSG-RKP050 | EPDM          | 1/2"   | -          | FKM           | 1/2"   | -          |
|               | 3/4"   | HSG-RKP075 |               | 3/4"   | -          |               | 3/4"   | -          |
|               | 1"     | HSG-RKP100 |               | 1"     | HSG-RKE100 |               | 1"     | HSG-RKV100 |
|               | 1-1/2" | HSG-RKP150 |               | 1-1/2" | HSG-RKE150 |               | 1-1/2" | HSG-RKV150 |
|               | 2"     | HSG-RKP200 |               | 2"     | HSG-RKE200 |               | 2"     | HSG-RKV200 |
|               | 2-1/2" | HSG-RKP250 |               | 2-1/2" | HSG-RKE250 |               | 2-1/2" | HSG-RKV250 |
|               | 3"     | HSG-RKP300 |               | 3"     | HSG-RKE300 |               | 3"     | HSG-RKV300 |
|               | 4"     | HSG-RKP400 |               | 4"     | HSG-RKE400 |               | 4"     | HSG-RKV400 |
|               | 6"     | HSG-RKP600 |               | 6"     | HSG-RKE600 |               | 6"     | HSG-RKV600 |

## B54BMP-Series Inline Sight Glass

Used in sanitary processes to view fluids. They are found in the food processing, beverage, winery, brewery, pet product, and industrial markets.

### Sizes

- 1", 1-1/2", 2", 2-1/2", 3", 4", and 6"

### Features

- Various end configurations available
  - Clamp, weld, bevel seat, John Perry, I-line, and Q-line

### Materials

- Product contact metal components: 316L stainless steel
- Non-product contact metal components: 316L stainless steel
- Product contact sight window: borosilicate glass or polycarbonate
- Product contact seals: nitrile rubber, FKM, or EPDM

### Specifications

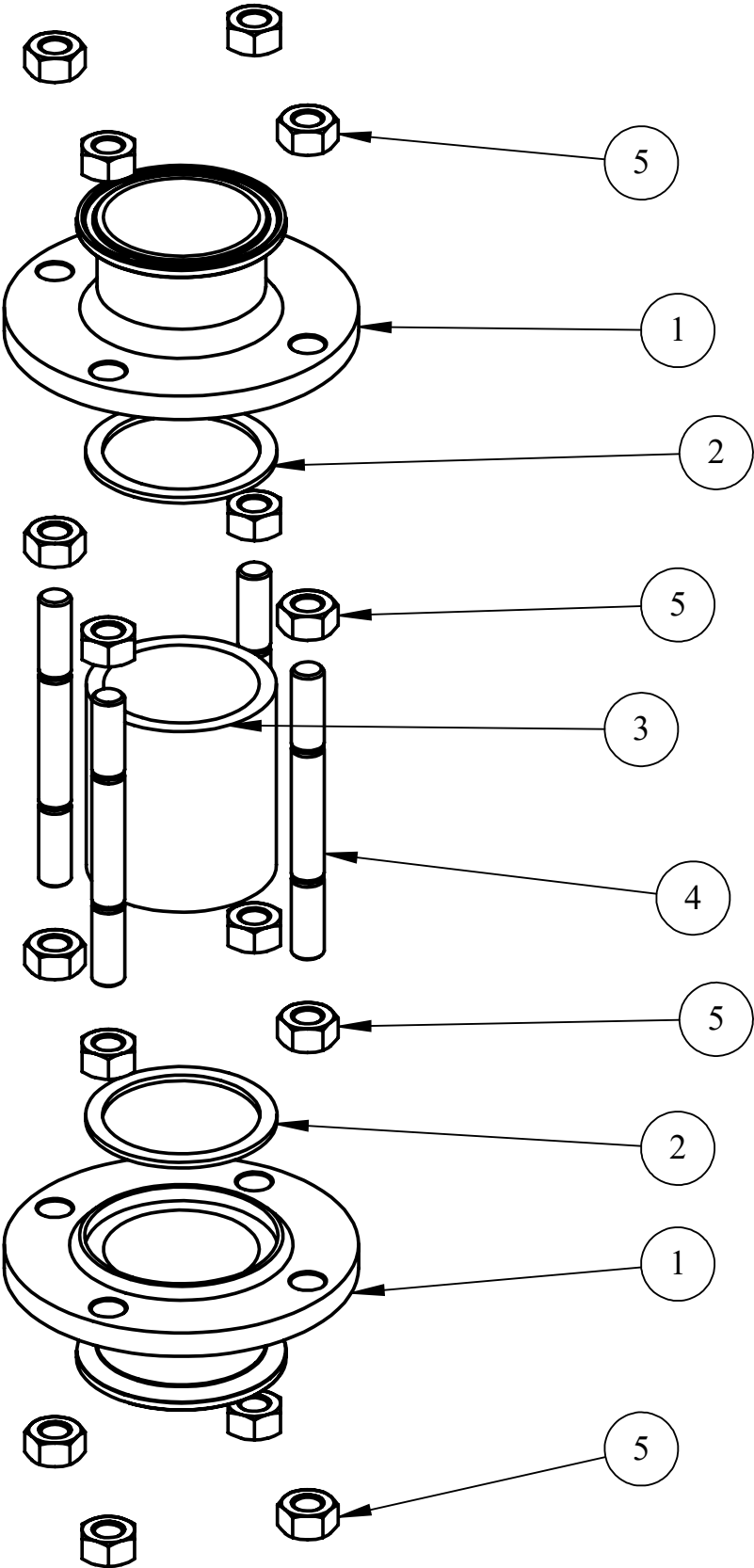
- Standard connection: clamp
- Sight glass working pressure:
  - 1": **145 PSI**
  - 1-1/2": **145 PSI**
  - 2": **145 PSI**
  - 2-1/2": **120 PSI**
  - 3": **120 PSI**
  - 4": **95 PSI**
  - 6": **80 PSI**
- Maximum operating temperature: **200°F (93°C)**
- Surface finish
  - Product contact metal components:  $\leq 32$  Ra I.D. and O.D.



## B54BMP-Series Inline Sight Glass - Part Number Key

| B54BMP-Series Inline Sight Glass<br>Part Number Key<br>Example: B54BMP-R100__ |        | Series | Connections | Material | Size | Sight Glass Material | Surface Finish | Elastomer |  |
|-------------------------------------------------------------------------------|--------|--------|-------------|----------|------|----------------------|----------------|-----------|--|
|                                                                               |        | B54BMP | -           | R        | 100  |                      |                |           |  |
| Series                                                                        | Code   |        |             |          |      |                      |                |           |  |
| B54BMP                                                                        | B54BMP |        |             |          |      |                      |                |           |  |
| Connections                                                                   | Code   |        |             |          |      |                      |                |           |  |
| Tri-clamp                                                                     | -      |        |             |          |      |                      |                |           |  |
| Weld                                                                          | B      |        |             |          |      |                      |                |           |  |
| Threaded bevel                                                                | T      |        |             |          |      |                      |                |           |  |
| Plain bevel with nut                                                          | P      |        |             |          |      |                      |                |           |  |
| Female I-line                                                                 | F      |        |             |          |      |                      |                |           |  |
| Male I-line                                                                   | M      |        |             |          |      |                      |                |           |  |
| John Perry plain                                                              | J      |        |             |          |      |                      |                |           |  |
| John Perry threaded                                                           | H      |        |             |          |      |                      |                |           |  |
| Q-line                                                                        | G      |        |             |          |      |                      |                |           |  |
| Material                                                                      | Code   |        |             |          |      |                      |                |           |  |
| 316L stainless steel                                                          | R      |        |             |          |      |                      |                |           |  |
| Size                                                                          | Code   |        |             |          |      |                      |                |           |  |
| 1"                                                                            | 100    |        |             |          |      |                      |                |           |  |
| 1-1/2"                                                                        | 150    |        |             |          |      |                      |                |           |  |
| 2"                                                                            | 200    |        |             |          |      |                      |                |           |  |
| 2-1/2"                                                                        | 250    |        |             |          |      |                      |                |           |  |
| 3"                                                                            | 300    |        |             |          |      |                      |                |           |  |
| 4"                                                                            | 400    |        |             |          |      |                      |                |           |  |
| 6"                                                                            | 600    |        |             |          |      |                      |                |           |  |
| Sight Glass Material                                                          | Code   |        |             |          |      |                      |                |           |  |
| Borosilicate glass                                                            | blank  |        |             |          |      |                      |                |           |  |
| Polycarbonate                                                                 | LX     |        |             |          |      |                      |                |           |  |
| Surface Finish                                                                | Code   |        |             |          |      |                      |                |           |  |
| 32 Ra (I.D. mech polish)                                                      | blank  |        |             |          |      |                      |                |           |  |
| 25 Ra (I.D. mech polish)                                                      | B      |        |             |          |      |                      |                |           |  |
| 20 Ra (I.D. mech polish)                                                      | C      |        |             |          |      |                      |                |           |  |
| 15 Ra (I.D. mech polish)                                                      | D      |        |             |          |      |                      |                |           |  |
| Elastomer                                                                     | Code   |        |             |          |      |                      |                |           |  |
| Nitrile rubber (standard)                                                     | blank  |        |             |          |      |                      |                |           |  |
| FKM                                                                           | V      |        |             |          |      |                      |                |           |  |
| EPDM                                                                          | E      |        |             |          |      |                      |                |           |  |

**B54BMP-Series Inline Sight Glass - Bill of Materials**

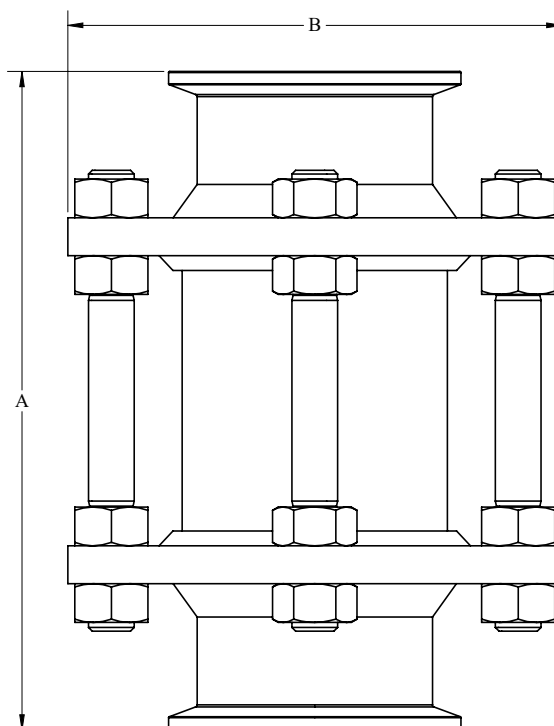




## B54BMP-Series Inline Sight Glass - Bill of Materials

| Item # | Size   | Part #       | Description                      | Material       | Qty |
|--------|--------|--------------|----------------------------------|----------------|-----|
| 1      | 1"     | B54BMP-1-100 | body, tri-clamp                  | 316L SS        | 2   |
|        | 1-1/2" | B54BMP-1-150 | body, tri-clamp                  | 316L SS        | 2   |
|        | 2"     | B54BMP-1-200 | body, tri-clamp                  | 316L SS        | 2   |
|        | 2-1/2" | B54BMP-1-250 | body, tri-clamp                  | 316L SS        | 2   |
|        | 3"     | B54BMP-1-300 | body, tri-clamp                  | 316L SS        | 2   |
|        | 4"     | B54BMP-1-400 | body, tri-clamp                  | 316L SS        | 2   |
|        | 6"     | B54BMP-1-600 | body, tri-clamp                  | 316L SS        | 2   |
| 2      | 1"     | B54BMP-SK100 | elastomer kit (2-pcs)            | Nitrile rubber | 1   |
|        |        | B54BMP-EK100 | elastomer kit (2-pcs)            | EPDM           | 1   |
|        |        | B54BMP-VK100 | elastomer kit (2-pcs)            | FKM            | 1   |
|        | 1-1/2" | B54BMP-SK150 | elastomer kit (2-pcs)            | Nitrile rubber | 1   |
|        |        | B54BMP-EK150 | elastomer kit (2-pcs)            | EPDM           | 1   |
|        |        | B54BMP-VK150 | elastomer kit (2-pcs)            | FKM            | 1   |
|        | 2"     | B54BMP-SK200 | elastomer kit (2-pcs)            | Nitrile rubber | 1   |
|        |        | B54BMP-EK200 | elastomer kit (2-pcs)            | EPDM           | 1   |
|        |        | B54BMP-VK200 | elastomer kit (2-pcs)            | FKM            | 1   |
|        | 2-1/2" | B54BMP-SK250 | elastomer kit (2-pcs)            | Nitrile rubber | 1   |
|        |        | B54BMP-EK250 | elastomer kit (2-pcs)            | EPDM           | 1   |
|        |        | B54BMP-VK250 | elastomer kit (2-pcs)            | FKM            | 1   |
|        | 3"     | B54BMP-SK300 | elastomer kit (2-pcs)            | Nitrile rubber | 1   |
|        |        | B54BMP-EK300 | elastomer kit (2-pcs)            | EPDM           | 1   |
|        |        | B54BMP-VK300 | elastomer kit (2-pcs)            | FKM            | 1   |
|        | 4"     | B54BMP-SK400 | elastomer kit (2-pcs)            | Nitrile rubber | 1   |
|        |        | B54BMP-EK400 | elastomer kit (2-pcs)            | EPDM           | 1   |
|        |        | B54BMP-VK400 | elastomer kit (2-pcs)            | FKM            | 1   |
|        | 6"     | B54BMP-SK600 | elastomer kit (2-pcs)            | Nitrile rubber | 1   |
|        |        | B54BMP-EK600 | elastomer kit (2-pcs)            | EPDM           | 1   |
|        |        | B54BMP-VK600 | elastomer kit (2-pcs)            | FKM            | 1   |
| 3      | 1"     | B54G-P100    | insert                           | Borosilicate   | 1   |
|        |        | B54BMP-LX100 | insert                           | Polycarbonate  | 1   |
|        | 1-1/2" | B54G-P150    | insert                           | Borosilicate   | 1   |
|        |        | B54BMP-LX150 | insert                           | Polycarbonate  | 1   |
|        | 2"     | B54G-P200    | insert                           | Borosilicate   | 1   |
|        |        | B54BMP-LX200 | insert                           | Polycarbonate  | 1   |
|        | 2-1/2" | B54G-P250    | insert                           | Borosilicate   | 1   |
|        |        | B54BMP-LX250 | insert                           | Polycarbonate  | 1   |
|        | 3"     | B54G-P300    | insert                           | Borosilicate   | 1   |
|        |        | B54BMP-LX300 | insert                           | Polycarbonate  | 1   |
|        | 4"     | B54G-P400    | insert                           | Borosilicate   | 1   |
|        |        | B54BMP-LX400 | insert                           | Polycarbonate  | 1   |
| 4      | 1"     | B54BMP-4-100 | body bolt, 3/8" UNC, 100 mm long | 316L SS        | 4   |
|        |        | B54BMP-4-150 | body bolt, 3/8" UNC, 100 mm long | 316L SS        | 4   |
|        | 2"     | B54BMP-4-200 | body bolt, 3/8" UNC, 100 mm long | 316L SS        | 4   |
|        | 2-1/2" | B54BMP-4-250 | body bolt, 3/8" UNC, 110 mm long | 316L SS        | 4   |
|        | 3"     | B54BMP-4-300 | body bolt, 1/2" UNC, 149 mm long | 316L SS        | 4   |
|        | 4"     | B54BMP-4-400 | body bolt, 1/2" UNC, 149 mm long | 316L SS        | 6   |
|        | 6"     | B54BMP-4-600 | body bolt, 1/2" UNC, 149 mm long | 316L SS        | 8   |
|        | 1"     | B54BMP-5-100 | nut, 3/8" UNC                    | 316L SS        | 4   |
| 5      | 1-1/2" | B54BMP-5-150 | nut, 3/8" UNC                    | 316L SS        | 4   |
|        | 2"     | B54BMP-5-200 | nut, 3/8" UNC                    | 316L SS        | 4   |
|        | 2-1/2" | B54BMP-5-250 | nut, 3/8" UNC                    | 316L SS        | 4   |
|        | 3"     | B54BMP-5-300 | nut, 1/2" UNC                    | 316L SS        | 4   |
|        | 4"     | B54BMP-5-400 | nut, 1/2" UNC                    | 316L SS        | 6   |
|        | 6"     | B54BMP-5-600 | nut, 1/2" UNC                    | 316L SS        | 8   |

### B54BMP-Series Inline Sight Glass - Dimensions



| Size   | A (in) | B (in) |
|--------|--------|--------|
| 1"     | 5.6    | 3.3    |
| 1-1/2" | 5.6    | 4.0    |
| 2"     | 5.6    | 4.3    |
| 2-1/2" | 6.1    | 4.8    |
| 3"     | 7.3    | 5.5    |
| 4"     | 7.4    | 6.5    |
| 6"     | 7.6    | 9.5    |

### B54BMP-Series Inline Sight Glass - Repair Kits

| Size   | Nitrile Rubber Seal Kit <sup>1</sup> | FKM Seal Kit <sup>2</sup> | Borosilicate Glass Replacement | Polycarbonate Replacement |
|--------|--------------------------------------|---------------------------|--------------------------------|---------------------------|
| 1"     | B54BMP-SK100                         | B54BMP-VK100              | B54G-P100                      | B54BMP-LX100              |
| 1-1/2" | B54BMP-SK150                         | B54BMP-VK150              | B54G-P150                      | B54BMP-LX150              |
| 2"     | B54BMP-SK200                         | B54BMP-VK200              | B54G-P200                      | B54BMP-LX200              |
| 2-1/2" | B54BMP-SK250                         | B54BMP-VK250              | B54G-P250                      | B54BMP-LX250              |
| 3"     | B54BMP-SK300                         | B54BMP-VK300              | B54G-P300                      | B54BMP-LX300              |
| 4"     | B54BMP-SK400                         | B54BMP-VK400              | B54G-P400                      | B54BMP-LX400              |
| 6"     | B54BMP-SK600                         | B54BMP-VK600              | B54G-P600                      | B54BMP-LX600              |

<sup>1</sup>Kit contains (2) black nitrile rubber gaskets

<sup>2</sup>Kit contains (2) FKM gaskets

## B54BM-Series Compact Sight Glass

Used in sanitary processes to view fluids. This sight glass is perfect on hose assemblies. They are found in the food processing, beverage, winery, brewery, pet product, and industrial markets

### Sizes

- 1", 1-1/2", 2", 3", and 4"

### Features

- Compact design for hose assembly
- Less cost to repair than bolted styles

### Materials

- Product contact metal components: 316L stainless steel
- Product contact sight window: polycarbonate or borosilicate glass
- Product contact seals: white nitrile rubber, FKM, or EPDM

### Specifications

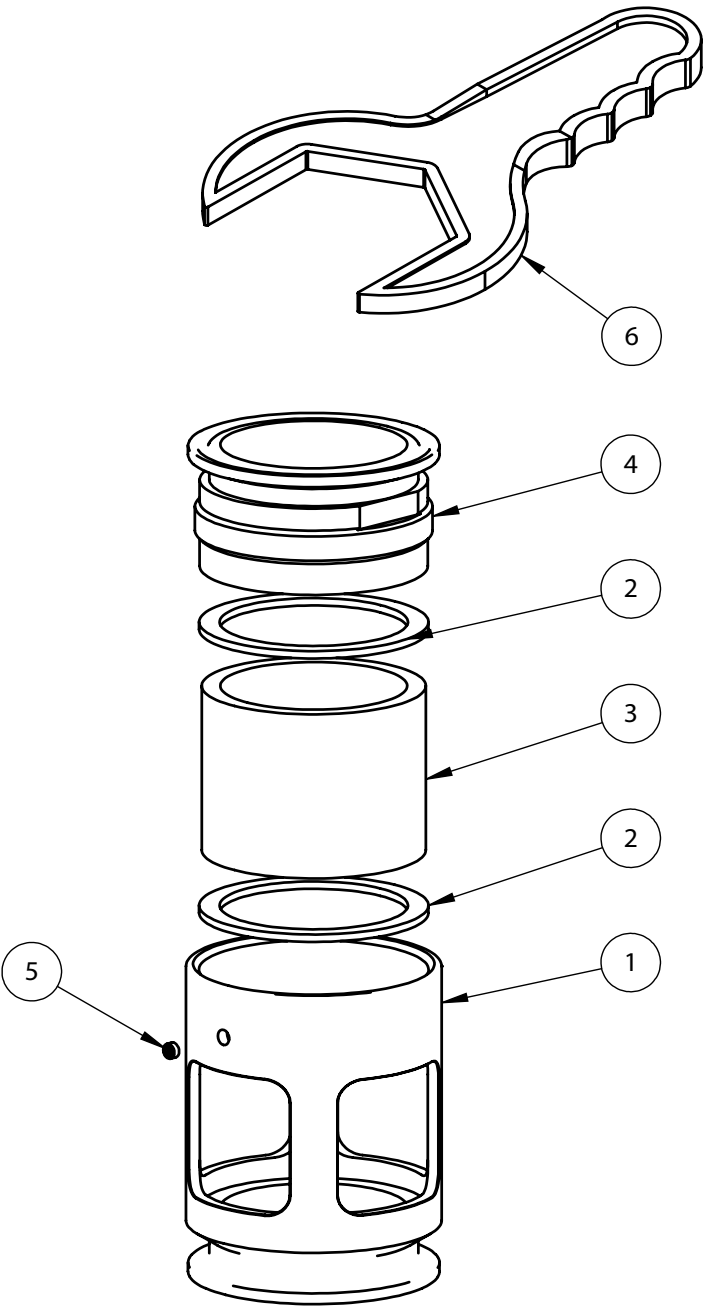
- Standard clamp connection
- Sight glass working pressure:
  - 1": **145 PSI**
  - 1-1/2": **145 PSI**
  - 2": **145 PSI**
  - 3": **120 PSI**
  - 4": **95 PSI**
- Maximum operating temperature: **200°F (93°C)**
- Minimum operating temperature: **0°F (-17°C)**
- Surface finish
  - Product Contact Metal Components:  $Ra \leq 32$



## B54BM-Series Compact Sight Glass - Part Number Key

| B54BM-Series Compact Sight Glass<br>Part Number Key<br>Example: B54BMPLX-R100_ |             | Series | Sight Glass Material |   | Material | Size | Elastomer |
|--------------------------------------------------------------------------------|-------------|--------|----------------------|---|----------|------|-----------|
|                                                                                |             | B54BM  | PLX                  | - | R        | 100  |           |
| <b>Series</b>                                                                  | <b>Code</b> |        |                      |   |          |      |           |
| B54BM                                                                          | B54BM       |        |                      |   |          |      |           |
| <b>Sight Glass Material</b>                                                    | <b>Code</b> |        |                      |   |          |      |           |
| Polycarbonate                                                                  | PLX         |        |                      |   |          |      |           |
| Borosilicate glass                                                             | PS          |        |                      |   |          |      |           |
| <b>Material</b>                                                                | <b>Code</b> |        |                      |   |          |      |           |
| 316L stainless steel                                                           | R           |        |                      |   |          |      |           |
| <b>Size</b>                                                                    | <b>Code</b> |        |                      |   |          |      |           |
| 1"                                                                             | 100         |        |                      |   |          |      |           |
| 1-1/2"                                                                         | 150         |        |                      |   |          |      |           |
| 2"                                                                             | 200         |        |                      |   |          |      |           |
| 3"                                                                             | 300         |        |                      |   |          |      |           |
| 4"                                                                             | 400         |        |                      |   |          |      |           |
| <b>Elastomer</b>                                                               | <b>Code</b> |        |                      |   |          |      |           |
| Nitrile rubber (standard)                                                      | blank       |        |                      |   |          |      |           |
| FKM                                                                            | V           |        |                      |   |          |      |           |
| EPDM                                                                           | E           |        |                      |   |          |      |           |

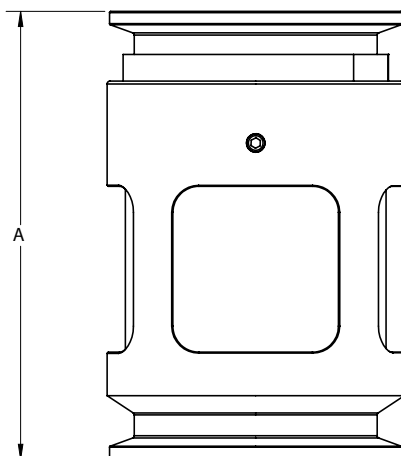
**B54BM-Series Compact Sight Glass- Bill of Materials**



## B54BM-Series Compact Sight Glass - Bill of Materials

| Item # | Size   | Part #        | Description              | Material        | Qty                 |      |     |                      |      |     |
|--------|--------|---------------|--------------------------|-----------------|---------------------|------|-----|----------------------|------|-----|
|        |        |               |                          |                 | Borosilicate Insert |      |     | Polycarbonate Insert |      |     |
|        |        |               |                          |                 | Nitrile             | EPDM | FKM | Nitrile              | EPDM | FKM |
| 1      | 1"     | B54BMPS-1100  | window body, clamp       | 316L SS         | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 1-1/2" | B54BMPS-1150  |                          |                 |                     |      |     |                      |      |     |
|        | 2"     | B54BMPS-1200  |                          |                 |                     |      |     |                      |      |     |
|        | 3"     | B54BMPS-1300  |                          |                 |                     |      |     |                      |      |     |
|        | 4"     | B54BMPS-1400  |                          |                 |                     |      |     |                      |      |     |
| 2      | 1"     | B54BMP-SK100  | elastomer kit (2-pieces) | Nitrile         | 1                   | -    | -   | 1                    | -    | -   |
|        |        | B54BMP-EK100  |                          | EPDM            | -                   | 1    | -   | -                    | 1    | -   |
|        |        | B54BMP-VK100  |                          | FKM             | -                   | -    | 1   | -                    | -    | 1   |
|        | 1-1/2" | B54BMP-SK150  | elastomer kit (2-pieces) | Nitrile         | 1                   | -    | -   | 1                    | -    | -   |
|        |        | B54BMP-EK150  |                          | EPDM            | -                   | 1    | -   | -                    | 1    | -   |
|        |        | B54BMP-VK150  |                          | FKM             | -                   | -    | 1   | -                    | -    | 1   |
|        | 2"     | B54BMP-SK200  | elastomer kit (2-pieces) | Nitrile         | 1                   | -    | -   | 1                    | -    | -   |
|        |        | B54BMP-EK200  |                          | EPDM            | -                   | 1    | -   | -                    | 1    | -   |
|        |        | B54BMP-VK200  |                          | FKM             | -                   | -    | 1   | -                    | -    | 1   |
|        | 3"     | B54BMP-SK300  | elastomer kit (2-pieces) | Nitrile         | 1                   | -    | -   | 1                    | -    | -   |
|        |        | B54BMP-EK300  |                          | EPDM            | -                   | 1    | -   | -                    | 1    | -   |
|        |        | B54BMP-VK300  |                          | FKM             | -                   | -    | 1   | -                    | -    | 1   |
|        | 4"     | B54BMP-SK400  | elastomer kit (2-pieces) | Nitrile         | 1                   | -    | -   | 1                    | -    | -   |
|        |        | B54BMP-EK400  |                          | EPDM            | -                   | 1    | -   | -                    | 1    | -   |
|        |        | B54BMP-VK400  |                          | FKM             | -                   | -    | 1   | -                    | -    | 1   |
| 3      | 1"     | B54BMPS-GL100 | insert                   | Borosilicate    | 1                   | 1    | 1   | -                    | -    | -   |
|        |        | B54BMPS-LX100 |                          | Polycarbonate   | -                   | -    | -   | 1                    | 1    | 1   |
|        | 1-1/2" | B54BMPS-GL150 | insert                   | Borosilicate    | 1                   | 1    | 1   | -                    | -    | -   |
|        |        | B54BMPS-LX150 |                          | Polycarbonate   | -                   | -    | -   | 1                    | 1    | 1   |
|        | 2"     | B54BMPS-GL200 | insert                   | Borosilicate    | 1                   | 1    | 1   | -                    | -    | -   |
|        |        | B54BMPS-LX200 |                          | Polycarbonate   | -                   | -    | -   | 1                    | 1    | 1   |
|        | 3"     | B54BMPS-GL300 | insert                   | Borosilicate    | 1                   | 1    | 1   | -                    | -    | -   |
|        |        | B54BMPS-LX300 |                          | Polycarbonate   | -                   | -    | -   | 1                    | 1    | 1   |
| 4      | 4"     | B54BMPS-GL400 | insert                   | Borosilicate    | 1                   | 1    | 1   | -                    | -    | -   |
|        |        | B54BMPS-LX400 |                          | Polycarbonate   | -                   | -    | -   | 1                    | 1    | 1   |
|        | 1"     | B54BMPS-4100  | upper body, clamp        | 316L SS         | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 1-1/2" | B54BMPS-4150  | upper body, clamp        | 316L SS         | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 2"     | B54BMPS-4200  | upper body, clamp        | 316L SS         | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 3"     | B54BMPS-4300  | upper body, clamp        | 316L SS         | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 4"     | B54BMPS-4400  | upper body, clamp        | 316L SS         | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | all    | B54BMPS-5     | M5-0.8 set screw         | Stainless steel | 1                   | 1    | 1   | 1                    | 1    | 1   |
| 6      | 1"     | B54BMPS-WR100 | wrench                   | Aluminum        | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 1-1/2" | B54BMPS-WR150 | wrench                   | Aluminum        | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 2"     | B54BMPS-WR200 | wrench                   | Aluminum        | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 3"     | B54BMPS-WR300 | wrench                   | Aluminum        | 1                   | 1    | 1   | 1                    | 1    | 1   |
|        | 4"     | B54BMPS-WR400 | wrench                   | Aluminum        | 1                   | 1    | 1   | 1                    | 1    | 1   |

## B54BM-Series Compact Sight Glass - Dimensions



| Size   | A (in) |
|--------|--------|
| 1"     | 3.4    |
| 1-1/2" | 3.6    |
| 2"     | 3.8    |
| 3"     | 4.1    |
| 4"     | 4.3    |

## B54BM-Series Compact Sight Glass - Repair Kits and Replacement Parts

| Size   | Nitrile Rubber Seal Kit <sup>1</sup> | FKM Seal Kit <sup>2</sup> | EPDM Seal Kit <sup>3</sup> | Borosilicate Glass Replacement | Polycarbonate Replacement |
|--------|--------------------------------------|---------------------------|----------------------------|--------------------------------|---------------------------|
| 1"     | B54BMP-SK100                         | B54BMP-VK100              | B54BMP-EK100               | B54BMPS-GL100                  | B54BMPS-LX100             |
| 1-1/2" | B54BMP-SK150                         | B54BMP-VK150              | B54BMP-EK150               | B54BMPS-GL150                  | B54BMPS-LX150             |
| 2"     | B54BMP-SK200                         | B54BMP-VK200              | B54BMP-EK200               | B54BMPS-GL200                  | B54BMPS-LX200             |
| 3"     | B54BMP-SK300                         | B54BMP-VK300              | B54BMP-EK300               | B54BMPS-GL300                  | B54BMPS-LX300             |
| 4"     | B54BMP-SK400                         | B54BMP-VK400              | B54BMP-EK400               | B54BMPS-GL400                  | B54BMPS-LX400             |

<sup>1</sup>Kit contains: 2 black nitrile gaskets

<sup>2</sup>Kit contains: 2 FKM gaskets

<sup>3</sup>Kit contains: 2 EPDM gaskets

## SJSS-Series Swivel



**B**

Used when a rotation is required between two connecting lines. They are found in the food processing, beverage, dairy, personal care, winery, brewery, pet product, and industrial markets

### Sizes

- 1", 1-1/2", 2", 2-1/2", 3", 4"

### Features

- 3A certified for COP
- Easy assembly/disassembly
- Multiple body styles for greater process flexibility

### Materials

- Product contact metal components: 316L stainless steel
- Non-product contact metal components: 304 stainless steel
- Product contact seals: PTFE and (EPDM or silicone)

### Specifications

- Standard connections: tri-clamp, weld
- Maximum pressure at **70°F (21°C)**
  - 1": **500 PSI**
  - 1-1/2": **500 PSI**
  - 2": **450 PSI**
  - 2-1/2": **400 PSI**
  - 3": **350 PSI**
  - 4": **300 PSI**
- Maximum pressure at **200°F (93°C)**
  - 1": **300 PSI**
  - 1-1/2": **300 PSI**
  - 2": **250 PSI**
  - 2-1/2": **200 PSI**
  - 3": **175 PSI**
  - 4": **150 PSI**
- Maximum operating temperature: **200°F (93°C)**
- Materials of construction
- Surface finish
  - Product contact metal components:  $\leq 32$  Ra
  - Non-product contact metal components:  $\leq 63$  Ra



## SJSS-Series Swivel - Part Number Key

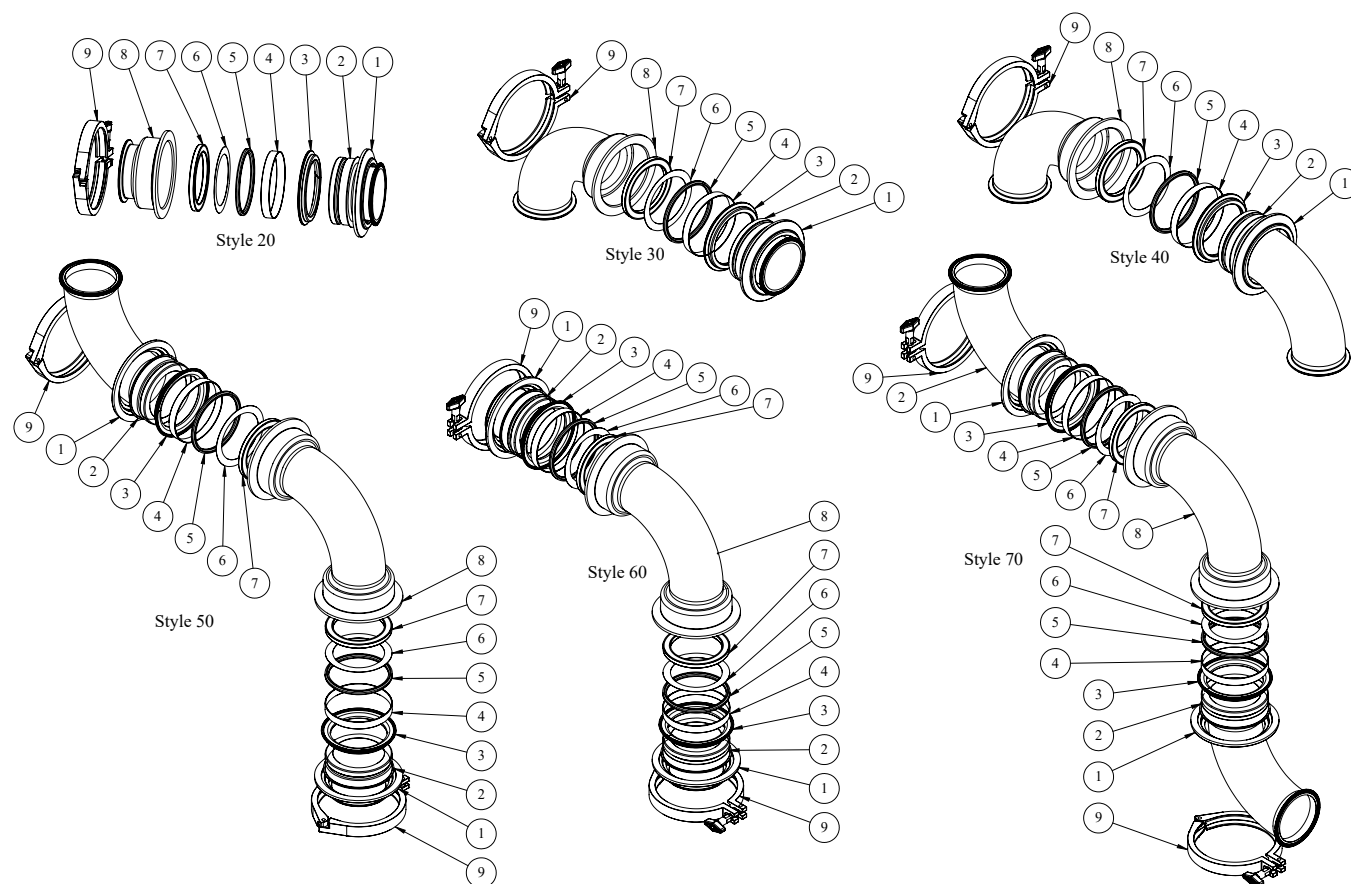
| SJSS-Series Swivel<br>Part Number Key<br>Ex: SJSS100ECC120B                                 |             | Series | Size | Gasket | End One<br>Connection | End Two<br>Connection | Surface<br>Finish | Style | Clamp |
|---------------------------------------------------------------------------------------------|-------------|--------|------|--------|-----------------------|-----------------------|-------------------|-------|-------|
|                                                                                             |             | SJSS   | 100  | E      | C                     | C                     | 1                 | 20    | B     |
| <b>Series</b>                                                                               | <b>Code</b> |        |      |        |                       |                       |                   |       |       |
| SJSS                                                                                        | SJSS        |        |      |        |                       |                       |                   |       |       |
| <b>Size</b>                                                                                 | <b>Code</b> |        |      |        |                       |                       |                   |       |       |
| 1"                                                                                          | 100         |        |      |        |                       |                       |                   |       |       |
| 1-1/2"                                                                                      | 150         |        |      |        |                       |                       |                   |       |       |
| 2"                                                                                          | 200         |        |      |        |                       |                       |                   |       |       |
| 2-1/2"                                                                                      | 250         |        |      |        |                       |                       |                   |       |       |
| 3"                                                                                          | 300         |        |      |        |                       |                       |                   |       |       |
| 4"                                                                                          | 400         |        |      |        |                       |                       |                   |       |       |
| <b>Elastomer</b>                                                                            | <b>Code</b> |        |      |        |                       |                       |                   |       |       |
| EPDM                                                                                        | E           |        |      |        |                       |                       |                   |       |       |
| Silicone                                                                                    | S           |        |      |        |                       |                       |                   |       |       |
| <b>Body One Connection (C1)</b>                                                             | <b>Code</b> |        |      |        |                       |                       |                   |       |       |
| Clamp (standard)                                                                            | C           |        |      |        |                       |                       |                   |       |       |
| Weld                                                                                        | B           |        |      |        |                       |                       |                   |       |       |
| Female I-line                                                                               | F           |        |      |        |                       |                       |                   |       |       |
| Male I-line                                                                                 | M           |        |      |        |                       |                       |                   |       |       |
| Threaded bevel                                                                              | T           |        |      |        |                       |                       |                   |       |       |
| Plain bevel with nut                                                                        | P           |        |      |        |                       |                       |                   |       |       |
| Q-line                                                                                      | Q           |        |      |        |                       |                       |                   |       |       |
| <b>Body Two Connection (C2)</b>                                                             | <b>Code</b> |        |      |        |                       |                       |                   |       |       |
| Clamp (standard)                                                                            | C           |        |      |        |                       |                       |                   |       |       |
| Weld                                                                                        | B           |        |      |        |                       |                       |                   |       |       |
| Female I-line                                                                               | F           |        |      |        |                       |                       |                   |       |       |
| Male I-line                                                                                 | M           |        |      |        |                       |                       |                   |       |       |
| Threaded bevel                                                                              | T           |        |      |        |                       |                       |                   |       |       |
| Plain bevel with nut                                                                        | P           |        |      |        |                       |                       |                   |       |       |
| Q-line                                                                                      | Q           |        |      |        |                       |                       |                   |       |       |
| <b>Surface Finish</b>                                                                       | <b>Code</b> |        |      |        |                       |                       |                   |       |       |
| 32 Ra (I.D. mechanical polished)                                                            | 1           |        |      |        |                       |                       |                   |       |       |
| 25 Ra (I.D. mechanical polished)                                                            | 2           |        |      |        |                       |                       |                   |       |       |
| 20 Ra (I.D. mechanical polished)                                                            | 3           |        |      |        |                       |                       |                   |       |       |
| 15 Ra (I.D. mechanical polished)                                                            | 4           |        |      |        |                       |                       |                   |       |       |
| 10 Ra (I.D. mechanical polished)                                                            | 5           |        |      |        |                       |                       |                   |       |       |
| <b>Styles</b>                                                                               | <b>Code</b> |        |      |        |                       |                       |                   |       |       |
|  20 (C1) | 20          |        |      |        |                       |                       |                   |       |       |
|  30 (C1) | 30          |        |      |        |                       |                       |                   |       |       |
|  40 (C1) | 40          |        |      |        |                       |                       |                   |       |       |
|  50 (C1) | 50          |        |      |        |                       |                       |                   |       |       |
|  60 (C1) | 60          |        |      |        |                       |                       |                   |       |       |
|  70 (C1) | 70          |        |      |        |                       |                       |                   |       |       |
|  20 (C2) | 30          |        |      |        |                       |                       |                   |       |       |
|  30 (C2) | 40          |        |      |        |                       |                       |                   |       |       |
|  40 (C2) | 50          |        |      |        |                       |                       |                   |       |       |
|  50 (C2) | 60          |        |      |        |                       |                       |                   |       |       |
|  60 (C2) | 70          |        |      |        |                       |                       |                   |       |       |
|  70 (C2) |             |        |      |        |                       |                       |                   |       |       |
| <b>Clamp</b>                                                                                | <b>Code</b> |        |      |        |                       |                       |                   |       |       |
| Single-pin clamp (standard)                                                                 | blank       |        |      |        |                       |                       |                   |       |       |
| Bolted clamp                                                                                | B           |        |      |        |                       |                       |                   |       |       |

B



## SJSS-Series Swivel - Bill of Materials

B



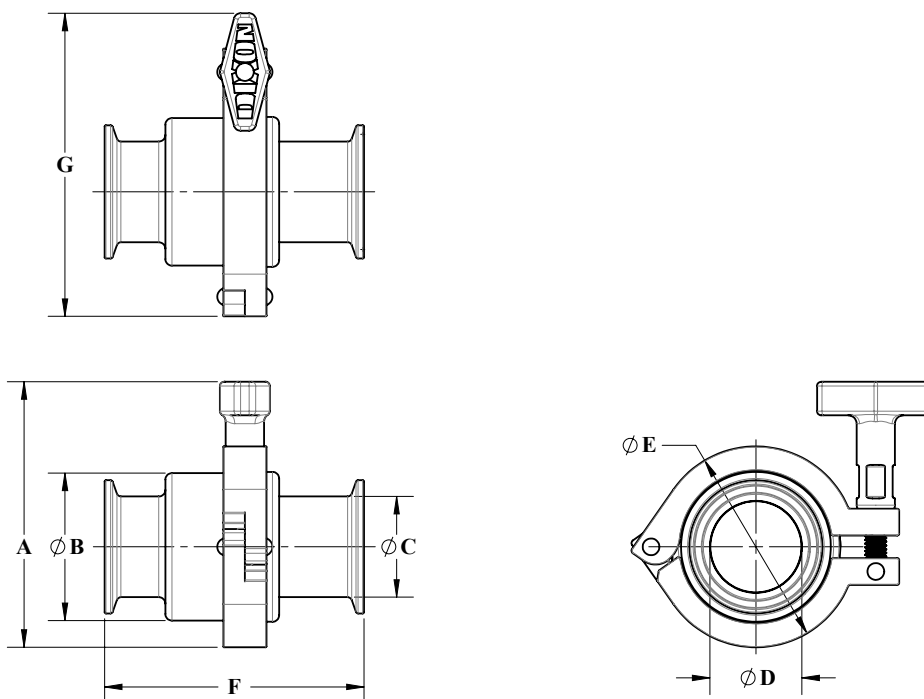
| Item # | Part # <sup>2</sup> | Description                     | Material         | Qty      |          |          |          |          |          |
|--------|---------------------|---------------------------------|------------------|----------|----------|----------|----------|----------|----------|
|        |                     |                                 |                  | Style 20 | Style 30 | Style 40 | Style 50 | Style 60 | Style 70 |
| 1      | SJSS-32CP5-___      | Upper body                      | 316L SS          | 1        | 1        | 1        | 2        | 2        | 2        |
| 2      | SJSS-32CP3-___      | Inner body - clamp              | 316L SS          | 1        | 1        | -        | 1        | 2        | -        |
|        | SJSS-32CP1-___      | Inner body - weld               | 316L SS          |          | -        | -        | -        | -        | -        |
|        | SJSS-32CP6-___      | Inner body - clamp elbow        | 316L SS          |          | -        | 1        | 1        | -        | 2        |
| 3      | SJSS-PSEAT-P-___    | Upper body seat                 | PTFE             | 1        | 1        | 1        | 2        | 2        | 2        |
| 4      | SJSS-32CP3B-400     | Inner body bushing <sup>1</sup> | POM              | 1        | 1        | 1        | 2        | 2        | 2        |
| 5      | SJSS-INBG-E-___     | Inner body gasket               | EPDM or Silicone | 1        | 1        | 1        | 2        | 2        | 2        |
|        | SJSS-INBG-S-___     |                                 |                  |          |          |          |          |          |          |
| 6      | SJSS-LBWSH-___      | Lower body washer               | PTFE             | 1        | 1        | 1        | 2        | 2        | 2        |
| 7      | SJSS-OUTBG-E-___    | Outer body gasket               | EPDM or Silicone | 1        | 1        | 1        | 2        | 2        | 2        |
|        | SJSS-OUTBG-S-___    |                                 |                  |          |          |          |          |          |          |
| 8      | SJSS-32CP4-___      | Outer body - clamp              | 316L SS          | 1        | -        | -        | -        | -        | -        |
|        | SJSS-32CP2-___      | Outer body - weld               | 316L SS          |          | -        | -        | -        | -        | -        |
|        | SJSS-32CP7-___      | Outer body - clamp elbow        | 316L SS          |          | 1        | 1        | -        | -        | -        |
|        | SJSS-32CP8-___      | Outer body x outer body elbow   | 316L SS          |          | -        | -        | 1        | 1        | 1        |
| 9      | SJSSMHM-__          | Body clamp                      | 304 SS           | 1        | 1        | 1        | 2        | 2        | 2        |

<sup>1</sup>Only used on 4" size<sup>2</sup>Part number size key: 1" = 100, 1-1/2" = 150, 2" = 200, 2-1/2" = 250, 3" = 300, 4" = 400

## SJSS-Series Swivels - Dimensions

## Style 20

B



## Clamp Dimensions

| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 3.56   | 1.68   | 1.00   | 0.87   | 2.42   | 3.86   | 3.93   |
| 1-1/2" | 3.96   | 2.20   | 1.50   | 1.37   | 2.99   | 3.87   | 4.51   |
| 2"     | 4.14   | 2.71   | 2.00   | 1.87   | 3.48   | 3.84   | 5.09   |
| 2-1/2" | 4.48   | 3.23   | 2.50   | 2.37   | 3.98   | 3.84   | 5.57   |
| 3"     | 5.08   | 4.26   | 3.00   | 2.87   | 5.08   | 3.84   | 6.82   |
| 4"     | 7.03   | 5.31   | 4.00   | 3.83   | 7.03   | 4.97   | 9.21   |

## Weld Dimensions

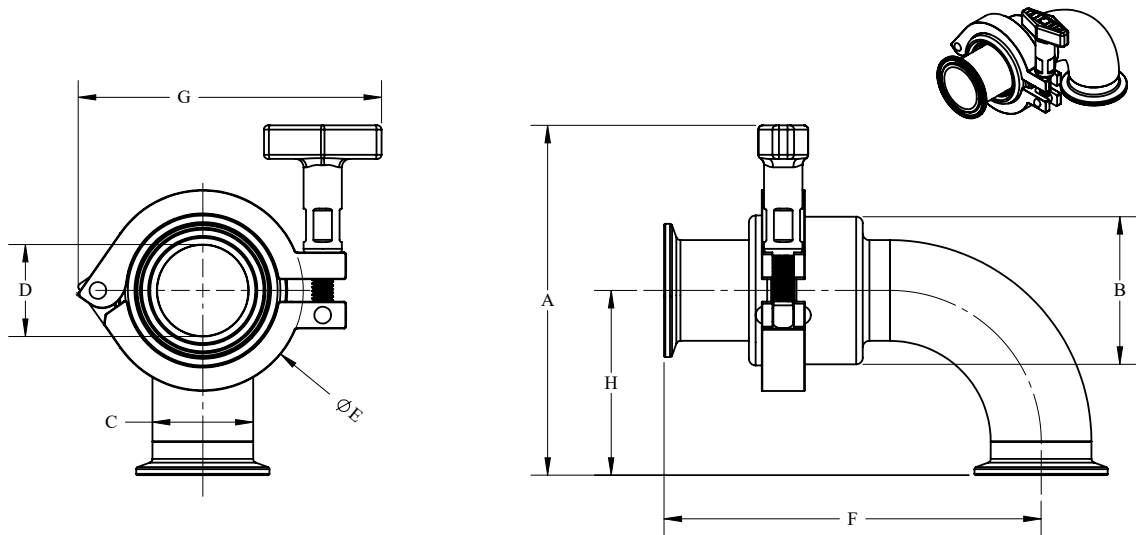
| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 3.56   | 1.68   | 1.00   | 0.87   | 2.42   | 2.24   | 3.93   |
| 1-1/2" | 3.96   | 2.20   | 1.50   | 1.37   | 2.99   | 2.24   | 4.51   |
| 2"     | 4.14   | 2.71   | 2.00   | 1.87   | 3.48   | 2.22   | 5.09   |
| 2-1/2" | 4.48   | 3.23   | 2.50   | 2.37   | 3.98   | 2.22   | 5.57   |
| 3"     | 5.08   | 4.26   | 3.00   | 2.87   | 5.08   | 2.21   | 6.82   |
| 4"     | 7.03   | 5.31   | 4.00   | 3.83   | 7.03   | 3.22   | 9.21   |

NOTE: Drawing is not to scale

SJSS-Series Swivel - Dimensions

B

Style 30



Clamp Dimensions

| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 4.35   | 1.68   | 1.00   | 0.87   | 2.42   | 4.86   | 3.93   | 2.00   |
| 1-1/2" | 5.21   | 2.20   | 1.50   | 1.37   | 2.99   | 5.62   | 4.51   | 2.75   |
| 2"     | 5.90   | 2.71   | 2.00   | 1.87   | 3.48   | 6.34   | 5.09   | 3.50   |
| 2-1/2" | 6.47   | 3.23   | 2.50   | 2.37   | 3.98   | 7.08   | 5.57   | 4.25   |
| 3"     | 7.41   | 4.26   | 3.00   | 2.87   | 5.08   | 7.84   | 6.82   | 5.00   |
| 4"     | 9.18   | 5.31   | 4.00   | 3.83   | 7.03   | 9.69   | 9.21   | 6.63   |

Weld Dimensions

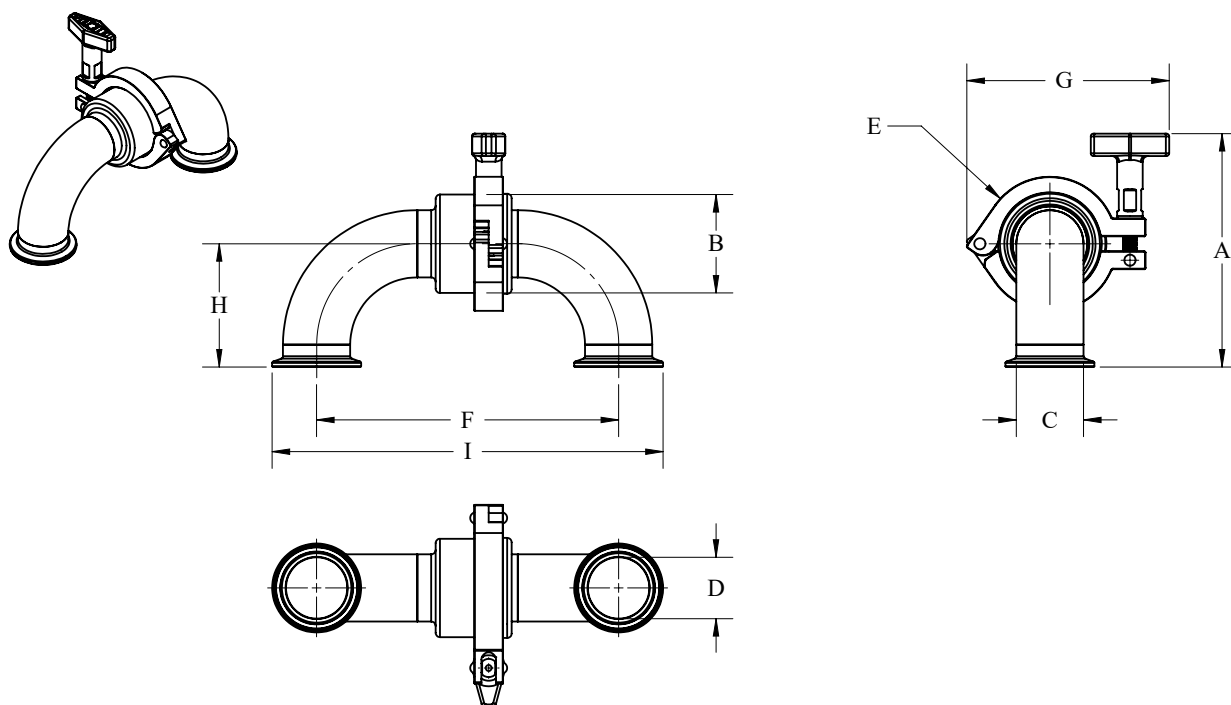
| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 3.85   | 1.68   | 1.00   | 0.87   | 2.42   | 3.77   | 3.93   | 1.50   |
| 1-1/2" | 4.71   | 2.20   | 1.50   | 1.37   | 2.99   | 4.52   | 4.51   | 2.25   |
| 2"     | 5.40   | 2.71   | 2.00   | 1.87   | 3.48   | 5.20   | 5.09   | 3.00   |
| 2-1/2" | 6.24   | 3.23   | 2.50   | 2.37   | 3.98   | 6.03   | 5.57   | 3.75   |
| 3"     | 6.91   | 4.26   | 3.00   | 2.87   | 5.08   | 6.75   | 6.82   | 4.50   |
| 4"     | 9.18   | 5.31   | 4.00   | 3.83   | 7.03   | 9.28   | 9.21   | 6.00   |

NOTE: Drawing is not to scale

## SJSS-Series Swivel - Dimensions

## Style 40

B



## Clamp Dimensions

| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) | I (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 4.35   | 1.68   | 1.00   | 0.87   | 2.42   | 5.27   | 3.93   | 2.00   | 7.26   |
| 1-1/2" | 5.20   | 2.20   | 1.50   | 1.37   | 2.99   | 6.70   | 4.51   | 2.80   | 8.70   |
| 2"     | 5.90   | 2.71   | 2.00   | 1.87   | 3.48   | 8.20   | 5.09   | 3.50   | 10.70  |
| 2-1/2" | 6.74   | 3.23   | 2.50   | 2.37   | 3.98   | 9.70   | 5.57   | 4.25   | 12.75  |
| 3"     | 7.41   | 4.26   | 3.00   | 2.87   | 5.08   | 11.15  | 6.82   | 5.00   | 14.73  |
| 4"     | 9.18   | 5.31   | 4.00   | 3.83   | 7.03   | 15.28  | 9.21   | 6.63   | 19.96  |

## Weld Dimensions

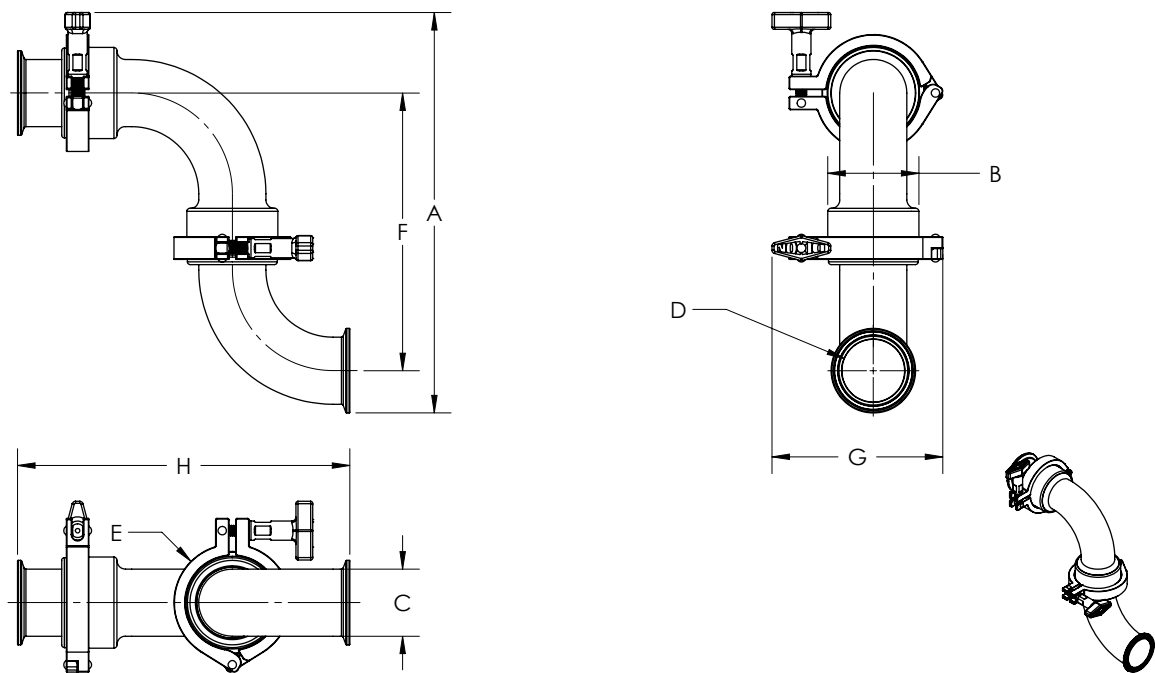
| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) | I (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 3.85   | 1.68   | 1.00   | 0.87   | 2.42   | 5.27   | 3.93   | 1.50   | 6.27   |
| 1-1/2" | 4.71   | 2.20   | 1.50   | 1.37   | 2.99   | 6.70   | 4.51   | 2.25   | 8.24   |
| 2"     | 5.40   | 2.71   | 2.00   | 1.87   | 3.48   | 8.20   | 5.09   | 3.00   | 9.75   |
| 2-1/2" | 6.24   | 3.23   | 2.50   | 2.37   | 3.98   | 9.70   | 5.57   | 3.75   | 12.20  |
| 3"     | 6.91   | 4.26   | 3.00   | 2.87   | 5.08   | 11.15  | 6.82   | 4.50   | 14.15  |
| 4"     | 8.55   | 5.31   | 4.00   | 3.83   | 7.03   | 15.28  | 9.21   | 6.00   | 19.20  |

NOTE: Drawing is not to scale

SJSS-Series Swivel - Dimensions

B

Style 50



Clamp Dimensions

| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 8.62   | 1.68   | 1.00   | 0.87   | 2.42   | 5.27   | 3.93   | 6.90   |
| 1-1/2" | 10.19  | 2.20   | 1.50   | 1.37   | 2.99   | 6.74   | 4.51   | 8.37   |
| 2"     | 11.93  | 2.71   | 2.00   | 1.87   | 3.48   | 8.27   | 5.09   | 9.90   |
| 2-1/2" | 13.71  | 3.23   | 2.50   | 2.37   | 3.98   | 9.70   | 5.57   | 11.40  |
| 3"     | 15.47  | 4.26   | 3.00   | 2.87   | 5.08   | 11.27  | 6.82   | 12.78  |
| 4"     | 20.17  | 5.31   | 4.00   | 3.83   | 7.03   | 15.28  | 9.21   | 16.95  |

Weld Dimensions

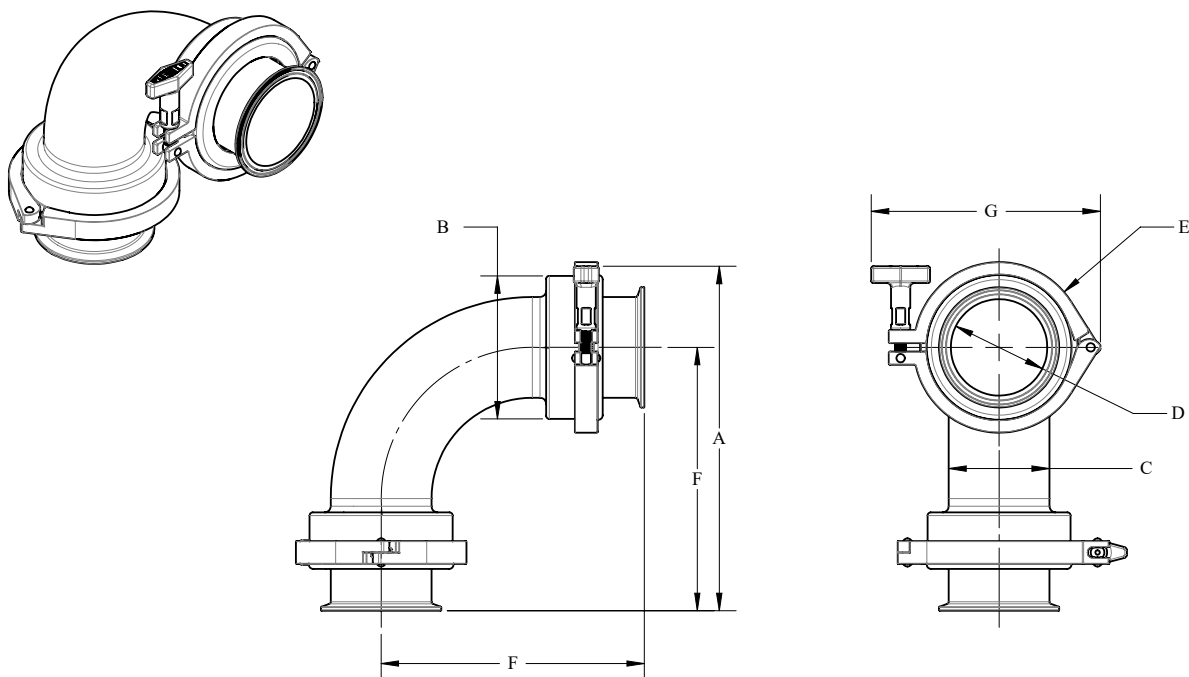
| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 8.13   | 1.68   | 1.00   | 0.87   | 2.42   | 5.27   | 3.93   | 5.27   |
| 1-1/2" | 9.98   | 2.20   | 1.50   | 1.37   | 2.99   | 6.74   | 4.51   | 6.77   |
| 2"     | 11.68  | 2.71   | 2.00   | 1.87   | 3.48   | 8.27   | 5.09   | 8.29   |
| 2-1/2" | 13.43  | 3.23   | 2.50   | 2.37   | 3.98   | 9.70   | 5.57   | 9.70   |
| 3"     | 15.30  | 4.26   | 3.00   | 2.87   | 5.08   | 11.27  | 6.82   | 11.27  |
| 4"     | 19.76  | 5.31   | 4.00   | 3.83   | 7.03   | 15.28  | 9.21   | 15.20  |

NOTE: Drawing is not to scale

## SJSS-Series Swivel - Dimensions

## Style 60

B



## Clamp Dimensions

| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 7.25   | 1.68   | 1.00   | 0.87   | 2.42   | 4.90   | 3.93   |
| 1-1/2" | 8.07   | 2.20   | 1.50   | 1.37   | 2.99   | 5.62   | 4.51   |
| 2"     | 8.81   | 2.71   | 2.00   | 1.87   | 3.48   | 6.41   | 5.09   |
| 2-1/2" | 9.64   | 3.23   | 2.50   | 2.37   | 3.98   | 7.15   | 5.57   |
| 3"     | 10.25  | 4.26   | 3.00   | 2.87   | 5.08   | 7.84   | 6.82   |
| 4"     | 12.96  | 5.31   | 4.00   | 3.83   | 7.03   | 10.41  | 9.21   |

## Weld Dimensions

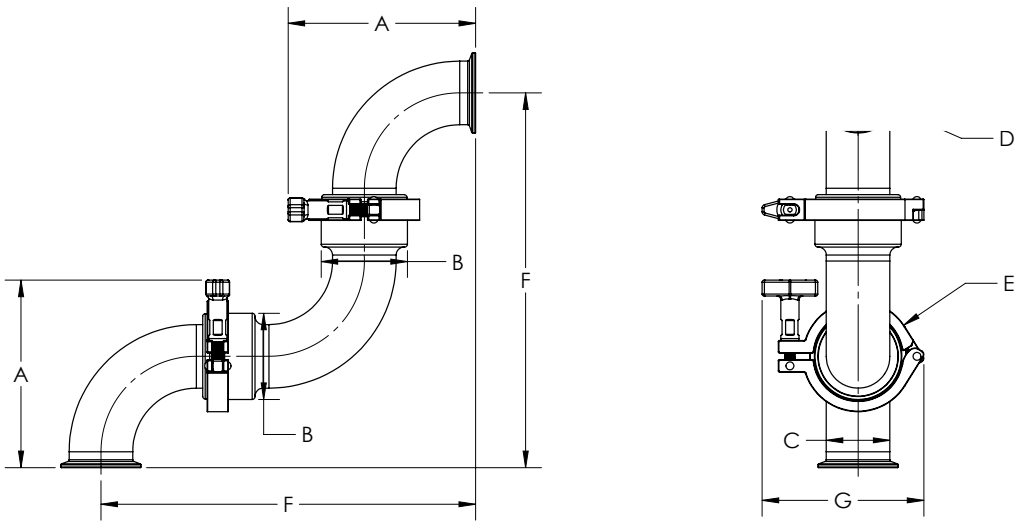
| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 6.13   | 1.68   | 1.00   | 0.87   | 2.42   | 3.77   | 3.93   |
| 1-1/2" | 6.98   | 2.20   | 1.50   | 1.37   | 2.99   | 4.52   | 4.51   |
| 2"     | 7.68   | 2.71   | 2.00   | 1.87   | 3.48   | 5.29   | 5.09   |
| 2-1/2" | 8.52   | 3.23   | 2.50   | 2.37   | 3.98   | 6.03   | 5.57   |
| 3"     | 9.18   | 4.26   | 3.00   | 2.87   | 5.08   | 6.77   | 6.82   |
| 4"     | 11.83  | 5.31   | 4.00   | 3.83   | 7.03   | 9.28   | 9.21   |

NOTE: Drawing is not to scale

SJSS-Series Swivel - Dimensions

B

Style 70



Clamp Dimensions

| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 4.35   | 1.68   | 1.00   | 0.87   | 2.42   | 7.27   | 3.93   |
| 1-1/2" | 5.21   | 2.20   | 1.50   | 1.37   | 2.99   | 9.49   | 4.51   |
| 2"     | 5.90   | 2.71   | 2.00   | 1.87   | 3.48   | 11.79  | 5.09   |
| 2-1/2" | 6.74   | 3.23   | 2.50   | 2.37   | 3.98   | 14.03  | 5.57   |
| 3"     | 7.41   | 4.26   | 3.00   | 2.87   | 5.08   | 16.27  | 6.82   |
| 4"     | 9.18   | 5.31   | 4.00   | 3.83   | 7.03   | 21.91  | 9.21   |

Weld Dimensions

| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 3.85   | 1.68   | 1.00   | 0.87   | 2.42   | 6.77   | 3.93   |
| 1-1/2" | 4.71   | 2.20   | 1.50   | 1.37   | 2.99   | 8.99   | 4.51   |
| 2"     | 5.40   | 2.71   | 2.00   | 1.87   | 3.48   | 11.29  | 5.09   |
| 2-1/2" | 6.24   | 3.23   | 2.50   | 2.37   | 3.98   | 13.53  | 5.57   |
| 3"     | 6.91   | 4.26   | 3.00   | 2.87   | 5.08   | 15.77  | 6.82   |
| 4"     | 8.55   | 5.31   | 4.00   | 3.83   | 7.03   | 21.28  | 9.21   |

NOTE: Drawing is not to scale

SJSS-Series Swivel - Repair Kits

| Size   | Silicone Part # | EPDM Part #     | Repair Kit Qty Required |          |          |          |          |          |
|--------|-----------------|-----------------|-------------------------|----------|----------|----------|----------|----------|
|        |                 |                 | Style 20                | Style 30 | Style 40 | Style 50 | Style 60 | Style 70 |
| 1"     | SJSS-REPAR-S100 | SJSS-REPAR-E100 | 1                       | 1        | 1        | 2        | 2        | 2        |
| 1-1/2" | SJSS-REPAR-S150 | SJSS-REPAR-E150 |                         |          |          |          |          |          |
| 2"     | SJSS-REPAR-S200 | SJSS-REPAR-E200 |                         |          |          |          |          |          |
| 2-1/2" | SJSS-REPAR-S250 | SJSS-REPAR-E250 |                         |          |          |          |          |          |
| 3"     | SJSS-REPAR-S300 | SJSS-REPAR-E300 |                         |          |          |          |          |          |
| 4"     | SJSS-REPAR-S400 | SJSS-REPAR-E400 |                         |          |          |          |          |          |

Kit contains: item #3 (qty 1), item #5 (qty 1), #6 (qty 1), and #7 (qty 1); 4" additionally contains #4 (qty 1)

## BSV-Series Dixon/Rieger Sample Valve



Used when you need to easily and safely sample liquids from closed systems such as vessels and pipelines. They are found in the pharmaceutical, bio-pharmaceutical, biochemical, cosmetic, food processing, beverage, and dairy markets.

### Sizes

- 1/2" and 3/4", 1" and 1-1/2", 2", 2-1/2", 3", 4"

### Features

- Valve body made from solid bar
- No dead space
- Drainable
- Connections suitable for orbital welding
- Available with single or dual ports
- Hermetically sealed against environment
- Optimum cleanability
- Change of seals without special tools

### Materials

- Product contact metal components: 316L stainless steel
- Non-product contact metal components: 304 stainless steel
- Product contact seals: PTFE bellows

### Specifications

- Standard clamp connections
- Sample ports: weld (standard), clamp or hose barb 1/2" only
- Valve data
  - Maximum pressure: **116 PSI**
  - Maximum operating temperature: **250°F (121°C)**
  - Maximum sterilization temperature (20 min/max): **275°F (135°C)**
  - Maximum ambient temperature: **140°F (60°C)**
- Actuator data
  - Fastener size: M4 x 7 mm
  - Control air
    - Spring return pressure range: **87-145 PSI (6-10 bar)**
    - Maximum temperature: **176°F (80°C)**
    - Solids content: 196 microinch (5µm) maximum
    - Oil content: .025 ppm (25 mg/m³) maximum
- Surface finish
  - Product contact metal components: ≤ 32 Ra
  - Non-product contact metal components: ≤ 63 Ra

**C**



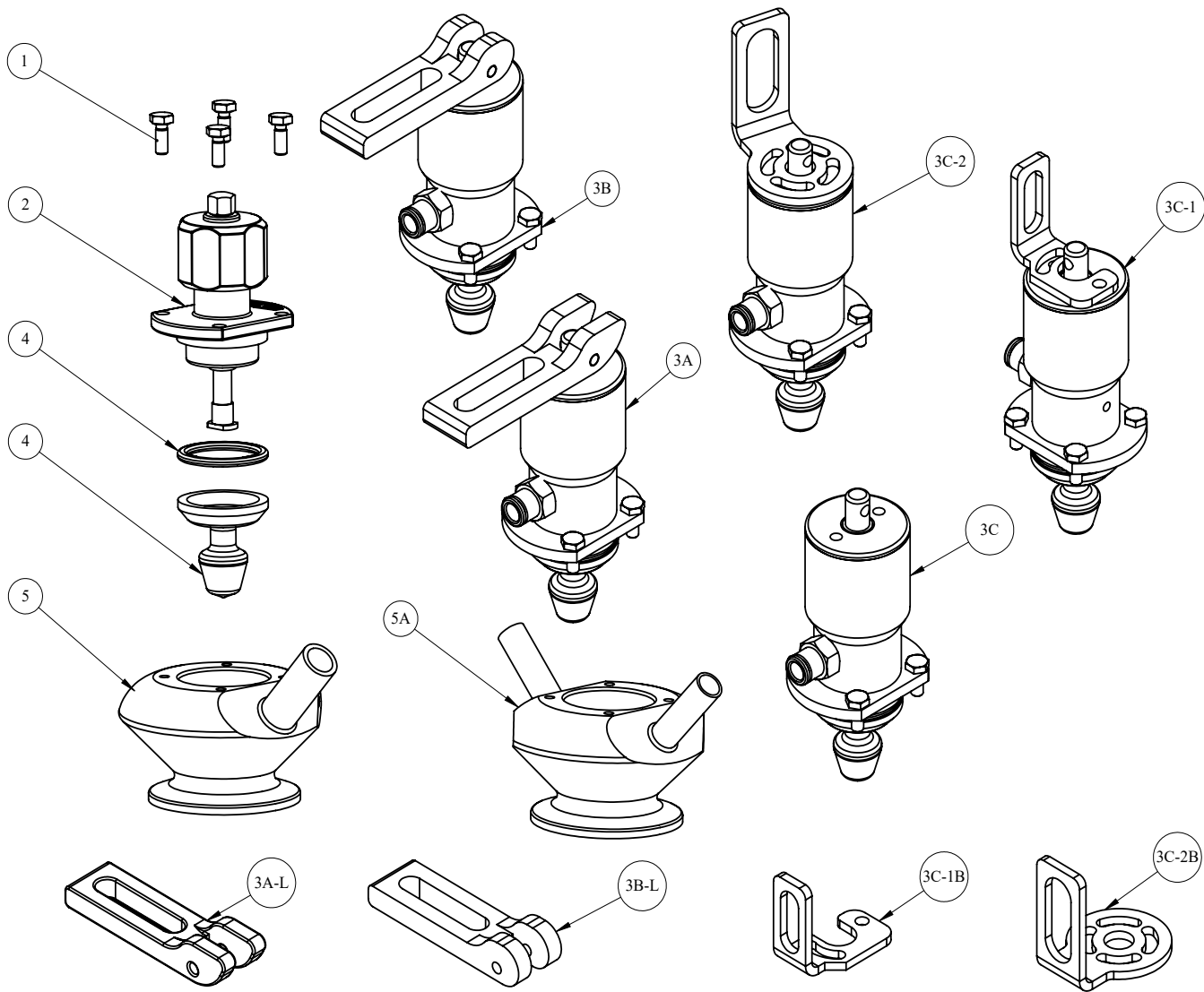
## BSV-Series Sample Valve - Part Number Key

C

| BSV-Series Sample Valve<br>Part Number Key<br>Example: BSVS-PC050C025 |             | Series | Type | Actuator | Process End<br>Connection | Process End<br>Connection Size | Sample Port<br>Connection | Sample Port<br>Connection<br>Size | Options |
|-----------------------------------------------------------------------|-------------|--------|------|----------|---------------------------|--------------------------------|---------------------------|-----------------------------------|---------|
|                                                                       |             | BSV    | S    | -        | P                         | C                              | 050                       | C                                 | 025     |
| <b>Series</b>                                                         | <b>Code</b> | BSV    | S    | -        | P                         | C                              | 050                       | C                                 | 025     |
| BSV                                                                   | BSV         |        |      |          |                           |                                |                           |                                   |         |
| <b>Type</b>                                                           | <b>Code</b> | S      | -    | P        | C                         | 050                            | C                         | 025                               |         |
| Single port                                                           | S           |        |      |          |                           |                                |                           |                                   |         |
| Dual port                                                             | D           |        |      |          |                           |                                |                           |                                   |         |
| <b>Actuator</b>                                                       | <b>Code</b> | P      | C    | 050      | C                         | 025                            |                           |                                   |         |
| Actuator                                                              | P           |        |      |          |                           |                                |                           |                                   |         |
| Actuator with open lever                                              | O           |        |      |          |                           |                                |                           |                                   |         |
| Actuator with self-closing lever                                      | S           |        |      |          |                           |                                |                           |                                   |         |
| Handwheel                                                             | H           |        |      |          |                           |                                |                           |                                   |         |
| Actuator with 8 mm proximity sensor bracket                           | J           |        |      |          |                           |                                |                           |                                   |         |
| Actuator with 12 mm proximity sensor bracket                          | K           |        |      |          |                           |                                |                           |                                   |         |
| <b>Process End Connection</b>                                         | <b>Code</b> | C      | 050  | C        | 025                       |                                |                           |                                   |         |
| Clamp (standard)                                                      | C           |        |      |          |                           |                                |                           |                                   |         |
| <b>Process End Connection Size</b>                                    | <b>Code</b> | 050    | C    | 025      |                           |                                |                           |                                   |         |
| 1/2" and 3/4"                                                         | 050         |        |      |          |                           |                                |                           |                                   |         |
| 1" and 1-1/2"                                                         | 100         |        |      |          |                           |                                |                           |                                   |         |
| 2"                                                                    | 200         |        |      |          |                           |                                |                           |                                   |         |
| 2-1/2"                                                                | 250         |        |      |          |                           |                                |                           |                                   |         |
| 3"                                                                    | 300         |        |      |          |                           |                                |                           |                                   |         |
| 4"                                                                    | 400         |        |      |          |                           |                                |                           |                                   |         |
| <b>Sample Port Connection</b>                                         | <b>Code</b> | C      | 025  |          |                           |                                |                           |                                   |         |
| Clamp (1/2" sample ports only)                                        | C           |        |      |          |                           |                                |                           |                                   |         |
| Weld (standard)                                                       | B           |        |      |          |                           |                                |                           |                                   |         |
| Hose barb (1/2" sample ports only, not 3A)                            | H           |        |      |          |                           |                                |                           |                                   |         |
| <b>Sample Port Connection Size</b>                                    | <b>Code</b> | 025    | C    |          |                           |                                |                           |                                   |         |
| 1/4"                                                                  | 025         |        |      |          |                           |                                |                           |                                   |         |
| 3/8"                                                                  | 375         |        |      |          |                           |                                |                           |                                   |         |
| 1/2"                                                                  | 050         |        |      |          |                           |                                |                           |                                   |         |
| <b>Options</b>                                                        | <b>Code</b> | Blank  |      |          |                           |                                |                           |                                   |         |
| Standard 32 Ra finish                                                 | Blank       |        |      |          |                           |                                |                           |                                   |         |
| SF1 finish                                                            | A           |        |      |          |                           |                                |                           |                                   |         |
| SF2 finish                                                            | B           |        |      |          |                           |                                |                           |                                   |         |
| SF3 finish                                                            | C           |        |      |          |                           |                                |                           |                                   |         |
| SF4 finish                                                            | D           |        |      |          |                           |                                |                           |                                   |         |
| SF5 finish                                                            | E           |        |      |          |                           |                                |                           |                                   |         |

BSV-Series Sample Valve - Bill of Materials

C



## BSV-Series Sample Valve - Bill of Materials

| Item # | Size          | Part #          | Description                                                | Material                  | Qty |
|--------|---------------|-----------------|------------------------------------------------------------|---------------------------|-----|
| 1      | 1/2" - 4"     | -               | M4x7 hex screw                                             | 18-8                      | 4   |
| 2      |               | BSV-MAN050400   | manual handle assembly                                     | 304 SS / Polyoxymethylene | 1   |
| 3A     |               | BSV-ACL050400   | pneumatic actuator assembly - self closing lever           | 304 SS / Nylon 6          | 1   |
| 3AL    |               | BSV-LEV-CL      | self-closing lever                                         | Nylon 6                   | 1   |
| 3B     |               | BSV-AOL050400   | pneumatic actuator assembly - normally open lever          | 304 SS / Nylon 6          | 1   |
| 3BL    |               | BSV-LEV-OP      | normally open lever                                        | Nylon 6                   | 1   |
| 3C     |               | BSV-ANL050400   | pneumatic actuator - no lever                              | 304 SS                    | 1   |
| 3C-1   |               | BSV-A8M050400   | pneumatic actuator - 8 mm proximity bracket                | 304 SS                    | 1   |
| 3C-1B  |               | BSV-PB-8M       | 8 mm proximity bracket (Kit)                               | 304 SS                    | 1   |
| 3C-2   |               | BSV-A12M050400  | pneumatic actuator - 12 mm proximity bracket               | 304 SS                    | 1   |
| 3C-2B  |               | BSV-PB-12M      | 12 mm proximity bracket (Kit)                              | 304 SS                    | 1   |
| 4      |               | BSV-NRKS050400  | repair kit (includes PTFE bellow & O-rings)                | PTFE / Silicone           | 1   |
| 5      | 1/2" x 1/4"   | BSVS-VBC050B025 | 1/2" tri-clamp connection / 1/4" single weld sample port   | 316L SS                   | 1   |
|        | 1/2" x 1/4"   | BSVS-VBC050B050 | 1/2" tri-clamp connection / 1/2" single weld sample port   |                           |     |
|        | 1/2" x 3/8"   | BSVS-VBC050B375 | 1/2" tri-clamp connection / 3/8" single weld sample port   |                           |     |
|        | 1" x 1/4"     | BSVS-VBC100B025 | 1" tri-clamp connection / 1/4" single weld sample port     |                           |     |
|        | 1" x 1/2"     | BSVS-VBC100B050 | 1" tri-clamp connection / 1/2" single weld sample port     |                           |     |
|        | 1" x 3/8"     | BSVS-VBC100B375 | 1" tri-clamp connection / 3/8" single weld sample port     |                           |     |
|        | 2" x 1/4"     | BSVS-VBC200B025 | 2" tri-clamp connection / 1/4" single weld sample port     |                           |     |
|        | 2" x 1/2"     | BSVS-VBC200B050 | 2" tri-clamp connection / 1/2" single weld sample port     |                           |     |
|        | 2" x 3/8"     | BSVS-VBC200B375 | 2" tri-clamp connection / 3/8" single weld sample port     |                           |     |
|        | 2.5" x 1/4"   | BSVS-VBC250B025 | 2-1/2" tri-clamp connection / 1/4" single weld sample port |                           |     |
|        | 2.5" x 1/2"   | BSVS-VBC250B050 | 2-1/2" tri-clamp connection / 1/2" single weld sample port |                           |     |
|        | 2-1/2" x 3/8" | BSVS-VBC250B375 | 2-1/2" tri-clamp connection / 3/8" single weld sample port |                           |     |
|        | 3" x 1/4"     | BSVS-VBC300B025 | 3" tri-clamp connection / 1/4" single weld sample port     |                           |     |
|        | 3" x 1/2"     | BSVS-VBC300B050 | 3" tri-clamp connection / 1/2" single weld sample port     |                           |     |
|        | 3" x 3/8"     | BSVS-VBC300B375 | 3" tri-clamp connection / 3/8" single weld sample port     |                           |     |
|        | 4" x 1/4"     | BSVS-VBC400B025 | 4" tri-clamp connection / 1/4" single weld sample port     |                           |     |
|        | 4" x 1/2"     | BSVS-VBC400B050 | 4" tri-clamp connection / 1/2" single weld sample port     |                           |     |
|        | 4" x 3/8"     | BSVS-VBC400B375 | 4" tri-clamp connection / 3/8" single weld sample port     |                           |     |

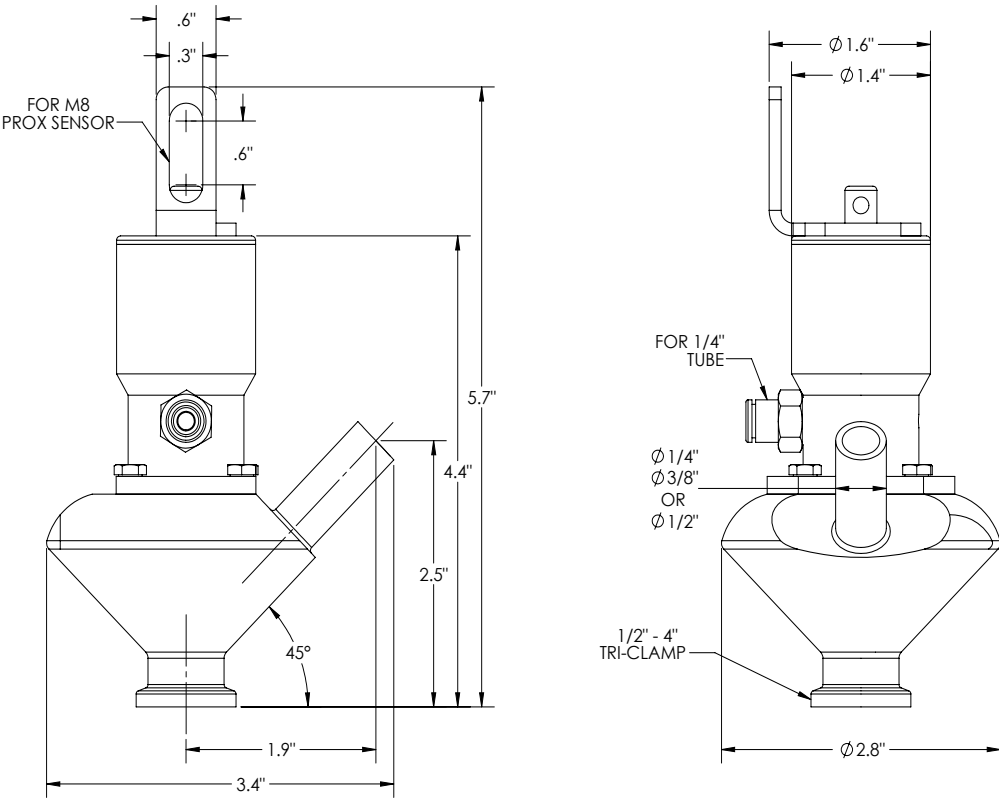
## BSV-Series Sample Valve - Bill of Materials

| Item # | Size          | Part #          | Description                                               | Material | Qty |
|--------|---------------|-----------------|-----------------------------------------------------------|----------|-----|
| 5A     | 1/2" x 1/4"   | BSVD-VBC050B025 | 1/2" tri-clamp connection / 1/4" dual weld sample ports   | 316L SS  | 1   |
|        | 1/2" x 1/2"   | BSVD-VBC050B050 | 1/2" tri-clamp connection / 1/2" dual weld sample ports   |          |     |
|        | 1/2" x 3/8"   | BSVD-VBC050B375 | 1/2" tri-clamp connection / 3/8" dual weld sample ports   |          |     |
|        | 1" x 1/4"     | BSVD-VBC100B025 | 1" tri-clamp connection / 1/4" dual weld sample ports     |          |     |
|        | 1" x 1/2"     | BSVD-VBC100B050 | 1" tri-clamp connection / 1/2" dual weld sample ports     |          |     |
|        | 1" x 3/8"     | BSVD-VBC100B375 | 1" tri-clamp connection / 3/8" dual weld sample ports     |          |     |
|        | 2" x 1/4"     | BSVD-VBC200B025 | 2" tri-clamp connection / 1/4" dual weld sample ports     |          |     |
|        | 2" x 1/2"     | BSVD-VBC200B050 | 2" tri-clamp connection / 1/2" dual weld sample ports     |          |     |
|        | 2" x 3/8"     | BSVD-VBC200B375 | 2" tri-clamp connection / 3/8" dual weld sample ports     |          |     |
|        | 2-1/2" x 1/4" | BSVD-VBC250B025 | 2-1/2" tri-clamp connection / 1/4" dual weld sample ports |          |     |
|        | 2-1/2" x 1/2" | BSVD-VBC250B050 | 2-1/2" tri-clamp connection / 1/2" dual weld sample ports |          |     |
|        | 2-1/2" x 3/8" | BSVD-VBC250B375 | 2-1/2" tri-clamp connection / 3/8" dual weld sample ports |          |     |
|        | 3" x 1/4"     | BSVD-VBC300B025 | 3" tri-clamp connection / 1/4" dual weld sample ports     |          |     |
|        | 3" x 1/2"     | BSVD-VBC300B050 | 3" tri-clamp connection / 1/2" dual weld sample ports     |          |     |
|        | 3" x 3/8"     | BSVD-VBC300B375 | 3" tri-clamp connection / 3/8" dual weld sample ports     |          |     |
|        | 4" x 1/4"     | BSVD-VBC400B025 | 4" tri-clamp connection / 1/4" dual weld sample ports     |          |     |
|        | 4" x 1/2"     | BSVD-VBC400B050 | 4" tri-clamp connection / 1/2" dual weld sample ports     |          |     |
|        | 4" x 3/8"     | BSVD-VBC400B375 | 4" tri-clamp connection / 3/8" dual weld sample ports     |          |     |

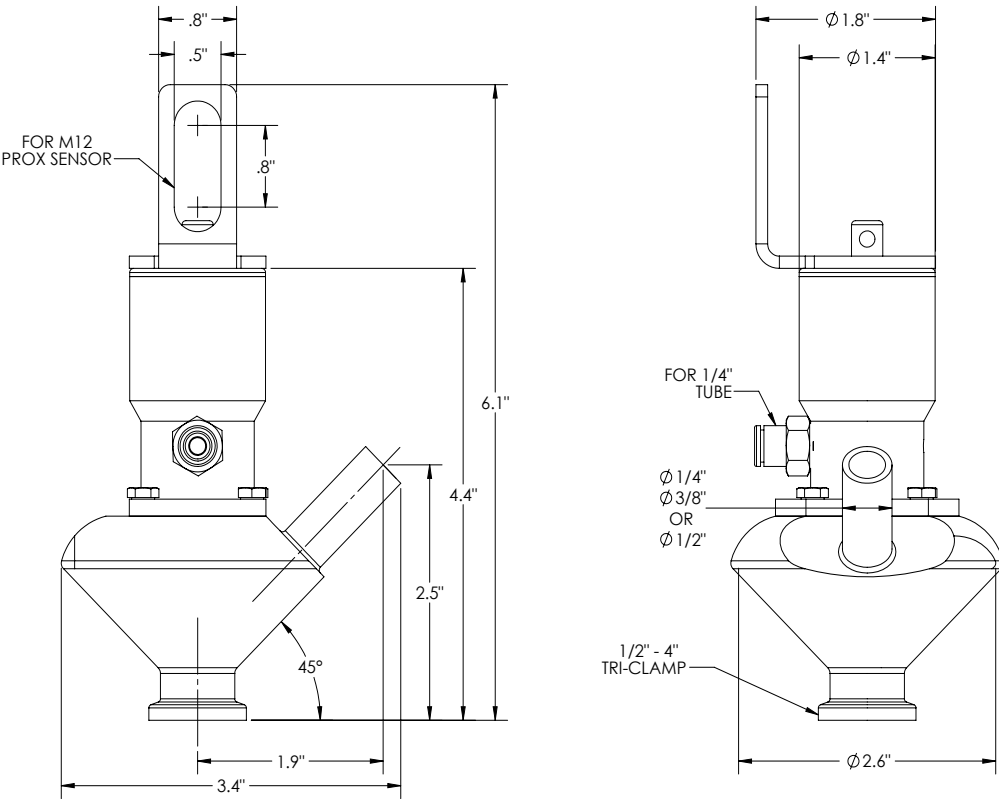
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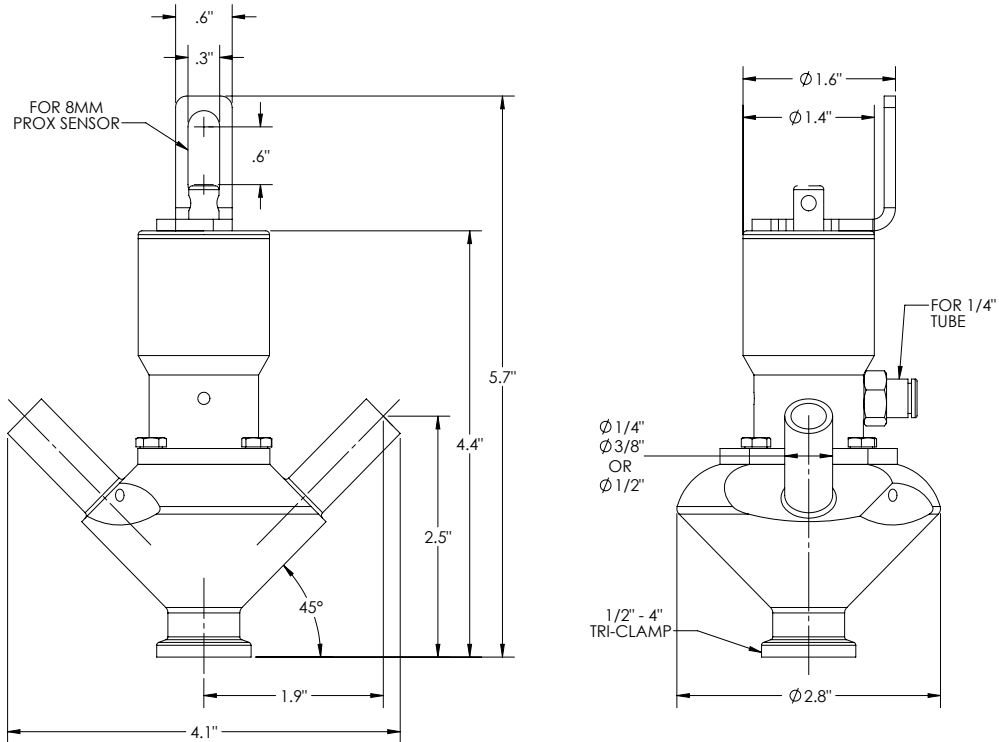
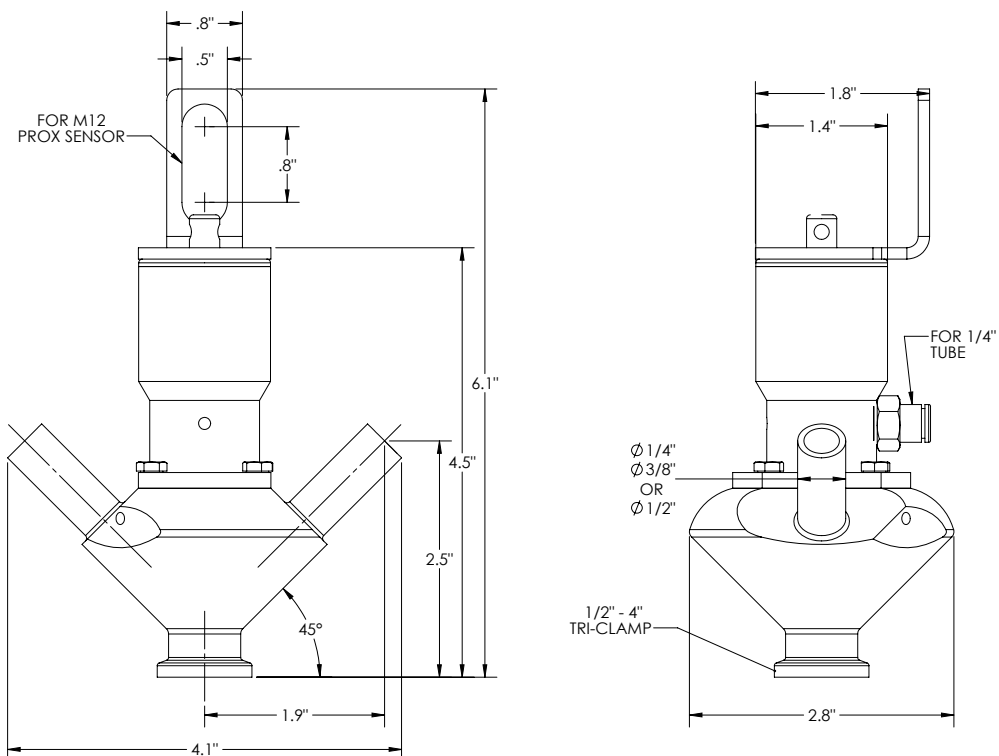
BSV-Series Sample Valve - Dimensions

Actuated Single Port 8 mm Proximity Bracket



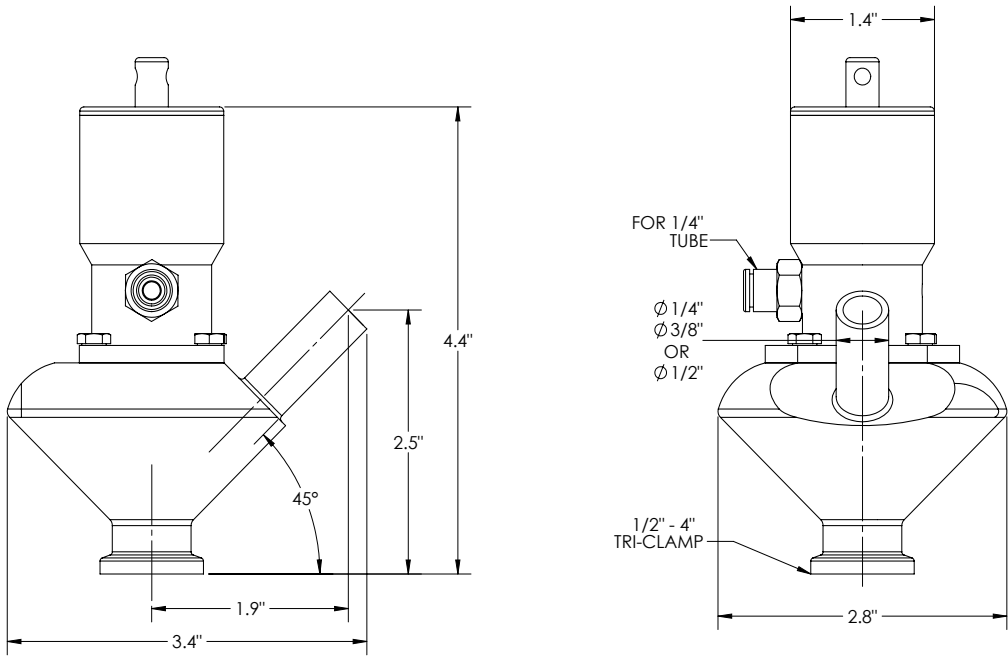
Actuated Single Port 12 mm Proximity Bracket



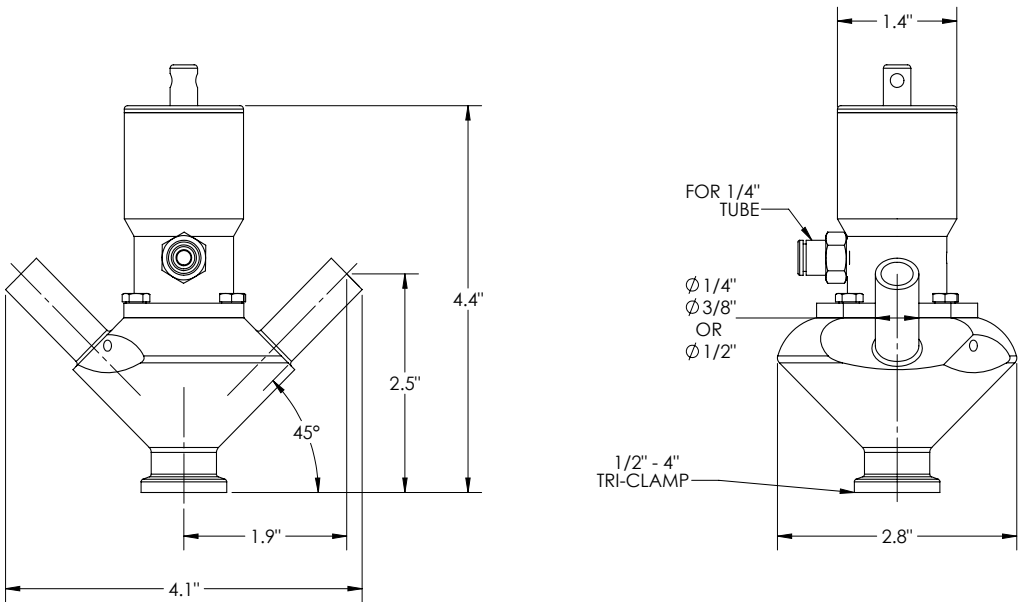
**BSV-Series Sample Valve - Dimensions****Actuated Dual Port 8 mm Proximity Bracket****Actuated Dual Port 12 mm Proximity Bracket**

BSV-Series Sample Valve - Dimensions

Single Port with Actuator

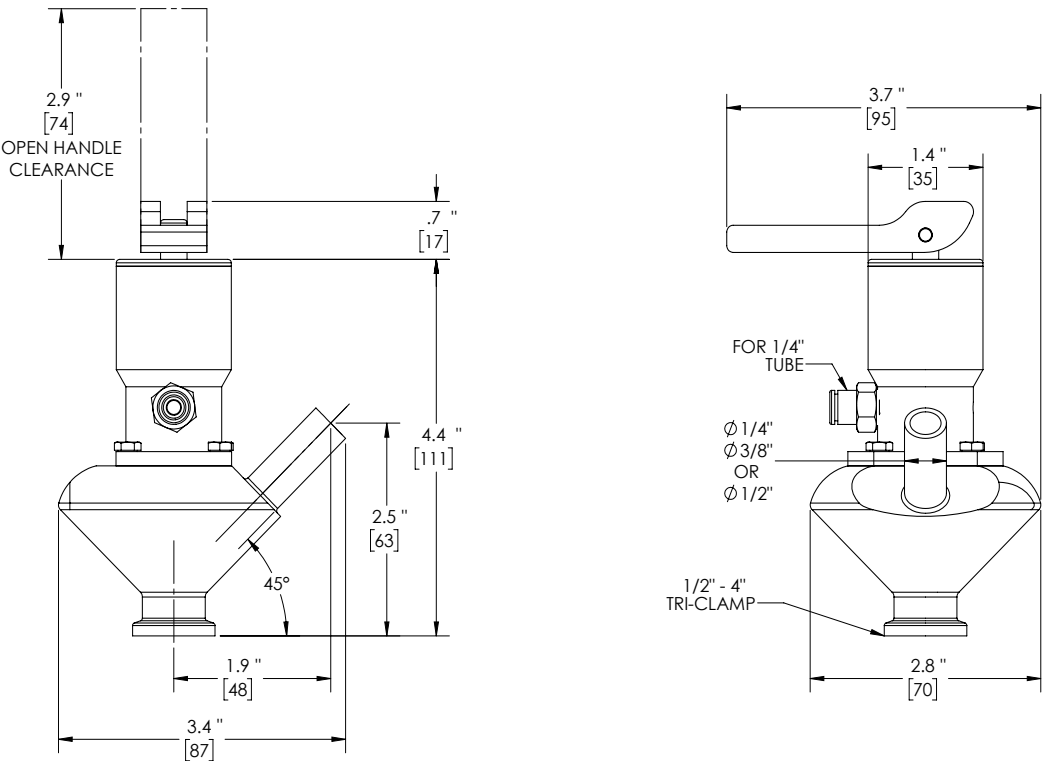


Dual Port with Actuator

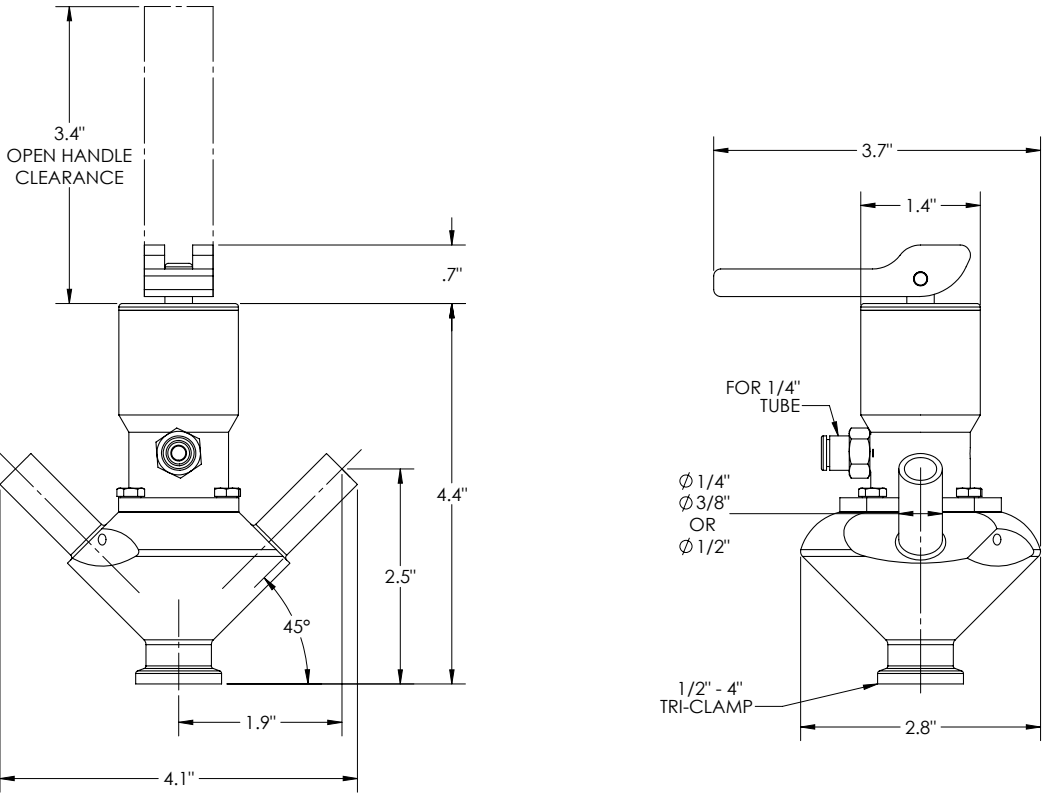


# BSV-Series Sample Valve - Dimensions

## Single Port with Actuator & Self-Closing Lever



## Dual Port with Actuator & Self-Closing Lever

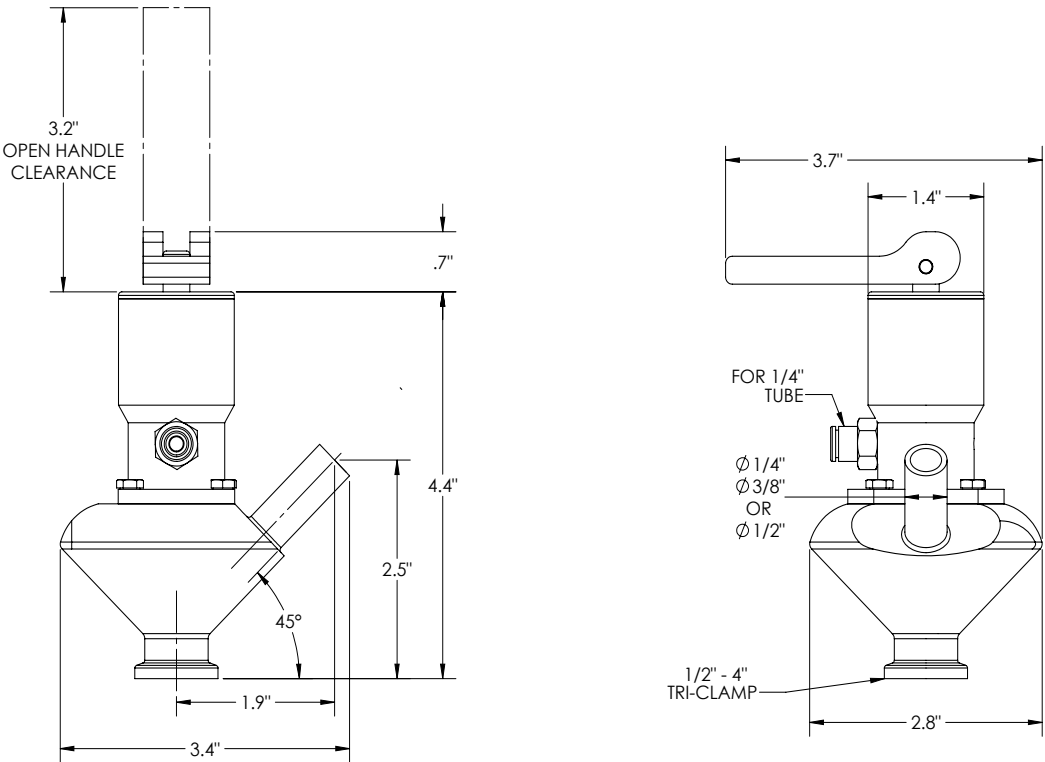


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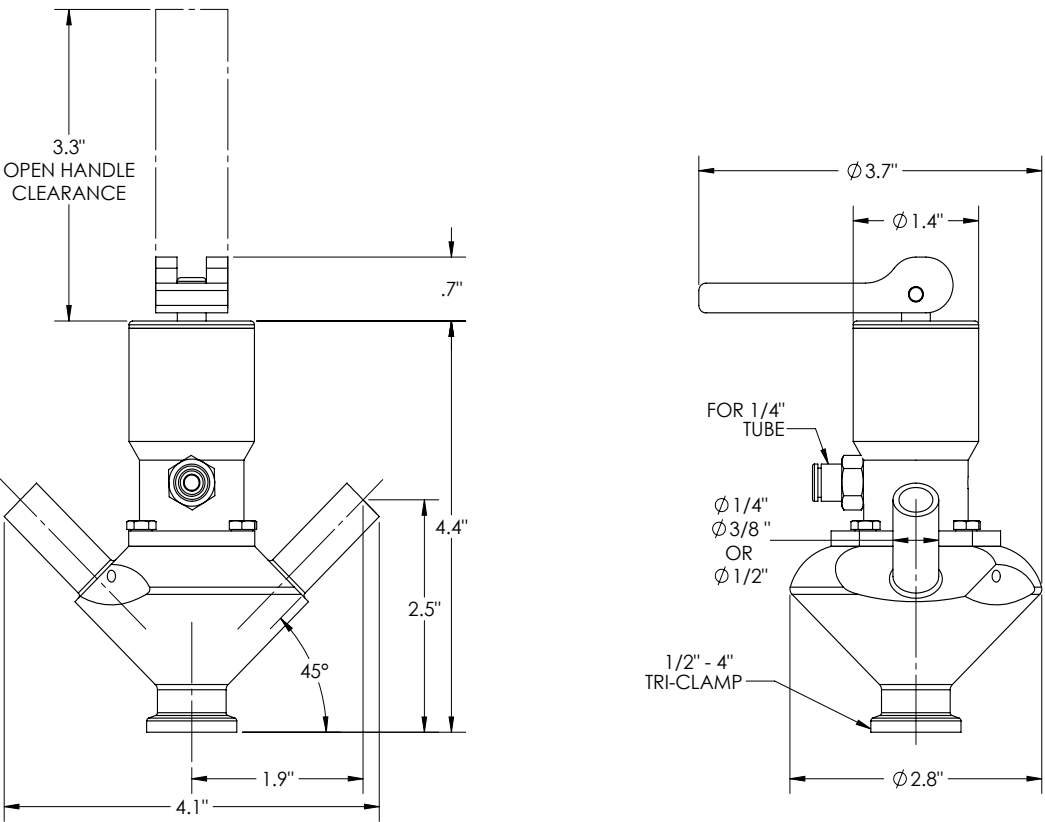


BSV-Series Sample Valve - Dimensions

Single Port with Actuator & Open Lever

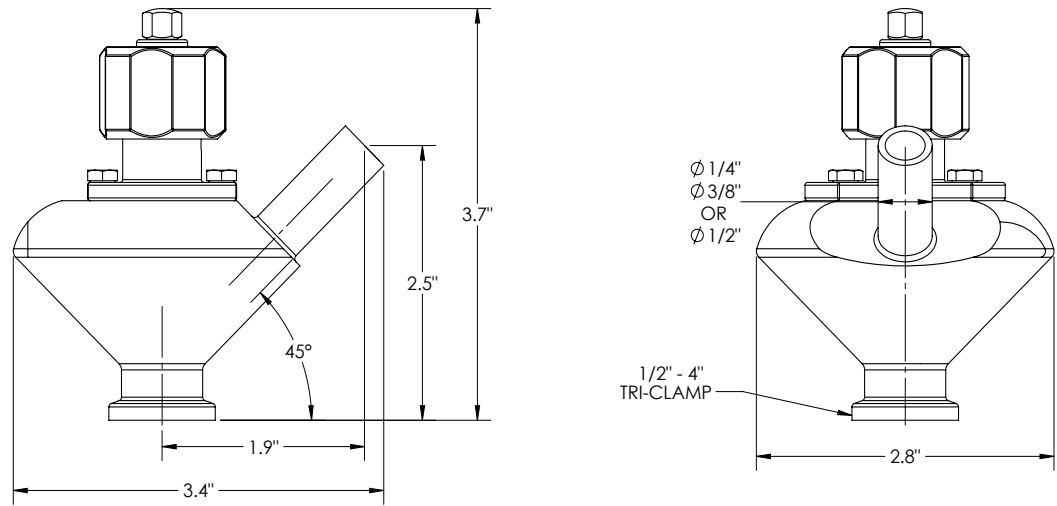


Dual Port with Actuator & Open Lever

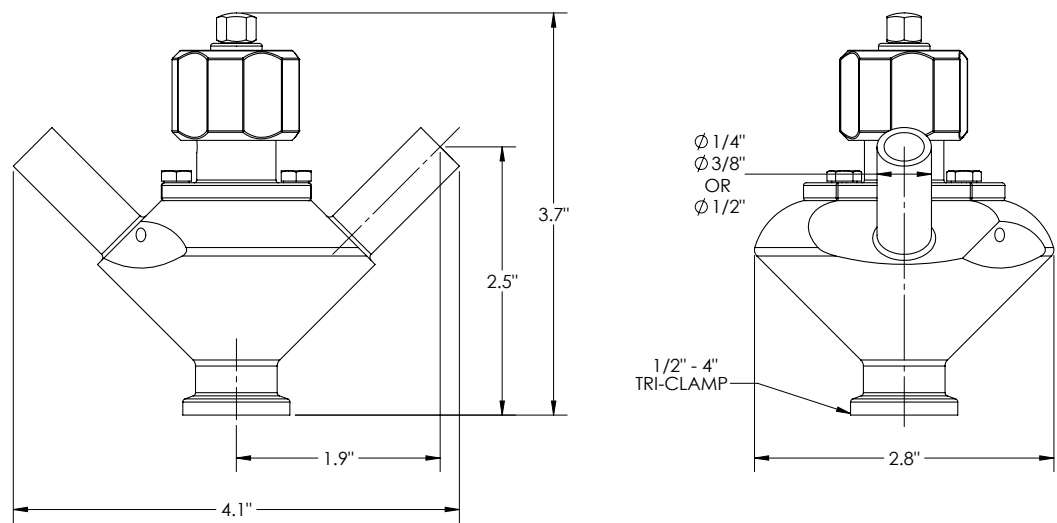


BSV-Series Sample Valve - Dimensions

Single Port with Handwheel



Dual Port with Handwheel



BSV-Series Sample Valve - Repair Kit

| Valve Size | Repair Kit Part Number |
|------------|------------------------|
| 1/2" - 4"  | BSV-NRKS050400         |

NOTE: Repair kit contains (1) silicone O-ring and (1) PTFE bellow.

BSVW-Series Sample Valve

Used to sample product from a vessel or line. They are found in the food processing, beverage, winery, and brewery markets.

Sizes

- 1/2" and 3/8" NPT
- 1" weld
- 1", 2", 2-1/2", and 3" clamp

Materials

- Product contact metal components: 304 stainless steel
- Product contact seals: PTFE or silicone, with silicone O-rings

Specifications

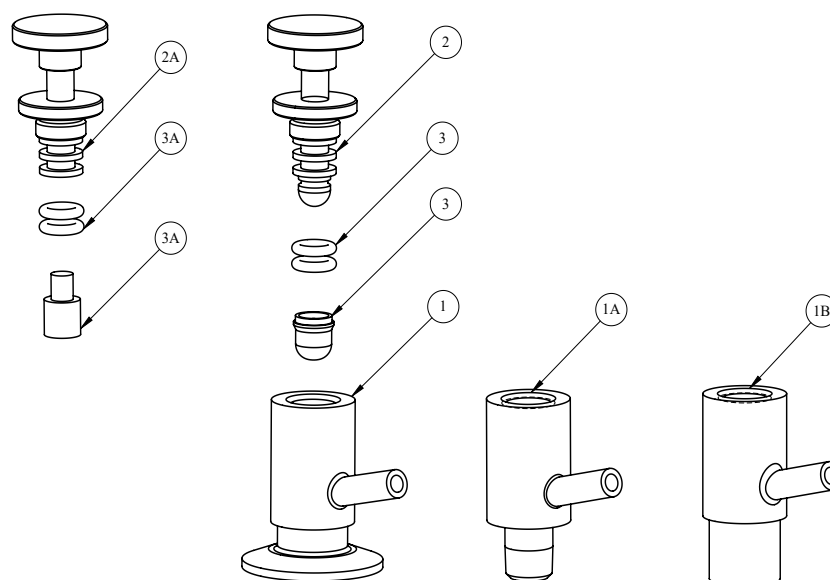
- Standard connections: clamp, weld, or NPT
- Port standard connection: weld
- Valve data
  - Maximum pressure: **200 PSI**
  - Maximum operating temperature: **300°F (149°C)**
- Surface finish
  - Product contact metal components: ≤ 32 Ra



BSVW-Series Sample Valve - Part Number Key

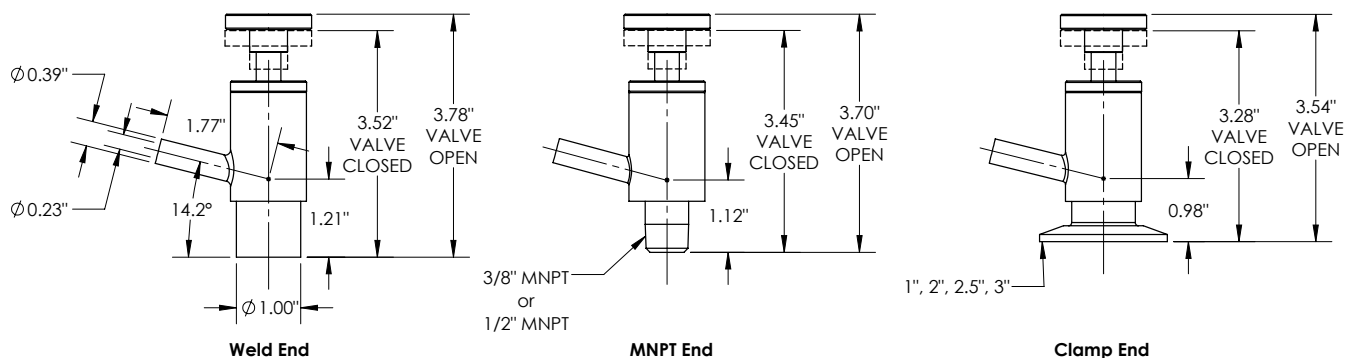
| BSVW-Series Sample Valve<br>Part Number Key<br>Example: BSVWNP-G375 |      | Series | End | Seat Material |     | Body Material | Size |
|---------------------------------------------------------------------|------|--------|-----|---------------|-----|---------------|------|
|                                                                     |      | BSVW   | N   | P             | -   | G             | 375  |
| Series                                                              | Code | BSVW   | N   | P             | -   | G             | 375  |
| BSVW                                                                | BSVW |        |     |               |     |               |      |
| End                                                                 | Code |        |     |               |     |               |      |
| MNPT                                                                | N    |        |     |               |     |               |      |
| Clamp                                                               | C    |        |     |               |     |               |      |
| Weld                                                                | B    |        |     |               |     |               |      |
| Seat Material                                                       | Code | P      | G   | P             | -   | G             | 375  |
| PTFE                                                                | P    |        |     |               |     |               |      |
| Silicone                                                            | S    |        |     |               |     |               |      |
| Body Material                                                       | Code |        |     |               |     |               |      |
| 304 stainless steel                                                 | G    |        |     |               |     |               |      |
| Size                                                                | Code | 375    | 500 | 100           | 200 | 250           | 300  |
| 3/8" MNPT                                                           | 375  |        |     |               |     |               |      |
| 1/2" MNPT                                                           | 500  |        |     |               |     |               |      |
| 1" clamp or weld                                                    | 100  |        |     |               |     |               |      |
| 2" clamp                                                            | 200  |        |     |               |     |               |      |
| 2-1/2" clamp                                                        | 250  |        |     |               |     |               |      |
| 3" clamp                                                            | 300  |        |     |               |     |               |      |

## BSVW-Series Sample Valve - Bill of Materials



| Item # | Part #      | Description                          | Material                | Qty |
|--------|-------------|--------------------------------------|-------------------------|-----|
| 1      | BSVWN-BDY   | 1" to 1-1/2" clamp to process body   | 304 SS                  | 1   |
|        | BSVWD-BDY   | 2" clamp to process body             | 304 SS                  | 1   |
|        | BSVWE-BDY   | 2-1/2" clamp to process body         | 304 SS                  | 1   |
|        | BSVWF-BDY   | 3" clamp to process body             | 304 SS                  | 1   |
| 1A     | BSVWC-BDY   | 3/8" NPT to process body             | 304 SS                  | 1   |
|        | BSVWG-BDY   | 1/2" NPT to process body             | 304 SS                  | 1   |
| 1B     | BSVWB-BDY   | 1" weld to process body              | 304 SS                  | 1   |
| 2      | BSVW-STEM2  | knob & stem assembly (silicone seat) | 304 SS                  | 1   |
| 2A     | BSVW-STEM2A | knob & stem assembly (PTFE seat)     | 304 SS                  | 1   |
| 3      | BSVW-RKS    | silicone seat repair kit             | silicone                | 1   |
| 3A     | BSVW-RKP    | PTFE seat repair kit                 | PTFE (silicone O-rings) | 1   |

## BSVW-Series Sample Valve - Dimensions



## BSVW-Series Sample Valve - Repair Kits

| BSVW-RKP Kit         | BSVW-RKS Kit         |
|----------------------|----------------------|
| (1) PTFE seat        | (1) Silicone seat    |
| (2) Silicone O-rings | (2) Silicone O-rings |

NOTE: Repair kits are for all valve sizes

B45-Series Air Blow Check Valve



The B45-Series Air Blow Check Valve is used in sanitary processes to evacuate product or inject clean air or gas into the system. It can be used in combination with the HYC Y-Ball Check Valve.

They are found in the food processing, beverage, dairy, personal care, winery, brewery, pet product, and industrial markets.

Sizes

- 1-1/2", 2", 2-1/2", 3", and 4"

Materials

- Product contact metal components: 316L stainless steel
- Non-product contact metal components: 304 stainless steel
- Product contact seals: EPDM

Specifications

- Standard connections
  - Clamp to process
- Air connections
  - 1/4" quick connect plug
  - 1/2" NPT cap
  - 1" hose barb
  - Air relief cap
- Valve data
  - Maximum pressure: **145 PSI**
  - Maximum operating temperature: **212°F (100°C)**
  - Cracking pressure: **9 PSI**
  - Capacity: see chart below
  - Sizing: see chart below
- Surface finish
  - Product contact metal components: Ra ≤ 32



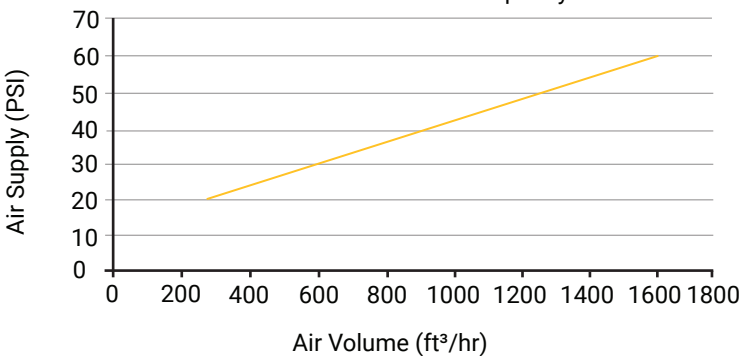
B45-series body with single pin clamp



B45Y-series body with Clever Clamp™

Capacity Chart

Air blow with filter disc capacity



Sizing Chart

| Ball Check Valve Size | Air Blow Check Valve Size |
|-----------------------|---------------------------|
| 1-1/2"                | 2"                        |
| 2"                    | 2-1/2"                    |
| 2-1/2"                | 3"                        |
| 3"                    | 4"                        |

NOTE: When using air blow check valves with ball check valves, refer to the sizing chart above.

## B45-Series Air Blow Check Valve - Part Number Key

| B45-Series Air Blow Check Valve<br>Part Number Key<br>Example: B45AB-R100150 |             | Series | Air End<br>Connection | Air Blow Body/<br>Seal Material | Size | Options |
|------------------------------------------------------------------------------|-------------|--------|-----------------------|---------------------------------|------|---------|
|                                                                              |             | B45    | AB                    | -                               | R    | 100150  |
| <b>Series</b>                                                                | <b>Code</b> | B45    | AB                    | -                               | R    | 100150  |
| B45                                                                          | B45         |        |                       |                                 |      |         |
| B45Y (with ball stabilizer option) <sup>1</sup>                              | B45Y        | B45    | AB                    | -                               | R    | 100150  |
| <b>Air End Connection</b>                                                    | <b>Code</b> |        |                       |                                 |      |         |
| 1/4" male air line quick connect                                             | AB          | B45    | AB                    | -                               | R    | 100150  |
| 1/4" NPT cap <sup>2</sup>                                                    | BA          |        |                       |                                 |      |         |
| 3/8" NPT cap <sup>2</sup>                                                    | BB          | B45    | AB                    | -                               | R    | 100150  |
| 1/2" NPT cap                                                                 | BC          |        |                       |                                 |      |         |
| 3/4" NPT cap <sup>2</sup>                                                    | BD          | B45    | AB                    | -                               | R    | 100150  |
| 1" hose barb                                                                 | CC          |        |                       |                                 |      |         |
| Air relief cap                                                               | AR          | B45    | AB                    | -                               | R    | 100150  |
| <b>Air Blow Body/Seal Material</b>                                           | <b>Code</b> |        |                       |                                 |      |         |
| 316L stainless steel/EPDM                                                    | R           | B45    | AB                    | -                               | R    | 100150  |
| <b>Size</b>                                                                  | <b>Code</b> |        |                       |                                 |      |         |
| 1-1/2" <sup>3</sup>                                                          | 100150      | B45    | AB                    | -                               | R    | 100150  |
| 2"                                                                           | 200         |        |                       |                                 |      |         |
| 2-1/2"                                                                       | 250         | B45    | AB                    | -                               | R    | 100150  |
| 3"                                                                           | 300         |        |                       |                                 |      |         |
| 4"                                                                           | 400         | B45    | AB                    | -                               | R    | 100150  |
| <b>Options</b>                                                               | <b>Code</b> |        |                       |                                 |      |         |
| 32 Ra (ID mechanical polish) (standard) <sup>4</sup>                         | blank       | B45    | AB                    | -                               | R    | 100150  |
| 25 Ra (ID mechanical polish) <sup>4</sup>                                    | B           |        |                       |                                 |      |         |
| 20 Ra (ID mechanical polish) <sup>4</sup>                                    | C           | B45    | AB                    | -                               | R    | 100150  |
| 15 Ra (ID electropolish) <sup>4</sup>                                        | D           |        |                       |                                 |      |         |
| 32 Ra (ID mechanical polish) with customer specified ID marking <sup>4</sup> | E           | B45    | AB                    | -                               | R    | 100150  |
| 25 Ra (ID mechanical polish) with customer specified ID marking <sup>4</sup> | F           |        |                       |                                 |      |         |
| 20 Ra (ID mechanical polish) with customer specified ID marking <sup>4</sup> | G           | B45    | AB                    | -                               | R    | 100150  |
| 15 Ra (ID electropolish) with customer specified ID marking <sup>4</sup>     | H           |        |                       |                                 |      |         |
| 32 Ra (ID mechanical polished) with Clever Clamp™                            | I           | B45    | AB                    | -                               | R    | 100150  |
| 32 Ra (ID mechanical polish) with Clever Clamp™ with self locking pin        | J           |        |                       |                                 |      |         |

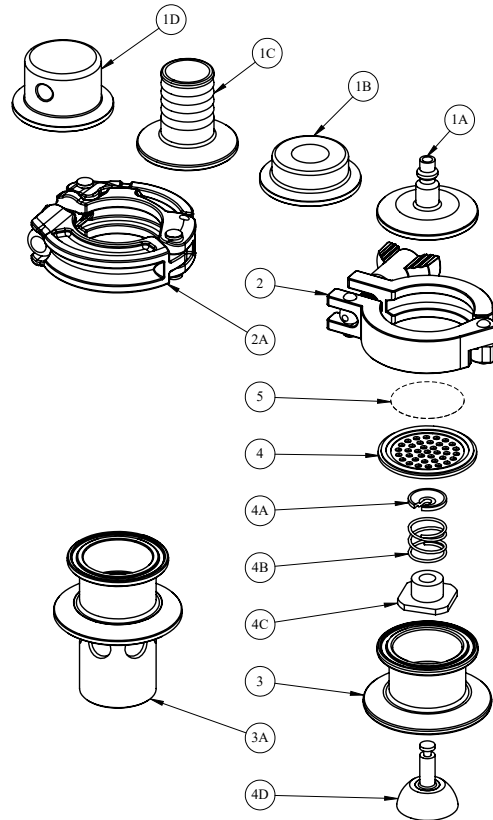
<sup>1</sup>To be used with HYC-series Y-ball check valve only

<sup>2</sup>Non-stock items, built to order

<sup>3</sup>Can only be connected to 1-1/2" ferrule

<sup>4</sup>Standard single pin clamp with serrated nut

## B45-Series Air Blow Check Valve - Bill of Materials



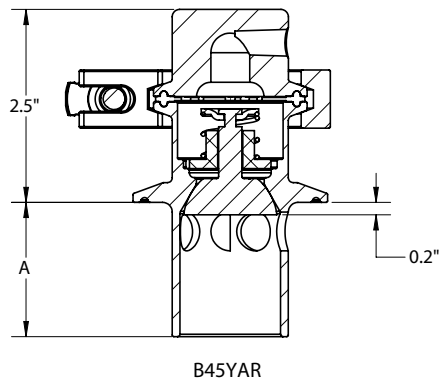
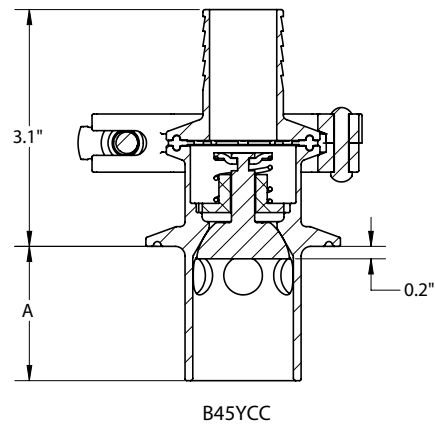
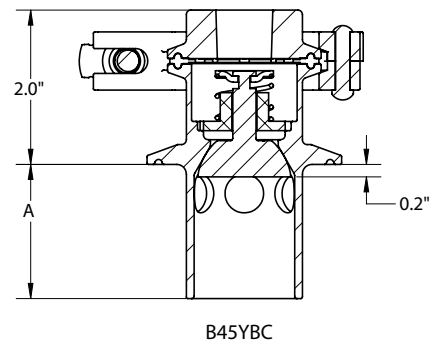
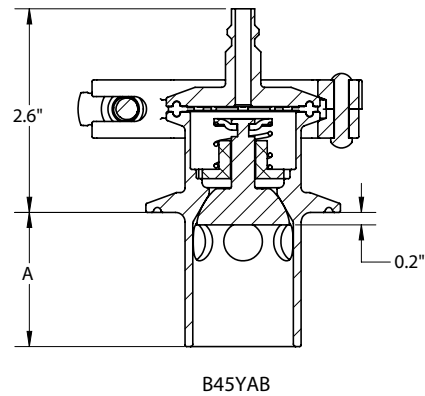
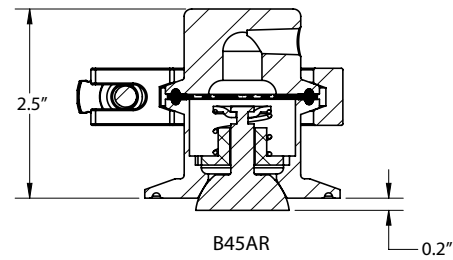
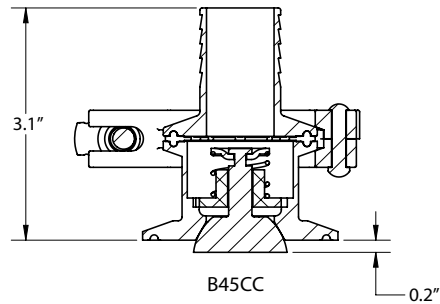
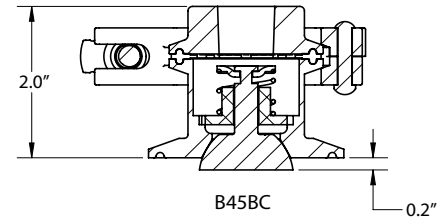
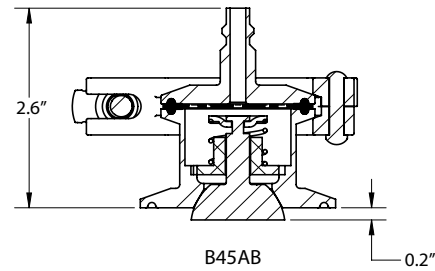
| Item # | Valve Size  | Part #          | Part # Key Identifier | Part # Key Code | Description                           | Material     | Qty |
|--------|-------------|-----------------|-----------------------|-----------------|---------------------------------------|--------------|-----|
| 1A     | all         | B16AC-G150      | Air End Connection    | AB              | 1/4" air line quick connect           | 316L SS      | 1   |
| 1B     | all         | B23BMP-R100     |                       | BC              | 1/2" NPT cap                          | 316L SS      | 1   |
| 1C     | all         | 14MPHR-R100     |                       | CC              | 1" hose barb                          | 316L SS      | 1   |
| 1D     | all         | HAV-4A          |                       | AR              | 1/8" NPT cap                          | 316L SS      | 1   |
| 2      | all         | 13MHHM100-150SN | Air End Clamp Type    | (blank)         | single pin clamp with serrated nut    | CF8          | 1   |
| 2A     | all         | 13SCC-100150    |                       | C               | Clever Clamp™                         | 304 SS       | 1   |
|        | all         | 13SCC-100150L   |                       | L               | Clever Clamp™ with self locking pin   | 304 SS       | 1   |
| 3      | 1" - 1-1/2" | B45AB-3-100150  | Series                | B45             | valve body                            | 316L SS      | 1   |
|        | 2"          | B45AB-3-200     |                       |                 |                                       |              | 1   |
|        | 2-1/2"      | B45AB-3-250     |                       |                 |                                       |              | 1   |
|        | 3"          | B45AB-3-300     |                       |                 |                                       |              | 1   |
|        | 4"          | B45AB-3-400     |                       |                 |                                       |              | 1   |
| 3A     | 1" - 1-1/2" | -               |                       | B45Y            | valve body for HYC-series check valve | 316L SS      | 1   |
|        | 2"          | B45Y-3-200      |                       |                 |                                       |              | 1   |
|        | 2-1/2"      | B45Y-3-250      |                       |                 |                                       |              | 1   |
|        | 3"          | B45Y-3-300      |                       |                 |                                       |              | 1   |
|        | 4"          | B45Y-3-400      |                       |                 |                                       |              | 1   |
| 4      | all         | B45AB-4         | Seal Material         | R               | perforated disc                       | 316L SS/EPDM | 1   |
| 4A     | all         | B45AB-4A        | -                     | -               | spring retainer                       | 304 SS       | 1   |
| 4B     | all         | B45AB-4B        | -                     | -               | spring retainer                       | 304 SS       | 1   |
| 4C     | all         | B45AB-4C        | -                     | -               | stem guide                            | nylon        | 1   |
| 4D     | all         | B45AB-4D        | Seal Material         | R               | stem and plug                         | 316L SS/EPDM | 1   |

**Filter discs (optional) must be used when installed for Accepted Practice 3A 604-05, supplying air under pressure in contact with milk, milk products, and product contact.**

|   |     |                |   |   |                                    |                 |   |
|---|-----|----------------|---|---|------------------------------------|-----------------|---|
| 5 | all | B45ABFD150     | - | - | optional filter disc (pack of 50)  | 1 micron filter | 1 |
|   |     | B45ABFD150-200 | - | - | optional filter disc (pack of 200) |                 |   |

Repair Kit: B45AB-RK contains item numbers: 4, 4A, 4B, 4C, and 4D

**B45-Series Air Blow Check Valve - Dimensions**



| Size   | A (in) |
|--------|--------|
| 2"     | 1.71   |
| 2-1/2" | 1.80   |
| 3"     | 1.92   |
| 4"     | 2.14   |



## HYC-Series Y-Ball Check Valve



When liquid flows through the valve, the ball is forced into the branch of the valve allowing full fluid flow. When the liquid stops, equalizing the pressure, the ball drops back into the seat, preventing backflow. Should reverse flow occur, the differential pressure will cause the ball to seal firmly against the seat, preventing leakage.

## Applications

- Used in sanitary processes to prevent backflow of fluids
- This valve can be used in combination with a B45 Air Blow Check Valve to evacuate the upstream checked fluid from the processing line
- They are found in the food processing, beverage, dairy, personal care, winery, brewery, pet product, and industrial markets

## Sizes

- 1-1/2" to 3"

## Features

- Replaceable seat
- PTFE ball standard
- Vertical or horizontal installation orientation

## Materials

- Product contact metal components: CF8M (316) stainless steel
- Non-product contact metal components: AISI 304 stainless steel
- Product contact seals: EPDM, FKM
- Ball: PTFE, EPDM, FKM, nitrile rubber

## Specifications

- Standard clamp connections (see part number key for alternate connections)
- Valve data
  - Maximum pressure: **150 PSI (10 bar)**
  - Minimum operating temperature: **15°F (-9°C)**
  - Maximum operating temperature: **200°F (93°C)**
- Surface finish
  - Product contact metal components: Ra ≤ 32 standard (see part number key for alternative finishes)



## HYC-Series Y-Ball Check Valve - Cracking Pressure and Cv Values

| Size   | Cracking Pressure Inches (H2O) |                        | Seating Pressure Inches (H2O) |                        | Flow Coefficient (Cv) |
|--------|--------------------------------|------------------------|-------------------------------|------------------------|-----------------------|
|        | Vertical Orientation           | Horizontal Orientation | Vertical Orientation          | Horizontal Orientation |                       |
| 1-1/2" | 2.0                            | 0.5                    | 3.6                           | 3.9                    | 60.0                  |
| 2"     | 2.5                            |                        | 2.6                           | 3.7                    | 80.0                  |
| 2-1/2" | 3.0                            |                        | 1.6                           | 2.4                    | 100.0                 |
| 3"     | 3.8                            |                        | 1.9                           | 2.6                    | 140.0                 |

## HYC-Series Y-Ball Check Valve - Sizing Chart

| Ball Check Valve Size | Air Blow Check Valve Size |
|-----------------------|---------------------------|
| 1-1/2"                | 2"                        |
| 2"                    | 2-1/2"                    |
| 2-1/2"                | 3"                        |
| 3"                    | 4"                        |

## HYC-Series Y-Ball Check Valve - Part Number Key

| HYC-Series Y-Ball Check Valve<br>Part Number Key<br>Example: HYCEP150CCAA |             | Series | Elastomer | Ball<br>Material | Size | End Connection | Surface Finish | Airblow Check<br>Valve Option |
|---------------------------------------------------------------------------|-------------|--------|-----------|------------------|------|----------------|----------------|-------------------------------|
|                                                                           |             | HYC    | E         | P                | 150  | CC             | A              | A                             |
| <b>Series</b>                                                             | <b>Code</b> |        |           |                  |      |                |                |                               |
| HYC                                                                       | HYC         |        |           |                  |      |                |                |                               |
| <b>Elastomer</b>                                                          | <b>Code</b> |        |           |                  |      |                |                |                               |
| EPDM                                                                      | E           |        |           |                  |      |                |                |                               |
| FKM                                                                       | V           |        |           |                  |      |                |                |                               |
| <b>Ball Material</b>                                                      | <b>Code</b> |        |           |                  |      |                |                |                               |
| Nitrile                                                                   | B           |        |           |                  |      |                |                |                               |
| EPDM                                                                      | E           |        |           |                  |      |                |                |                               |
| PTFE (standard)                                                           | P           |        |           |                  |      |                |                |                               |
| FKM                                                                       | V           |        |           |                  |      |                |                |                               |
| <b>Size</b>                                                               | <b>Code</b> |        |           |                  |      |                |                |                               |
| 1-1/2"                                                                    | 150         |        |           |                  |      |                |                |                               |
| 2"                                                                        | 200         |        |           |                  |      |                |                |                               |
| 2-1/2"                                                                    | 250         |        |           |                  |      |                |                |                               |
| 3"                                                                        | 300         |        |           |                  |      |                |                |                               |
| <b>End Connection</b>                                                     | <b>Code</b> |        |           |                  |      |                |                |                               |
| Clamp (standard)                                                          | CC          |        |           |                  |      |                |                |                               |
| Weld                                                                      | BB          |        |           |                  |      |                |                |                               |
| Female I-Line                                                             | FF          |        |           |                  |      |                |                |                               |
| Male I-Line                                                               | MM          |        |           |                  |      |                |                |                               |
| Threaded Bevel                                                            | TT          |        |           |                  |      |                |                |                               |
| Plain Bevel with nut                                                      | PP          |        |           |                  |      |                |                |                               |
| Q-Line                                                                    | QQ          |        |           |                  |      |                |                |                               |
| John Perry Plain                                                          | JJ          |        |           |                  |      |                |                |                               |
| John Perry threaded                                                       | HH          |        |           |                  |      |                |                |                               |
| Extended weld                                                             | EE          |        |           |                  |      |                |                |                               |
| Female NPT*                                                               | 11          |        |           |                  |      |                |                |                               |
| Male NPT*                                                                 | 22          |        |           |                  |      |                |                |                               |
| <b>Surface Finish</b>                                                     | <b>Code</b> |        |           |                  |      |                |                |                               |
| 32 Ra (I.D. mech. polished)<br>(standard)                                 | A           |        |           |                  |      |                |                |                               |
| 25 Ra (I.D. mech. polished)                                               | B           |        |           |                  |      |                |                |                               |
| 20 Ra (I.D. mech. polished)                                               | C           |        |           |                  |      |                |                |                               |
| 15 Ra (I.D. electropolish)                                                | D           |        |           |                  |      |                |                |                               |
| <b>Airblow Check Valve Options</b>                                        | <b>Code</b> |        |           |                  |      |                |                |                               |
| None                                                                      | A           |        |           |                  |      |                |                |                               |
| 1/4" male air line quick<br>connect                                       | B           |        |           |                  |      |                |                |                               |
| 1/2" NPT cap                                                              | C           |        |           |                  |      |                |                |                               |
| 1" hose barb                                                              | D           |        |           |                  |      |                |                |                               |

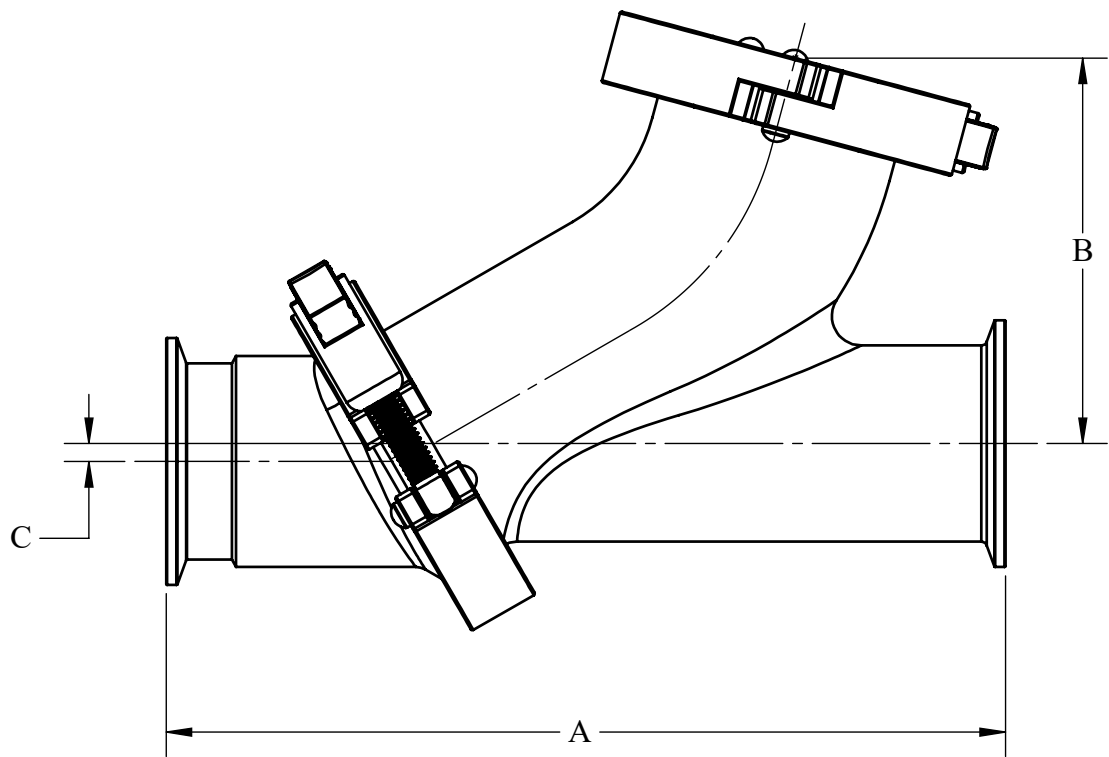
\*Not a sanitary connection

HYC-Series Y-Ball Check Valve - Pressure Drop Table

| Capacity (U.S. GPM) | Valve Size |      |        |     |
|---------------------|------------|------|--------|-----|
|                     | 1-1/2"     | 2"   | 2-1/2" | 3"  |
| 10                  | 0.0        | 0.0  | 0.0    | 0.0 |
| 20                  | 0.1        | 0.1  | 0.0    | 0.0 |
| 30                  | 0.3        | 0.1  | 0.1    | 0.0 |
| 40                  | 0.4        | 0.3  | 0.2    | 0.1 |
| 50                  | 0.7        | 0.4  | 0.3    | 0.1 |
| 60                  | 1.0        | 0.6  | 0.4    | 0.2 |
| 70                  | 1.4        | 0.8  | 0.5    | 0.3 |
| 80                  | 1.8        | 1.0  | 0.6    | 0.3 |
| 90                  | 2.3        | 1.3  | 0.8    | 0.4 |
| 100                 | 2.8        | 1.6  | 1.0    | 0.5 |
| 110                 | 3.4        | 1.9  | 1.2    | 0.6 |
| 120                 | 4          | 2.3  | 1.4    | 0.7 |
| 130                 | 4.7        | 2.6  | 1.7    | 0.9 |
| 140                 | 5.4        | 3.1  | 2      | 1.0 |
| 150                 | 6.3        | 3.5  | 2.3    | 1.1 |
| 160                 | 7.1        | 4.0  | 2.6    | 1.3 |
| 170                 | 8.0        | 4.5  | 2.9    | 1.5 |
| 180                 | 9.0        | 5.1  | 3.2    | 1.7 |
| 190                 | 10.0       | 5.6  | 3.6    | 1.8 |
| 200                 | 11.1       | 6.3  | 4.0    | 2.0 |
| 210                 |            | 6.9  | 4.4    | 2.3 |
| 220                 |            | 7.6  | 4.8    | 2.5 |
| 230                 |            | 8.3  | 5.3    | 2.7 |
| 240                 |            | 9.0  | 5.8    | 2.9 |
| 250                 |            | 9.8  | 6.3    | 3.2 |
| 260                 |            | 10.6 | 6.8    | 3.4 |
| 270                 |            | 11.4 | 7.3    | 3.7 |
| 280                 |            | 12.3 | 7.8    | 4.0 |
| 290                 |            | 13.1 | 8.4    | 4.3 |
| 300                 |            | 14.1 | 9.0    | 4.6 |
| 310                 |            |      | 9.6    | 4.9 |
| 320                 |            |      | 10.2   | 5.2 |
| 330                 |            |      | 10.9   | 5.6 |
| 340                 |            |      | 11.6   | 5.9 |
| 350                 |            |      | 12.3   | 6.3 |
| 360                 |            |      |        | 6.6 |
| 370                 | 7.0        |      |        |     |
| 380                 | 7.4        |      |        |     |
| 390                 | 7.8        |      |        |     |
| 400                 | 8.2        |      |        |     |
| 410                 | 8.6        |      |        |     |
| 420                 | 9.0        |      |        |     |
| 430                 | 9.4        |      |        |     |
| 440                 | 9.9        |      |        |     |
| 460                 | 10.3       |      |        |     |
| 470                 | 10.8       |      |        |     |

ΔP = [GPM/Cv]²G

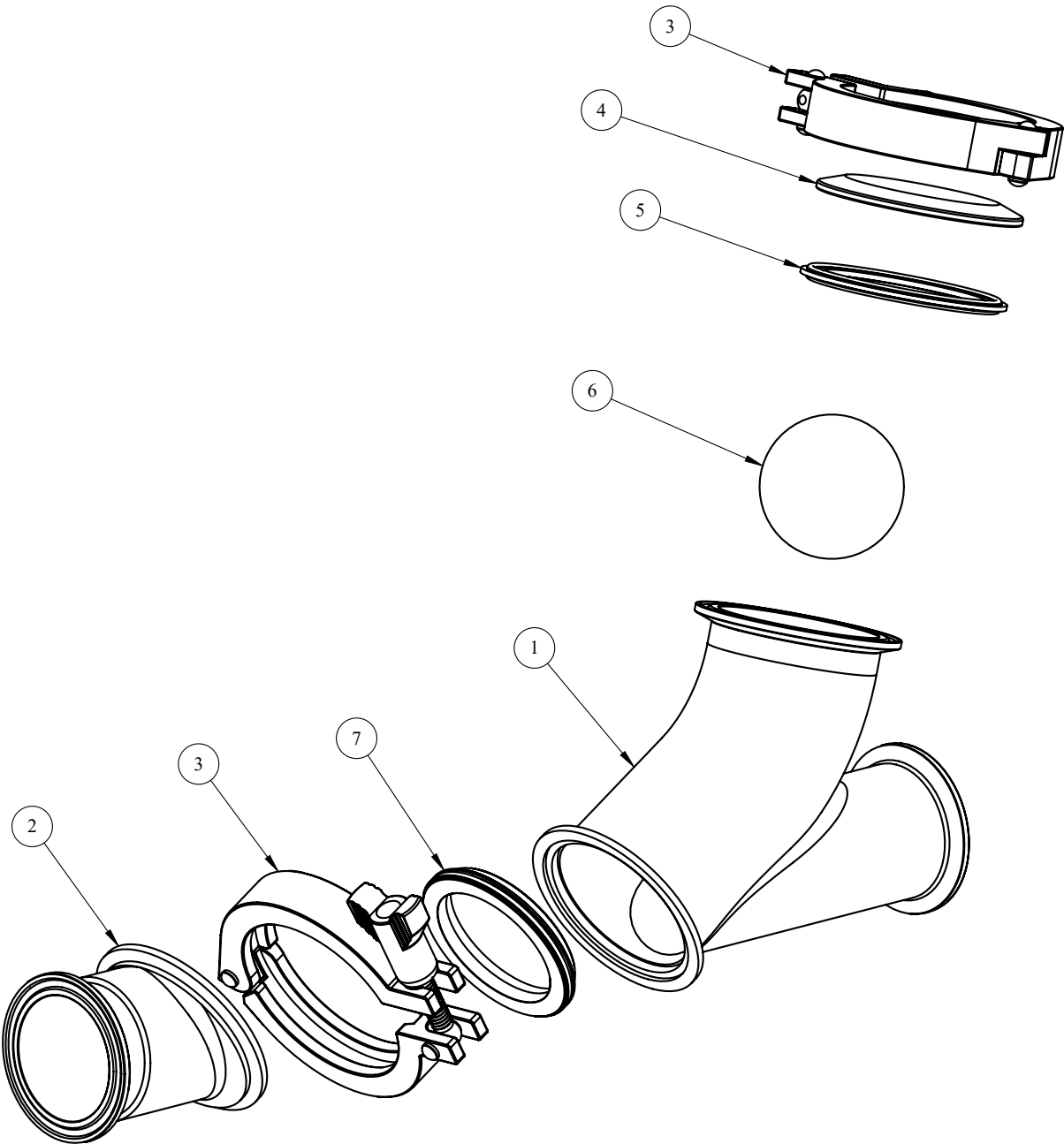
HYC-Series Y-Ball Check Valve - Dimensions



D

| Size   | A (in) | B (in) | C (in) | PTFE Ball Ø (in) | Rubber Ball Ø (in) |
|--------|--------|--------|--------|------------------|--------------------|
| 1-1/2" | 7.5    | 3.3    | 0.16   | 1.6              | 1.6                |
| 2"     | 8.5    | 3.9    |        | 2.1              | 2.1                |
| 2-1/2" | 10     | 4.5    |        | 2.7              | 2.6                |
| 3"     | 11.5   | 5.3    |        | 3.6              | 3.5                |

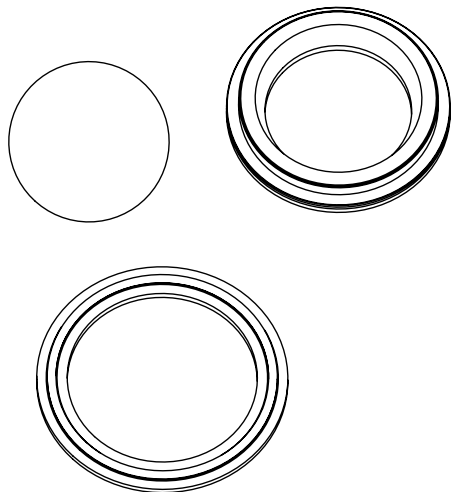
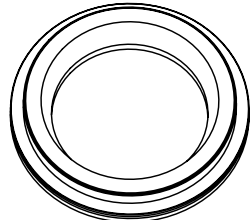
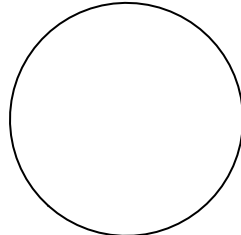
HYC-Series Y-Ball Check Valve - Bill of Materials



## HYC-Series Y-Ball Check Valve - Bill of Materials

| Item # | HYC Valve Size | Part #      | Description | Material | Qty |
|--------|----------------|-------------|-------------|----------|-----|
| 1      | 1-1/2"         | HYC-1-150   | angle body  | CF8M     | 1   |
|        | 2"             | HYC-1-200   |             |          | 1   |
|        | 2-1/2"         | HYC-1-250   |             |          | 1   |
|        | 3"             | HYC-1-300   |             |          | 1   |
| 2      | 1-1/2"         | HYC-2-150   | inlet body  | CF8M     | 1   |
|        | 2"             | HYC-2-200   |             |          | 1   |
|        | 2-1/2"         | HYC-2-250   |             |          | 1   |
|        | 3"             | HYC-2-300   |             |          | 1   |
| 3      | 1-1/2"         | 13MHMM200SN | clamp       | CF8      | 2   |
|        | 2"             | 13MHMM250SN |             |          | 2   |
|        | 2-1/2"         | 13MHMM300SN |             |          | 2   |
|        | 3"             | 13MHMM400SN |             |          | 2   |
| 4      | 1-1/2"         | 16AMP-R200  | end cap     | 316L SS  | 1   |
|        | 2"             | 16AMP-R250  |             |          | 1   |
|        | 2-1/2"         | 16AMP-R300  |             |          | 1   |
|        | 3"             | 16AMP-R400  |             |          | 1   |
| 5      | 1-1/2"         | 40MP-E200   | cap gasket  | EPDM     | 1   |
|        | 2"             | 40MP-E250   |             |          | 1   |
|        | 2-1/2"         | 40MP-E300   |             |          | 1   |
|        | 3"             | 40MP-E400   |             |          | 1   |
|        | 1-1/2"         | 40MP-SFY200 |             | FKM      | 1   |
|        | 2"             | 40MP-SFY250 |             |          | 1   |
|        | 2-1/2"         | 40MP-SFY300 |             |          | 1   |
|        | 3"             | 40MP-SFY400 |             |          | 1   |
| 6      | 1-1/2"         | HYC-TB150   | ball        | PTFE     | 1   |
|        | 2"             | HYC-TB200   |             |          | 1   |
|        | 2-1/2"         | HYC-TB250   |             |          | 1   |
|        | 3"             | HYC-TB300   |             |          | 1   |
|        | 1-1/2"         | HYC-EB150   |             | EPDM     | 1   |
|        | 2"             | HYC-EB200   |             |          | 1   |
|        | 2-1/2"         | HYC-EB250   |             |          | 1   |
|        | 3"             | HYC-EB300   |             |          | 1   |
|        | 1-1/2"         | HYC-VB150   |             | FKM      | 1   |
|        | 2"             | HYC-VB200   |             |          | 1   |
|        | 2-1/2"         | HYC-VB250   |             |          | 1   |
|        | 3"             | HYC-VB300   |             |          | 1   |
| 7      | 1-1/2"         | HYC-7E-150  | seat        | EPDM     | 1   |
|        | 2"             | HYC-7E-200  |             |          | 1   |
|        | 2-1/2"         | HYC-7E-250  |             |          | 1   |
|        | 3"             | HYC-7E-300  |             |          | 1   |
|        | 1-1/2"         | HYC-7V-150  |             | FKM      | 1   |
|        | 2"             | HYC-7V-200  |             |          | 1   |
|        | 2-1/2"         | HYC-7V-250  |             |          | 1   |
|        | 3"             | HYC-7V-300  |             |          | 1   |

## HYC-Series Y-Ball Check Valve - Repair Kits

| Series               | Elastomer                  | Size   | Part #         | Repair Kit                                                                                                                                                 |
|----------------------|----------------------------|--------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Repair Kit           | EPDM & PTFE ball           | 1-1/2" | HYC-RK-E-P-150 | Repair Kit contains: end cap gasket (5), ball (6), and seat (7)<br><br> |
|                      |                            | 2"     | HYC-RK-E-P-200 |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-RK-E-P-250 |                                                                                                                                                            |
|                      |                            | 3"     | HYC-RK-E-P-300 |                                                                                                                                                            |
|                      | EPDM & nitrile rubber ball | 1-1/2" | HYC-RK-E-B-150 |                                                                                                                                                            |
|                      |                            | 2"     | HYC-RK-E-B-200 |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-RK-E-B-250 |                                                                                                                                                            |
|                      |                            | 3"     | HYC-RK-E-B-300 |                                                                                                                                                            |
|                      | FKM & PTFE ball            | 1-1/2" | HYC-RK-V-P-150 |                                                                                                                                                            |
|                      |                            | 2"     | HYC-RK-V-P-200 |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-RK-V-P-250 |                                                                                                                                                            |
|                      |                            | 3"     | HYC-RK-V-P-300 |                                                                                                                                                            |
|                      | FKM & nitrile rubber ball  | 1-1/2" | HYC-RK-V-B-150 |                                                                                                                                                            |
|                      |                            | 2"     | HYC-RK-V-B-200 |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-RK-V-B-250 |                                                                                                                                                            |
|                      |                            | 3"     | HYC-RK-V-B-300 |                                                                                                                                                            |
| Seal Kits            | EPDM                       | 1-1/2" | HYC-SK-E-150   | Seal Kit contains: end cap gasket (5) and seat (7)<br><br>             |
|                      |                            | 2"     | HYC-SK-E-200   |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-SK-E-250   |                                                                                                                                                            |
|                      |                            | 3"     | HYC-SK-E-300   |                                                                                                                                                            |
|                      | FKM                        | 1-1/2" | HYC-SK-V-150   |                                                                                                                                                            |
|                      |                            | 2"     | HYC-SK-V-200   |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-SK-V-250   |                                                                                                                                                            |
|                      |                            | 3"     | HYC-SK-V-300   |                                                                                                                                                            |
| Replacement Ball Kit | PTFE                       | 1-1/2" | HYC-P150       | Replacement Ball Kit contains: ball (6)<br><br>                       |
|                      |                            | 2"     | HYC-P200       |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-P250       |                                                                                                                                                            |
|                      |                            | 3"     | HYC-P300       |                                                                                                                                                            |
|                      | NBR                        | 1-1/2" | HYC-B150       |                                                                                                                                                            |
|                      |                            | 2"     | HYC-B200       |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-B250       |                                                                                                                                                            |
|                      |                            | 3"     | HYC-B300       |                                                                                                                                                            |
|                      | FKM                        | 1-1/2" | HYC-V150       |                                                                                                                                                            |
|                      |                            | 2"     | HYC-V200       |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-V250       |                                                                                                                                                            |
|                      |                            | 3"     | HYC-V300       |                                                                                                                                                            |
|                      | EPDM                       | 1-1/2" | HYC-E150       |                                                                                                                                                            |
|                      |                            | 2"     | HYC-E200       |                                                                                                                                                            |
|                      |                            | 2-1/2" | HYC-E250       |                                                                                                                                                            |
|                      |                            | 3"     | HYC-E300       |                                                                                                                                                            |

## HYC-Series Y-Ball Check Valve



Used in sanitary processes to prevent backflow of fluids. When liquid flows through the valve, the ball is forced into the branch of the valve allowing fluid flow. When the liquid stops equalizing the pressure, the ball drops back into the seat, preventing backflow. Should reverse flow occur, the differential pressure will cause the ball to seal firmly against the seat preventing leakage.

This valve can be used in combination with a B45 air blow check valve to evacuate the upstream checked fluid from the processing line.

They are found in the food processing, beverage, dairy, personal care, winery, brewery, pet product, and industrial markets.

## Sizes

- 1-1/2" to 3"

## Features

- Improved flow performance and ball stabilization<sup>1</sup>
- Patent pending ball cap stabilizer<sup>1</sup>
- Replaceable seat
- PTFE ball standard
- Vertical or horizontal installation orientation

## Materials

- Product contact metal components: 316L stainless steel
- Non-product contact metal components: AISI 304
- Product contact seals: EPDM, FKM
- Ball: PTFE, EPDM, FKM, nitrile rubber

## Specifications

- Standard connections: clamp (see part number key for alternate connections)
- Valve data
  - Maximum pressure: **150 PSI** (10 bar)
  - Minimum operating temperature: **15°F (-9°C)**
  - Maximum operating temperature: **200°F (93°C)**
- Surface finish
  - Product contact metal components: Ra ≤ 32 (see part number key for alternate finishes)

HYC-Series Y-Ball Check Valve<sup>1</sup>

HYC-Series Y-Ball Check Valve with B45 Air Blow Check Valve

## HYC-Series Cracking Pressure and Flow Coefficient

| Size   | Cracking Pressure (in) (H <sub>2</sub> O) |                        | Seating Pressure (in) (H <sub>2</sub> O) |                        | Flow Coefficient               |                               |                            |
|--------|-------------------------------------------|------------------------|------------------------------------------|------------------------|--------------------------------|-------------------------------|----------------------------|
|        | Vertical Orientation                      | Horizontal Orientation | Vertical Orientation                     | Horizontal Orientation | HYC-4A Ball Stabilizer End Cap | B45Y Ball Stabilizer Air Blow | 16AMP/B45 End Cap/Air Blow |
| 1-1/2" | 2.0                                       | 0.5                    | 3.6                                      | 3.9                    | 44.3                           | 37.1                          | 53.9                       |
| 2"     | 2.5                                       |                        | 2.6                                      | 3.7                    | 75.3                           | 67.8                          | 106.3                      |
| 2-1/2" | 3.0                                       |                        | 1.6                                      | 2.4                    | 137.0                          | 130.8                         | 151.0                      |
| 3"     | 3.8                                       |                        | 1.9                                      | 2.6                    | 158.9                          | 167.5                         | 162.7                      |

## Sizing Chart

| Ball Valve Check Valve Size | Air Blow Check Valve Size |
|-----------------------------|---------------------------|
| 1-1/2"                      | 2"                        |
| 2"                          | 2-1/2"                    |
| 2-1/2"                      | 3"                        |
| 3"                          | 4"                        |

<sup>1</sup>The improved design of the HYC-Series Y-Ball Check Valve is launching in 2025. This will be the new standard design.

NOTE: Previous repair kits are still interchangeable with the improved design.



## HYC-Series Y-Ball Check Valve - Part Number Key

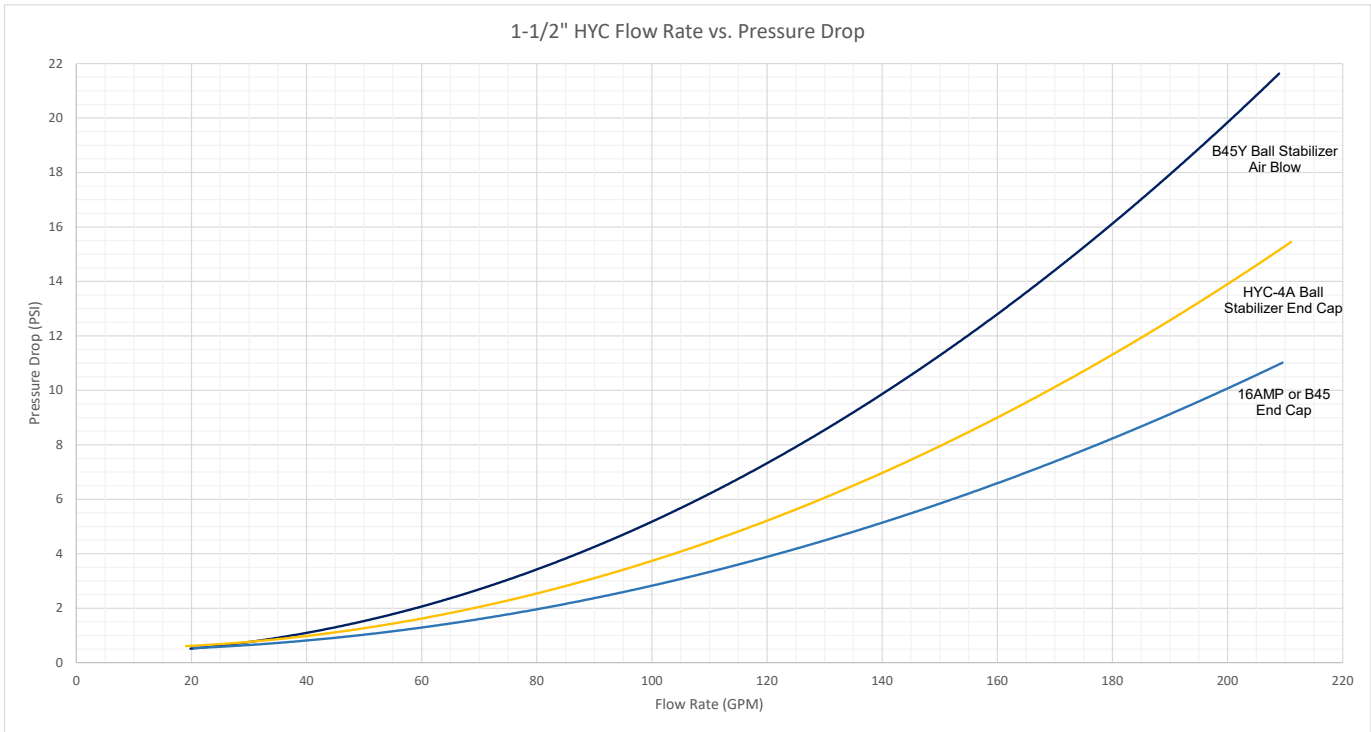
| HYC-Series Y-Ball Check Valve<br>Part Number Key<br>Example: HYCEP150CCAA |      | Series | Elastomer | Ball<br>Material | Size | End<br>Connections | Surface<br>Finish | Options |
|---------------------------------------------------------------------------|------|--------|-----------|------------------|------|--------------------|-------------------|---------|
|                                                                           |      | HYC    | E         | P                | 150  | CC                 | A                 | E       |
| Series                                                                    | Code | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| HYC                                                                       | HYC  |        |           |                  |      |                    |                   |         |
| Elastomer                                                                 | Code |        |           |                  |      |                    |                   |         |
| EPDM                                                                      | E    | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| FKM                                                                       | V    |        |           |                  |      |                    |                   |         |
| Ball Material                                                             | Code |        |           |                  |      |                    |                   |         |
| PTFE (standard)                                                           | P    | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| EPDM                                                                      | E    |        |           |                  |      |                    |                   |         |
| Nitrile rubber                                                            | B    |        |           |                  |      |                    |                   |         |
| FKM                                                                       | V    | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| Size                                                                      | Code |        |           |                  |      |                    |                   |         |
| 1-1/2"                                                                    | 150  | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| 2"                                                                        | 200  |        |           |                  |      |                    |                   |         |
| 2-1/2"                                                                    | 250  |        |           |                  |      |                    |                   |         |
| 3"                                                                        | 300  | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| Body One Connection                                                       | Code |        |           |                  |      |                    |                   |         |
| Clamp (standard)                                                          | CC   | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| Weld                                                                      | BB   |        |           |                  |      |                    |                   |         |
| Female I-line                                                             | FF   |        |           |                  |      |                    |                   |         |
| Male I-line                                                               | MM   | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| Threaded bevel                                                            | TT   |        |           |                  |      |                    |                   |         |
| Plain bevel with nut                                                      | PP   |        |           |                  |      |                    |                   |         |
| Q-line                                                                    | QQ   | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| John Perry plain                                                          | JJ   |        |           |                  |      |                    |                   |         |
| John Perry threaded                                                       | HH   |        |           |                  |      |                    |                   |         |
| Extended weld                                                             | EE   | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| Female NPT <sup>1</sup>                                                   | 11   |        |           |                  |      |                    |                   |         |
| Male NPT <sup>1</sup>                                                     | 22   |        |           |                  |      |                    |                   |         |
| Surface Finish                                                            | Code | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| 32 Ra (I.D. mech. polished)<br>(standard)                                 | A    |        |           |                  |      |                    |                   |         |
| 25 Ra (I.D. mech. polished)                                               | B    |        |           |                  |      |                    |                   |         |
| 20 Ra (I.D. mech. polished)                                               | C    | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| 15 Ra (I.D. electropolish)                                                | D    |        |           |                  |      |                    |                   |         |
| 32 Ra (I.D. mech. polished) with<br>customer specified ID marking         | E    |        |           |                  |      |                    |                   |         |
| 25 Ra (I.D. mech. polished) with<br>customer specified ID marking         | F    | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| 20 Ra (I.D. mech. polished) with<br>customer specified ID marking         | G    |        |           |                  |      |                    |                   |         |
| 15 Ra (I.D. mech. polished) with<br>customer specified ID marking         | H    |        |           |                  |      |                    |                   |         |
| Options                                                                   | Code | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| Ball stabilizer end cap (standard)                                        | E    |        |           |                  |      |                    |                   |         |
| 1/4" male air line quick connect <sup>2</sup>                             | F    |        |           |                  |      |                    |                   |         |
| 1/2" NPT cap <sup>2</sup>                                                 | I    | ←      | ←         | ←                | ←    | ←                  | ←                 | ←       |
| 1" hose barb <sup>2</sup>                                                 | K    |        |           |                  |      |                    |                   |         |

<sup>1</sup>Not a sanitary connection

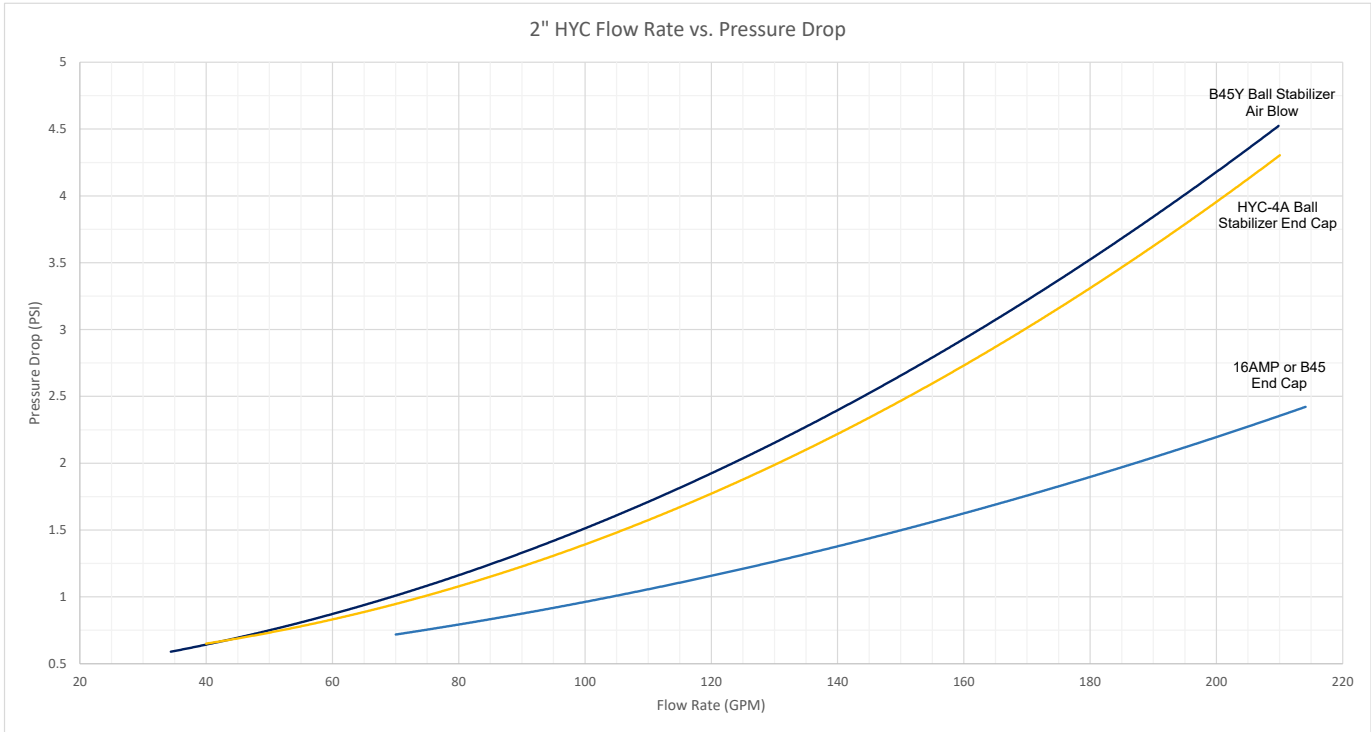
<sup>2</sup>Air blow check valve with ball stabilizer

<sup>1</sup>Not a sanitary connection<sup>2</sup>Air blow check valve with ball stabilizer

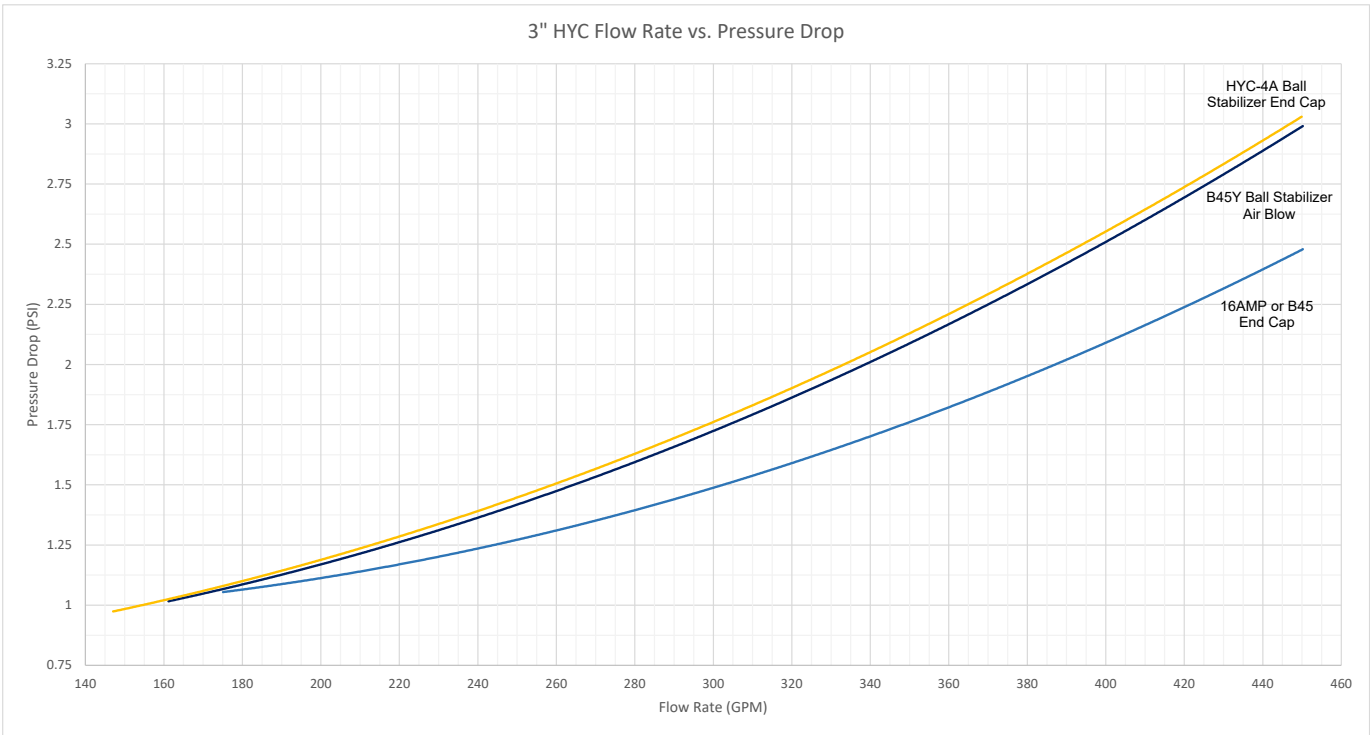
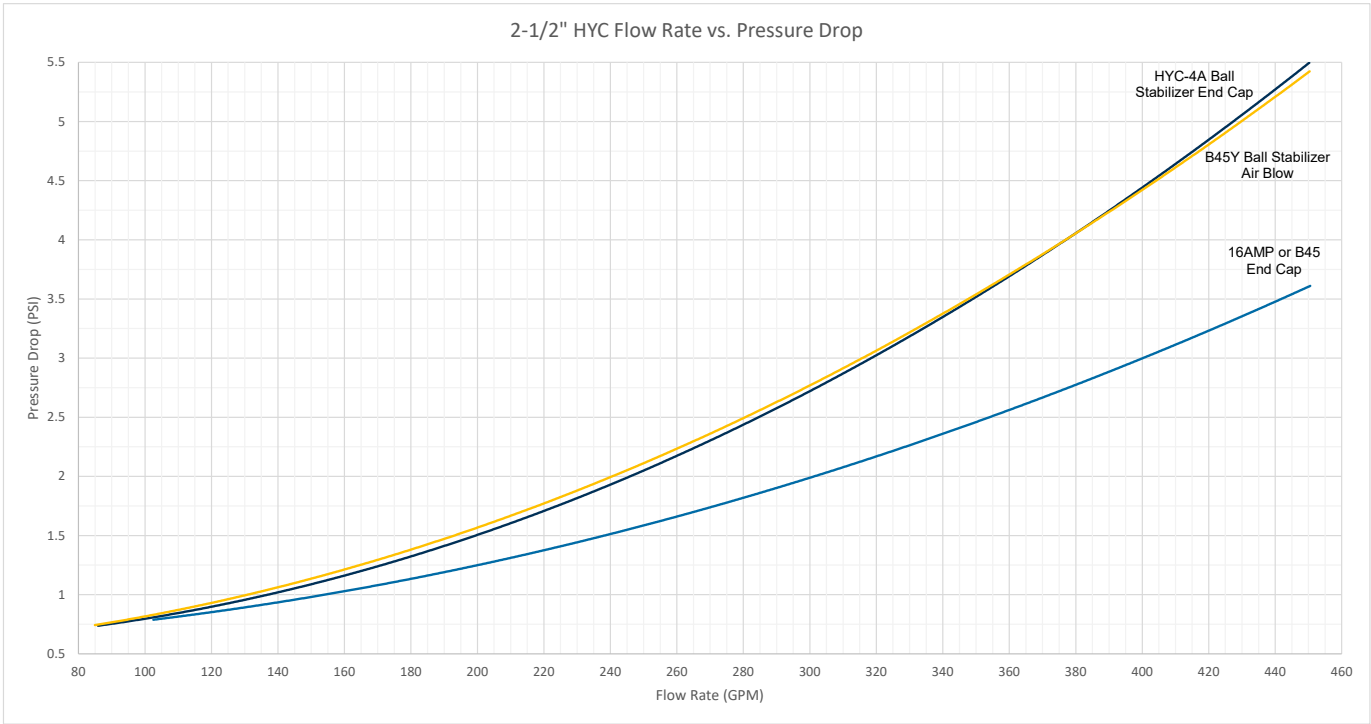
HYC-Series Y-Ball Check Valve - Pressure Drop Charts



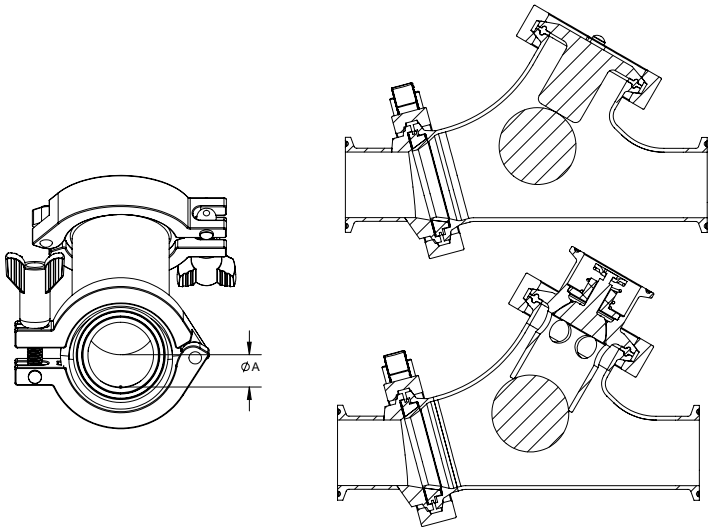
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HYC-Series Y-Ball Check Valve - Pressure Drop Charts



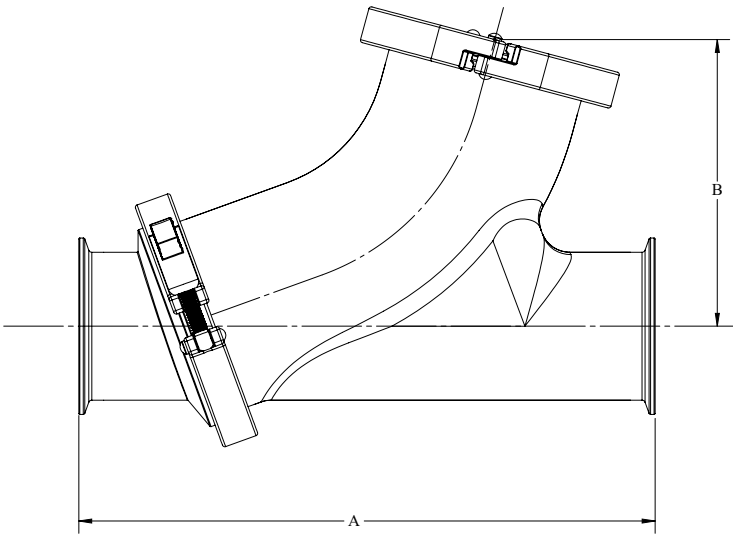
HYC-Series Y-Ball Check Valve - Maximum Particulate Diameter



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| Size   | A (in) |
|--------|--------|
| 1-1/2" | 0.67   |
| 2"     | 0.71   |
| 2-1/2" | 1.09   |
| 3"     | 1.54   |

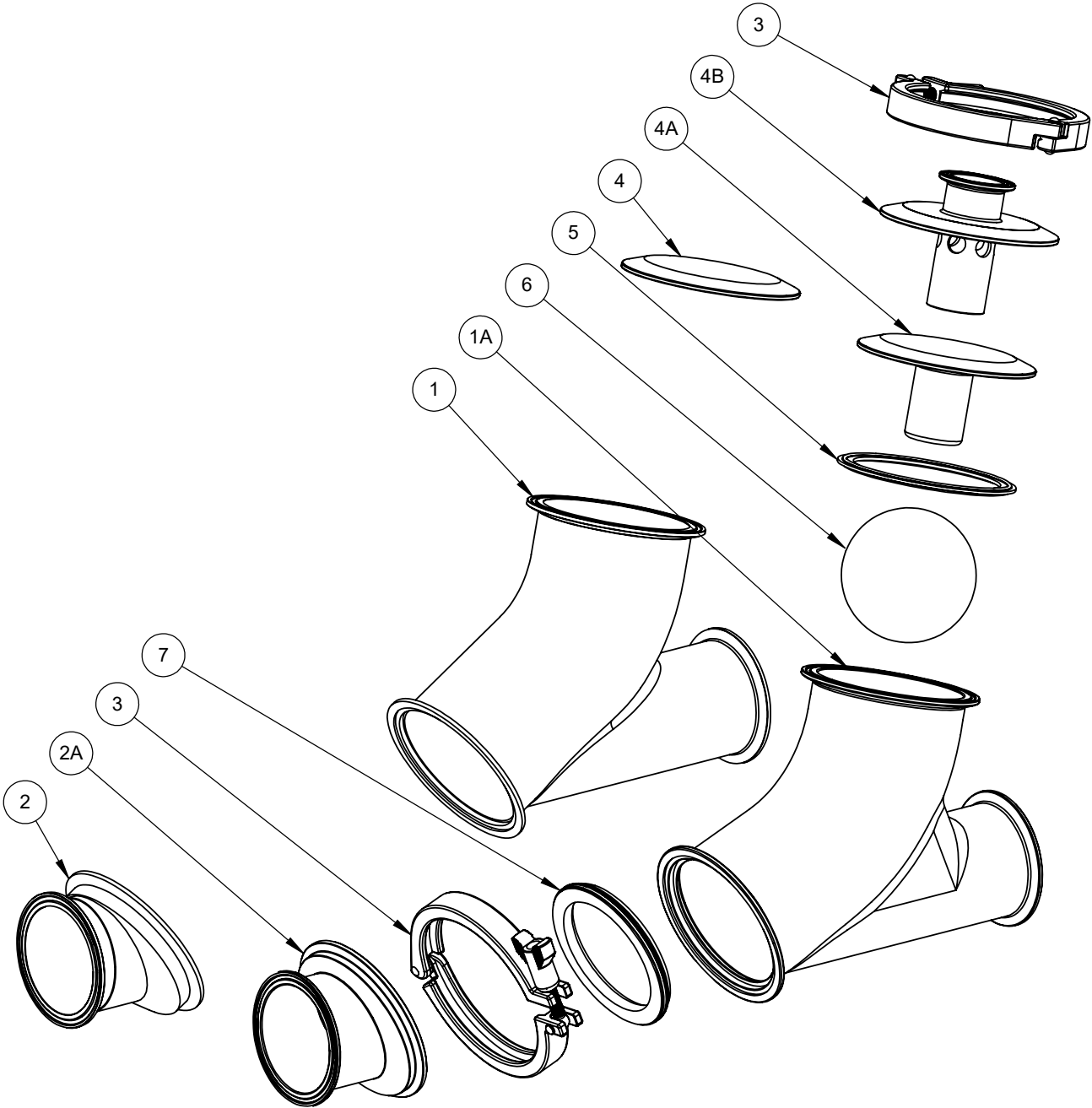
HYC-Series Y-Ball Check Valve - Dimensions



| Size   | A (in) | B (in) | PTFE Ball Ø (in) | Rubber Ball Ø (in) |
|--------|--------|--------|------------------|--------------------|
| 1-1/2" | 7.5    | 3.3    | 1.6              | 1.6                |
| 2"     | 8.5    | 3.9    | 2.1              | 2.1                |
| 2-1/2" | 10     | 4.5    | 2.7              | 2.6                |
| 3"     | 11.5   | 5.3    | 3.6              | 3.5                |

HYC-Series Y-Ball Check Valve - Bill of Materials

D



## HYC-Series Y-Ball Check Valve - Bill of Materials

| Item # | HYC Valve Size | Part #      | Description                                          | Material | Qty |
|--------|----------------|-------------|------------------------------------------------------|----------|-----|
| 1      | 1-1/2"         | HYC-1-150   | angle body (pre-2025 design)                         | 316L SS  | 1   |
|        | 2"             | HYC-1-200   |                                                      |          | 1   |
|        | 2-1/2"         | HYC-1-250   |                                                      |          | 1   |
|        | 3"             | HYC-1-300   |                                                      |          | 1   |
| 1A     | 1-1/2"         | HYC-1A-150  | angle body (2025 revised design)                     | 316L SS  | 1   |
|        | 2"             | HYC-1A-200  |                                                      |          | 1   |
|        | 2-1/2"         | HYC-1A-250  |                                                      |          | 1   |
|        | 3"             | HYC-1A-300  |                                                      |          | 1   |
| 2      | 1-1/2"         | HYC-2-150   | inlet body (pre-2025 design)                         | 316L SS  | 1   |
|        | 2"             | HYC-2-200   |                                                      |          | 1   |
|        | 2-1/2"         | HYC-2-250   |                                                      |          | 1   |
|        | 3"             | HYC-2-300   |                                                      |          | 1   |
| 2A     | 1-1/2"         | HYC-2A-150  | inlet body (2025 revised design)                     | 316L SS  | 1   |
|        | 2"             | HYC-2A-200  |                                                      |          | 1   |
|        | 2-1/2"         | HYC-2A-250  |                                                      |          | 1   |
|        | 3"             | HYC-2A-300  |                                                      |          | 1   |
| 3      | 1-1/2"         | 13MHM200SN  | clamp                                                | CF8      | 2   |
|        | 2"             | 13MHM250SN  |                                                      |          | 2   |
|        | 2-1/2"         | 13MHM300SN  |                                                      |          | 2   |
|        | 3"             | 13MHM400SN  |                                                      |          | 2   |
| 4      | 1-1/2"         | 16AMP-R200  | end cap                                              | 316L SS  | 1   |
|        | 2"             | 16AMP-R250  |                                                      |          | 1   |
|        | 2-1/2"         | 16AMP-R300  |                                                      |          | 1   |
|        | 3"             | 16AMP-R400  |                                                      |          | 1   |
| 4A     | 1-1/2"         | HYC-4A-150  | HYC ball stabilizer end cap (standard)               | 316L SS  | 1   |
|        | 2"             | HYC-4A-200  |                                                      |          | 1   |
|        | 2-1/2"         | HYC-4A-250  |                                                      |          | 1   |
|        | 3"             | HYC-4A-300  |                                                      |          | 1   |
| 4B     | 1-1/2"         | B45Y-3-200  | HYC ball stabilizer air blow valve body <sup>1</sup> | 316L SS  | 1   |
|        | 2"             | B45Y-3-250  |                                                      |          | 1   |
|        | 2-1/2"         | B45Y-3-300  |                                                      |          | 1   |
|        | 3"             | B45Y-3-400  |                                                      |          | 1   |
| 5      | 1-1/2"         | 40MP-E200   | cap gasket                                           | EPDM     | 1   |
|        | 2"             | 40MP-E250   |                                                      |          | 1   |
|        | 2-1/2"         | 40MP-E300   |                                                      |          | 1   |
|        | 3"             | 40MP-E400   |                                                      |          | 1   |
|        | 1-1/2"         | 40MP-SFY200 |                                                      | FKM      | 1   |
|        | 2"             | 40MP-SFY250 |                                                      |          | 1   |
|        | 2-1/2"         | 40MP-SFY300 |                                                      |          | 1   |
|        | 3"             | 40MP-SFY400 |                                                      |          | 1   |

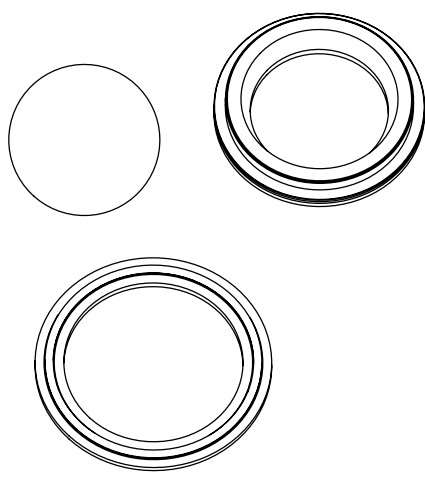
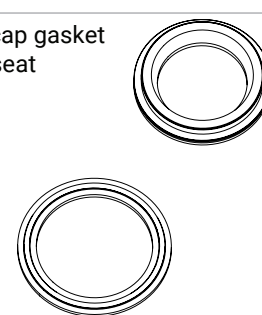
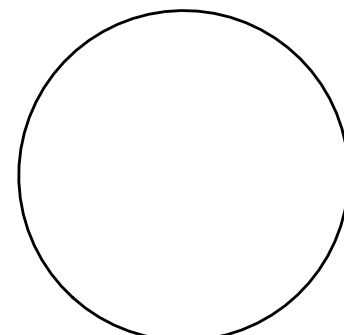
<sup>1</sup>See B45-series EPRG for air end connection options.

HYC-Series Y-Ball Check Valve - Bill of Materials

| Item # | HYC Valve Size | Part #     | Description | Material           | Qty |
|--------|----------------|------------|-------------|--------------------|-----|
| 6      | 1-1/2"         | HYC-TB150  | ball        | PTFE<br>(standard) | 1   |
|        | 2"             | HYC-TB200  |             |                    | 1   |
|        | 2-1/2"         | HYC-TB250  |             |                    | 1   |
|        | 3"             | HYC-TB300  |             |                    | 1   |
|        | 1-1/2"         | HYC-EB150  |             | EPDM               | 1   |
|        | 2"             | HYC-EB200  |             |                    | 1   |
|        | 2-1/2"         | HYC-EB250  |             |                    | 1   |
|        | 3"             | HYC-EB300  |             |                    | 1   |
|        | 1-1/2"         | HYC-VB150  |             | FKM                | 1   |
|        | 2"             | HYC-VB200  |             |                    | 1   |
|        | 2-1/2"         | HYC-VB250  |             |                    | 1   |
|        | 3"             | HYC-VB300  |             |                    | 1   |
|        | 1-1/2"         | HYC-BB150  |             | nitrile rubber     | 1   |
|        | 2"             | HYC-BB200  |             |                    | 1   |
|        | 2-1/2"         | HYC-BB250  |             |                    | 1   |
|        | 3"             | HYC-BB300  |             |                    | 1   |
| 7      | 1-1/2"         | HYC-7E-150 | seat        | EPDM               | 1   |
|        | 2"             | HYC-7E-200 |             |                    | 1   |
|        | 2-1/2"         | HYC-7E-250 |             |                    | 1   |
|        | 3"             | HYC-7E-300 |             |                    | 1   |
|        | 1-1/2"         | HYC-7V-150 |             | FKM                | 1   |
|        | 2"             | HYC-7V-200 |             |                    | 1   |
|        | 2-1/2"         | HYC-7V-250 |             |                    | 1   |
|        | 3"             | HYC-7V-300 |             |                    | 1   |

NOTE: The revised version of the HYC-series Y-Ball Check valve will be the standard, launching 2024.

## HYC-Series Y-Ball Check Valve - Repair Kits

| Repair Kit Type      | Elastomer/Ball Material      | Size (in) | Part #      | Contains: (1) end cap gasket, (1) ball, and (1) seat                                                                              |
|----------------------|------------------------------|-----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Complete Repair Kit  | EPDM and PTFE ball           | 1-1/2     | HYC-RKE150  |                                                |
|                      |                              | 2         | HYC-RKE200  |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-RKE250  |                                                                                                                                   |
|                      |                              | 3         | HYC-RKE300  |                                                                                                                                   |
|                      | EPDM and nitrile rubber ball | 1-1/2     | HYC-RKE150B |                                                                                                                                   |
|                      |                              | 2         | HYC-RKE200B |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-RKE250B |                                                                                                                                   |
|                      |                              | 3         | HYC-RKE300B |                                                                                                                                   |
|                      | FKM and PTFE ball            | 1-1/2     | HYC-RKV150  |                                                                                                                                   |
|                      |                              | 2         | HYC-RKV200  |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-RKV250  |                                                                                                                                   |
|                      |                              | 3         | HYC-RKV300  |                                                                                                                                   |
|                      | FKM and nitrile rubber ball  | 1-1/2     | HYC-RKV150B |                                                                                                                                   |
|                      |                              | 2         | HYC-RKV200B |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-RKV250B |                                                                                                                                   |
|                      |                              | 3         | HYC-RKV300B |                                                                                                                                   |
| Elastomer Seal Kit   | EPDM                         | 1-1/2     | HYC-SKE150  | Contains: (1) end cap gasket and (1) seat<br> |
|                      |                              | 2         | HYC-SKE200  |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-SKE250  |                                                                                                                                   |
|                      |                              | 3         | HYC-SKE300  |                                                                                                                                   |
|                      | FKM                          | 1-1/2     | HYC-SKV150  |                                                                                                                                   |
|                      |                              | 2         | HYC-SKV200  |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-SKV250  |                                                                                                                                   |
|                      |                              | 3         | HYC-SKV300  |                                                                                                                                   |
| Replacement Ball Kit | PTFE                         | 1-1/2     | HYC-TB150   | Contains: (1) ball<br>                       |
|                      |                              | 2         | HYC-TB200   |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-TB250   |                                                                                                                                   |
|                      |                              | 3         | HYC-TB300   |                                                                                                                                   |
|                      | Nitrile rubber               | 1-1/2     | HYC-BB150   |                                                                                                                                   |
|                      |                              | 2         | HYC-BB200   |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-BB250   |                                                                                                                                   |
|                      |                              | 3         | HYC-BB300   |                                                                                                                                   |
|                      | FKM                          | 1-1/2     | HYC-VB150   |                                                                                                                                   |
|                      |                              | 2         | HYC-VB200   |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-VB250   |                                                                                                                                   |
|                      |                              | 3         | HYC-VB300   |                                                                                                                                   |
|                      | EPDM                         | 1-1/2     | HYC-EB150   |                                                                                                                                   |
|                      |                              | 2         | HYC-EB200   |                                                                                                                                   |
|                      |                              | 2-1/2     | HYC-EB250   |                                                                                                                                   |
|                      |                              | 3         | HYC-EB300   |                                                                                                                                   |

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HAV-Series Air Relief Check Valve

The HAV-series air relief check valve is installed vertically on suction lines where air removal is required. This valve is double-seated with a freely moving polypropylene ball.

The ball, which is lighter than water, closes against the upper or lower seat, against vacuum or positive pressure conditions. Under vacuum the ball sits at the bottom of the valve. Under positive pressure the ball moves allowing air to escape.

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They are found in food processing, beverage, dairy, personal care, winery, brewery, pet product, and industrial markets.

Sizes

- 1-1/2" and 2"

Features

- Replaceable ball and gasket
- Valve seals for pressure and vacuum

Materials

- Product contact metal components: 304 stainless steel
- Non-product contact metal components: 304 stainless steel
- Product contact seals: EPDM (standard), others available upon request

Specifications

- Clamp connections standard
- Valve data
  - Maximum pressure: **145 PSI (10 bar)**
  - Maximum operating temperature: **212°F (100°C)**
- Ball material: Polypropylene (standard) or PTFE
- Ball material density
  - Polypropylene: 0.033 lb/in<sup>3</sup>
  - PTFE: 0.078 lb/in<sup>3</sup>
- Surface finish
  - Product contact metal components: Ra ≤ 32

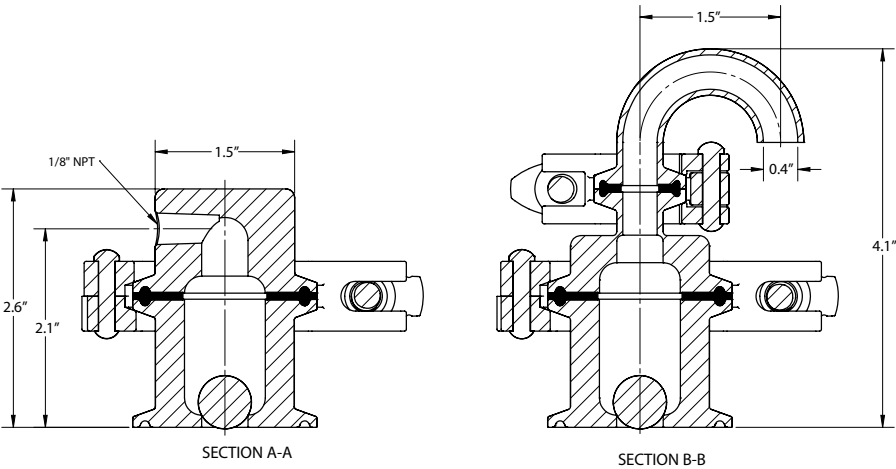
NOTE: Not for use on tanks  
3A approved only when used with 3A cover (item #4 on page 4)



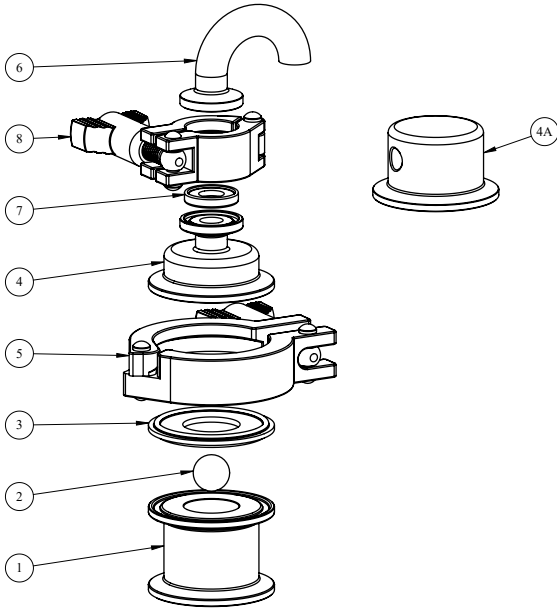
HAV-Series Air Relief Check Valve - Part Number Key

| HAV-Series Air Relief Check Valve<br>Part Number Key<br>Example: HAVNEA150 |      | Series | Style | Elastomer | Ball Material | Size |
|----------------------------------------------------------------------------|------|--------|-------|-----------|---------------|------|
|                                                                            |      | HAV    | N     | E         | A             | 150  |
| Series                                                                     | Code | ←      | ←     | ←         | ←             | ←    |
| HAV                                                                        | HAV  |        |       |           |               |      |
| Style                                                                      | Code | ←      | ←     | ←         | ←             | ←    |
| 1/8" NPT tap (not 3A)                                                      | N    |        |       |           |               |      |
| 1/2" 3A elbow                                                              | 3    | ←      | ←     | ←         | ←             | ←    |
| Elastomer                                                                  | Code |        |       |           |               |      |
| EPDM (standard)                                                            | E    | ←      | ←     | ←         | ←             | ←    |
| FKM                                                                        | V    |        |       |           |               |      |
| Ball Material                                                              | Code | ←      | ←     | ←         | ←             | ←    |
| Polypropylene (standard)                                                   | A    |        |       |           |               |      |
| PTFE                                                                       | P    | ←      | ←     | ←         | ←             | ←    |
| Size                                                                       | Code |        |       |           |               |      |
| 1-1/2"                                                                     | 150  | ←      | ←     | ←         | ←             | ←    |
| 2"                                                                         | 200  |        |       |           |               |      |

# HAV-Series Air Relief Check Valve - Dimensions



# HAV-Series Air Relief Check Valve - Bill of Materials



| Item # | Valve Size | Part #          | Description        | Material      | Elbow | NPT |
|--------|------------|-----------------|--------------------|---------------|-------|-----|
|        |            |                 |                    |               | Qty   |     |
| 1      | 1-1/2"     | HAV-1150        | 1-1/2" body        | 304 SS        | 1     | 1   |
|        | 2"         | HAV-1200        | 2" body            |               |       |     |
| 2      | all        | HAV-3P          | ball               | polypropylene | 1     | 1   |
|        |            | HAV-3T          |                    | PTFE          |       |     |
| 3      | all        | 40MP-E100       | 1" gasket          | EPDM          | 1     | 1   |
| 4      | all        | HAV-4           | 3A cover           | 304 SS        | 1     | -   |
| 4A     | all        | HAV-4A          | tapped cover       | 304 SS        | -     | 1   |
| 5      | all        | 13MHHM100-150SN | 1" to 1-1/2" clamp | CF8           | 1     | 1   |
| 6      | all        | HAV-6           | 180° tube ferrule  | 304 SS        | 1     | -   |
| 7      | all        | 42MP-E50        | 1/2" gasket        | EPDM          | 1     | -   |
| 8      | all        | 13MHHM50-75SN   | 1/2" clamp         | CF8           | 1     | -   |

# HAV-Series Air Relief Check Valve - Repair Kits

| Size | Polypropylene Ball Part # | PTFE Ball Part # |
|------|---------------------------|------------------|
| all  | HAV-3P                    | HAV-3T           |

## HSC/EHSC-Series Spring Check Valve



Used in sanitary processes to prevent backflow of fluids. The HSC-Series is for vertical applications and the EHSC-Series is for horizontal applications. These valves are certified clean-in-place for sizes 1" through 4" and clean-out-of-place for sizes 1/2" and 3/4".

They are found in the food processing, beverage, dairy, personal care, winery, brewery, pet product and industrial markets.

## D

## Sizes

- 1/2" to 4"

## Features

- Machined from solid bar
- Integrated spider design
- Standard O-ring and gasket seals

## Materials

- Product contact metal components: 316L stainless steel
- Non-product contact metal components: CF8
- Product contact seals: EPDM, FKM

## Specifications

- Standard connection: clamp
- Valve data
  - Maximum pressure: **145 PSI (10 bar)**
  - Maximum operating temperature: **200°F (93°C)**
  - Minimum operating temperature: **15°F (-9°C)**
- Surface finish
  - Product contact metal components:  $Ra \leq 32$
- Cleaning method
  - CIP models: HSC and EHSC sizes 1" to 4"
  - COP models: HSC and EHSC sizes 1/2" to 3/4"



NOTE: Check valves should be sized for the application and not necessarily for the tubing size.

## Cracking Pressure Chart

| Size   | Cracking Pressure (PSIG) |
|--------|--------------------------|
| 1/2"   | 10.0                     |
| 3/4"   | 4.0                      |
| 1"     | 2.5                      |
| 1-1/2" | 1.0                      |
| 2"     | 1.5                      |
| 2-1/2" | 0.8                      |
| 3"     | 0.5                      |
| 4"     | 0.4                      |

## HSC/EHSC-Series Spring Check Valve - Part Number Key

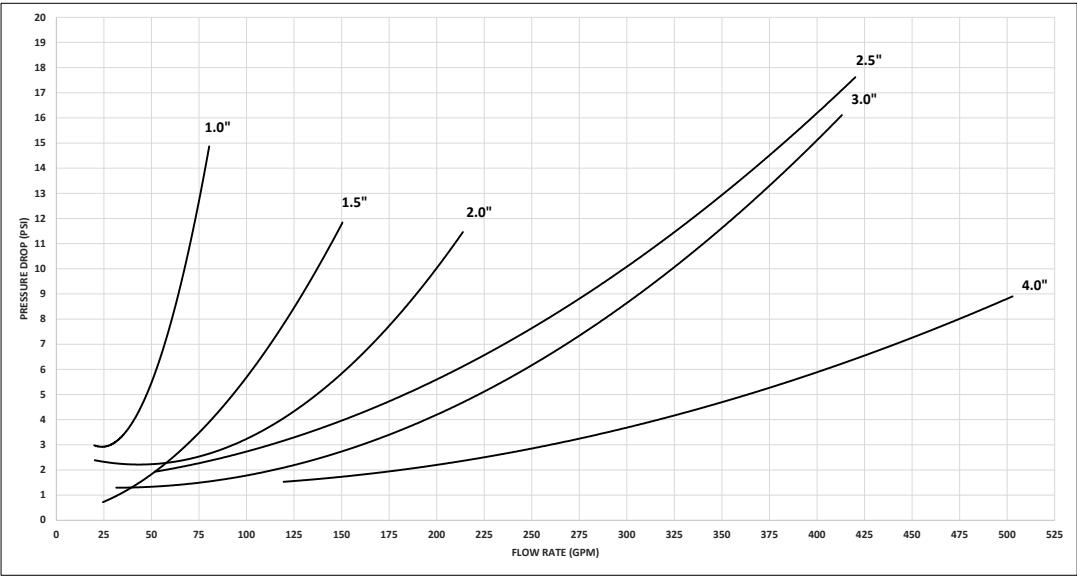
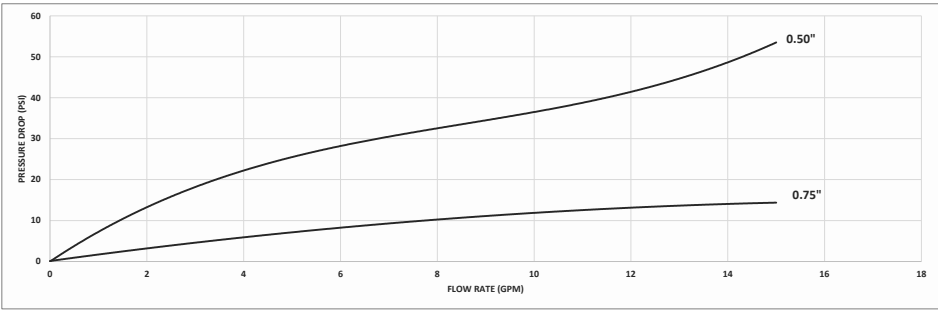
| HSC/EHSC-Series Spring Check Valve<br>Part Number Key<br>Example: HSCE050CCA |             | Series | Elastomers | Size | End Connections |
|------------------------------------------------------------------------------|-------------|--------|------------|------|-----------------|
|                                                                              |             | HSC    | E          | 050  |                 |
| <b>Series</b>                                                                | <b>Code</b> | HSC    | E          | 050  |                 |
| HSC (vertical application)                                                   | HSC         |        |            |      |                 |
| EHSC (horizontal application)                                                | EHSC        |        |            |      |                 |
| <b>Elastomers</b>                                                            | <b>Code</b> |        | E          | 050  |                 |
| EPDM                                                                         | E           |        |            |      |                 |
| FKM                                                                          | V           |        |            |      |                 |
| FKM plunger with EPDM body gasket                                            | W           |        |            |      |                 |
| FKM (metal detectable)                                                       | Y           |        |            |      |                 |
| <b>Size</b>                                                                  | <b>Code</b> |        |            | 050  |                 |
| 1/2"                                                                         | 050         |        |            |      |                 |
| 3/4"                                                                         | 075         |        |            |      |                 |
| 1"                                                                           | 100         |        |            |      |                 |
| 1-1/2"                                                                       | 150         |        |            |      |                 |
| 2"                                                                           | 200         |        |            |      |                 |
| 2-1/2"                                                                       | 250         |        |            |      |                 |
| 3"                                                                           | 300         |        |            |      |                 |
| 4"                                                                           | 400         |        |            |      |                 |
| <b>End Connections</b>                                                       | <b>Code</b> |        |            |      |                 |
| Clamp                                                                        | CC          |        |            |      |                 |
| Weld                                                                         | BB          |        |            |      |                 |

NOTE: Standard surface finish is 32 Ra I.D.

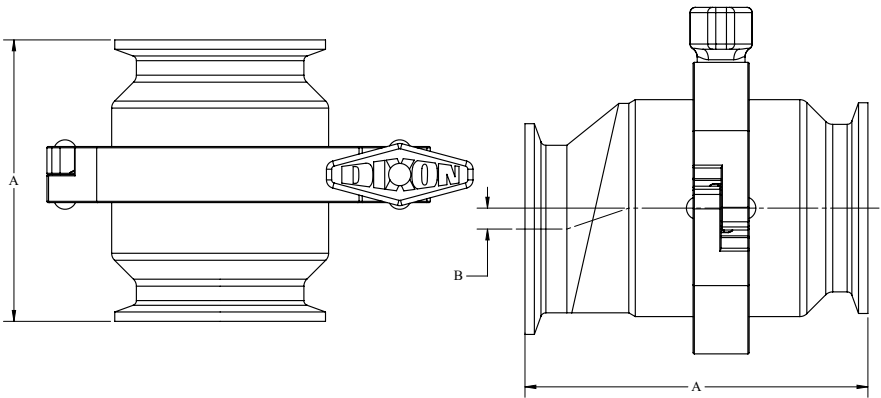
For other configurations, please contact Dixon Sanitary

D

HSC/EHSC-Series Spring Check Valve - Pressure Drop Charts



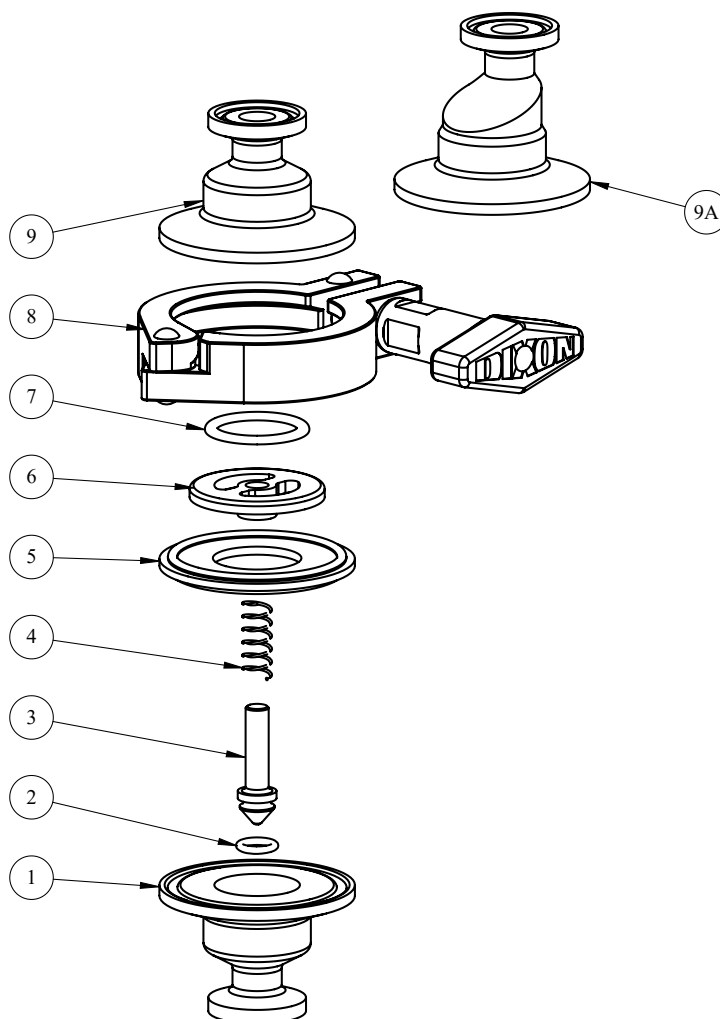
HSC/EHSC-Series Spring Check Valve - Dimensions



| Size   | HSC    | EHSC |        |
|--------|--------|------|--------|
|        | A (in) |      | B (in) |
| 1/2"   | 2.7    | 3.1  | 0.3    |
| 3/4"   | 2.7    | 3.1  | 0.3    |
| 1"     | 3.3    | 4.0  | 0.3    |
| 1-1/2" | 3.4    | 3.6  | 0.3    |
| 2"     | 3.4    | 4.1  | 0.3    |
| 2-1/2" | 3.4    | 4.0  | 0.4    |
| 3"     | 3.4    | 4.0  | 0.4    |
| 4"     | 4.1    | 4.7  | 0.4    |

## HSC/EHSC-Series Spring Check Valve - Bill of Materials

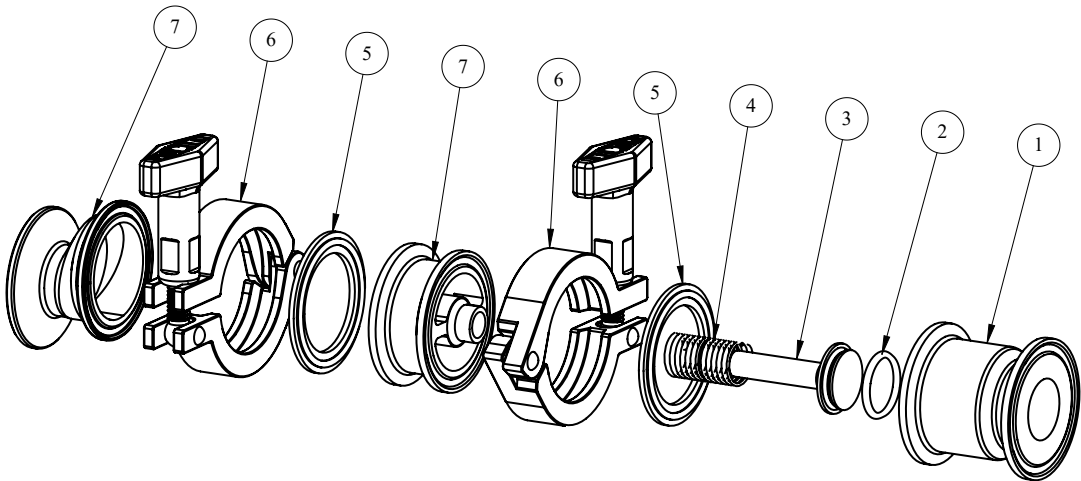
1/2" to 3/4"



| Item # | Size | Part #          | Description                  | Material        | Qty |      |
|--------|------|-----------------|------------------------------|-----------------|-----|------|
|        |      |                 |                              |                 | HSC | EHSC |
| 1      | 1/2" | HSC-LB050       | lower body, clamp            | 316L SS         | 1   | 1    |
|        | 3/4" | HSC-LB075       | lower body, clamp            | 316L SS         | 1   | 1    |
| 2      | both | see repair kits | plunger O-ring               | see repair kits | 1   | 1    |
| 3      | 1/2" | HSC-P050        | plunger                      | 316L SS         | 1   | 1    |
|        | 3/4" | HSC-P075        | plunger                      | 316L SS         | 1   | 1    |
| 4      | 1/2" | HSC-SP050       | spring                       | 316L SS         | 1   | 1    |
|        | 3/4" | HSC-SP075       | spring                       | 316L SS         | 1   | 1    |
| 5      | both | see repair kits | plunger O-ring               | see repair kits | 1   | 1    |
| 6      | 1/2" | HSC-S050        | spider                       | 316L SS         | 1   | 1    |
|        | 3/4" | HSC-S075        | spider                       | 316L SS         | 1   | 1    |
| 7      | both | see repair kits | spider O-ring                | see repair kits | 1   | 1    |
| 8      | both | 13MHHM100-150   | clamp                        | CF8             | 1   | 1    |
| 9      | 1/2" | HSC-UB050       | concentric upper body, clamp | 316L SS         | 1   | -    |
|        | 3/4" | HSC-UB075       | concentric upper body, clamp | 316L SS         | 1   | -    |
| 9A     | 1/2" | EHSC-UB050      | eccentric upper body, clamp  | 316L SS         | -   | 1    |
|        | 3/4" | EHSC-UB075      | eccentric upper body, clamp  | 316L SS         | -   | 1    |

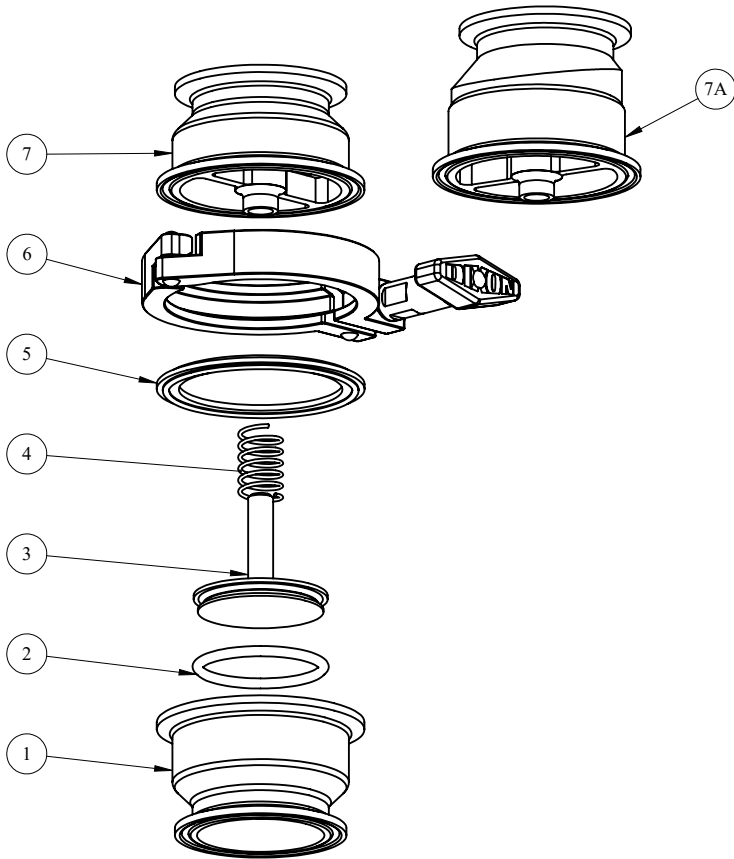
HSC/EHSC-Series Spring Check Valve - Bill of Materials

1"



| Item # | Part #          | Description            | Material        | Qty |
|--------|-----------------|------------------------|-----------------|-----|
| 1      | HSC-LB100       | lower body, clamp      | 316L SS         | 1   |
| 2      | see repair kits | plunger O-ring         | see repair kits | 1   |
| 3      | HSC-P100        | plunger                | 316L SS         | 1   |
| 4      | HSC-SP100       | spring                 | 316L SS         | 1   |
| 5      | see repair kits | body gasket            | see repair kits | 2   |
| 6      | 13MHM100-150    | clamp                  | CF8             | 2   |
| 7      | EHSC-UB100      | 2 pc upper body, clamp | 316L SS         | 1   |

1" to 4" HSC, 1-1/2" to 4" EHSC



## HSC/EHSC-Series Spring Check Valve - Bill of Materials

1" to 4" HSC, 1-1/2" to 4" EHSC

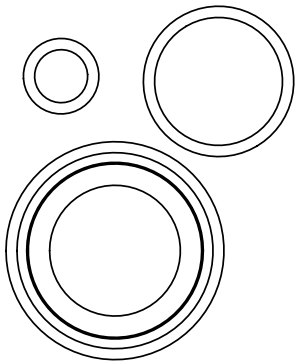
| Item # | Size   | Part #          | Description                  | Material        | Qty |      |
|--------|--------|-----------------|------------------------------|-----------------|-----|------|
|        |        |                 |                              |                 | HSC | EHSC |
| 1      | 1"     | HSC-LB100       | lower body, clamp            | 316L SS         | 1   | -    |
|        | 1-1/2" | HSC-LB150       | lower body, clamp            | 316L SS         | 1   | 1    |
|        | 2"     | HSC-LB200       | lower body, clamp            | 316L SS         | 1   | 1    |
|        | 2-1/2" | HSC-LB250       | lower body, clamp            | 316L SS         | 1   | 1    |
|        | 3"     | HSC-LB300       | lower body, clamp            | 316L SS         | 1   | 1    |
|        | 4"     | HSC-LB400       | lower body, clamp            | 316L SS         | 1   | 1    |
| 2      | all    | see repair kits | plunger O-ring               | see repair kits | 1   | 1    |
| 3      | 1"     | HSC-P100        | plunger                      | 316L SS         | 1   | -    |
|        | 1-1/2" | HSC-P150        | plunger                      | 316L SS         | 1   | 1    |
|        | 2"     | HSC-P200        | plunger                      | 316L SS         | 1   | 1    |
|        | 2-1/2" | HSC-P250        | plunger                      | 316L SS         | 1   | 1    |
|        | 3"     | HSC-P300        | plunger                      | 316L SS         | 1   | 1    |
|        | 4"     | HSC-P400        | plunger                      | 316L SS         | 1   | 1    |
| 4      | 1'     | HSC-SP100       | spring                       | 316L SS         | 1   | -    |
|        | 1-1/2" | HSC-SP150       | spring                       | 316L SS         | 1   | 1    |
|        | 2"     | HSC-SP200       | spring                       | 316L SS         | 1   | 1    |
|        | 2-1/2" | HSC-SP250       | spring                       | 316L SS         | 1   | 1    |
|        | 3"     | HSC-SP300       | spring                       | 316L SS         | 1   | 1    |
|        | 4"     | HSC-SP400       | spring                       | 316L SS         | 1   | 1    |
| 5      | all    | see repair kits | plunger O-ring               | see repair kits | 1   | 1    |
| 6      | 1"     | 13MHM100-150    | clamp                        | 316L SS         | 1   | -    |
|        | 1-1/2" | 13MHM200        | clamp                        | 316L SS         | 1   | 1    |
|        | 2"     | 13MHM250        | clamp                        | 316L SS         | 1   | 1    |
|        | 2-1/2" | 13MHV300        | clamp                        | 316L SS         | 1   | 1    |
|        | 3"     | 13MHM400        | clamp                        | 316L SS         | 1   | 1    |
|        | 4"     | 13MHM500        | clamp                        | 316L SS         | 1   | 1    |
| 7      | 1"     | HSC-UB100       | concentric upper body, clamp | 316L SS         | 1   | -    |
|        | 1-1/2" | HSC-UB150       | concentric upper body, clamp | 316L SS         | 1   | -    |
|        | 2"     | HSC-UB200       | concentric upper body, clamp | 316L SS         | 1   | -    |
|        | 2-1/2" | HSC-UB250       | concentric upper body, clamp | 316L SS         | 1   | -    |
|        | 3"     | HSC-UB300       | concentric upper body, clamp | 316L SS         | 1   | -    |
|        | 4"     | HSC-UB400       | concentric upper body, clamp | 316L SS         | 1   | -    |
| 7A     | 1-1/2" | EHSC-UB150      | eccentric upper body, clamp  | 316L SS         | -   | 1    |
|        | 2"     | EHSC-UB200      | eccentric upper body, clamp  | 316L SS         | -   | 1    |
|        | 2-1/2" | EHSC-UB250      | eccentric upper body, clamp  | 316L SS         | -   | 1    |
|        | 3"     | EHSC-UB300      | eccentric upper body, clamp  | 316L SS         | -   | 1    |
|        | 4"     | EHSC-UB400      | eccentric upper body, clamp  | 316L SS         | -   | 1    |

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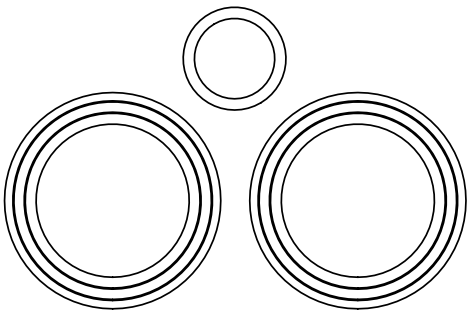


HSC/EHSC-Series Spring Check Valve - Repair Kits

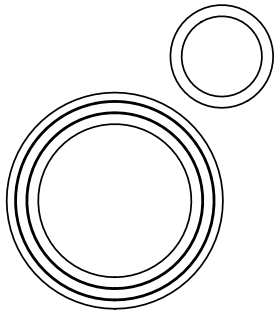
1/2" & 3/4" HSC/EHSC



1" EHSC



1" - 4" HSC & 1-1/2" - 4" EHSC



| Series | Elastomer | Size   | Part #      |
|--------|-----------|--------|-------------|
| HSC    | EPDM      | 1/2"   | HSC-RKE050  |
|        |           | 3/4"   | HSC-RKE075  |
|        |           | 1"     | HSC-RKE100  |
|        |           | 1-1/2" | HSC-RKE150  |
|        |           | 2"     | HSC-RKE200  |
|        |           | 2-1/2" | HSC-RKE250  |
|        |           | 3"     | HSC-RKE300  |
|        |           | 4"     | HSC-RKE400  |
|        | FKM       | 1/2"   | HSC-RKV050  |
|        |           | 3/4"   | HSC-RKV075  |
|        |           | 1"     | HSC-RKV100  |
|        |           | 1-1/2" | HSC-RKV150  |
|        |           | 2"     | HSC-RKV200  |
|        |           | 2-1/2" | HSC-RKV250  |
|        |           | 3"     | HSC-RKV300  |
|        |           | 4"     | HSC-RKV400  |
| EHSC   | EPDM      | 1/2"   | EHSC-RKE050 |
|        |           | 3/4"   | EHSC-RKE075 |
|        |           | 1"     | EHSC-RKE100 |
|        |           | 1-1/2" | EHSC-RKE150 |
|        |           | 2"     | EHSC-RKE200 |
|        |           | 2-1/2" | EHSC-RKE250 |
|        |           | 3"     | EHSC-RKE300 |
|        |           | 4"     | EHSC-RKE400 |
|        | FKM       | 1/2"   | EHSC-RKV050 |
|        |           | 3/4"   | EHSC-RKV075 |
|        |           | 1"     | EHSC-RKV100 |
|        |           | 1-1/2" | EHSC-RKV150 |
|        |           | 2"     | EHSC-RKV200 |
|        |           | 2-1/2" | EHSC-RKV250 |
|        |           | 3"     | EHSC-RKV300 |
|        |           | 4"     | EHSC-RKV400 |

## TVPC-Series Air and Vacuum Relief Tank Vent Valve

When filling or emptying a tank this valve is used to relieve pressure or vacuum. The stainless steel dome will help in preventing external contamination. They are found mostly in winery and brewery markets.

### Sizes

- 2" and 3"

### Feature

- 2" and 3" clamp connections on same valve

### Materials

- Metal components: 304 stainless steel
- Other components: PVC

### Specifications

- Standard clamp connection
- Valve data:
  - Vacuum break: **2" water column (0.1 PSI)**
  - Pressure relief: **2" water column (0.1 PSI)**
  - Maximum tank fill and evacuation rate: **250 GPM**
  - Operating temperature range: **40°F to 120°F (4.4°C to 49°C)**

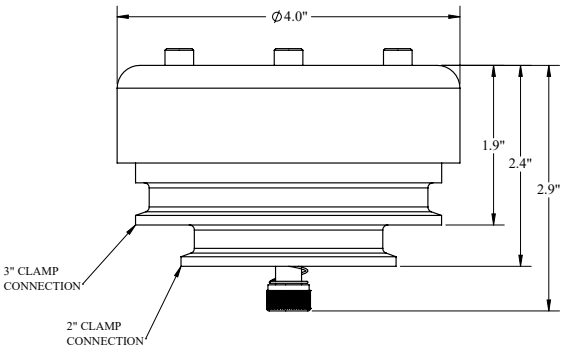
NOTE: This valve has been designed as a secondary pressure and vacuum relief vent. Always open upper manhole whenever product is being transferred in excess of **250 GPM**. Dixon® Sanitary assumes no liability for tank damage or product loss. Designed for indoor use.



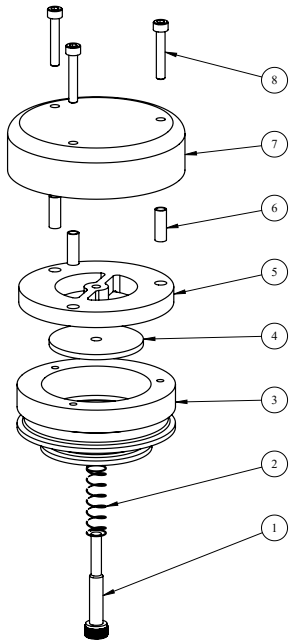
### Part #

TVPC200-300

## TVPC-Series Air and Vacuum Relief Tank Vent Valve - Dimensions



## TVPC-Series Air and Vacuum Relief Tank Vent Valve - Bill of Materials



| Item # | Part # | Description | Material | Qty |
|--------|--------|-------------|----------|-----|
| 1      | TVPC-1 | spring bolt | 304 SS   | 1   |
| 2      | TVPC-2 | spring      | 304 SS   | 1   |
| 3      | TVPC-3 | body        | PVC      | 1   |
| 4      | TVPC-4 | check plate | PVC      | 1   |
| 5      | TVPC-5 | flow plate  | PVC      | 1   |
| 6      | TVPC-6 | spacer      | 304 SS   | 3   |
| 7      | TVPC-7 | cap         | 304 SS   | 1   |
| 8      | TVPC-8 | cap bolt    | 304 SS   | 3   |

TVSEC-Series Stainless Steel Air and Vacuum Relief Tank Vent Valve

When filling or emptying a tank this valve relieves pressure or vacuum and seals under equal pressure. In addition, it includes an external stainless steel screen that protects against larger particulates from entering the tank. It includes a 1/4" FNPT port that allows inert gas to be pumped into the tank. They are most prominent in the winery and brewery markets.

Sizes

- 2", 3", and 4"

Features

- Triple action functionality
  - Valve relieves pressure as the fluid level rises while filling a tank
  - Valve relieves vacuum as the fluid level drops while emptying a tank
  - Seals under equal pressure
- Stainless steel screen surrounds the entire vacuum and pressure flow area
- 1/4" FNPT connection for gas inlet; plug also supplied

Materials

- Product contact metal components: 304 stainless steel
- Non-product contact metal components: 304 stainless steel
- Product contact seals: EPDM
- Gas inlet purge plug: Nylon

Specifications

- Standard clamp connection
- Tank vent data
  - Vacuum break: **2" water column (0.1 PSI)**
  - Pressure relief: **22" water column (0.8 PSI)**
  - Maximum tank fill and evacuation rate: **250 GPM**
  - Operating temperature range: **40°F to 120°F (4.4°C to 49°C)**
- Surface finish
  - Product contact metal components: **Ra ≤ 32**
- Screen technical data
  - Surface area of the open holes: **3.2in<sup>2</sup> +/- 0.2in<sup>2</sup>**
  - Surface area of the open holes and screen: **20in<sup>2</sup>**
  - Hole diameter: **0.03"**

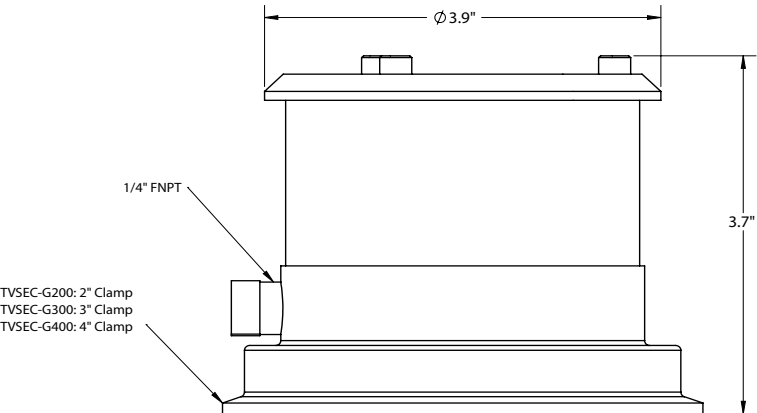
NOTE: This valve has been designed as a secondary pressure and vacuum relief vent. Always open the upper manhole whenever a product is being transferred in excess of **250 GPM**. Dixon Sanitary assumes no liability for tank damage or product loss. Designed for indoor use.



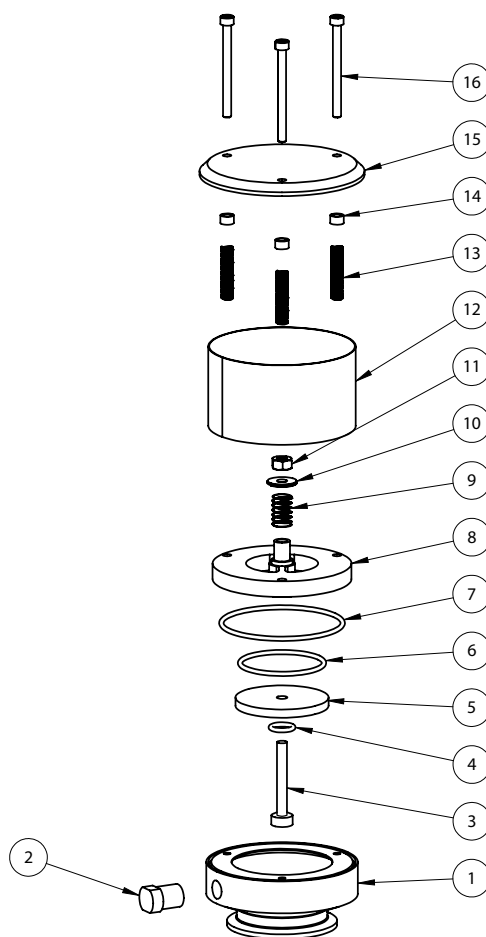
TVSEC-Series Air and Vacuum Relief Tank Vent Valve - Part Number Table

| Tube O.D. | Part #     |
|-----------|------------|
| 2"        | TVSEC-G200 |
| 3"        | TVSEC-G300 |
| 4"        | TVSEC-G400 |

TVSEC-Series Air and Vacuum Relief Tank Vent Valve - Dimensions



## TVSEC-Series Stainless Steel Air and Vacuum Relief Tank Vent Valve - Bill of Materials



| Item # | Valve Size | Part #      | Description            | Material | Qty |
|--------|------------|-------------|------------------------|----------|-----|
| 1      | 2"         | TVSEC-1-200 | 2" body                | 304 SS   | 1   |
|        | 3"         | TVSEC-1-300 | 3" body                |          |     |
|        | 4"         | TVSEC-1-400 | 4" body                |          |     |
| 2      | all        | TVSEC-2     | plug                   | PVC      | 1   |
| 3      | all        | TVSEC-3     | vacuum bolt            | 304 SS   | 1   |
| 4      | all        | TVSEC-4E    | vacuum bolt O-ring     | EPDM     | 1   |
| 5      | all        | TVSEC-5     | vacuum disc            | 304 SS   | 1   |
| 6      | all        | TVSEC-6E    | vacuum disc O-ring     | EPDM     | 1   |
| 7      | all        | TVSEC-7E    | pressure plate O-ring  | EPDM     | 1   |
| 8      | all        | TVSEC-8     | pressure plate         | 304 SS   | 1   |
| 9      | all        | TVSEC-9     | vacuum spring          | 304 SS   | 1   |
| 10     | all        | TVSEC-10    | flat washer            | 304 SS   | 1   |
| 11     | all        | TVSEC-11    | nut                    | 304 SS   | 1   |
| 12     | all        | TVSEC-12    | screen                 | 304 SS   | 1   |
| 13     | all        | TVSEC-13    | pressure plate springs | 304 SS   | 3   |
| 14     | all        | TVSEC-14    | spacers                | 304 SS   | 3   |
| 15     | all        | TVSEC-15    | cover                  | 304 SS   | 1   |
| 16     | all        | TVSEC-16    | cover screws           | 304 SS   | 3   |

TVSEC-Series Stainless Steel Air and Vacuum Relief Tank Vent Valve - Repair Kits

Tank Vent Repair Kit

| Part #   | Description                                | Qty |
|----------|--------------------------------------------|-----|
| TVSEC-RK | 304 stainless steel vacuum bolt            | 1   |
|          | EPDM vacuum bolt O-ring                    | 1   |
|          | EPDM vacuum disc O-ring                    | 1   |
|          | EPDM pressure plate O-ring                 | 1   |
|          | vacuum spring                              | 1   |
|          | 304 stainless steel flat washer            | 1   |
|          | 304 stainless steel nut                    | 1   |
|          | 304 stainless steel pressure plate springs | 3   |
|          | 304 stainless steel spacers                | 3   |
|          | 304 stainless steel cover screws           | 3   |



Tank Vent O-Ring Kit

| Part #       | Description                | Qty |
|--------------|----------------------------|-----|
| TVSEC-OKIT-E | EPDM vacuum bolt O-ring    | 1   |
|              | EPDM vacuum disc O-ring    | 1   |
|              | EPDM pressure plate O-ring | 1   |



## B5102-Series Butterfly Valve

Used in hygienic applications when you need a valve for isolation or control of the flow of product. The body acts as the clamp and the seat acts as the ferrule gasket.

They are found in the food processing, beverage, dairy, winery, brewery, pet products, and industrial markets.

### Sizes

- 1", 1-1/2", 2", 2-1/2", 3", 4"

### Features

- Bi-directional flow
- All sizes use only 3/4" of line space
- 3-position reversible handle
- No need for clamps, gaskets, or welding
- Quick and easy installation (no special tools required)

### Materials

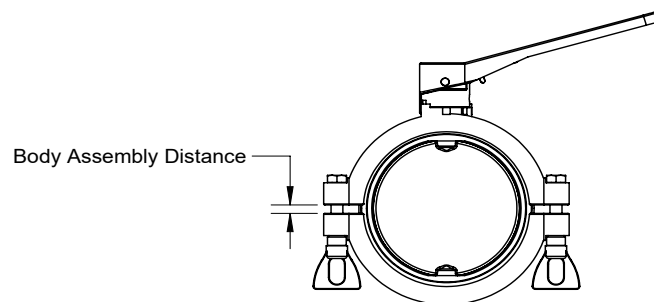
- Product contact metal components: 316L stainless steel
- Non-product contact metal components: 304 stainless steel
- Non-product contact other: PTFE
- Product contact seals: EPDM, silicone, or FKM

### Specifications

- Standard connections: for use with clamp ferrules
- Maximum pressure of valve:
  - 1" to 1-1/2" **140 PSI**
  - 2" to 2-1/2": **120 PSI**
  - 3": **100 PSI**
  - 4" **70 PSI**
- Minimum line pressure (all sizes): 0.4" Hg vacuum at **68°F (-20°C)**
- Operating temperature range: **15°F to 200°F (-9°C to 93°C)**
- Surface Finish
  - Product Contact Metal Components:  $\leq 32$  Ra
  - Non-Product Contact Metal Components:  $\leq 64$  Ra



## B5102-Series Butterfly Valve - Break Torque, Pressure Rating, Flow Coefficient, Body Assembly, and Weight



| Size   | Break Torque<br>(in-lbs) | Pressure Rating<br>(PSI) | Flow Coefficient<br>(Cv) | Body Assembly Distance<br>(in) | Weight with Handle<br>(lbs) |
|--------|--------------------------|--------------------------|--------------------------|--------------------------------|-----------------------------|
| 1"     | 35                       | 140                      | 23                       | 0.084                          | 1.5                         |
| 1-1/2" | 40                       | 140                      | 80                       | 0.088                          | 2                           |
| 2"     | 60                       | 120                      | 230                      | 0.094                          | 2.5                         |
| 2-1/2" | 80                       | 120                      | 264                      | 0.082                          | 3                           |
| 3"     | 215                      | 100                      | 372                      | 0.109                          | 4                           |
| 4"     | 495                      | 70                       | 800                      | 0.083                          | 6                           |

## B5102-Series Butterfly Valve - Part Number Key

| B5102-Series Butterfly Valve<br>Part Number Key<br>Example: B5102E150-A      |       | Series | Seat Material | Size | * | Actuation | Control Unit/<br>Feedback | Finish Options |
|------------------------------------------------------------------------------|-------|--------|---------------|------|---|-----------|---------------------------|----------------|
|                                                                              |       | B5102  | E             | 150  | - | A         |                           |                |
| Series                                                                       | Code  | B5102  | E             | 150  | - | A         |                           |                |
| B5102                                                                        | B5102 |        |               |      |   |           |                           |                |
| Seat Material                                                                | Code  |        |               |      |   |           |                           |                |
| EPDM                                                                         | E     |        |               |      |   |           |                           |                |
| Silicone                                                                     | S     |        |               |      |   |           |                           |                |
| FKM                                                                          | V     |        |               |      |   |           |                           |                |
| Size                                                                         | Code  |        |               |      |   |           |                           |                |
| 1"                                                                           | 100   |        |               |      |   |           |                           |                |
| 1-1/2"                                                                       | 150   |        |               |      |   |           |                           |                |
| 2"                                                                           | 200   |        |               |      |   |           |                           |                |
| 2-1/2"                                                                       | 250   |        |               |      |   |           |                           |                |
| 3"                                                                           | 300   |        |               |      |   |           |                           |                |
| 4"                                                                           | 400   |        |               |      |   |           |                           |                |
| Actuation                                                                    | Code  | A      |               |      |   |           |                           |                |
| Manual handle -3 position<br>standard handle                                 | A     |        |               |      |   |           |                           |                |
| 24VDC electric (power open/<br>power close)                                  | D     |        |               |      |   |           |                           |                |
| 110VAC electric (power open/<br>power close)                                 | E     |        |               |      |   |           |                           |                |
| Normally open linear pneumatic<br>vertical canister                          | F     |        |               |      |   |           |                           |                |
| Normally closed linear pneumatic<br>vertical canister                        | G     |        |               |      |   |           |                           |                |
| Air to air linear pneumatic<br>vertical canister                             | H     |        |               |      |   |           |                           |                |
| Air to air pneumatic rack & pinion SS                                        | J     |        |               |      |   |           |                           |                |
| Normally closed pneumatic rack &<br>pinion stainless steel                   | K     |        |               |      |   |           |                           |                |
| Normally open pneumatic rack &<br>pinion stainless steel                     | L     |        |               |      |   |           |                           |                |
| Air to air pneumatic rack & pinion AL                                        | M     |        |               |      |   |           |                           |                |
| Normally closed pneumatic rack &<br>pinion AL                                | N     |        |               |      |   |           |                           |                |
| Normally open pneumatic rack &<br>pinion AL                                  | P     |        |               |      |   |           |                           |                |
| Normally closed, dead man handle                                             | Q     |        |               |      |   |           |                           |                |
| 220VAC electric (power open/<br>power close)                                 | R     |        |               |      |   |           |                           |                |
| Normally closed pneumatic rack &<br>pinion AL (oversized)                    | S     |        |               |      |   |           |                           |                |
| 24VAC electric (power open/<br>power close)                                  | T     |        |               |      |   |           |                           |                |
| 110VAC electric (4-20mA input/<br>output modulating controller)              | U     |        |               |      |   |           |                           |                |
| 24VDC electric (4-20mA input/<br>output modulating controller)               | V     |        |               |      |   |           |                           |                |
| 24VDC electric (power open/power<br>close, 2 extra switches)                 | W     |        |               |      |   |           |                           |                |
| 24VDC electric (4-20mA input/<br>output modulating<br>controller, oversized) | X     |        |               |      |   |           |                           |                |

\*Only use a dash (-) in the part number if using a manual handle with no options, otherwise the dash is eliminated.

## B5102-Series Butterfly Valve - Part Number Key

| B5102-Series Butterfly Valve<br>Part Number Key<br>Example: B5102E150-A           |             | Series | Seat<br>Material | Size | * | Actuation | Control Unit/<br>Feedback | Finish<br>Options |
|-----------------------------------------------------------------------------------|-------------|--------|------------------|------|---|-----------|---------------------------|-------------------|
|                                                                                   |             | B5102  | E                | 150  | - | A         |                           |                   |
| 24VDC electric (75% duty cycle, oversized)                                        | Y           |        |                  |      |   |           |                           |                   |
| Normally closed pneumatic rack & pinion TP                                        | Z           |        |                  |      |   |           |                           |                   |
| 12VDC electric (power open/ power close)                                          | 1           |        |                  |      |   |           |                           |                   |
| 110VAC electric (power open/power close, undersized)                              | 2           |        |                  |      |   |           |                           |                   |
| Air to air pneumatic rack & pinion AL (oversized)                                 | 3           |        |                  |      |   |           |                           |                   |
| Air to air pneumatic rack & pinion AL (double oversized)                          | 4           |        |                  |      |   |           |                           |                   |
| Normally closed pneumatic rack & pinion AL (double oversized)                     | 5           |        |                  |      |   |           |                           |                   |
| 24VDC electric (4-20mA input/0-10V output modulating controller)                  | 6           |        |                  |      |   |           |                           |                   |
| <b>Control Unit/Feedback</b>                                                      | <b>Code</b> |        |                  |      |   |           |                           |                   |
| None                                                                              | blank       |        |                  |      |   |           |                           |                   |
| <b>Only available to be used with the following actuation codes: F, G, and H</b>  |             |        |                  |      |   |           |                           |                   |
| 10-30VDC 12mm external proximity, PNP, open/close, (qty 2), flying leads          | 01          |        |                  |      |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open/close, (qty 2), flying leads         | 02          |        |                  |      |   |           |                           |                   |
| 10-30VDC 12mm external proximity, PNP, open, (Qty 1), flying leads                | 03          |        |                  |      |   |           |                           |                   |
| 10-30VDC 12mm external proximity, PNP, close, (Qty 1), flying leads               | 04          |        |                  |      |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open, (qty 1), flying leads               | 05          |        |                  |      |   |           |                           |                   |
| 10-30VDC 12mm external proximity, PNP, open/close, (Qty 2), M12 quick disconnect  | 06          |        |                  |      |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open/close, (qty 2), M12 quick disconnect | 07          |        |                  |      |   |           |                           |                   |
| 10-30VDC 12mm external proximity, PNP, open, (Qty 1), M12 quick disconnect        | 08          |        |                  |      |   |           |                           |                   |
| 10-30VDC 12mm external proximity, PNP, close, (qty 1), M12 quick disconnect       | 09          |        |                  |      |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open, (qty 1), M12 quick disconnect       | 10          |        |                  |      |   |           |                           |                   |
| <b>Only available to be used with the following actuation codes: F, G, and H</b>  |             |        |                  |      |   |           |                           |                   |
| Burkert 8691, single acting, DeviceNet, multipin                                  | 11          |        |                  |      |   |           |                           |                   |
| Burkert 8691, single acting, AS-i, multipin                                       | 12          |        |                  |      |   |           |                           |                   |
| Burkert 8691, single acting, 24VDC, multipin                                      | 13          |        |                  |      |   |           |                           |                   |
| Burkert 8691, double acting, DeviceNet, multipin                                  | 14          |        |                  |      |   |           |                           |                   |
| Burkert 8691, double acting, AS-i, multipin                                       | 15          |        |                  |      |   |           |                           |                   |
| Burkert 8691, double acting, 24VDC, multipin                                      | 16          |        |                  |      |   |           |                           |                   |

E

\*Only use a dash (-) in the part number if using a manual handle with no options, otherwise the dash is eliminated.



## B5102-Series Butterfly Valve - Part Number Key

| B5102-Series Butterfly Valve<br>Part Number Key<br>Example: B5102E150-A |                                                                                           | Series | Seat Material | Size | * | Actuation | Control Unit/<br>Feedback | Finish Options |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------|---------------|------|---|-----------|---------------------------|----------------|
|                                                                         |                                                                                           | B5102  | E             | 150  | - | A         |                           |                |
| E                                                                       | Burkert 8691, without solenoid, 24VDC, multipin                                           | 17     |               |      |   |           |                           |                |
|                                                                         | Burkert 8692 positioner, 24VDC, 4-20mA, multipin                                          | 18     |               |      |   |           |                           |                |
|                                                                         | Burkert 8692 positioner, 24VDC, ATEX, multipin                                            | 62     |               |      |   |           |                           |                |
|                                                                         | Burkert 8691, single acting, IO link, multipin                                            | 64     |               |      |   |           |                           |                |
|                                                                         | <b>Only available to be used with the following actuation codes: J, K, L, M, N, and P</b> |        |               |      |   |           |                           |                |
|                                                                         | Limit switch box, OPEN/CLOSE beacon, (2) SPDT mech. switches                              | 19     |               |      |   |           |                           |                |
|                                                                         | Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches                          | 20     |               |      |   |           |                           |                |
|                                                                         | Limit switch box, OPEN/CLOSE beacon, AS-I interface                                       | 21     |               |      |   |           |                           |                |
|                                                                         | <b>Only available to be used with the following actuation codes: J, K, L, M, N, and P</b> |        |               |      |   |           |                           |                |
|                                                                         | Rotary pneumatic positioner <b>3-15 PSI</b> input, no feedback                            | 22     |               |      |   |           |                           |                |
|                                                                         | Rotary pneumatic positioner <b>3-15 PSI</b> input, (2) SPDT mech. switches for feedback   | 23     |               |      |   |           |                           |                |
|                                                                         | Rotary pneumatic positioner <b>3-15 PSI</b> input, 4-20mA for feedback                    | 24     |               |      |   |           |                           |                |
|                                                                         | Rotary electropneumatic positioner 4-20mA input, no feedback                              | 25     |               |      |   |           |                           |                |
|                                                                         | Rotary electropneumatic positioner 4-20mA input, (2) SPDT mech. switches for feedback     | 26     |               |      |   |           |                           |                |
|                                                                         | Rotary electropneumatic positioner 4-20mA input, 4-20mA for feedback                      | 27     |               |      |   |           |                           |                |
|                                                                         | Rotary electropneumatic positioner 0-10v input, no feedback                               | 28     |               |      |   |           |                           |                |
|                                                                         | Rotary electropneumatic positioner 0-10v input, (2) SPDT mech. switches for feedback      | 29     |               |      |   |           |                           |                |
|                                                                         | Rotary electropneumatic positioner 0-10v input, 4-20mA for feedback                       | 30     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 12VDC                                                               | 31     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 24VDC                                                               | 32     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 24VAC                                                               | 33     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 110VAC                                                              | 34     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 220VAC                                                              | 35     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 12VDC + option 19 limit switch                                      | 36     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 12VDC + option 20 limit switch                                      | 37     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 24VDC + option 19 limit switch                                      | 38     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 24VDC + option 20 limit switch                                      | 39     |               |      |   |           |                           |                |
|                                                                         | Single coil solenoid, 24VAC + option 19 limit switch                                      | 40     |               |      |   |           |                           |                |

\*Only use a dash (-) in the part number if using a manual handle with no options, otherwise the dash is eliminated.

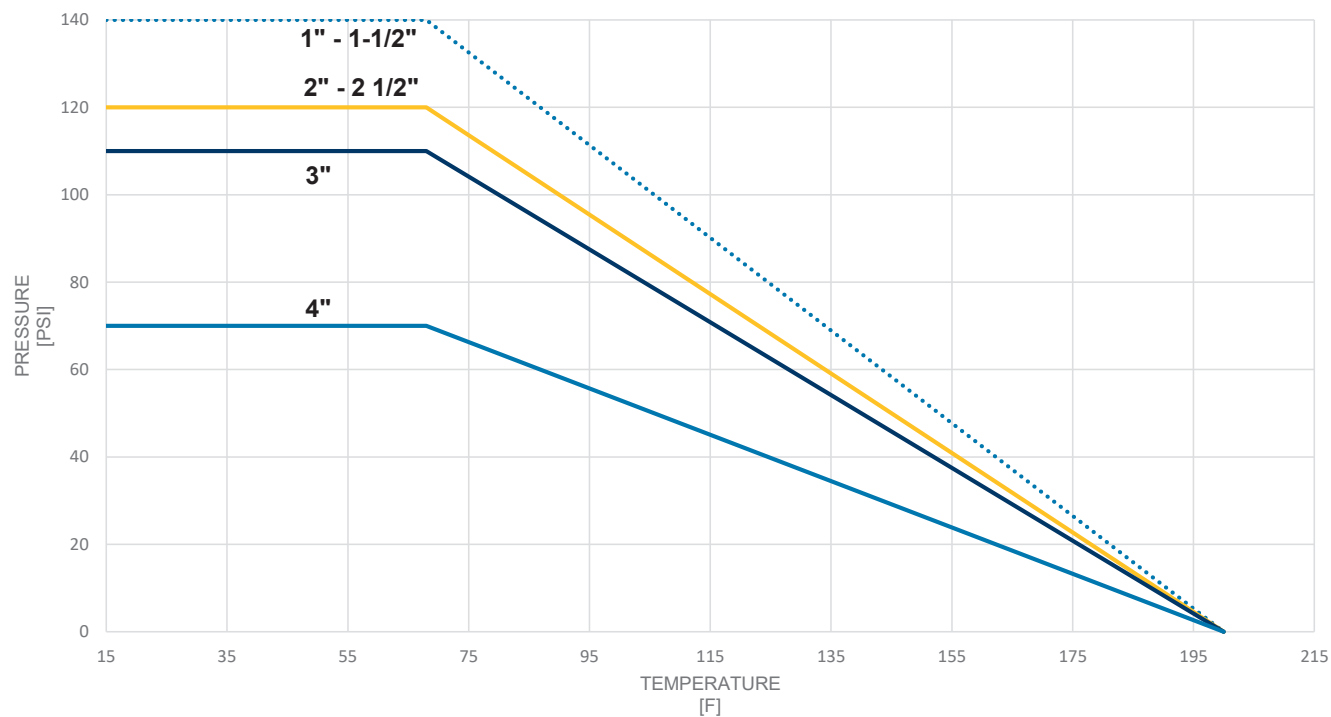
## B5102-Series Butterfly Valve - Part Number Key

| B5102-Series Butterfly Valve<br>Part Number Key<br>Example: B5102E150-A                                       |             | Series | Seat Material | Size | * | Actuation | Control Unit/<br>Feedback | Finish Options |
|---------------------------------------------------------------------------------------------------------------|-------------|--------|---------------|------|---|-----------|---------------------------|----------------|
|                                                                                                               |             | B5102  | E             | 150  | - | A         |                           |                |
| Single coil solenoid, 24VAC + option 20 limit switch                                                          | 41          |        |               |      |   |           |                           |                |
| Single coil solenoid, 110VAC + option 19 limit switch                                                         | 42          |        |               |      |   |           |                           |                |
| Single coil solenoid, 110VAC + option 20 limit switch                                                         | 43          |        |               |      |   |           |                           |                |
| Single coil solenoid, 220VAC + option 19 limit switch                                                         | 44          |        |               |      |   |           |                           |                |
| Single coil solenoid, 220VAC + option 20 limit switch                                                         | 45          |        |               |      |   |           |                           |                |
| Limit switch box with integral solenoid, AS-i, 24VDC                                                          | 46          |        |               |      |   |           |                           |                |
| Rotary electropneumatic positioner 4-20mA input, no feedback, explosion proof                                 | 48          |        |               |      |   |           |                           |                |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                         | 49          |        |               |      |   |           |                           |                |
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, explosion proof                             | 50          |        |               |      |   |           |                           |                |
| Single coil solenoid, 12VDC + option 19 limit switch+ pre-wired                                               | 51          |        |               |      |   |           |                           |                |
| Single coil solenoid, 12VDC + option 20 limit switch+ pre-wired                                               | 52          |        |               |      |   |           |                           |                |
| Single coil solenoid, 24VDC + option 19 limit switch+ pre-wired                                               | 53          |        |               |      |   |           |                           |                |
| Single coil solenoid, 24VDC + option 20 limit switch+ pre-wired                                               | 54          |        |               |      |   |           |                           |                |
| Single coil solenoid, 24VAC + option 19 limit switch+ pre-wired                                               | 55          |        |               |      |   |           |                           |                |
| Single coil solenoid, 24VAC + option 20 limit switch+ pre-wired                                               | 56          |        |               |      |   |           |                           |                |
| Single coil solenoid, 110VAC + option 19 limit switch+ pre-wired                                              | 57          |        |               |      |   |           |                           |                |
| Single coil solenoid, 110VAC + option 20 limit switch+ pre-wired                                              | 58          |        |               |      |   |           |                           |                |
| Single coil solenoid, 220VAC + option 19 limit switch+ pre-wired                                              | 59          |        |               |      |   |           |                           |                |
| Single coil solenoid, 220VAC + option 20 limit switch+ pre-wired                                              | 60          |        |               |      |   |           |                           |                |
| Mount actuator rotated 90 degrees                                                                             | 61          |        |               |      |   |           |                           |                |
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, 24VDC single coil solenoid, explosion proof | 63          |        |               |      |   |           |                           |                |
| Limit switch box, OPEN/CLOSE beacon, (2) mechanical SPDT switches, explosion proof                            | 65          |        |               |      |   |           |                           |                |
| <b>Finish Options</b>                                                                                         | <b>Code</b> |        |               |      |   |           |                           |                |
| 32 Ra mechanical (standard)                                                                                   | blank       |        |               |      |   |           |                           |                |
| 25 Ra mechanical                                                                                              | B           |        |               |      |   |           |                           |                |
| 20 Ra mechanical                                                                                              | C           |        |               |      |   |           |                           |                |
| 15 Ra mechanical                                                                                              | D           |        |               |      |   |           |                           |                |

\*Only use a dash (-) in the part number if using a manual handle with no options, otherwise the dash is eliminated.

B5102-Series Butterfly Valve - Pressure Temperature Chart

E



1" - 1-1/2" Pressure Temperature Relation

| Temperature (°F) | Pressure PSI |
|------------------|--------------|
| 15               | 140          |
| 68               | 140          |
| 200              | 0            |

2" - 2-1/2" Pressure Temperature Relation

| Temperature (°F) | Pressure PSI |
|------------------|--------------|
| 15               | 120          |
| 68               | 120          |
| 200              | 0            |

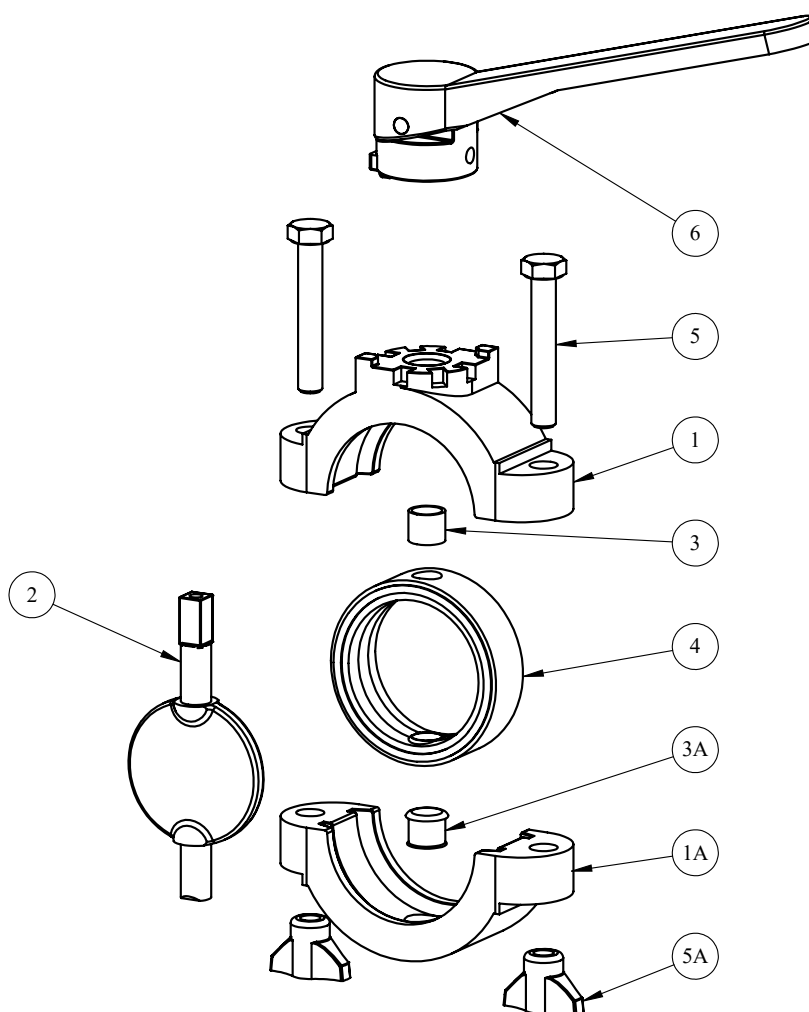
3" Pressure Temperature Relation

| Temperature (°F) | Pressure PSI |
|------------------|--------------|
| 15               | 110          |
| 68               | 110          |
| 200              | 0            |

4" Pressure Temperature Relation

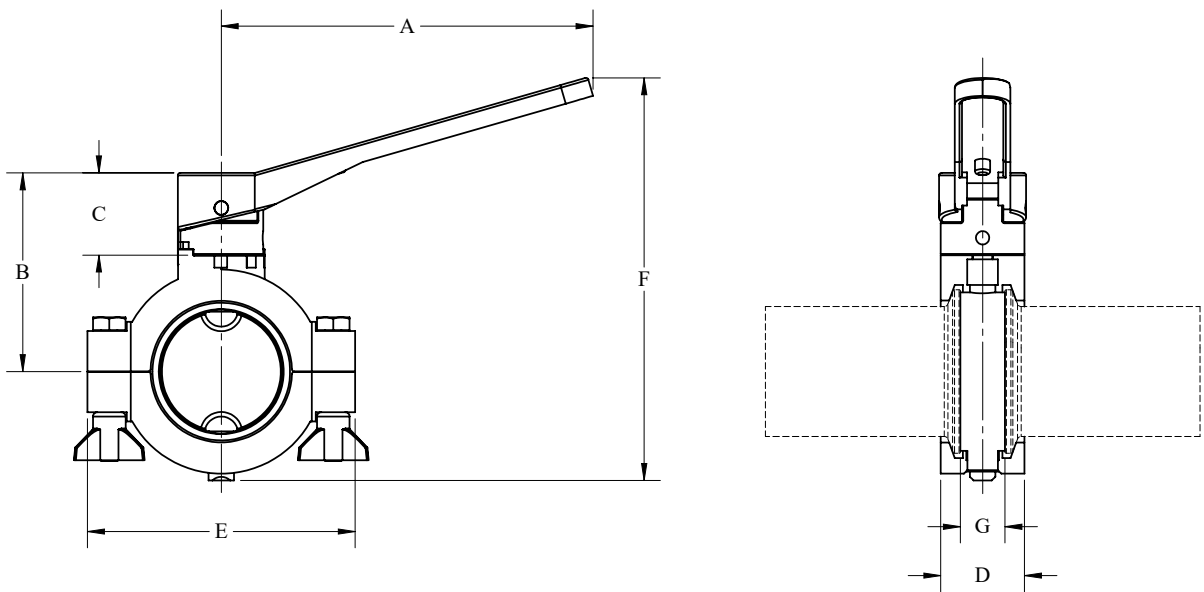
| Temperature (°F) | Pressure PSI |
|------------------|--------------|
| 15               | 70           |
| 68               | 70           |
| 200              | 0            |

## B5102-Series Butterfly Valve - Bill of Materials



| Item # | Size        | Part #          | Description     | Material       | Qty |
|--------|-------------|-----------------|-----------------|----------------|-----|
| 1      | all         | see repair kit  | upper body half | CF8            | 1   |
| 1a     | all         | see repair kit  | lower body half | CF8            | 1   |
| 2      | 1"          | B5102-DSC100    | disc            | 316L SS        | 1   |
|        | 1-1/2"      | B5102-DSC150    | disc            | 316L SS        | 1   |
|        | 2"          | B5102-DSC200    | disc            | 316L SS        | 1   |
|        | 2-1/2"      | B5102-DSC250    | disc            | 316L SS        | 1   |
|        | 3"          | B5102-DSC300    | disc            | 316L SS        | 1   |
|        | 4"          | B5102-DSC400    | disc            | 316L SS        | 1   |
| 3      | 1" - 2-1/2" | B5102-100-250UB | upper bushing   | PTFE           | 1   |
|        | 3" - 4"     | B5102-300-400UB | upper bushing   | PTFE           | 1   |
| 3a     | 1" - 2-1/2" | B5102-100-250LB | lower bushing   | PTFE           | 1   |
|        | 3" - 4"     | B5102-300-400LB | lower bushing   | PTFE           | 1   |
| 4      | all         | see repair kit  | seat            | see repair kit | 1   |
| 5      | all         | see repair kit  | bolts           | see repair kit | 2   |
| 5a     | all         | see repair kit  | wing nuts       | see repair kit | 2   |
| 6      | 1" - 2-1/2" | B5102-SH100-250 | handle assembly | CF8            | 1   |
|        | 3" - 4"     | B5102-SH300-400 | handle assembly | CF8            | 1   |

B5102-Series Butterfly Valve - Dimensions



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1"     | 5.6    | 2.8    | 1.3    | 1.3    | 3.6    | 5.6    | 0.7    |
| 1-1/2" | 5.6    | 2.8    | 1.3    | 1.3    | 3.6    | 5.6    | 0.7    |
| 2"     | 5.6    | 3      | 1.3    | 1.3    | 4.1    | 6.1    | 0.7    |
| 2-1/2" | 5.6    | 3.3    | 1.3    | 1.3    | 4.6    | 6.6    | 0.7    |
| 3"     | 5.6    | 3.6    | 1.3    | 1.3    | 5.3    | 7.1    | 0.7    |
| 4"     | 5.6    | 4.1    | 1.3    | 1.3    | 6.4    | 8.2    | 0.7    |

B5102-Series Butterfly Valve - Repair Kits

| Valve Size | Red Silicone | Black EPDM   | Brown FKM    | Replacement Handle Part # | Replacement Bolt/Nut Kit Part # | Replacement Housing Kit Pat # |
|------------|--------------|--------------|--------------|---------------------------|---------------------------------|-------------------------------|
| 1"         | B5102-RKS100 | B5102-RKE100 | B5102-RKV100 | B5102-SH100-250           | B5102-BN100-250                 | B5102-HSG100                  |
| 1-1/2"     | B5102-RKS150 | B5102-RKE150 | B5102-RKV150 | B5102-SH100-250           | B5102-BN100-250                 | B5102-HSG150                  |
| 2"         | B5102-RKS200 | B5102-RKE200 | B5102-RKV200 | B5102-SH100-250           | B5102-BN100-250                 | B5102-HSG200                  |
| 2-1/2"     | B5102-RKS250 | B5102-RKE250 | B5102-RKV250 | B5102-SH100-250           | B5102-BN100-250                 | B5102-HSG250                  |
| 3"         | B5102-RKS300 | B5102-RKE300 | B5102-RKV300 | B5102-SH300-400           | B5102-BN300-400                 | B5102-HSG300                  |
| 4"         | B5102-RKS400 | B5102-RKE400 | B5102-RKV400 | B5102-SH300-400           | B5102-BN300-400                 | B5102-HSG400                  |

Red silicone kit contains: (1) silicone seat, (2) PTFE bushings  
 Black EPDM kit contains: (1) EPDM seat, (2) PTFE bushings  
 Brown FKM kit contains: (1) FKM seat, (2) PTFE bushings  
 Handle kit contains: (1) CF8M handle  
 Bolt/nut kit contains: (2) 304 wing nuts, (2) 304 steel bolts  
 Housing kit contains: (1) upper body half, (1) lower body half

## B5107-Series Butterfly Valve

Quarter turn valve is used to isolate and regulate the flow of fluid in processing pipelines. They are found in the pharmaceutical, biochemical, cosmetic, food processing, beverage, and some dairy markets.

### Sizes

- 1/2", 3/4", 1", 1-1/2", 2", 2-1/2", 3", 4", 6", 8"

### Certification/Compliance for rubber seats

- FDA: 21 CFR 177.2600
- 3A: sanitary standard 18-03 Class II (low fat) compliant
- United States Pharmacopeia (USP): 87 & 88 Class VI
- European Regulation: EC 1935/2004
- REACH: in accordance with EC 1907/2006
  - Does not contain any substances above 0.1% (w/w) from: The Candidate List of Substances of Very High Concern, Annex XVII
- Animal derived ingredient free
- Phthalate free

### Features

- Hex head body bolts eliminate cavities of socket head screw
- High performance seat design increases seal life
- Large disc stem decreases chance of stem deformation
- Large range of options for operating devices and accessories

### Materials

- Product contact metal components: 316L forged stainless steel
- Non-product contact metal components: 304 stainless steel
- Product contact seals: EPDM, silicone, or FKM

### Specifications

- Standard connections: clamp, weld
- Available optional connections:
  - Female I-line, male I-line, threaded bevel, plain bevel, Q-line, John Perry threaded
- Valve data
  - Maximum pressure:
    - 1/2" to 2": **140 PSI**
    - 2-1/2" to 3": **110 PSI**
    - 4": **85 PSI**
    - 6" to 8": **60 PSI**
  - Maximum product line pressure: 0.4" Hg vacuum (absolute) at **68°F (20°C)**
  - Maximum operating temperature: **200°F (93°C)**
  - Minimum operating temperature: **15°F (-9°C)**
  - Valve stem square size:
    - 1/2" to 4": 10mm
    - 6": 13mm
    - 8": 14mm
- Surface finish
  - Product contact metal components: ≤ 32 Ra (standard), 20 Ra, 15 Ra optional
  - Non-product contact metal components: ≤ 32 Ra
  - Seat lubricant: MOLYKOTE 111



E

B5107-Series Butterfly Valve - Manual Operating Devices and Accessories

|                                                                                                                                            |                                                                                                                                                                                                    |                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Pull Handle</p>                                        | <p>Pull Handle with Limit Switch for Position Detection</p>                                                       | <p>Pull Handle with External Proximity Sensors for Position Detection (Lockout Capable)</p>       |
| <p>Infinite Handle</p>                                   | <p>Infinite Handle with Limit Switch for Position Detection</p>                                                  | <p>Infinite Handle with External Proximity Sensors for Position Detection (Lockout Capable)</p>  |
| <p>Multi Position Trigger Handle (Lockout Capable)</p>  | <p>Multi Position Trigger Handle with External Proximity Sensors for Position Detection (Lockout Capable)</p>  |                                                                                                                                                                                      |
| <p>Pull Handle Stem Extension</p>                       | <p>Infinite Handle Stem Extension</p>                                                                         |                                                                                                                                                                                      |

## B5107-Series Butterfly Valve - Pneumatic & Electric Operating Devices and Accessories

**Stainless Steel Canister Actuator  
(Spring Return or Double Acting)**



**Stainless Steel Canister Actuator with  
External Proximity Position Detection**



**Stainless Steel Canister Actuator  
with Burkert Control Top**



**Aluminum Rack and Pinion Actuator  
(Spring Return or Double Acting)**



**Aluminum Rack and Pinion Actuator with  
Limit Switch for Position Detection**



**Electric Actuator  
(Power Open/Power Close)**



### Flow Coefficients (Cv)

(Based on water at 68°F)

| Valve Size | Flow Coefficient (Cv) | Valve Size | Flow Coefficient (Cv) |
|------------|-----------------------|------------|-----------------------|
| 1/2"       | 7                     | 2-1/2"     | 264                   |
| 3/4"       | 11                    | 3"         | 372                   |
| 1"         | 23                    | 4"         | 800                   |
| 1-1/2"     | 80                    | 6"         | 1200                  |
| 2"         | 230                   | 8"         | 2800                  |

### Valve Break Torque

(Based on water at 68°F)

| Valve Size | Break Torque (in-lbs) Silicone | Break Torque (in-lbs) EPDM | Break Torque (in-lbs) FKM |
|------------|--------------------------------|----------------------------|---------------------------|
| 1/2"       | 20                             | 13                         | 70                        |
| 3/4"       | 20                             | 13                         | 70                        |
| 1"         | 20                             | 13                         | 70                        |
| 1-1/2"     | 35                             | 20                         | 125                       |
| 2"         | 35                             | 48                         | 175                       |
| 2-1/2"     | 133                            | 98                         | 220                       |
| 3"         | 133                            | 146                        | 310                       |
| 4"         | 266                            | 341                        | 450                       |
| 6"         | 775                            | 830                        | NA                        |
| 8"         | 1106                           | 1106                       | NA                        |



B5107-Series Butterfly Valve - Pressure Drop Chart

(Based on Water at 68°F)

| Capacity<br>(U.S.-GPM) | Valve Size |      |      |        |     |        |     |     |     |     |
|------------------------|------------|------|------|--------|-----|--------|-----|-----|-----|-----|
|                        | 1/2"       | 3/4" | 1"   | 1-1/2" | 2"  | 2-1/2" | 3"  | 4"  | 6"  | 8"  |
| 5                      | 7          | 5    |      |        |     |        |     |     |     |     |
| 10                     |            | 2.5  | 0.2  | 0.0    |     |        |     |     |     |     |
| 50                     |            |      | 4.7  | 0.4    |     |        |     |     |     |     |
| 90                     |            |      | 15.3 | 1.3    | 0.2 |        |     |     |     |     |
| 130                    |            |      |      | 2.6    | 0.3 | 0.2    |     |     |     |     |
| 170                    |            |      |      | 4.5    | 0.5 | 0.4    | 0.2 |     |     |     |
| 210                    |            |      |      | 6.9    | 0.8 | 0.6    | 0.3 |     |     |     |
| 250                    |            |      |      | 9.8    | 1.2 | 0.9    | 0.5 |     |     |     |
| 290                    |            |      |      |        | 1.6 | 1.2    | 0.6 |     |     |     |
| 330                    |            |      |      |        | 2.1 | 1.6    | 0.8 | 0.2 |     |     |
| 370                    |            |      |      |        | 2.6 | 2.0    | 1.0 | 0.2 |     |     |
| 410                    |            |      |      |        | 3.2 | 2.4    | 1.2 | 0.3 |     |     |
| 450                    |            |      |      |        | 3.8 | 2.9    | 1.5 | 0.3 |     |     |
| 490                    |            |      |      |        | 4.5 | 3.4    | 1.7 | 0.4 | 0.2 |     |
| 530                    |            |      |      |        |     | 4.0    | 2.0 | 0.4 | 0.2 |     |
| 570                    |            |      |      |        |     | 4.7    | 2.3 | 0.5 | 0.2 |     |
| 610                    |            |      |      |        |     | 5.3    | 2.7 | 0.6 | 0.3 |     |
| 650                    |            |      |      |        |     | 6.1    | 3.1 | 0.7 | 0.3 |     |
| 690                    |            |      |      |        |     | 6.8    | 3.4 | 0.7 | 0.3 |     |
| 730                    |            |      |      |        |     |        | 3.9 | 0.8 | 0.4 |     |
| 770                    |            |      |      |        |     |        | 4.3 | 0.9 | 0.4 |     |
| 810                    |            |      |      |        |     |        | 4.7 | 1.0 | 0.5 |     |
| 850                    |            |      |      |        |     |        | 5.2 | 1.1 | 0.5 |     |
| 890                    |            |      |      |        |     |        | 5.7 | 1.2 | 0.6 |     |
| 930                    |            |      |      |        |     |        | 6.3 | 1.4 | 0.6 |     |
| 970                    |            |      |      |        |     |        |     | 1.5 | 0.7 |     |
| 1010                   |            |      |      |        |     |        |     | 1.6 | 0.7 |     |
| 1050                   |            |      |      |        |     |        |     | 1.7 | 0.8 |     |
| 1090                   |            |      |      |        |     |        |     | 1.9 | 0.8 | 0.2 |
| 1130                   |            |      |      |        |     |        |     | 2.0 | 0.9 | 0.2 |
| 1170                   |            |      |      |        |     |        |     | 2.1 | 1.0 | 0.2 |
| 1210                   |            |      |      |        |     |        |     | 2.3 | 1.0 | 0.2 |
| 1250                   |            |      |      |        |     |        |     | 2.4 | 1.1 | 0.2 |
| 1290                   |            |      |      |        |     |        |     | 2.6 | 1.2 | 0.2 |
| 1330                   |            |      |      |        |     |        |     | 2.8 | 1.2 | 0.2 |
| 1370                   |            |      |      |        |     |        |     | 2.9 | 1.3 | 0.2 |
| 1410                   |            |      |      |        |     |        |     | 3.1 | 1.4 | 0.3 |
| 1450                   |            |      |      |        |     |        |     | 3.3 | 1.5 | 0.3 |
| 1490                   |            |      |      |        |     |        |     | 3.5 | 1.5 | 0.3 |
| 1530                   |            |      |      |        |     |        |     | 3.7 | 1.6 | 0.3 |
| 1570                   |            |      |      |        |     |        |     | 3.9 | 1.7 | 0.3 |
| 1610                   |            |      |      |        |     |        |     | 4.1 | 1.8 | 0.3 |
| 1650                   |            |      |      |        |     |        |     | 4.3 | 1.9 | 0.3 |

$$\Delta P = \left[ \frac{\text{GPM}}{C_v} \right]^2 G$$

## B5107-Series Butterfly Valve - Part Number Key

| B5107-Series Butterfly Valve<br>Part Number Key<br>Example: B5107E050CC-A__ |             | Series | Seat<br>Material | Size | Connection<br>End | Connection<br>End | * | Actuation | Control Unit/<br>Feedback | Finish<br>Options |
|-----------------------------------------------------------------------------|-------------|--------|------------------|------|-------------------|-------------------|---|-----------|---------------------------|-------------------|
|                                                                             |             | B5107  | E                | 050  | C                 | C                 | - | A         |                           |                   |
| <b>Series</b>                                                               | <b>Code</b> |        |                  |      |                   |                   |   |           |                           |                   |
| B5107                                                                       | B5107       |        |                  |      |                   |                   |   |           |                           |                   |
| <b>Seat Material</b>                                                        | <b>Code</b> |        |                  |      |                   |                   |   |           |                           |                   |
| EPDM                                                                        | E           |        |                  |      |                   |                   |   |           |                           |                   |
| Silicone                                                                    | S           |        |                  |      |                   |                   |   |           |                           |                   |
| FKM (1/2" - 4")                                                             | V           |        |                  |      |                   |                   |   |           |                           |                   |
| EPDM/PTFE                                                                   | X           |        |                  |      |                   |                   |   |           |                           |                   |
| FKM/PTFE (1/2" - 4")                                                        | Y           |        |                  |      |                   |                   |   |           |                           |                   |
| Silicone/PTFE                                                               | Z           |        |                  |      |                   |                   |   |           |                           |                   |
| <b>Size</b>                                                                 | <b>Code</b> |        |                  |      |                   |                   |   |           |                           |                   |
| 1/2"                                                                        | 050         |        |                  |      |                   |                   |   |           |                           |                   |
| 3/4"                                                                        | 075         |        |                  |      |                   |                   |   |           |                           |                   |
| 1"                                                                          | 100         |        |                  |      |                   |                   |   |           |                           |                   |
| 1-1/2"                                                                      | 150         |        |                  |      |                   |                   |   |           |                           |                   |
| 2"                                                                          | 200         |        |                  |      |                   |                   |   |           |                           |                   |
| 2-1/2"                                                                      | 250         |        |                  |      |                   |                   |   |           |                           |                   |
| 3"                                                                          | 300         |        |                  |      |                   |                   |   |           |                           |                   |
| 4"                                                                          | 400         |        |                  |      |                   |                   |   |           |                           |                   |
| 6"                                                                          | 600         |        |                  |      |                   |                   |   |           |                           |                   |
| 8"                                                                          | 800         |        |                  |      |                   |                   |   |           |                           |                   |
| <b>Connections (choose connection for each side)</b>                        | <b>Code</b> |        |                  |      |                   |                   |   |           |                           |                   |
| Clamp (standard)                                                            | C           |        |                  |      |                   |                   |   |           |                           |                   |
| Weld                                                                        | B           |        |                  |      |                   |                   |   |           |                           |                   |
| Female I-line                                                               | F           |        |                  |      |                   |                   |   |           |                           |                   |
| Flange                                                                      | K           |        |                  |      |                   |                   |   |           |                           |                   |
| Male I-line                                                                 | M           |        |                  |      |                   |                   |   |           |                           |                   |
| Threaded bevel                                                              | T           |        |                  |      |                   |                   |   |           |                           |                   |
| Plain bevel with nut                                                        | P           |        |                  |      |                   |                   |   |           |                           |                   |
| Q-line                                                                      | Q           |        |                  |      |                   |                   |   |           |                           |                   |
| John Perry plain                                                            | J           |        |                  |      |                   |                   |   |           |                           |                   |
| John Perry Threaded                                                         | H           |        |                  |      |                   |                   |   |           |                           |                   |
| Female NPT                                                                  | 1           |        |                  |      |                   |                   |   |           |                           |                   |
| Male NPT                                                                    | 2           |        |                  |      |                   |                   |   |           |                           |                   |
| DIN male                                                                    | 3           |        |                  |      |                   |                   |   |           |                           |                   |
| DIN weld liner/nut                                                          | 4           |        |                  |      |                   |                   |   |           |                           |                   |
| SMS male                                                                    | 5           |        |                  |      |                   |                   |   |           |                           |                   |
| SMS welding liner                                                           | 6           |        |                  |      |                   |                   |   |           |                           |                   |
| <b>Actuation</b>                                                            | <b>Code</b> |        |                  |      |                   |                   |   |           |                           |                   |
| Manual handle - 4 position standard handle                                  | A           |        |                  |      |                   |                   |   |           |                           |                   |
| Manual handle - infinite position handle (1/2" - 4")                        | B           |        |                  |      |                   |                   |   |           |                           |                   |
| Manual handle - 13 position trigger handle (1/2" - 4")                      | C           |        |                  |      |                   |                   |   |           |                           |                   |
| Extended manual handle - 4 position standard handle                         | 8           |        |                  |      |                   |                   |   |           |                           |                   |

\*NOTE: Only use a dash (-) in the part number if using a manual handle with no options, otherwise dash is eliminated.

## B5107-Series Butterfly Valve - Part Number Key

| B5107-Series Butterfly Valve<br>Part Number Key<br>Example: B5107E050CC-A__ |             | Series | Seat<br>Material | Size | Connection<br>End | Connection<br>End | * | Actuation | Control Unit/<br>Feedback | Finish<br>Options |
|-----------------------------------------------------------------------------|-------------|--------|------------------|------|-------------------|-------------------|---|-----------|---------------------------|-------------------|
|                                                                             |             | B5107  | E                | 050  | C                 | C                 | - | A         |                           |                   |
| <b>Actuation (continued)</b>                                                | <b>Code</b> |        |                  |      |                   |                   |   |           |                           |                   |
| Extended manual handle-infinite position handle                             | 9           |        |                  |      |                   |                   |   |           |                           |                   |
| 24VDC electric (power open/power close)                                     | D           |        |                  |      |                   |                   |   |           |                           |                   |
| 110VAC electric (power open/power close)                                    | E           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally open linear pneumatic vertical canister                            | F           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally closed linear pneumatic vertical canister                          | G           |        |                  |      |                   |                   |   |           |                           |                   |
| Air to air linear pneumatic vertical canister                               | H           |        |                  |      |                   |                   |   |           |                           |                   |
| Manual handle - lockout 4 position standard handle (6" and 8")              | I           |        |                  |      |                   |                   |   |           |                           |                   |
| Air to air pneumatic rack and pinion SS                                     | J           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally closed pneumatic rack and pinion SS                                | K           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally open pneumatic rack and pinion SS                                  | L           |        |                  |      |                   |                   |   |           |                           |                   |
| Air to air pneumatic rack and pinion AL                                     | M           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally closed pneumatic rack and pinion AL                                | N           |        |                  |      |                   |                   |   |           |                           |                   |
| 110VAC electric (2 extra switches, torque switches)                         | O           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally open pneumatic rack and pinion AL                                  | P           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally closed, dead man handle                                            | Q           |        |                  |      |                   |                   |   |           |                           |                   |
| 220VAC electric (power open/power close)                                    | R           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally closed pneumatic rack and pinion AL (oversized)                    | S           |        |                  |      |                   |                   |   |           |                           |                   |
| 24VAC electric (power open/power close)                                     | T           |        |                  |      |                   |                   |   |           |                           |                   |
| 110VAC electric (4-20mA input/output modulating controller)                 | U           |        |                  |      |                   |                   |   |           |                           |                   |
| 24VDC electric (4-20mA input/output modulating controller)                  | V           |        |                  |      |                   |                   |   |           |                           |                   |
| 24VDC electric (power open/power close, 2 extra switches)                   | W           |        |                  |      |                   |                   |   |           |                           |                   |
| 24VDC electric (4-20mA input/output modulating controller, oversized)       | X           |        |                  |      |                   |                   |   |           |                           |                   |
| 24VDC electric (75% duty cycle, oversized)                                  | Y           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally closed pneumatic rack and pinion TP                                | Z           |        |                  |      |                   |                   |   |           |                           |                   |
| 12VDC electric (power open/power close)                                     | 1           |        |                  |      |                   |                   |   |           |                           |                   |
| 110VAC electric (power open/power closed, undersized)                       | 2           |        |                  |      |                   |                   |   |           |                           |                   |
| Air to air pneumatic rack and pinion AL (oversized)                         | 3           |        |                  |      |                   |                   |   |           |                           |                   |
| Air to air pneumatic rack and pinion AL (double oversized)                  | 4           |        |                  |      |                   |                   |   |           |                           |                   |
| Normally closed pneumatic rack and pinion AL (double oversized)             | 5           |        |                  |      |                   |                   |   |           |                           |                   |
| 24VDC electric (4-20mA input/0-10V output modulating controller)            | 6           |        |                  |      |                   |                   |   |           |                           |                   |

## B5107-Series Butterfly Valve - Part Number Key

| B5107-Series Butterfly Valve<br>Part Number Key<br>Example: B5107E050CC-A__                     |       | Series | Seat<br>Material | Size | Connection<br>End | Connection<br>End | *Actuation | Control Unit/<br>Feedback | Finish<br>Options |
|-------------------------------------------------------------------------------------------------|-------|--------|------------------|------|-------------------|-------------------|------------|---------------------------|-------------------|
|                                                                                                 |       | B5107  | E                | 050  | C                 | C                 | -          | A                         |                   |
| 110VAC electric (power open/power close, 2 extra switches)                                      | 7     |        |                  |      |                   |                   |            |                           |                   |
| Extended manual handle - 4 position standard handle (1/2" - 4")                                 | 8     |        |                  |      |                   |                   |            |                           |                   |
| Extended manual handle - infinite position handle (1/2" - 4")                                   | 9     |        |                  |      |                   |                   |            |                           |                   |
| Control Unit/Feedback                                                                           | Code  |        |                  |      |                   |                   |            |                           |                   |
| None                                                                                            | blank |        |                  |      |                   |                   |            |                           |                   |
| <b>Only available to be used with the following Actuation codes: A, B, C, F, G, H, 8, and 9</b> |       |        |                  |      |                   |                   |            |                           |                   |
| 10-30VDC 12mm external proximity, PNP, open/close, (Qty 2), flying leads                        | 01    |        |                  |      |                   |                   |            |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open/close, (Qty 2), flying leads                       | 02    |        |                  |      |                   |                   |            |                           |                   |
| 10-30VDC 12mm external proximity, PNP, open, (Qty 1), flying leads                              | 03    |        |                  |      |                   |                   |            |                           |                   |
| 10-30VDC 12mm external proximity, PNP, close, (Qty 1), flying leads                             | 04    |        |                  |      |                   |                   |            |                           |                   |
| 10-30VDC 12mm external proximity, NPN, open, (Qty 1), flying leads                              | 05    |        |                  |      |                   |                   |            |                           |                   |
| 10-30VDC 12mm external proximity, PNP, open/close, (Qty 2), M12 quick disconnect                | 06    |        |                  |      |                   |                   |            |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open/close, (Qty 2), M12 quick disconnect               | 07    |        |                  |      |                   |                   |            |                           |                   |
| 10-30VDC 12mm external proximity, PNP, open, (Qty 1), M12 quick disconnect                      | 08    |        |                  |      |                   |                   |            |                           |                   |
| 10-30VDC 12mm external proximity, PNP, close, (Qty 1), M12 quick disconnect                     | 09    |        |                  |      |                   |                   |            |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open, (Qty 1), M12 quick disconnect                     | 10    |        |                  |      |                   |                   |            |                           |                   |
| Manual handle bracket for proximity sensor only                                                 | 70    |        |                  |      |                   |                   |            |                           |                   |
| <b>Only available to be used with the following Actuation codes: F, G, &amp; H</b>              |       |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8691, single acting, DeviceNet, multipin                                                | 11    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8691, single acting, AS-i, multipin                                                     | 12    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8691, single acting, 24VDC, multipin                                                    | 13    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8691, double acting, DeviceNet, multipin                                                | 14    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8691, double acting, AS-i, multipin                                                     | 15    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8691, double acting, 24VDC, multipin                                                    | 16    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8691, without solenoid, 24VDC, multipin                                                 | 17    |        |                  |      |                   |                   |            |                           |                   |
| Aluminum proximity ring with red poly tube indicator - discontinued Jan. 2022                   | 47    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8692 positioner, 24VDC, 4-20mA, multipin                                                | 18    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8692 positioner, 24VDC, ATEX, multipin                                                  | 62    |        |                  |      |                   |                   |            |                           |                   |
| Burkert 8691, single acting, IO link, multipin                                                  | 64    |        |                  |      |                   |                   |            |                           |                   |

E

## B5107-Series Butterfly Valve - Part Number Key

| B5107-Series Butterfly Valve<br>Part Number Key<br>Example: B5107E050CC-A__           |    | Series | Seat<br>Material | Size | Connection<br>End | Connection<br>End | * | Actuation | Control Unit/<br>Feedback | Finish<br>Options |
|---------------------------------------------------------------------------------------|----|--------|------------------|------|-------------------|-------------------|---|-----------|---------------------------|-------------------|
|                                                                                       |    | B5107  | E                | 050  | C                 | C                 | - | A         |                           |                   |
| Burket 8681, 1 solenoid (single acting), 120 VAC, cable glands                        | 68 |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8681, 2 solenoids (double acting), 120VAC, cable glands                       | 69 |        |                  |      |                   |                   |   |           |                           |                   |
| Only available to be used with the following actuation codes: A, J, K, L, M, N, & P   |    |        |                  |      |                   |                   |   |           |                           |                   |
| limit switch box, OPEN/CLOSE beacon, (2) SPDT mech. switches                          | 19 |        |                  |      |                   |                   |   |           |                           |                   |
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches                      | 20 |        |                  |      |                   |                   |   |           |                           |                   |
| Limit switch box, OPEN/CLOSE beacon, AS-I interface                                   | 21 |        |                  |      |                   |                   |   |           |                           |                   |
| Only available to be used with the following actuation codes: J, K, L, M, N, & P      |    |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary pneumatic positioner 3-15psi input, no feedback                                | 22 |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary pneumatic positioner 3-15psi input, (2) SPDT mech. switches for feedback       | 23 |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary pneumatic positioner 3-15psi input, 4-20mA for feedback                        | 24 |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary electropneumatic positioner 4-20mA input, no feedback                          | 25 |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary electropneumatic positioner 4-20mA input, (2) SPDT mech. switches for feedback | 26 |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary electropneumatic positioner 4-20mA input, 4-20mA for feedback                  | 27 |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary electropneumatic positioner 0-10v input, no Feedback                           | 28 |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary electropneumatic positioner 0-10v input, (2) SPDT mech. switches for feedback  | 29 |        |                  |      |                   |                   |   |           |                           |                   |
| Rotary electropneumatic positioner 0-10v input, 4-20mA for feedback                   | 30 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 12VDC                                                           | 31 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 24VDC                                                           | 32 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 24VAC                                                           | 33 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 110VAC                                                          | 34 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 220VAC                                                          | 35 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 12VDC + option 19 limit switch                                  | 36 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 12VDC + option 20 limit switch                                  | 37 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 24VDC + option 19 limit switch                                  | 38 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 24VDC + option 20 limit switch                                  | 39 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 24VAC + option 19 limit switch                                  | 40 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 24VAC + option 20 limit switch                                  | 41 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 110VAC + option 19 limit switch                                 | 42 |        |                  |      |                   |                   |   |           |                           |                   |
| Single coil solenoid, 110VAC + option 20 limit switch                                 | 43 |        |                  |      |                   |                   |   |           |                           |                   |

## B5107-Series Butterfly Valve - Part Number Key

| B5107-Series Butterfly Valve<br>Part Number Key<br>Example: B5107E050CC-A__                                   |             | Series | Seat<br>Material | Size | Connection<br>End | Connection<br>End | * Actuation | Control<br>Unit/<br>Feedback | Finish<br>Options |
|---------------------------------------------------------------------------------------------------------------|-------------|--------|------------------|------|-------------------|-------------------|-------------|------------------------------|-------------------|
|                                                                                                               |             | B5107  | E                | 050  | C                 | C                 | -           | A                            |                   |
| Single coil solenoid, 220VAC + option 19 limit switch                                                         | 44          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 220VAC + option 20 limit switch                                                         | 45          |        |                  |      |                   |                   |             |                              |                   |
| Limit switch box with integral solenoid, AS-i, 24VDC                                                          | 46          |        |                  |      |                   |                   |             |                              |                   |
| Aluminum proximity ring with red poly tube indicator - discontinued Jan. 2022                                 | 47          |        |                  |      |                   |                   |             |                              |                   |
| Rotary electropneumatic positioner 4-20mA input, no feedback, explosion proof                                 | 48          |        |                  |      |                   |                   |             |                              |                   |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                         | 49          |        |                  |      |                   |                   |             |                              |                   |
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, explosion proof                             | 50          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 12VDC + option 19 limit switch+ pre-wired                                               | 51          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 12VDC + option 20 limit switch+ pre-wired                                               | 52          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 24VDC + option 19 limit switch+ pre-wired                                               | 53          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 24VDC + option 20 limit switch+ pre-wired                                               | 54          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 24VAC + option 19 limit switch+ pre-wired                                               | 55          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 24VAC + option 20 limit switch+ pre-wired                                               | 56          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 110VAC + option 19 limit switch+ pre-wired                                              | 57          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 110VAC + option 20 limit switch+ pre-wired                                              | 58          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 220VAC + option 19 limit switch+ pre-wired                                              | 59          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, 220VAC + option 20 limit switch+ pre-wired                                              | 60          |        |                  |      |                   |                   |             |                              |                   |
| Mount actuator rotated 90 degrees                                                                             | 61          |        |                  |      |                   |                   |             |                              |                   |
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, 24VDC single coil solenoid, explosion proof | 63          |        |                  |      |                   |                   |             |                              |                   |
| Limit switch box, OPEN/CLOSE beacon, (2) mechanical SPDT switches, explosion proof                            | 65          |        |                  |      |                   |                   |             |                              |                   |
| Single coil solenoid, SS, 24VDC + SS limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches         | 66          |        |                  |      |                   |                   |             |                              |                   |
| 3D beacon low profile visual indicator + option 01 external proximity sensor                                  | 67          |        |                  |      |                   |                   |             |                              |                   |
| <b>Finish Options</b>                                                                                         | <b>Code</b> |        |                  |      |                   |                   |             |                              |                   |
| 32 Ra mechanical (standard)                                                                                   | blank       |        |                  |      |                   |                   |             |                              |                   |
| 25Ra mechanical finish                                                                                        | B           |        |                  |      |                   |                   |             |                              |                   |
| 20 Ra mechanical finish                                                                                       | C           |        |                  |      |                   |                   |             |                              |                   |
| 15 Ra electropolish                                                                                           | D           |        |                  |      |                   |                   |             |                              |                   |
| 32 Ra mech. w/ customer specified I.D. marking                                                                | E           |        |                  |      |                   |                   |             |                              |                   |
| 25 Ra mech. w/ customer specified I.D. marking                                                                | F           |        |                  |      |                   |                   |             |                              |                   |
| 20 Ra mech. w/ customer specified I.D. marking                                                                | G           |        |                  |      |                   |                   |             |                              |                   |
| 15 Ra electropolish w/ customer specified I.D. marking                                                        | H           |        |                  |      |                   |                   |             |                              |                   |

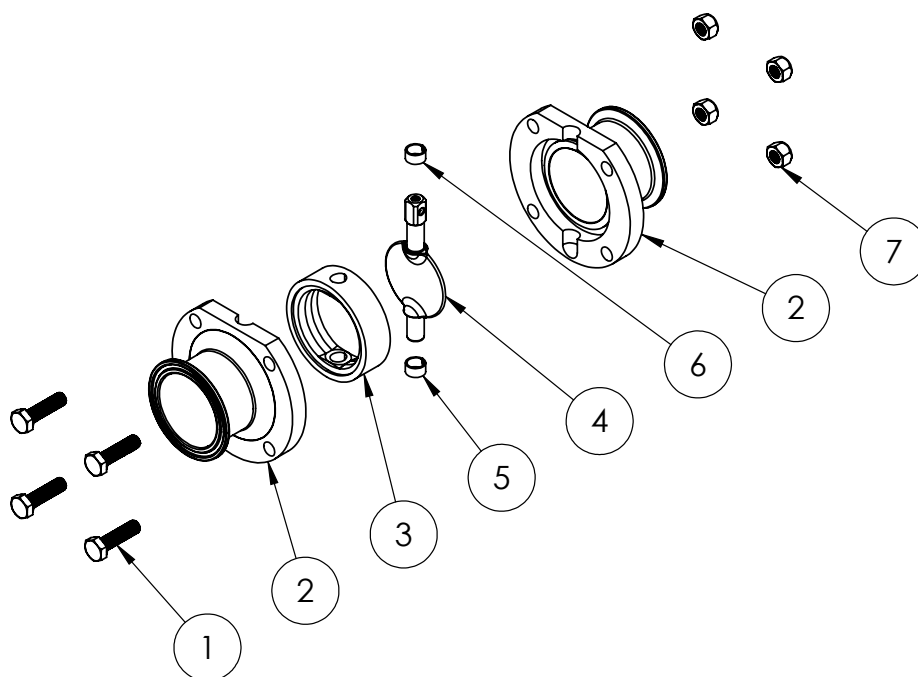
E

## B5107-Series Butterfly Valve - Proximity Sensor Bracket Kit Part Number Table

| Part #             | Description                                                               | Contains <sup>1</sup> |
|--------------------|---------------------------------------------------------------------------|-----------------------|
| Kit with Handle    |                                                                           |                       |
| B5107-SH-5025PB    | 1/2" - 2-1/2" pull handle with proximity bracket                          | 2, 11                 |
| B5107-SH-3040PB    | 3" - 4" pull handle with proximity bracket                                |                       |
| B5107-SH-5025PB8   | 1/2" - 2-1/2" pull handle with proximity bracket and M8 bushings          | 2, 11, 13             |
| B5107-SH-3040PB8   | 3" - 4" pull handle with proximity bracket and M8 bushings                |                       |
| B5107-ES-5025PB    | 1/2" - 2-1/2" extended pull handle with proximity bracket                 | 2A, 11                |
| B5107-ES-3040PB    | 3" - 4" extended pull handle with proximity bracket                       |                       |
| B5107-ES-5025PB8   | 1/2" - 2-1/2" extended pull handle with proximity bracket and M8 bushings | 2A, 11, 13            |
| B5107-ES-3040PB8   | 3" - 4" extended pull handle with proximity bracket and M8 bushings       |                       |
| B5107-IH-5025PB    | 1/2" - 2-1/2" infinite handle with proximity bracket                      | 3, 11                 |
| B5107-IH-3040PB    | 3" - 4" infinite handle with proximity bracket                            |                       |
| B5107-IH-5025PB8   | 1/2" - 2-1/2" infinite handle with proximity bracket and M8 bushings      | 3, 11, 13             |
| B5107-IH-3040PB8   | 3" - 4" infinite handle with proximity bracket and M8 bushings            |                       |
| B5107-EI-5025PB    | 1/2" - 2-1/2" extended infinite handle with proximity bracket             | 3A, 11                |
| B5107-EI-3040PB    | 3" - 4" extended infinite handle with proximity bracket                   |                       |
| B5107-EI-5025PB8   | 1/2" - 2-1/2" extended handle with proximity bracket and M8 bushings      | 3A, 11, 13            |
| B5107-EI-3040PB8   | 3" - 4" extended infinite handle with proximity bracket and M8 bushings   |                       |
| Kit without Handle |                                                                           |                       |
| B5107-PB-B         | proximity bracket bushings                                                | 13                    |
| B5107-PB-5025      | proximity bracket for 1/2" - 2-1/2" handle                                | 11                    |
| B5107-PB-3040      | proximity bracket for 3" - 4" handle                                      |                       |
| B5107-PB-5025B     | proximity bracket for 1/2" - 2-1/2" handle with M8 bushings               | 11, 13                |
| B5107-PB-3040B     | proximity bracket for 3" - 4" handle with M8 bushings                     |                       |

<sup>1</sup>Items referred to are in the manual handle bill of materials.

## B5107-Series Butterfly Valve - Bill of Materials (Valve Body)



| Item # | Description                  | Part #          |             |             |             |                | Material   | Qty |
|--------|------------------------------|-----------------|-------------|-------------|-------------|----------------|------------|-----|
|        |                              | 1/2"            | 3/4"        | 1"          | 1-1/2"      | 2"             |            |     |
| 1      | body bolt                    | M6x1x30         |             |             |             |                | 18-8       | 4   |
| 2      | clamp body half <sup>1</sup> | B5107-HSG50     | B5107-HSG75 | B5107-HSG10 | B5107-HSG15 | B5107-HSG20    | 316L       | 2   |
| 3      | valve seat                   | see repair kits |             |             |             |                | -          | 1   |
| 4      | disc                         | B5107-DSC5010   |             |             | B5107-DSC15 | B5107-DSC20    | 316L       | 1   |
| 5      | lower bushing <sup>2</sup>   | -               |             |             |             |                | polyacetal | 1   |
| 6      | upper bushing <sup>2</sup>   | -               |             |             |             |                | polyacetal | 1   |
| 7      | body nut                     | M6x1 Nylock     |             |             |             | M8x1.25 Nylock | 18-8       | 4   |

| Item # | Description                  | Part #          |             |             |             |                | Material   | Qty            |
|--------|------------------------------|-----------------|-------------|-------------|-------------|----------------|------------|----------------|
|        |                              | 2-1/2"          | 3"          | 4"          | 6"          | 8"             |            |                |
| 1      | body bolt                    | M8x1.25x30      | M8x1.25x40  |             |             | M10x1.5x45     | 18-8       | 4 <sup>3</sup> |
| 2      | clamp body half <sup>1</sup> | B5107-HSG25     | B5107-HSG30 | B5107-HSG40 | B5107-HSG60 | B5107-HSG800   | 316L       | 2              |
| 3      | valve seat                   | see repair kits |             |             |             |                | -          | 1              |
| 4      | disc                         | B5107-DSC25     | B5107-DSC30 | B5107-DSC40 | B5107-DSC60 | B5107-DSC800   | 316L       | 1              |
| 5      | lower bushing <sup>2</sup>   | -               |             |             |             |                | polyacetal | 1              |
| 6      | upper bushing <sup>2</sup>   | -               |             |             |             |                | polyacetal | 1              |
| 7      | body nut                     | M8x1.25 Nylock  |             |             |             | M10x1.5 Nylock | 18-8       | 4 <sup>3</sup> |

<sup>1</sup>Other connection ends available, see connection code identifier in part number key (ex: 2" flange connection: B5107-HSG20K).

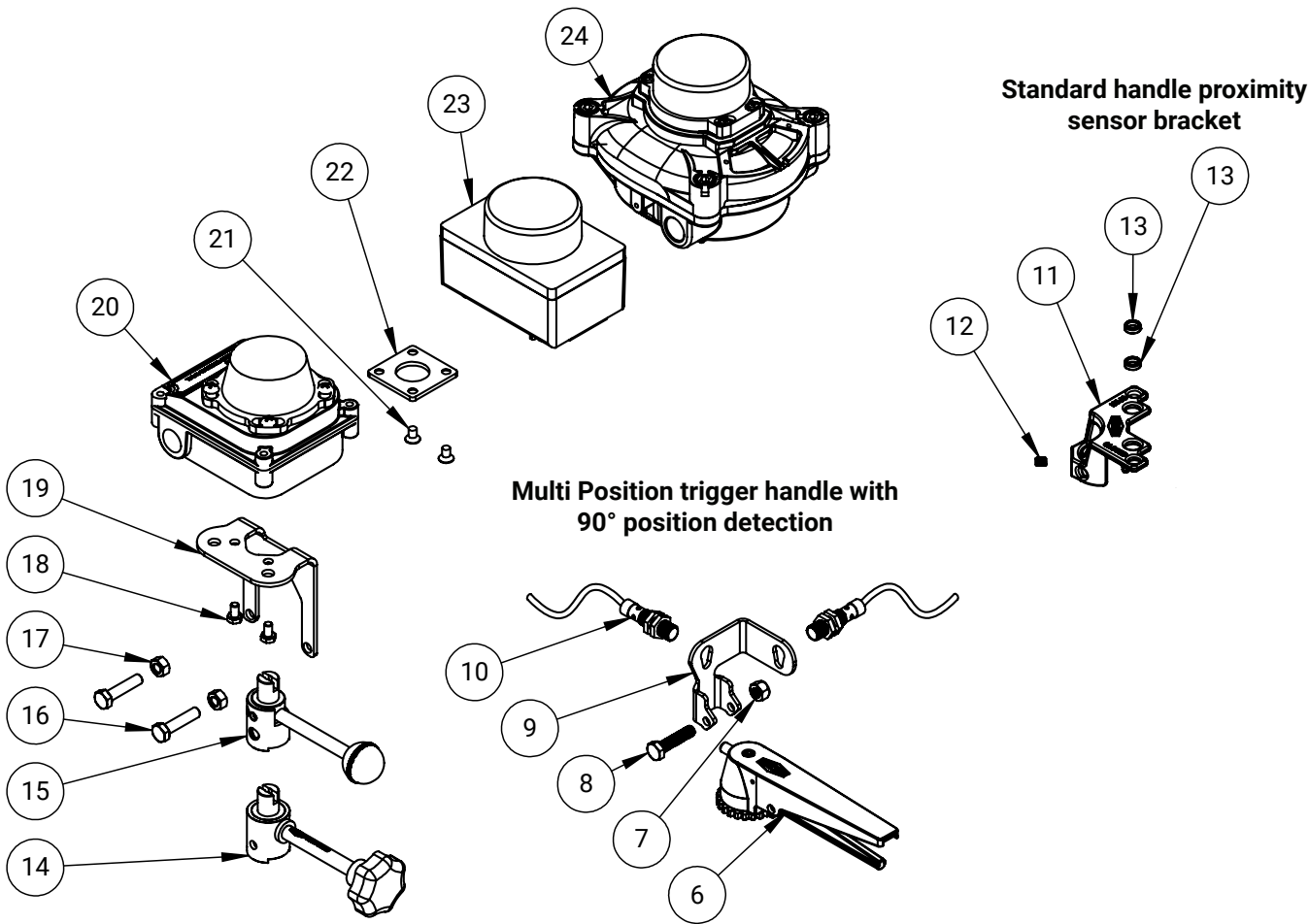
<sup>2</sup>Upper and lower bushings are included in the seat repair kit. Cannot be purchased separately.

<sup>3</sup>4" and 8" valves have a qty 6 bolts and nuts. 6" valve has a qty 8 bolts and nuts.

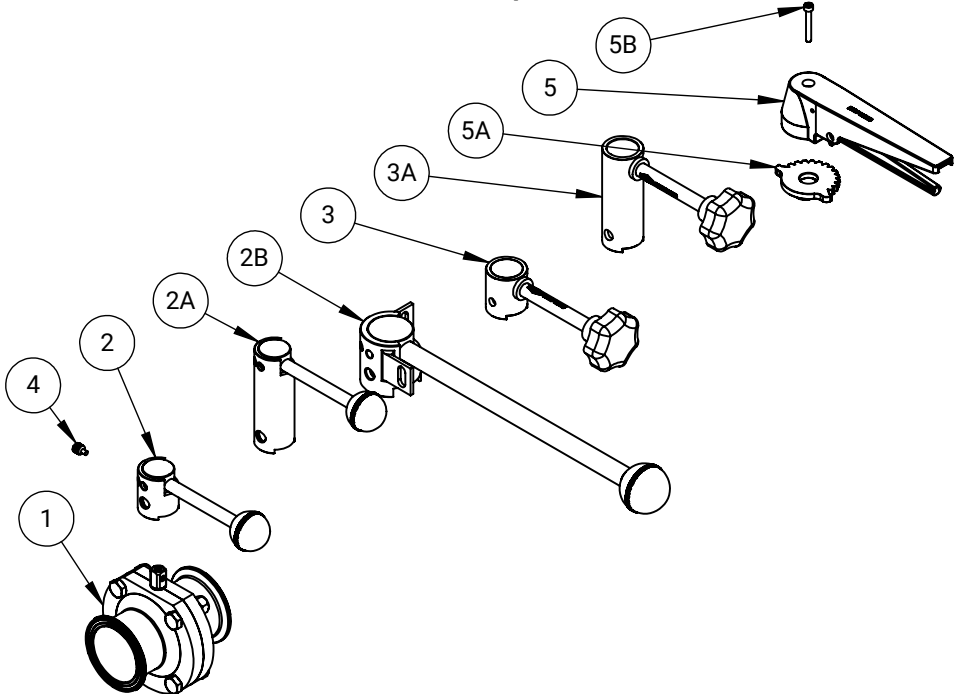


B5107-Series Butterfly Valve - Bill of Materials (Manual Options)

Standard and Infinite Handle with Position Detection



Standard handle options



## B5107-Series Butterfly Valve - Bill of Materials (Manual Options)

| Item # | Description                                  | Part #     |                                      |            |            |                            | Material      | Qty |
|--------|----------------------------------------------|------------|--------------------------------------|------------|------------|----------------------------|---------------|-----|
|        |                                              | 1/2"       | 3/4"                                 | 1"         | 1-1/2"     | 2"                         |               |     |
| 1      | valve                                        | B5107_050_ | B5107_075_                           | B5107_100_ | B5107_150_ | B5107_200_                 | see valve BOM | 1   |
| 2      | pull handle                                  |            | B5107-SH5025                         |            |            |                            | 304           | 1   |
| 2A     | extended pull handle                         |            | B5107-SH5025E                        |            |            |                            | 304           | 1   |
| 3      | infinite handle                              |            | B5107-IH5025                         |            |            |                            | 304           | 1   |
| 3A     | extended infinite handle                     |            | B5107-IH5025E                        |            |            |                            | 304           | 1   |
| 4      | item no. 2, 2A, 3, 3A handle set screw       |            | B5107-IHSH-SSLP                      |            |            |                            | 304           | 1   |
| 5      | trigger handle                               |            | B5107-TH5025                         |            |            |                            | 304           | 1   |
| 5A     | 180° sprocket <sup>2</sup>                   |            |                                      |            |            |                            | 304           | 1   |
| 5B     | M5x30mm socket cap bolt <sup>2</sup>         |            |                                      |            |            |                            | 304           | 1   |
| 6      | proximity sensor trigger handle              |            | B5107-TH5025-PS                      |            |            |                            | 304           | 1   |
| 7      | body nut                                     |            | M6x1 Nylock                          |            |            | M8x1.25 Nylock             | 18-8          | 1   |
| 8      | valve/bracket bolt                           |            | M6x1x35mm hex head bolt              |            |            | M8x1.25x35mm hex head bolt | 18-8          | 1   |
| 9      | external proximity bracket                   |            | B5107-B1015-MPD                      |            |            |                            | 304           | 1   |
| 10     | proximity sensor                             |            | see DW-series Proximity Sensors EPRG |            |            |                            | -             | -   |
| 11     | proximity sensor bracket <sup>1</sup>        |            | B5107-PB-5025                        |            |            |                            | CF8           | 1   |
| 12     | M6x8mm set screw                             |            |                                      |            |            |                            | 304           | 1   |
| 13     | M12 to M8 bushings                           |            | B5107-PB-B                           |            |            |                            | PTFE          | 2   |
| 14     | infinite handle for position detection       |            | B5107-IH5025-L                       |            |            |                            | 304           | 1   |
| 15     | pull handle for position detection           |            | B5107-SH5025-L                       |            |            |                            | 304           | 1   |
| 16     | valve/bracket bolt                           |            | M6x1x35mm hex head bolt              |            |            | M8x1.25x35mm hex head bolt | 18-8          | 2   |
| 17     | body nut                                     |            | M6x1 Nylock                          |            |            | M8x1.25 Nylock             | 18-8          | 2   |
| 18     | item no. 20 limit switch bracket bolt        |            | M6x1x10mm hex head bolt              |            |            |                            | 18-8          | 2   |
|        | item no. 23 and 24 limit switch bracket bolt |            | M6x1x16mm hex head bolt              |            |            |                            | 18-8          | 2   |
| 19     | limit switch bracket                         |            | B5107-LSB-5015                       |            |            | B5107-LSB-2025             | 304           | 1   |
| 20     | XLS-B4-series limit switch                   |            | see Limit Switches EPRG              |            |            |                            | -             | 1   |
| 21     | spacer bolts                                 |            | M6x1x12mm countersunk screw          |            |            |                            | 18-8          | 2   |
| 22     | spacer                                       |            | B5107-LSB-SP                         |            |            |                            | 304           | 1   |
| 23     | XLS-C4-series limit switch                   |            | see Limit Switches EPRG              |            |            |                            | -             | 1   |
| 24     | XLS-C7-series limit switch                   |            |                                      |            |            |                            | -             | 1   |

<sup>1</sup>Used with actuation codes A, B, 8, and 9 only.

<sup>2</sup>Included with the trigger handle.

## B5107-Series Butterfly Valve - Bill of Materials (Manual Options)

| Item # | Description                                  | Part #                               |                            |            |              |              | Material      | Qty  |   |
|--------|----------------------------------------------|--------------------------------------|----------------------------|------------|--------------|--------------|---------------|------|---|
|        |                                              | 2-1/2"                               | 3"                         | 4"         | 6"           | 8"           |               |      |   |
| 1      | valve                                        | B5107_250_                           | B5107_300_                 | B5107_400_ | B5107_600_   | B5107_800_   | see valve BOM | 1    |   |
| 2      | pull handle                                  | B5107-SH5025                         | B5107-SH3040               |            | B5107-SH60   | B5107-SH800  | 304           | 1    |   |
| 2A     | extended pull handle                         | B5107-SH5025E                        | B5107-SH3040E              |            | -            |              | 304           | 1    |   |
| 2B     | lockout pull handle                          | -                                    |                            |            | B5107-LSH600 | B5107-LSH800 | 304           | 1    |   |
| 3      | infinite handle                              | B5107-IH5025                         | B5107-IH3040               |            | B5107-IH60   | B5107-IH800  | 304           | 1    |   |
| 3A     | extended infinite handle                     | B5107-IH5025E                        | B5107-IH3040E              |            | -            |              | 304           | 1    |   |
| 4      | item no. 2, 2A, 3, 3A handle set screw       | B5107-IHSH-SSLP                      |                            |            |              |              | 304           | 1    |   |
| 5      | trigger handle                               | B5107-TH5025                         | B5107-TH3040               |            | -            |              |               | 304  | 1 |
| 5A     | 180° sprocket <sup>2</sup>                   |                                      |                            |            |              |              |               | 304  | 1 |
| 5B     | M5x30mm socket cap bolt <sup>2</sup>         |                                      |                            |            |              |              |               | 304  | 1 |
| 6      | proximity sensor trigger handle              | B5107-TH5025-PS                      | B5107-TH3040-PS            |            |              |              |               | 304  | 1 |
| 7      | body nut                                     | M6x1 Nylock                          |                            | 18-8       |              |              |               | 1    |   |
| 8      | valve/bracket bolt                           | M8x1.25x35mm hex head bolt           | M8x1.25x45mm hex head bolt |            |              |              |               | 18-8 | 1 |
| 9      | external proximity bracket                   | B5107-B1015-MPD                      | B5107-B3040-MPD            |            |              |              |               | 304  | 1 |
| 10     | proximity sensor                             | see DW-series Proximity Sensors EPRG |                            | -          |              |              |               | -    |   |
| 11     | proximity sensor bracket <sup>1</sup>        | B5107-PB-5025                        | B5107-PB-3040              |            |              |              |               | CF8  | 1 |
| 12     | M6x8mm set screw                             |                                      |                            |            |              |              |               | 304  | 1 |
| 13     | M12 to M8 bushings                           | B5107-PB-B                           |                            | PTFE       |              |              |               | 2    |   |
| 14     | infinite handle for position detection       | B5107-IH5025-L                       | B5107-IH3040-L             |            |              |              |               | 304  | 1 |
| 15     | pull handle for position detection           | B5107-SH5025-L                       | B5107-SH3040-L             |            |              |              |               | 304  | 1 |
| 16     | valve/bracket bolt                           | M8x1.25x35mm hex head bolt           | M8x1.25x45mm hex head bolt |            |              |              |               | 18-8 | 2 |
| 17     | body nut                                     | M8x1.25 Nylock                       | M8x1.25 Nylock             |            |              |              |               | 18-8 | 2 |
| 18     | item no. 20 limit switch bracket bolt        | M6x1x10mm hex head bolt              |                            |            | 18-8         | 2            |               |      |   |
|        | item no. 23 and 24 limit switch bracket bolt | M6x1x16mm hex head bolt              |                            |            | 18-8         | 2            |               |      |   |
| 19     | limit switch bracket                         | B5107-LSB-5015                       | B5107-LSB-3040             |            | 304          | 1            |               |      |   |
| 20     | XLS-B4-series limit switch                   | see Limit Switch EPRG                |                            |            | -            | 1            |               |      |   |
| 21     | spacer bolts                                 | M6x1x12mm countersunk screw          |                            |            | 18-8         | 2            |               |      |   |
| 22     | spacer                                       | B5107-LSB-SP                         |                            |            | 304          | 1            |               |      |   |
| 23     | XLS-C4-series limit switch                   | see Limit Switch EPRG                |                            |            | -            | 1            |               |      |   |
| 24     | XLS-C7-series limit switch                   |                                      |                            |            |              | 1            |               |      |   |

<sup>1</sup>Used with actuation codes A, B, 8, and 9 only.<sup>2</sup>Included with the trigger handle.

## B5107-Series Butterfly Valve - Bill of Materials (Manual Options)

### Part Number Key Code Identifier

| Item # | Description                                  | Part # Key Code Identifier | Part # Key Code <sup>2</sup> |
|--------|----------------------------------------------|----------------------------|------------------------------|
| 1      | valve                                        | -                          | -                            |
| 2      | pull handle                                  | Actuation                  | A                            |
| 2A     | extended pull handle                         |                            | 8                            |
| 2B     | lockout pull handle                          |                            | I                            |
| 3      | infinite handle                              |                            | B                            |
| 3A     | extended infinite handle                     |                            | 9                            |
| 4      | item no. 2, 2A, 3, 3A handle set screw       |                            | -                            |
| 5      | trigger handle                               |                            | C                            |
| 5A     | 180° sprocket <sup>3</sup>                   |                            |                              |
| 5B     | M5x30mm socket cap bolt <sup>3</sup>         |                            |                              |
| 6      | proximity sensor trigger handle              | Control Unit/Feedback      | 01-10, 70                    |
| 7      | body nut                                     |                            |                              |
| 8      | valve/bracket bolt                           |                            |                              |
| 9      | external proximity bracket                   |                            |                              |
| 10     | proximity sensor                             | Control Unit/Feedback      | 01-10, 70                    |
| 11     | proximity sensor bracket <sup>1</sup>        |                            |                              |
| 12     | M6x8mm set screw                             |                            |                              |
| 13     | M12 to M8 bushing                            | Actuation                  | B                            |
| 14     | infinite handle for position detection       |                            | A                            |
| 15     | pull handle for position detection           | -                          | -                            |
| 16     | valve/bracket bolt                           | -                          | -                            |
| 17     | body nut                                     | -                          | -                            |
| 18     | item no. 20 limit switch bracket bolt        | -                          | -                            |
|        | item no. 23 and 24 limit switch bracket bolt | -                          | -                            |
| 19     | limit switch bracket                         | -                          | -                            |
| 20     | XLS-B4-series limit switch                   | Control Unit/Feedback      | 19                           |
| 21     | spacer bolts                                 | -                          | -                            |
| 22     | spacer                                       | -                          | -                            |
| 23     | XLS-C4-series limit switch                   | Control Unit/Feedback      | 20, 21, 46                   |
| 24     | XLS-C7-series limit switch                   |                            | 50, 63, 65                   |

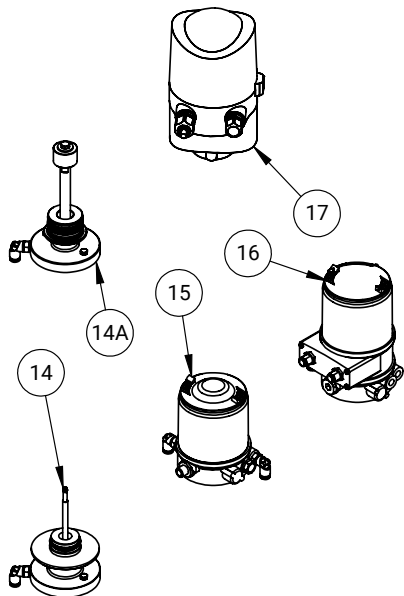
<sup>1</sup>Used with Actuation codes A, B, 8, and 9 only.

<sup>2</sup>Code shown is based off single option selection, see part number key for combination codes.

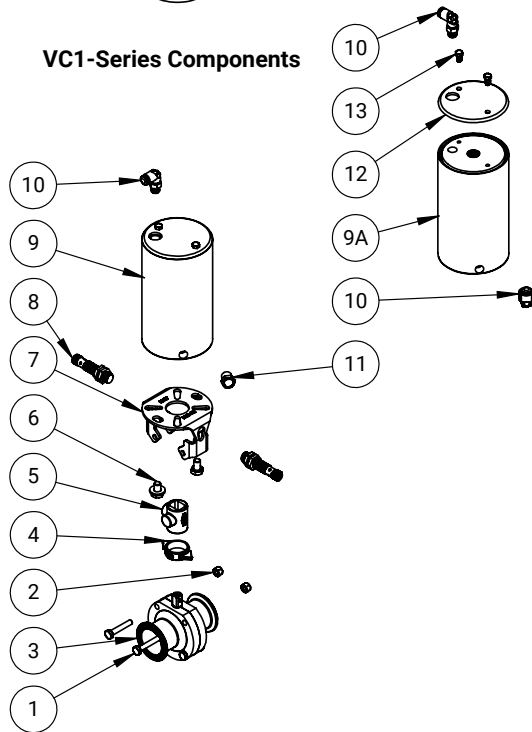
B5107-Series Butterfly Valve - Bill of Materials (Actuated Options)

VC1-Series Vertical Canister Actuator

Control Top Options

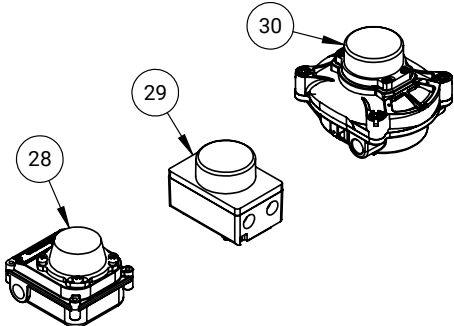


VC1-Series Components

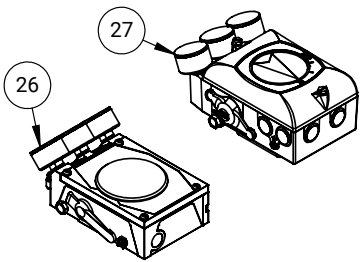


RP-BA, RP-BS, BEO, and BX-Series Actuators

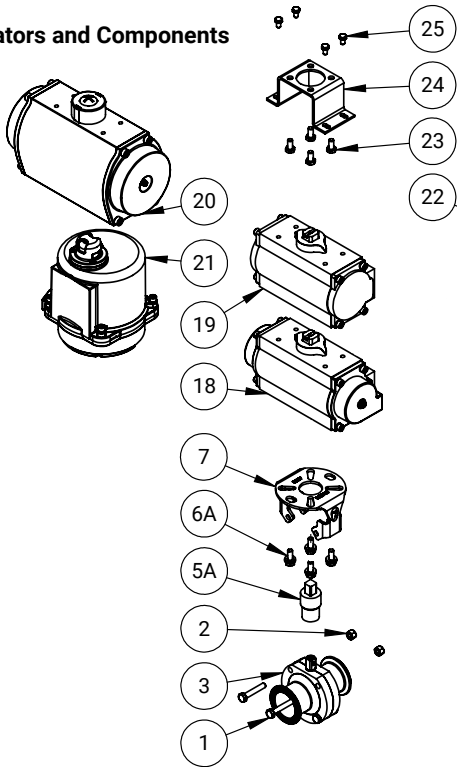
Limit Switch Options



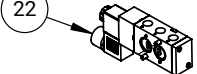
Positioner Options



Actuators and Components



Solenoid Options



## B5107-Series Butterfly Valve - Bill of Materials (Actuated Options)

| Item # | Description                                    | Part #                                                                                                                                                                                  |            |            |            |                            | Material      | Qty |
|--------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|----------------------------|---------------|-----|
|        |                                                | 1/2"                                                                                                                                                                                    | 3/4"       | 1"         | 1-1/2"     | 2"                         |               |     |
| 1      | actuated body bolt                             | M6x1x35mm hex head bolt                                                                                                                                                                 |            |            |            | M8x1.25x35mm hex head bolt | 18-8          | 2   |
| 2      | body nut                                       | M6x1 Nylock nut                                                                                                                                                                         |            |            |            | M8x1.25 Nylock nut         | 18-8          | 2   |
| 3      | valve                                          | B5107_050_                                                                                                                                                                              | B5107_075_ | B5107_100_ | B5107_150_ | B5107_200_                 | see valve BOM | 1   |
| 4      | indicator                                      | XB51-P-N                                                                                                                                                                                |            |            |            |                            | polyethylene  | 1   |
| 5      | VC1-series coupler                             | XB51-CPB-NB                                                                                                                                                                             |            |            |            |                            | CF8           | 1   |
| 5A     | coupler <sup>1</sup>                           | XB51 coupler is dependent on actuator selected based on actuator code and seat material                                                                                                 |            |            |            |                            | 304           | 1   |
| 6      | VC1 actuator bolt and lock washer              | M8x1.25x12mm hex head bolt, M8x1.25 lock washer                                                                                                                                         |            |            |            |                            | 18-8          | 2   |
| 6A     | pneumatic/electric actuator bolt               | mounting bolt is dependent on actuator selected based on actuator code and seat material                                                                                                |            |            |            |                            | 18-8          | 4   |
| 7      | actuator bracket                               | B5107-B100-150                                                                                                                                                                          |            |            |            | B5107-B200-250             | 304           | 1   |
| 8      | external proximity sensors                     | see DW-series Proximity Sensors EPRG                                                                                                                                                    |            |            |            |                            | -             | -   |
| 9      | VC1-series spring return actuator canister     | VC1SR                                                                                                                                                                                   |            |            |            |                            | 304           | 1   |
| 9A     | VC1-series double acting actuator canister     | VC1DA                                                                                                                                                                                   |            |            |            |                            | 304           | 1   |
| 10     | canister top cap                               | VC1-7                                                                                                                                                                                   |            |            |            |                            | 304           | 1   |
| 11     | air fitting                                    | 407322                                                                                                                                                                                  |            |            |            |                            | -             | -   |
| 12     | air filter                                     | VC-NR-AF                                                                                                                                                                                |            |            |            |                            | -             | -   |
| 13     | top cap bolts                                  | M5x0.8x10mm hex head bolt                                                                                                                                                               |            |            |            |                            | 18-8          | 2   |
| 14     | Burkert 8691/8692 adapter kit                  | adapter and detection shaft: VC1-BA, VC1-DS, O-rings: (2) VC1-BA-OR1, VC1-BA-OR2, adapter hardware: 407322, (2) M5x0.8x20mm hex head bolts                                              |            |            |            |                            | -             | 1   |
| 14A    | Burkert 8682 adapter kit                       | adapter: VC1-BA2, detection shaft: VC1-DS2, VC1-DTA, M6WASHER, M6x1x12mm hex head bolt, O-ring: VC1-BA-OR1, VC1-BA-OR2, (2) VC1-BA-OR3, hardware: 407322, (2) M5x0.8x20mm hex head bolt |            |            |            |                            | -             | 1   |
| 15     | Burkert 8691 control top                       | see BT-series Control Top EPRG                                                                                                                                                          |            |            |            |                            | -             | 1   |
| 16     | Burkert 8692 control top                       | see XPB-series Control Top EPRG                                                                                                                                                         |            |            |            |                            | -             | 1   |
| 17     | Burkert 8682 control top                       | see MT-series Control Top EPRG                                                                                                                                                          |            |            |            |                            | -             | 1   |
| 18     | RP-BA-series spring return actuator            | see RP-BA-series Rack and Pinion Actuator EPRG                                                                                                                                          |            |            |            |                            | -             | 1   |
| 19     | RP-BA-series double acting actuator            |                                                                                                                                                                                         |            |            |            |                            |               | 1   |
| 20     | RP-BS-series actuator                          | see RP-BS-series Rack and Pinion Actuator EPRG                                                                                                                                          |            |            |            |                            | -             | 1   |
| 21     | BEO and BX-series actuator                     | see BEO-series Electric Actuator and BX-series Electric Actuator EPRG                                                                                                                   |            |            |            |                            | -             | 1   |
| 22     | solenoid                                       | see X-series Solenoid EPRG                                                                                                                                                              |            |            |            |                            | -             | 1   |
| 23     | M6x12mm hex head limit switch/positioner bolts | M6x1x12mm hex head bolt                                                                                                                                                                 |            |            |            |                            | 18-8          | 4   |
| 24     | F05 limit switch/positioner bracket            | LSPP-BK-S-N                                                                                                                                                                             |            |            |            |                            | 304           | 1   |
| 25     | M5x10mm hex head bracket bolts                 | M5x0.8x10mm hex head bolt                                                                                                                                                               |            |            |            |                            | 18-8          | 4   |
| 26     | XPO-series rotary positioner                   | see XPO and XPV-series Rotary Positioner EPRG                                                                                                                                           |            |            |            |                            | -             | 1   |
| 27     | XPV-series rotary positioner                   |                                                                                                                                                                                         |            |            |            |                            |               |     |
| 28     | XLS-B4-series limit switch                     | see Limit Switches EPRG                                                                                                                                                                 |            |            |            |                            | -             | 1   |
| 29     | XLS-C4-series limit switch                     |                                                                                                                                                                                         |            |            |            |                            |               |     |
| 30     | XLS-C7-series limit switch                     |                                                                                                                                                                                         |            |            |            |                            |               |     |

<sup>1</sup>Coupler may also require sleeve.

## B5107-Series Butterfly Valve - Bill of Materials (Actuated Options)

| Item # | Description                                    | Part #                                                                                                                                                                                  |                            |            |                                                                                                                                              |                               | Material     | Qty  |   |  |  |
|--------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------|------|---|--|--|
|        |                                                | 2-1/2"                                                                                                                                                                                  | 3"                         | 4"         | 6"                                                                                                                                           | 8"                            |              |      |   |  |  |
| 1      | actuated body bolt                             | M8x1.25x35mm hex head bolt                                                                                                                                                              | M8x1.24x45mm hex head bolt |            | M8x1.25x45mm socket cap screw                                                                                                                | M10x1.5x50mm socket cap screw | 18-8         | 2    |   |  |  |
| 2      | body nut                                       | M8x1.25 Nylock nut                                                                                                                                                                      |                            |            | -                                                                                                                                            | M10x1.25 Nylock nut           | 18-8         | 2    |   |  |  |
| 3      | valve                                          | B5107_250_                                                                                                                                                                              | B5107_300_                 | B5107_400_ | B5107_600_                                                                                                                                   | B5107_800_                    | see BOM      | 1    |   |  |  |
| 4      | indicator                                      | XB51-P-N                                                                                                                                                                                |                            |            |                                                                                                                                              |                               | polyethylene | 1    |   |  |  |
| 5      | VC1-series coupler                             | XB51-CPB-NB                                                                                                                                                                             |                            |            |                                                                                                                                              |                               | CF8          | 1    |   |  |  |
| 5A     | coupler <sup>1</sup>                           | XB51 coupler is dependent on actuator selected based on actuator code and seat material                                                                                                 |                            |            |                                                                                                                                              |                               | 304          | 1    |   |  |  |
| 6      | VC1-series actuator bolt and lock washer       | M8x1.25x12mm hex head bolt                                                                                                                                                              |                            |            |                                                                                                                                              |                               | 18-8         | 2    |   |  |  |
| 6A     | pneumatic/electric actuator bolt               | mounting bolts are dependent on actuator selected based on actuator code and seat material                                                                                              |                            |            |                                                                                                                                              |                               | 18-8         | 4    |   |  |  |
| 7      | actuator bracket                               | B5107-B200-250                                                                                                                                                                          | B5107-B300-400             |            | B5107-B600                                                                                                                                   | B5107-B800                    | 304          | 1    |   |  |  |
| 8      | external proximity sensors                     | see DW-series Proximity Sensors EPRG                                                                                                                                                    |                            |            |                                                                                                                                              |                               | -            | -    |   |  |  |
| 9      | VC1-series spring return actuator canister     | VC1SR                                                                                                                                                                                   |                            |            | 6" and 8" valves can only be actuated using Dixon's RP-BA and RP-BS-series rack and pinion actuators or BEO and BX-series electric actuators |                               |              | 304  | 1 |  |  |
| 9A     | VC1-series double acting actuator canister     | VC1DA                                                                                                                                                                                   |                            |            |                                                                                                                                              |                               |              | 304  | 1 |  |  |
| 10     | canister top cap                               | VC1-7                                                                                                                                                                                   |                            |            |                                                                                                                                              |                               |              | 304  | 1 |  |  |
| 11     | air fitting                                    | 407322                                                                                                                                                                                  |                            |            |                                                                                                                                              |                               |              | -    | - |  |  |
| 12     | air filter                                     | VC-NR-AF                                                                                                                                                                                |                            |            |                                                                                                                                              |                               |              | -    | - |  |  |
| 13     | top cap bolts                                  | M5x0.8x100mm hex head bolt                                                                                                                                                              |                            |            |                                                                                                                                              |                               |              | 18-8 | 2 |  |  |
| 14     | Burkert 8691/8692 adapter kit                  | adapter and detection shaft: VC1-BA, VC1-DS, O-rings: (2) VC1-BA-OR1, VC1-BA-OR2, adapter hardware: 407322, (2) M5x0.8x20mm hex head bolt                                               |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 14A    | Burkert 8682 adapter kit                       | adapter: VC1-BA2, detection shaft: VC1-DS2, VC1-DTA, M6WASHER, M6x1x12mm hex head bolt, O-ring: VC1-BA-OR1, VC1-BA-OR2, (2) VC1-BA-OR3, hardware: 407322, (2) M5x0.8x20mm hex head bolt |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 15     | Burkert 8691 control top                       | see BT-series Control Top EPRG                                                                                                                                                          |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 16     | Burkert 8692 control top                       | see XPB-series Control Top EPRG                                                                                                                                                         |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 17     | Burkert 8682 control top                       | see MT-series Control Top EPRG                                                                                                                                                          |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 18     | RP-BA-series spring return actuator            | see RP-BA-series Rack and Pinion Actuator EPRG                                                                                                                                          |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 19     | RP-BA-series double acting actuator            |                                                                                                                                                                                         |                            |            |                                                                                                                                              |                               |              |      | 1 |  |  |
| 20     | RP-BS-series actuator                          | see RP-BS-series Rack and Pinion Actuator EPRG                                                                                                                                          |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 21     | BEO and BX-series                              | see BEO-series and BX-series Electric Actuator EPRG                                                                                                                                     |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 22     | solenoid                                       | see X-series Solenoid EPRG                                                                                                                                                              |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 23     | M6x12mm hex head limit switch/positioner bolts | M6x1x12mm hex head bolt                                                                                                                                                                 |                            |            |                                                                                                                                              |                               |              | 18-8 | 4 |  |  |
| 24     | F05 limit switch/positioner bracket            | LSPP-BK-S-N                                                                                                                                                                             |                            |            |                                                                                                                                              |                               |              | 304  | 1 |  |  |
| 25     | M5x10mm hex head bracket bolts                 | M5x0.8x10mm hex head bolt                                                                                                                                                               |                            |            |                                                                                                                                              |                               |              | 18-8 | 4 |  |  |
| 26     | XPO-series rotary positioner                   | see XPO-series and XPV-series Rotary Positioner EPRG                                                                                                                                    |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 27     | XPV-series rotary positioner                   |                                                                                                                                                                                         |                            |            |                                                                                                                                              |                               |              |      |   |  |  |
| 28     | XLS-B4-series limit switch                     | see Limit Switches EPRG                                                                                                                                                                 |                            |            |                                                                                                                                              |                               |              | -    | 1 |  |  |
| 29     | XLS-C4-series limit switch                     |                                                                                                                                                                                         |                            |            |                                                                                                                                              |                               |              |      |   |  |  |
| 30     | XLS-C7-series limit switch                     |                                                                                                                                                                                         |                            |            |                                                                                                                                              |                               |              |      |   |  |  |

<sup>1</sup>Coupler may also require sleeve.

## B5107-Series Butterfly Valve - Bill of Materials (Actuated Options)

### Part Number Key Code Identifier

| Item # | Description                                    | Part # Key Code Identifier             | Part # Key Code <sup>2</sup> |
|--------|------------------------------------------------|----------------------------------------|------------------------------|
| 1      | actuated body bolt                             | standard on actuated valves            |                              |
| 2      | body nut                                       |                                        |                              |
| 3      | valve                                          |                                        |                              |
| 4      | indicator                                      |                                        |                              |
| 5      | VC1-series coupler                             |                                        |                              |
| 5A     | coupler <sup>1</sup>                           |                                        |                              |
| 6      | VC1-series actuator bolt and lock washer       |                                        |                              |
| 6A     | pneumatic/electric actuator bolt               |                                        |                              |
| 7      | actuator bracket                               | standard on VC1-series actuated valves |                              |
| 8      | external proximity sensors                     |                                        |                              |
| 9      | VC1-series spring return actuator canister     |                                        |                              |
| 9A     | VC1-series double acting actuator canister     |                                        |                              |
| 10     | canister top cap                               |                                        |                              |
| 11     | air fitting                                    |                                        |                              |
| 12     | air filter                                     |                                        |                              |
| 13     | top cap bolts                                  |                                        |                              |
| 14     | Burkert 8691/8692 adapter kit                  | Control Unit/Feedback                  | 11-18, 62, 64                |
| 14A    | Burkert 8682 adapter kit                       | Control Unit/Feedback                  | 68, 69                       |
| 15     | Burkert 8691 control top                       | Control Unit/Feedback                  | 11-17, 64                    |
| 16     | Burkert 8692 control top                       | Control Unit/Feedback                  | 18, 62                       |
| 17     | Burkert 8682 control top                       | Control Unit/Feedback                  | 68, 69                       |
| 18     | RP-BA-series spring return actuator            | Actuator                               | N, P, S, 5                   |
| 19     | RP-BA-series double acting actuator            | Actuator                               | M, 3, 4                      |
| 20     | RP-BS-series actuator                          | Actuator                               | J, K, L                      |
| 21     | BEO-series and BX-series actuator              | Actuator                               | D, E, O, R, T-Y, 6, 7        |
| 22     | solenoid                                       | Control Unit/Feedback                  | 31-35                        |
| 23     | M6x12mm hex head limit switch/positioner bolts | standard on item no. 26-30             |                              |
| 24     | F05 limit switch/positioner bracket            |                                        |                              |
| 25     | M5x10mm hex head bracket bolts                 |                                        |                              |
| 26     | XPO-series rotary positioner                   |                                        |                              |
| 27     | XPV-series rotary positioner                   | Control Unit/Feedback                  | 22-30                        |
| 28     | XLS-B4-series limit switch                     | Control Unit/Feedback                  | 19                           |
| 29     | XLS-C4-series limit switch                     |                                        | 20, 21, 46                   |
| 30     | XLS-C7-series limit switch                     |                                        | 50, 63, 65                   |

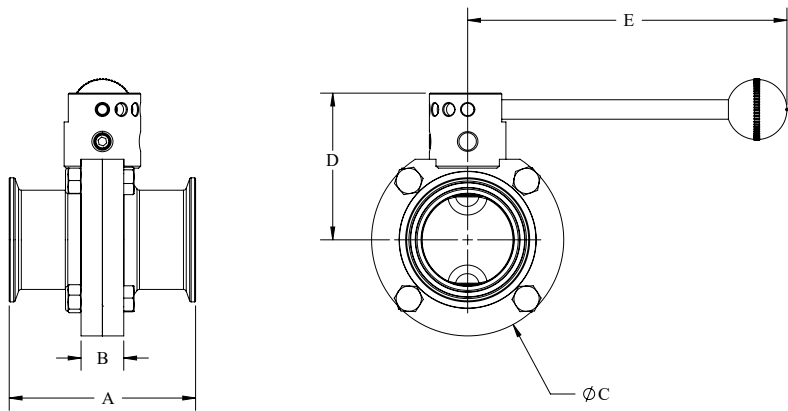
<sup>1</sup>Coupler may also require a sleeve.

<sup>2</sup>Code shown is based off single option selection, see part number key for combination codes.



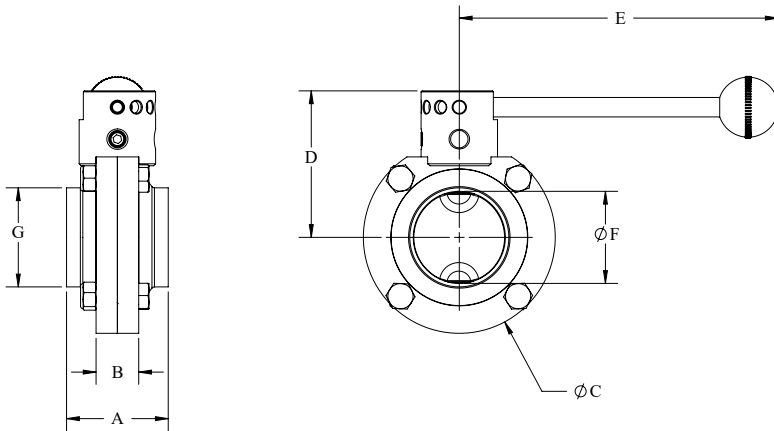
B5107-Series Butterfly Valve - Dimensions

Standard Handle - Clamp



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) |
|--------|--------|--------|--------|--------|--------|
| 1/2"   | 3.50   | 0.90   | 3.10   | 2.60   | 4.60   |
| 3/4"   | 3.50   | 0.90   | 3.10   | 2.60   | 4.60   |
| 1"     | 3.50   | 0.90   | 3.10   | 2.60   | 4.60   |
| 1-1/2" | 3.50   | 0.90   | 3.10   | 2.60   | 4.60   |
| 2"     | 3.80   | 0.90   | 3.90   | 3.00   | 4.60   |
| 2-1/2" | 3.80   | 0.90   | 4.60   | 3.40   | 4.60   |
| 3"     | 4.10   | 1.20   | 5.20   | 3.50   | 6.50   |
| 4"     | 4.80   | 1.20   | 6.70   | 4.30   | 6.50   |
| 6"     | 5.50   | 1.20   | 8.50   | 5.60   | 11.70  |
| 8"     | 5.00   | 1.20   | 11.20  | 7.80   | 18.10  |

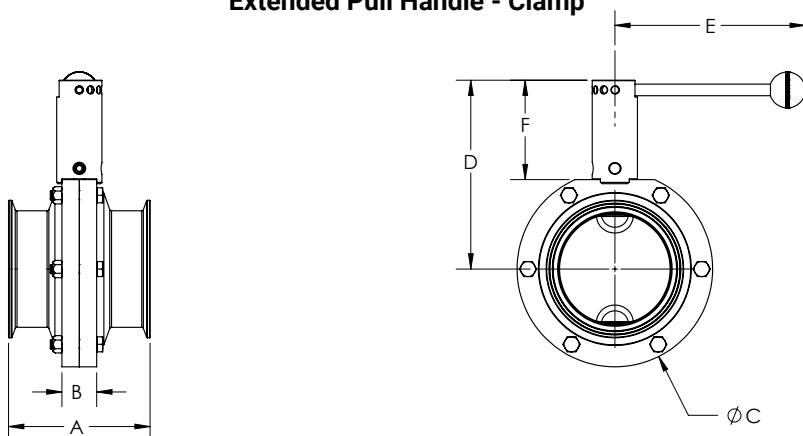
Standard Handle - Weld



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1/2"   | 1.87   | 0.90   | 3.10   | 2.60   | 4.60   | 0.37   | 0.50   |
| 3/4"   | 1.87   | 0.90   | 3.10   | 2.60   | 4.60   | 0.62   | 0.75   |
| 1"     | 1.87   | 0.90   | 3.10   | 2.60   | 4.60   | 0.87   | 1.00   |
| 1-1/2" | 1.87   | 0.90   | 3.10   | 2.60   | 4.60   | 1.37   | 1.50   |
| 2"     | 2.06   | 0.90   | 3.90   | 3.00   | 4.60   | 1.87   | 2.00   |
| 2-1/2" | 2.12   | 0.90   | 4.60   | 3.40   | 4.60   | 2.37   | 2.50   |
| 3"     | 2.50   | 1.20   | 5.20   | 3.50   | 6.50   | 2.87   | 3.00   |
| 4"     | 3.18   | 1.20   | 6.70   | 4.30   | 6.50   | 3.83   | 4.00   |
| 6"     | 3.83   | 1.20   | 8.50   | 5.60   | 11.70  | 5.78   | 6.00   |
| 8"     | 4.97   | 1.20   | 11.20  | 7.80   | 18.10  | 7.78   | 8.00   |

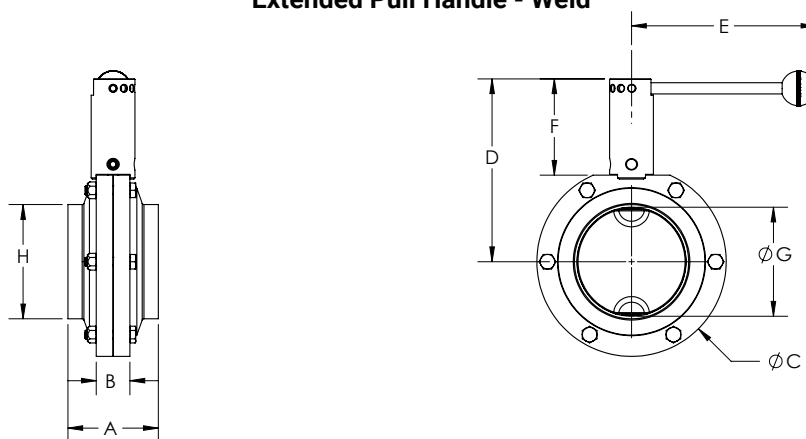
## B5107-Series Butterfly Valve - Dimensions

### Extended Pull Handle - Clamp



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) |
|--------|--------|--------|--------|--------|--------|--------|
| 1/2"   | 3.50   | 0.90   | 3.10   | 4.60   | 4.60   | 3.30   |
| 3/4"   | 3.50   | 0.90   | 3.10   | 4.60   | 4.60   | 3.30   |
| 1"     | 3.50   | 0.90   | 3.10   | 4.60   | 4.60   | 3.30   |
| 1-1/2" | 3.50   | 0.90   | 3.10   | 4.60   | 4.60   | 3.30   |
| 2"     | 3.80   | 0.90   | 3.90   | 5.00   | 4.60   | 3.30   |
| 2-1/2" | 3.80   | 0.90   | 4.60   | 5.40   | 4.60   | 3.30   |
| 3"     | 4.10   | 1.20   | 5.20   | 5.50   | 6.50   | 3.30   |
| 4"     | 4.80   | 1.20   | 6.70   | 6.30   | 6.50   | 3.30   |

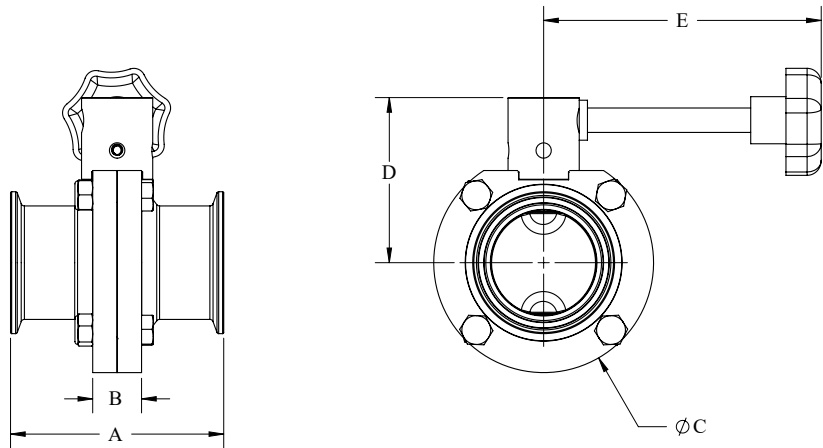
### Extended Pull Handle - Weld



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1/2"   | 1.87   | 0.90   | 3.10   | 4.60   | 4.60   | 0.37   | 0.50   | 0.50   |
| 3/4"   | 1.87   | 0.90   | 3.10   | 4.60   | 4.60   | 0.62   | 0.75   | 0.75   |
| 1"     | 1.87   | 0.90   | 3.10   | 4.60   | 4.60   | 0.87   | 1.00   | 1.00   |
| 1-1/2" | 1.87   | 0.90   | 3.10   | 4.60   | 4.60   | 1.37   | 1.50   | 1.50   |
| 2"     | 2.06   | 0.90   | 3.90   | 5.00   | 4.60   | 1.87   | 2.00   | 2.00   |
| 2-1/2" | 2.12   | 0.90   | 4.60   | 5.40   | 4.60   | 2.37   | 2.50   | 2.50   |
| 3"     | 2.50   | 1.20   | 5.20   | 5.50   | 6.50   | 2.87   | 3.00   | 3.00   |
| 4"     | 3.18   | 1.20   | 6.70   | 6.30   | 6.50   | 3.83   | 4.00   | 4.00   |

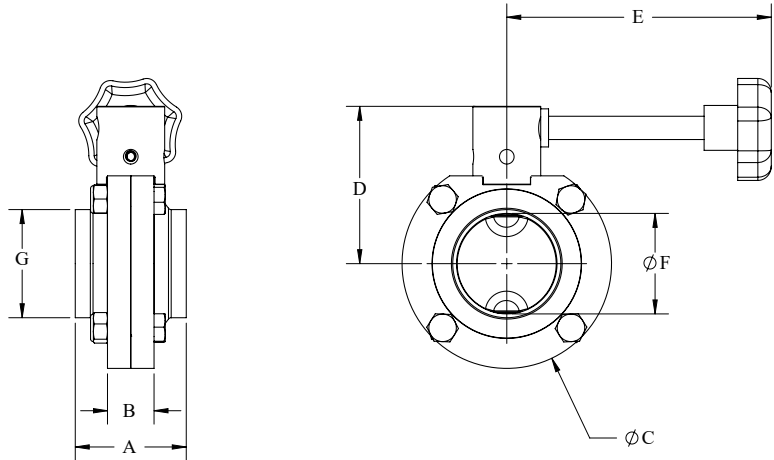
B5107-Series Butterfly Valve - Dimensions

Infinite Handle - Clamp



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) |
|--------|--------|--------|--------|--------|--------|
| 1/2"   | 3.50   | 0.90   | 3.10   | 2.60   | 4.90   |
| 3/4"   | 3.50   | 0.90   | 3.10   | 2.60   | 4.90   |
| 1"     | 3.50   | 0.90   | 3.10   | 2.60   | 4.90   |
| 1-1/2" | 3.50   | 0.90   | 3.10   | 2.60   | 4.90   |
| 2"     | 3.80   | 0.90   | 3.90   | 3.00   | 4.90   |
| 2-1/2" | 3.80   | 0.90   | 4.60   | 3.40   | 4.90   |
| 3"     | 4.10   | 1.20   | 5.20   | 3.50   | 6.60   |
| 4"     | 4.80   | 1.20   | 6.70   | 4.30   | 6.60   |

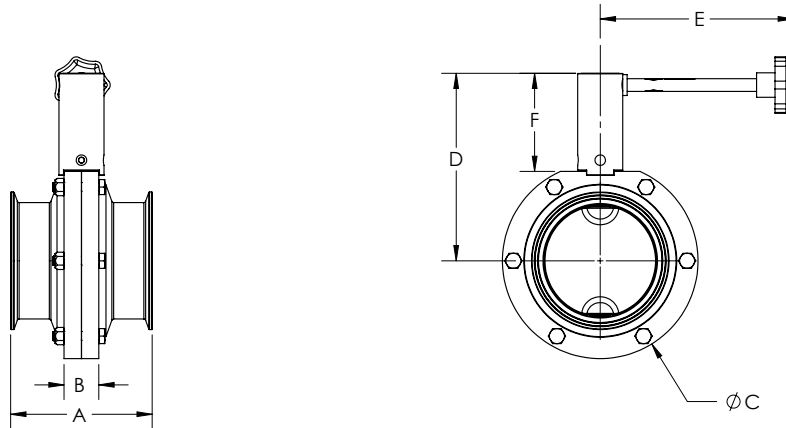
Infinite Handle - Weld



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1/2"   | 1.87   | 0.90   | 3.10   | 2.60   | 4.90   | 0.37   | 0.50   |
| 3/4"   | 1.87   | 0.90   | 3.10   | 2.60   | 4.90   | 0.62   | 0.75   |
| 1"     | 1.87   | 0.90   | 3.10   | 2.60   | 4.90   | 0.87   | 1.00   |
| 1-1/2" | 1.87   | 0.90   | 3.10   | 2.60   | 4.90   | 1.37   | 1.50   |
| 2"     | 2.06   | 0.90   | 3.90   | 3.00   | 4.90   | 1.87   | 2.00   |
| 2-1/2" | 2.12   | 0.90   | 4.60   | 3.40   | 4.90   | 2.37   | 2.50   |
| 3"     | 2.50   | 1.20   | 5.20   | 3.50   | 6.60   | 2.87   | 3.00   |
| 4"     | 3.18   | 1.20   | 6.70   | 4.30   | 6.60   | 3.83   | 4.00   |

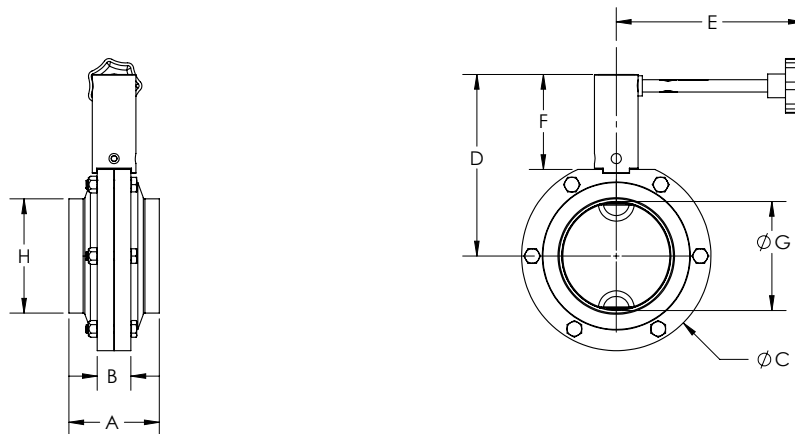
## B5107-Series Butterfly Valve - Dimensions

### Extended Infinite Handle - Clamp



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) |
|--------|--------|--------|--------|--------|--------|--------|
| 1/2"   | 3.50   | 0.90   | 3.10   | 4.60   | 4.90   | 3.30   |
| 3/4"   | 3.50   | 0.90   | 3.10   | 4.60   | 4.90   | 3.30   |
| 1"     | 3.50   | 0.90   | 3.10   | 4.60   | 4.90   | 3.30   |
| 1-1/2" | 3.50   | 0.90   | 3.10   | 4.60   | 4.90   | 3.30   |
| 2"     | 3.80   | 0.90   | 3.90   | 5.00   | 4.90   | 3.30   |
| 2-1/2" | 3.80   | 0.90   | 4.60   | 5.40   | 4.90   | 3.30   |
| 3"     | 4.10   | 1.20   | 5.20   | 5.50   | 6.60   | 3.30   |
| 4"     | 4.80   | 1.20   | 6.70   | 6.30   | 6.60   | 3.30   |

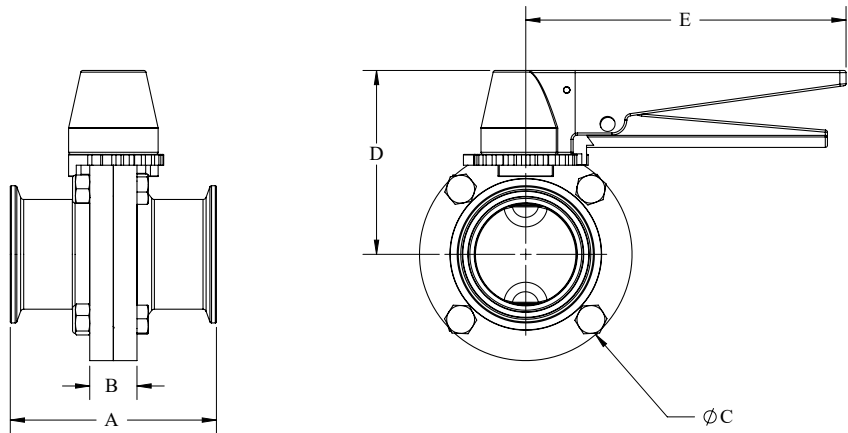
### Extended Infinite Handle - Weld



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1/2"   | 1.87   | 0.90   | 3.10   | 4.60   | 4.90   | 0.37   | 0.50   | 0.50   |
| 3/4"   | 1.87   | 0.90   | 3.10   | 4.60   | 4.90   | 0.62   | 0.75   | 0.75   |
| 1"     | 1.87   | 0.90   | 3.10   | 4.60   | 4.90   | 0.87   | 1.00   | 1.00   |
| 1-1/2" | 1.87   | 0.90   | 3.10   | 4.60   | 4.90   | 1.37   | 1.50   | 1.50   |
| 2"     | 2.06   | 0.90   | 3.90   | 5.00   | 4.90   | 1.87   | 2.00   | 2.00   |
| 2-1/2" | 2.12   | 0.90   | 4.60   | 5.40   | 4.90   | 2.37   | 2.50   | 2.50   |
| 3"     | 2.50   | 1.20   | 5.20   | 5.50   | 6.60   | 2.87   | 3.00   | 3.00   |
| 4"     | 3.18   | 1.20   | 6.70   | 6.30   | 6.60   | 3.83   | 4.00   | 4.00   |

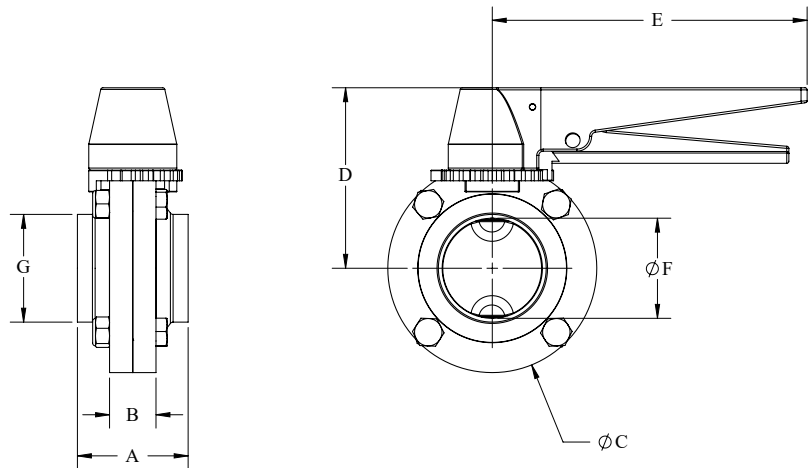
B5107-Series Butterfly Valve - Dimensions

Trigger Handle - Clamp



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) |
|--------|--------|--------|--------|--------|--------|
| 1/2"   | 3.50   | 0.90   | 3.10   | 2.60   | 5.90   |
| 3/4"   | 3.50   | 0.90   | 3.10   | 2.60   | 5.90   |
| 1"     | 3.50   | 0.90   | 3.10   | 2.60   | 5.90   |
| 1-1/2" | 3.50   | 0.90   | 3.10   | 2.60   | 5.90   |
| 2"     | 3.80   | 0.90   | 3.90   | 3.00   | 5.90   |
| 2-1/2" | 3.80   | 0.90   | 4.60   | 3.40   | 5.90   |
| 3"     | 4.10   | 1.20   | 5.20   | 3.50   | 5.90   |
| 4"     | 4.80   | 1.20   | 6.70   | 4.30   | 5.90   |

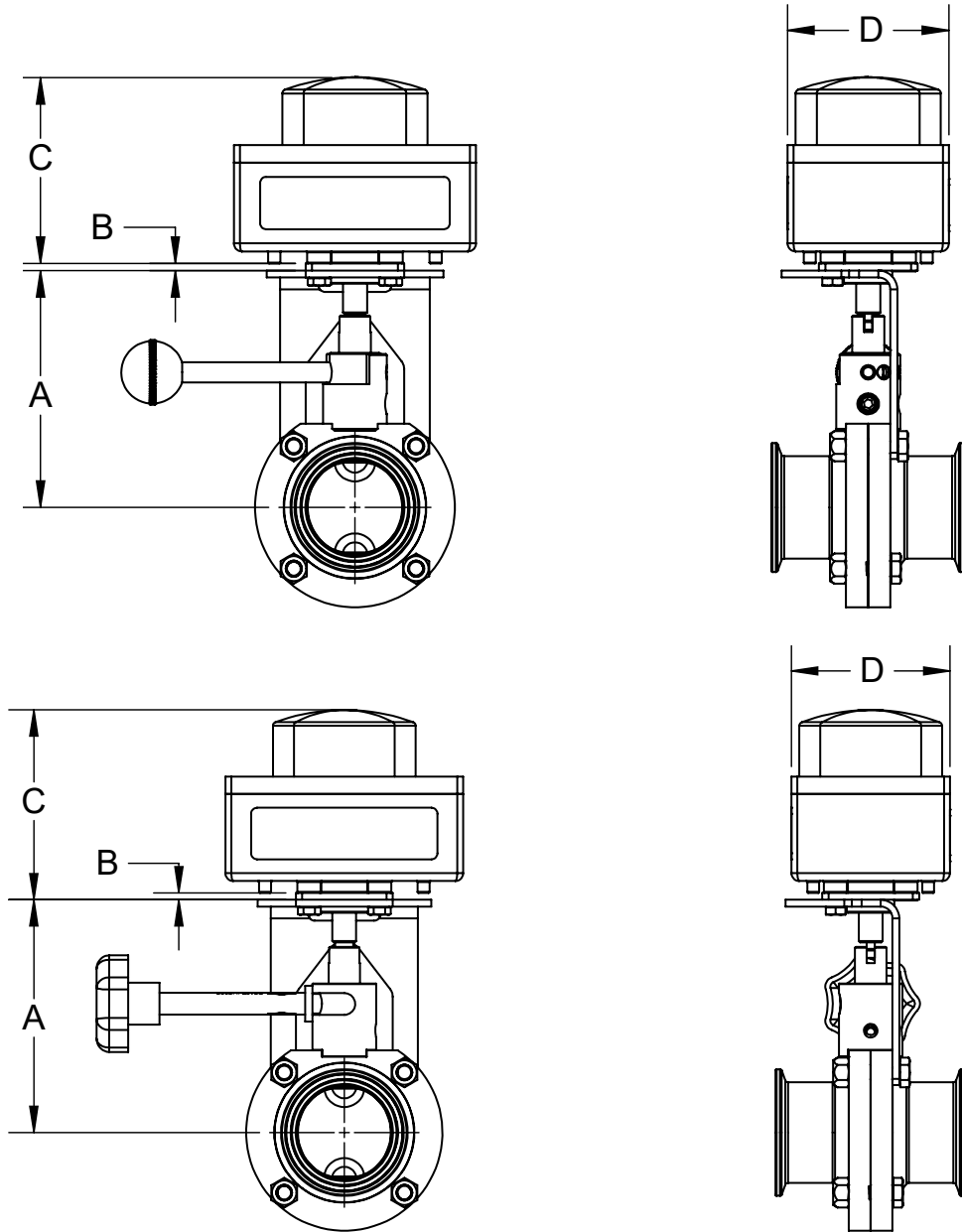
Trigger Handle - Weld



| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 1/2"   | 1.87   | 0.90   | 3.10   | 2.60   | 5.90   | 0.37   | 0.50   |
| 3/4"   | 1.87   | 0.90   | 3.10   | 2.60   | 5.90   | 0.62   | 0.75   |
| 1"     | 1.87   | 0.90   | 3.10   | 2.60   | 5.90   | 0.87   | 1.00   |
| 1-1/2" | 1.87   | 0.90   | 3.10   | 2.60   | 5.90   | 1.37   | 1.50   |
| 2"     | 2.06   | 0.90   | 3.90   | 3.00   | 5.90   | 1.87   | 2.00   |
| 2-1/2" | 2.12   | 0.90   | 4.60   | 3.40   | 5.90   | 2.37   | 2.50   |
| 3"     | 2.50   | 1.20   | 5.20   | 3.50   | 5.90   | 2.87   | 3.00   |
| 4"     | 3.18   | 1.20   | 6.70   | 4.30   | 5.90   | 3.83   | 4.00   |

## B5107-Series Butterfly Valve - Dimensions

Standard and Infinite Handles with Position Detection



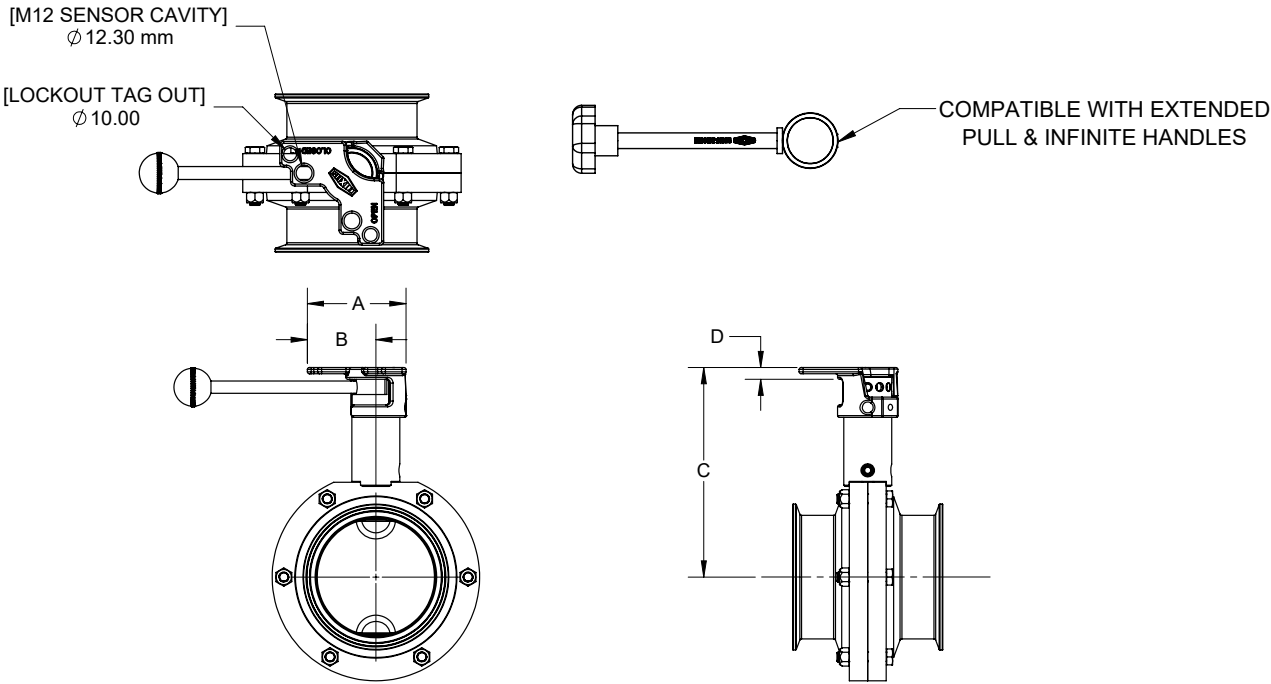
E

NOTE: Limit switch shown is XLS-C4A0120P

| Size   | A (in) | XLS-B4A0120P                 |        |        | XLS-C4A0120P |        |        | XLS-C7A0120P |        |        |
|--------|--------|------------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|        |        | B (in)                       | C (in) | D (in) | B (in)       | C (in) | D (in) | B (in)       | C (in) | D (in) |
| 1/2"   | 4.31   | 0<br>(no spacer<br>required) | 3.62   | 4.06   | 0.135        | 3.63   | 3.15   | 0.135        | 5.43   | 6.7    |
| 3/4"   | 4.31   |                              |        |        |              |        |        |              |        |        |
| 1"     | 4.32   |                              |        |        |              |        |        |              |        |        |
| 1-1/2" | 4.32   |                              |        |        |              |        |        |              |        |        |
| 2"     | 4.63   |                              |        |        |              |        |        |              |        |        |
| 2-1/2" | 5.04   |                              |        |        |              |        |        |              |        |        |
| 3"     | 5.19   |                              |        |        |              |        |        |              |        |        |
| 4"     | 6.06   |                              |        |        |              |        |        |              |        |        |

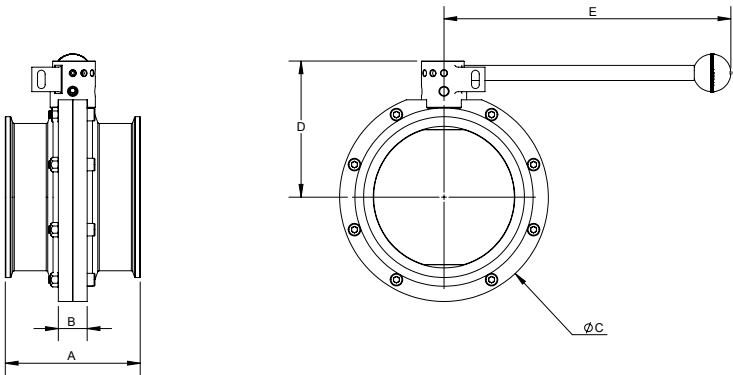
B5107-Series Butterfly Valve - Dimensions

Standard and Infinite Handles with Lock-out Tag-out



| Part #        | Size   | A (in) | B (in) | C (in) (standard handle) | C (in) (infinite handle) | D (in) |
|---------------|--------|--------|--------|--------------------------|--------------------------|--------|
| B5107-PB-5025 | 1/2"   | 3.02   | 2.20   | 5                        | 5                        | 0.37   |
|               | 3/4"   | 3.02   | 2.20   | 5                        | 5                        | 0.37   |
|               | 1"     | 3.02   | 2.20   | 5                        | 5                        | 0.37   |
|               | 1-1/2" | 3.02   | 2.20   | 5                        | 5                        | 0.37   |
|               | 2"     | 3.02   | 2.20   | 5.4                      | 5.4                      | 0.37   |
|               | 2-1/2" | 3.02   | 2.20   | 5.8                      | 5.8                      | 0.37   |
| B5107-PB-3040 | 3"     | 3.17   | 2.20   | 6                        | 5.9                      | 0.37   |
|               | 4"     | 3.17   | 2.20   | 6.8                      | 6.7                      | 0.37   |

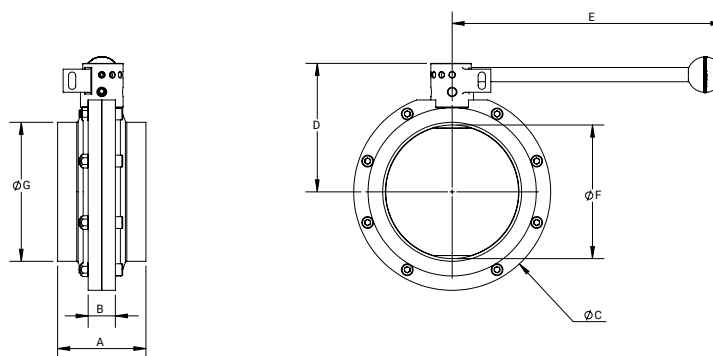
Pull Handle with Lock-out Tag-out - Clamp



| Size | A (in) | B (in) | C (in) | D (in) | E (in) |
|------|--------|--------|--------|--------|--------|
| 6"   | 5.50   | 1.20   | 8.50   | 5.60   | 11.70  |
| 8"   | 5.00   | 1.20   | 11.20  | 7.80   | 18.10  |

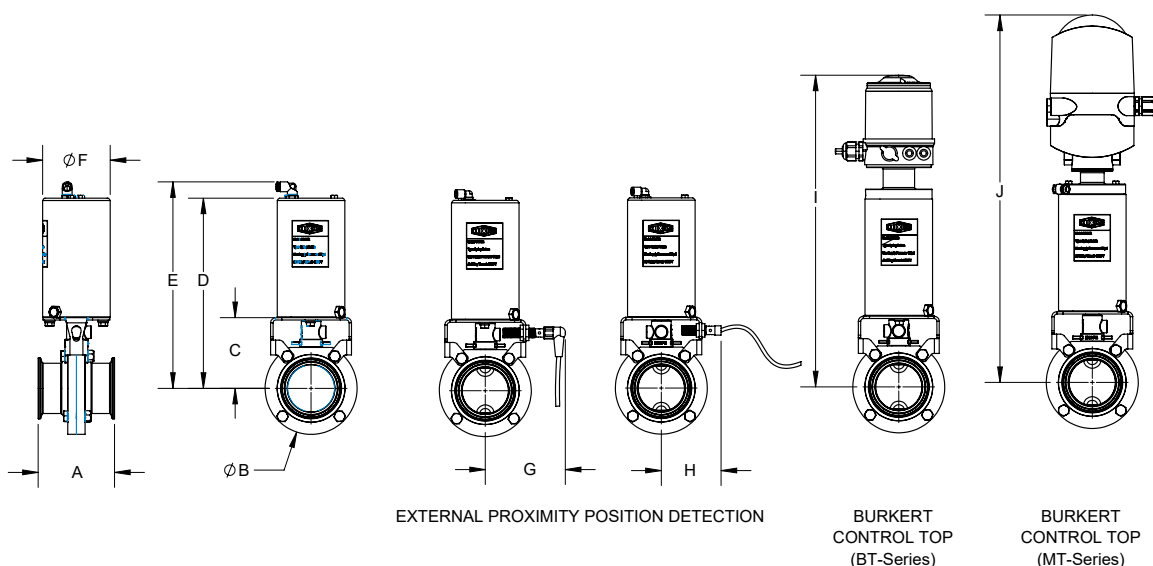
## B5107-Series Butterfly Valve - Dimensions

### Pull Handle with Lock-out Tag-out - Weld



| Size | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) |
|------|--------|--------|--------|--------|--------|--------|--------|
| 6"   | 3.83   | 1.20   | 8.50   | 5.60   | 11.70  | 5.78   | 6.00   |
| 8"   | 4.97   | 1.20   | 11.20  | 7.80   | 18.10  | 7.78   | 8.00   |

### Vertical Canister Actuator



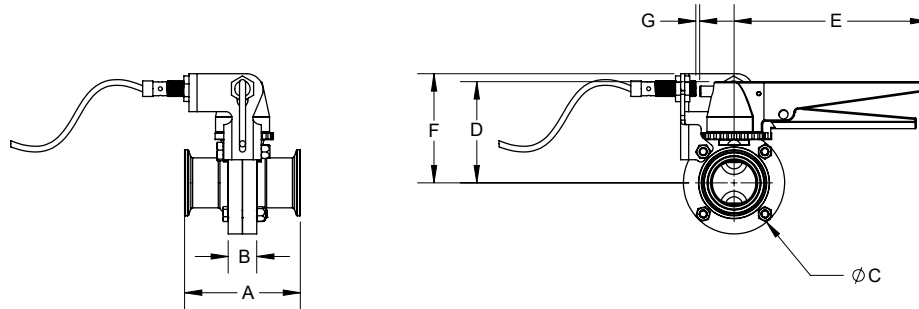
NOTE: See Proximity, BT-series, and MT-series EPRG for more information.

| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) | I (in) | J (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1/2"   | 3.5    | 3.1    | 2.7    | 8.7    | 9.6    | 3.4    | 4.0    | 3.0    | 14.7   | 17.6   |
| 3/4"   | 3.5    | 3.1    | 2.7    | 8.7    | 9.6    | 3.4    | 4.0    | 3.0    | 14.7   | 17.6   |
| 1"     | 3.5    | 3.1    | 2.7    | 8.7    | 9.6    | 3.4    | 4.0    | 3.0    | 14.7   | 17.6   |
| 1-1/2" | 3.5    | 3.1    | 2.7    | 8.7    | 9.6    | 3.4    | 4.0    | 3.0    | 14.7   | 17.6   |
| 2"     | 3.8    | 3.9    | 3.0    | 9.0    | 10.0   | 3.4    | 4.0    | 3.0    | 15.0   | 17.9   |
| 2-1/2" | 3.8    | 4.6    | 3.5    | 9.5    | 10.4   | 3.4    | 4.0    | 3.0    | 15.5   | 18.4   |
| 3"     | 4.1    | 5.2    | 3.6    | 9.5    | 10.5   | 3.4    | 4.0    | 3.0    | 15.5   | 18.5   |
| 4"     | 4.8    | 6.7    | 4.4    | 10.4   | 11.4   | 3.4    | 4.0    | 3.0    | 16.4   | 19.3   |



## B5107-Series Butterfly Valve - Dimensions

### Multi Position Trigger Handle with Position Detection



| Size   | A (in) |      | B (in) | C (in) | D (in) | E (in) | F (in) | G (in)                                                   |
|--------|--------|------|--------|--------|--------|--------|--------|----------------------------------------------------------|
|        | Clamp  | Weld |        |        |        |        |        |                                                          |
| 1/2"   | 3.50   | 1.87 | 0.90   | 3.10   | 2.60   | 5.90   | 3.30   | proximity distance dependent on sensor used <sup>1</sup> |
| 3/4"   | 3.50   | 1.87 | 0.90   | 3.10   | 2.60   | 5.90   | 3.30   |                                                          |
| 1"     | 3.50   | 1.87 | 0.90   | 3.10   | 2.60   | 5.90   | 3.30   |                                                          |
| 1-1/2" | 3.50   | 1.87 | 0.90   | 3.10   | 2.60   | 5.90   | 3.30   |                                                          |
| 2"     | 3.80   | 2.06 | 0.90   | 3.90   | 3.00   | 5.90   | 3.55   |                                                          |
| 2-1/2" | 3.80   | 2.12 | 0.90   | 4.60   | 3.40   | 5.90   | 4.00   |                                                          |
| 3"     | 4.10   | 2.50 | 1.20   | 5.20   | 3.50   | 5.90   | 4.05   |                                                          |
| 4"     | 4.80   | 3.18 | 1.20   | 6.70   | 4.30   | 5.90   | 4.90   |                                                          |

<sup>1</sup>Refer to proximity sensor EPRG for more information on proximity distance.

## B5107-Series Butterfly Valve - Repair Kits

| Size   | Seat Material |              |              |              |               |              |
|--------|---------------|--------------|--------------|--------------|---------------|--------------|
|        | EPDM          | Silicone     | FKM          | EPDM/PTFE    | Silicone/PTFE | FKM/PTFE     |
| 1/2"   | B5107-RKE100  | B5107-RKS100 | B5107-RKV100 | B5107-RKX100 | B5107-RKZ100  | B5107-RKY100 |
| 3/4"   |               |              |              |              |               |              |
| 1"     |               |              |              |              |               |              |
| 1-1/2" | B5107-RKE150  | B5107-RKS150 | B5107-RKV150 | B5107-RKX150 | B5107-RKZ150  | B5107-RKY150 |
| 2"     | B5107-RKE200  | B5107-RKS200 | B5107-RKV200 | B5107-RKX200 | B5107-RKZ200  | B5107-RKY200 |
| 2-1/2" | B5107-RKE250  | B5107-RKS250 | B5107-RKV250 | B5107-RKX250 | B5107-RKZ250  | B5107-RKY250 |
| 3"     | B5107-RKE300  | B5107-RKS300 | B5107-RKV300 | B5107-RKX300 | B5107-RKZ300  | B5107-RKY300 |
| 4"     | B5107-RKE400  | B5107-RKS400 | B5107-RKV400 | B5107-RKX400 | B5107-RKZ400  | B5107-RKY400 |
| 6"     | B5107-RKE600  | B5107-RKS600 | -            | B5107-RKX600 | B5107-RKZ600  | -            |
| 8"     | B5107-RKE800  | B5107-RKS800 | -            | B5107-RKX800 | B5107-RKZ800  | -            |

NOTE: All repair kits contain items 3, 4, and 5.

## L5107-Series Butterfly Valve

Quarter-turn valve used to isolate and regulate the flow of fluid in processing pipelines.

They are found in the pharmaceutical, biochemical, cosmetic, food processing, beverage, and some dairy markets.

### Certifications

- FDA 21 CFR 177.2600
- 3A sanitary standard 18-03 Class II (low fat) compliant
- United States Pharmacopeia (USP) 87 and 88 Class VI
- European regulation EC 1935/2004
- REACH
  - In accordance with regulation EC 1907/2006
  - Does not contain any substances above 0.1% (w/w)
    - Source: The Candidate List of Substances of Very High Concern, Annex XVII
- Animal derived ingredient free
- Phthalate free

### Sizes

- 1", 1-1/2", 2", 2-1/2", 3", and 4"

### Features

- Compact design with face-to-face dimensions being 3" for all sizes
- High performance rubber seat design
  - Same seat design as our premium B5107-series butterfly valve line
  - Seats are interchangeable
- 360° trigger sprocket allows handle to be easily rotated to both sides of the valve without disassembly and reassembly of the valve handle
- Hex head body bolts eliminate cavities of socket head screws for cleaner exterior design
- Durable high performance polyamide handle with stainless trigger reduces weight of overall assembly
- Manual valves ship complete with handle installed and ready for operation

### Materials

- Product contact metal components: 304 forged stainless steel
- Non-product contact metal components: 304 stainless steel
- Product contact seals: EPDM, silicone, or FKM

### Specifications

- Standard connection: clamp (2022 ASME BPE DT-4.1.4-1)
- Maximum pressure
  - 1/2" to 2": **140 PSI**
  - 2-1/2" to 3": **110 PSI**
  - 4": **85 PSI**
- Minimum product line pressure: 0.4" Hg vacuum (absolute) at **68°F (20°C)**
- Maximum operating temperature: **200°F (93°C)**
- Minimum operating temperature: **15°F (-9°C)**
- Valve stem square size: 10mm (all valve sizes)
- Surface finish
  - Product contact metal components: ≤ 32 Ra (standard)
- Seat lubricant: MOLYKOTE® 111



E

## L5107-Series Butterfly Valve - Flow Coefficients (Cv)

| Valve Size | Flow Coefficient (Cv) | Valve Size | Flow Coefficient (Cv) |
|------------|-----------------------|------------|-----------------------|
| 1"         | 23                    | 2-1/2"     | 264                   |
| 1-1/2"     | 80                    | 3"         | 372                   |
| 2"         | 230                   | 4"         | 800                   |

L5107-Series Butterfly Valve - Valve Break Torque  
(Based on water at 68°F)

| Valve Size | Break Torque (in-lbs) Silicone | Break Torque (in-lbs) EPDM | Break Torque (in-lbs) FKM |
|------------|--------------------------------|----------------------------|---------------------------|
| 1"         | 20                             | 13                         | 70                        |
| 1-1/2"     | 35                             | 20                         | 125                       |
| 2"         | 35                             | 48                         | 175                       |
| 2-1/2"     | 133                            | 98                         | 220                       |
| 3"         | 133                            | 146                        | 310                       |
| 4"         | 266                            | 341                        | 450                       |

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L5107-Series Butterfly Valve - Pressure Drop Chart (PSI)  
(Based on water at 68°F)

| Capacity (USGPM) | 1"   | 1-1/2" | 2"  | 2-1/2" | 3"  | 4"  |
|------------------|------|--------|-----|--------|-----|-----|
| 5                |      |        |     |        |     |     |
| 10               | 0.2  | 0.0    |     |        |     |     |
| 50               | 4.7  | 0.4    |     |        |     |     |
| 90               | 15.3 | 1.3    | 0.2 |        |     |     |
| 130              |      | 2.6    | 0.3 | 0.2    |     |     |
| 170              |      | 4.5    | 0.5 | 0.4    | 0.2 |     |
| 210              |      | 6.9    | 0.8 | 0.6    | 0.3 |     |
| 250              |      | 9.8    | 1.2 | 0.9    | 0.5 |     |
| 290              |      |        | 1.6 | 1.2    | 0.6 |     |
| 330              |      |        | 2.1 | 1.6    | 0.8 | 0.2 |
| 370              |      |        | 2.6 | 2.0    | 1.0 | 0.2 |
| 410              |      |        | 3.2 | 2.4    | 1.2 | 0.3 |
| 450              |      |        | 3.8 | 2.9    | 1.5 | 0.3 |
| 490              |      |        | 4.5 | 3.4    | 1.7 | 0.4 |
| 530              |      |        |     | 4.0    | 2.0 | 0.4 |
| 570              |      |        |     | 4.7    | 2.3 | 0.5 |
| 610              |      |        |     | 5.3    | 2.7 | 0.6 |
| 650              |      |        |     | 6.1    | 3.1 | 0.7 |
| 690              |      |        |     | 6.8    | 3.4 | 0.7 |
| 730              |      |        |     |        | 3.9 | 0.8 |
| 770              |      |        |     |        | 4.3 | 0.9 |
| 810              |      |        |     |        | 4.7 | 1.0 |
| 850              |      |        |     |        | 5.2 | 1.1 |
| 890              |      |        |     |        | 5.7 | 1.2 |
| 930              |      |        |     |        | 6.3 | 1.4 |
| 970              |      |        |     |        |     | 1.5 |
| 1010             |      |        |     |        |     | 1.6 |
| 1050             |      |        |     |        |     | 1.7 |
| 1090             |      |        |     |        |     | 1.9 |
| 1130             |      |        |     |        |     | 2.0 |
| 1170             |      |        |     |        |     | 2.1 |
| 1210             |      |        |     |        |     | 2.3 |
| 1250             |      |        |     |        |     | 2.4 |
| 1290             |      |        |     |        |     | 2.6 |
| 1330             |      |        |     |        |     | 2.8 |
| 1370             |      |        |     |        |     | 2.9 |
| 1410             |      |        |     |        |     | 3.1 |
| 1450             |      |        |     |        |     | 3.3 |
| 1490             |      |        |     |        |     | 3.5 |
| 1530             |      |        |     |        |     | 3.7 |
| 1570             |      |        |     |        |     | 3.9 |
| 1610             |      |        |     |        |     | 4.1 |
| 1650             |      |        |     |        |     | 4.3 |

$$\Delta P = \left[ \frac{\text{GPM}}{C_v} \right]^2 G$$

**L5107-Series Butterfly Valve - Operating Devices**

| Multi Position Trigger Handle<br>Lock-out Tag-out                                 | Stainless Steel Canister Actuator<br>(spring return or double acting)             | Stainless Steel Canister Actuator<br>with External Proximity<br>Position Detection  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |

E

|                                                                       |
|-----------------------------------------------------------------------|
| <b>Stainless Steel Canister Actuator<br/>with Burkert Control Top</b> |
|-----------------------------------------------------------------------|



L5107-Series Butterfly Valve - Part Number Key

| L5107-Series Butterfly Valve<br>Part Number Key<br>Example: L5107E150CC-P         |       | Series | Seat<br>Material | Size | Connection<br>End | Connection<br>End | * | Actuation | Control Unit/<br>Feedback | Finish<br>Options |
|-----------------------------------------------------------------------------------|-------|--------|------------------|------|-------------------|-------------------|---|-----------|---------------------------|-------------------|
|                                                                                   |       | L5107  | E                | 150  | C                 | C                 | - | P         |                           |                   |
| Series                                                                            | Code  |        |                  |      |                   |                   |   |           |                           |                   |
| L5107                                                                             | L5107 |        |                  |      |                   |                   |   |           |                           |                   |
| Seat Material                                                                     | Code  |        |                  |      |                   |                   |   |           |                           |                   |
| EPDM                                                                              | E     |        |                  |      |                   |                   |   |           |                           |                   |
| Silicone                                                                          | S     |        |                  |      |                   |                   |   |           |                           |                   |
| FKM                                                                               | V     |        |                  |      |                   |                   |   |           |                           |                   |
| Size                                                                              | Code  |        |                  |      |                   |                   |   |           |                           |                   |
| 1"                                                                                | 100   |        |                  |      |                   |                   |   |           |                           |                   |
| 1-1/2"                                                                            | 150   |        |                  |      |                   |                   |   |           |                           |                   |
| 2"                                                                                | 200   |        |                  |      |                   |                   |   |           |                           |                   |
| 2-1/2"                                                                            | 250   |        |                  |      |                   |                   |   |           |                           |                   |
| 3"                                                                                | 300   |        |                  |      |                   |                   |   |           |                           |                   |
| 4"                                                                                | 400   |        |                  |      |                   |                   |   |           |                           |                   |
| Connection End                                                                    | Code  |        |                  |      |                   |                   |   |           |                           |                   |
| Clamp (standard)                                                                  | C     |        |                  |      |                   |                   |   |           |                           |                   |
| Actuation                                                                         | Code  |        |                  |      |                   |                   |   |           |                           |                   |
| Manual handle - 24 position trigger handle (ships assembled)                      | P     |        |                  |      |                   |                   |   |           |                           |                   |
| Normally open linear pneumatic vertical canister actuator                         | F     |        |                  |      |                   |                   |   |           |                           |                   |
| Normally closed linear pneumatic vertical canister actuator                       | G     |        |                  |      |                   |                   |   |           |                           |                   |
| Air to air linear pneumatic vertical canister actuator                            | H     |        |                  |      |                   |                   |   |           |                           |                   |
| Control Unit/Feedback                                                             | Code  |        |                  |      |                   |                   |   |           |                           |                   |
| Only available to be used with the following actuation codes: F, G, and H         |       |        |                  |      |                   |                   |   |           |                           |                   |
| None                                                                              | blank |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, PNP, open/close, (qty 2), flying leads         | 01    |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open/close, (qty 2), flying leads         | 02    |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, PNP, open, (qty 1), flying leads               | 03    |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, PNP, close, (qty 1), flying leads              | 04    |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open, (qty 1), flying leads               | 05    |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, PNP, open/close, (qty 2), M12 quick disconnect | 06    |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, NPN, open/close, (qty 2), M12 quick disconnect | 07    |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external proximity, PNP, open, (qty 1), M12 quick disconnect       | 08    |        |                  |      |                   |                   |   |           |                           |                   |
| 10-30 VDC 12mm external prox, PNP, close, (qty 1), M12 quick disconnect           | 09    |        |                  |      |                   |                   |   |           |                           |                   |

\* Only use a dash (-) in the part number if using a manual handle, otherwise the dash is eliminated.

NOTE: Part number key continues on the next page.

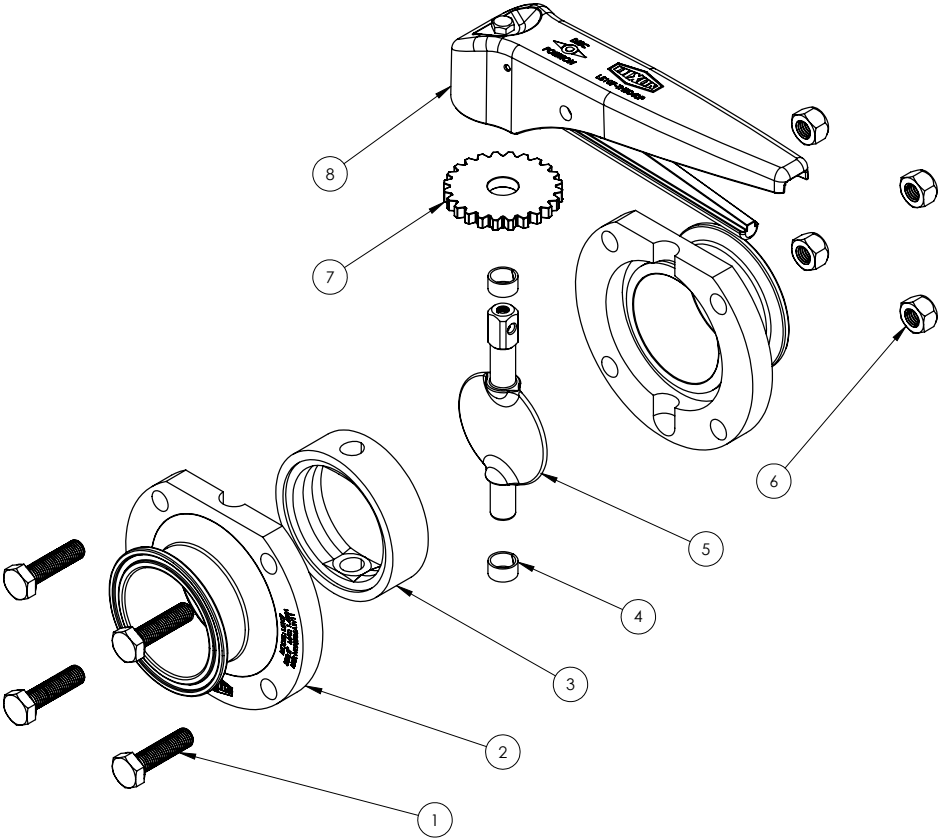
## L5107-Series Butterfly Valve - Part Number Key

| L5107-Series Butterfly Valve<br>Part Number Key<br>Example: L5107E150CC-P            |             | Series | Seat<br>Material | Size | Connection<br>End | Connection<br>End | * | Actuation | Control Unit/<br>Feedback | Finish<br>Options |
|--------------------------------------------------------------------------------------|-------------|--------|------------------|------|-------------------|-------------------|---|-----------|---------------------------|-------------------|
|                                                                                      |             | L5107  | E                | 150  | C                 | C                 | - | P         |                           |                   |
| 10-30 VDC 12mm external<br>proximity, NPN, open, (qty 1), M12<br>quick disconnect    | 10          |        |                  |      |                   |                   |   |           |                           |                   |
| <b>Only available to be used with the<br/>following actuation codes: F, G, and H</b> |             |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8691, single acting,<br>DeviceNet, multipin                                  | 11          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8691, single acting, AS-i,<br>multipin                                       | 12          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8691, single acting, 24VDC,<br>multipin                                      | 13          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8691, double acting,<br>DeviceNet, multipin                                  | 14          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8691, double acting, AS-i,<br>multipin                                       | 15          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8691, double acting,<br>24VDC, multipin                                      | 16          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8691, without solenoid,<br>24VDC, multipin                                   | 17          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8692 positioner, 24VDC,<br>4-20mA, multipin                                  | 18          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8962 positioner, 24VDC,<br>ATEX, multipin                                    | 62          |        |                  |      |                   |                   |   |           |                           |                   |
| Burkert 8691, single acting, IO link<br>multipin                                     | 64          |        |                  |      |                   |                   |   |           |                           |                   |
| <b>Finish Options</b>                                                                | <b>Code</b> |        |                  |      |                   |                   |   |           |                           |                   |
| 32Ra mechanical (standard)                                                           | blank       |        |                  |      |                   |                   |   |           |                           |                   |
| 25Ra mechanical                                                                      | B           |        |                  |      |                   |                   |   |           |                           |                   |
| 20Ra mechanical                                                                      | C           |        |                  |      |                   |                   |   |           |                           |                   |
| 32Ra mechanical with customer<br>specified ID marking                                | E           |        |                  |      |                   |                   |   |           |                           |                   |
| 25Ra mechanical with customer<br>specified ID marking                                | F           |        |                  |      |                   |                   |   |           |                           |                   |
| 20Ra mechanical with customer<br>specified ID marking                                | G           |        |                  |      |                   |                   |   |           |                           |                   |

\*Only use a dash (-) in the part number if using a manual handle, otherwise the dash is eliminated.

E

L5107-Series Butterfly Valve - Bill of Materials



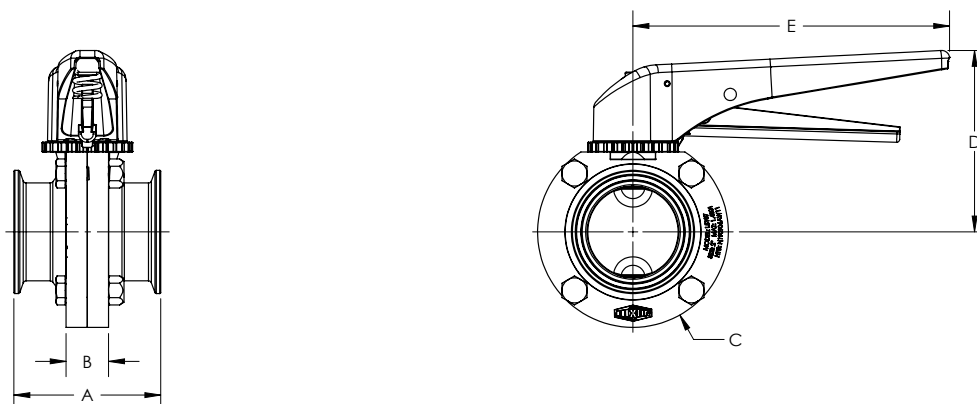
| Item # | Description  | Part #                         |             |                     | Material        | Qty |
|--------|--------------|--------------------------------|-------------|---------------------|-----------------|-----|
|        |              | 1"                             | 1-1/2"      | 2"                  |                 |     |
| 1      | body bolt    | M6x1x30 hex head               |             | M8X1.25X30 hex head | 18-8            | 4   |
| 2      | body housing | L5107-HSG10                    | L5107-HSG15 | L5107-HSG20         | 304             | 2   |
| 3      | valve seat   | see repair kit                 |             |                     | -               | 1   |
| 4      | bushing      | n/a (included with item no. 3) |             |                     | polyacetal      | 2   |
| 5      | disc         | L5107-DSC10                    | L5107-DSC15 | L5107-DSC20         | 304             | 1   |
| 6      | body nut     | M6x1 Nylock                    |             | M8x1.25 Nylock      | 18-8            | 4   |
| 7      | sprocket     | L5107-THS-5025                 |             |                     | 304             | 1   |
| 8      | handle       | L5107-TH5040P                  |             |                     | PA55-GF30 / 304 | 1   |

| Item # | Description  | Part #                         |                     |             | Material        | Qty            |
|--------|--------------|--------------------------------|---------------------|-------------|-----------------|----------------|
|        |              | 2-1/2"                         | 3"                  | 4"          |                 |                |
| 1      | body bolt    | M8x1.25x30 hex head            | M8x1.25x40 hex head |             | 18-8            | 4 <sup>1</sup> |
| 2      | body housing | L5107-HSG25                    | L5107-HSG30         | L5107-HSG40 | 304             | 2              |
| 3      | valve seat   | see repair kits                |                     |             | -               | 1              |
| 4      | bushing      | n/a (included with item no. 3) |                     |             | polyacetal      | 2              |
| 5      | disc         | L5107-DSC25                    | L5107-DSC30         | L5107-DSC40 | 304             | 1              |
| 6      | body nut     | M8x1.25 Nylock                 |                     |             | 18-8            | 4 <sup>1</sup> |
| 7      | sprocket     | L5107-THS-5025                 | L5107-THS-3040      |             | 304             | 1              |
| 8      | handle       | L5107-TH5040P                  |                     |             | PA55-GF30 / 304 | 1              |

<sup>1</sup>4" valves have a quantity of 6 bolts and nuts

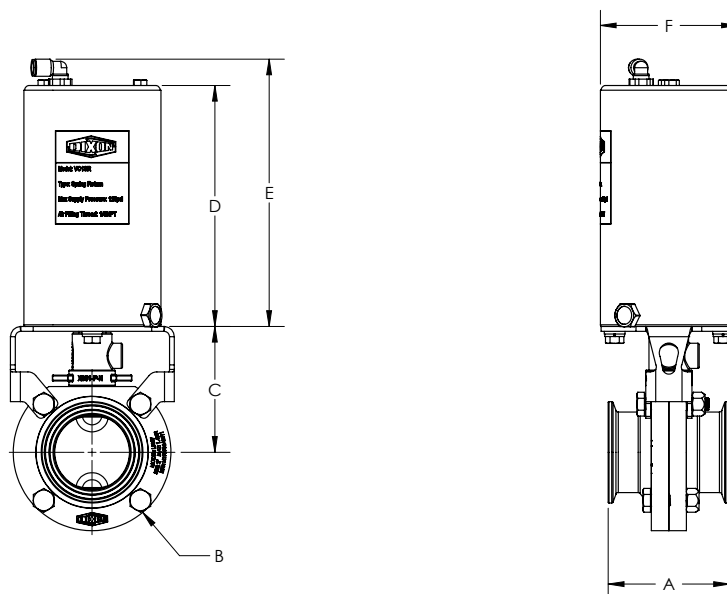
## L5107-Series Butterfly Valve - Dimensions

### Manual Handle



| Valve Size | A (in) | B (in) | C (in) | D (in) | E (in) |
|------------|--------|--------|--------|--------|--------|
| 1"         | 3.00   | 0.866  | 3.071  | 3.363  | 6.469  |
| 1-1/2"     |        | 0.866  | 3.071  | 3.363  |        |
| 2"         |        | 0.866  | 3.898  | 3.707  |        |
| 2-1/2"     |        | 0.866  | 4.606  | 4.119  |        |
| 3"         |        | 1.181  | 5.197  | 4.312  |        |
| 4"         |        | 1.181  | 6.657  | 5.109  |        |

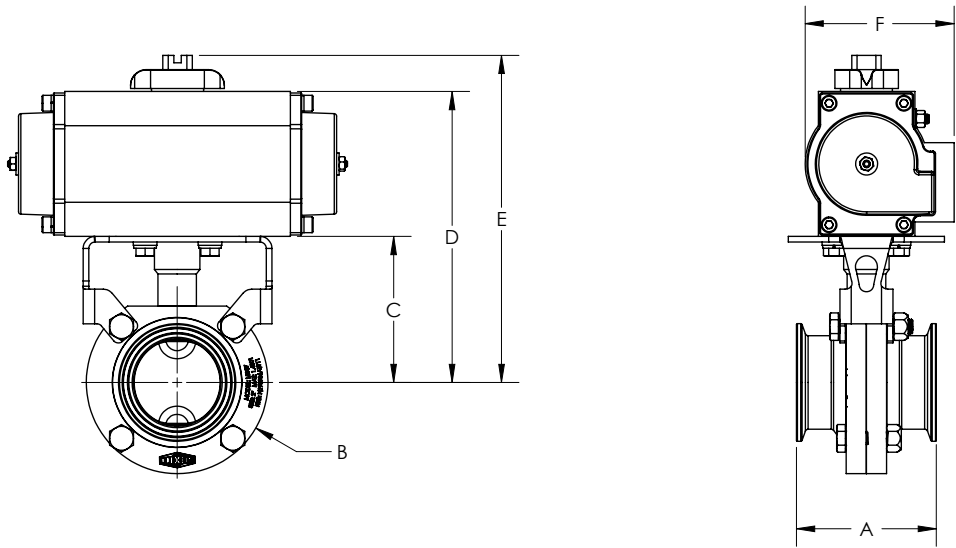
### Vertical Canister Actuator



| Valve Size | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) |
|------------|--------|--------|--------|--------|--------|--------|
| 1"         | 3.00   | 3.071  | 2.834  | 5.984  | 6.638  | 3.386  |
| 1-1/2"     |        | 3.071  | 2.834  |        |        |        |
| 2"         |        | 3.898  | 3.124  |        |        |        |
| 2-1/2"     |        | 4.606  | 3.542  |        |        |        |
| 3"         |        | 5.197  | 3.683  |        |        |        |
| 4"         |        | 6.657  | 4.557  |        |        |        |



L5107-Series Butterfly Valve - Dimensions  
Rack and Pinion Actuator



| Valve Size | A (in) | B (in) | C (in) | D (in) |       | E (in) |       | F (in) |       |
|------------|--------|--------|--------|--------|-------|--------|-------|--------|-------|
|            |        |        |        | SR     | DA    | SR     | DA    | SR     | DA    |
| 1"         | 3.00   | 3.071  | 2.834  | 5.934  | 5.934 | 6.707  | 6.707 | 3.197  | 3.197 |
| 1-1/2"     |        | 3.071  | 2.834  | 5.934  | 5.934 | 6.707  | 6.707 | 3.197  | 3.197 |
| 2"         |        | 3.898  | 3.124  | 6.224  | 6.224 | 6.997  | 6.997 | 3.197  | 3.197 |
| 2-1/2"     |        | 4.606  | 3.542  | 6.642  | 6.642 | 7.415  | 7.415 | 3.197  | 3.197 |
| 3"         |        | 5.197  | 3.683  | 7.543  | 7.543 | 8.308  | 8.308 | 3.717  | 3.717 |
| 4"         |        | 6.657  | 4.557  | 9.343  | 8.417 | 10.098 | 9.182 | 4.679  | 3.717 |

L5107-Series Butterfly Valve - Repair Kits

| Repair Kit Part # | Part Description                                   | Kit Contains                        |
|-------------------|----------------------------------------------------|-------------------------------------|
| B5107-RKV100      | L5107/B5107 FKM repair kit, for 1" valves          | items 3, 4, and seat lubricant pack |
| B5107-RKV150      | L5107/B5107 FKM repair kit, for 1-1/2" valves      |                                     |
| B5107-RKV200      | L5107/B5107 FKM repair kit, for 2" valves          |                                     |
| B5107-RKV250      | L5107/B5107 FKM repair kit, for 2-1/2" valves      |                                     |
| B5107-RKV300      | L5107/B5107 FKM repair kit, for 3" valves          |                                     |
| B5107-RKV400      | L5107/B5107 FKM repair kit, for 4" valves          |                                     |
| B5107-RKS100      | L5107/B5107 silicone repair kit, for 1" valves     |                                     |
| B5107-RKS150      | L5107/B5107 silicone repair kit, for 1-1/2" valves |                                     |
| B5107-RKS200      | L5107/B5107 silicone repair kit, for 2" valves     |                                     |
| B5107-RKS250      | L5107/B5107 silicone repair kit, for 2-1/2" valves |                                     |
| B5107-RKS300      | L5107/B5107 silicone repair kit, for 3" valves     |                                     |
| B5107-RKS400      | L5107/B5107 silicone repair kit, for 4" valves     |                                     |
| B5107-RKE100      | L5107/B5107 EPDM repair kit, for 1" valves         |                                     |
| B5107-RKE150      | L5107/B5107 EPDM repair kit, for 1-1/2" valves     |                                     |
| B5107-RKE200      | L5107/B5107 EPDM repair kit, for 2" valves         |                                     |
| B5107-RKE250      | L5107/B5107 EPDM repair kit, for 2-1/2" valves     |                                     |
| B5107-RKE300      | L5107/B5107 EPDM repair kit, for 3" valves         |                                     |
| B5107-RKE400      | L5107/B5107 EPDM repair kit, for 4" valves         |                                     |

## B51-Series Industrial Butterfly Valve

Used in industrial applications when you need a valve for isolation or control of the flow of product. The B51-series valve is a resilient seated butterfly valve available with a pneumatic or electric actuator and a variety of control options.

They are found in the industrial market in various applications.

### Certifications

- CE, NSF/ANSI 61, NSF/ANSI 372, CRN
- Conforms to MSS-SP-67, MSS-SP-25, API-609

### Sizes

- 1-1/2" to 12" (larger sizes available upon request)

### Features

- Wafer or lug type (install between standard ANSI class 125-150 flanges)
- Cartridge seat design
- Dead-end service
- Designed for blowout-proof service

### Materials

- Product contact metal components: nickel-plated ductile iron, CF8M, aluminum bronze, and nylon
- Non-product contact metal components: ductile iron, CF8M
- Product contact seals: PTFE, EPDM, nitrile rubber, FKM

### Specifications

- Standard connection: wafer and lug
- Valve data
  - Maximum pressure: **200 PSI**
  - Maximum operating temperatures
    - EPDM: **-40°F to 275°F (-40°C to 135°C)**
    - FKM: **0°F to 300°F (-17°C to 148°C)**
    - Nitrile rubber: **10°F to 180°F (-12°C to 82°C)**
    - PTFE over EPDM: **-4°F to 300°F (-20°C to 148°C)**
  - Maximum ambient temperature: **-40°F to 300°F (-40°C to 148°C)**
- Actuator: standard ISO 5211

**E**

## B51-Series Industrial Butterfly Valve - Part Number Key

| B51-Series Industrial Butterfly Valve<br>Part Number Key<br>Example: B5120A150L- |             | Series | Body | Disc | Seat<br>Material | Size | Ends |   | Handle |
|----------------------------------------------------------------------------------|-------------|--------|------|------|------------------|------|------|---|--------|
|                                                                                  |             | B51    | 2    | 0    | B                | 150  | L    | - |        |
| <b>Series</b>                                                                    | <b>Code</b> | B51    | 2    | 0    | B                | 150  | L    | - |        |
| B51                                                                              | B51         |        |      |      |                  |      |      |   |        |
| <b>Body</b>                                                                      | <b>Code</b> | B51    | 2    | 0    | B                | 150  | L    | - |        |
| Ductile iron                                                                     | 2           |        |      |      |                  |      |      |   |        |
| Stainless steel (CF8M)                                                           | 3           | B51    | 2    | 0    | B                | 150  | L    | - |        |
| Stainless steel (CF8M)                                                           | 3           |        |      |      |                  |      |      |   |        |
| <b>Disc</b>                                                                      | <b>Code</b> | B51    | 2    | 0    | B                | 150  | L    | - |        |
| Stainless steel (CF8M)                                                           | 0           |        |      |      |                  |      |      |   |        |
| Nickel-plated ductile iron                                                       | 1           | B51    | 2    | 0    | B                | 150  | L    | - |        |
| Nylon coated ductile iron*                                                       | 2           |        |      |      |                  |      |      |   |        |
| AL bronze                                                                        | 3           | B51    | 2    | 0    | B                | 150  | L    | - |        |
| 304 SS mirror polish                                                             | 4           |        |      |      |                  |      |      |   |        |
| Undercut stainless steel                                                         | 5           | B51    | 2    | 0    | B                | 150  | L    | - |        |
| PTFE/stainless steel                                                             | 6           |        |      |      |                  |      |      |   |        |
| <b>Seat Material</b>                                                             | <b>Code</b> | B51    | 2    | 0    | B                | 150  | L    | - |        |
| Nitrile rubber                                                                   | B           |        |      |      |                  |      |      |   |        |
| EPDM                                                                             | E           | B51    | 2    | 0    | B                | 150  | L    | - |        |
| PTFE backed EPDM                                                                 | P           |        |      |      |                  |      |      |   |        |
| Silicone                                                                         | S           | B51    | 2    | 0    | B                | 150  | L    | - |        |
| FKM                                                                              | V           |        |      |      |                  |      |      |   |        |
| <b>Size</b>                                                                      | <b>Code</b> | B51    | 2    | 0    | B                | 150  | L    | - |        |
| 1-1/2" **                                                                        | 150         |        |      |      |                  |      |      |   |        |
| 2"                                                                               | 200         | B51    | 2    | 0    | B                | 150  | L    | - |        |
| 2-1/2"                                                                           | 250         |        |      |      |                  |      |      |   |        |
| 3"                                                                               | 300         | B51    | 2    | 0    | B                | 150  | L    | - |        |
| 4"                                                                               | 400         |        |      |      |                  |      |      |   |        |
| 5"                                                                               | 500         | B51    | 2    | 0    | B                | 150  | L    | - |        |
| 6"                                                                               | 600         |        |      |      |                  |      |      |   |        |
| 8"                                                                               | 800         | B51    | 2    | 0    | B                | 150  | L    | - |        |
| 10"                                                                              | 1000        |        |      |      |                  |      |      |   |        |
| 12"                                                                              | 1200        | B51    | 2    | 0    | B                | 150  | L    | - |        |
| <b>Ends</b>                                                                      | <b>Code</b> |        |      |      |                  |      |      |   |        |
| Lug                                                                              | L           | B51    | 2    | 0    | B                | 150  | L    | - |        |
| Wafer                                                                            | W           |        |      |      |                  |      |      |   |        |
| <b>Handle</b>                                                                    | <b>Code</b> | B51    | 2    | 0    | B                | 150  | L    | - |        |
| No handle                                                                        | blank       |        |      |      |                  |      |      |   |        |
| Multi-position handle ***                                                        | C           | B51    | 2    | 0    | B                | 150  | L    | - |        |
| Gear operator                                                                    | G           |        |      |      |                  |      |      |   |        |
| Standard with lock plate                                                         | CL          | B51    | 2    | 0    | B                | 150  | L    | - |        |
| Multi-position stainless handle ***                                              | CS          |        |      |      |                  |      |      |   |        |

\* Only available with stainless steel body

\*\* Only available in wafer end

\*\*\* Only available up to 8"

## B51-Series Industrial Butterfly Valve - Actuated Part Number Key

| B51-Series Actuated Industrial Butterfly Valve Part Number Key<br>Example: 5L20B151XX00XX1 |             | Valve Style | Body Material | Disc Material | Seat Material | Size |
|--------------------------------------------------------------------------------------------|-------------|-------------|---------------|---------------|---------------|------|
|                                                                                            |             | 5L          | 2             | 0             | B             | 15   |
| <b>B51 Valve Style</b>                                                                     | <b>Code</b> |             |               |               |               |      |
| Lug                                                                                        | 5L          |             |               |               |               |      |
| Wafer                                                                                      | 5W          |             |               |               |               |      |
| <b>Body Material</b>                                                                       | <b>Code</b> |             |               |               |               |      |
| Ductile iron                                                                               | 2           |             |               |               |               |      |
| Stainless steel                                                                            | 3           |             |               |               |               |      |
| <b>Disc Material</b>                                                                       | <b>Code</b> |             |               |               |               |      |
| 316 stainless steel                                                                        | 0           |             |               |               |               |      |
| Nickel plated ductile iron                                                                 | 1           |             |               |               |               |      |
| Nylon 11 coated ductile iron                                                               | 2           |             |               |               |               |      |
| Aluminum bronze                                                                            | 3           |             |               |               |               |      |
| Polished 316 stainless steel                                                               | 4           |             |               |               |               |      |
| PTFE coated 316 stainless steel                                                            | 5           |             |               |               |               |      |
| <b>Seat Material</b>                                                                       | <b>Code</b> |             |               |               |               |      |
| Nitrile rubber                                                                             | B           |             |               |               |               |      |
| FKM                                                                                        | V           |             |               |               |               |      |
| EPDM                                                                                       | E           |             |               |               |               |      |
| PTFE over EPDM                                                                             | P           |             |               |               |               |      |
| <b>Size</b>                                                                                | <b>Code</b> |             |               |               |               |      |
| 1-1/2"                                                                                     | 15          |             |               |               |               |      |
| 2"                                                                                         | 20          |             |               |               |               |      |
| 2-1/2"                                                                                     | 25          |             |               |               |               |      |
| 3"                                                                                         | 30          |             |               |               |               |      |
| 4"                                                                                         | 40          |             |               |               |               |      |
| 5"                                                                                         | 50          |             |               |               |               |      |
| 6"                                                                                         | 60          |             |               |               |               |      |
| 8"                                                                                         | 80          |             |               |               |               |      |
| 10"                                                                                        | 10          |             |               |               |               |      |
| 12"                                                                                        | 12          |             |               |               |               |      |

E

Continue part number selection by following column 1 or 2 on page 120.

## B51-Series Industrial Butterfly Valve - Actuated Part Number Key

| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                      |                  |          |         |                 | 2. Electric Actuator                          |         |          |             |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|---------|-----------------|-----------------------------------------------|---------|----------|-------------|
| Actuator                                                                                                                                  | Actuator Options | Feedback | Control | Valve Operation | Actuator                                      | Voltage | Option 1 | Option 2    |
| 1                                                                                                                                         | XX               | 00       | XX      | 1               | E                                             | B       | 1        | 1           |
| <b>Actuator</b>                                                                                                                           |                  |          |         | <b>Code</b>     | <b>Actuator</b>                               |         |          | <b>Code</b> |
| Aluminum spring return pneumatic rack and pinion                                                                                          |                  |          |         | 1               | Electric                                      |         |          | E           |
| Aluminum double acting pneumatic rack and pinion                                                                                          |                  |          |         | 2               | Oversized (1-UP) Electric                     |         |          | F           |
| Stainless steel spring return pneumatic rack and pinion                                                                                   |                  |          |         | 3               | Nema 7 Electric                               |         |          | G           |
| Stainless steel double acting pneumatic rack and pinion                                                                                   |                  |          |         | 4               | Electric with Riser Kit                       |         |          | H           |
| Deadman spring return handle                                                                                                              |                  |          |         | 6               | <b>Voltage</b>                                |         |          | <b>Code</b> |
| Technopolymer spring return pneumatic rack and pinion                                                                                     |                  |          |         | 7               | 115VAC                                        |         |          | B           |
| <b>Actuator Options</b>                                                                                                                   |                  |          |         | <b>Code</b>     | 12VDC                                         |         |          | C           |
| None                                                                                                                                      |                  |          |         | XX              | 24VAC                                         |         |          | D           |
| Oversized (1-up)                                                                                                                          |                  |          |         | AA              | 24VDC                                         |         |          | E           |
| Actuator mounted parallel to flow                                                                                                         |                  |          |         | AB              | 220VAC                                        |         |          | F           |
| High temperature FKM elastomers                                                                                                           |                  |          |         | AC              | 12VAC                                         |         |          | G           |
| Extended travel stops                                                                                                                     |                  |          |         | AD              | <b>Option 1</b>                               |         |          | <b>Code</b> |
| Riser kit                                                                                                                                 |                  |          |         | AE              | None                                          |         |          | 1           |
| <b>Feedback</b>                                                                                                                           |                  |          |         | <b>Code</b>     | Torque switches                               |         |          | 2           |
| None                                                                                                                                      |                  |          |         | 00              | 4-20mA Input/Output Modulating Controller     |         |          | 3           |
| Limit Switch Box, OPEN/CLOSE Beacon, (2) SPDT Mech. Switches                                                                              |                  |          |         | 11              | Current Position Transmitter                  |         |          | 4           |
| Limit Switch Box, OPEN/CLOSE Beacon, (2) Switches, Magnetic Reed SPDT, Hermetically Sealed, up to SIL3, Exia ready, cULusClass 1/2 Div1/2 |                  |          |         | 12              | Potentiometer                                 |         |          | 5           |
| Limit Switch Box, OPEN/CLOSE Beacon, AS-I                                                                                                 |                  |          |         | 13              | Local Control Unit                            |         |          | 6           |
| Limit Switch Box, OPEN/CLOSE Beacon, (2) Proximity SPDT Switches, Aluminum Exd IIB certified enclosure                                    |                  |          |         | 14              | Two Extra Travel Cams and Switches            |         |          | 7           |
| Limit Switch Box, OPEN/CLOSE Beacon, (2) DPDT Mechanical Switches                                                                         |                  |          |         | 15              | Three Position Cam Set                        |         |          | 8           |
| Limit Switch Box, OPEN/CLOSE Beacon, (2) Switches, Electro mechanical SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1            |                  |          |         | 16              | Local Control Unit with Lock                  |         |          | 9           |
| Limit Switch Box, OPEN/CLOSE Beacon, Inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO                                                    |                  |          |         | 17              | 1-5V Input/2-10V Output Modulating Controller |         |          | A           |
| Limit Switch Box, OPEN/CLOSE Beacon, 4-20ma Analog Position Transmitter                                                                   |                  |          |         | 18              | 2-10V Input/Output Modulating Controller      |         |          | B           |
| Limit Switch Box, OPEN/CLOSE Beacon, SPDT Proximity, 0.25A@120VAC, 0.416A@48VDC, Resistive                                                |                  |          |         | 19              | 75% Duty Cycle                                |         |          | C           |
| Limit Switch Box, OPEN/CLOSE Beacon, 4-20ma Analog Position Transmitter + 2 SPDT Mechanical Switches                                      |                  |          |         | 20              | Relay                                         |         |          | D           |
| Stainless Steel Limit Switch Box, OPEN/CLOSE Beacon, (2) Proximity SPDT Switches                                                          |                  |          |         | 21              | Four Position Cam Set                         |         |          | E           |

## B51-Series Industrial Butterfly Valve - Actuated Part Number Key

| 1. Pneumatic Actuator or Spring Return Manual Handle                                                   |                  |          |         |                 | 2. Electric Actuator                          |         |          |             |
|--------------------------------------------------------------------------------------------------------|------------------|----------|---------|-----------------|-----------------------------------------------|---------|----------|-------------|
| Actuator                                                                                               | Actuator Options | Feedback | Control | Valve Operation | Actuator                                      | Voltage | Option 1 | Option 2    |
| 1                                                                                                      | XX               | 00       | XX      | 1               | E                                             | B       | 1        | 1           |
| <b>Control</b>                                                                                         |                  |          |         | <b>Code</b>     | 25% Duty Cycle (Actuator Code G Only)         |         |          | F           |
| None                                                                                                   |                  |          |         | XX              | 75% Duty Cycle (Actuator Code G Only)         |         |          | G           |
| Single Coil Solenoid, 120VAC                                                                           |                  |          |         | AA              | <b>Option 2</b>                               |         |          | <b>Code</b> |
| Single Coil Solenoid, 24VDC                                                                            |                  |          |         | AB              | None                                          |         |          | 1           |
| Single Coil Solenoid, 12VDC                                                                            |                  |          |         | AC              | Torque Switches                               |         |          | 2           |
| Single Coil Solenoid, 220VAC                                                                           |                  |          |         | AD              | 4-20mA Input/Output Modulating Controller     |         |          | 3           |
| Dual Coil Solenoid, 120VAC                                                                             |                  |          |         | AE              | Current Position Transmitter                  |         |          | 4           |
| Dual Coil Solenoid, 24VDC                                                                              |                  |          |         | AF              | Potentiometer                                 |         |          | 5           |
| Dual Coil Solenoid, 220VAC                                                                             |                  |          |         | AG              | Local Control Unit                            |         |          | 6           |
| Pneumatic Positioner <b>3-15 PSI</b> input, no feedback                                                |                  |          |         | AH              | Two Extra Travel Cams and Switches            |         |          | 7           |
| Pneumatic Positioner <b>3-15 PSI</b> input, (2) SPDT Mech. Switches for Feedback                       |                  |          |         | AI              | Three Position Cam Set                        |         |          | 8           |
| Pneumatic Positioner <b>3-15 PSI</b> input, 4-20mA for Feedback                                        |                  |          |         | AJ              | Local Control Unit with Lock                  |         |          | 9           |
| Electropneumatic Positioner 4-20mA input, no Feedback                                                  |                  |          |         | AK              | 1-5V Input/2-10V Output Modulating Controller |         |          | A           |
| Electropneumatic Positioner 4-20mA input, (2) SPDT Mech. Switches for Feedback                         |                  |          |         | AL              | 2-10V Input/Output Modulating Controller      |         |          | B           |
| Electropneumatic Positioner 4-20mA input, 4-20mA for Feedback                                          |                  |          |         | AM              | 75% Duty Cycle                                |         |          | C           |
| Electropneumatic Positioner 0-10v input, no Feedback                                                   |                  |          |         | AN              | Relay                                         |         |          | D           |
| Electropneumatic Positioner 0-10v input, (2) SPDT Mech. Switches for Feedback                          |                  |          |         | AO              | Four Position Cam Set                         |         |          | E           |
| Electropneumatic Positioner 0-10v input, 4-20mA for Feedback                                           |                  |          |         | AP              | 25% Duty Cycle (Actuator Code G Only)         |         |          | F           |
| V200 Rotary Electropneumatic Positioner 4-20mA input, 4-20mA Feedback                                  |                  |          |         | AQ              | 75% Duty Cycle (Actuator Code G Only)         |         |          | G           |
| Electropneumatic Positioner 4-20mA input, no Feedback, Class 1, Div II Explosion Proof                 |                  |          |         | AR              |                                               |         |          |             |
| Single Coil Solenoid, 24VDC and 24V Banjo Solenoid Valve with Form B Plug                              |                  |          |         | AS              |                                               |         |          |             |
| Single Coil Solenoid, 24VDC, AS-I, 2.5W Low Power                                                      |                  |          |         | AT              |                                               |         |          |             |
| Single Coil Solenoid, 24VDC, Intrinsically Safe                                                        |                  |          |         | AU              |                                               |         |          |             |
| Single Coil Solenoid, 120VAC, Exp. Proof, Class H Coil                                                 |                  |          |         | AV              |                                               |         |          |             |
| Single Coil Solenoid, 24VDC, Exp. Proof, Class H Coil                                                  |                  |          |         | AW              |                                               |         |          |             |
| Single Coil Solenoid, 24VAC                                                                            |                  |          |         | AX              |                                               |         |          |             |
| V200 Rotary Electropneumatic Positioner 4-20mA input, 4-20mA Feedback, Class 1, Div II Explosion Proof |                  |          |         | AY              |                                               |         |          |             |
| Single Coil Solenoid, 24VDC, Molded LED, Ind. Form, 2M Leads                                           |                  |          |         | AZ              |                                               |         |          |             |
| TUFRAM coated Electropneumatic Positioner 4-20mA input, no Feedback                                    |                  |          |         | BA              |                                               |         |          |             |

E

B51-Series Industrial Butterfly Valve - Actuated Part Number Key

| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                                                                                          |                  |          |         |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|---------|-----------------|
| Actuator                                                                                                                                                                                                      | Actuator Options | Feedback | Control | Valve Operation |
| 1                                                                                                                                                                                                             | XX               | 00       | XX      | 1               |
| V200 Rotary Pneumatic Positioner, (2) REED SWITCH Feedback                                                                                                                                                    |                  |          |         | BB              |
| Single Coil Solenoid, 24VDC, Pre-Wired to Limit Switch WITH CORDSET (Dual Keyway, 1/2"-20 UNF Mating Thread, Single Ended, Straight Female Connector, 22 AWG PVC, Auto Color Code 2P to 6P Cable, 12' Length) |                  |          |         | BC              |
| Single Coil Solenoid, 24VDC, Pre-Wired to Limit Switch, 6P MALE CONNECTOR                                                                                                                                     |                  |          |         | BD              |
| Valve Operation                                                                                                                                                                                               |                  |          |         | Code            |
| Normally Closed (Spring Return)                                                                                                                                                                               |                  |          |         | 1               |
| Normally Open (Spring Return)                                                                                                                                                                                 |                  |          |         | 2               |
| Fail in Place (Double Acting)                                                                                                                                                                                 |                  |          |         | 3               |

## B51-Series Industrial Butterfly Valve - Pressure Drop Chart - Flow Coefficients (Cv)

| Size   | Opening Angle |     |     |      |      |      |      |      |      |
|--------|---------------|-----|-----|------|------|------|------|------|------|
|        | 10°           | 20° | 30° | 40°  | 50°  | 60°  | 70°  | 80°  | 90°  |
| 1-1/2" | 0.1           | 1.8 | 7   | 16   | 32   | 41   | 59   | 76   | 99   |
| 2"     | 0.1           | 2   | 11  | 22   | 42   | 58   | 86   | 120  | 132  |
| 2-1/2" | 0.2           | 4   | 20  | 37   | 65   | 98   | 142  | 202  | 256  |
| 3"     | 0.3           | 8   | 21  | 38   | 86   | 125  | 198  | 392  | 505  |
| 4"     | 0.4           | 14  | 35  | 77   | 140  | 232  | 401  | 702  | 936  |
| 5"     | 0.9           | 29  | 62  | 132  | 232  | 392  | 625  | 922  | 1109 |
| 6"     | 2.1           | 42  | 96  | 203  | 372  | 611  | 1105 | 2009 | 2531 |
| 8"     | 3.2           | 65  | 191 | 401  | 726  | 121  | 1901 | 3555 | 4812 |
| 10"    | 3.9           | 151 | 321 | 695  | 1232 | 2065 | 3740 | 6183 | 7498 |
| 12"    | 5             | 234 | 495 | 1065 | 1909 | 2178 | 5905 | 8805 | 9928 |

## Holding Pressure Chart

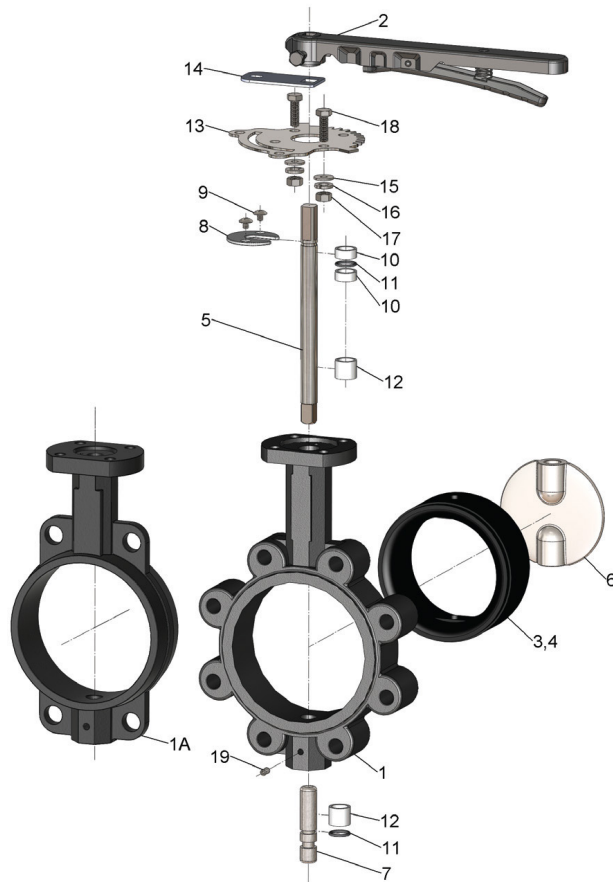
| Size Range                      | 1-1/2" to 12"             |         |         |         |                           |                |
|---------------------------------|---------------------------|---------|---------|---------|---------------------------|----------------|
| Disc                            | Full Cut                  |         |         |         | Undercut                  |                |
| Seat                            | EPDM, Nitrile Rubber, FKM |         | PTFE/E  |         | EPDM, Nitrile Rubber, FKM | PTFE/E         |
| Stem                            | 416 SS                    | 316SS   | 416 SS  | 316 SS  | 416SS, 316SS              | 416 SS, 316 SS |
| Maximum Rated Body Pressure     | 200 PSI                   | 200 PSI | 150 PSI | 150 PSI | 200 PSI                   | 150 PSI        |
| Bidirectional Service           | 200 PSI                   | 150 PSI | 150 PSI | 50 PSI  | 50 PSI                    | 50 PSI         |
| Unidirectional Dead-End Service | 200 PSI                   | 150 PSI | 150 PSI | 50 PSI  | 50 PSI                    | 50 PSI         |

## Torque Chart (in-lbs)

| Size   | Standard Seat |       |       |       | Undercut | PTFE Seat |       |       |
|--------|---------------|-------|-------|-------|----------|-----------|-------|-------|
|        | 50ΔP          | 100ΔP | 150ΔP | 200ΔP | 50ΔP     | 50ΔP      | 100ΔP | 150ΔP |
| 1-1/2" | 89            | 97    | 106   | 115   | -        | 133       | 133   | 136   |
| 2"     | 105           | 111   | 117   | 124   | -        | 144       | 148   | 150   |
| 2-1/2" | 133           | 143   | 159   | 184   | -        | 161       | 165   | 168   |
| 3"     | 191           | 203   | 218   | 247   | -        | 299       | 304   | 310   |
| 4"     | 283           | 316   | 343   | 373   | 200      | 392       | 409   | 425   |
| 5"     | 428           | 479   | 540   | 631   | 330      | 771       | 793   | 814   |
| 6"     | 636           | 720   | 799   | 909   | 440      | 1074      | 1113  | 1151  |
| 8"     | 1239          | 1273  | 1411  | 1506  | 820      | 2106      | 2177  | 2257  |
| 10"    | 2568          | 2710  | 2832  | 3106  | 1151     | 3152      | 3301  | 3453  |
| 12"    | 3154          | 3308  | 3671  | 4306  | 2400     | 4186      | 4444  | 4692  |



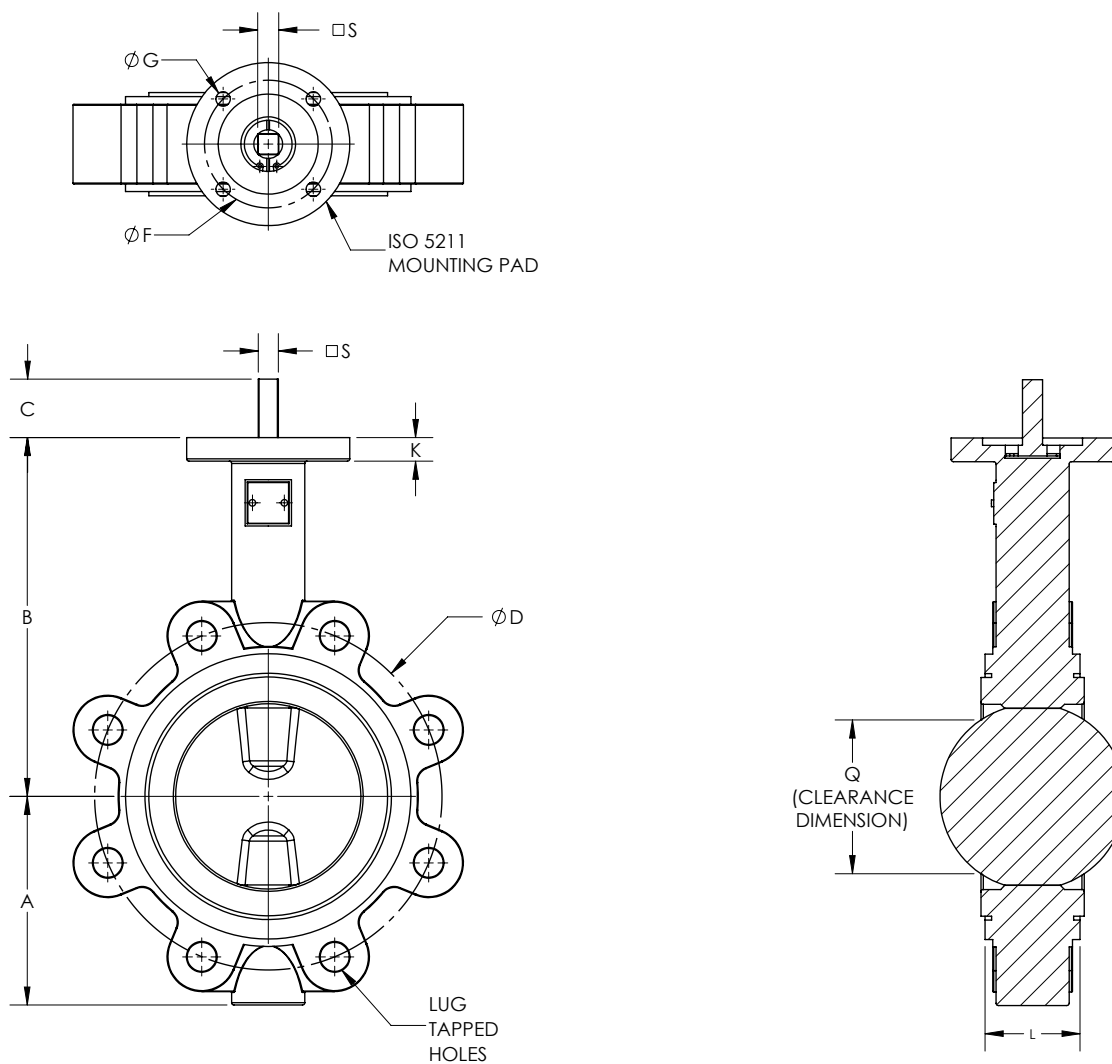
## B51-Series Industrial Butterfly Valve - Bill of Materials



| Item # | Description                           | Materials                                                                    | Qty |
|--------|---------------------------------------|------------------------------------------------------------------------------|-----|
| 1      | lug body                              | cast iron, CF8M, ductile iron                                                | 1   |
| 1A     | wafer body                            | cast iron, CF8M, ductile iron                                                | 1   |
| 2      | operator (bare stem, handle, or gear) | cast iron, 304 SS                                                            | 1   |
| 3      | seat                                  | EPDM, nitrile rubber, FKM (others)                                           | 1   |
| 4      | back ring                             | phenolic thermoset resin                                                     | 1   |
| 5      | stem, upper                           | 416 or 316 SS                                                                | 1   |
| 6      | disc                                  | nickel plated ductile iron, CF8M, aluminum bronze, nylon coated ductile iron | 1   |
| 7      | stem lower                            | 416 or 316 SS                                                                | 1   |
| 8      | stem retainer plate                   | zinc dichromate plated carbon steel                                          | 1   |
| 9      | retainer plate screws                 | zinc dichromate plated carbon steel                                          | 2   |
| 10     | bushings, upper                       | PTFE with graphite                                                           | 2   |
| 11     | stem o-ring                           | EPDM, nitrile rubber, FKM (others)                                           | 1   |
| 12     | bushings, lower                       | PTFE with graphite                                                           | 2   |
| 13     | throttle plate                        | zinc dichromate plated carbon steel                                          | 1   |
| 14     | infinite lock plate                   | zinc dichromate plated carbon steel                                          | 1   |
| 15     | washer                                | zinc dichromate plated carbon steel                                          | 2   |
| 16     | lock washer                           | zinc dichromate plated carbon steel                                          | 2   |
| 17     | nut                                   | zinc dichromate plated carbon steel                                          | 2   |
| 18     | bolt                                  | zinc dichromate plated carbon steel                                          | 2   |
| 19     | set screw                             | zinc dichromate plated carbon steel                                          | 1   |

## B51-Series Industrial Butterfly Valve - Dimensions

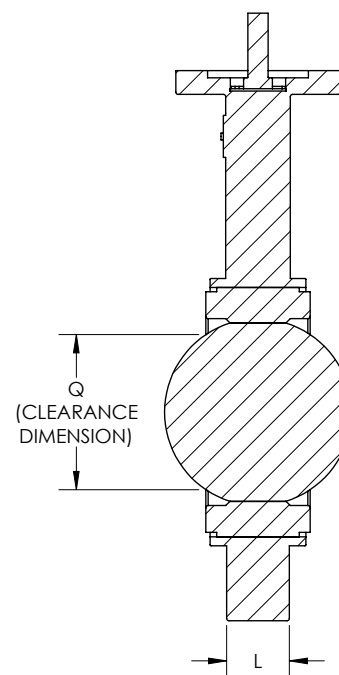
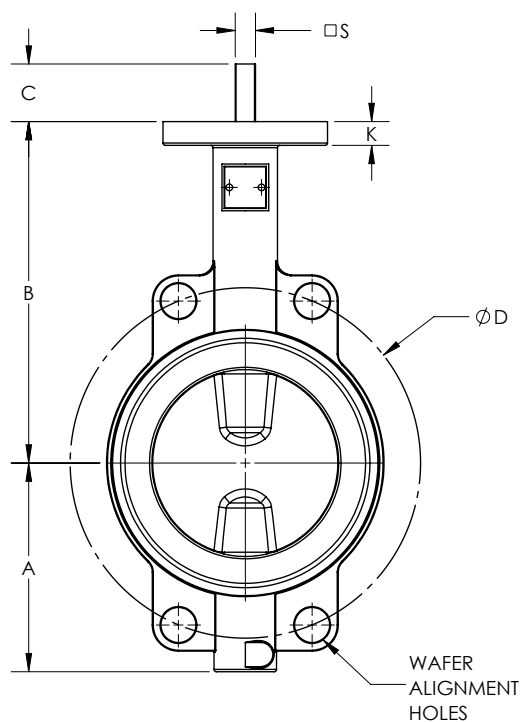
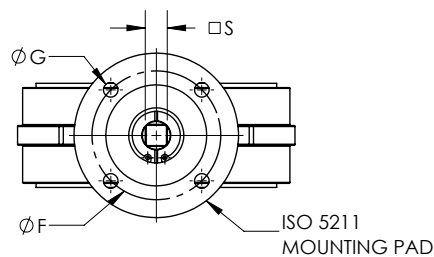
### Stainless Steel Lug Butterfly Valve



| Size   | L (in) | Q (in) | ØD (in) | Lug Taps SAE Thread | A (in) | B (in) | C (in) | □S (in) | ØF(in) | ISO | ØG (in) | K (in) |
|--------|--------|--------|---------|---------------------|--------|--------|--------|---------|--------|-----|---------|--------|
| 2"     | 1.69   | 1.14   | 4.74    | 4x 5/8"-11 UNC      | 2.60   | 5.12   | 1.18   | 0.354   | 1.969  | F05 | 0.3     | 0.43   |
| 2-1/2" | 1.81   | 1.77   | 5.50    | 4x 5/8"-11 UNC      | 3.23   | 5.55   | 1.18   | 0.354   | 1.969  | F05 | 0.30    | 0.43   |
| 3"     | 1.81   | 2.44   | 6.00    | 4x 5/8"-11 UNC      | 3.54   | 5.83   | 1.18   | 0.354   | 1.969  | F05 | 0.3     | 0.43   |
| 4"     | 2.05   | 3.50   | 7.50    | 8x 5/8"-11 UNC      | 4.25   | 6.69   | 1.18   | 0.433   | 2.756  | F07 | 0.41    | 0.47   |
| 5"     | 2.20   | 4.57   | 8.50    | 8x 3/4"-10 UNC      | 4.84   | 7.36   | 1.18   | 0.551   | 2.756  | F07 | 0.41    | 0.51   |
| 6"     | 2.20   | 5.71   | 9.51    | 8x 3/4"-10 UNC      | 5.43   | 7.95   | 1.18   | 0.551   | 4.016  | F07 | 0.41    | 0.51   |
| 8"     | 2.36   | 7.76   | 11.75   | 8x 3/4"-10 UNC      | 6.69   | 9.37   | 1.57   | 0.669   | 4.016  | F10 | 0.48    | 0.59   |
| 10"    | 2.68   | 9.76   | 14.25   | 12x 7/8"-9 UNC      | 7.87   | 10.71  | 1.57   | 0.866   | 4.016  | F10 | 0.48    | 0.59   |
| 12"    | 3.07   | 11.73  | 17.01   | 12x 7/8"-9 UNC      | 9.29   | 12.01  | 1.57   | 0.866   | 4.016  | F10 | 0.48    | 0.59   |

B51-Series Industrial Butterfly Valve - Dimensions

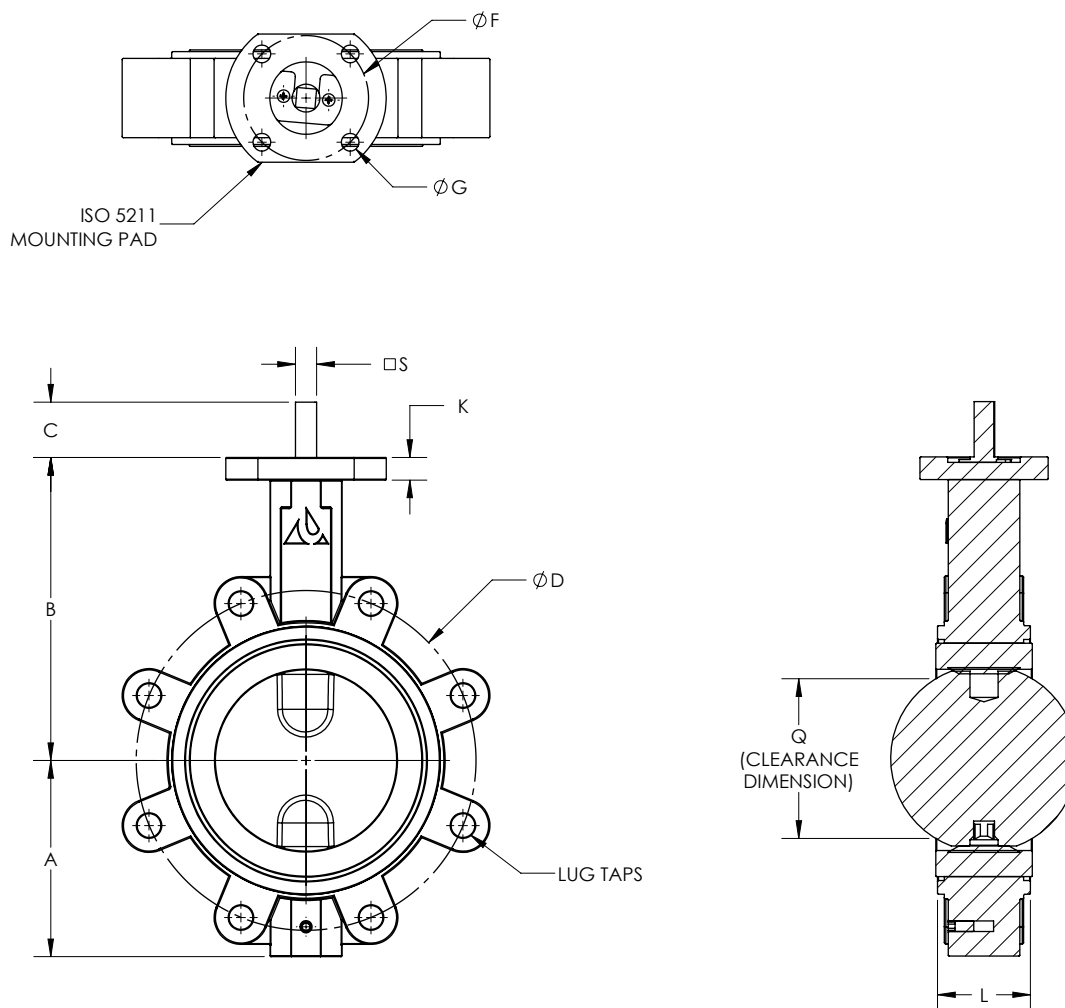
Stainless Steel Wafer Butterfly Valve



| Size   | L (in) | Q (in) | $\phi D$ (in) | Wafer Holes (in) | A (in) | B (in) | C (in) | $\square S$ (in) | $\phi F$ (in) | ISO | $\phi G$ (in) | K (in) |
|--------|--------|--------|---------------|------------------|--------|--------|--------|------------------|---------------|-----|---------------|--------|
| 2"     | 1.69   | 1.14   | 4.74          | 4 x 0.75         | 2.60   | 5.12   | 1.18   | 0.354            | 1.969         | F05 | 0.3           | 0.43   |
| 2-1/2" | 1.81   | 1.77   | 5.50          | 4 x 0.75         | 3.23   | 5.55   | 1.18   | 0.354            | 1.969         | F05 | 0.30          | 0.43   |
| 3"     | 1.81   | 2.44   | 6.00          | 4 x 0.75         | 3.54   | 5.83   | 1.18   | 0.354            | 1.969         | F05 | 0.3           | 0.43   |
| 4"     | 2.05   | 3.50   | 7.50          | 4 x 0.75         | 4.25   | 6.69   | 1.18   | 0.433            | 2.756         | F07 | 0.41          | 0.47   |
| 5"     | 2.20   | 4.57   | 8.50          | 4 x 0.87         | 4.84   | 7.36   | 1.18   | 0.551            | 2.756         | F07 | 0.41          | 0.51   |
| 6"     | 2.20   | 5.71   | 9.51          | 4 x 0.87         | 5.43   | 7.95   | 1.18   | 0.551            | 4.016         | F07 | 0.41          | 0.51   |
| 8"     | 2.36   | 7.76   | 11.75         | 4 x 0.87         | 6.69   | 9.37   | 1.57   | 0.669            | 4.016         | F10 | 0.48          | 0.59   |
| 10"    | 2.68   | 9.76   | 14.25         | 4 x 0.98         | 7.87   | 10.71  | 1.57   | 0.866            | 4.016         | F10 | 0.48          | 0.59   |
| 12"    | 3.07   | 11.73  | 17.01         | 4 x 0.98         | 9.29   | 12.01  | 1.57   | 0.866            | 4.016         | F10 | 0.48          | 0.59   |

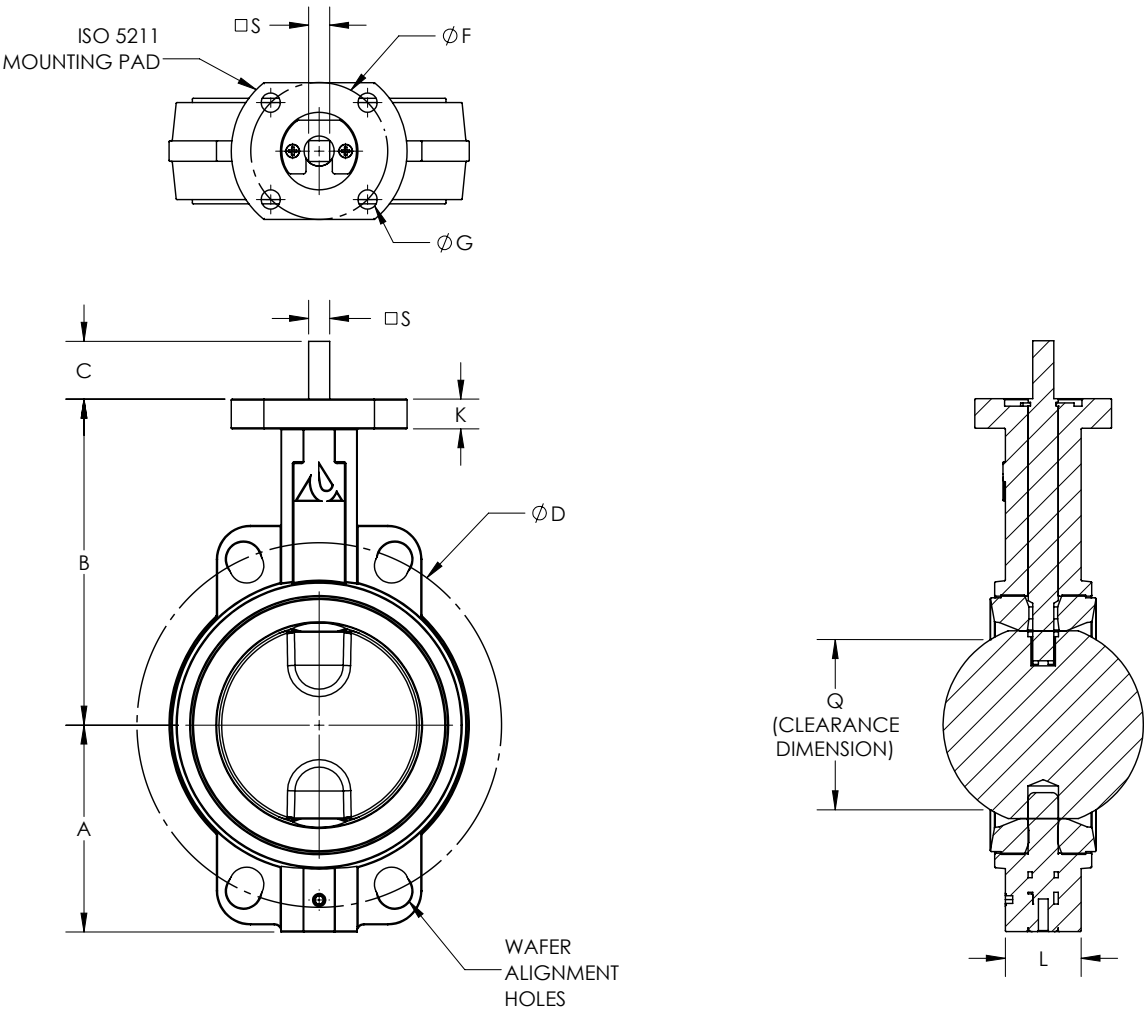
## B51-Series Industrial Butterfly Valve - Dimensions

### Ductile Iron Lug Butterfly Valve



| Size   | L (in) | Q (in) | ØD (in) | Lug Taps SAE Thread | A (in) | B (in) | C (in) | □S (in) | ØF(in) | ISO | ØG (in) | K (in) |
|--------|--------|--------|---------|---------------------|--------|--------|--------|---------|--------|-----|---------|--------|
| 1-1/2" | 1.30   | 0.83   | 3.88    | -                   | 2.32   | 4.92   | 1.18   | 0.354   | 1.969  | F05 | 0.30    | 0.39   |
| 2"     | 1.69   | 1.14   | 4.74    | 4x 5/8"-11 UNC      | 2.60   | 5.12   | 1.18   | 0.354   | 1.969  | F05 | 0.3     | 0.43   |
| 2-1/2" | 1.81   | 1.77   | 5.50    | 4x 5/8"-11 UNC      | 3.23   | 5.55   | 1.18   | 0.354   | 1.969  | F05 | 0.30    | 0.43   |
| 3"     | 1.81   | 2.44   | 6.00    | 4x 5/8"-11 UNC      | 3.54   | 5.83   | 1.18   | 0.354   | 1.969  | F05 | 0.3     | 0.43   |
| 4"     | 2.05   | 3.50   | 7.50    | 8x 5/8"-11 UNC      | 4.25   | 6.69   | 1.18   | 0.433   | 2.756  | F07 | 0.41    | 0.47   |
| 5"     | 2.20   | 4.57   | 8.50    | 8x 3/4"-10 UNC      | 4.84   | 7.36   | 1.18   | 0.551   | 2.756  | F07 | 0.41    | 0.51   |
| 6"     | 2.20   | 5.71   | 9.51    | 8x 3/4"-10 UNC      | 5.43   | 7.95   | 1.18   | 0.551   | 4.016  | F07 | 0.41    | 0.51   |
| 8"     | 2.36   | 7.76   | 11.75   | 8x 3/4"-10 UNC      | 6.69   | 9.37   | 1.57   | 0.669   | 4.016  | F10 | 0.48    | 0.59   |
| 10"    | 2.68   | 9.76   | 14.25   | 12x 7/8"-9 UNC      | 7.87   | 10.71  | 1.57   | 0.866   | 4.016  | F10 | 0.48    | 0.59   |
| 12"    | 3.07   | 11.73  | 17.01   | 12x 7/8"-9 UNC      | 9.29   | 12.01  | 1.57   | 0.866   | 4.016  | F10 | 0.48    | 0.59   |

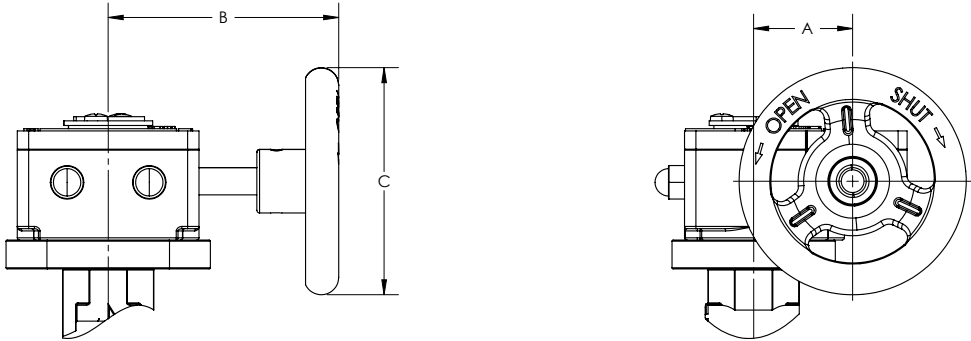
**B51-Series Industrial Butterfly Valve - Dimensions**  
**Ductile Iron Wafer Butterfly Valve**



| Size   | L (in) | Q (in) | ØD (in) | Wafer Holes (in) | A (in) | B (in) | C (in) | □S (in) | ØF(in) | ISO | ØG (in) | K (in) |
|--------|--------|--------|---------|------------------|--------|--------|--------|---------|--------|-----|---------|--------|
| 1-1/2" | 1.30   | 0.83   | 3.88    | 4 X 0.63         | 2.32   | 4.92   | 1.18   | 0.354   | 1.969  | F05 | 0.30    | 0.39   |
| 2"     | 1.69   | 1.14   | 4.74    | 4 X 0.75         | 2.60   | 5.12   | 1.18   | 0.354   | 1.969  | F05 | 0.3     | 0.43   |
| 2-1/2" | 1.81   | 1.77   | 5.50    | 4 X 0.75         | 3.23   | 5.55   | 1.18   | 0.354   | 1.969  | F05 | 0.30    | 0.43   |
| 3"     | 1.81   | 2.44   | 6.00    | 4 X 0.75         | 3.54   | 5.83   | 1.18   | 0.354   | 1.969  | F05 | 0.3     | 0.43   |
| 4"     | 2.05   | 3.50   | 7.50    | 4 X 0.75         | 4.25   | 6.69   | 1.18   | 0.433   | 2.756  | F07 | 0.41    | 0.47   |
| 5"     | 2.20   | 4.57   | 8.50    | 4 X 0.87         | 4.84   | 7.36   | 1.18   | 0.551   | 2.756  | F07 | 0.41    | 0.51   |
| 6"     | 2.20   | 5.71   | 9.51    | 4 X 0.87         | 5.43   | 7.95   | 1.18   | 0.551   | 4.016  | F07 | 0.41    | 0.51   |
| 8"     | 2.36   | 7.76   | 11.75   | 4 X 0.87         | 6.69   | 9.37   | 1.57   | 0.669   | 4.016  | F10 | 0.48    | 0.59   |
| 10"    | 2.68   | 9.76   | 14.25   | 4 X 0.98         | 7.87   | 10.71  | 1.57   | 0.866   | 4.016  | F10 | 0.48    | 0.59   |
| 12"    | 3.07   | 11.73  | 17.01   | 4 X 0.98         | 9.29   | 12.01  | 1.57   | 0.866   | 4.016  | F10 | 0.48    | 0.59   |

**B51-Series Industrial Butterfly Valve - Dimensions**

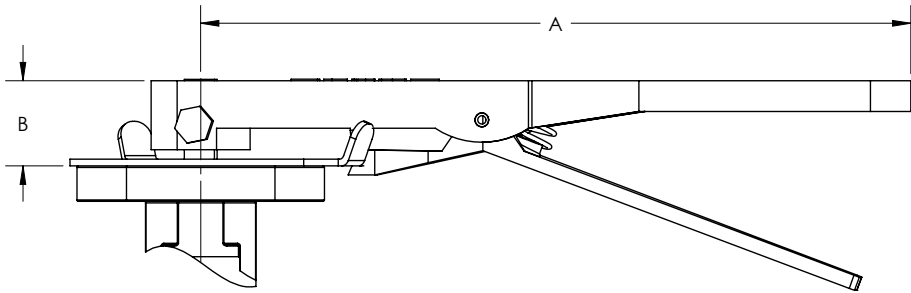
**Gear Operator**



E

| Size   | A (in) | B (in) | H (in) |
|--------|--------|--------|--------|
| 1-1/2" | 1.69   | 3.9    | 6      |
| 2"     | 1.69   | 3.9    | 6      |
| 2-1/2" | 1.69   | 3.9    | 6      |
| 3"     | 1.69   | 3.9    | 6      |
| 4"     | 1.69   | 3.9    | 6      |
| 5"     | 2.49   | 5.8    | 6      |
| 6"     | 2.49   | 5.8    | 6      |
| 8"     | 2.38   | 8.4    | 10     |
| 10"    | 2.38   | 8.4    | 10     |
| 12"    | 2.63   | 8.3    | 12     |

**Handles**



| Size   | A (in) | B (in) |
|--------|--------|--------|
| 1-1/2" | 8.9    | 1.3    |
| 2"     | 8.9    | 1.3    |
| 2-1/2" | 8.9    | 1.3    |
| 3"     | 10.2   | 1.42   |
| 4"     | 10.2   | 1.42   |
| 5"     | 10.2   | 1.42   |
| 6"     | 14.0   | 1.69   |
| 8"     | 14.0   | 1.69   |
| 10"    | 14.0   | 1.69   |
| 12"    | 14.0   | 1.69   |

B51-Series Industrial Butterfly Valve - Weight Charts

Ductile Iron Weight Chart

| Size   | Wafer |      | Lug  |      |
|--------|-------|------|------|------|
|        | lbs   | kg   | lbs  | kg   |
| 1-1/2" | 3.5   | 1.6  | 4.0  | 1.8  |
| 2"     | 4.4   | 2.0  | 5.4  | 2.5  |
| 2-1/2" | 5.1   | 2.3  | 6.6  | 3.0  |
| 3"     | 5.8   | 2.7  | 7.3  | 3.3  |
| 4"     | 9.4   | 4.3  | 13.2 | 6.0  |
| 5"     | 12.6  | 5.7  | 16.3 | 7.4  |
| 6"     | 15.6  | 7.1  | 20.5 | 9.3  |
| 8"     | 25.9  | 11.8 | 33.3 | 15.1 |
| 10"    | 40.8  | 18.5 | 57.8 | 26.2 |
| 12"    | 61.8  | 28.1 | 81.3 | 36.9 |

Stainless Steel Weight Chart

| Size   | Wafer |      | Lug  |      |
|--------|-------|------|------|------|
|        | lbs   | kg   | lbs  | kg   |
| 1-1/2" | -     | -    | -    | -    |
| 2"     | 4.0   | 1.8  | 5.3  | 2.4  |
| 2-1/2" | 4.8   | 2.2  | 6.0  | 2.7  |
| 3"     | 5.6   | 2.6  | 6.5  | 3.0  |
| 4"     | 9.4   | 4.3  | 12.5 | 5.7  |
| 5"     | 12.5  | 5.7  | 14.7 | 6.7  |
| 6"     | 16.3  | 7.4  | 20.0 | 9.1  |
| 8"     | 26.6  | 12.1 | 31.7 | 14.4 |
| 10"    | 41.7  | 18.9 | 54.7 | 24.8 |
| 12"    | 66.6  | 30.2 | 75.6 | 34.3 |

Ductile Iron with Handle Weight Chart

| Size   | Handle |     | Wafer with Handle |      | Lug with Handle |      |
|--------|--------|-----|-------------------|------|-----------------|------|
|        | lbs    | kg  | lbs               | kg   | lbs             | kg   |
| 1-1/2" | 1.1    | 2.4 | 4.6               | 4.0  | 5.1             | 4.2  |
| 2"     | 1.1    | 2.4 | 5.5               | 4.4  | 6.5             | 4.9  |
| 2-1/2" | 1.1    | 2.4 | 6.2               | 4.7  | 7.7             | 5.4  |
| 3"     | 1.1    | 2.4 | 6.9               | 5.1  | 8.4             | 5.7  |
| 4"     | 1.2    | 2.6 | 10.6              | 6.9  | 14.4            | 8.6  |
| 5"     | 1.3    | 2.9 | 13.9              | 8.6  | 17.6            | 10.3 |
| 6"     | 1.3    | 2.9 | 16.9              | 9.9  | 21.8            | 12.1 |
| 8"     | 2.6    | 5.7 | 28.5              | 17.5 | 35.9            | 20.8 |
| 10"    | 2.6    | 5.7 | 43.4              | 24.2 | 60.4            | 31.9 |
| 12"    | 2.6    | 5.7 | 64.4              | 33.8 | 83.9            | 42.6 |

NOTE: For 8" and larger it is recommended a gear operator be used for manual operation.

## B51-Series Industrial Butterfly Valve - Weight Charts

### Stainless Steel with Handle Weight Chart

| Size   | Handle |     | Wafer with Handle |      | Lug with Handle |      |
|--------|--------|-----|-------------------|------|-----------------|------|
|        | lbs    | kg  | lbs               | kg   | lbs             | kg   |
| 1-1/2" | -      | -   | -                 | -    | -               | -    |
| 2"     | 1.0    | 2.2 | 5.0               | 4.0  | 6.3             | 4.6  |
| 2-1/2" | 1.0    | 2.2 | 5.8               | 4.4  | 7.0             | 4.9  |
| 3"     | 1.0    | 2.2 | 6.6               | 4.8  | 7.5             | 5.2  |
| 4"     | 1.0    | 2.2 | 10.4              | 6.5  | 13.5            | 7.9  |
| 5"     | 1.0    | 2.2 | 13.5              | 7.9  | 15.7            | 8.9  |
| 6"     | 1.0    | 2.2 | 17.3              | 9.6  | 21.0            | 11.3 |
| 8"     | 2.5    | 5.5 | 29.1              | 17.6 | 34.2            | 19.9 |
| 10"    | 2.5    | 5.5 | 44.2              | 24.4 | 57.2            | 30.3 |
| 12"    | 2.5    | 5.5 | 69.1              | 35.7 | 78.1            | 39.8 |

NOTE: For 8" and larger it is recommended a gear operator be used for manual operation.

### Ductile Iron with Gear Weight Chart

| Size   | Gear |      | Wafer with Gear |      | Lug with Gear |      |
|--------|------|------|-----------------|------|---------------|------|
|        | lbs  | kg   | lbs             | kg   | lbs           | kg   |
| 1-1/2" | 3.0  | 6.6  | 6.5             | 8.2  | 7.0           | 8.4  |
| 2"     | 3.0  | 6.6  | 7.4             | 8.6  | 8.4           | 9.1  |
| 2-1/2" | 3.0  | 6.6  | 8.1             | 8.9  | 9.6           | 9.6  |
| 3"     | 3.0  | 6.6  | 8.8             | 9.3  | 10.3          | 9.9  |
| 4"     | 3.0  | 6.6  | 12.4            | 10.9 | 16.2          | 12.6 |
| 5"     | 6.0  | 13.2 | 18.6            | 18.9 | 22.3          | 20.6 |
| 6"     | 6.0  | 13.2 | 21.6            | 20.3 | 26.5          | 22.5 |
| 8"     | 12.0 | 26.5 | 37.9            | 38.2 | 45.3          | 41.6 |
| 10"    | 12.0 | 26.5 | 52.8            | 45.0 | 69.8          | 52.7 |
| 12"    | 12.0 | 48.5 | 83.8            | 76.6 | 103.3         | 85.4 |

### Stainless Steel with Gear Weight Chart

| Size   | Gear |      | Wafer with Gear |      | Lug with Gear |      |
|--------|------|------|-----------------|------|---------------|------|
|        | lbs  | kg   | lbs             | kg   | lbs           | kg   |
| 1-1/2" | -    | -    | -               | -    | -             | -    |
| 2"     | 3.0  | 6.6  | 7.0             | 8.4  | 8.3           | 9.0  |
| 2-1/2" | 3.0  | 6.6  | 7.8             | 8.8  | 9.0           | 9.3  |
| 3"     | 3.0  | 6.6  | 8.6             | 9.2  | 9.5           | 9.6  |
| 4"     | 3.0  | 6.6  | 12.4            | 10.9 | 15.5          | 12.3 |
| 5"     | 6.0  | 13.2 | 18.5            | 18.9 | 20.7          | 19.9 |
| 6"     | 6.0  | 13.2 | 22.3            | 20.6 | 26.0          | 22.3 |
| 8"     | 12.0 | 26.5 | 38.6            | 38.5 | 43.7          | 40.9 |
| 10"    | 12.0 | 26.5 | 53.7            | 45.4 | 66.7          | 51.3 |
| 12"    | 22.0 | 48.5 | 88.6            | 78.7 | 97.6          | 82.8 |

### Repair Kits

- Repair kit includes items (3) seat, (4) back ring, (10) upper bushing, (11) stem O-ring, and (12) lower bushing in the bill of materials.



### BV2-Series Ball Valve

Used in sanitary processes when you need a valve for isolation or control of the flow of a product. The 3-piece design allows for seat and/or ball replacement without removing the valve from the process line.

They are found in the food processing, beverage, winery, brewery, pet product, and industrial markets.

#### Sizes

- 1/2" to 4"

#### Features

- Live-loaded stem packing
- Precision stainless steel balls reduce torque and friction losses while extending seat life
- Integral ISO 5211 mounting pad
- Lockable handle can prevent accidental actuation
- Standard internal entry blow-out proof stem design
- Full port design matches ball and seat ports to tube I.D. for lower pressure drop and less turbulent flow
- Compact design for areas with tight space restrictions
- Fully encapsulated construction produces bubble tight seal
- Identification tagging available
- Balanced encapsulated construction minimizes cold flow
- V-port encapsulated

#### Materials

- Product contact metal components: CF8M stainless steel
- Non-product contact metal components: CF8M, 316, 304 stainless steel
- Product contact seals: virgin PTFE (standard), 15% glass reinforced PTFE, 25% carbon reinforced PTFE (not food grade), 50% stainless steel reinforced PTFE, and ultra-high molecular weight polyethylene

#### Specifications

- Standard connections: clamp (other options available, see part number key)
- Valve data
  - Maximum pressure
    - 1/2" - 2": **1000 PSI WOG**
    - 2-1/2" - 4": **800 PSI WOG**
  - Operating temperature: **-20°F to 450°F (-29°C to 232°C)**
- Surface finish
  - Product contact metal components:  $\leq 32$  Ra
  - Non-product contact metal components: as cast or  $Ra \leq 63$
- Seat lubricant: BESSIL F-100
- Stem lubricant: G.A. BESSIL 25



1/2" to 2"



2-1/2" to 4"

## BV2-Series Ball Valve - Part Number Key

| BV2-Series Sanitary Ball Valve<br>Part Number Key<br>Example: BV2CV-050CC-A |             | Series | Seat | Seat<br>Material | Valve<br>Size | Connection<br>End 1 | Connection<br>End 2 | Handle | Surface<br>Finish |
|-----------------------------------------------------------------------------|-------------|--------|------|------------------|---------------|---------------------|---------------------|--------|-------------------|
|                                                                             |             | BV2    | C    | V                | - 050         | C                   | C                   | - A    |                   |
| <b>Series</b>                                                               | <b>Code</b> |        |      |                  |               |                     |                     |        |                   |
| BV2                                                                         | BV2         |        |      |                  |               |                     |                     |        |                   |
| <b>Seat Type</b>                                                            | <b>Code</b> |        |      |                  |               |                     |                     |        |                   |
| Encapsulated                                                                | C           |        |      |                  |               |                     |                     |        |                   |
| Non-encapsulated                                                            | N           |        |      |                  |               |                     |                     |        |                   |
| 60° V-Port                                                                  | L           |        |      |                  |               |                     |                     |        |                   |
| 30° V-Port                                                                  | M           |        |      |                  |               |                     |                     |        |                   |
| <b>Seat Material</b>                                                        | <b>Code</b> |        |      |                  |               |                     |                     |        |                   |
| Virgin PTFE (standard)                                                      | V           |        |      |                  |               |                     |                     |        |                   |
| 15% glass reinforced PTFE                                                   | G           |        |      |                  |               |                     |                     |        |                   |
| 25% carbon reinforced PTFE                                                  | C           |        |      |                  |               |                     |                     |        |                   |
| 50% stainless steel reinforced PTFE                                         | S           |        |      |                  |               |                     |                     |        |                   |
| Ultra high molecular weight polyethylene                                    | U           |        |      |                  |               |                     |                     |        |                   |
| <b>Valve Size</b>                                                           | <b>Code</b> |        |      |                  |               |                     |                     |        |                   |
| 1/2"                                                                        | 050         |        |      |                  |               |                     |                     |        |                   |
| 3/4"                                                                        | 075         |        |      |                  |               |                     |                     |        |                   |
| 1"                                                                          | 100         |        |      |                  |               |                     |                     |        |                   |
| 1-1/2"                                                                      | 150         |        |      |                  |               |                     |                     |        |                   |
| 2"                                                                          | 200         |        |      |                  |               |                     |                     |        |                   |
| 2-1/2"                                                                      | 250         |        |      |                  |               |                     |                     |        |                   |
| 3"                                                                          | 300         |        |      |                  |               |                     |                     |        |                   |
| 4"                                                                          | 400         |        |      |                  |               |                     |                     |        |                   |
| <b>Connection End 1</b>                                                     | <b>Code</b> |        |      |                  |               |                     |                     |        |                   |
| Clamp (standard)                                                            | C           |        |      |                  |               |                     |                     |        |                   |
| Weld                                                                        | B           |        |      |                  |               |                     |                     |        |                   |
| Female I-line                                                               | F           |        |      |                  |               |                     |                     |        |                   |
| Male I-line                                                                 | M           |        |      |                  |               |                     |                     |        |                   |
| Threaded bevel                                                              | T           |        |      |                  |               |                     |                     |        |                   |
| Plain bevel with nut                                                        | P           |        |      |                  |               |                     |                     |        |                   |
| Q-line                                                                      | Q           |        |      |                  |               |                     |                     |        |                   |
| DIN male                                                                    | D           |        |      |                  |               |                     |                     |        |                   |
| DIN liner with nut                                                          | L           |        |      |                  |               |                     |                     |        |                   |
| <b>Connection End 2</b>                                                     | <b>Code</b> |        |      |                  |               |                     |                     |        |                   |
| Clamp (standard)                                                            | C           |        |      |                  |               |                     |                     |        |                   |
| Weld                                                                        | B           |        |      |                  |               |                     |                     |        |                   |
| Female I-line                                                               | F           |        |      |                  |               |                     |                     |        |                   |
| Male I-line                                                                 | M           |        |      |                  |               |                     |                     |        |                   |
| Threaded bevel                                                              | T           |        |      |                  |               |                     |                     |        |                   |
| Plain bevel with nut                                                        | P           |        |      |                  |               |                     |                     |        |                   |
| Q-line                                                                      | Q           |        |      |                  |               |                     |                     |        |                   |
| DIN male                                                                    | D           |        |      |                  |               |                     |                     |        |                   |
| DIN liner with nut                                                          | L           |        |      |                  |               |                     |                     |        |                   |
| <b>Surface Finish</b>                                                       | <b>Code</b> |        |      |                  |               |                     |                     |        |                   |
| 32 Ra (mechanical polish)                                                   | blank       |        |      |                  |               |                     |                     |        |                   |
| 25 Ra (mechanical polish)                                                   | -2          |        |      |                  |               |                     |                     |        |                   |
| 20 Ra (mechanical polish)                                                   | -1          |        |      |                  |               |                     |                     |        |                   |
| 20 Ra (electro polish)                                                      | -5          |        |      |                  |               |                     |                     |        |                   |
| 15 Ra (electro polish)                                                      | -4          |        |      |                  |               |                     |                     |        |                   |
| 10 Ra (electro polish)                                                      | -7          |        |      |                  |               |                     |                     |        |                   |
| 32 Ra (mechanical polish) with K22 kolsterising treatment                   | F           |        |      |                  |               |                     |                     |        |                   |

F

**BV2-Series Ball Valve - Part Number Key (Actuated)**

| Sanitary 2-Way Actuated Ball Valve<br>Part Number Key<br>Example: 2CV50CA1XX00XX1 |      | Series | Seat Material | Size | Connections | Surface Finish |  |
|-----------------------------------------------------------------------------------|------|--------|---------------|------|-------------|----------------|--|
|                                                                                   |      | 2C     | V             | 50   | C           | A              |  |
| Series                                                                            | Code |        |               |      |             |                |  |
| Encapsulated                                                                      | 2C   |        |               |      |             |                |  |
| Non-encapsulated                                                                  | 2N   |        |               |      |             |                |  |
| Encapsulated 30° V Port                                                           | 2M   |        |               |      |             |                |  |
| Encapsulated 60° V Port                                                           | 2L   |        |               |      |             |                |  |
| Seat Material                                                                     | Code |        |               |      |             |                |  |
| Virgin PTFE                                                                       | V    |        |               |      |             |                |  |
| RTFE (15% glass reinforced PTFE)                                                  | G    |        |               |      |             |                |  |
| 25% carbon reinforced PTFE                                                        | C    |        |               |      |             |                |  |
| 50% stainless steel reinforced PTFE                                               | S    |        |               |      |             |                |  |
| UHMW (encapsulated only)                                                          | U    |        |               |      |             |                |  |
| Size                                                                              | Code |        |               |      |             |                |  |
| 1/2"                                                                              | 50   |        |               |      |             |                |  |
| 3/4"                                                                              | 75   |        |               |      |             |                |  |
| 1"                                                                                | 10   |        |               |      |             |                |  |
| 1-1/2"                                                                            | 15   |        |               |      |             |                |  |
| 2"                                                                                | 20   |        |               |      |             |                |  |
| 2-1/2"                                                                            | 25   |        |               |      |             |                |  |
| 3"                                                                                | 30   |        |               |      |             |                |  |
| 4"                                                                                | 40   |        |               |      |             |                |  |
| Connections                                                                       | Code |        |               |      |             |                |  |
| Clamp                                                                             | C    |        |               |      |             |                |  |
| Weld                                                                              | B    |        |               |      |             |                |  |
| Female I-line                                                                     | F    |        |               |      |             |                |  |
| Male I-line                                                                       | M    |        |               |      |             |                |  |
| Threaded bevel                                                                    | T    |        |               |      |             |                |  |
| Plain bevel with nut                                                              | P    |        |               |      |             |                |  |
| Q-line                                                                            | Q    |        |               |      |             |                |  |
| Female NPT                                                                        | 1    |        |               |      |             |                |  |
| Flange                                                                            | K    |        |               |      |             |                |  |
| Clamp x weld                                                                      | D    |        |               |      |             |                |  |
| Male x female I-line                                                              | X    |        |               |      |             |                |  |
| Surface Finish                                                                    | Code |        |               |      |             |                |  |
| 32 Ra                                                                             | A    |        |               |      |             |                |  |
| 25 Ra                                                                             | B    |        |               |      |             |                |  |
| 20 Ra                                                                             | C    |        |               |      |             |                |  |
| 15 Ra                                                                             | D    |        |               |      |             |                |  |
| 10 Ra                                                                             | E    |        |               |      |             |                |  |

Continue  
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Continue number selection by following column 1 (pneumatic actuators) or 2 (electric actuators) on page 141.

## BV2-Series Ball Valve - Part Number Key (Actuated)

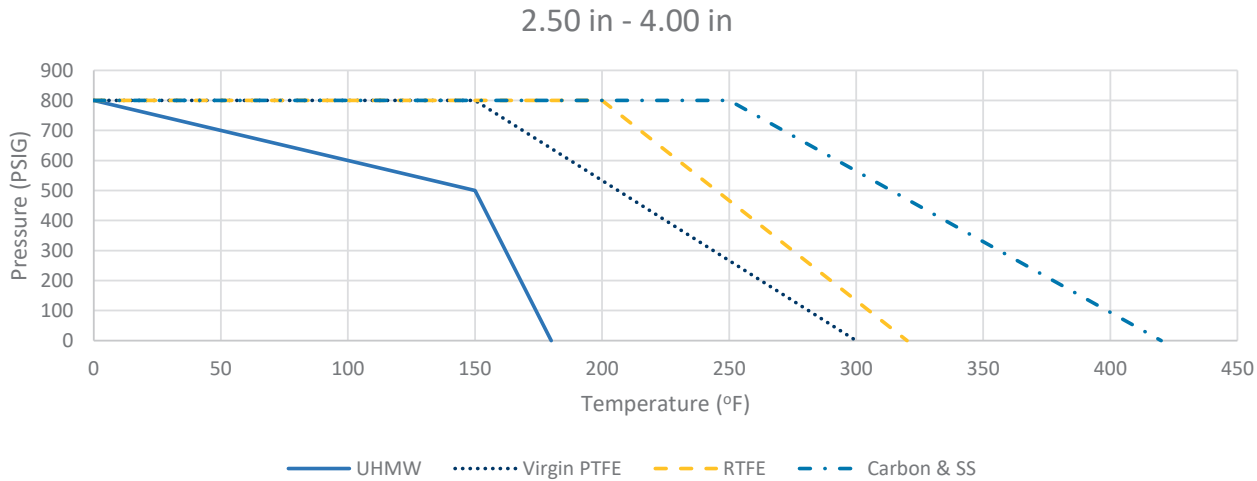
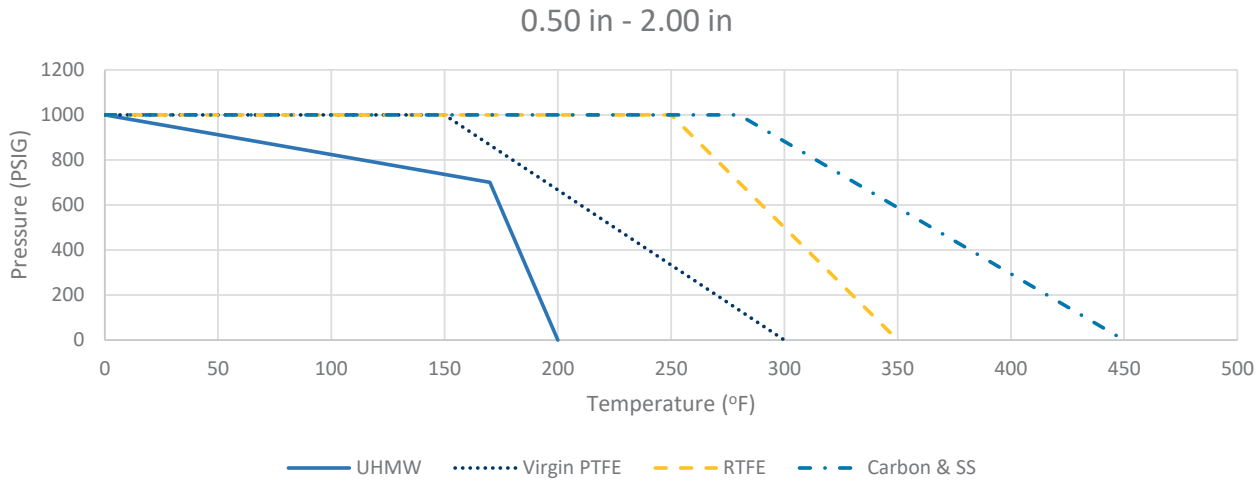
| 1. Pneumatic Actuator, Spring Return Manual Handle, or Manual Handle with Feedback                                                        |                  |          |         |                 | 2. Electric Actuator                          |         |          |          |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|---------|-----------------|-----------------------------------------------|---------|----------|----------|
| Actuator                                                                                                                                  | Actuator Options | Feedback | Control | Valve Operation | Actuator                                      | Voltage | Option 1 | Option 2 |
| 1                                                                                                                                         | XX               | 00       | XX      | 1               | E                                             | B       | 1        | 1        |
| Actuator                                                                                                                                  |                  |          |         | Code            | Actuator                                      |         |          | Code     |
| Aluminum spring return pneumatic rack and pinion                                                                                          |                  |          |         | 1               | Electric                                      |         |          | E        |
| Aluminum double acting pneumatic rack and pinion                                                                                          |                  |          |         | 2               | Oversized (1-UP) electric                     |         |          | F        |
| Stainless steel spring return pneumatic rack and pinion                                                                                   |                  |          |         | 3               | Nema 7 electric                               |         |          | G        |
| Stainless steel double acting pneumatic rack and pinion                                                                                   |                  |          |         | 4               | Electric with riser kit                       |         |          | H        |
| Manual handle                                                                                                                             |                  |          |         | 5               | Voltage                                       |         |          | Code     |
| Dead man spring return handle                                                                                                             |                  |          |         | 6               | 115VAC                                        |         |          | B        |
| Technopolymer spring return pneumatic rack and pinion                                                                                     |                  |          |         | 7               | 12VDC                                         |         |          | C        |
| Actuator Options                                                                                                                          |                  |          |         | Code            | 24VAC                                         |         |          | D        |
| None                                                                                                                                      |                  |          |         | XX              | 24VDC                                         |         |          | E        |
| Oversized (1-UP)                                                                                                                          |                  |          |         | AA              | 220VAC                                        |         |          | F        |
| Actuator mounted perpendicular to flow                                                                                                    |                  |          |         | AB              | 12VAC                                         |         |          | G        |
| High temp FKM elastomers                                                                                                                  |                  |          |         | AC              | Option 1                                      |         |          | Code     |
| Extended travel stops                                                                                                                     |                  |          |         | AD              | None                                          |         |          | 1        |
| Riser kit                                                                                                                                 |                  |          |         | AE              | Torque switches                               |         |          | 2        |
| Feedback                                                                                                                                  |                  |          |         | Code            | 4-20mA Input/Output modulating controller     |         |          | 3        |
| None                                                                                                                                      |                  |          |         | 00              | Current position transmitter                  |         |          | 4        |
| Limit switch box, OPEN/CLOSE beacon, (2) SPDT mech. switches                                                                              |                  |          |         | 11              | Potentiometer                                 |         |          | 5        |
| Limit switch box, OPEN/CLOSE beacon, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULusClass 1/2 div1/2 |                  |          |         | 12              | Local control unit                            |         |          | 6        |
| Limit switch box, OPEN/CLOSE beacon, AS-I                                                                                                 |                  |          |         | 13              | Two extra travel cams and switches            |         |          | 7        |
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, aluminum Exd IIB certified enclosure                                    |                  |          |         | 14              | Three position cam set                        |         |          | 8        |
| Limit switch box, OPEN/CLOSE beacon, (2) DPDT mech. switches                                                                              |                  |          |         | 15              | Local control unit with lock                  |         |          | 9        |
| Limit switch box, OPEN/CLOSE beacon, (2) switches, electro mec. SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1                  |                  |          |         | 16              | 1-5V Input/2-10V output modulating controller |         |          | A        |
| Limit switch box, OPEN/CLOSE beacon, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO                                                    |                  |          |         | 17              | 2-10V Input/Output modulating controller      |         |          | B        |
| Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter                                                                   |                  |          |         | 18              | 75% duty cycle                                |         |          | C        |
| Limit switch box, OPEN/CLOSE beacon, SPDT proximity, 0.25A@120VAC, 0.416A@48VDC, resistive                                                |                  |          |         | 19              | Relay                                         |         |          | D        |
| Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter + 2 SPDT mechanical switches                                      |                  |          |         | 20              | Four position cam set                         |         |          | E        |
| Stainless steel limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches                                                          |                  |          |         | 21              | 25% duty cycle (actuator code G only)         |         |          | F        |
| Stainless steel limit switch box, OPEN/CLOSE beacon, (2) inductive NUMAR Exia ready switches                                              |                  |          |         | 22              | 75% duty cycle (actuator code G only)         |         |          | G        |

F

## BV2-Series Ball Valve - Part Number Key (Actuated)

| Control                                                                                                                                                                                                       | Code        | Option 2                                      | Code |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|------|
| None                                                                                                                                                                                                          | XX          | None                                          | 1    |
| Single coil solenoid, 120VAC                                                                                                                                                                                  | AA          | Torque switches                               | 2    |
| Single coil solenoid, 24VDC                                                                                                                                                                                   | AB          | 4-20mA input/output modulating controller     | 3    |
| Single coil solenoid, 12VDC                                                                                                                                                                                   | AC          | Current position transmitter                  | 4    |
| Single coil solenoid, 220VAC                                                                                                                                                                                  | AD          | Potentiometer                                 | 5    |
| Dual coil solenoid, 120VAC                                                                                                                                                                                    | AE          | Local control unit                            | 6    |
| Dual coil solenoid, 24VDC                                                                                                                                                                                     | AF          | Two extra travel cams and switches            | 7    |
| Dual coil solenoid, 220VAC                                                                                                                                                                                    | AG          | Three position cam set                        | 8    |
| Pneumatic positioner 3-15psi input, no feedback                                                                                                                                                               | AH          | Local control unit with lock                  | 9    |
| Pneumatic positioner 3-15psi input, (2) SPDT mech. switches for feedback                                                                                                                                      | AI          | 1-5V input/2-10V output modulating controller | A    |
| Pneumatic positioner 3-15psi input, 4-20mA for feedback                                                                                                                                                       | AJ          | 2-10V input/output modulating controller      | B    |
| Electropneumatic positioner 4-20mA input, no feedback                                                                                                                                                         | AK          | 75% duty cycle                                | C    |
| Electropneumatic positioner 4-20mA input, (2) SPDT mech. switches for feedback                                                                                                                                | AL          | Relay                                         | D    |
| Electropneumatic positioner 4-20mA input, 4-20mA for feedback                                                                                                                                                 | AM          | Four position cam set                         | E    |
| Electropneumatic positioner 0-10v input, no feedback                                                                                                                                                          | AN          | 25% duty cycle (actuator code G only)         | F    |
| Electropneumatic positioner 0-10v input, (2) SPDT mech. switches for feedback                                                                                                                                 | AO          | 75% duty cycle (actuator code G only)         | G    |
| Electropneumatic positioner 0-10v input, 4-20mA for feedback                                                                                                                                                  | AP          |                                               |      |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                                                                                                                         | AQ          |                                               |      |
| Electropneumatic positioner 4-20mA input, no feedback, class 1, div II explosion proof                                                                                                                        | AR          |                                               |      |
| Single coil solenoid, 24VDC and 24V banjo solenoid valve with form B plug                                                                                                                                     | AS          |                                               |      |
| Single coil solenoid, 24VDC, AS-I, 2.5W low power                                                                                                                                                             | AT          |                                               |      |
| Single coil solenoid, 24VDC, intrinsically safe                                                                                                                                                               | AU          |                                               |      |
| Single coil solenoid, 120VAC, exp. proof, class H coil                                                                                                                                                        | AV          |                                               |      |
| Single coil solenoid, 24VDC, exp. proof, class H coil                                                                                                                                                         | AW          |                                               |      |
| Single coil solenoid, 24VAC                                                                                                                                                                                   | AX          |                                               |      |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback, class 1, div II explosion proof                                                                                                        | AY          |                                               |      |
| Single coil solenoid, 24VDC, molded LED, ind. form, 2M leads                                                                                                                                                  | AZ          |                                               |      |
| TUFRAM COATED electropneumatic positioner 4-20mA input, no feedback                                                                                                                                           | BA          |                                               |      |
| V200 rotary pneumatic positioner, (2) REED SWITCH feedback                                                                                                                                                    | BB          |                                               |      |
| Single coil solenoid, 24VDC, pre-wired to limit switch WITH CORDSET (Dual Keyway, 1/2"-20 UNF mating thread, single ended, straight female connector, 22 AWG PVC, auto color code 2P to 6P cable, 12' length) | BC          |                                               |      |
| Single coil solenoid, 24VDC, pre-wired to limit switch, 6P MALE CONNECTOR                                                                                                                                     | BD          |                                               |      |
| Single coil solenoid, stainless steel, 24VDC                                                                                                                                                                  | BE          |                                               |      |
| <b>Valve Operation</b>                                                                                                                                                                                        | <b>Code</b> |                                               |      |
| Normally closed (spring return)                                                                                                                                                                               | 1           |                                               |      |
| Normally open (spring return)                                                                                                                                                                                 | 2           |                                               |      |
| Fail in place (actuator code 2, 4, or 5)                                                                                                                                                                      | 3           |                                               |      |

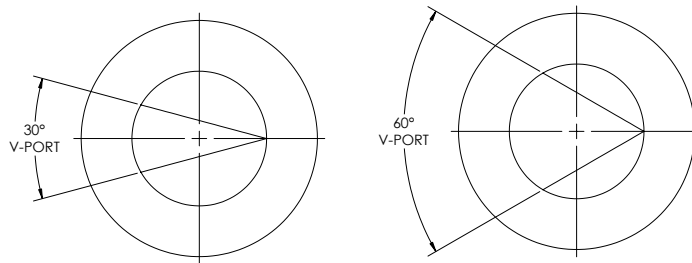
**BV2-Series Ball Valve - Pressure Temperature Chart**



## BV2-Series Ball Valve - Break Torque, Weight, Cv, and Vacuum Testing Chart

| Part #    | Size   | Break Torque    |                               |                                |                                         |          | Weight (lbs) | Flow Coefficient (Cv) | Vacuum Testing            |                              |
|-----------|--------|-----------------|-------------------------------|--------------------------------|-----------------------------------------|----------|--------------|-----------------------|---------------------------|------------------------------|
|           |        | V (virgin PTFE) | G (15% glass reinforced RTFE) | C (25% carbon reinforced PTFE) | S (50% stainless steel reinforced PTFE) | U (UHMW) |              |                       | Body Leakage (atm-cc/sec) | Helium Leak Rate Test (Torr) |
| BV2_-050_ | 1/2"   | 38              | 38                            | 67                             | 67                                      | 34       | 1.5          | 8                     | 1 x 10 <sup>-9</sup>      | 1 x 10 <sup>-5</sup>         |
| BV2_-075_ | 3/4"   | 40              | 40                            | 70                             | 70                                      | 36       | 1.9          | 29                    |                           |                              |
| BV2_-100_ | 1"     | 109             | 109                           | 191                            | 191                                     | 98       | 2.7          | 66                    |                           |                              |
| BV2_-150_ | 1-1/2" | 387             | 387                           | 677                            | 677                                     | 348      | 4.8          | 192                   |                           |                              |
| BV2_-200_ | 2"     | 432             | 432                           | 756                            | 756                                     | 389      | 8.9          | 434                   | 1 x 10 <sup>-7</sup>      | 1 x 10 <sup>-4</sup>         |
| BV2_-250_ | 2-1/2" | 738             | 738                           | 1292                           | 1292                                    | 664      | 18.7         | 723                   |                           |                              |
| BV2_-300_ | 3"     | 810             | 810                           | 1418                           | 1418                                    | 729      | 29.7         | 1124                  |                           |                              |
| BV2_-400_ | 4"     | 895             | 1790                          | 1566                           | 1566                                    | 806      | 43.6         | 2100                  |                           |                              |

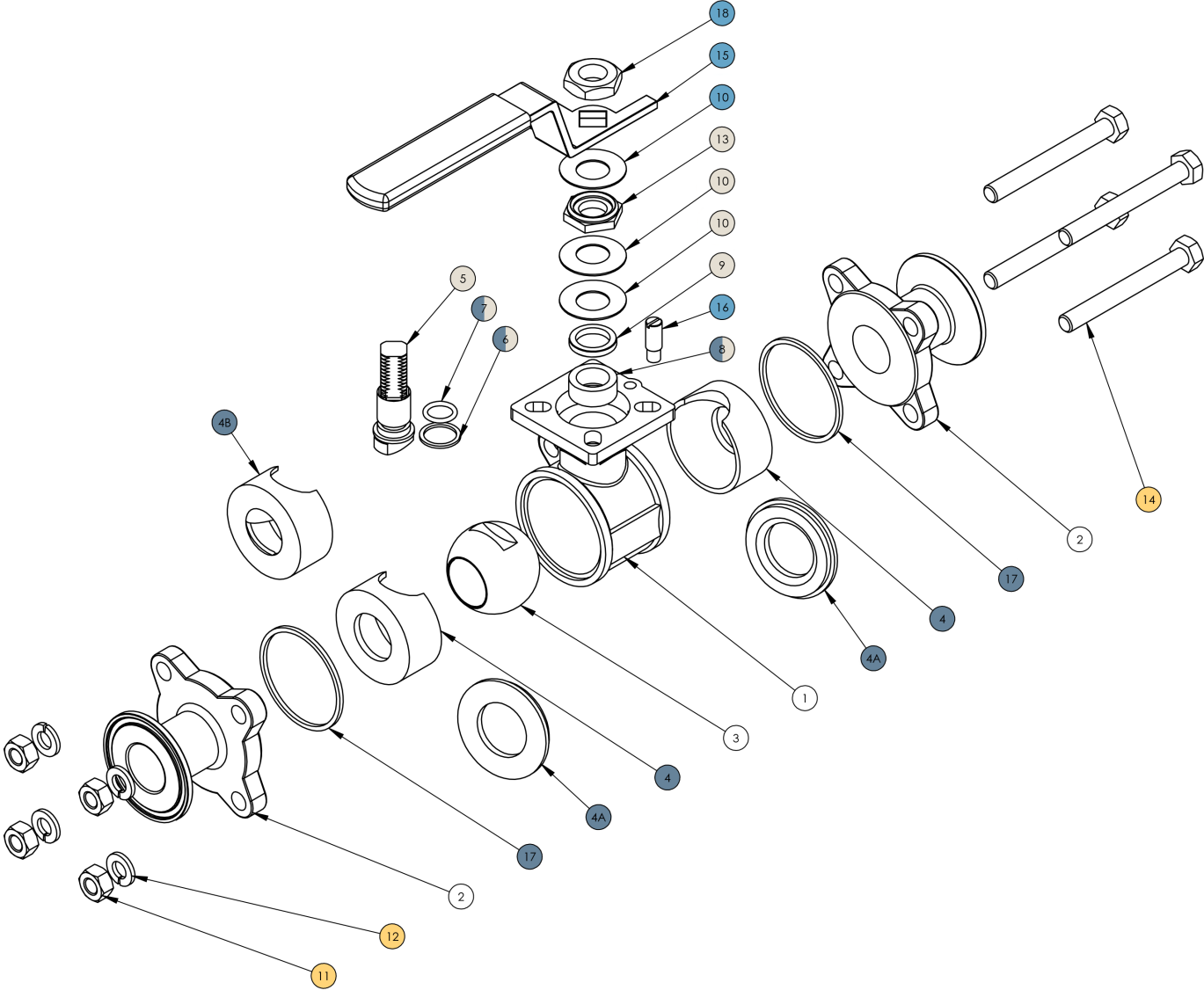
## BV2-Series Ball Valve - V-Port Seat Flow Coefficient (Cv)



| Size   | V-Port Angle | Percentage of Valve Opening |     |      |       |       |       |        |        |        |        |        |
|--------|--------------|-----------------------------|-----|------|-------|-------|-------|--------|--------|--------|--------|--------|
|        |              | 0%                          | 10% | 20%  | 30%   | 40%   | 50%   | 60%    | 70%    | 80%    | 90%    | 100%   |
| 1/2"   | 30°          | 0                           | .04 | .23  | .47   | .77   | 1.19  | 1.83   | 2.47   | 3.43   | 4.65   | 5.55   |
|        | 60°          | 0                           | .04 | .28  | .73   | 1.11  | 1.83  | 2.92   | 4.29   | 7.00   | 9.43   | 12.78  |
| 3/4"   | 30°          | 0                           | .07 | .30  | .61   | .99   | 1.57  | 2.42   | 3.25   | 4.52   | 6.12   | 7.30   |
|        | 60°          | 0                           | .07 | .35  | .93   | 1.46  | 2.42  | 3.85   | 5.64   | 9.21   | 12.41  | 16.25  |
| 1"     | 30°          | 0                           | .08 | .45  | 1.25  | 2.06  | 3.54  | 5.30   | 7.70   | 10.49  | 12.84  | 15.48  |
|        | 60°          | 0                           | .09 | .68  | 1.74  | 2.78  | 5.13  | 8.00   | 11.88  | 18.71  | 23.22  | 32.81  |
| 1-1/2" | 30°          | 0                           | .07 | .65  | 1.88  | 3.39  | 5.66  | 8.36   | 12.12  | 16.17  | 20.44  | 23.88  |
|        | 60°          | 0                           | .09 | .92  | 2.81  | 4.69  | 8.89  | 14.85  | 21.16  | 30.73  | 45.88  | 59.74  |
| 2"     | 30°          | 0                           | .09 | 1.18 | 3.79  | 7.53  | 12.26 | 17.83  | 26.44  | 36.45  | 48.09  | 55.85  |
|        | 60°          | 0                           | .11 | 1.51 | 5.80  | 10.39 | 20.60 | 33.98  | 48.75  | 69.04  | 104.23 | 135.75 |
| 2-1/2" | 30°          | 0                           | .09 | 1.15 | 4.42  | 7.91  | 13.39 | 20.05  | 30.43  | 41.92  | 56.30  | 76.95  |
|        | 60°          | 0                           | .13 | 1.46 | 5.91  | 11.90 | 23.24 | 37.92  | 59.31  | 83.29  | 113.65 | 162.50 |
| 3"     | 30°          | 0                           | .12 | 1.20 | 4.15  | 9.49  | 15.96 | 26.78  | 38.91  | 53.31  | 69.77  | 85.91  |
|        | 60°          | 0                           | .15 | 2.89 | 6.70  | 15.82 | 29.36 | 46.32  | 73.60  | 106.74 | 149.88 | 193.20 |
| 4"     | 30°          | 0                           | .16 | 1.75 | 7.84  | 18.59 | 35.21 | 58.60  | 87.89  | 124.21 | 158.53 | 196.35 |
|        | 60°          | 0                           | .26 | 2.20 | 12.44 | 33.67 | 62.98 | 106.26 | 160.49 | 233.96 | 329.50 | 437.29 |

**BV2-Series Ball Valve - Bill of Materials**

1/2" to 1"



F



## BV2-Series Ball Valve - Bill of Materials

1/2" to 1"

| Item # | BV2 Size | Part #                                                                                                                                                                  | Description              | Materials       | Qty |
|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------|-----|
| 1      | 1/2"     | BV-2C-1-050                                                                                                                                                             | body                     | CF8M            | 1   |
|        | 3/4"     | BV-2C-1-075                                                                                                                                                             | body                     | CF8M            | 1   |
|        | 1"       | BV-2C-1-100                                                                                                                                                             | body                     | CF8M            | 1   |
| 2      | 1/2"     | BV-2X-CE050                                                                                                                                                             | tri-clamp end            | CF8M            | 2   |
|        | 3/4"     | BV-2X-CE075                                                                                                                                                             | tri-clamp end            | CF8M            | 2   |
|        | 1"       | BV-2X-CE100                                                                                                                                                             | tri-clamp end            | CF8M            | 2   |
| 3      | 1/2"     | BV-2X-BL050                                                                                                                                                             | ball                     | CF8M            | 1   |
|        | 3/4"     | BV-2X-BL075                                                                                                                                                             | ball                     | CF8M            | 1   |
|        | 1"       | BV-2X-BL100                                                                                                                                                             | ball                     | CF8M            | 1   |
| 4      | all      |                                                                                        | encapsulated seat        | see repair kits | 2   |
| 4A     | all      |                                                                                        | non-encapsulated seat    | see repair kits | 2   |
| 4B     | all      |                                                                                        | v-port encapsulated seat | see repair kits | 1   |
| 5      | all      |                                                                                        | stem                     | 316 SS          | 1   |
| 6      | all      |       | thrust washer            | see repair kits | 1   |
| 7      | all      |   | stem O-ring              | FKM             | 1   |
| 8      | all      |   | stem packing             | see repair kits | 3   |
| 9      | all      |                                                                                      | gland ring               | 316 SS          | 1   |
| 10     | all      |   | bevel washer             | 301 SS          | 3   |
| 11     | all      |                                                                                      | hex nut                  | 304 SS          | 4   |
| 12     | all      |                                                                                      | lock washer              | 304 SS          | 4   |
| 13     | all      |                                                                                      | stem lock nut            | 304 SS          | 1   |
| 14     | all      |                                                                                      | body bolt                | 304 SS          | 4   |
| 15     | all      |                                                                                      | handle                   | 304 SS / Vinyl  | 1   |
| 16     | all      |                                                                                      | stop pin                 | 316 SS          | 1   |
| 17     | all      |                                                                                      | body seal                | see repair kits | 2   |
| 18     | all      |                                                                                      | handle nut               | 304 SS          | 1   |



Included in seat kit (page 152)



Included in handle kit (page 153)



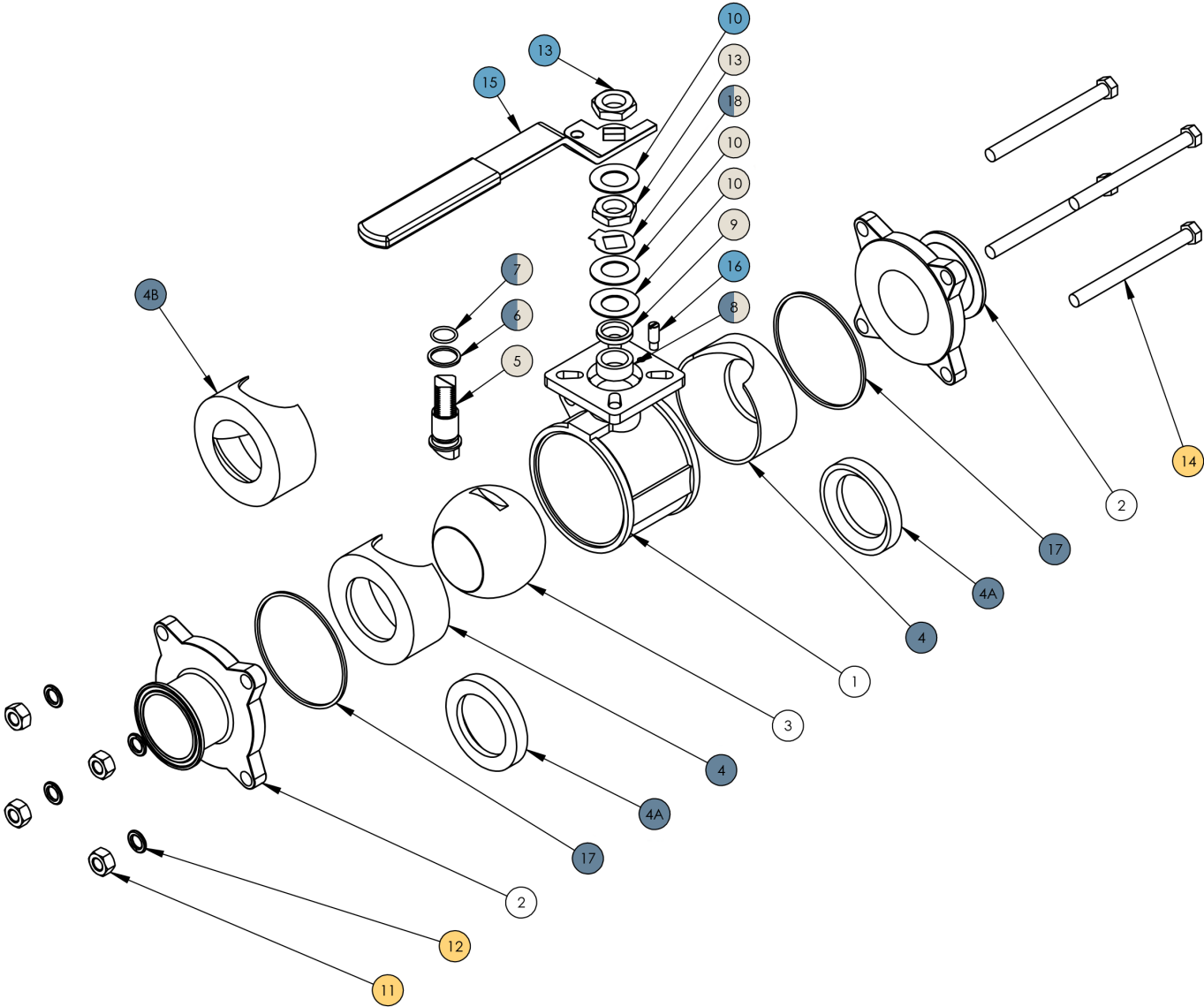
Included in stem kit (page 153)



Included in bolt and nut kit (page 153)

**BV2-Series Ball Valve - Bill of Materials**

1-1/2" to 2"



F

## BV2-Series Ball Valve - Bill of Materials

1-1/2" to 2"

| Item # | BV2 Size | Part #                                                                                                                                                                  | Description              | Materials       | Qty |
|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------|-----|
| 1      | 1-1/2"   | BV-2C-1-150                                                                                                                                                             | body                     | CF8M            | 1   |
|        | 2"       | BV-2C-1-200                                                                                                                                                             | body                     | CF8M            | 1   |
| 2      | 1-1/2"   | BV-2X-CE150                                                                                                                                                             | tri-clamp end            | CF8M            | 2   |
|        | 2"       | BV-2X-CE200                                                                                                                                                             | tri-clamp end            | CF8M            | 2   |
| 3      | 1-1/2"   | BV-2X-BL150                                                                                                                                                             | ball                     | CF8M            | 1   |
|        | 2"       | BV-2X-BL200                                                                                                                                                             | ball                     | CF8M            | 1   |
| 4      | all      |                                                                                        | encapsulated seat        | see repair kits | 2   |
| 4A     | all      |                                                                                        | non-encapsulated seat    | see repair kits | 2   |
| 4B     | all      |                                                                                        | v-port encapsulated seat | see repair kits | 1   |
| 5      | all      |                                                                                        | stem                     | 316 SS          | 1   |
| 6      | all      |       | thrust washer            | see repair kits | 1   |
| 7      | all      |       | stem O-ring              | FKM             | 1   |
| 8      | all      |       | stem packing             | see repair kits | 3   |
| 9      | all      |                                                                                       | gland ring               | 316 SS          | 1   |
| 10     | all      |   | bevel washer             | 301 SS          | 3   |
| 11     | all      |                                                                                      | hex nut                  | 304 SS          | 4   |
| 12     | all      |                                                                                      | lock washer              | 304 SS          | 4   |
| 13     | all      |   | stem nut                 | 304 SS          | 2   |
| 14     | all      |                                                                                      | body bolt                | 304 SS          | 4   |
| 15     | all      |                                                                                      | handle                   | 304 SS / Vinyl  | 1   |
| 16     | all      |                                                                                      | stop pin                 | 316 SS          | 1   |
| 17     | all      |                                                                                      | body seal                | see repair kits | 2   |
| 18     | all      |   | tab washer               | 304 SS          | 1   |



Included in seat kit (page 152)



Included in handle kit (page 153)



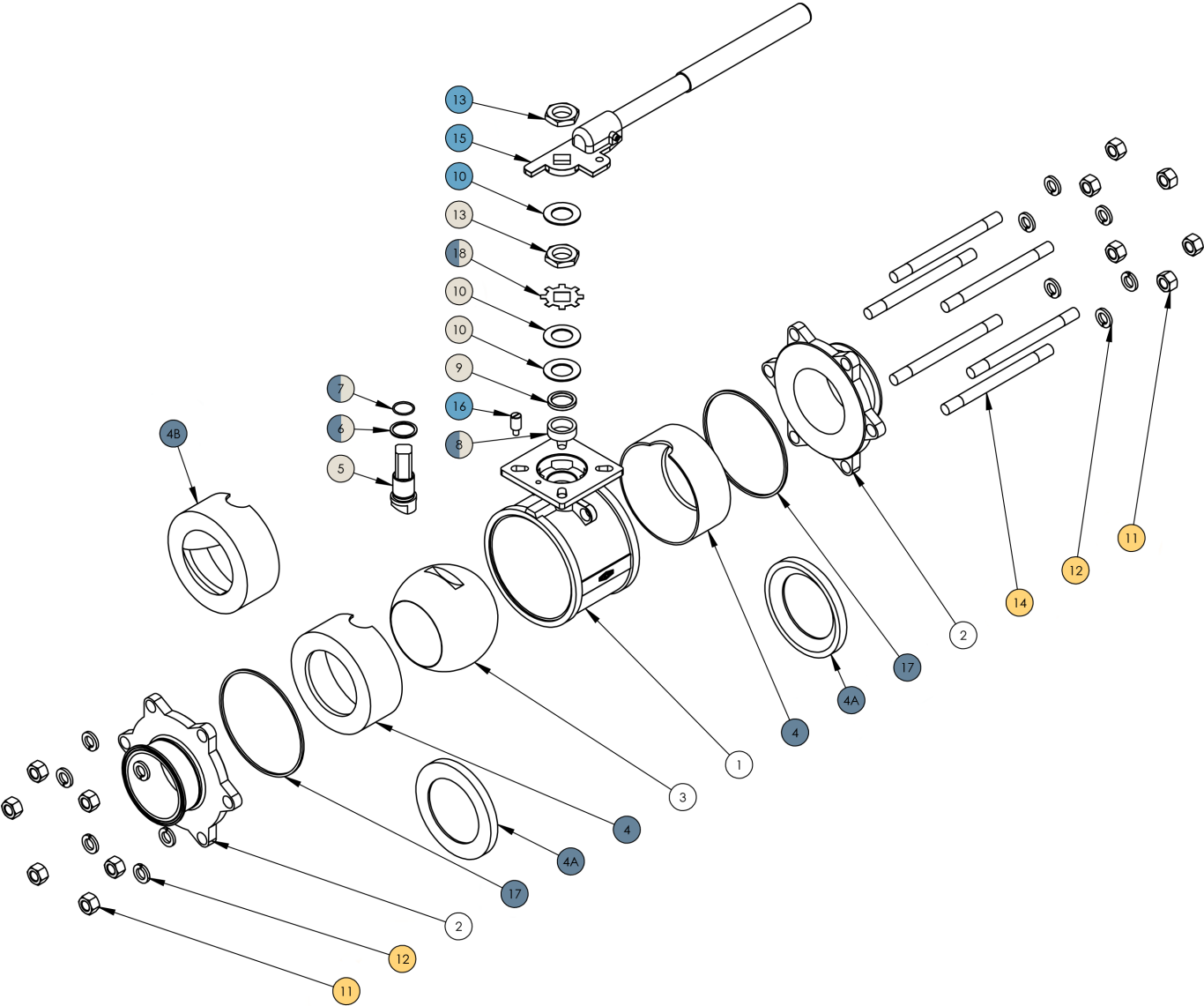
Included in stem kit (page 153)



Included in bolt and nut kit (page 153)

**BV2-Series Ball Valve - Bill of Materials**

2-1/2" to 4"



**F**

## BV2-Series Ball Valve - Bill of Materials

2-1/2" to 4"

| Item # | BV2 Size | Part #                                                                                                                                                                  | Description              | Materials      | Qty    |    |    |
|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------|--------|----|----|
|        |          |                                                                                                                                                                         |                          |                | 2-1/2" | 3" | 4" |
| 1      | 2-1/2"   | BV-2C-1-250                                                                                                                                                             | body                     | CF8M           | 1      | 1  | 1  |
|        | 3"       | BV-2C-1-300                                                                                                                                                             | body                     | CF8M           | 1      | 1  | 1  |
|        | 4"       | BV-2C-1-400                                                                                                                                                             | body                     | CF8M           | 1      | 1  | 1  |
| 2A     | 2-1/2"   | BV-2X-CE250                                                                                                                                                             | tri-clamp end            | CF8M           | 2      | 2  | 2  |
|        | 3"       | BV-2X-CE300                                                                                                                                                             | tri-clamp end            | CF8M           | 2      | 2  | 2  |
|        | 4"       | BV-2X-CE400                                                                                                                                                             | tri-clamp end            | CF8M           | 2      | 2  | 2  |
| 3      | 2-1/2"   | BV-2X-BL250                                                                                                                                                             | ball                     | CF8M           | 1      | 1  | 1  |
|        | 3"       | BV-2X-BL300                                                                                                                                                             | ball                     | CF8M           | 1      | 1  | 1  |
|        | 4"       | BV-2X-BL400                                                                                                                                                             | ball                     | CF8M           | 1      | 1  | 1  |
| 4      | all      |                                                                                        | encapsulated seat        | see repair kit | 2      | 2  | 2  |
| 4A     | all      |                                                                                        | non-encapsulated seat    | see repair kit | 2      | 2  | 2  |
| 4B     | all      |                                                                                        | v-port encapsulated seat | see repair kit | 1*     |    |    |
| 5      | all      |                                                                                       | stem                     | 316 SS         | 1      | 1  | 1  |
| 6      | all      |   | thrust washer            | see repair kit | 1      | 1  | 1  |
| 7      | all      |   | stem O-ring              | FKM            | 1      | 1  | 1  |
| 8      | all      |   | stem packing             | see repair kit | 3      | 3  | 3  |
| 9      | all      |                                                                                      | gland ring               | 316 SS         | 1      | 1  | 1  |
| 10     | all      |   | bevel washer             | 301 SS         | 3      | 3  | 3  |
| 11     | all      |                                                                                      | hex nut                  | 304 SS         | 4      | 8  | 12 |
| 12     | all      |                                                                                      | lock washer              | 304 SS         | 4      | 8  | 12 |
| 13     | all      |   | stem nut                 | 304 SS         | 2      | 2  | 2  |
| 14     | all      |                                                                                      | body bolt                | 304 SS         | 4      | 4  | 6  |
| 15     | all      |                                                                                      | handle                   | 304 SS/vinyl   | 1      | 1  | 1  |
| 16     | all      |                                                                                      | stop pin                 | 316 SS         | 1      | 1  | 1  |
| 17     | all      |                                                                                      | body seal                | see repair kit | 2      | 2  | 2  |
| 18     | all      |   | tab washer               | 304 SS         | 1      | 1  | 1  |

 Included in seat kit (page 152)

 Included in handle kit (page 153)

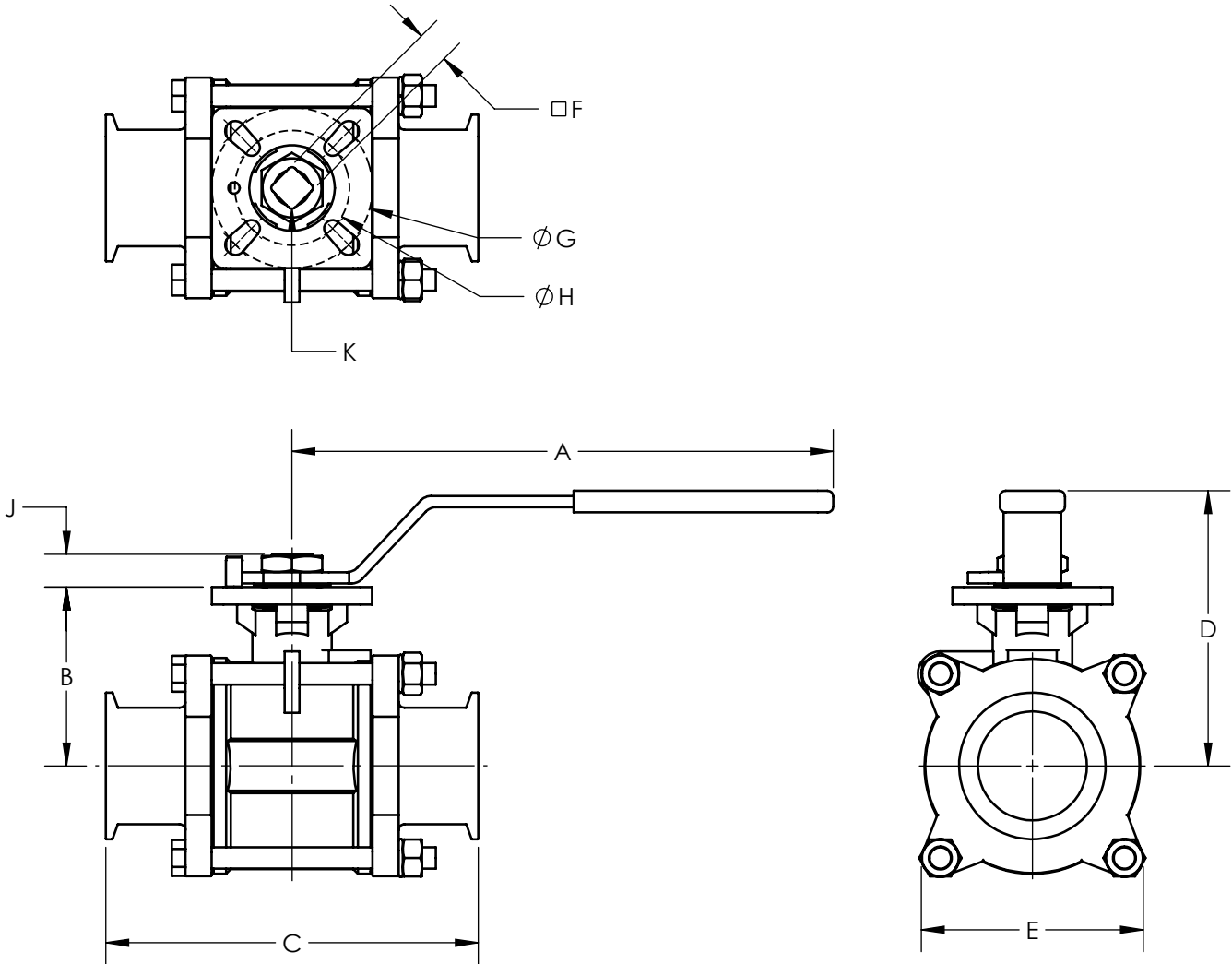
 Included in stem kit (page 153)

 Included in bolt and nut kit (page 153)

# BV2-Series Ball Valve - Dimensions

1/2" to 2"

F



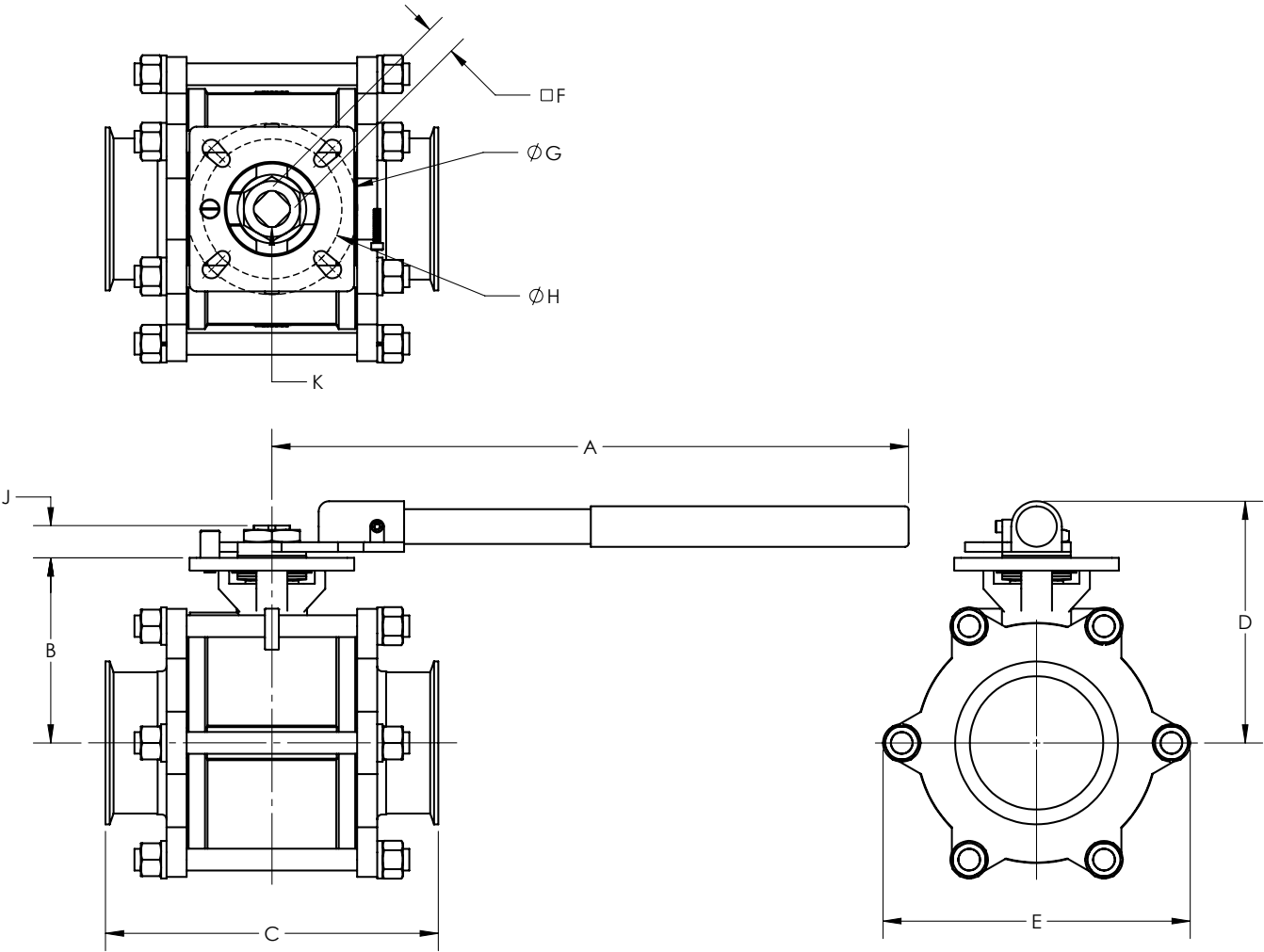
| Size   | A (in) | B (in) | C (in) <sup>1</sup> | D (in) | E (in) | F (mm) | G (ISO 5211) | H (ISO 5211) | J (mm) | K (threads) |
|--------|--------|--------|---------------------|--------|--------|--------|--------------|--------------|--------|-------------|
| 1/2"   | 4.9    | 1.5    | 4.3                 | 3.1    | 2.0    | 9      | F04          | F03          | 9      | M12 x 1.75  |
| 3/4"   | 4.9    | 1.8    | 4.7                 | 3.4    | 2.2    | 9      | F04          | F03          | 11     | M12 x 1.75  |
| 1"     | 5.5    | 2.1    | 4.9                 | 3.6    | 2.4    | 11     | F05          | F04          | 11     | M14 x 2     |
| 1-1/2" | 9.3    | 2.7    | 5.6                 | 4.4    | 3.1    | 14     | F07          | F05          | 14     | M18 x 2.5   |
| 2"     | 9.5    | 3.1    | 6.4                 | 4.7    | 3.7    | 14     | F07          | F05          | 14     | M18 x 2.5   |

<sup>1</sup>Clamp and weld dimensions are the same.

BV2-Series Ball Valve - Dimensions

2-1/2" to 4"

F

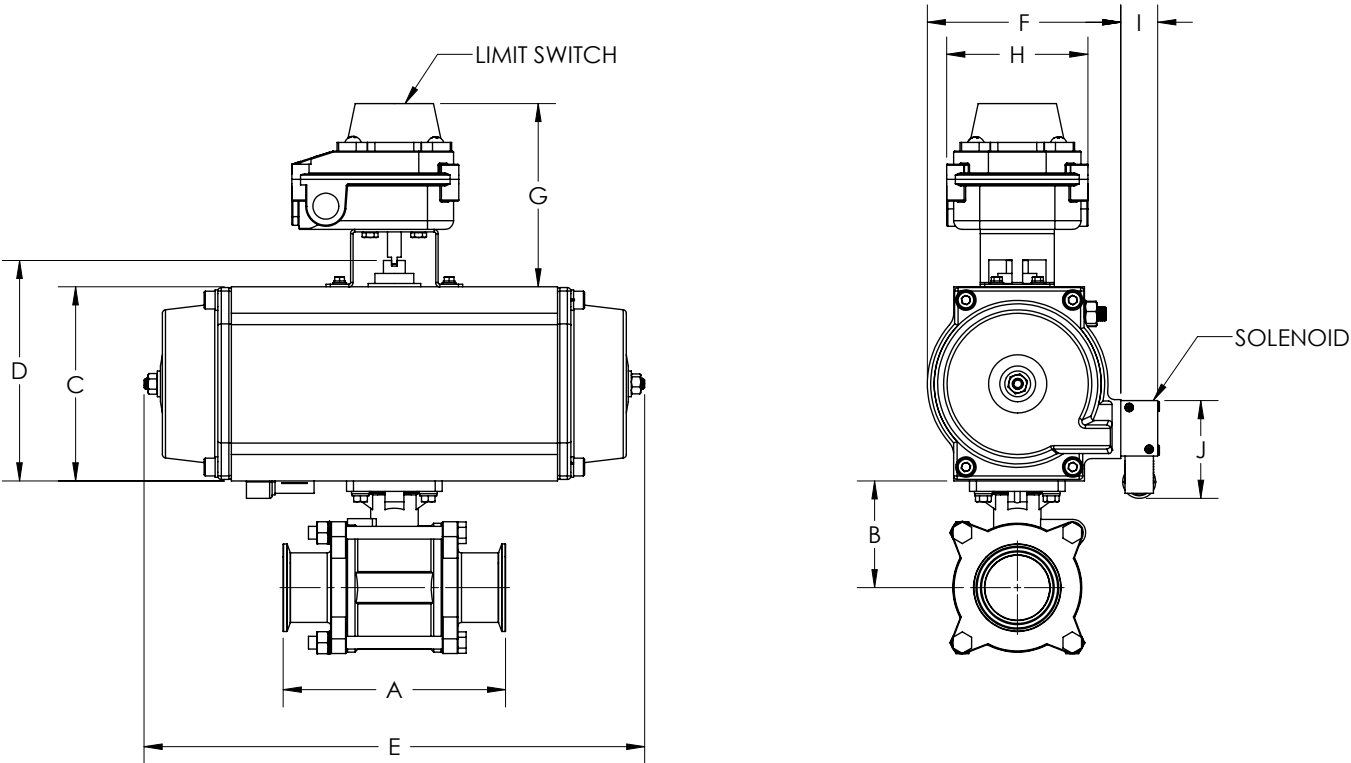


| Size   | A (in) | B (in) | C (in) <sup>1</sup> | D (in) | E (in) | F (mm) | G (ISO 5211) | H (ISO 5211) | J (mm) | K (threads)     |
|--------|--------|--------|---------------------|--------|--------|--------|--------------|--------------|--------|-----------------|
| 2-1/2" | 18.0   | 3.8    | 7.8                 | 5.2    | 4.9    | 17     | F10          | F07          | 17     | M22 x 2.5       |
| 3"     | 18.0   | 4.2    | 9.0                 | 5.7    | 5.4    | 17     | F12          | F10          | 17     | M22 x 2.5       |
| 4"     | 18.0   | 5.3    | 9.6                 | 6.9    | 8.8    | 22     | F12          | F10          | 24     | 1-1/8" x 12 UNF |

<sup>1</sup>Clamp and weld dimensions are the same.

**BV2-Series Ball Valve - Dimensions**

**Spring Return**



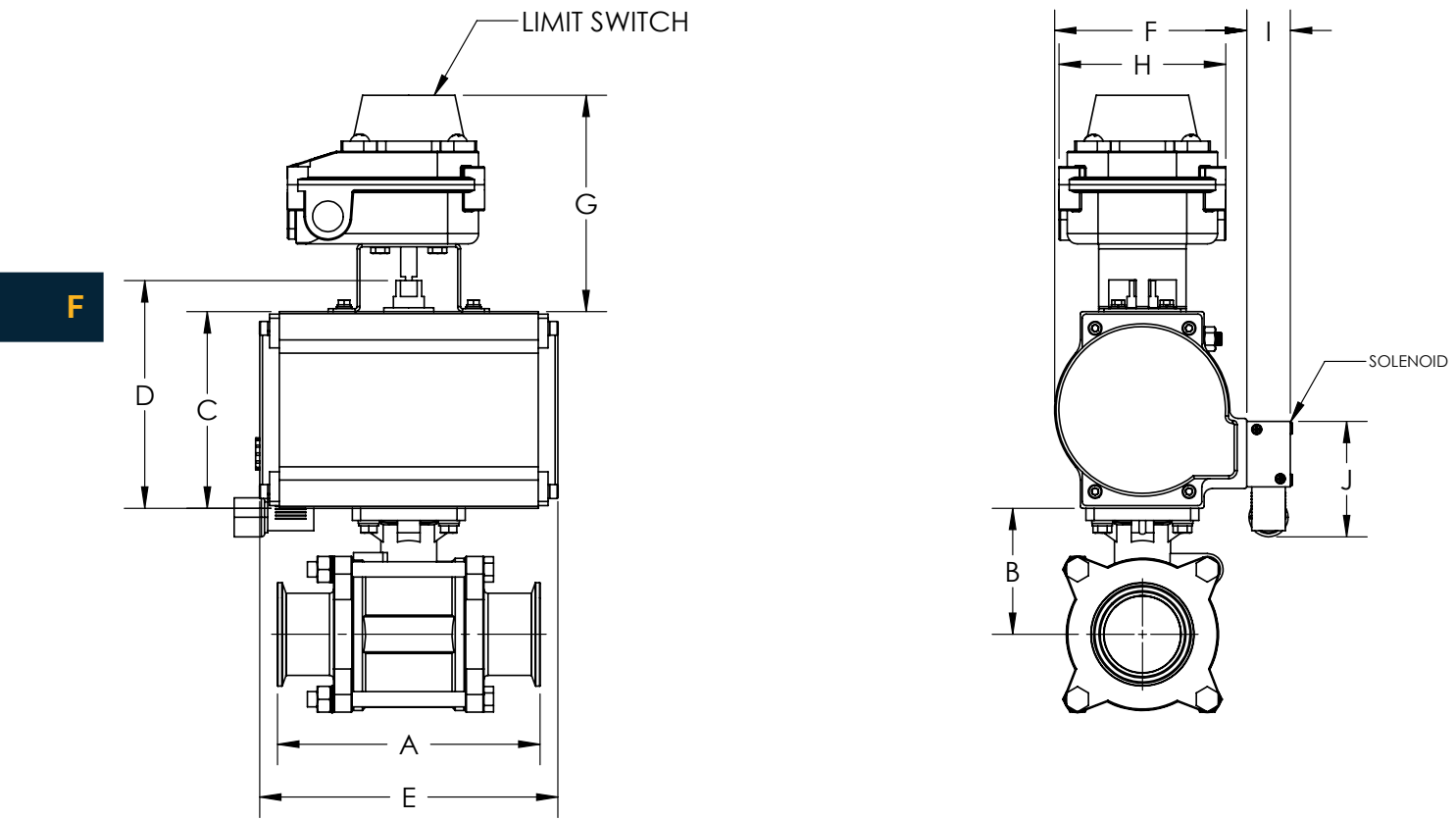
| Size   | A (in) <sup>1</sup> | B (in) | RP-BA Series Actuator | C (in) | D (in) | E (in) | F (in) | G (in)        | H (in)   | I (in) | J (in) |
|--------|---------------------|--------|-----------------------|--------|--------|--------|--------|---------------|----------|--------|--------|
|        |                     |        |                       |        |        |        |        | XLS-B4-series | X-series |        |        |
| 1/2"   | 4.3                 | 1.5    | RP-BA-025-SR          | 3.1    | 3.83   | 7.66   | 3.20   | 5.27          | 4.06     | 1.07   | 2.81   |
| 3/4"   | 4.7                 | 1.8    |                       |        |        |        |        |               |          |        |        |
| 1"     | 4.9                 | 2.1    | RP-BA-025-SR05        | 3.1    | 3.83   | 7.66   | 3.20   |               |          |        |        |
| 1-1/2" | 5.6                 | 2.7    | RP-BA-045-SR          | 3.86   | 4.63   | 8.09   | 3.72   |               |          |        |        |
| 2"     | 6.4                 | 3.1    | RP-BA-101-SR          | 4.79   | 5.54   | 9.84   | 4.68   |               |          |        |        |
| 2-1/2" | 7.8                 | 3.8    | RP-BA-225-SR          | 5.58   | 6.34   | 13.98  | 5.56   |               |          |        |        |
| 3"     | 9.0                 | 4.2    | RP-BA-365-SR          | 6.94   | 7.72   | 16.61  | 7.25   |               |          |        |        |
| 4"     | 9.6                 | 5.3    | RP-BA-500-SR          | 7.73   | 8.50   | 19.17  | 8.05   |               |          |        |        |

<sup>1</sup>Clamp and weld dimensions are the same.



BV2-Series Ball Valve - Dimensions

Double Acting

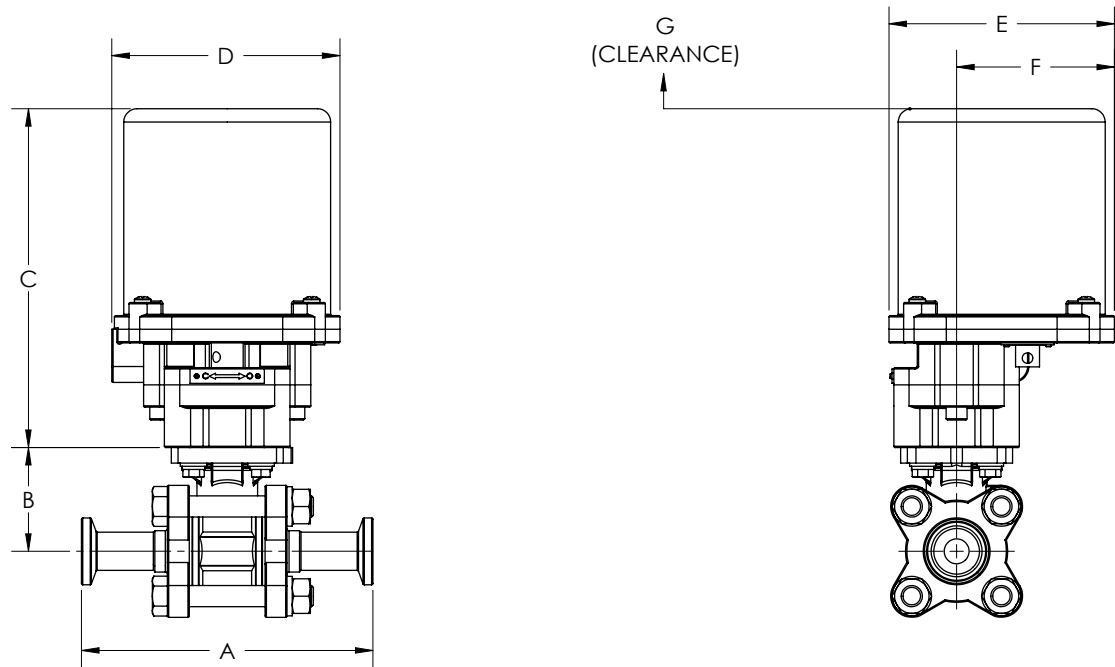


| Size   | A (in) <sup>1</sup> | B (in) | RP-BA Series Actuator | C (in) | D (in) | E (in) | F (in) | G (in)        | H (in) | I (in)   | J (in) |
|--------|---------------------|--------|-----------------------|--------|--------|--------|--------|---------------|--------|----------|--------|
|        |                     |        |                       |        |        |        |        | XLS-B4 series |        | X series |        |
| 1/2"   | 4.3                 | 1.5    | RP-BA-012-DA          | 2.60   | 3.39   | 4.72   | 2.93   | 5.27          | 4.06   | 1.07     | 2.81   |
| 3/4"   | 4.7                 | 1.8    |                       |        |        |        |        |               |        |          |        |
| 1"     | 4.9                 | 2.1    | RP-BA-025-DA05        | 3.10   | 3.87   | 5.68   | 3.20   |               |        |          |        |
| 1-1/2" | 5.6                 | 2.7    | RP-BA-045-DA          | 3.86   | 4.63   | 5.87   | 3.72   |               |        |          |        |
| 2"     | 6.4                 | 3.1    |                       |        |        |        |        |               |        |          |        |
| 2-1/2" | 7.8                 | 3.8    | RP-BA-101-DA          | 4.79   | 5.54   | 7.20   | 4.77   |               |        |          |        |
| 3"     | 9.0                 | 4.2    | RP-BA-225-DA          | 5.58   | 6.34   | 10.22  | 5.56   |               |        |          |        |
| 4"     | 9.6                 | 5.3    |                       |        |        |        |        |               |        |          |        |

<sup>1</sup>Clamp and weld dimensions are the same.

**BV2-Series Ball Valve - Dimensions**

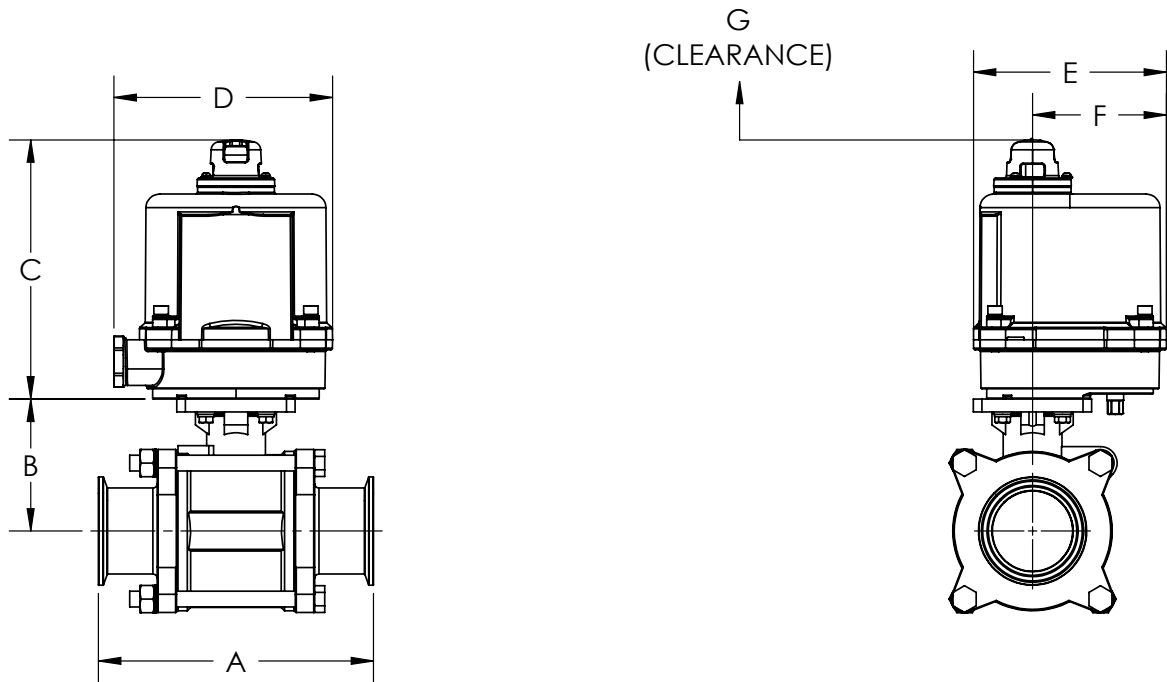
**Electric Actuator - BM-T**



F

NOTE: The electric actuator shown is a BM-T model. For more information on actuation accessories see relevant EPRG for electric actuators.

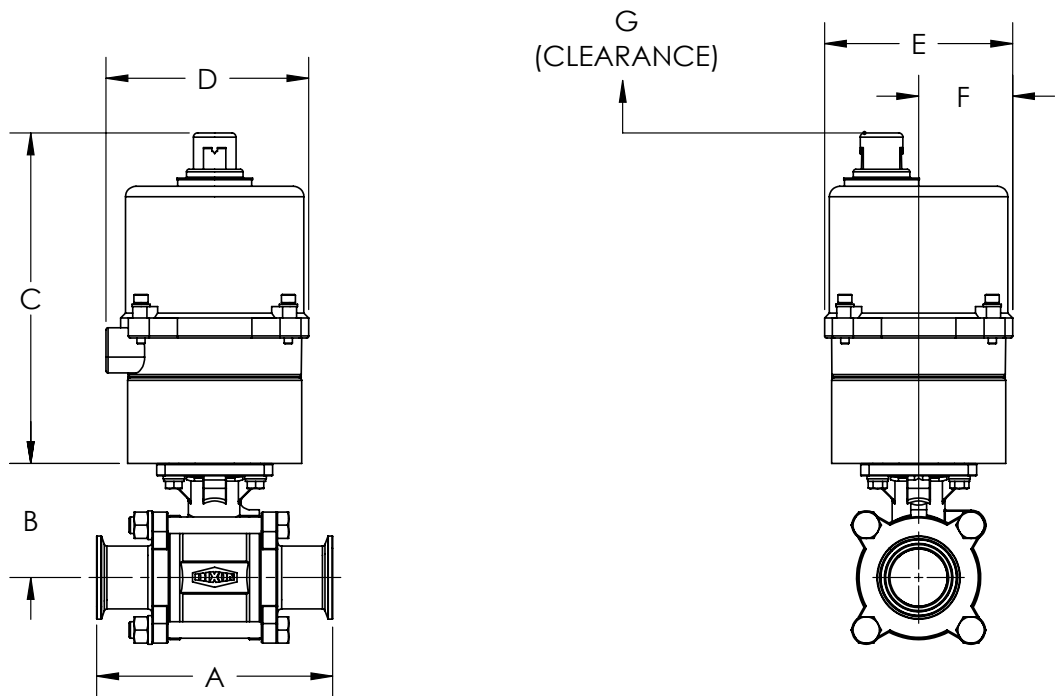
**Electric Actuator - OM-1**



NOTE: The electric actuator shown is a BEOM-1 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

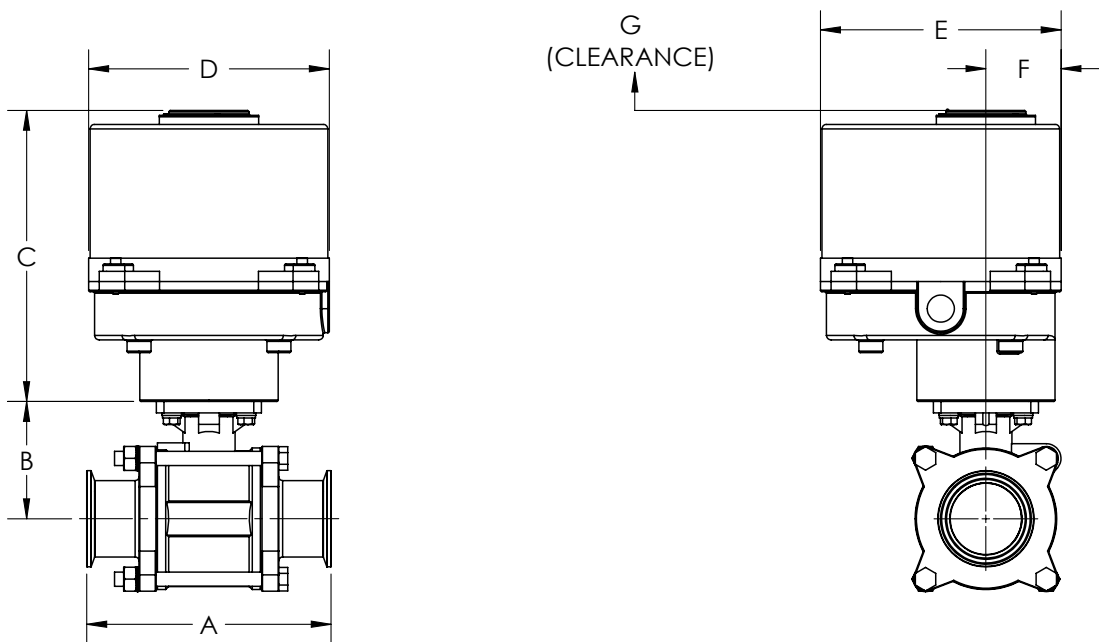
BV2-Series Ball Valve - Dimensions

Electric Actuator - OM-A



NOTE: The electric actuator shown is a BEOM-A model. For more information on actuation accessories see relevant EPRG for electric actuators.

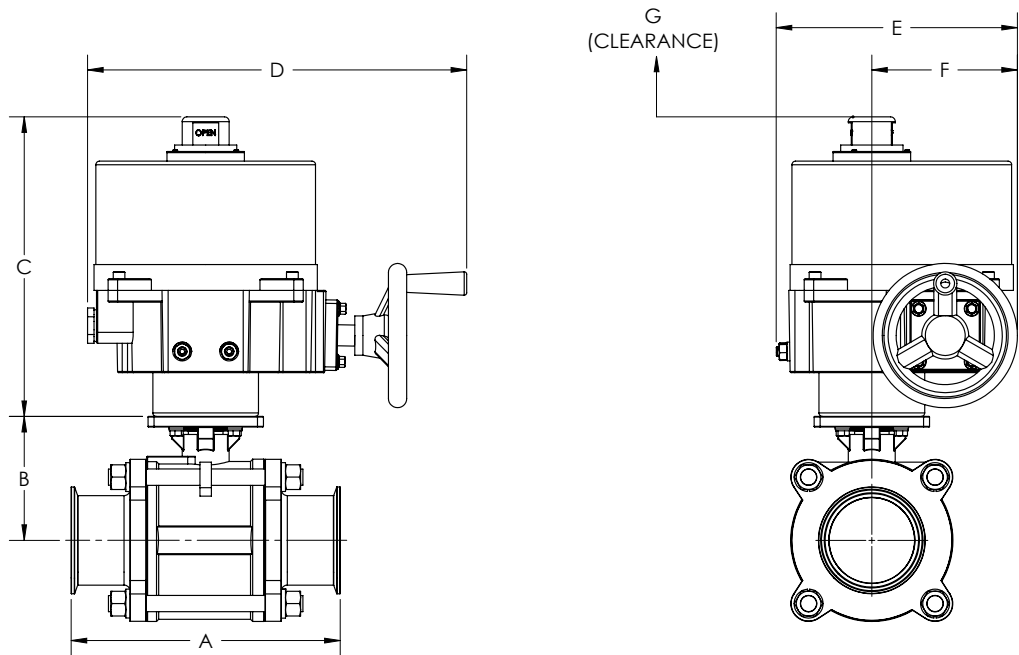
Electric Actuator - BM-2



NOTE: The electric actuator shown is a BM-2 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

**BV2-Series Ball Valve - Dimensions**

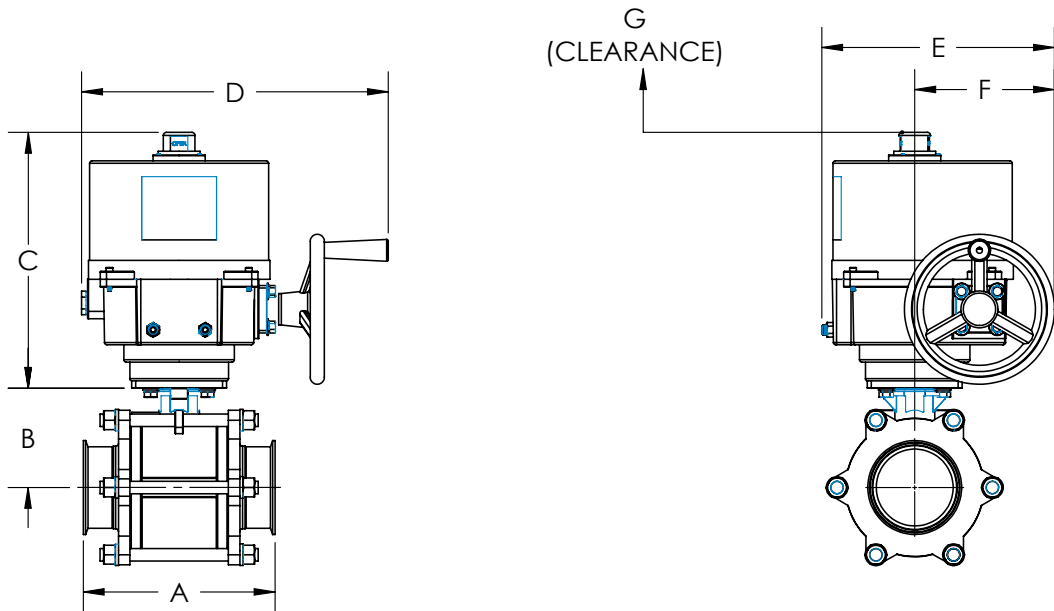
**Electric Actuator - OM-3**



F

NOTE: The electric actuator shown is an OM-3 model. For more information on actuation accessories see relevant EPRG for electric actuators.

**Electric Actuator - OM-4**



NOTE: The electric actuator shown is an OM-4 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

## BV2-Series Ball Valve - Dimensions

| Size   | A (in) <sup>1</sup> | B (in) | Electric Actuator Series | C (in) | D (in) | E (in) | F (in) | G (in) <sup>2</sup> |
|--------|---------------------|--------|--------------------------|--------|--------|--------|--------|---------------------|
| 1/2"   | 4.3                 | 1.5    | BM-T                     | 4.96   | 3.43   | 3.35   | 2.34   | 3.35                |
| 3/4"   | 4.7                 | 1.8    |                          |        |        |        |        |                     |
| 1"     | 4.9                 | 2.1    | OM-1                     | 6.02   | 4.80   | 4.49   | 3.11   | 4.72                |
| 1-1/2" | 5.6                 | 2.7    | OM-A                     | 7.83   | 4.80   | 4.49   | 2.24   | 4.72                |
| 2"     | 6.4                 | 3.1    | BM-2                     | 7.68   | 6.34   | 6.30   | 4.33   | 4.72                |
| 2-1/2" | 7.8                 | 3.8    | OM-3                     | 10.55  | 12.84  | 7.13   | 4.84   | 6.50                |
| 3"     | 9.0                 | 4.2    |                          |        |        |        |        |                     |
| 4"     | 9.6                 | 5.3    | OM-4                     | 12.99  | 15.43  | 11.58  | 7.24   | 8.07                |

<sup>1</sup>Clamp and weld dimensions are the same.<sup>2</sup>Space needed to remove cover.

## BV2-Series Ball Valve - Repair Kits



## Encapsulated Seat Kit

| Size   | Material    |             |                 |                          |             |
|--------|-------------|-------------|-----------------|--------------------------|-------------|
|        | Virgin PTFE | RTFE        | 25% Carbon PTFE | 50% Stainless Steel PTFE | UHMW        |
| 1/2"   | BV-2C-VK050 | BV-2C-GK050 | BV-2C-CK050     | BV-2C-SK050              | BV-2C-UK050 |
| 3/4"   | BV-2C-VK075 | BV-2C-GK075 | BV-2C-CK075     | BV-2C-SK075              | BV-2C-UK075 |
| 1"     | BV-2C-VK100 | BV-2C-GK100 | BV-2C-CK100     | BV-2C-SK100              | BV-2C-UK100 |
| 1-1/2" | BV-2C-VK150 | BV-2C-GK150 | BV-2C-CK150     | BV-2C-SK150              | BV-2C-UK150 |
| 2"     | BV-2C-VK200 | BV-2C-GK200 | BV-2C-CK200     | BV-2C-SK200              | BV-2C-UK200 |
| 2-1/2" | BV-2C-VK250 | BV-2C-GK250 | BV-2C-CK250     | BV-2C-SK250              | BV-2C-UK250 |
| 3"     | BV-2C-VK300 | BV-2C-GK300 | BV-2C-CK300     | BV-2C-SK300              | BV-2C-UK300 |
| 4"     | BV-2C-VK400 | BV-2C-GK400 | BV-2C-CK400     | BV-2C-SK400              | BV-2C-UK400 |



## Non-Encapsulated Seat Kit

| Size   | Material    |             |                 |                          |             |
|--------|-------------|-------------|-----------------|--------------------------|-------------|
|        | Virgin PTFE | RTFE        | 25% Carbon PTFE | 50% Stainless Steel PTFE | UHMW        |
| 1/2"   | BV-2N-VK050 | BV-2N-GK050 | BV-2N-CK050     | BV-2N-SK050              | BV-2N-UK050 |
| 3/4"   | BV-2N-VK075 | BV-2N-GK075 | BV-2N-CK075     | BV-2N-SK075              | BV-2N-UK075 |
| 1"     | BV-2N-VK100 | BV-2N-GK100 | BV-2N-CK100     | BV-2N-SK100              | BV-2N-UK100 |
| 1-1/2" | BV-2N-VK150 | BV-2N-GK150 | BV-2N-CK150     | BV-2N-SK150              | BV-2N-UK150 |
| 2"     | BV-2N-VK200 | BV-2N-GK200 | BV-2N-CK200     | BV-2N-SK200              | BV-2N-UK200 |
| 2-1/2" | BV-2N-VK250 | BV-2N-GK250 | BV-2N-CK250     | BV-2N-SK250              | BV-2N-UK250 |
| 3"     | BV-2N-VK300 | BV-2N-GK300 | BV-2N-CK300     | BV-2N-SK300              | BV-2N-UK300 |
| 4"     | BV-2N-VK400 | BV-2N-GK400 | BV-2N-CK400     | BV-2N-SK400              | BV-2N-UK400 |

## BV2-Series Ball Valve - Repair Kits



### Encapsulated 60° V-Port Seat Kit

| Size   | Material    |             |                 |                          |             |
|--------|-------------|-------------|-----------------|--------------------------|-------------|
|        | Virgin PTFE | RTFE        | 25% Carbon PTFE | 50% Stainless Steel PTFE | UHMW        |
| 1/2"   | BV-2L-VK050 | BV-2L-GK050 | BV-2L-CK050     | BV-2L-SK050              | BV-2L-UK050 |
| 3/4"   | BV-2L-VK075 | BV-2L-GK075 | BV-2L-CK075     | BV-2L-SK075              | BV-2L-UK075 |
| 1"     | BV-2L-VK100 | BV-2L-GK100 | BV-2L-CK100     | BV-2L-SK100              | BV-2L-UK100 |
| 1-1/2" | BV-2L-VK150 | BV-2L-GK150 | BV-2L-CK150     | BV-2L-SK150              | BV-2L-UK150 |
| 2"     | BV-2L-VK200 | BV-2L-GK200 | BV-2L-CK200     | BV-2L-SK200              | BV-2L-UK200 |
| 2-1/2" | BV-2L-VK250 | BV-2L-GK250 | BV-2L-CK250     | BV-2L-SK250              | BV-2L-UK250 |
| 3"     | BV-2L-VK300 | BV-2L-GK300 | BV-2L-CK300     | BV-2L-SK300              | BV-2L-UK300 |
| 4"     | BV-2L-VK400 | BV-2L-GK400 | BV-2L-CK400     | BV-2L-SK400              | BV-2L-UK400 |

F



### Encapsulated 30° V-Port Seat Kit

| Size   | Material    |             |                 |                          |             |
|--------|-------------|-------------|-----------------|--------------------------|-------------|
|        | Virgin PTFE | RTFE        | 25% Carbon PTFE | 50% Stainless Steel PTFE | UHMW        |
| 1/2"   | BV-2M-VK050 | BV-2M-GK050 | BV-2M-CK050     | BV-2M-SK050              | BV-2M-UK050 |
| 3/4"   | BV-2M-VK075 | BV-2M-GK075 | BV-2M-CK075     | BV-2M-SK075              | BV-2M-UK075 |
| 1"     | BV-2M-VK100 | BV-2M-GK100 | BV-2M-CK100     | BV-2M-SK100              | BV-2M-UK100 |
| 1-1/2" | BV-2M-VK150 | BV-2M-GK150 | BV-2M-CK150     | BV-2M-SK150              | BV-2M-UK150 |
| 2"     | BV-2M-VK200 | BV-2M-GK200 | BV-2M-CK200     | BV-2M-SK200              | BV-2M-UK200 |
| 2-1/2" | BV-2M-VK250 | BV-2M-GK250 | BV-2M-CK250     | BV-2M-SK250              | BV-2M-UK250 |
| 3"     | BV-2M-VK300 | BV-2M-GK300 | BV-2M-CK300     | BV-2M-SK300              | BV-2M-UK300 |
| 4"     | BV-2M-VK400 | BV-2M-GK400 | BV-2M-CK400     | BV-2M-SK400              | BV-2M-UK400 |



### Handle Kits

| Size   | Part #          |
|--------|-----------------|
| 1/2"   | BV-23-HA050-075 |
| 3/4"   |                 |
| 1"     | BV-23-HA100     |
| 1-1/2" | BV-23-HA150-200 |
| 2"     |                 |
| 2-1/2" | BV-23-HA-17     |
| 3"     |                 |
| 4"     | BV-23-HA-22     |



### Stem Kits (Virgin PTFE)

| Size   | Part #      |
|--------|-------------|
| 1/2"   | BV-2X-SM050 |
| 3/4"   | BV-2X-SM075 |
| 1"     | BV-2X-SM100 |
| 1-1/2" | BV-2X-SM150 |
| 2"     | BV-2X-SM200 |
| 2-1/2" | BV-2X-SM250 |
| 3"     | BV-2X-SM300 |
| 4"     | BV-2X-SM400 |



### Bolt and Nut Kits

| Size   | Part #      |
|--------|-------------|
| 1/2"   | BV-2X-BN050 |
| 3/4"   | BV-2X-BN075 |
| 1"     | BV-2X-BN100 |
| 1-1/2" | BV-2X-BN150 |
| 2"     | BV-2X-BN200 |
| 2-1/2" | BV-2X-BN250 |
| 3"     | BV-2X-BN300 |
| 4"     | BV-2X-BN400 |

BV2G-Series Non-Encapsulated Ball Valve

Sizes

- 1/2", 3/4", 1", 1-1/2", 2", 2-1/2", 3", and 4"

Features

- Compact design for areas with tight space restrictions
- Full port design offers lower pressure drop and a less turbulent flow
- Balanced non-encapsulated construction minimizes cold flow
- Precision stainless steel balls reduce torque and friction losses while extending seat life
- Blow-out proof stem
- Lockable handle can prevent accidental actuation when used

Materials

- Product contact metal components: CF8M (316) stainless steel

Specifications

- Maximum pressure
  - 1/2" to 2": **1000 PSI WOG**
  - 2-1/2" to 4": **800 PSI WOG**

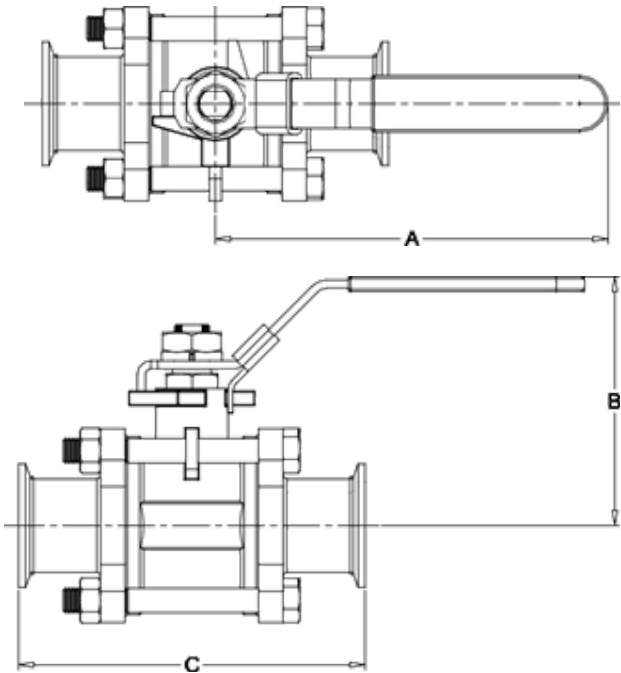


| Size   | Part #        | Weight (lbs) | Break Torque (in-lbs) |
|--------|---------------|--------------|-----------------------|
| 1/2"   | BV2G*-050CC-A | 1.4          | 55                    |
| 3/4"   | BV2G*-075CC-A | 1.8          | 71                    |
| 1"     | BV2G*-100CC-A | 2.6          | 101                   |
| 1-1/2" | BV2G*-150CC-A | 4.6          | 221                   |
| 2"     | BV2G*-200CC-A | 8.5          | 345                   |
| 2-1/2" | BV2G*-250CC-A | 17.8         | 883                   |
| 3"     | BV2G*-300CC-A | 28.2         | 830                   |
| 4"     | BV2G*-400CC-A | 41.4         | 1323                  |

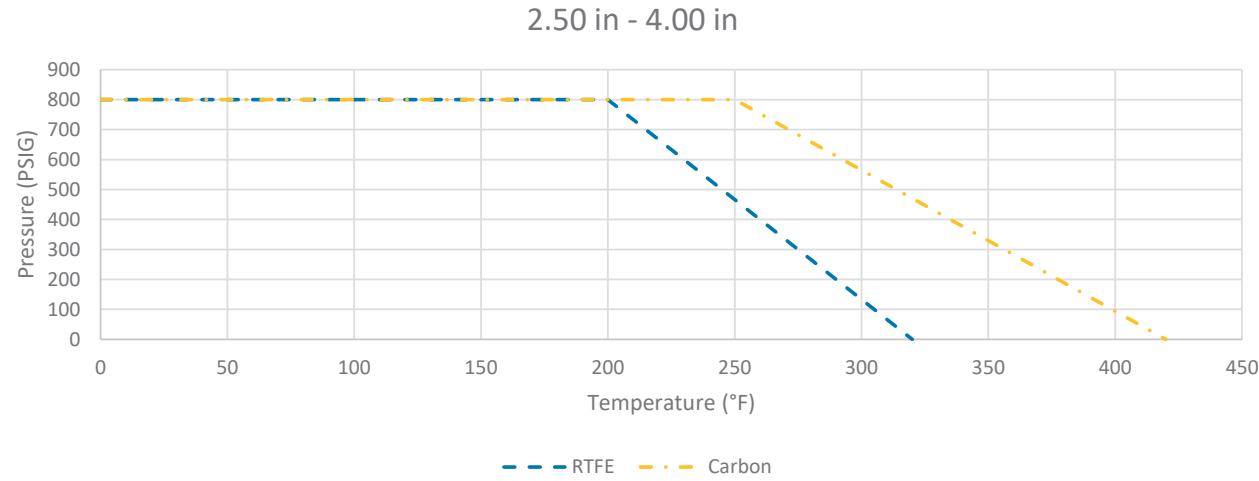
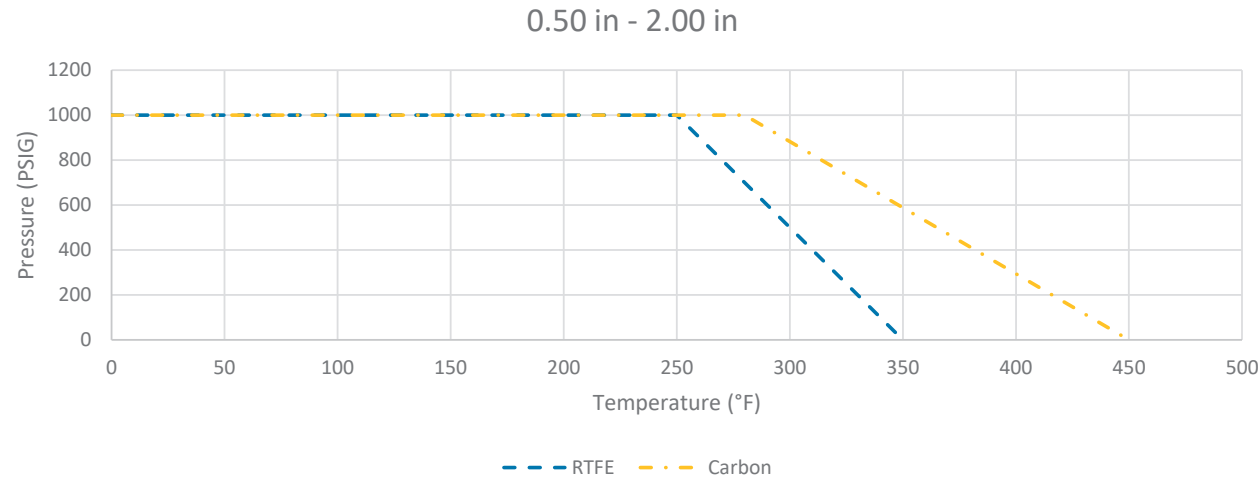
\* G - RTFE; C - 25% carbon/PTFE

BV2G-Series Non-Encapsulated Ball Valve - Dimensions

| Size   | A (in) | B (in) | C (in) |
|--------|--------|--------|--------|
| 1/4"   | 4.1    | 2.3    | 4.6    |
| 3/4"   | 4.1    | 2.5    | 4.7    |
| 1"     | 5.0    | 2.8    | 4.9    |
| 1-1/2" | 6.1    | 3.5    | 5.6    |
| 2"     | 7.6    | 3.9    | 6.4    |
| 2-1/2" | 7.6    | 4.4    | 7.8    |
| 3"     | 10.9   | 4.9    | 9.0    |
| 4"     | 13.2   | 6.6    | 9.6    |

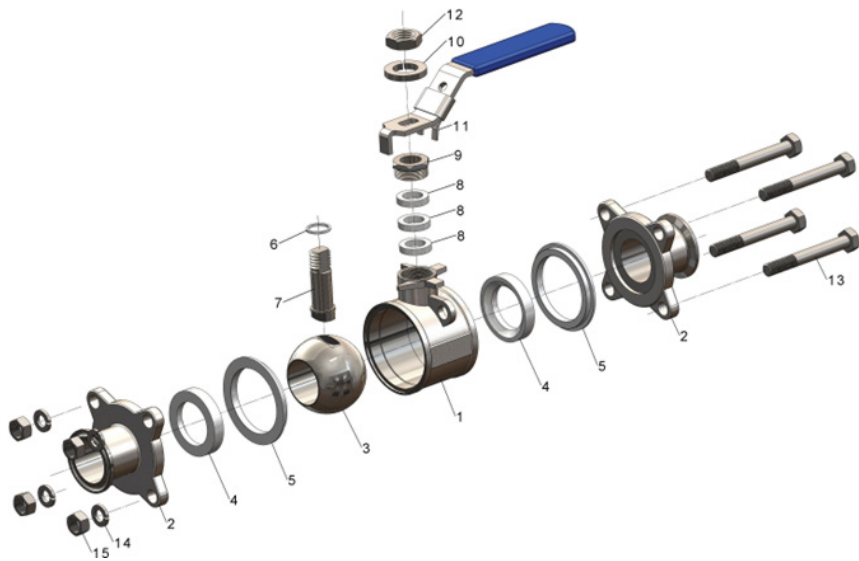


**BV2G-Series Non-Encapsulated Ball Valve - Pressure Temperature Charts**





BV2G-Series Non-Encapsulated Ball Valve - Bill of Materials



| Item # | Description   | Material | Qty        |    |
|--------|---------------|----------|------------|----|
|        |               |          | 1/2" to 3" | 4" |
| 1      | body          | CF8M     | 1          | 1  |
| 2      | end (4-bolt)  | CF8M     | 2          | 2  |
| 3      | ball          | CF8M     | 1          | 1  |
| 4      | seat          | G or C * | 2          | 2  |
| 5      | gasket        | G or C * | 2          | 2  |
| 6      | thrust washer | G or C * | 1          | 1  |
| 7      | stem          | 316      | 1          | 1  |
| 8      | stem packing  | G or C * | 3          | 3  |
| 9      | gland         | 304      | 1          | 1  |
| 10     | bevel washer  | 301      | 1          | 1  |
| 11     | handle        | 304      | 1          | 1  |
| 12     | nut           | 304      | 1          | 1  |
| 13     | bolt          | 304      | 4          | 6  |
| 14     | bolt washer   | 304      | 4          | 6  |
| 15     | bolt nut      | 304      | 4          | 6  |

\* G - RTFE; C - 25% carbon/PTFE

BV2G-Series Non-Encapsulated Ball Valve - Repair Kits

| Valve Size | Repair Kit Part # |
|------------|-------------------|
| 1/2"       | BV-2G-*K050       |
| 3/4"       | BV-2G-*K075       |
| 1"         | BV-2G-*K100       |
| 1-1/2"     | BV-2G-*K150       |
| 2"         | BV-2G-*K200       |
| 2-1/2"     | BV-2G-*K250       |
| 3"         | BV-2G-*K300       |
| 4"         | BV-2G-*K400       |

\* G - RTFE; C - 25% carbon/PTFE  
Repair kit contains items 4 (qty 2), 5 (qty 2), 6 (qty 1), 8 (qty 3)

## BV3S/4S-Series Sanitary Multi-Port Ball Valve

The BV3S/4S-series sanitary multi-port ball valve can be used for diversion or control of processing fluid

They are found in the food processing, beverage, winery, brewery, pet product, and industrial markets

### Sizes

- 1/2", 3/4", 1", 1-1/2", 2", 2-1/2", 3", 4"

### Features

- Live-loaded stem packing
- Integral ISO 5211 mounting pad
- Lockable handle can prevent accidental actuation
- Standard internal entry blow-out proof stem design
- Precision stainless steel balls reduce torque and friction losses while extending shelf life
- Full port design on 1/2" through 3" and reduced port design on 4"
- Compact design for areas with tight space restrictions
- Fully encapsulated construction produces bubble tight seal
- Identification tagging available
- Balanced encapsulated construction minimizes cold flow

### Materials

- Product contact metal components: CF8M
- Non-product contact metal components: 304 stainless steel
- Product contact seals: virgin PTFE, 15% reinforced PTFE, UHMW polyethylene, 50% stainless steel reinforced PTFE, 25% carbon reinforced PTFE

### Specifications

- Standard connections: clamp
- Valve data
  - Maximum pressure
    - 1/2" to 2": **1000 PSI WOG**
    - 2-1/2" to 4": **800 PSI WOG**
- Surface finish
  - Product contact metal components:  $\leq 32$  Ra
  - Non-product contact metal components: as cast or  $Ra \leq 63$
  - Seat lubricant: BESSI F-100
  - Stem lubricant: G.A. BESSIL 25



F

**BV3S/4S-Series Sanitary Multi-Port Ball Valve - Part Number Key**

| BV3S/4S-Series Multi-Port Sanitary Ball Valve Part Number Key<br>Example: BV3SVTF050C-A |             | Valve Style | Seat Material | Ball Configuration | Port Size | Size | Connections |   | Handle | Surface Finish |
|-----------------------------------------------------------------------------------------|-------------|-------------|---------------|--------------------|-----------|------|-------------|---|--------|----------------|
|                                                                                         |             | BV3S        | V             | T                  | F         | 050  | C           | - | A      |                |
| <b>Valve Style</b>                                                                      | <b>Code</b> |             |               |                    |           |      |             |   |        |                |
| 3-way                                                                                   | BV3S        |             |               |                    |           |      |             |   |        |                |
| 4-way                                                                                   | BV4S        |             |               |                    |           |      |             |   |        |                |
| <b>Seat Material</b>                                                                    | <b>Code</b> |             |               |                    |           |      |             |   |        |                |
| Virgin PTFE                                                                             | V           |             |               |                    |           |      |             |   |        |                |
| 15% glass reinforced PTFE                                                               | G           |             |               |                    |           |      |             |   |        |                |
| 25% carbon reinforced PTFE                                                              | C           |             |               |                    |           |      |             |   |        |                |
| 50% stainless steel reinforced PTFE                                                     | S           |             |               |                    |           |      |             |   |        |                |
| Ultra high molecular weight polyethylene                                                | U           |             |               |                    |           |      |             |   |        |                |
| <b>Ball Configuration</b>                                                               | <b>Code</b> |             |               |                    |           |      |             |   |        |                |
| T Port                                                                                  | T           |             |               |                    |           |      |             |   |        |                |
| L Port                                                                                  | L           |             |               |                    |           |      |             |   |        |                |
| <b>Port Size</b>                                                                        | <b>Code</b> |             |               |                    |           |      |             |   |        |                |
| Full port                                                                               | F           |             |               |                    |           |      |             |   |        |                |
| Reduced port (4" only) <sup>1</sup>                                                     | R           |             |               |                    |           |      |             |   |        |                |
| <b>Size</b>                                                                             | <b>Code</b> |             |               |                    |           |      |             |   |        |                |
| 1/2"                                                                                    | 050         |             |               |                    |           |      |             |   |        |                |
| 3/4"                                                                                    | 075         |             |               |                    |           |      |             |   |        |                |
| 1"                                                                                      | 100         |             |               |                    |           |      |             |   |        |                |
| 1-1/2"                                                                                  | 150         |             |               |                    |           |      |             |   |        |                |
| 2"                                                                                      | 200         |             |               |                    |           |      |             |   |        |                |
| 2-1/2"                                                                                  | 250         |             |               |                    |           |      |             |   |        |                |
| 3"                                                                                      | 300         |             |               |                    |           |      |             |   |        |                |
| 4"                                                                                      | 400         |             |               |                    |           |      |             |   |        |                |
| <b>Connections</b>                                                                      | <b>Code</b> |             |               |                    |           |      |             |   |        |                |
| Clamp (standard)                                                                        | C           |             |               |                    |           |      |             |   |        |                |
| Weld                                                                                    | B           |             |               |                    |           |      |             |   |        |                |
| Female I-Line                                                                           | F           |             |               |                    |           |      |             |   |        |                |
| Male I-Line                                                                             | M           |             |               |                    |           |      |             |   |        |                |
| Threaded Bevel                                                                          | T           |             |               |                    |           |      |             |   |        |                |
| Plain Bevel with Nut                                                                    | P           |             |               |                    |           |      |             |   |        |                |
| Q-Line                                                                                  | Q           |             |               |                    |           |      |             |   |        |                |
| John Perry Plain with Nut                                                               | J           |             |               |                    |           |      |             |   |        |                |
| John Perry Threaded                                                                     | H           |             |               |                    |           |      |             |   |        |                |
| <b>Handle</b>                                                                           | <b>Code</b> |             |               |                    |           |      |             |   |        |                |
| 90° manual handle (standard)                                                            | A           |             |               |                    |           |      |             |   |        |                |
| 180° manual handle                                                                      | B           |             |               |                    |           |      |             |   |        |                |
| <b>Surface Finish</b>                                                                   | <b>Code</b> |             |               |                    |           |      |             |   |        |                |
| 32 Ra I.D.                                                                              | blank       |             |               |                    |           |      |             |   |        |                |
| 25 Ra I.D.                                                                              | -2          |             |               |                    |           |      |             |   |        |                |
| 20 Ra I.D.                                                                              | -1          |             |               |                    |           |      |             |   |        |                |
| 15 Ra I.D.                                                                              | -4          |             |               |                    |           |      |             |   |        |                |
| 10 Ra I.D.                                                                              | -7          |             |               |                    |           |      |             |   |        |                |

<sup>1</sup>Reduced port size is 3.15".

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Part Number Key (Actuated)

| BV3/4S-Series Actuated Ball Valve<br>Part Number Key<br>Example: BV3SVTF050C-A |             | Valve Style | Seat Material | Size | Connections | Surface Finish |
|--------------------------------------------------------------------------------|-------------|-------------|---------------|------|-------------|----------------|
|                                                                                |             | 3CL         | V             | 50   | C           | A              |
| <b>Valve Style</b>                                                             | <b>Code</b> |             |               |      |             |                |
| 3-Way L-Port                                                                   | 3CL         |             |               |      |             |                |
| 3-Way T-Port                                                                   | 3CT         |             |               |      |             |                |
| 4-Way L-Port                                                                   | 4CL         |             |               |      |             |                |
| 4-Way T-Port                                                                   | 4CT         |             |               |      |             |                |
| <b>Seat Material</b>                                                           | <b>Code</b> |             |               |      |             |                |
| Virgin PTFE                                                                    | V           |             |               |      |             |                |
| RTFE (15% glass reinforced PTFE)                                               | G           |             |               |      |             |                |
| 25% carbon reinforced PTFE                                                     | C           |             |               |      |             |                |
| 50% stainless steel reinforced PTFE                                            | S           |             |               |      |             |                |
| UHMW                                                                           | U           |             |               |      |             |                |
| <b>Size</b>                                                                    | <b>Code</b> |             |               |      |             |                |
| 1/2"                                                                           | 50          |             |               |      |             |                |
| 3/4"                                                                           | 75          |             |               |      |             |                |
| 1"                                                                             | 10          |             |               |      |             |                |
| 1-1/2"                                                                         | 15          |             |               |      |             |                |
| 2"                                                                             | 20          |             |               |      |             |                |
| 2-1/2"                                                                         | 25          |             |               |      |             |                |
| 3"                                                                             | 30          |             |               |      |             |                |
| 4"                                                                             | 40          |             |               |      |             |                |
| <b>Connections</b>                                                             | <b>Code</b> |             |               |      |             |                |
| Clamp                                                                          | C           |             |               |      |             |                |
| Weld                                                                           | B           |             |               |      |             |                |
| Female I-Line                                                                  | F           |             |               |      |             |                |
| Male I-Line                                                                    | M           |             |               |      |             |                |
| Threaded Bevel                                                                 | T           |             |               |      |             |                |
| Plain Bevel with Nut                                                           | P           |             |               |      |             |                |
| Q-Line                                                                         | Q           |             |               |      |             |                |
| Female NPT                                                                     | 1           |             |               |      |             |                |
| Flange                                                                         | K           |             |               |      |             |                |
| <b>Surface Finish</b>                                                          | <b>Code</b> |             |               |      |             |                |
| 32 Ra                                                                          | A           |             |               |      |             |                |
| 25 Ra                                                                          | B           |             |               |      |             |                |
| 20 Ra                                                                          | C           |             |               |      |             |                |
| 15 Ra                                                                          | D           |             |               |      |             |                |
| 10 Ra                                                                          | E           |             |               |      |             |                |
| 32 Ra with K22 kolstering treatment                                            | F           |             |               |      |             |                |

Continue number selection by following column 1 or 2 on page 166.

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Part Number Key (Actuated)

| 1. Pneumatic Actuator, Spring Return Manual Handle, or Manual Handle with Feedback                                                           |          |         |           | 2. Electric Actuator                          |         |          |          |           |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|-----------|-----------------------------------------------|---------|----------|----------|-----------|
| Actuator                                                                                                                                     | Feedback | Control | Flow Path | Actuator                                      | Voltage | Option 1 | Option 2 | Flow Path |
| 1                                                                                                                                            | 00       | XX      | 10        | E                                             | B       | 1        | 1        | 12        |
| Actuator                                                                                                                                     |          |         | Code      | Actuator                                      |         |          | Code     |           |
| Aluminum spring return pneumatic rack and pinion                                                                                             |          |         | 1         | Electric                                      |         |          | E        |           |
| Aluminum double acting pneumatic rack and pinion                                                                                             |          |         | 2         | Oversized (1-UP) Electric                     |         |          | F        |           |
| Stainless steel spring return pneumatic rack and pinion                                                                                      |          |         | 3         | Nema 7 Electric                               |         |          | G        |           |
| Stainless steel double acting pneumatic rack and pinion                                                                                      |          |         | 4         | Electric with Riser Kit                       |         |          | H        |           |
| Manual handle                                                                                                                                |          |         | 5         | Voltage                                       |         |          | Code     |           |
| Dead man spring return handle                                                                                                                |          |         | 6         | 115VAC                                        |         |          | B        |           |
| Oversized (1-UP) aluminum spring return pneumatic rack and pinion                                                                            |          |         | 7         | 12VDC                                         |         |          | C        |           |
| Technopolymer spring return pneumatic rack and pinion                                                                                        |          |         | 8         | 24VAC                                         |         |          | D        |           |
| Oversized (1-UP) aluminum double acting pneumatic rack and pinion                                                                            |          |         | 9         | 24VDC                                         |         |          | E        |           |
| 90° manual handle with riser kit                                                                                                             |          |         | A         | 220VAC                                        |         |          | F        |           |
| 180° manual handle                                                                                                                           |          |         | B         | 12VAC                                         |         |          | G        |           |
| Feedback                                                                                                                                     |          |         | Code      | Option 1                                      |         |          | Code     |           |
| None                                                                                                                                         |          |         | 00        | None                                          |         |          | 1        |           |
| Limit switch box, position indicator, (2) SPDT mechanical switches                                                                           |          |         | 11        | Torque switches                               |         |          | 2        |           |
| Limit switch box, position indicator, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULus Class 1/2 Div 1/2 |          |         | 12        | 4-20 mA input/output modulating controller    |         |          | 3        |           |
| Limit switch box, position indicator, AS-I                                                                                                   |          |         | 13        | Current position transmitter                  |         |          | 4        |           |
| Limit switch box, position indicator, (2) proximity SPDT switches, aluminum Exd IIB certified enclosure                                      |          |         | 14        | Potentiometer                                 |         |          | 5        |           |
| Limit switch box, position indicator, (2) DPDT mechanical switches                                                                           |          |         | 15        | Local control unit                            |         |          | 6        |           |
| Limit switch box, position indicator, (2) switches, electro mechanical SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1              |          |         | 16        | Two extra travel cams and switches            |         |          | 7        |           |
| Limit switch box, position indicator, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO                                                      |          |         | 17        | Three position cam set                        |         |          | 8        |           |
| Limit switch box, position indicator, 4-20ma analog position transmitter                                                                     |          |         | 18        | Local control unit with lock                  |         |          | 9        |           |
| Limit switch box, position indicator, SPDT proximity, 0.25A @ 120VAC, 0.416A @ 48VDC, resistive                                              |          |         | 19        | 1-5V input/2-10V output modulating controller |         |          | A        |           |
| Limit switch box, position indicator, 4-20ma analog position transmitter + 2 SPDT mechanical switches                                        |          |         | 20        | 2-10V input/output modulating controller      |         |          | B        |           |
| Stainless steel limit switch box, position indicator, (2) proximity SPDT switches                                                            |          |         | 21        | 75% duty cycle                                |         |          | C        |           |
| Control                                                                                                                                      |          |         | Code      | Relay                                         |         |          | Code     |           |
| None                                                                                                                                         |          |         | XX        | Four position cam set                         |         |          | E        |           |
| Single coil solenoid, 120VAC                                                                                                                 |          |         | AA        | 25% duty cycle (actuator code G only)         |         |          | F        |           |
| Single coil solenoid, 24VDC                                                                                                                  |          |         | AB        | 75% duty cycle (actuator code G only)         |         |          | G        |           |
| Single coil solenoid, 12VDC                                                                                                                  |          |         | AC        | Option 2                                      |         |          | Code     |           |
| Single coil solenoid, 220VAC                                                                                                                 |          |         | AD        | None                                          |         |          | 1        |           |
| Dual coil solenoid, 120VAC                                                                                                                   |          |         | AE        | Torque switches                               |         |          | 2        |           |
| Dual coil solenoid, 24VDC                                                                                                                    |          |         | AF        | 4-20mA input/output modulating controller     |         |          | 3        |           |
| Dual coil solenoid, 220VAC                                                                                                                   |          |         | AG        | Current position transmitter                  |         |          | 4        |           |

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Part Number Key (Actuated)

|                                                                                                                                                                                                               |             |                                               |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|-------------|
| Pneumatic positioner <b>3-15 PSI</b> input, no feedback                                                                                                                                                       | AH          | Potentiometer                                 | 5           |
| Pneumatic positioner <b>3-15 PSI</b> input, (2) SPDT mechanical switches for feedback                                                                                                                         | AI          | Local control unit                            | 6           |
| Pneumatic positioner <b>3-15 PSI</b> input, 4-20mA for feedback                                                                                                                                               | AJ          | Two extra travel cams and switches            | 7           |
| Electropneumatic positioner 4-20mA input, no feedback                                                                                                                                                         | AK          | Three position cam set                        | 8           |
| Electropneumatic positioner 4-20mA input, (2) SPDT mechanical switches for feedback                                                                                                                           | AL          | Local unit with lock                          | 9           |
| Electropneumatic positioner 4-20mA input, 4-20mA for feedback                                                                                                                                                 | AM          | 1-5V input/2-10V output modulating controller | A           |
| Electropneumatic positioner 0-10v input, no feedback                                                                                                                                                          | AN          | 2-10V input/output modulating controller      | B           |
| Electropneumatic positioner 0-10v input, (2) SPDT mechanical switches for feedback                                                                                                                            | AO          | 75% duty cycle                                | C           |
| Electropneumatic positioner 0-10v input, 4-20mA for feedback                                                                                                                                                  | AP          | Relay                                         | D           |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                                                                                                                         | AQ          | Four position cam set                         | E           |
| Electropneumatic positioner 4-20mA input, no feedback, Class 1, Div II explosion proof                                                                                                                        | AR          | 25% duty cycle (actuator code G only)         | F           |
| Single coil solenoid, 24VDC and 24V banjo solenoid valve with Form B plug                                                                                                                                     | AS          | 75% duty cycle (actuator code G only)         | G           |
| Single coil solenoid, 24VDC, AS-I, 2.5W low power                                                                                                                                                             | AT          | <b>Flow Path</b>                              | <b>Code</b> |
| Single coil solenoid, 24VDC, intrinsically safe                                                                                                                                                               | AU          | Energize A, Energize B                        | 12          |
| Single coil solenoid, 24VDC, pre-wired to limit switch with CORDSET (dual keyway, 1/2"-20 UNF mating thread, single ended, straight female connector, 22 AWG PVC, auto color code 2P to 6P cable, 12' length) | AV          | Energize A, Energize D                        | 13          |
| Single coil solenoid, 24VDC, explosion proof, Class H coil                                                                                                                                                    | AW          | Energize A, Energize B, Energize D (180)      | 39          |
| Single coil solenoid, 24VAC                                                                                                                                                                                   | AX          |                                               |             |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback, Class 1, Div II explosion proof                                                                                                        | AY          |                                               |             |
| Single coil solenoid, 24VDC, molded LED, ind. form, 2M leads                                                                                                                                                  | AZ          |                                               |             |
| TUFRAM COATED electropneumatic positioner 4-20mA input, no feedback                                                                                                                                           | BA          |                                               |             |
| V200 rotary pneumatic positioner, (2) REED SWITCH feedback                                                                                                                                                    | BB          |                                               |             |
| Single coil solenoid, 120VAC, explosion proof, Class H coil                                                                                                                                                   | BC          |                                               |             |
| Single coil solenoid, 24VDC, pre-wired to limit switch, 6P male connection                                                                                                                                    | BD          |                                               |             |
| Non-integral 304 stainless steel NEMA 4/4X 3 position control box, includes 3 manifold mount solenoids time delay relay and terminal strip (3 input control, does not require PLC) 24VDC                      | BE          |                                               |             |
| Non-integral 304 stainless steel NEMA 4/4X 3 position control box includes 3 manifold mount solenoids time delay relay and terminal strip (3 input control, does not require PLC) 120VAC                      | BF          |                                               |             |
| <b>Flow Path</b>                                                                                                                                                                                              | <b>Code</b> |                                               |             |
| Rest A, energize B (spring return)                                                                                                                                                                            | 10          |                                               |             |
| Rest A, energize D (spring return)                                                                                                                                                                            | 11          |                                               |             |
| Energize A, energize B (double acting)                                                                                                                                                                        | 12          |                                               |             |
| Energize A, energize D (double acting)                                                                                                                                                                        | 13          |                                               |             |
| Rest B, energize A, energize D (spring return, 180°)                                                                                                                                                          | 14          |                                               |             |
| Rest B, energize A (spring return)                                                                                                                                                                            | 15          |                                               |             |

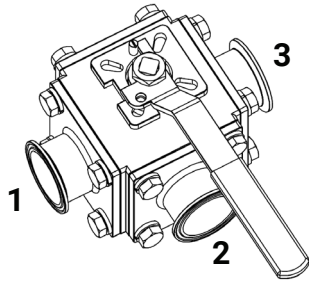
NOTE: Refer to the flow path codes on the following pages for other available configurations.

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

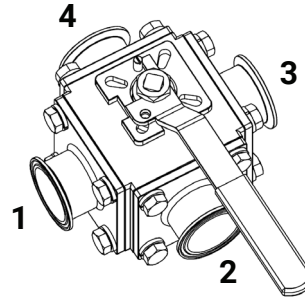
### What is a multiport ball valve?

Multiport ball valves, also known as a 3-way and 4-way ball valves, provide an easy solution for applications requiring flow direction control in one valve body. 3-way or 4-way refers to the number of valve-to-application connection points there are.

3-Way

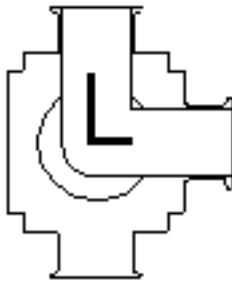


4-Way

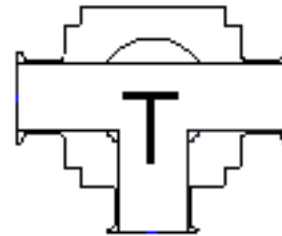


Dixon® Sanitary offers two variations to the 3-way and 4-way multiport ball valves, "L" and "T" port styles. "L" and "T" refer to the shape of the flow path inside the ball of the valve.

L-Port



T-Port



### Why is a defined flow path necessary?

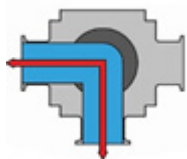
Rotating the ball inside the valve will yield different flow paths. The requirements of the application will determine the flow path needed when purchasing an actuated multiport ball valve.

When a multiport ball valve is ordered with a manual handle, adjusting the flow path for the application may be as simple as rotating the valve by hand. However, when a multiport ball valve is actuated, the flow path information is required to ensure the valve and necessary components are built in the proper position to meet the application requirements.

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

### Understanding the flow path diagrams

When viewing Dixon Sanitary's flow path code tables, it is important to understand what the diagrams mean. The flow path diagrams are drawn as if the top half of the valve was cut off and you are looking straight down on the cut valve. This view shows the L or T shape inside the ball, the position of the ball, and how many connection points are on the valve. Each position is given a letter designation A, B, C, or D.



Example: This diagram shows a 3-way (3 connection points), L-port ball valve ("L" shaped path inside the ball), currently in position "A" (position designation assigned by Dixon Sanitary).



Example: This diagram shows a 3-way (3 connection points), L-port ball valve ("L" shaped path inside the ball), currently in position "C" (position designation assigned by Dixon Sanitary). This position is essentially a shut-off position for the L-port valve. This position is not possible on a T-port valve.



Example: This diagram shows a 4-way (4 connection points), T-port ball valve ("T" shaped path inside the ball), currently in position "A" (position designation assigned by Dixon Sanitary).

### Steps to determine the flow path

1. Determine the core function of the valve
  - Will this valve be used to shut off and divert flow? Change the destination of flow? Mix two sources of flow into one?
2. Determine how many flow positions the valve will need to operate. E.g. diverting between two destinations and a shut off position would be three positions.
3. Determine actuator function
  - First determine the source of power for the actuator. Will this be pneumatically or electrically powered? If pneumatic, does it need to be spring return or double acting? Spring return means if air power is lost, the actuator will rotate the valve back to a predetermined "fail" or "rest" position. Double acting and electric both rotate only when air power or electric power are applied.
4. Select the flow path code from the list of available combinations.



BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

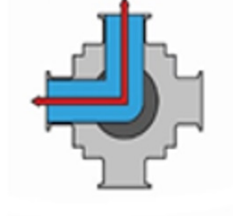
3-Way L-Port

| A                                                                                 | B                                                                                 | C                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |

3-Way T-Port

| A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |

4-Way L-Port

| A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |

4-Way T-Port

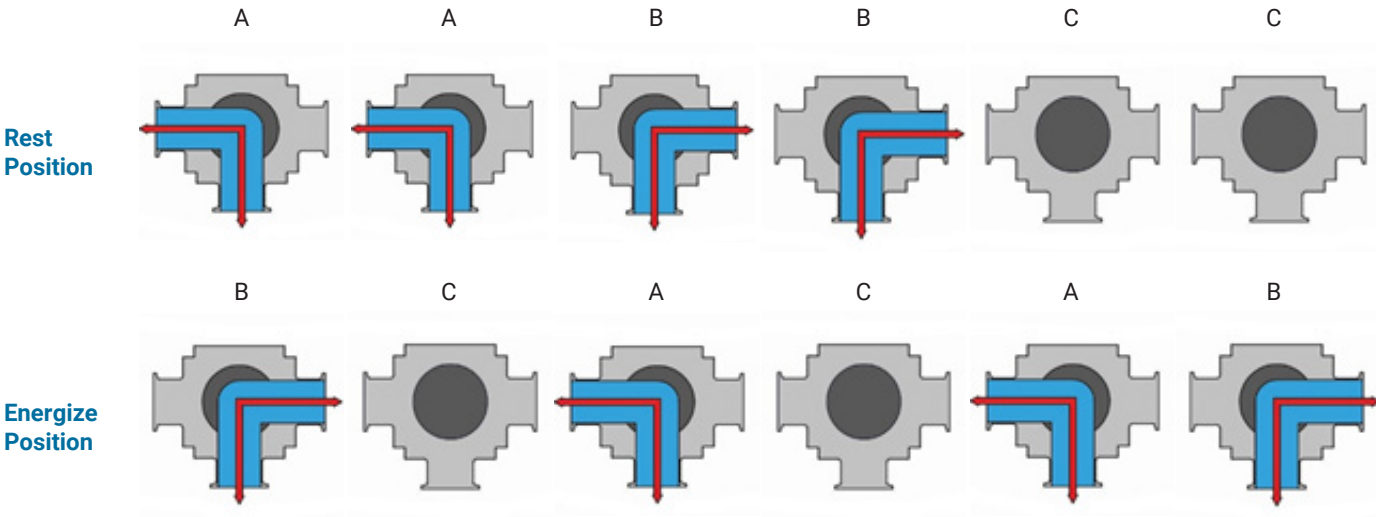
| A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |

**BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes**

**2 Position**

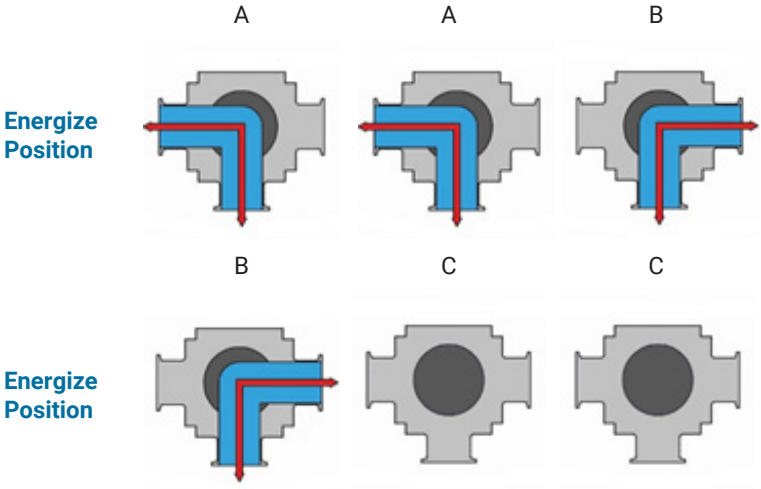
**3-Way | L-Port | Spring Return**

| Code                   | 10  | 16  | 15  | 17  | 18  | 19  |
|------------------------|-----|-----|-----|-----|-----|-----|
| Rotation               | 90° | 90° | 90° | 90° | 90° | 90° |
| Air Rotation Detection | CCW | CW  | CW  | CCW | CCW | CW  |



**3-Way | L-Port | Double Acting or Electric**

| Code     | 12  | 20  | 21  |
|----------|-----|-----|-----|
| Rotation | 90° | 90° | 90° |

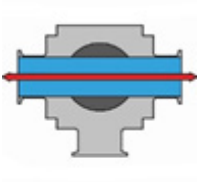
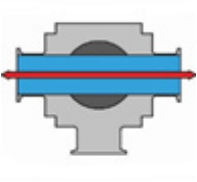
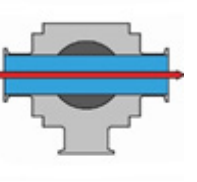
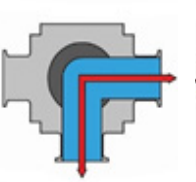
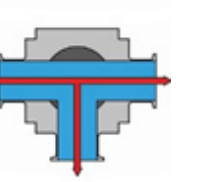
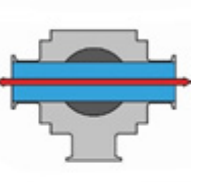
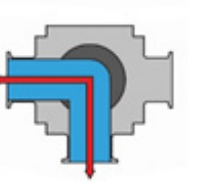
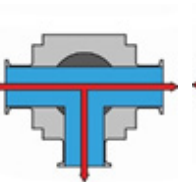
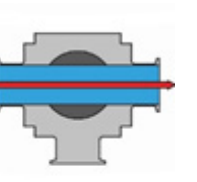


BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

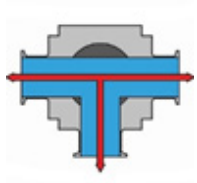
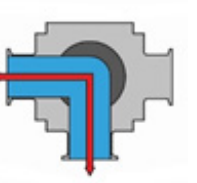
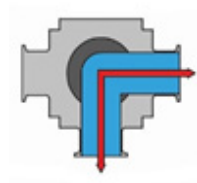
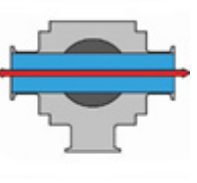
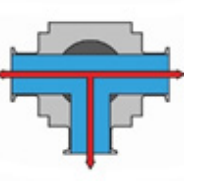
3-Way | T-Port | Spring Return

|                        |     |        |     |     |     |        |
|------------------------|-----|--------|-----|-----|-----|--------|
| Code                   | 10  | 16     | 15  | 11  | 17  | 18     |
| Rotation               | 90° | 180°   | 90° | 90° | 90° | 180°   |
| Air Rotation Detection | CW  | Either | CCW | CCW | CW  | Either |

F

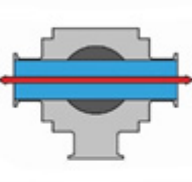
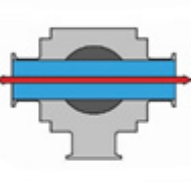
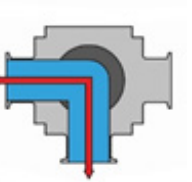
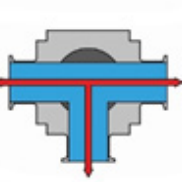
|                   |                                                                                    |                                                                                    |                                                                                    |                                                                                     |                                                                                      |                                                                                      |
|-------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                   | A                                                                                  | A                                                                                  | B                                                                                  | A                                                                                   | B                                                                                    | C                                                                                    |
| Rest Position     |   |   |   |   |   |   |
|                   | B                                                                                  | C                                                                                  | A                                                                                  | D                                                                                   | C                                                                                    | A                                                                                    |
| Energize Position |  |  |  |  |  |  |

|                        |     |     |     |     |
|------------------------|-----|-----|-----|-----|
| Code                   | 19  | 22  | 23  | 24  |
| Rotation               | 90° | 90° | 90° | 90° |
| Air Rotation Detection | CCW | CW  | CW  | CCW |

|                   |                                                                                     |                                                                                     |                                                                                     |                                                                                      |
|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                   | C                                                                                   | C                                                                                   | D                                                                                   | D                                                                                    |
| Rest Position     |  |  |  |  |
|                   | B                                                                                   | D                                                                                   | A                                                                                   | C                                                                                    |
| Energize Position |  |  |  |  |

**BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes**

**3-Way | T-Port | Double Acting or Electric**

| Code              | 12                                                                                 | 20                                                                                 | 13                                                                                 | 21                                                                                  | 25                                                                                   |
|-------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Rotation          | 90°                                                                                | 180°                                                                               | 90°                                                                                | 90°                                                                                 | 90°                                                                                  |
|                   | A                                                                                  | A                                                                                  | A                                                                                  | B                                                                                   | D                                                                                    |
| Energize Position |   |   |   |   |   |
|                   | B                                                                                  | C                                                                                  | D                                                                                  | C                                                                                   | C                                                                                    |
| Energize Position |  |  |  |  |  |

F

**4-Way | L-Port | Spring Return**

| Code                   | 10                                                                                  | 16                                                                                  |
|------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Rotation               | 180°                                                                                | 180°                                                                                |
| Air Rotation Detection | Either                                                                              | Either                                                                              |
| Rest Position          |  |  |
|                        | A                                                                                   | A                                                                                   |
| Energize Position      |  |  |
|                        | B                                                                                   | C                                                                                   |

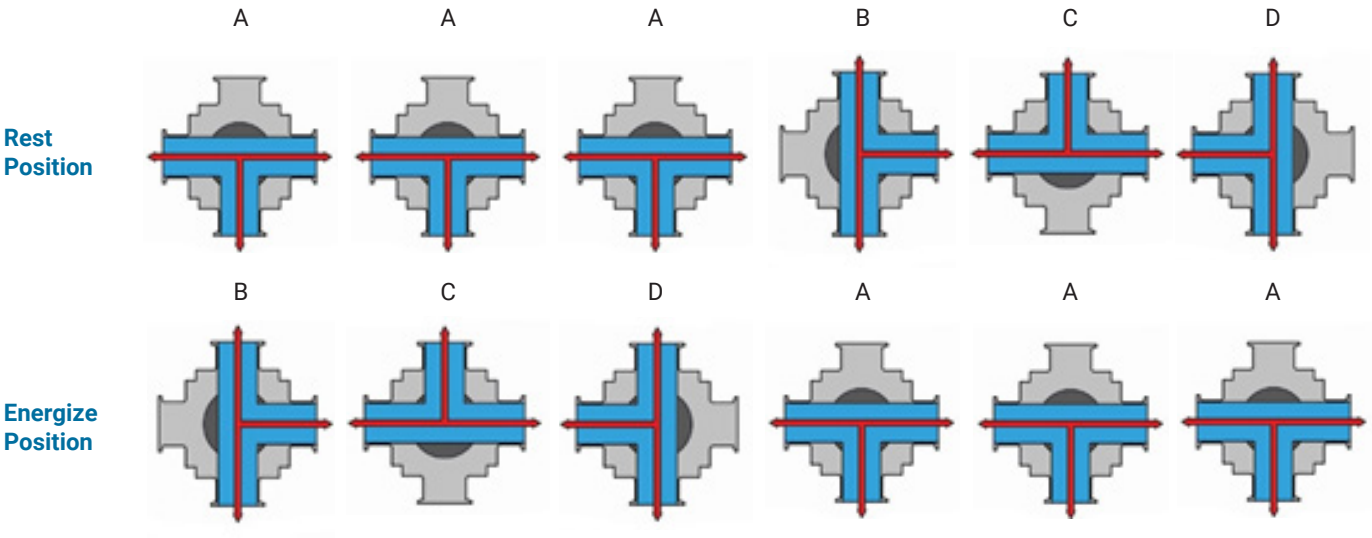
**4-Way | L-Port | Double Acting or Electric**

| Code              | 12                                                                                   |
|-------------------|--------------------------------------------------------------------------------------|
| Rotation          | 180°                                                                                 |
| Energize Position |  |
|                   | A                                                                                    |
| Energize Position |  |
|                   | B                                                                                    |

BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

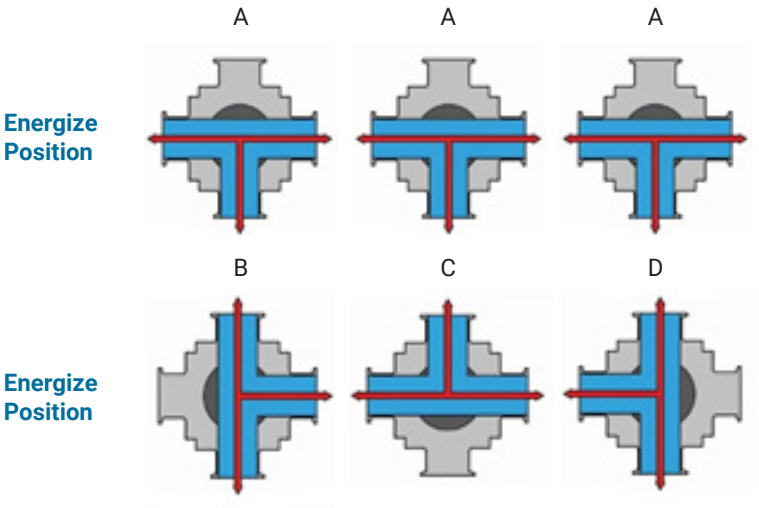
4-Way | T-Port | Spring Return

|                        |     |        |     |     |        |      |
|------------------------|-----|--------|-----|-----|--------|------|
| Code                   | 10  | 16     | 11  | 15  | 18     | 23   |
| Rotation               | 90° | 180°   | 90° | 90° | 90°    | 180° |
| Air Rotation Detection | CCW | Either | CW  | CW  | Either | CCW  |



4-Way | T-Port | Double Acting or Electric

|          |     |      |     |
|----------|-----|------|-----|
| Code     | 12  | 20   | 13  |
| Rotation | 90° | 180° | 90° |



**BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes**

**3 Position**

3-Way | L-Port | Spring Return

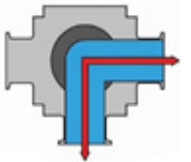
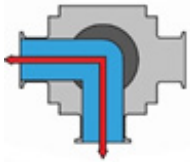
| Code                   | 26     | 28     | 29     |
|------------------------|--------|--------|--------|
| Rotation               | 180°   | 180°   | 180°   |
| Air Rotation Detection | Either | Either | Either |
| Return                 | Either | Either | End    |

A

B

C

Rest  
Position

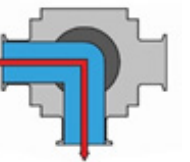
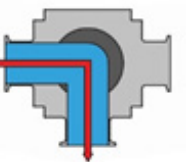
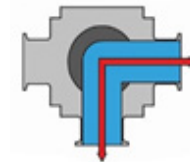


B

A

A

Energize  
Position



C

C

B

Energize  
Position

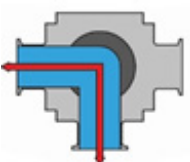


3-Way | L-Port | Double Acting or Electric

| Code     | 30   |
|----------|------|
| Rotation | 180° |

A

Energize  
Position



B

Energize  
Position



C

Energize  
Position

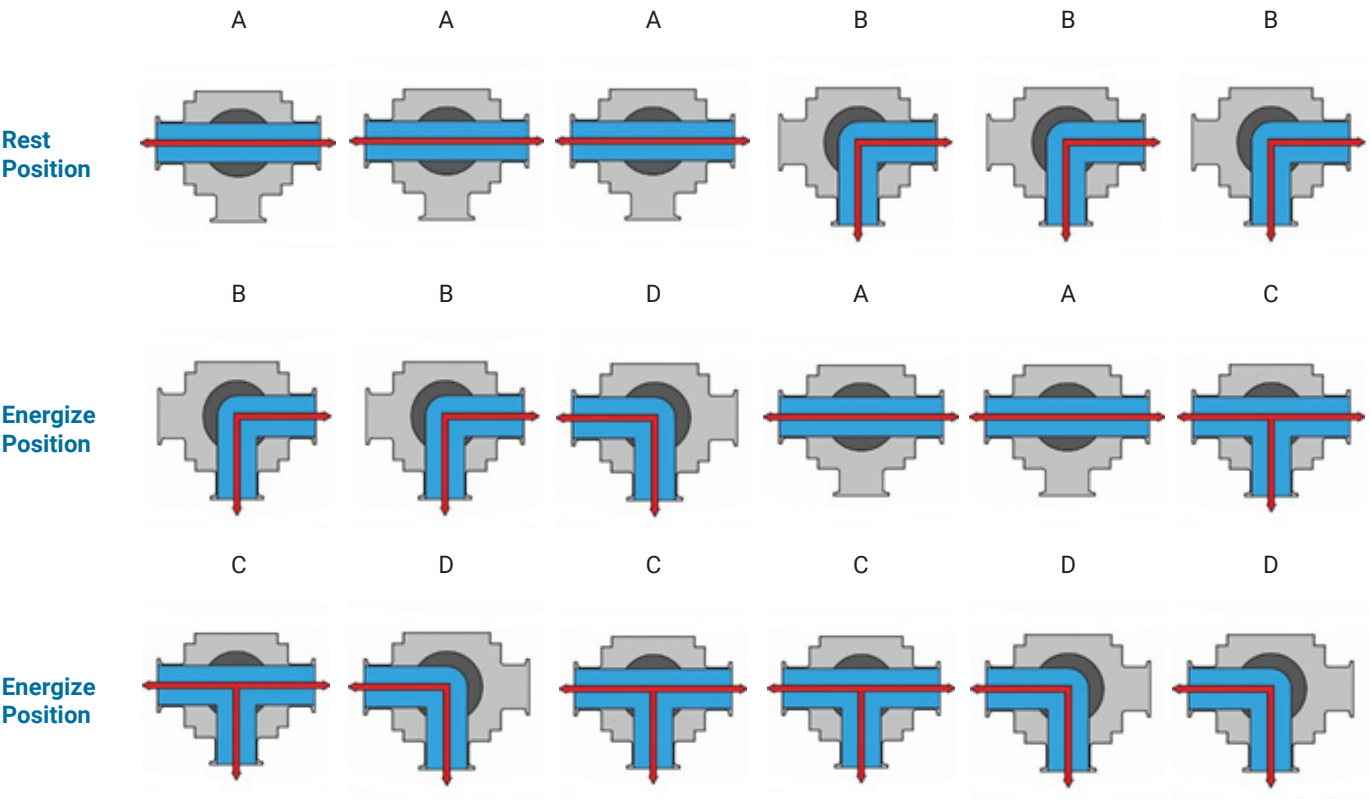


F

BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

3-Way | T-Port | Spring Return

|                        |      |        |      |        |      |      |
|------------------------|------|--------|------|--------|------|------|
| Code                   | 26   | 27     | 31   | 28     | 14   | 32   |
| Rotation               | 180° | 180°   | 180° | 180°   | 180° | 180° |
| Air Rotation Detection | CW   | Both   | CCW  | Both   | CCW  | CW   |
| Return                 | End  | Center | End  | Center | End  | End  |

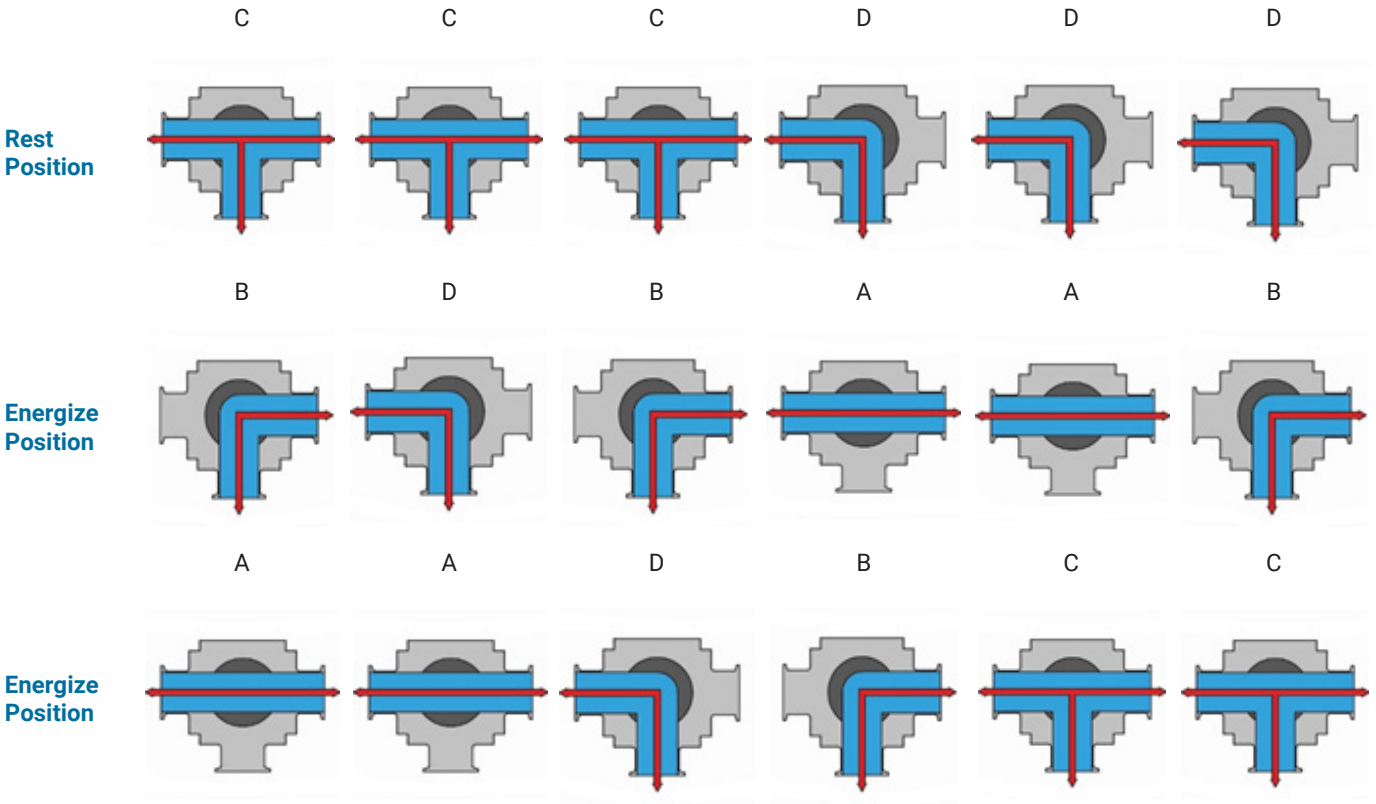


**BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes**

3-Way | T-Port | Spring Return

| Code                   | 33   | 34   | 35     | 36   | 37     | 38   |
|------------------------|------|------|--------|------|--------|------|
| Rotation               | 180° | 180° | 180°   | 180° | 180°   | 180° |
| Air Rotation Detection | CCW  | CW   | Both   | CW   | Both   | CCW  |
| Return                 | End  | End  | Center | End  | Center | End  |

F





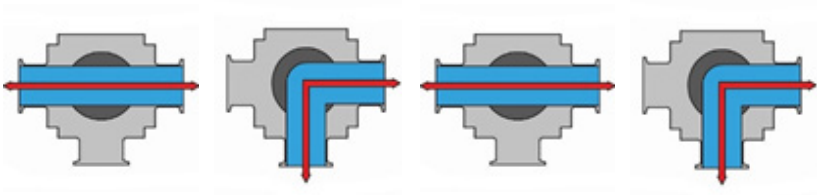
BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

3-Way | T-Port | Double Acting or Electric

|          |      |      |      |      |
|----------|------|------|------|------|
| Code     | 30   | 39   | 40   | 41   |
| Rotation | 180° | 180° | 180° | 180° |

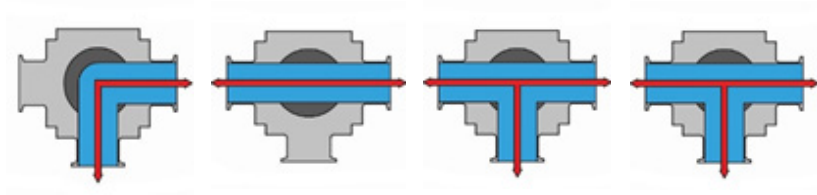
A B A B

**F** Energize Position



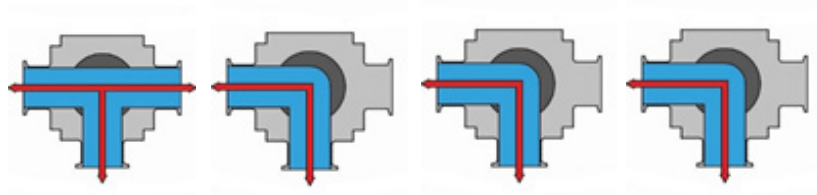
B A C C

Energize Position



C D D D

Energize Position

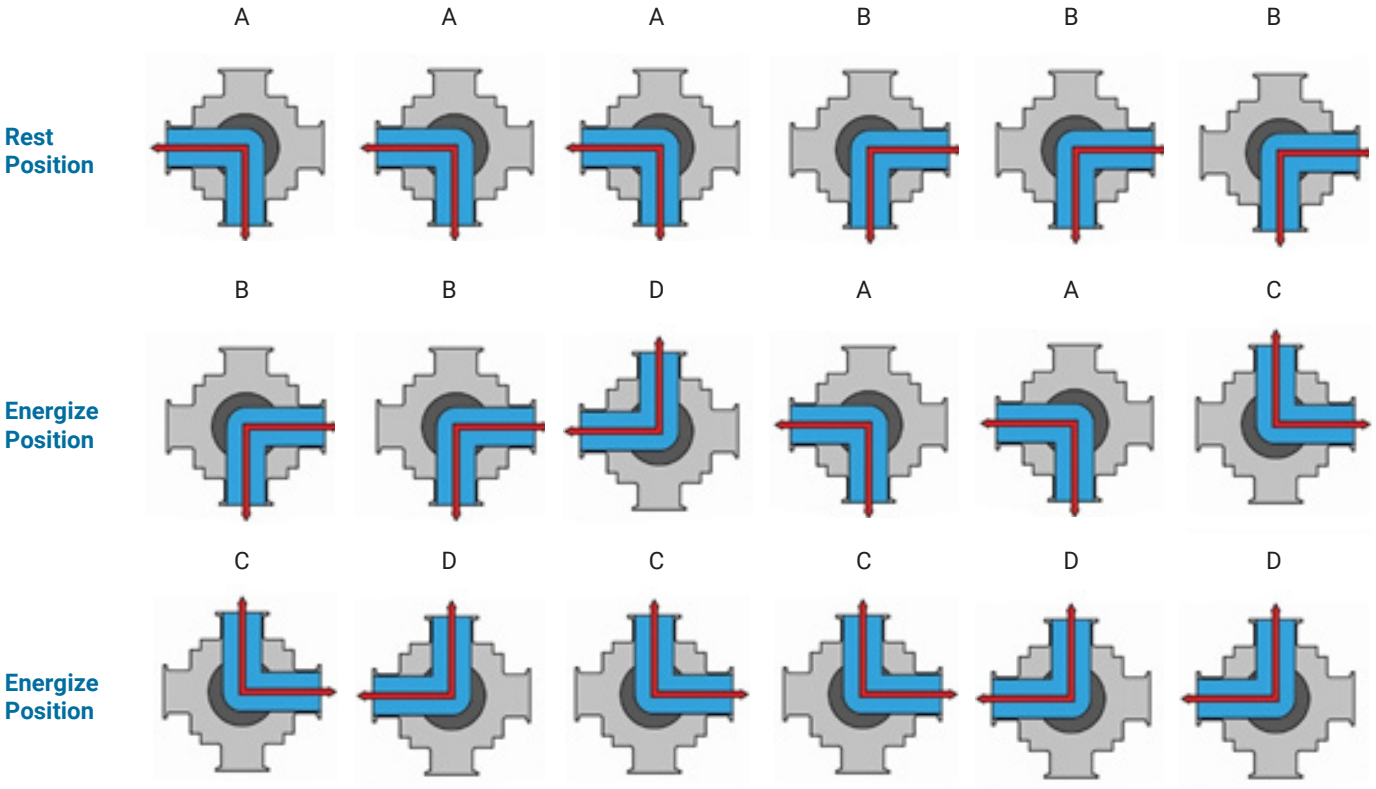


**BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes**

4-Way | L-Port | Spring Return

| Code                   | 26   | 27     | 31   | 28     | 14   | 32   |
|------------------------|------|--------|------|--------|------|------|
| Rotation               | 180° | 180°   | 180° | 180°   | 180° | 180° |
| Air Rotation Detection | CCW  | Both   | CW   | Both   | CW   | CCW  |
| Return                 | End  | Center | End  | Center | End  | End  |

F

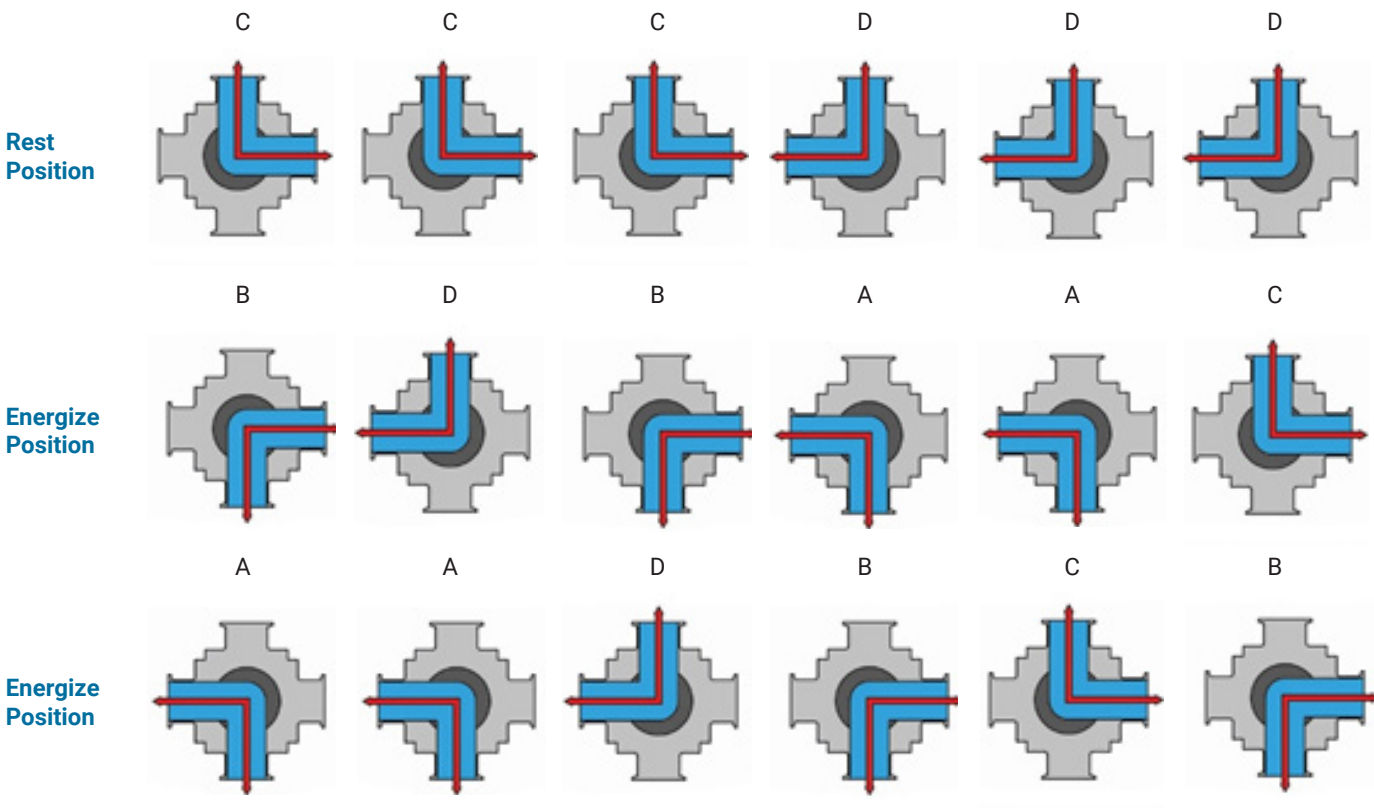


NOTE: 4-way, L-Port, Spring Return continued on the next page

BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

4-Way | L-Port | Spring Return

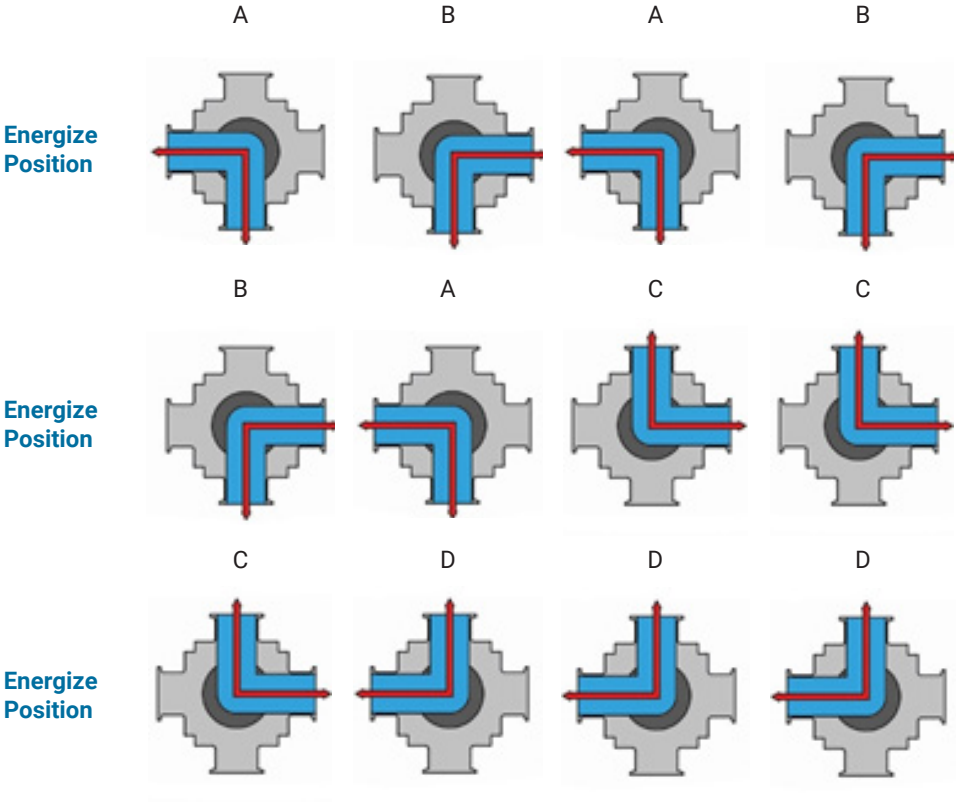
|                        |      |      |        |      |        |      |
|------------------------|------|------|--------|------|--------|------|
| Code                   | 33   | 34   | 35     | 36   | 37     | 42   |
| Rotation               | 180° | 180° | 180°   | 180° | 180°   | 180° |
| Air Rotation Detection | CW   | CCW  | Both   | CCW  | Both   | CW   |
| Return                 | End  | End  | Center | End  | Center | End  |



**BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes**

4-Way | L-Port | Double Acting or Electric

| Code     | 30   | 39   | 40   | 41   |
|----------|------|------|------|------|
| Rotation | 180° | 180° | 180° | 180° |

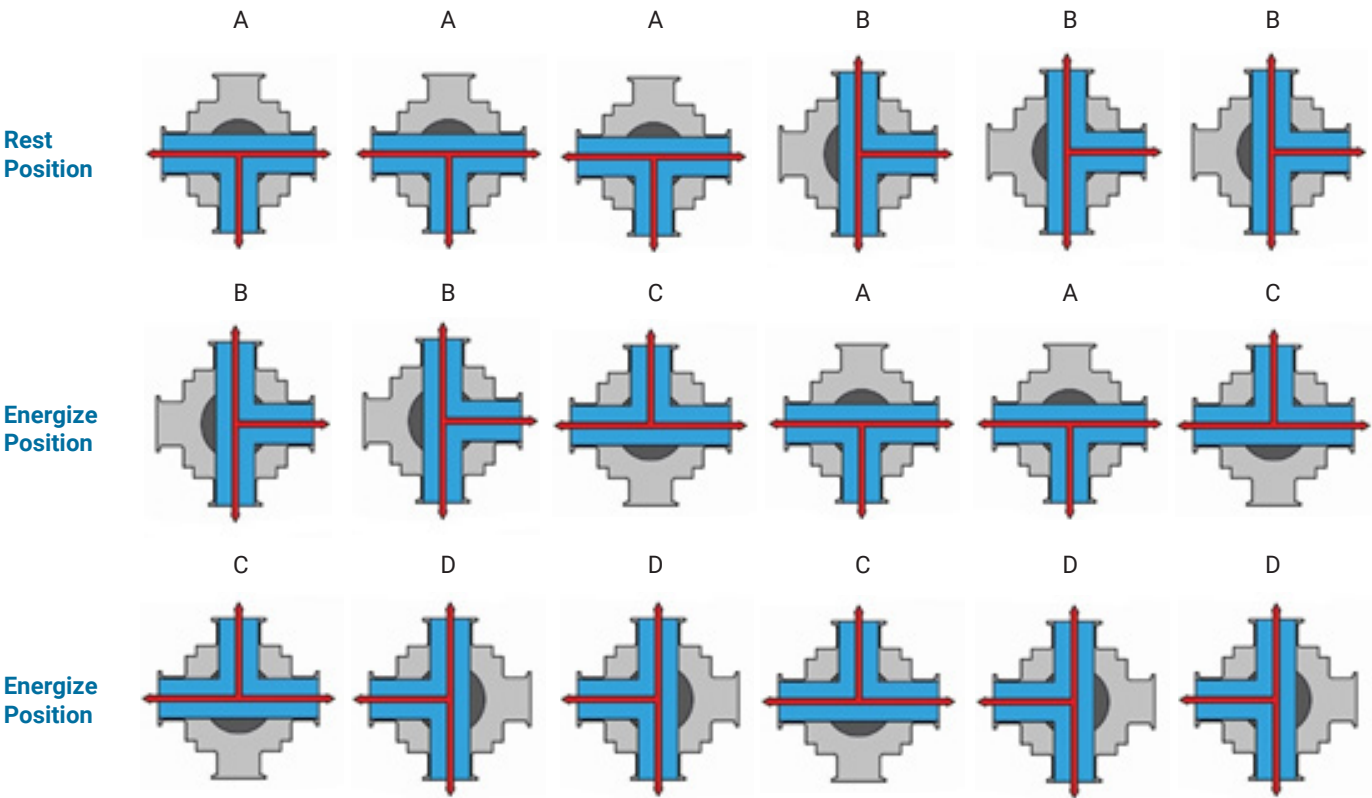


F

BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

4-Way | T-Port | Spring Return

|                        |      |        |      |        |      |      |
|------------------------|------|--------|------|--------|------|------|
| Code                   | 26   | 43     | 27   | 28     | 14   | 32   |
| Rotation               | 180° | 180°   | 180° | 180°   | 180° | 180° |
| Air Rotation Detection | CCW  | Both   | CW   | Both   | CW   | CCW  |
| Return                 | End  | Center | End  | Center | End  | End  |



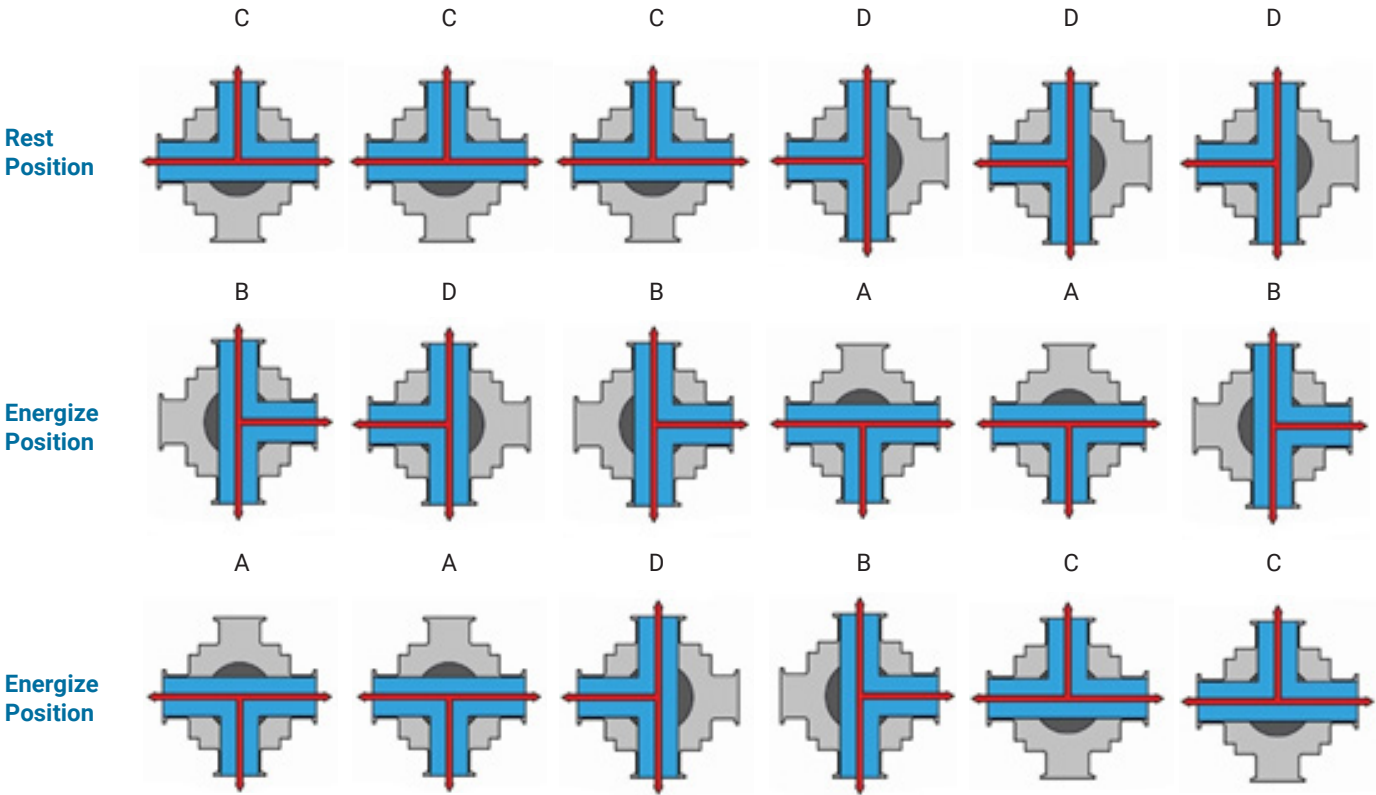
NOTE: 4-way, T-Port, Spring Return continued on the next page

# **BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes**

4-Way | T-Port | Spring Return

| Code                   | 33   | 34   | 35     | 36   | 37     | 38   |
|------------------------|------|------|--------|------|--------|------|
| Rotation               | 180° | 180° | 180°   | 180° | 180°   | 180° |
| Air Rotation Detection | CW   | CCW  | Both   | CCW  | Both   | CW   |
| Return                 | End  | End  | Center | End  | Center | End  |

F



BV3S/4S-Series Sanitary Multi-Port Ball Valve - Flow Path Position Codes

4-Way | T-Port | Double Acting or Electric

|          |      |      |      |      |
|----------|------|------|------|------|
| Code     | 30   | 39   | 40   | 41   |
| Rotation | 180° | 180° | 180° | 180° |

F

Energize Position

A

B

A

B

Energize Position

B

A

D

C

Energize Position

C

D

C

D

### BV3S/4S-Series Sanitary Multi-Port Ball Valve - Break Torque (Actuated)

| Part #     | Size   | Base Break Torque (in-lbs) |      | Flow Coefficient (C <sub>v</sub> ) |          |              | Vacuum Testing (Virgin PTFE Seals) |                       | Weight (lbs) |
|------------|--------|----------------------------|------|------------------------------------|----------|--------------|------------------------------------|-----------------------|--------------|
|            |        | L                          | T    | L                                  | T (thru) | T (branched) | Body Leakage (atm-cc/sec)          | Helium Leak Rate Test |              |
| BV_S_050_  | 1/2"   | 48                         | 45   | 3.5                                | 5.3      | 3            | 1 x 10 <sup>-9</sup>               | 10 <sup>-5</sup> Torr | 3.6          |
| BV_S_075_  | 3/4"   | 62                         | 62   | 10                                 | 14       | 8            |                                    |                       | 4.3          |
| BV_S_100_  | 1"     | 84                         | 79   | 20                                 | 30       | 14           |                                    |                       | 6.8          |
| BV_S_150_  | 1-1/2" | 315                        | 286  | 52                                 | 80       | 44           |                                    |                       | 12.6         |
| BV_S_200_  | 2"     | 789                        | 595  | 100                                | 150      | 83           | 1 x 10 <sup>-7</sup>               | 10 <sup>-4</sup> Torr | 21.6         |
| BV_S_250_  | 2-1/2" | 833                        | 1090 | 148                                | 176      | 108          |                                    |                       | 33.7         |
| BV_S_300_  | 3"     | 1303                       | 1940 | 250                                | 380      | 200          |                                    |                       | 56.4         |
| BV_S_R400_ | 4"     | 1453                       | 2050 | 450                                | 680      | 350          |                                    |                       | 85.4         |

### BV3S/4S-Series Actuated Ball Valve - Seat Multiplier

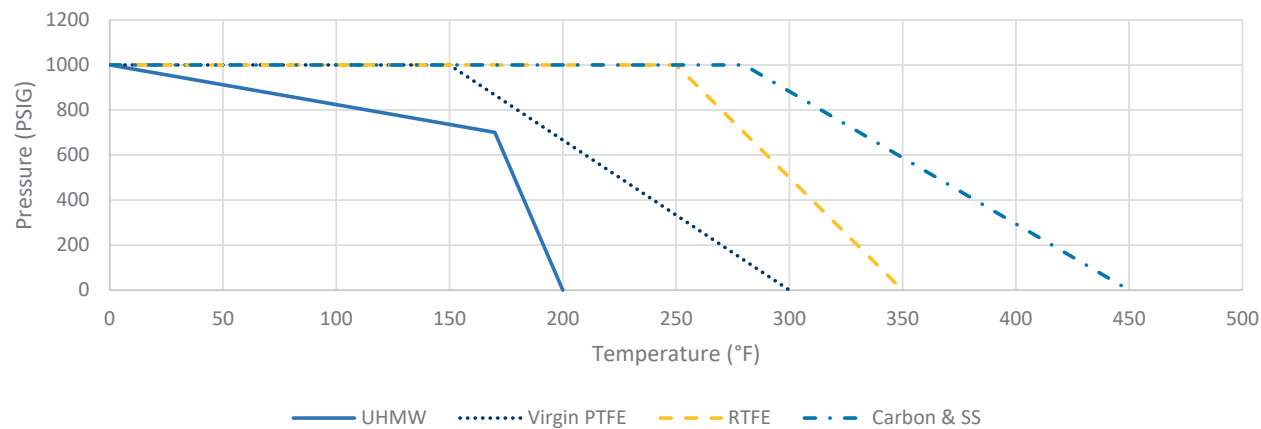
| Code (Seat Material)                    | Material Torque Multiplier |
|-----------------------------------------|----------------------------|
| U (UHMW)                                | 0.9                        |
| V (Virgin PTFE)                         | 1                          |
| G (15% Glass Reinforced RTFE)           | 1 (4" = 2.0)               |
| C (25% Carbon Reinforced PTFE)          | 1.75                       |
| S (50% Stainless Steel Reinforced PTFE) | 1.75                       |

NOTE: 1) Base Break Torque \* Material Torque Multiplier = Material Break Torque

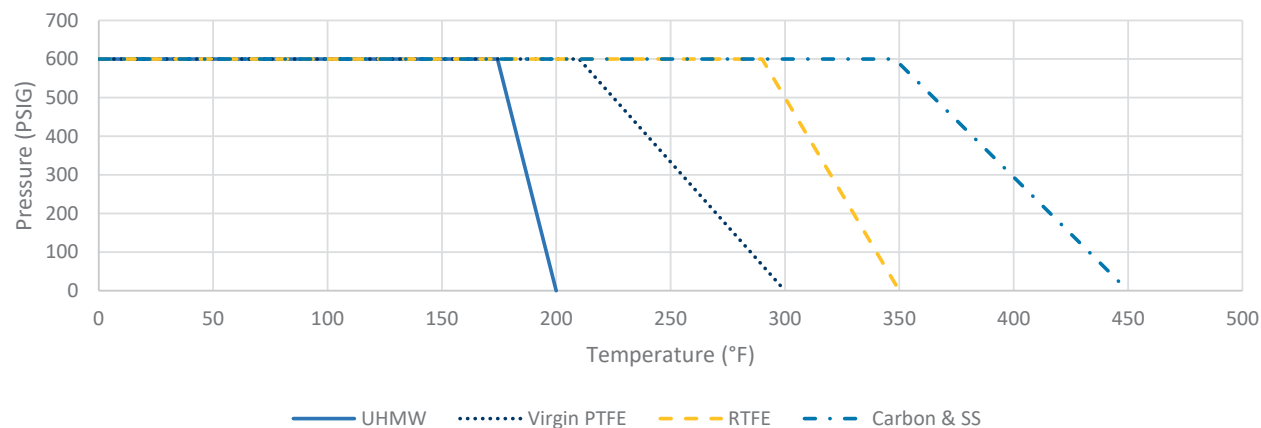


BV3S/4S-Series Sanitary Multi-Port Ball Valve - Pressure Temperature Charts

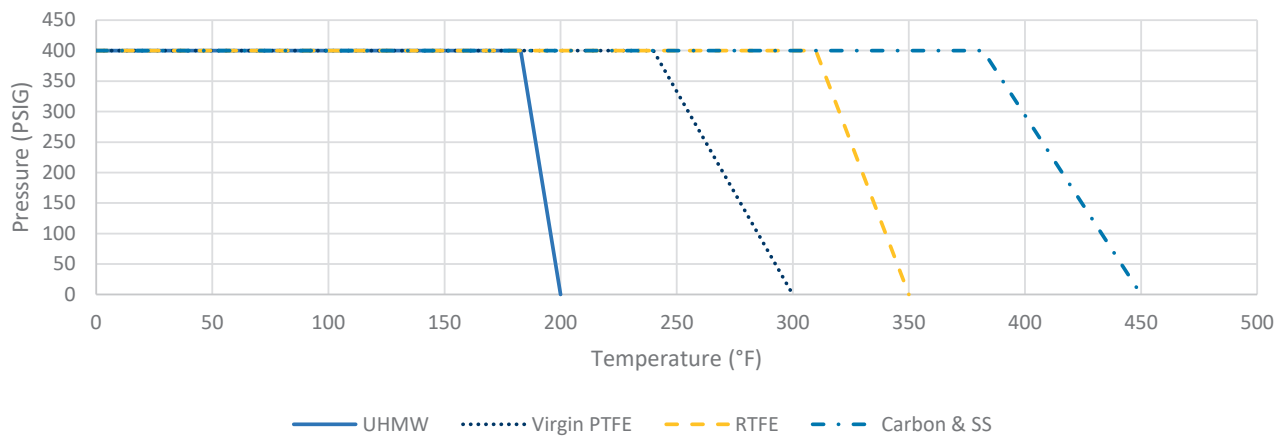
0.50 in & 0.75 in



1.00 in

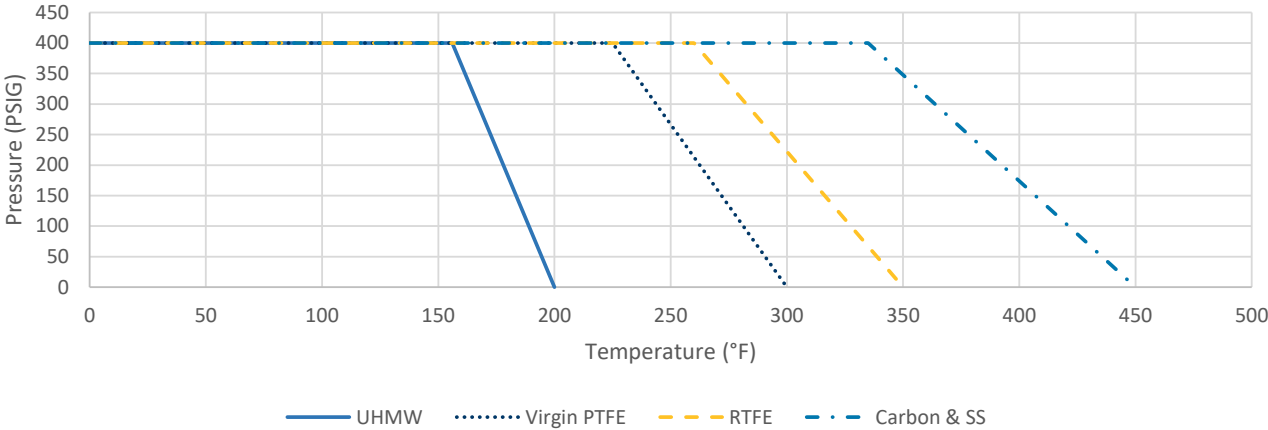


1.50 in & 2.00 in



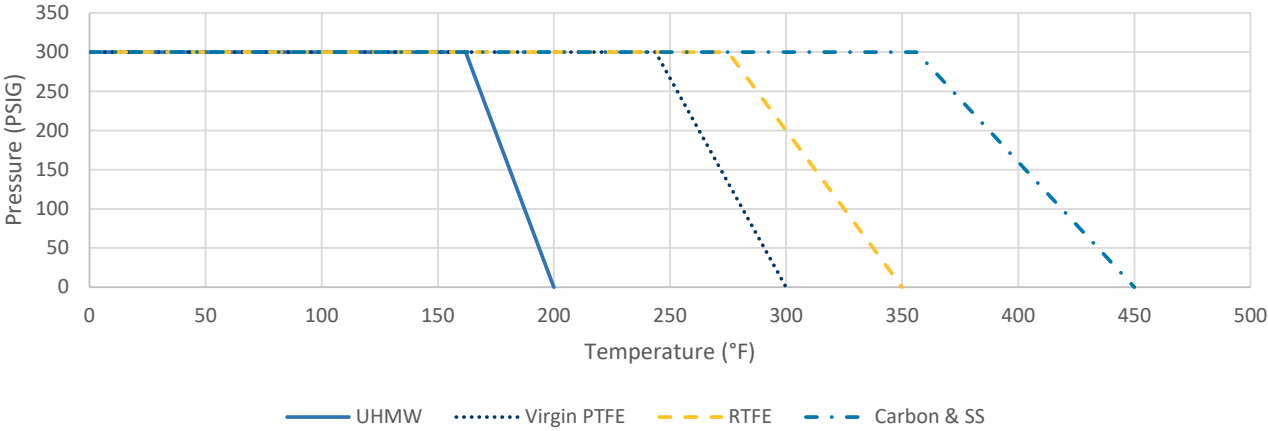
**BV3S/4S-Series Sanitary Multi-Port Ball Valve - Pressure Temperature Charts**

2.50 in & 3.00 in

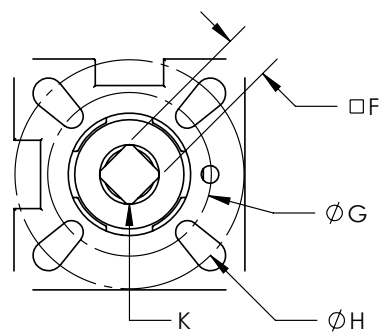


F

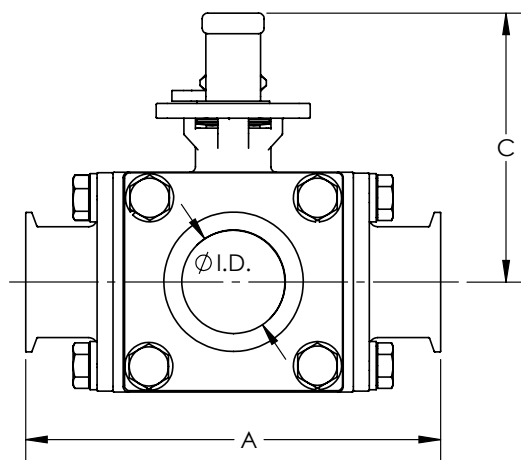
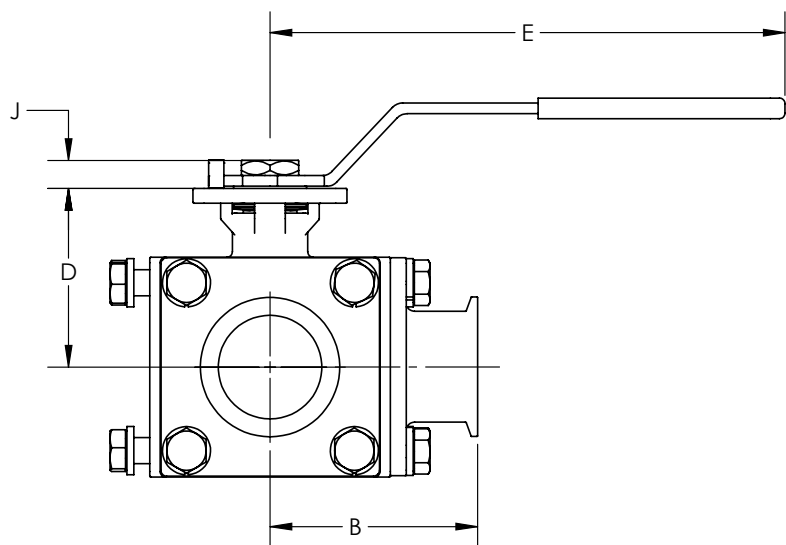
4.00 in



BV3S/4S-Series Sanitary Multi-Port Ball Valve - Dimensions



PAD DETAIL

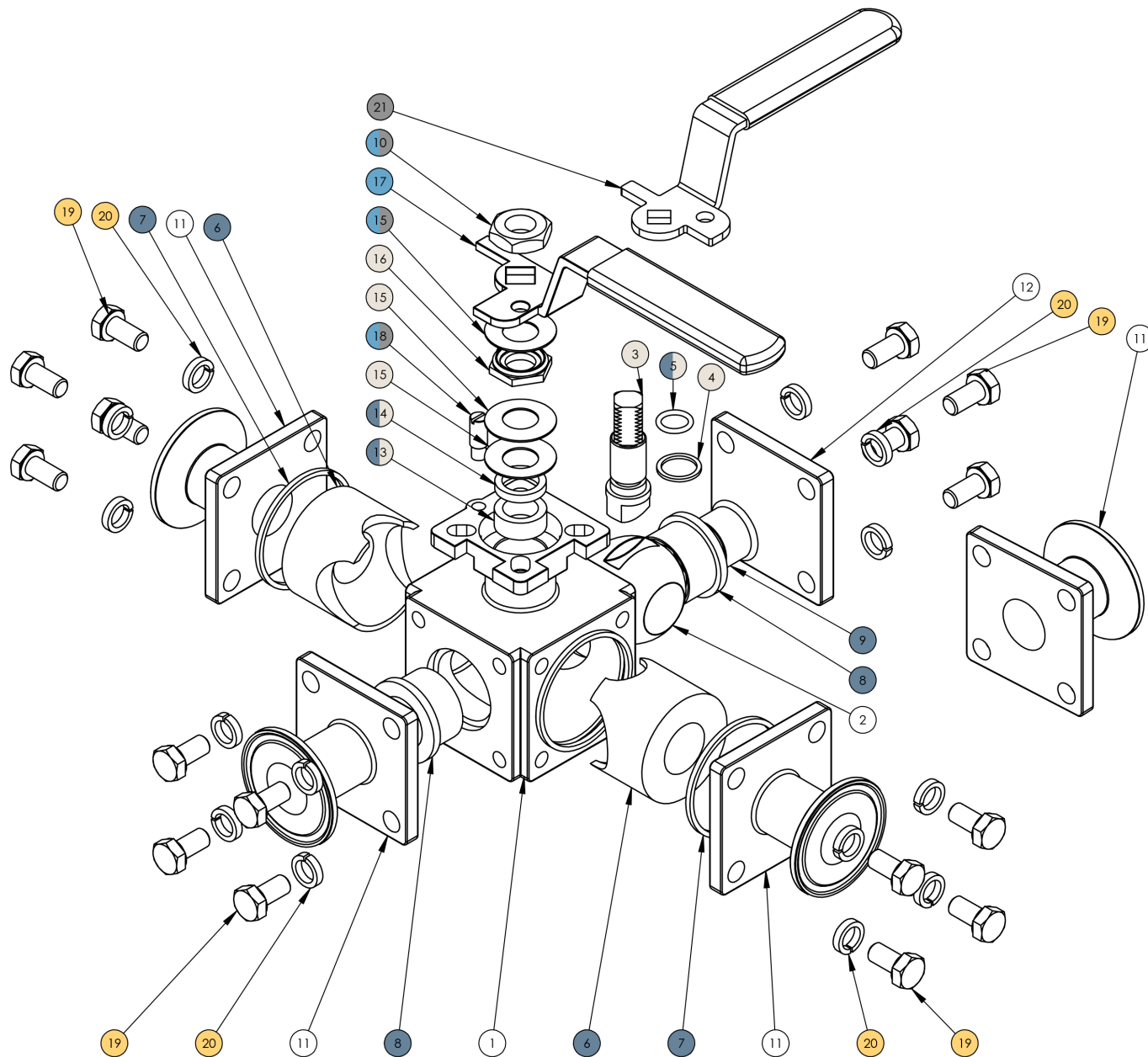


| Size   | A (in) | B (in) | C (in) | D (in) | E (in) | ID (in) | F (mm) | G (ISO 5211) | H (ISO 5211) | J (mm) | K (threads)     |
|--------|--------|--------|--------|--------|--------|---------|--------|--------------|--------------|--------|-----------------|
| 1/2"   | 4.6    | 2.3    | 3.3    | 1.7    | 4.9    | 0.37    | 9      | F03          | F04          | 9      | M12 x 1.75      |
| 3/4"   | 5.0    | 2.5    | 3.5    | 1.9    | 4.9    | 0.62    | 9      | F03          | F04          | 10     | M12 x 1.75      |
| 1"     | 6.0    | 3.0    | 3.8    | 2.3    | 5.4    | 0.87    | 11     | F04          | F05          | 12     | M14 x 2         |
| 1-1/2" | 6.9    | 3.4    | 4.5    | 2.9    | 9.3    | 1.37    | 14     | F05          | F07          | 12     | M18 x 2.5       |
| 2"     | 7.5    | 3.7    | 4.9    | 3.2    | 9.3    | 1.87    | 14     | F05          | F07          | 14     | M18 x 2.5       |
| 2-1/2" | 8.4    | 4.5    | 5.3    | 3.9    | 18.0   | 2.37    | 17     | F07          | F10          | 17     | M22 x 2.5       |
| 3"     | 9.6    | 5.1    | 6.5    | 4.9    | 18.3   | 2.87    | 22     | F10          | F12          | 24     | 1-1/8" x 12 UNF |
| 4"     | 11.4   | 6.3    | 7.0    | 5.4    | 18.3   | 3.83    | 22     | F10          | F12          | 23     | 1-1/8" x 12 UNF |

NOTE: Handle dimensions applicable for both 90° and 180° handles.

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Bill of Materials

1/2" to 1"



-  Included in seat kit (page 191)
-  Included in handle kit (page 191)
-  Included in 180° handle kit (page 191)
-  Included in stem kit (page 191)
-  Included in bolt and nut kit (page 191) (3-way only)

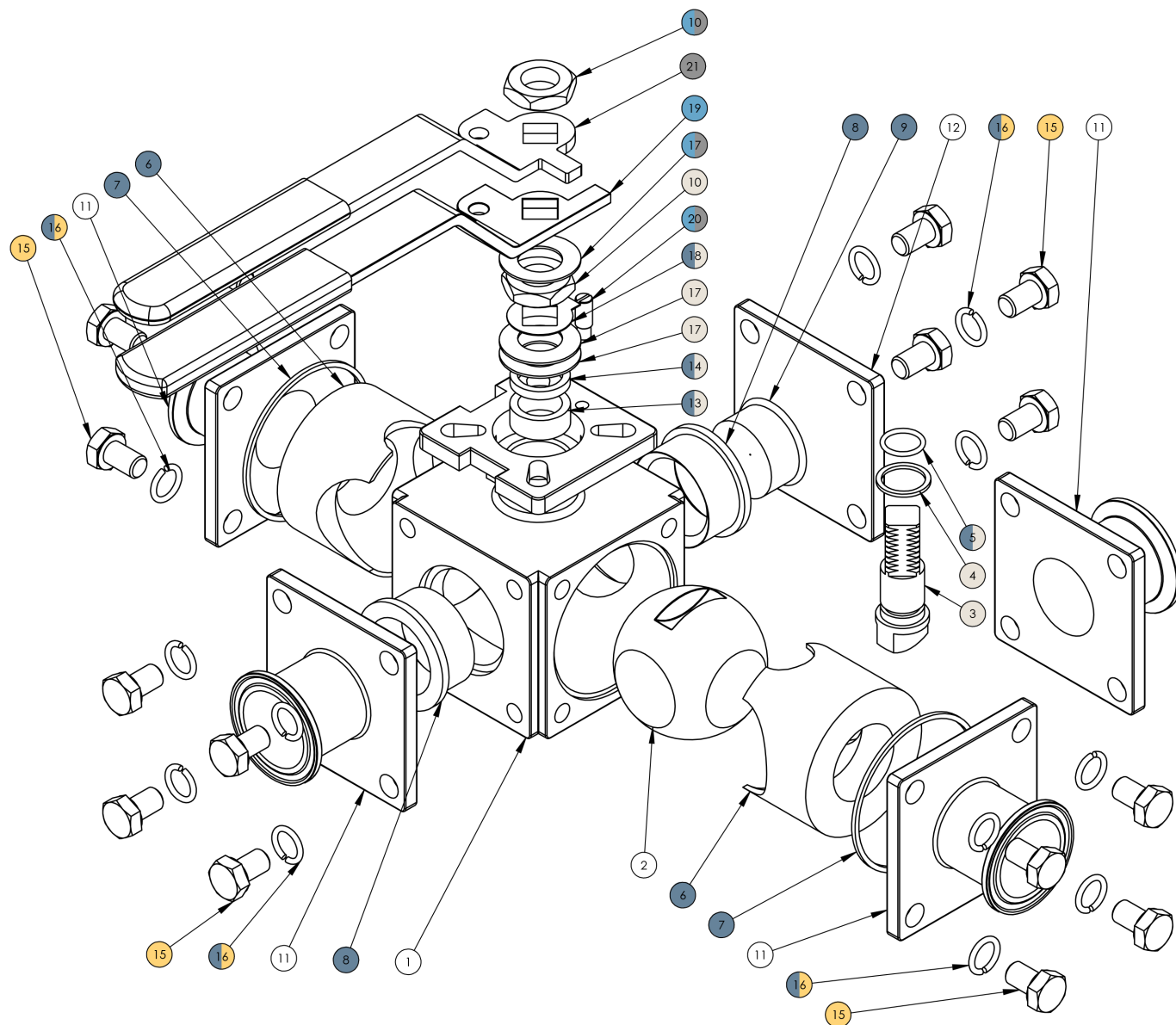
## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Bill of Materials (1/2" to 1")

| Item #          | Size | Part #                                                                              | Description             | Material        | Qty    |        |        |        |
|-----------------|------|-------------------------------------------------------------------------------------|-------------------------|-----------------|--------|--------|--------|--------|
|                 |      |                                                                                     |                         |                 | 3-Way  |        | 4-Way  |        |
|                 |      |                                                                                     |                         |                 | L-Port | T-Port | L-Port | T-Port |
| 1               | 1/2" | BV3S-1050                                                                           | body                    | CF8M            | 1      | 1      | 1      | 1      |
|                 | 3/4" | BV3S-1075                                                                           | body                    | CF8M            | 1      | 1      | 1      | 1      |
|                 | 1"   | BV3S-1100                                                                           | body                    | CF8M            | 1      | 1      | 1      | 1      |
| 2               | 1/2" | BV-3SVFLB050                                                                        | L-port ball             | CF8M            | 1      | -      | 1      | -      |
|                 |      | BV-3SVFTB050                                                                        | T-port ball             | CF8M            | -      | 1      | -      | 1      |
|                 | 3/4" | BV-3SVFLB075                                                                        | L-port ball             | CF8M            | 1      | -      | 1      | -      |
|                 |      | BV-3SVFTB075                                                                        | T-port ball             | CF8M            | -      | 1      | -      | 1      |
|                 | 1"   | BV-3SVFLB100                                                                        | L-port ball             | CF8M            | 1      | -      | 1      | -      |
|                 |      | BV-3SVFTB100                                                                        | T-port ball             | CF8M            | -      | 1      | -      | 1      |
| 3               | all  |    | stem                    | 304 SS          | 1      | 1      | 1      | 1      |
| 4               | all  |    | gland ring              | 316 SS          | 1      | 1      | 1      | 1      |
| 5               | all  |    | stem O-ring             | FKM             | 1      | 1      | 1      | 1      |
| 6               | all  |    | encapsulated seat       | see repair kits | 2      | 2      | 2      | 2      |
| 7               | all  |    | body seal               | see repair kits | 2      | 2      | 2      | 2      |
| 8               | all  |    | small encapsulated seat | see repair kits | 2      | 2      | 2      | 2      |
| 9               | all  |   | plug                    | see repair kits | 1      | 1      | -      | -      |
| 10              | all  |  | handle nut              | 304 SS          | 1      | 1      | 1      | 1      |
| 11              | 1/2" | BV-3SVFCE050                                                                        | tri-clamp end           | CF8M            | 3      | 3      | 4      | 4      |
|                 | 3/4" | BV-3SVFCE075                                                                        | tri-clamp end           | CF8M            | 3      | 3      | 4      | 4      |
|                 | 1"   | BV-3SVFCE100                                                                        | tri-clamp end           | CF8M            | 3      | 3      | 4      | 4      |
| 12              | 1/2" | BV-3SVRCP050                                                                        | cover plate             | CF8M            | 1      | 1      | -      | -      |
|                 | 3/4" | BV-3SVRCP075                                                                        | cover plate             | CF8M            | 1      | 1      | -      | -      |
|                 | 1"   | BV-3SVRCP100                                                                        | cover plate             | CF8M            | 1      | 1      | -      | -      |
| 13              | 1/2" |  | stem packing            | see repair kits | 1      | 1      | 1      | 1      |
|                 | 3/4" |  | stem packing            | see repair kits | 2      | 2      | 2      | 2      |
|                 | 1"   |  | stem packing            | see repair kits | 3      | 3      | 3      | 3      |
| 14              | all  |  | thrust washer           | see repair kits | 1      | 1      | 1      | 1      |
| 15 <sup>1</sup> | all  |  | bevel washer            | 304 SS          | 3      | 3      | 3      | 3      |
| 16              | all  |  | stem lock nut           | 304 SS          | 1      | 1      | 1      | 1      |
| 17              | all  |  | handle                  | 304 SS/Vinyl    | 1      | 1      | 1      | 1      |
| 18              | all  |  | stop pin                | 304 SS          | 1      | 1      | 1      | 1      |
| 19              | all  |  | bolt                    | 304 SS          | 16     | 16     | 16     | 16     |
| 20              | all  |  | lock washer             | 304 SS          | 16     | 16     | 16     | 16     |
| 21              | 1/2" |  | 180° handle             | 304 SS          | 1      | 1      | 1      | 1      |
|                 | 3/4" |  | 180° handle             | 304 SS          | 1      | 1      | 1      | 1      |
|                 | 1"   |  | 180° handle             | 304 SS          | 1      | 1      | 1      | 1      |

<sup>1</sup>Top bevel washer is included in handle kit(s) and bottom two bevel washers are included in the stem kit.

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Bill of Materials

1-1/2"



-  Included in seat kit (page 191)
-  Included in handle kit (page 191)
-  Included in 180° handle kit (page 191)
-  Included in stem kit (page 191)
-  Included in bolt and nut kit (page 191) (3-way only)

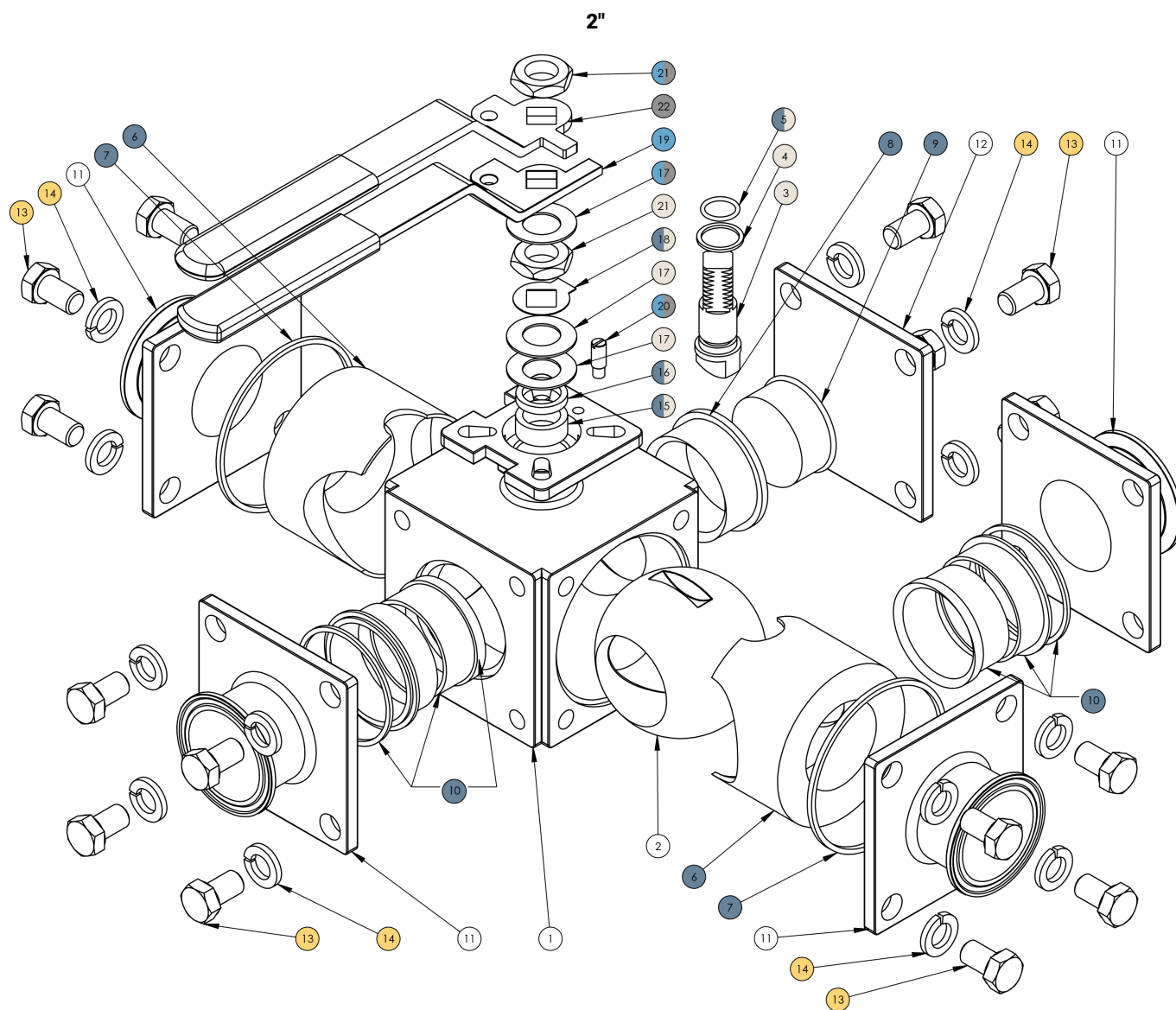
## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Bill of Materials (1-1/2")

| Item #          | Part #                                                                              | Description             | Material        | Qty    |        |        |        |
|-----------------|-------------------------------------------------------------------------------------|-------------------------|-----------------|--------|--------|--------|--------|
|                 |                                                                                     |                         |                 | 3-Way  |        | 4-Way  |        |
|                 |                                                                                     |                         |                 | L-Port | T-Port | L-Port | T-Port |
| 1               | BV3S-1150                                                                           | body                    | CF8M            | 1      | 1      | 1      | 1      |
| 2               | BV-3SVFLB150                                                                        | L-port ball             | CF8M            | 1      | -      | 1      | -      |
|                 | BV-3SVFTB150                                                                        | T-port ball             | CF8M            | -      | 1      | -      | 1      |
| 3               |    | stem                    | 304 SS          | 1      | 1      | 1      | 1      |
| 4               |    | gland ring              | 316 SS          | 1      | 1      | 1      | 1      |
| 5               |    | stem O-ring             | FKM             | 1      | 1      | 1      | 1      |
| 6               |    | encapsulated seat       | see repair kits | 2      | 2      | 2      | 2      |
| 7               |    | body seal               | see repair kits | 2      | 2      | 2      | 2      |
| 8               |    | small encapsulated seat | see repair kits | 2      | 2      | 2      | 2      |
| 9               |    | plug                    | see repair kits | 1      | 1      | -      | -      |
| 10 <sup>1</sup> |    | stem nut                | 304 SS          | 2      | 2      | 2      | 2      |
| 11              | BV-3SVFCE150                                                                        | tri-clamp end           | CF8M            | 3      | 3      | 4      | 4      |
| 12              | BV-3SVRCP150                                                                        | cover plate             | CF8M            | 1      | 1      | -      | -      |
| 13              |   | stem packing            | see repair kits | 3      | 3      | 3      | 3      |
| 14              |  | thrust washer           | see repair kits | 1      | 1      | 1      | 1      |
| 15              |  | bolt                    | 304 SS          | 16     | 16     | 16     | 16     |
| 16              |  | lock washer             | 304 SS          | 16     | 16     | 16     | 16     |
| 17 <sup>2</sup> |  | bevel washer            | 304 SS          | 3      | 3      | 3      | 3      |
| 18              |  | tab washer              | 304 SS          | 1      | 1      | 1      | 1      |
| 19              |  | handle                  | 304 SS/Vinyl    | 1      | 1      | 1      | 1      |
| 20              |  | stop pin                | 304 SS          | 1      | 1      | 1      | 1      |
| 21              |  | 180° handle             | 304 SS          | 1      | 1      | 1      | 1      |

<sup>1</sup>Top stem nut is included in the handle kit(s) and bottom stem nut is included in the stem kit.

<sup>2</sup>Top bevel washer is included in the handle kit(s) and bottom two bevel washers are included in the stem kit.

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Bill of Materials



-  Included in seat kit (page 191)
-  Included in handle kit (page 191)
-  Included in 180° handle kit (page 191)
-  Included in stem kit (page 191)
-  Included in bolt and nut kit (page 191) (3-way only)



## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Bill of Materials (2")

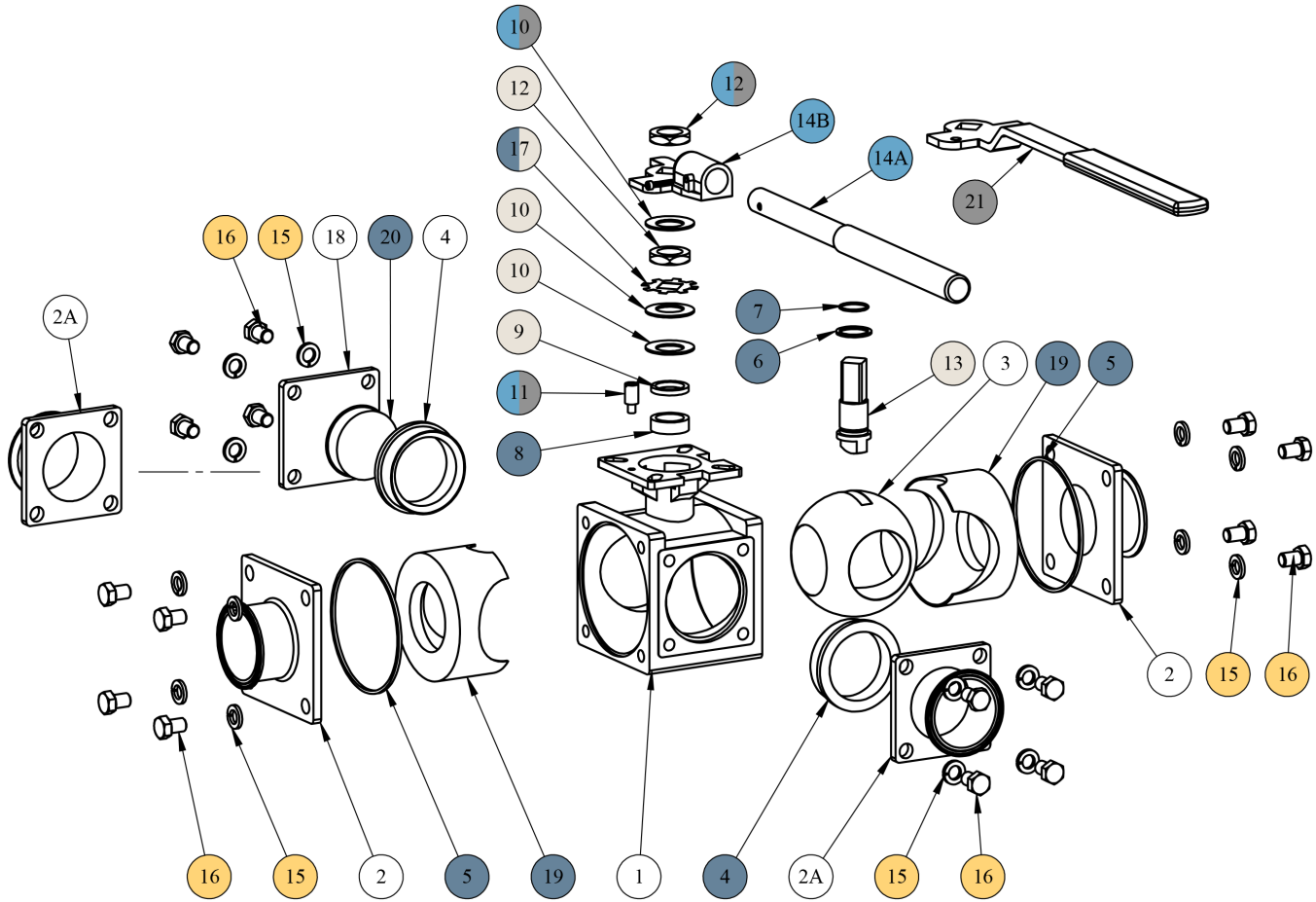
| Item #          | Part #                                                                              | Description                  | Material        | Qty    |        |        |        |
|-----------------|-------------------------------------------------------------------------------------|------------------------------|-----------------|--------|--------|--------|--------|
|                 |                                                                                     |                              |                 | 3-Way  |        | 4-Way  |        |
|                 |                                                                                     |                              |                 | L-Port | T-Port | L-Port | T-Port |
| 1               | BV3S-1200                                                                           | body                         | CF8M            | 1      | 1      | 1      | 1      |
| 2               | BV-3SVFLB200                                                                        | L-port ball                  | CF8M            | 1      | -      | 1      | -      |
|                 | BV-3SVFTB200                                                                        | T-port ball                  | CF8M            | -      | 1      | -      | 1      |
| 3               |    | stem                         | 304 SS          | 1      | 1      | 1      | 1      |
| 4               |    | gland ring                   | 316 SS          | 1      | 1      | 1      | 1      |
| 5               |    | stem O-ring                  | FKM             | 1      | 1      | 1      | 1      |
| 6               |    | encapsulated seat            | see repair kits | 2      | 2      | 2      | 2      |
| 7               |    | body seal                    | see repair kits | 2      | 2      | 2      | 2      |
| 8               |    | small encapsulated plug seat | see repair kits | 2      | 2      | 2      | 2      |
| 9               |    | plug                         | see repair kits | 1      | 1      | -      | -      |
| 10              |    | small seat assembly (3 pcs)  | see repair kits | 1      | 1      | 2      | 2      |
| 11              | BV-3SVFCE200                                                                        | tri-clamp end                | CF8M            | 3      | 3      | 4      | 4      |
| 12              | BV-3SVRCP200                                                                        | cover plate                  | CF8M            | 1      | 1      | -      | -      |
| 13              |   | bolt                         | 304 SS          | 16     | 16     | 16     | 16     |
| 14              |  | lock washer                  | 304 SS          | 16     | 16     | 16     | 16     |
| 15              |  | stem packing                 | see repair kits | 3      | 3      | 3      | 3      |
| 16              |  | thrust washer                | see repair kits | 1      | 1      | 1      | 1      |
| 17 <sup>1</sup> |  | bevel washer                 | 304 SS          | 3      | 3      | 3      | 3      |
| 18              |  | tab washer                   | 304 SS          | 1      | 1      | 1      | 1      |
| 19              |  | handle                       | 304 SS/Vinyl    | 1      | 1      | 1      | 1      |
| 20              |  | stop pin                     | 304 SS          | 1      | 1      | 1      | 1      |
| 21 <sup>2</sup> |  | stem nut                     | 304 SS          | 2      | 2      | 2      | 2      |
| 22              |  | 180° handle                  | 304 SS          | 1      | 1      | 1      | 1      |

<sup>1</sup>Top bevel washer is included in the handle kit(s) and bottom two bevel washers are included in the stem kit.

<sup>2</sup>Top stem nut is included in the handle kit(s) and bottom stem nut is included in the stem kit.

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Bill of Materials

2-1/2" to 4"



-  Included in seat kit (page 191)
-  Included in handle kit (page 191)
-  Included in 180° handle kit (page 191)
-  Included in stem kit (page 191)
-  Included in bolt and nut kit (page 191) (3-way only)

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Bill of Materials (2-1/2" to 4")

| Item #          | Size   | Part #                                                                              | Description             | Material        | Qty    |        |        |        |
|-----------------|--------|-------------------------------------------------------------------------------------|-------------------------|-----------------|--------|--------|--------|--------|
|                 |        |                                                                                     |                         |                 | 3-Way  |        | 4-Way  |        |
|                 |        |                                                                                     |                         |                 | L-Port | T-Port | L-Port | T-Port |
| 1               | 2-1/2" | BV3S-1250                                                                           | body                    | CF8M            | 1      | 1      | 1      | 1      |
|                 | 3"     | BV3S-1300                                                                           | body                    | CF8M            | 1      | 1      | 1      | 1      |
|                 | 4"     | BV3S-1400                                                                           | body                    | CF8M            | 1      | 1      | 1      | 1      |
| 2               | 2-1/2" | BV-3SVFCL250                                                                        | large tri-clamp end     | CF8M            | 2      | 2      | 2      | 2      |
|                 | 3"     | BV-3SVFCL300                                                                        | large tri-clamp end     | CF8M            | 2      | 2      | 2      | 2      |
|                 | 4"     | BV-3SVFCL400                                                                        | large tri-clamp end     | CF8M            | 2      | 2      | 2      | 2      |
| 2A              | 2-1/2" | BV-3SVFCS250                                                                        | small tri-clamp end     | CF8M            | 1      | 1      | 2      | 2      |
|                 | 3"     | BV-3SVFCS300                                                                        | small tri-clamp end     | CF8M            | 1      | 1      | 2      | 2      |
|                 | 4"     | BV-3SVFCS400                                                                        | small tri-clamp end     | CF8M            | 1      | 1      | 2      | 2      |
| 3               | 2-1/2" | BV-3SVFLB250                                                                        | L-port ball             | CF8M            | 1      | -      | 1      | -      |
|                 |        | BV-3SVFTB250                                                                        | T-port ball             | CF8M            | -      | 1      | -      | 1      |
|                 | 3"     | BV-3SVFLB300                                                                        | L-port ball             | CF8M            | 1      | -      | 1      | -      |
|                 |        | BV-3SVFTB300                                                                        | T-port ball             | CF8M            | -      | 1      | -      | 1      |
|                 | 4"     | BV-3SVFLB400                                                                        | L-port ball             | CF8M            | 1      | -      | 1      | -      |
|                 |        | BV-3SVFTB400                                                                        | T-port ball             | CF8M            | -      | 1      | -      | 1      |
| 4               | all    |  | small encapsulated seat | see repair kits | 2      | 2      | 2      | 2      |
| 5               | all    |  | body seal               | see repair kits | 2      | 2      | 2      | 2      |
| 6               | all    |  | thrust washer           | see repair kits | 1      | 1      | 1      | 1      |
| 7               | all    |  | stem O-ring             | FKM             | 1      | 1      | 1      | 1      |
| 8               | all    |  | stem packing            | see repair kits | 3      | 3      | 3      | 3      |
| 9               | all    |  | gland ring              | 316 SS          | 1      | 1      | 1      | 1      |
| 10 <sup>1</sup> | all    |  | bevel washer            | 301 SS          | 3      | 3      | 3      | 3      |
| 11              | all    |  | stop pin                | 304 SS          | 1      | 1      | 1      | 1      |
| 12 <sup>2</sup> | all    |  | stem nut                | 304 SS          | 2      | 2      | 2      | 2      |
| 13              | all    |  | stem                    | 304 SS          | 1      | 1      | 1      | 1      |
| 14A             | all    |  | handle                  | 304 SS/Vinyl    | 1      | 1      | 1      | 1      |
| 14B             | all    |  | handle hub              | CF3             | 1      | 1      | 1      | 1      |
| 15              | all    |  | lock washer             | 304 SS          | 16     | 16     | 16     | 16     |
| 16              | all    |  | bolt                    | 304 SS          | 16     | 16     | 16     | 16     |
| 17              | all    |  | tab washer              | 304 SS          | 1      | 1      | 1      | 1      |
| 18              | 2-1/2" | BV-3SVRCP250                                                                        | cover plate             | CF8M            | 1      | 1      | 0      | 0      |
|                 | 3"     | BV-3SVRCP300                                                                        | cover plate             | CF8M            | 1      | 1      | 0      | 0      |
|                 | 4"     | BV-3SVRCP400                                                                        | cover plate             | CF8M            | 1      | 1      | 0      | 0      |
| 19              | all    |  | large encapsulated seat | see repair kits | 2      | 2      | 2      | 2      |
| 20              | all    |  | plug                    | see repair kits | 1      | 1      | -      | -      |
| 21              | all    |  | 180° handle             | 304 SS          | 1      | 1      | 1      | 1      |

<sup>1</sup>Top bevel washer is included in the handle kit(s) and bottom two bevel washers are included in the stem kit.<sup>2</sup>Top stem nut is included in the handle kit(s) and bottom stem nut is included in the stem kit.

## BV3S/4S-Series Sanitary Multi-Port Ball Valve - Repair Kits

### Seat Kits

| Size   | Material     |             |                 |                          |             |
|--------|--------------|-------------|-----------------|--------------------------|-------------|
|        | Virgin PTFE  | RTFE        | 25% Carbon PTFE | 50% Stainless Steel PTFE | UHMW        |
| 1/2"   | BV-3SVFRK050 | BV-3SGRK050 | BV-3SCRK050     | BV-3SSRK050              | BV-3SURK050 |
| 3/4"   | BV-3SVFRK075 | BV-3SGRK075 | BV-3SCRK075     | BV-3SSRK075              | BV-3SURK075 |
| 1"     | BV-3SVFRK100 | BV-3SGRK100 | BV-3SCRK100     | BV-3SSRK100              | BV-3SURK100 |
| 1-1/2" | BV-3SVFRK150 | BV-3SGRK150 | BV-3SCRK150     | BV-3SSRK150              | BV-3SURK150 |
| 2"*    | BV-3SVFRK200 | BV-3SGRK200 | BV-3SCRK200     | BV-3SSRK200              | BV-3SURK200 |
| 2-1/2" | BV-3SVFRK250 | BV-3SGRK250 | BV-3SCRK250     | BV-3SSRK250              | BV-3SURK250 |
| 3"     | BV-3SVFRK300 | BV-3SGRK300 | BV-3SCRK300     | BV-3SSRK300              | BV-3SURK300 |
| 4"     | BV-3SVRRK400 | BV-3SGRK400 | BV-3SCRK400     | BV-3SSRK400              | BV-3SURK400 |

\*The 3-piece small assembly (2" only) contains (2) seat material components and (1) 316L stainless steel ring.

### Handle Kits

| Size   | 90° Part #      | 180° Part #  |
|--------|-----------------|--------------|
| 1/2"   | BV-23-HA050-075 | BV-3-HA18-9  |
| 3/4"   |                 |              |
| 1"     | BV-23-HA100     | BV-3-HA18-11 |
| 1-1/2" | BV-23-HA150-200 | BV-3-HA18-14 |
| 2"     |                 |              |
| 2-1/2" | BV-23-HA-17     | BV-3-HA18-17 |
| 3"     | BV-23-HA-22     | BV-3-HA18-22 |
| 4"     |                 |              |

### Stem Kits

| Size   | Part #        |               |
|--------|---------------|---------------|
|        | L Port        | T Port        |
| 1/2"   | BV3SV-SML-050 | BV3SV-SMT-050 |
| 3/4"   | BV3SV-SML-075 | BV3SV-SMT-075 |
| 1"     | BV3SV-SML-100 | BV3SV-SMT-100 |
| 1-1/2" | BV3SV-SML-150 | BV3SV-SMT-150 |
| 2"     | BV3SV-SML-200 | BV3SV-SMT-200 |
| 2-1/2" | BV3SV-SML-250 | BV3SV-SMT-250 |
| 3"     | BV3SV-SML-300 | BV3SV-SMT-300 |
| 4"     | BV3SV-SML-400 | BV3SV-SMT-400 |

### Bolt and Washer Kit (3-way only)

| Size   | Part #      |
|--------|-------------|
| 1/2"   | BV-3X-BN050 |
| 3/4"   | BV-3X-BN075 |
| 1"     | BV-3X-BN100 |
| 1-1/2" | BV-3X-BN150 |
| 2"     | BV-3X-BN200 |
| 2-1/2" | BV-3X-BN250 |
| 3"     | BV-3X-BN300 |
| 4"     | BV-3X-BN400 |

### BV2I-Series Industrial Ball Valve

The BV2I valve is a full port valve and available with a manual handle, pneumatic or electric actuator and a variety of control options.

Used in oil, water, and gas applications when you need a valve for isolation or control of the flow of a product. They are found in the industrial market and in the sanitary process markets on the non-process side where there is not product contact.

#### Sizes

- 1/4", 3/8", 1/2", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4"

#### Features

- Blow-out proof stem design
- Live-loaded stem packing
- ISO 5211 mounting pad
- 3-piece design allows for ball and seat replacement without having to remove the valve from the line
- Self centering valve ends
- Anti-static stem

#### Materials

- Product contact metal components: CF8M stainless steel
- Non-product contact metal components: 316 stainless steel
- Product contact seals: RTFE or 25% carbon PTFE

#### Specifications

- Standard connections:
  - FNPT, schedule 5/10 socket weld
- Valve data
  - Maximum pressure:
    - 1/4" to 2": **1000 PSI WOG**
    - 2-1/2" to 3": **800 PSI WOG**
    - 4": **600 PSI WOG**
  - Operating pressure range: **-20°F to 400 °F (-28°C to 200°C)**
- Actuator data
  - ISO 5211 mounting pad connection (see chart on page 3)
- Surface finish
  - Product contact metal components:  $\leq 32$  Ra
  - Seat lubricant: BESSIL F-100



### BV2I-Series Industrial Ball Valve - ISO 5211 Mounting Pad Connection Chart

| Size   | ISO 5211 Mounting Pad Connections |     | Stem Width (mm) | Stem Height (mm) |
|--------|-----------------------------------|-----|-----------------|------------------|
| 1/4"   | F03                               | F04 | 9               | 9                |
| 3/8"   | F03                               | F04 | 9               | 10               |
| 1/2"   | F03                               | F04 | 9               | 10               |
| 3/4"   | F03                               | F04 | 9               | 11               |
| 1"     | F04                               | F05 | 11              | 12.5             |
| 1-1/4" | F04                               | F05 | 11              | 14               |
| 1-1/2" | F05                               | F07 | 14              | 17               |
| 2"     | F05                               | F07 | 14              | 17               |
| 2-1/2" | F07                               | F10 | 17              | 18.5             |
| 3"     | F07                               | F10 | 17              | 18.5             |
| 4"     | F07                               | F10 | 17              | 21               |

F

### BV2I-Series Industrial Ball Valve - Weight and Break Torque Chart

| Part #    | Size   | Base Break Torque (in-lbs) | Flow Coefficient (Cv) | Weight (lbs) |
|-----------|--------|----------------------------|-----------------------|--------------|
| BV2I_025_ | 1/4"   | 17                         | 8.1                   | 1.00         |
| BV2I_038_ | 3/8"   | 18                         | 14                    | 1.10         |
| BV2I_050_ | 1/2"   | 50                         | 26                    | 1.26         |
| BV2I_075_ | 3/4"   | 57                         | 51                    | 1.57         |
| BV2I_100_ | 1"     | 115                        | 68                    | 2.27         |
| BV2I_125_ | 1-1/4" | 186                        | 120                   | 3.44         |
| BV2I_150_ | 1-1/2" | 220                        | 170                   | 5.51         |
| BV2I_200_ | 2"     | 405                        | 376                   | 7.58         |
| BV2I_250_ | 2-1/2" | 452                        | 510                   | 14.11        |
| BV2I_300_ | 3"     | 1020                       | 996                   | 24.69        |
| BV2I_400_ | 4"     | 1180                       | 1893                  | 48.50        |

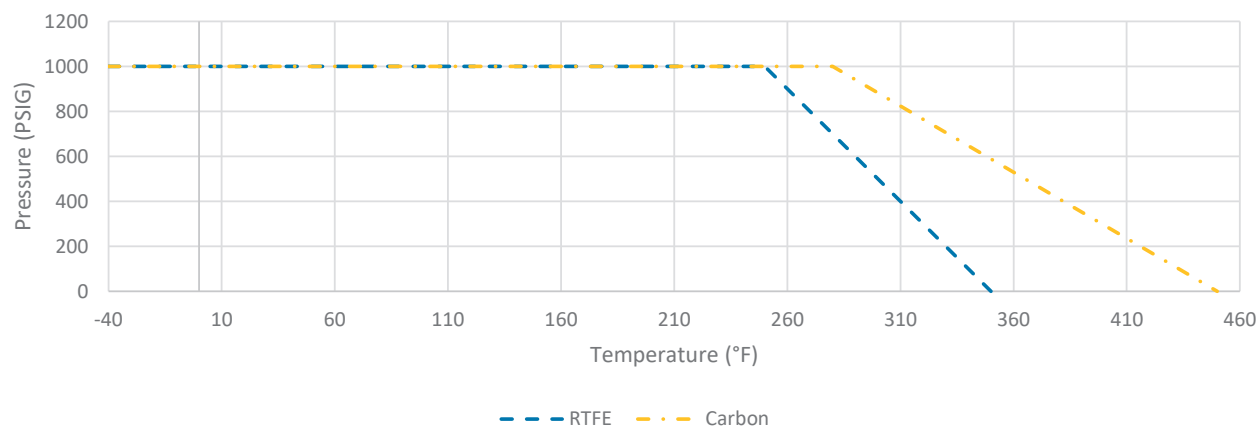
### BV2I-Series Ball Valve - Seat Material

| Code (Seat Material)            | Material Torque Multiplier |
|---------------------------------|----------------------------|
| GN (15% Glass Reinforced RTFE)  | 1                          |
| CN (25% Carbon Reinforced PTFE) | 1.25                       |

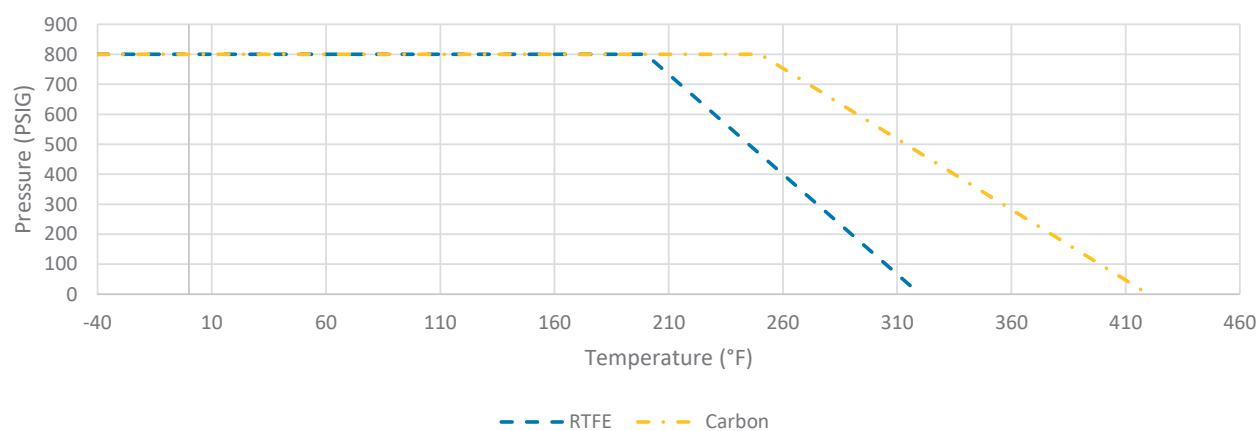
NOTE: 1) Base Break Torque \* Material Torque Multiplier = Material Break Torque

BV2I-Series Industrial Ball Valve - Pressure Temperature Charts

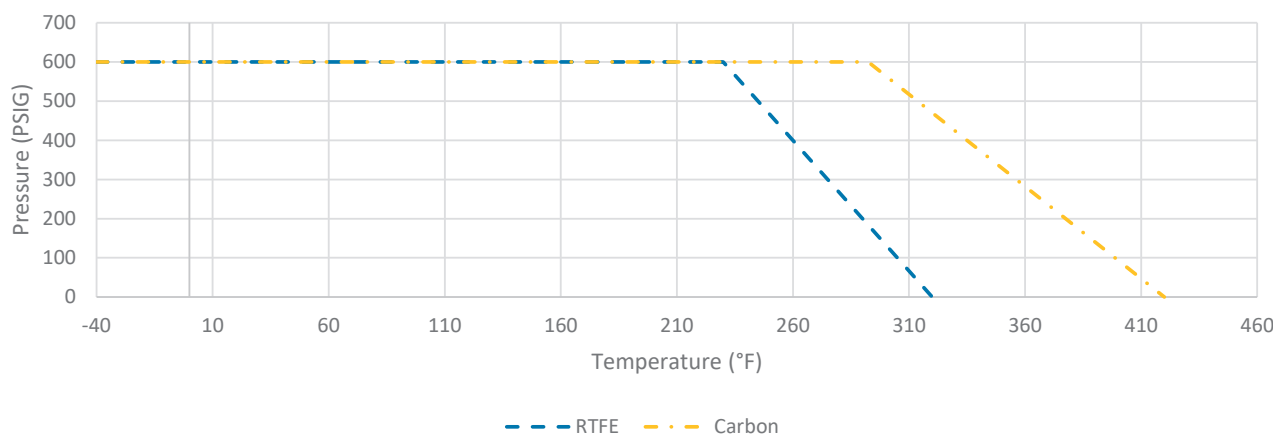
0.25 in - 2.00 in



2.50 in & 3.00 in



4.00 in



## BV2I-Series Industrial Ball Valve - Part Number Key

| BV2I-Series Industrial Ball Valve<br>Part Number Key<br>Example: BV2IGN02511-A |             | Series | Seat Material | Valve Size | Connection End | Connection End |   | Handle |
|--------------------------------------------------------------------------------|-------------|--------|---------------|------------|----------------|----------------|---|--------|
|                                                                                |             | BV2I   | GN            | 025        | 1              | 1              | - | A      |
| <b>Series</b>                                                                  | <b>Code</b> | BV2I   | GN            | 025        | 1              | 1              | - | A      |
| BV2I                                                                           | BV2I        |        |               |            |                |                |   |        |
| <b>Seat Material</b>                                                           | <b>Code</b> | GN     | GN            | 025        | 1              | 1              | - | A      |
| 15% glass reinforced PTFE (standard)                                           | GN          |        |               |            |                |                |   |        |
| 25% carbon reinforced PTFE                                                     | CN          |        |               |            |                |                |   |        |
| <b>Valve Size</b>                                                              | <b>Code</b> | 025    | GN            | 025        | 1              | 1              | - | A      |
| 1/4"                                                                           | 025         |        |               |            |                |                |   |        |
| 3/8"                                                                           | 038         |        |               |            |                |                |   |        |
| 1/2"                                                                           | 050         |        |               |            |                |                |   |        |
| 3/4"                                                                           | 075         |        |               |            |                |                |   |        |
| 1"                                                                             | 100         |        |               |            |                |                |   |        |
| 1-1/4"                                                                         | 125         |        |               |            |                |                |   |        |
| 1-1/2"                                                                         | 150         |        |               |            |                |                |   |        |
| 2"                                                                             | 200         |        |               |            |                |                |   |        |
| 2-1/2"                                                                         | 250         |        |               |            |                |                |   |        |
| 3"                                                                             | 300         |        |               |            |                |                |   |        |
| 4"                                                                             | 400         |        |               |            |                |                |   |        |
| <b>Connection End</b>                                                          | <b>Code</b> | 1      | GN            | 025        | 1              | 1              | - | A      |
| Female NPT                                                                     | 1           |        |               |            |                |                |   |        |
| Socket weld                                                                    | 3           | A      | GN            | 025        | 1              | 1              | - | A      |
| <b>Handle</b>                                                                  | <b>Code</b> |        |               |            |                |                |   |        |
| Manual handle (standard)                                                       | A           |        |               |            |                |                |   |        |
| No handle (actuation)                                                          | blank       | A      | GN            | 025        | 1              | 1              | - | A      |
|                                                                                |             |        |               |            |                |                |   |        |

| Industrial 2-Way Actuated Ball Valve<br>Part Number Key<br>Example: 2IG0311XX00XX1 |             | Series | Seat Material | Size | Connections |
|------------------------------------------------------------------------------------|-------------|--------|---------------|------|-------------|
|                                                                                    |             | 2I     | G             | 03   | 1           |
| <b>Series</b>                                                                      | <b>Code</b> | 2I     | G             | 03   | 1           |
| Stainless steel 3-piece body, non-encapsulated                                     | 2I          |        |               |      |             |
| <b>Seat Material</b>                                                               | <b>Code</b> | G      | G             | 03   | 1           |
| RTFE (15% glass reinforced PTFE)                                                   | G           |        |               |      |             |
| 25% carbon reinforced PTFE                                                         | C           |        |               |      |             |
| <b>Size</b>                                                                        | <b>Code</b> | 03     | G             | 03   | 1           |
| 1/4"                                                                               | 03          |        |               |      |             |
| 3/8"                                                                               | 04          |        |               |      |             |
| 1/2"                                                                               | 50          |        |               |      |             |
| 3/4"                                                                               | 75          |        |               |      |             |
| 1"                                                                                 | 10          |        |               |      |             |
| 1-1/4"                                                                             | 13          |        |               |      |             |
| 1-1/2"                                                                             | 15          |        |               |      |             |
| 2"                                                                                 | 20          |        |               |      |             |
| 2-1/2"                                                                             | 25          |        |               |      |             |
| 3"                                                                                 | 30          |        |               |      |             |
| 4"                                                                                 | 40          |        |               |      |             |
| <b>Connections</b>                                                                 | <b>Code</b> | 1      | G             | 03   | 1           |
| Female NPT                                                                         | 1           |        |               |      |             |
| Socket weld                                                                        | 3           | 1      | G             | 03   | 1           |
|                                                                                    |             |        |               |      |             |

NOTE: Continue part number selection by following column 1 or 2 on page 202.



## BV2I-Series Industrial Ball Valve (Actuated)

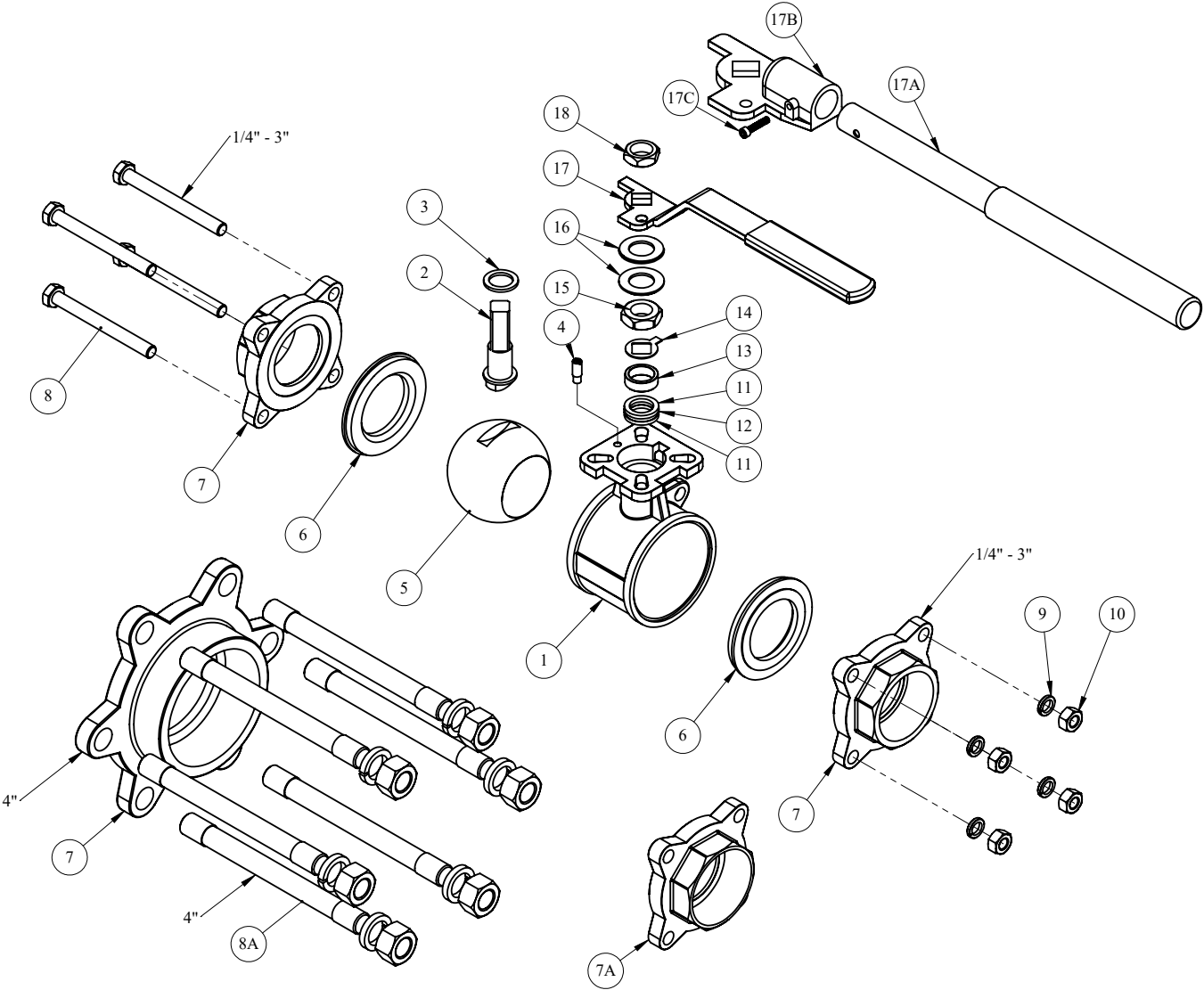
| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                        |                  |          |         |                 | 2. Electric Actuator                          |         |          |             |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|---------|-----------------|-----------------------------------------------|---------|----------|-------------|
| Actuator                                                                                                                                    | Actuator Options | Feedback | Control | Valve Operation | Actuator                                      | Voltage | Option 1 | Option 2    |
| 1                                                                                                                                           | XX               | 00       | XX      | 1               | E                                             | B       | 1        | 1           |
| <b>Actuator</b>                                                                                                                             |                  |          |         | <b>Code</b>     | <b>Actuator</b>                               |         |          | <b>Code</b> |
| Aluminum spring return pneumatic rack and pinion                                                                                            |                  |          |         | 1               | Electric                                      |         |          | E           |
| Aluminum double acting pneumatic rack and pinion                                                                                            |                  |          |         | 2               | Oversized (1-UP) electric                     |         |          | F           |
| Stainless steel spring return pneumatic rack and pinion                                                                                     |                  |          |         | 3               | Nema 7 electric                               |         |          | G           |
| Stainless steel double acting pneumatic rack and pinion                                                                                     |                  |          |         | 4               | Electric with riser kit                       |         |          | H           |
| Dead man spring return handle                                                                                                               |                  |          |         | 6               | <b>Voltage</b>                                |         |          | <b>Code</b> |
| Technopolymer spring return pneumatic rack and pinion                                                                                       |                  |          |         | 7               | 115VAC                                        |         |          | B           |
| <b>Actuator Options</b>                                                                                                                     |                  |          |         | <b>Code</b>     | 12VDC                                         |         |          | C           |
| None                                                                                                                                        |                  |          |         | XX              | 24VAC                                         |         |          | D           |
| Oversized (1-UP)                                                                                                                            |                  |          |         | AA              | 24VDC                                         |         |          | E           |
| Actuator mounted perpendicular to flow                                                                                                      |                  |          |         | AB              | 220VAC                                        |         |          | F           |
| High temp FKM elastomers                                                                                                                    |                  |          |         | AC              | 12VAC                                         |         |          | G           |
| Extended travel stops                                                                                                                       |                  |          |         | AD              | <b>Option 1</b>                               |         |          | <b>Code</b> |
| Riser kit                                                                                                                                   |                  |          |         | AE              | None                                          |         |          | 1           |
| <b>Feedback</b>                                                                                                                             |                  |          |         | <b>Code</b>     | Torque switches                               |         |          | 2           |
| None                                                                                                                                        |                  |          |         | 00              | 4-20mA input/output modulating controller     |         |          | 3           |
| Limit switch box, OPEN/CLOSE beacon, (2) SPDT mechanical switches                                                                           |                  |          |         | 11              | Current position transmitter                  |         |          | 4           |
| Limit switch box, OPEN/CLOSE beacon, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULus Class 1/2 Div 1/2 |                  |          |         | 12              | Potentiometer                                 |         |          | 5           |
| Limit switch box, OPEN/CLOSE beacon, AS-I                                                                                                   |                  |          |         | 13              | Local control unit                            |         |          | 6           |
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, aluminum Exd IIB certified enclosure                                      |                  |          |         | 14              | Two extra travel cams and switches            |         |          | 7           |
| Limit switch box, OPEN/CLOSE beacon, (2) DPDT mechanical switches                                                                           |                  |          |         | 15              | Three position cam set                        |         |          | 8           |
| Limit switch box, OPEN/CLOSE beacon, (2) switches, electro mechanical SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1              |                  |          |         | 16              | Local control unit with lock                  |         |          | 9           |
| Limit switch box, OPEN/CLOSE beacon, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO                                                      |                  |          |         | 17              | 1-5V input/2-10V output modulating controller |         |          | A           |
| Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter                                                                     |                  |          |         | 18              | 2-10V input/output modulating controller      |         |          | B           |
| Limit switch box, OPEN/CLOSE beacon, SPDT proximity, 0.25A @ 120VAC, 0.416A @ 48VDC, resistive                                              |                  |          |         | 19              | 75% duty cycle                                |         |          | C           |
| Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter + 2 SPDT mechanical switches                                        |                  |          |         | 20              | Relay                                         |         |          | D           |
| Stainless steel limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches                                                            |                  |          |         | 21              | Four position cam set                         |         |          | E           |
|                                                                                                                                             |                  |          |         |                 | 25% duty cycle (actuator Code G only)         |         |          | F           |
|                                                                                                                                             |                  |          |         |                 | 75% duty cycle (actuator Code G only)         |         |          | G           |

### BV2I-Series Industrial Ball Valve (Actuated)

| Control                                                                                                                                                                                                       | Code        | Option 2                                      | Code |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|------|
| None                                                                                                                                                                                                          | XX          | None                                          | 1    |
| Single coil solenoid, 120VAC                                                                                                                                                                                  | AA          | Torque switches                               | 2    |
| Single coil solenoid, 24VDC                                                                                                                                                                                   | AB          | 4-20mA input/output modulating controller     | 3    |
| Single coil solenoid, 12VDC                                                                                                                                                                                   | AC          | Current position transmitter                  | 4    |
| Single coil solenoid, 220VAC                                                                                                                                                                                  | AD          | Potentiometer                                 | 5    |
| Dual coil solenoid, 120VAC                                                                                                                                                                                    | AE          | Local control unit                            | 6    |
| Dual coil solenoid, 24VDC                                                                                                                                                                                     | AF          | Two extra travel cams and switches            | 7    |
| Dual coil solenoid, 220VAC                                                                                                                                                                                    | AG          | Three position cam set                        | 8    |
| Pneumatic positioner 3-15psi input, no feedback                                                                                                                                                               | AH          | Local control unit with lock                  | 9    |
| Pneumatic positioner 3-15psi input, (2) SPDT mechanical switches for feedback                                                                                                                                 | AI          | 1-5V input/2-10V output modulating controller | A    |
| Pneumatic positioner 3-15psi input, 4-20mA for feedback                                                                                                                                                       | AJ          | 2-10V input/output modulating controller      | B    |
| Electropneumatic positioner 4-20mA input, no feedback                                                                                                                                                         | AK          | 75% duty cycle                                | C    |
| Electropneumatic positioner 4-20mA input, (2) SPDT mechanical switches for feedback                                                                                                                           | AL          | Relay                                         | D    |
| Electropneumatic positioner 4-20mA input, 4-20mA for feedback                                                                                                                                                 | AM          | Four position cam set                         | E    |
| Electropneumatic positioner 0-10v input, no feedback                                                                                                                                                          | AN          | 25% duty cycle (actuator Code G only)         | F    |
| Electropneumatic positioner 0-10v input, (2) SPDT mechanical switches for feedback                                                                                                                            | AO          | 75% duty cycle (actuator Code G only)         | G    |
| Electropneumatic positioner 0-10v input, 4-20mA for feedback                                                                                                                                                  | AP          |                                               |      |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                                                                                                                         | AQ          |                                               |      |
| Electropneumatic positioner 4-20mA input, no feedback, Class 1, Div II explosion proof                                                                                                                        | AR          |                                               |      |
| Single coil solenoid, 24VDC and 24V Banjo solenoid valve with Form B plug                                                                                                                                     | AS          |                                               |      |
| Single coil solenoid, 24VDC, AS-I, 2.5W low power                                                                                                                                                             | AT          |                                               |      |
| Single coil solenoid, 24VDC, intrinsically safe                                                                                                                                                               | AU          |                                               |      |
| Single coil solenoid, 120VAC, explosion proof, Class H coil                                                                                                                                                   | AV          |                                               |      |
| Single coil solenoid, 24VDC, explosion proof, Class H coil                                                                                                                                                    | AW          |                                               |      |
| Single coil solenoid, 24VAC                                                                                                                                                                                   | AX          |                                               |      |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback, Class 1, Div II explosion proof                                                                                                        | AY          |                                               |      |
| Single coil solenoid, 24VDC, molded LED, ind. form, 2M Leads                                                                                                                                                  | AZ          |                                               |      |
| TUFRAM coated electropneumatic positioner 4-20mA input, no feedback                                                                                                                                           | BA          |                                               |      |
| V200 rotary pneumatic positioner, (2) REED SWITCH feedback                                                                                                                                                    | BB          |                                               |      |
| Single coil solenoid, 24VDC, pre-wired to limit switch with CORDSET (dual keyway, 1/2"-20 UNF mating thread, single ended, straight female connector, 22 AWG PVC, auto color code 2P to 6P cable, 12' length) | BC          |                                               |      |
| Single coil solenoid, 24VDC, pre-wired to limit switch, 6P male connector                                                                                                                                     | BD          |                                               |      |
| <b>Valve Operation</b>                                                                                                                                                                                        | <b>Code</b> |                                               |      |
| Normally closed (spring return)                                                                                                                                                                               | 1           |                                               |      |
| Normally open (spring return)                                                                                                                                                                                 | 2           |                                               |      |
| Fail in place (double acting)                                                                                                                                                                                 | 3           |                                               |      |

F

BV2I-Series Industrial Ball Valve - Bill of Materials



### BV2I-Series Industrial Ball Valve - Bill of Materials

| Item # | Description       | Material       | Qty        |              |     |
|--------|-------------------|----------------|------------|--------------|-----|
|        |                   |                | 1/4" to 2" | 2-1/2" to 3" | 4"  |
| 1      | body              | CF8M           | 1          |              |     |
| 2      | stem              | 316 SS         | 1          |              |     |
| 3      | thrust washer     | G or C         | 1          |              |     |
| 4      | stopper           | 304 SS         | 1          |              |     |
| 5      | ball              | 316 SS         | 1          |              |     |
| 6      | seat              | G or C         | 2          |              |     |
| 7      | end (FNPT)        | CF8M           | 2          |              |     |
| 7A     | end (socket weld) | CF8M           | 2          |              |     |
| 8      | body bolt         | 304 SS         | 4          |              | N/A |
| 8A     | body bolt         | 304 SS         | N/A        |              | 6   |
| 9      | body washer       | 304 SS         | 4          |              | 12  |
| 10     | body nut          | 304 SS         | 4          |              | 12  |
| 11     | stem packing      | G or C         | 2          |              |     |
| 12     | O-ring            | Silicone       | 1          |              |     |
| 13     | gland bushing     | 304 SS         | 1          |              |     |
| 14     | tap washer        | 304 SS         | 1          |              |     |
| 15     | gland nut         | 304 SS         | 1          |              |     |
| 16     | spring washer     | 304 SS         | 1          |              |     |
| 17     | handle            | 304 SS/plastic | 1          |              | N/A |
| 17A    | handle rod        | 304 SS/plastic | N/A        | 1            |     |
| 17B    | handle hub        | 304 SS         | N/A        | 1            |     |
| 17C    | hub bolt          | 304 SS         | N/A        | 1            |     |
| 18     | handle nut        | 304 SS         | 1          |              |     |

F

### BV2I-Series Ball Valve - Repair Kits

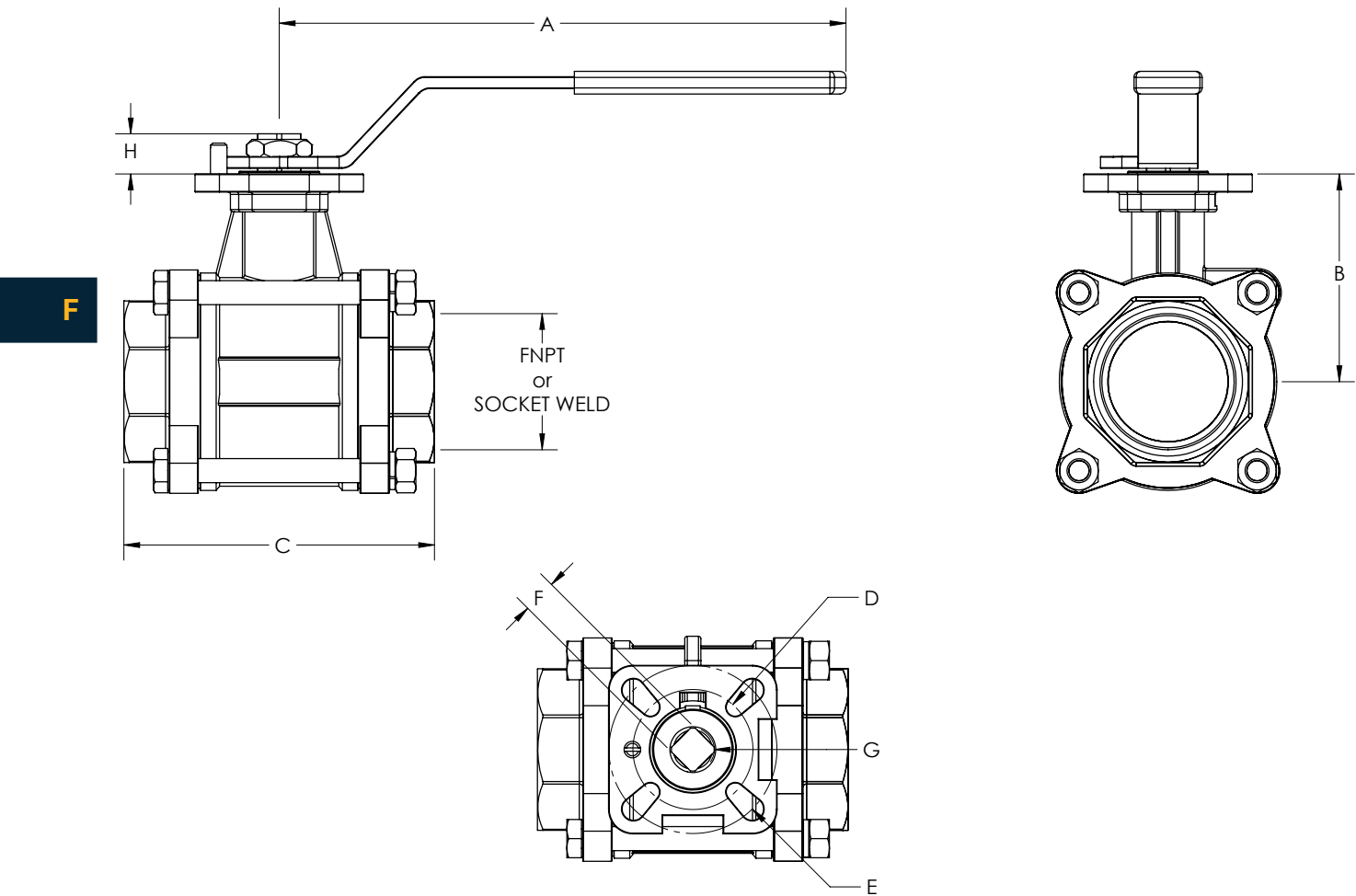
| Item # | Description   | Qty |
|--------|---------------|-----|
| 3      | thrust washer | 1   |
| 6      | seat          | 2   |
| 11     | stem packing  | *   |
| 12     | O-ring        | 1   |

\* 1/2" - 2": qty 2

2-1/2": qty 3

3" - 4": qty 4

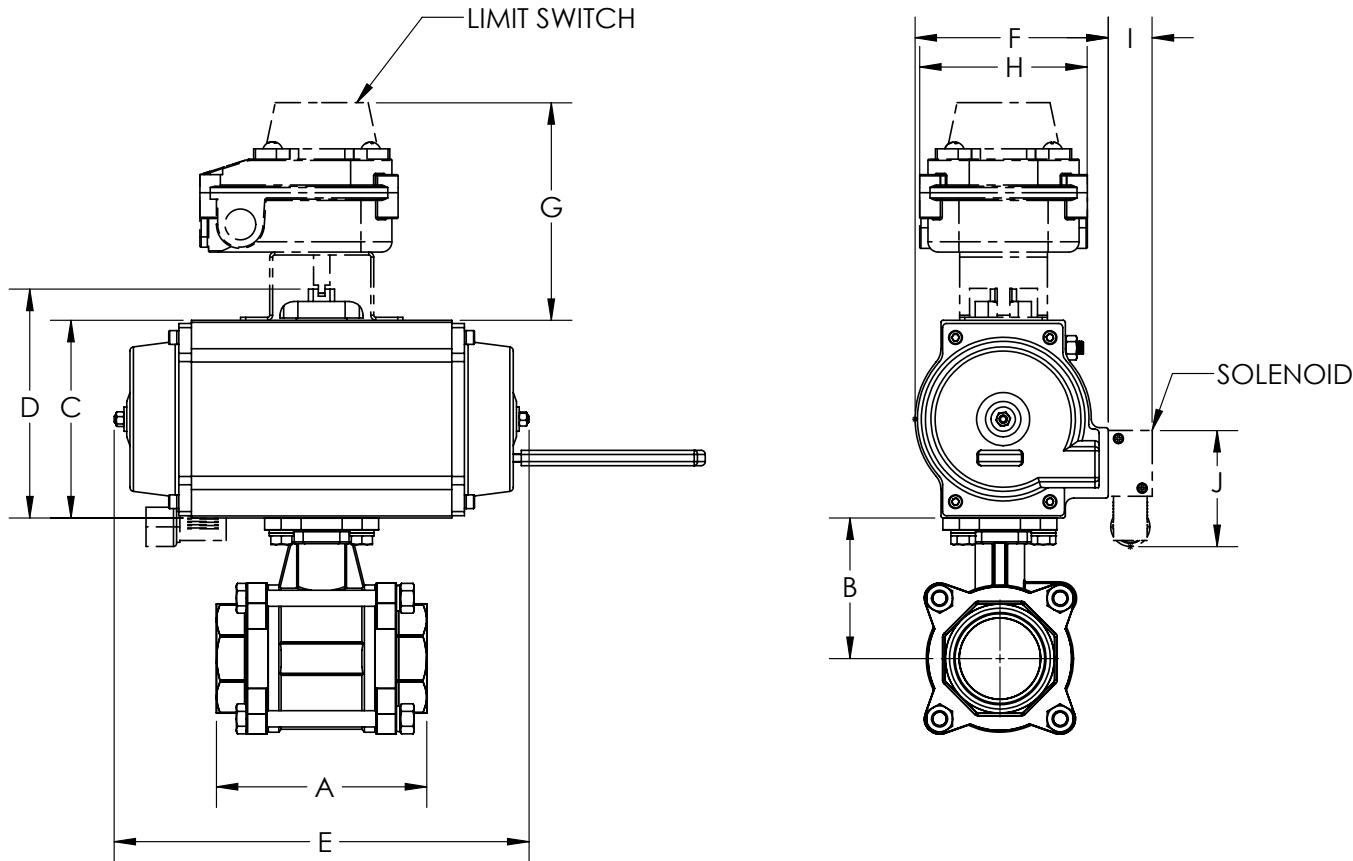
BV2I-Series Industrial Ball Valve - Dimensions



| Size   | A     | B    | C    | D   | E   | F (mm) | G (threads) | H (mm) | FNPT | Socket Weld |
|--------|-------|------|------|-----|-----|--------|-------------|--------|------|-------------|
| 1/4"   | 4.72  | 1.52 | 2.51 | F03 | F04 | 9      | M12 x 1.75  | 9      | 0.25 | N/A         |
| 3/8"   | 4.72  | 1.52 | 2.51 | F03 | F04 | 9      | M12 x 1.75  | 10     | 0.38 | 0.71        |
| 1/2"   | 4.72  | 1.67 | 2.84 | F03 | F04 | 9      | M12 x 1.75  | 10     | 0.50 | 0.88        |
| 3/4"   | 4.72  | 1.91 | 3.11 | F03 | F04 | 9      | M12 x 1.75  | 11     | 0.75 | 1.09        |
| 1"     | 5.35  | 2.17 | 3.29 | F04 | F05 | 11     | M14 x 2     | 12     | 1.00 | 1.35        |
| 1-1/4" | 5.35  | 2.35 | 4.14 | F04 | F05 | 11     | M14 x 2     | 14     | 1.25 | 1.70        |
| 1-1/2" | 9.17  | 2.77 | 4.41 | F05 | F07 | 14     | M18 x 2.5   | 17     | 1.50 | 1.94        |
| 2"     | 9.17  | 3.38 | 5.13 | F05 | F07 | 14     | M18 x 2.5   | 17     | 2.00 | 2.44        |
| 2-1/2" | 17.32 | 4.29 | 6.64 | F07 | F10 | 17     | M22 x 2.5   | 18     | 2.50 | 3.01        |
| 3"     | 17.32 | 4.67 | 7.34 | F07 | F10 | 17     | M22 x 2.5   | 18     | 3.00 | 3.52        |
| 4"     | 17.32 | 4.54 | 8.88 | F07 | F10 | 17     | M22 x 2.5   | 21     | 4.00 | 4.52        |

**BV2I-Series Industrial Ball Valve - Dimensions**

Actuated Spring Return



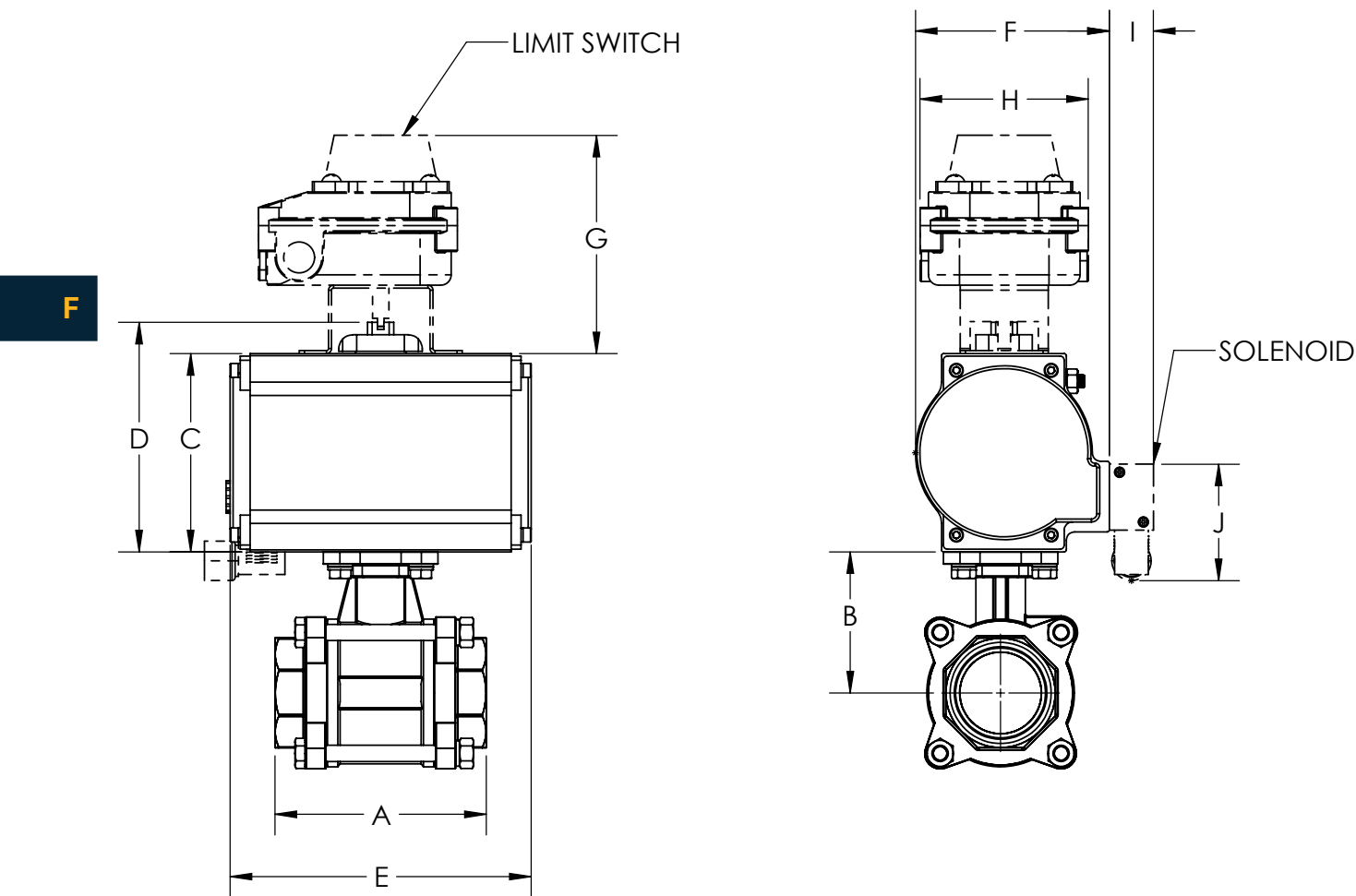
F

| Size   | A (in) | B (in) | RP-BA Series<br>Actuator | C (in) | D (in) | E (in) | F (in) | G (in)        | H (in) | I (in)   | J (in) |
|--------|--------|--------|--------------------------|--------|--------|--------|--------|---------------|--------|----------|--------|
|        |        |        |                          |        |        |        |        | XLS-B4 Series |        | X Series |        |
| 1/4"   | 2.51   | 1.52   | RP-BA-025-SR             | 3.10   | 3.83   | 7.66   | 3.20   | 5.27          | 4.06   | 1.07     | 2.81   |
| 3/8"   | 2.51   | 1.52   |                          |        |        |        |        |               |        |          |        |
| 1/2"   | 2.84   | 1.67   |                          |        |        |        |        |               |        |          |        |
| 3/4"   | 3.11   | 1.91   |                          |        |        |        |        |               |        |          |        |
| 1"     | 3.29   | 2.17   | RP-BA-025-SR05           | 3.10   | 3.83   | 7.66   | 3.20   |               |        |          |        |
| 1-1/4" | 4.14   | 2.35   |                          |        |        |        |        |               |        |          |        |
| 1-1/2" | 4.41   | 2.77   | RP-BA-045-SR             | 3.86   | 4.63   | 8.09   | 3.72   |               |        |          |        |
| 2"     | 5.13   | 3.38   | RP-BA-101-SR             | 4.79   | 5.54   | 9.84   | 4.68   |               |        |          |        |
| 2-1/2" | 6.64   | 4.29   | RP-BA-225-SR             | 5.58   | 6.34   | 13.98  | 5.56   |               |        |          |        |
| 3"     | 7.34   | 4.67   |                          |        |        |        |        |               |        |          |        |
| 4"     | 8.88   | 4.54   | RP-BA-365-SR             | 6.94   | 7.72   | 16.61  | 7.25   |               |        |          |        |

NOTE: For more information on actuation accessories, see relevant EPRG for the actuator, limit switch, and solenoid.

BV2I-Series Industrial Ball Valve - Dimensions

Actuated Double Acting

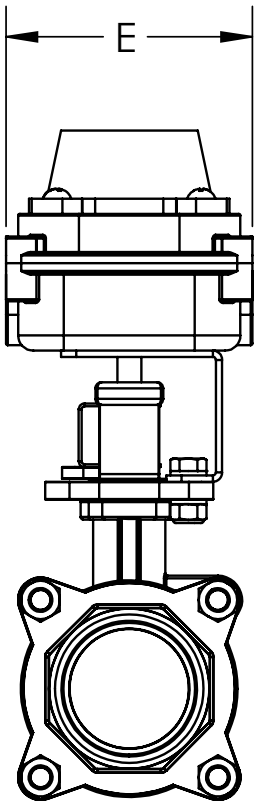
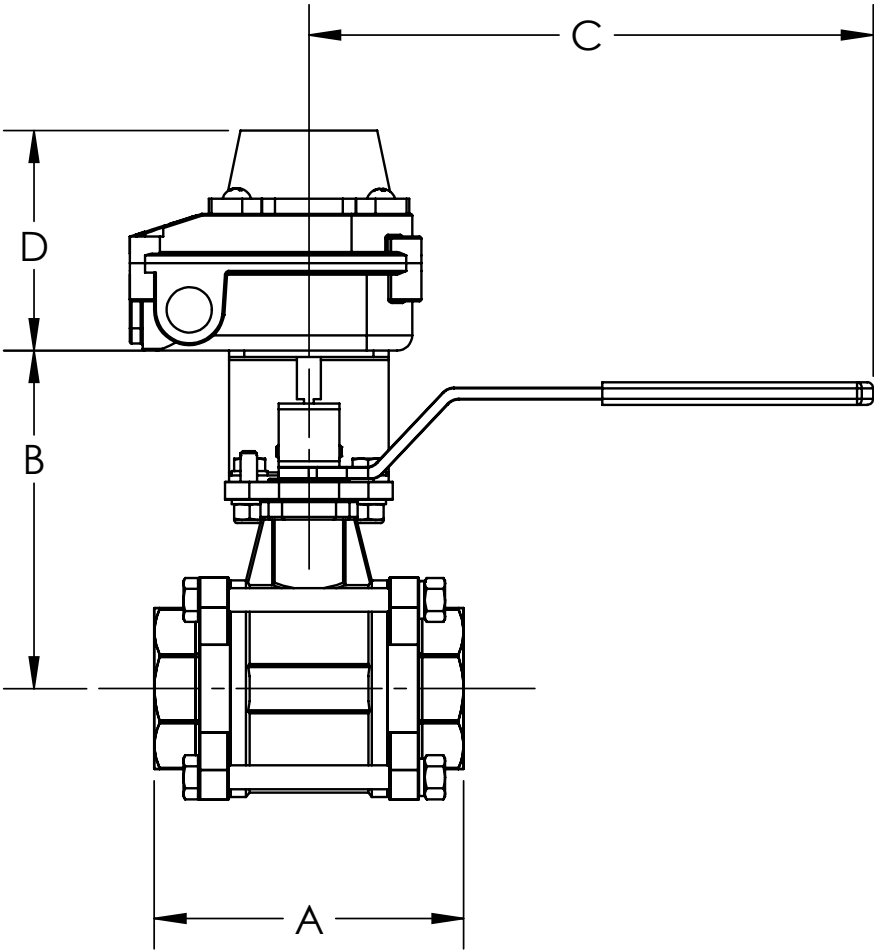


| Size   | A (in) | B (in) | RP-BA Series Actuator | C (in) | D (in) | E (in) | F (in) | G (in)        | H (in) | I (in)   | J (in) |
|--------|--------|--------|-----------------------|--------|--------|--------|--------|---------------|--------|----------|--------|
|        |        |        |                       |        |        |        |        | XLS-B4 Series |        | X Series |        |
| 1/4"   | 2.51   | 1.52   | RP-BA-012-DA          | 2.6    | 3.39   | 4.72   | 2.93   | 5.27          | 4.06   | 1.07     | 2.81   |
| 3/8"   | 2.51   | 1.52   |                       |        |        |        |        |               |        |          |        |
| 1/2"   | 2.84   | 1.67   |                       |        |        |        |        |               |        |          |        |
| 3/4"   | 3.11   | 1.91   | RP-BA-025-DA          | 3.1    | 3.87   | 5.68   | 3.2    |               |        |          |        |
| 1"     | 3.29   | 2.17   | RP-BA-025-DA05        | 3.1    | 3.87   | 5.68   | 3.2    |               |        |          |        |
| 1-1/4" | 4.14   | 2.35   |                       |        |        |        |        |               |        |          |        |
| 1-1/2" | 4.41   | 2.77   | RP-BA-045-DA          | 3.86   | 4.63   | 5.87   | 3.72   |               |        |          |        |
| 2"     | 5.13   | 3.38   |                       |        |        |        |        |               |        |          |        |
| 2-1/2" | 6.64   | 4.29   | RP-BA-101-DA          | 4.79   | 5.54   | 7.2    | 4.77   |               |        |          |        |
| 3"     | 7.34   | 4.67   | RP-BA-225-DA          | 5.58   | 6.34   | 10.22  | 5.56   |               |        |          |        |
| 4"     | 8.88   | 4.54   |                       |        |        |        |        |               |        |          |        |

NOTE: For more information on actuation accessories, see relevant EPRG for the actuator, limit switch, and solenoid.

**BV2I-Series Industrial Ball Valve - Dimensions**

Actuated Manual Handle and Limit Switch



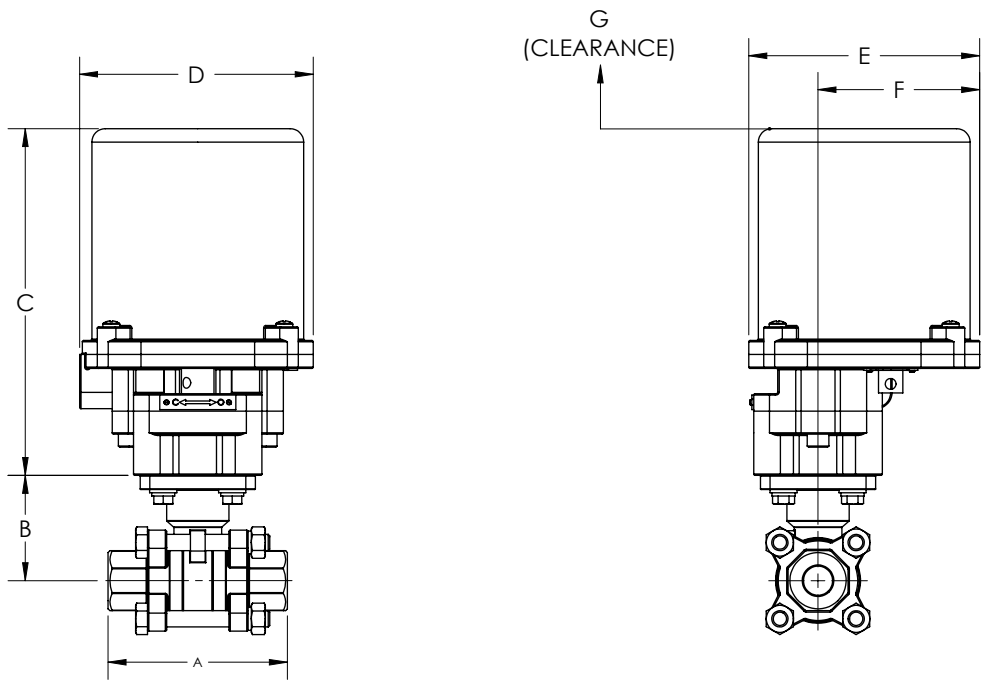
| Size   | A (in) | B (in) | C (in) | D (in)       | E (in) |
|--------|--------|--------|--------|--------------|--------|
|        |        |        |        | XLS-B4A0120P |        |
| 1/4"   | 2.51   | 3.59   | 4.72   | 3.62         | 4.06   |
| 3/8"   | 2.51   | 3.59   | 4.72   |              |        |
| 1/2"   | 2.84   | 3.74   | 4.72   |              |        |
| 3/4"   | 3.11   | 3.98   | 4.72   |              |        |
| 1"     | 3.29   | 4.35   | 5.35   |              |        |
| 1-1/4" | 4.14   | 4.53   | 5.35   |              |        |
| 1-1/2" | 4.41   | 4.94   | 9.17   |              |        |
| 2"     | 5.13   | 5.55   | 9.17   |              |        |
| 2-1/2" | 6.64   | 6.60   | 17.32  |              |        |
| 3"     | 7.34   | 6.98   | 17.32  |              |        |
| 4"     | 8.88   | 6.85   | 17.32  |              |        |

NOTE: The limit switch depicted is XLS-B4A0120P. For more information on actuation accessories, see relevant EPRG.



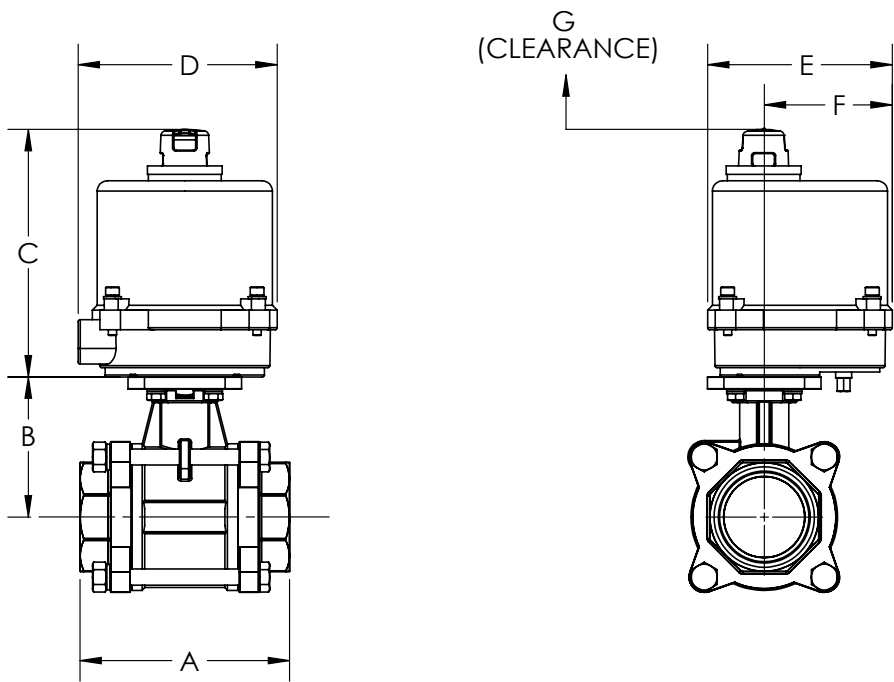
BV2I-Series Industrial Ball Valve - Dimensions

Electric Actuator



NOTE: The electric actuator shown is a OM-T model. For more information on actuation accessories see relevant EPRG for electric actuators.

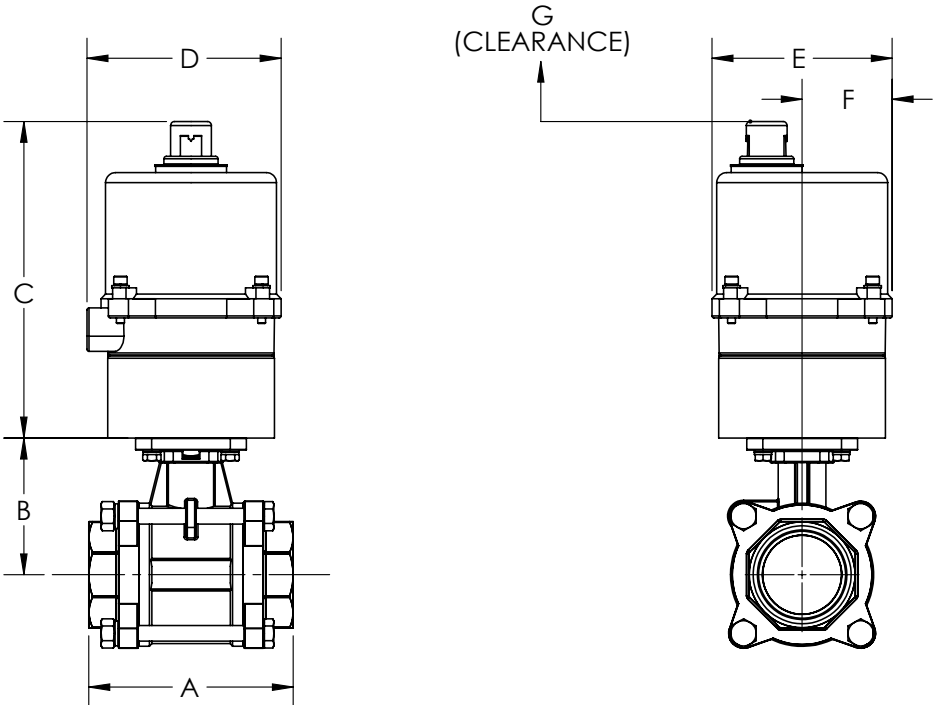
Electric Actuator



NOTE: The electric actuator shown is a BEOM-1B-1 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

**BV2I-Series Industrial Ball Valve - Dimensions**

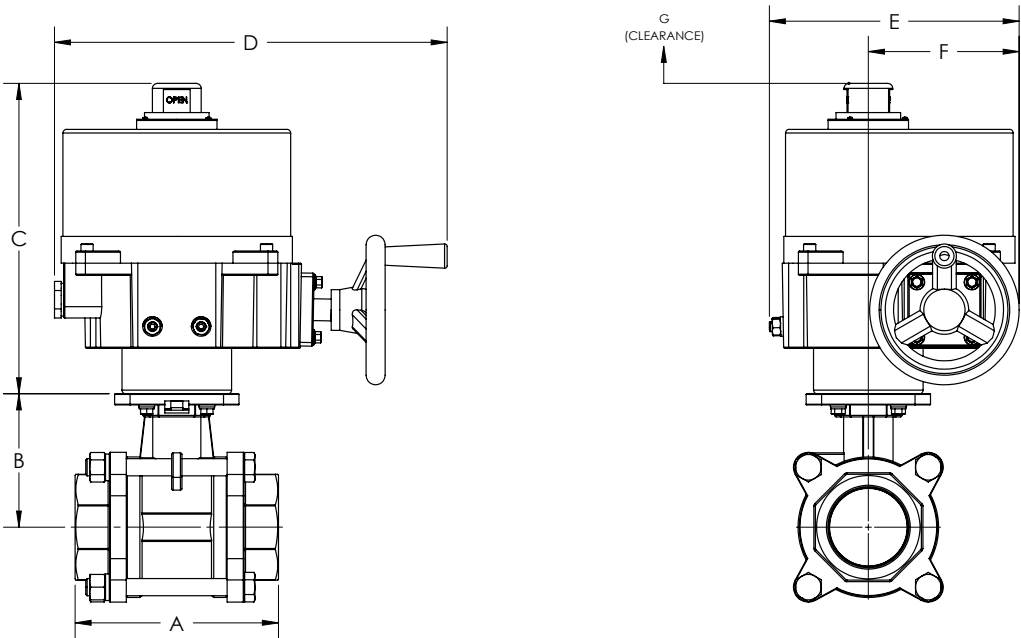
**Electric Actuator**



F

NOTE: The electric actuator shown is a BEOM-A model. For more information on actuation accessories see relevant EPRG for electric actuators.

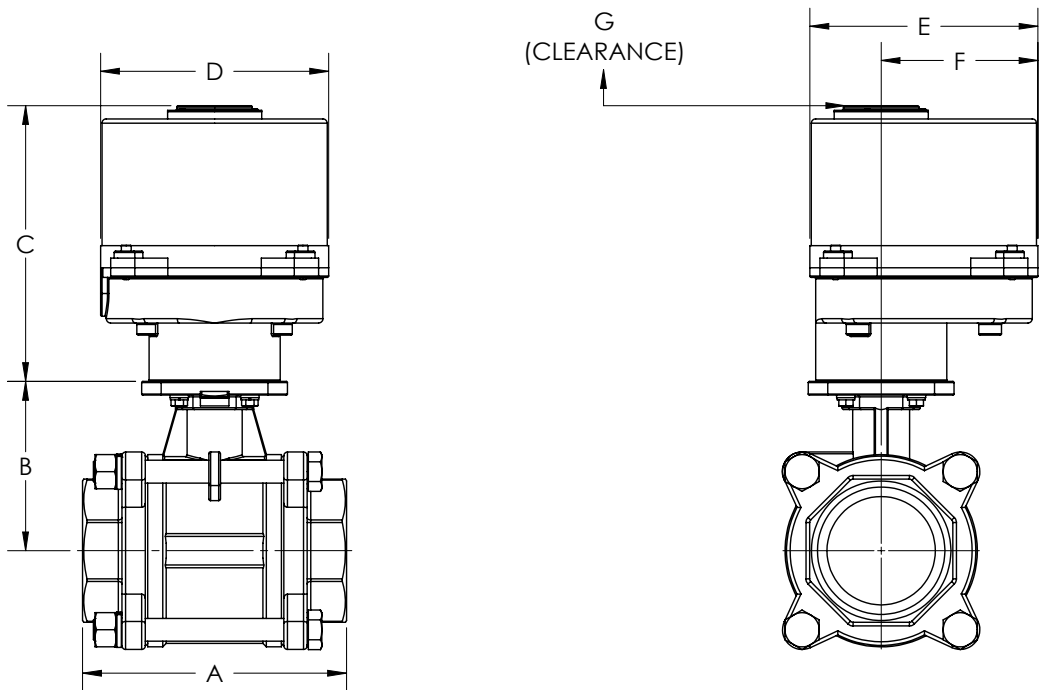
**Electric Actuator**



NOTE: The electric actuator shown is a OM-3 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

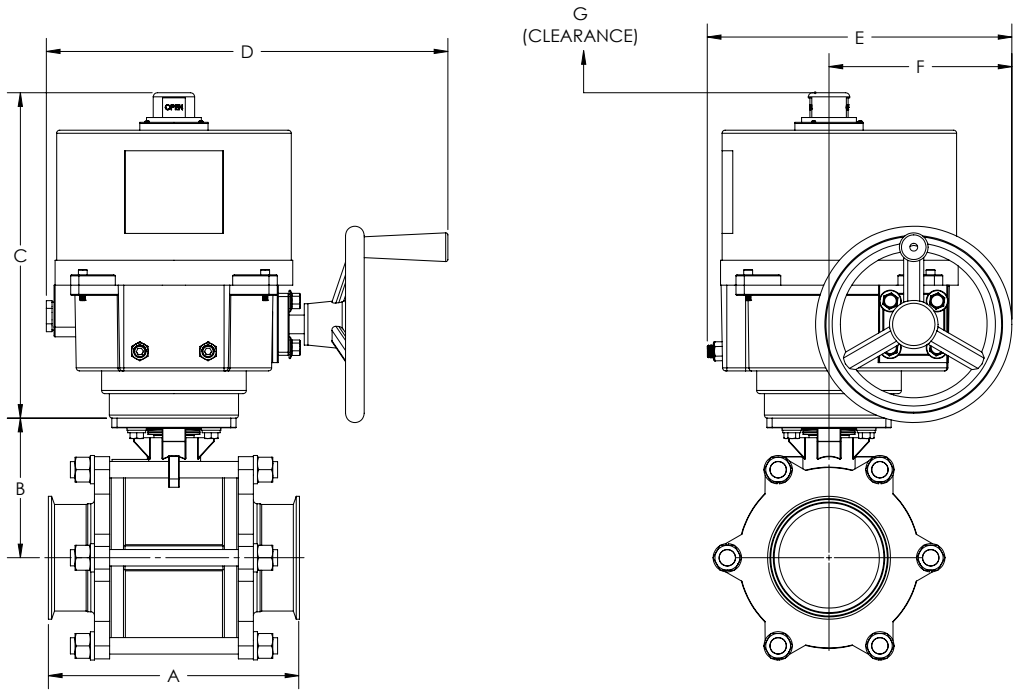
BV2I-Series Industrial Ball Valve - Dimensions

Electric Actuator



NOTE: The electric actuator shown is a BM-2 model. For more information on actuation accessories see relevant EPRG for electric actuators.

Electric Actuator



NOTE: The electric actuator shown is a OM-4 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

### BV2I-Series Industrial Ball Valve - Dimensions

| Size   | A (in) | B (in) | Actuator | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|----------|--------|--------|--------|--------|--------|
| 1/4"   | 2.51   | 1.52   | BM-T     | 4.96   | 3.43   | 3.35   | 2.34   | 3.35   |
| 3/8"   | 2.51   | 1.52   |          |        |        |        |        |        |
| 1/2"   | 2.84   | 1.67   |          |        |        |        |        |        |
| 3/4"   | 3.11   | 1.91   | OM-1     | 6.02   | 4.80   | 4.49   | 3.11   | 4.72   |
| 1"     | 3.29   | 2.17   |          |        |        |        |        |        |
| 1-1/4" | 4.14   | 2.35   |          |        |        |        |        |        |
| 1-1/2" | 4.41   | 2.77   |          |        |        |        |        |        |
| 2"     | 5.13   | 3.38   | OM-A     | 7.83   | 4.80   | 4.49   | 2.24   | 4.72   |
| 2-1/2" | 6.64   | 4.29   | OM-3     | 10.55  | 12.84  | 7.13   | 4.84   | 6.50   |
| 3"     | 7.34   | 4.67   | BM-2     | 7.68   | 6.34   | 6.06   | 4.33   | 4.72   |
| 4"     | 8.88   | 4.54   | OM-4     | 12.99  | 15.43  | 11.58  | 7.24   | 8.07   |

F

### BV2I-Series Industrial Ball Valve - Repair Kits

| Valve Size | Repair Kit Part # | Handle Kit Part # |
|------------|-------------------|-------------------|
| 1/4"       | BV-2IN-*K025      | BV-2I-HA-9        |
| 3/8"       | BV-2IN-*K038      | BV-2I-HA-9        |
| 1/2"       | BV-2IN-*K050      | BV-2I-HA-9        |
| 3/4"       | BV-2IN-*K075      | BV-2I-HA-9        |
| 1"         | BV-2IN-*K100      | BV-2I-HA-11       |
| 1-1/4"     | BV-2IN-*K125      | BV-2I-HA-11       |
| 1-1/2"     | BV-2IN-*K150      | BV-2I-HA-14       |
| 2"         | BV-2IN-*K200      | BV-2I-HA-14       |
| 2-1/2"     | BV-2IN-*K250      | BV-2I-HA-17       |
| 3"         | BV-2IN-*K300      | BV-2I-HA-17       |
| 4"         | BV-2IN-*K400      | BV-2I-HA-17       |

\*Use G or C

Kit contains:

1 - (G) RTFE or (C) 25% carbon/PTFE thrust washer

2 - (G) RTFE or (C) 25% carbon/PTFE seats

\*\* - (G) RTFE or (C) 25% carbon/PTFE stem packings (qty (4) for 3"-4", qty (3) for 2-1/2", qty (2) for 1/4"-2")

1 - Silicone O-ring

BV2H-Series Ball Valve

The BV2H valve is a full port valve and available with pneumatic or electric actuator and a variety of control options. They are used in oil, water, and gas applications when you need a valve for isolation or control of the flow of product.

They are found in the industrial market and in the sanitary process markets on the non-process side where there is no product contact.

Sizes

- 1/4", 3/8", 1/2", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3"

Features

- Blow-out proof stem design
- ISO 5211 mounting pad

Materials

- Product contact metal components: CF8M stainless steel
- Product contact seals: RTFE

Specifications

- Standard connections: FNPT
- Valve data
  - Maximum pressure
    - 1/4" to 2": **1000 PSI WOG**
    - 2-1/2" to 3": **800 PSI WOG**
  - Operating temperature range
    - 1/4" to 2": **-20°F to 350°F (-28°C to 177°C)**
    - 2-1/2" to 3": **-20°F to 310°F (-28°C to 154°C)**
- Actuator: ISO 5211 mounting pad connection
- Surface finish
  - Product Contact Metal Components: ≤ 32 Ra
  - Seat lubricant: BESSIL F-100



| Size   | ISO 5211 Mounting Pad Connections |     | Stem Width (mm) | Stem Height (mm) |
|--------|-----------------------------------|-----|-----------------|------------------|
| 1/4"   | F03                               | F04 | 9               | 9                |
| 3/8"   | F03                               | F04 | 9               | 10               |
| 1/2"   | F03                               | F04 | 9               | 10               |
| 3/4"   | F03                               | F04 | 9               | 11               |
| 1"     | F04                               | F05 | 11              | 12.5             |
| 1-1/4" | F04                               | F05 | 11              | 14               |
| 1-1/2" | F05                               | F07 | 14              | 17               |
| 2"     | F05                               | F07 | 14              | 17               |
| 2-1/2" | F07                               | F10 | 17              | 18.5             |
| 3"     | F07                               | F10 | 17              | 18.5             |

## BV2H-Series Ball Valve - Part Number Key

| Valve I.D. | Size   | Code | FNPT Connections |
|------------|--------|------|------------------|
| 2HG        | 1/4"   | 03   | 1                |
|            | 3/8"   | 04   |                  |
|            | 1/2"   | 50   |                  |
|            | 3/4"   | 75   |                  |
|            | 1"     | 10   |                  |
|            | 1-1/4" | 13   |                  |
|            | 1-1/2" | 15   |                  |
|            | 2"     | 20   |                  |
|            | 2-1/2" | 25   |                  |
|            | 3"     | 30   |                  |

Continue to part number selection by following column 1 or 2.

| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                       |                  |          |         |                 | 2. Electric Actuator                      |         |          |          |
|--------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|---------|-----------------|-------------------------------------------|---------|----------|----------|
| Actuator                                                                                                                                   | Actuator Options | Feedback | Control | Valve Operation | Actuator                                  | Voltage | Option 1 | Option 2 |
| 1                                                                                                                                          | XX               | 00       | XX      | 1               | E                                         | B       | 1        | 1        |
| Actuator                                                                                                                                   |                  |          |         | Code            | Actuator                                  |         |          | Code     |
| Aluminum spring return pneumatic rack and pinion                                                                                           |                  |          |         | 1               | Electric                                  |         |          | E        |
| Aluminum double acting pneumatic rack and pinion                                                                                           |                  |          |         | 2               | Oversized (1-UP) electric                 |         |          | F        |
| Stainless steel spring return pneumatic rack and pinion                                                                                    |                  |          |         | 3               | Nema 7 electric                           |         |          | G        |
| Stainless steel double acting pneumatic rack and pinion                                                                                    |                  |          |         | 4               | Electric with riser kit                   |         |          | H        |
| Dead man spring return handle                                                                                                              |                  |          |         | 6               | Voltage                                   |         |          | Code     |
| Technopolymer spring return pneumatic rack and pinion                                                                                      |                  |          |         | 7               | 115VAC                                    |         |          | B        |
| Actuator Options                                                                                                                           |                  |          |         | Code            | 12VDC                                     |         |          | C        |
| None                                                                                                                                       |                  |          |         | XX              | 24VAC                                     |         |          | D        |
| Oversized (1-UP)                                                                                                                           |                  |          |         | AA              | 24VDC                                     |         |          | E        |
| Actuator mounted perpendicular to flow                                                                                                     |                  |          |         | AB              | 220VAC                                    |         |          | F        |
| High temp FKM elastomers                                                                                                                   |                  |          |         | AC              | 12VAC                                     |         |          | G        |
| Extended travel stops                                                                                                                      |                  |          |         | AD              | Option 1                                  |         |          | Code     |
| Riser kit                                                                                                                                  |                  |          |         | AE              | None                                      |         |          | 1        |
| Feedback                                                                                                                                   |                  |          |         | Code            | Torque switches                           |         |          | 2        |
| None                                                                                                                                       |                  |          |         | 00              | 4-20mA input/output modulating controller |         |          | 3        |
| Limit switch box, OPEN/CLOSE beacon, (2) SPDT mech. switches                                                                               |                  |          |         | 11              | Current position transmitter              |         |          | 4        |
| Limit switch box, OPEN/CLOSE beacon, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULus class 1/2 div1/2 |                  |          |         | 12              | Potentiometer                             |         |          | 5        |
| Limit switch box, OPEN/CLOSE beacon, AS-I                                                                                                  |                  |          |         | 13              | Local control unit                        |         |          | 6        |

## BV2H-Series Ball Valve - Part Number Key

|                                                                                                                          |             |                                               |             |
|--------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|-------------|
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, aluminum Exd IIB certified enclosure                   | 14          | Two extra travel cams and switches            | 7           |
| Limit switch box, OPEN/CLOSE beacon, (2) DPDT mech. switches                                                             | 15          | Three position cam set                        | 8           |
| Limit switch box, OPEN/CLOSE beacon, (2) switches, electro mec. SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1 | 16          | Local control unit with lock                  | 9           |
| Limit switch box, OPEN/CLOSE beacon, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO                                   | 17          | 1-5V input/2-10V output modulating controller | A           |
| Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter                                                  | 18          | 2-10V input/output modulating controller      | B           |
| Limit switch box, OPEN/CLOSE beacon, SPDT proximity, 0.25A@120VAC, 0.416A@48VDC, resistive                               | 19          | 75% duty cycle                                | C           |
| Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter + 2 SPDT mechanical switches                     | 20          | Relay                                         | D           |
| Stainless steel limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches                                         | 21          | Four position cam set                         | E           |
| <b>Control</b>                                                                                                           | <b>Code</b> | 25% duty cycle (actuator code G only)         | F           |
| None                                                                                                                     | XX          | 75% duty cycle (actuator code G only)         | G           |
| Single coil solenoid, 120VAC                                                                                             | AA          | <b>Option 2</b>                               | <b>Code</b> |
| Single coil solenoid, 24VDC                                                                                              | AB          | None                                          | 1           |
| Single coil solenoid, 12VDC                                                                                              | AC          | Torque switches                               | 2           |
| Single coil solenoid, 220VAC                                                                                             | AD          | 4-20mA input/output modulating controller     | 3           |
| Dual coil solenoid, 120VAC                                                                                               | AE          | Current position transmitter                  | 4           |
| Dual coil solenoid, 24VDC                                                                                                | AF          | Potentiometer                                 | 5           |
| Dual coil solenoid, 220VAC                                                                                               | AG          | Local control unit                            | 6           |
| Pneumatic positioner <b>3-15psi</b> input, no feedback                                                                   | AH          | Two extra travel cams and switches            | 7           |
| Pneumatic positioner <b>3-15psi</b> input, (2) SPDT mech. switches for feedback                                          | AI          | Three position cam set                        | 8           |
| Pneumatic positioner <b>3-15psi</b> input, 4-20mA for feedback                                                           | AJ          | Local control unit with lock                  | 9           |
| Electropneumatic positioner 4-20mA input, no feedback                                                                    | AK          | 1-5V input/2-10V output modulating controller | A           |
| Electropneumatic positioner 4-20mA input, (2) SPDT mech. switches for feedback                                           | AL          | 2-10V input/output modulating controller      | B           |
| Electropneumatic positioner 4-20mA input, 4-20mA for feedback                                                            | AM          | 75% duty cycle                                | C           |
| Electropneumatic positioner 0-10v input, no feedback                                                                     | AN          | Relay                                         | D           |
| Electropneumatic positioner 0-10v input, (2) SPDT mech. switches for feedback                                            | AO          | Four position cam set                         | E           |
| Electropneumatic positioner 0-10v input, 4-20mA for feedback                                                             | AP          | 25% duty cycle (actuator code G only)         | F           |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                                    | AQ          | 75% duty cycle (actuator code G only)         | G           |

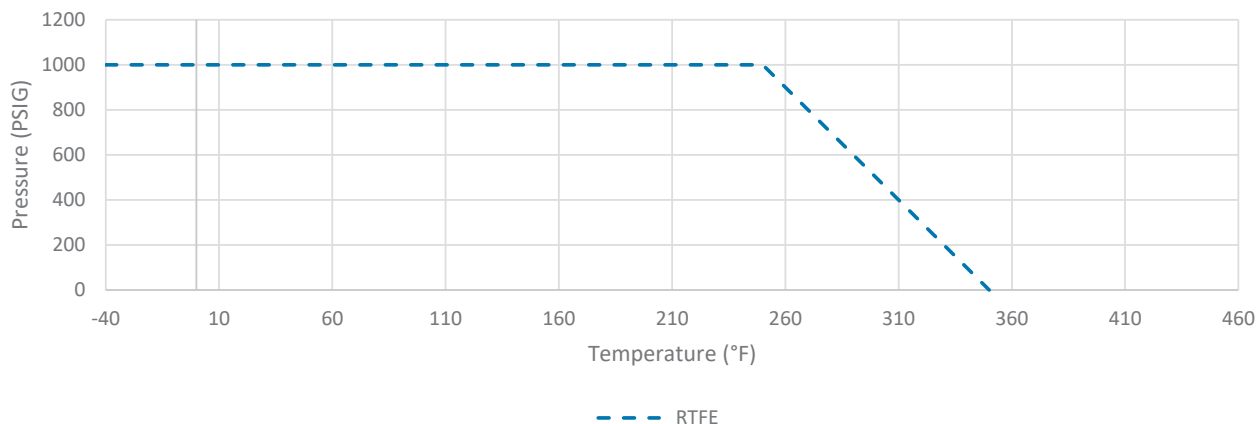
## BV2H-Series Ball Valve - Part Number Key

|                                                                                                                                                                                                               |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Electropneumatic positioner 4-20mA input, no feedback, class 1, div II explosion proof                                                                                                                        | AR          |
| Single coil solenoid, 24VDC and 24V banjo solenoid valve with form B plug                                                                                                                                     | AS          |
| Single coil solenoid, 24VDC, AS-I, 2.5W low power                                                                                                                                                             | AT          |
| Single coil solenoid, 24VDC, intrinsically safe                                                                                                                                                               | AU          |
| Single coil solenoid, 120VAC, exp. proof, class H coil                                                                                                                                                        | AV          |
| Single coil solenoid, 24VDC, exp. proof, class H coil                                                                                                                                                         | AW          |
| Single coil solenoid, 24VAC                                                                                                                                                                                   | AX          |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback, class 1, div II explosion proof                                                                                                        | AY          |
| Single coil solenoid, 24VDC, molded LED, ind. form, 2M leads                                                                                                                                                  | AZ          |
| TUFRAM COATED electropneumatic positioner 4-20mA input, no feedback                                                                                                                                           | BA          |
| V200 rotary pneumatic positioner, (2) REED SWITCH feedback                                                                                                                                                    | BB          |
| Single coil solenoid, 24VDC, pre-wired to limit switch WITH CORDSET (dual keyway, 1/2"-20 UNF mating thread, single ended, straight female connector, 22 AWG PVC, auto color code 2P to 6P cable, 12' length) | BC          |
| Single coil solenoid, 24VDC, pre-wired to limit switch, 6P MALE CONNECTOR                                                                                                                                     | BD          |
| Single coil solenoid, stainless steel, 24VDC                                                                                                                                                                  | BE          |
| <b>Valve Operation</b>                                                                                                                                                                                        | <b>Code</b> |
| Normally closed (spring return)                                                                                                                                                                               | 1           |
| Normally open (spring return)                                                                                                                                                                                 | 2           |
| Fail in place (double acting)                                                                                                                                                                                 | 3           |

F

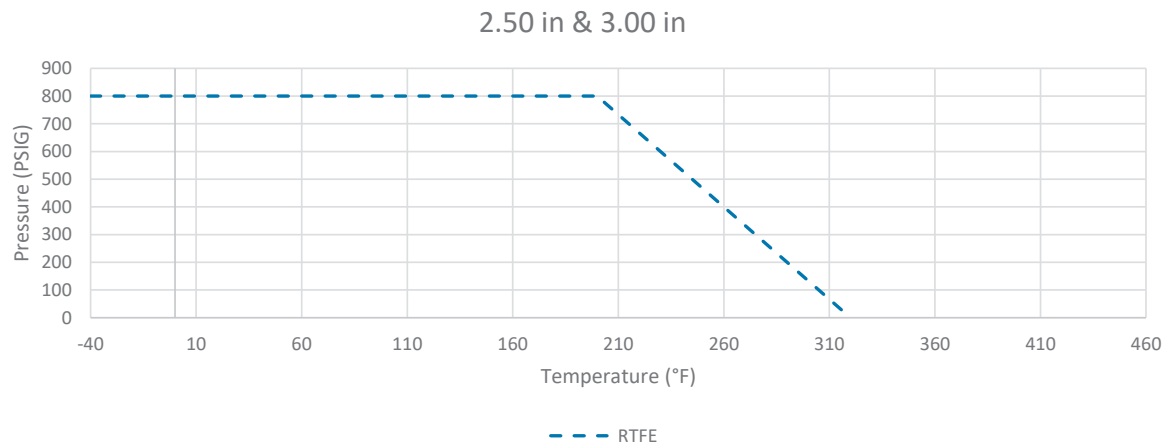
## BV2H-Series Ball Valve - Pressure Drop Table

0.25 in - 2.00 in





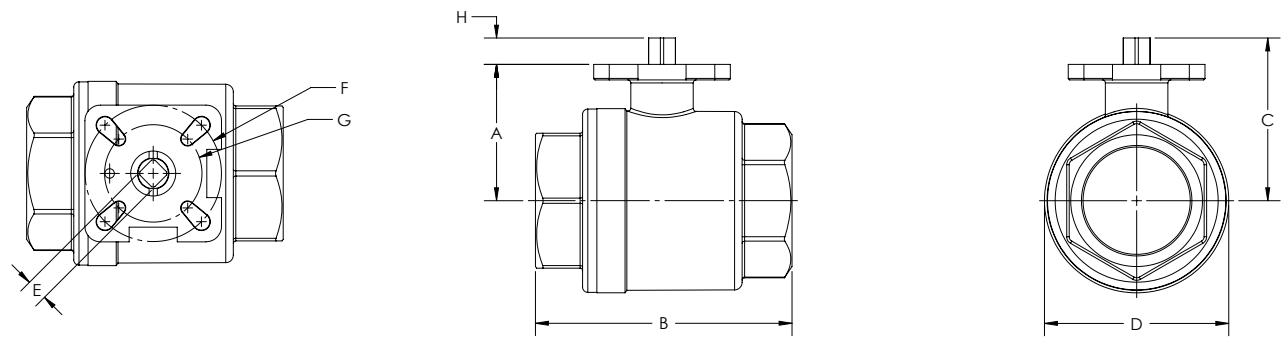
BV2H-Series Ball Valve - Pressure Drop Table



BV2H-Series Ball Valve - Weight & Break Torque Chart

| Part #      | Size   | Break Torque (in-lbs) | Weight (lbs) |
|-------------|--------|-----------------------|--------------|
| BV2HG-02511 | 1/4"   | 12                    | 0.53         |
| BV2HG-03811 | 3/8"   | 46                    | 0.53         |
| BV2HG-05011 | 1/2"   | 70                    | 0.66         |
| BV2HG-07511 | 3/4"   | 125                   | 1.12         |
| BV2HG-10011 | 1"     | 136                   | 1.87         |
| BV2HG-12511 | 1-1/4" | 193                   | 2.76         |
| BV2HG-15011 | 1-1/2" | 195                   | 4.45         |
| BV2HG-20011 | 2"     | 377                   | 6.30         |
| BV2HG-25011 | 2-1/2" | 1250                  | 11.62        |
| BV2HG-30011 | 3"     | 1450                  | 24.69        |

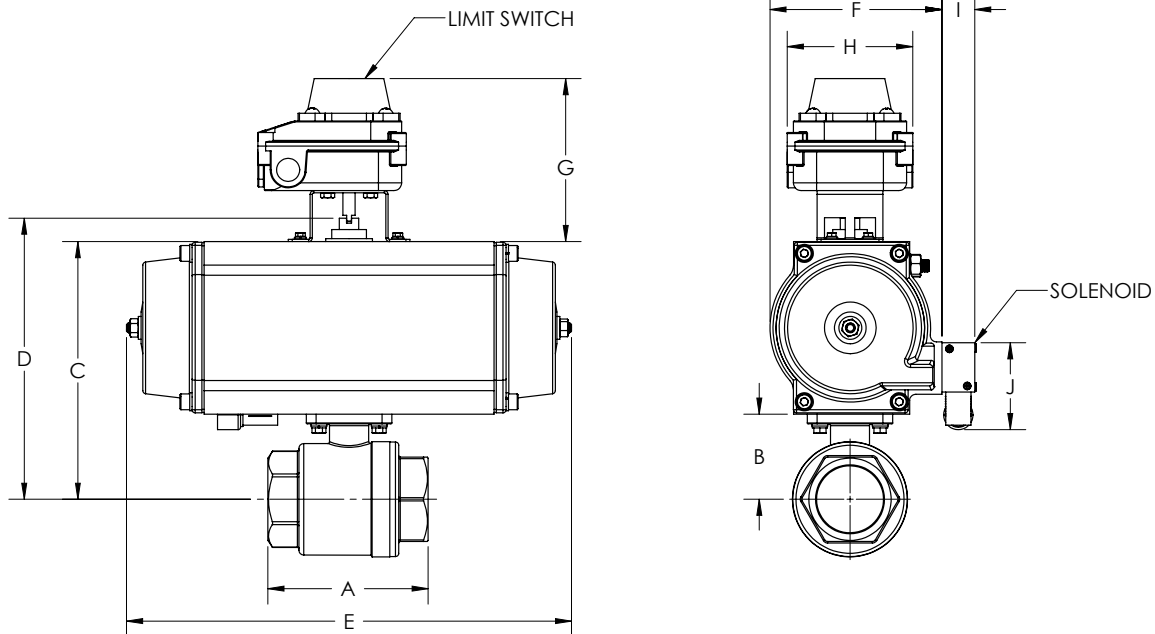
BV2H-Series Ball Valve - Dimensions



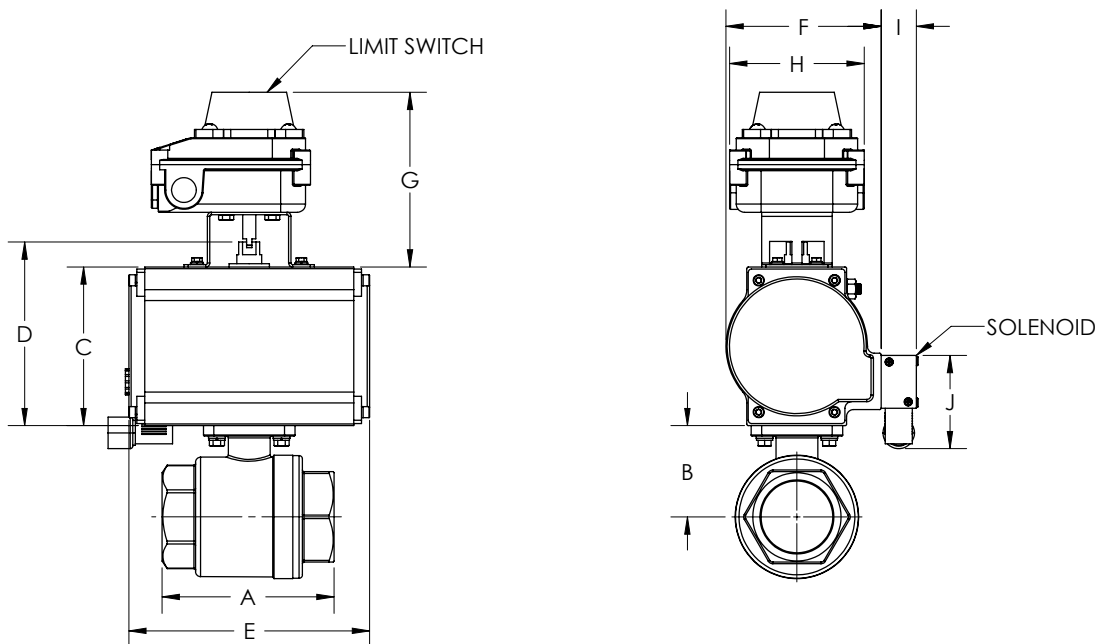
| Size   | A (in) | B (in) | C (in) | D (in) | E (mm) | F (ISO 5211) | G (ISO 5211) | H (mm) |
|--------|--------|--------|--------|--------|--------|--------------|--------------|--------|
| 1/4"   | 1.1    | 2.2    | 1.7    | 1.4    | 9.0    | F04          | F03          | 11     |
| 3/8"   | 1.1    | 2.2    | 1.5    | 1.2    | 9.0    | F04          | F03          | 11     |
| 1/2"   | 2.4    | 2.4    | 3.0    | 1.5    | 9.0    | F04          | F03          | 12     |
| 3/4"   | 3.0    | 3.0    | 3.6    | 1.9    | 9.0    | F04          | F03          | 10     |
| 1"     | 3.4    | 3.4    | 4.1    | 2.3    | 9.0    | F05          | F04          | 10     |
| 1-1/4" | 3.9    | 3.9    | 4.6    | 2.8    | 9.0    | F05          | F04          | 13     |
| 1-1/2" | 4.5    | 4.5    | 5.3    | 3.2    | 11.0   | F07          | F05          | 17     |
| 2"     | 5.2    | 5.2    | 6.0    | 3.9    | 11.0   | F07          | F05          | 14     |
| 2-1/2" | 4.1    | 6.6    | 4.8    | 4.6    | 17.0   | F10          | F07          | 17     |
| 3"     | 4.6    | 7.5    | 5.3    | 5.5    | 17.0   | F10          | F07          | 21     |

## BV2H-Series Ball Valve - Dimensions

### Actuated Spring Return



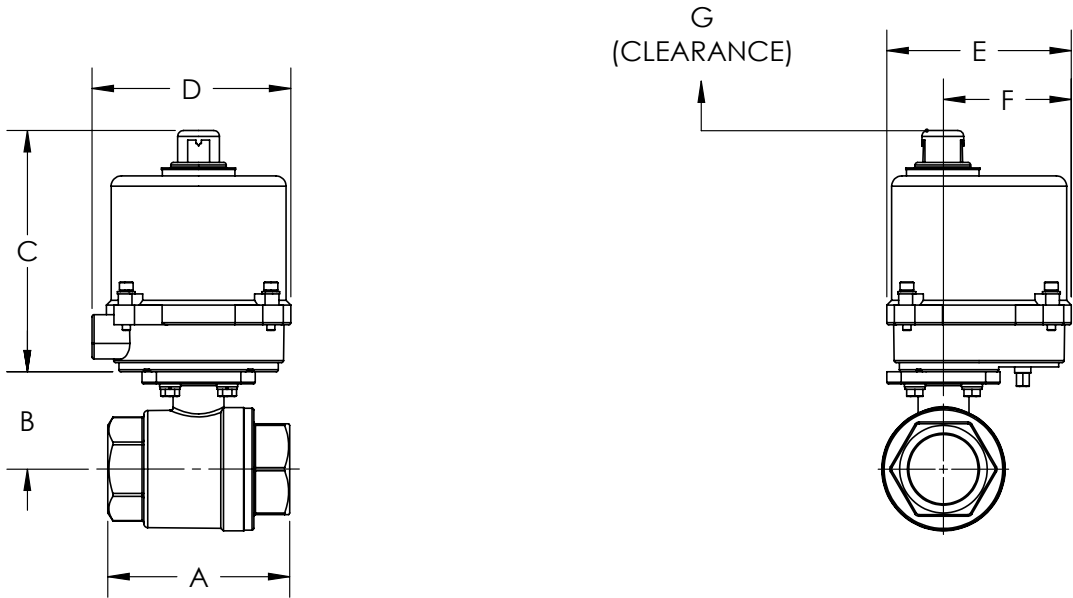
### Actuated Double Acting



NOTE: For more information on actuation accessories see relevant EPRG for actuator, limit switch, and solenoid  
 Pictured with optional limit switch and solenoid.

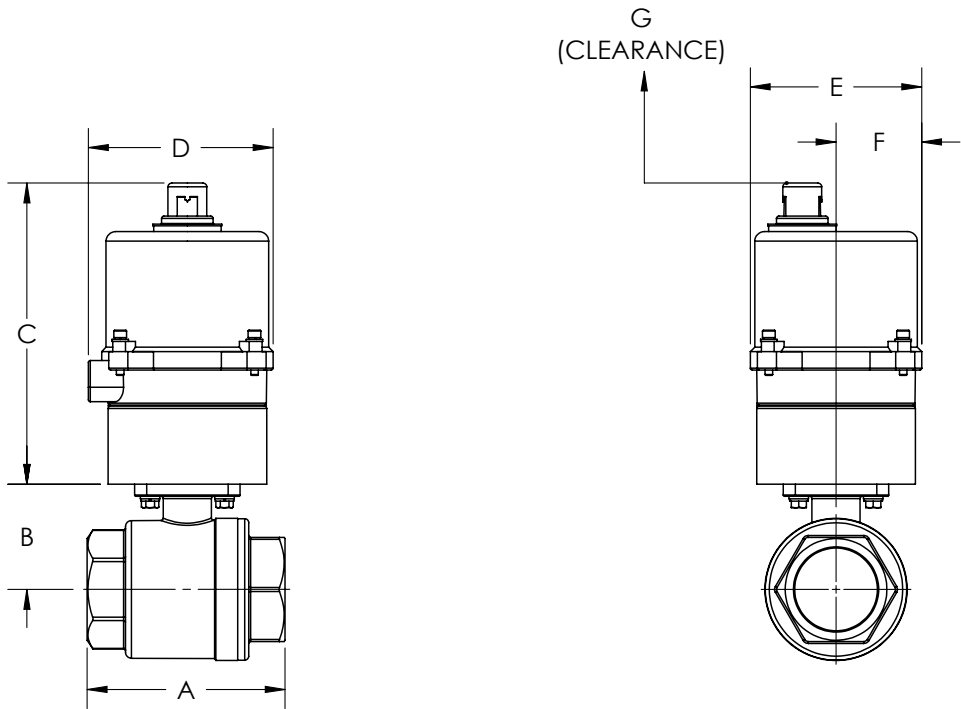
BV2H-Series Ball Valve - Dimensions

Actuated Electric



NOTE: Electric actuator shown is BEOM-1 series. For more information on actuation accessories, see relevant EPRG for electric actuators.

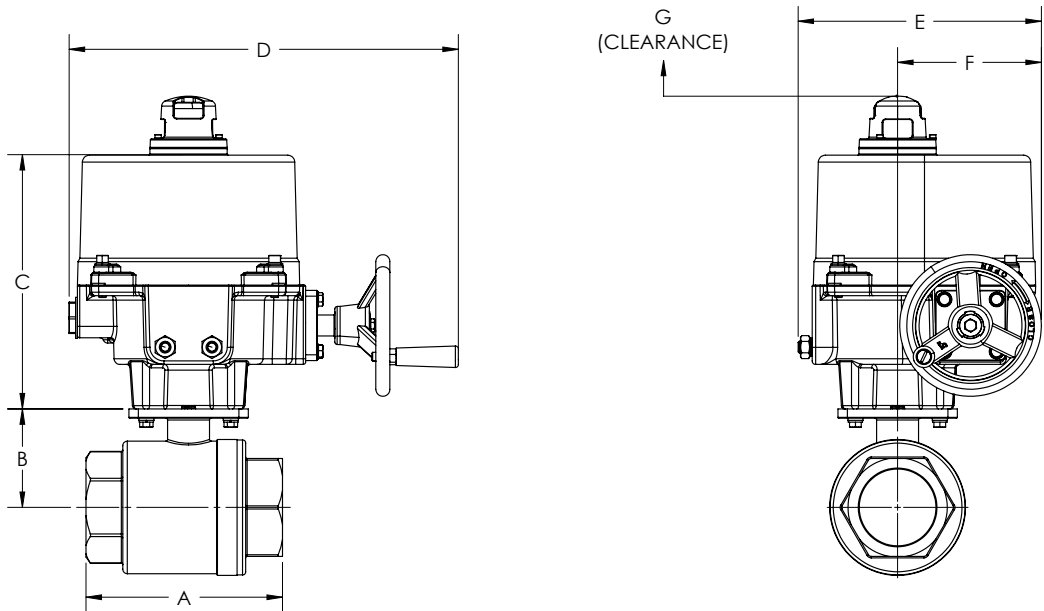
Actuated Electric



NOTE: Electric actuator shown is BEOM-A series. For more information on actuation accessories, see relevant EPRG for electric actuators.

**BV2H-Series Ball Valve - Dimensions**

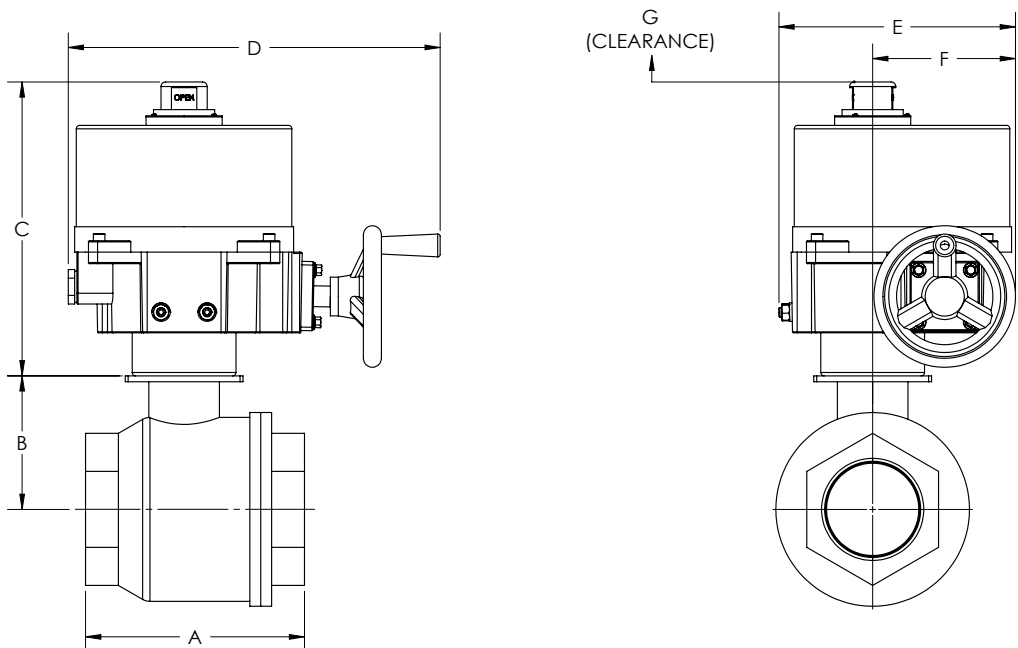
**Actuated Electric**



F

NOTE: Electric actuator shown is BM-2 series. For more information on actuation accessories, see relevant EPRG for electric actuators.

**Actuated Electric**



NOTE: Electric actuator shown is OM-3 series. For more information on actuation accessories, see relevant EPRG for electric actuators.

BV2H-Series Ball Valve - Dimensions

Spring Return

| Size   | A (in) | B (in) | RP-BA Series Actuator | C (in) | D (in) | E (in) | F(in) | G (in)        | H (in) | I (in)   | J (in) |
|--------|--------|--------|-----------------------|--------|--------|--------|-------|---------------|--------|----------|--------|
|        |        |        |                       |        |        |        |       | XLS-B4 Series |        | X Series |        |
| 1/4"   | 2.17   | 1.06   | RP-BA-025-SR          | 3.10   | 3.83   | 7.66   | 3.20  | 5.27          | 4.06   | 1.07     | 2.81   |
| 3/8"   | 2.17   | 1.06   |                       |        |        |        |       |               |        |          |        |
| 1/2"   | 2.40   | 2.40   |                       |        |        |        |       |               |        |          |        |
| 3/4"   | 2.99   | 2.99   |                       |        |        |        |       |               |        |          |        |
| 1"     | 3.43   | 3.43   | RP-BA-025-SR05        | 3.10   | 3.83   | 7.66   | 3.20  |               |        |          |        |
| 1-1/4" | 3.94   | 3.94   |                       |        |        |        |       |               |        |          |        |
| 1-1/2" | 4.49   | 4.49   | RP-BA-045-SR          | 3.68   | 4.63   | 8.09   | 3.72  |               |        |          |        |
| 2"     | 5.20   | 5.20   | RP-BA-101-SR          | 4.79   | 5.54   | 9.84   | 4.68  |               |        |          |        |
| 2-1/2" | 6.61   | 4.13   | RP-BA-225-SR          | 5.58   | 6.34   | 13.98  | 5.56  |               |        |          |        |
| 3"     | 7.48   | 4.56   |                       |        |        |        |       |               |        |          |        |

Double Acting

| Size   | A (in) | B (in) | RP-BA Series Actuator | C (in) | D (in) | E (in) | F(in) | G (in)        | H (in) | I (in)   | J (in) |
|--------|--------|--------|-----------------------|--------|--------|--------|-------|---------------|--------|----------|--------|
|        |        |        |                       |        |        |        |       | XLS-B4 Series |        | X Series |        |
| 1/4"   | 2.17   | 1.06   | RP-BA-012-DA          | 2.60   | 3.39   | 4.72   | 2.93  | 5.27          | 4.06   | 1.07     | 2.81   |
| 3/8"   | 2.17   | 1.06   |                       |        |        |        |       |               |        |          |        |
| 1/2"   | 2.40   | 2.40   |                       |        |        |        |       |               |        |          |        |
| 3/4"   | 2.99   | 2.99   |                       |        |        |        |       |               |        |          |        |
| 1"     | 3.43   | 3.43   | RP-BA-025-DA05        | 3.1    | 3.87   | 5.68   | 3.2   |               |        |          |        |
| 1-1/4" | 3.94   | 3.94   |                       |        |        |        |       |               |        |          |        |
| 1-1/2" | 4.49   | 4.49   | RP-BA-045-DA          | 3.86   | 4.63   | 5.87   | 3.72  |               |        |          |        |
| 2"     | 5.20   | 5.20   |                       |        |        |        |       |               |        |          |        |
| 2-1/2" | 6.61   | 4.13   | RP-BA-101-DA          | 4.79   | 5.54   | 7.20   | 4.77  |               |        |          |        |
| 3"     | 7.48   | 4.56   |                       |        |        |        |       |               |        |          |        |

Electric

| Size   | A (in) | B (in) | Electric Actuator Series | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------|--------|--------|--------------------------|--------|--------|--------|--------|--------|
| 1/4"   | 2.17   | 1.06   | OM-1                     | 6.02   | 4.80   | 4.49   | 3.11   | 4.72   |
| 3/8"   | 2.17   | 1.06   |                          |        |        |        |        |        |
| 1/2"   | 2.40   | 2.40   |                          |        |        |        |        |        |
| 3/4"   | 2.99   | 2.99   |                          |        |        |        |        |        |
| 1"     | 3.43   | 3.43   |                          |        |        |        |        |        |
| 1-1/4" | 3.94   | 3.94   |                          |        |        |        |        |        |
| 1-1/2" | 4.49   | 4.49   | OM-A                     | 7.83   | 4.80   | 4.49   | 2.24   | 4.72   |
| 2"     | 5.20   | 5.20   |                          |        |        |        |        |        |
| 2-1/2" | 6.61   | 4.13   | BM-2                     | 7.68   | 6.34   | 6.06   | 4.33   | 4.72   |
| 3"     | 7.48   | 4.56   | OM-3                     | 10.55  | 12.84  | 7.13   | 4.84   | 6.50   |

## BV2B-Series Ball Valve

The BV2B valve is a full port valve and available with pneumatic or electric actuator and a variety of control options. It is used in oil, water, and gas applications when you need a valve for isolation or control of the flow of product

They are found in the industrial market and in the sanitary process markets on the non-process side where there is no product contact

### Sizes

- 1/4", 3/8", 1/2", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4"

### Features

- Blow-out proof stem design
- ISO 5211 mounting pad

### Materials

- Product contact metal components
  - 1/4" to 2": brass body and chrome plated brass ball
  - 2-1/2" to 4": bronze body and 304 stainless steel ball
  - Stem: 304 stainless steel
- Product contact seals: PTFE

### Specifications

- Standard connections: FNPT
- Valve data
  - Maximum pressure: **600 PSI**
  - Maximum operating temperature: **20°F to 320°F (-7°C to 160°C)**
- Actuator data
  - ISO 5211 mounting pad connection
- Surface finish
  - Product contact metal components: ball ≤ 32 Ra
  - Seat lubricant: KF-96-1,000CS
  - Stem lubricant: 201-100CS



1/4" to 2"



2-1/2" to 4"

| Size   | ISO 5211 Mounting Pad Connections |     | Stem Width (mm) | Stem Height (mm) |
|--------|-----------------------------------|-----|-----------------|------------------|
| 1/4"   | F03                               | -   | 9               | 9                |
| 3/8"   | F03                               | -   | 9               | 9                |
| 1/2"   | F04                               | -   | 9               | 8.2              |
| 3/4"   | F04                               | F05 | 11              | 11               |
| 1"     | F04                               | F05 | 11              | 11               |
| 1-1/4" | F05                               | F07 | 14              | 14               |
| 1-1/2" | F05                               | F07 | 14              | 14.5             |
| 2"     | F05                               | F07 | 14              | 14               |
| 2-1/2" | -                                 | F07 | 14              | 18               |
| 3"     | -                                 | F07 | 14              | 18               |
| 4"     | -                                 | F07 | 17              | 17               |

**BV2B-Series Ball Valve - Part Number Key**

| Valve I.D. | Size   | Code | FNPT Connections |
|------------|--------|------|------------------|
| 2BV        | 1/4"   | 03   | 1                |
|            | 3/8"   | 04   |                  |
|            | 1/2"   | 50   |                  |
|            | 3/4"   | 75   |                  |
|            | 1"     | 10   |                  |
|            | 1-1/4" | 13   |                  |
|            | 1-1/2" | 15   |                  |
|            | 2"     | 20   |                  |
|            | 2-1/2" | 25   |                  |
|            | 3"     | 30   |                  |
|            | 4"     | 40   |                  |



| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                      |                  |          |         |                 | 2. Electric Actuator                      |         |          |             |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|---------|-----------------|-------------------------------------------|---------|----------|-------------|
| Actuator                                                                                                                                  | Actuator Options | Feedback | Control | Valve Operation | Actuator                                  | Voltage | Option 1 | Option 2    |
| 1                                                                                                                                         | XX               | 00       | XX      | 1               | E                                         | B       | 1        | 1           |
| <b>Actuator</b>                                                                                                                           |                  |          |         | <b>Code</b>     | <b>Actuator</b>                           |         |          | <b>Code</b> |
| Aluminum spring return pneumatic rack and pinion                                                                                          |                  |          |         | 1               | Electric                                  |         |          | E           |
| Aluminum double acting pneumatic rack and pinion                                                                                          |                  |          |         | 2               | Oversized (1-UP) electric                 |         |          | F           |
| Stainless steel spring return pneumatic rack and pinion                                                                                   |                  |          |         | 3               | Nema 7 electric                           |         |          | G           |
| Stainless steel double acting pneumatic rack and pinion                                                                                   |                  |          |         | 4               | Electric with riser kit                   |         |          | H           |
| Dead man spring return handle                                                                                                             |                  |          |         | 6               | <b>Voltage</b>                            |         |          | <b>Code</b> |
| Technopolymer spring return pneumatic rack and pinion                                                                                     |                  |          |         | 7               | 115VAC                                    |         |          | B           |
| <b>Actuator Options</b>                                                                                                                   |                  |          |         | <b>Code</b>     | 12VDC                                     |         |          | C           |
| None                                                                                                                                      |                  |          |         | XX              | 24VAC                                     |         |          | D           |
| Oversized (1-UP)                                                                                                                          |                  |          |         | AA              | 24VDC                                     |         |          | E           |
| Actuator mounted perpendicular to flow                                                                                                    |                  |          |         | AB              | 220VAC                                    |         |          | F           |
| High temp FKM elastomers                                                                                                                  |                  |          |         | AC              | 12VAC                                     |         |          | G           |
| Extended travel stops                                                                                                                     |                  |          |         | AD              | <b>Option 1</b>                           |         |          | <b>Code</b> |
| Riser kit                                                                                                                                 |                  |          |         | AE              | None                                      |         |          | 1           |
| <b>Feedback</b>                                                                                                                           |                  |          |         | <b>Code</b>     | Torque switches                           |         |          | 2           |
| None                                                                                                                                      |                  |          |         | 00              | 4-20mA input/output modulating controller |         |          | 3           |
| Limit switch box, OPEN/CLOSE beacon, (2) SPDT mech. switches                                                                              |                  |          |         | 11              | Current position transmitter              |         |          | 4           |
| Limit switch box, OPEN/CLOSE beacon, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULusClass 1/2 Div1/2 |                  |          |         | 12              | Potentiometer                             |         |          | 5           |
| Limit switch box, OPEN/CLOSE beacon, AS-I                                                                                                 |                  |          |         | 13              | Local control unit                        |         |          | 6           |

## BV2B-Series Ball Valve - Part Number Key

|                                                                                                                          |             |                                               |             |
|--------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|-------------|
| Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, aluminum exd IIB certified enclosure                   | 14          | Two extra travel cams and switches            | 7           |
| Limit switch box, OPEN/CLOSE beacon, (2) DPDT mech. switches                                                             | 15          | Three position cam set                        | 8           |
| Limit switch box, OPEN/CLOSE beacon, (2) switches, electro mec. SPDT, silver contacts, up to SIL3, cULus class 1/2 div 1 | 16          | Local control unit with lock                  | 9           |
| Limit switch box, OPEN/CLOSE beacon, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO                                   | 17          | 1-5V input/2-10V output modulating controller | A           |
| Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter                                                  | 18          | 2-10V input/output modulating controller      | B           |
| Limit switch box, OPEN/CLOSE beacon, SPDT proximity, 0.25A@120VAC, 0.416A@48VDC, resistive                               | 19          | 75% duty cycle                                | C           |
| Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter + 2 SPDT mechanical switches                     | 20          | Relay                                         | D           |
| Stainless steel limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches                                         | 21          | Four position cam set                         | E           |
| <b>Control</b>                                                                                                           | <b>Code</b> | 25% duty cycle (actuator code G only)         | F           |
| None                                                                                                                     | XX          | 75% duty cycle (actuator code G only)         | G           |
| Single coil solenoid, 120VAC                                                                                             | AA          | <b>Option 2</b>                               | <b>Code</b> |
| Single coil solenoid, 24VDC                                                                                              | AB          | None                                          | 1           |
| Single coil solenoid, 12VDC                                                                                              | AC          | Torque switches                               | 2           |
| Single coil solenoid, 220VAC                                                                                             | AD          | 4-20mA input/output modulating controller     | 3           |
| Dual coil solenoid, 120VAC                                                                                               | AE          | Current position transmitter                  | 4           |
| Dual coil solenoid, 24VDC                                                                                                | AF          | Potentiometer                                 | 5           |
| Dual coil solenoid, 220VAC                                                                                               | AG          | Local control unit                            | 6           |
| Pneumatic positioner 3-15psi input, no feedback                                                                          | AH          | Two extra travel cams and switches            | 7           |
| Pneumatic positioner 3-15psi input, (2) SPDT mech. switches for feedback                                                 | AI          | Three position cam set                        | 8           |
| Pneumatic positioner 3-15psi input, 4-20mA for feedback                                                                  | AJ          | Local control unit with lock                  | 9           |
| Electropneumatic positioner 4-20mA input, no feedback                                                                    | AK          | 1-5V input/2-10V output modulating controller | A           |
| Electropneumatic positioner 4-20mA input, (2) SPDT mech. switches for feedback                                           | AL          | 2-10V input/output modulating controller      | B           |
| Electropneumatic positioner 4-20mA input, 4-20mA for feedback                                                            | AM          | 75% duty cycle                                | C           |
| Electropneumatic positioner 0-10v input, no feedback                                                                     | AN          | Relay                                         | D           |
| Electropneumatic positioner 0-10v input, (2) SPDT mech. switches for feedback                                            | AO          | Four position cam set                         | E           |
| Electropneumatic positioner 0-10v input, 4-20mA for feedback                                                             | AP          | 25% duty cycle (actuator code G only)         | F           |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                                    | AQ          | 75% duty cycle (actuator code G only)         | G           |

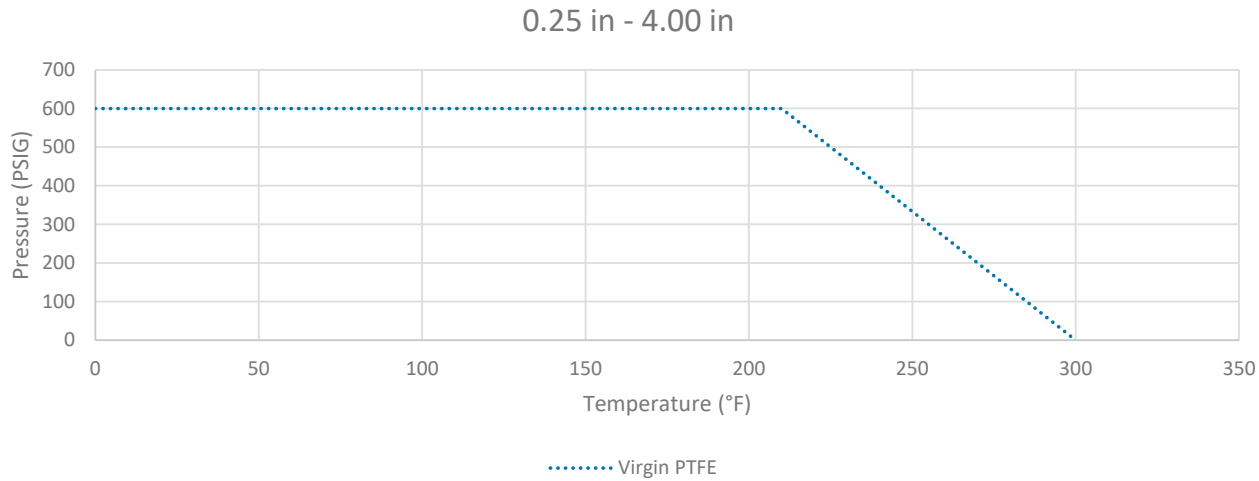
F



## BV2B-Series Ball Valve - Part Number Key

|                                                                                                                                                                                                               |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Electropneumatic positioner 4-20mA input, no feedback, class 1, Div II explosion proof                                                                                                                        | AR          |
| Single coil solenoid, 24VDC and 24V banjo solenoid valve with form B plug                                                                                                                                     | AS          |
| Single coil solenoid, 24VDC, AS-I, 2.5W low power                                                                                                                                                             | AT          |
| Single coil solenoid, 24VDC, intrinsically safe                                                                                                                                                               | AU          |
| Single coil solenoid, 120VAC, exp. proof, class H coil                                                                                                                                                        | AV          |
| Single coil solenoid, 24VDC, exp. proof, class H coil                                                                                                                                                         | AW          |
| Single coil solenoid, 24VAC                                                                                                                                                                                   | AX          |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback, class 1, div II explosion proof                                                                                                        | AY          |
| Single coil solenoid, 24VDC, molded LED, ind. form, 2M leads                                                                                                                                                  | AZ          |
| TUFRAM COATED electropneumatic positioner 4-20mA input, no feedback                                                                                                                                           | BA          |
| V200 rotary pneumatic positioner, (2) REED SWITCH feedback                                                                                                                                                    | BB          |
| Single coil solenoid, 24VDC, pre-wired to limit switch WITH CORDSET (Dual Keyway, 1/2"-20 UNF mating thread, single ended, straight female connector, 22 AWG PVC, auto color code 2P to 6P cable, 12' length) | BC          |
| Single coil solenoid, 24VDC, pre-wired to limit switch, 6P MALE CONNECTOR                                                                                                                                     | BD          |
| Single coil solenoid, stainless steel, 24VDC                                                                                                                                                                  | BE          |
| <b>Valve Operation</b>                                                                                                                                                                                        | <b>Code</b> |
| Normally closed (spring return)                                                                                                                                                                               | 1           |
| Normally open (Spring return)                                                                                                                                                                                 | 2           |
| Fail in place (double acting)                                                                                                                                                                                 | 3           |

### BV2B-Series Ball Valve - Pressure Drop Chart

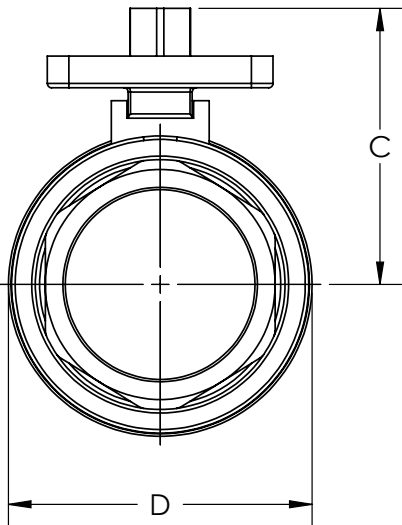
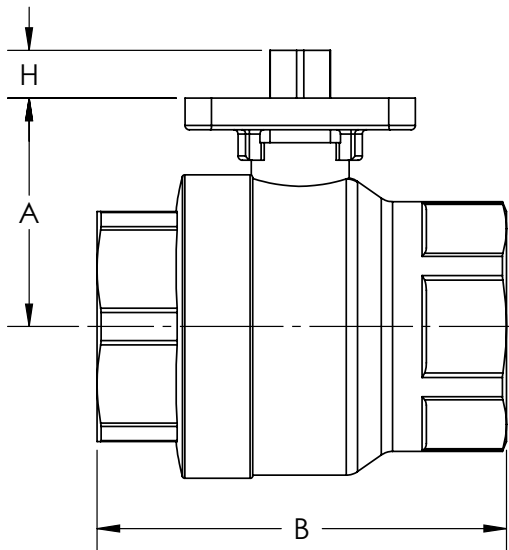
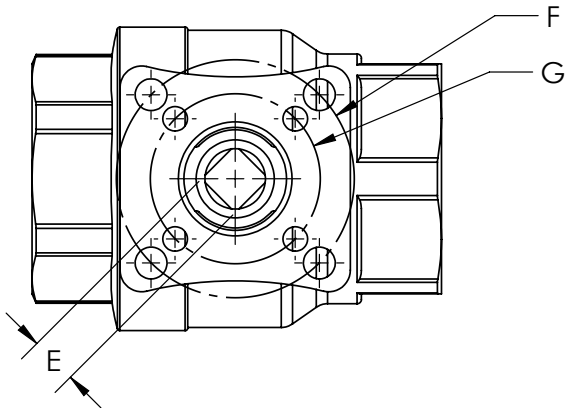


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### BV2B-Series Ball Valve - Technical Specifications

| Part #      | Size   | Break Torque (in-lbs) | Flow Coefficient (Cv) | Weight (lbs) |
|-------------|--------|-----------------------|-----------------------|--------------|
| BV2BV-02511 | 1/4"   | 5                     | 8.1                   | 0.80         |
| BV2BV-03811 | 3/8"   | 12                    | 14                    | 0.77         |
| BV2BV-05011 | 1/2"   | 81                    | 26                    | 0.70         |
| BV2BV-07511 | 3/4"   | 115                   | 51                    | 1.19         |
| BV2BV-10011 | 1"     | 155                   | 68                    | 1.56         |
| BV2BV-12511 | 1-1/4" | 265                   | 120                   | 2.50         |
| BV2BV-15011 | 1-1/2" | 335                   | 170                   | 3.33         |
| BV2BV-20011 | 2"     | 460                   | 376                   | 4.99         |
| BV2BV-25011 | 2-1/2" | 475                   | 510                   | 13.04        |
| BV2BV-30011 | 3"     | 505                   | 996                   | 18.84        |
| BV2BV-40011 | 4"     | 1395                  | 1893                  | 35.33        |

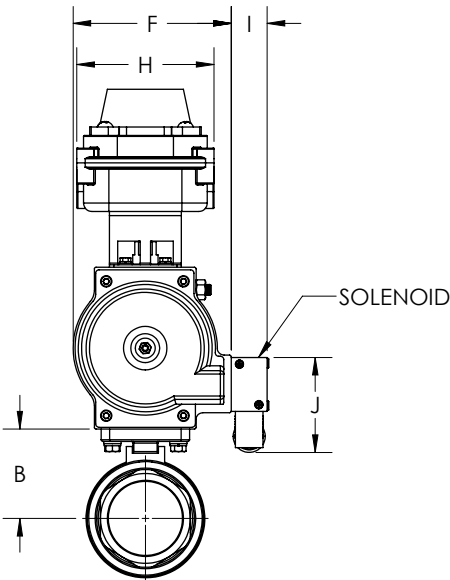
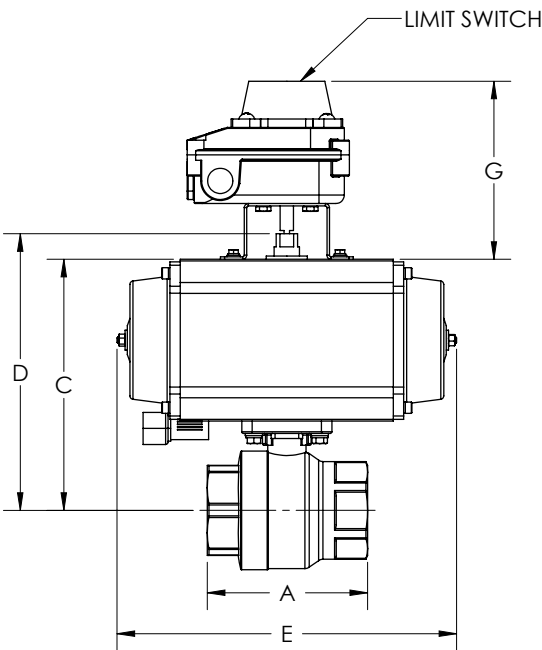
BV2B-Series Ball Valve - Dimensions



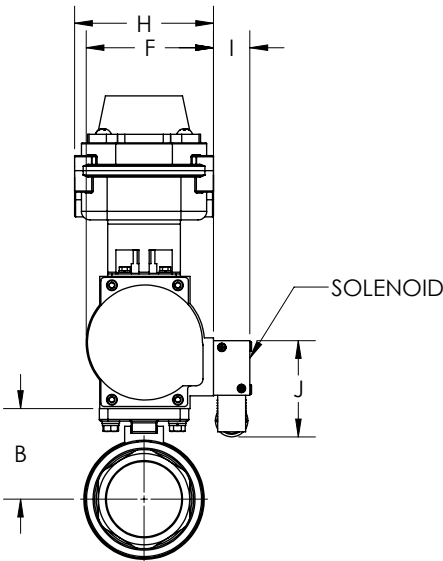
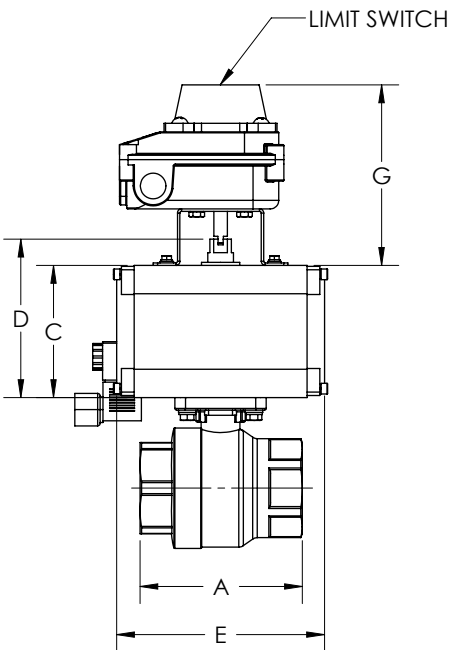
| Size   | A (in) | B (in) | C (in) | D (in) | E (mm) | F (ISO 5211) | G (ISO 5211) | H (mm) |
|--------|--------|--------|--------|--------|--------|--------------|--------------|--------|
| 1/4"   | 1.3    | 2.6    | 1.6    | 1.3    | 9.0    | -            | F03          | 9      |
| 3/8"   | 1.3    | 2.6    | 1.6    | 1.3    | 9.0    | -            | F03          | 9      |
| 1/2"   | 1.5    | 2.2    | 1.9    | 1.3    | 9.0    | -            | F04          | 8      |
| 3/4"   | 1.6    | 2.8    | 2.0    | 1.7    | 11.0   | -            | F05          | 10     |
| 1"     | 1.8    | 3.2    | 2.2    | 1.9    | 11.0   | -            | F05          | 11     |
| 1-1/4" | 2.1    | 3.6    | 2.8    | 2.5    | 11.0   | F07          | F05          | 16     |
| 1-1/2" | 2.3    | 4.1    | 2.9    | 2.9    | 14.0   | F07          | F05          | 15     |
| 2"     | 2.7    | 4.8    | 3.2    | 3.5    | 14.0   | F07          | F05          | 14     |
| 2-1/2" | 3.9    | 6.1    | 4.6    | 4.5    | 14.0   | -            | F07          | 18     |
| 3"     | 4.3    | 6.9    | 5.0    | 5.3    | 14.0   | -            | F07          | 18     |
| 4"     | 4.9    | 8.1    | 5.6    | 6.4    | 17.0   | -            | F07          | 18     |

**BV2B-Series Ball Valve - Dimensions**

**Spring Return**



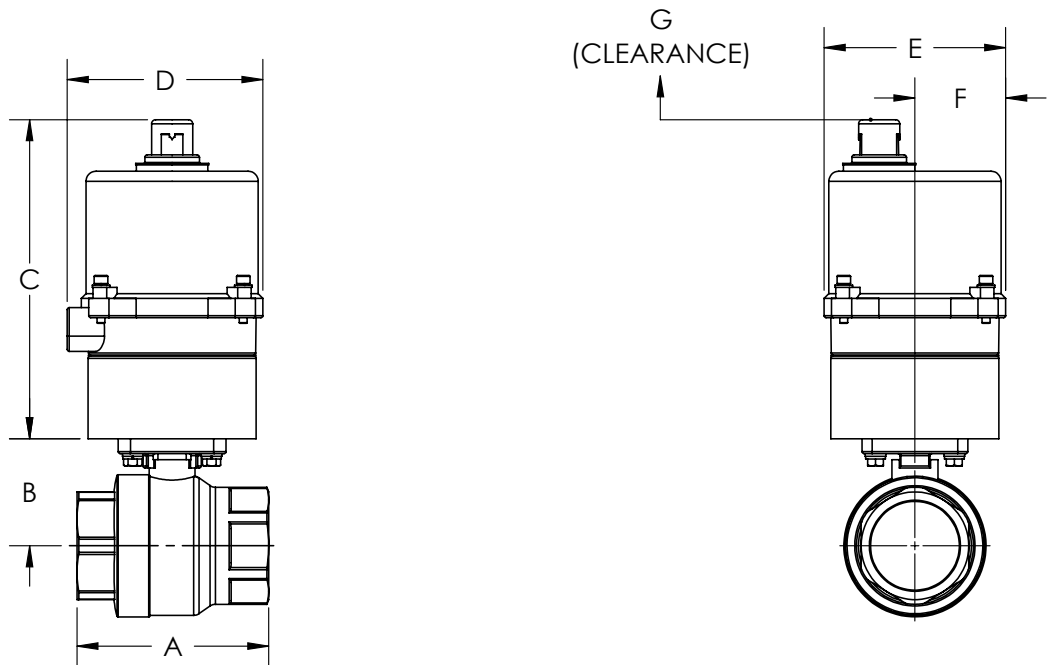
**Double Acting**



NOTE: For more information on actuator accessories, see relevant EPRG for actuator, limit switch, and solenoid.

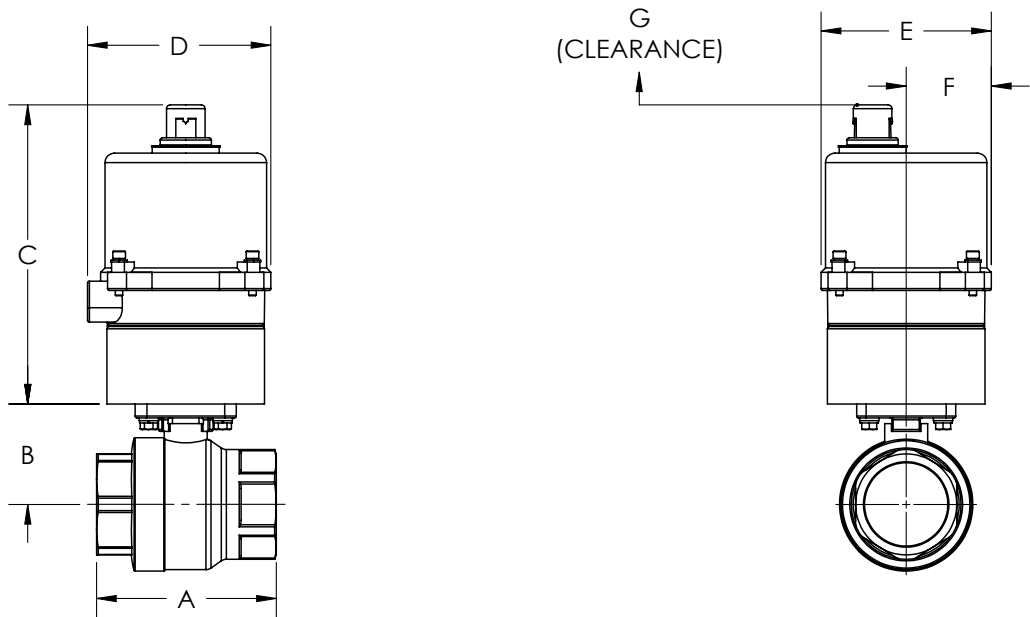
BV2B-Series Ball Valve - Dimensions

Actuated Electric



NOTE: The electric actuator shown is a BEOM-1 model. For more information on actuator accessories, see relevant EPRG for electric actuator.

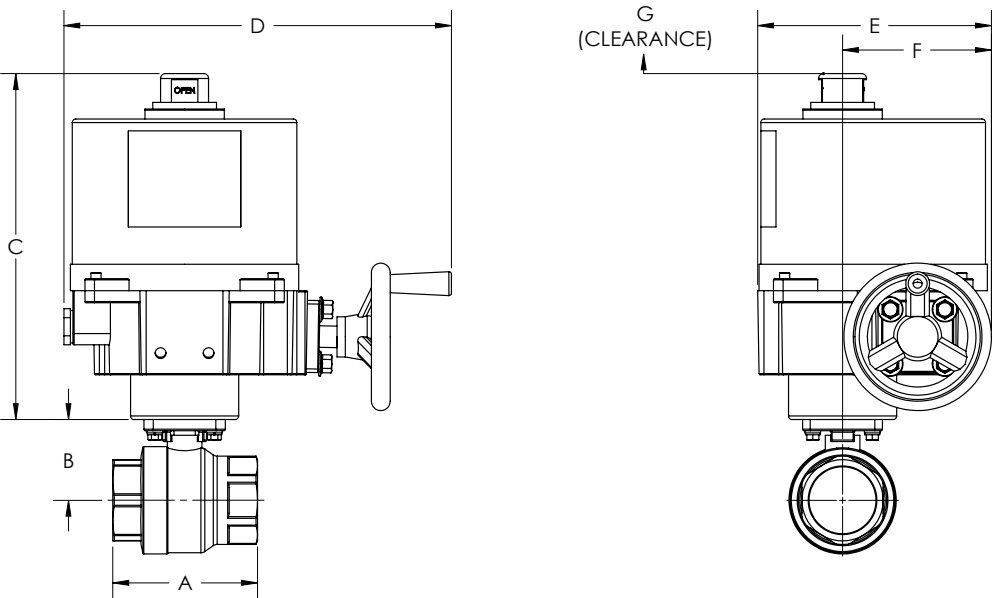
Actuated Electric



NOTE: The electric actuator shown is a BEOM-A model. For more information on actuator accessories, see relevant EPRG for electric actuator.

**BV2B-Series Ball Valve - Dimensions**

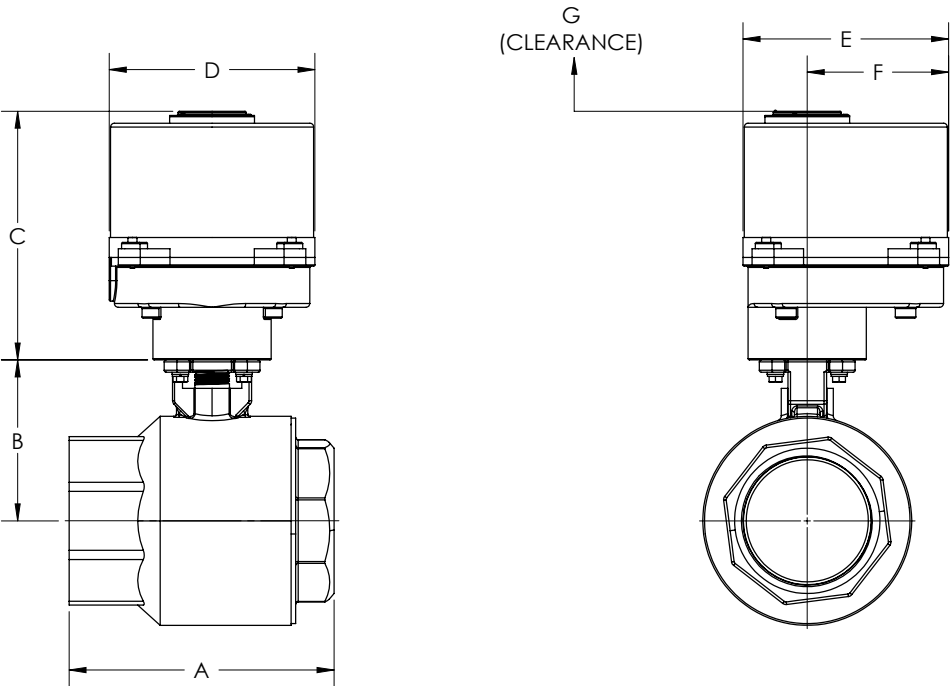
**Actuated Electric**



F

NOTE: The electric actuator shown is a BEOM-2 model. For more information on actuator accessories, see relevant EPRG for electric actuator.

**Actuated Electric**



NOTE: The electric actuator shown is a BM-2 model. For more information on actuator accessories, see relevant EPRG for electric actuator.

BV2B-Series Ball Valve - Dimensions

Spring Return

| Size   | A (in) | B (in) | RP-BA Series Actuator | C (in) | D (in) | E (in) | F(in) | G (in)        | H (in) | I (in)   | J (in) |
|--------|--------|--------|-----------------------|--------|--------|--------|-------|---------------|--------|----------|--------|
|        |        |        |                       |        |        |        |       | XLS-B4 Series |        | X Series |        |
| 1/4"   | 2.64   | 1.28   | RP-BA-025-SR          | 3.1    | 3.83   | 7.66   | 3.20  | 5.27          | 4.06   | 1.07     | 2.81   |
| 3/8"   | 2.64   | 1.28   |                       |        |        |        |       |               |        |          |        |
| 1/2"   | 2.16   | 1.51   |                       |        |        |        |       |               |        |          |        |
| 3/4"   | 2.8    | 1.63   | RP-BA-025-SR05        | 3.1    | 3.83   | 7.66   | 3.20  |               |        |          |        |
| 1"     | 3.23   | 1.76   |                       |        |        |        |       |               |        |          |        |
| 1-1/4" | 3.58   | 2.13   | RP-BA-045-SR          | 3.86   | 4.63   | 8.09   | 3.72  |               |        |          |        |
| 1-1/2" | 4.06   | 2.32   |                       |        |        |        |       |               |        |          |        |
| 2"     | 4.76   | 2.65   | RP-BA-101-SR          | 4.79   | 5.54   | 9.84   | 4.68  |               |        |          |        |
| 2-1/2" | 6.08   | 3.93   |                       |        |        |        |       |               |        |          |        |
| 3"     | 6.89   | 4.32   | RP-BA-225-SR          | 5.58   | 6.34   | 13.98  | 5.56  |               |        |          |        |
| 4"     | 8.12   | 4.93   |                       |        |        |        |       |               |        |          |        |

Double Acting

| Size   | A (in) | B (in) | RP-BA Series Actuator | C (in) | D (in) | E (in) | F(in) | G (in) | H (in) | I (in) | J (in) |
|--------|--------|--------|-----------------------|--------|--------|--------|-------|--------|--------|--------|--------|
| 1/4"   | 2.64   | 1.28   | RP-BA-012-DA          | 2.60   | 3.39   | 4.72   | 2.93  | 5.27   | 4.06   | 1.07   | 2.81   |
| 3/8"   | 2.64   | 1.28   |                       |        |        |        |       |        |        |        |        |
| 1/2"   | 2.16   | 1.51   |                       |        |        |        |       |        |        |        |        |
| 3/4"   | 2.8    | 1.63   | RP-BA-025-DA05        | 3.10   | 3.87   | 5.68   | 3.20  |        |        |        |        |
| 1"     | 3.23   | 1.76   |                       |        |        |        |       |        |        |        |        |
| 1-1/4" | 3.58   | 2.13   |                       |        |        |        |       |        |        |        |        |
| 1-1/2" | 4.06   | 2.32   | RP-BA-045-DA          | 3.86   | 4.63   | 5.87   | 3.72  |        |        |        |        |
| 2"     | 4.76   | 2.65   |                       |        |        |        |       |        |        |        |        |
| 2-1/2" | 6.08   | 3.93   |                       |        |        |        |       |        |        |        |        |
| 3"     | 6.89   | 4.32   | RP-BA-101-DA          | 4.79   | 5.54   | 7.20   | 4.77  |        |        |        |        |
| 4"     | 8.12   | 4.93   |                       |        |        |        |       |        |        |        |        |

Electric Actuator

| Size   | A (in) | B (in) | Actuator | C (in) | D (in) | E (in) | F(in) | G (in) |
|--------|--------|--------|----------|--------|--------|--------|-------|--------|
| 1/4"   | 2.64   | 1.28   | OM-1     | 6.02   | 4.8    | 4.49   | 3.11  | 4.72   |
| 3/8"   | 2.64   | 1.28   |          |        |        |        |       |        |
| 1/2"   | 2.16   | 1.51   |          |        |        |        |       |        |
| 3/4"   | 2.8    | 1.63   |          |        |        |        |       |        |
| 1"     | 3.23   | 1.76   |          |        |        |        |       |        |
| 1-1/4" | 3.58   | 2.13   | OM-A     | 7.83   | 4.8    | 4.49   | 2.24  | 4.72   |
| 1-1/2" | 4.06   | 2.32   |          |        |        |        |       |        |
| 2"     | 4.76   | 2.65   |          |        |        |        |       |        |
| 2-1/2" | 6.08   | 3.93   | OM-2     | 10.55  | 12.84  | 7.13   | 4.84  | 6.5    |
| 3"     | 6.89   | 4.32   |          |        |        |        |       |        |
| 4"     | 8.12   | 4.93   | BM-2     | 7.68   | 6.34   | 6.06   | 4.33  | 4.72   |

# BV3I-Series Multi-Port Ball Valve

## Sizes

- 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"

## Features

- Full port stainless steel ball
- ISO 5211 mounting pad
- Blow-out proof stem

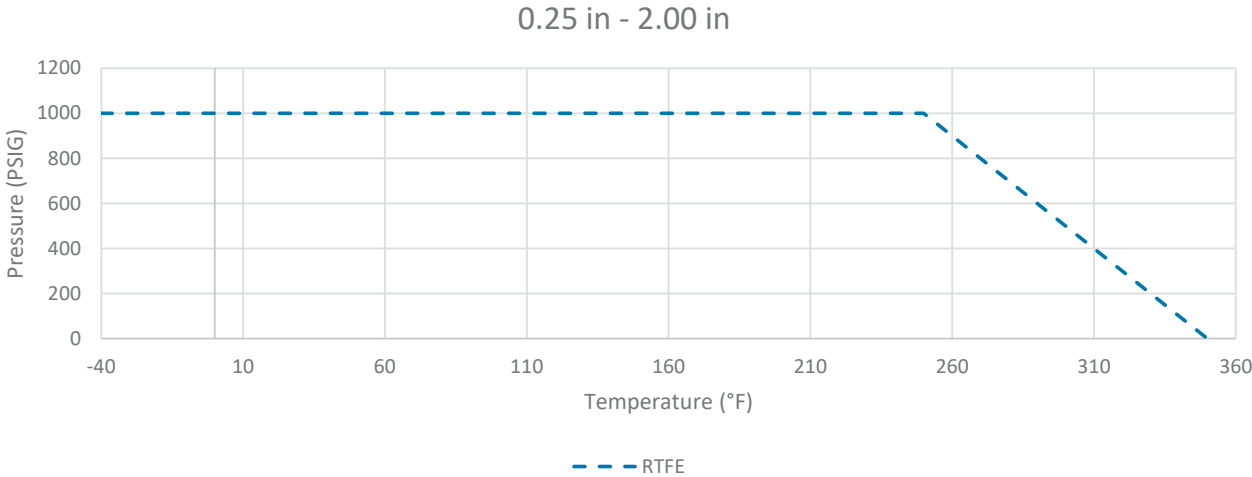
## Specifications

- Surface Finish
  - Product Contact Metal Components:  $\leq 32$  Ra
  - Non-Product Contact Metal Components:  $\leq 63$  Ra



| Size   | L-Port Part #  | T-Port Part #  | Weight (lbs) | Break Torque (in-lbs) | ISO 5211 | Flow Coefficient (Cv) |
|--------|----------------|----------------|--------------|-----------------------|----------|-----------------------|
| 1/4"   | BV3IGLF-0251-A | BV3IGTF-0251-A | .70          | 105                   | F03/F04  | 7                     |
| 3/8"   | BV3IGLF-0381-A | BV3IGTF-0381-A | .72          | 105                   | F03/F04  | 7                     |
| 1/2"   | BV3IGLF-0501-A | BV3IGTF-0501-A | .72          | 138                   | F03/F04  | 11                    |
| 3/4"   | BV3IGLF-0751-A | BV3IGTF-0751-A | 1.11         | 184                   | F04/F05  | 20                    |
| 1"     | BV3IGLF-1001-A | BV3IGTF-1001-A | 1.71         | 323                   | F04/F05  | 30                    |
| 1-1/4" | BV3IGLF-1251-A | BV3IGTF-1251-A | 2.77         | 461                   | F05/F07  | 47                    |
| 1-1/2" | BV3IGLF-1501-A | BV3IGTF-1501-A | 3.82         | 633                   | F05/F07  | 70                    |
| 2"     | BV3IGLF-2001-A | BV3IGTF-2001-A | 6.73         | 1037                  | F07/F10  | 156                   |

## BV3I-Series Multi-Port Ball Valve - Pressure Temperature Chart





## BV3-Series Industrial Actuated Ball Valve - Part Number Key

| BV3-Series Industrial Actuated Ball Valve Part Number Key<br>Example: 3BLV031100XX10 |             | Valve Style | Seat Material | Size | Connections |
|--------------------------------------------------------------------------------------|-------------|-------------|---------------|------|-------------|
|                                                                                      |             | 3BL         | V             | 03   | 1           |
| <b>BV3B/BV3I Valve Style</b>                                                         | <b>Code</b> | ←           | ←             | ←    | ←           |
| Brass 3-way L-port                                                                   | 3BL         |             |               |      |             |
| Brass 3-way T-port                                                                   | 3BT         |             |               |      |             |
| Stainless steel 3-way L-port                                                         | 3IL         |             |               |      |             |
| Stainless steel 3-way T-port                                                         | 3IT         |             |               |      |             |
| <b>Seat Material</b>                                                                 | <b>Code</b> | ←           | ←             | ←    | ←           |
| Virgin-PTFE (3B valve style only)                                                    | V           |             |               |      |             |
| RTFE (15% glass reinforced PTFE) (3I valve styles only)                              | G           |             |               |      |             |
| <b>Size</b>                                                                          | <b>Code</b> | ←           | ←             | ←    | ←           |
| 1/4"                                                                                 | 03          |             |               |      |             |
| 3/8"                                                                                 | 38          |             |               |      |             |
| 1/2"                                                                                 | 50          |             |               |      |             |
| 3/4"                                                                                 | 75          |             |               |      |             |
| 1"                                                                                   | 10          |             |               |      |             |
| 1-1/4"                                                                               | 13          |             |               |      |             |
| 1-1/2"                                                                               | 15          |             |               |      |             |
| 2"                                                                                   | 20          |             |               |      |             |
| 2-1/2" (3B valve style only)                                                         | 25          |             |               |      |             |
| 3" (3B valve style only)                                                             | 30          |             |               |      |             |
| <b>Connections</b>                                                                   | <b>Code</b> | ←           | ←             | ←    | ←           |
| Female NPT                                                                           | 1           |             |               |      |             |

Continue number selection by following column 1 (pneumatic actuators) or 2 (electric actuators) below.

| 1. Pneumatic Actuator or Spring Return Manual Handle              |          |         |             | 2. Electric Actuator      |         |          |        |             |
|-------------------------------------------------------------------|----------|---------|-------------|---------------------------|---------|----------|--------|-------------|
| Actuator                                                          | Feedback | Control | Flow Path   | Actuator                  | Voltage | Option 1 | Option | Flow Path   |
| 1                                                                 | XX       | 00      | 10          | E                         | B       | 1        | 1      | 12          |
| <b>Actuator</b>                                                   |          |         | <b>Code</b> | <b>Actuator</b>           |         |          |        | <b>Code</b> |
| Aluminum spring return pneumatic rack and pinion                  |          |         | 1           | Electric                  |         |          |        | E           |
| Aluminum double acting pneumatic rack and pinion                  |          |         | 2           | Oversized (1-UP) electric |         |          |        | F           |
| Stainless steel spring return pneumatic rack and pinion           |          |         | 3           | Nema 7 electric           |         |          |        | G           |
| Stainless steel double acting pneumatic rack and pinion           |          |         | 4           | Electric with riser kit   |         |          |        | H           |
| Dead man spring return handle                                     |          |         | 6           | <b>Voltage</b>            |         |          |        | <b>Code</b> |
| Oversized (1-UP) aluminum spring return pneumatic rack and pinion |          |         | 7           | 115VAC                    |         |          |        | B           |
| Technopolymer spring return pneumatic rack and pinion             |          |         | 8           | 12VDC                     |         |          |        | C           |
| Oversized (1-UP) aluminum double acting pneumatic rack and pinion |          |         | 9           | 24VAC                     |         |          |        | D           |
| Manual handle with riser kit                                      |          |         | A           | 24VDC                     |         |          |        | E           |

## BV3-Series Industrial Actuated Ball Valve - Part Number Key

| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                         |          |         |             | 2. Electric Actuator                          |         |          |        |             |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|-------------|-----------------------------------------------|---------|----------|--------|-------------|
| Actuator                                                                                                                                     | Feedback | Control | Flow Path   | Actuator                                      | Voltage | Option 1 | Option | Flow Path   |
| 1                                                                                                                                            | XX       | 00      | 10          | E                                             | B       | 1        | 1      | 12          |
| <b>Feedback</b>                                                                                                                              |          |         | <b>Code</b> |                                               |         |          |        |             |
| None                                                                                                                                         |          |         | 00          | 220VAC                                        |         |          |        | F           |
| Limit switch box, position indicator, (2) SPDT mechanical switches                                                                           |          |         | 11          | 12VAC                                         |         |          |        | G           |
| Limit switch box, position indicator, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULus Class 1/2 Div 1/2 |          |         | 12          | <b>Option 1</b>                               |         |          |        | <b>Code</b> |
| Limit switch box, position indicator, AS-I                                                                                                   |          |         | 13          | None                                          |         |          |        | 1           |
| Limit switch box, position indicator, (2) proximity SPDT switches, aluminum Exd IIB certified enclosure                                      |          |         | 14          | Torque switches                               |         |          |        | 2           |
| Limit switch box, position indicator, (2) DPDT mechanical switches                                                                           |          |         | 15          | 4-20mA input/output modulating controller     |         |          |        | 3           |
| Limit switch box, position indicator, (2) switches, electro mec. SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1                    |          |         | 16          | Current position transmitter                  |         |          |        | 4           |
| Limit switch box, position indicator, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO                                                      |          |         | 17          | Potentiometer                                 |         |          |        | 5           |
| Limit switch box, position indicator, 4-20ma analog position transmitter                                                                     |          |         | 18          | Local control unit                            |         |          |        | 6           |
| Limit switch box, position indicator, SPDT proximity, 0.25A @120VAC, 0.416A @ 48VDC, resistive                                               |          |         | 19          | Two extra travel cams and switches            |         |          |        | 7           |
| Limit switch box, position indicator, 4-20ma analog position transmitter + 2 SPDT mechanical switches                                        |          |         | 20          | Three position cam set                        |         |          |        | 8           |
| Stainless steel limit switch box, position indicator, (2) proximity SPDT switches                                                            |          |         | 21          | Local control unit with lock                  |         |          |        | 9           |
| <b>Control</b>                                                                                                                               |          |         | <b>Code</b> | 1-5V input/2-10V output modulating controller |         |          |        | A           |
| None                                                                                                                                         |          |         | XX          | 2-10V input/output modulating controller      |         |          |        | B           |
| Single coil solenoid, 120VAC                                                                                                                 |          |         | AA          | 75% duty cycle                                |         |          |        | C           |
| Single coil solenoid, 24VDC                                                                                                                  |          |         | AB          | Relay                                         |         |          |        | D           |
| Single coil solenoid, 12VDC                                                                                                                  |          |         | AC          | Four position cam set                         |         |          |        | E           |
| Single coil solenoid, 220VAC                                                                                                                 |          |         | AD          | 25% duty cycle (actuator code G only)         |         |          |        | F           |
| Dual coil solenoid, 120VAC                                                                                                                   |          |         | AE          | 75% duty cycle (actuator code G only)         |         |          |        | G           |
| Dual coil solenoid, 24VDC                                                                                                                    |          |         | AF          | <b>Option 2</b>                               |         |          |        | <b>Code</b> |
| Dual coil solenoid, 220VAC                                                                                                                   |          |         | AG          | None                                          |         |          |        | 1           |
| Pneumatic positioner 3-15psi input, no feedback                                                                                              |          |         | AH          | Torque switches                               |         |          |        | 2           |
| Pneumatic positioner 3-15psi input, (2) SPDT mechanical switches for feedback                                                                |          |         | AI          | 4-20mA input/output modulating controller     |         |          |        | 3           |
| Pneumatic positioner 3-15psi input, 4-20mA for feedback                                                                                      |          |         | AJ          | Current position transmitter                  |         |          |        | 4           |
| Electropneumatic positioner 4-20mA input, no feedback                                                                                        |          |         | AK          | Potentiometer                                 |         |          |        | 5           |
| Electropneumatic positioner 4-20mA input, (2) SPDT mechanical switches for feedback                                                          |          |         | AL          | Local control unit                            |         |          |        | 6           |
| Electropneumatic positioner 4-20mA input, 4-20mA for feedback                                                                                |          |         | AM          | Two extra travel cams and switches            |         |          |        | 7           |
| Electropneumatic positioner 0-10v input, no feedback                                                                                         |          |         | AN          | Three position cam set                        |         |          |        | 8           |
| Electropneumatic positioner 0-10V input, (2) SPDT mechanical switches for feedback                                                           |          |         | AO          | Local control unit with lock                  |         |          |        | 9           |
|                                                                                                                                              |          |         |             | 1-5V input/2-10V output modulating controller |         |          |        | A           |

## BV3-Series Industrial Actuated Ball Valve - Part Number Key

| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                                                                                          |          |         |           | 2. Electric Actuator                     |         |          |        |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|-----------|------------------------------------------|---------|----------|--------|-----------|
| Actuator                                                                                                                                                                                                      | Feedback | Control | Flow Path | Actuator                                 | Voltage | Option 1 | Option | Flow Path |
| 1                                                                                                                                                                                                             | XX       | 00      | 10        | E                                        | B       | 1        | 1      | 12        |
| Electropneumatic positioner 0-10v input, 4-20mA for feedback                                                                                                                                                  |          |         | AP        | 2-10V input/output modulating controller |         |          |        | B         |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                                                                                                                         |          |         | AQ        | 75% duty cycle                           |         |          |        | C         |
| Electropneumatic positioner 4-20mA input, no feedback, Class 1, Div II explosion proof                                                                                                                        |          |         | AR        | Relay                                    |         |          |        | D         |
| Single coil solenoid, 24VDC and 24V banjo solenoid valve with form B plug                                                                                                                                     |          |         | AS        | Four position cam set                    |         |          |        | E         |
| Single coil solenoid, 24VDC, AS-I, 2.5W low power                                                                                                                                                             |          |         | AT        | 25% duty cycle (actuator code G only)    |         |          |        | F         |
| Single coil solenoid, 24VDC, intrinsically safe                                                                                                                                                               |          |         | AU        | 75% duty cycle (actuator code G only)    |         |          |        | G         |
| Single coil solenoid, 24VDC, pre-wired to limit switch with cordset (dual keyway, 1/2"-20 UNF mating thread, single ended, straight female connector, 22 AWG PVC, auto color code 2P to 6P cable, 12' length) |          |         | AV        | Flow Path                                |         |          |        | Code      |
| Single coil solenoid, 24VDC, explosion proof, Class H coil                                                                                                                                                    |          |         | AW        | Energize A, Energize B                   |         |          |        | 12        |
| Single coil solenoid, 24VAC                                                                                                                                                                                   |          |         | AX        | Energize A, Energize D                   |         |          |        | 13        |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback, Class 1, Div II explosion proof                                                                                                        |          |         | AY        | Energize A, Energize B, Energize D (80°) |         |          |        | 39        |
| Single coil solenoid, 24VDC, molded LED, ind. form, 2M leads                                                                                                                                                  |          |         | AZ        |                                          |         |          |        |           |
| TUFRAM coated electropneumatic positioner 4-20mA input, no feedback                                                                                                                                           |          |         | BA        |                                          |         |          |        |           |
| V200 rotary pneumatic positioner, (2) REED SWITCH feedback                                                                                                                                                    |          |         | BB        |                                          |         |          |        |           |
| Single coil solenoid, 120VAC, explosion proof, Class H coil                                                                                                                                                   |          |         | BC        |                                          |         |          |        |           |
| Single coil solenoid, 24VDC, pre-wired to limit switch, 6P male connector                                                                                                                                     |          |         | BD        |                                          |         |          |        |           |
| Flow Path                                                                                                                                                                                                     |          |         | Code      |                                          |         |          |        |           |
| Rest A, Energize B (spring return)                                                                                                                                                                            |          |         | 10        |                                          |         |          |        |           |
| Rest A, Energize D (spring return)                                                                                                                                                                            |          |         | 11        |                                          |         |          |        |           |
| Energize A, Energize B (double acting)                                                                                                                                                                        |          |         | 12        |                                          |         |          |        |           |
| Energize A, Energize D (double acting)                                                                                                                                                                        |          |         | 13        |                                          |         |          |        |           |
| Rest B, Energize A, Energize D (spring return, 180°)                                                                                                                                                          |          |         | 14        |                                          |         |          |        |           |
| Rest B, Energize A (spring return)                                                                                                                                                                            |          |         | 15        |                                          |         |          |        |           |

NOTE: Refer to the flow path codes on the following pages for other available configurations.

**BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes**

**3-Way L-Port**

| A                                                                                 | B                                                                                 | C                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |

F

**3-Way T-Port**

| A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |

**4-Way L-Port**

| A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |

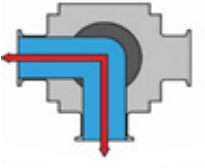
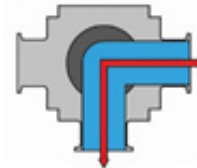
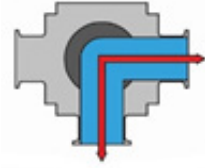
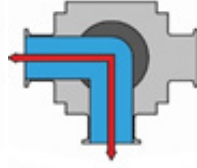
**4-Way T-Port**

| A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |

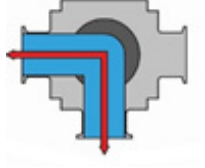
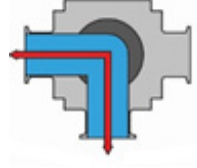
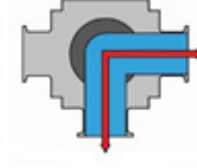
BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

2 Position

3-Way | L-Port | Spring Return

|                        |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Code                   | 10                                                                                  | 16                                                                                  | 15                                                                                  | 17                                                                                   | 18                                                                                    | 19                                                                                    |
| Rotation               | 90°                                                                                 | 90°                                                                                 | 90°                                                                                 | 90°                                                                                  | 90°                                                                                   | 90°                                                                                   |
| Air Rotation Detection | CCW                                                                                 | CW                                                                                  | CW                                                                                  | CCW                                                                                  | CCW                                                                                   | CW                                                                                    |
|                        | A                                                                                   | A                                                                                   | B                                                                                   | B                                                                                    | C                                                                                     | C                                                                                     |
| Rest Position          |    |    |    |    |    |    |
|                        | B                                                                                   | C                                                                                   | A                                                                                   | C                                                                                    | A                                                                                     | B                                                                                     |
| Energize Position      |  |  |  |  |  |  |

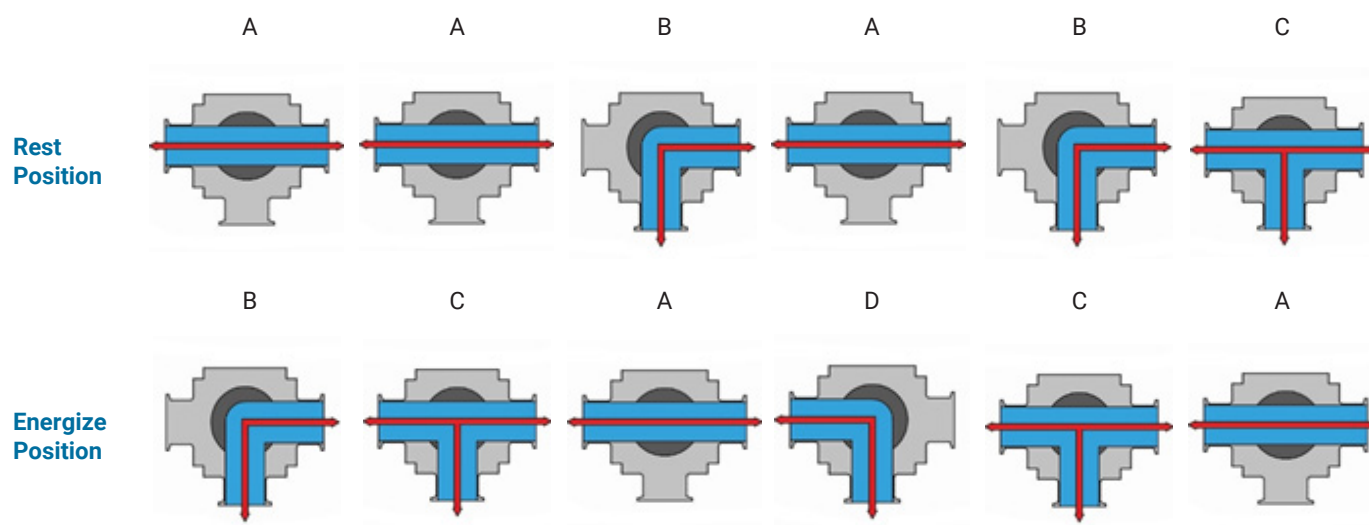
3-Way | L-Port | Double Acting or Electric

|                   |                                                                                     |                                                                                     |                                                                                     |
|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Code              | 12                                                                                  | 20                                                                                  | 21                                                                                  |
| Rotation          | 90°                                                                                 | 90°                                                                                 | 90°                                                                                 |
|                   | A                                                                                   | A                                                                                   | B                                                                                   |
| Energize Position |  |  |  |
|                   | B                                                                                   | C                                                                                   | C                                                                                   |
| Energize Position |  |  |  |

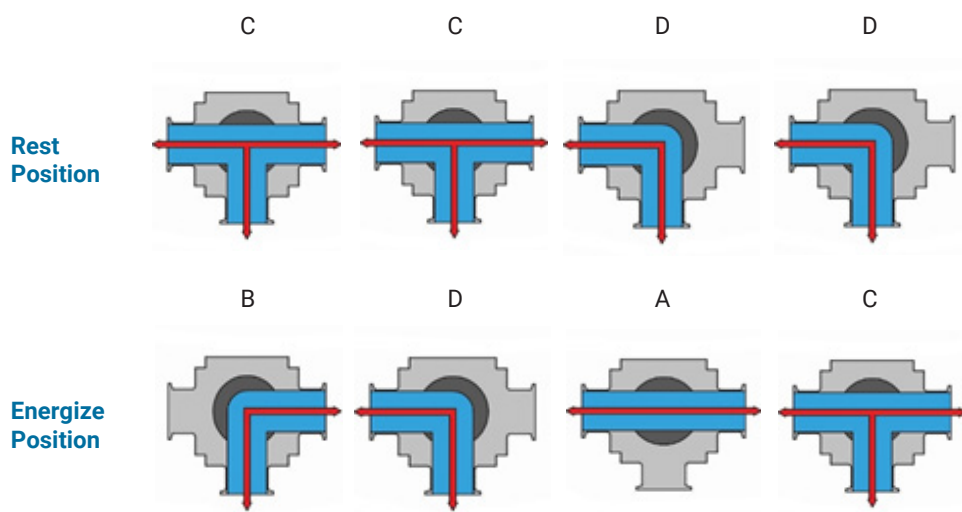
**BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes**

3-Way | T-Port | Spring Return

| Code                   | 10  | 16     | 15  | 11  | 17  | 18     |
|------------------------|-----|--------|-----|-----|-----|--------|
| Rotation               | 90° | 180°   | 90° | 90° | 90° | 180°   |
| Air Rotation Detection | CW  | Either | CCW | CCW | CW  | Either |



| Code                   | 19  | 22  | 23  | 24  |
|------------------------|-----|-----|-----|-----|
| Rotation               | 90° | 90° | 90° | 90° |
| Air Rotation Detection | CCW | CW  | CW  | CCW |



BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

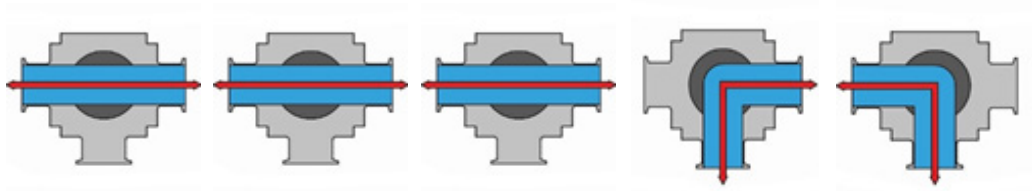
3-Way | T-Port | Double Acting or Electric

|          |     |      |     |     |     |
|----------|-----|------|-----|-----|-----|
| Code     | 12  | 20   | 13  | 21  | 25  |
| Rotation | 90° | 180° | 90° | 90° | 90° |

A                      A                      A                      B                      D

F

Energize  
Position



B                      C                      D                      C                      C

Energize  
Position

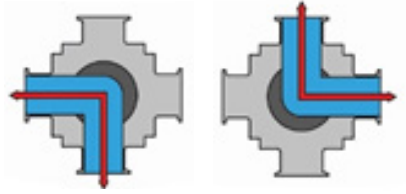


4-Way | L-Port | Spring Return

|                           |        |        |
|---------------------------|--------|--------|
| Code                      | 10     | 16     |
| Rotation                  | 180°   | 180°   |
| Air Rotation<br>Detection | Either | Either |

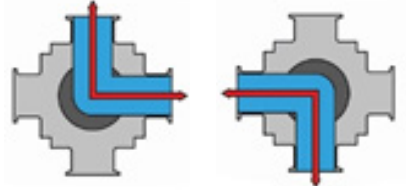
A                      A

Rest  
Position



B                      C

Energize  
Position



4-Way | L-Port | Double Acting or Electric

|          |      |
|----------|------|
| Code     | 12   |
| Rotation | 180° |

A

Energize  
Position



B

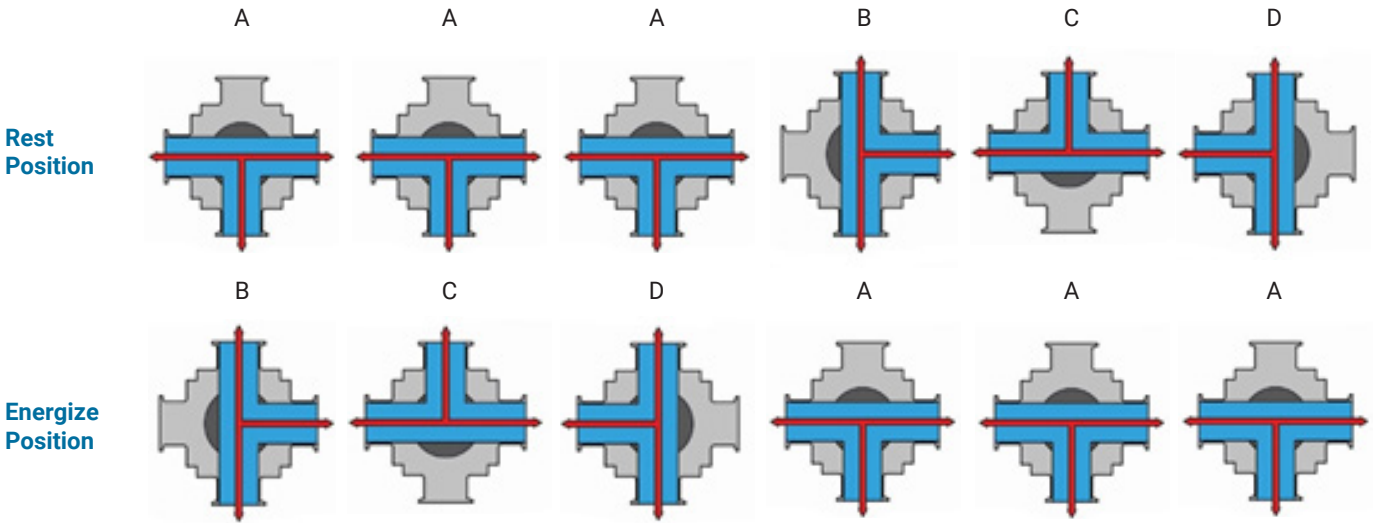
Energize  
Position



**BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes**

**4-Way | T-Port | Spring Return**

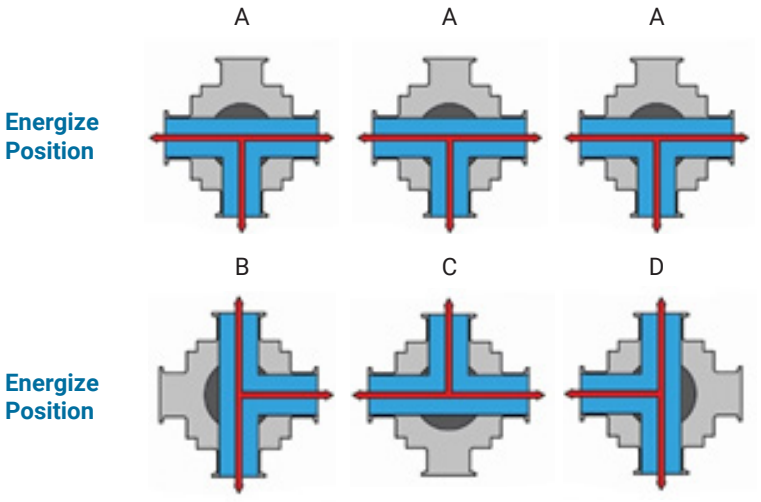
| Code                   | 10  | 16     | 11  | 15  | 18     | 23   |
|------------------------|-----|--------|-----|-----|--------|------|
| Rotation               | 90° | 180°   | 90° | 90° | 90°    | 180° |
| Air Rotation Detection | CCW | Either | CW  | CW  | Either | CCW  |



F

**4-Way | T-Port | Double Acting or Electric**

| Code     | 12  | 20   | 13  |
|----------|-----|------|-----|
| Rotation | 90° | 180° | 90° |





BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3 Position

3-Way | L-Port | Spring Return

|                        |        |        |        |
|------------------------|--------|--------|--------|
| Code                   | 26     | 28     | 29     |
| Rotation               | 180°   | 180°   | 180°   |
| Air Rotation Detection | Either | Either | Either |
| Return                 | Either | Either | End    |

A

B

C

Rest  
Position

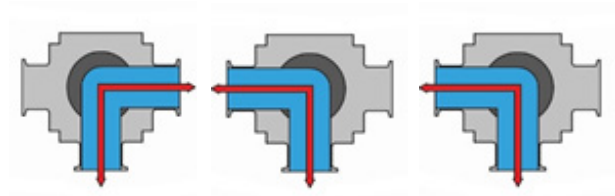


B

A

A

Energize  
Position



C

C

B

Energize  
Position



3-Way | L-Port | Double Acting or Electric

|          |      |
|----------|------|
| Code     | 30   |
| Rotation | 180° |

A

Energize  
Position



B

Energize  
Position



C

Energize  
Position

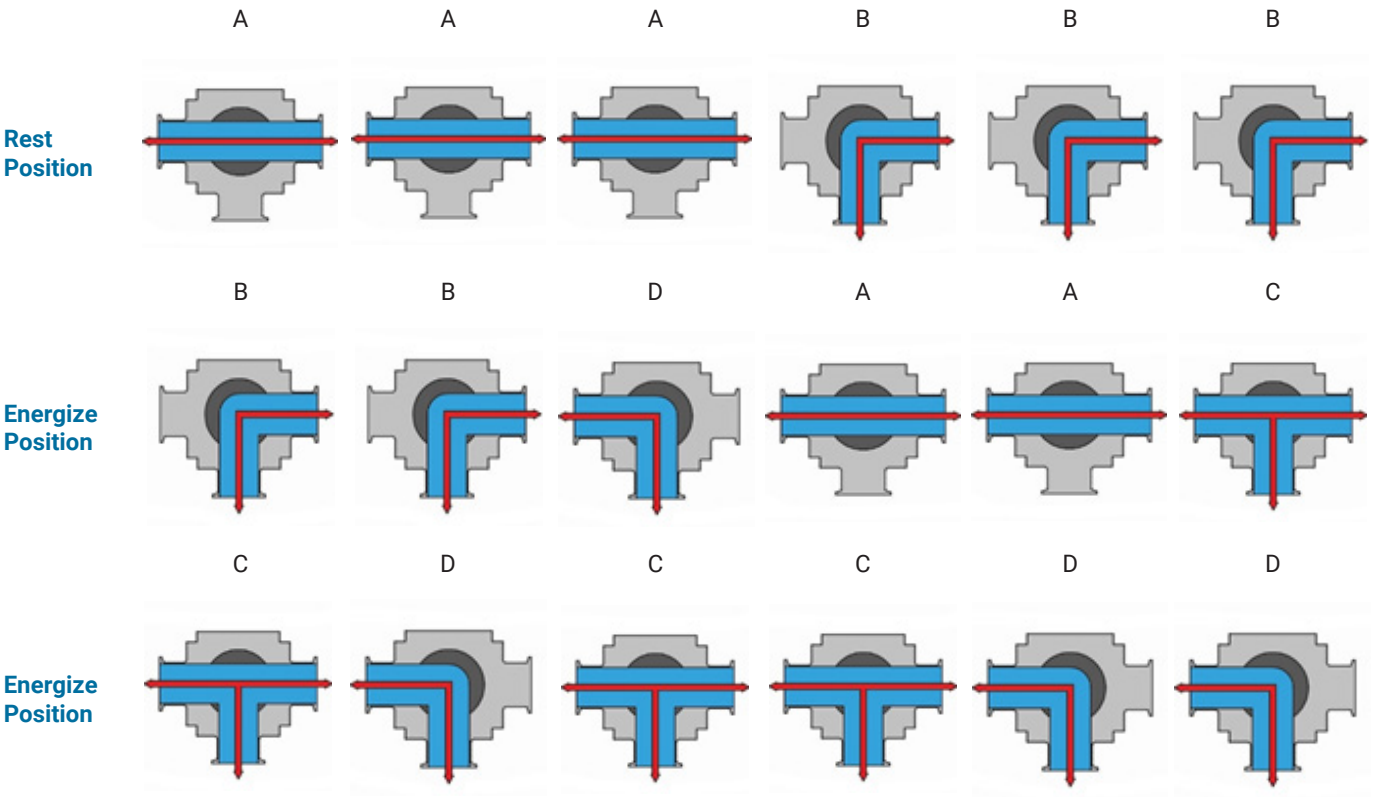


**BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes**

3-Way | T-Port | Spring Return

| Code                   | 26   | 27     | 31   | 28     | 14   | 32   |
|------------------------|------|--------|------|--------|------|------|
| Rotation               | 180° | 180°   | 180° | 180°   | 180° | 180° |
| Air Rotation Detection | CW   | Both   | CCW  | Both   | CCW  | CW   |
| Return                 | End  | Center | End  | Center | End  | End  |

F



BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3-Way | T-Port | Spring Return

|                        |      |      |        |      |        |      |
|------------------------|------|------|--------|------|--------|------|
| Code                   | 33   | 34   | 35     | 36   | 37     | 38   |
| Rotation               | 180° | 180° | 180°   | 180° | 180°   | 180° |
| Air Rotation Detection | CCW  | CW   | Both   | CW   | Both   | CCW  |
| Return                 | End  | End  | Center | End  | Center | End  |

C

C

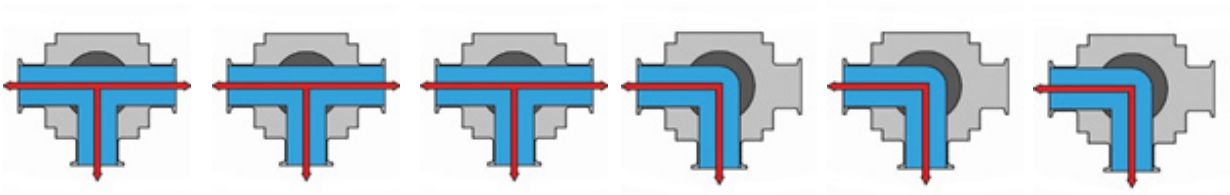
C

D

D

D

Rest  
Position



B

D

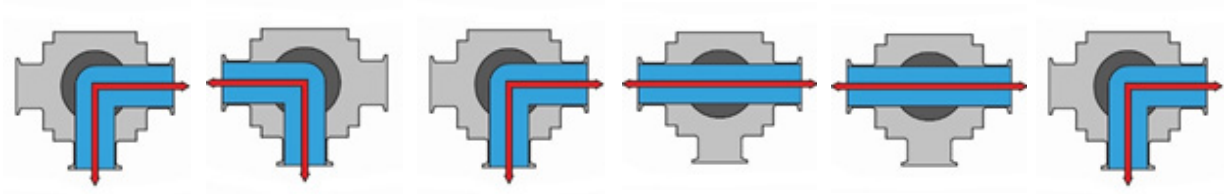
B

A

A

B

Energize  
Position



A

A

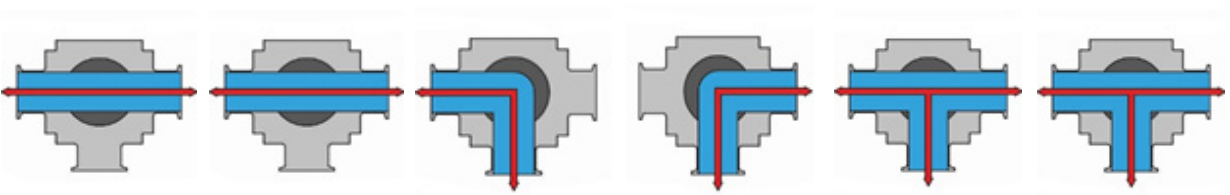
D

B

C

C

Energize  
Position



**BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes**

3-Way | T-Port | Double Acting or Electric

|          |      |      |      |      |
|----------|------|------|------|------|
| Code     | 30   | 39   | 40   | 41   |
| Rotation | 180° | 180° | 180° | 180° |

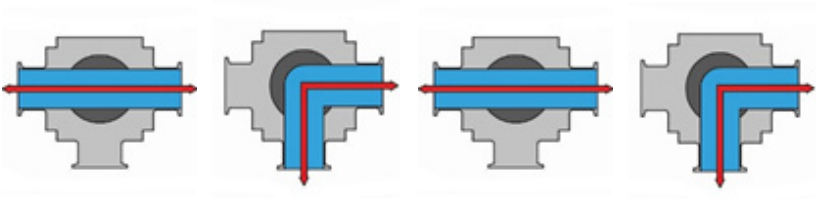
A

B

A

B

Energize  
Position



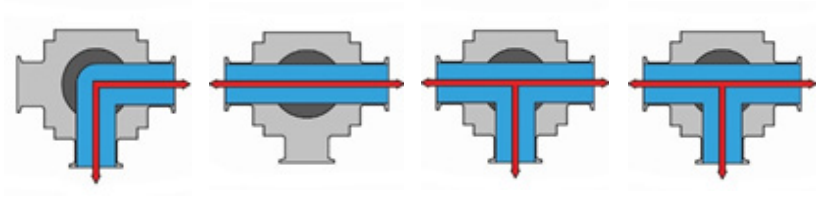
B

A

C

C

Energize  
Position



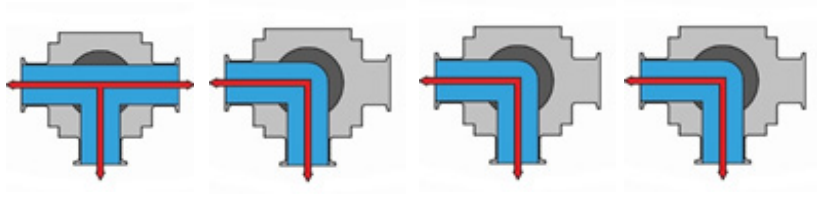
C

D

D

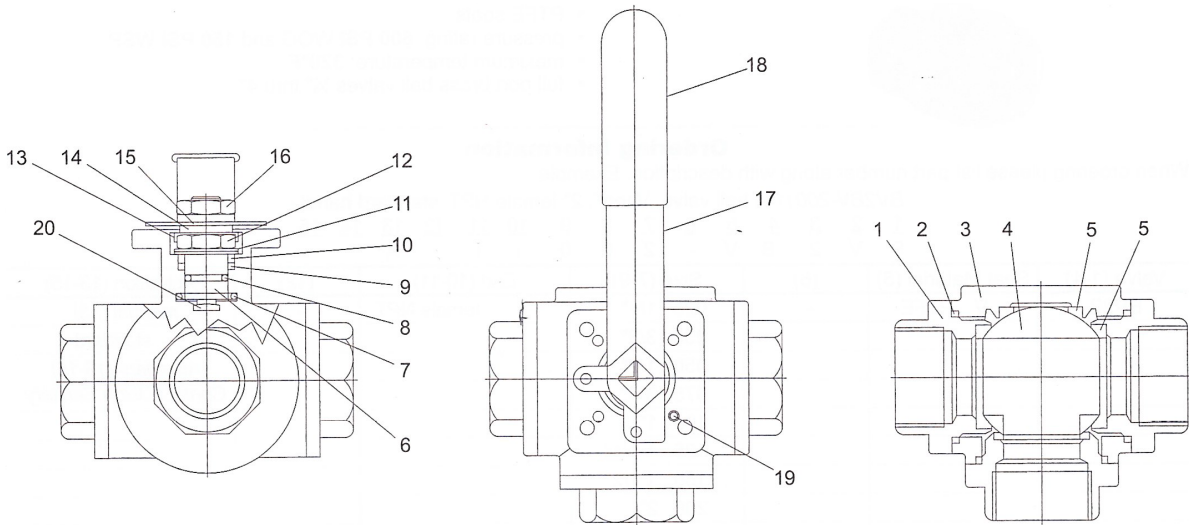
D

Energize  
Position



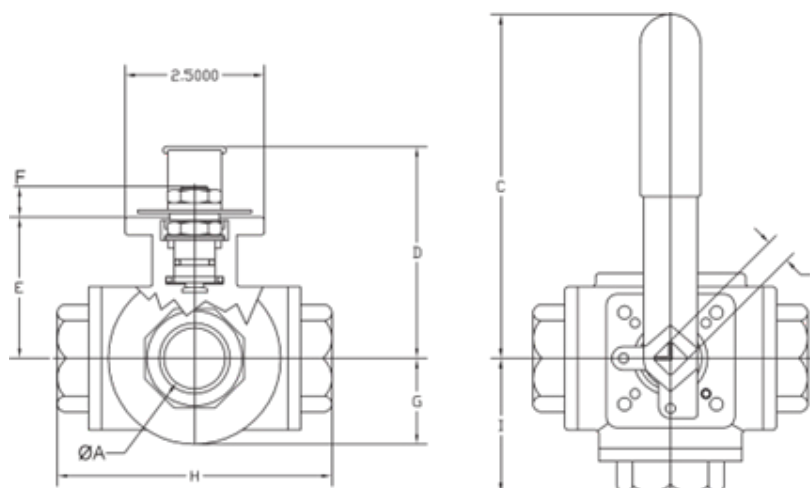
F

BV3I-Series Industrial Multi-Port Ball Valve - Bill of Materials



| Item # | Description       | Material | Qty |
|--------|-------------------|----------|-----|
| 1      | end cap           | CF8M     | 1   |
| 2      | gasket            | PTFE     | 3   |
| 3      | body              | CF8M     | 1   |
| 4      | ball              | CF8M     | 1   |
| 5      | seat              | PTFE     | 4   |
| 6      | stem              | RTFE     | 1   |
| 7      | stem seal         | FKM      | 1   |
| 8      | O-ring            | PTFE     | 1   |
| 9      | stem packing      | PTFE     | 1   |
| 10     | gland             | 301 SS   | 1   |
| 11     | Belleville washer | 304 SS   | 2   |
| 12     | stem nut          | 304 SS   | 1   |
| 13     | nut stop          | 304 SS   | 1   |
| 14     | space washer      | 304 SS   | 1   |
| 15     | lock saddle       | 304 SS   | 1   |
| 16     | handle nut        | 304 SS   | 1   |
| 17     | handle            | 304 SS   | 1   |
| 18     | handle sleeve     | vinyl    | 1   |
| 19     | stop pin          | 304 SS   | 1   |
| 20     | insert pin        | 316 SS   | 1   |

## BV3I-Series Industrial Multi-Port Ball Valve - Dimensions



| Size   | A (in) | B (mm) | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) | I (in) |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1/4"   | .43    | 9      | 5.12   | 2.44   | 1.45   | .40    | .78    | 2.83   | 1.41   |
| 3/8"   | .47    | 9      | 5.12   | 2.44   | 1.45   | .40    | .78    | 2.83   | 1.41   |
| 1/2"   | .59    | 9      | 5.12   | 2.51   | 1.65   | .45    | .91    | 3.26   | 1.63   |
| 3/4"   | .78    | 11     | 6.49   | 3.22   | 1.65   | .59    | 1.10   | 3.89   | 1.94   |
| 1"     | .98    | 11     | 6.49   | 3.50   | 2.18   | .55    | 1.33   | 4.40   | 2.20   |
| 1-1/4" | 1.25   | 14     | 8.07   | 3.85   | 2.48   | .64    | 1.53   | 4.92   | 2.46   |
| 1-1/2" | 1.50   | 14     | 8.07   | 4.25   | 2.88   | .62    | 1.88   | 5.86   | 2.93   |
| 2"     | 2.0    | 17     | 12.79  | 5.51   | 3.63   | .88    | 2.36   | 6.85   | 3.42   |

## BV3I-Series Industrial Multi-Port Ball Valve - Repair Kits

| Valve Size | Repair Kit Part # |
|------------|-------------------|
| 1/4"       | BV-3I-GK0251      |
| 3/8"       | BV-3I-GK0381      |
| 1/2"       | BV-3I-GK0501      |
| 3/4"       | BV-3I-GK0751      |
| 1"         | BV-3I-GK1001      |
| 1-1/4"     | BV-3I-GK1251      |
| 1-1/2"     | BV-3I-GK1501      |
| 2"         | BV-3I-GK2001      |

Repair kit contains (3) PTFE gaskets, (4) PTFE seats, (1) RTFE stem, (1) FKM stem seal, and (1) PTFE stem packing.

BV3B-Series Industrial Brass Ball Valve

Sizes

- 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3"

Features

- Reduced port brass ball
- ISO 5211 mounting pad
- Blow-out proof stem
- Double O-ring stem packing

Materials

- Chrome plated brass ball
- FKM elastomers
- PTFE seats with O-ring backing for low operation torque

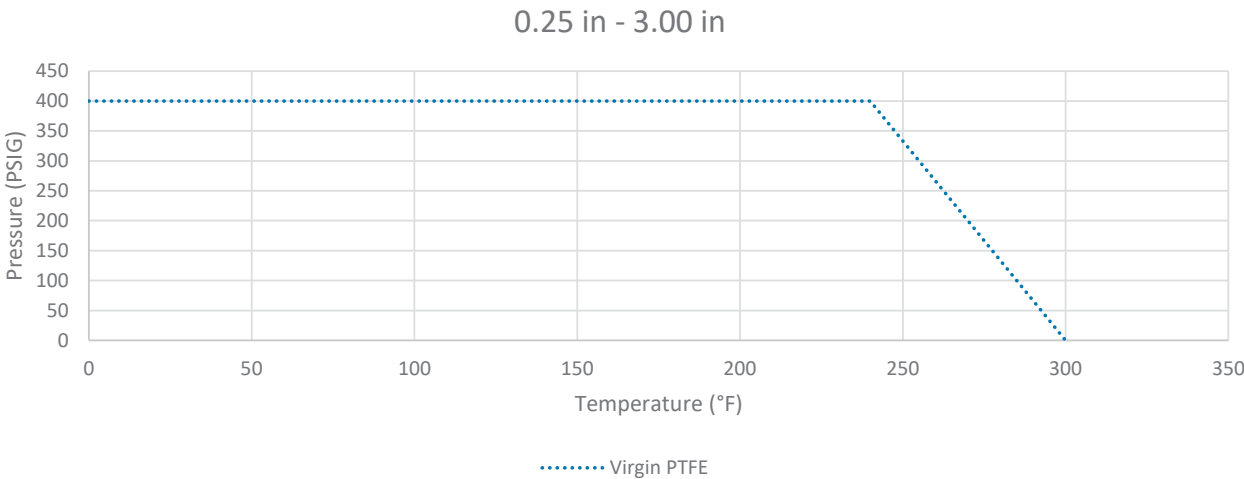


Specifications

- Pressure rating: **400 PSI** WOG; **100 PSI** WSP
- Maximum temperature: 344°F (173°C)

| Size   | L-Port Part #  | T-Port Part #  | Weight (lbs) | Break Torque (in-lbs) | ISO 5211 |
|--------|----------------|----------------|--------------|-----------------------|----------|
| 1/4"   | BV3BVLR-0251-A | BV3BVTR-0251-A | 1.22         | 53.1                  | F03      |
| 3/8"   | BV3BVLR-0381-A | BV3BVTR-0381-A | 1.16         | 53.1                  | F03      |
| 1/2"   | BV3BVLR-0501-A | BV3BVTR-0501-A | 1.21         | 53.1                  | F03      |
| 3/4"   | BV3BVLR-0751-A | BV3BVTR-0751-A | 1.44         | 53.1                  | F03      |
| 1"     | BV3BVLR-1001-A | BV3BVTR-1001-A | 2.64         | 150.46                | F05      |
| 1-1/4" | BV3BVLR-1251-A | BV3BVTR-1251-A | 4.15         | 150.46                | F05      |
| 1-1/2" | BV3BVLR-1501-A | BV3BVTR-1501-A | 6.02         | 150.46                | F05      |
| 2"     | BV3BVLR-2001-A | BV3BVTR-2001-A | 9.08         | 274.37                | F07      |
| 2-1/2" | BV3BVLR-2501-A | BV3BVTR-2501-A | 16.33        | 380.58                | F07      |
| 3"     | BV3BVLR-3001-A | BV3BVTR-3001-A | 19.55        | 380.58                | F07      |

BV3B-Series Industrial Brass Ball Valve - Pressure Temperature Chart



## BV3-Series Industrial Actuated Ball Valve - Part Number Key

| BV3-Series Industrial Actuated Ball Valve Part Number Key<br>Example: 3BLV031100XX10 |             | Valve Style | Seat Material | Size | Connections |
|--------------------------------------------------------------------------------------|-------------|-------------|---------------|------|-------------|
|                                                                                      |             | 3BL         | V             | 03   | 1           |
| <b>BV3B/BV3I Valve Style</b>                                                         | <b>Code</b> |             |               |      |             |
| Brass 3-way L-port                                                                   | 3BL         |             |               |      |             |
| Brass 3-way T-port                                                                   | 3BT         |             |               |      |             |
| Stainless steel 3-way L-port                                                         | 3IL         |             |               |      |             |
| Stainless steel 3-way T-port                                                         | 3IT         |             |               |      |             |
| <b>Seat Material</b>                                                                 | <b>Code</b> |             |               |      |             |
| Virgin-PTFE (3B valve style only)                                                    | V           |             |               |      |             |
| RTFE (15% glass reinforced PTFE) (3I valve styles only)                              | G           |             |               |      |             |
| <b>Size</b>                                                                          | <b>Code</b> |             |               |      |             |
| 1/4"                                                                                 | 03          |             |               |      |             |
| 3/8"                                                                                 | 38          |             |               |      |             |
| 1/2"                                                                                 | 50          |             |               |      |             |
| 3/4"                                                                                 | 75          |             |               |      |             |
| 1"                                                                                   | 10          |             |               |      |             |
| 1-1/4"                                                                               | 13          |             |               |      |             |
| 1-1/2"                                                                               | 15          |             |               |      |             |
| 2"                                                                                   | 20          |             |               |      |             |
| 2-1/2" (3B valve style only)                                                         | 25          |             |               |      |             |
| 3" (3B valve style only)                                                             | 30          |             |               |      |             |
| <b>Connections</b>                                                                   | <b>Code</b> |             |               |      |             |
| Female NPT                                                                           | 1           |             |               |      |             |

Continue number selection by following  
column 1 (pneumatic actuators) or  
2 (electric actuators) below.

| 1. Pneumatic Actuator or Spring Return Manual Handle              |          |         |             | 2. Electric Actuator      |         |          |             |           |
|-------------------------------------------------------------------|----------|---------|-------------|---------------------------|---------|----------|-------------|-----------|
| Actuator                                                          | Feedback | Control | Flow Path   | Actuator                  | Voltage | Option 1 | Option      | Flow Path |
| 1                                                                 | XX       | 00      | 10          | E                         | B       | 1        | 1           | 12        |
| <b>Actuator</b>                                                   |          |         | <b>Code</b> | <b>Actuator</b>           |         |          | <b>Code</b> |           |
| Aluminum spring return pneumatic rack and pinion                  |          |         | 1           | Electric                  |         |          | E           |           |
| Aluminum double acting pneumatic rack and pinion                  |          |         | 2           | Oversized (1-UP) electric |         |          | F           |           |
| Stainless steel spring return pneumatic rack and pinion           |          |         | 3           | Nema 7 electric           |         |          | G           |           |
| Stainless steel double acting pneumatic rack and pinion           |          |         | 4           | Electric with riser kit   |         |          | H           |           |
| Dead man spring return handle                                     |          |         | 6           | <b>Voltage</b>            |         |          | <b>Code</b> |           |
| Oversized (1-UP) aluminum spring return pneumatic rack and pinion |          |         | 7           | 115VAC                    |         |          | B           |           |
| Technopolymer spring return pneumatic rack and pinion             |          |         | 8           | 12VDC                     |         |          | C           |           |
| Oversized (1-UP) aluminum double acting pneumatic rack and pinion |          |         | 9           | 24VAC                     |         |          | D           |           |
| Manual handle with riser kit                                      |          |         | A           | 24VDC                     |         |          | E           |           |



## BV3-Series Industrial Actuated Ball Valve - Part Number Key

| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                         |          |         |             | 2. Electric Actuator                          |         |          |        |             |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|-------------|-----------------------------------------------|---------|----------|--------|-------------|
| Actuator                                                                                                                                     | Feedback | Control | Flow Path   | Actuator                                      | Voltage | Option 1 | Option | Flow Path   |
| 1                                                                                                                                            | XX       | 00      | 10          | E                                             | B       | 1        | 1      | 12          |
| <b>Feedback</b>                                                                                                                              |          |         | <b>Code</b> |                                               |         |          |        |             |
| None                                                                                                                                         |          |         | 00          | 220VAC                                        |         |          |        | F           |
| Limit switch box, position indicator, (2) SPDT mechanical switches                                                                           |          |         | 11          | 12VAC                                         |         |          |        | G           |
| Limit switch box, position indicator, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULus Class 1/2 Div 1/2 |          |         | 12          | <b>Option 1</b>                               |         |          |        | <b>Code</b> |
| Limit switch box, position indicator, AS-I                                                                                                   |          |         | 13          | None                                          |         |          |        | 1           |
| Limit switch box, position indicator, (2) proximity SPDT switches, aluminum Exd IIB certified enclosure                                      |          |         | 14          | Torque switches                               |         |          |        | 2           |
| Limit switch box, position indicator, (2) DPDT mechanical switches                                                                           |          |         | 15          | 4-20mA input/output modulating controller     |         |          |        | 3           |
| Limit switch box, position indicator, (2) switches, electro mec. SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1                    |          |         | 16          | Current position transmitter                  |         |          |        | 4           |
| Limit switch box, position indicator, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO                                                      |          |         | 17          | Potentiometer                                 |         |          |        | 5           |
| Limit switch box, position indicator, 4-20ma analog position transmitter                                                                     |          |         | 18          | Local control unit                            |         |          |        | 6           |
| Limit switch box, position indicator, SPDT proximity, 0.25A @120VAC, 0.416A @ 48VDC, resistive                                               |          |         | 19          | Two extra travel cams and switches            |         |          |        | 7           |
| Limit switch box, position indicator, 4-20ma analog position transmitter + 2 SPDT mechanical switches                                        |          |         | 20          | Three position cam set                        |         |          |        | 8           |
| Stainless steel limit switch box, position indicator, (2) proximity SPDT switches                                                            |          |         | 21          | Local control unit with lock                  |         |          |        | 9           |
| <b>Control</b>                                                                                                                               |          |         | <b>Code</b> | 1-5V input/2-10V output modulating controller |         |          |        | A           |
| None                                                                                                                                         |          |         | XX          | 2-10V input/output modulating controller      |         |          |        | B           |
| Single coil solenoid, 120VAC                                                                                                                 |          |         | AA          | 75% duty cycle                                |         |          |        | C           |
| Single coil solenoid, 24VDC                                                                                                                  |          |         | AB          | Relay                                         |         |          |        | D           |
| Single coil solenoid, 12VDC                                                                                                                  |          |         | AC          | Four position cam set                         |         |          |        | E           |
| Single coil solenoid, 220VAC                                                                                                                 |          |         | AD          | 25% duty cycle (actuator code G only)         |         |          |        | F           |
| Dual coil solenoid, 120VAC                                                                                                                   |          |         | AE          | 75% duty cycle (actuator code G only)         |         |          |        | G           |
| Dual coil solenoid, 24VDC                                                                                                                    |          |         | AF          | <b>Option 2</b>                               |         |          |        | <b>Code</b> |
| Dual coil solenoid, 220VAC                                                                                                                   |          |         | AG          | None                                          |         |          |        | 1           |
| Pneumatic positioner 3-15psi input, no feedback                                                                                              |          |         | AH          | Torque switches                               |         |          |        | 2           |
| Pneumatic positioner 3-15psi input, (2) SPDT mechanical switches for feedback                                                                |          |         | AI          | 4-20mA input/output modulating controller     |         |          |        | 3           |
| Pneumatic positioner 3-15psi input, 4-20mA for feedback                                                                                      |          |         | AJ          | Current position transmitter                  |         |          |        | 4           |
| Electropneumatic positioner 4-20mA input, no feedback                                                                                        |          |         | AK          | Potentiometer                                 |         |          |        | 5           |
| Electropneumatic positioner 4-20mA input, (2) SPDT mechanical switches for feedback                                                          |          |         | AL          | Local control unit                            |         |          |        | 6           |
| Electropneumatic positioner 4-20mA input, 4-20mA for feedback                                                                                |          |         | AM          | Two extra travel cams and switches            |         |          |        | 7           |
| Electropneumatic positioner 0-10v input, no feedback                                                                                         |          |         | AN          | Three position cam set                        |         |          |        | 8           |
| Electropneumatic positioner 0-10V input, (2) SPDT mechanical switches for feedback                                                           |          |         | AO          | Local control unit with lock                  |         |          |        | 9           |
|                                                                                                                                              |          |         |             | 1-5V input/2-10V output modulating controller |         |          |        | A           |

## BV3-Series Industrial Actuated Ball Valve - Part Number Key

| 1. Pneumatic Actuator or Spring Return Manual Handle                                                                                                                                                          |          |         |           | 2. Electric Actuator                     |         |          |        |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|-----------|------------------------------------------|---------|----------|--------|-----------|
| Actuator                                                                                                                                                                                                      | Feedback | Control | Flow Path | Actuator                                 | Voltage | Option 1 | Option | Flow Path |
| 1                                                                                                                                                                                                             | XX       | 00      | 10        | E                                        | B       | 1        | 1      | 12        |
| Electropneumatic positioner 0-10v input, 4-20mA for feedback                                                                                                                                                  |          |         | AP        | 2-10V input/output modulating controller |         |          |        | B         |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback                                                                                                                                         |          |         | AQ        | 75% duty cycle                           |         |          |        | C         |
| Electropneumatic positioner 4-20mA input, no feedback, Class 1, Div II explosion proof                                                                                                                        |          |         | AR        | Relay                                    |         |          |        | D         |
| Single coil solenoid, 24VDC and 24V banjo solenoid valve with form B plug                                                                                                                                     |          |         | AS        | Four position cam set                    |         |          |        | E         |
| Single coil solenoid, 24VDC, AS-I, 2.5W low power                                                                                                                                                             |          |         | AT        | 25% duty cycle (actuator code G only)    |         |          |        | F         |
| Single coil solenoid, 24VDC, intrinsically safe                                                                                                                                                               |          |         | AU        | 75% duty cycle (actuator code G only)    |         |          |        | G         |
| Single coil solenoid, 24VDC, pre-wired to limit switch with cordset (dual keyway, 1/2"-20 UNF mating thread, single ended, straight female connector, 22 AWG PVC, auto color code 2P to 6P cable, 12' length) |          |         | AV        | Flow Path                                |         |          |        | Code      |
| Single coil solenoid, 24VDC, explosion proof, Class H coil                                                                                                                                                    |          |         | AW        | Energize A, Energize B                   |         |          |        | 12        |
| Single coil solenoid, 24VAC                                                                                                                                                                                   |          |         | AX        | Energize A, Energize D                   |         |          |        | 13        |
| V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback, Class 1, Div II explosion proof                                                                                                        |          |         | AY        | Energize A, Energize B, Energize D (80°) |         |          |        | 39        |
| Single coil solenoid, 24VDC, molded LED, ind. form, 2M leads                                                                                                                                                  |          |         | AZ        |                                          |         |          |        |           |
| TUFRAM coated electropneumatic positioner 4-20mA input, no feedback                                                                                                                                           |          |         | BA        |                                          |         |          |        |           |
| V200 rotary pneumatic positioner, (2) REED SWITCH feedback                                                                                                                                                    |          |         | BB        |                                          |         |          |        |           |
| Single coil solenoid, 120VAC, explosion proof, Class H coil                                                                                                                                                   |          |         | BC        |                                          |         |          |        |           |
| Single coil solenoid, 24VDC, pre-wired to limit switch, 6P male connector                                                                                                                                     |          |         | BD        |                                          |         |          |        |           |
| Flow Path                                                                                                                                                                                                     |          |         | Code      |                                          |         |          |        |           |
| Rest A, Energize B (spring return)                                                                                                                                                                            |          |         | 10        |                                          |         |          |        |           |
| Rest A, Energize D (spring return)                                                                                                                                                                            |          |         | 11        |                                          |         |          |        |           |
| Energize A, Energize B (double acting)                                                                                                                                                                        |          |         | 12        |                                          |         |          |        |           |
| Energize A, Energize D (double acting)                                                                                                                                                                        |          |         | 13        |                                          |         |          |        |           |
| Rest B, Energize A, Energize D (spring return, 180°)                                                                                                                                                          |          |         | 14        |                                          |         |          |        |           |
| Rest B, Energize A (spring return)                                                                                                                                                                            |          |         | 15        |                                          |         |          |        |           |

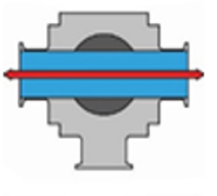
NOTE: Refer to the flow path codes on the following pages for other available configurations.

BV3B-Series Industrial Brass Ball Valve - Flow Path Codes

3-Way L-Port

| A                                                                                 | B                                                                                 | C                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |

3-Way T-Port

| A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |

4-Way L-Port

| A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |

4-Way T-Port

| A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |

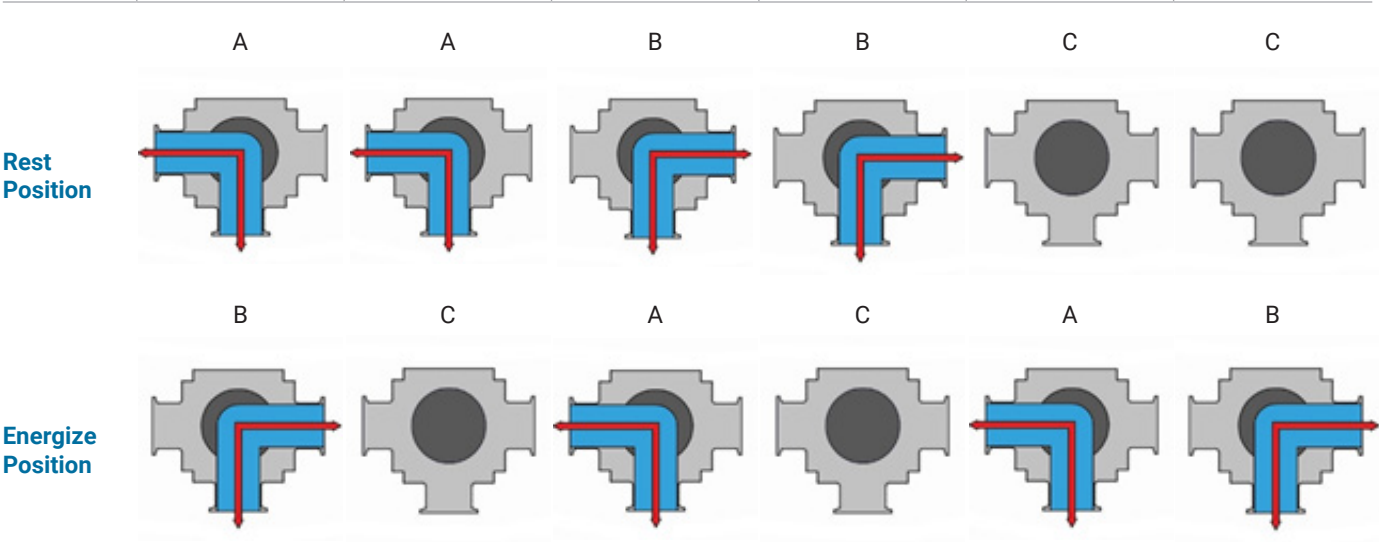
F

**BV3B-Series Industrial Brass Ball Valve - Flow Path Codes**

**2 Position**

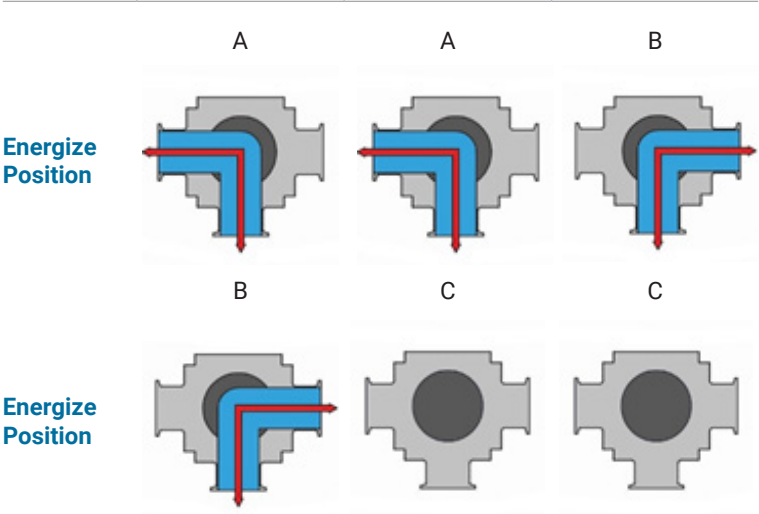
**3-Way | L-Port | Spring Return**

| Code                   | 10  | 16  | 15  | 17  | 18  | 19  |
|------------------------|-----|-----|-----|-----|-----|-----|
| Rotation               | 90° | 90° | 90° | 90° | 90° | 90° |
| Air Rotation Detection | CCW | CW  | CW  | CCW | CCW | CW  |



**3-Way | L-Port | Double Acting or Electric**

| Code     | 12  | 20  | 21  |
|----------|-----|-----|-----|
| Rotation | 90° | 90° | 90° |



BV3B-Series Industrial Brass Ball Valve - Flow Path Codes

3-Way | T-Port | Spring Return

|                        |     |        |     |     |     |        |
|------------------------|-----|--------|-----|-----|-----|--------|
| Code                   | 10  | 16     | 15  | 11  | 17  | 18     |
| Rotation               | 90° | 180°   | 90° | 90° | 90° | 180°   |
| Air Rotation Detection | CW  | Either | CCW | CCW | CW  | Either |

F

Rest Position

A

A

B

A

B

C

B

C

A

D

C

A

|                        |     |     |     |     |
|------------------------|-----|-----|-----|-----|
| Code                   | 19  | 22  | 23  | 24  |
| Rotation               | 90° | 90° | 90° | 90° |
| Air Rotation Detection | CCW | CW  | CW  | CCW |

Rest Position

C

C

D

D

B

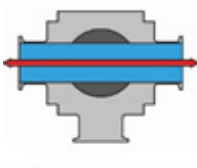
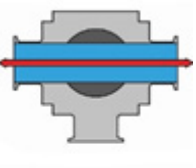
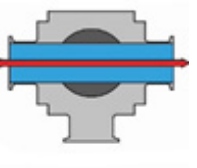
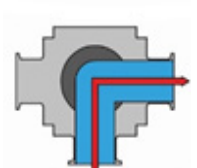
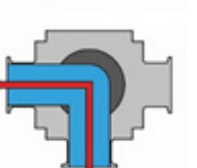
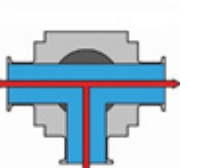
D

A

C

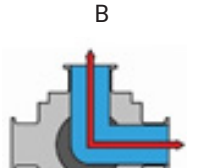
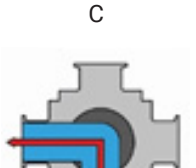
**BV3B-Series Industrial Brass Ball Valve - Flow Path Codes**

**3-Way | T-Port | Double Acting or Electric**

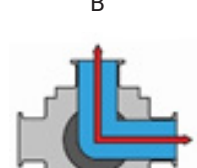
| Code              | 12                                                                                | 20                                                                                | 13                                                                                | 21                                                                                 | 25                                                                                  |
|-------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Rotation          | 90°                                                                               | 180°                                                                              | 90°                                                                               | 90°                                                                                | 90°                                                                                 |
|                   | A                                                                                 | A                                                                                 | A                                                                                 | B                                                                                  | D                                                                                   |
| Energize Position |  |  |  |  |  |
|                   | B                                                                                 | C                                                                                 | D                                                                                 | C                                                                                  | C                                                                                   |
| Energize Position |  |  |  |  |  |

F

**4-Way | L-Port | Spring Return**

| Code                   | 10                                                                                  | 16                                                                                  |
|------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Rotation               | 180°                                                                                | 180°                                                                                |
| Air Rotation Detection | Either                                                                              | Either                                                                              |
| Rest Position          |  |  |
|                        | A                                                                                   | A                                                                                   |
| Energize Position      |  |  |
|                        | B                                                                                   | C                                                                                   |

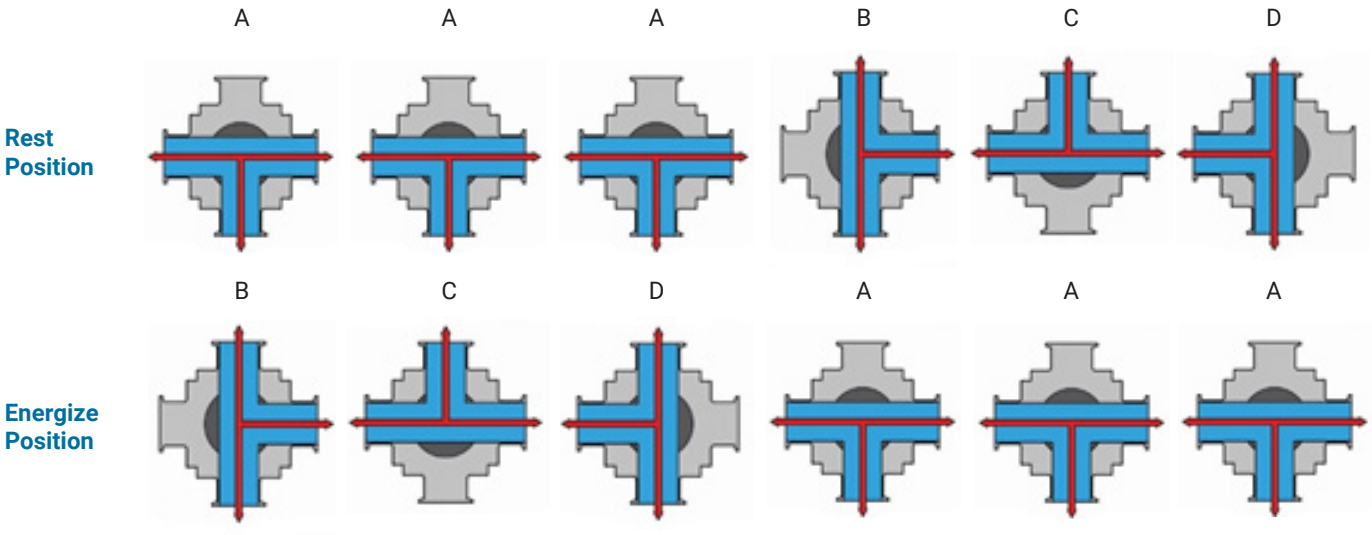
**4-Way | L-Port | Double Acting or Electric**

| Code              | 12                                                                                   |
|-------------------|--------------------------------------------------------------------------------------|
| Rotation          | 180°                                                                                 |
|                   | A                                                                                    |
| Energize Position |  |
|                   | B                                                                                    |
| Energize Position |  |

BV3B-Series Industrial Brass Ball Valve - Flow Path Codes

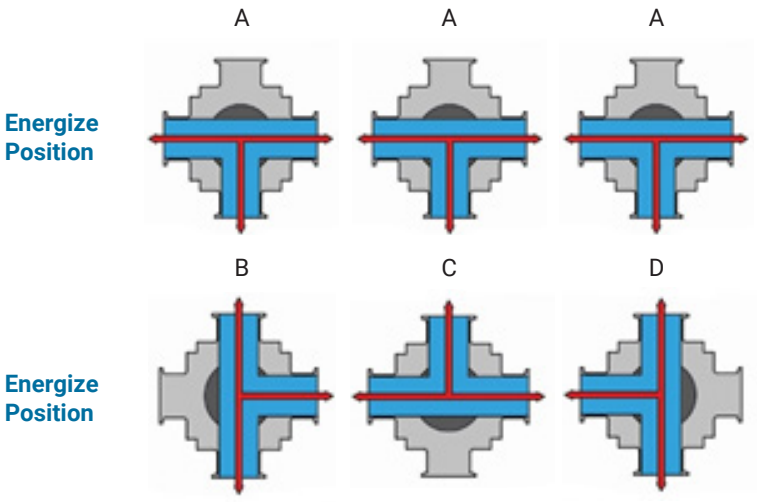
4-Way | T-Port | Spring Return

|                        |     |        |     |     |        |      |
|------------------------|-----|--------|-----|-----|--------|------|
| Code                   | 10  | 16     | 11  | 15  | 18     | 23   |
| Rotation               | 90° | 180°   | 90° | 90° | 90°    | 180° |
| Air Rotation Detection | CCW | Either | CW  | CW  | Either | CCW  |



4-Way | T-Port | Double Acting or Electric

|          |     |      |     |
|----------|-----|------|-----|
| Code     | 12  | 20   | 13  |
| Rotation | 90° | 180° | 90° |



**BV3B-Series Industrial Brass Ball Valve - Flow Path Codes**

**3 Position**

3-Way | L-Port | Spring Return

| Code                   | 26     | 28     | 29     |
|------------------------|--------|--------|--------|
| Rotation               | 180°   | 180°   | 180°   |
| Air Rotation Detection | Either | Either | Either |
| Return                 | Either | Either | End    |

A

B

C

Rest  
Position



B

A

A

Energize  
Position



C

C

B

Energize  
Position



3-Way | L-Port | Double Acting or Electric

| Code     | 30   |
|----------|------|
| Rotation | 180° |

A

Energize  
Position



B

Energize  
Position



C

Energize  
Position



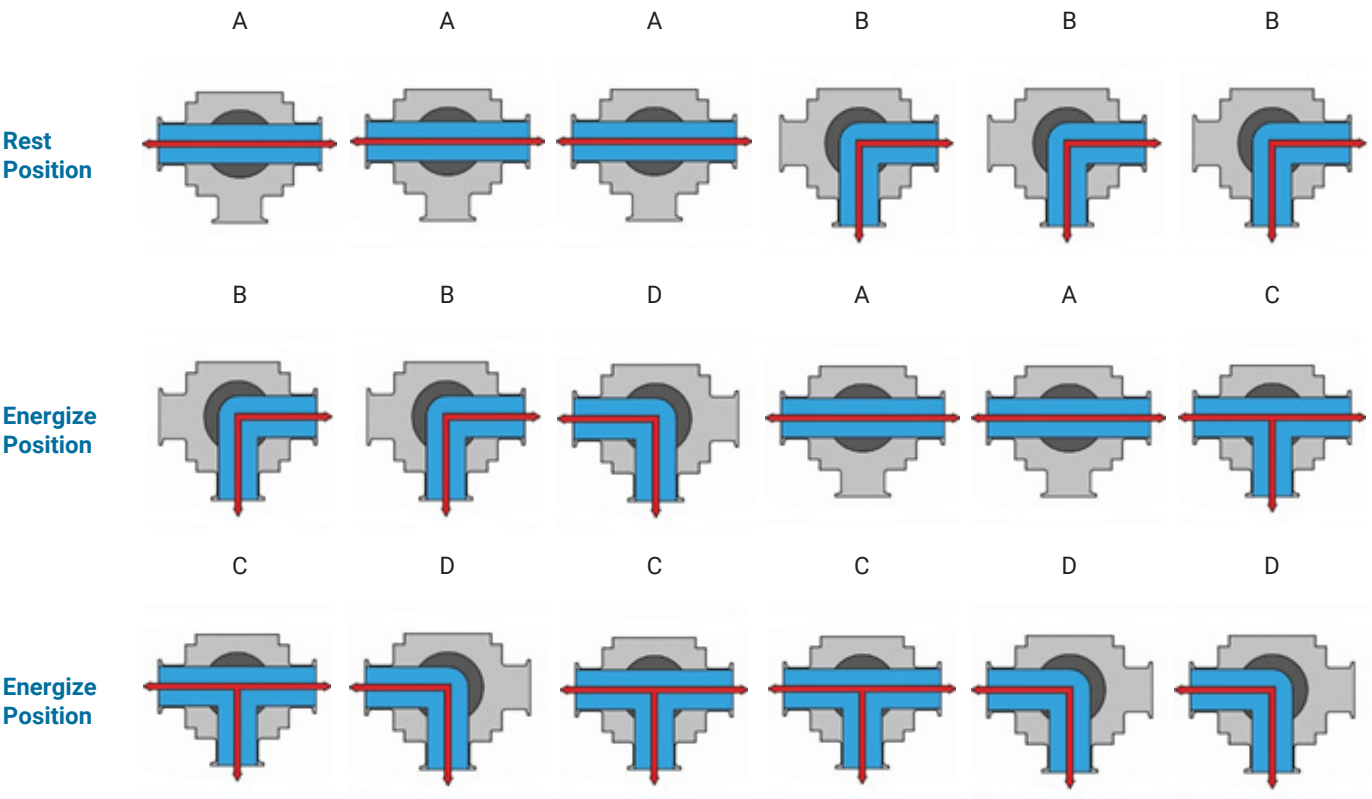
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BV3B-Series Industrial Brass Ball Valve - Flow Path Codes

3-Way | T-Port | Spring Return

|                        |      |        |      |        |      |      |
|------------------------|------|--------|------|--------|------|------|
| Code                   | 26   | 27     | 31   | 28     | 14   | 32   |
| Rotation               | 180° | 180°   | 180° | 180°   | 180° | 180° |
| Air Rotation Detection | CW   | Both   | CCW  | Both   | CCW  | CW   |
| Return                 | End  | Center | End  | Center | End  | End  |

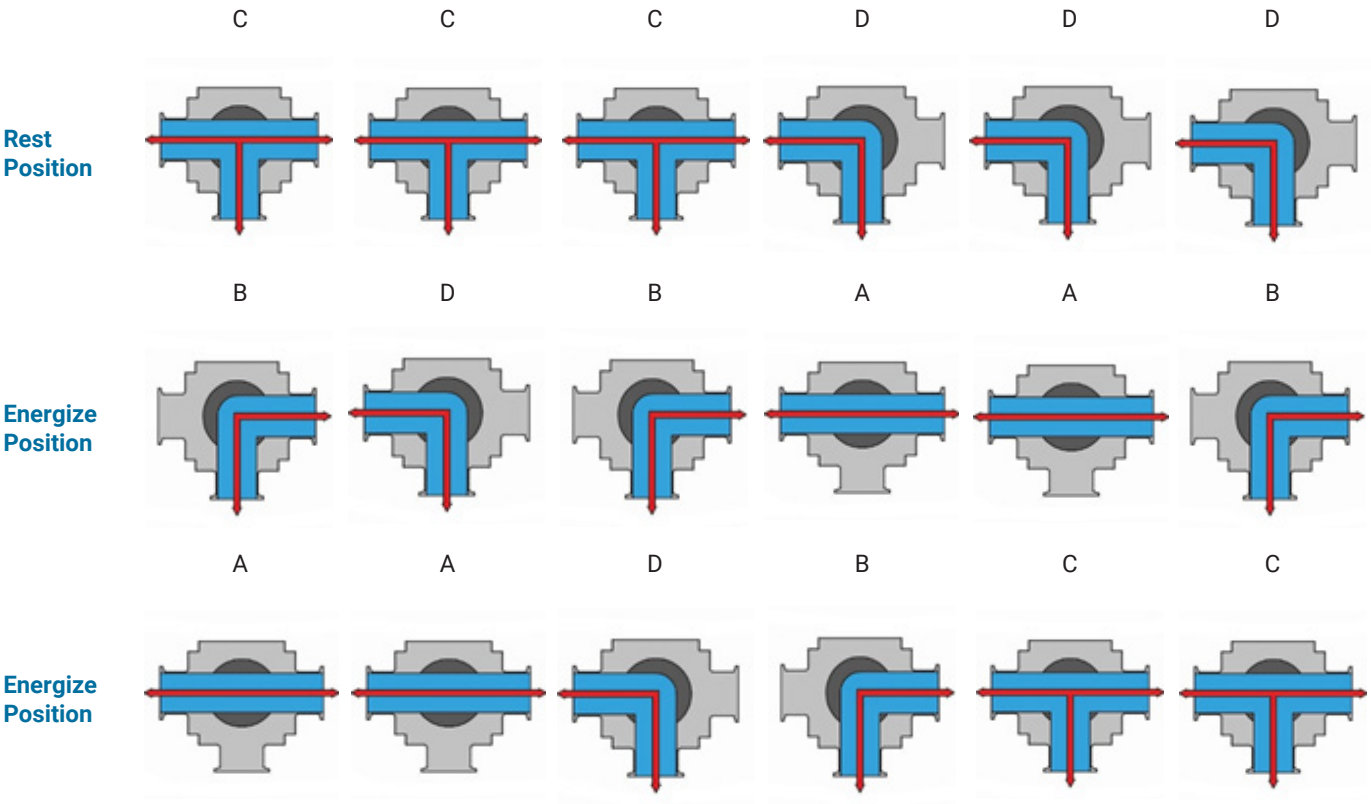


BV3B-Series Industrial Brass Ball Valve - Flow Path Codes

3-Way | T-Port | Spring Return

| Code                   | 33   | 34   | 35     | 36   | 37     | 38   |
|------------------------|------|------|--------|------|--------|------|
| Rotation               | 180° | 180° | 180°   | 180° | 180°   | 180° |
| Air Rotation Detection | CCW  | CW   | Both   | CW   | Both   | CCW  |
| Return                 | End  | End  | Center | End  | Center | End  |

F



BV3B-Series Industrial Brass Ball Valve - Flow Path Codes

3-Way | T-Port | Double Acting or Electric

|          |      |      |      |      |
|----------|------|------|------|------|
| Code     | 30   | 39   | 40   | 41   |
| Rotation | 180° | 180° | 180° | 180° |

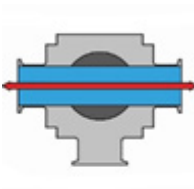
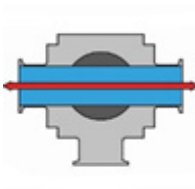
A

B

A

B

Energize Position



B

A

C

C

Energize Position



C

D

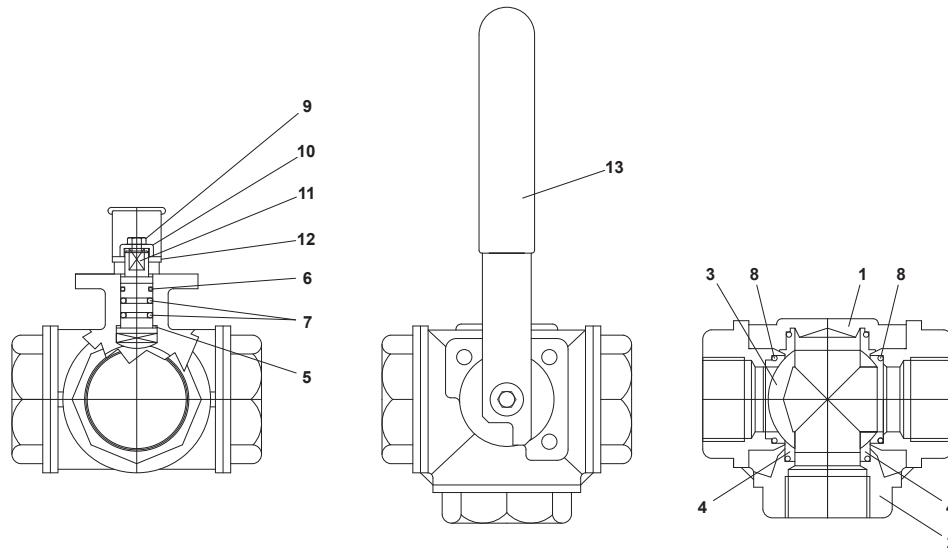
D

D

Energize Position

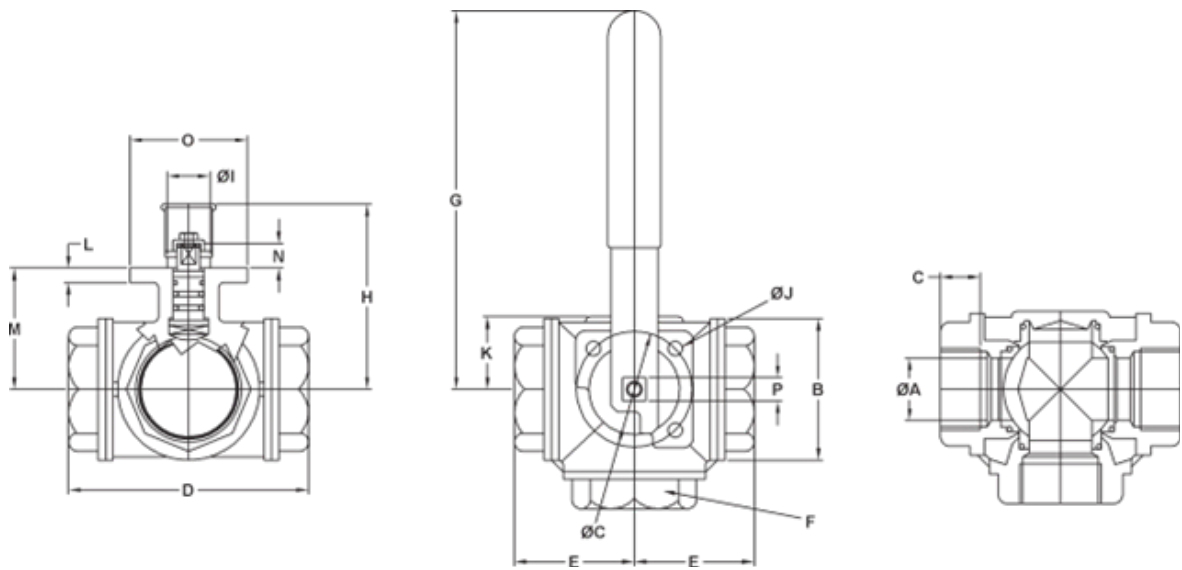


## BV3B-Series Industrial Brass Ball Valve - Bill of Materials



| Item # | Description    | Material            | Qty |
|--------|----------------|---------------------|-----|
| 1      | body           | brass               | 1   |
| 2      | end connection | brass               | 3   |
| 3      | ball           | chrome plated brass | 1   |
| 4      | ball seat      | PTFE                | 4   |
| 5      | thrust washer  | PTFE                | 1   |
| 6      | stem seal      | PTFE                | 1   |
| 7      | O-ring stem    | FKM                 | 1   |
| 8      | O-ring body    | FKM                 | 4   |
| 9      | screw          | steel               | 1   |
| 10     | bushing        | brass               | 1   |
| 11     | stem           | brass               | 1   |
| 12     | washer         | nylon               | 1   |
| 13     | handle         | steel and vinyl     | 1   |

BV3B-Series Industrial Brass Ball Valve - Dimensions



| Size   | A (in) <sup>1</sup> | B (in) <sup>1</sup> | C (in) | D (in) | E (in) | F (in) | G (in) | H (in) | I (in) | J (in) | K (in) | L (in) | M (in) | N (in) | O (in) | P (mm) |
|--------|---------------------|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1/4"   | .39                 | 1.34                | .39    | 2.64   | 1.32   | .86    | 4.72   | 2.44   | .87    | .23    | .77    | .20    | 1.20   | .35    | 1.49   | 9      |
| 3/8"   | .43                 | 1.34                | .40    | 2.64   | 1.32   | .86    | 4.72   | 2.44   | .87    | .23    | .77    | .20    | 1.20   | .35    | 1.49   | 9      |
| 1/2"   | .43                 | 1.34                | .53    | 2.87   | 1.44   | 1.06   | 4.72   | 2.44   | .87    | .23    | .77    | .20    | 1.20   | .35    | 1.49   | 9      |
| 3/4"   | .59                 | 1.53                | .55    | 3.19   | 1.60   | 1.25   | 4.72   | 2.52   | .87    | .23    | .87    | .20    | 1.29   | .35    | 1.49   | 9      |
| 1"     | .79                 | 1.89                | .66    | 3.74   | 1.87   | 1.61   | 6.69   | 2.95   | .94    | .27    | 1.00   | .28    | 1.63   | .43    | 1.97   | 11     |
| 1-1/4" | .98                 | 2.36                | .68    | 4.39   | 2.20   | 1.96   | 6.69   | 3.17   | .94    | .27    | 1.22   | .28    | 1.85   | .43    | 1.97   | 11     |
| 1-1/2" | 1.26                | 2.83                | .68    | 4.86   | 2.43   | 2.16   | 6.69   | 3.66   | 1.26   | .27    | 1.79   | .28    | 2.34   | .43    | 1.97   | 11     |
| 2"     | 1.57                | 3.38                | .70    | 5.73   | 2.87   | 2.75   | 9.05   | 4.43   | 1.46   | .35    | 1.75   | .32    | 2.90   | .59    | 2.75   | 14     |
| 2-1/2" | 1.95                | 4.37                | .93    | 6.93   | 3.47   | 3.34   | 9.05   | 4.86   | 1.46   | .35    | 2.20   | .32    | 3.35   | .59    | 2.75   | 14     |
| 3"     | 1.95                | 4.45                | 1.01   | 7.08   | 3.54   | 4.13   | 9.05   | 4.86   | 1.46   | .35    | 2.20   | .32    | 3.35   | .59    | 2.75   | 14     |

<sup>1</sup>Clamp and weld dimensions are the same.

## SSV-Series Single Seat Valves



Used in sanitary processes for the isolation or diversion of fluids. The valve is 3A certified to be cleaned-in-place and is constructed from FDA approved materials.

These valves can be found in the food processing, beverage, dairy, personal care, winery, brewery, and pet product markets.

### Sizes

- 1", 1-1/2", 2", 2-1/2", 3", and 4"

### Features

- Available with a pneumatic actuator or manual handle
- Burkert™ control top model numbers 8691 and 8692 are available

NOTE: See part number key for configurations available

### Materials

- Product contact metal components: AISI 316L
- Non-product contact metal components: AISI 304
- Product contact seals: EPDM, FKM, or PTFE

### Specifications

- Standard clamp connections
- Valve data
  - Maximum pressure: see holding pressure chart
  - Maximum operating temperature: **266°F (130°C)**
  - Maximum sterilization temperature (20 minutes maximum): **275°F (135°C)**
  - Maximum ambient temperature: **140°F (60°C)**
- Actuator data
  - Connections: 1/8" NPT with 1/4" tube push-in connection
  - Control air pressure
    - Spring return maximum pressure: **80 PSI (5.5 bar)**
    - Double acting maximum pressure: **45 PSI (3.1 bar)**
    - Maximum temperature: **176°F (80°C)**
  - Solids content
    - Maximum particle size: 5 µm
    - Maximum particle density: 5 mg/m³
  - Oil content
    - Maximum oil: 25 mg/m³ (oil free quality class 3)
- Surface finish
  - Product contact metal components: Ra ≤ 32
  - Non-product contact metal components: Ra ≤ 63 polished
- Device sound emission level: ≤ 70 dB(A)


**G**

SSV-Series Single Seat Valve - Part Number Key

| SSV-Series Single Seat Valve<br>Part Number Key<br>Example: S01A10C1EEA |      | Series | Valve Body |   |    |   |  | Actuation Type | Stem Type | Wetted Elastomers | Options |
|-------------------------------------------------------------------------|------|--------|------------|---|----|---|--|----------------|-----------|-------------------|---------|
|                                                                         |      | S      | 01         | A | 10 | C |  | 1              | E         | E                 | A       |
| Series                                                                  | Code | S      | 01         | A | 10 | C |  | 1              | E         | E                 | A       |
| Shut off                                                                | S    |        |            |   |    |   |  |                |           |                   |         |
| Divert                                                                  | D    |        |            |   |    |   |  |                |           |                   |         |
| Valve Body Style (See Diagram A)                                        | Code |        |            |   |    |   |  |                |           |                   |         |
| L (2-port shut-off)                                                     | 01   |        |            |   |    |   |  |                |           |                   |         |
| T (3-port shut-off)                                                     | 02   |        |            |   |    |   |  |                |           |                   |         |
| Y (2-port shut-off)                                                     | 03   |        |            |   |    |   |  |                |           |                   |         |
| F (3-port divert)                                                       | 04   |        |            |   |    |   |  |                |           |                   |         |
| F-90 (3-port divert) top port rotated 90° CW                            | 49   |        |            |   |    |   |  |                |           |                   |         |
| L/L (3-port divert)                                                     | 05   |        |            |   |    |   |  |                |           |                   |         |
| L/L-90 (3-port divert) top port rotated 90° CW                          | 59   |        |            |   |    |   |  |                |           |                   |         |
| T/L (4-port divert)                                                     | 06   |        |            |   |    |   |  |                |           |                   |         |
| T/L-90 (4-port divert) top port rotated 90° CW                          | 69   |        |            |   |    |   |  |                |           |                   |         |
| L/T (4-port divert)                                                     | 07   |        |            |   |    |   |  |                |           |                   |         |
| L/T-90 (4-port divert) top port rotated 90° CW                          | 79   |        |            |   |    |   |  |                |           |                   |         |
| T/T (5-port divert) top port rotated 90° CW                             | 08   |        |            |   |    |   |  |                |           |                   |         |
| T/T-90 (5-port divert) top port rotated 90° CW                          | 89   |        |            |   |    |   |  |                |           |                   |         |
| Surface Finish                                                          | Code |        |            |   |    |   |  |                |           |                   |         |
| 32 Ra (I.D. mech. polish)                                               | A    |        |            |   |    |   |  |                |           |                   |         |
| 25 Ra (I.D. mech. polish)                                               | B    |        |            |   |    |   |  |                |           |                   |         |
| 20 Ra (I.D. mech. polish)                                               | C    |        |            |   |    |   |  |                |           |                   |         |
| 15 Ra (I.D. mech. polish)                                               | D    |        |            |   |    |   |  |                |           |                   |         |
| Valve Size                                                              | Code |        |            |   |    |   |  |                |           |                   |         |
| 1"                                                                      | 10   |        |            |   |    |   |  |                |           |                   |         |
| 1-1/2"                                                                  | 15   |        |            |   |    |   |  |                |           |                   |         |
| 2"                                                                      | 20   |        |            |   |    |   |  |                |           |                   |         |
| 2-1/2"                                                                  | 25   |        |            |   |    |   |  |                |           |                   |         |
| 3"                                                                      | 30   |        |            |   |    |   |  |                |           |                   |         |
| 4"                                                                      | 40   |        |            |   |    |   |  |                |           |                   |         |
| Connections                                                             | Code |        |            |   |    |   |  |                |           |                   |         |
| Clamp                                                                   | C    |        |            |   |    |   |  |                |           |                   |         |
| Weld                                                                    | B    |        |            |   |    |   |  |                |           |                   |         |
| Female I-line                                                           | F    |        |            |   |    |   |  |                |           |                   |         |
| Male I-line                                                             | M    |        |            |   |    |   |  |                |           |                   |         |
| Threaded bevel                                                          | T    |        |            |   |    |   |  |                |           |                   |         |
| Plain bevel                                                             | P    |        |            |   |    |   |  |                |           |                   |         |
| Q-Line                                                                  | Q    |        |            |   |    |   |  |                |           |                   |         |
| Combination (see table 1)                                               | -    |        |            |   |    |   |  |                |           |                   |         |

Table 1 (Codes)

| A-Port      | B-Port | C-Port      | D-Port      | E-Port      | Port Diagram |
|-------------|--------|-------------|-------------|-------------|--------------|
| C           | C      | C           | C           | C           |              |
| B           | B      | B           | B           | B           |              |
| F           | F      | F           | F           | F           |              |
| M           | M      | M           | M           | M           |              |
| T           | T      | T           | T           | T           |              |
| P           | P      | P           | P           | P           |              |
| Q           | Q      | Q           | Q           | Q           |              |
| N (no port) | -      | N (no port) | N (no port) | N (no port) |              |

## SSV-Series Single Seat Valve - Part Number Key

| SSV-Series Single Seat Valve<br>Part Number Key<br>Example: S01A10C1EEA |             | Series | Valve Body |   |    |   |  | Actuation Type | Stem Type | Wetted Elastomers | Options |
|-------------------------------------------------------------------------|-------------|--------|------------|---|----|---|--|----------------|-----------|-------------------|---------|
|                                                                         |             | S      | 01         | A | 10 | C |  | 1              | E         | E                 | A       |
| <b>Actuation Type</b>                                                   | <b>Code</b> |        |            |   |    |   |  |                |           |                   |         |
| Pneumatic spring return (air-to-raise)                                  | 1           |        |            |   |    |   |  |                |           |                   |         |
| Pneumatic spring return (air-to-lower)                                  | 2           |        |            |   |    |   |  |                |           |                   |         |
| Pneumatic double acting (air-to-air)                                    | 3           |        |            |   |    |   |  |                |           |                   |         |
| Manual handle                                                           | 4           |        |            |   |    |   |  |                |           |                   |         |
| <b>Stem Type</b>                                                        | <b>Code</b> |        |            |   |    |   |  |                |           |                   |         |
| Elastomer O-ring stem seal                                              | E           |        |            |   |    |   |  |                |           |                   |         |
| PTFE plug seal                                                          | P           |        |            |   |    |   |  |                |           |                   |         |
| <b>Wetted Elastomers</b>                                                | <b>Code</b> |        |            |   |    |   |  |                |           |                   |         |
| EPDM                                                                    | E           |        |            |   |    |   |  |                |           |                   |         |
| FKM                                                                     | V           |        |            |   |    |   |  |                |           |                   |         |
| <b>Options</b>                                                          | <b>Code</b> |        |            |   |    |   |  |                |           |                   |         |
| 10-30 VDC external proximity, PNP, (qty 2)                              | A           |        |            |   |    |   |  |                |           |                   |         |
| 10-30 VDC external proximity, NPN, (qty 2)                              | B           |        |            |   |    |   |  |                |           |                   |         |
| 20-253 VAC external proximity, (qty 2)                                  | C           |        |            |   |    |   |  |                |           |                   |         |
| 110 VAC external proximity, (qty 2)                                     | D           |        |            |   |    |   |  |                |           |                   |         |
| Burkert 8691, single acting, DeviceNet, multipin                        | E           |        |            |   |    |   |  |                |           |                   |         |
| Burkert 8691, single acting, AS-i, multipin                             | F           |        |            |   |    |   |  |                |           |                   |         |
| Burkert 8691, single acting, 24VDC, multipin                            | G           |        |            |   |    |   |  |                |           |                   |         |
| Burkert 8691, double acting, DeviceNet, multipin                        | H           |        |            |   |    |   |  |                |           |                   |         |
| Burkert 8691, double acting, AS-i, multipin                             | J           |        |            |   |    |   |  |                |           |                   |         |
| Burkert 8691, double acting, 24VDC, multipin                            | K           |        |            |   |    |   |  |                |           |                   |         |
| Burkert 8691, without solenoid, 24VDC, multipin                         | L           |        |            |   |    |   |  |                |           |                   |         |
| Burkert 8692 positioner, 24VDC, 4-20mA, multipin                        | P           |        |            |   |    |   |  |                |           |                   |         |
| External proximity bracket only                                         | Q           |        |            |   |    |   |  |                |           |                   |         |

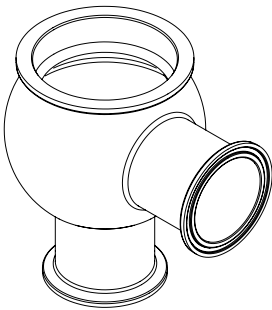
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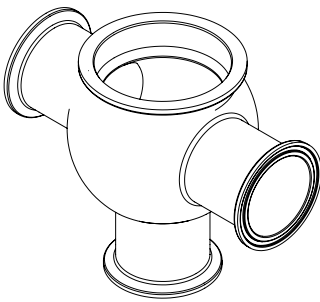
SSV-Series Single Seat Valve - Body Styles (Diagram A)

Part Number Example:  
D06B20NBCCC2PVG  
Part Description: Divert Valve,  
T/L Body, 25 Ra Polish, 2", [No  
Port on A, Butt weld on Port B,  
Clamp Port C, Clamp on Port  
D, Clamp on Port E] Spring  
Return Air-to-Lower Actuator,  
PTFE Stem Seal, FKM wetted  
Elastomers, Burkert 8691  
Single Acting 24VDC Multipin

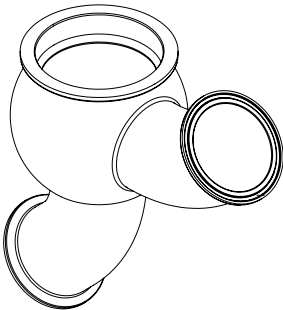
L-Body



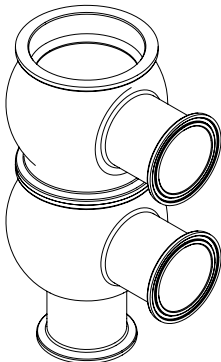
T-Body



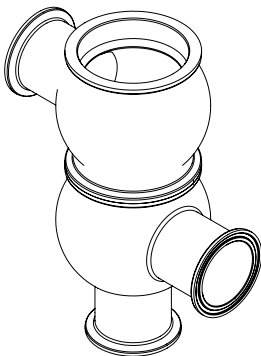
Y-Body



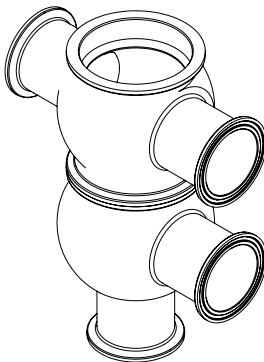
F-Body



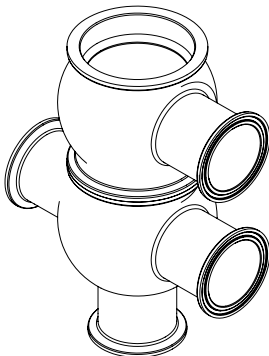
LL-Body



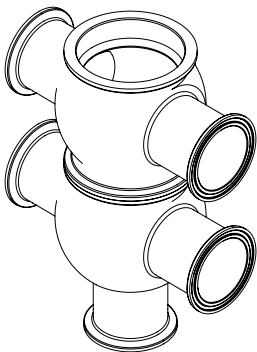
TL-Body



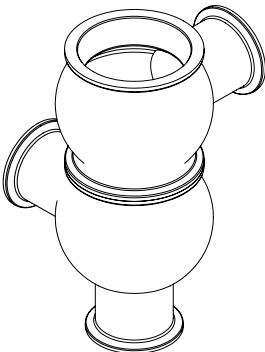
LT-Body



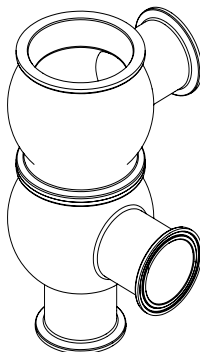
TT-Body



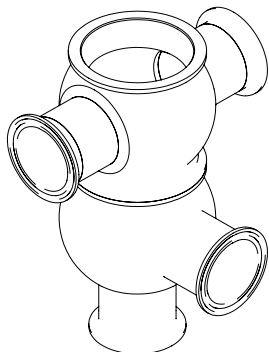
F-90 Body



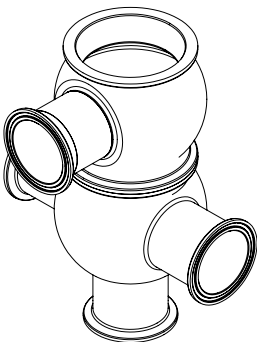
LL-90 Body



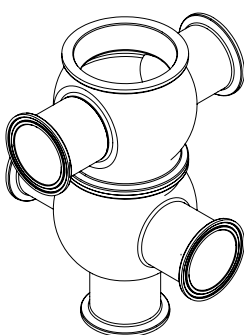
TL-90 Body



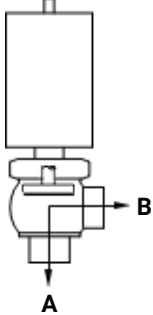
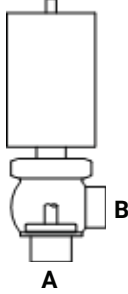
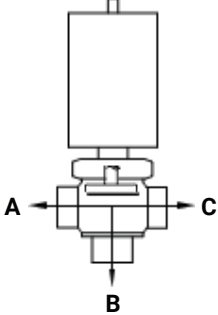
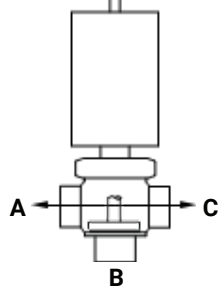
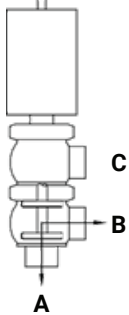
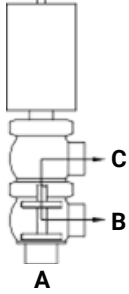
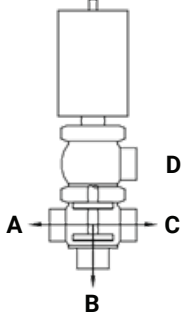
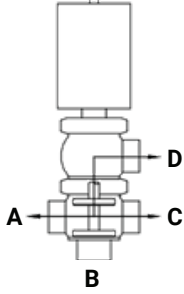
LT-90 Body



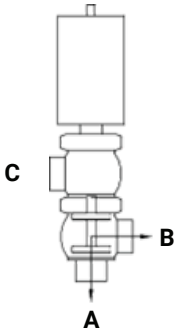
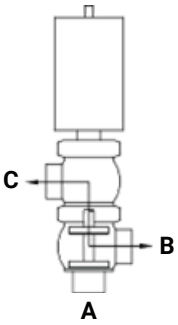
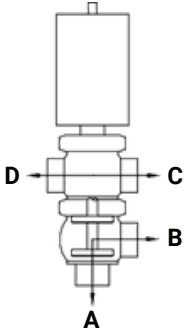
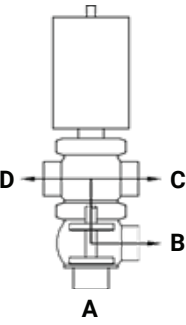
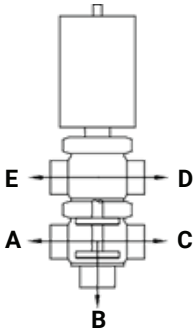
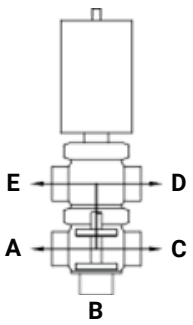
TT-90 Body



SSV-Series Single Seat Valve - Flow Paths

| Body Style                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L-Body                                                                                                                                                                                                                             | T-Body                                                                                                                                                                                                                                               | F-Body                                                                                                                                                                                                                                                 | L/T-Body                                                                                                                                                                                                                                                                   |
| <p>Open</p>  <p>A</p> <p>B</p> <p>Closed</p>  <p>A</p> <p>B</p> | <p>Open</p>  <p>A</p> <p>B</p> <p>C</p> <p>Closed</p>  <p>A</p> <p>B</p> <p>C</p> | <p>Open</p>  <p>A</p> <p>B</p> <p>C</p> <p>Closed</p>  <p>A</p> <p>B</p> <p>C</p> | <p>Open</p>  <p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>Closed</p>  <p>A</p> <p>B</p> <p>C</p> <p>D</p> |

G

| Body Style                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L/L-Body                                                                                                                                                                                                                                                | T/L-Body                                                                                                                                                                                                                                                                  | T/T-Body                                                                                                                                                                                                                                                                                        |
| <p>Open</p>  <p>A</p> <p>B</p> <p>C</p> <p>Closed</p>  <p>A</p> <p>B</p> <p>C</p> | <p>Open</p>  <p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>Closed</p>  <p>A</p> <p>B</p> <p>C</p> <p>D</p> | <p>Open</p>  <p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>Closed</p>  <p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> |

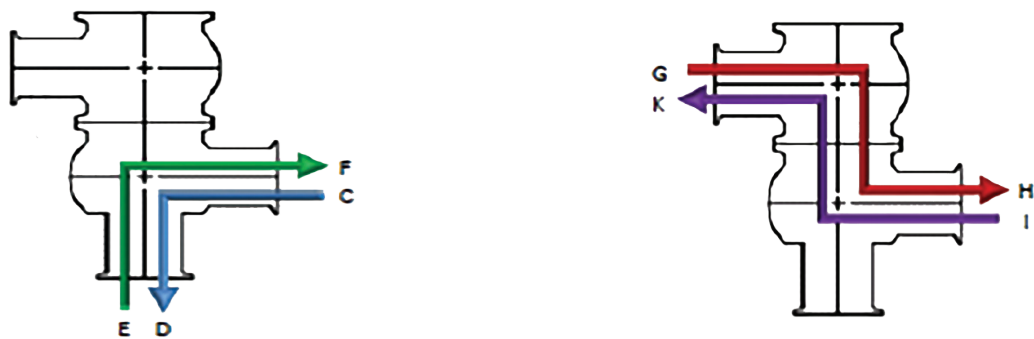
SSV-Series Single Seat Valve - Divert Pressure Drop Chart



| Δp [PSI] | Valve Size |        |        |        |        |        |        |        |
|----------|------------|--------|--------|--------|--------|--------|--------|--------|
|          | 1"         |        |        |        | 1-1/2" |        |        |        |
|          | C-D        | E-F    | G-H    | I-K    | C-D    | E-F    | G-H    | I-K    |
|          | Q[GPM]     | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] |
| 3.6      | 26.40      | 25.52  | 27.10  | 26.84  | 65.34  | 63.27  | 67.19  | 66.44  |
| 7.3      | 37.40      | 36.08  | 38.28  | 38.02  | 92.40  | 89.50  | 95.04  | 94.16  |
| 14.5     | 52.67      | 51.04  | 54.16  | 53.77  | 130.68 | 126.54 | 134.77 | 133.32 |
| 21.8     | 64.68      | 62.48  | 66.44  | 65.82  | 160.16 | 155.01 | 164.56 | 163.24 |
| 29.0     | 74.49      | 72.16  | 76.56  | 76.03  | 184.80 | 179.08 | 190.08 | 188.54 |
| 36.3     | 83.29      | 80.70  | 85.67  | 84.92  | 206.62 | 200.20 | 212.52 | 210.76 |
| 43.5     | 91.21      | 88.44  | 93.85  | 93.10  | 226.34 | 219.16 | 232.76 | 231.00 |
| 50.8     | 98.56      | 95.48  | 101.20 | 100.58 | 244.51 | 236.72 | 251.24 | 249.48 |
| 58.0     | 105.34     | 102.08 | 107.49 | 107.36 | 261.36 | 253.09 | 268.40 | 266.64 |
| 65.3     | 111.76     | 108.24 | 114.84 | 113.96 | 277.20 | 268.40 | 285.12 | 282.92 |
| 72.5     | 117.74     | 114.14 | 121.18 | 120.12 | 292.16 | 282.92 | 300.52 | 298.32 |

| Δp [PSI] | Valve Size |        |        |        |        |        |        |        |
|----------|------------|--------|--------|--------|--------|--------|--------|--------|
|          | 2"         |        |        |        | 2-1/2" |        |        |        |
|          | C-D        | E-F    | G-H    | I-K    | C-D    | E-F    | G-H    | I-K    |
|          | Q[GPM]     | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] |
| 3.6      | 121.66     | 117.92 | 125.18 | 124.08 | 195.36 | 189.42 | 201.08 | 199.76 |
| 7.3      | 172.04     | 166.76 | 176.88 | 175.56 | 276.32 | 267.87 | 284.24 | 282.04 |
| 14.5     | 243.32     | 235.84 | 250.36 | 248.16 | 390.72 | 378.84 | 402.16 | 399.08 |
| 21.8     | 298.01     | 288.86 | 306.68 | 304.04 | 478.54 | 464.20 | 492.36 | 488.84 |
| 29.0     | 344.08     | 333.52 | 354.20 | 351.12 | 552.55 | 535.92 | 568.92 | 564.52 |
| 36.3     | 384.74     | 372.90 | 396.00 | 392.48 | 617.76 | 599.02 | 635.80 | 630.96 |
| 43.5     | 421.52     | 408.50 | 433.84 | 429.88 | 676.72 | 656.17 | 696.52 | 691.24 |
| 50.8     | 455.40     | 441.32 | 468.60 | 464.20 | 730.97 | 708.84 | 752.40 | 746.68 |
| 58.0     | 486.64     | 471.68 | 500.72 | 496.32 | 781.44 | 757.68 | 804.32 | 798.16 |
| 65.3     | 516.12     | 500.28 | 531.08 | 526.24 | 828.96 | 803.66 | 853.16 | 846.56 |
| 72.5     | 544.28     | 527.56 | 559.68 | 554.84 | 873.84 | 847.13 | 899.36 | 892.32 |

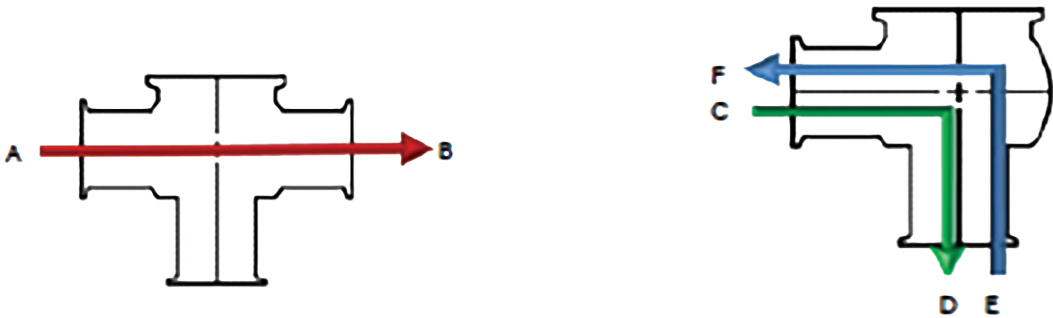
SSV-Series Single Seat Valve - Divert Pressure Drop Chart



| Δp [PSI] | Valve Size |         |         |         |         |         |         |         |
|----------|------------|---------|---------|---------|---------|---------|---------|---------|
|          | 3"         |         |         |         | 4"      |         |         |         |
|          | C-D        | E-F     | G-H     | I-K     | C-D     | E-F     | G-H     | I-K     |
|          | Q[GPM]     | Q[GPM]  | Q[GPM]  | Q[GPM]  | Q[GPM]  | Q[GPM]  | Q[GPM]  | Q[GPM]  |
| 3.6      | 286.53     | 277.68  | 294.80  | 292.60  | 511.28  | 495.53  | 525.80  | 521.84  |
| 7.3      | 404.80     | 392.70  | 416.90  | 413.60  | 723.05  | 700.74  | 743.60  | 737.88  |
| 14.5     | 573.01     | 555.37  | 589.60  | 585.20  | 1022.56 | 991.01  | 1051.60 | 1043.68 |
| 21.8     | 701.80     | 680.24  | 722.04  | 717.20  | 1252.37 | 1213.74 | 1287.88 | 1278.20 |
| 29.0     | 810.48     | 785.40  | 833.80  | 827.64  | 1446.10 | 1401.49 | 1487.20 | 1476.20 |
| 36.3     | 906.05     | 878.24  | 932.80  | 925.32  | 1617.00 | 1567.28 | 1663.20 | 1650.00 |
| 43.5     | 992.51     | 961.93  | 1021.24 | 1013.76 | 1771.13 | 1716.44 | 1821.60 | 1808.40 |
| 50.8     | 1072.02    | 1039.02 | 1103.08 | 1094.72 | 1913.12 | 1854.16 | 1967.24 | 1953.60 |
| 58.0     | 1146.02    | 1110.74 | 1179.20 | 1170.40 | 2045.12 | 1982.02 | 2103.20 | 2087.36 |
| 65.3     | 1215.54    | 1178.10 | 1250.92 | 1241.24 | 2169.20 | 2102.23 | 2230.80 | 2214.08 |
| 72.5     | 1281.28    | 1241.86 | 1318.24 | 1308.56 | 2286.68 | 2215.97 | 2351.36 | 2333.76 |

G

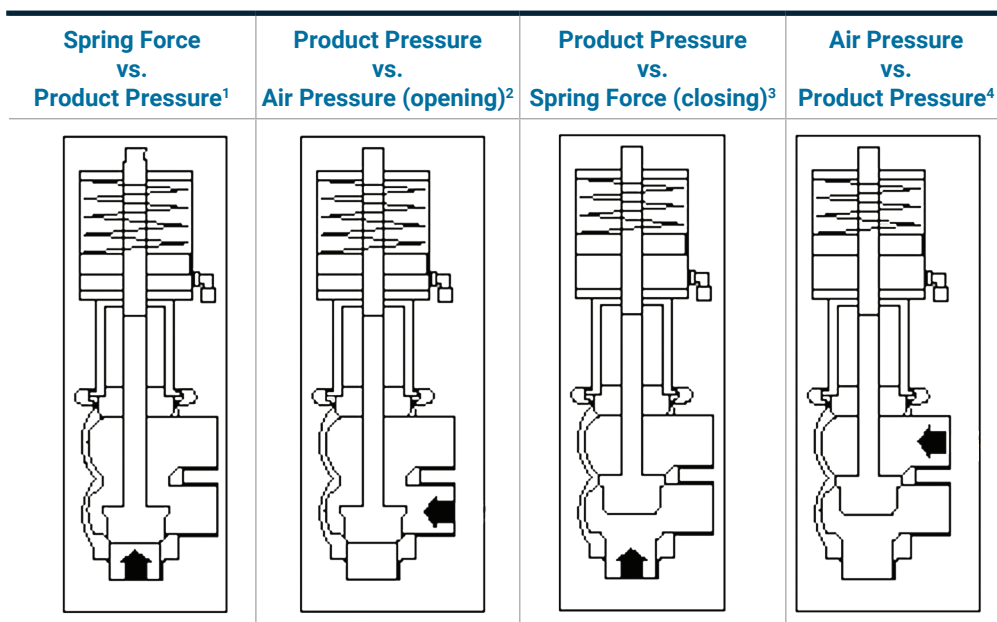
SSV-Series Single Seat Valve - Shut-Off Pressure Drop Chart



| Ap [PSI] | Valve Size |        |        |        |        |        |        |        |        |
|----------|------------|--------|--------|--------|--------|--------|--------|--------|--------|
|          | 1"         |        |        | 1-1/2" |        |        | 2"     |        |        |
|          | A-B        | C-D    | E-F    | A-B    | C-D    | E-F    | A-B    | C-D    | E-F    |
|          | Q[GPM]     | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] | Q[GPM] |
| 3.6      | 26.75      | 26.40  | 25.52  | 66.35  | 65.34  | 63.27  | 123.64 | 121.66 | 117.92 |
| 7.3      | 37.84      | 37.40  | 36.08  | 93.85  | 92.40  | 89.50  | 166.06 | 172.04 | 166.76 |
| 14.5     | 53.52      | 52.67  | 51.04  | 132.70 | 130.68 | 126.54 | 247.28 | 243.32 | 235.84 |
| 21.8     | 65.56      | 64.68  | 62.48  | 162.54 | 160.16 | 155.01 | 302.85 | 298.01 | 288.86 |
| 29.0     | 75.68      | 74.49  | 72.16  | 187.66 | 184.80 | 179.08 | 349.80 | 344.08 | 333.52 |
| 36.3     | 84.61      | 83.29  | 80.70  | 209.88 | 206.62 | 200.20 | 390.98 | 384.74 | 372.90 |
| 43.5     | 92.84      | 91.21  | 88.44  | 229.86 | 226.34 | 219.16 | 428.30 | 421.52 | 408.50 |
| 50.8     | 100.14     | 98.56  | 95.48  | 248.29 | 244.51 | 236.72 | 462.62 | 455.40 | 441.32 |
| 58.0     | 107.05     | 105.34 | 102.08 | 265.32 | 261.36 | 253.09 | 494.56 | 486.64 | 471.68 |
| 65.3     | 113.52     | 111.76 | 108.24 | 281.60 | 277.20 | 268.40 | 524.57 | 516.12 | 500.28 |
| 72.5     | 119.68     | 117.74 | 114.14 | 296.74 | 292.16 | 282.92 | 553.08 | 544.28 | 527.56 |

| Ap [PSI] | Valve Size |        |        |         |         |         |         |         |         |
|----------|------------|--------|--------|---------|---------|---------|---------|---------|---------|
|          | 2-1/2"     |        |        | 3"      |         |         | 4"      |         |         |
|          | A-B        | C-D    | E-F    | A-B     | C-D     | E-F     | A-B     | C-D     | E-F     |
|          | Q[GPM]     | Q[GPM] | Q[GPM] | Q[GPM]  | Q[GPM]  | Q[GPM]  | Q[GPM]  | Q[GPM]  | Q[GPM]  |
| 3.6      | 198.57     | 195.36 | 189.42 | 291.28  | 286.53  | 277.68  | 519.64  | 511.28  | 495.53  |
| 7.3      | 280.81     | 276.32 | 267.87 | 411.93  | 404.80  | 392.70  | 734.80  | 723.05  | 700.74  |
| 14.5     | 397.14     | 390.72 | 378.84 | 582.56  | 573.01  | 555.37  | 1039.28 | 1022.56 | 991.01  |
| 21.8     | 486.42     | 478.54 | 464.20 | 713.50  | 701.80  | 680.24  | 1272.92 | 1252.37 | 1213.74 |
| 29.0     | 561.66     | 552.55 | 535.92 | 823.86  | 810.48  | 785.40  | 1469.78 | 1446.10 | 1401.49 |
| 36.3     | 627.92     | 617.76 | 599.02 | 921.10  | 906.05  | 878.24  | 1643.27 | 1617.00 | 1567.28 |
| 43.5     | 687.90     | 676.72 | 656.17 | 1009.05 | 992.51  | 961.93  | 1800.04 | 1771.13 | 1716.44 |
| 50.8     | 742.98     | 730.97 | 708.84 | 1089.88 | 1072.02 | 1039.02 | 1944.36 | 1913.12 | 1854.16 |
| 58.0     | 794.29     | 781.44 | 757.68 | 1165.12 | 1146.02 | 1110.74 | 2078.56 | 2045.12 | 1982.02 |
| 65.3     | 842.60     | 828.96 | 803.66 | 1235.96 | 1215.54 | 1178.10 | 2204.40 | 2169.20 | 2102.23 |
| 72.5     | 888.05     | 873.84 | 847.13 | 1302.40 | 1281.28 | 1241.86 | 2324.08 | 2286.68 | 2215.97 |

## SSV-Series Single Seat Valve - Spring Return (Air-to-Raise) Holding Pressure Chart



| Plant Supply Air | Valve Size | Actuator Size | Seat Material | bar  | PSI   | bar  | PSI   | bar  | PSI   | bar  | PSI   |
|------------------|------------|---------------|---------------|------|-------|------|-------|------|-------|------|-------|
| 80 PSI           | 1"         | 1"            | Elastomer     | 12.3 | 178.4 | 16.0 | 232.0 | 6.8  | 98.6  | 16.0 | 232.0 |
|                  |            |               | PTFE          | 10.3 | 149.4 | 16.0 | 232.0 | 6.9  | 100.1 | 16.0 | 232.0 |
|                  | 1-1/2"     | 2"            | Elastomer     | 17.3 | 251.1 | 16.0 | 232.0 | 12.1 | 175.5 | 16.0 | 232.0 |
|                  |            |               | PTFE          | 9.8  | 142.1 | 16.0 | 232.0 | 13.6 | 197.2 | 14.9 | 216.1 |
|                  | 2"         | 2"            | Elastomer     | 9.3  | 134.9 | 9.8  | 142.1 | 8.2  | 118.9 | 8.8  | 127.6 |
|                  |            |               | PTFE          | 10.6 | 153.7 | 10.3 | 149.4 | 7.6  | 110.2 | 9.8  | 142.1 |
|                  | 2-1/2"     | 3"            | Elastomer     | 14.0 | 203.0 | 10.8 | 156.6 | 11.3 | 163.1 | 14.3 | 207.4 |
|                  |            |               | PTFE          | 10.1 | 146.0 | 15.2 | 220.4 | 12.9 | 187.1 | 13.6 | 197.2 |
|                  | 3"         | 3"            | Elastomer     | 9.5  | 137.8 | 9.3  | 134.9 | 8.3  | 120.4 | 8.8  | 127.6 |
|                  |            |               | PTFE          | 9.8  | 142.1 | 10.2 | 147.9 | 8.3  | 120.4 | 10.9 | 158.1 |
|                  | 4"         | 3"            | Elastomer     | 4.8  | 69.6  | 5.3  | 76.9  | 5.2  | 75.4  | 5.4  | 78.3  |
|                  |            |               | PTFE          | 5.0  | 72.5  | 5.6  | 81.2  | 5.5  | 79.8  | 5.9  | 85.6  |

NOTE: **80 PSI** required for spring return actuators. Do not exceed **80 PSI**.

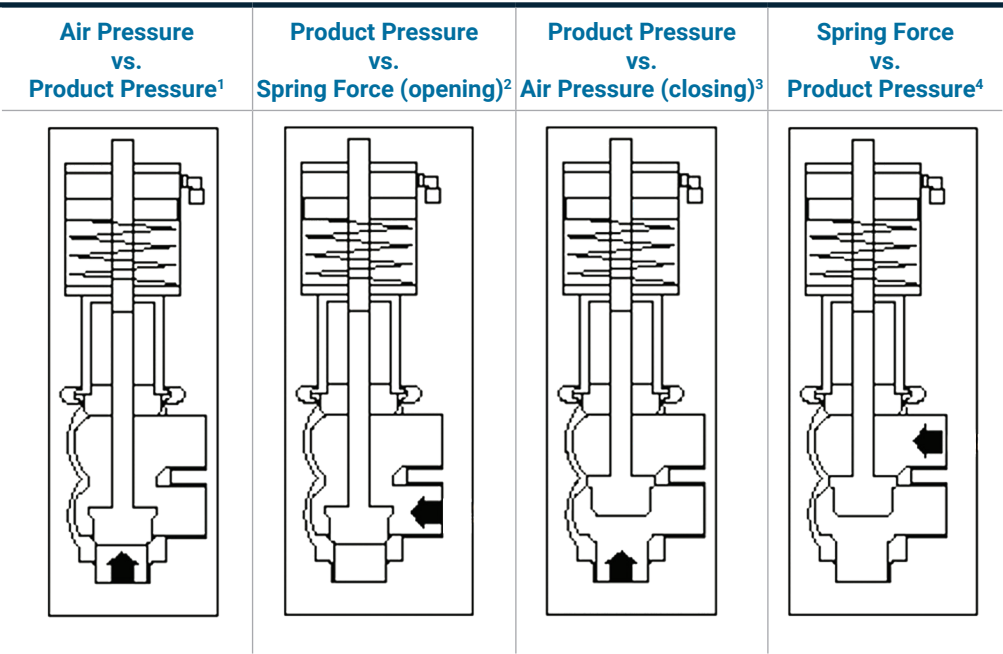
<sup>1</sup>Product line pressure required to overcome the spring force of the actuator from the bottom port in the lowered position.

<sup>2</sup>Product line pressure required from the side port to prevent the valve stem from actuating to the raised position when actuated with **80 PSI** air.

<sup>3</sup>Product line pressure required from the bottom port to prevent the actuator spring from actuating to the lower position.

<sup>4</sup>Product line pressure required from the side port to overcome the actuated valve at **80 PSI** to force the valve stem to lower position.

SSV-Series Single Seat Valve - Spring Return (Air-to-Lower) Holding Pressure Chart



| Plant<br>Supply<br>Air | Valve<br>Size | Actuator<br>Size | Seat<br>Material | bar  | PSI   | bar  | PSI   | bar  | PSI   | bar  | PSI   |
|------------------------|---------------|------------------|------------------|------|-------|------|-------|------|-------|------|-------|
| 80 PSI                 | 1"            | 1"               | Elastomer        | 16.0 | 232.0 | 9.3  | 134.9 | 12.8 | 185.6 | 11.8 | 171.1 |
|                        |               |                  | PTFE             | 16.0 | 232.0 | 11.8 | 170.8 | 15.0 | 217.5 | 9.3  | 134.9 |
|                        | 1-1/2"        | 2"               | Elastomer        | 16.0 | 232.0 | 15.8 | 229.1 | 14.8 | 214.6 | 16.0 | 232.0 |
|                        |               |                  | PTFE             | 8.8  | 127.6 | 16.0 | 232.0 | 14.0 | 203.0 | 13.6 | 197.2 |
|                        | 2"            | 2"               | Elastomer        | 10.1 | 146.5 | 9.2  | 133.4 | 8.1  | 117.5 | 9.5  | 137.8 |
|                        |               |                  | PTFE             | 8.1  | 117.5 | 10.1 | 146.5 | 8.4  | 121.8 | 9.2  | 133.4 |
|                        | 2-1/2"        | 3"               | Elastomer        | 15.8 | 229.1 | 12.8 | 185.6 | 11.0 | 159.5 | 12.9 | 187.1 |
|                        |               |                  | PTFE             | 9.7  | 140.7 | 14.8 | 214.6 | 13.4 | 194.3 | 11.8 | 171.1 |
|                        | 3"            | 3"               | Elastomer        | 10.0 | 145.0 | 9.3  | 134.9 | 9.3  | 134.9 | 9.1  | 132.0 |
|                        |               |                  | PTFE             | 10.0 | 145.0 | 9.1  | 131.7 | 9.3  | 134.9 | 9.7  | 140.7 |
|                        | 4"            | 3"               | Elastomer        | 5.3  | 76.9  | 5.3  | 76.9  | 5.1  | 74.0  | 4.8  | 69.6  |
|                        |               |                  | PTFE             | 4.4  | 63.8  | 5.6  | 81.2  | 5.8  | 84.1  | 4.4  | 63.8  |

NOTE: 80 PSI required for spring return actuators. Do not exceed 80 PSI.

<sup>1</sup>Product line pressure required from the bottom port to overcome the actuated valve at 80 PSI to force the valve stem to the raised position.

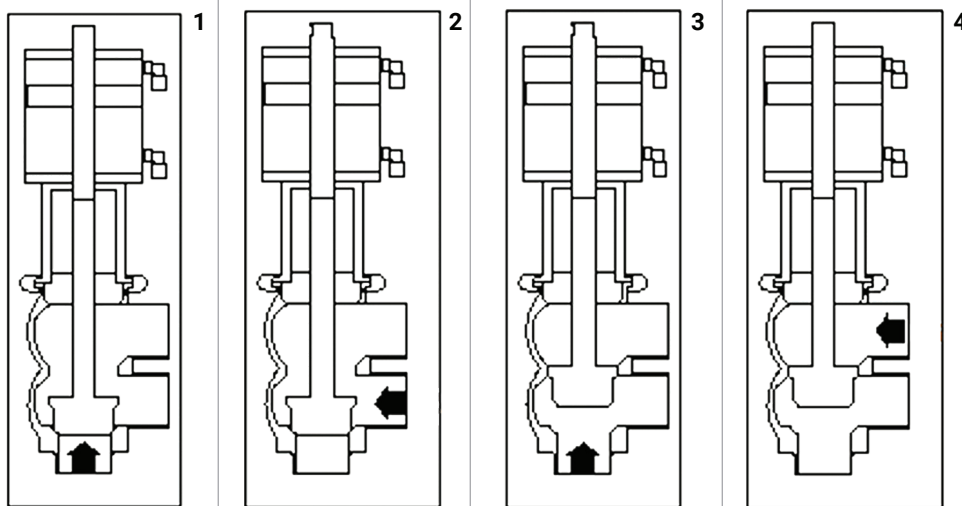
<sup>2</sup>Product line pressure required from the side port to prevent the actuator spring from actuating to the raised position.

<sup>3</sup>Product line pressure required from the bottom port to prevent the actuated valve from actuating to the lower position at 80 PSI.

<sup>4</sup>Product line pressure required from the side port to overcome the spring force of the actuator to force the valve stem to the lower position.

## SSV-Series Single Seat Valve - Double Acting Actuator Holding Pressure Chart

Air Pressure  
vs.  
Product Pressure



| Plant Supply Air | Valve Size | Actuator Size | Seat Material | bar  | PSI   | bar  | PSI   | bar  | PSI   | bar  | PSI   |
|------------------|------------|---------------|---------------|------|-------|------|-------|------|-------|------|-------|
| 45 PSI           | 1"         | 1"            | Elastomer     | 12.3 | 178.4 | 16.0 | 232.0 | 6.8  | 98.6  | 16.0 | 232.0 |
|                  |            |               | PTFE          | 10.3 | 149.4 | 16.0 | 232.0 | 6.9  | 100.1 | 16.0 | 232.0 |
|                  | 1-1/2"     | 2"            | Elastomer     | 17.3 | 251.1 | 16.0 | 232.0 | 12.1 | 175.5 | 16.0 | 232.0 |
|                  |            |               | PTFE          | 9.8  | 142.1 | 16.0 | 232.0 | 13.6 | 197.2 | 14.9 | 216.1 |
|                  | 2"         | 2"            | Elastomer     | 9.3  | 134.9 | 9.8  | 142.1 | 8.2  | 118.9 | 8.8  | 127.6 |
|                  |            |               | PTFE          | 10.6 | 153.7 | 10.3 | 149.4 | 7.6  | 110.2 | 9.8  | 142.1 |
|                  | 2-1/2"     | 3"            | Elastomer     | 14.0 | 203.0 | 10.8 | 156.6 | 11.3 | 163.1 | 14.3 | 207.4 |
|                  |            |               | PTFE          | 10.1 | 146.0 | 15.2 | 220.4 | 12.9 | 187.1 | 13.6 | 197.2 |
|                  | 3"         | 3"            | Elastomer     | 9.5  | 137.8 | 9.3  | 134.9 | 8.3  | 120.4 | 8.8  | 127.6 |
|                  |            |               | PTFE          | 9.8  | 142.1 | 10.2 | 147.9 | 8.3  | 120.4 | 10.9 | 158.1 |
|                  | 4"         | 3"            | Elastomer     | 4.8  | 69.6  | 5.3  | 76.9  | 5.2  | 75.4  | 5.4  | 78.3  |
|                  |            |               | PTFE          | 5.0  | 72.5  | 5.6  | 81.2  | 5.5  | 79.8  | 5.9  | 85.6  |

NOTE: **45 PSI** required for double acting actuators. Do not exceed **45 PSI**.

<sup>1</sup>Product line pressure required from the bottom port to overcome the actuated valve at **80 PSI** to force the valve stem to the raised position.

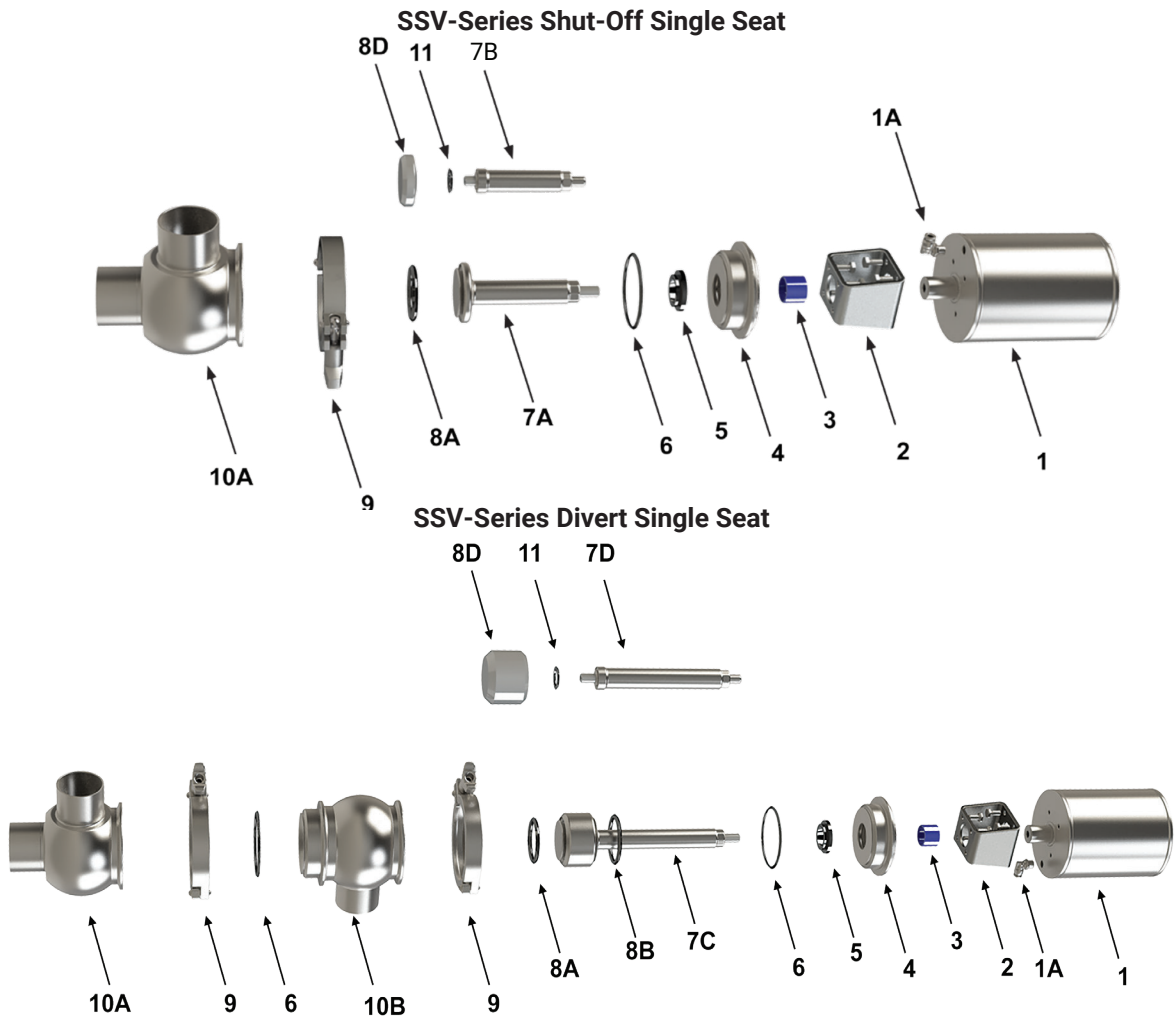
<sup>2</sup>Product line pressure required from the side port to prevent the actuated valve at **80 PSI** from actuating to the raised position.

<sup>3</sup>Product line pressure required from the bottom port to prevent the actuated valve at **80 PSI** from actuating to the lower position.

<sup>4</sup>Product line pressure required from the side port to overcome the actuated valve at **80 PSI** to force the valve stem to the lower position.



SSV-Series Single Seat Valve - Bill of Materials



| Part Type                    | Part #          | Item # | Material | Description                               | Qty      |        | Valve Type        |
|------------------------------|-----------------|--------|----------|-------------------------------------------|----------|--------|-------------------|
|                              |                 |        |          |                                           | Shut-Off | Divert |                   |
| Actuator                     | SSV-ACT-SR-10   | 1      | 304 SS   | 1" spring-return actuator                 | 1        | 1      | Shut-Off / Divert |
|                              | SSV-ACT-SR-1520 |        | 304 SS   | 1-1/2" to 2" spring-return actuator       | 1        | 1      |                   |
|                              | SSV-ACT-SR-2540 |        | 304 SS   | 2-1/2" to 4" spring-return actuator       | 1        | 1      |                   |
|                              | SSV-ACT-DA-10   |        | 304 SS   | 1" double acting actuator                 | 1        | 1      |                   |
|                              | SSV-ACT-DA-1520 |        | 304 SS   | 1-1/2" to 2" double acting actuator       | 1        | 1      |                   |
|                              | SSV-ACT-DA-2540 |        | 304 SS   | 2-1/2" to 4" double acting actuator       | 1        | 1      |                   |
| Air Fitting                  | 36095611        | 1A     | Ni Brass | 1" to 4" male NPT push-in swivel elbow    | 1*       | 1*     | Shut-Off / Divert |
| Actuator Adapter Bracket     | SSV-AB10        | 2      | 304 SS   | 1" actuator adapter bracket               | 1        | 1      | Shut-Off / Divert |
|                              | SSV-AB1540      |        | 304 SS   | 1-1/2" to 4" actuator adapter bracket     | 1        | 1      |                   |
| Adapter Flange Slide Bearing | SSV-AFSB-1015   | 3      | 316L SS  | 1" to 1-1/2" adapter flange slide bearing | 1        | 1      | Shut-Off / Divert |
|                              | SSV-AFSB-2040   |        | 316L SS  | 2" to 4" adapter flange slide bearing     | 1        | 1      |                   |
| Adapter Flange               | SSV-ADFLNG-10   | 4      | 316L SS  | 1" adapter flange                         | 1        | 1      | Shut-Off / Divert |
|                              | SSV-ADFLNG-15   |        | 316L SS  | 1-1/2" adapter flange                     | 1        | 1      |                   |
|                              | SSV-ADFLNG-20   |        | 316L SS  | 2" adapter flange                         | 1        | 1      |                   |
|                              | SSV-ADFLNG-25   |        | 316L SS  | 2-1/2" adapter flange                     | 1        | 1      |                   |
|                              | SSV-ADFLNG-30   |        | 316L SS  | 3" adapter flange                         | 1        | 1      |                   |
|                              | SSV-ADFLNG-40   |        | 316L SS  | 4" adapter flange                         | 1        | 1      |                   |

NOTE: \*Use Qty 2 for double acting actuators

## SSV-Series Single Seat Valve - Bill of Materials

## SSV-Series Shut-Off and Divert Single Seats

| Part Type                                 | Part #        | Item # | Material | Description                                      | Qty      |        | Valve Type        |
|-------------------------------------------|---------------|--------|----------|--------------------------------------------------|----------|--------|-------------------|
|                                           |               |        |          |                                                  | Shut-Off | Divert |                   |
| Stem Lip Seal                             | SSV-LSE-1015  | 5      | EPDM     | 1" to 1-1/2" stem lip seal                       | 1        | 1      | Shut-Off / Divert |
|                                           | SSV-LSE-2040  |        | EPDM     | 2" to 4" stem lip seal                           | 1        | 1      |                   |
|                                           | SSV-LSV-1015  | 5      | FKM      | 1" to 1-1/2" stem lip seal                       | 1        | 1      | Shut-Off / Divert |
|                                           | SSV-LSV-2040  |        | FKM      | 2" to 4" stem lip seal                           | 1        | 1      |                   |
| Adapter Flange Seal O-Ring                | SSV-AFSO-E-10 | 6      | EPDM     | 1" adapter flange seal O-ring                    | 1        | 2      | Shut-Off / Divert |
|                                           | SSV-AFSO-E-15 |        | EPDM     | 1-1/2" adapter flange seal O-ring                | 1        | 2      |                   |
|                                           | SSV-AFSO-E-20 |        | EPDM     | 2" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-E-25 |        | EPDM     | 2-1/2" adapter flange seal O-ring                | 1        | 2      |                   |
|                                           | SSV-AFSO-E-30 |        | EPDM     | 3" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-E-40 |        | EPDM     | 4" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-V-10 | 6      | FKM      | 1" adapter flange seal O-ring                    | 1        | 2      | Shut-Off / Divert |
|                                           | SSV-AFSO-V-15 |        | FKM      | 1-1/2" adapter flange seal O-ring                | 1        | 2      |                   |
|                                           | SSV-AFSO-V-20 |        | FKM      | 2" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-V-25 |        | FKM      | 2-1/2" adapter flange seal O-ring                | 1        | 2      |                   |
|                                           | SSV-AFSO-V-30 |        | FKM      | 3" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-V-40 |        | FKM      | 4" adapter flange seal O-ring                    | 1        | 2      |                   |
| Single Body Valve Stem (Elastomeric Seal) | SSV-SVS-OS-10 | 7A     | 316L SS  | 1" single body valve stem (elastomeric seal)     | 1        | -      | Shut-Off          |
|                                           | SSV-SVS-OS-15 |        | 316L SS  | 1-1/2" single body valve stem (elastomeric seal) | 1        | -      |                   |
|                                           | SSV-SVS-OS-20 |        | 316L SS  | 2" single body valve stem (elastomeric seal)     | 1        | -      |                   |
|                                           | SSV-SVS-OS-25 |        | 316L SS  | 2-1/2" single body valve stem (elastomeric seal) | 1        | -      |                   |
|                                           | SSV-SVS-OS-30 |        | 316L SS  | 3" single body valve stem (elastomeric seal)     | 1        | -      |                   |
|                                           | SSV-SVS-OS-40 |        | 316L SS  | 4" single body valve stem (elastomeric seal)     | 1        | -      |                   |
| Single Body Valve Stem (PTFE Seal)        | SSV-SVS-PS-10 | 7B     | 316L SS  | 1" single body valve stem (PTFE seal)            | 1        | -      | Shut-Off          |
|                                           | SSV-SVS-PS-15 |        | 316L SS  | 1-1/2" single body valve stem (PTFE seal)        | 1        | -      |                   |
|                                           | SSV-SVS-PS-20 |        | 316L SS  | 2" single body valve stem (PTFE seal)            | 1        | -      |                   |
|                                           | SSV-SVS-PS-25 |        | 316L SS  | 2-1/2" single body valve stem (PTFE seal)        | 1        | -      |                   |
|                                           | SSV-SVS-PS-30 |        | 316L SS  | 3" single body valve stem (PTFE seal)            | 1        | -      |                   |
|                                           | SSV-SVS-PS-40 |        | 316L SS  | 4" single body valve stem (PTFE seal)            | 1        | -      |                   |
| Double Body Valve Stem (Elastomeric Seal) | SSV-DVS-OS-10 | 7C     | 316L SS  | 1" double body valve stem (elastomeric seal)     | -        | 1      | Divert            |
|                                           | SSV-DVS-OS-15 |        | 316L SS  | 1-1/2" double body valve stem (elastomeric seal) | -        | 1      |                   |
|                                           | SSV-DVS-OS-20 |        | 316L SS  | 2" double body valve stem (elastomeric seal)     | -        | 1      |                   |
|                                           | SSV-DVS-OS-25 |        | 316L SS  | 2-1/2" double body valve stem (elastomeric seal) | -        | 1      |                   |
|                                           | SSV-DVS-OS-30 |        | 316L SS  | 3" double body valve stem (elastomeric seal)     | -        | 1      |                   |
|                                           | SSV-DVS-OS-40 |        | 316L SS  | 4" double body valve stem (elastomeric seal)     | -        | 1      |                   |
| Double Body Valve Stem (PTFE Seal)        | SSV-DVS-PS-10 | 7D     | 316L SS  | 1" double body valve stem (PTFE seal)            | -        | 1      | Divert            |
|                                           | SSV-DVS-PS-15 |        | 316L SS  | 1-1/2" double body valve stem (PTFE seal)        | -        | 1      |                   |
|                                           | SSV-DVS-PS-20 |        | 316L SS  | 2" double body valve stem (PTFE seal)            | -        | 1      |                   |
|                                           | SSV-DVS-PS-25 |        | 316L SS  | 2-1/2" double body valve stem (PTFE seal)        | -        | 1      |                   |
|                                           | SSV-DVS-PS-30 |        | 316L SS  | 3" double body valve stem (PTFE seal)            | -        | 1      |                   |
|                                           | SSV-DVS-PS-40 |        | 316L SS  | 4" double body valve stem (PTFE seal)            | -        | 1      |                   |

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## SSV-Series Single Seat Valve - Bill of Materials

## SSV-Series Shut-Off and Divert Single Seats

| Part Type              | Part #        | Item # | Material | Description                       | Qty      |        | Valve Type        |
|------------------------|---------------|--------|----------|-----------------------------------|----------|--------|-------------------|
|                        |               |        |          |                                   | Shut-Off | Divert |                   |
| Lower Stem Seal O-Ring | SSV-LSOR-E-10 | 8A     | EPDM     | 1" lower stem seal O-ring         | 1        | 1      | Shut-Off / Divert |
|                        | SSV-LSOR-E-15 |        | EPDM     | 1-1/2" lower stem seal O-ring     | 1        | 1      |                   |
|                        | SSV-LSOR-E-20 |        | EPDM     | 2" lower stem seal O-ring         | 1        | 1      |                   |
|                        | SSV-LSOR-E-25 |        | EPDM     | 2-1/2" lower stem seal O-ring     | 1        | 1      |                   |
|                        | SSV-LSOR-E-30 |        | EPDM     | 3" lower stem seal O-ring         | 1        | 1      |                   |
|                        | SSV-LSOR-E-40 |        | EPDM     | 4" lower stem seal O-ring         | 1        | 1      |                   |
|                        | SSV-LSOR-V-10 | 8A     | FKM      | 1" lower stem seal O-ring         | 1        | 1      | Shut-Off / Divert |
|                        | SSV-LSOR-V-15 |        | FKM      | 1-1/2" lower stem seal O-ring     | 1        | 1      |                   |
|                        | SSV-LSOR-V-20 |        | FKM      | 2" lower stem seal O-ring         | 1        | 1      |                   |
|                        | SSV-LSOR-V-25 |        | FKM      | 2-1/2" lower stem seal O-ring     | 1        | 1      |                   |
|                        | SSV-LSOR-V-30 |        | FKM      | 3" lower stem seal O-ring         | 1        | 1      |                   |
|                        | SSV-LSOR-V-40 |        | FKM      | 4" lower stem seal O-ring         | 1        | 1      |                   |
| Upper Stem Seal O-Ring | SSV-USOR-E-10 | 8B     | EPDM     | 1" upper stem seal O-ring         | -        | 1      | Divert            |
|                        | SSV-USOR-E-15 |        | EPDM     | 1-1/2" upper stem seal O-ring     | -        | 1      |                   |
|                        | SSV-USOR-E-20 |        | EPDM     | 2" upper stem seal O-ring         | -        | 1      |                   |
|                        | SSV-USOR-E-25 |        | EPDM     | 2-1/2" upper stem seal O-ring     | -        | 1      |                   |
|                        | SSV-USOR-E-30 |        | EPDM     | 3" upper stem seal O-ring         | -        | 1      |                   |
|                        | SSV-USOR-E-40 |        | EPDM     | 4" upper stem seal O-ring         | -        | 1      |                   |
|                        | SSV-USOR-V-10 | 8B     | FKM      | 1" upper stem seal O-ring         | -        | 1      | Divert            |
|                        | SSV-USOR-V-15 |        | FKM      | 1-1/2" upper stem seal O-ring     | -        | 1      |                   |
|                        | SSV-USOR-V-20 |        | FKM      | 2" upper stem seal O-ring         | -        | 1      |                   |
|                        | SSV-USOR-V-25 |        | FKM      | 2-1/2" upper stem seal O-ring     | -        | 1      |                   |
|                        | SSV-USOR-V-30 |        | FKM      | 3" upper stem seal O-ring         | -        | 1      |                   |
|                        | SSV-USOR-V-40 |        | FKM      | 4" upper stem seal O-ring         | -        | 1      |                   |
| Stem Seal Plug         | SSV-SBSP-P-10 | 8C     | PTFE     | 1" single body stem seal plug     | 1        | -      | Shut-Off          |
|                        | SSV-SBSP-P-15 |        | PTFE     | 1-1/2" single body stem seal plug | 1        | -      |                   |
|                        | SSV-SBSP-P-20 |        | PTFE     | 2" single body stem seal plug     | 1        | -      |                   |
|                        | SSV-SBSP-P-25 |        | PTFE     | 2-1/2" single body stem seal plug | 1        | -      |                   |
|                        | SSV-SBSP-P-30 |        | PTFE     | 3" single body stem seal plug     | 1        | -      |                   |
|                        | SSV-SBSP-P-40 |        | PTFE     | 4" single body stem seal plug     | 1        | -      |                   |
|                        | SSV-DBSP-P-10 | 8D     | PTFE     | 1" double body stem seal plug     | -        | 1      | Divert            |
|                        | SSV-DBSP-P-15 |        | PTFE     | 1-1/2" double body stem seal plug | -        | 1      |                   |
|                        | SSV-DBSP-P-20 |        | PTFE     | 2" double body stem seal plug     | -        | 1      |                   |
|                        | SSV-DBSP-P-25 |        | PTFE     | 2-1/2" double body stem seal plug | -        | 1      |                   |
|                        | SSV-DBSP-P-30 |        | PTFE     | 3" double body stem seal plug     | -        | 1      |                   |
|                        | SSV-DBSP-P-40 |        | PTFE     | 4" double body stem seal plug     | -        | 1      |                   |
| Body Clamp             | 13MHM200SN    | 9      | 304 SS   | 1" body clamp                     | 1        | 2      | Shut-Off / Divert |
|                        | 13MHM250SN    |        | 304 SS   | 1-1/2" body clamp                 | 1        | 2      |                   |
|                        | 13MHM300SN    |        | 304 SS   | 2" body clamp                     | 1        | 2      |                   |
|                        | 13MHM300SN    |        | 304 SS   | 2-1/2" body clamp                 | 1        | 2      |                   |
|                        | 13MHM400SN    |        | 304 SS   | 3" body clamp                     | 1        | 2      |                   |
|                        | 13MHM500SN    |        | 304 SS   | 4" body clamp                     | 1        | 2      |                   |

## SSV-Series Single Seat Valve - Bill of Materials

## SSV-Series Shut-Off and Divert Single Seats

| Part Type                           | Part #     | Item # | Material | Description                                          | Qty      |        | Valve Type        |
|-------------------------------------|------------|--------|----------|------------------------------------------------------|----------|--------|-------------------|
|                                     |            |        |          |                                                      | Shut-Off | Divert |                   |
| Lower Valve Body (L-Port) Tri-Clamp | SSV-LBLC10 | 10A    | 316L SS  | 1" lower valve body (L) configuration, tri-clamp     | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-LBLC15 |        | 316L SS  | 1-1/2" lower valve body (L) configuration, tri-clamp | 1        | 1      |                   |
|                                     | SSV-LBLC20 |        | 316L SS  | 2" lower valve body (L) configuration, tri-clamp     | 1        | 1      |                   |
|                                     | SSV-LBLC25 |        | 316L SS  | 2-1/2" lower valve body (L) configuration, tri-clamp | 1        | 1      |                   |
|                                     | SSV-LBLC30 |        | 316L SS  | 3" lower valve body (L) configuration, tri-clamp     | 1        | 1      |                   |
|                                     | SSV-LBLC40 |        | 316L SS  | 4" lower valve body (L) configuration, tri-clamp     | 1        | 1      |                   |
| Lower Valve Body (L-Port) Butt weld | SSV-LBLB10 | 10A    | 316L SS  | 1" lower valve body (L) configuration, butt weld     | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-LBLB15 |        | 316L SS  | 1-1/2" lower valve body (L) configuration, butt weld | 1        | 1      |                   |
|                                     | SSV-LBLB20 |        | 316L SS  | 2" lower valve body (L) configuration, butt weld     | 1        | 1      |                   |
|                                     | SSV-LBLB25 |        | 316L SS  | 2-1/2" lower valve body (L) configuration, butt weld | 1        | 1      |                   |
|                                     | SSV-LBLB30 |        | 316L SS  | 3" lower valve body (L) configuration, butt weld     | 1        | 1      |                   |
|                                     | SSV-LBLB40 |        | 316L SS  | 4" lower valve body (L) configuration, butt weld     | 1        | 1      |                   |
| Lower Valve Body (T-Port) Tri-Clamp | SSV-LBTC10 | 10A    | 316L SS  | 1" lower valve body (T) configuration, tri-clamp     | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-LBTC15 |        | 316L SS  | 1-1/2" lower valve body (T) configuration, tri-clamp | 1        | 1      |                   |
|                                     | SSV-LBTC20 |        | 316L SS  | 2" lower valve body (T) configuration, tri-clamp     | 1        | 1      |                   |
|                                     | SSV-LBTC25 |        | 316L SS  | 2-1/2" lower valve body (T) configuration, tri-clamp | 1        | 1      |                   |
|                                     | SSV-LBTC30 |        | 316L SS  | 3" lower valve body (T) configuration, tri-clamp     | 1        | 1      |                   |
|                                     | SSV-LBTC40 |        | 316L SS  | 4" lower valve body (T) configuration, tri-clamp     | 1        | 1      |                   |
| Lower Valve Body (T-Port) Butt weld | SSV-LBTB10 | 10A    | 316L SS  | 1" lower valve body (T) configuration, butt weld     | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-LBTB15 |        | 316L SS  | 1-1/2" lower valve body (T) configuration, butt weld | 1        | 1      |                   |
|                                     | SSV-LBTB20 |        | 316L SS  | 2" lower valve body (T) configuration, butt weld     | 1        | 1      |                   |
|                                     | SSV-LBTB25 |        | 316L SS  | 2-1/2" lower valve body (T) configuration, butt weld | 1        | 1      |                   |
|                                     | SSV-LBTB30 |        | 316L SS  | 3" lower valve body (T) configuration, butt weld     | 1        | 1      |                   |
|                                     | SSV-LBTB40 |        | 316L SS  | 4" lower valve body (T) configuration, butt weld     | 1        | 1      |                   |
| Lower Valve Body (Y-Port) Tri-Clamp | SSV-LBYC10 | 10A    | 316L SS  | 1" lower valve body (Y) configuration, tri-clamp     | 1        | -      | Shut-Off          |
|                                     | SSV-LBYC15 |        | 316L SS  | 1-1/2" lower valve body (Y) configuration, tri-clamp | 1        | -      |                   |
|                                     | SSV-LBYC20 |        | 316L SS  | 2" lower valve body (Y) configuration, tri-clamp     | 1        | -      |                   |
|                                     | SSV-LBYC25 |        | 316L SS  | 2-1/2" lower valve body (Y) configuration, tri-clamp | 1        | -      |                   |
|                                     | SSV-LBYC30 |        | 316L SS  | 3" lower valve body (Y) configuration, tri-clamp     | 1        | -      |                   |
|                                     | SSV-LBYC40 |        | 316L SS  | 4" lower valve body (Y) configuration, tri-clamp     | 1        | -      |                   |
| Lower Valve Body (Y-Port) Butt weld | SSV-LBYB10 | 10A    | 316L SS  | 1" lower valve body (Y) configuration, butt weld     | 1        | -      | Shut-Off          |
|                                     | SSV-LBYB15 |        | 316L SS  | 1-1/2" lower valve body (Y) configuration, butt weld | 1        | -      |                   |
|                                     | SSV-LBYB20 |        | 316L SS  | 2" lower valve body (Y) configuration, butt weld     | 1        | -      |                   |
|                                     | SSV-LBYB25 |        | 316L SS  | 2-1/2" lower valve body (Y) configuration, butt weld | 1        | -      |                   |
|                                     | SSV-LBYB30 |        | 316L SS  | 3" lower valve body (Y) configuration, butt weld     | 1        | -      |                   |
|                                     | SSV-LBYB40 |        | 316L SS  | 4" lower valve body (Y) configuration, butt weld     | 1        | -      |                   |
| Upper Valve Body (L-Port) Tri-Clamp | SSV-UBLC10 | 10B    | 316L SS  | 1" upper valve body (L) configuration, tri-clamp     | -        | 1      | Divert            |
|                                     | SSV-UBLC15 |        | 316L SS  | 1-1/2" upper valve body (L) configuration, tri-clamp | -        | 1      |                   |
|                                     | SSV-UBLC20 |        | 316L SS  | 2" upper valve body (L) configuration, tri-clamp     | -        | 1      |                   |
|                                     | SSV-UBLC25 |        | 316L SS  | 2-1/2" upper valve body (L) configuration, tri-clamp | -        | 1      |                   |
|                                     | SSV-UBLC30 |        | 316L SS  | 3" upper valve body (L) configuration, tri-clamp     | -        | 1      |                   |
|                                     | SSV-UBLC40 |        | 316L SS  | 4" upper valve body (L) configuration, tri-clamp     | -        | 1      |                   |
| Upper Valve Body (L-Port) Butt weld | SSV-UBLB10 | 10B    | 316L SS  | 1" upper valve body (L) configuration, butt weld     | -        | 1      | Divert            |
|                                     | SSV-UBLB15 |        | 316L SS  | 1-1/2" upper valve body (L) configuration, butt weld | -        | 1      |                   |
|                                     | SSV-UBLB20 |        | 316L SS  | 2" upper valve body (L) configuration, butt weld     | -        | 1      |                   |
|                                     | SSV-UBLB25 |        | 316L SS  | 2-1/2" upper valve body (L) configuration, butt weld | -        | 1      |                   |
|                                     | SSV-UBLB30 |        | 316L SS  | 3" upper valve body (L) configuration, butt weld     | -        | 1      |                   |
|                                     | SSV-UBLB40 |        | 316L SS  | 4" upper valve body (L) configuration, butt weld     | -        | 1      |                   |

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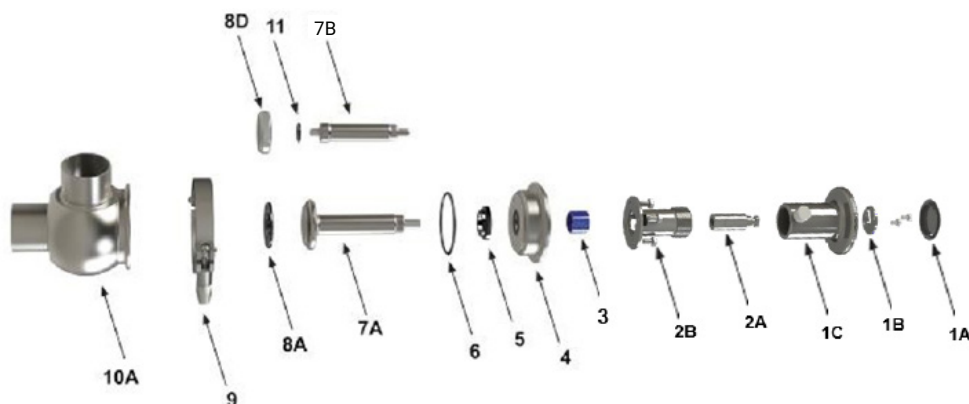
## SSV-Series Single Seat Valve - Bill of Materials

## SSV Series Shut-Off and Divert Single Seats

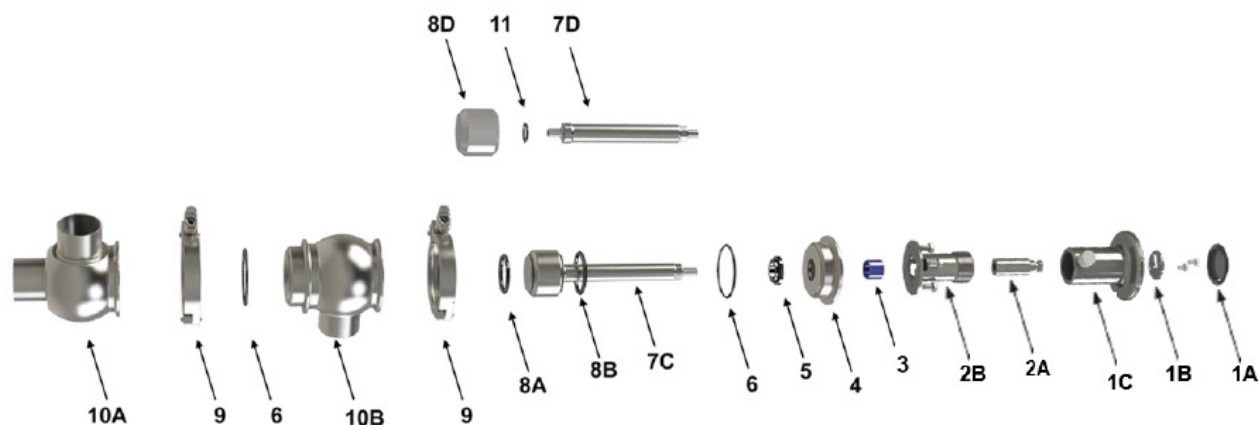
| Part Type                           | Part #          | Item # | Material | Description                                          | Qty      |        | Valve Type        |
|-------------------------------------|-----------------|--------|----------|------------------------------------------------------|----------|--------|-------------------|
|                                     |                 |        |          |                                                      | Shut-Off | Divert |                   |
| Upper Valve Body (T-Port) Tri-Clamp | SSV-UBTC10      | 10B    | 316L SS  | 1" upper valve body (T) configuration, tri-clamp     | -        | 1      | Divert            |
|                                     | SSV-UBTC15      |        | 316L SS  | 1-1/2" upper valve body (T) configuration, tri-clamp | -        | 1      |                   |
|                                     | SSV-UBTC20      |        | 316L SS  | 2" upper valve body (T) configuration, tri-clamp     | -        | 1      |                   |
|                                     | SSV-UBTC25      |        | 316L SS  | 2-1/2" upper valve body (T) configuration, tri-clamp | -        | 1      |                   |
|                                     | SSV-UBTC30      |        | 316L SS  | 3" upper valve body (T) configuration, tri-clamp     | -        | 1      |                   |
|                                     | SSV-UBTC40      |        | 316L SS  | 4" upper valve body (T) configuration, tri-clamp     | -        | 1      |                   |
| Upper Valve Body (T-Port) Buttweld  | SSV-UBTB10      | 10B    | 316L SS  | 1" upper valve body (T) configuration, buttweld      | -        | 1      | Divert            |
|                                     | SSV-UBTB15      |        | 316L SS  | 1-1/2" upper valve body (T) configuration, buttweld  | -        | 1      |                   |
|                                     | SSV-UBTB20      |        | 316L SS  | 2" upper valve body (T) configuration, buttweld      | -        | 1      |                   |
|                                     | SSV-UBTB25      |        | 316L SS  | 2-1/2" upper valve body (T) configuration, buttweld  | -        | 1      |                   |
|                                     | SSV-UBTB30      |        | 316L SS  | 3" upper valve body (T) configuration, buttweld      | -        | 1      |                   |
|                                     | SSV-UBTB40      |        | 316L SS  | 4" upper valve body (T) configuration, buttweld      | -        | 1      |                   |
| Stem Seal Plug O-Ring               | SSV-SPOR-E-1015 | 11     | EPDM     | 1" to 1-1/2" stem seal plug O-ring                   | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-SPOR-E-2040 |        | EPDM     | 2" to 4" stem seal plug O-ring                       | 1        | 1      |                   |
|                                     | SSV-SPOR-V-1015 |        | FKM      | 1" to 1-1/2" stem seal plug O-ring                   | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-SPOR-V-2040 |        | FKM      | 2" to 4" stem seal plug O-ring                       | 1        | 1      |                   |

## SSV-Series Single Seat Valve - Bill of Materials

### SSV-Series Shut-Off Single Seat (Manual Handle)



### SSV-Series Divert Single Seat (Manual Handle)



| Part Type                    | Part #        | Item # | Material | Description                               | Qty      |        | Valve Type        |
|------------------------------|---------------|--------|----------|-------------------------------------------|----------|--------|-------------------|
|                              |               |        |          |                                           | Shut-Off | Divert |                   |
| Handle Cap                   | 9750K320      | 1A     | Poly     | 1" to 4" handle cap cover                 | 1        | 1      | Shut-Off / Divert |
| Handle Retainer              | SSV-HR-1040   | 1B     | 304 SS   | 1" to 4" handle retainer ring             | 1        | 1      | Shut-Off / Divert |
| Handle                       | SSV-HA-1040   | 1C     | 304 SS   | 1" to 4" handle                           | 1        | 1      | Shut-Off / Divert |
|                              | SSV-SC-1015   |        | 304 SS   | 1" to 1-1/2" handle stem                  | 1        | 1      |                   |
| Handle Stem                  | SSV-SC-2025   | 2A     | 304 SS   | 2" to 2-1/2" handle stem                  | 1        | 1      | Shut-Off / Divert |
|                              | SSV-SC-3040   |        | 304 SS   | 3" to 4" handle stem                      | 1        | 1      |                   |
| Handle Hub                   | SSV-HAB-10    | 2B     | 304 SS   | 1" handle hub                             | 1        | 1      | Shut-Off / Divert |
|                              | SSV-HAB-1540  |        | 304 SS   | 1-1/2" to 4" handle hub                   | 1        | 1      |                   |
| Adapter Flange Slide Bearing | SSV-AFSB-1015 | 3      | Poly     | 1" to 1-1/2" adapter flange slide bearing | 1        | 1      | Shut-Off / Divert |
|                              | SSV-AFSB-2040 |        |          | 2" to 4" adapter flange slide bearing     | 1        | 1      |                   |
| Adapter Flange               | SSV-ADFLNG-10 | 4      | 316L SS  | 1" adapter flange                         | 1        | 1      | Shut-Off / Divert |
|                              | SSV-ADFLNG-15 |        | 316L SS  | 1-1/2" adapter flange                     | 1        | 1      |                   |
|                              | SSV-ADFLNG-20 |        | 316L SS  | 2" adapter flange                         | 1        | 1      |                   |
|                              | SSV-ADFLNG-25 |        | 316L SS  | 2-1/2" adapter flange                     | 1        | 1      |                   |
|                              | SSV-ADFLNG-30 |        | 316L SS  | 3" adapter flange                         | 1        | 1      |                   |
|                              | SSV-ADFLNG-40 |        | 316L SS  | 4" adapter flange                         | 1        | 1      |                   |
|                              | SSV-ADFLNG-40 |        | 316L SS  | 4" adapter flange                         | 1        | 1      |                   |



**SSV-Series Single Seat Valve - Bill of Materials**  
**SSV-Series Shut-Off and Divert Single Seats (Manual Handle)**

| Part Type                                 | Part #        | Item # | Material | Description                                      | Qty      |        | Valve Type        |
|-------------------------------------------|---------------|--------|----------|--------------------------------------------------|----------|--------|-------------------|
|                                           |               |        |          |                                                  | Shut-Off | Divert |                   |
| Stem Lip Seal                             | SSV-LSE-1015  | 5      | EPDM     | 1" to 1-1/2" stem lip seal                       | 1        | 1      | Shut-Off / Divert |
|                                           | SSV-LSE-2040  |        | EPDM     | 2" to 4" stem lip seal                           | 1        | 1      |                   |
|                                           | SSV-LSV-1015  | 5      | FKM      | 1" to 1-1/2" stem lip seal                       | 1        | 1      | Shut-Off / Divert |
|                                           | SSV-LSV-2040  |        | FKM      | 2" to 4" stem lip seal                           | 1        | 1      |                   |
| Adapter Flange Seal O-Ring                | SSV-AFSO-E-10 | 6      | EPDM     | 1" adapter flange seal O-ring                    | 1        | 2      | Shut-Off / Divert |
|                                           | SSV-AFSO-E-15 |        | EPDM     | 1-1/2" adapter flange seal O-ring                | 1        | 2      |                   |
|                                           | SSV-AFSO-E-20 |        | EPDM     | 2" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-E-25 |        | EPDM     | 2-1/2" adapter flange seal O-ring                | 1        | 2      |                   |
|                                           | SSV-AFSO-E-30 |        | EPDM     | 3" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-E-40 |        | EPDM     | 4" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-V-10 | 6      | FKM      | 1" adapter flange seal O-ring                    | 1        | 2      | Shut-Off / Divert |
|                                           | SSV-AFSO-V-15 |        | FKM      | 1-1/2" adapter flange seal O-ring                | 1        | 2      |                   |
|                                           | SSV-AFSO-V-20 |        | FKM      | 2" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-V-25 |        | FKM      | 2-1/2" adapter flange seal O-ring                | 1        | 2      |                   |
|                                           | SSV-AFSO-V-30 |        | FKM      | 3" adapter flange seal O-ring                    | 1        | 2      |                   |
|                                           | SSV-AFSO-V-40 |        | FKM      | 4" adapter flange seal O-ring                    | 1        | 2      |                   |
| Single Body Valve Stem (Elastomeric Seal) | SSV-SVS-OS-10 | 7A     | 316L SS  | 1" single body valve stem (elastomeric seal)     | 1        | -      | Shut-Off          |
|                                           | SSV-SVS-OS-15 |        | 316L SS  | 1-1/2" single body valve stem (elastomeric seal) | 1        | -      |                   |
|                                           | SSV-SVS-OS-20 |        | 316L SS  | 2" single body valve stem (elastomeric seal)     | 1        | -      |                   |
|                                           | SSV-SVS-OS-25 |        | 316L SS  | 2-1/2" single body valve stem (elastomeric seal) | 1        | -      |                   |
|                                           | SSV-SVS-OS-30 |        | 316L SS  | 3" single body valve stem (elastomeric seal)     | 1        | -      |                   |
|                                           | SSV-SVS-OS-40 |        | 316L SS  | 4" single body valve stem (elastomeric seal)     | 1        | -      |                   |
| Single Body Valve Stem (PTFE Seal)        | SSV-SVS-PS-10 | 7B     | 316L SS  | 1" single body valve stem (PTFE seal)            | 1        | -      | Shut-Off          |
|                                           | SSV-SVS-PS-15 |        | 316L SS  | 1-1/2" single body valve stem (PTFE seal)        | 1        | -      |                   |
|                                           | SSV-SVS-PS-20 |        | 316L SS  | 2" single body valve stem (PTFE seal)            | 1        | -      |                   |
|                                           | SSV-SVS-PS-25 |        | 316L SS  | 2-1/2" single body valve stem (PTFE seal)        | 1        | -      |                   |
|                                           | SSV-SVS-PS-30 |        | 316L SS  | 3" single body valve stem (PTFE seal)            | 1        | -      |                   |
|                                           | SSV-SVS-PS-40 |        | 316L SS  | 4" single body valve stem (PTFE seal)            | 1        | -      |                   |
| Double Body Valve Stem (Elastomeric Seal) | SSV-DVS-OS-10 | 7C     | 316L SS  | 1" double body valve stem (elastomeric seal)     | -        | 1      | Divert            |
|                                           | SSV-DVS-OS-15 |        | 316L SS  | 1-1/2" double body valve stem (elastomeric seal) | -        | 1      |                   |
|                                           | SSV-DVS-OS-20 |        | 316L SS  | 2" double body valve stem (elastomeric seal)     | -        | 1      |                   |
|                                           | SSV-DVS-OS-25 |        | 316L SS  | 2-1/2" double body valve stem (elastomeric seal) | -        | 1      |                   |
|                                           | SSV-DVS-OS-30 |        | 316L SS  | 3" double body valve stem (elastomeric seal)     | -        | 1      |                   |
|                                           | SSV-DVS-OS-40 |        | 316L SS  | 4" double body valve stem (elastomeric seal)     | -        | 1      |                   |
| Double Body Valve Stem (PTFE Seal)        | SSV-DVS-PS-10 | 7D     | 316L SS  | 1" double body valve stem (PTFE seal)            | -        | 1      | Divert            |
|                                           | SSV-DVS-PS-15 |        | 316L SS  | 1-1/2" double body valve stem (PTFE seal)        | -        | 1      |                   |
|                                           | SSV-DVS-PS-20 |        | 316L SS  | 2" double body valve stem (PTFE seal)            | -        | 1      |                   |
|                                           | SSV-DVS-PS-25 |        | 316L SS  | 2-1/2" double body valve stem (PTFE seal)        | -        | 1      |                   |
|                                           | SSV-DVS-PS-30 |        | 316L SS  | 3" double body valve stem (PTFE seal)            | -        | 1      |                   |
|                                           | SSV-DVS-PS-40 |        | 316L SS  | 4" double body valve stem (PTFE seal)            | -        | 1      |                   |
| Lower Stem Seal O-Ring                    | SSV-LSOR-E-10 | 8A     | EPDM     | 1" lower stem seal O-ring                        | 1        | 1      | Shut-Off / Divert |
|                                           | SSV-LSOR-E-15 |        | EPDM     | 1-1/2" lower stem seal O-ring                    | 1        | 1      |                   |
|                                           | SSV-LSOR-E-20 |        | EPDM     | 2" lower stem seal O-ring                        | 1        | 1      |                   |
|                                           | SSV-LSOR-E-25 |        | EPDM     | 2-1/2" lower stem seal O-ring                    | 1        | 1      |                   |
|                                           | SSV-LSOR-E-30 |        | EPDM     | 3" lower stem seal O-ring                        | 1        | 1      |                   |
|                                           | SSV-LSOR-E-40 |        | EPDM     | 4" lower stem seal O-ring                        | 1        | 1      |                   |
|                                           | SSV-LSOR-V-10 | 8A     | FKM      | 1" lower stem seal O-ring                        | 1        | 1      | Shut-Off / Divert |
|                                           | SSV-LSOR-V-15 |        | FKM      | 1-1/2" lower stem seal O-ring                    | 1        | 1      |                   |
|                                           | SSV-LSOR-V-20 |        | FKM      | 2" lower stem seal O-ring                        | 1        | 1      |                   |
|                                           | SSV-LSOR-V-25 |        | FKM      | 2-1/2" lower stem seal O-ring                    | 1        | 1      |                   |
|                                           | SSV-LSOR-V-30 |        | FKM      | 3" lower stem seal O-ring                        | 1        | 1      |                   |
|                                           | SSV-LSOR-V-40 |        | FKM      | 4" lower stem seal O-ring                        | 1        | 1      |                   |

## SSV-Series Single Seat Valve - Bill of Materials

### SSV-Series Shut-Off and Divert Single Seats (Manual Handle)

| Part Type                           | Part #        | Item # | Material | Description                                          | Qty      |        | Valve Type        |
|-------------------------------------|---------------|--------|----------|------------------------------------------------------|----------|--------|-------------------|
|                                     |               |        |          |                                                      | Shut-Off | Divert |                   |
| Upper Stem Seal O-Ring              | SSV-USOR-E-10 | 8B     | EPDM     | 1" upper stem seal O-ring                            | -        | 1      | Divert            |
|                                     | SSV-USOR-E-15 |        | EPDM     | 1-1/2" upper stem seal O-ring                        | -        | 1      |                   |
|                                     | SSV-USOR-E-20 |        | EPDM     | 2" upper stem seal O-ring                            | -        | 1      |                   |
|                                     | SSV-USOR-E-25 |        | EPDM     | 2-1/2" upper stem seal O-ring                        | -        | 1      |                   |
|                                     | SSV-USOR-E-30 |        | EPDM     | 3" upper stem seal O-ring                            | -        | 1      |                   |
|                                     | SSV-USOR-E-40 | 8B     | EPDM     | 4" upper stem seal O-ring                            | -        | 1      | Divert            |
|                                     | SSV-USOR-V-10 |        | FKM      | 1" upper stem seal O-ring                            | -        | 1      |                   |
|                                     | SSV-USOR-V-15 |        | FKM      | 1-1/2" upper stem seal O-ring                        | -        | 1      |                   |
|                                     | SSV-USOR-V-20 |        | FKM      | 2" upper stem seal O-ring                            | -        | 1      |                   |
|                                     | SSV-USOR-V-25 |        | FKM      | 2-1/2" upper stem seal O-ring                        | -        | 1      |                   |
|                                     | SSV-USOR-V-30 |        | FKM      | 3" upper stem seal O-ring                            | -        | 1      |                   |
|                                     | SSV-USOR-V-40 |        | FKM      | 4" upper stem seal O-ring                            | -        | 1      |                   |
| Stem Seal Plug                      | SSV-SBSP-P-10 | 8C     | PTFE     | 1" single body stem seal plug                        | 1        | -      | Shut-Off          |
|                                     | SSV-SBSP-P-15 |        | PTFE     | 1-1/2" single body stem seal plug                    | 1        | -      |                   |
|                                     | SSV-SBSP-P-20 |        | PTFE     | 2" single body stem seal plug                        | 1        | -      |                   |
|                                     | SSV-SBSP-P-25 |        | PTFE     | 2-1/2" single body stem seal plug                    | 1        | -      |                   |
|                                     | SSV-SBSP-P-30 |        | PTFE     | 3" single body stem seal plug                        | 1        | -      |                   |
|                                     | SSV-SBSP-P-40 | 8D     | PTFE     | 4" single body stem seal plug                        | 1        | -      | Divert            |
|                                     | SSV-DBSP-P-10 |        | PTFE     | 1" double body stem seal plug                        | -        | 1      |                   |
|                                     | SSV-DBSP-P-15 |        | PTFE     | 1-1/2" double body stem seal plug                    | -        | 1      |                   |
|                                     | SSV-DBSP-P-20 |        | PTFE     | 2" double body stem seal plug                        | -        | 1      |                   |
|                                     | SSV-DBSP-P-25 |        | PTFE     | 2-1/2" double body stem seal plug                    | -        | 1      |                   |
|                                     | SSV-DBSP-P-30 |        | PTFE     | 3" double body stem seal plug                        | -        | 1      |                   |
|                                     | SSV-DBSP-P-40 |        | PTFE     | 4" double body stem seal plug                        | -        | 1      |                   |
| Body Clamp                          | 13MHHM200SN   | 9      | 304 SS   | 1" body clamp                                        | 1        | 2      | Shut-Off / Divert |
|                                     | 13MHHM250SN   |        | 304 SS   | 1-1/2" body clamp                                    | 1        | 2      |                   |
|                                     | 13MHHM300SN   |        | 304 SS   | 2" body clamp                                        | 1        | 2      |                   |
|                                     | 13MHHV300SN   |        | 304 SS   | 2-1/2" body clamp                                    | 1        | 2      |                   |
|                                     | 13MHHM400SN   |        | 304 SS   | 3" body clamp                                        | 1        | 2      |                   |
|                                     | 13MHHM500SN   |        | 304 SS   | 4" body clamp                                        | 1        | 2      |                   |
| Lower Valve Body (L-Port) Tri-Clamp | SSV-LBLC10    | 10A    | 316L SS  | 1" lower valve body (L) configuration, tri-clamp     | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-LBLC15    |        | 316L SS  | 1-1/2" lower valve body (L) configuration, tri-clamp | 1        | 1      |                   |
|                                     | SSV-LBLC20    |        | 316L SS  | 2" lower valve body (L) configuration, tri-clamp     | 1        | 1      |                   |
|                                     | SSV-LBLC25    |        | 316L SS  | 2-1/2" lower valve body (L) configuration, tri-clamp | 1        | 1      |                   |
|                                     | SSV-LBLC30    |        | 316L SS  | 3" lower valve body (L) configuration, tri-clamp     | 1        | 1      |                   |
|                                     | SSV-LBLC40    |        | 316L SS  | 4" lower valve body (L) configuration, tri-clamp     | 1        | 1      |                   |
| Lower Valve Body (L-Port) Buttweld  | SSV-LBLB10    | 10A    | 316L SS  | 1" lower valve body (L) configuration, weld          | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-LBLB15    |        | 316L SS  | 1-1/2" lower valve body (L) configuration, weld      | 1        | 1      |                   |
|                                     | SSV-LBLB20    |        | 316L SS  | 2" lower valve body (L) configuration, weld          | 1        | 1      |                   |
|                                     | SSV-LBLB25    |        | 316L SS  | 2-1/2" lower valve body (L) configuration, weld      | 1        | 1      |                   |
|                                     | SSV-LBLB30    |        | 316L SS  | 3" lower valve body (L) configuration, weld          | 1        | 1      |                   |
|                                     | SSV-LBLB40    |        | 316L SS  | 4" lower valve body (L) configuration, weld          | 1        | 1      |                   |
| Lower Valve Body (T-Port) Tri-Clamp | SSV-LBTC10    | 10A    | 316L SS  | 1" lower valve body (T) configuration, tri-clamp     | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-LBTC15    |        | 316L SS  | 1-1/2" lower valve body (T) configuration, tri-clamp | 1        | 1      |                   |
|                                     | SSV-LBTC20    |        | 316L SS  | 2" lower valve body (T) configuration, tri-clamp     | 1        | 1      |                   |
|                                     | SSV-LBTC25    |        | 316L SS  | 2-1/2" lower valve body (T) configuration, tri-clamp | 1        | 1      |                   |
|                                     | SSV-LBTC30    |        | 316L SS  | 3" lower valve body (T) configuration, tri-clamp     | 1        | 1      |                   |
|                                     | SSV-LBTC40    |        | 316L SS  | 4" lower valve body (T) configuration, tri-clamp     | 1        | 1      |                   |

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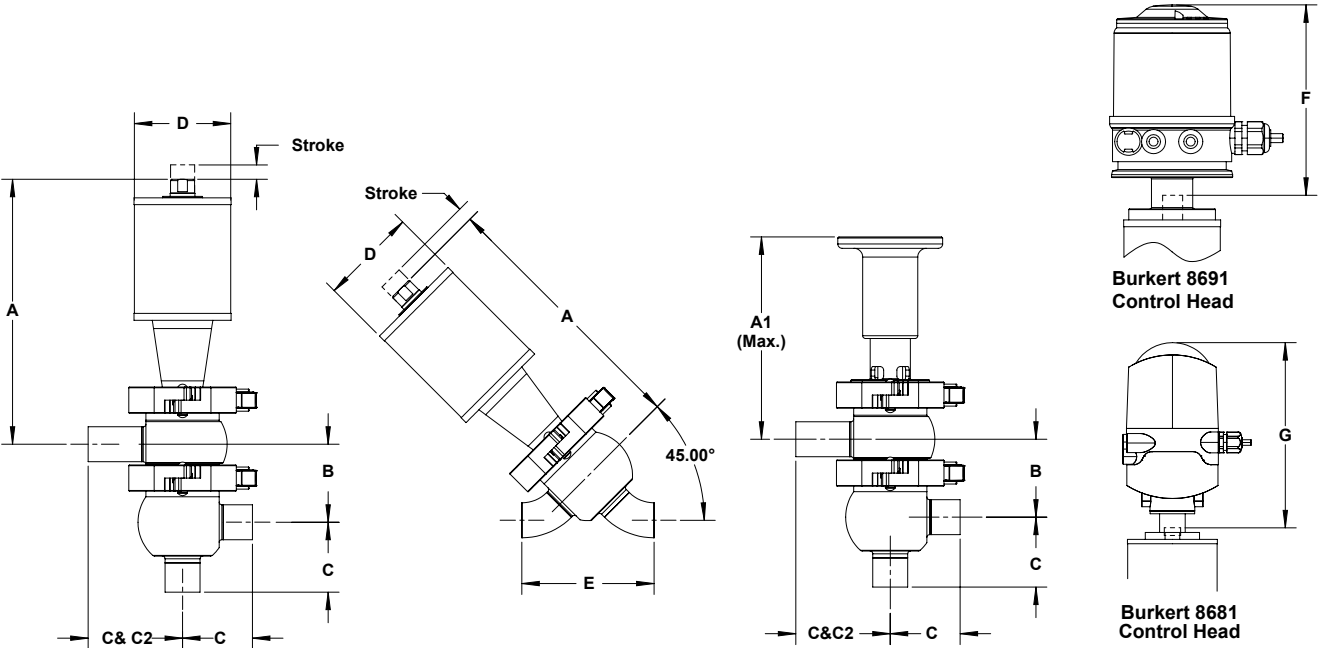


## SSV-Series Single Seat Valve - Bill of Materials

## SSV-Series Shut-Off and Divert Single Seats (Manual Handle)

| Part Type                           | Part #          | Item # | Material | Description                                          | Qty      |        | Valve Type        |
|-------------------------------------|-----------------|--------|----------|------------------------------------------------------|----------|--------|-------------------|
|                                     |                 |        |          |                                                      | Shut-Off | Divert |                   |
| Lower Valve Body (T-Port) Butt-weld | SSV-LBTB10      | 10A    | 316L SS  | 1" lower valve body (T) configuration, weld          | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-LBTB15      |        | 316L SS  | 1-1/2" lower valve body (T) configuration, weld      | 1        | 1      |                   |
|                                     | SSV-LBTB20      |        | 316L SS  | 2" lower valve body (T) configuration, weld          | 1        | 1      |                   |
|                                     | SSV-LBTB25      |        | 316L SS  | 2-1/2" lower valve body (T) configuration, weld      | 1        | 1      |                   |
|                                     | SSV-LBTB30      |        | 316L SS  | 3" lower valve body (T) configuration, weld          | 1        | 1      |                   |
|                                     | SSV-LBTB40      |        | 316L SS  | 4" lower valve body (T) configuration, weld          | 1        | 1      |                   |
| Lower Valve Body (Y-Port) Tri-Clamp | SSV-LBYC10      | 10A    | 316L SS  | 1" lower valve body (Y) configuration, tri-clamp     | 1        | -      | Shut-Off          |
|                                     | SSV-LBYC15      |        | 316L SS  | 1-1/2" lower valve body (Y) configuration, tri-clamp | 1        | -      |                   |
|                                     | SSV-LBYC20      |        | 316L SS  | 2" lower valve body (Y) configuration, tri-clamp     | 1        | -      |                   |
|                                     | SSV-LBYC25      |        | 316L SS  | 2-1/2" lower valve body (Y) configuration, tri-clamp | 1        | -      |                   |
|                                     | SSV-LBYC30      |        | 316L SS  | 3" lower valve body (Y) configuration, tri-clamp     | 1        | -      |                   |
|                                     | SSV-LBYC40      |        | 316L SS  | 4" lower valve body (Y) configuration, tri-clamp     | 1        | -      |                   |
| Lower Valve Body (Y-Port) Butt-weld | SSV-LBYB10      | 10A    | 316L SS  | 1" lower valve body (Y) configuration, weld          | 1        | -      | Shut-Off          |
|                                     | SSV-LBYB15      |        | 316L SS  | 1-1/2" lower valve body (Y) configuration, weld      | 1        | -      |                   |
|                                     | SSV-LBYB20      |        | 316L SS  | 2" lower valve body (Y) configuration, weld          | 1        | -      |                   |
|                                     | SSV-LBYB25      |        | 316L SS  | 2-1/2" lower valve body (Y) configuration, weld      | 1        | -      |                   |
|                                     | SSV-LBYB30      |        | 316L SS  | 3" lower valve body (Y) configuration, weld          | 1        | -      |                   |
|                                     | SSV-LBYB40      |        | 316L SS  | 4" lower valve body (Y) configuration, weld          | 1        | -      |                   |
| Upper Valve Body (L-Port) Tri-Clamp | SSV-UBLC10      | 10B    | 316L SS  | 1" upper valve body (L) configuration, tri-clamp     | -        | 1      | Divert            |
|                                     | SSV-UBLC15      |        | 316L SS  | 1-1/2" upper valve body (L) configuration, tri-clamp | -        | 1      |                   |
|                                     | SSV-UBLC20      |        | 316L SS  | 2" upper valve body (L) configuration, tri-clamp     | -        | 1      |                   |
|                                     | SSV-UBLC25      |        | 316L SS  | 2-1/2" upper valve body (L) configuration, tri-clamp | -        | 1      |                   |
|                                     | SSV-UBLC30      |        | 316L SS  | 3" upper valve body (L) configuration, tri-clamp     | -        | 1      |                   |
|                                     | SSV-UBLC40      |        | 316L SS  | 4" upper valve body (L) configuration, tri-clamp     | -        | 1      |                   |
| Upper Valve Body (L-Port) Butt-weld | SSV-UBLB10      | 10B    | 316L SS  | 1" upper valve body (L) configuration, weld          | -        | 1      | Divert            |
|                                     | SSV-UBLB15      |        | 316L SS  | 1-1/2" upper valve body (L) configuration, weld      | -        | 1      |                   |
|                                     | SSV-UBLB20      |        | 316L SS  | 2" upper valve body (L) configuration, weld          | -        | 1      |                   |
|                                     | SSV-UBLB25      |        | 316L SS  | 2-1/2" upper valve body (L) configuration, weld      | -        | 1      |                   |
|                                     | SSV-UBLB30      |        | 316L SS  | 3" upper valve body (L) configuration, weld          | -        | 1      |                   |
|                                     | SSV-UBLB40      |        | 316L SS  | 4" upper valve body (L) configuration, weld          | -        | 1      |                   |
| Upper Valve Body (T-Port) Tri-Clamp | SSV-UBTC10      | 10B    | 316L SS  | 1" upper valve body (T) configuration, tri-clamp     | -        | 1      | Divert            |
|                                     | SSV-UBTC15      |        | 316L SS  | 1-1/2" upper valve body (T) configuration, tri-clamp | -        | 1      |                   |
|                                     | SSV-UBTC20      |        | 316L SS  | 2" upper valve body (T) configuration, tri-clamp     | -        | 1      |                   |
|                                     | SSV-UBTC25      |        | 316L SS  | 2-1/2" upper valve body (T) configuration, tri-clamp | -        | 1      |                   |
|                                     | SSV-UBTC30      |        | 316L SS  | 3" upper valve body (T) configuration, tri-clamp     | -        | 1      |                   |
|                                     | SSV-UBTC40      |        | 316L SS  | 4" upper valve body (T) configuration, tri-clamp     | -        | 1      |                   |
| Upper Valve Body (T-Port) Butt-weld | SSV-UBTB10      | 10B    | 316L SS  | 1" upper valve body (T) configuration, weld          | -        | 1      | Divert            |
|                                     | SSV-UBTB15      |        | 316L SS  | 1-1/2" upper valve body (T) configuration, weld      | -        | 1      |                   |
|                                     | SSV-UBTB20      |        | 316L SS  | 2" upper valve body (T) configuration, weld          | -        | 1      |                   |
|                                     | SSV-UBTB25      |        | 316L SS  | 2-1/2" upper valve body (T) configuration, weld      | -        | 1      |                   |
|                                     | SSV-UBTB30      |        | 316L SS  | 3" upper valve body (T) configuration, weld          | -        | 1      |                   |
|                                     | SSV-UBTB40      |        | 316L SS  | 4" upper valve body (T) configuration, weld          | -        | 1      |                   |
| Stem Seal Plug O-Ring               | SSV-SPOR-E-1015 | 11     | EPDM     | 1" to 1-1/2" stem seal plug O-ring                   | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-SPOR-E-2040 |        | EPDM     | 2" to 4" stem seal plug O-ring                       | 1        | 1      |                   |
|                                     | SSV-SPOR-V-1015 |        | FKM      | 1" to 1-1/2" stem seal plug O-ring                   | 1        | 1      | Shut-Off / Divert |
|                                     | SSV-SPOR-V-2040 |        | FKM      | 2" to 4" stem seal plug O-ring                       | 1        | 1      |                   |

# SSV-Series Single Seat Valve - Dimensions

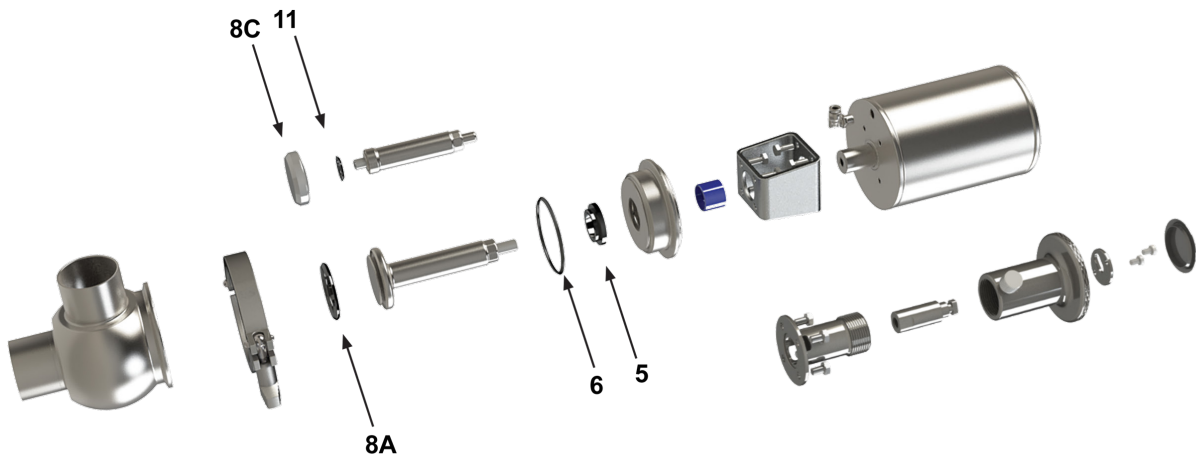


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| Valve Size | A (in) | A1 (in) | Stroke (in) | B (in) | C (in) (Clamp) | C (in) (Weld) | C2 (in) (Clamp) | C2 (in) (Weld) | D (in) | E (in) (Clamp) | E (in) (Weld) | F (in) | G (in) |
|------------|--------|---------|-------------|--------|----------------|---------------|-----------------|----------------|--------|----------------|---------------|--------|--------|
| 1"         | 7.58   | 5.80    | 0.41        | 2.23   | 2.50           | 2.00          | 3.20            | 2.00           | 2.78   | 4.78           | 3.78          | 6.00   | 8.47   |
| 1-1/2"     | 8.80   | 6.10    | 0.77        | 3.15   | 2.75           | 2.25          | -               | -              | 4.11   | 6.60           | 5.60          |        |        |
| 2"         | 9.05   | 6.28    | 0.77        | 3.64   | 3.50           | 3.00          | -               | -              | 4.11   | 7.64           | 6.64          |        |        |
| 2-1/2"     | 11.36  | 6.52    | 1.04        | 4.72   | 3.50           | 3.00          | -               | -              | 6.08   | 9.33           | 8.33          |        |        |
| 3"         | 11.61  | 6.78    | 1.04        | 5.04   | 3.75           | 3.25          | -               | -              | 6.08   | 10.63          | 9.63          |        |        |
| 4"         | 12.10  | 7.25    | 1.04        | 5.94   | 4.50           | 3.87          | -               | -              | 6.08   | 13.18          | 11.93         |        |        |

SSV-Series Single Seat Valve - Repair Kits

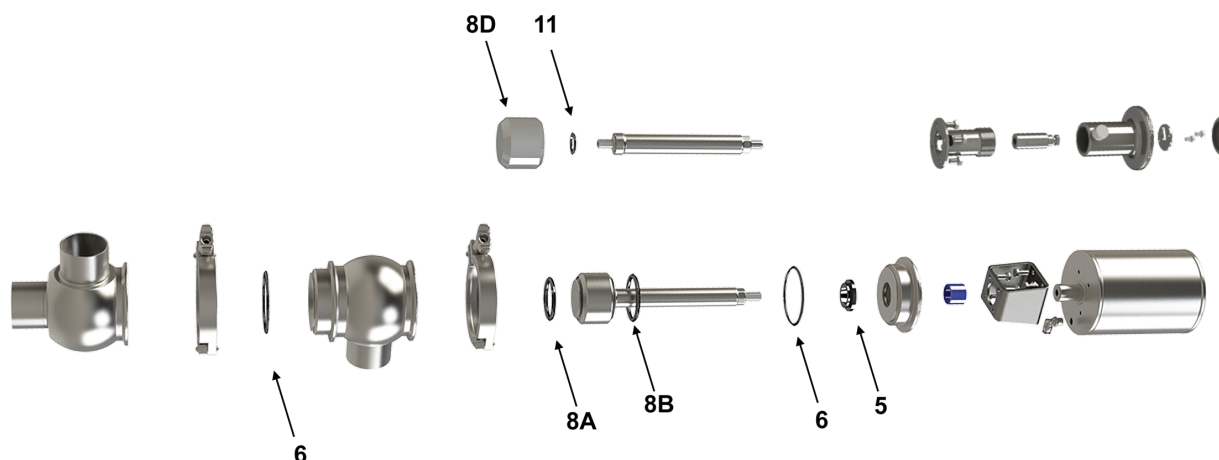
SSV-Series Shut-Off Single Seat



| Valve Size | Valve Type | Stem Seat Material | Body Seal Material | Kit Part #    | Kit Includes       |
|------------|------------|--------------------|--------------------|---------------|--------------------|
| 1"         | Shut-Off   | FKM                | FKM                | SSV-RKS-10-V  | Items 5, 6, 8A     |
| 1-1/2"     | Shut-Off   | FKM                | FKM                | SSV-RKS-15-V  | Items 5, 6, 8A     |
| 2"         | Shut-Off   | FKM                | FKM                | SSV-RKS-20-V  | Items 5, 6, 8A     |
| 2-1/2"     | Shut-Off   | FKM                | FKM                | SSV-RKS-25-V  | Items 5, 6, 8A     |
| 3"         | Shut-Off   | FKM                | FKM                | SSV-RKS-30-V  | Items 5, 6, 8A     |
| 4"         | Shut-Off   | FKM                | FKM                | SSV-RKS-40-V  | Items 5, 6, 8A     |
| 1"         | Shut-Off   | EPDM               | EDPM               | SSV-RKS-10-E  | Items 5, 6, 8A     |
| 1-1/2"     | Shut-Off   | EPDM               | EDPM               | SSV-RKS-15-E  | Items 5, 6, 8A     |
| 2"         | Shut-Off   | EPDM               | EDPM               | SSV-RKS-20-E  | Items 5, 6, 8A     |
| 2-1/2"     | Shut-Off   | EPDM               | EDPM               | SSV-RKS-25-E  | Items 5, 6, 8A     |
| 3"         | Shut-Off   | EPDM               | EDPM               | SSV-RKS-30-E  | Items 5, 6, 8A     |
| 4"         | Shut-Off   | EPDM               | EDPM               | SSV-RKS-40-E  | Items 5, 6, 8A     |
| 1"         | Shut-Off   | PTFE               | FKM                | SSV-RKS-10-PV | Items 5, 6, 8C, 11 |
| 1-1/2"     | Shut-Off   | PTFE               | FKM                | SSV-RKS-15-PV | Items 5, 6, 8C, 11 |
| 2"         | Shut-Off   | PTFE               | FKM                | SSV-RKS-20-PV | Items 5, 6, 8C, 11 |
| 2-1/2"     | Shut-Off   | PTFE               | FKM                | SSV-RKS-25-PV | Items 5, 6, 8C, 11 |
| 3"         | Shut-Off   | PTFE               | FKM                | SSV-RKS-30-PV | Items 5, 6, 8C, 11 |
| 4"         | Shut-Off   | PTFE               | FKM                | SSV-RKS-40-PV | Items 5, 6, 8C, 11 |
| 1"         | Shut-Off   | PTFE               | EPDM               | SSV-RKS-10-PE | Items 5, 6, 8C, 11 |
| 1-1/2"     | Shut-Off   | PTFE               | EPDM               | SSV-RKS-15-PE | Items 5, 6, 8C, 11 |
| 2"         | Shut-Off   | PTFE               | EPDM               | SSV-RKS-20-PE | Items 5, 6, 8C, 11 |
| 2-1/2"     | Shut-Off   | PTFE               | EPDM               | SSV-RKS-25-PE | Items 5, 6, 8C, 11 |
| 3"         | Shut-Off   | PTFE               | EPDM               | SSV-RKS-30-PE | Items 5, 6, 8C, 11 |
| 4"         | Shut-Off   | PTFE               | EPDM               | SSV-RKS-40-PE | Items 5, 6, 8C, 11 |

## SSV-Series Single Seat Valve - Repair Kits

### SSV-Series Divert Single Seat



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| Valve Size | Valve Type | Stem Seat Material | Body Seal Material | Kit Part #    | Kit Includes       |
|------------|------------|--------------------|--------------------|---------------|--------------------|
| 1"         | Divert     | FKM                | FKM                | SSV-RKD-10-V  | Items 5, 6, 8A, 8B |
| 1-1/2"     | Divert     | FKM                | FKM                | SSV-RKD-15-V  | Items 5, 6, 8A, 8B |
| 2"         | Divert     | FKM                | FKM                | SSV-RKD-20-V  | Items 5, 6, 8A, 8B |
| 2-1/2"     | Divert     | FKM                | FKM                | SSV-RKD-25-V  | Items 5, 6, 8A, 8B |
| 3"         | Divert     | FKM                | FKM                | SSV-RKD-30-V  | Items 5, 6, 8A, 8B |
| 4"         | Divert     | FKM                | FKM                | SSV-RKD-40-V  | Items 5, 6, 8A, 8B |
| 1"         | Divert     | EPDM               | EDPM               | SSV-RKD-10-E  | Items 5, 6, 8A, 8B |
| 1-1/2"     | Divert     | EPDM               | EDPM               | SSV-RKD-15-E  | Items 5, 6, 8A, 8B |
| 2"         | Divert     | EPDM               | EDPM               | SSV-RKD-20-E  | Items 5, 6, 8A, 8B |
| 2-1/2"     | Divert     | EPDM               | EDPM               | SSV-RKD-25-E  | Items 5, 6, 8A, 8B |
| 3"         | Divert     | EPDM               | EDPM               | SSV-RKD-30-E  | Items 5, 6, 8A, 8B |
| 4"         | Divert     | EPDM               | EDPM               | SSV-RKD-40-E  | Items 5, 6, 8A, 8B |
| 1"         | Divert     | PTFE               | FKM                | SSV-RKD-10-PV | Items 5, 6, 8D, 11 |
| 1-1/2"     | Divert     | PTFE               | FKM                | SSV-RKD-15-PV | Items 5, 6, 8D, 11 |
| 2"         | Divert     | PTFE               | FKM                | SSV-RKD-20-PV | Items 5, 6, 8D, 11 |
| 2-1/2"     | Divert     | PTFE               | FKM                | SSV-RKD-25-PV | Items 5, 6, 8D, 11 |
| 3"         | Divert     | PTFE               | FKM                | SSV-RKD-30-PV | Items 5, 6, 8D, 11 |
| 4"         | Divert     | PTFE               | FKM                | SSV-RKD-40-PV | Items 5, 6, 8D, 11 |
| 1"         | Divert     | PTFE               | EPDM               | SSV-RKD-10-PE | Items 5, 6, 8D, 11 |
| 1-1/2"     | Divert     | PTFE               | EPDM               | SSV-RKD-15-PE | Items 5, 6, 8D, 11 |
| 2"         | Divert     | PTFE               | EPDM               | SSV-RKD-20-PE | Items 5, 6, 8D, 11 |
| 2-1/2"     | Divert     | PTFE               | EPDM               | SSV-RKD-25-PE | Items 5, 6, 8D, 11 |
| 3"         | Divert     | PTFE               | EPDM               | SSV-RKD-30-PE | Items 5, 6, 8D, 11 |
| 4"         | Divert     | PTFE               | EPDM               | SSV-RKD-40-PE | Items 5, 6, 8D, 11 |

SPR-Series Pressure Relief Valve



1655

Used as a safety valve to bypass fluids if the discharge on a positive displacement pump is closed with the pump still running. The valve will open and bypass both liquids and gas.

3A certified for clean-out-of-place, they are found in the food processing, beverage, dairy, winery, brewery, pet products, and industrial markets.

Sizes

- 1-1/2" and 2"

Features

- Valve opens when the set pressure is reached to prevent excess pressure in piping or systems
- Valve body made from solid bar
- Low spare part cost

Materials

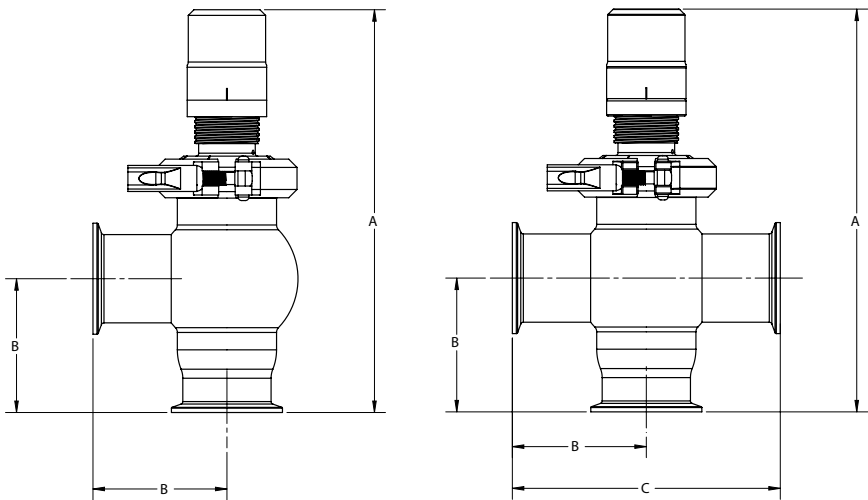
- Product contact metal components: 316L stainless steel
- Non-product contact metal components: 304 stainless steel
- Product contact seals: EPDM or FKM

Specifications

- Standard clamp connections
- Valve set pressure ranges
  - 10-49 PSI
  - 50-99 PSI
  - 100-300 PSI
- Maximum operating temperature: 266°F (130°C)
- Maximum sterilization temperature (20 minutes maximum): 300°F (148°C)
- Surface finish
  - Product contact metal components: < 32 Ra on all product contact surfaces
  - Non-product contact metal components: > 32 Ra
  - Cleaning method: 3A certified for clean-out-of-place



SPR-Series Pressure Relief Valve - Dimensions



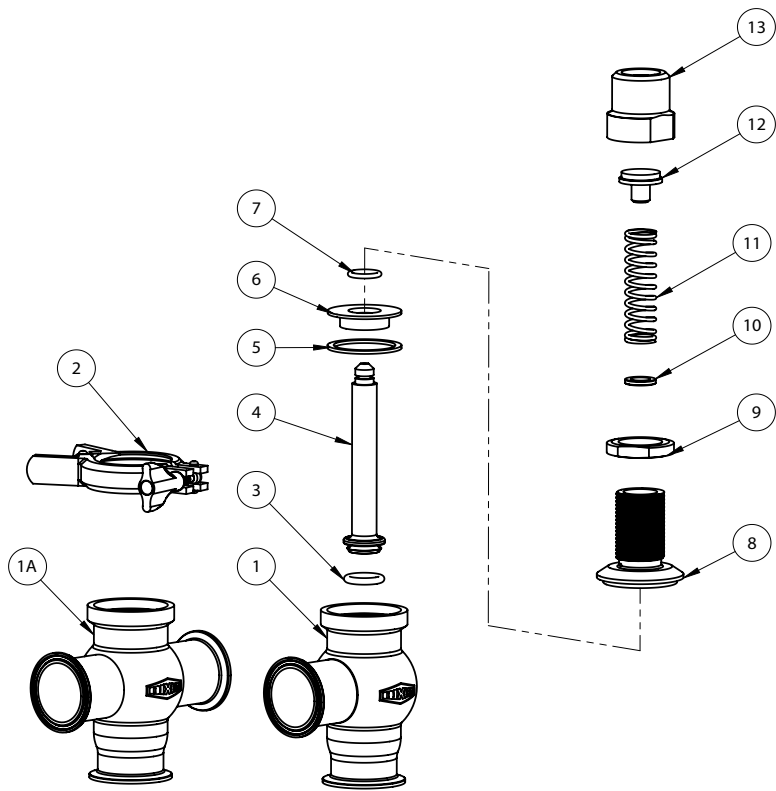
| Size   | A (in) | B (in) | C (in) | Connection |
|--------|--------|--------|--------|------------|
| 1-1/2" | 9.2    | 2.7    | 5.4    | tri-clamp  |
| 2"     | 9.8    | 3.0    | 6.1    | tri-clamp  |

## SPR-Series Pressure Relief Valve - Part Number Key

| SPR-Series Pressure Relief Valve<br>Part Number Key<br>Example: SPR-LCE1A150 |             | Series |   | Body Style | Connection | Elastomer | Spring Set<br>Range (PSI) | Size | Finish |
|------------------------------------------------------------------------------|-------------|--------|---|------------|------------|-----------|---------------------------|------|--------|
|                                                                              |             | SPR    | - | L          | C          | E         | 1A                        | 150  |        |
| <b>Series</b>                                                                | <b>Code</b> | SPR    |   | L          | C          | E         | 1A                        | 150  |        |
| SPR                                                                          | SPR         |        |   |            |            |           |                           |      |        |
| <b>Body Style</b>                                                            | <b>Code</b> |        |   | L          | C          | E         | 1A                        | 150  |        |
| L-Body style                                                                 | L           |        |   |            |            |           |                           |      |        |
| T-Body style                                                                 | T           |        |   | L          | C          | E         | 1A                        | 150  |        |
|                                                                              |             |        |   |            |            |           |                           |      |        |
| <b>Connection</b>                                                            | <b>Code</b> |        |   | L          | C          | E         | 1A                        | 150  |        |
| Clamp                                                                        | C           |        |   |            |            |           |                           |      |        |
| <b>Elastomer</b>                                                             | <b>Code</b> |        |   | L          | C          | E         | 1A                        | 150  |        |
| EPDM                                                                         | E           |        |   |            |            |           |                           |      |        |
| FKM                                                                          | V           |        |   | L          | C          | E         | 1A                        | 150  |        |
|                                                                              |             |        |   |            |            |           |                           |      |        |
| <b>Spring Set Range</b>                                                      | <b>Code</b> |        |   | L          | C          | E         | 1A                        | 150  |        |
| 10 - 49 PSI                                                                  | 1A          |        |   |            |            |           |                           |      |        |
| 50 - 99 PSI                                                                  | 2A          |        |   | L          | C          | E         | 1A                        | 150  |        |
| 100 - 300 PSI                                                                | 3A          |        |   |            |            |           |                           |      |        |
| <b>Size</b>                                                                  | <b>Code</b> |        |   | L          | C          | E         | 1A                        | 150  |        |
| 1-1/2"                                                                       | 150         |        |   |            |            |           |                           |      |        |
| 2"                                                                           | 200         |        |   | L          | C          | E         | 1A                        | 150  |        |
|                                                                              |             |        |   |            |            |           |                           |      |        |
| <b>Surface Finish</b>                                                        | <b>Code</b> |        |   | L          | C          | E         | 1A                        | 150  |        |
| 32 Ra                                                                        | Blank       |        |   |            |            |           |                           |      |        |
| 25 Ra                                                                        | B           |        |   | L          | C          | E         | 1A                        | 150  |        |
| 20 Ra                                                                        | C           |        |   |            |            |           |                           |      |        |
| 15 Ra                                                                        | D           |        |   | L          | C          | E         | 1A                        | 150  |        |
|                                                                              |             |        |   |            |            |           |                           |      |        |

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SPR-Series Pressure Relief Valve - Bill of Materials



| Item # | SPR Size      | Part #       | Description          | Material | Qty |
|--------|---------------|--------------|----------------------|----------|-----|
| 1      | 1-1/2"        | SPR-LBDY150  | L-body               | 316L SS  | 1   |
|        | 2"            | SPR-LBDY200  |                      |          |     |
| 1A     | 1-1/2"        | SPR-TBDY150  | T-body               | 316L SS  | 1   |
|        | 2"            | SPR-TBDY200  |                      |          |     |
| 2      | 1-1/2"        | 13IL-Q100150 | clamp                | 304 SS   | 1   |
|        | 2"            | 13IL-Q200    |                      |          | 1   |
| 3      | 1-1/2" and 2" | SPR-SSE      | seat seal            | EPDM     | 1   |
|        |               | SPR-SSV      |                      | FKM      | 1   |
| 4      | 1-1/2"        | SPR-STEM150  | stem                 | 316L SS  | 1   |
|        | 2"            | SPR-STEM200  |                      |          | 1   |
| 5      | 1-1/2"        | 40IE150      | body gasket          | EPDM     | 1   |
|        |               | 40IV150      |                      | FKM      |     |
|        | 2"            | 40IE200      |                      | EPDM     |     |
|        |               | 40IV200      |                      | FKM      |     |
| 6      | 1-1/2"        | SPR-SH150    | stem holder          | 316L SS  | 1   |
|        | 2"            | SPR-SH200    |                      |          |     |
| 7      | 1-1/2" and 2" | SPR-SOE      | stem O-ring          | EPDM     | 1   |
|        |               | SPR-SOV      |                      | EPDM     |     |
| 8      | 1-1/2"        | SPR-ADPTR150 | adapter              | 304 SS   | 1   |
|        | 2"            | SPR-ADPTR200 |                      |          |     |
| 9      | 1-1/2" and 2" | SPR-LN       | locking nut          | 304 SS   | 1   |
| 10     |               | SPR-WSHR     | washer               |          | 1   |
| 11     |               | SPR-S50      | spring set (Code 1A) |          | 1   |
| 11     |               | SPR-S100     | spring set (Code 2A) |          | 1   |
| 11     |               | SPR-S300     | spring set (Code 3A) |          | 1   |
|        |               | SPR-TOPCAP   | top cap              |          | 1   |
|        |               | SPR-ADJSTCAP | adjustable cap       |          | 1   |
| 13     |               |              |                      |          |     |



## DX60-Series Tanker Valve



### Applications

- Used on food-grade and dairy stainless steel bulk transport trailers to safely and hygienically load and unload various products including milk, juices, chocolate, glycerin, and many types of food-grade oils
- These valves are found in the tanker manufacturing and repair/replacement markets

### Sizes

- 3", 6" x 6", 6" x 4", 6" x 3" (other sizes available upon request)

### Features

- Drop-in replacement for other 60TTF valves on the market
- Durable valve body machined from bar
- Lip seal provides fluid-tight seal whether the plunger is open or closed
  - Cycle tested to over 70,000 cycles
- Easy-lock plunger for locking valve in open position with no external clips needed
- Patented closure system to eliminate the pinch point that may result in injury on competitor's valves
- Bonnet design uses standard sanitary clamps for easy removal without the need of tools

### Materials

- Product contact metal components: 304 stainless steel
- Non-product contact metal components: see BOM for individual component materials
- Product contact seals: FKM or nitrile rubber (FDA 21CFR177.2600 & 3A 18-03 Class I)

### Specifications

- Standard connections
  - 3" Flange with ANSI B16.5 class 150# flange bolt circle x 3" sanitary male threaded bevel seat
  - 6" sanitary tri-clamp flange x 3" sanitary male threaded bevel seat adapter
  - 6" sanitary tri-clamp ferrule x 6" 90° outlet tri-clamp ferrule
  - Other connection types available upon request
- Valve data
  - Maximum product line pressure: **75 PSI (5.17 Bar)**
  - Maximum operating temperature: **212°F (100°C)**
  - Minimum operating temperature: **-20°F (-29°C)**
  - Maximum ambient temperature: **140°F (60°C)**
- Surface Finish
  - Product Contact Metal Components:  $\leq 32$  Ra
  - Non-Product Contact Metal Components:  $\leq 63$  Ra
- Cleaning method: 3A certified for Clean-In-Place (CIP) and Clean-Out-Of-Place (COP)



Aluminum cover with  
lanyard style cover nut



Aluminum cover with 5/8" UNC  
threaded post and nut

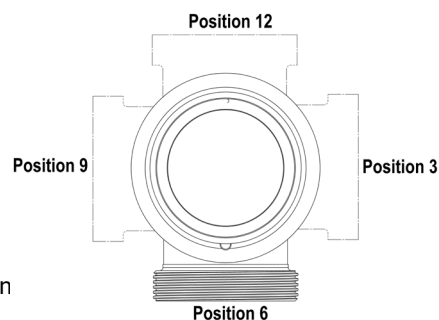


Optional plunger with  
freeze rod



## DX60-Series Tanker Valve - Part Number Key

| DX60-Series Hygienic Tanker Valve<br>Part Number Key<br>Example: DX603010A1GV1_ |             | Series | Valve Body |    |   |   | Material | Seat Material | Valve Cover | Options |
|---------------------------------------------------------------------------------|-------------|--------|------------|----|---|---|----------|---------------|-------------|---------|
|                                                                                 |             | DX60   | 30         | 10 | A | 1 | G        | V             | 1           |         |
| <b>Series</b>                                                                   | <b>Code</b> | ←      | ←          | ←  | ← | ← | ←        | ←             | ←           | ←       |
| DX60                                                                            | DX60        |        |            |    |   |   |          |               |             |         |
| <b>Valve Size</b>                                                               | <b>Code</b> |        |            |    |   |   |          |               |             |         |
| 3"                                                                              | 30          |        |            |    |   |   |          |               |             |         |
| 3" at position 6 / 2" at position 3, 9, or 12                                   | 32          |        |            |    |   |   |          |               |             |         |
| 3" at position 6 / 2-1/2" at positions 3, 9, or 12                              | 35          |        |            |    |   |   |          |               |             |         |
| 6" to trailer / 3" at 3, 6, 9, or 12                                            | 63N         |        |            |    |   |   |          |               |             |         |
| 6" to trailer / 6" 90° outlet                                                   | 60          |        |            |    |   |   |          |               |             |         |
| <b>Valve Body Style</b>                                                         | <b>Code</b> |        |            |    |   |   |          |               |             |         |
| L (2-port shut-off) position 6                                                  | 10          |        |            |    |   |   |          |               |             |         |
| Multiport (3-port shut-off) positions 6 and 3                                   | 20          | ←      | ←          | ←  | ← | ← | ←        | ←             | ←           | ←       |
| Multiport (3-port shut-off) positions 6 and 9                                   | 30          |        |            |    |   |   |          |               |             |         |
| Multiport (3-port shut-off) positions 6 and 12                                  | 40          |        |            |    |   |   |          |               |             |         |
| <b>Surface Finish</b>                                                           | <b>Code</b> |        |            |    |   |   |          |               |             |         |
| 32 Ra (I.D. mech polish)                                                        | A           |        |            |    |   |   |          |               |             |         |
| <b>Connections</b>                                                              | <b>Code</b> |        |            |    |   |   |          |               |             |         |
| Flange (to trailer) x male threaded bevel *                                     | 1           |        |            |    |   |   |          |               |             |         |
| Plain bevel (to trailer) x male threaded bevel                                  | 2           |        |            |    |   |   |          |               |             |         |
| <b>Wetted Parts Material</b>                                                    | <b>Code</b> |        |            |    |   |   |          |               |             |         |
| 304 stainless steel                                                             | G           |        |            |    |   |   |          |               |             |         |
| 316L stainless steel                                                            | R           | ←      | ←          | ←  | ← | ← | ←        | ←             | ←           | ←       |
| <b>Seat Material</b>                                                            | <b>Code</b> |        |            |    |   |   |          |               |             |         |
| FKM                                                                             | V           |        |            |    |   |   |          |               |             |         |
| Nitrile rubber                                                                  | B           |        |            |    |   |   |          |               |             |         |
| <b>Valve Dust Cover</b>                                                         | <b>Code</b> |        |            |    |   |   |          |               |             |         |
| Aluminum with lanyard style cover nut                                           | 1           |        |            |    |   |   |          |               |             |         |
| No cover                                                                        | 2           |        |            |    |   |   |          |               |             |         |
| Aluminum with 5/8" UNC threaded post and nut                                    | 3           |        |            |    |   |   |          |               |             |         |
| <b>Options</b>                                                                  | <b>Code</b> |        |            |    |   |   |          |               |             |         |
| None                                                                            | blank       |        |            |    |   |   |          |               |             |         |
| Plunger with freeze rod                                                         | R           | ←      | ←          | ←  | ← | ← | ←        | ←             | ←           | ←       |
| No bevel seat nut or cap                                                        | A           |        |            |    |   |   |          |               |             |         |



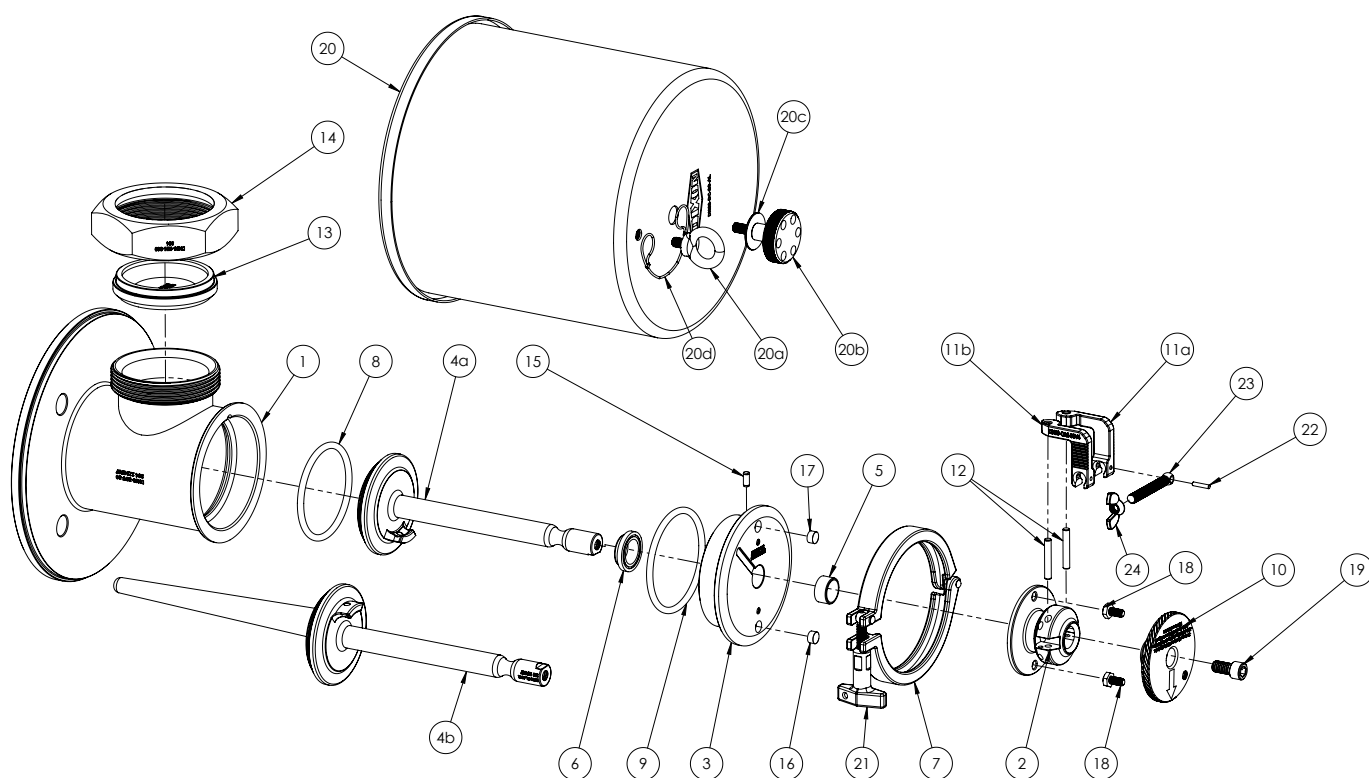
\* When used with valve size code 63, the flange is a tri-clamp style connection

NOTE: For other sizes and configurations not listed, please contact the Dixon® Sanitary Engineering department by emailing [sanitaryengineering@dixonvalve.com](mailto:sanitaryengineering@dixonvalve.com) or give us a call at 800.789.1718.

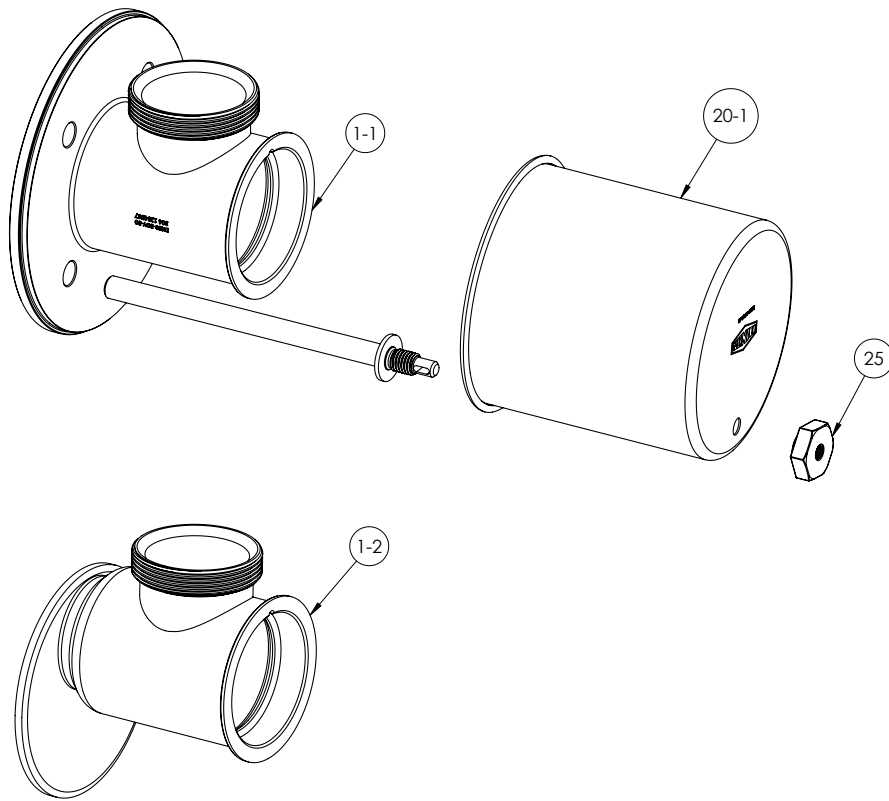
## DX60-Series Tanker Valve - Standard Valve Part Numbers

| Size    | Connections                                | Cover Style                                          | Freeze Rod         | Material            | Weight (lbs) | Part #         |
|---------|--------------------------------------------|------------------------------------------------------|--------------------|---------------------|--------------|----------------|
| 3"      | 150# flange x male threaded bevel seat     | with aluminum cover (lanyard style dust cover)       | with freeze rod    | 304, nitrile rubber | 28.0         | DX603010A1GB1R |
|         |                                            |                                                      |                    | 304, FKM            | 28.0         | DX603010A1GV1R |
|         |                                            |                                                      | without freeze rod | 304, nitrile rubber | 27.0         | DX603010A1GB1  |
|         |                                            |                                                      |                    | 304, FKM            | 27.0         | DX603010A1GV1  |
|         |                                            | with aluminum cover (5/8" UNC threaded post and nut) | with freeze rod    | 304, nitrile rubber | 30.5         | DX603010A1GB3R |
|         |                                            |                                                      |                    | 304, FKM            | 30.5         | DX603010A1GV3R |
|         |                                            |                                                      | without freeze rod | 304, nitrile rubber | 29.4         | DX603010A1GB3  |
|         |                                            |                                                      |                    | 304, FKM            | 29.4         | DX603010A1GV3  |
|         |                                            | without aluminum cover                               | with freeze rod    | 304, FKM            | 26.4         | DX603010A1GV2R |
|         |                                            |                                                      |                    | 304, nitrile rubber | 26.4         | DX603010A2GB2R |
|         |                                            |                                                      | without freeze rod | 304, nitrile rubber | 25.4         | DX603010A1GB2  |
|         |                                            |                                                      |                    | 304, FKM            | 25.4         | DX603010A1GV2  |
| 6" x 3" | 6" tri-clamp x 3" male threaded bevel seat | without aluminum cover                               | without freeze rod | 304, FKM            | 25.4         | DX6063N10A1GV2 |
|         |                                            |                                                      |                    | 304, nitrile rubber | 19.9         | DX6063N10A1GB2 |
| 6"      | 6" ferrule x 6" 90° outlet ferrule         | without aluminum cover                               | without freeze rod | 304, FKM            | -            | DX606010A3GV2  |

## DX60-Series Tanker Valve - BOM



## DX60-Series Tanker Valve - Bill of Materials (Alternative Body and Cover)



| Part Type                       | Part #          | Item # | Material | Description                                                             | Qty |
|---------------------------------|-----------------|--------|----------|-------------------------------------------------------------------------|-----|
| Body housing                    | DX60-BDY-30     | 1      | 304 SS   | DX60 body (3" flange x 3" male bevel seat)                              | 1   |
|                                 | DX60-BDY-30P    | 1-1    | 304 SS   | DX60 body (3" flange x 3" male bevel seat) with 5/8" UNC post for cover | 1   |
|                                 | DX60-BDY-60103N | 1-2    | 304 SS   | DX60 body (6" tri-clamp x 3" male bevel seat)                           | 1   |
| Bonnet hub flange               | DX60-BF-30      | 2      | 304 SS   | DX60 bonnet hub flange (3" valve)                                       | 1   |
| Bonnet                          | DX60-BON-30     | 3      | 304 SS   | DX60 bonnet (3" valve)                                                  | 1   |
| Plunger                         | DX60-PL-30      | 4a     | 304 SS   | DX60 plunger (3" valve)                                                 | 1   |
| Plunger - freeze rod (optional) | DX60-PL-30-R    | 4b     | 304 SS   | DX60 plunger with freeze rod (3" valve)                                 | 1   |
| Stem bushing                    | DX60-SB-30      | 5      | PTFE     | DX60 stem bushing (3" valve)                                            | 1   |
| Lip seal                        | DX60-LS-V-30    | 6      | FKM      | DX60 FKM lip seal (3" valve)                                            | 1   |
| Body clamp                      | DX60-CLMP-30    | 7      | 304      | DX60 body clamp (3" valve)                                              | 1   |
| Plunger seal                    | DX60-PS-V-30    | 8      | FKM      | DX60 FKM plunger seal (3" valve)                                        | 1   |
| Bonnet seal                     | DX60-BS-V-30    | 9      | FKM      | DX60 FKM bonnet seal (3" valve)                                         | 1   |
| Plunger handle                  | DX60-HA-30      | 10     | 304 SS   | DX60 plunger handle (3" valve)                                          | 1   |
| Handle cam arm left             | DX60-CA-KIT     | 11a    | 304 SS   | Handle cam arm left (3" valve)                                          | 1   |
| Handle cam arm right            |                 | 11b    | 304 SS   | Handle cam arm right (3" valve)                                         | 1   |
| Pin                             | DX60-G100PSS    | 12     | 304 SS   | Cam arm pin                                                             | 2   |
| Bevel seat cap                  | DX60-16A-G30    | 13     | 304 SS   | DX60 bevel seat cap (3" valve)                                          | 1   |

### DX60-Series Tanker Valve - Bill of Materials

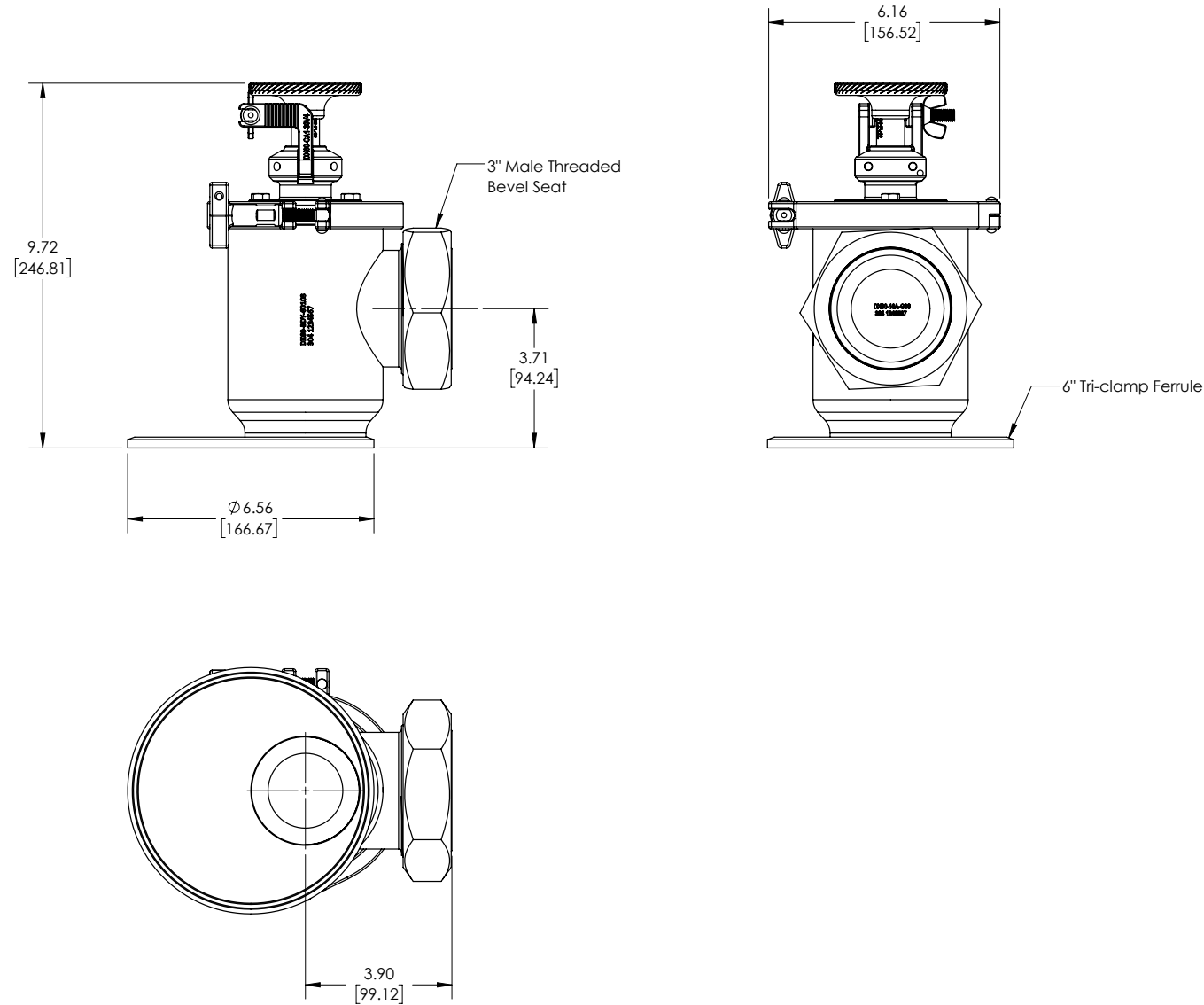
| Part Type                            | Part #          | Item # | Material | Description                                                               | Qty |
|--------------------------------------|-----------------|--------|----------|---------------------------------------------------------------------------|-----|
| Bevel seat nut                       | 13H-G300        | 14     | 304 SS   | 3" bevel seat nut                                                         | 1   |
| Bonnet locating pin                  | DX60-BLP-30     | 15     | 18-8     | DX60 bonnet locating pin (3" valve)                                       | 1   |
| Bonnet marker - red                  | DX60-BMR        | 16     | Nylon    | DX60 red bonnet marker                                                    | 1   |
| Bonnet marker - green                | DX60-BMG        | 17     | Nylon    | DX60 green bonnet marker                                                  | 1   |
| Bonnet flange bolt                   | DX60-BFHB-30    | 18     | 18-8     | DX60 bonnet flange bolt (3" valve)                                        | 2   |
| Plunger handle bolt                  | DX60-HAB-30     | 19     | 304 SS   | DX60 plunger handle bolt                                                  | 1   |
| Dust cover                           | DX60-DC-30-ALRK | 20     | AL       | DX60 valve dust cover assembly with lanyard/nut (3" valve)                | 1   |
| Dust cover                           | DX60-DC-30-ALP  | 20-1   | AL       | DX60 valve dust cover for 5/8" UNC post style body                        | 1   |
| Dust cover eye bolt                  | DX60-DCEB-30    | 20a    | 304 SS   | DX60 dust cover eye bolt                                                  | 1   |
| Dust cover nut                       | DX60-DCN-30     | 20b    | AL       | DX60 dust cover nut                                                       | 1   |
| Dust cover nut washer                | DX60-DCNW-30    | 20c    | 18-8     | DX60 dust cover nut washer                                                | 1   |
| Dust cover nut assembly with lanyard | DX60-DCNA-30    | 20a-d  | --       | Nut assembly w/ lanyard                                                   | 1   |
| Body clamp wing nut                  | DX60-13DWN      | 21     | 304 SS   | DX60 body clamp wing nut                                                  | 1   |
| SS slotted spring pin, 1/8" x 5/8"   | DX-92373A179    | 22     | 18-8     | SS slotted spring pin, 1/8" x 5/8"                                        | 1   |
| 5/16" x 2-1/2" threaded eye bolt     | 13IB6           | 23     | 304 SS   | 5/16" x 2-1/2" threaded eye bolt                                          | 1   |
| SS wing nut, 5/16"-18", right hand   | DX-92001A330    | 24     | 18-8     | SS wing nut, 5/16"-18", right hand                                        | 1   |
| 5/8" aluminum dust cover stem nut    | DX60-DCSN-AL    | 25     | AL       | 5/8" UNC aluminum dust cover stem nut. Use with dust cover DX60-DC-30-ALP | 1   |

### DX60-Series Tanker Valve - Other Material Components

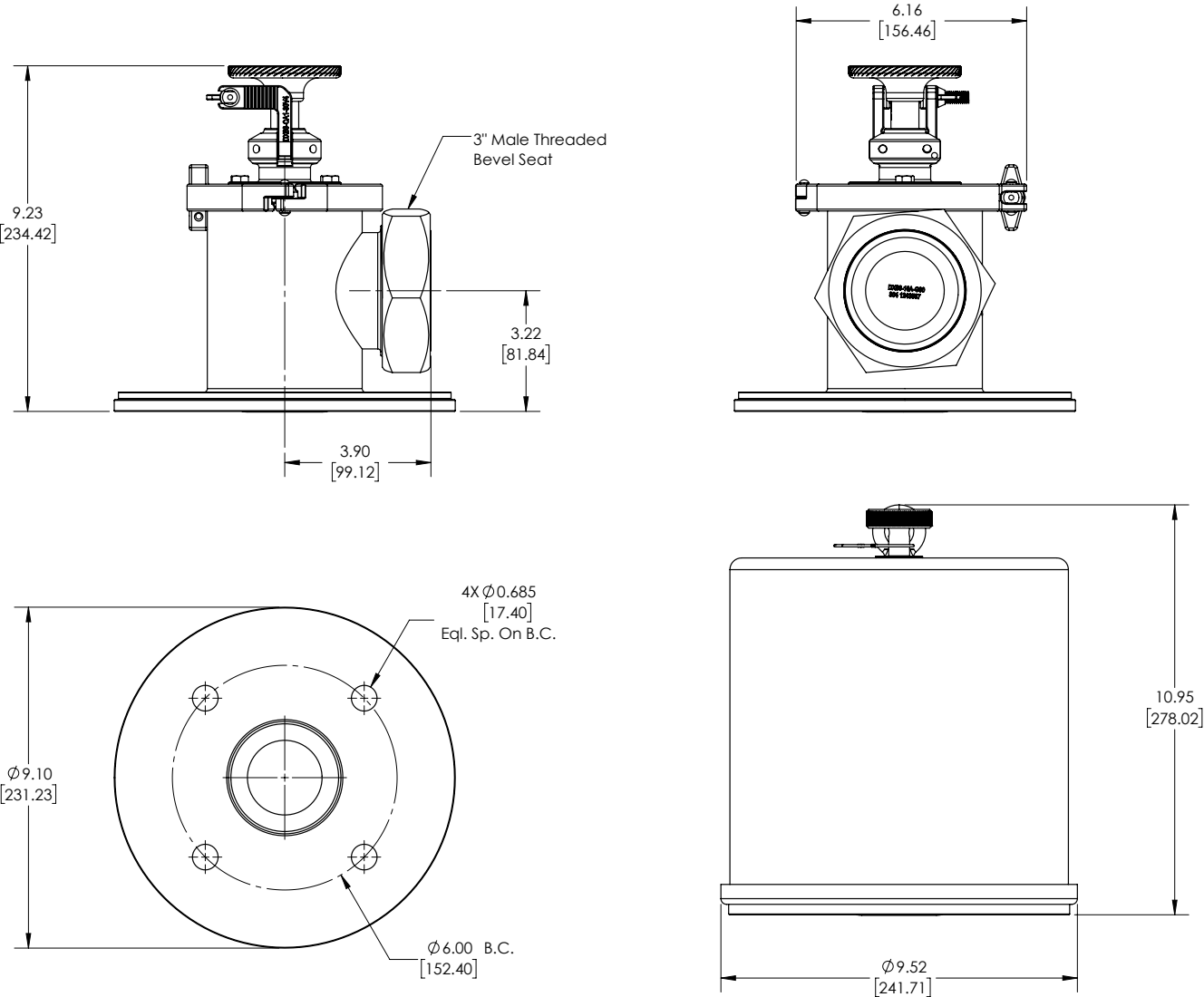
| Part Type      | Part #          | Item # | Material       | Description                                                                   | Qty |
|----------------|-----------------|--------|----------------|-------------------------------------------------------------------------------|-----|
| Body housing   | DX60-BDY-30R    | 1      | 316L SS        | DX60 body (3" flange x 3" male bevel Seat), 316L                              | 1   |
|                | DX60-BDY-30PR   | 1-1    | 316L SS        | DX60 body (3" flange x 3" male bevel seat) with 5/8" UNC post for cover, 316L | 1   |
|                | DX60-BDY60103NR | 1-2    | 316L           | DX60 body (6" tri-clamp x 3" male bevel seat), 316L                           | 1   |
| Bonnet         | DX60-BON-30R    | 3      | 316L           | DX60 bonnet (3" valve), 316L                                                  | 1   |
| Plunger        | DX60-PL-30R     | 4a     | 316L           | DX60 plunger (3" valve), 316L                                                 | 1   |
| Bevel seat cap | DX60-16A-G30R   | 13     | 316L           | DX60 bevel seat cap (3" valve), 316L                                          | 1   |
| Lip seal       | DX60-LS-B-30    | 6      | nitrile rubber | DX60 NBR lip seal (3" valve)                                                  | 1   |
| Plunger seal   | DX60-PS-B-30    | 8      | nitrile rubber | DX60 NBR plunger seal (3" valve)                                              | 1   |
| Bonnet seal    | DX60-BS-B-30    | 9      | NBR            | DX60 NBR bonnet seal (3" valve)                                               | 1   |

DX60-Series Tanker Valve - Dimensions

6x3 Valve

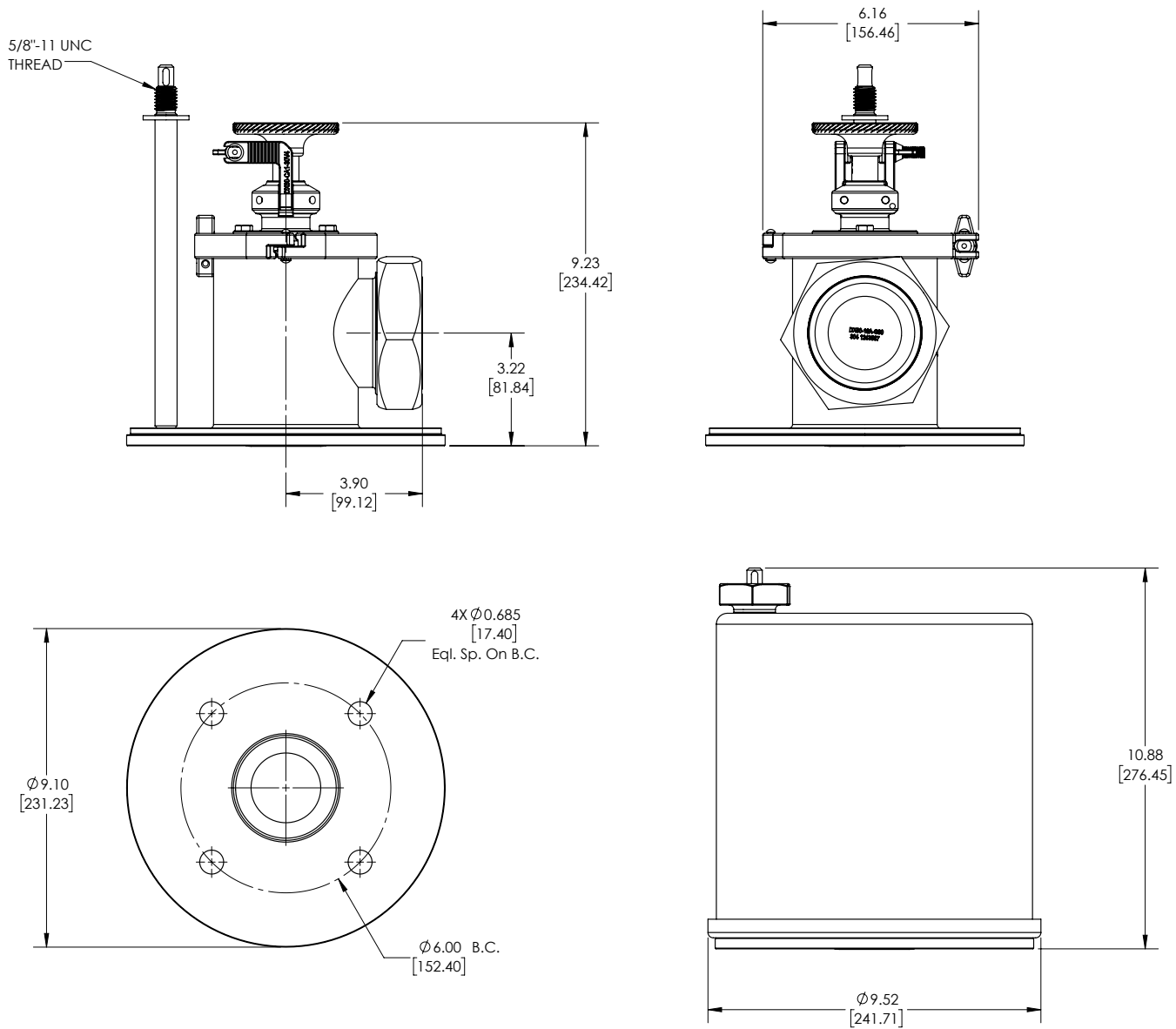


**DX60-Series Tanker Valve - Dimensions**  
**3x3 Valve 150# Flange**



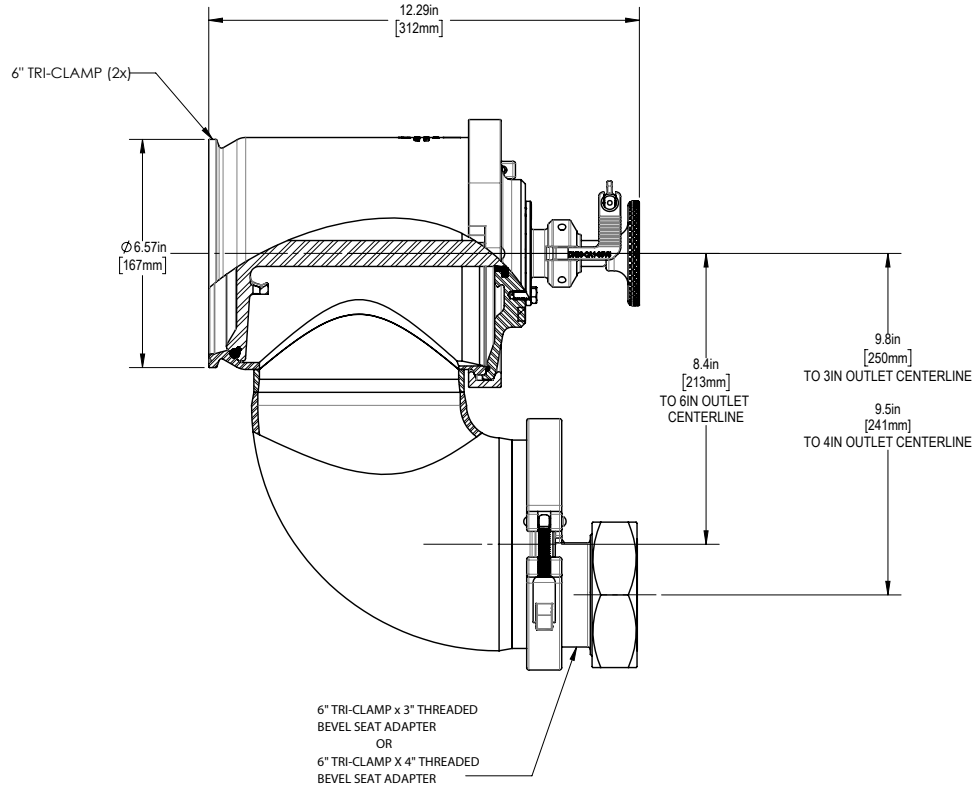
DX60-Series Tanker Valve - Dimensions

3x3 Valve 150# Flange Post Covers



## DX60-Series Tanker Valve - Dimensions

### 6x6 Valve with Optional Reducing End Cap



## DX60-Series Tanker Valve - Repair Kits

| Valve Size     | Lip Seal Material (Item 6) | Plunger Seal Material (Item 8) | Bonnet Seat Material (Item 9) | Repair Kit Part # | Kit Includes  |
|----------------|----------------------------|--------------------------------|-------------------------------|-------------------|---------------|
| 3" and 6" x 3" | -                          | FKM                            | FKM                           | DX60-30-SK1-V     | Items 8, 9    |
|                | FKM                        | FKM                            | FKM                           | DX60-30-SK2-V     | Items 6, 8, 9 |
|                | -                          | Nitrile rubber                 | Nitrile rubber                | DX60-30-SK1-B     | Items 8, 9    |
|                | Nitrile rubber             | Nitrile rubber                 | Nitrile rubber                | DX60-30-SK2-B     | Items 6, 8, 9 |

| Repair Kit Part # | Description                                       | Kit Contains                                                                                 |
|-------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------|
| DX60-30-SK1-V     | DX60 FKM plunger and bonnet seals                 | (1) FKM plunger seal, (1) FKM bonnet seal                                                    |
| DX60-30-SK2-V     | DX60 FKM lip seal, plunger seal, and bonnet seal  | (1) FKM lip seal, (1) FKM plunger seal, (1) FKM bonnet seal                                  |
| DX60-30-SK1-B     | DX60 Buna plunger and bonnet seats                | (1) Nitrile rubber plunger seal, (1) nitrile rubber bonnet seal                              |
| DX60-30-SK2-B     | DX60 Buna lip seal, plunger seal, and bonnet seal | (1) Nitrile rubber lip seal, (1) nitrile rubber plunger seal, (1) nitrile rubber bonnet seal |



### RP-BA-Series Aluminum Rack and Pinion Actuator

Utilized with industrial and sanitary valves for quarter turn actuation in industrial, food, beverage, and pharmaceutical industries

#### Features

- Body: extruded hard anodized aluminum alloy provides wear and corrosion resistance
- Heavy duty spring: high tensile steel springs with retainer and guide for safety
- Pistons: die-cast aluminum alloy fitted with nylon bushing guides and nitrile rubber seats
- End caps: epoxy-coated die-cast aluminum alloy for maximum resistance to corrosive environments
- Pinion: electroless nickel plated carbon steel for maximum corrosion and wear resistance
- Rotation adjustment: full  $\pm 5^\circ$  of travel adjustments in the open and closed positions, standard on all sizes
- Solenoid interface: international VDE/VDI 3845 NAMUR solenoid mounting standard on all models
- Indicator: high visibility polyethylene, open/close indication is standard on all models
- Tested to 1 million cycles
- Twin rack and pinion design
- Female double square output shaft
- ISO 5211 bolt patterns

#### Specifications

- Size range: 40 in-lb to 16,500 in-lb
- Standard connections: ISO 5211 mounting pad
  - F04, F05, F07, F10, F12, F14
- Operating pressure: **40 to 120 PSI**
- Maximum pressure rating: **150 PSI**
- Temperature range: **-4°F to 200°F (-20°C to 93°C)**
- FKM seal maximum temperature: **350°F (176°C)**
- Operating media: dry or lubricated
- Piston and pinion lubrication: Shell Darina R2
- Range of rotation adjustment: 80° to 100°
- Cycle times
  - Overall cycle time performance will vary greatly for each unit
  - Cycle times are dependent on air supply, valve torque, line pressure, temperature, and media



## RP-BA-Series Aluminum Rack and Pinion Actuator - Spring Return Torque Ratings (in-lbs)

| Part #       | Spring Set | Spring Torque |      | Air Torque |      |        |      |        |      |         |      |         |       |
|--------------|------------|---------------|------|------------|------|--------|------|--------|------|---------|------|---------|-------|
|              |            |               |      | 40 PSI     |      | 60 PSI |      | 80 PSI |      | 100 PSI |      | 120 PSI |       |
|              |            | Start         | End  | Start      | End  | Start  | End  | Start  | End  | Start   | End  | Start   | End   |
| RP-BA-025-SR | 2          | 69            | 45   | 76         | 47   | 138    | 109  | 201    | 172  | 263     | 234  | 326     | 312   |
|              | 3          | 104           | 67   |            |      | 113    | 70   | 176    | 133  | 229     | 195  | 301     | 258   |
|              | 4          | 140           | 90   |            |      | 88     | 31   | 151    | 93   | 213     | 156  | 276     | 218   |
|              | 5          | 175           | 112  |            |      |        |      | 126    | 54   | 189     | 116  | 251     | 179   |
|              | 6          | 209           | 135  |            |      |        |      |        |      | 164     | 77   | 227     | 139   |
| RP-BA-045-SR | 2          | 126           | 81   | 135        | 83   | 248    | 196  | 361    | 309  | 473     | 421  | 586     | 533   |
|              | 3          | 190           | 121  |            |      | 203    | 125  | 316    | 238  | 428     | 350  | 541     | 463   |
|              | 4          | 254           | 162  |            |      | 158    | 54   | 271    | 167  | 383     | 279  | 496     | 392   |
|              | 5          | 317           | 202  |            |      |        |      | 226    | 96   | 339     | 209  | 451     | 321   |
|              | 6          | 381           | 243  |            |      |        |      |        |      | 293     | 137  | 406     | 251   |
| RP-BA-101-SR | 2          | 279           | 179  | 300        | 184  | 549    | 433  | 798    | 682  | 1048    | 931  | 1297    | 1181  |
|              | 3          | 418           | 270  |            |      | 449    | 278  | 698    | 526  | 947     | 775  | 1196    | 1025  |
|              | 4          | 559           | 360  |            |      | 350    | 120  | 599    | 371  | 848     | 618  | 1097    | 867   |
|              | 5          | 698           | 450  |            |      |        |      | 500    | 212  | 749     | 464  | 998     | 710   |
|              | 6          | 839           | 540  |            |      |        |      |        |      | 650     | 304  | 899     | 557   |
| RP-BA-225-SR | 2          | 659           | 394  | 690        | 395  | 1253   | 958  | 1816   | 1521 | 2379    | 2084 | 2939    | 2647  |
|              | 3          | 990           | 590  |            |      | 1034   | 591  | 1596   | 1154 | 2159    | 1717 | 2722    | 2280  |
|              | 4          | 1320          | 787  |            |      | 816    | 226  | 1379   | 788  | 2029    | 1351 | 2505    | 1914  |
|              | 5          | 1650          | 984  |            |      |        |      | 1161   | 424  | 1724    | 984  | 2287    | 1549  |
|              | 6          | 1980          | 1181 |            |      |        |      |        |      | 1506    | 621  | 2069    | 1181  |
| RP-BA-365-SR | 2          | 1053          | 607  | 1152       | 659  | 2063   | 1570 | 2975   | 2482 | 3886    | 3393 | 4797    | 4305  |
|              | 3          | 1573          | 912  |            |      | 1726   | 996  | 2637   | 1907 | 3549    | 2819 | 4460    | 3730  |
|              | 4          | 2091          | 1217 |            |      | 1388   | 423  | 2300   | 1335 | 3211    | 2246 | 4123    | 3157  |
|              | 5          | 2625          | 1519 |            |      |        |      | 1967   | 744  | 2878    | 1655 | 3789    | 2566  |
|              | 6          | 3144          | 1824 |            |      |        |      |        |      | 2540    | 1082 | 3452    | 1994  |
| RP-BA-500-SR | 2          | 1560          | 785  | 1590       | 803  | 2780   | 1990 | 3970   | 3180 | 5160    | 4380 | 6350    | 5570  |
|              | 3          | 2340          | 1180 |            |      | 2380   | 1200 | 3570   | 2400 | 4760    | 3590 | 5960    | 4780  |
|              | 4          | 3130          | 1570 |            |      | 1980   | 414  | 3180   | 1600 | 4370    | 2800 | 5560    | 3990  |
|              | 5          | 3910          | 1960 |            |      |        |      | 2780   | 815  | 3970    | 2010 | 5160    | 3200  |
|              | 6          | 4690          | 2360 |            |      |        |      |        |      | 3570    | 1220 | 4760    | 2410  |
| RP-BA-110-SR | 2          | 3400          | 1720 | 3460       | 1760 | 6060   | 4360 | 8660   | 6960 | 11300   | 9560 | 13900   | 12200 |
|              | 3          | 5100          | 2570 |            |      | 5200   | 2650 | 7790   | 5240 | 10400   | 7840 | 13000   | 10400 |
|              | 4          | 6790          | 3430 |            |      | 4330   | 932  | 6930   | 3530 | 9520    | 6130 | 12100   | 8730  |
|              | 5          | 8490          | 4290 |            |      |        |      | 6060   | 1810 | 8660    | 4410 | 11300   | 7010  |
|              | 6          | 10200         | 5150 |            |      |        |      |        |      | 7790    | 2700 | 10400   | 5300  |

NOTE: Spring set 4 is standard on all sizes

RP-BA-Series Rack and Pinion Actuator - Double Acting Torque Ratings (in-lbs)

| Part #       | 40 PSI | 60 PSI | 80 PSI | 100 PSI | 120 PSI |
|--------------|--------|--------|--------|---------|---------|
| RP-BA-012-DA | 63     | 94     | 125    | 156     | 188     |
| RP-BA-025-DA | 125    | 187    | 250    | 312     | 375     |
| RP-BA-045-DA | 225    | 337    | 450    | 562     | 675     |
| RP-BA-101-DA | 500    | 750    | 1000   | 1250    | 1500    |
| RP-BA-225-DA | 1125   | 1687   | 2250   | 2812    | 3375    |
| RP-BA-365-DA | 1825   | 2738   | 3650   | 4563    | 5475    |
| RP-DA-500-DA | 2500   | 3750   | 5000   | 6250    | 7500    |
| RP-BA-110-DA | 5500   | 8250   | 11000  | 13750   | 16500   |

Weight, Volume, Mounting, and Cycle Times - Spring Return

| Part #         | Weight (lbs) | Volume          |                 | ISO 5211 | Cycle Time (@ 80 PSI, No Load) |                    |
|----------------|--------------|-----------------|-----------------|----------|--------------------------------|--------------------|
|                |              | cm <sup>3</sup> | in <sup>3</sup> |          | Spring Side (seconds)          | Air Side (seconds) |
| RP-BA-025-SR05 | 4.21         | 170             | 10.37           | F05      | 0.05                           | 0.28               |
| RP-BA-025-SR   | 4.21         | 170             | 10.37           | F04      | 0.05                           | 0.25               |
| RP-BA-045-SR   | 5.20         | 324             | 19.77           | F05/F07  | 0.08                           | 0.39               |
| RP-BA-101-SR   | 11.45        | 708             | 43.20           | F05/F07  | 0.17                           | 0.81               |
| RP-BA-225-SR   | 22.50        | 1573            | 95.99           | F07/F10  | 0.3                            | 1.77               |
| RP-BA-365-SR   | 40.55        | 2673            | 163.12          | F10/F12  | 0.44                           | 2.52               |
| RP-BA-500-SR   | 57.80        | 3018            | 184.17          | F10/F12  | 0.6                            | 3.44               |
| RP-BA-110-SR   | 113.50       | 6381            | 389.39          | F14      | 1.31                           | 7.10               |

Weight, Volume, Mounting, and Cycle Times - Double Acting

| Part #         | Weight (lbs) | Volume   |        |         |        | ISO 5211 | Cycle Time (@ 80 PSI, No Load, seconds) |
|----------------|--------------|----------|--------|---------|--------|----------|-----------------------------------------|
|                |              | Outboard |        | Inboard |        |          |                                         |
|                |              | cm³      | in³    | cm³     | in³    |          |                                         |
| RP-BA-012-DA   | 2.24         | 77       | 4.70   | 80      | 4.88   | F04      | 0.04                                    |
| RP-BA-025-DA05 | 3.48         | 139      | 8.48   | 170     | 10.37  | F05      | 0.08                                    |
| RP-BA-025-DA   | 3.48         | 139      | 8.48   | 170     | 10.37  | F04      | 0.08                                    |
| RP-BA-045-DA   | 5.00         | 252      | 15.38  | 324     | 19.77  | F05/F07  | 0.10                                    |
| RP-BA-101-DA   | 8.70         | 495      | 30.21  | 708     | 43.20  | F05/F07  | 0.21                                    |
| RP-BA-225-DA   | 17.25        | 1163     | 70.97  | 1573    | 95.99  | F07/F10  | 0.50                                    |
| RP-BA-365-DA   | 33.00        | 2415     | 147.37 | 2673    | 163.12 | F10/F12  | 0.62                                    |
| RP-BA-500-DA   | 45.00        | 2863     | 174.71 | 3018    | 184.17 | F10/F12  | 1.80                                    |
| RP-BA-110-DA   | 95.01        | 5591     | 341.18 | 6381    | 389.39 | F14      | 3.80                                    |

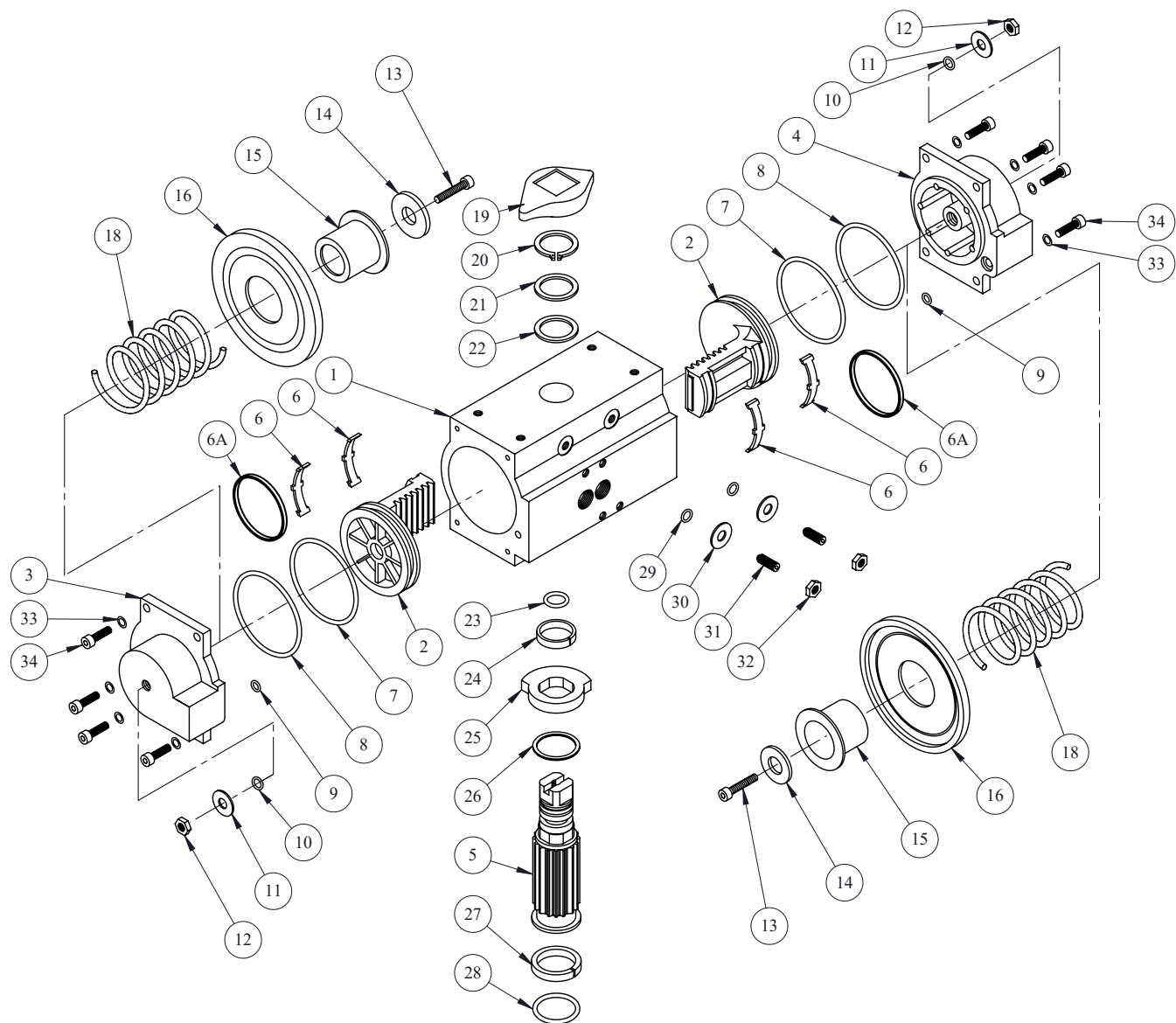
## RP-BA-Series Aluminum Rack and Pinion Actuator - Part Number Key

| RP-BA-Series Aluminum Rack and Pinion Actuator Part Number Key<br>Example: RP-BA-012-DACW |             | Type | Spring Set | Series | Elastomer | Size |   | Function | Rotation |
|-------------------------------------------------------------------------------------------|-------------|------|------------|--------|-----------|------|---|----------|----------|
|                                                                                           |             | RP   | -          | BA     | -         | 012  | - | DA       | CW       |
| <b>Type</b>                                                                               | <b>Code</b> | ←    |            |        |           |      |   |          |          |
| RP (rack and pinion)                                                                      | RP          |      |            |        |           |      |   |          |          |
| <b>Spring Set</b>                                                                         | <b>Code</b> | ←    |            |        |           |      |   |          |          |
| 2 spring set                                                                              | 2           |      |            |        |           |      |   |          |          |
| 3 springs                                                                                 | 3           |      |            |        |           |      |   |          |          |
| 4 springs (standard)                                                                      | -           |      |            |        |           |      |   |          |          |
| 5 springs                                                                                 | 4           |      |            |        |           |      |   |          |          |
| 6 springs                                                                                 | 5           |      |            |        |           |      |   |          |          |
| <b>Series</b>                                                                             | <b>Code</b> | ←    |            |        |           |      |   |          |          |
| BA                                                                                        | BA          |      |            |        |           |      |   |          |          |
| <b>Elastomer</b>                                                                          | <b>Code</b> | ←    |            |        |           |      |   |          |          |
| Nitrile Rubber (standard)                                                                 | -           |      |            |        |           |      |   |          |          |
| FKM                                                                                       | V           | ←    |            |        |           |      |   |          |          |
| <b>Size</b>                                                                               | <b>Code</b> |      |            |        |           |      |   |          |          |
| 012 (double acting only)                                                                  | 012         | ←    |            |        |           |      |   |          |          |
| 025 (F04)                                                                                 | 025         |      |            |        |           |      |   |          |          |
| 045                                                                                       | 045         |      |            |        |           |      |   |          |          |
| 101                                                                                       | 101         |      |            |        |           |      |   |          |          |
| 225                                                                                       | 225         |      |            |        |           |      |   |          |          |
| 365                                                                                       | 365         |      |            |        |           |      |   |          |          |
| 500                                                                                       | 500         |      |            |        |           |      |   |          |          |
| 1000                                                                                      | 110         |      |            |        |           |      |   |          |          |
| <b>Function</b>                                                                           | <b>Code</b> | ←    |            |        |           |      |   |          |          |
| Spring return                                                                             | SR          |      |            |        |           |      |   |          |          |
| Double acting                                                                             | DA          |      |            |        |           |      |   |          |          |
| Spring return F05 (025 only)                                                              | SR05        |      |            |        |           |      |   |          |          |
| Double acting F05 (025 only)                                                              | DA05        |      |            |        |           |      |   |          |          |
| <b>Rotation (air to P1)*</b>                                                              | <b>Code</b> | ←    |            |        |           |      |   |          |          |
| Counter clockwise (standard)                                                              | blank       |      |            |        |           |      |   |          |          |
| Clockwise                                                                                 | CW          |      |            |        |           |      |   |          |          |

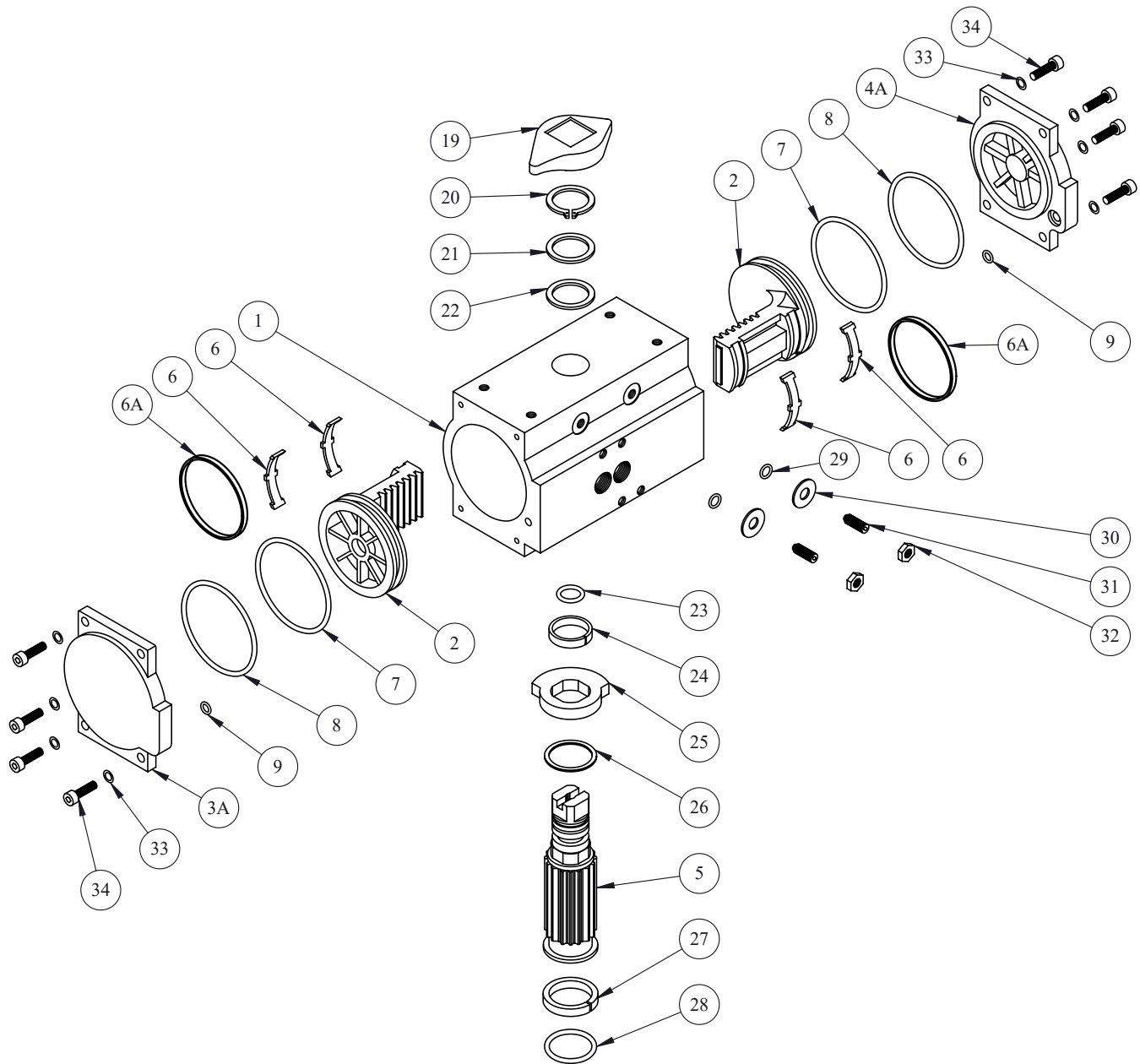
\*See drawing on page 10 for air to P1

J

RP-BA-Series Aluminum Rack and Pinion Spring Return Actuator - Bill of Materials



## RP-BA-Series Aluminum Rack and Pinion Double Acting Actuator - Bill of Materials



J

## RP-BA-Series Aluminum Rack and Pinion Actuator - Bill of Materials

| Item # | Description        | Material                  | Qty           |               | Part #       |
|--------|--------------------|---------------------------|---------------|---------------|--------------|
|        |                    |                           | Spring Return | Double Acting |              |
| 1      | body               | anodized aluminum alloy   | 1             |               | RP-BA-###-1  |
| 2      | piston             | die-cast aluminum alloy   | 2             |               | RP-BA-###-2  |
| 3      | left end cover SR  | die-cast aluminum alloy   | 1             | -             | RP-BA-###-3  |
| 3A     | left end cover DA  | die-cast aluminum alloy   | -             | 1             | RP-BA-###-3A |
| 4      | right end cover SR | die-cast aluminum alloy   | 1             | -             | RP-BA-###-4  |
| 4A     | right end cover DA | die-cast aluminum alloy   | -             | 1             | RP-BA-###-4A |
| 5      | pinion             | carbon steel              | 1             |               | RP-BA-###-5  |
| 6      | bearing            | nylon                     | *             |               | RP-BA-###-6  |
| 6A     | bearing            | nylon                     | **            |               | RP-BA-###-6A |
| 7      | O-ring             | nitrile or FKM            | 2             |               | RP-BA-###-7  |
| 8      | O-ring             | nitrile or FKM            | 2             |               | RP-BA-###-8  |
| 9      | O-ring             | nitrile or FKM            | 2             |               | RP-BA-###-9  |
| 10     | O-ring             | nitrile or FKM            | 2             | -             | RP-BA-###-10 |
| 11     | washer             | 304 SS                    | 2             | -             | RP-BA-###-11 |
| 12     | nut                | 304 SS                    | 2             | -             | RP-BA-###-12 |
| 13     | screw              | 304 SS                    | 2             | -             | RP-BA-###-13 |
| 14     | washer             | 304 SS                    | 2             | -             | RP-BA-###-14 |
| 15     | spring guide       | 304 SS                    | 2             | -             | RP-BA-###-15 |
| 16     | retainer           | 304 SS                    | 2             | -             | RP-BA-###-16 |
| 18     | spring             | high tensile steel        | ***           | -             | RP-BA-###-18 |
| 19     | piston indicator   | polyethylene              | 1             |               | RP-BA-###-19 |
| 20     | retaining ring     | 304 SS                    | 1             |               | RP-BA-###-20 |
| 21     | washer             | 304 SS                    | 1             |               | RP-BA-###-21 |
| 22     | bearing            | nylon                     | 1             |               | RP-BA-###-22 |
| 23     | O-ring             | nitrile or FKM            | 1             |               | RP-BA-###-23 |
| 24     | bearing            | nylon                     | 1             |               | RP-BA-###-24 |
| 25     | stop cam           | iron-based powdered metal | 1             |               | RP-BA-###-25 |
| 26     | retaining ring     | 304 SS                    | 1             |               | RP-BA-###-26 |
| 27     | bearing            | nylon                     | 1             |               | RP-BA-###-27 |
| 28     | O-ring             | nitrile or FKM            | 1             |               | RP-BA-###-28 |
| 29     | O-ring             | nitrile or FKM            | 2             |               | RP-BA-###-29 |
| 30     | washer             | 304 SS                    | 2             |               | RP-BA-###-30 |
| 31     | stop screw         | 304 SS                    | 2             |               | RP-BA-###-31 |
| 32     | nut                | 304 SS                    | 2             |               | RP-BA-###-32 |
| 33     | washer             | 304 SS                    | 8             |               | RP-BA-###-33 |
| 34     | cap screw          | 304 SS                    | 8             |               | RP-BA-###-34 |

\*Quantity 4 for size 012 to 101, quantity 2 for sizes 225 to 1000

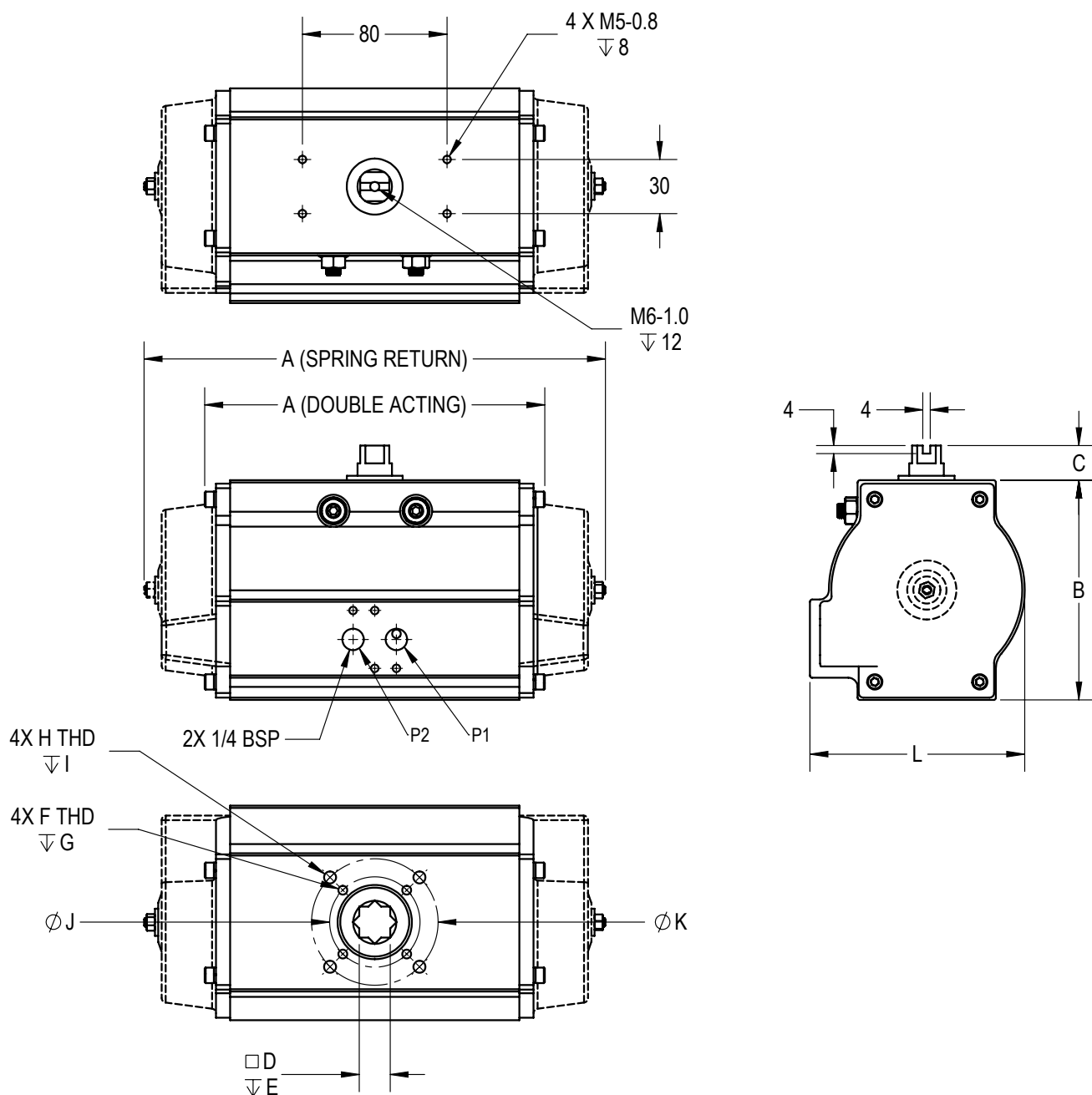
\*\*Quantity 0 for sizes 012 to 101, quantity 2 for sizes 225 to 1000

\*\*\*Actual number of physical springs will depend on spring set being used

###Refer to size below

- 012, 025, 045, 101, 225, 365, 500, 1000

## RP-BA-Series Aluminum Rack and Pinion Actuator - Dimensions



| Size      | A (in)        |               | B (in) | C (in) | D (mm) | E (in) | F   | G (mm) | H   | I (mm) | J   | K   | L (in) |
|-----------|---------------|---------------|--------|--------|--------|--------|-----|--------|-----|--------|-----|-----|--------|
|           | Spring Return | Double Acting |        |        |        |        |     |        |     |        |     |     |        |
| 012       | -             | 4.7           | 2.6    | 0.5    | 9      | 0.4    | M5  | 8      | -   | -      | F04 | -   | 2.9    |
| 025 (F04) | 7.7           | 5.7           | 3.1    | 0.5    | 11     | 0.7    | M5  | 8      | -   | -      | F04 | -   | 3.2    |
| 025 (F05) | 7.7           | 5.7           | 3.1    | 0.5    | 11     | 0.7    | M6  | 10     | -   | -      | F05 | -   | 3.2    |
| 045       | 8.1           | 5.9           | 4.8    | 0.5    | 14     | 0.8    | M6  | 10     | M8  | 12     | F05 | F07 | 3.7    |
| 101       | 9.8           | 7.2           | 5.6    | 0.5    | 17     | 1.0    | M6  | 10     | M8  | 12     | F05 | F07 | 4.7    |
| 225       | 14.0          | 10.2          | 6.9    | 0.5    | 22     | 1.2    | M8  | 12     | M10 | 15     | F07 | F10 | 5.5    |
| 365       | 16.6          | 12.0          | 7.7    | 0.5    | 27     | 1.4    | M10 | 15     | M12 | 19     | F10 | F12 | 7.3    |
| 500       | 19.2          | 14.3          | 9.6    | 0.5    | 27     | 1.4    | M10 | 15     | M12 | 19     | F10 | F12 | 8.1    |
| 1000      | 25.3          | 19.3          | 25.3   | 0.5    | 36     | 1.8    | M16 | 24     | -   | -      | F14 | -   | 9.4    |



RP-BA-Series Aluminum Rack and Pinion Actuator - Repair Kits

| Kit Type                    | Part #     | Contains                                   |
|-----------------------------|------------|--------------------------------------------|
| Seal/Bearing Kit (Nitrile)  | RP-012-RKB | Items 6, 7, 8, 9, 10, 23, 28, 29           |
|                             | RP-025-RKB |                                            |
|                             | RP-045-RKB |                                            |
|                             | RP-101-RKB |                                            |
|                             | RP-225-RKB |                                            |
|                             | RP-365-RKB |                                            |
|                             | RP-500-RKB |                                            |
|                             | RP-110-RKB |                                            |
| Seal/Bearing Kit (FKM)      | RP-012-RKV | Items 6, 7, 8, 9, 10, 23, 28, 29           |
|                             | RP-025-RKV |                                            |
|                             | RP-045-RKV |                                            |
|                             | RP-101-RKV |                                            |
|                             | RP-225-RKV |                                            |
|                             | RP-365-RKV |                                            |
|                             | RP-500-RKV |                                            |
|                             | RP-110-RKV |                                            |
| End Cap/Spring Set Assembly | RP-025-SS  | Items 3, 4, 10, 11, 12, 13, 14, 15, 16, 18 |
|                             | RP-045-SS  |                                            |
|                             | RP-101-SS  |                                            |
|                             | RP-225-SS  |                                            |
|                             | RP-365-SS  |                                            |
|                             | RP-500-SS  |                                            |
|                             | RP-110-SS  |                                            |

NOTE: All kits are qty 1 kit/actuator

## RP-BS-Series Stainless Steel Rack and Pinion Actuator

Stainless steel rack and pinion utilized with industrial and sanitary valves for quarter turn actuation in industrial, food/beverage, and pharmaceutical applications

### Features

- Replaceable top and bottom PTFE pinion bearings ensure low friction
- 304 SS construction for excellent chemical and corrosion resistance
- Travel stops provide  $\pm 4^\circ$  travel adjustment
- Precision cast stainless steel pistons are guided through full face engagement with the pinion and piston guide
- NAMUR slotted shaft is standard to provide a self-centering positive drive for positioners or a variety of switches
- Drive pinion is one-piece stainless steel alloy shaft with precision machined gear teeth for precise control



### Specifications

- Maximum pressure rating: **120 PSI**
- NBR elastomer (standard) temperature range: **-4°F to 180°F (-20°C to 82°C)**
- FKM elastomer (optional) temperature range: **-4°F to 302°F (-20°C to 150°C)**
- Available in:
  - Double acting
  - Spring return (standard CW - air actuated)
  - Spring return (optional CCW - air actuated)

### Actuator Weights Chart

| Model Size | Double Acting (lbs) | Spring Return (lbs) |
|------------|---------------------|---------------------|
| 045        | 5.0                 | 5.5                 |
| 060        | 8.0                 | 8.5                 |
| 085        | 14.0                | 14.5                |
| 105        | 25.5                | 27.0                |
| 125        | 38.5                | 40.5                |
| 140        | 63.5                | 65.5                |
| 160        | 80.0                | 83.0                |

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RP-BS-Series Stainless Steel Rack and Pinion Actuator Spring Return Torque Chart (in-lbs)

| Size         | Spring Per Side | Spring Torque |       | 40 PSI |       | 60 PSI |       | 80 PSI |       | 100 PSI |       |
|--------------|-----------------|---------------|-------|--------|-------|--------|-------|--------|-------|---------|-------|
|              | (5 STD)         | End           | Break | End    | Break | End    | Break | End    | Break | End     | Break |
| RP-BS-045-SR | 3               | 35            | 57    | 14     | 36    | 50     | 72    | 86     | 108   | 121     | 143   |
|              | 4               | 47            | 77    |        |       | 30     | 60    | 66     | 96    | 101     | 131   |
|              | 5               | 60            | 96    |        |       |        |       | 47     | 83    | 82      | 118   |
|              | 6               | 71            | 115   |        |       |        |       |        |       | 63      | 107   |
| RP-BS-065-SR | 3               | 67            | 136   | 35     | 104   | 120    | 189   | 206    | 275   | 291     | 360   |
|              | 4               | 90            | 182   |        |       | 74     | 166   | 160    | 252   | 245     | 337   |
|              | 5               | 112           | 227   |        |       |        |       | 115    | 230   | 200     | 315   |
|              | 6               | 135           | 273   |        |       |        |       |        |       | 154     | 292   |
| RP-BS-080-SR | 3               | 167           | 273   | 97     | 203   | 282    | 388   | 467    | 573   | 652     | 758   |
|              | 4               | 223           | 364   |        |       | 191    | 332   | 376    | 517   | 561     | 702   |
|              | 5               | 279           | 456   |        |       |        |       | 284    | 461   | 469     | 646   |
|              | 6               | 335           | 547   |        |       |        |       |        |       | 378     | 590   |
| RP-BS-105-SR | 3               | 346           | 574   | 50     | 278   | 362    | 590   | 675    | 903   | 987     | 1215  |
|              | 4               | 461           | 766   |        |       | 170    | 475   | 483    | 788   | 795     | 1110  |
|              | 5               | 576           | 956   |        |       |        |       | 293    | 673   | 605     | 985   |
|              | 6               | 692           | 1141  |        |       |        |       |        |       | 420     | 869   |
| RP-BS-125-SR | 3               | 651           | 1141  | 73     | 563   | 681    | 1171  | 1288   | 1778  | 1895    | 2385  |
|              | 4               | 869           | 1522  |        |       | 300    | 953   | 907    | 1560  | 1514    | 2167  |
|              | 5               | 1080          | 1902  |        |       |        |       | 527    | 1349  | 1134    | 1956  |
|              | 6               | 1301          | 2283  |        |       |        |       |        |       | 753     | 1735  |
| RP-BS-140-SR | 3               | 808           | 1859  | 175    | 1226  | 1192   | 2243  | 2209   | 3260  | 3226    | 4277  |
|              | 4               | 1071          | 2487  |        |       | 564    | 1980  | 1581   | 2997  | 2598    | 4014  |
|              | 5               | 1345          | 3107  |        |       |        |       | 961    | 2723  | 1978    | 3740  |
|              | 6               | 1610          | 3726  |        |       |        |       |        |       | 1359    | 3475  |
| RP-BS-160-SR | 3               | 1522          | 2098  | 895    | 1580  | 2420   | 3131  | 4022   | 4682  | 4657    | 6233  |
|              | 4               | 2035          | 3133  |        |       | 1720   | 2618  | 3122   | 4169  | 4822    | 5720  |
|              | 5               | 2550          | 3690  |        |       |        |       | 2467   | 3654  | 3588    | 5205  |
|              | 6               | 3054          | 4893  |        |       |        |       |        |       | 3333    | 4701  |

NOTE: 5 springs per side is standard

RP-BS-Series Double Acting Torque Chart (in-lbs)

| Size         | 40 PSI | 60 PSI | 80 PSI | 100 PSI | 120 PSI |
|--------------|--------|--------|--------|---------|---------|
| RP-BS-045-DA | 71     | 107    | 143    | 178     | 214     |
| RP-BS-065-DA | 171    | 256    | 342    | 427     | 512     |
| RP-BS-080-DA | 370    | 555    | 740    | 925     | 1110    |
| RP-BS-105-DA | 624    | 936    | 1249   | 1561    | 1873    |
| RP-BS-125-DA | 1214   | 1822   | 2429   | 3036    | 3643    |
| RP-BS-140-DA | 2034   | 3051   | 4068   | 5085    | 6102    |
| RP-BS-160-DA | 3102   | 4653   | 6204   | 7755    | 9306    |

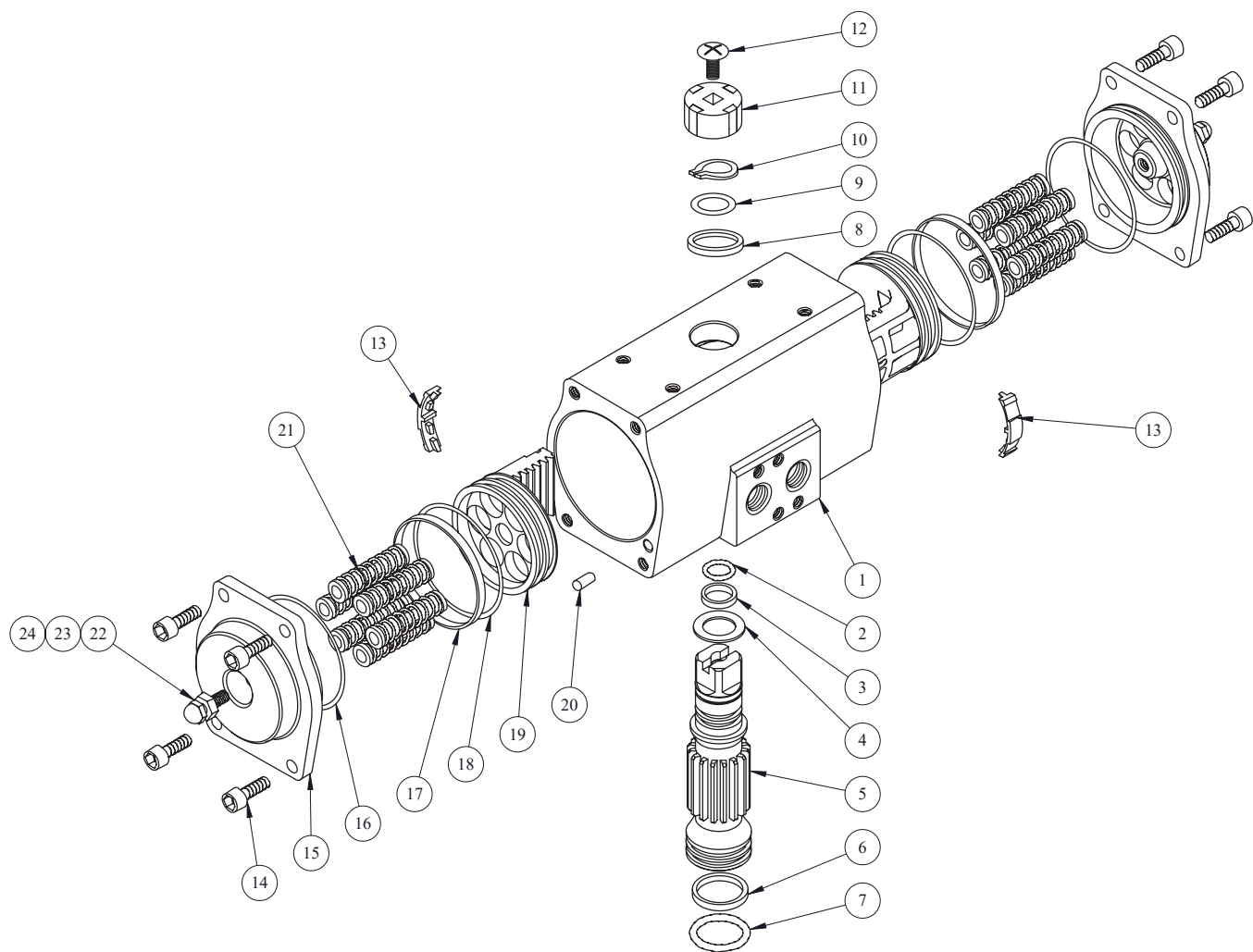
## RP-BS-Series Stainless Steel Rack and Pinion Actuator - Part Number Key

| RP-BS-Series Stainless Steel Actuator<br>Part Number Key<br>Example: RP-BS-045-DA |      | Series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   | Model |   | Configuration | Spring Set | Seal Options | Rotation |
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| Series                                                                            | Code | 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|   |       |   |               |            |              |          |

## RP-BS-Series Stainless Steel Rack and Pinion Actuator - Spring Set Kit Part Number Key

| RP-BS-Series Spring Set Kit<br>Part Number Key<br>Example: RP-BS-045SS5 |       | Series |   | Model | Kit | Spring Set Quantity |   |
|-------------------------------------------------------------------------|-------|--------|---|-------|-----|---------------------|---|
|                                                                         |       | RP-BS  | - | 045   | SS  | 5                   |   |
| Series                                                                  | Code  |        |   |       |     |                     |   |
| RP-BS                                                                   | RP-BS |        |   |       |     |                     | ← |
| Model-Size                                                              | Code  |        |   |       |     |                     | ← |
| 045                                                                     | 045   |        |   |       |     |                     |   |
| 065                                                                     | 065   |        |   |       |     |                     |   |
| 080                                                                     | 080   |        |   |       |     |                     |   |
| 105                                                                     | 105   |        |   |       |     |                     |   |
| 125                                                                     | 125   |        |   |       |     |                     |   |
| 140                                                                     | 140   |        |   |       |     |                     |   |
| 160                                                                     | 160   |        |   |       |     |                     |   |
| Kit                                                                     | Code  |        |   |       |     |                     | ← |
| Spring Set Kit                                                          | SS    |        |   |       |     |                     |   |
| Spring Set Quantity                                                     | Code  |        |   |       |     |                     | ← |
| 3                                                                       | 3     |        |   |       |     |                     |   |
| 4                                                                       | 4     |        |   |       |     |                     |   |
| 5 (standard)                                                            | 5     |        |   |       |     |                     |   |
| 6                                                                       | 6     |        |   |       |     |                     |   |

RP-BS-Series Stainless Steel Rack and Pinion Actuator - Bill of Materials

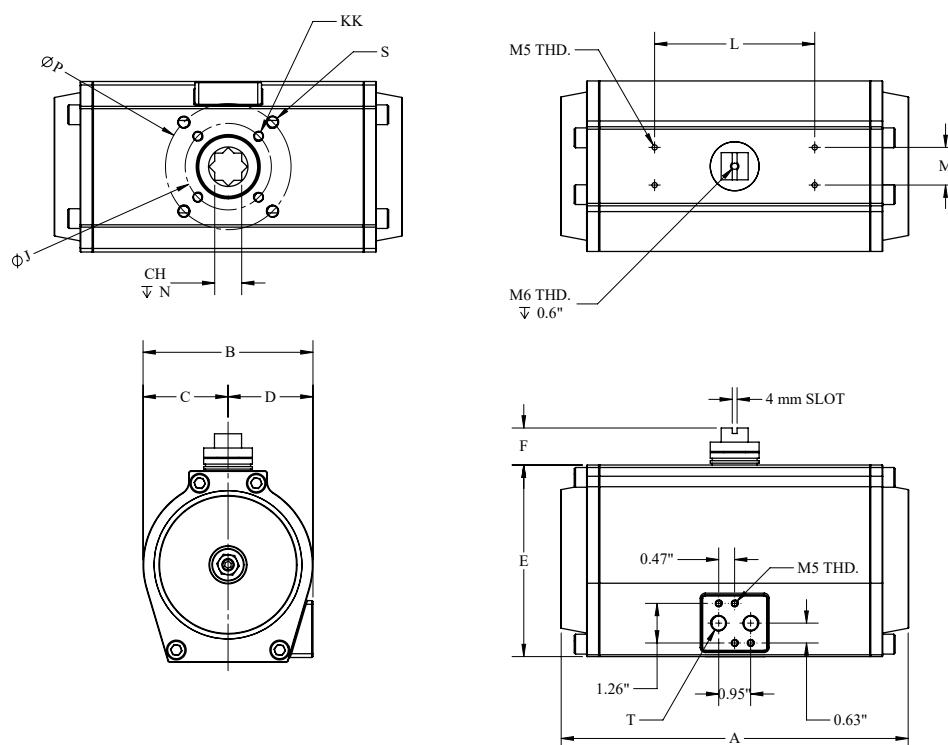


| Item # | Description             | Material         | Qty |
|--------|-------------------------|------------------|-----|
| 1      | Body                    | CF8              | 1   |
| 2      | O-ring (pinion top)     | nitrile rubber   | 1   |
| 3      | Bearing (pinion top)    | Polyoxymethylene | 1   |
| 4      | Inside washer           | Polyoxymethylene | 1   |
| 5      | Pinion                  | 304 SS           | 1   |
| 6      | Bearing (pinion bottom) | Polyoxymethylene | 1   |
| 7      | O-ring (pinion bottom)  | nitrile rubber   | 1   |
| 8      | Outside washer          | Polyoxymethylene | 1   |
| 9      | Thrust washer           | 304 SS           | 1   |
| 10     | Circlip                 | 304 SS           | 1   |
| 11     | Indicator               | Plastic (ABS)    | 1   |
| 12     | Indicator screw         | Plastic (ABS)    | 1   |

| Item # | Description               | Material         | Qty  |
|--------|---------------------------|------------------|------|
| 13     | Guide (piston)            | Nylon 66         | 2    |
| 14     | End cap screw             | 304 SS           | 8    |
| 15     | End cap                   | CF8              | 2    |
| 16     | O-ring (end cap)          | nitrile rubber   | 2    |
| 17     | Bearing (piston)          | Polyoxymethylene | 2    |
| 18     | O-ring (piston)           | nitrile rubber   | 2    |
| 19     | Piston                    | 304 SS           | 2    |
| 20     | Plug                      | nitrile rubber   | 2    |
| 21*    | Spring                    | Piano wire       | 0-12 |
| 22     | Adjustment screw          | 304 SS           | 2    |
| 23     | O-ring (adjustment screw) | nitrile rubber   | 2    |
| 24     | Nut (adjustment screw)    | 304 SS           | 2    |

\* For spring return only

## RP-BS-Series Stainless Steel Rack and Pinion Actuator - Dimensions



| Size | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | CH (mm) | J   | L (in) | N (in) | M (in) | P   | S      | T        | KK     |
|------|--------|--------|--------|--------|--------|--------|---------|-----|--------|--------|--------|-----|--------|----------|--------|
| 045  | 7.6    | 2.6    | 1.2    | 1.2    | 2.6    | 0.8    | 11      | F03 | 3.2    | 0.6    | 1.2    | F05 | M6x10  | 1/4" NPT | M5x8   |
| 065  | 7.3    | 2.9    | 1.4    | 1.4    | 3.2    | 0.8    | 14      | F05 | 3.2    | 0.6    | 1.2    | -   | M6x10  | 1/4" NPT | -      |
| 080  | 8.4    | 4.0    | 1.9    | 1.9    | 4.2    | 0.8    | 17      | F05 | 3.2    | 0.7    | 1.2    | F07 | M8x13  | 1/4" NPT | M6x10  |
| 105  | 10.5   | 4.8    | 2.3    | 2.3    | 5.2    | 0.8    | 22      | F07 | 3.2    | 0.8    | 1.2    | -   | M8x13  | 1/4" NPT | -      |
| 125  | 12.2   | 5.4    | 2.7    | 2.7    | 6.1    | 1.2    | 22      | F07 | 5.1    | 1.0    | 1.2    | F10 | M10x16 | 1/4" NPT | M8x13  |
| 140  | 19.3   | 6.3    | 3.1    | 3.1    | 6.9    | 1.2    | 27      | F10 | 5.1    | 1.2    | 1.2    | F12 | M12x20 | 1/4" NPT | M10x16 |
| 160  | 21.1   | 6.9    | 3.4    | 3.4    | 7.8    | 1.2    | 27      | F10 | 5.1    | 1.2    | 1.2    | F12 | M12x21 | 1/4" NPT | M10x16 |

## RP-BS-Series Stainless Steel Rack and Pinion Actuator - Repair Kits

| Kit Type                                   | Part #       |
|--------------------------------------------|--------------|
| Seal/Bearing Kit (nitrile rubber standard) | RP-045SS-RKB |
|                                            | RP-065SS-RKB |
|                                            | RP-080SS-RKB |
|                                            | RP-105SS-RKB |
|                                            | RP-125SS-RKB |
|                                            | RP-140SS-RKB |
| Seal/Bearing Kit (FKM optional)            | RP-045SS-RKV |
|                                            | RP-065SS-RKV |
|                                            | RP-080SS-RKV |
|                                            | RP-105SS-RKV |
|                                            | RP-125SS-RKV |
|                                            | RP-140SS-RKV |

NOTE: All kits are qty 1 kit/actuator

Repair kits contain the following item numbers from the bill of materials: 2, 3, 4, 6, 7, 8, 13, 17, and 18

### RP-MA-Series Rack and Pinion Actuator

Aluminum rack and pinion actuators utilized with valves for 180° rotation in industrial, food, beverage, and pharmaceutical applications.

#### Features

- NAMUR VDI/VDE 3845 and ISO 5211 dimensions on all sizes
- Standard angle of rotation is 180°. Available in 120°, 135°, and 150° angle of rotation
- 016 and larger sizes feature a travel stop with  $\pm 10^\circ$  adjustment in both open and closed directions
- Extruded aluminum body is internally machined and lapped to exact specifications. All internal and external surfaces are anodized for corrosion resistance
- For additional corrosion resistance, actuator can be epoxy coated
- Configurable beacon indicator is standard and available for all rotations
- All pinions are supplied with anti-blowout retention in both directions
- Air pressure operation from **40 to 120 PSI**. Water, nitrogen, and compatible hydraulic fluids may be used to power the actuator
- All units are permanently lubricated at the factory with non-silicone grease
- 100% of all units are factory pressure and leak tested



#### Specifications

- Twin rack and pinion design
- Female double square output shaft
- ISO 5211 bolt patterns
- Piston and pinion lubrication: non-silicone grease
- Range of rotation adjustment: 170° to 190°
- Operating media: dry or lubricated non-corrosive gas
- Operating pressure: **40 to 120 PSI**
- Maximum pressure rating: **150 PSI**
- Nitrile rubber (standard) temperature range: **-4°F to 176°F (-20°C to 80°C)**
- FVMQ (fluorosilicone) temperature range: **-67° to 250°F (-55° to 121°C)**
- FKM temperature range: **-10°F to 250°F (-23° to 121°C)**
- Available in:
  - Double acting
  - Double acting 3-position
  - Spring return
  - Center return
  - Low and high temperature seals
  - Polyamide epoxy coating

## RP-MA-Series Rack and Pinion Actuator - Weight and Air Consumption Charts

| Size    | Double Acting |                   | Spring Return |                   | Center Return |                   | 3-Position   |                   |
|---------|---------------|-------------------|---------------|-------------------|---------------|-------------------|--------------|-------------------|
|         | Weight (lbs)  | Air Cons. (cu-in) | Weight (lbs)  | Air Cons. (cu-in) | Weight (lbs)  | Air Cons. (cu-in) | Weight (lbs) | Air Cons. (cu-in) |
| 16      | 5.29          | 42.5              | 7.67          | 21.2              | CF            | 42.5              | CF           | 89.4              |
| 17      | 8.05          | 53.7              | 10.14         | 25.6              | CF            | 53.7              | CF           | 116.1             |
| 20 - 21 | 8.82          | 73.7              | 11.57         | 38.1              | CF            | 73.7              | CF           | 153.7             |
| 25 - 26 | 11.79         | 118.7             | 15.39         | 58.1              | CF            | 118.7             | CF           | 248.0             |
| 30 - 31 | 14.88         | 150.0             | 19.62         | 71.9              | CF            | 150.0             | CF           | 317.0             |
| 35 - 36 | 22.44         | 237.5             | 30.29         | 113.7             | CF            | 237.5             | CF           | 514.4             |
| 40 - 41 | 27.67         | 293.9             | 36.88         | 141.2             | CF            | 293.7             | CF           | 636.8             |
| 45 - 46 | 39.20         | 462.5             | 51.48         | 221.9             | CF            | 462.5             | CF           | 978.1             |
| 50 - 51 | 54.23         | 656.3             | 77.08         | 316.2             | CF            | 656.3             | CF           | 1421.4            |
| 55 - 56 | 65.81         | 906.3             | 88.76         | 435.6             | CF            | 906.3             | CF           | 1942.5            |

| Size  | Drive (mm) | Drive (in) | Standard ISO Pattern | Optional Pattern                 |
|-------|------------|------------|----------------------|----------------------------------|
| 16    | 14         | 0.551      | F05/F07              | F04/3.25                         |
| 17    | 14         | 0.551      | F05/F07              | F04/3.25                         |
| 20-21 | 17         | 0.670      | F05/F07              | F04/3.25                         |
| 25-26 | 17         | 0.670      | F05/F07              | F04/3.25                         |
| 30-31 | 17         | 0.670      | F05/F07              | F04/3.25                         |
| 35-36 | 22         | 0.866      | F07/F10              | 3.25/5.00                        |
| 40-41 | 22         | 0.866      | F07/F10              | F07/F12<br>3.25/F12<br>3.25/5.00 |
| 45-46 | 22         | 0.866      | F07/F10              | F07/F12<br>3.25/F12<br>3.25/5.00 |
| 50-51 | 27         | 1.063      | F10/F12              | -                                |
| 55-56 | 27         | 1.063      | F10/F12              | -                                |

## RP-MA-Series Rack and Pinion Actuator - Torque Ratings (Double Acting)

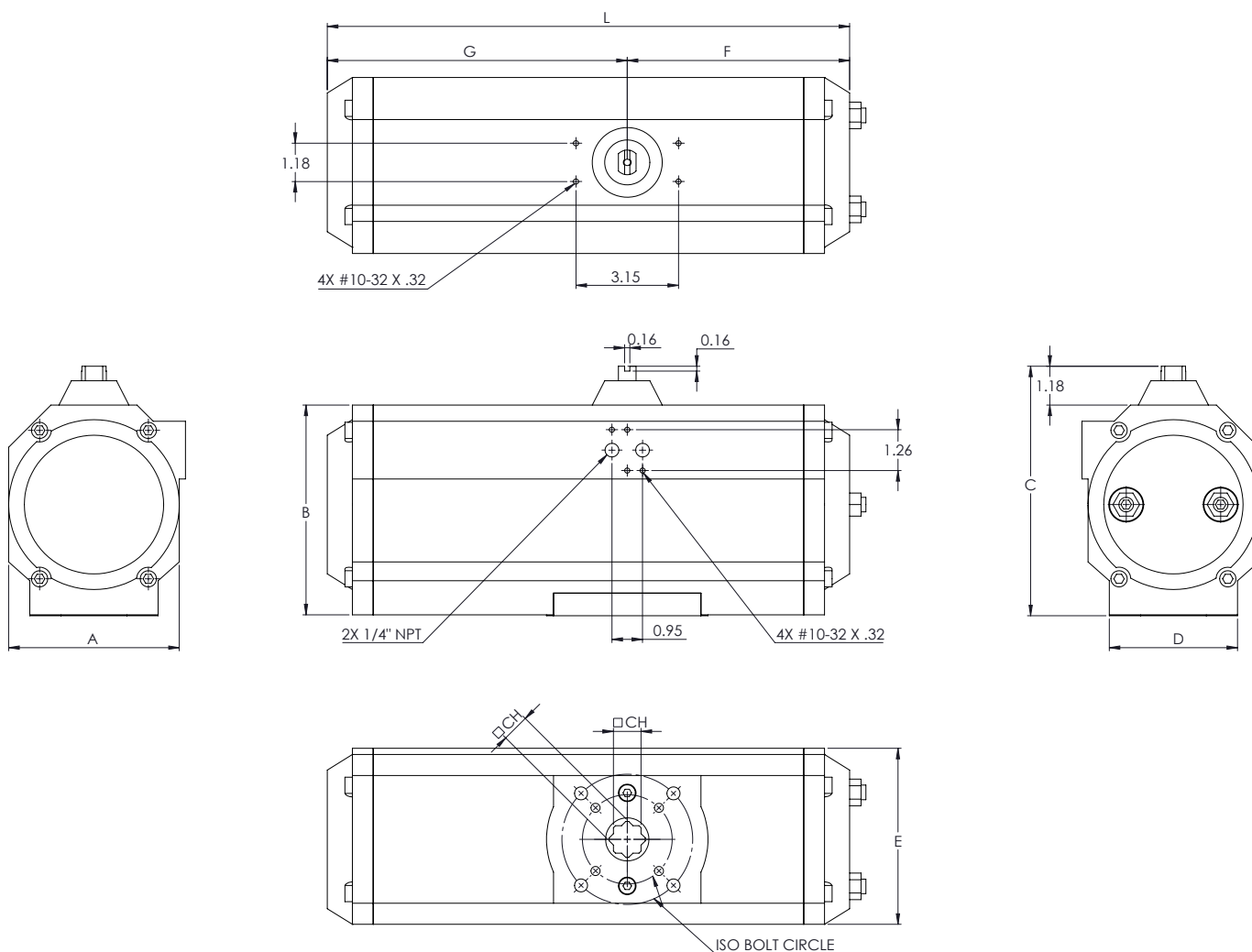
| Part #       | 40 PSI | 60 PSI | 80 PSI | 100 PSI | 120 PSI |
|--------------|--------|--------|--------|---------|---------|
| RP-MA-016-DA | 137    | 206    | 275    | 344     | 412     |
| RP-MA-017-DA | 180    | 270    | 360    | 450     | 540     |
| RP-MA-021-DA | 250    | 375    | 500    | 625     | 750     |
| RP-MA-026-DA | 375    | 562    | 750    | 937     | 1125    |
| RP-MA-031-DA | 500    | 750    | 100    | 1250    | 1500    |
| RP-MA-036-DA | 800    | 1200   | 1600   | 200     | 2400    |
| RP-MA-041-DA | 100    | 1500   | 2000   | 2500    | 3000    |
| RP-MA-046-DA | 1562   | 2344   | 3125   | 3906    | 4687    |
| RP-MA-051-DA | 2250   | 3375   | 4500   | 5625    | 6750    |
| RP-MA-056-DA | 3000   | 4500   | 6000   | 7500    | 9000    |



## RP-MA-Series Rack and Pinion Actuator - Torque Ratings (Spring Return)

| Part #       | Spring Set | Spring Torque |      | 40 PSI |      | 60 PSI |      | 80 PSI |      | 100 PSI |      | 120 PSI |      |
|--------------|------------|---------------|------|--------|------|--------|------|--------|------|---------|------|---------|------|
|              |            | Start         | End  | Start  | End  | Start  | End  | Start  | End  | Start   | End  | Start   | End  |
| RP-MA-015-SR | 2+2        | 75            | 53   | 84     | 62   | 153    | 131  | 222    | 200  | 291     | 269  | 359     | 337  |
|              | 3+3        | 112           | 81   | 56     | 25   | 125    | 94   | 194    | 163  | 263     | 232  | 331     | 300  |
|              | 4+4        | 150           | 107  |        |      | 99     | 56   | 168    | 125  | 237     | 194  | 305     | 262  |
|              | 5+5        | 187           | 134  |        |      | 72     | 19   | 141    | 88   | 210     | 157  | 278     | 225  |
|              | 7+5        | 224           | 160  |        |      |        |      | 115    | 51   | 184     | 120  | 252     | 188  |
| RP-MA-017-SR | 2+2        | 93            | 64   | 116    | 87   | 206    | 177  | 296    | 267  | 386     | 357  | 476     | 447  |
|              | 3+3        | 139           | 96   | 84     | 41   | 174    | 131  | 264    | 221  | 354     | 311  | 444     | 401  |
|              | 4+4        | 185           | 128  |        |      | 142    | 85   | 232    | 175  | 322     | 265  | 412     | 355  |
|              | 5+5        | 232           | 160  |        |      | 110    | 38   | 200    | 128  | 290     | 218  | 380     | 308  |
|              | 7+5        | 278           | 192  |        |      |        |      | 168    | 82   | 258     | 172  | 348     | 262  |
| RP-MA-020-SR | 2+2        | 122           | 92   | 158    | 128  | 283    | 253  | 408    | 378  | 533     | 503  | 658     | 628  |
|              | 3+3        | 184           | 138  | 112    | 66   | 237    | 191  | 362    | 316  | 487     | 441  | 612     | 566  |
|              | 4+4        | 245           | 184  | 66     | 5    | 191    | 130  | 316    | 255  | 441     | 380  | 566     | 505  |
|              | 5+5        | 307           | 230  |        |      | 145    | 68   | 270    | 193  | 395     | 318  | 520     | 443  |
|              | 7+5        | 369           | 278  |        |      | 97     | 6    | 222    | 131  | 347     | 256  | 472     | 381  |
| RP-MA-025-SR | 2+2        | 196           | 124  | 251    | 179  | 438    | 366  | 626    | 554  | 813     | 741  | 1001    | 929  |
|              | 3+3        | 294           | 185  | 190    | 81   | 377    | 268  | 565    | 456  | 752     | 643  | 940     | 831  |
|              | 4+4        | 392           | 247  |        |      | 315    | 170  | 503    | 358  | 690     | 545  | 878     | 733  |
|              | 5+5        | 490           | 309  |        |      | 253    | 72   | 441    | 260  | 628     | 447  | 816     | 635  |
|              | 7+5        | 588           | 372  |        |      |        |      | 378    | 162  | 565     | 349  | 753     | 537  |
| RP-MA-030-SR | 2+2        | 251           | 187  | 313    | 249  | 563    | 499  | 813    | 749  | 1063    | 999  | 1313    | 1249 |
|              | 3+3        | 376           | 280  | 220    | 123  | 470    | 374  | 720    | 624  | 970     | 874  | 1220    | 1124 |
|              | 4+4        | 502           | 374  |        |      | 376    | 248  | 626    | 498  | 876     | 748  | 1126    | 998  |
|              | 5+5        | 627           | 467  |        |      | 283    | 123  | 533    | 373  | 783     | 623  | 1033    | 873  |
|              | 7+5        | 753           | 560  |        |      |        |      | 440    | 247  | 690     | 497  | 940     | 747  |
| RP-MA-035-SR | 2+2        | 412           | 306  | 494    | 388  | 894    | 788  | 1294   | 1188 | 1694    | 1588 | 2094    | 1988 |
|              | 3+3        | 617           | 461  | 339    | 183  | 739    | 583  | 1139   | 983  | 1539    | 1383 | 1939    | 1783 |
|              | 4+4        | 824           | 614  |        |      | 586    | 376  | 986    | 776  | 1386    | 1176 | 1786    | 1576 |
|              | 5+5        | 1029          | 767  |        |      | 433    | 171  | 833    | 571  | 1233    | 971  | 1633    | 1371 |
|              | 7+5        | 1236          | 921  |        |      |        |      | 679    | 364  | 1079    | 764  | 1479    | 1164 |
| RP-MA-040-SR | 2+2        | 505           | 371  | 629    | 495  | 1129   | 995  | 1629   | 1495 | 2129    | 1995 | 2629    | 2495 |
|              | 3+3        | 757           | 556  | 444    | 243  | 944    | 743  | 1444   | 1243 | 1944    | 1743 | 2444    | 2243 |
|              | 4+4        | 1011          | 741  |        |      | 759    | 489  | 1259   | 989  | 1759    | 1489 | 2259    | 1989 |
|              | 5+5        | 1263          | 929  |        |      | 572    | 237  | 1072   | 737  | 1572    | 1237 | 2072    | 1737 |
|              | 7+5        | 1516          | 113  |        |      |        |      | 887    | 484  | 1387    | 984  | 1887    | 1484 |
| RP-MA-045-SR | 2+2        | 890           | 560  | 1002   | 672  | 1784   | 1454 | 2565   | 2235 | 3346    | 3016 | 4127    | 3797 |
|              | 3+3        | 1334          | 840  | 722    | 228  | 1504   | 1010 | 2285   | 1791 | 3066    | 2572 | 3847    | 3353 |
|              | 4+4        | 1779          | 1120 |        |      | 1224   | 565  | 2005   | 1346 | 2786    | 2127 | 3567    | 2908 |
|              | 5+5        | 224           | 1399 |        |      | 945    | 120  | 1726   | 901  | 2507    | 1682 | 3288    | 2463 |
|              | 7+5        | 2669          | 1679 |        |      |        |      | 1446   | 456  | 2227    | 1237 | 3008    | 2018 |
| RP-MA-050-SR | 2+2        | 1101          | 869  | 1381   | 1149 | 2506   | 2274 | 3631   | 339  | 4756    | 4524 | 5881    | 5649 |
|              | 3+3        | 1652          | 1304 | 946    | 598  | 2071   | 1723 | 3196   | 2848 | 4321    | 3973 | 5446    | 5098 |
|              | 4+4        | 2203          | 1738 | 512    | 47   | 1637   | 1172 | 2762   | 2297 | 3887    | 3422 | 5012    | 4547 |
|              | 5+5        | 2754          | 2173 |        |      | 1202   | 621  | 2327   | 1746 | 3452    | 2871 | 4577    | 3996 |
|              | 7+5        | 3303          | 2607 |        |      | 768    | 72   | 1893   | 1197 | 3080    | 2322 | 4143    | 3447 |
| RP-MA-055-SR | 2+2        | 1487          | 1055 | 1945   | 1513 | 3445   | 3013 | 4945   | 4513 | 6445    | 6013 | 7945    | 7513 |
|              | 3+3        | 2231          | 1583 | 1417   | 769  | 2917   | 2269 | 4417   | 3769 | 5917    | 5269 | 7417    | 6769 |
|              | 4+4        | 2974          | 211  | 889    | 26   | 2389   | 1526 | 3889   | 3026 | 5389    | 4526 | 6889    | 6026 |
|              | 5+5        | 3718          | 2638 |        |      | 1862   | 782  | 3362   | 2282 | 4862    | 3782 | 6362    | 5282 |
|              | 7+5        | 4462          | 3166 |        |      | 1334   | 38   | 2834   | 1538 | 4334    | 3038 | 5834    | 4538 |

## RP-MA-Series Rack and Pinion Actuator - Dimensions (Spring Return)

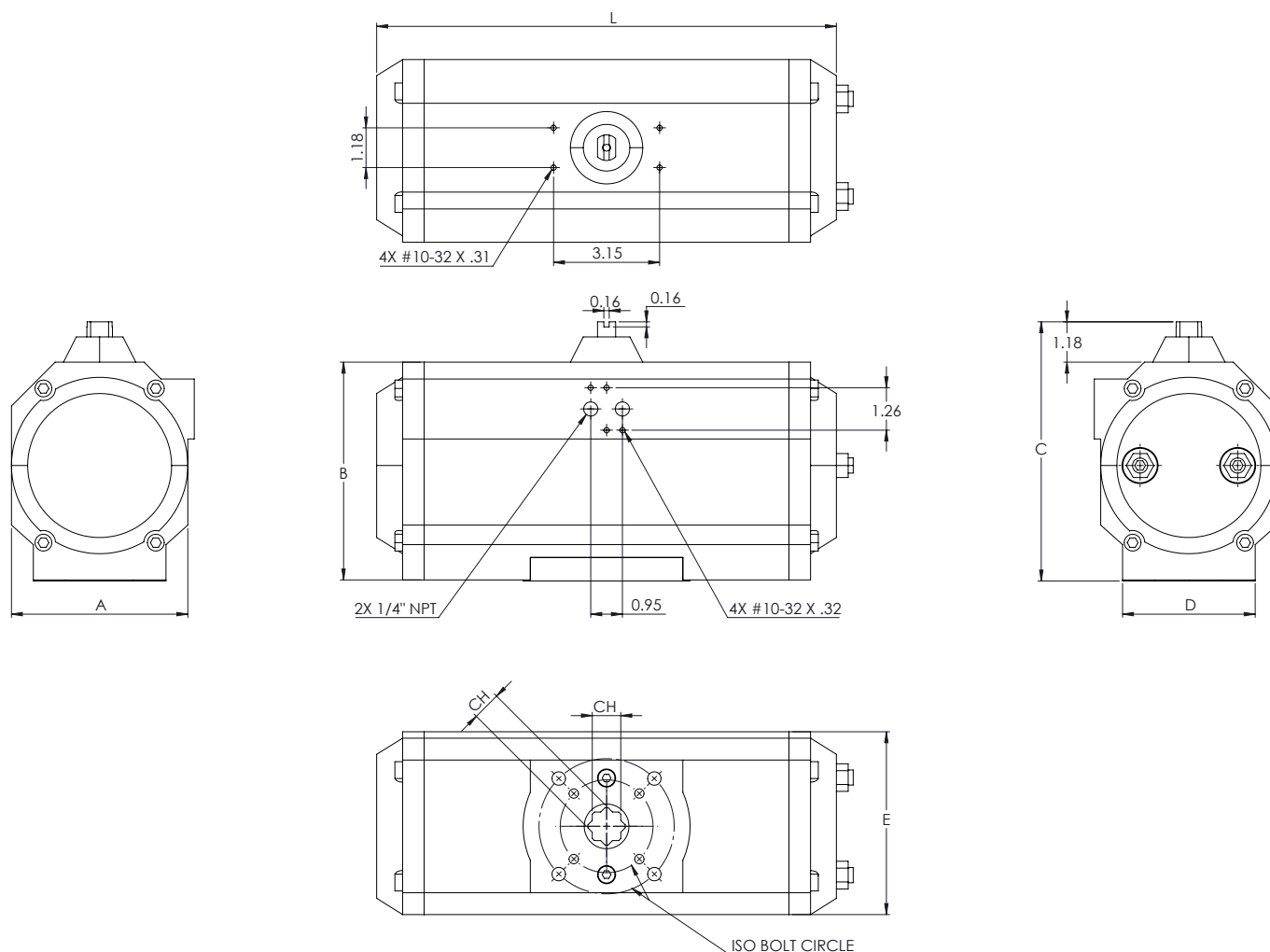


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| Size | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | L (in) | Standard ISO | Optional ISO   | CH (mm) |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|----------------|---------|
| 16   | 2.76   | 3.54   | 4.76   | 2.52   | 3.35   | 5.39   | 7.42   | 12.82  | F05/F07      | F04/3.25       | 14      |
| 17   | 2.76   | 3.54   | 4.76   | 2.52   | 3.35   | 5.39   | 7.42   | 12.82  | F05/F07      | F04/3.25       | 14      |
| 20   | 3.386  | 4.409  | 5.63   | 2.756  | 3.78   | 4.96   | 6.73   | 11.69  | F05/F07      | F04/3.25       | 17      |
| 25   | 3.386  | 4.409  | 5.63   | 2.756  | 3.78   | 6.50   | 9.04   | 15.53  | F05/F07      | F04/3.25       | 17      |
| 30   | 4.10   | 5.16   | 6.38   | 2.76   | 4.45   | 6.52   | 8.68   | 15.197 | F05/F07      | F04/3.25       | 17      |
| 35   | 5.16   | 6.50   | 7.72   | 3.40   | 5.43   | 6.83   | 9.21   | 16.04  | F07/F10      | 3.25/5.00      | 22      |
| 40   | 5.16   | 6.50   | 7.72   | 3.40   | 5.43   | 7.89   | 10.91  | 18.80  | F07/F10      | F07/F12/3.25/5 | 22      |
| 45   | 5.78   | 6.97   | 8.19   | 3.40   | 5.95   | 10.00  | 13.15  | 23.15  | F07/F10      | F07/F12/3.25/5 | 22      |
| 50   | 7.17   | 8.54   | 9.76   | 4.72   | 7.28   | 9.82   | 13.58  | 23.15  | F10/F12      | -              | 27      |
| 55   | 7.17   | 8.54   | 9.76   | 4.72   | 7.28   | 11.95  | 15.75  | 27.70  | F10/F12      | -              | 27      |

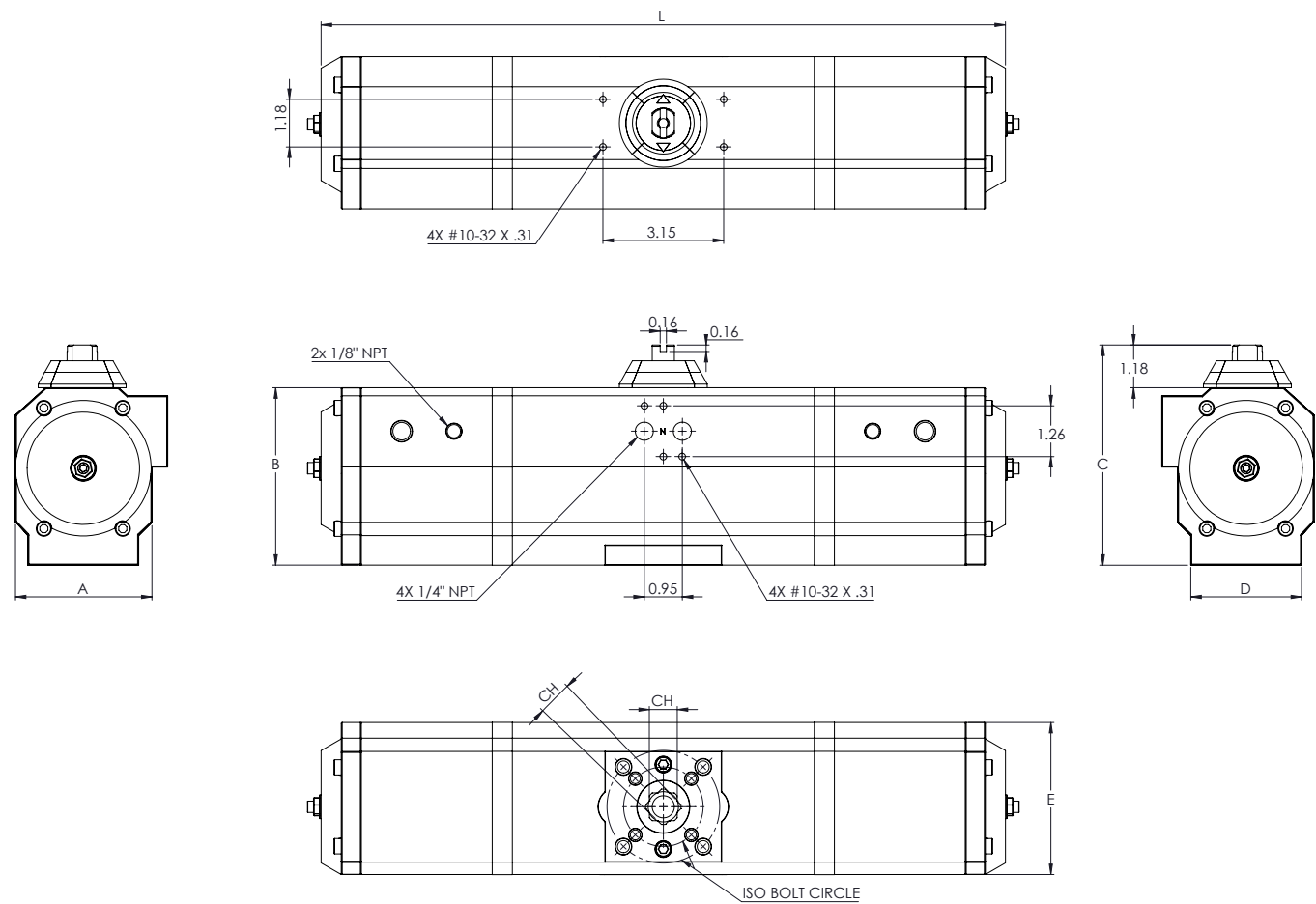
| Size | A (in) | B (in) | C (in) | D (in) | E (in) | F (in) | G (in) | L (in) | Standard ISO | Optional ISO   | CH (mm) |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|----------------|---------|
| 16   | 2.76   | 3.54   | 4.76   | 2.52   | 3.35   | 8.58   | 4.61   | 13.19  | F05/F07      | F04/3.25       | 14      |
| 17   | 3.39   | 4.41   | 5.63   | 2.76   | 3.78   | 9.21   | 4.96   | 14.73  | F05/F07      | F04/3.25       | 17      |
| 25   | 3.39   | 4.41   | 5.63   | 2.76   | 3.78   | 10.79  | 6.50   | 17.28  | F05/F07      | F04/3.25       | 17      |
| 30   | 4.10   | 5.16   | 6.38   | 2.76   | 4.45   | 11.30  | 6.54   | 17.84  | F05/F07      | F04/3.25       | 17      |
| 35   | 5.16   | 6.50   | 7.78   | 3.40   | 5.43   | 12.60  | 6.86   | 191.45 | F07/F10      | 3.25/5.00      | 22      |
| 40   | 5.16   | 6.50   | 7.78   | 3.40   | 5.43   | 14.21  | 7.91   | 22.13  | F07/F10      | F07/F12/3.25/5 | 22      |
| 45   | 5.78   | 6.97   | 8.19   | 3.40   | 5.95   | 17.87  | 10.00  | 27.87  | F07/F10      | F07/F12/3.25/5 | 22      |
| 50   | 7.17   | 8.54   | 9.76   | 4.72   | 7.28   | 17.32  | 9.84   | 27.17  | F10/F12      | -              | 27      |
| 55   | 7.17   | 8.54   | 9.76   | 4.72   | 7.28   | 21.26  | 11.97  | 33.23  | F10/F12      | -              | 27      |

## RP-MA-Series Rack and Pinion Actuator - Dimensions (Double Acting)



| Size | A (in) | B (in) | C (in) | D (in) | E (in) | L (in) | Standard ISO | Optional ISO   | CH (mm) |
|------|--------|--------|--------|--------|--------|--------|--------------|----------------|---------|
| 16   | 2.76   | 3.54   | 4.76   | 2.52   | 3.35   | 9.21   | F05/F07      | F04/3.25       | 14      |
| 17   | 2.76   | 3.54   | 4.76   | 2.52   | 3.35   | 10.79  | F05/F07      | F04/3.25       | 14      |
| 21   | 3.39   | 4.41   | 5.63   | 2.76   | 3.78   | 9.92   | F05/F07      | F04/3.25       | 17      |
| 26   | 3.39   | 4.41   | 5.63   | 2.76   | 3.78   | 12.99  | F05/F07      | F04/3.25       | 17      |
| 31   | 4.10   | 5.16   | 6.38   | 2.76   | 4.45   | 13.03  | F05/F07      | F04/3.25       | 17      |
| 36   | 5.16   | 6.50   | 7.72   | 3.40   | 5.43   | 13.66  | F07/F10      | 3.25/5.00      | 22      |
| 41   | 5.16   | 6.50   | 7.72   | 3.40   | 5.43   | 15.79  | F07/F10      | F07/F12/3.25/5 | 22      |
| 46   | 5.78   | 6.97   | 8.19   | 3.40   | 5.95   | 20.00  | F07/F10      | F07/F12/3.25/5 | 22      |
| 51   | 7.17   | 8.54   | 9.76   | 4.72   | 7.28   | 19.65  | F10/F12      | -              | 27      |
| 56   | 7.17   | 8.54   | 9.76   | 4.72   | 7.28   | 23.90  | F10/F12      | -              | 27      |

RP-MA-Series Rack and Pinion Actuator - Dimensions (Double Acting 3-Position)



| Size | A (in) | B (in) | C (in) | D (in) | E (in) | L (in) | Standard ISO | Optional ISO   | CH (mm) |
|------|--------|--------|--------|--------|--------|--------|--------------|----------------|---------|
| 16   | 2.76   | 3.54   | 4.76   | 2.52   | 3.35   | 15.24  | F05/F07      | F04/3.25       | 14      |
| 17   | 2.76   | 3.54   | 4.76   | 2.52   | 3.35   | 17.24  | F05/F07      | F04/3.25       | 14      |
| 21   | 3.39   | 4.41   | 5.63   | 2.76   | 3.78   | 16.26  | F05/F07      | F04/3.25       | 17      |
| 26   | 3.39   | 4.41   | 5.63   | 2.76   | 3.78   | 20.24  | F05/F07      | F04/3.25       | 17      |
| 31   | 4.10   | 5.16   | 6.38   | 2.76   | 4.45   | 21.06  | F05/F07      | F04/3.25       | 17      |
| 36   | 5.16   | 6.50   | 7.72   | 3.40   | 5.43   | 22.13  | F07/F10      | 3.25/5.00      | 22      |
| 41   | 5.16   | 6.50   | 7.72   | 3.40   | 5.473  | 24.92  | F07/F10      | F07/F12/3.25/5 | 22      |
| 46   | 5.78   | 6.97   | 8.19   | 3.40   | 5.95   | 31.54  | F07/F10      | F07/F12/3.25/5 | 22      |
| 51   | 7.17   | 8.54   | 9.76   | 4.72   | 7.28   | 32.4   | F10/F12      | -              | 27      |
| 56   | 7.17   | 8.54   | 9.76   | 4.72   | 7.28   | 37.99  | F10/F12      | -              | 27      |

NOTE: Repair kits unavailable, not field serviceable.

## RP-TP-Series Technopolymer Rack and Pinion Actuator

Utilized with industrial and sanitary valves for quarter turn actuation in corrosive environment applications.

### Features

- Double acting or spring return with non-metallic spring cartridges and epoxy coated springs
- Anti-blowout pinion
- Indicator: high visibility technopolymer
  - Open/close indication is standard
- Female double square output shaft

### Materials

- Body and spring cartridge: technopolymer
- Elastomers: nitrile rubber
- Piston: die cast aluminum
- Pinion: nickel plated carbon steel
- Fasteners: 304 stainless steel

### Specifications

- Size range: 62 in-lbs to 750 in-lbs
- Standard connections: ISO 5211 female output drive
  - NAMUR VDI/VDE 3845 solenoid and switch mounting standards
- Actuator data
  - Connections: 1/4" NPT
  - Operating pressure: **40 to 200 PSI**
  - Temperature range: **-4°F to 176°F (-20°C to 80°C)**
  - Operating media: lubricated air, hydraulic oil, or water



## RP-TP-Series Technopolymer Rack and Pinion Actuator - Torque Ratings

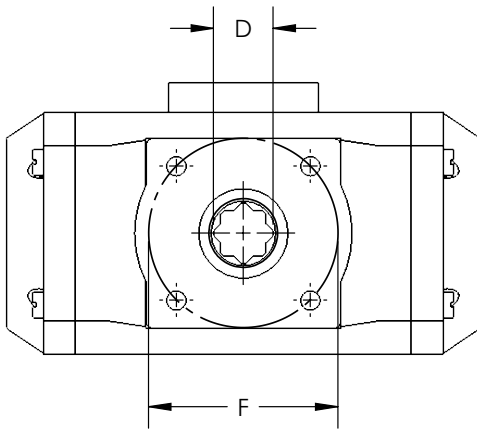
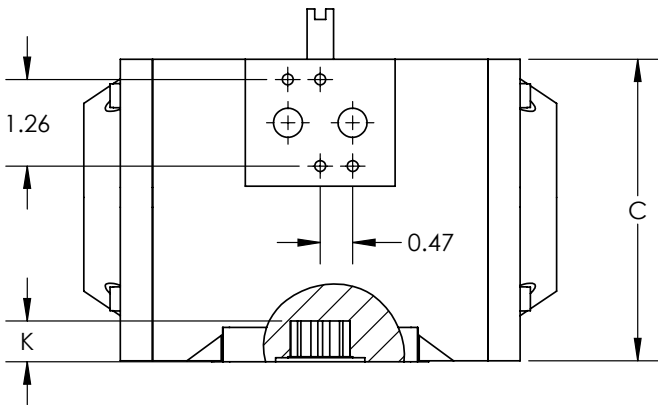
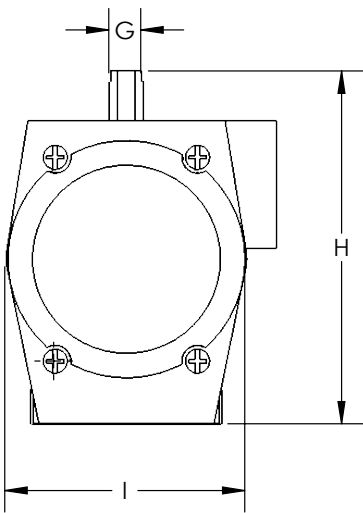
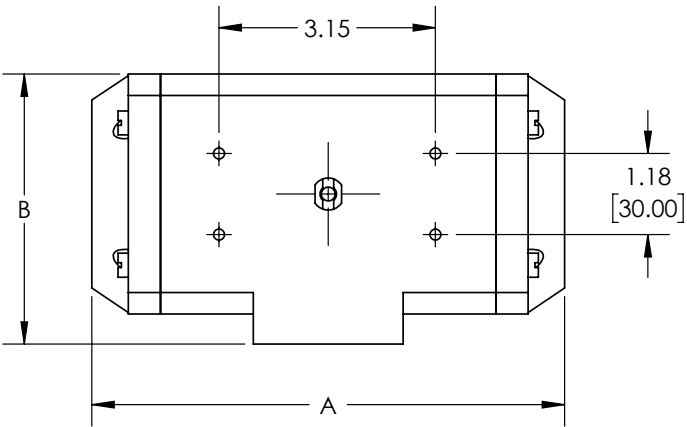
### Double Acting

| Part#        | 40 PSI | 60 PSI | 80 PSI | 100 PSI | 120 PSI |
|--------------|--------|--------|--------|---------|---------|
| RP-TP-011-DA | 62     | 94     | 125    | 156     | 187     |
| RP-TP-014-DA | 137    | 206    | 275    | 344     | 412     |
| RP-TP-019-DA | 250    | 375    | 500    | 625     | 750     |

### Spring Return

| Part #       | Position #1 Spring Torque |       |     | Position #2 Air Torque |     |        |     |         |     |
|--------------|---------------------------|-------|-----|------------------------|-----|--------|-----|---------|-----|
|              |                           |       |     | 60 PSI                 |     | 80 PSI |     | 100 PSI |     |
|              | # Springs                 | Start | End | Start                  | End | Start  | End | Start   | End |
| RP-TP-011-SR | 1+1                       | 33    | 22  | 72                     | 61  | 103    | 92  | 134     | 123 |
|              | 2+2                       | 66    | 44  | 50                     | 28  | 81     | 59  | 112     | 90  |
|              | 3+3                       | 99    | 66  | -                      | -   | 58     | 27  | 90      | 66  |
| RP-TP-014-SR | 2+2                       | 75    | 53  | 153                    | 131 | 222    | 200 | 291     | 269 |
|              | 3+3                       | 112   | 81  | 125                    | 94  | 194    | 163 | 263     | 232 |
|              | 4+4                       | 150   | 107 | 99                     | 56  | 168    | 125 | 237     | 194 |
|              | 5+5                       | 187   | 134 | 72                     | 19  | 141    | 88  | 210     | 157 |
|              | 7+5                       | 224   | 160 | -                      | -   | 115    | 51  | 184     | 120 |
| RP-TP-019-SR | 2+2                       | 122   | 92  | 283                    | 253 | 408    | 378 | 533     | 503 |
|              | 3+3                       | 184   | 138 | 237                    | 191 | 362    | 316 | 487     | 441 |
|              | 4+4                       | 245   | 184 | 191                    | 130 | 316    | 255 | 441     | 380 |
|              | 5+5                       | 307   | 230 | 145                    | 68  | 270    | 193 | 395     | 318 |
|              | 7+5                       | 369   | 278 | 97                     | 6   | 222    | 131 | 347     | 256 |

RP-TP-Series Technopolymer Rack and Pinion Actuator - Dimensions



| Part #      | A (in) | B (in) | C (in) | D (mm) | F   | G (in) | H (in) | I (in) | K (in) |
|-------------|--------|--------|--------|--------|-----|--------|--------|--------|--------|
| RP-TP-011-* | 4.69   | 2.64   | 2.76   | 11     | F04 | 0.47   | 3.58   | 2.09   | 0.49   |
| RP-TP-014-* | 6.30   | 3.39   | 3.54   | 14     | F05 | 0.47   | 4.37   | 2.76   | 0.75   |
| RP-TP-019-* | 6.89   | 3.98   | 4.39   | 17     | F07 | 0.47   | 5.22   | 2.76   | 0.91   |

\*SR (spring return) or DA (double acting)

## BEO-Series Electric Actuator

The quarter-turn BEO-series electric actuator is an alternative to the rack and pinion actuator when an air supply isn't available. This electric actuator is used with sanitary and industrial valves for quarter turn actuation in industrial, food/beverage, and pharmaceutical applications.

### Certifications

- CSA (except BM-2), CE (except for BM-2), UKCA (except BM-2), RoHS, China RoHS, REACH

### Features

- ISO 5211 mounting flange
- Self-locking gear system
- Mechanical position indication
- Mechanical stops (except OM-1 / A / BM-2)
- Built-in thermal protection
- 30% duty cycle
- Clutchless manual override (for safe operation, handwheel does not rotate during operation)
- Standard anti-condensation heater to prevent the freezing of lubricants and keep interior dry to prevent product damage from moisture (heater not recommended if ambient temperature is over **95°F** or **35°C**)
- Enclosure features
  - Aluminum alloy, polyester powder coated
  - Corrosion protection C3 according to ISO 12944-6
  - OM-1, OM-A, BM-2, and BM-T utilize a plastic clover
  - NEMA 4X, 5, and IP67 (waterproof and dustproof enclosure intended for outdoor use)
- Gear train features
  - High alloy steel gear trains with self locking to avoid backlash
  - Gear trains are factory lubricated for life
- Motor features
  - Insulation class F
  - Built in thermal protection prevents motor burnout
    - AC motor: **257±9°F (125±5°C)**
    - DC motor: **194±9°F (90±5°C)**



### Specifications

- Standard connections: ISO 5211 mounting flange
- Working temperature range: **-22°F to 149°F (-30°C to 65°C)**
- Working relative humidity range: 30% to 90%
- Standard voltages: 12 VDC, 12 VAC, 24 VDC/AC, 115VAC, 220VAC
- Options
  - **Heater thermostat:** can switch the anti-condensation heater off when the temperature inside the actuator is higher than **77±9°F (25±5°C)**
  - **Auxiliary limit switches:** actuators come standard with two limit switches (LS1 for fully open and LS2 for fully closed position). Two auxiliary limit switches are optional for fully open and fully closed position feedback.
  - **Modulating control:** a proportional control unit
    - Analog signal input: 4-20mA, 1-5V, and 2-10V
    - Analog signal output: 4-20mA and 2-10V
  - **Potentiometer unit:** recommended to use with a floating control actuator to output signal for position indicator. Two resistors, 1K ohm or 5K ohm are available for selection.
  - **Analog signal output:** recommended to use with a floating control actuator for position indication
    - Analog signal output: 0-20mA, 4-20mA, 0-5V, 0-10V, 1-5V, and 2-10V
  - **Extended duty cycle controller** (including motor, IEC standard): 75% duty cycle available for OM-A, OM-1 to OM-6
  - **Enclosure material:** IP68 316 stainless steel; available for OM-1 to OM-6
  - **Torque switch:** torque overload protection. Must be ordered with actuator, installed and set up at factory
  - **Local control unit:** contains LOCAL/REMOTE and CLOSE/OFF/OPEN rotary switches. In LOCAL mode, the valves are directly being controlled in the field and can be operated to close, stop, or open by using CLOSE/OFF/OPEN selector switch.
    - Standard: IP65
    - Optional: IP67, NEMA 4X
    - For OM-1 and OM-A: LCU is only available for floating control units
    - For OM-2 to OM-6: three phase power supply units with modulating control must be optioned with LCU



## BEO-Series Electric Actuator - Part Number Key

| BEO-Series Electric Actuator<br>Part Number Key<br>Example: BEOM-TB-11 |             | Series | Model | Voltage |   | Option 1 | Option 2 | Indicator |
|------------------------------------------------------------------------|-------------|--------|-------|---------|---|----------|----------|-----------|
|                                                                        |             | BE     | BM-T  | B       | - | 1        | 1        |           |
| <b>Series</b>                                                          | <b>Code</b> |        |       |         |   |          |          |           |
| BE                                                                     | BE          |        |       |         |   |          |          |           |
| <b>Model</b>                                                           | <b>Code</b> |        |       |         |   |          |          |           |
| BM-T <sup>1</sup>                                                      | BM-T        |        |       |         |   |          |          |           |
| OM-1                                                                   | OM-1        |        |       |         |   |          |          |           |
| OM-A                                                                   | OM-A        |        |       |         |   |          |          |           |
| OM-M                                                                   | OM-M        |        |       |         |   |          |          |           |
| OM-2                                                                   | OM-2        |        |       |         |   |          |          |           |
| BM-2 <sup>2</sup>                                                      | BM-2        |        |       |         |   |          |          |           |
| OM-3                                                                   | OM-3        |        |       |         |   |          |          |           |
| OM-4                                                                   | OM-4        |        |       |         |   |          |          |           |
| OM-5                                                                   | OM-5        |        |       |         |   |          |          |           |
| OM-6                                                                   | OM-6        |        |       |         |   |          |          |           |
| <b>Voltage</b>                                                         | <b>Code</b> |        |       |         |   |          |          |           |
| 115 VAC                                                                | B           |        |       |         |   |          |          |           |
| 12 VDC <sup>5</sup>                                                    | C           |        |       |         |   |          |          |           |
| 12 VAC <sup>6</sup>                                                    | G           |        |       |         |   |          |          |           |
| 24 VDC/AC                                                              | E           |        |       |         |   |          |          |           |
| 220 VAC                                                                | F           |        |       |         |   |          |          |           |
| <b>Option 1</b>                                                        | <b>Code</b> |        |       |         |   |          |          |           |
| None                                                                   | 1           |        |       |         |   |          |          |           |
| Torque switches                                                        | 2           |        |       |         |   |          |          |           |
| 4-20mA input/output modulating controller                              | 3           |        |       |         |   |          |          |           |
| Current position transmitter                                           | 4           |        |       |         |   |          |          |           |
| Potentiometer                                                          | 5           |        |       |         |   |          |          |           |
| Local control unit                                                     | 6           |        |       |         |   |          |          |           |
| Two extra travel cams and switches                                     | 7           |        |       |         |   |          |          |           |
| Three position cam set                                                 | 8           |        |       |         |   |          |          |           |
| Local control unit with lock                                           | 9           |        |       |         |   |          |          |           |
| 1-5V input/2-10V output modulating controller                          | A           |        |       |         |   |          |          |           |
| 2-10V input/output modulating controller                               | B           |        |       |         |   |          |          |           |
| 75% duty cycle <sup>3</sup>                                            | C           |        |       |         |   |          |          |           |
| Four position cam set                                                  | D           |        |       |         |   |          |          |           |
| Heater thermostat                                                      | E           |        |       |         |   |          |          |           |
| No heater                                                              | F           |        |       |         |   |          |          |           |
| Torque limiter                                                         | G           |        |       |         |   |          |          |           |
| <b>Option 2<sup>4</sup></b>                                            | <b>Code</b> |        |       |         |   |          |          |           |
| None                                                                   | 1           |        |       |         |   |          |          |           |
| Torque switches                                                        | 2           |        |       |         |   |          |          |           |
| 4-20mA input/output modulating controller                              | 3           |        |       |         |   |          |          |           |
| Current position transmitter                                           | 4           |        |       |         |   |          |          |           |
| Potentiometer                                                          | 5           |        |       |         |   |          |          |           |
| Local control unit                                                     | 6           |        |       |         |   |          |          |           |
| Two extra travel cams and switches                                     | 7           |        |       |         |   |          |          |           |
| Three position cam set                                                 | 8           |        |       |         |   |          |          |           |
| Local control unit with lock                                           | 9           |        |       |         |   |          |          |           |
| 1-5V input/2-10V output modulating controller                          | A           |        |       |         |   |          |          |           |
| 2-10V input/output modulating controller                               | B           |        |       |         |   |          |          |           |
| 75% duty cycle <sup>3</sup>                                            | C           |        |       |         |   |          |          |           |
| Four position cam set                                                  | D           |        |       |         |   |          |          |           |
| Heater thermostat                                                      | E           |        |       |         |   |          |          |           |
| No heater                                                              | F           |        |       |         |   |          |          |           |
| Torque limiter                                                         | G           |        |       |         |   |          |          |           |
| <b>Indicator</b>                                                       | <b>Code</b> |        |       |         |   |          |          |           |
| Open/close (standard)                                                  | blank       |        |       |         |   |          |          |           |
| L-port                                                                 | -L          |        |       |         |   |          |          |           |
| T-port                                                                 | -T          |        |       |         |   |          |          |           |

<sup>1</sup> No options available.<sup>2</sup> Options 1, 7, & E available.<sup>3</sup> Not available in 220 VAC.<sup>4</sup> If 2 options selected, list lower code first.<sup>5</sup> Cannot be selected in combination with Option 1 or 2 Codes A and B.<sup>6</sup> 12 VAC only available in OM-1 model.

NOTE: Do not duplicate options selected from Option 1 to Option 2.

Some options are not available to combine.

## BEO-Series Electric Actuator - Supply Voltages

| Model        | Voltages |    |      |    |           |           |           |           |           |
|--------------|----------|----|------|----|-----------|-----------|-----------|-----------|-----------|
|              | 12 V     |    | 24 V |    | 1-Phase   |           | 3-Phase   |           |           |
|              | DC       | AC | DC   | AC | 110-120 V | 220-240 V | 220-240 V | 380-415 V | 440-480 V |
| BM-T         | ✓        |    | ✓    | ✓  | ✓         | ✓         |           |           |           |
| OM-1         | ✓        | ✓  | ✓    | ✓  | ✓         | ✓         |           |           |           |
| OM-A         | ✓        |    | ✓    | ✓  | ✓         | ✓         |           |           |           |
| BM-2         |          |    |      |    | ✓         | ✓         | ✓         | ✓         | ✓         |
| OM-2 to OM-6 | ✓        |    | ✓    | ✓  | ✓         | ✓         | ✓         | ✓         | ✓         |

## Standard Mounting Specs

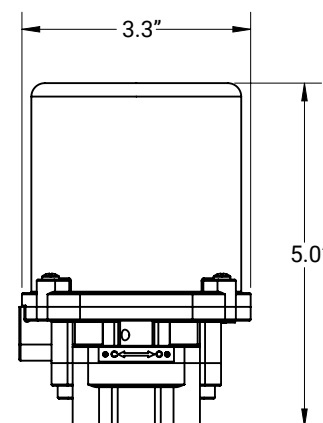
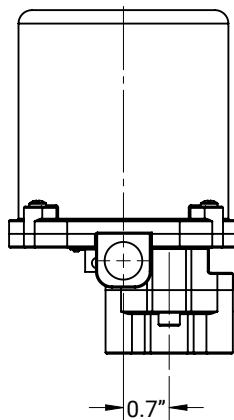
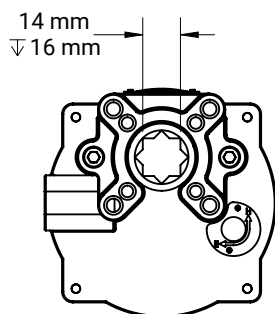
| Model              | Mounting Flange ISO 5211 |
|--------------------|--------------------------|
| BM-2               | F07                      |
| BM-T               | F03 / F05                |
| OM-A               | F05 / F07                |
| OM-1               | F03 / F05                |
| OM-2 & OM-3        | F07 / F10                |
| OM-4, OM-5, & OM-6 | F10 / F12                |

## Torque, Weight, and Override Specifications

| Model | Output Torque |        | Weight |       | Manual Override |
|-------|---------------|--------|--------|-------|-----------------|
|       | N-m           | in-lbs | kg     | lbs   |                 |
| BM-T  | 15            | 132    | 1.5    | 3.3   | lever           |
| OM-A  | 50            | 443    | 3      | 6.61  | -               |
| OM-1  | 35            | 310    | 2      | 4.41  | lever           |
| BM-2  | 120           | 1063   | 5.5    | 12.13 | hand wheel      |
| OM-2  | 90            | 797    | 11     | 24.25 |                 |
| OM-3  | 150           | 1328   | 11     | 24.25 |                 |
| OM-4  | 400           | 3542   | 20     | 44.09 |                 |
| OM-5  | 500           | 4427   | 20     | 44.09 |                 |
| OM-6  | 650           | 5756   | 20     | 44.09 |                 |

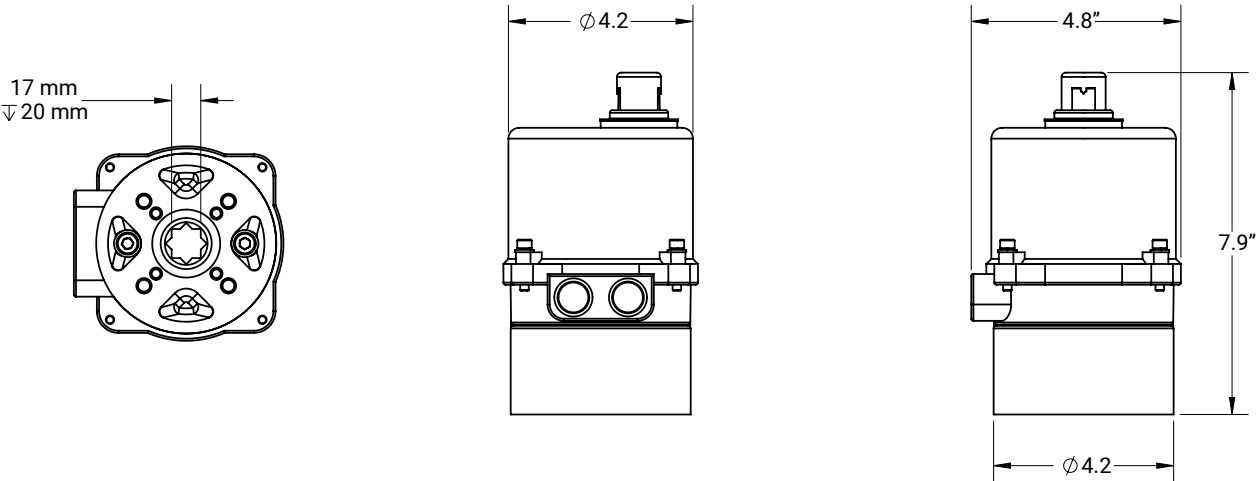
## BEO-Series Electric Actuator - Dimensions

### BM-T

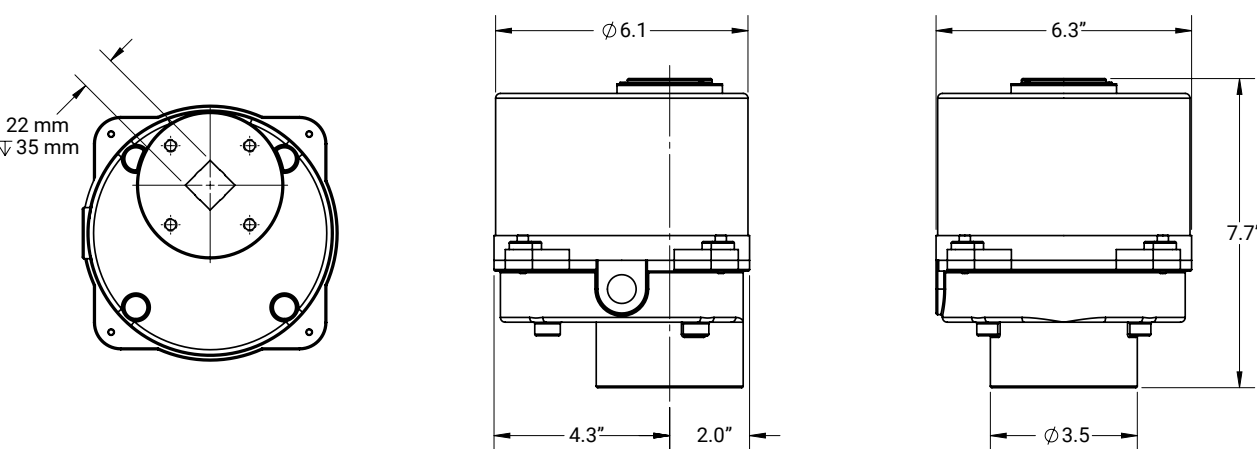


BEO-Series Electric Actuator - Dimensions

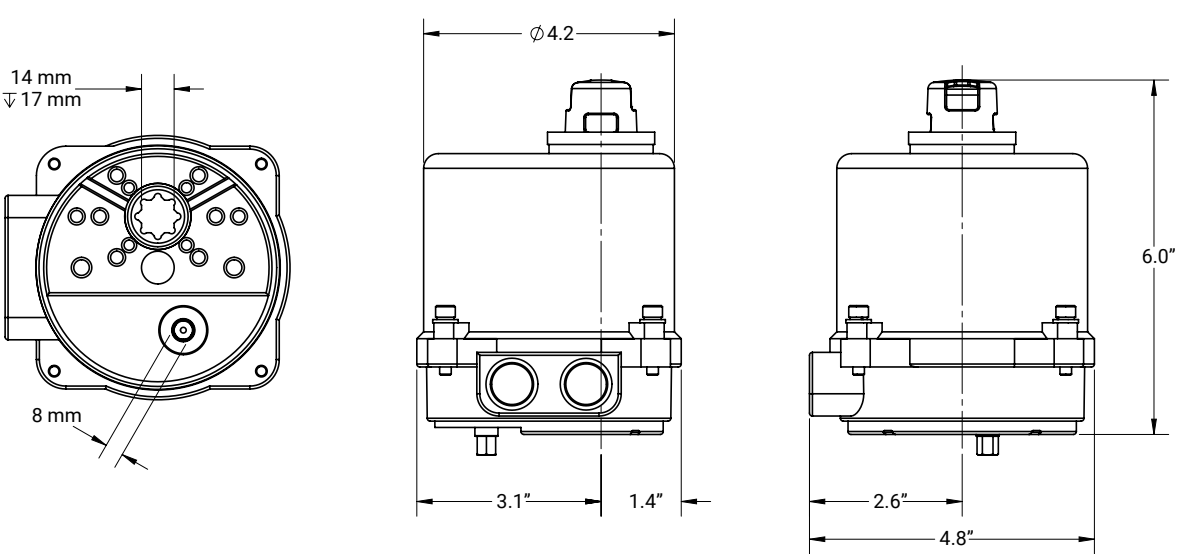
OM-A



BM-2

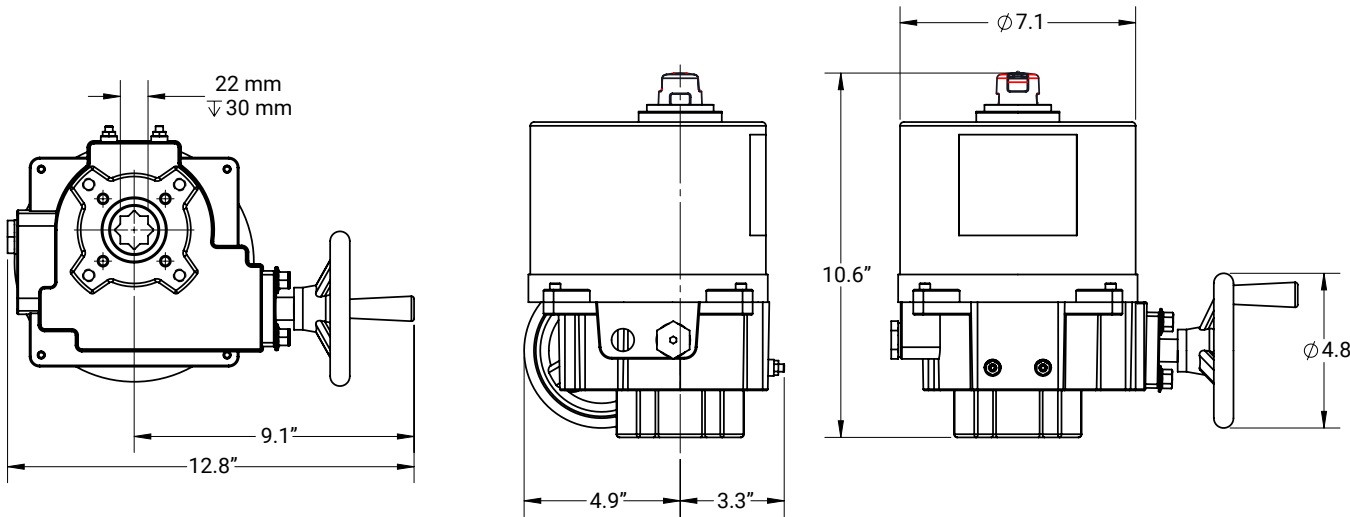


OM-1

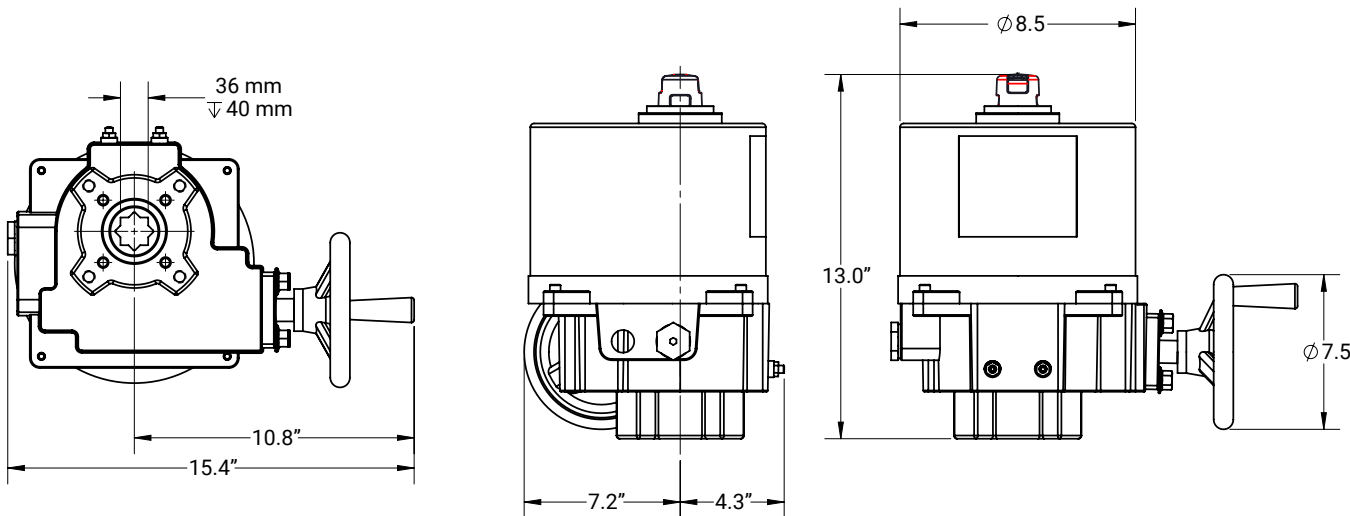


**BEO-Series Electric Actuator - Dimensions**

**OM-2 & OM-3**



**OM-4, OM-5, & OM-6**



J

**BEO-Series Electric Actuator - Electrical Data**  
**BM-T and OM-1 to 6, 1 PH, 30% and 75% duty cycle**  
**BM-T, 1 PH, 30% duty cycle**

| Voltage | Motor Power | Running Current |       |       | Running Time |         |         | Start Current |       |       |
|---------|-------------|-----------------|-------|-------|--------------|---------|---------|---------------|-------|-------|
|         |             | DC              | 60 Hz | 50 Hz | DC           | 60 Hz   | 50 Hz   | DC            | 60 Hz | 50 Hz |
|         | Watt        | Amp             | Amp   | Amp   | Sec/90°      | Sec/90° | Sec/90° | Amp           | Amp   | Amp   |
| 12      | 5           | 0.6             | -     | -     | 18           | -       | -       | 4             | -     | -     |
| 24      |             | 0.4             | 0.6   | 0.7   | 16           | 19      | 23      | 4             | 2     | 2     |
| 110-120 |             | -               | 0.3   | 0.3   | -            | 19      | 23      | -             | 1     | 1     |
| 220-240 |             | -               | 0.2   | 0.2   | -            | 19      | 23      | -             | 1     | 1     |

**12VAC/DC, Floating Control, 75% duty cycle**

| Model | Motor Power | Running Current |       |       | Running Time |         |         | Start Current |       |       |
|-------|-------------|-----------------|-------|-------|--------------|---------|---------|---------------|-------|-------|
|       |             | DC              | 60 Hz | 50 Hz | DC           | 60 Hz   | 50 Hz   | DC            | 60 Hz | 50 Hz |
|       | Watt        | Amp             | Amp   | Amp   | Sec/90°      | Sec/90° | Sec/90° | Amp           | Amp   | Amp   |
| OM-1  | 10          | 2.1             | 2.4   | 2.3   | 22           | 22      | 21      | 3             | 4     | 4     |
| OM-A  | 10          | 2.5             | -     | -     | 34           | -       | -       | 3             | -     | -     |
| OM-2  | 40          | 4.5             | -     | -     | 15           | -       | -       | 12            | -     | -     |
| OM-3  | 40          | 4.6             | -     | -     | 24           | -       | -       | 8             | -     | -     |
| OM-4  | 80          | 14.0            | -     | -     | 21           | -       | -       | 22            | -     | -     |
| OM-5  | 80          | 14.9            | -     | -     | 29           | -       | -       | 27            | -     | -     |
| OM-6  | 80          | 12.3            | -     | -     | 35           | -       | -       | 18            | -     | -     |

**24VAC/DC, Floating Control, 75% duty cycle**

| Model | Motor Power | Running Current |       |       | Running Time |         |         | Start Current |       |       |
|-------|-------------|-----------------|-------|-------|--------------|---------|---------|---------------|-------|-------|
|       |             | DC              | 60 Hz | 50 Hz | DC           | 60 Hz   | 50 Hz   | DC            | 60 Hz | 50 Hz |
|       | Watt        | Amp             | Amp   | Amp   | Sec/90°      | Sec/90° | Sec/90° | Amp           | Amp   | Amp   |
| OM-1  | 10          | 1.4             | 1.6   | 1.6   | 18           | 18      | 18      | 2.0           | 8.0   | 8.0   |
| OM-A  | 10          | 1.4             | 1.6   | 1.6   | 36           | 37      | 37      | 2.0           | 8.0   | 8.0   |
| OM-2  | 40          | 2.8             | 3.4   | 3.4   | 18           | 18      | 17      | 10.0          | 11.0  | 12.0  |
| OM-3  | 40          | 2.6             | 3.1   | 3.1   | 27           | 26      | 26      | 10.0          | 11.0  | 12.0  |
| OM-4  | 80          | 7.7             | 9.4   | 9.4   | 21           | 20      | 20      | 20.0          | 30.0  | 30.0  |
| OM-5  | 80          | 7.4             | 8.9   | 9     | 28           | 26      | 26      | 20.0          | 30.0  | 30.0  |
| OM-6  | 80          | 9.0             | 11.1  | 11.6  | 37           | 37      | 39      | 20.0          | 30.0  | 30.0  |

**24VAC/DC, Modulating Control, 75% duty cycle**

| Model | Motor Power | Running Current |       |       | Running Time |         |         | Start Current |       |       |
|-------|-------------|-----------------|-------|-------|--------------|---------|---------|---------------|-------|-------|
|       |             | DC              | 60 Hz | 50 Hz | DC           | 60 Hz   | 50 Hz   | DC            | 60 Hz | 50 Hz |
|       | Watt        | Amp             | Amp   | Amp   | Sec/90°      | Sec/90° | Sec/90° | Amp           | Amp   | Amp   |
| OM-1  | 10          | 1.3             | 2.8   | 2.8   | 18           | 18      | 18      | 2.0           | 8.0   | 8.0   |
| OM-A  | 10          | 1.3             | 2.8   | 2.8   | 36           | 37      | 37      | 2.0           | 8.0   | 8.0   |
| OM-2  | 40          | 2.8             | 3.40  | 3.40  | 18           | 18      | 17      | 10.0          | 11.0  | 12.0  |
| OM-3  | 40          | 2.6             | 3.1   | 3.1   | 27           | 26      | 26      | 10.0          | 11.0  | 12.0  |
| OM-4  | 80          | 7.7             | 9.4   | 9.4   | 21           | 20      | 20      | 20.0          | 30.0  | 30.0  |
| OM-5  | 80          | 7.4             | 8.9   | 9.0   | 28           | 26      | 26      | 20.0          | 30.0  | 30.0  |
| OM-6  | 80          | 9.0             | 11.1  | 11.6  | 37           | 37      | 39      | 20.0          | 30.0  | 30.0  |

## BEO-Series Electric Actuator - Electrical Data

### 110-120 VAC, Floating Control, 75% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-1  | 10          | 0.6             | 0.6   | 15           | 15      | 3.0           | 3.0   |
| OM-A  | 10          | 0.6             | 0.6   | 28           | 28      | 3.0           | 3.0   |
| OM-2  | 40          | 0.8             | 0.8   | 19           | 19      | 9.0           | 9.0   |
| OM-3  | 40          | 0.7             | 0.7   | 29           | 28      | 9.0           | 9.0   |
| OM-4  | 80          | 2.1             | 2.2   | 24           | 23      | 17.0          | 17.0  |
| OM-5  | 80          | 1.9             | 1.9   | 28           | 28      | 17.0          | 17.0  |
| OM-6  | 80          | 2.0             | 2.1   | 38           | 38      | 17.0          | 17.0  |

### 110-120 VAC, Modulating Control, 75% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-1  | 10          | 0.6             | 0.6   | 18           | 17      | 3.0           | 2.0   |
| OM-A  | 10          | 0.6             | 0.6   | 33           | 33      | 3.0           | 2.0   |
| OM-2  | 40          | 0.8             | 0.8   | 19           | 19      | 9.0           | 9.0   |
| OM-3  | 40          | 0.7             | 0.7   | 29           | 28      | 9.0           | 9.0   |
| OM-4  | 80          | 2.1             | 2.2   | 24           | 23      | 17.0          | 17.0  |
| OM-5  | 80          | 1.9             | 1.9   | 28           | 28      | 17.0          | 17.0  |
| OM-6  | 80          | 2.0             | 2.1   | 38           | 38      | 17.0          | 17.0  |

### 110-120 VAC, Floating Control, 30% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-1  | 10          | 0.7             | 0.8   | 12           | 17      | 2.0           | 2.0   |
| OM-A  | 10          | 0.7             | 0.8   | 27           | 37      | 2.0           | 2.0   |
| OM-2  | 40          | 1.2             | 1.7   | 17           | 20      | 3.0           | 4.0   |
| BM-2  | 40          | 1.3             | 1.6   | 9            | 11      | 4.0           | 4.0   |
| OM-3  | 40          | 1.2             | 1.7   | 26           | 31      | 3.0           | 4.0   |
| OM-4  | 80          | 2.1             | 2.4   | 19           | 23      | 7.0           | 7.0   |
| OM-5  | 80          | 2.0             | 2.4   | 26           | 31      | 7.0           | 7.0   |
| OM-6  | 80          | 2.4             | 2.5   | 34           | 41      | 7.0           | 7.0   |

### 110-120 VAC, Modulating Control, 30% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-2  | 40          | 1.2             | 1.7   | 17           | 20      | 3.0           | 4.0   |
| OM-3  | 40          | 1.2             | 1.7   | 26           | 31      | 3.0           | 4.0   |
| OM-4  | 80          | 2.1             | 2.4   | 19           | 23      | 7.0           | 7.0   |
| OM-5  | 80          | 2.0             | 2.4   | 26           | 31      | 7.0           | 7.0   |
| OM-6  | 80          | 2.4             | 2.5   | 34           | 41      | 7.0           | 7.0   |

## BEO-Series Electric Actuator - Electrical Data

## 220-240 VAC, Floating Control, 75% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-1  | 10          | 0.4             | 0.4   | 15           | 15      | 2.0           | 2.0   |
| OM-A  | 10          | 0.4             | 0.4   | 28           | 28      | 2.0           | 2.0   |
| OM-2  | 40          | 0.4             | 0.4   | 16           | 16      | 6.0           | 7.0   |
| OM-3  | 40          | 0.4             | 0.4   | 26           | 25      | 6.0           | 7.0   |
| OM-4  | 80          | 1.1             | 1.1   | 22           | 22      | 15.0          | 14.0  |
| OM-5  | 80          | 1.0             | 1.1   | 28           | 28      | 15.0          | 14.0  |
| OM-6  | 80          | 1.0             | 1.1   | 35           | 35      | 15.0          | 14.0  |

## 220-240 VAC, Modulating Control, 75% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-1  | 10          | 0.4             | 0.4   | 18           | 18      | 2.0           | 2.0   |
| OM-A  | 10          | 0.4             | 0.4   | 30           | 30      | 2.0           | 2.0   |
| OM-2  | 40          | 0.4             | 0.4   | 16           | 16      | 6.0           | 7.0   |
| OM-3  | 40          | 0.4             | 0.4   | 26           | 25      | 6.0           | 7.0   |
| OM-4  | 80          | 1.1             | 1.1   | 22           | 22      | 15.0          | 14.0  |
| OM-5  | 80          | 1.0             | 1.1   | 28           | 28      | 15.0          | 14.0  |
| OM-6  | 80          | 1.0             | 1.1   | 35           | 35      | 15.0          | 14.0  |

## 220-240 VAC, Floating Control, 30% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-1  | 10          | 0.4             | 0.4   | 15           | 17      | 3.0           | 2.0   |
| OM-A  | 10          | 0.4             | 0.4   | 25           | 33      | 3.0           | 2.0   |
| OM-2  | 40          | 0.6             | 0.8   | 17           | 21      | 2.0           | 2.0   |
| BM-2  | 40          | 0.6             | 0.8   | 9            | 11      | 2.0           | 2.0   |
| OM-3  | 40          | 0.6             | 0.8   | 26           | 31      | 2.0           | 2.0   |
| OM-4  | 80          | 1.1             | 1.3   | 20           | 23      | 4.0           | 4.0   |
| OM-5  | 80          | 1.0             | 1.3   | 26           | 31      | 4.0           | 4.0   |
| OM-6  | 80          | 1.1             | 1.3   | 34           | 40      | 4.0           | 4.0   |

## BEO-Series Electric Actuator - Electrical Data

### 220-240 VAC, Modulating Control, 30% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-2  | 40          | 0.6             | 0.8   | 17           | 21      | 2.0           | 2.0   |
| OM-3  | 40          | 0.6             | 0.8   | 26           | 31      | 2.0           | 2.0   |
| OM-4  | 80          | 1.1             | 1.3   | 20           | 23      | 4.0           | 4.0   |
| OM-5  | 80          | 1.0             | 1.3   | 26           | 31      | 4.0           | 4.0   |
| OM-6  | 80          | 1.1             | 1.3   | 34           | 40      | 4.0           | 4.0   |

### OM-2 to OM-6, 3 PH, 30% duty cycle

### 220-240 VAC, Floating Control, 30% duty cycle

| Model | Motor Power | Running Current |       | Running Time |         | Start Current |       |
|-------|-------------|-----------------|-------|--------------|---------|---------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz         | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp           | Amp   |
| OM-2  | 40          | 0.5             | 0.6   | 16           | 19      | 1.3           | 1.4   |
| BM-2  | 40          | 0.5             | 0.6   | 9            | 10      | 1.6           | 1.6   |
| OM-3  | 40          | 0.5             | 0.6   | 26           | 31      | 1.3           | 1.4   |
| OM-4  | 80          | 0.9             | 1.0   | 21           | 24      | 2.9           | 3.1   |
| OM-5  | 80          | 0.9             | 1.0   | 27           | 31      | 2.9           | 3.1   |
| OM-6  | 80          | 0.9             | 1.0   | 34           | 40      | 2.9           | 3.1   |

J



### BX-Series Explosion Proof Electric Actuator

The quarter-turn electric BX-series explosion-proof actuator is an alternative to the rack and pinion actuator, utilized when an air supply isn't available. It is also used when flame-proof and combustible dust-proof enclosures are specified.

#### Certifications

- CSA for hazardous locations
- AEx/Ex
- UKCA II 2GD
- ATEX II 2GD
- RoHS
- REACH

#### Features

- Self-locking gear system
- Mechanical position indication
- Built-in thermal protection
- Clutch-less manual over-ride (for safe operation, the handwheel does not rotate during operation)
- Standard anti-condensation heater to prevent the freezing of lubricants and keep interior dry to prevent damage from moisture (heater not recommended if ambient temperature is over **68°F** or **35°C**)
- Enclosure features
  - Aluminum alloy, polyester powder coated, corrosion protection C3 according to ISO 12944-6
  - NEMA 4X and IP68 (waterproof and dustproof enclosure 7m, 72hrs)
- Gear train features
  - High alloy steel gear trains with self-locking to avoid backlash
  - Gear trains are factory lubricated for life
- Motor features
  - Insulation class F
  - Built-in thermal protection prevents motor burnout
    - AC motor: 257±9°F (125±5°C)
    - DC motor: 194 ± 9°F (90 ± 5°C)



#### Specifications

- Standard connections: ISO 5211 mounting flange
- Working temperature range: **-22°F to 158°F (-30°C to 70°C)**
- Working relative humidity range: 30% to 95%
- Options
  - Heater thermostat
    - Can switch the anti-condensation heater off when the temperature inside the actuator is higher than **77±9°F (25±5°C)**
  - Auxiliary limit switches
    - Actuators come standard with two limit switches (LS1 for fully-open and LS2 for fully-closed positioning)
    - Two auxiliary limit switches are optional for fully-open and fully-closed position feedback
  - Modulating control
    - A proportional control unit
    - Analog signal input: 4-20mA, 1-5V, and 2-10V
    - Analog signal output: 4-20mA and 2-10V
  - Potentiometer unit
    - Recommended to use with a floating control actuator to output signal for position indicator
    - Two resistors, 1K ohm or 5K ohm are available for selection
  - Current position transmitter
    - Can provide 4-20mA output signal for position indication

## BX-Series Explosion Proof Electric Actuator - Part Number Key

| BX-Series Electric Actuator<br>Part Number Key<br>Example: BXOM-1B-11 |             | Series | Model | Voltage |   | Option 1 | Option 2 |
|-----------------------------------------------------------------------|-------------|--------|-------|---------|---|----------|----------|
|                                                                       |             | BX     | OM-1  | B       | - | 1        | 1        |
| <b>Series</b>                                                         | <b>Code</b> |        |       |         |   |          |          |
| BX                                                                    | BX          |        |       |         |   |          |          |
| <b>Model</b>                                                          | <b>Code</b> |        |       |         |   |          |          |
| OM-1                                                                  | OM-1        |        |       |         |   |          |          |
| OM-A                                                                  | OM-A        |        |       |         |   |          |          |
| OM-M                                                                  | OM-M        |        |       |         |   |          |          |
| OM-2                                                                  | OM-2        |        |       |         |   |          |          |
| OM-3                                                                  | OM-3        |        |       |         |   |          |          |
| OM-4                                                                  | OM-4        |        |       |         |   |          |          |
| OM-5                                                                  | OM-5        |        |       |         |   |          |          |
| OM-6                                                                  | OM-6        |        |       |         |   |          |          |
| <b>Voltage</b>                                                        | <b>Code</b> |        |       |         |   |          |          |
| 115 VAC                                                               | B           |        |       |         |   |          |          |
| 12 VDC                                                                | C           |        |       |         |   |          |          |
| 24 VDC/AC                                                             | D           |        |       |         |   |          |          |
| 220 VAC                                                               | F           |        |       |         |   |          |          |
| <b>Option 1</b>                                                       | <b>Code</b> |        |       |         |   |          |          |
| None                                                                  | 1           |        |       |         |   |          |          |
| 4-20 mA input/output<br>modulating controller                         | 3           |        |       |         |   |          |          |
| Current position transmitter                                          | 4           |        |       |         |   |          |          |
| Potentiometer                                                         | 5           |        |       |         |   |          |          |
| Two extra travel cams and<br>switches                                 | 7           |        |       |         |   |          |          |
| 1-5V input/2-10V output<br>modulating controller                      | A           |        |       |         |   |          |          |
| 2-10V input/output<br>modulating controller                           | B           |        |       |         |   |          |          |
| 75% duty cycle <sup>1</sup>                                           | C           |        |       |         |   |          |          |
| Heater thermostat                                                     | E           |        |       |         |   |          |          |
| No heater                                                             | F           |        |       |         |   |          |          |
| <b>Option 2<sup>2</sup></b>                                           | <b>Code</b> |        |       |         |   |          |          |
| None                                                                  | 1           |        |       |         |   |          |          |
| 4-20 mA input/output<br>modulating controller                         | 3           |        |       |         |   |          |          |
| Current position transmitter                                          | 4           |        |       |         |   |          |          |
| Potentiometer                                                         | 5           |        |       |         |   |          |          |
| Two extra travel cams and<br>switches                                 | 7           |        |       |         |   |          |          |
| 1-5V input/2-10V output<br>modulating controller                      | A           |        |       |         |   |          |          |
| 2-10V input/output<br>modulating controller                           | B           |        |       |         |   |          |          |
| 75% duty cycle <sup>1</sup>                                           | C           |        |       |         |   |          |          |
| Heater thermostat                                                     | E           |        |       |         |   |          |          |
| No heater                                                             | F           |        |       |         |   |          |          |

<sup>1</sup>Standard for 24V

<sup>2</sup>If 2 options selected, list lower code first

NOTE: Do not duplicate options selected from Option 1 and Option 2. Some options are not available to combine.

## BX-Series Explosion Proof Electric Actuator - Standard Mounting Specifications

| Model                | Mounting Flange | Square |      | Depth of Square |      |
|----------------------|-----------------|--------|------|-----------------|------|
|                      | ISO 5211        | mm     | in   | mm              | in   |
| OM-A                 | F07             | 17     | 0.67 | 20              | 0.78 |
| OM-1                 | F03/F05         | 14     | 0.55 | 17              | 0.67 |
| OM-2 and OM-3        | F07             | 22     | 0.87 | 30              | 1.18 |
| OM-4, OM-5, and OM-6 | F10             | 36     | 1.38 | 40              | 1.57 |

### Hazardous Area Enclosures

#### TS Taiwan Hazardous Areas Certification

| Marking              | Ambient Temperature          |
|----------------------|------------------------------|
| Ex db IIB T4 Gb      | -22°F ~ 158°F (-30°C ~ 70°C) |
| Ex tb IIIC T130°C Db | -22°F ~ 158°F (-30°C ~ 70°C) |

In accordance with IEC 60079-0, IEC 60079-1, IEC60079-31.

#### CNEx China Hazardous Areas Certification

| Marking              | Ambient Temperature          |
|----------------------|------------------------------|
| Ex db IIB T4 Gb      | -22°F ~ 158°F (-30°C ~ 70°C) |
| Ex tb IIIC T130°C Db | -22°F ~ 158°F (-30°C ~ 70°C) |

In accordance with GB/T3836.1, GB/t3836.2, GB/T3836.31.

#### ATEX Hazardous Areas Certification for European Union

| Directive   | Marking              | Ambient Temperature          |
|-------------|----------------------|------------------------------|
| ATEX II2GD  | Ex db IIB T4 Gb      | -22°F ~ 158°F (-30°C ~ 70°C) |
| ATEX II 2GD | Ex tb IIIC T130°C Db | -22°F ~ 158°F (-30°C ~ 70°C) |

In accordance with IEC 60079-0, IEC 60079-1, IEC60079-31.

#### IECEx Hazardous Areas Certification for International Market

| Marking              | Ambient Temperature          |
|----------------------|------------------------------|
| Ex db IIB T4 Gb      | -22°F ~ 158°F (-30°C ~ 70°C) |
| Ex tb IIIC T130°C Db | -22°F ~ 158°F (-30°C ~ 70°C) |

In accordance with IEC 60079-0, IEC 60079-1, IEC60079-31.

## CSA Hazardous Locations Certification for North America

### Zone System

| Code   | Class | Permitted Zone | Type of Protection | Group         | Temperature Class | Ambient Temperature          |
|--------|-------|----------------|--------------------|---------------|-------------------|------------------------------|
| AEx/Ex | 1     | 1              | db                 | IIB, IIA      | T4                | -22°F ~ 158°F (-30°C ~ 70°C) |
| AEx/Ex | 11    | 21             | tb                 | IIC, IIB, IIA | T130°C            | -22°F ~ 158°F (-30°C ~ 70°C) |

In accordance with CAN/CSA-C22.2 No. 0-20, CAN/CSA-C22.2 No. 60079-0, CAN/CSA-C22.2 No. 60079-1, CAN/CSA-C22.2 No. 60079-31, UL 60079-0, UL 60079-1, UL 60079-31.

### Division System

| Hazard Class | Permitted Division | Group   | Temperature Class | Ambient Temperature          |
|--------------|--------------------|---------|-------------------|------------------------------|
| I            | 1                  | C, D    | T4                | -22°F ~ 158°F (-30°C ~ 70°C) |
| II           | 1                  | E, F, G | T130°C            | -22°F ~ 158°F (-30°C ~ 70°C) |

In accordance with CAN/CSA-C22.2 No. 0-20, CSA C22.2 No. 30-M1986, CSA C22.2 No. 25-17, FM 3600, FM 3615, FM 3616.

### UKCA Hazardous Area Certification

| Directive   | Marking              | Ambient Temperature          |
|-------------|----------------------|------------------------------|
| UKCA II 2GD | Ex db IIB T4 Gb      | -22°F ~ 158°F (-30°C ~ 70°C) |
| UKCA II 2GD | Ex tb IIIC T130°C Db | -22°F ~ 158°F (-30°C ~ 70°C) |

In accordance with EN 60079-0, EN 60079-1, EN 60079-31.

### JPEX Hazardous Areas Certification for Japan

| Marking              | Ambient Temperature          |
|----------------------|------------------------------|
| Ex db IIB T4 Gb      | -22°F ~ 158°F (-30°C ~ 70°C) |
| Ex tb IIIC T130°C Db | -22°F ~ 158°F (-30°C ~ 70°C) |

In accordance with JNIOOSH-TR-46-1, JNIOOSH-TR-46-2, JNIOOSH-TR-46-9.

## Torque, Weight, and Override Specifications Chart

| Model | Maximum Torque |        | Weight |      | Manual Override |
|-------|----------------|--------|--------|------|-----------------|
|       | N-m            | in-lbs | kg     | lb   |                 |
| OM-A  | 50             | 443    | 4.5    | 10   | -               |
| OM-1  | 35             | 310    | 3.5    | 8    | lever           |
| OM-2  | 90             | 797    | 17     | 37.5 | hand-wheel      |
| OM-3  | 150            | 1328   | 17     | 37.5 |                 |
| OM-4  | 400            | 3542   | 31     | 68.5 |                 |
| OM-5  | 500            | 4427   | 31     | 68.5 |                 |
| OM-6  | 650            | 5756   | 31     | 68.5 |                 |

## BX-Series Explosion Proof Electric Actuator - Electrical Data

### 12VAC/DC, Floating Control, 30% and 75% Duty Cycle

| Model | Motor Power | Running Current |       |       | Running Time |         |         | Lock Current |       |       |
|-------|-------------|-----------------|-------|-------|--------------|---------|---------|--------------|-------|-------|
|       |             | DC              | 60 Hz | 50 Hz | DC           | 60 Hz   | 50 Hz   | DC           | 60 Hz | 50 Hz |
|       | Watt        | Amp             | Amp   | Amp   | Sec/90°      | Sec/90° | Sec/90° | Amp          | Amp   | Amp   |
| OM-1  | 10          | 2.9             | -     | -     | 22           | -       | -       | 3.1          | -     | -     |
| OM-A  | 10          | 2.5             | -     | -     | 34           | -       | -       | 3.1          | -     | -     |
| OM-2  | 40          | 4.4             | -     | -     | 15           | -       | -       | 17.5         | -     | -     |
| OM-3  | 40          | 5.1             | -     | -     | 24           | -       | -       | 17.5         | -     | -     |
| OM-4  | 80          | 14.1            | -     | -     | 21           | -       | -       | 40.6         | -     | -     |
| OM-5  | 80          | 14.5            | -     | -     | 29           | -       | -       | 40.6         | -     | -     |
| OM-6  | 80          | 21.8            | -     | -     | 35           | -       | -       | 40.6         | -     | -     |

### 24VAC/DC, Floating Control, 75% Duty Cycle

| Model | Motor Power | Running Current |       |       | Running Time |         |         | Lock Current |       |       |
|-------|-------------|-----------------|-------|-------|--------------|---------|---------|--------------|-------|-------|
|       |             | DC              | 60 Hz | 50 Hz | DC           | 60 Hz   | 50 Hz   | DC           | 60 Hz | 50 Hz |
|       | Watt        | Amp             | Amp   | Amp   | Sec/90°      | Sec/90° | Sec/90° | Amp          | Amp   | Amp   |
| OM-1  | 10          | 1.5             | 1.9   | 1.6   | 11           | 14      | 14      | 2.6          | 2.5   | 2.5   |
| OM-A  | 10          | 1.3             | 1.6   | 1.6   | 21           | 24      | 25      | 2.6          | 2.5   | 2.5   |
| OM-2  | 40          | 1.9             | 3.4   | 3.4   | 19           | 15      | 15      | 14.1         | 10.4  | 10.4  |
| OM-3  | 40          | 2.7             | 3.6   | 3.9   | 30           | 24      | 24      | 14.1         | 10.4  | 10.4  |
| OM-4  | 80          | 7.4             | 10.7  | 10.3  | 22           | 20      | 22      | 36.4         | 27.3  | 27.3  |
| OM-5  | 80          | 8.1             | 10.5  | 10.4  | 30           | 27      | 28      | 36.4         | 27.3  | 27.3  |
| OM-6  | 80          | 12.5            | 10.3  | 10.3  | 42           | 34      | 34      | 36.4         | 27.3  | 27.3  |

### 24VAC/DC, Modulating Control, 75% Duty Cycle

| Model | Motor Power | Running Current |       |       | Running Time |         |         | Lock Current |       |       |
|-------|-------------|-----------------|-------|-------|--------------|---------|---------|--------------|-------|-------|
|       |             | DC              | 60 Hz | 50 Hz | DC           | 60 Hz   | 50 Hz   | DC           | 60 Hz | 50 Hz |
|       | Watt        | Amp             | Amp   | Amp   | Sec/90°      | Sec/90° | Sec/90° | Amp          | Amp   | Amp   |
| OM-1  | 10          | 1.6             | 2.8   | 2.8   | 15           | 14      | 15      | 0.4          | 2.8   | 2.8   |
| OM-A  | 10          | 1.2             | 2.5   | 2.4   | 26           | 23      | 24      | 0.4          | 2.8   | 2.8   |
| OM-2  | 40          | 1.9             | 3.4   | 3.4   | 19           | 15      | 15      | 14.1         | 10.4  | 10.4  |
| OM-3  | 40          | 2.7             | 3.6   | 3.9   | 30           | 24      | 24      | 14.1         | 10.4  | 10.4  |
| OM-4  | 80          | 7.4             | 10.7  | 10.3  | 22           | 20      | 22      | 36.4         | 27.3  | 27.3  |
| OM-5  | 80          | 8.1             | 10.5  | 10.4  | 30           | 27      | 28      | 36.4         | 27.3  | 27.3  |
| OM-6  | 80          | 12.5            | 10.3  | 10.3  | 42           | 34      | 34      | 36.4         | 27.3  | 27.3  |

## BX-Series Explosion Proof Electric Actuator - Electrical Data

### 110-120 VAC, Floating Control, 75% Duty Cycle

| Model | Motor Power | Running Current |       | Running Time |         | Lock Current |       |
|-------|-------------|-----------------|-------|--------------|---------|--------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz        | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp          | Amp   |
| OM-1  | 10          | 0.6             | 0.6   | 12           | 12      | 2.5          | 2.3   |
| OM-A  | 10          | 0.5             | 0.5   | 21           | 21      | 2.5          | 2.3   |
| OM-2  | 40          | 0.5             | 0.5   | 16           | 16      | 3.6          | 3.7   |
| OM-3  | 40          | 0.6             | 0.6   | 26           | 25      | 3.6          | 3.7   |
| OM-4  | 80          | 3.7             | 3.8   | 15           | 15      | 12.7         | 11.7  |
| OM-5  | 80          | 3.6             | 3.6   | 21           | 20      | 12.7         | 11.7  |
| OM-6  | 80          | 4.8             | 5.2   | 29           | 27      | 12.7         | 11.7  |

### 110-120 VAC, Modulating Control, 75% Duty Cycle

| Model | Motor Power | Running Current |       | Running Time |         | Lock Current |       |
|-------|-------------|-----------------|-------|--------------|---------|--------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz        | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp          | Amp   |
| OM-1  | 10          | 0.6             | 0.5   | 12           | 12      | 0.7          | 0.7   |
| OM-A  | 10          | 0.5             | 0.5   | 22           | 22      | 0.7          | 0.7   |
| OM-2  | 40          | 0.5             | 0.5   | 16           | 16      | 3.6          | 3.7   |
| OM-3  | 40          | 0.6             | 0.6   | 26           | 25      | 3.6          | 3.7   |
| OM-4  | 80          | 3.7             | 3.8   | 15           | 15      | 12.7         | 11.7  |
| OM-5  | 80          | 3.6             | 3.6   | 21           | 20      | 12.7         | 11.7  |
| OM-6  | 80          | 4.8             | 5.2   | 29           | 27      | 12.7         | 11.7  |

### 110-120 VAC, Floating Control, 30% Duty Cycle

| Model | Motor Power | Running Current |       | Running Time |         | Lock Current |       |
|-------|-------------|-----------------|-------|--------------|---------|--------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz        | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp          | Amp   |
| OM-1  | 10          | 0.7             | 0.8   | 11           | 14      | 0.7          | 0.7   |
| OM-A  | 10          | 0.7             | 0.8   | 21           | 27      | 0.7          | 0.8   |
| OM-2  | 40          | 0.9             | 1.2   | 18           | 22      | 1.4          | 1.5   |
| OM-3  | 40          | 0.9             | 1.2   | 28           | 34      | 1.4          | 1.5   |
| OM-4  | 80          | 2.1             | 2.3   | 20           | 25      | 5.5          | 6.0   |
| OM-5  | 80          | 2.2             | 2.3   | 27           | 33      | 5.5          | 6.0   |
| OM-6  | 80          | 2.7             | 2.4   | 36           | 42      | 5.5          | 6.0   |

BX-Series Explosion Proof Electric Actuator - Electrical Data

110-120 VAC, Modulating Control, 30% Duty Cycle

| Model | Motor Power | Running Current |       | Running Time |         | Lock Current |       |
|-------|-------------|-----------------|-------|--------------|---------|--------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz        | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp          | Amp   |
| OM-2  | 40          | 0.9             | 1.2   | 18           | 22      | 1.4          | 1.5   |
| OM-3  | 40          | 0.9             | 1.2   | 28           | 34      | 1.4          | 1.5   |
| OM-4  | 80          | 2.1             | 2.3   | 20           | 25      | 5.5          | 6.0   |
| OM-5  | 80          | 2.2             | 2.3   | 27           | 33      | 5.5          | 6.0   |
| OM-6  | 80          | 2.7             | 2.4   | 36           | 42      | 5.5          | 6.0   |

220-240 VAC, Floating Control, 75% Duty Cycle

| Model | Motor Power | Running Current |       | Running Time |         | Lock Current |       |
|-------|-------------|-----------------|-------|--------------|---------|--------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz        | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp          | Amp   |
| OM-1  | 10          | 0.4             | 0.4   | 11           | 11      | 0.6          | 0.6   |
| OM-A  | 10          | 0.3             | 0.3   | 20           | 20      | 0.6          | 0.6   |
| OM-2  | 40          | 0.3             | 0.3   | 25           | 24      | 2.7          | 2.5   |
| OM-3  | 40          | 0.3             | 0.3   | 25           | 24      | 2.7          | 2.5   |
| OM-4  | 80          | 2.1             | 2.2   | 14           | 14      | 7.0          | 7.7   |
| OM-5  | 80          | 1.9             | 1.9   | 19           | 19      | 7.0          | 7.7   |
| OM-6  | 80          | 2.0             | 2.3   | 24           | 25      | 7.0          | 7.7   |

220-240 VAC, Modulating Control, 75% Duty Cycle

| Model | Motor Power | Running Current |       | Running Time |         | Lock Current |       |
|-------|-------------|-----------------|-------|--------------|---------|--------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz        | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp          | Amp   |
| OM-1  | 10          | 0.3             | 0.3   | 12           | 12      | 0.4          | 0.4   |
| OM-A  | 10          | 0.3             | 0.3   | 22           | 22      | 0.4          | 0.4   |
| OM-2  | 40          | 0.3             | 0.3   | 16           | 15      | 2.7          | 2.5   |
| OM-3  | 40          | 0.3             | 0.3   | 25           | 24      | 2.7          | 2.5   |
| OM-4  | 80          | 2.1             | 2.2   | 14           | 14      | 7.0          | 7.7   |
| OM-5  | 80          | 1.9             | 1.9   | 19           | 19      | 7.0          | 7.7   |
| OM-6  | 80          | 2.0             | 2.3   | 24           | 25      | 7.0          | 7.7   |

## BX-Series Explosion Proof Electric Actuator - Electrical Data

### 220-240 VAC, Floating Control, 30% Duty Cycle

| Model | Motor Power | Running Current |       | Running Time |         | Lock Current |       |
|-------|-------------|-----------------|-------|--------------|---------|--------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz        | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp          | Amp   |
| OM-1  | 10          | 0.3             | 0.3   | 11           | 13      | 0.3          | 0.3   |
| OM-A  | 10          | 0.3             | 0.3   | 20           | 25      | 0.3          | 0.3   |
| OM-2  | 40          | 0.4             | 0.5   | 18           | 22      | 0.7          | 0.8   |
| OM-3  | 40          | 0.4             | 0.5   | 28           | 34      | 0.7          | 0.8   |
| OM-4  | 80          | 0.9             | 1.3   | 20           | 24      | 2.8          | 3.0   |
| OM-5  | 80          | 1.1             | 1.3   | 27           | 33      | 2.8          | 3.0   |
| OM-6  | 80          | 1.1             | 1.3   | 33           | 41      | 2.8          | 3.0   |

### 220-240 VAC, Modulating Control, 30% Duty Cycle

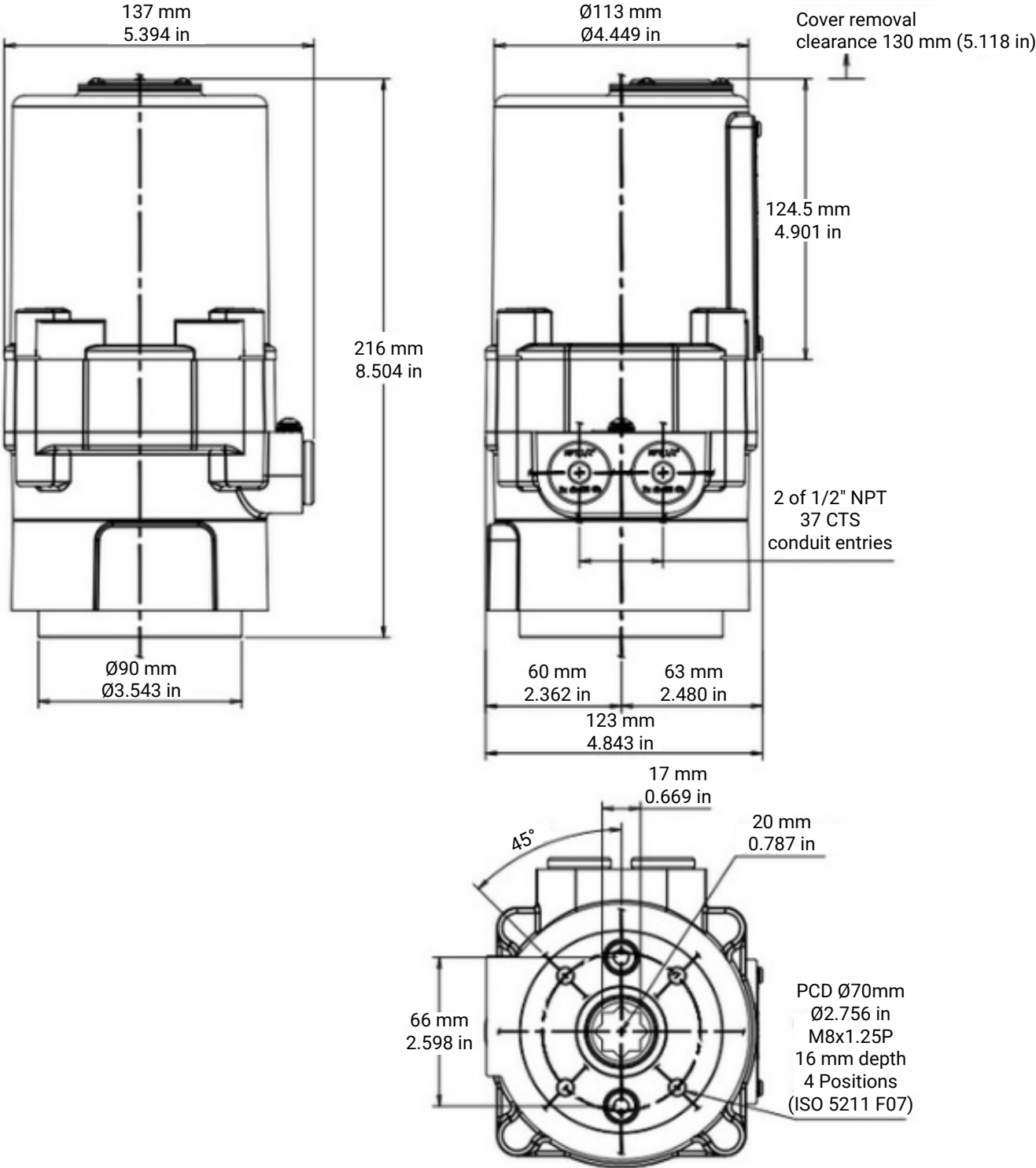
| Model | Motor Power | Running Current |       | Running Time |         | Lock Current |       |
|-------|-------------|-----------------|-------|--------------|---------|--------------|-------|
|       |             | 60 Hz           | 50 Hz | 60 Hz        | 50 Hz   | 60 Hz        | 50 Hz |
|       | Watt        | Amp             | Amp   | Sec/90°      | Sec/90° | Amp          | Amp   |
| OM-2  | 40          | 0.4             | 0.5   | 18           | 22      | 0.7          | 0.8   |
| OM-3  | 40          | 0.4             | 0.5   | 28           | 34      | 0.7          | 0.8   |
| OM-4  | 80          | 0.9             | 1.3   | 20           | 24      | 2.8          | 3.0   |
| OM-5  | 80          | 1.1             | 1.3   | 27           | 33      | 2.8          | 3.0   |
| OM-6  | 80          | 1.1             | 1.3   | 33           | 41      | 2.8          | 3.0   |

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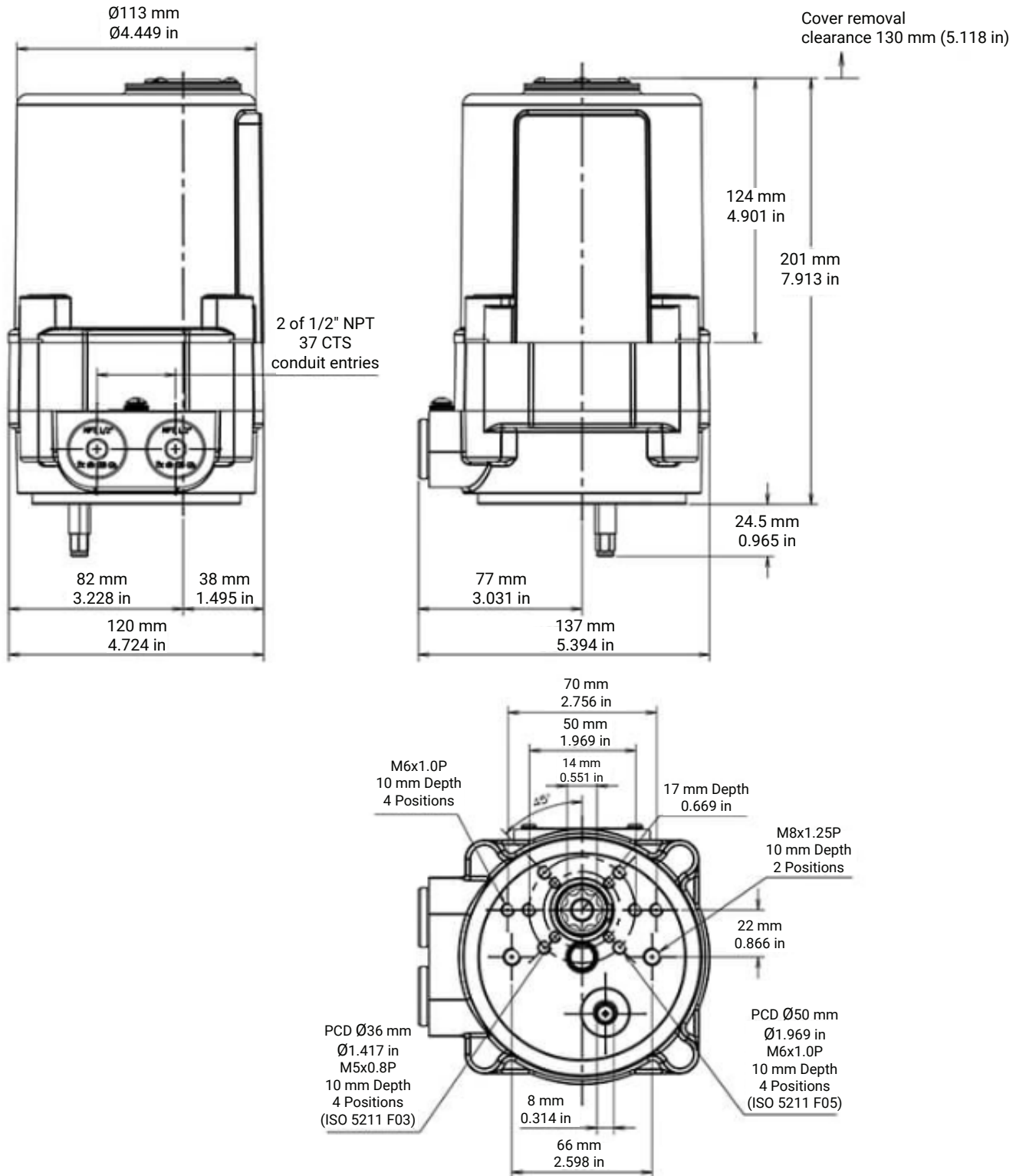
BX-Series Explosion Proof Electric Actuator - Dimensions

OM-A

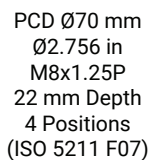


## BX-Series Explosion Proof Electric Actuator - Dimensions

**OM-1**

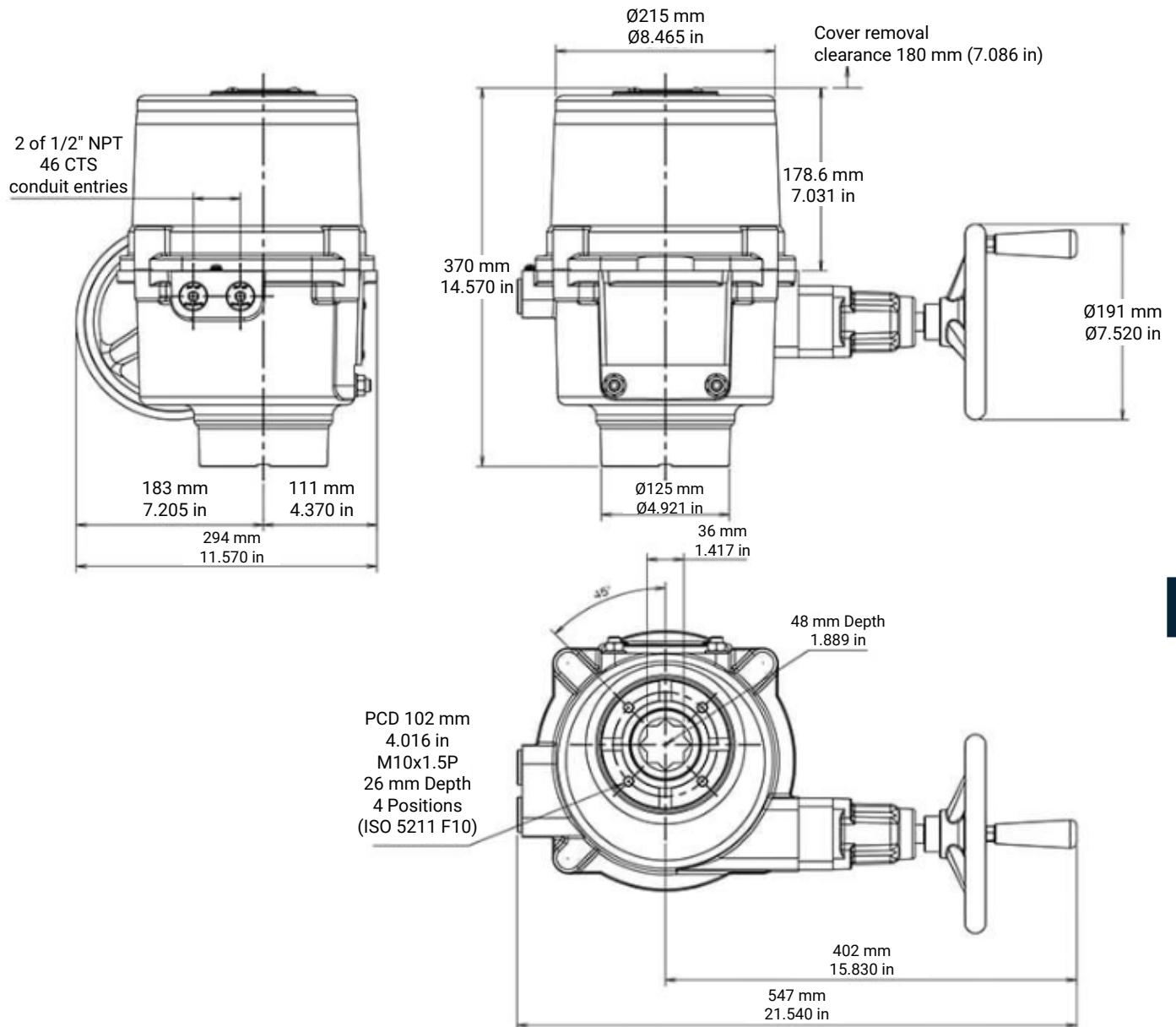


## OM-2 and OM-3



## BX-Series Explosion Proof Electric Actuator - Dimensions

### OM-4, OM-5, and OM-6



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VC-Series Vertical Canister Actuator

Used with Dixon® B5107, L5107, and B5102-series sanitary butterfly valves for quarter-turn actuation.

Sizes

- One size for all Dixon sanitary butterfly valves up to 4"

Features

- Tested to 1 million cycles
- Excellent corrosion resistance
- Available in spring return or double acting
- Actuation capabilities range between 1/2" to 4" in EPDM, silicone, and FKM for sanitary butterfly valves

Materials

- See bill of materials on page 3

Specifications

- Cycle times
  - Cycle time performance will vary greatly for each unit
  - They are dependent on air supply, valve torque, line pressure, temperature, and media
- Actuator data
  - Air connections: 1/8" NPT fitting ports
  - Lubrication:
  - Control air data
    - Spring return maximum pressure: **120 PSI**
    - Double acting maximum pressure: **120 PSI**
    - Maximum temperature: **250°F (121°C)**
    - Minimum temperature: **-4°F (-20°C)**
    - Plant air: dry or lubricated
- VC1SR: spring return actuator data
  - Weight: 6.0 lbs
  - Air consumption: 8.5 in³ down stroke (CW), 18.5 in³ up stroke (CCW)
  - Cycle time (@ **80 PSI**, no load): 0.30 seconds (CCW air), 1.50 seconds (CW spring)
- VC1DA: double acting actuator data
  - Weight: 5.1 lbs
  - Air consumption: 8.5 in³ down stroke (CW), 20 in³ up stroke (CCW)
  - Cycle time (@ **80 PSI**, no load): 0.15 seconds
- Control top mounting kits
  - Bürkert 8681/Dixon MT-series control top
  - Bürkert 8691/Dixon BT-series control top
  - Bürkert 8692/Dixon XPB-series positioner



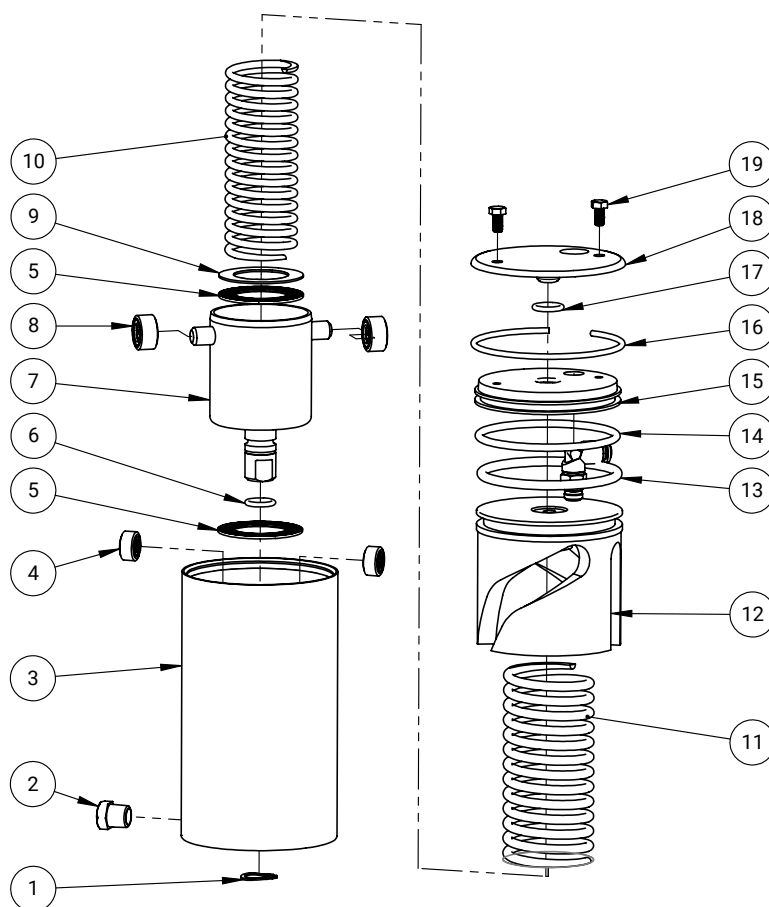
VC-Series Vertical Canister Actuator - Part Number Table

| Part # | Description                              | Repair Kit Part # |
|--------|------------------------------------------|-------------------|
| VC1SR  | spring return vertical canister actuator | VC1-RK1¹          |
| VC1DA  | double acting vertical canister actuator |                   |

¹Repair kit includes items: 4, 5, 6, 8, 9, 13, and 14.

NOTE: See Actuation Accessories EPRG for available couplers, sleeves, and brackets.

## VC-Series Vertical Canister Actuator - Bill of Materials



| Item #          | Part #   | Description          | Material | Qty | Spare Part |
|-----------------|----------|----------------------|----------|-----|------------|
| 1               | VC1-17   | retaining clip       | 304 SS   | 1   | yes        |
| 2 <sup>1</sup>  | VC-NR-AF | air filter           | 304 SS   | 1   |            |
| 3               | VC1-1    | actuator body        | 304 SS   | 1   |            |
| 4               | VC1-8    | body needle bearing  | 304 SS   | 2   |            |
| 5 <sup>2</sup>  | VC1-10   | thrust bearing       | 304 SS   | 2   |            |
| 6               | VC1-11   | drive O-ring         | EPDM     | 1   |            |
| 7               | VC1-2    | actuator drive       | 304 SS   | 1   |            |
| 8               | VC1-9    | drive needle bearing | 304 SS   | 2   |            |
| 9 <sup>1</sup>  | VC1-12   | thrust washer        | 304 SS   | 1   |            |
| 10 <sup>1</sup> | VC1-3    | inner spring         | 60Si2Mn  | 1   |            |
| 11 <sup>1</sup> | VC1-4    | outer spring         | 60Si2Mn  | 1   |            |
| 12              | VC1-5    | piston               | AL       | 1   |            |
| 13              | VC1-13   | piston O-ring        | EPDM     | 1   |            |
| 14              | VC1-14   | end cap O-ring       | EPDM     | 1   |            |
| 15              | VC1-6    | end cap              | 304 SS   | 1   |            |
| 16              | VC1-15   | retaining ring       | 304 SS   | 1   |            |
| 17              | VC1-16   | top cap O-ring       | EPDM     | 1   |            |
| 18              | VC1-7    | top cap              | 304 SS   | 1   |            |
| 19 <sup>3</sup> | -        | M5x10mm hex screw    | 18-8     | 2   |            |

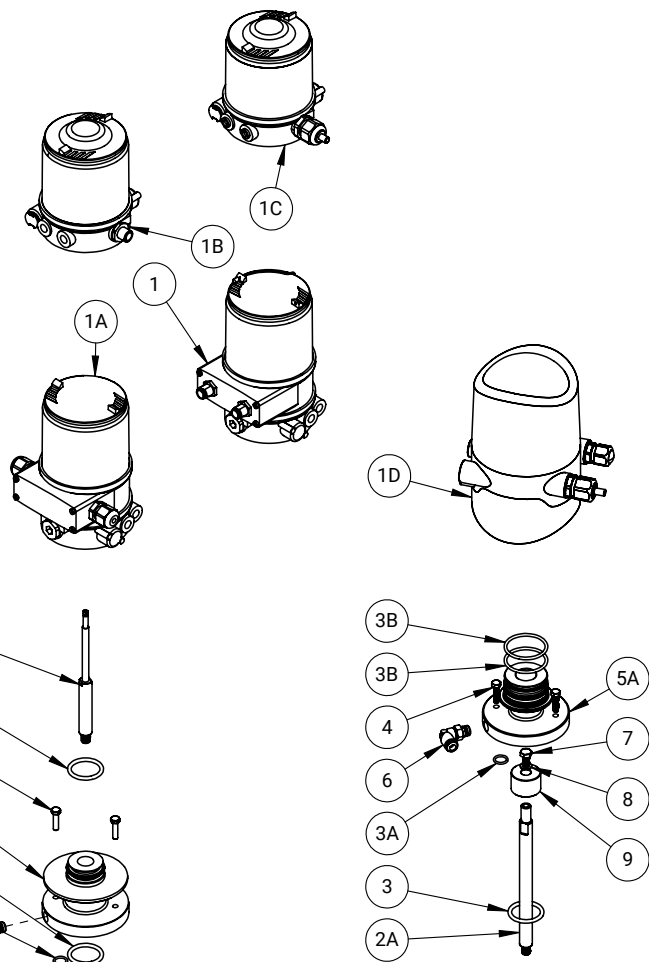
<sup>1</sup>Double acting actuators do not require items 2, 9, 10, and 11

<sup>2</sup>Double acting actuators only require qty 1 of item 5

<sup>3</sup>Item 19 to be assembled with liquid threadlocker and torqued to 45.1 in-lbs (5.1 N-m)

NOTE: Repair kit VC1-RK1 includes items 4, 5, 6, 8, 9, 13, and 14

VC-Series Vertical Canister Actuator - Bill of Materials (Accessories)

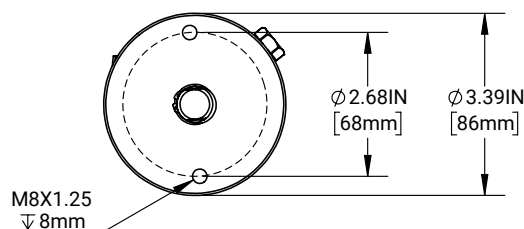
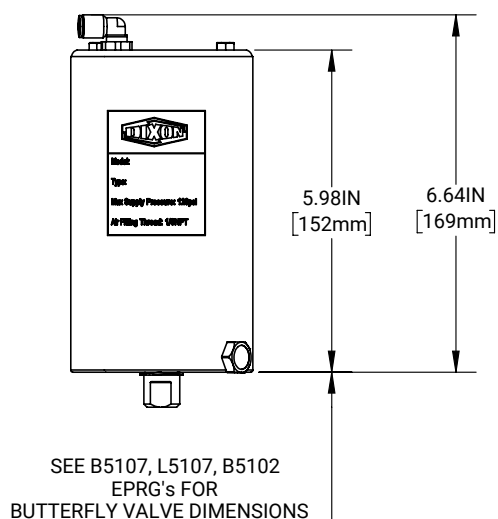


XPB and BT-Series Adapter

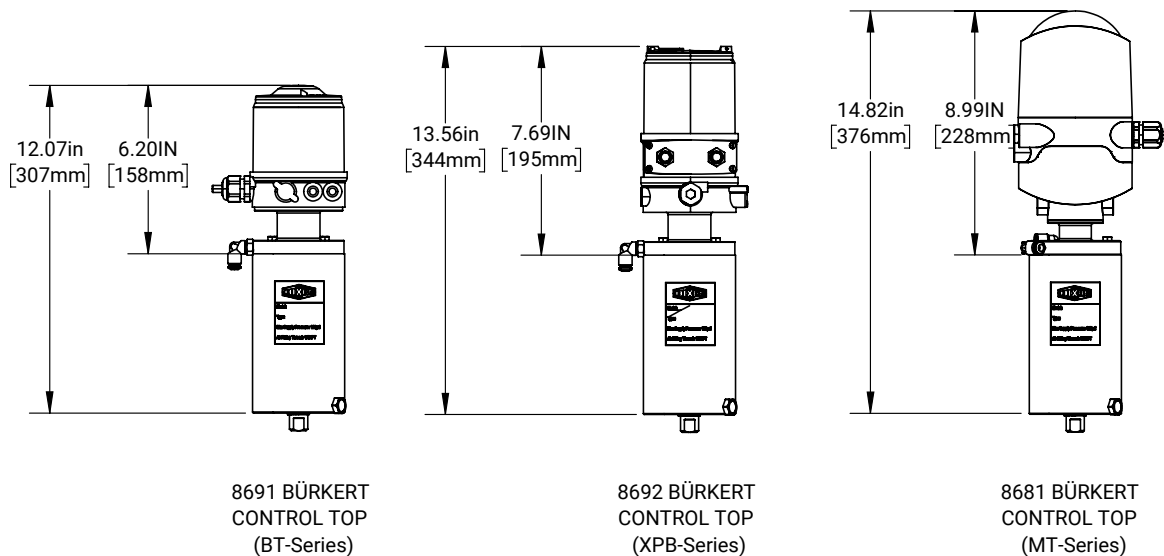
MT-Series Adapter

| Item # | Part #              | Description                                            | Material       | Qty |
|--------|---------------------|--------------------------------------------------------|----------------|-----|
| 1      | see XPB-series EPRG | XPB-series control top with M12 multipole              | -              | 1   |
| 1A     |                     | XPB-series control top with cable gland                | -              | 1   |
| 1B     | see MT-series EPRG  | BT-series control top with M12 multipole               | -              | 1   |
| 1C     |                     | BT-series control top with cable gland                 | -              | 1   |
| 1D     | see BT-series EPRG  | MT-series positioner                                   | -              | 1   |
| 2      | VC1-DS              | VC1 detection shaft for XPB and BT-series control tops | 304 SS         | 1   |
| 2A     | VC1-DS2             | VC1 detection shaft for MT-series positioner           | 304 SS         | 1   |
| 3      | VC1-BA-OR1          | AS568-216 O-ring                                       | nitrile rubber | 1   |
| 3A     | VC1-BA-OR2          | AS568-013 O-ring                                       | nitrile rubber | 1   |
| 3B     | VC1-BA-OR3          | 2.65mm x 37.5mm O-ring                                 | nitrile rubber | 2   |
| 4      | M5x0.8x20HB         | M5x20mm hex head bolts                                 | 18-8           | 2   |
| 5      | VC1-BA              | VC1 adapter for XPB and BT-series control tops         | 304 SS         | 1   |
| 5A     | VC1-BA2             | VC1 adapter for MT-series control tops                 | 304 SS         | 1   |
| 6      | 407322              | air fitting                                            | -              | 1   |
| 7      | -                   | M6x10mm hex head bolt                                  | 18-8           | 1   |
| 8      | -                   | M6 lock washer                                         | 18-8           | 1   |
| 9      | VC1-DTA             | VC1 detection target for MT-series positioner          | 410 SS         | 1   |

## VC-Series Vertical Canister Actuator - Dimensions



## VC-Series Vertical Canister Actuator - Dimensions (Accessories)



NOTE: See BT-series, XPB-series, and MT-series EPRG's for more information.



## BT-Series Control Top

Bürkert 8691 control top for automation and position feedback of Dixon® butterfly valves with spring return or double acting vertical canister actuators and single seat valves.

### Certifications

- IP65/IP67, UL listed E238179, 4X enclosure, NEC class 2

### Features

- Contact-free inductive valve position registration
- Color illuminated status display
- Fieldbus interface AS-Interface, IO-Link, or option
- Integrated pilot valve
- Detects and saves the valve end position using the Teach function during start-up

### Materials

- Non-metal components: polyphenylene sulfide (PPS) and polycarbonate
- Metal components: stainless steel
- Product contact seals: EPDM

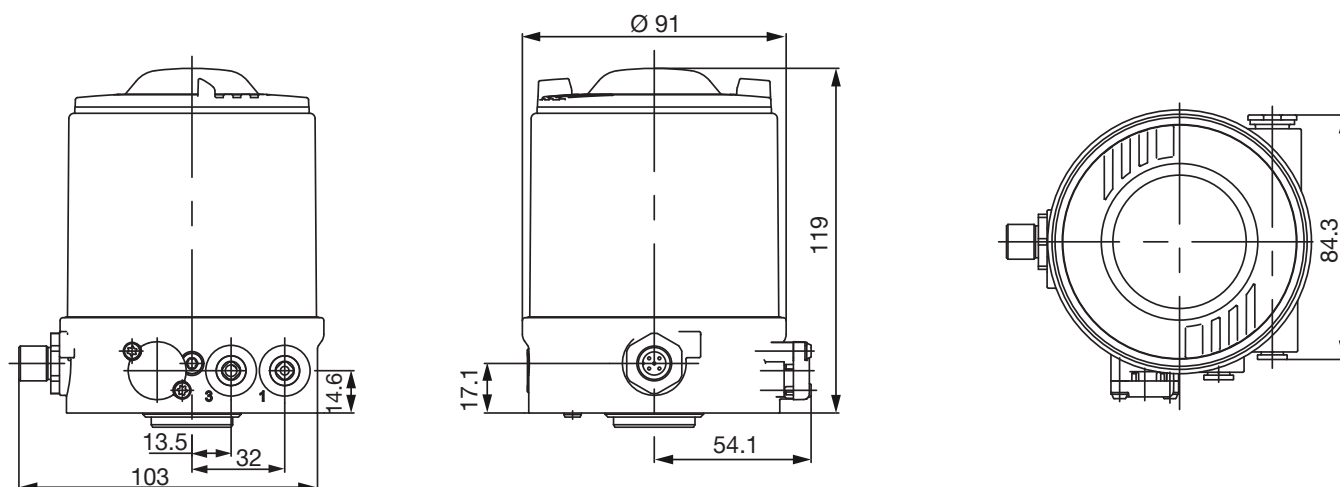
### Specifications

- Standard clamp connections: M12, 8-pin resp. 4- or 5-pin according to device version or cable gland
- Operating ambient temperature range
  - With pilot valve: **14°F to 131°F (-10°C to 55°C)**
  - Without pilot valve: **-4°F to 104°F (-20°C to 60°C)**
- Pneumatic data
  - Air connections: G 1/8
- Control air
  - Control medium: neutral gases, air, quality class according to ISO 8573-1
  - Air capacity: 250 l/min (for aeration and ventilation)

NOTE: All electrical data can be found [here](#) or at [www.burkert-usa.com](http://www.burkert-usa.com).

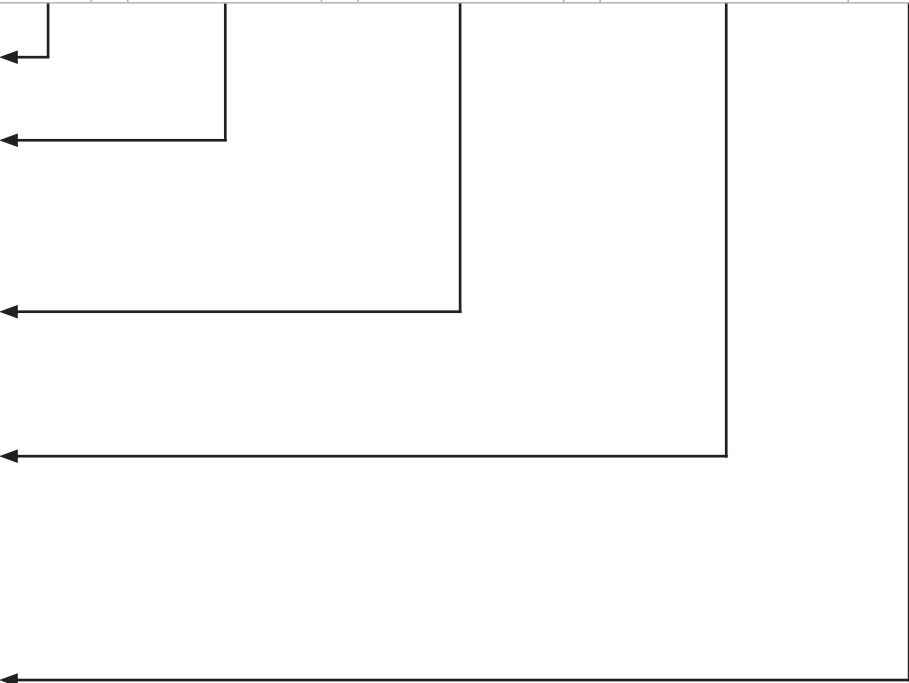


## BT-Series Control Top - Dimensions



NOTE: Dimensions are in mm.

## BT-Series Control Top - Part Number Key

| BT-Series Control Top<br>Part Number Key<br>Example: BT-PS-24S-M12_ |             | Series                                                                              |   | Communication |   | Pneumatic Valve |   | Electrical Connection | Approvals |
|---------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------|---|---------------|---|-----------------|---|-----------------------|-----------|
|                                                                     |             | BT                                                                                  | - | PS            | - | 24S             | - | M12                   |           |
| <b>Series</b>                                                       | <b>Code</b> |  |   |               |   |                 |   |                       |           |
| Bürkert 8691 Control Top                                            | BT          |                                                                                     |   |               |   |                 |   |                       |           |
| <b>Communication</b>                                                | <b>Code</b> |                                                                                     |   |               |   |                 |   |                       |           |
| Contact-free analog position sensor (PNP)                           | PS          |                                                                                     |   |               |   |                 |   |                       |           |
| Contact-free analog position sensor (NPN)                           | NP          |                                                                                     |   |               |   |                 |   |                       |           |
| AS-Interface                                                        | AS          |                                                                                     |   |               |   |                 |   |                       |           |
| DeviceNet                                                           | DN          |                                                                                     |   |               |   |                 |   |                       |           |
| <b>Pneumatic Valve</b>                                              | <b>Code</b> |                                                                                     |   |               |   |                 |   |                       |           |
| Single acting 24VDC                                                 | 24S         |                                                                                     |   |               |   |                 |   |                       |           |
| Double acting 24VDC                                                 | 24D         |                                                                                     |   |               |   |                 |   |                       |           |
| No solenoid                                                         | NS          |                                                                                     |   |               |   |                 |   |                       |           |
| <b>Electrical Connection</b>                                        | <b>Code</b> |                                                                                     |   |               |   |                 |   |                       |           |
| M12 multipole*                                                      | M12         |                                                                                     |   |               |   |                 |   |                       |           |
| Cable gland                                                         | CG          |                                                                                     |   |               |   |                 |   |                       |           |
| *M12 8-pins (analog position sensor)                                |             |                                                                                     |   |               |   |                 |   |                       |           |
| M12 4-pins (AS-Interface)                                           |             |                                                                                     |   |               |   |                 |   |                       |           |
| M12 5-pins (DeviceNet)                                              |             |                                                                                     |   |               |   |                 |   |                       |           |
| <b>Approvals</b>                                                    | <b>Code</b> |                                                                                     |   |               |   |                 |   |                       |           |
| IP65/IP67 acc. to EN 60529, 4X acc. to NEMA 250 standard            | blank       |                                                                                     |   |               |   |                 |   |                       |           |
| ATEX II cat. 3G/D                                                   | A           |                                                                                     |   |               |   |                 |   |                       |           |

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## MT-Series Control Top

Bürkert 8681 control top for automation and feedback of Dixon® butterfly valves with spring return or double acting vertical canister actuators and single seat valves.

### Certifications

- IP65/67 according to EN 60529

### Features

- Contactless position measurement system
- Colored status display
- Manual override operative with closed housing
- Optional AS-Interface and IO-link
- Analog voltage options: 12-28 VDC or 120VAC

### Materials

- Body: polyphenylene sulfide (PPS)
- Cover: polycarbonate
- Seals: EPDM

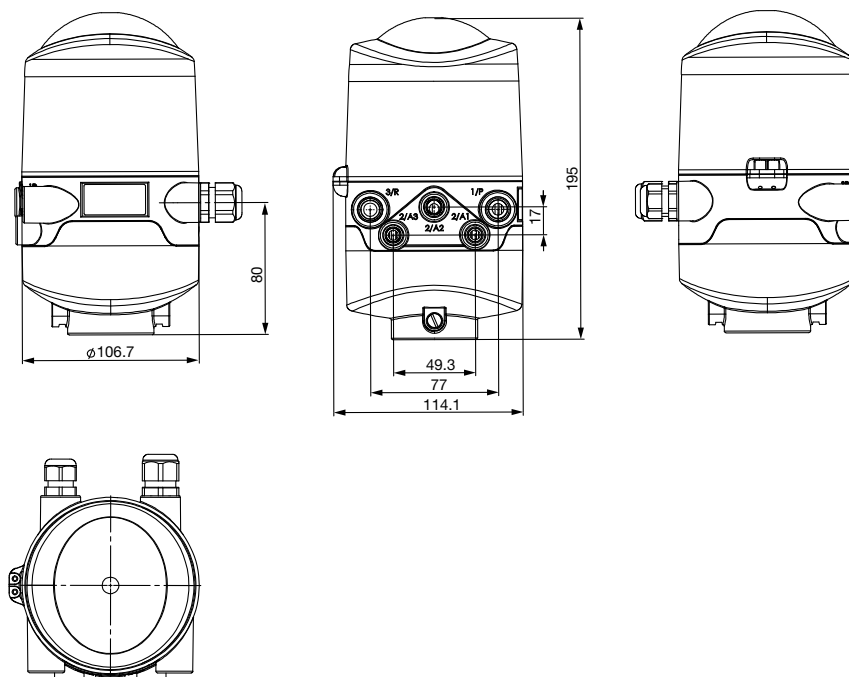
### Specifications

- Operating ambient temperature range: **14°F to 131°F (-10°C to 55°C)**
- Pneumatic data
  - Air connections
    - Air inlet and outlet: G 1/4
    - Service port: G 1/8
- Control air data
  - Control medium: neutral gases, air, quality class according to ISO 8573-1
  - Air capacity:
    - 110 l/min for aeration and ventilation
    - 110 l/min delivery condition
    - 200 l/min maximum typical flow rate

NOTE: All electrical data can be found [here](#) or at [www.burkert-usa.com](http://www.burkert-usa.com).



## MT-Series Control Top - Dimensions



NOTE: Dimensions are in mm.

## MT-Series Control Top - Part Number Key

| MT-Series Control Top<br>Part Number Key<br>Example: MT-1A-N1 |             | Series |   | Number of<br>Solenoid Valves | Power Supply |   | Communication | Connection | Approvals |
|---------------------------------------------------------------|-------------|--------|---|------------------------------|--------------|---|---------------|------------|-----------|
|                                                               |             | MT     | - | 1                            | A            | - | N             | 1          |           |
| <b>Series</b>                                                 | <b>Code</b> |        |   |                              |              |   |               |            |           |
| Bürkert 8681 Control Top                                      | MT          |        |   |                              |              |   |               |            |           |
| <b>Number of Solenoid Valves</b>                              | <b>Code</b> |        |   |                              |              |   |               |            |           |
| One                                                           | 1           |        |   |                              |              |   |               |            |           |
| Two                                                           | 2           |        |   |                              |              |   |               |            |           |
| Three                                                         | 3           |        |   |                              |              |   |               |            |           |
| No solenoid                                                   | N           |        |   |                              |              |   |               |            |           |
| <b>Power Supply</b>                                           | <b>Code</b> |        |   |                              |              |   |               |            |           |
| 24VDC                                                         | A           |        |   |                              |              |   |               |            |           |
| 120VAC (cable glands<br>connection only)                      | B           |        |   |                              |              |   |               |            |           |
| 12VDC                                                         | C           |        |   |                              |              |   |               |            |           |
| No solenoid                                                   | N           |        |   |                              |              |   |               |            |           |
| <b>Communication</b>                                          | <b>Code</b> |        |   |                              |              |   |               |            |           |
| No communication                                              | N           |        |   |                              |              |   |               |            |           |
| AS-Interface                                                  | A           |        |   |                              |              |   |               |            |           |
| DeviceNet                                                     | B           |        |   |                              |              |   |               |            |           |
| <b>Connection</b>                                             | <b>Code</b> |        |   |                              |              |   |               |            |           |
| M12 pin connector (12 pin)                                    | 1           |        |   |                              |              |   |               |            |           |
| Communication specific<br>(AS-Interface or DeviceNet)         | 2           |        |   |                              |              |   |               |            |           |
| Cable glands                                                  | 3           |        |   |                              |              |   |               |            |           |
| <b>Approvals</b>                                              | <b>Code</b> |        |   |                              |              |   |               |            |           |
| Standard                                                      | blank       |        |   |                              |              |   |               |            |           |
| ATEX zone 2/22 cat. 3                                         | A           |        |   |                              |              |   |               |            |           |

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XLS-B4-Series Limit Switch

The XLS-B4 series limit switch has been designed to provide rotary pneumatic actuators with a local and remote indication of valve position in a variety of applications.

This limit switch is manufactured from die-cast aluminum and powder epoxy-coated with stainless steel fasteners and shaft. With a weather-proof NEMA 4/4X and IP68 rating, the XLS-B4 is corrosion resistant and suitable for most environments.

Features

- UL approved
- Compact, cost-efficient limit switches for both local and remote indication of valve and or actuator position
- Visual position indicator
- Quick-set adjustable cams
- Multipoint terminal strip
- Dual wire potting
- Captive cover bolts
- NEMA 4/4X
- Standard NAMUR mounting

Materials

- Indicator: polycarbonate
- Housing: black polyester powder-coated die cast aluminum
- Bracket: 304 stainless steel

Specifications

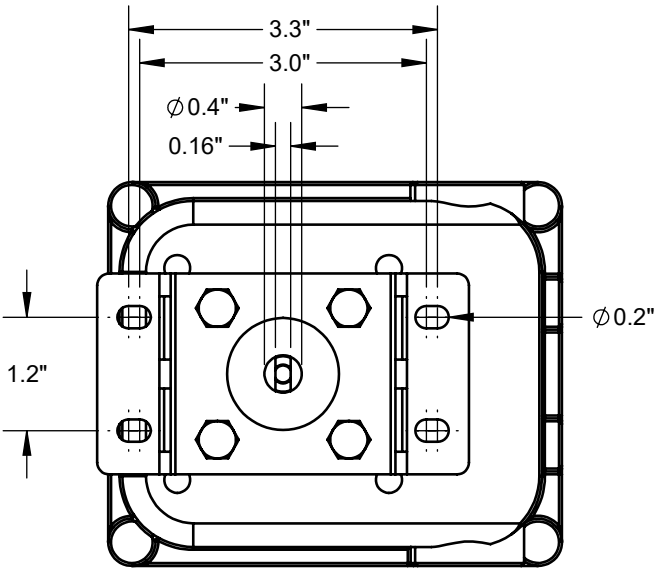
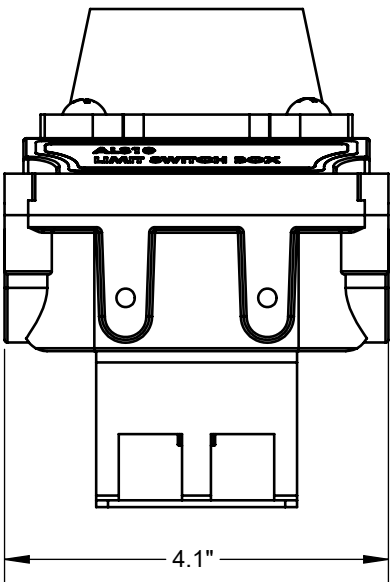
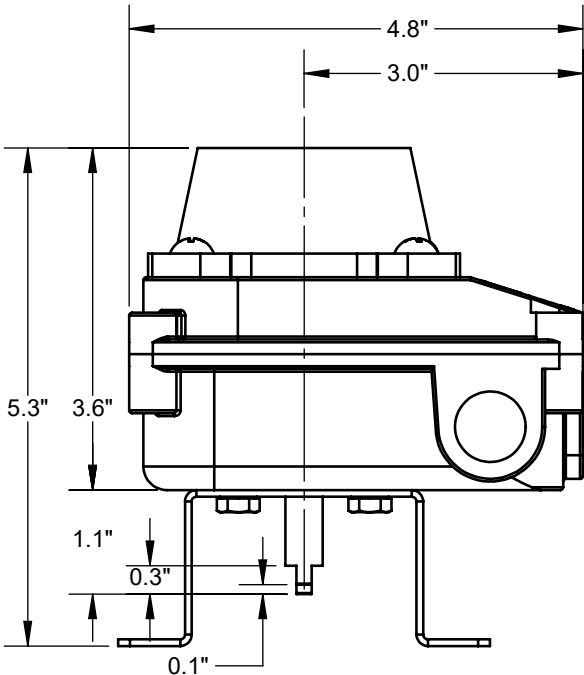
- Weight: 1.9 lbs
- Enclosure: weatherproof, IP68
- Temperature range: -4°F to 185°F (20°C to 85°C)
- Cable entry: 2 x 2-1/2" NPT
- Position indicator: 0° to 90° indication with open (yellow) and closed (red), L and T flow indication
- Switch types: mechanical (2) SPDT
- Maximum voltage: 250VAC/VDC
- Current data
  - 0.6A 125VDC
  - 0.3A 250VDC
  - 16A 125/250VAC



XLS-B4-Series Part Number Table

| Part #       | Description                                                                                                                          |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------|
| XLS-B4A0120P | IP68 enclosure, open/closed indicator, mechanical SPDT, (2) switches, 8 point terminal strip, 2 x 2-1/2" NPT cable entry             |
| XLS-B4L0120P | IP68 enclosure, L-port indicator with clear cover, mechanical SPDT, (2) switches, 8 point terminal strip, 2 x 2-1/2" NPT cable entry |
| XLS-B4T0120P | IP68 enclosure, T-port indicator with clear cover, mechanical SPDT, (2) switches, 8 point terminal strip, 2 x 2-1/2" NPT cable entry |
| XLS-B4AJ     | replacement 2-way cover assembly                                                                                                     |
| XLS-B4-IC    | replacement clear cover                                                                                                              |

**XLS-B4-Series Limit Switch - Dimensions**



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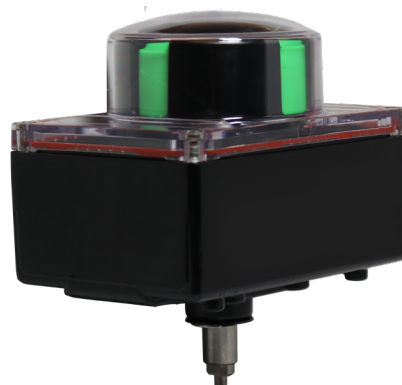
## XLS-C4-Series Limit Switch

The XLS-C4-series limit switch provides a compact design and cost effective solution for both visual and remote electrical indication of rotary valve/actuator position.

This series is the ideal switch for applications requiring proximity switches or AS-interface. Hermetically sealed and solid state switch options also make the XLS-C4 series suitable for use in intrinsically safe applications and Class I Division 2 Groups A, B, C, D, and Class II Division F and G hazardous applications.

## Features

- The polyester coating inside and outside as well as the stainless steel shaft make this unit ideal for use in harsh environments
- Multiple switch options include mechanical, proximity, and inductive switches
- Visual position indication: 3D beacon provides high visibility confirmation of valve actuator position
- "Easy-set" cams are splined, spring-loaded, and independently adjustable. This design offers tool-free calibration and positive vibration resistant engagement
- Standard with two 1/2" NPT cable entries



## Materials

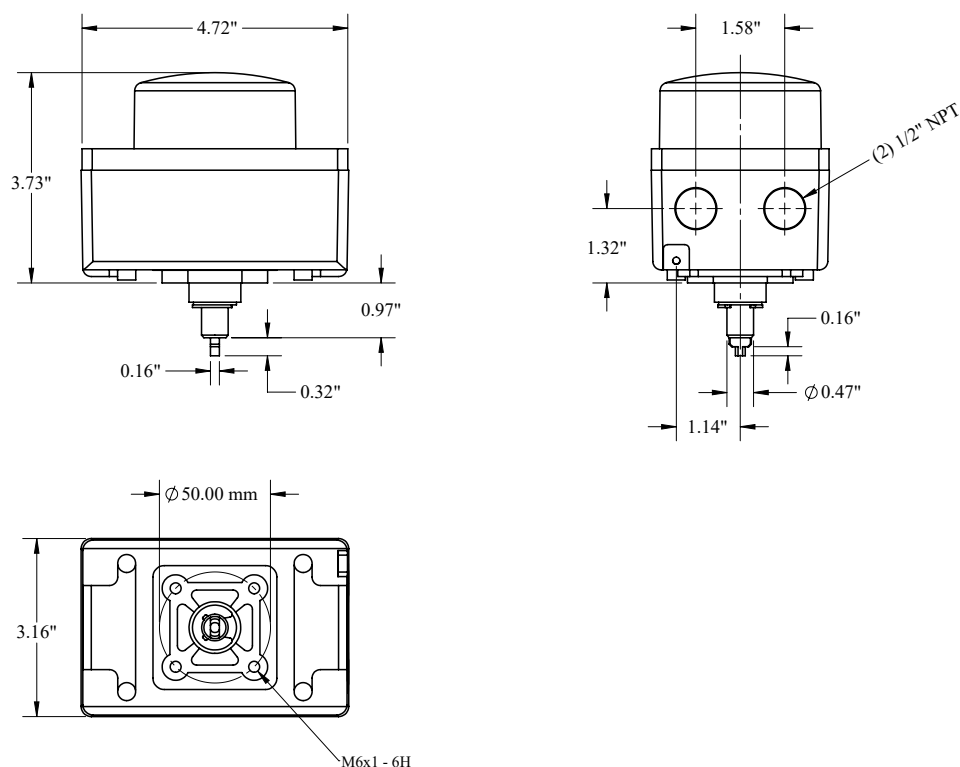
- Cover: polycarbonate, aluminum, or stainless steel
- Housing: aluminum, polyester-coated, or stainless steel
- Shaft: stainless steel
- Cam/splines: UV resistant polycarbonate
- 3D beacon: UV resistant polycarbonate
- Terminal block: stainless steel screws and PVC housing

## Specifications

- Weight: 1.25 lbs
- Temperature range: **-4°F to 176°F (20°C to 80°C)**
- Approvals: UL, NEMA 4/4X Class I Division 2 Groups A, B, C, D, and Class II Division 2 Groups F and G

NOTE: See page 349 for part number key.

## XLS-C4-Series Limit Switch - Dimensions



## XLS-C7-Series Limit Switch

The XLS-C7 series hazardous location explosion-proof limit switch provides an effective solution for both visual and remote electrical indication of the valve/actuator position.

The heavy-duty design and wide variety of options make the XLS-C7 series the ideal limit switch for use in NEMA 7 and 9 applications.

### Features

- Limit switch for both local and remote indication of valve/actuator position
- Wide variety of switch options are available
- Visual position indicator
- Quick-set adjustable cams
- Multipoint terminal strip
- Dual wire potting
- Captive cover bolts
- UL approved
  - Class I Division 1 Groups C, D and Division 2 Groups A, B, C, and D
  - Class II Division 1 Groups E, F, G and Division 2 Groups F and G
- NEMA 4, 4X, 7, and 9
- Standard NAMUR mounting

### Materials

- 3D beacon: UV resistant and 94-V0 polycarbonate
- Painting: black polyester powder coating
- Cover: die chromated aluminum
- Body: die chromated aluminum
- Shaft: stainless steel
- Fasteners: stainless steel

### Specifications

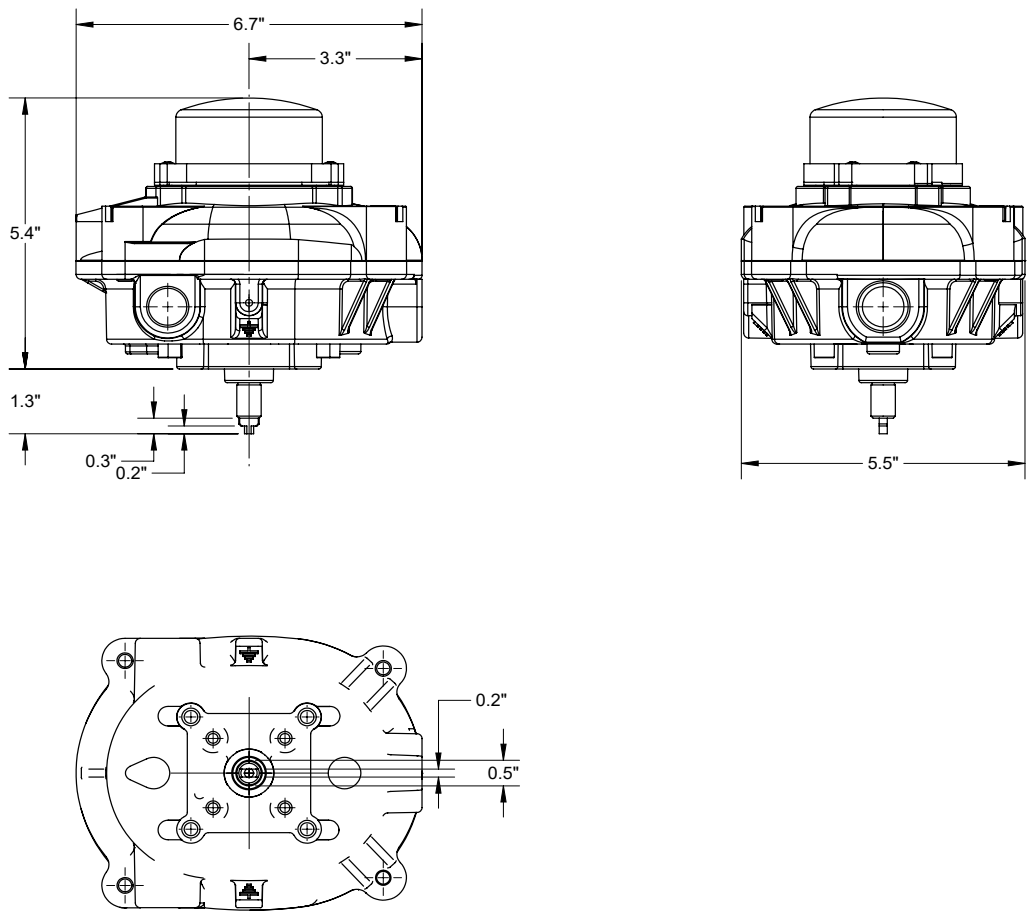
- Weight: 4 lbs
- Cable entry: two 1/2" NPT
- Position indicator
- Option for NAMUR proximity switches for intrinsically safe applications
- AS-I digital communication interface card option
- Temperature range: **-4°F to 176°F (-20°C to 80°C)**
- Switch approvals
  - Class I Division 1 Groups C and D
  - Class I Division 2 Groups A, B, C, D (proximity sensors only)
  - Class II Division 1 Groups E, F, G
  - Class II Division 2 Groups F and G

NOTE: See page 349 for part number key.

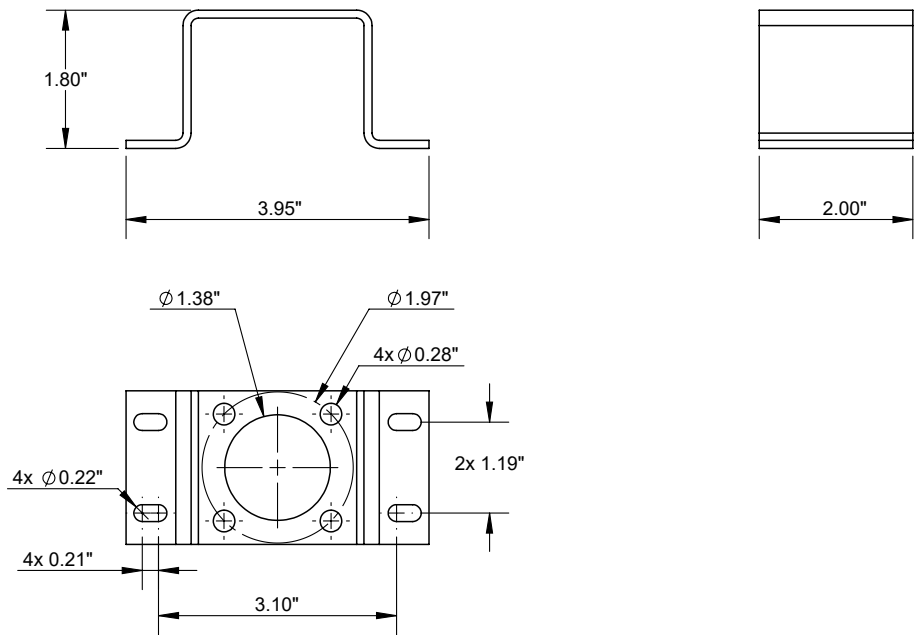




XLS-C7-Series Limit Switch - Dimensions

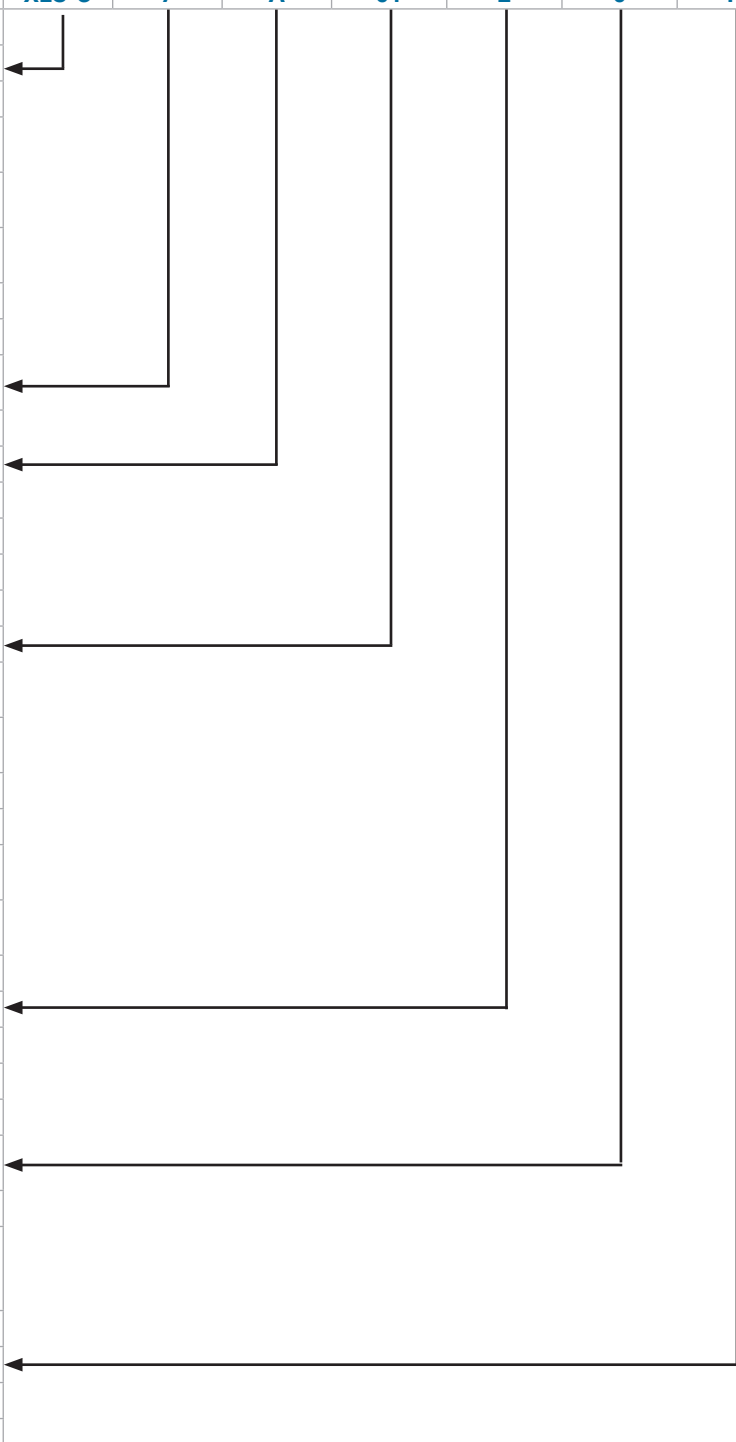


XLS-C-Series Limit Switch Bracket - Dimensions



NOTE: Bracket shown with XLS-C-series limit switch. Part number is LSPP-BK-S-N

## XLS-C-Series Limit Switch - Part Number Key

| XLS-C-Series Limit Switch<br>Part Number Key<br>Example: XLS-C7A0120P                  |             | Series                                                                              | Enclosure | Indicator | Switch Type | Switch Quantity | Terminal Strip | Cable Entry |
|----------------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------|-----------|-----------|-------------|-----------------|----------------|-------------|
|                                                                                        |             | XLS-C                                                                               | 7         | A         | 01          | 2               | 0              | P           |
| <b>Series</b>                                                                          | <b>Code</b> |  |           |           |             |                 |                |             |
| XLS-C                                                                                  | XLS-C       |                                                                                     |           |           |             |                 |                |             |
| <b>Enclosure</b>                                                                       | <b>Code</b> |                                                                                     |           |           |             |                 |                |             |
| IP66/67 aluminum body with polycarbonate cover                                         | 1           |                                                                                     |           |           |             |                 |                |             |
| IP66/67 aluminum body ATEX and IECEx intrinsically safe                                | 3           |                                                                                     |           |           |             |                 |                |             |
| NEMA 4/4X aluminum body with polycarbonate cover (standard)                            | 4           |                                                                                     |           |           |             |                 |                |             |
| NEMA 4/4X with 316 stainless steel enclosure                                           | 5           |                                                                                     |           |           |             |                 |                |             |
| NEMA 4/4X with aluminum enclosure                                                      | 6           |                                                                                     |           |           |             |                 |                |             |
| Nema 4/4X, 7 & 9 with aluminum enclosure (explosion proof)                             | 7           |                                                                                     |           |           |             |                 |                |             |
| <b>Indicator</b>                                                                       | <b>Code</b> |                                                                                     |           |           |             |                 |                |             |
| Open/closed                                                                            | A           |                                                                                     |           |           |             |                 |                |             |
| L-port                                                                                 | L           |                                                                                     |           |           |             |                 |                |             |
| T-port                                                                                 | T           |                                                                                     |           |           |             |                 |                |             |
| none                                                                                   | N           |                                                                                     |           |           |             |                 |                |             |
| <b>Switch Type</b>                                                                     | <b>Code</b> |                                                                                     |           |           |             |                 |                |             |
| SPDT el. mech. switch silver-plated contacts                                           | 01          |                                                                                     |           |           |             |                 |                |             |
| SPDT el. mech. switch gold-plated contacts (required for ATEX and IECEx enclosure)     | 02          |                                                                                     |           |           |             |                 |                |             |
| SPDT magnetic hermetically sealed proximity switches                                   | 10          |                                                                                     |           |           |             |                 |                |             |
| 4-20mA position transmitter                                                            | TR          |                                                                                     |           |           |             |                 |                |             |
| AS-Interface                                                                           | AS          |                                                                                     |           |           |             |                 |                |             |
| Inductive sensors, 2 wires NO, 5-60 VDC operating voltage, 2-100mA operating current   | 32          |                                                                                     |           |           |             |                 |                |             |
| Inductive NAMUR sensors, 2 wires, up to SIL3, Exia ready                               | 70          |                                                                                     |           |           |             |                 |                |             |
| <b>Switch Quantity</b>                                                                 | <b>Code</b> |                                                                                     |           |           |             |                 |                |             |
| 2                                                                                      | 2           |                                                                                     |           |           |             |                 |                |             |
| 3                                                                                      | 3           |                                                                                     |           |           |             |                 |                |             |
| 4 <sup>1</sup>                                                                         | 4           |                                                                                     |           |           |             |                 |                |             |
| <b>Terminal Strip</b>                                                                  | <b>Code</b> |                                                                                     |           |           |             |                 |                |             |
| Screw terminals with solenoid connection (standard)                                    | 0           |                                                                                     |           |           |             |                 |                |             |
| AS-I terminal                                                                          | 1           |                                                                                     |           |           |             |                 |                |             |
| Blue screw type terminals with solenoid connection (required ATEX and IECEx enclosure) | 3           |                                                                                     |           |           |             |                 |                |             |
| <b>Cable Entry</b>                                                                     | <b>Code</b> |                                                                                     |           |           |             |                 |                |             |
| 2 x 2-1/2" NPT (standard)                                                              | P           |                                                                                     |           |           |             |                 |                |             |
| 2 x M20-1.5                                                                            | M           |                                                                                     |           |           |             |                 |                |             |
| 2 x 1/2" NPT + 1 x 3/4" NPT <sup>1</sup>                                               | N           |                                                                                     |           |           |             |                 |                |             |

<sup>1</sup>Available for enclosure code 7

DW-Series Proximity Sensors

Inductive proximity sensors detect the presence of metallic objects at close range, signaling the presence of the object to a connected control device such as a PLC or relay. These sensors can be bracket mounted to actuated Dixon® Sanitary butterfly valves and single seat valves.

Certifications

- IP67 rated
- UL Listed E239373
- EMC Directive no. 2014/30/EC
- RoHS Directive no. 2011/65/EU

Size

- M12

Features

- Complete overload protection
- LED status indicator

Materials

- Housing: chrome-plated brass
- Sensing face: PPS (polyphenylene sulfide)

Specifications

- Standard connections: 6.56 ft Axial cable flying leads or M12 quick-disconnect
- Sensor data
  - Operating temperature range: -13°F to 158°F (-25°C to 70°C)



| Specifications                              | DW-Ax-50x-M12                     |
|---------------------------------------------|-----------------------------------|
| Mounting Type                               | semi-flush                        |
| Nominal Sensing Distance                    | 6 mm                              |
| Material Correction Factors                 | see the material influence table  |
| Output Type                                 | NPN or PNP, N.O. or N.C.          |
| Operating Voltage                           | 10 to 30 VDC                      |
| No-load Supply Current                      | ≤ 10mA                            |
| Operating (Load) Current                    | ≤ 200mA                           |
| Off-state (Leakage) Current                 | ≤ 0.1mA                           |
| Voltage Drop                                | ≤ 2 V                             |
| Switching Frequency                         | ≤ 800Hz                           |
| Differential Travel (% of Nominal Distance) | ≤ 10%                             |
| Repeat Accuracy                             | 0.15mm                            |
| Ripple                                      | ≤ 20%                             |
| Time Delay Before Availability (tv)         | ≤ 50ms                            |
| Reverse Polarity Protection                 | yes                               |
| Short-Circuit Protection                    | yes                               |
| Indication/Switch Status                    | yellow LED                        |
| Shock/Vibration                             | IEC 60947-5-2/7.4                 |
| Weight                                      | 92g (3.25 oz), 26g (0.92 oz)      |
| Connection                                  | 2m (6.5 ft) cable, M12 connection |

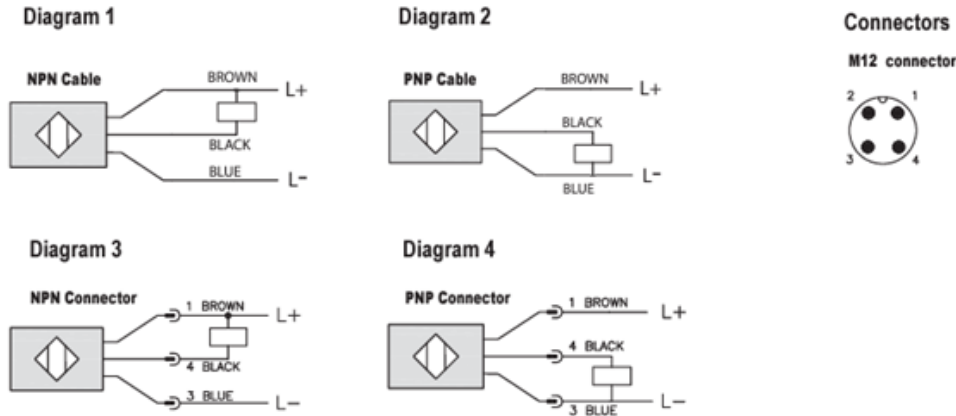
DW-Series Proximity Sensors - Electrical Data

| Electrical Data                       |       |
|---------------------------------------|-------|
| Operating voltage AC maximum          | 250 V |
| Operating voltage DC maximum          | 250 V |
| Operating voltage AC (UL-listed)      | 30 V  |
| Operating voltage DC (UL-listed)      | 30 V  |
| Current operating per contact maximum | 4 A   |

DW-Series Proximity Sensors - Part Number Table

| Part #        | Size | Sensing Range  | Mounting   | Output State | Logic | Connection               | Wiring    | Dimensions |
|---------------|------|----------------|------------|--------------|-------|--------------------------|-----------|------------|
| DW-AD-501-M12 | M12  | 6mm (0.236 in) | semi-flush | N.O.         | NPN   | 2m (6.56 ft) axial cable | diagram 1 | figure 1   |
| DW-AD-503-M12 |      |                |            | N.O.         | PNP   | 2m (6.56 ft) axial cable | diagram 2 | figure 2   |
| DW-AS-501-M12 |      |                |            | N.O.         | NPN   | M12 quick-disconnect     | diagram 3 | figure 3   |
| DW-AS-503-M12 |      |                |            | N.O.         | PNP   | M12 quick-disconnect     | diagram 4 | figure 3   |

DW-Series Proximity Sensors - Wiring Diagrams



DW-Series Proximity Sensors - Dimensions

Figure 1 - DW-AD-501-M12

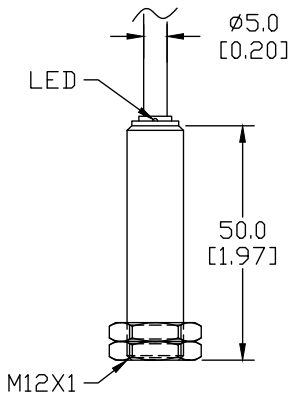


Figure 2 - DW-AD-503-M12

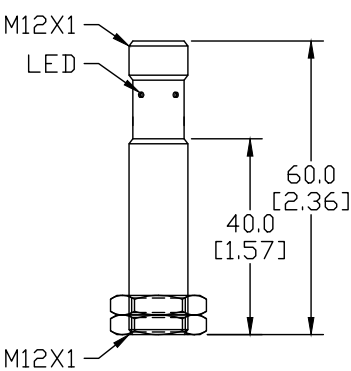


Figure 3 - DW-AS-501-M12

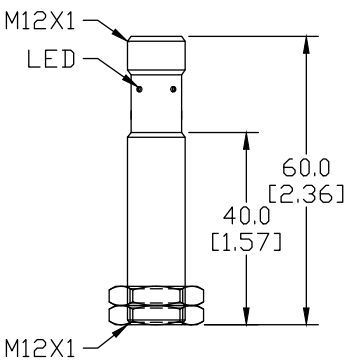
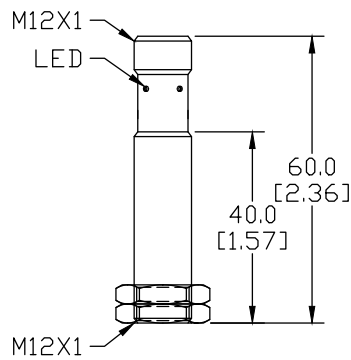
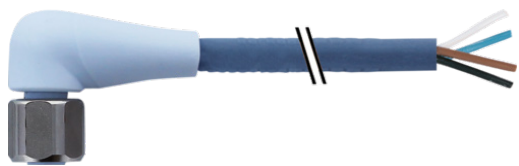


Figure 4 - DW-AS-503-M12

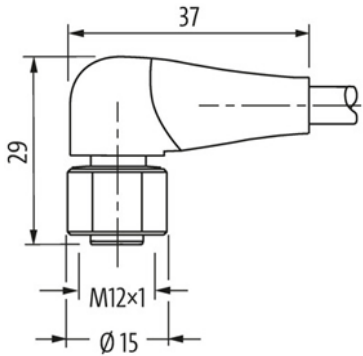
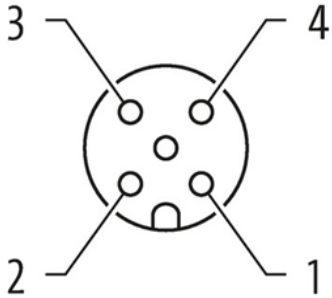


NOTE: Dimensions are in mm (in).

DW-Series Proximity Sensors - M12 4-Pole Cable



|   |    |
|---|----|
| 1 | BN |
| 2 | WH |
| 3 | BU |
| 4 | BK |



NOTE: Dimensions are in mm (in).

M12 4-Pole Cable - Part Number Table

| Part #         | Cord Length (ft) |
|----------------|------------------|
| M12F-4P-69K-2M | 6.56             |
| M12F-4P-69K-3M | 9.84             |
| M12F-4P-69K-5M | 16.4             |

## X-Series Solenoid Valve

X-series solenoids are direct mount compatible with all Dixon® rack and pinion actuators. They are used with industrial and sanitary valves for quarter turn actuation in industrial, food, beverage, and pharmaceutical applications.

### Certifications/Approvals

- CSA/UL approved coil
- ATEX approved coil option

### Features

- Multiple voltages available (AC/DC)
- Standard duty, intrinsically safe and explosion proof models
- Water and dust-proof according to IP65; IP67 available
- Standard lockable manual override button
- Aluminum 4-way direct mount body, 2 position normally closed or fail-in-place



### Materials

- Models XSC, XIS, XEX, and XHT
  - Body, spool, cap, and piston: aluminum
  - Spool cap assembly: polypropylene
  - End plate: carbon steel
  - Armature housing: brass/stainless steel
  - Fasteners: plated steel
  - Elastomers: nitrile rubber
  - Coil nut: technopolymer
- Stainless steel enclosure
  - Body, spool, cap, and piston: stainless steel
  - Spool cap assembly: polypropylene
  - End plate: stainless steel
  - Armature housing: brass/stainless steel
  - Fasteners: stainless steel
  - Elastomers: nitrile rubber
  - Coil nut: technopolymer

### Specifications

- Sizes: 1/4" NAMUR body
- Standard connections: 1/2" NPT connector standard
  - 1M flying leads (model XEX)
- Valve data
  - Minimum pressure: **30 PSI**
  - Maximum pressure: **120 PSI**
  - Maximum ambient temperature: see chart

#### Model XSC Technical Data

|                             |                                                                     |
|-----------------------------|---------------------------------------------------------------------|
| Standard voltages           | 24 - 110 - 220V 50/60 Hz, 12 - 24V DC                               |
| Power input                 | 60 Hz inrush 9.4VA holding 6.9VA<br>DC 4.8W                         |
| Voltage tolerance           | ±10%                                                                |
| Coil insulation             | Class "F"                                                           |
| Duty cycle                  | 100%                                                                |
| Protection class            | IP65                                                                |
| Air supply connection       | 1/4" NPT                                                            |
| Operating pressure          | Minimum 2 bar ( <b>30 PSI</b> )<br>Maximum 8 bar ( <b>120 PSI</b> ) |
| DIN connector               | 1/2" NPT                                                            |
| Flow factor                 | Cv 1.1                                                              |
| Maximum operating frequency | 600/1'                                                              |
| Ambient temperature limit   | <b>-4°F to 158°F (-4°C to 70°C)</b>                                 |
| Weight                      | 0.80 lb                                                             |

## X-Series Solenoid Valve - Technical Data

## Model XIS Technical Data

|                             |                                      |
|-----------------------------|--------------------------------------|
| Standard voltages           | 24V DC                               |
| Power input                 | DC 1.6W                              |
| Voltage tolerance           | ±10%                                 |
| Coil insulation             | class "F"                            |
| Duty cycle                  | 100%                                 |
| Protection class            | IP65                                 |
| Air supply connection       | 1/4" NPT                             |
| Operating pressure          | Minimum 2 bar ( <b>30 PSI</b> )      |
|                             | Maximum 8 bar ( <b>115 PSI</b> )     |
| DIN connector               | Strain relief                        |
| Flow factor                 | Cv 1.1                               |
| Maximum operating frequency | 600/1'                               |
| Ambient temperature limit   | <b>-4°F to 122°F (-20°C to 50°C)</b> |
| Weight                      | 0.80 lb                              |
| V max                       | 28V DC                               |
| I max                       | 115mA                                |
| Maximum valve pressure      | <b>115 PSI</b>                       |
| Hazardous Location Class:   |                                      |
| Class I                     | Groups A, B, C, and D                |
| Class II                    | Groups E, F, and G                   |
| Class III                   | Div. I                               |

## Model XEX Technical Data

|                             |                                       |
|-----------------------------|---------------------------------------|
| Standard voltages           | 24 - 110 - 220V 50/60 Hz, 12 - 24V DC |
| Power input                 | 60 Hz inrush 7.5VA holding 5VA        |
|                             | DC 6W                                 |
| Voltage tolerance           | ±10%                                  |
| Coil insulation             | class "H"                             |
| Duty cycle                  | 100%                                  |
| Protection class            | IP65                                  |
| Air supply connection       | 1/4" NPT                              |
| Operating pressure          | Minimum: 2 bar ( <b>30 PSI</b> )      |
|                             | Maximum: 8 bar ( <b>120 PSI</b> )     |
| DIN connector               | 1/2" NPT                              |
| Flow factor                 | Cv 1.1                                |
| Maximum operating frequency | 600/1'                                |
| Ambient temperature limit   | <b>-4°F to 140°F (-20°C to 60°C)</b>  |
| Weight                      | 0.95 lb                               |
| Hazardous Location Class:   |                                       |
| Class I                     | Groups A, B, C, and D                 |
| Class II                    | Groups E, F, and G                    |
| Class III                   | Div. I                                |

## X-Series Solenoid Valve - Part Number Key

| X-Series Solenoid Valves<br>Part Number Key<br>Example: XSC-A1S-024D-F1 |      | Series | Model | Enclosure | Operator | Coil Options | Voltage | Connector Options | Seals |   |   |   |    |   |   |   |   |   |      |   |   |   |
|-------------------------------------------------------------------------|------|--------|-------|-----------|----------|--------------|---------|-------------------|-------|---|---|---|----|---|---|---|---|---|------|---|---|---|
|                                                                         |      | X      | SC    | -         | A        | 1            | S       | -                 | 024D  | F | - | 1 |    |   |   |   |   |   |      |   |   |   |
| Series                                                                  | Code | X      | SC    | -         | A        | 1            | S       | -                 | 024D  | F | - | 1 |    |   |   |   |   |   |      |   |   |   |
| NAMUR mount solenoid                                                    | X    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Model                                                                   | Code |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| IP65, industrial for coil (standard)                                    | SC   |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Intrinsically safe, form A coil (24VDC only)                            | IS   |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Explosion proof, class H coil with 1/2" NPT and leads                   | EX   |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| High temperature, IP65, class H, form A coil                            | HT   |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Enclosure                                                               | Code | A      | SC    | -         | A        | 1            | S       | -                 | 024D  | F | - | 1 |    |   |   |   |   |   |      |   |   |   |
| 2 pos., 1/4" NAMUR aluminum body, single coil/dual coil                 | A    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| 2 pos., 1/4" NAMUR stainless steel body, single coil only               | S    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| 3 pos., 1/4" NAMUR aluminum body, dual coils only                       | D    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Operator                                                                | Code | 1      |       |           |          |              |         |                   |       |   |   |   | SC | - | A | 1 | S | - | 024D | F | - | 1 |
| Left pilot, normal closed, single coil (2 position only)                | 1    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Dual pilots, fail in place, dual coils (2 position only)                | 2    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Dual pilots, fail to open centers, dual coils (3 position only)         | 3    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Dual pilots, fail to close centers, dual coils (3 position only)        | 4    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Coil Options                                                            | Code | S      | SC    | -         | A        | 1            | S       | -                 | 024D  | F | - | 1 |    |   |   |   |   |   |      |   |   |   |
| CSA/UL coil (standard)                                                  | S    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Asi 2.5W low power level 3 (model SC only)                              | L    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| ATEX approved coil                                                      | X    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Voltage                                                                 | Code | -      |       |           |          |              |         |                   |       |   |   |   | SC | - | A | 1 | S | - | 024D | F | - | 1 |
| Refer to table 1 for options                                            | -    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Connector Options                                                       | Code | A      | SC    | -         | A        | 1            | S       | -                 | 024D  | F | - | 1 |    |   |   |   |   |   |      |   |   |   |
| None                                                                    | A    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Model SC Only                                                           |      | F      |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Industrial form, 1/2" NPT (standard)                                    | B    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Industrial form, 1/2" NPT with grommet                                  | C    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Molded lead, industrial form, 1M lead                                   | D    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| Molded lead, industrial form, 3M lead                                   | E    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| 12V AC/DC LED industrial form, 1/2" NPT                                 | F    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| 24V AC/DC LED industrial form, 1/2" NPT                                 | G    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| 120V AC/DC LED industrial form, 1/2" NPT                                | H    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| 220V AC/DC LED industrial form, 1/2" NPT                                | I    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |
| 24V AC/DC molded LED, industrial form, 1M leads                         | J    |        |       |           |          |              |         |                   |       |   |   |   |    |   |   |   |   |   |      |   |   |   |

| Table 1 (Voltage Codes) |       |       |       |       |        |        |
|-------------------------|-------|-------|-------|-------|--------|--------|
| Model                   | 12VDC | 24VDC | 24VAC | 48VDC | 120VAC | 220VAC |
| SC                      | 012D  | 024D  | 024A  | 048D  | 120A   | 220A   |
| IS                      | -     | 024D  | -     | -     | -      | -      |
| EX                      | 012D  | 024D  | 024A  | -     | 120A   | 220A   |
| HT                      | -     | 024D  | -     | -     | 120A   | 220A   |
| LT                      | -     | 024D  | -     | -     | -      | -      |

J

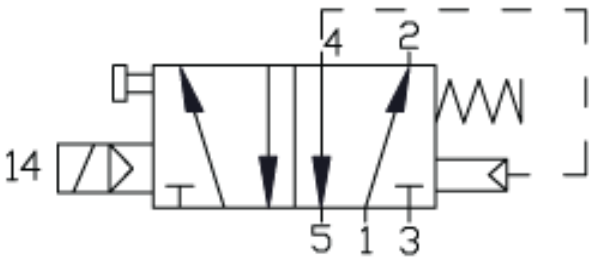


X-Series Solenoid Valve - Part Number Key

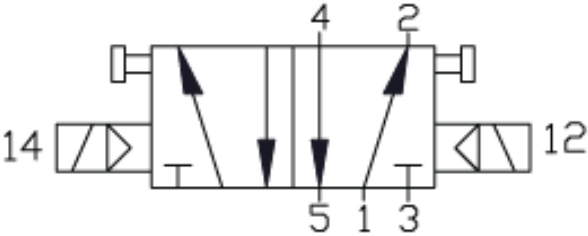
| X-Series Solenoid Valves<br>Part Number Key<br>Example: XSC-A1S-024D-F1 |      | Series | Model | Enclosure | Operator | Coil Options | Voltage | Connector Options | Seals |   |   |   |
|-------------------------------------------------------------------------|------|--------|-------|-----------|----------|--------------|---------|-------------------|-------|---|---|---|
|                                                                         |      | X      | SC    | -         | A        | 1            | S       | -                 | 024D  | F | - | 1 |
| 120V AC/DC molded LED, industrial form, 1M leads                        | K    |        |       |           |          |              |         |                   |       |   |   |   |
| 24V AC/DC molded LED, industrial form, 2M leads                         | L    |        |       |           |          |              |         |                   |       |   |   |   |
| 120V AC/DC molded LED, industrial form, 2M leads                        | M    |        |       |           |          |              |         |                   |       |   |   |   |
| IP67 kit                                                                | N    |        |       |           |          |              |         |                   |       |   |   |   |
| M12, industrial form                                                    | O    |        |       |           |          |              |         |                   |       |   |   |   |
| Model HT and IS only                                                    |      |        |       |           |          |              |         |                   |       |   |   |   |
| Form A, 3/8" NPT with grommet (standard)                                | P    |        |       |           |          |              |         |                   |       |   |   |   |
| Form A, 1/2" NPT with grommet                                           | Q    |        |       |           |          |              |         |                   |       |   |   |   |
| Molded lead, form A, 1M lead                                            | R    |        |       |           |          |              |         |                   |       |   |   |   |
| Model EX only                                                           |      |        |       |           |          |              |         |                   |       |   |   |   |
| 1/2" NP connection with 1M flying leads (standard)                      | S    |        |       |           |          |              |         |                   |       |   |   |   |
| Seals                                                                   | Code |        |       |           |          |              |         |                   |       |   |   |   |
| Nitrile rubber (standard for models SC, HT, IS, EX)                     | 1    |        |       |           |          |              |         |                   |       |   |   |   |
| Low temperature nitrile rubber                                          | 2    |        |       |           |          |              |         |                   |       |   |   |   |

X-Series Solenoid - Flow Diagrams

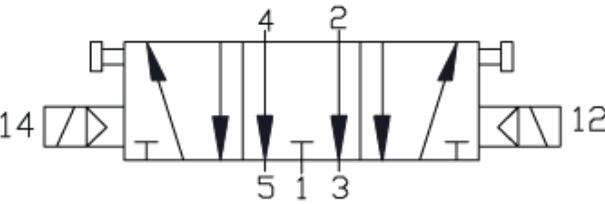
Single Coil Left Pilot



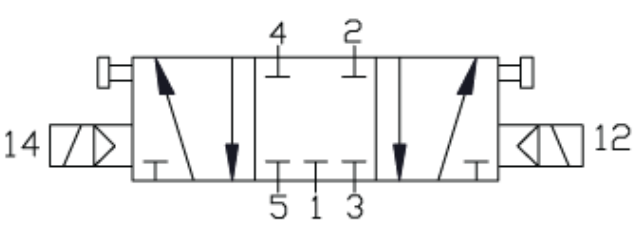
Dual Pilot



3-Position Open Center



3-Position Closed Center



## X-Series Solenoid Valve - Coil Data

## Model XSC

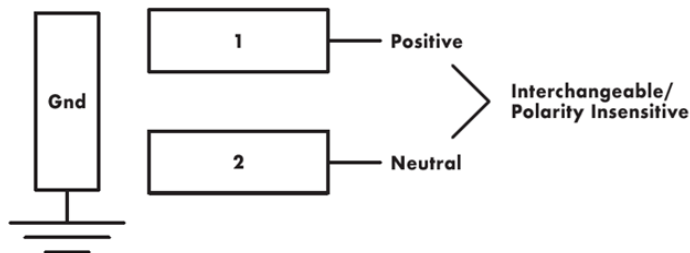
| Voltage (primary) | Voltage (secondary) | Watts (DC)/VA (AC) | Insulation Class | Resistance (ohms) | Inrush Power Draw (AC only) | IP Rating | Ambient Temperature           |
|-------------------|---------------------|--------------------|------------------|-------------------|-----------------------------|-----------|-------------------------------|
| 12 VDC            | 24 VAC              | 6.9                | F                | 40.1              | 10.2                        | 65/67     | -4°F to 122°F (-20°C to 50°C) |
| 24 VDC            | 48 VAC              | 6.9                | F                | 97.9              | -                           | 65/67     | -4°F to 122°F (-20°C to 50°C) |
| 120 VAC           | -                   | 6.9                | F                | 619               | 12.4                        | 65/67     | -4°F to 122°F (-20°C to 50°C) |
| 230 VDC           | 125 VAC             | 6.9                | F                | 2475              | -                           | 65/67     | -4°F to 122°F (-20°C to 50°C) |
| 24 VDC            | -                   | 3.0                | F                | 200               | -                           | 65        | 5°F to 122°F (-15°C to 50°C)  |
| 24 VDC            | -                   | 2.7                | H                | 216               | -                           | 65        | -4°F to 176°F (-20°C to 80°C) |
| 120 VAC           | -                   | 3.7                | H                | 741               | 6.84                        | 65        | -4°F to 176°F (-20°C to 80°C) |
| 240 VAC           | -                   | 3.7                | H                | 2924              | 6.72                        | 65        | -4°F to 176°F (-20°C to 80°C) |

## Model XEX

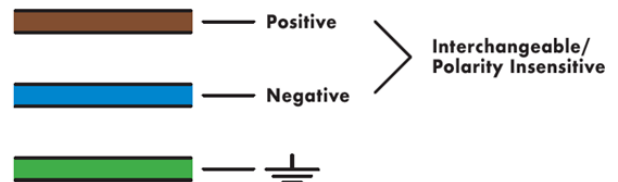
| Voltage (primary) | Voltage (secondary) | Watts (DC)/VA (AC) | Insulation Class | Resistance (ohms) | Inrush Power Draw (AC only) | IP Rating | Ambient Temperature           |
|-------------------|---------------------|--------------------|------------------|-------------------|-----------------------------|-----------|-------------------------------|
| 12 VDC            | -                   | 4.5                | H                | 32.2              | -                           | 65        | -4°F to 140°F (-20°C to 60°C) |
| 24 VDC            | -                   | 4.6                | H                | 126               | -                           | 65        | -4°F to 140°F (-20°C to 60°C) |
| 110/120 VAC       | -                   | 6.8                | H                | 530               | 12.3                        | 65        | -4°F to 140°F (-20°C to 60°C) |
| 220/240 VAC       | -                   | 6.8                | H                | 2345              | 12.3                        | 65        | -4°F to 140°F (-20°C to 60°C) |
| 24 VAC            | -                   | -                  | F                | -                 | -                           | 65        | -4°F to 122°F (-20°C to 50°C) |
| 125 VDC           | -                   | -                  | F                | -                 | -                           | 65        | -4°F to 122°F (-20°C to 50°C) |

## X-Series Solenoid Valve - Wiring Diagram

## DIN Connector

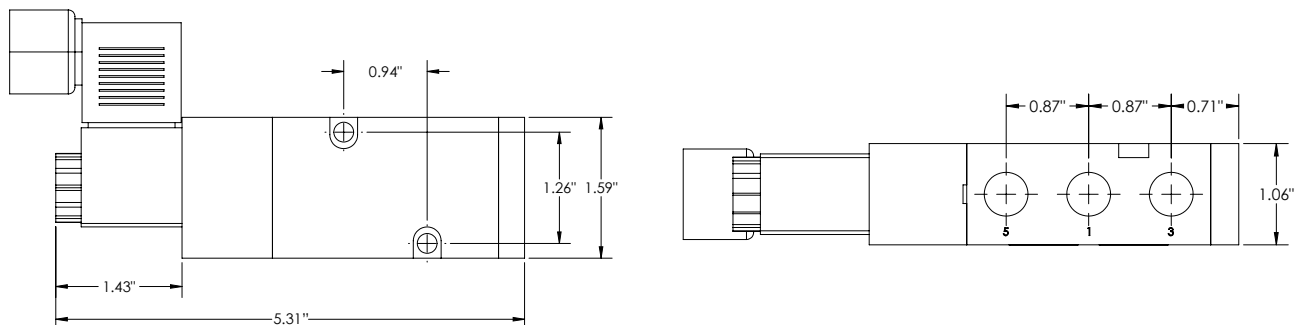


## Flying Leads



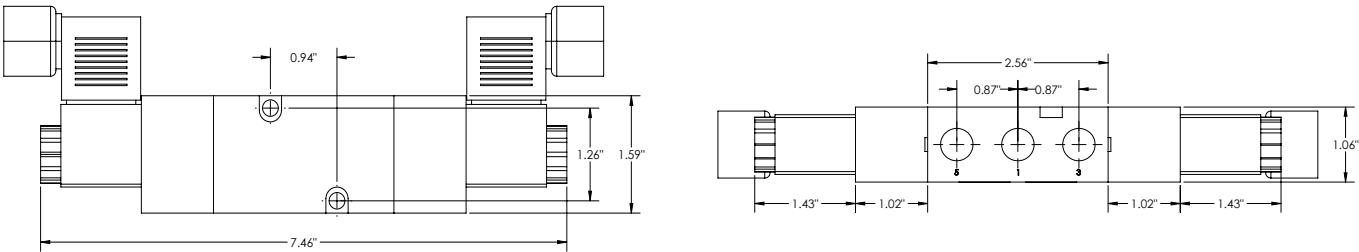
## X-Series Solenoid Valve - Dimensions

## Model XSC Single Coil

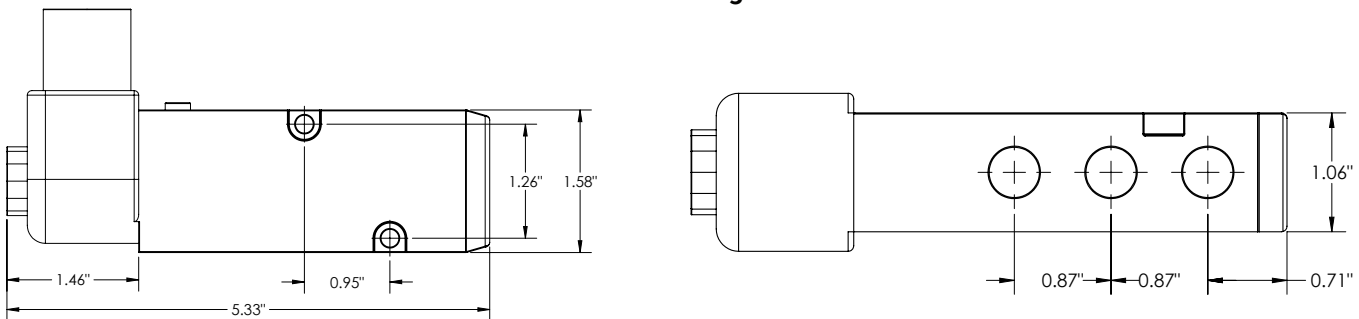


X-Series Solenoid Valve - Dimensions

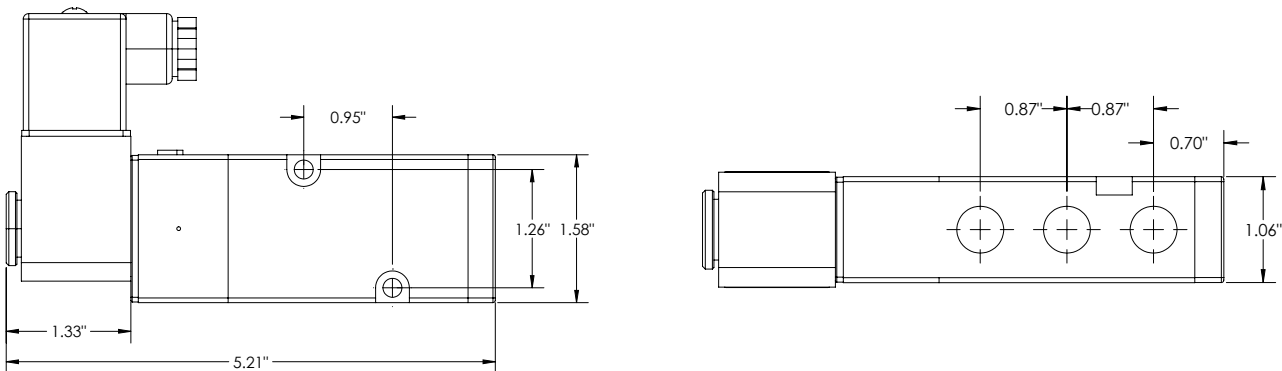
Model XSC Dual Coil



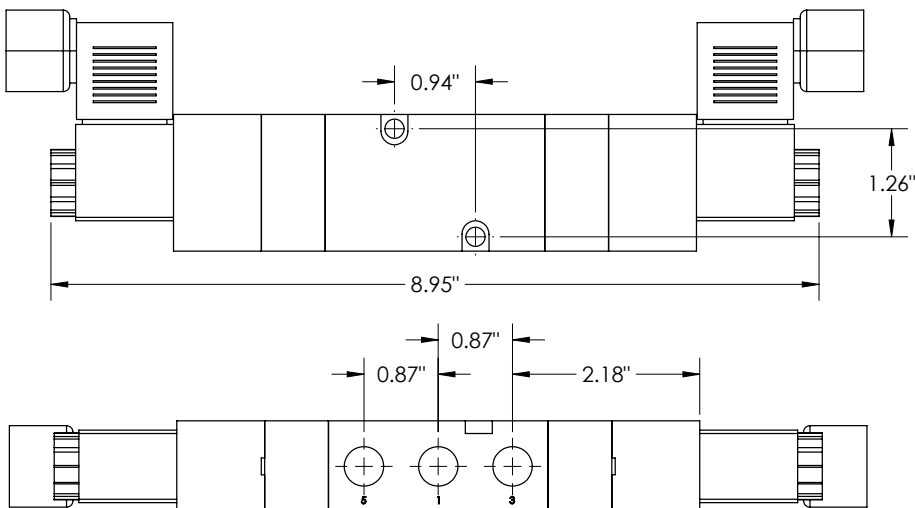
Model XEX Single Coil



Model XIS Single Coil



Model XSC 3 Position



## Actuation Accessories

Accessories for mounting Dixon® actuators to industrial or sanitary valves and actuator and valve accessories for limit switch and proximity capabilities.

### Features

- Actuator sleeve inserts for size reduction of output drive
- Square sleeves used in conjunction with double square sleeves to meet larger varieties in size reduction
- Couplers used for non-direct mount applications
- ISO 5211 mounting brackets

### Materials

- Sleeve inserts
  - Square: 304 stainless steel
  - Double square: high strength iron based powdered metal
  - Double D: high strength iron based powdered metal
- Couplers: 304 stainless steel
- Brackets: 304 stainless steel
- B5107-PB brackets: CF8M

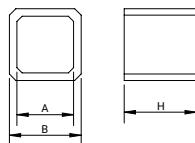


| Square Sleeve                                                                       | Double Square Sleeve                                                                | Double D Sleeve                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|   |   |   |
| Female Square to Male Square                                                        | Female Rectangular Bore to Male Square                                              | Female Slot to Male Square                                                            |
|  |  |  |
| Female Double D to Male Square                                                      | Female Slot to (45° rotated) Male Square                                            | Female Square to (45° rotated) Male Square                                            |
|  |  |  |

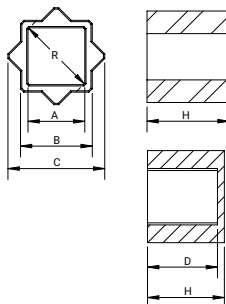
J

## Actuation Accessories - Sleeve Dimensions

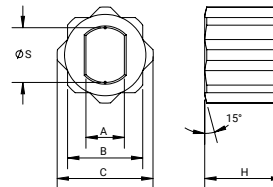
Square Sleeve



Double Square Sleeve



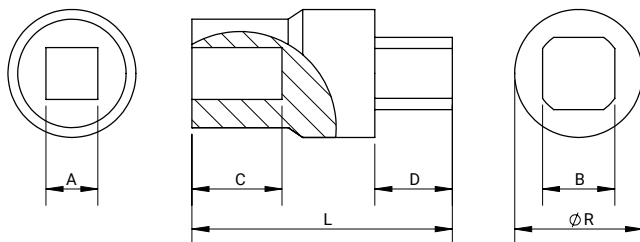
Double D Sleeve



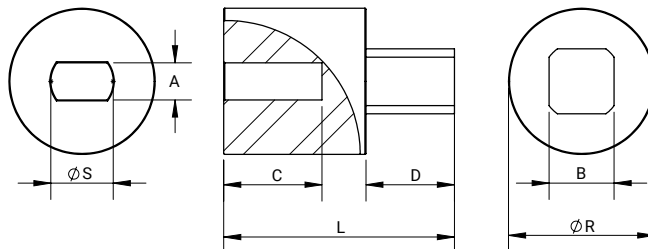
| Sleeve Type          | Part #          | A (mm) | B (mm) | C (mm) | D (mm) | H (mm) | R (mm) | S (mm) |
|----------------------|-----------------|--------|--------|--------|--------|--------|--------|--------|
| Square Sleeve        | XB51-SVF        | 8      | 11     | -      | -      | 11     | -      | -      |
|                      | XB51-SVD        | 9      | 11     | -      | -      | 11     | -      | -      |
|                      | XB51-SVA        | 11     | 14     | -      | -      | 14     | -      | -      |
|                      | XB51-SVG        | 10     | 14     | -      | -      | 14     | -      | -      |
|                      | XB51-SVB        | 14     | 17     | -      | -      | 17     | -      | -      |
|                      | XB51-SV1622     | 16     | 22     | -      | -      | 21.8   | -      | -      |
|                      | XB51-SVC        | 17     | 22     | -      | -      | 22     | -      | -      |
|                      | XB51-SVE        | 22     | 27     | -      | -      | 27     | -      | -      |
| Double Square Sleeve | XB51-SVZ        | 27     | 35     | -      | -      | 40     | -      | -      |
|                      | DSQ.11X9        | 9      | 11     | 13.9   | -      | 11     | -      | -      |
|                      | DSQ.14X9X16     | 9      | 14     | 17.9   | -      | 16     | -      | -      |
|                      | DSQ.14X9X17.4   | 9      | 14     | 18.9   | -      | 17.4   | -      | -      |
|                      | DSQ.14X11       | 11     | 14     | 18     | -      | 17     | -      | -      |
|                      | DSQ.17X11.SHORT | 11     | 17     | 22     | -      | 17     | -      | -      |
|                      | DSQ.17X11.TALL  | 11     | 17     | 21.9   | -      | 20.9   | -      | -      |
|                      | DSQ.17X14.SHORT | 14     | 17     | 22     | -      | 18     | -      | -      |
|                      | DSQ.17X14.TALL  | 14     | 17     | 21.9   | -      | 20.9   | -      | -      |
|                      | DSQ.22X14       | 14     | 22     | 28     | -      | 27     | -      | -      |
|                      | DSQ.22X17       | 17     | 22     | 28     | -      | 27     | -      | -      |
|                      | DSQ.27X17.SHORT | 17     | 22     | 36     | -      | 27     | -      | -      |
|                      | DSQ.27X22.SHORT | 22     | 27     | 36     | -      | 27     | -      | -      |
|                      | DSQ.27X22.TALL  | 22     | 27     | 6      | -      | 33.8   | -      | -      |
|                      | DSQ.36X27       | 27     | 36     | 48.2   | -      | 46     | -      | -      |
|                      | XB51-STVD       | 9      | 11     | 15     | -      | 17     | 12.5   | -      |
|                      | XB51-SVH        | 9      | 14     | 19.1   | -      | 20     | 12.5   | -      |
|                      | XB51-STVA       | 11     | 14     | 19.1   | -      | 20     | 14.5   | -      |
|                      | XB51-SVQ        | 9      | 17     | 23.1   | -      | 24     | 12.5   | -      |
|                      | XB51-SVI        | 11     | 17     | 23.1   | -      | 24     | 14.5   | -      |
|                      | XB51-STVB       | 14     | 17     | 23.1   | -      | 24     | 19.2   | -      |
|                      | XB51-SVJ        | 22     | 11     | 29.6   | -      | 30     | 15.5   | -      |
|                      | XB51-SVK        | 14     | 22     | 29.6   | -      | 30     | 19.2   | -      |
|                      | XB51-STVC       | 17     | 22     | 29.6   | -      | 30     | 23.3   | -      |
|                      | XB51-SVR        | 19     | 22     | 29.6   | -      | 30     | 25.8   | -      |
|                      | XB51-SVS        | 22.2   | 27     | 35.8   | -      | 29     | 31.4   | -      |
|                      | XB51-SVL        | 14     | 27     | 36     | 27     | 29     | 19.2   | -      |
|                      | XB51-SVM        | 17     | 27     | 36     | 27     | 29     | 23.3   | -      |
|                      | XB51-STVE       | 22     | 27     | 36     | 27     | 29     | 30     | -      |
|                      | XB51-STS        | 19     | 36     | 48     | 33     | 35     | 25.8   | -      |
|                      | XB51-SVP        | 27     | 36     | 48     | 33     | 35     | 37     | -      |
| Double D Sleeve      | XB51-DD1122     | 11     | 22     | 28.1   | -      | 22.8   | -      | 16     |
|                      | XB51-DD1322     | 13     | 22     | 28.1   | -      | 22.8   | -      | 19.3   |

## Actuation Accessories - Coupler Dimensions

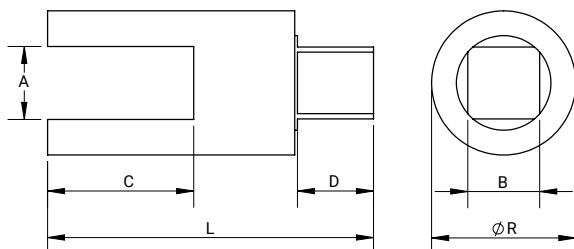
**Female Square to Male Square Coupler**



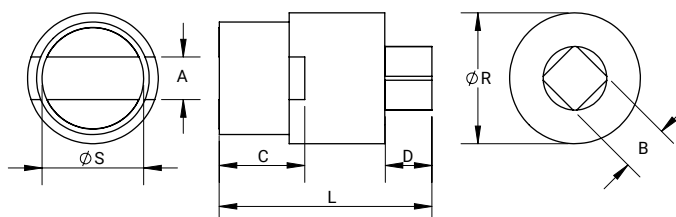
**Female Double D to Male Square Coupler**



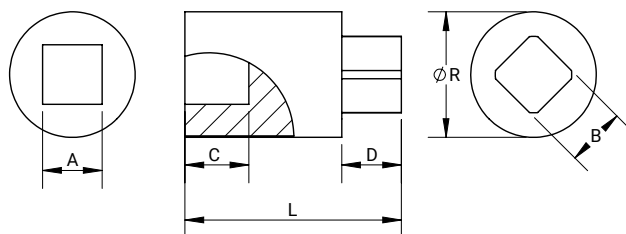
**Female Slot to Male Square Coupler**



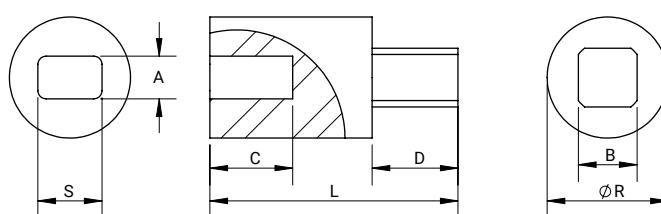
**Female Slot to (45° rotated) Male Square Coupler**



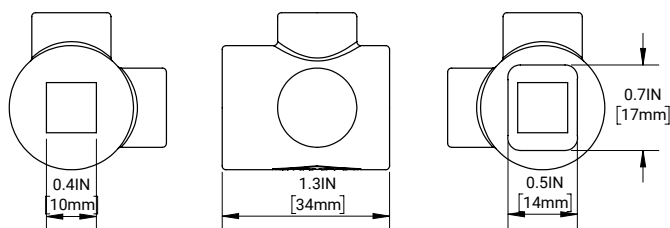
**Female Square to (45° rotated) Male Square Coupler**



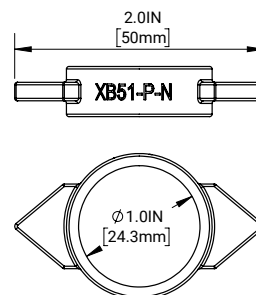
**Female Rectangular Bore to Male Square Coupler**



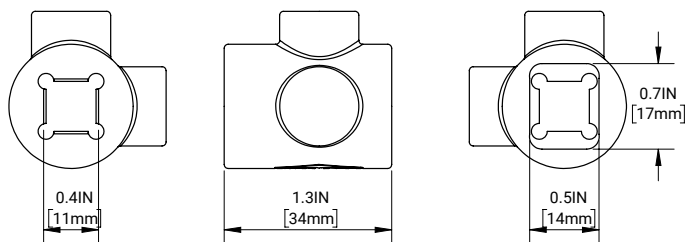
**B5107-Series Valve to VC1-Series Actuator Coupler  
Part Number: XB51-CPB-NB**



**Coupler Flow Indicator  
Part Number: XB51-P-N**



**B5102-Series Valve to VC1-Series Actuator Coupler  
Part Number: XB51-CP102-1040**



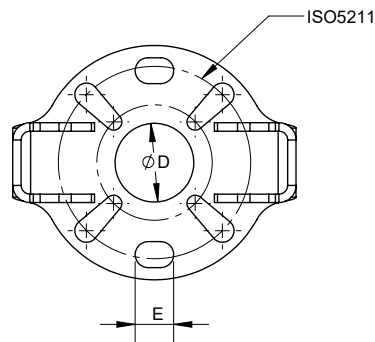
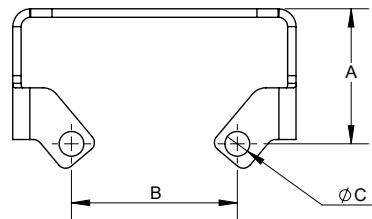
### Actuation Accessories - Coupler Dimensions

| Coupler Style                              | Part #          | A (mm) | B (mm) | C (mm) | D (mm) | L (mm) | R (mm) | S (mm) |
|--------------------------------------------|-----------------|--------|--------|--------|--------|--------|--------|--------|
| Female Square to Male Square               | XB51-CPF        | 8      | 11     | 16.0   | 14.0   | 50.0   | 24.8   | -      |
|                                            | XBV-CP-F03F04-9 | 9      | 9      | 15.2   | 9.5    | 46.4   | 16.5   | -      |
|                                            | XBV-CP-F03F04   | 9      | 14     | 15.2   | 9.5    | 46.4   | 16.5   | -      |
|                                            | XB51-CPF-N      | 10     | 11     | 16.0   | 14.0   | 50.0   | 24.8   | -      |
|                                            | XB51-CPG        | 10     | 14     | 17.5   | 15.0   | 50.5   | 24.8   | -      |
|                                            | XB51-CPE        | 13     | 17     | 24.3   | 17.0   | 76.0   | 34.8   | -      |
|                                            | XB51-CPH        | 14     | 14     | 28.3   | 14.8   | 63.2   | 27.9   | -      |
|                                            | XB51-C1617      | 16     | 17     | 25.4   | 22.9   | 59.6   | 27.9   | -      |
| Female Rectangular Bore to Male Square     | XB51-WB100-125  | 8      | 11     | 15.5   | 16.1   | 46.5   | 22.7   | 12     |
|                                            | XB51-WB150-200  | 10     | 14     | 20.3   | 20.1   | 47.4   | 26.8   | 16     |
|                                            | XB51-WB250-400  | 14     | 14     | 21.6   | 20.1   | 49.5   | 30.6   | 20     |
| Female Slot to Male Square                 | XB51-CPK        | 10     | 11     | 16.0   | 15.9   | 54.1   | 24.7   | -      |
| Female Double D to Male Square             | XB51-C16S1      | 9      | 17     | 25.4   | 22.9   | 59.6   | 27.9   | 16     |
|                                            | XB51-C16S2      | 11     | 17     | 25.4   | 22.9   | 59.6   | 27.9   | 16     |
| Female Slot to (45° rotated) Male Square   | XB51-CPJ        | 8      | 9      | 16.0   | 8.7    | 40.0   | 24.5   | 19     |
| Female Square to (45° rotated) Male Square | XBV-CP150-200   | 14     | 14     | 15.0   | 14.0   | 50.9   | 29.5   | -      |

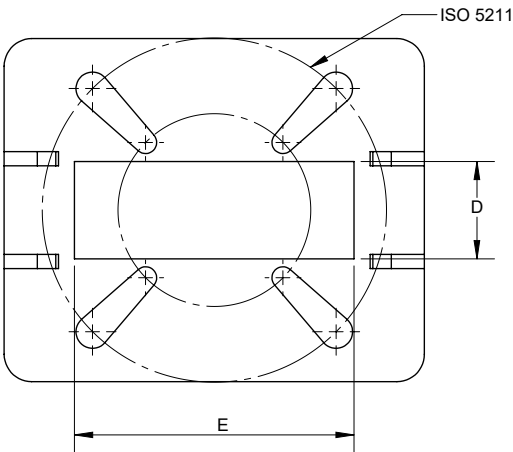
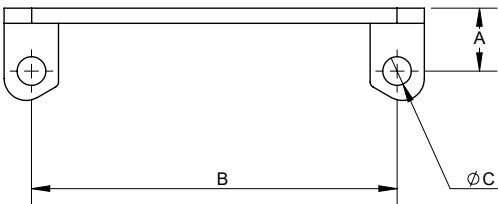
Actuation Accessories - Actuator Mounting Bracket Dimensions

B5107-Series Butterfly Valve Brackets

B5107-Series Bracket - 1/2" - 6"



B5107-Series Bracket - 8"



J

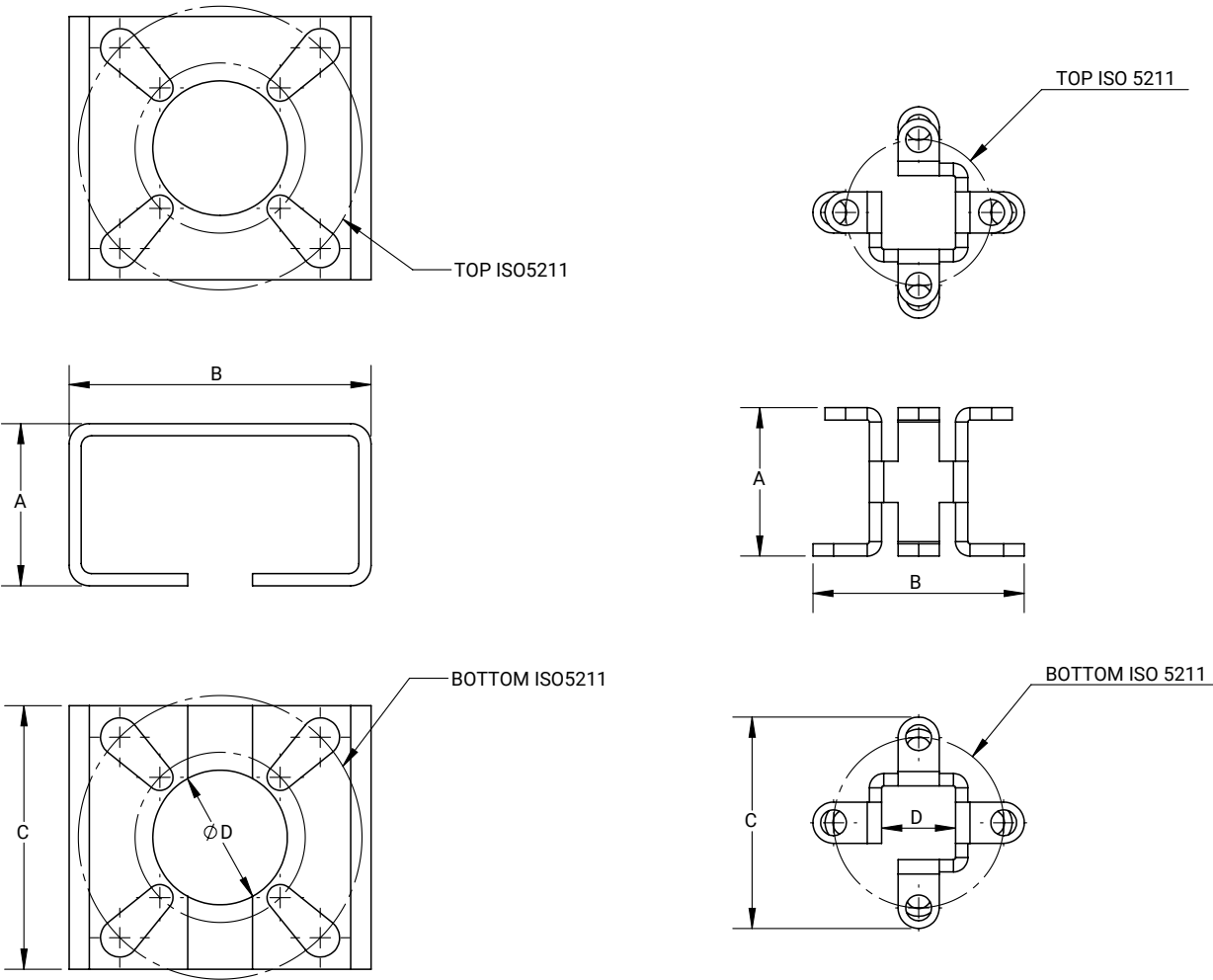
| Size   | Part #         | A (in) | B (in) | C (mm) | D (in) | E (in) | ISO 5211 |     |     |
|--------|----------------|--------|--------|--------|--------|--------|----------|-----|-----|
| 1/2"   | B5107-B100-150 | 1.9    | 1.9    | 6      | 1.1    | 0.6    | F04      | F05 | F07 |
| 3/4"   |                |        |        |        |        |        |          |     |     |
| 1"     |                |        |        |        |        |        |          |     |     |
| 1-1/2" |                |        |        |        |        |        |          |     |     |
| 2"     | B5107-B200-250 | 1.9    | 2.4    | 9      | 1.1    | 0.6    | F04      | F05 | F07 |
| 2-1/2" |                |        |        |        |        |        |          |     |     |
| 3"     | B5107-B300-400 | 2      | 3.2    | 10     | 1.1    | 0.6    | F04      | F05 | F07 |
| 4"     |                |        |        |        |        |        |          |     |     |
| 6"     | B5107-B600     | 3      | 3.9    | 10     | 1.5    | 0.6    | F07      | F10 | -   |
| 8"     | B5107-B800     | 0.9    | 5.2    | 10     | 1.4    | 4      | F07      | F10 | F12 |



Actuation Accessories - Actuator Mounting Bracket Dimensions

Ball Valve and Butterfly Valve Brackets - XBV Bracket

Part Number: XBV-F03F04

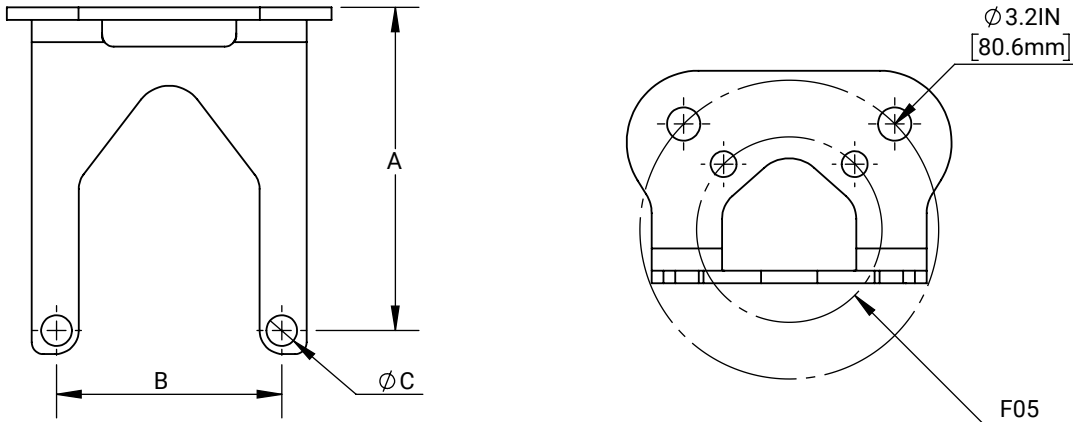


| Part #                     | A (in) | B (in) | C (in) | D (in) | Top ISO 5211 |     |     | Bottom ISO 5211 |     |     |
|----------------------------|--------|--------|--------|--------|--------------|-----|-----|-----------------|-----|-----|
| XBV-F03F04                 | 1.4    | 2.1    | 2.1    | 0.7    | F03          | -   | -   | F04             | -   | -   |
| XBV-B050-075               | 1.5    | 2.2    | 2      | 1      | F03          | F04 | F05 | F03             | F04 | F05 |
| XBV-B100-200               | 1.6    | 2.9    | 2.6    | 1.3    | F04          | F05 | F07 | F04             | F05 | F07 |
| XBV-WB250-400              | 1.6    | 2.9    | 2.6    | 1.6    | F04          | F05 | F07 | F04             | F05 | F07 |
| YXBV-B100200C <sup>1</sup> | 1.7    | 3.43   | 3.1    | 1.3    | F07          | -   | -   | F04             | F05 | F07 |
| XBV-F10-F14                | 2.8    | 6      | 5.5    | 3      | F14          | -   | -   | F10             | -   | -   |

<sup>1</sup>Has non-ISO 5211 mounting diameter of 82.6mm for both top and bottom of bracket.

## Actuation Accessories - Accessory Brackets

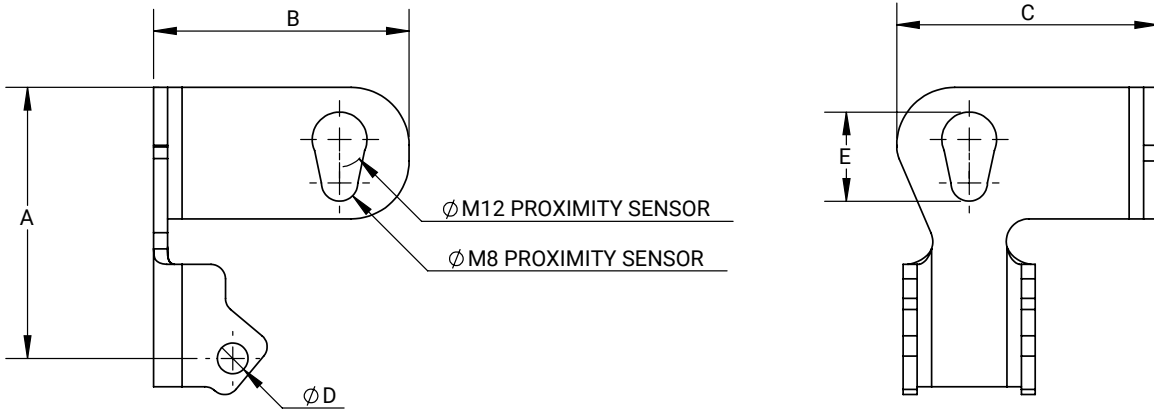
### B5107-Series Manual Limit Switch Bracket



| Size   | Part #         | A (in) | B (in) | C (mm) |
|--------|----------------|--------|--------|--------|
| 1/2"   | B5107-LSB-5015 | 3.4    | 1.9    | 7      |
| 3/4"   |                |        |        |        |
| 1"     |                |        |        |        |
| 1-1/2" |                |        |        |        |
| 2"     | B5107-LSB-2025 | 3.4    | 2.4    | 8      |
| 2-1/2" |                |        |        |        |
| 3"     | B5107-LSB-3040 | 3.5    | 3.2    | 8      |
| 4"     |                |        |        |        |

NOTE: Use with position detection handles. See B5107-series butterfly valve EPRG for more information.

### B5107-Series Proximity Sensor Bracket for Trigger Handle

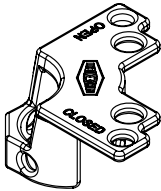
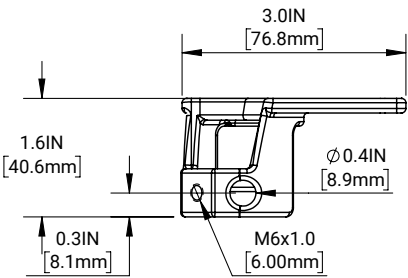


| Size   | Part #          | A (in) | B (in) | C (in) | D (mm) | E (in) | Compatible Trigger Handle Part # |
|--------|-----------------|--------|--------|--------|--------|--------|----------------------------------|
| 1/2"   | B5107-B1015-MPD | 2.3    | 2.2    | 2.2    | 6      | 0.8    | B5107-TH5025-PS                  |
| 3/4"   |                 |        |        |        |        |        |                                  |
| 1"     |                 |        |        |        |        |        |                                  |
| 1-1/2" |                 |        |        |        |        |        |                                  |
| 2"     | B5107-B2025-MPD | 2.3    | 2.3    | 2.2    | 8      | 0.8    |                                  |
| 2-1/2" |                 |        |        |        |        |        |                                  |
| 3"     | B5107-B3040-MPD | 2.5    | 2.8    | 2.2    | 9      | 0.8    | B5107-TH3040-PS                  |
| 4"     |                 |        |        |        |        |        |                                  |

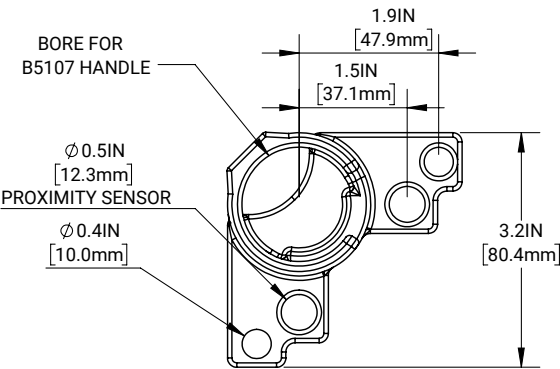
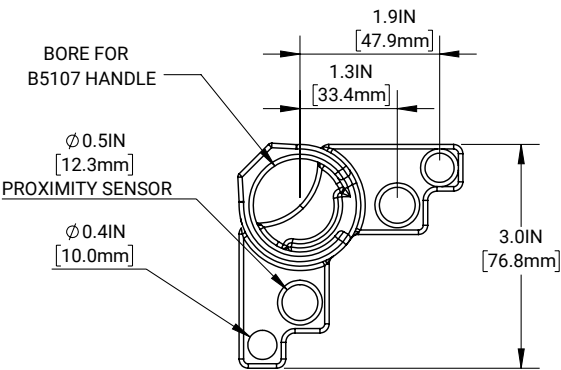
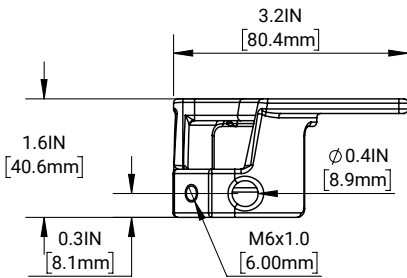
Actuation Accessories - Accessory Brackets

B5107-Series Proximity Sensor Bracket for Pull and Infinite Handles

B5107-PB-5025  
(1/2" - 2-1/2")



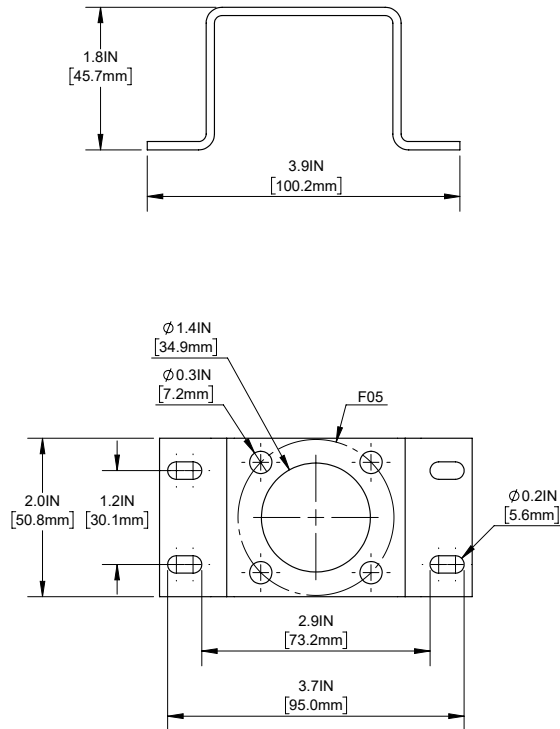
B5107-PB-3040  
(3" - 4")



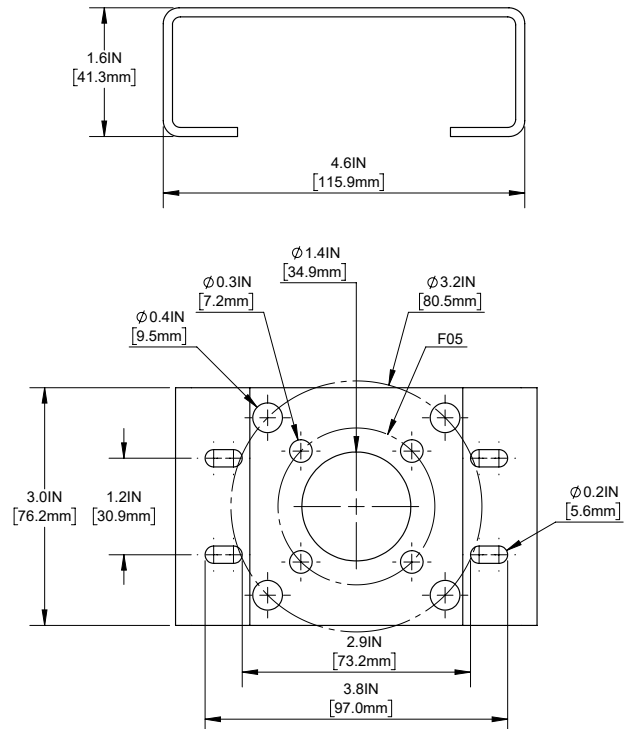
## Actuation Accessories - Accessory Brackets

### Rack and Pinion Limit Switch and Positioner Brackets

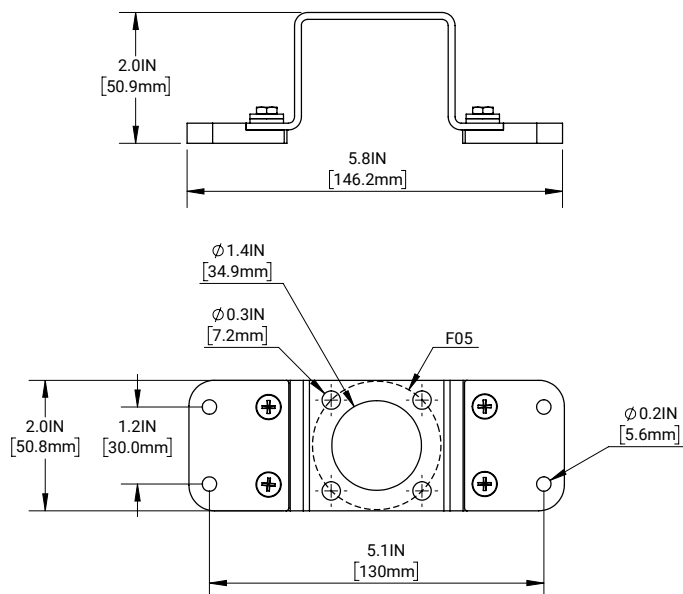
**LSPP-BK-S-N**



**LSPP-BK-S**

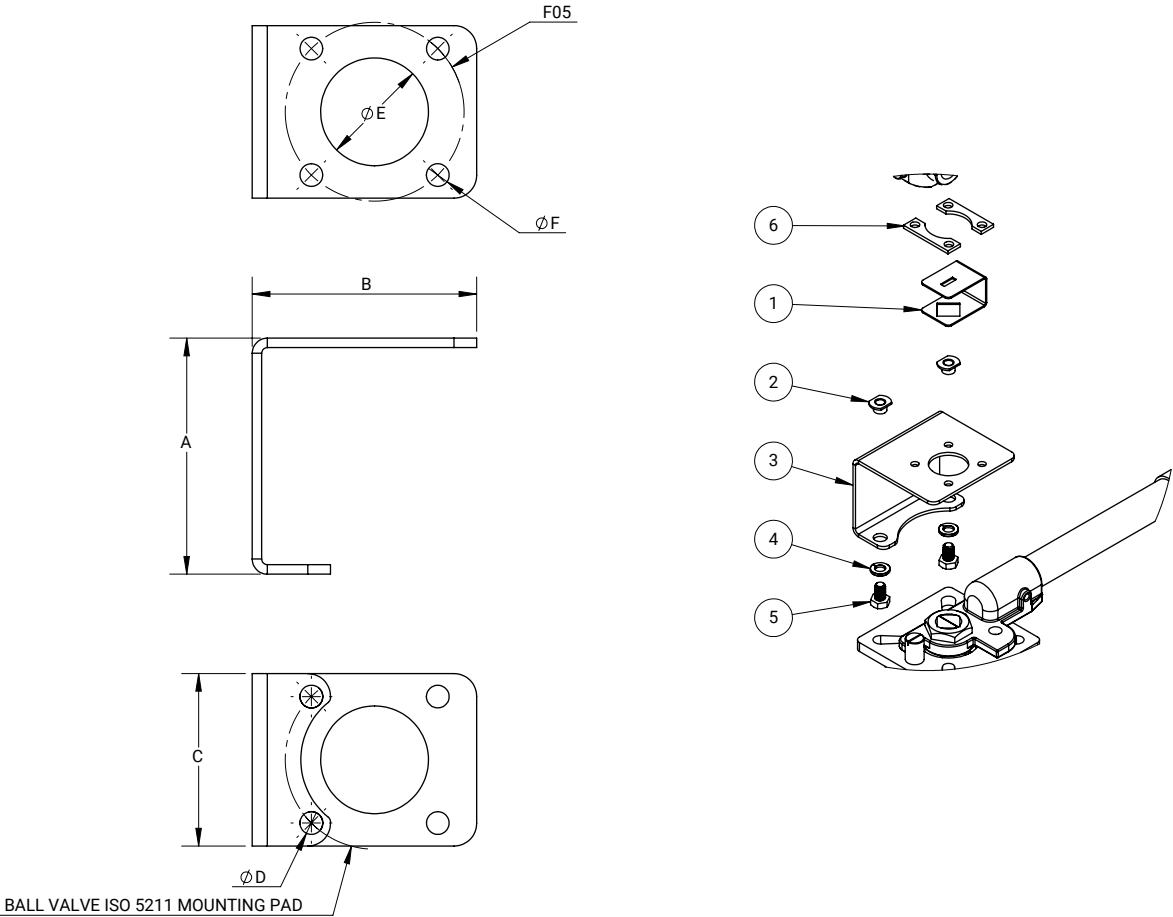


**LSPP-BK-NL**



Actuation Accessories - Accessory Brackets

Ball Valve Manual Limit Switch Bracket



| Ball Valve ISO 5211 Mounting Pad | Bracket Part # | A (in) | B (in) | C (in) | D (mm) | E (in) |
|----------------------------------|----------------|--------|--------|--------|--------|--------|
| F04                              | BV-LSB-F04     | 2.4    | 2.4    | 1.9    | 6      | 1.2    |
| F05                              | BV-LSB-F05     | 2.6    | 2.5    | 1.9    | 6      | 1.2    |
| F07                              | BV-LSB-F07     | 2.6    | 2.7    | 2.6    | 6      | 1.2    |
| F10                              | BV-LSB-F10     | 2.8    | 3.3    | 3.5    | 6      | 1.2    |
| F12                              | BV-LSB-F12     | 2.9    | 3.7    | 4.3    | 6      | 1.2    |

Ball Valve Manual Limit Switch Bracket - Bill of Materials

| Item # | Description               | Ball Valve ISO 5211 Mounting Pad |              |              |              |              | Qty       |
|--------|---------------------------|----------------------------------|--------------|--------------|--------------|--------------|-----------|
|        |                           | F04                              | F05          | F07          | F10          | F12          |           |
| 1      | limit switch stem bracket | BV-LSSB-9                        | BV-LSSB-11   | BV-LSSB-14   | BV-LSSB-17   | BV-LSSB-22   | 1 per kit |
| 2      | flanged nut insert        | BV-2X-FN-F04                     | BV-2X-FN-F05 | BV-2X-FN-F07 | BV-2X-FN-F10 | BV-2X-FN-F12 | 2 per kit |
| 3      | limit switch bracket      | BV-LSB-F04                       | BV-LSB-F05   | BV-LSB-F07   | BV-LSB-F10   | BV-LSB-F12   | 1 per kit |
| 4      | lock washer               | M4LOCKW                          | M5LOCKW      | M6LOCKW      | M8LOCKW      | M10LOCKW     | 2 per kit |
| 5      | hex head bolt             | M4X0.7X10HB                      | M5X0.8X12HB  | M6X1X16HB    | M8X1.25X16HB | M10X1.5X16HB | 2 per kit |
| 6      | limit switch spacer       | LSPP-SP                          | LSPP-SP      | LSPP-SP      | LSPP-SP      | LSPP-SP      | 2 per kit |

## Actuation Accessories - Accessory Brackets

### Ball Valve Limit Switch Kits for Manual Actuation

| Part #         | Description                                                                                                   | Item # Included |
|----------------|---------------------------------------------------------------------------------------------------------------|-----------------|
| BVK-LSB-F04-9  | XLS-B-series limit switch kit accessory for F04 ball valve pad with 9mm square stem, manual handle actuation  | 1 - 5           |
| BVK-LSB-F05-11 | XLS-B-series limit switch kit accessory for F05 ball valve pad with 11mm square stem, manual handle actuation | 1 - 5           |
| BVK-LSB-F07-14 | XLS-B-series limit switch kit accessory for F07 ball valve pad with 14mm square stem, manual handle actuation | 1 - 5           |
| BVK-LSB-F10-17 | XLS-B-series limit switch kit accessory for F10 ball valve pad with 17mm square stem, manual handle actuation | 1 - 5           |
| BVK-LSB-F12-22 | XLS-B-series limit switch kit accessory for F12 ball valve pad with 22mm square stem, manual handle actuation | 1 - 5           |
| BVK-LSC-F04-9  | XLS-C-series limit switch kit accessory for F04 ball valve pad with 9mm square stem, manual handle actuation  | 1 - 6           |
| BVK-LSC-F05-11 | XLS-C-series limit switch kit accessory for F05 ball valve pad with 11mm square stem, manual handle actuation | 1 - 6           |
| BVK-LSC-F07-14 | XLS-C-series limit switch kit accessory for F07 ball valve pad with 14mm square stem, manual handle actuation | 1 - 6           |
| BVK-LSC-F10-17 | XLS-C-series limit switch kit accessory for F10 ball valve pad with 17mm square stem, manual handle actuation | 1 - 6           |
| BVK-LSC-F12-22 | XLS-C-series limit switch kit accessory for F12 ball valve pad with 22mm square stem, manual handle actuation | 1 - 6           |

J

## BC/BP-Series Centrifugal Pump



Designed for conveying low viscosity fluids in a broad range of applications such as dairy, food, beverage, wine, and brewing markets.

**Certifications**

- 3A approved
- Elastomers meet FDA 21CFR 177.2600 and 3A 18-03 Class I

**Sizes**

- 1-1/2" - 4" x 1-1/2" - 6" inlet

**Features**

- Seal options: externally balanced 'D' seal, 'DG' seal with clamped in seat, or externally balanced 'F' flush seal
- Seal design
  - Robust single mechanical seal design with multiple material options
- Shaft design
  - BP sealed impeller with nut provides optimal hygienic performance while the split shaft compression collar improves shaft concentricity, reduces vibration, and improves seal life
  - BC design utilizes an impeller retainer; some BC models have a split shaft design available
- Drop-in replacement for other C-series pumps
- Wet end mounts to a standard NEMA C-face frame motor

**Materials**

- Product contact components: AISI 316L, FKM, silicone, EPDM, PTFE
- Non-product contact components: AISI 304
- Product contact seals: 316L, carbon, silicon carbide, tungsten carbide, and ceramic

**K****Specifications**

- Standard connection: clamp
- Minimum operating temperature: **32°F (0°C)**
- Maximum operating temperature: **212°F (100°C)**
- Viscosity range: 1-500 cP
- Surface Finish
  - Product contact metal components:  $\leq 32$  Ra
  - Non-product contact metal components:  $\leq 63$  Ra
- Seal type: single mechanical
- Performance characteristics
  - Nominal capacity: up to **1200 GPM**
  - Nominal speed: up to 3500 RPM - 60 Hz
- Motors and mounting
  - Motor frame size: NEMA C-face
  - Speeds: 1750 and 3450 RPM
  - Enclosure: TENV or TEFC, stainless steel or epoxy white washdown
- Cleaning method
  - CIP: clean-in-place

## BC/BP-Series Centrifugal Pump - Part Number Key

| BC/BP-Series Centrifugal Pump<br>Part Number Key<br>Example: BC114M101BAJA01 |      | Series | Model | Connection | Seal Type | Impeller | Elastomer | Frame | Motor Type | Motor Electrical | HP RPM |
|------------------------------------------------------------------------------|------|--------|-------|------------|-----------|----------|-----------|-------|------------|------------------|--------|
|                                                                              |      | BC     | 114   | M          | 1         | 01       | B         | A     | J          | A                | 01     |
| Series                                                                       | Code | BC     | 114   | M          | 1         | 01       | B         | A     | J          | A                | 01     |
| BC - impeller retainer                                                       | BC   |        |       |            |           |          |           |       |            |                  |        |
| BP - threaded impeller nut                                                   | BP   |        |       |            |           |          |           |       |            |                  |        |
| Model                                                                        | Code | 114    |       |            |           |          |           |       |            |                  |        |
| 1-1/2" inlet x 1-1/2" outlet                                                 | 114  |        |       |            |           |          |           |       |            |                  |        |
| 2" inlet x 1-1/2" outlet                                                     | 214  |        |       |            |           |          |           |       |            |                  |        |
| 2" inlet x 1-1/2" outlet                                                     | 216  |        |       |            |           |          |           |       |            |                  |        |
| 2-1/2" inlet x 1-1/2" outlet                                                 | 516  |        |       |            |           |          |           |       |            |                  |        |
| 2" inlet x 1-1/2" outlet                                                     | 218  |        |       |            |           |          |           |       |            |                  |        |
| 3" inlet x 1-1/2" outlet                                                     | 318  |        |       |            |           |          |           |       |            |                  |        |
| 3" inlet x 2" outlet                                                         | 328  |        |       |            |           |          |           |       |            |                  |        |
| 4" inlet x 2" outlet                                                         | 428  |        |       |            |           |          |           |       |            |                  |        |
| 4" inlet x 4" outlet <sup>1</sup>                                            | 441  |        |       |            |           |          |           |       |            |                  |        |
| 6" inlet x 4" outlet <sup>1</sup>                                            | 641  |        |       |            |           |          |           |       |            |                  |        |
| Connection                                                                   | Code |        | M     |            |           |          |           |       |            |                  |        |
| Clamp (standard)                                                             | M    |        |       |            |           |          |           |       |            |                  |        |
| Weld                                                                         | B    |        |       |            |           |          |           |       |            |                  |        |
| Seal Type                                                                    | Code | 1      |       |            |           |          |           |       |            |                  |        |
| D type - carbon vs stainless steel                                           | 1    |        |       |            |           |          |           |       |            |                  |        |
| DG C/SC - carbon vs silicon carbide                                          | 2    |        |       |            |           |          |           |       |            |                  |        |
| DG C/CER - carbon vs ceramic                                                 | 3    |        |       |            |           |          |           |       |            |                  |        |
| DG C/TC - carbon vs tungsten carbide                                         | 4    |        |       |            |           |          |           |       |            |                  |        |
| D type C/F - carbon vs stainless steel with cascade                          | 5    |        |       |            |           |          |           |       |            |                  |        |
| DG SC/SC - silicon carbide vs silicon carbide                                | 6    |        |       |            |           |          |           |       |            |                  |        |
| DG C/SC/F - carbon vs silicon carbide with cascade flush                     | 7    |        |       |            |           |          |           |       |            |                  |        |
| D type w/Wave Spring - carbon vs stainless steel                             | A    |        |       |            |           |          |           |       |            |                  |        |
| DG C/SC w/Wave Spring - carbon vs silicon carbide                            | B    |        |       |            |           |          |           |       |            |                  |        |
| D type C/F w/Wave Spring - carbon vs stainless steel with cascade            | E    |        |       |            |           |          |           |       |            |                  |        |
| Impeller                                                                     | Code |        | 01    |            |           |          |           |       |            |                  |        |
| 2-1/2"                                                                       | 01   |        |       |            |           |          |           |       |            |                  |        |
| 2-3/4"                                                                       | 02   |        |       |            |           |          |           |       |            |                  |        |
| 3"                                                                           | 03   |        |       |            |           |          |           |       |            |                  |        |
| 3-1/4"                                                                       | 04   |        |       |            |           |          |           |       |            |                  |        |
| 3-1/2"                                                                       | 05   |        |       |            |           |          |           |       |            |                  |        |
| 3-3/4"                                                                       | 06   |        |       |            |           |          |           |       |            |                  |        |
| 4"                                                                           | 07   |        |       |            |           |          |           |       |            |                  |        |
| 4-1/4"                                                                       | 08   |        |       |            |           |          |           |       |            |                  |        |
| 4-1/2"                                                                       | 09   |        |       |            |           |          |           |       |            |                  |        |
| 4-3/4"                                                                       | 10   |        |       |            |           |          |           |       |            |                  |        |
| 5"                                                                           | 11   |        |       |            |           |          |           |       |            |                  |        |
| 5-1/4"                                                                       | 12   |        |       |            |           |          |           |       |            |                  |        |
| 5-1/2"                                                                       | 13   |        |       |            |           |          |           |       |            |                  |        |

Only available as a BP with DG seal.

<sup>1</sup>Only available as a BP with DG seal.



## BC/BP-Series Centrifugal Pump - Part Number Key

| BC/BP-Series Centrifugal Pump<br>Part Number Key<br>Example: BC114M101BAJA01 |             | Series | Model | Connection | Seal<br>Type | Impeller | Elastomer | Frame | Motor<br>Type | Motor<br>Electrical | HP<br>RPM |
|------------------------------------------------------------------------------|-------------|--------|-------|------------|--------------|----------|-----------|-------|---------------|---------------------|-----------|
|                                                                              |             | BC     | 114   | M          | 1            | 01       | B         | A     | J             | A                   | 01        |
| 5-3/4"                                                                       | 14          |        |       |            |              |          |           |       |               |                     |           |
| 6"                                                                           | 15          |        |       |            |              |          |           |       |               |                     |           |
| 6-1/4"                                                                       | 16          |        |       |            |              |          |           |       |               |                     |           |
| 6-1/2"                                                                       | 17          |        |       |            |              |          |           |       |               |                     |           |
| 6-3/4"                                                                       | 18          |        |       |            |              |          |           |       |               |                     |           |
| 7"                                                                           | 19          |        |       |            |              |          |           |       |               |                     |           |
| 7-1/4"                                                                       | 20          |        |       |            |              |          |           |       |               |                     |           |
| 7-1/2"                                                                       | 21          |        |       |            |              |          |           |       |               |                     |           |
| 7-3/4"                                                                       | 22          |        |       |            |              |          |           |       |               |                     |           |
| 8"                                                                           | 23          |        |       |            |              |          |           |       |               |                     |           |
| 8-1/4"                                                                       | 70          |        |       |            |              |          |           |       |               |                     |           |
| 8-1/2"                                                                       | 71          |        |       |            |              |          |           |       |               |                     |           |
| 8-3/4"                                                                       | 72          |        |       |            |              |          |           |       |               |                     |           |
| 9"                                                                           | 73          |        |       |            |              |          |           |       |               |                     |           |
| 9-1/4"                                                                       | 74          |        |       |            |              |          |           |       |               |                     |           |
| 9-3/4"                                                                       | 76          |        |       |            |              |          |           |       |               |                     |           |
| 10"                                                                          | 77          |        |       |            |              |          |           |       |               |                     |           |
| <b>Elastomer</b>                                                             | <b>Code</b> |        |       |            |              |          |           |       |               |                     |           |
| Nitrile rubber <sup>2</sup>                                                  | B           |        |       |            |              |          |           |       |               |                     |           |
| EPDM                                                                         | E           |        |       |            |              |          |           |       |               |                     |           |
| Silicone/EPDM                                                                | S           |        |       |            |              |          |           |       |               |                     |           |
| FKM                                                                          | V           |        |       |            |              |          |           |       |               |                     |           |
| <b>Frame</b>                                                                 | <b>Code</b> |        |       |            |              |          |           |       |               |                     |           |
| 56C                                                                          | A           |        |       |            |              |          |           |       |               |                     |           |
| 143/145TC                                                                    | B           |        |       |            |              |          |           |       |               |                     |           |
| 182/184TC                                                                    | C           |        |       |            |              |          |           |       |               |                     |           |
| 213/215TC                                                                    | D           |        |       |            |              |          |           |       |               |                     |           |
| 254/256TC                                                                    | E           |        |       |            |              |          |           |       |               |                     |           |
| 284/286TS (1.625" bore diameter)                                             | F           |        |       |            |              |          |           |       |               |                     |           |
| 284/286TC (1.875" bore diameter)                                             | H           |        |       |            |              |          |           |       |               |                     |           |
| 324/326TSC                                                                   | G           |        |       |            |              |          |           |       |               |                     |           |
| <b>Stop here for fluid end.</b>                                              |             |        |       |            |              |          |           |       |               |                     |           |
| <b>Motor Type</b>                                                            | <b>Code</b> |        |       |            |              |          |           |       |               |                     |           |
| Baldor stainless steel wash down                                             | J           |        |       |            |              |          |           |       |               |                     |           |
| Baldor white wash down                                                       | Z           |        |       |            |              |          |           |       |               |                     |           |
| Sterling stainless steel wash down                                           | S           |        |       |            |              |          |           |       |               |                     |           |
| Sterling painted wash down                                                   | W           |        |       |            |              |          |           |       |               |                     |           |
| Baldor general purpose                                                       | M           |        |       |            |              |          |           |       |               |                     |           |
| Baldor explosion proof CL1, DV1<br>GP D Class II GP F and G                  | E           |        |       |            |              |          |           |       |               |                     |           |
| Brook Crompton CL1 DV 2 GP A,<br>B, C, and D cast iron wash down             | 3           |        |       |            |              |          |           |       |               |                     |           |
| Worldwide electric stainless steel<br>wash down                              | 4           |        |       |            |              |          |           |       |               |                     |           |
| Baldor food safe stainless steel<br>wash down                                | F           |        |       |            |              |          |           |       |               |                     |           |
| WEG shark stainless steel<br>wash down                                       | G           |        |       |            |              |          |           |       |               |                     |           |
| Baldor explosion proof CL1, DV 2,<br>GP A, B, C, and D cast iron             | H           |        |       |            |              |          |           |       |               |                     |           |

<sup>2</sup>BP models 441 and 641 nitrile rubber elastomer comes supplied with static FKM impeller nut O-ring seals (P25A).

<sup>2</sup>BP models 441 and 641 nitrile rubber elastomer comes supplied with static FKM impeller nut O-ring seals (P25A).

## BC/BP-Series Centrifugal Pump - Part Number Key

| BC/BP-Series Centrifugal Pump<br>Part Number Key<br>Example: BC114M101BAJA01 |             | Series | Model | Connection | Seal<br>Type | Impeller | Elastomer | Frame | Motor<br>Type | Motor<br>Electrical | HP<br>RPM |
|------------------------------------------------------------------------------|-------------|--------|-------|------------|--------------|----------|-----------|-------|---------------|---------------------|-----------|
|                                                                              |             | BC     | 114   | M          | 1            | 01       | B         | A     | J             | A                   | 01        |
| <b>Motor Electrical</b>                                                      | <b>Code</b> |        |       |            |              |          |           |       |               |                     |           |
| 1PH, 60HZ, 115/230V                                                          | A           |        |       |            |              |          |           |       |               |                     |           |
| 3PH, 60HZ, 208-230/460V                                                      | B           |        |       |            |              |          |           |       |               |                     |           |
| 3PH, 60HZ, 575V                                                              | C           |        |       |            |              |          |           |       |               |                     |           |
| 3PH, 50HZ, 190/380V                                                          | D           |        |       |            |              |          |           |       |               |                     |           |
| 3PH, 50HZ, 380/460V                                                          | E           |        |       |            |              |          |           |       |               |                     |           |
| 3PH, 50HZ, 220/380/440V                                                      | F           |        |       |            |              |          |           |       |               |                     |           |
| 3PH, 50HZ, 220/380/415V                                                      | G           |        |       |            |              |          |           |       |               |                     |           |
| <b>HP RPM</b>                                                                | <b>Code</b> |        |       |            |              |          |           |       |               |                     |           |
| 0.33HP - 1750RPM                                                             | 01          |        |       |            |              |          |           |       |               |                     |           |
| 0.50HP - 1750RPM                                                             | 02          |        |       |            |              |          |           |       |               |                     |           |
| 0.75HP - 1750RPM                                                             | 03          |        |       |            |              |          |           |       |               |                     |           |
| 1.0HP - 1750RPM                                                              | 04          |        |       |            |              |          |           |       |               |                     |           |
| 1.5HP - 1750RPM                                                              | 05          |        |       |            |              |          |           |       |               |                     |           |
| 2.0HP - 1750RPM                                                              | 06          |        |       |            |              |          |           |       |               |                     |           |
| 3.0HP - 1750RPM                                                              | 07          |        |       |            |              |          |           |       |               |                     |           |
| 5.0HP - 1750RPM                                                              | 08          |        |       |            |              |          |           |       |               |                     |           |
| 7.5HP - 1750RPM                                                              | 09          |        |       |            |              |          |           |       |               |                     |           |
| 10HP - 1750RPM                                                               | 10          |        |       |            |              |          |           |       |               |                     |           |
| 15HP - 1750RPM                                                               | 11          |        |       |            |              |          |           |       |               |                     |           |
| 20HP - 1750RPM                                                               | 12          |        |       |            |              |          |           |       |               |                     |           |
| 25HP - 1750RPM                                                               | 13          |        |       |            |              |          |           |       |               |                     |           |
| 30HP - 1750RPM                                                               | 14          |        |       |            |              |          |           |       |               |                     |           |
| 40HP - 1750RPM                                                               | 15          |        |       |            |              |          |           |       |               |                     |           |
| 50HP - 1750RPM                                                               | 16          |        |       |            |              |          |           |       |               |                     |           |
| 60HP - 1750RPM                                                               | 17          |        |       |            |              |          |           |       |               |                     |           |
| 0.33HP - 3500RPM                                                             | 18          |        |       |            |              |          |           |       |               |                     |           |
| 0.50HP - 3500RPM                                                             | 19          |        |       |            |              |          |           |       |               |                     |           |
| 0.75HP - 3500RPM                                                             | 20          |        |       |            |              |          |           |       |               |                     |           |
| 1.0HP - 3500RPM                                                              | 21          |        |       |            |              |          |           |       |               |                     |           |
| 1.5HP - 3500RPM                                                              | 22          |        |       |            |              |          |           |       |               |                     |           |
| 2.0HP - 3500RPM                                                              | 23          |        |       |            |              |          |           |       |               |                     |           |
| 3.0HP - 3500RPM                                                              | 24          |        |       |            |              |          |           |       |               |                     |           |
| 5.0HP - 3500RPM                                                              | 25          |        |       |            |              |          |           |       |               |                     |           |
| 7.5HP - 3500RPM                                                              | 26          |        |       |            |              |          |           |       |               |                     |           |
| 10HP - 3500RPM                                                               | 27          |        |       |            |              |          |           |       |               |                     |           |
| 15HP - 3500RPM                                                               | 28          |        |       |            |              |          |           |       |               |                     |           |
| 20HP - 3500RPM                                                               | 29          |        |       |            |              |          |           |       |               |                     |           |
| 25HP - 3500RPM                                                               | 30          |        |       |            |              |          |           |       |               |                     |           |
| 30HP - 3500RPM                                                               | 31          |        |       |            |              |          |           |       |               |                     |           |
| 40HP - 3500RPM                                                               | 32          |        |       |            |              |          |           |       |               |                     |           |
| 50HP - 3500RPM                                                               | 33          |        |       |            |              |          |           |       |               |                     |           |
| 60HP - 3500RPM                                                               | 34          |        |       |            |              |          |           |       |               |                     |           |
| 2HP - 1200RPM                                                                | 35          |        |       |            |              |          |           |       |               |                     |           |

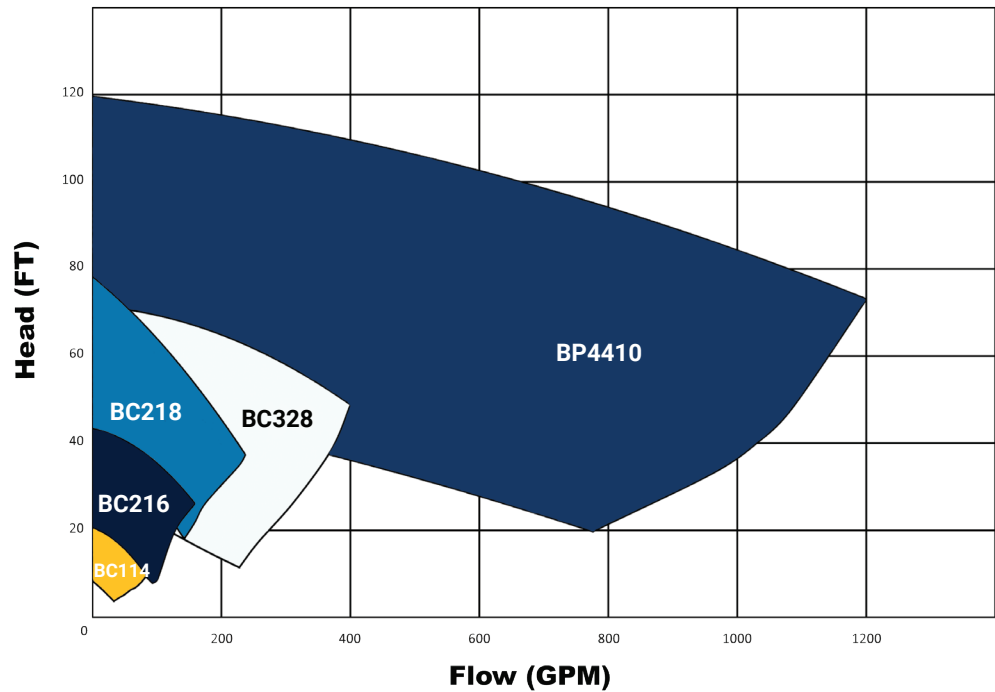
NOTE: BP models 114-428 are manufactured to 3A standards but do not carry a 3A certificate. BP model 441 and 641 do carry the 3A certificate.

Fluid end includes all parts required to assemble to your motor.

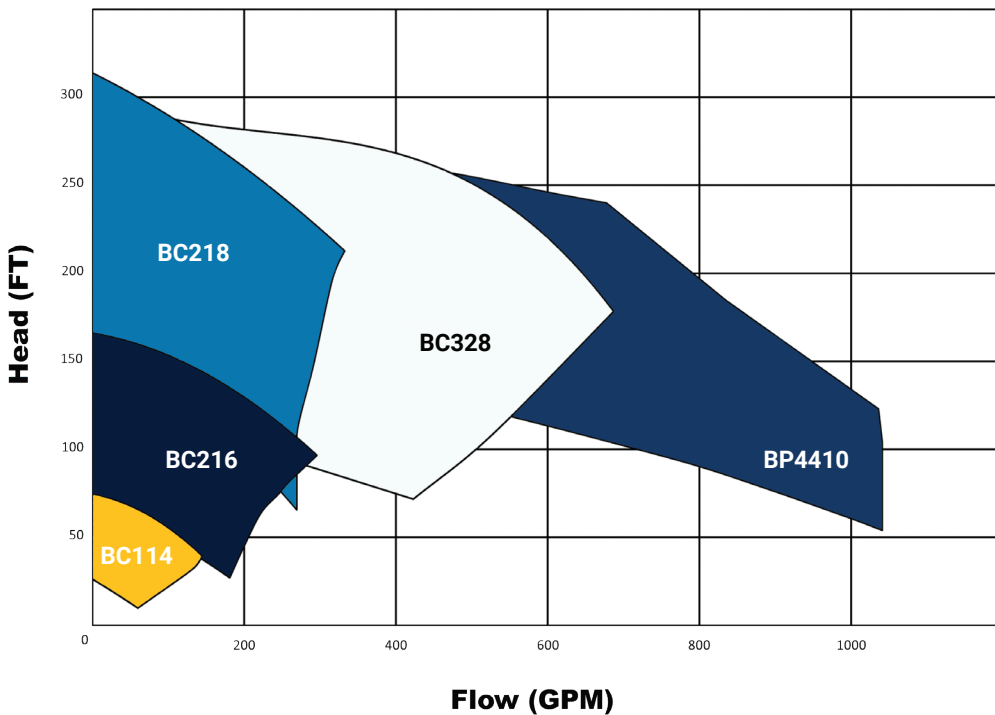
Specify adjustable leg kits at time of order. Leg kits will be shipped to match the frame size of motor as specified by model number. Leg kits will not be assembled. If there are options that are not listed above, please contact Dixon Sanitary at 800.789.1718 for availability and pricing.

BC/BP-Series Centrifugal Pump - Pump Curves

1750 RPM



3500 RPM



## BC/BP-Series Centrifugal Pump - Pump Curves

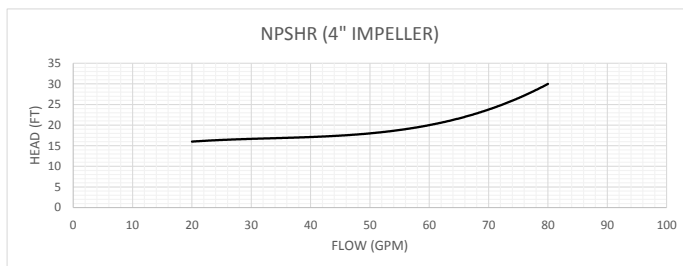
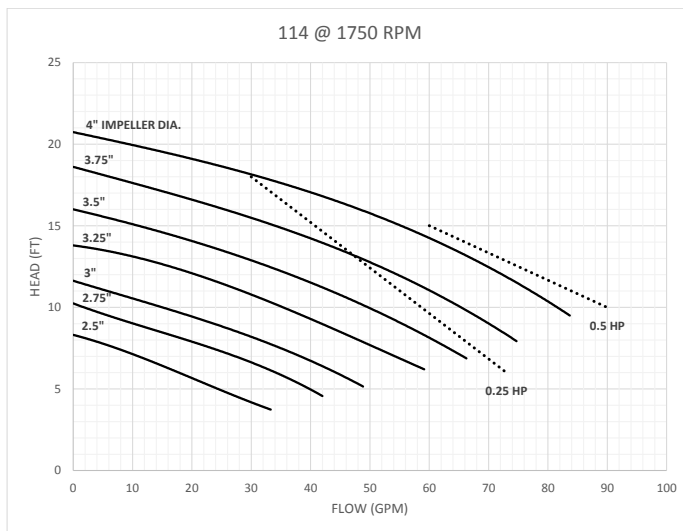
## BC/BP 114

Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 1750

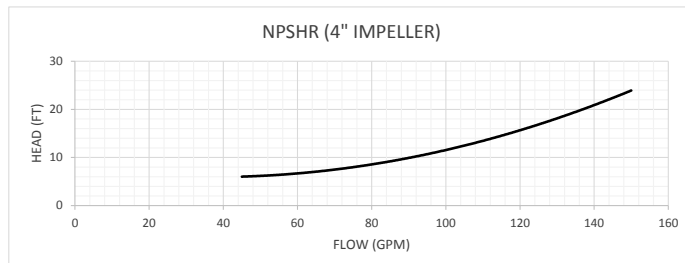
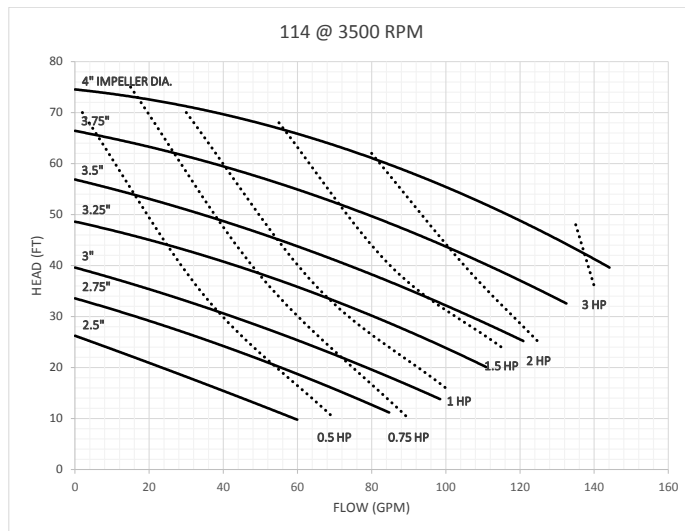
Size: 1-1/2" x 1-1/2" x 4"

Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 3500

Size: 1-1/2" x 1-1/2" x 4"

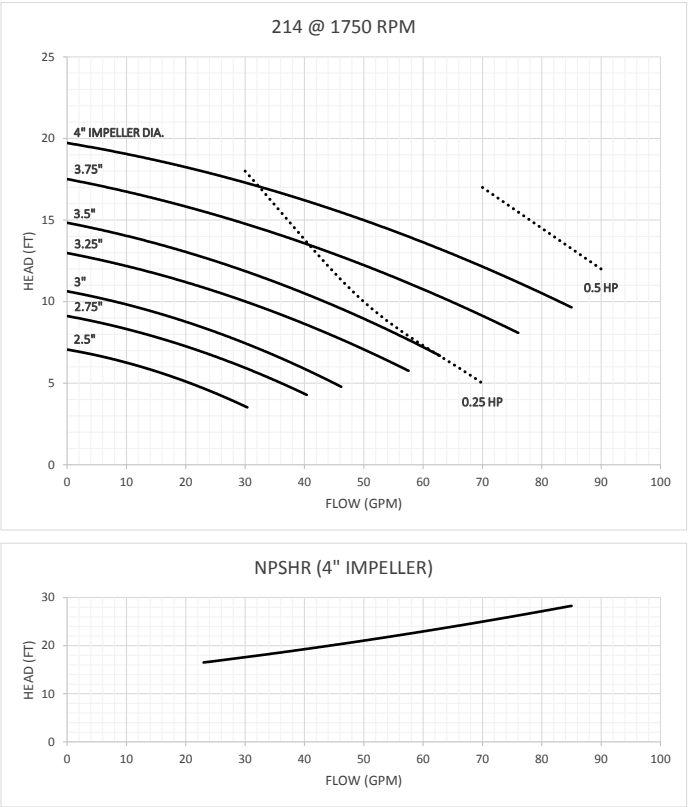


K

BC/BP-Series Centrifugal Pump - Pump Curves

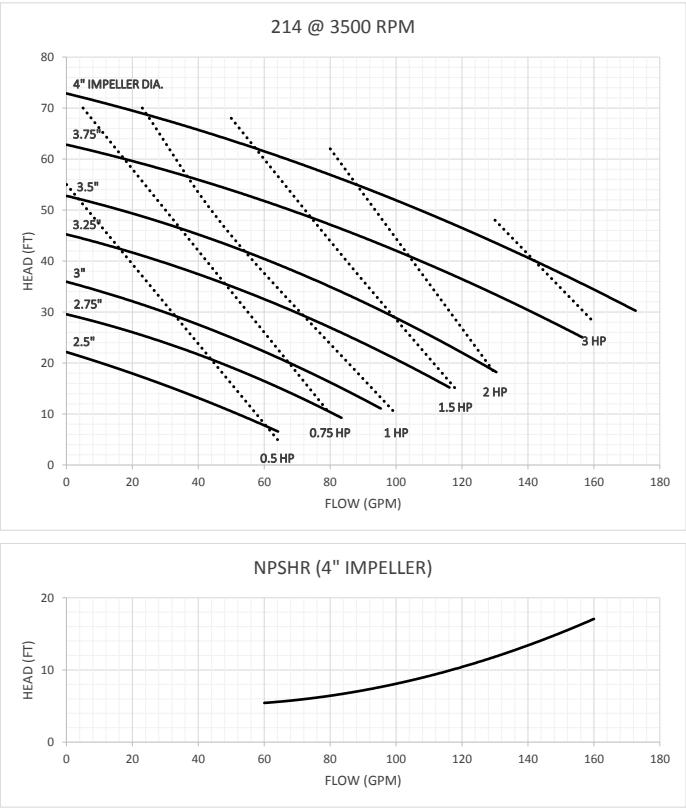
BC/BP 214

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 1750  
Size: 2" x 1-1/5" x 4"



K

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 3500  
Size: 2" x 1-1/2" x 4"



## BC/BP-Series Centrifugal Pump - Pump Curves

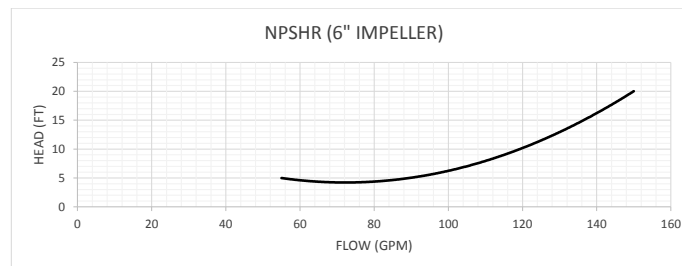
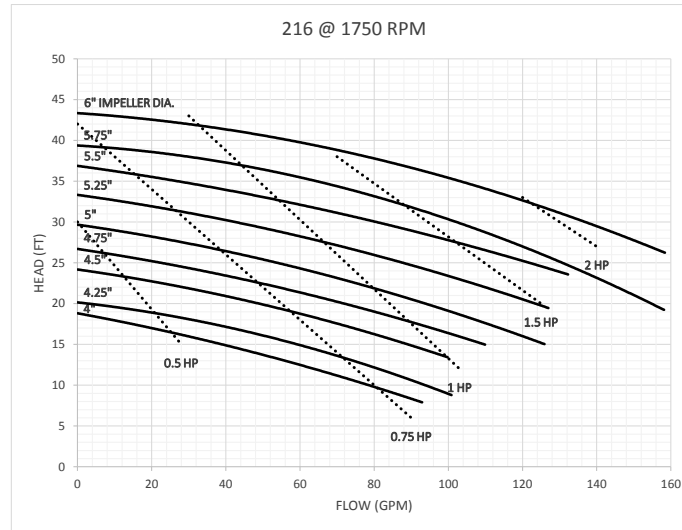
### BC/BP 216

Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 1750

Size: 2" x 1-1/2" x 6"

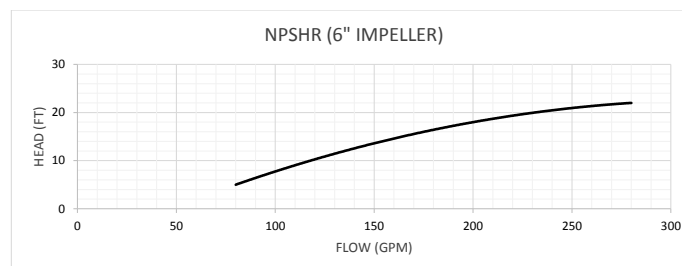
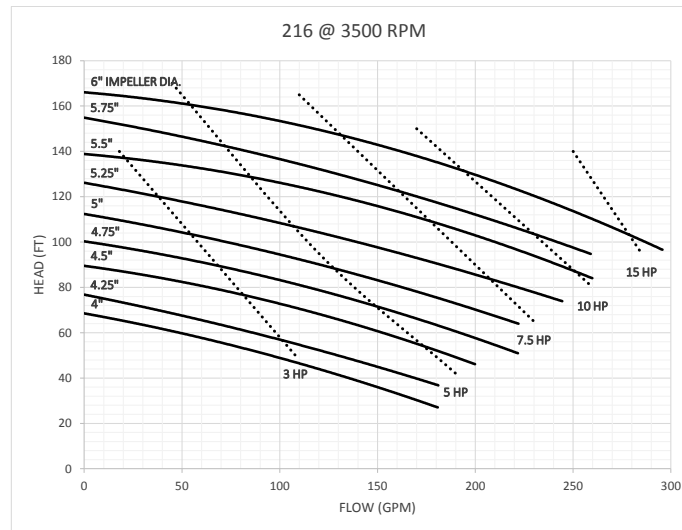


Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 3500

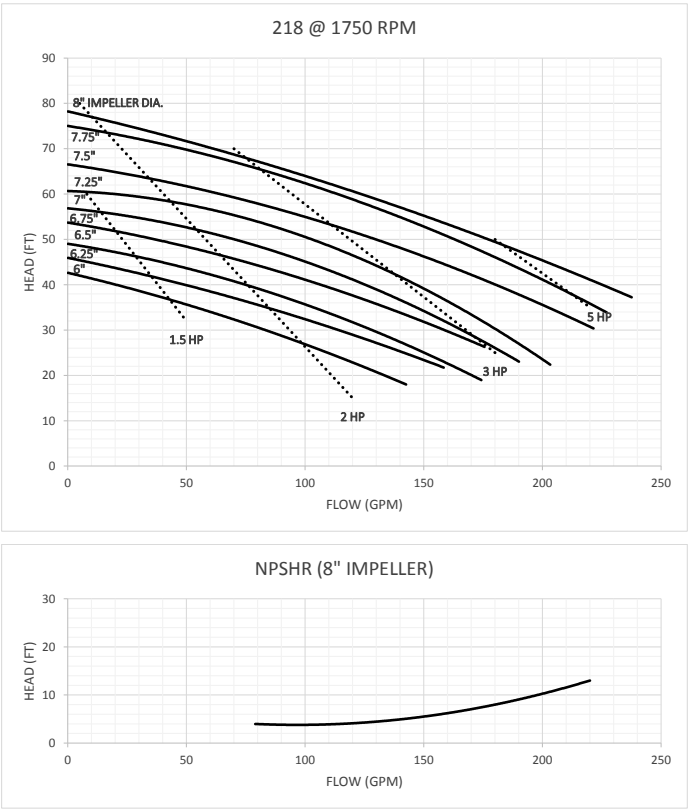
Size: 2" x 1-1/2" x 6"



BC/BP-Series Centrifugal Pump - Pump Curves

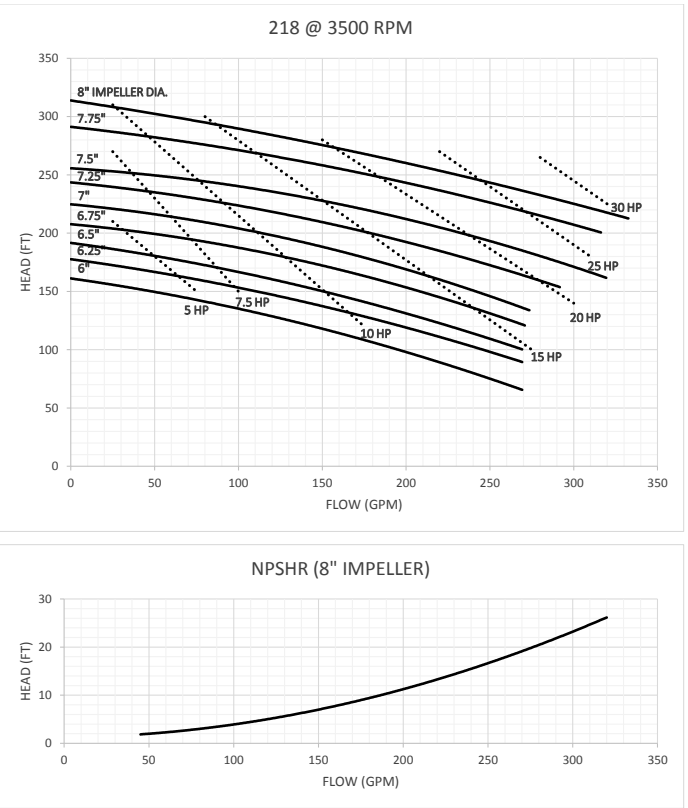
BC/BP 218

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 1750  
Size: 2" x 1" x 8"



K

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 3500  
Size: 2" x 1" x 8"



## BC/BP-Series Centrifugal Pump - Pump Curves

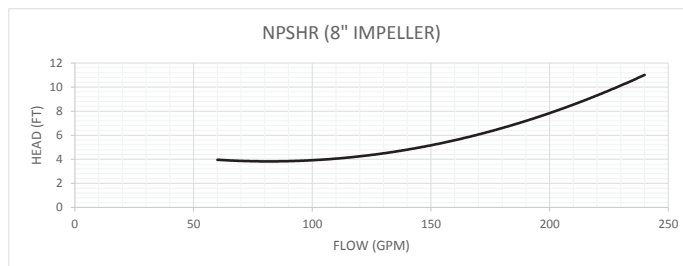
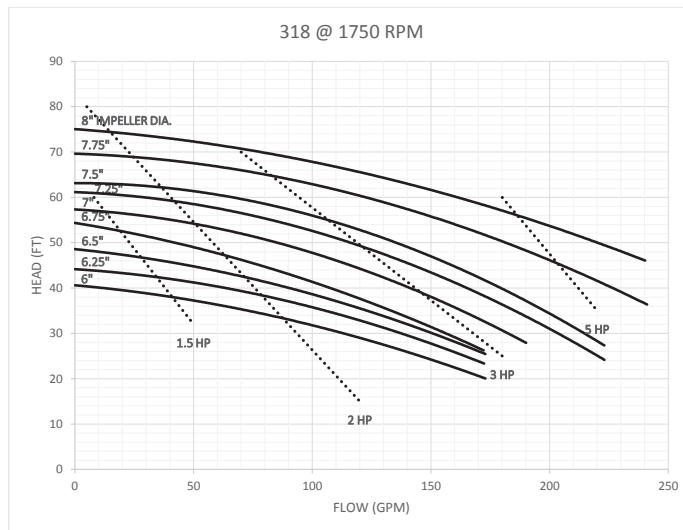
## BC/BP 318

Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 1750

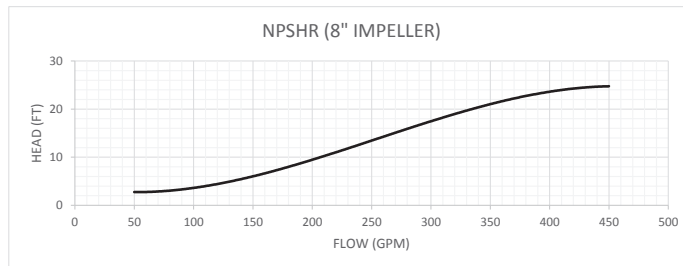
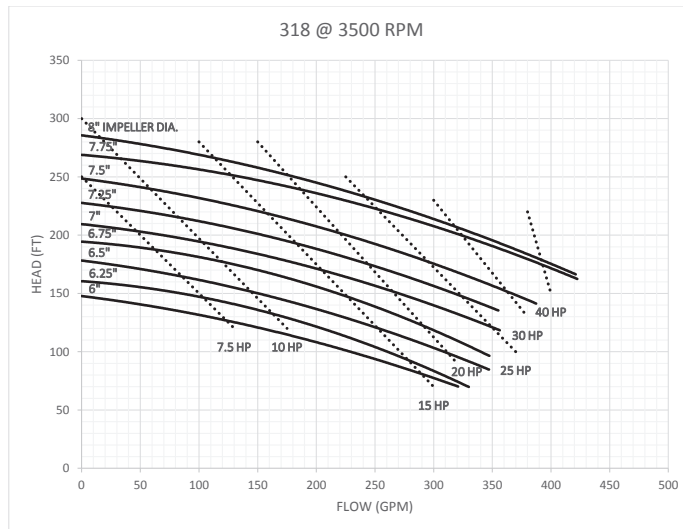
Size: 3" x 1-1/2" x 8"

Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 3500

Size: 3" x 1-1/2" x 8"



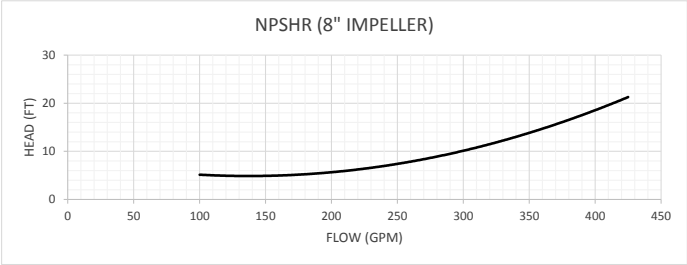
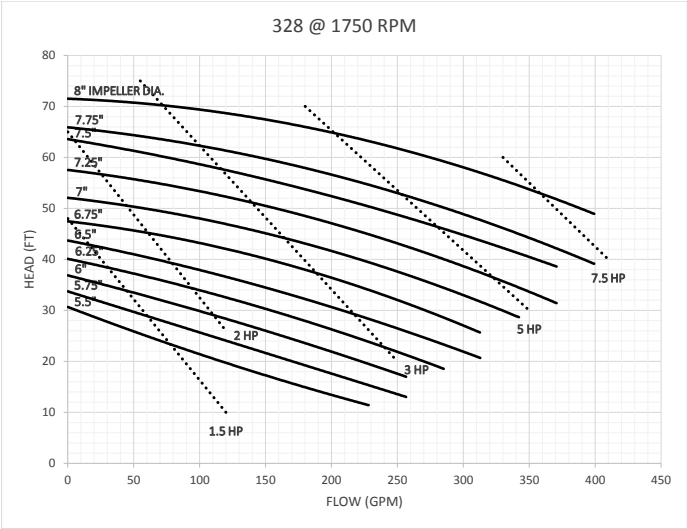
K



BC/BP-Series Centrifugal Pump - Pump Curves

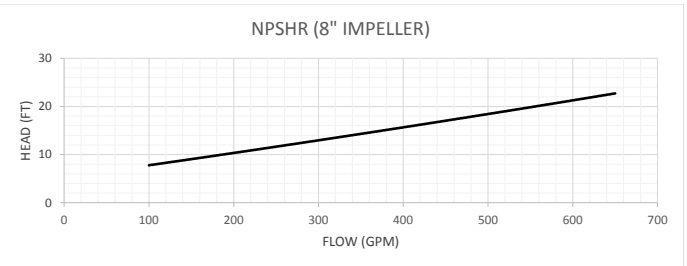
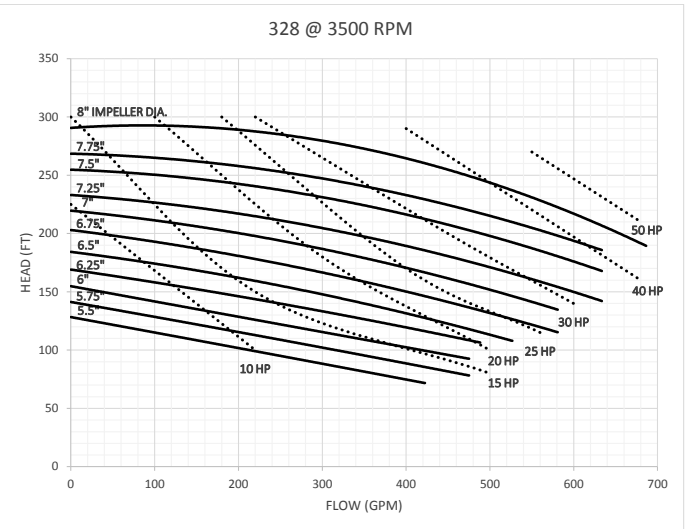
BC/BP 328

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 1750  
Size: 3" x 2" x 8"



K

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 3500  
Size: 3" x 2" x 8"



## BC/BP-Series Centrifugal Pump - Pump Curves

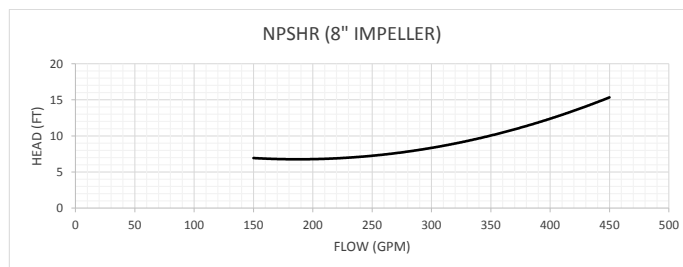
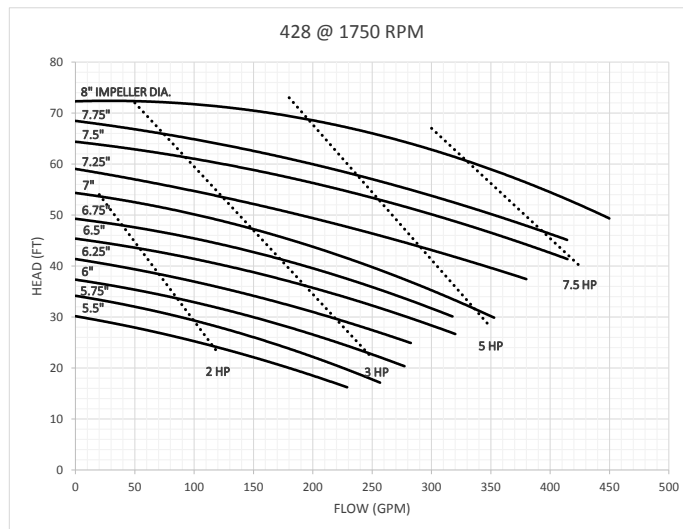
## BC/BP 428

Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 1750

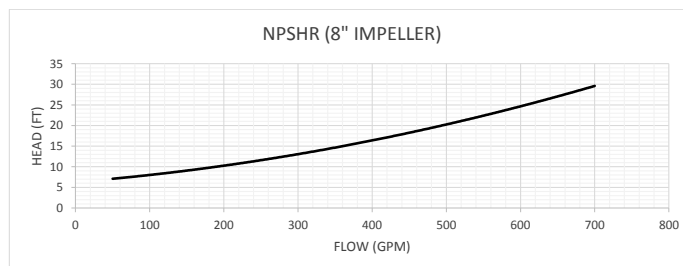
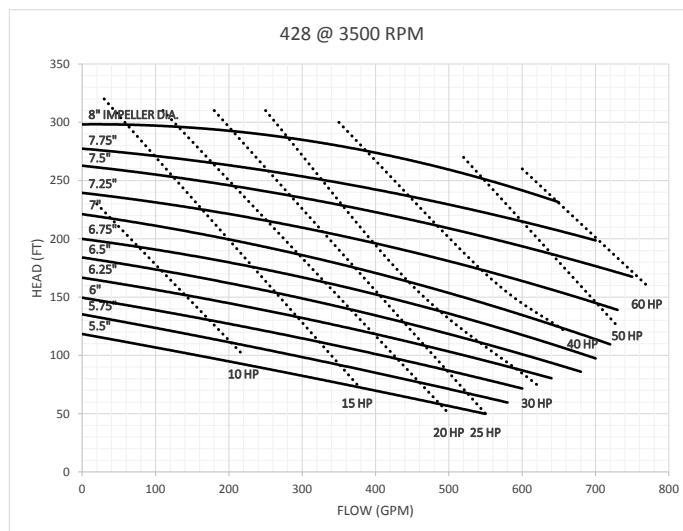
Size: 4" x 2" x 8"

Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 3500

Size: 4" x 2" x 8"

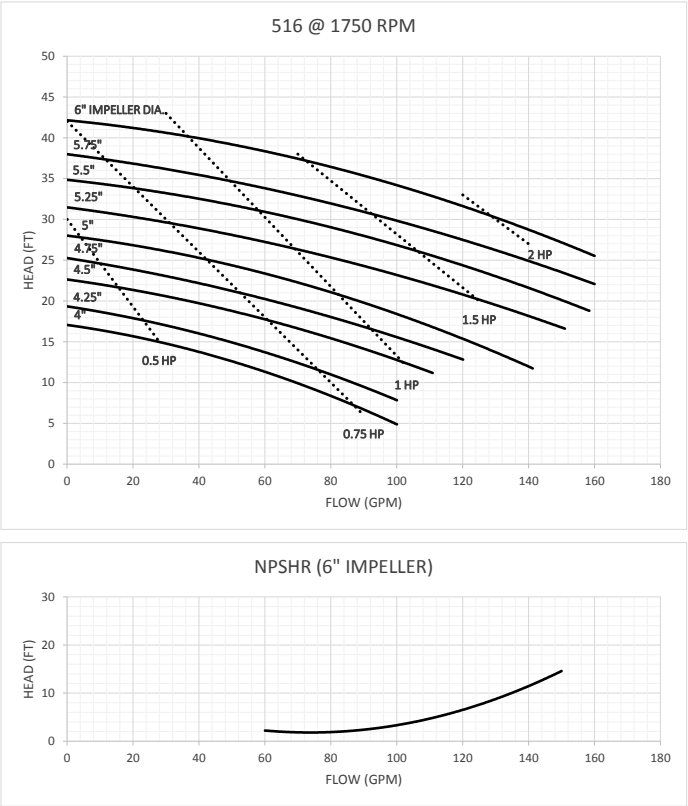


K

BC/BP-Series Centrifugal Pump - Pump Curves

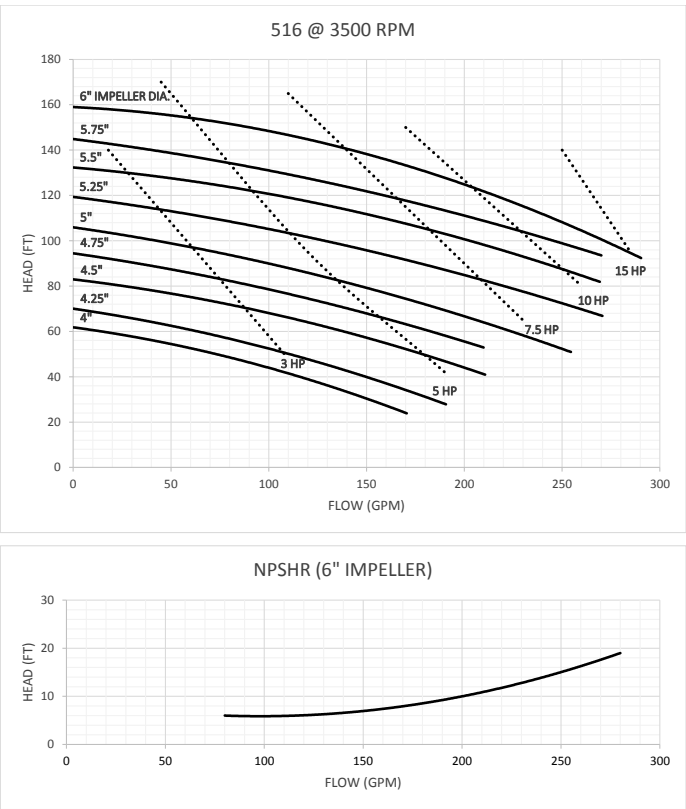
BC/BP 516

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 1750  
Size: 2-1/2" x 1-1/2" x 6"



K

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 3500  
Size: 2-1/2" x 1-1/2" x 6"



## BC/BP-Series Centrifugal Pump - Pump Curves

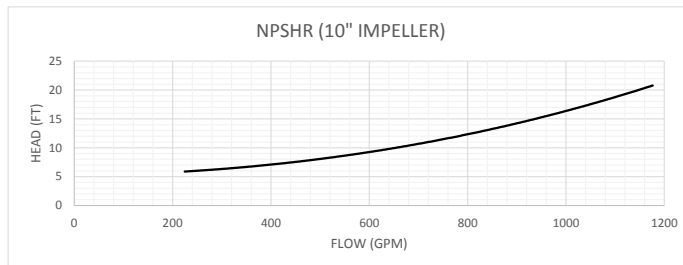
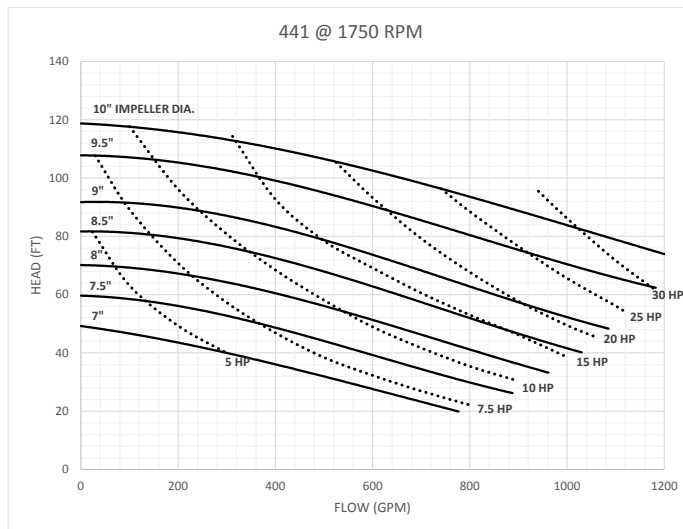
### BP 441

Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 1750

Size: 4" x 4" x 8"

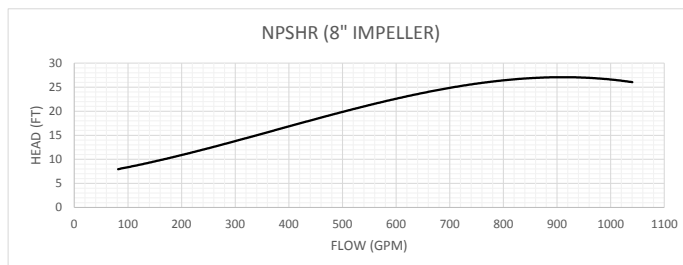
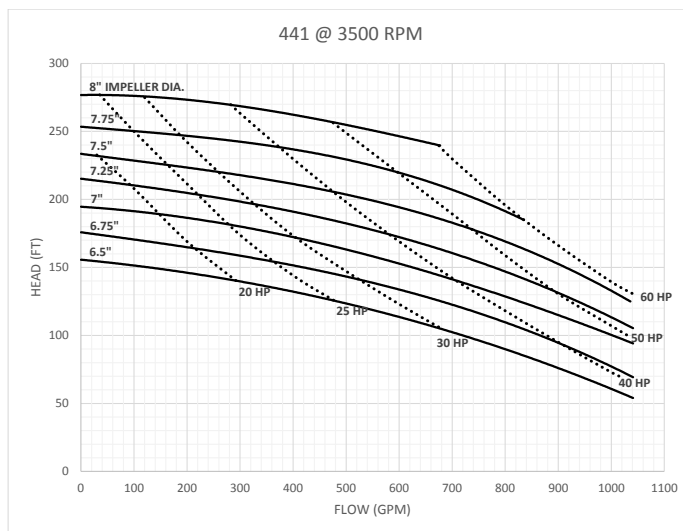


Based on H<sub>2</sub>O at 70°F (21°C)

Frequency: 60 HZ

RPM: 3500

Size: 4" x 4" x 8"

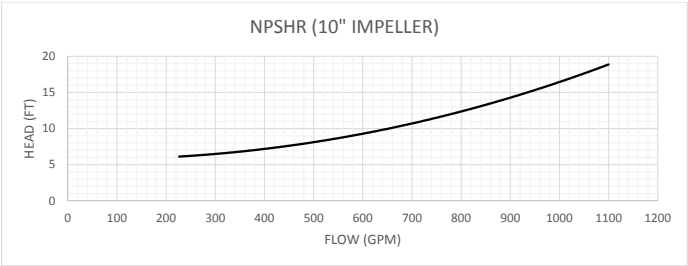
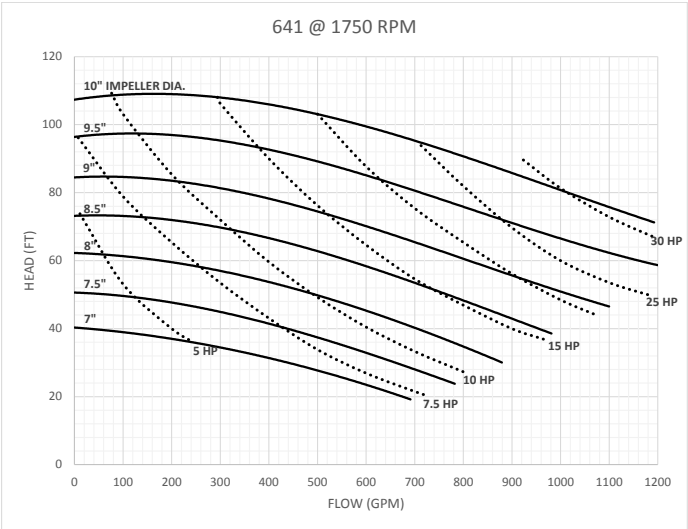


K

BC/BP-Series Centrifugal Pump - Pump Curves

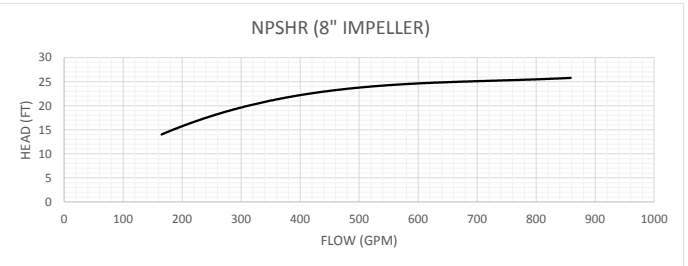
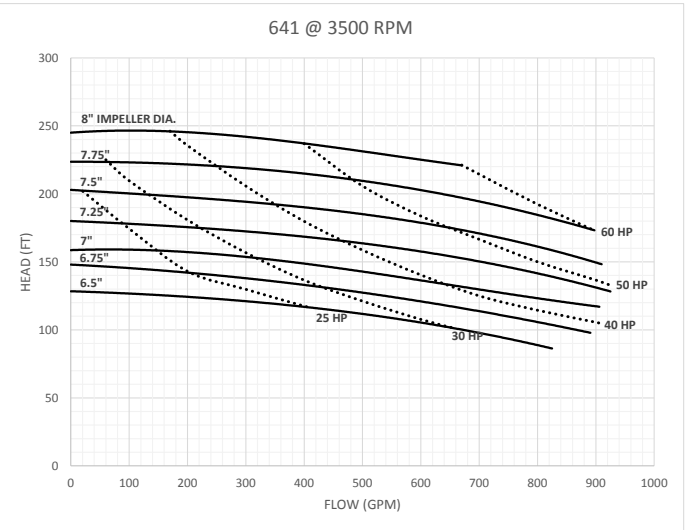
BP 641

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 1750  
Size: 6" x 4" x 10"

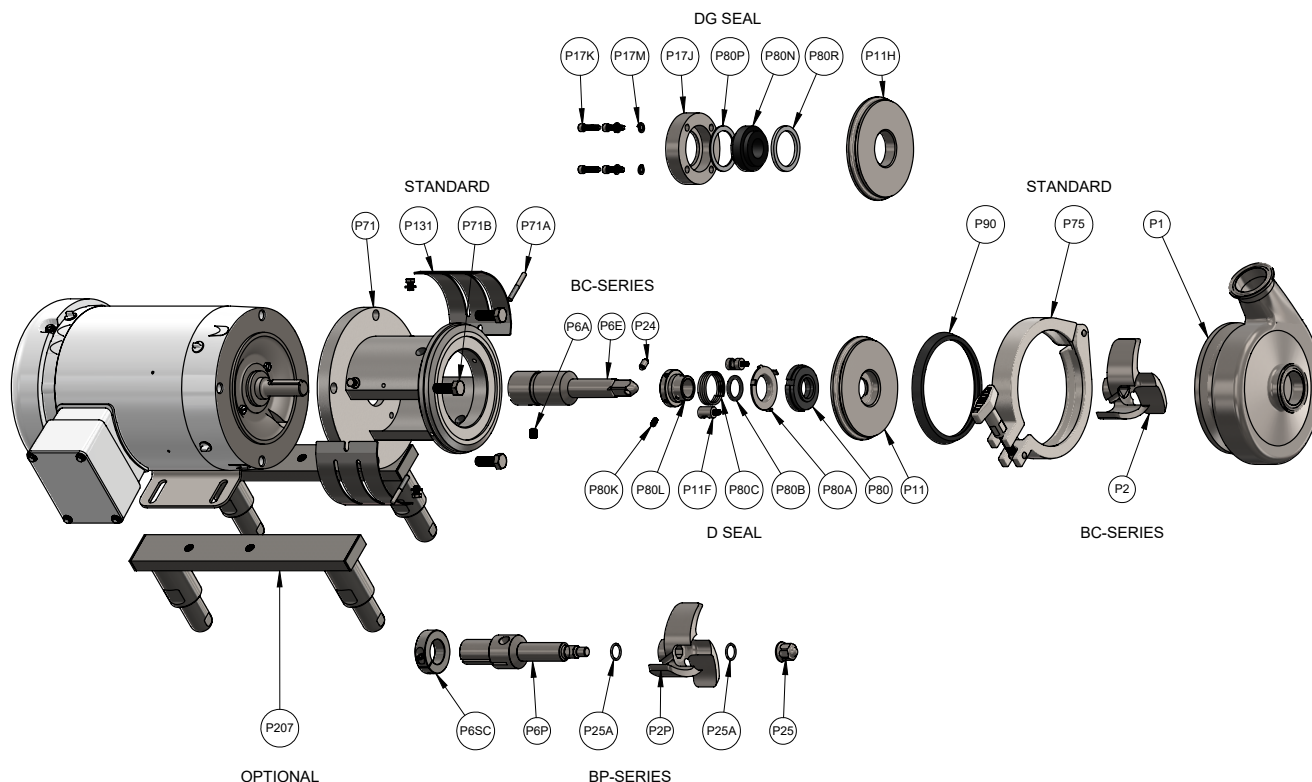


K

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 3500  
Size: 6" x 4" x 10"



## BC/BP-Series Centrifugal Pump - Bill of Materials



| Item # | Description                                  | Part #       |              |               |             |                     |
|--------|----------------------------------------------|--------------|--------------|---------------|-------------|---------------------|
|        |                                              | BC114        | BC216        | BC218         | BC328       | BP441 <sup>BP</sup> |
| P1     | casing                                       | P1-114M      | P1-216M      | P1-218M       | P1-328M     | P1-441M             |
| P1     | enlarged inlet casing                        | P1-214M      | P1-516M      | P1-318M       | P1-428M     | P1-641M             |
| P2     | impeller <sup>1, BC</sup>                    | P2-114-400   | P2-216-600   | P2-218-800    | P2-328-800  | P2-441-1000         |
| P2P    | impeller <sup>1, BP</sup>                    | P2P-114-400  | P2P-216-600  | P2P-218-800   | P2P-328-800 | P2P-441-1000        |
| P6A    | stub shaft set screw                         | P6A-114SS    |              | P6A-216BSS    |             | P6A-441SS           |
| P11    | back plate <sup>D</sup>                      | P11-114DP    | P11-216DP    | P11-218BDP    |             | -                   |
| P11F   | back plate latch                             | P11F-114BPP  |              | P11F-218BPP   |             | P11F-441PP          |
| P11H   | back plate <sup>DG</sup>                     | P11H-114DGP  | P11H-216DGP  | P11H-218BDGP  |             | P11H-441DGP         |
| P17J   | gland ring <sup>DG</sup>                     | P17J-114GR   | P17J-216GR   | P17J-218BGR   |             | P17J-441GR          |
| P17K   | gland bolt <sup>DG</sup>                     | P17K-114BG   |              | P217K-216BGB  |             | P17K-441GB          |
| P17M   | washers <sup>DG</sup>                        | P17M-114GW   |              | P17M-216BGW   |             | P17M-441GW          |
| P24    | impeller retainer <sup>BC</sup>              | P24-114R     | P24-216R     | P24-218BR     |             | -                   |
| P25    | threaded impeller nut <sup>BP</sup>          | P25-114NUT-P | P25-216NUT-P | P25-218BNUT-P |             | P25-441NUT          |
| P25A   | nitrile rubber impeller O-ring <sup>BP</sup> | P25A-114NOB  | P25A-216NOB  | P25A-218BNOB  |             | -                   |
|        | EPDM impeller O-ring <sup>BP</sup>           | P25A-114NOE  | P25A-216NOE  | P25A-218BNOE  |             | P25A-441NOE         |
|        | FKM impeller O-ring <sup>BP</sup>            | P25A-114NOV  | P25A-216NOV  | P25A-218BNOV  |             | P25A-441NOV         |
| P71A   | adapter pins                                 | P71A-114BAP  |              |               |             | -                   |
| P75    | clamp assembly                               | P75-114CA    | P75-216CA    | P75-218BCA    |             | P75-441CA           |
| P80    | carbon seal                                  | P80-114CS    | P80-216CS    | P80-218BCS    |             | P80-441CS           |
| P80    | silicon carbide seal                         | P80-114SC    | P80-216SC    | P80-218BSC    |             | P80-441SC           |
| P80A   | seal cup                                     | P80A-114CP   | P80A-216CP   | P80A-218BCP   |             | P80A-441CP          |
| P80B   | nitrile rubber seal O-ring                   | P80B-114SOB  | P80B-216SOB  | P80B-218BSOB  |             | -                   |
|        | EPDM seal O-ring                             | P80B-114SOE  | P80B-216SOE  | P80B-218BSOE  |             | P80B-441SOE         |
|        | silicone seal O-ring                         | P80B-114SOS  | P80B-216SOS  | P80B-218BSOS  |             | P80B-441SOS         |
|        | FKM seal O-ring                              | P80B-114SOV  | P80B-216SOV  | P80B-218BSOV  |             | P80B-441SOV         |

## BC/BP-Series Centrifugal Pump - Bill of Materials

| Item # | Description                         | Part #      |             |              |       |                     |
|--------|-------------------------------------|-------------|-------------|--------------|-------|---------------------|
|        |                                     | BC114       | BC216       | BC218        | BC328 | BP441 <sup>BP</sup> |
| P80C   | spring                              | P80C-114SG  | P80C-216SG  | P80C-218BSG  |       | P80C-441SG          |
| P80K   | drive collar set screw              | P80K-114DCS |             | P80K-216BDCS |       | P80K-441DCS         |
| P80L   | drive collar                        | P80L-114DC  | P80L-216DC  | P80L-218BDC  |       | P80L-441DC          |
| P80N   | silicon carbide seat <sup>DG</sup>  | P80N-114SC  | P80N-216SC  | P80N-218BSC  |       | P80N-441SC          |
|        | ceramic seat <sup>DG</sup>          | P80N-114CER | P80N-216CER | P80N-218BCER |       | -                   |
|        | tungsten carbide seat <sup>DG</sup> | P80N-114TC  | P80N-216TC  | P80N-218BTC  |       | -                   |
| P80P   | outboard gasket <sup>DG</sup>       | P80P-114OG  | P80P-216OG  | P80P-218BOG  |       | P80P-441OG          |
| P80R   | inboard gasket <sup>DG</sup>        | P80R-114IG  | P80R-216IG  | P80R-218BIG  |       | P80P-441IG          |
| P90    | nitrile rubber casing gaskets       | P90-114CGB  | P90-216CGB  | P90-218BCGB  |       | -                   |
|        | EPDM casing gaskets                 | P90-114CGE  | P90-216CGE  | P90-218BCGE  |       | P90-441CGE          |
|        | silicone casing gaskets             | P90-114CGS  | P90-216CGS  | P90-218BCGS  |       | P90-441CGS          |
|        | FKM casing gasket                   | P90-114CGV  | P90-216CGV  | P90-218BCGV  |       | P90-441CGV          |

<sup>1</sup>Part number is for maximum sized impeller.<sup>D</sup>Available for D-seal type only.<sup>DG</sup>Available for DG-seal type only.<sup>BC</sup>Available for BC-series only.<sup>BP</sup>Available for BP-series only.

## BC/BP-Series Centrifugal Pump - Bill of Materials - Variable Parts

## BC/BP 114

| Item # | Description                | Part #         |                |                |
|--------|----------------------------|----------------|----------------|----------------|
|        |                            | 56C            | 140TC          | 180TC          |
| P6E    | stub shaft <sup>BC</sup>   | P6E-114-56SH   | P6E-114-14SH   | P6E-114-18SH   |
| P6P    | stub shaft <sup>BP</sup>   | P6P-114-56SH-P | P6P-114-14SH-P | P6P-114-18SH-P |
| P6SC   | shaft collar <sup>BP</sup> | P6SC-56        | P6SC-14        | P6SC-18        |
| P71    | adapter                    | P71-114-56AN   | P71-114-56AN   | P71-114-18AN   |
| P71B   | adapter bolts              | P71B-114B-56AB | P71B-114B-56AB | P71B-114B-18AB |
| P131   | guard set                  | P131-114-56GAN | P131-114-56GAN | P131-114-18GAN |

## BC/BP 216

| Item # | Description                | Part #         |                |                |                |                |
|--------|----------------------------|----------------|----------------|----------------|----------------|----------------|
|        |                            | 56C            | 140TC          | 180TC          | 210TC          | 250TC          |
| P6E    | stub shaft <sup>BC</sup>   | P6E-216-56SH   | P6E-216-14SH   | P6E-216-18SH   | P6E-216-21SH   | P6E-216-25SH   |
| P6P    | stub shaft <sup>BP</sup>   | P6P-216-56SH-P | P6P-216-14SH-P | P6P-216-18SH-P | P6P-216-21SH-P | P6P-216-25SH-P |
| P6SC   | shaft collar <sup>BP</sup> | P6SC-56        | P6SC-14        | P6SC-18        | P6SC-21        | P6SC-25        |
| P71    | adapter                    | P71-216-56AN   | P71-216-56AN   | P71-216-18AN   | P71-216-21AN   | P71-216-25AN   |
| P71B   | adapter bolts              | P71B-114B-56AB | P71B-114B-56AB | P71B-114B-18AB | P71B-114B-18AB | P71B-114B-18AB |
| P131   | guard set                  | P131-216-56GAN | P131-216-56GAN | P131-216-18GAN | P131-216-21GAN | P131-216-25GAN |

## BC/BP 218 BC/BP 328

| Item # | Description                | Part #          |                 |                 |                 |                |
|--------|----------------------------|-----------------|-----------------|-----------------|-----------------|----------------|
|        |                            | 180TC           | 210TC           | 250TC           | 280TSC          | 320TSC         |
| P6E    | stub shaft <sup>BC</sup>   | P6E-218B-18SH   | P6E-218B-21SH   | P6E-218B-25SH   | P6E-218B-28SH   | P6E-328-32SH   |
| P6P    | stub shaft <sup>BP</sup>   | P6P-218B-18SH-P | P6P-218B-21SH-P | P6P-218B-25SH-P | P6P-218B-28SH-P | P6P-328-32SH-P |
| P6SC   | shaft collar <sup>BP</sup> | P6SC-18         | P6SC-21         | P6SC-2528S      | P6SC-2528S      | P6SC-32        |
| P71    | adapter                    | P71-218B-18AN   | P71-218B-21AN   | P71-218B-25AN   | P71-218B-28AN   | P71-328-32AN   |
| P71B   | adapter bolts              | P71B-114B-18AB  | P71B-114B-18AB  | P71B-114-18AB   | P71B-114B-18AB  | P71B-328-32AB  |
| P131   | guard set                  | P131-218B-18GAN | P131-218B-21GAN | P131-218B-25GAN | P131-218B-28GAN | P131-328-32GAN |

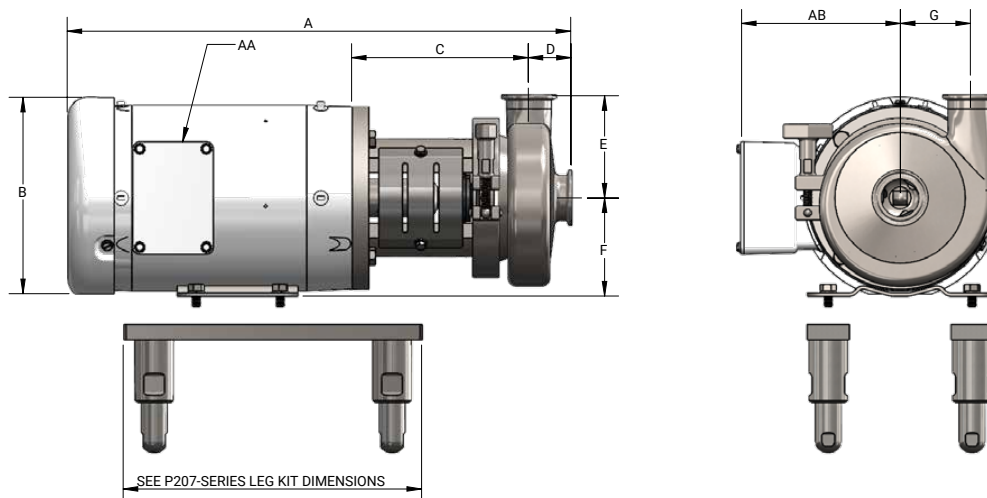
## BC/BP-Series Centrifugal Pump - Bill of Materials

## BP 441

| Item # | Description              | Part #         |                |                |                |
|--------|--------------------------|----------------|----------------|----------------|----------------|
|        |                          | 210TC          | 250TC          | 280TSC         | 320TSC         |
| P6P    | stub shaft <sup>BP</sup> | P6P-441-21SH   | P6P-441-25SH   | P6P-441-28SH   | P6P-441-32TCSH |
| P71    | adapter                  | P71-441B-21A   | P71-441-25A    | P71-441B-28A   | P71B-441B-32A  |
| P71B   | adapter bolts            | P71B-114B-18AB | P71B-114B-18AB | P71B-114B-18AB | P71B-441B-32AB |
| P131   | guard set                | P131-441-21GA  | P131-441-25GA  | P131-441-28GA  | P131-441-32GA  |

<sup>BC</sup>Available for BC-series only.<sup>BP</sup>Available for BP-series only.

## BC/BP-Series Centrifugal Pump - Dimensions



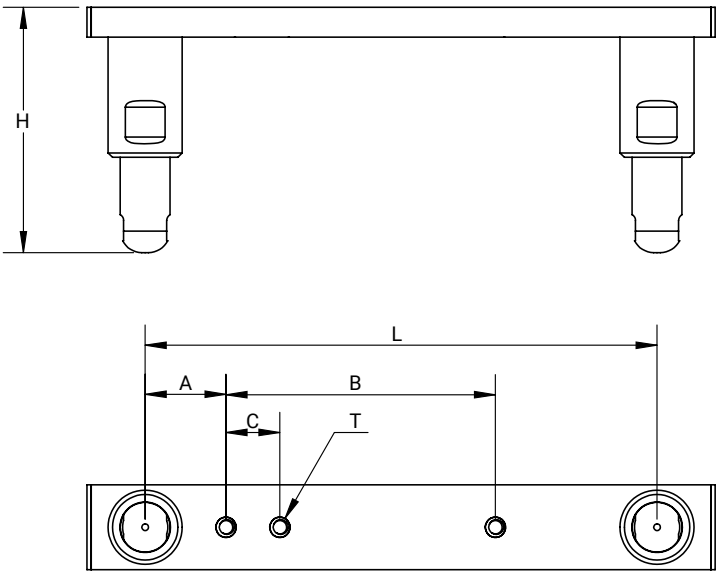
| Pump Model                                       | Frame Size | A (in)                                                             | AA (in)<br>(conduit size) | AB (in) | B (in)                    | C (in) | D (in) | E (in) | F (in) | G (in) |
|--------------------------------------------------|------------|--------------------------------------------------------------------|---------------------------|---------|---------------------------|--------|--------|--------|--------|--------|
| BC/BP 114<br>BC/BP 214                           | 56C        | contact<br>Dixon Sanitary<br>for exact<br>measurement <sup>1</sup> | 0.50                      | 5.00    | 6.63                      | 6.22   | 1.63   | 3.63   | 3.50   | 2.63   |
|                                                  | 143/145TC  |                                                                    | 0.75                      | 5.25    |                           |        |        |        | -      |        |
|                                                  | 182/183TC  |                                                                    | 0.75                      | 5.88    |                           |        |        |        | 4.50   |        |
| BC/BP 216<br>BC/BP 516                           | 56C        |                                                                    | 0.50                      | 5.00    | 6.63                      | 6.06   | 1.94   | 4.50   | 3.50   | 3.69   |
|                                                  | 143/145TC  |                                                                    | 0.75                      | 5.25    |                           |        |        |        |        |        |
|                                                  | 182/183TC  |                                                                    | 0.75                      | 5.88    |                           |        |        |        | 4.50   |        |
|                                                  | 213/215TC  |                                                                    | 1.00                      | 7.38    |                           |        |        |        | 5.25   |        |
|                                                  | 254/256TC  |                                                                    | 1.00                      | 9.63    |                           |        |        |        | 6.25   |        |
| BC/BP 218<br>BC/BP 318<br>BC/BP 328<br>BC/BP 428 | 182/183TC  |                                                                    | 0.75                      | 5.88    | 1.94<br>2.25 <sup>2</sup> | 6.94   | 1.94   | 5.50   | 4.50   | 4.75   |
|                                                  | 213/215TC  |                                                                    | 1.00                      | 7.38    |                           |        |        |        | 5.25   |        |
|                                                  | 254/256TC  |                                                                    | 1.00                      | 9.63    |                           |        |        |        | 6.25   |        |
|                                                  | 284/286TC  |                                                                    | 1.50                      | 13.13   |                           |        |        |        | 7.00   |        |
|                                                  | 324/326TC  |                                                                    | 2.00                      | 14.13   |                           |        |        |        | 8.00   |        |
| BP 441<br>BP 641                                 | 213/215TC  |                                                                    | 1.00                      | 7.38    | 10.52                     | 9.56   | 3.25   | 7.35   | 5.25   | 7.60   |
|                                                  | 254/256TC  |                                                                    | 1.00                      | 9.63    |                           |        |        |        | 6.25   |        |
|                                                  | 284/286TC  |                                                                    | 1.50                      | 13.13   |                           |        |        |        | 7.00   |        |
|                                                  | 324/326TC  |                                                                    | 2.00                      | 14.13   |                           |        |        |        | 8.00   |        |

<sup>1</sup>Dimensions dependent on motor selection.<sup>2</sup>Dimension applies to BC/BP 328 and 428 only.



BC/BP-Series Centrifugal Pump - Dimensions

Leg Kit - Optional



| Frame Size | Part #         | A (in) | B (in) | C (in) | H (in) |      | L (in) | T               |
|------------|----------------|--------|--------|--------|--------|------|--------|-----------------|
|            |                |        |        |        | min    | max  |        |                 |
| 56C        | P207-56LK-N    | 1.50   | 3.00   | -      | 4.60   | 5.00 | 10.50  | 5/16"-18<br>UNC |
|            | P207-56LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 140TC      | P207-14LK-N    |        | 5.00   | 1.00   | 4.60   | 5.00 | 11.50  |                 |
|            | P207-14LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 180TC      | P207-18LK-N    |        | 5.50   |        | 4.60   | 5.00 | 12.63  |                 |
|            | P207-18LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 210TC      | P207-21LK-N    |        | 7.00   | 1.50   | 4.60   | 5.00 | 15.88  |                 |
|            | P207-21LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 250TC      | P207-25LK-N    |        | 10.00  | 1.75   | 4.60   | 5.00 | 20.00  |                 |
|            | P207-25LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 280TSC     | P207-28LK-N    |        | 11.00  | 1.50   | 4.60   | 5.00 | 21.00  |                 |
|            | P207-28LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 320TSC     | P207-32LK-N    |        | 12.00  |        | 4.60   | 5.00 | 22.50  |                 |
|            | P207-32LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |

## BC/BP-Series Centrifugal Pump - Friction Loss Chart

| Capacity<br>in U.S.<br>GPM | O.D. Tube Size      |       |     |                         |       |     |                     |       |      |                         |       |      |                     |       |      |                     |       |      |
|----------------------------|---------------------|-------|-----|-------------------------|-------|-----|---------------------|-------|------|-------------------------|-------|------|---------------------|-------|------|---------------------|-------|------|
|                            | 1"<br>I.D. = 0.870" |       |     | 1-1/2"<br>I.D. = 1.370" |       |     | 2"<br>I.D. = 1.870" |       |      | 2-1/2"<br>I.D. = 2.370" |       |      | 3"<br>I.D. = 2.870" |       |      | 4"<br>I.D. = 3.834" |       |      |
|                            | Tube                | Elbow | Tee | Tube                    | Elbow | Tee | Tube                | Elbow | Tee  | Tube                    | Elbow | Tee  | Tube                | Elbow | Tee  | Tube                | Elbow | Tee  |
| 5                          | .035                | .025  | .25 |                         |       |     |                     |       |      |                         |       |      |                     |       |      |                     |       |      |
| 10                         | .12                 | .06   | .40 | .02                     | .01   | .15 | .005                | .015  | .10  |                         |       |      |                     |       |      |                     |       |      |
| 15                         | .25                 | .10   | .80 | .04                     | .02   | .25 | .013                | .02   | .15  |                         |       |      |                     |       |      |                     |       |      |
| 20                         | .43                 | .22   | 1.5 | .06                     | .03   | .30 | .02                 | .025  | .20  | .005                    | .02   | .10  | .003                | .02   | .06  |                     |       |      |
| 25                         | .66                 | .40   | 2.3 | .08                     | .04   | .40 | .025                | .03   | .25  | .006                    | .03   | .15  | .004                | .03   | .08  |                     |       |      |
| 30                         | .93                 | .70   | 3.3 | .105                    | .55   | .55 | .035                | .05   | .30  | .008                    | .05   | .20  | .005                | .04   | .10  |                     |       |      |
| 35                         | 1.22                | 1.25  | 5.2 | .135                    | .80   | .80 | .04                 | .06   | .40  | .011                    | .06   | .25  | .006                | .05   | .13  |                     |       |      |
| 40                         |                     |       |     | .17                     | 1.0   | 1.0 | .05                 | .08   | .50  | .015                    | .07   | .30  | .007                | .06   | .15  |                     |       |      |
| 45                         |                     |       |     | .21                     | 1.3   | 1.3 | .063                | .10   | .60  | .02                     | .09   | .35  | .008                | .065  | .18  |                     |       |      |
| 50                         |                     |       |     | .25                     | 1.6   | 1.6 | .073                | .12   | .70  | .022                    | .10   | .40  | .01                 | .07   | .20  |                     |       |      |
| 60                         |                     |       |     | .34                     | 2.2   | 2.2 | .10                 | .18   | .90  | .03                     | .12   | .45  | .015                | .08   | .25  |                     |       |      |
| 80                         |                     |       |     | .57                     | 3.7   | 3.7 | .16                 | .30   | 1.5  | .05                     | .15   | .55  | .02                 | .10   | .40  |                     |       |      |
| 100                        |                     |       |     | .85                     | 5.8   | 5.8 | .23                 | .44   | 2.3  | .075                    | .18   | .60  | .03                 | .11   | .50  | .008                | .04   | .10  |
| 120                        |                     |       |     | 1.18                    | 9.1   | 9.1 | .32                 | .64   | 3.3  | .105                    | .21   | 1.0  | .04                 | .13   | .60  | .01                 | .05   | .15  |
| 140                        |                     |       |     |                         |       |     | .42                 | .85   | 4.5  | .14                     | .23   | 1.25 | .05                 | .16   | .80  | .013                | .06   | .20  |
| 160                        |                     |       |     |                         |       |     | .54                 | 1.13  | 5.8  | .17                     | .28   | 1.6  | .07                 | .20   | 1.1  | .015                | .07   | .25  |
| 180                        |                     |       |     |                         |       |     | .67                 | 1.45  | 7.4  | .205                    | .31   | 2.0  | .08                 | .21   | 1.3  | .02                 | .08   | .30  |
| 200                        |                     |       |     |                         |       |     | .81                 | 1.82  | 9.0  | .245                    | .35   | 2.5  | .10                 | .26   | 1.6  | .025                | .09   | .40  |
| 220                        |                     |       |     |                         |       |     | .95                 | 2.22  | 11.0 | .29                     | .41   | 3.0  | .12                 | .30   | 1.9  | .028                | .10   | .50  |
| 240                        |                     |       |     |                         |       |     | 1.10                | 2.63  | 13.5 | .34                     | .48   | 3.7  | .14                 | .33   | 2.2  | .035                | .11   | .55  |
| 260                        |                     |       |     |                         |       |     |                     |       |      | .39                     | .53   | 4.5  | .165                | .39   | 2.5  | .04                 | .115  | .60  |
| 280                        |                     |       |     |                         |       |     |                     |       |      | .45                     | .61   | 5.3  | .19                 | .42   | 2.8  | .045                | .12   | .65  |
| 300                        |                     |       |     |                         |       |     |                     |       |      | .515                    | .70   | 6.2  | .22                 | .50   | 3.1  | .05                 | .13   | .70  |
| 350                        |                     |       |     |                         |       |     |                     |       |      | .68                     | 1.05  | 8.5  | .28                 | .67   | 4.1  | .07                 | .15   | .90  |
| 400                        |                     |       |     |                         |       |     |                     |       |      | .86                     | 1.55  | 11.0 | .38                 | .88   | 5.2  | .085                | .18   | 1.2  |
| 450                        |                     |       |     |                         |       |     |                     |       |      | 1.05                    | 2.25  | 13.5 | .44                 | 1.1   | 6.6  | .105                | .20   | 1.5  |
| 500                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .54                 | 1.4   | 8.0  | .13                 | .23   | 1.75 |
| 550                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .64                 | 1.7   | 9.5  | .15                 | .27   | 2.1  |
| 600                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .75                 | 2.05  | 10.2 | .175                | .30   | 2.5  |
| 650                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .87                 | 2.41  | 13.0 | .20                 | .34   | 2.8  |
| 700                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .10                 | 2.8   | 15.0 | .23                 | .40   | 3.4  |
| 750                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      |                     |       |      | .26                 | .43   | 3.8  |
| 800                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      |                     |       |      | .30                 | .50   | 4.4  |

K

## BC/BP-Series Centrifugal Pump - Viscosity Chart

N - Newtonian, T - Thixotropic, D - Dilatant

|                 | Fluid                                   | Specific Gravity | Viscosity CPS   | Viscosity Type |
|-----------------|-----------------------------------------|------------------|-----------------|----------------|
| Reference       | Water                                   | 1.0              | 1.0             | N              |
| Adhesives       | "box" adhesives                         | 1+-              | 3,000           | T              |
|                 | PVA                                     | 1.3              | 100             | T              |
|                 | rubber and solvents                     | 1.0              | 15,000          | N              |
| Bakery          | batter                                  | 1.0              | 2,000           | T              |
|                 | butter (melted)                         | 0.98             | 18 at 140°F     | N              |
|                 | egg (whole)                             | 0.5              | 60 at 50°F      | N              |
|                 | emulsifier                              | -                | 20              | T              |
|                 | frosting                                | 1.0              | 10,000          | T              |
|                 | lecithin                                | -                | 3,250 at 125°F  | T              |
|                 | 77% sweetened condensed milk            | 1.3              | 10,000 at 77°F  | N              |
|                 | yeast slurry 15%                        | 1.0              | 180             | T              |
|                 | beer                                    | 1.0              | 1.1 at 40°F     | N              |
| Beer/Wine       | brewers concentrated yeast (80% solids) | -                | 16,000 at 40°F  | T              |
|                 | wort                                    | -                | -               | -              |
|                 | wine                                    | 1.0              | -               | -              |
|                 | caramel                                 | 1.2              | 400 at 140°F    | -              |
| Confectionery   | chocolate                               | 1.1              | 17,000 at 120°F | T              |
|                 | fudge (hot)                             | 1.1              | 36,000          | T              |
|                 | toffee                                  | 1.2              | 87,000          | T              |
|                 | face cream                              | -                | 10,000          | T              |
| Cosmetics/Soaps | hair gel                                | 1.4              | 5,000           | T              |
|                 | shampoo                                 | -                | 5,000           | T              |
|                 | toothpaste                              | -                | 20,000          | T              |
|                 | hand cleaner                            | -                | 2,000           | T              |
|                 | cottage cheese                          | 1.08             | 225             | T              |
| Dairy           | cream                                   | 1.02             | 20 at 40°F      | N              |
|                 | milk                                    | 1.03             | 1.2 at 60°F     | N              |
|                 | process cheese                          | -                | 30,000 at 160°F | T              |
|                 | yogurt                                  | -                | 1,100           | T              |
| Detergents      | detergent concentrate                   | -                | 10              | N              |
| Dyes and Inks   | printers ink                            | 1 to 1.38        | 10,000          | T              |
|                 | dye                                     | 1.1              | 10              | N              |
|                 | gum                                     | -                | 5,000           | T              |
| Fats and Oils   | corn oil                                | 0.92             | 30              | N              |
|                 | lard                                    | 0.96             | 60 at 100°F     | N              |
|                 | linseed oil                             | 0.93             | 30 at 100°F     | N              |
|                 | peanut oil                              | 0.92             | 42 at 100°F     | N              |
|                 | soybean oil                             | 0.95             | 36 at 100°F     | N              |
|                 | vegetable oil                           | 0.92             | 3 at 300°F      | N              |
|                 | black bean paste                        | -                | 10,000          | T              |
| Misc. Foods     | cream style corn                        | -                | 130 at 190°F    | T              |
|                 | ketchup                                 | 1.11             | 560 at 145°F    | T              |
|                 | pablum                                  | -                | 4,500           | T              |
|                 | pear pulp                               | -                | 4,000 at 160°F  | T              |
|                 | mashed potato                           | 1.0              | 20,000          | T              |
|                 | potato skins and caustic                | -                | 20,000 at 100°F | T              |
|                 | prune juice                             | 1.0              | 60 at 120°F     | T              |
|                 | orange juice concentrate                | 1.1              | 5,000 at 38°F   | T              |
|                 | tapioca pudding                         | 0.7              | 1,000 at 235°F  | T              |
|                 | mayonnaise                              | 1.0              | 5,000 at 75°F   | T              |
|                 | 33% tomato paste                        | 1.14             | 7,000           | T              |
|                 | honey                                   | 1.5              | 1,500 at 100°F  | -              |

## BC/BP-Series Centrifugal Pump - Viscosity Chart

N - Newtonian, T - Thixotropic, D - Dilatant

|                                  | Fluid                     | Specific Gravity | Viscosity CPS            | Viscosity Type |
|----------------------------------|---------------------------|------------------|--------------------------|----------------|
| Meat Products                    | melted animal fat         | 0.9              | 43 at 100°F              | N              |
|                                  | ground beef fats          | 0.9              | 11,000 at 60°F           | T              |
|                                  | meat emulsion             | 1.0              | 22,000 at 40°F           | T              |
|                                  | pet food                  | 1.0              | 11,000 at 40°F           | T              |
|                                  | pork fat slurry           | 1.0              | 650 at 40°F              | T              |
| Misc. Chemicals                  | glycols                   | 1.1              | 35 at range              | -              |
| Paint                            | metallic auto paints      | -                | 220                      | T              |
|                                  | solvents                  | 0.8 to 0.9       | 0.5 to 10                | N              |
|                                  | titanium dioxide slurry   | -                | 10,000                   | T              |
|                                  | varnish                   | 1.06             | 140 at 100°F             | -              |
|                                  | turpentine                | 0.86             | 2 at 60°F                | -              |
| Paper and Textile                | black liquor tar          | -                | 2,000 at 300°F           | -              |
|                                  | paper coating 35%         | -                | 400                      | -              |
|                                  | sulfide 6%                | -                | 1,600                    | -              |
|                                  | black liquor              | 1.3              | 1,100 at 122°F           | -              |
|                                  | black liquor soap         | -                | 7,000 at 122°F           | -              |
| Petroleum and Petroleum Products | asphalt (unblended)       | 1.3              | 500 to 2,500             | -              |
|                                  | gasoline                  | 0.7              | 0.8 at 60°F              | N              |
|                                  | kerosene                  | 0.8              | 3 at 68°F                | N              |
|                                  | fuel oil #6               | 0.9              | 660 at 122°F             | N              |
|                                  | auto lube oil SAE 40      | 0.9              | 200 at 100°F             | N              |
|                                  | auto lube oil SAE 90      | 0.9              | 320 at 100°F             | N              |
|                                  | propane                   | 0.46             | 0.2 at 100°F             | N              |
|                                  | tars                      | 1.2              | wide range               | -              |
| Pharmaceuticals                  | castor oil                | 0.96             | 350                      | N              |
|                                  | cough syrup               | 1.0              | 190                      | N              |
|                                  | "stomach" remedy slurries | -                | 1,500                    | T              |
|                                  | pill pastes               | -                | 5,000 +-                 | T              |
| Plastic Resins <sup>1</sup>      | butadiene                 | 0.94             | 0.17 at 40°F             | -              |
|                                  | polyester resin (typ)     | 1.4              | 3,000                    | T              |
|                                  | PVA resin (typ)           | 1.3              | 65,000                   | -              |
| Starches and Gums                | corn starch Sol 22°B      | 1.18             | 32                       | T              |
|                                  | corn starch Sol 25°B      | 1.21             | 300                      | T              |
| Sugars, Syrups, Molasses         | corn syrup 41 Be          | 1.39             | 15,000 at 60°F           | N              |
|                                  | corn syrup 45 Be          | 1.45             | 12,000 at 130°F          | N              |
|                                  | glucose                   | 1.42             | 10,000 at 100°F          | -              |
|                                  | molasses A                | 1.42             | 280 to 5,000 at 100°F    | -              |
|                                  | molasses B                | 1.43 to 1.48     | 1,400 to 13,000 at 100°F | -              |
|                                  | molasses C                | 1.46 to 1.49     | 2,600 to 5,000 at 100°F  | -              |
|                                  | sugar syrups              | -                | -                        | -              |
|                                  | 60 Brix                   | 1.29             | 75 at 60°F               | N              |
|                                  | 68 Brix                   | 1.34             | 360 at 60°F              | N              |
| Water and Waste Treatment        | 76 Brix                   | 1.39             | 4,000 at 60°F            | N              |
|                                  | clarified sewage sludge   | 1.1              | 2,000 range              | -              |

<sup>1</sup>Wide variety of plastics can be pumped, viscosity varies greatly.

## BC/BP-Series Centrifugal Pump - Repair Kits

## Repair Kit 1

| Series | Model # | Elastomer      |             |             |             | Items Included                                        |
|--------|---------|----------------|-------------|-------------|-------------|-------------------------------------------------------|
|        |         | Nitrile Rubber | EPDM        | Silicone    | FKM         |                                                       |
| BC     | 114     | PRK1-114B      | PRK1-114E   | PRK1-114S   | PRK1-114V   | (1) casing gasket (P90)                               |
|        | 216     | PRK1-216B      | PRK1-216E   | PRK1-216S   | PRK1-216V   | (1) carbon seal (P80)                                 |
|        | 218/328 | PRK1-218BB     | PRK1-218BE  | PRK1-218BS  | PRK1-218BV  | (1) seal O-ring (P80B)<br>(1) impeller retainer (P24) |
| BP     | 114     | PRK1-114BP     | PRK1-114EP  | PRK1-114SP  | PRK1-114VP  | (1) casing gasket (P90)                               |
|        | 216     | PRK1-216BP     | PRK1-216EP  | PRK1-216SP  | PRK1-216VP  | (1) carbon seal (P80)                                 |
|        | 218/328 | PRK1-218BBP    | PRK1-218BEP | PRK1-218BSP | PRK1-218BVP | (1) seal O-ring (P80B)                                |
|        | 441     | PRK1-441B      | PRK1-441E   | -           | PRK1-441V   | (2) impeller O-rings (P25A)                           |

## Repair Kit 2

| Series | Model # | Elastomer      |            |            |            | Items Included                                                                |
|--------|---------|----------------|------------|------------|------------|-------------------------------------------------------------------------------|
|        |         | Nitrile Rubber | EPDM       | Silicone   | FKM        |                                                                               |
| BC/BP  | 114     | PRK2-114B      | PRK2-114E  | PRK2-114S  | PRK2-114V  | (3) casing gaskets (P90)<br>(3) seal O-rings (P80B)<br>(3) carbon seals (P90) |
|        | 216     | PRK2-216B      | PRK2-216E  | PRK2-216S  | PRK2-216V  |                                                                               |
|        | 218/328 | PRK2-218BB     | PRK2-218BE | PRK2-218BS | PRK2-218BV |                                                                               |
|        | 441     | PRK2-441B      | PRK2-441E  | -          | PRK2-441V  |                                                                               |

## Repair Kit 3

| Series | Model # | Elastomer      |            |            |            | Items Included                                                                              |
|--------|---------|----------------|------------|------------|------------|---------------------------------------------------------------------------------------------|
|        |         | Nitrile Rubber | EPDM       | Silicone   | FKM        |                                                                                             |
| BC/BP  | 114     | PRK3-114B      | PRK3-114E  | PRK3-114S  | PRK3-114V  | (1) carbon seal (P80)<br>(1) seal cup (P80A)<br>(1) seal O-ring (P80B)<br>(1) spring (P80C) |
|        | 216     | PRK3-216B      | PRK3-216E  | PRK3-216S  | PRK3-216V  |                                                                                             |
|        | 218/328 | PRK3-218BB     | PRK3-218BE | PRK3-218BS | PRK3-218BV |                                                                                             |
|        | 441     | PRK3-441B      | PRK3-441E  | -          | PRK3-441V  |                                                                                             |

## Repair Kit 4

| Series | Model # | Elastomer      |             |             |             | Items Included                                                                                    |
|--------|---------|----------------|-------------|-------------|-------------|---------------------------------------------------------------------------------------------------|
|        |         | Nitrile Rubber | EPDM        | Silicone    | FKM         |                                                                                                   |
| BC     | 114     | PRK4-114B      | PRK4-114E   | PRK4-114S   | PRK4-114V   | (1) casing gasket (P90)                                                                           |
|        | 216     | PRK4-216B      | PRK4-216E   | PRK4-216S   | PRK4-216V   | (1) carbon seal (P80)                                                                             |
|        | 218/328 | PRK4-218BB     | PRK4-218BE  | PRK4-218BS  | PRK4-218BV  | (1) seal cup (P80A)<br>(1) seal O-ring (P80B)<br>(1) spring (P80C)<br>(1) impeller retainer (P24) |
| BP     | 114     | PRK4-114BP     | PRK4-114EP  | PRK4-114SP  | PRK4-114VP  | (1) casing gasket (P90)                                                                           |
|        | 216     | PRK4-216BP     | PRK4-216EP  | PRK4-216SP  | PRK4-216VP  | (1) carbon seal (P80)                                                                             |
|        | 218/328 | PRK4-218BBP    | PRK4-218BEP | PRK4-218BSP | PRK4-218BVP | (1) seal cup (P80A)<br>(1) seal O-ring (P80B)                                                     |
|        | 441     | PRK4-441B      | PRK4-441E   | -           | PRK4-441V   | (1) spring (P80C)<br>(2) impeller O-rings (P25A)                                                  |

## BC/BP-Series Centrifugal Pump - Repair Kits

## DG Repair Kit

| Series | Model # | Elastomer      | Seal Seat Material |                 |                  | Items Included                                                                                                                                                                                                                           |
|--------|---------|----------------|--------------------|-----------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |         |                | Ceramic            | Silicon Carbide | Tungsten Carbide |                                                                                                                                                                                                                                          |
| BC     | 114     | nitrile rubber | PRKDG-114BCER      | PRKDG-114BSC    | PRKDG-114BTC     | (1) seal seat (P80N)<br>(1) carbon seal (P80)<br>(1) seal cup (P80A)<br>(1) seal O-ring (P80B)<br>(1) spring (P80C)<br>(1) outboard gasket (P80P)<br>(1) inboard gasket (P80R)<br>(1) casing gasket (P90)<br>(1) impeller retainer (P24) |
|        |         | EPDM           | PRKDG-114ECER      | PRKDG-114ESC    | PRKDG-114ETC     |                                                                                                                                                                                                                                          |
|        |         | silicone       | PRKDG-114SCER      | PRKDG-114SSC    | PRKDG-114STC     |                                                                                                                                                                                                                                          |
|        |         | FKM            | PRKDG-114VCER      | PRKDG-114VSC    | PRKDG-114VTC     |                                                                                                                                                                                                                                          |
|        | 216     | nitrile rubber | PRKDG-216BCER      | PRKDG-216BSC    | PRKDG-216BTC     |                                                                                                                                                                                                                                          |
|        |         | EPDM           | PRKDG-216ECER      | PRKDG-216ESC    | PRKDG-216ETC     |                                                                                                                                                                                                                                          |
|        |         | silicone       | PRKDG-216SCER      | PRKDG-216SSC    | PRKDG-216STC     |                                                                                                                                                                                                                                          |
|        |         | FKM            | PRKDG-216VCER      | PRKDG-216VSC    | PRKDG-216VTC     |                                                                                                                                                                                                                                          |
|        | 218/328 | nitrile rubber | PRKDG-218BBCER     | PRKDG-218BBSC   | PRKDG-218BBTC    |                                                                                                                                                                                                                                          |
|        |         | EPDM           | PRKDG-218BECER     | PRKDG-218BESC   | PRKDG-218BETC    |                                                                                                                                                                                                                                          |
|        |         | silicone       | PRKDG-218BSCER     | PRKDG-218BSSC   | PRKDG-218BSTC    |                                                                                                                                                                                                                                          |
|        |         | FKM            | PRKDG-218BVCER     | PRKDG-218BVSC   | PRKDG-218BVTCT   |                                                                                                                                                                                                                                          |
| BP     | 114     | nitrile rubber | PRKDG-114BCERP     | PRKDG-114BSCP   | PRKDG-114BTCP    | (1) seal seat (P80N)<br>(1) carbon seal (P80)<br>(1) seal cup (P80A)<br>(1) seal O-ring (P80B)<br>(1) spring (P80C)<br>(1) outboard gasket (P80P)<br>(1) inboard gasket (P80R)<br>(1) casing gasket (P90)<br>(2) impeller O-rings (P25A) |
|        |         | EPDM           | PRKDG-114ECERP     | PRKDG-114ESCP   | PRKDG-114ETCP    |                                                                                                                                                                                                                                          |
|        |         | silicone       | PRKDG-114SCERP     | PRKDG-114SSCP   | PRKDG-114STCP    |                                                                                                                                                                                                                                          |
|        |         | FKM            | PRKDG-114VCERP     | PRKDG-114VSCP   | PRKDG-114VTCP    |                                                                                                                                                                                                                                          |
|        | 216     | nitrile rubber | PRKDG-216BCERP     | PRKDG-216BSCP   | PRKDG-216BTCP    |                                                                                                                                                                                                                                          |
|        |         | EPDM           | PRKDG-216ECERP     | PRKDG-216ESCP   | PRKDG-216ETCP    |                                                                                                                                                                                                                                          |
|        |         | silicone       | PRKDG-216SCERP     | PRKDG-216SSCP   | PRKDG-216STCP    |                                                                                                                                                                                                                                          |
|        |         | FKM            | PRKDG-216VCERP     | PRKDG-216VSCP   | PRKDG-216VTCP    |                                                                                                                                                                                                                                          |
|        | 218/328 | nitrile rubber | PRKDG-218BBCERP    | PRKDG-218BBSCP  | PRKDG-218BBTCP   |                                                                                                                                                                                                                                          |
|        |         | EPDM           | PRKDG-218BECERP    | PRKDG-218BESCP  | PRKDG-218BETCP   |                                                                                                                                                                                                                                          |
|        |         | silicone       | PRKDG-218BSCERP    | PRKDG-218BSSCP  | PRKDG-218BSTCP   |                                                                                                                                                                                                                                          |
|        |         | FKM            | PRKDG-218BVCERP    | PRKDG-218BVSCP  | PRKDG-218BVTCP   |                                                                                                                                                                                                                                          |
|        | 441     | nitrile rubber | PRKDG-441BCER      | PRKDG-441BSC    | PRKDG-441BTC     |                                                                                                                                                                                                                                          |
|        |         | EPDM           | PRKDG-441ECER      | PRKDG-441ESC    | PRKDG-441ETC     |                                                                                                                                                                                                                                          |
|        |         | FKM            | PRKDG-441VCER      | PRKDG-441VSC    | PRKDG-441VTC     |                                                                                                                                                                                                                                          |

## DG Seal Conversion Kit

| Series | Model # | Seal Seat Material |                 |                  | Items Included                                                                                                                                                |
|--------|---------|--------------------|-----------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |         | Ceramic            | Silicon Carbide | Tungsten Carbide |                                                                                                                                                               |
| BC/BP  | 114     | PCK-114DGCER       | PCK-114DGSC     | PCK-114DGTCT     | (1) DG backplate (P11H)<br>(1) gland ring (P17J)<br>(4) gland bolts (P17K)<br>(1) seal seat (P80N)<br>(1) outboard gasket (P80P)<br>(1) inboard gasket (P80R) |
|        | 216     | PCK-216DGCER       | PCK-216DGSC     | PCK-216DGTCT     |                                                                                                                                                               |
|        | 218/328 | PCK-218BDGCER      | PCK-218BDGSC    | PCK-218BDGTCT    |                                                                                                                                                               |

## ExD-Series Centrifugal Pump



High efficiency semi-open impeller designed for conveying low viscosity fluids in a broad range of applications like dairy, food, beverage, winery, and brewing markets.

**Certifications**

- 3A approved
- Elastomers meet FDA 21CFR 177.2600 and 3A 18-03 Class I

**Size**

- 1" - 2-1/2" outlet x 1" - 4" inlet

**Features**

- Seal options
  - Externally balanced seal with clamped in seat
  - Accommodates BC/BP-series DG single mechanical stationary and rotary seals
- Seal design
  - Robust single mechanical seal design with multiple material options
- Casing, front cover, and impeller machined from heavy duty forgings and precision castings
- Set and forget by simply setting the U.S. patent pending shaft sleeve with no gapping of the impeller required, even after a seal change
- Unique adapter slots make pump discharge easily adjustable from 90° to 180° without casing or front cover disassembly
- Wet end mounts to a standard NEMA C-face frame motor

**Materials**

- Product contact components: AISI 316L stainless steel, FKM, silicone, EPDM, PTFE
- Non-product contact components: AISI 304 stainless steel
- Product contact seals: 316L stainless steel, carbon, silicon carbide, tungsten carbide, and ceramic

**K****Specifications**

- Standard connection: clamp
- Minimum operating temperature: **32°F (0°C)**
- Maximum operating temperature: **212°F (100°)**
- Viscosity range: 1 - 500 cP
- Surface Finish
  - Product contact metal components: ≤ 32 Ra
  - Non-product contact metal components: ≤ 63 Ra
- Seal type: single mechanical
- Performance characteristics
  - Nominal capacity: up to **500 GPM**
  - Nominal speed: up to 3500 RPM - 60 Hz
- Motors and mounting
  - Motor frame size: NEMA C-face
  - Speeds: 1750 and 3450 RPM
  - Enclosure: TENV or TEFC, stainless steel, or epoxy white washdown
- Cleaning method
  - CIP: clean-in-place

## ExD-Series Centrifugal Pump - Part Number Key

| ExD-Series Centrifugal Pump<br>Part Number Key<br>Example: EX100ACB1AA_A01 |      | Series | Model | Impeller<br>Key | Inlet/Outlet<br>Connection | Elastomer | Seal<br>Type | Frame<br>Size | Options | Motor<br>Type | Electrical | Motor<br>Power<br>(HP<br>RPM) |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------|------|--------|-------|-----------------|----------------------------|-----------|--------------|---------------|---------|---------------|------------|-------------------------------|--|--|--|--|--|--|--|
|                                                                            |      | EX     | 100   | A               | C                          | B         | 1            | A             | A       | -             | A          | 01                            |  |  |  |  |  |  |  |
| Series                                                                     | Code | ←      | ←     |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| ExD                                                                        | EX   |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Model                                                                      | Code |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 1" x 1"                                                                    | 100  |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 1-1/2" x 1"                                                                | 110  |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 2" x 1-1/2"                                                                | 120  |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 2-1/2" x 1-1/2"                                                            | 130  |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 2-1/2" x 2"                                                                | 200  |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 3" x 2"                                                                    | 210  |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 3" x 2-1/2"                                                                | 220  |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 4" x 2-1/2"                                                                | 230  |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Impeller Key                                                               | Code | ←      |       | ←               |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| -                                                                          | -    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Inlet/Outlet Connection                                                    | Code |        |       |                 | ←                          |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Clamp x clamp                                                              | C    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Weld x weld                                                                | B    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Elastomer                                                                  | Code |        |       |                 | ←                          |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Nitrile rubber                                                             | B    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| EPDM/EPDM                                                                  | E    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Silicone/EPDM                                                              | S    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| FKM                                                                        | V    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Seal Type                                                                  | Code |        |       |                 | ←                          |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Single mechanical SC/C                                                     | 1    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Single mechanical TC/TC                                                    | 2    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Single mechanical CER/C                                                    | 3    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Single mechanical SC/SC                                                    | 4    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Frame Size                                                                 | Code |        |       |                 | ←                          |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 56C                                                                        | A    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 143/145TC                                                                  | B    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 182/184TC                                                                  | C    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 213/215TC                                                                  | D    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 254/256TC                                                                  | E    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Options*                                                                   | Code |        |       |                 | ←                          |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Drain A                                                                    | A    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Drain D                                                                    | D    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Drain J                                                                    | J    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Drain K                                                                    | K    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| None                                                                       | N    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Motor Type                                                                 | Code |        |       |                 | ←                          |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Contact Dixon Sanitary for motor options at 800.789.1718.                  |      |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| Electrical                                                                 | Code |        |       |                 | ←                          |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 1Ph/60 Hz 115/230V                                                         | A    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 3Ph/60 Hz 208-230/460V                                                     | B    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 3Ph/60 Hz/575V                                                             | C    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 3Ph/50 Hz/190/380V                                                         | D    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 3Ph/50 Hz/380/460V                                                         | E    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 3Ph/50 Hz/220/380/440V                                                     | F    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |
| 3Ph/50 Hz 220/380/415V                                                     | G    |        |       |                 |                            |           |              |               |         |               |            |                               |  |  |  |  |  |  |  |

| Model # | A   | B   | C   | D   | E   | F   | G   | H   | I   |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 100/110 | 4.0 | 3.8 | 3.6 | 3.4 | 3.2 | 3.0 | 2.8 | -   | -   |
| 200/210 | 7.0 | 6.6 | 6.2 | 5.8 | 5.4 | 5.2 | 4.8 | -   | -   |
| 120/130 | 6.0 | 5.8 | 5.6 | 5.4 | 5.2 | 5.0 | 4.8 | 4.6 | 4.4 |
| 220/230 | 7.3 | 6.9 | 6.5 | 6.0 | 5.6 | 5.2 | 4.8 | -   | -   |

\*Drain options can be found on page 415.



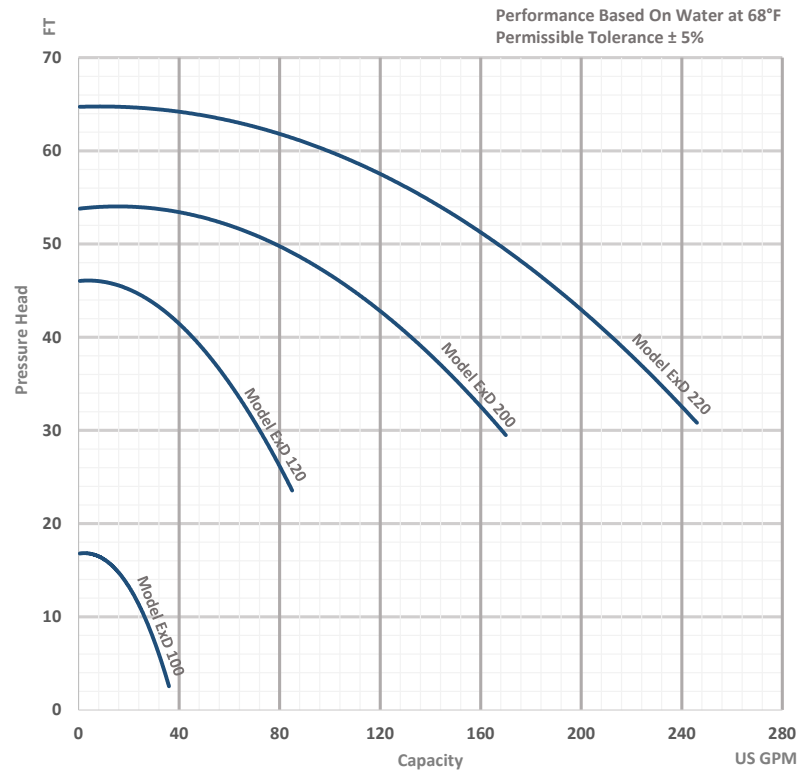
ExD-Series Centrifugal Pump - Part Number Key

| ExD-Series Centrifugal Pump<br>Part Number Key<br>Example: EX100ACB1AA_A01 |      | Series | Model | Impeller<br>Key | Inlet/Outlet<br>Connection | Elastomer | Seal<br>Type | Frame<br>Size | Options | Motor<br>Type | Electrical | Motor<br>Power<br>(HP<br>RPM) |
|----------------------------------------------------------------------------|------|--------|-------|-----------------|----------------------------|-----------|--------------|---------------|---------|---------------|------------|-------------------------------|
|                                                                            |      | EX     | 100   | A               | C                          | B         | 1            | A             | A       | -             | A          | 01                            |
| Motor Power (HP RPM)                                                       | Code |        |       |                 |                            |           |              |               |         |               |            |                               |
| 1/3 1750                                                                   | 01   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 1/2 1750                                                                   | 02   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 3/4 1750                                                                   | 03   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 1 1750                                                                     | 04   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 1-1/2 1750                                                                 | 05   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 2 1750                                                                     | 06   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 3 1750                                                                     | 07   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 5 1750                                                                     | 08   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 7-1/2 1750                                                                 | 09   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 10 1750                                                                    | 10   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 15 1750                                                                    | 11   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 20 1750                                                                    | 12   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 25 1750                                                                    | 13   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 30 1750                                                                    | 14   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 40 1750                                                                    | 15   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 50 1750                                                                    | 16   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 60 1750                                                                    | 17   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 1/3 3500                                                                   | 18   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 1/2 3500                                                                   | 19   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 3/4 3500                                                                   | 20   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 1 3500                                                                     | 21   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 1-1/2 3500                                                                 | 22   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 2 3500                                                                     | 23   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 3 3500                                                                     | 24   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 5 3500                                                                     | 25   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 7-1/2 3500                                                                 | 26   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 10 3500                                                                    | 27   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 15 3500                                                                    | 28   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 20 3500                                                                    | 29   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 25 3500                                                                    | 30   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 30 3500                                                                    | 31   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 40 3500                                                                    | 32   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 50 3500                                                                    | 33   |        |       |                 |                            |           |              |               |         |               |            |                               |
| 60 3500                                                                    | 34   |        |       |                 |                            |           |              |               |         |               |            |                               |

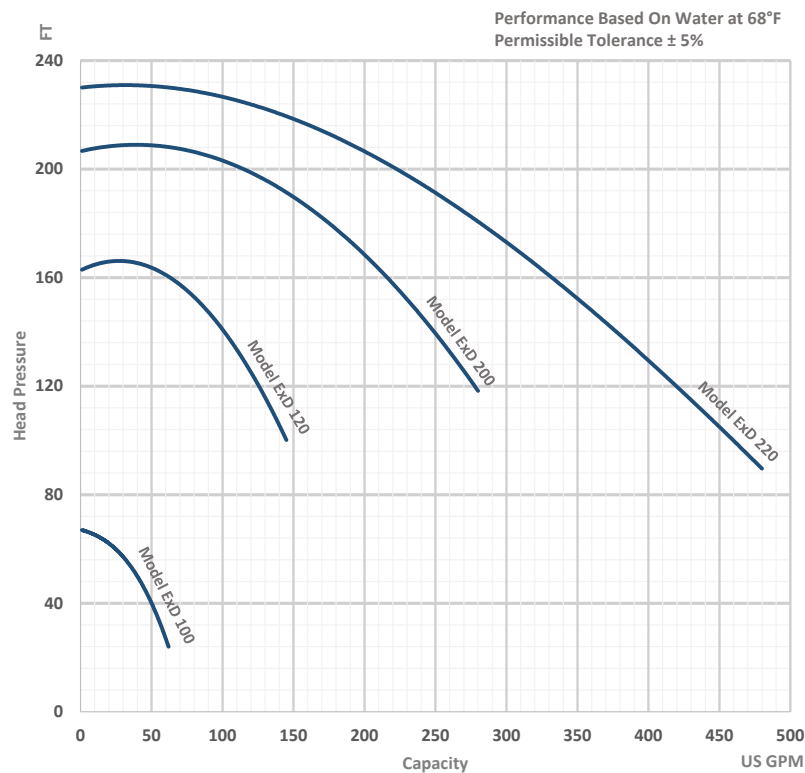
NOTE: Fluid end includes all parts required to assemble to your motor.  
Specify adjustable leg kits at time of order. Leg kits will be shipped to match the frame size as specified by model number.  
Leg kits will not be assembled.  
If there are options that are not listed above, please contact Dixon Sanitary for availability and pricing.

ExD-Series Centrifugal Pump - Pump Curves

1750 RPM



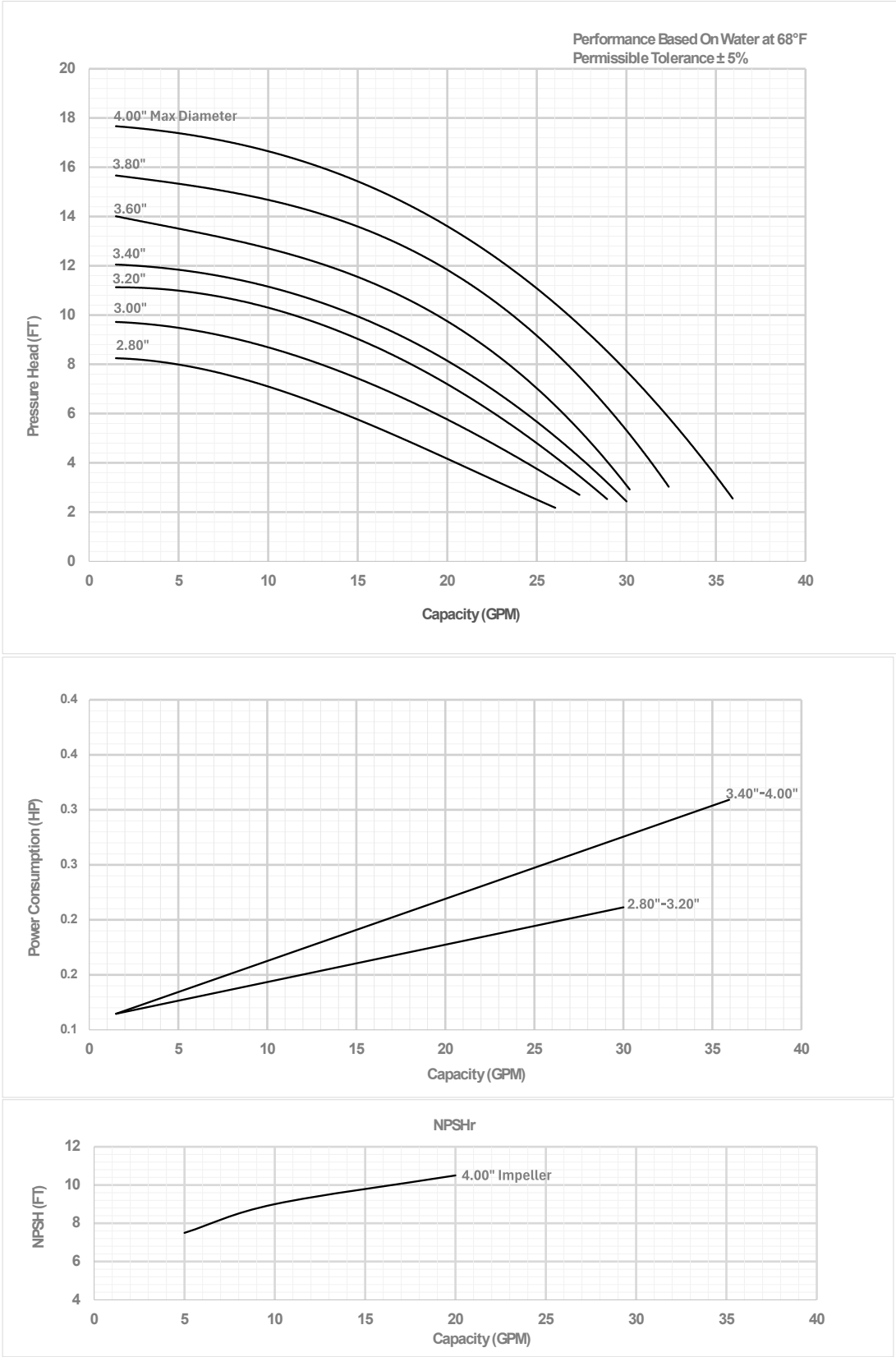
3500 RPM



K

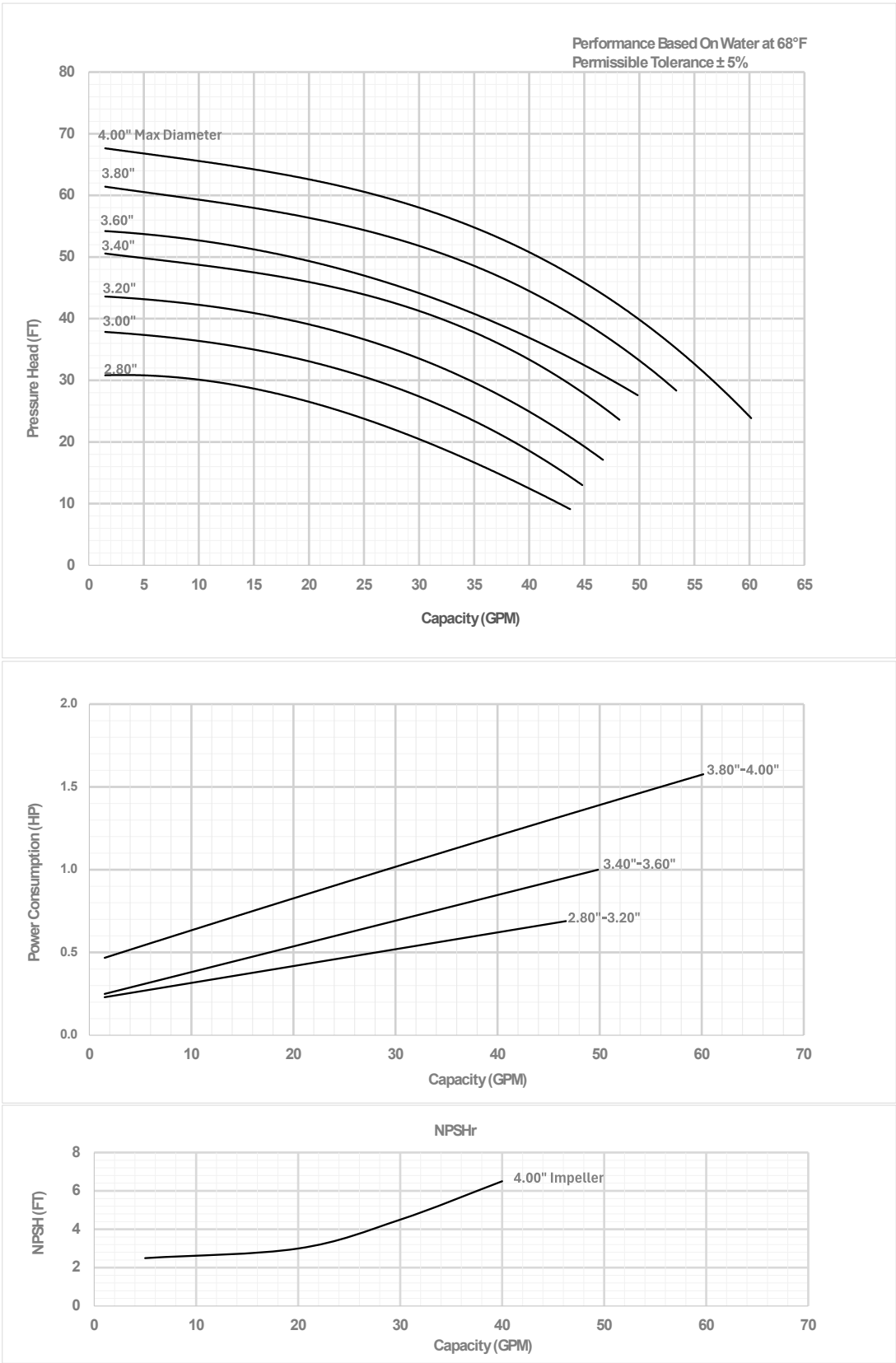
ExD-Series Centrifugal Pump - Pump Curves

ExD 100-110 - 1750 RPM



ExD-Series Centrifugal Pump - Pump Curves

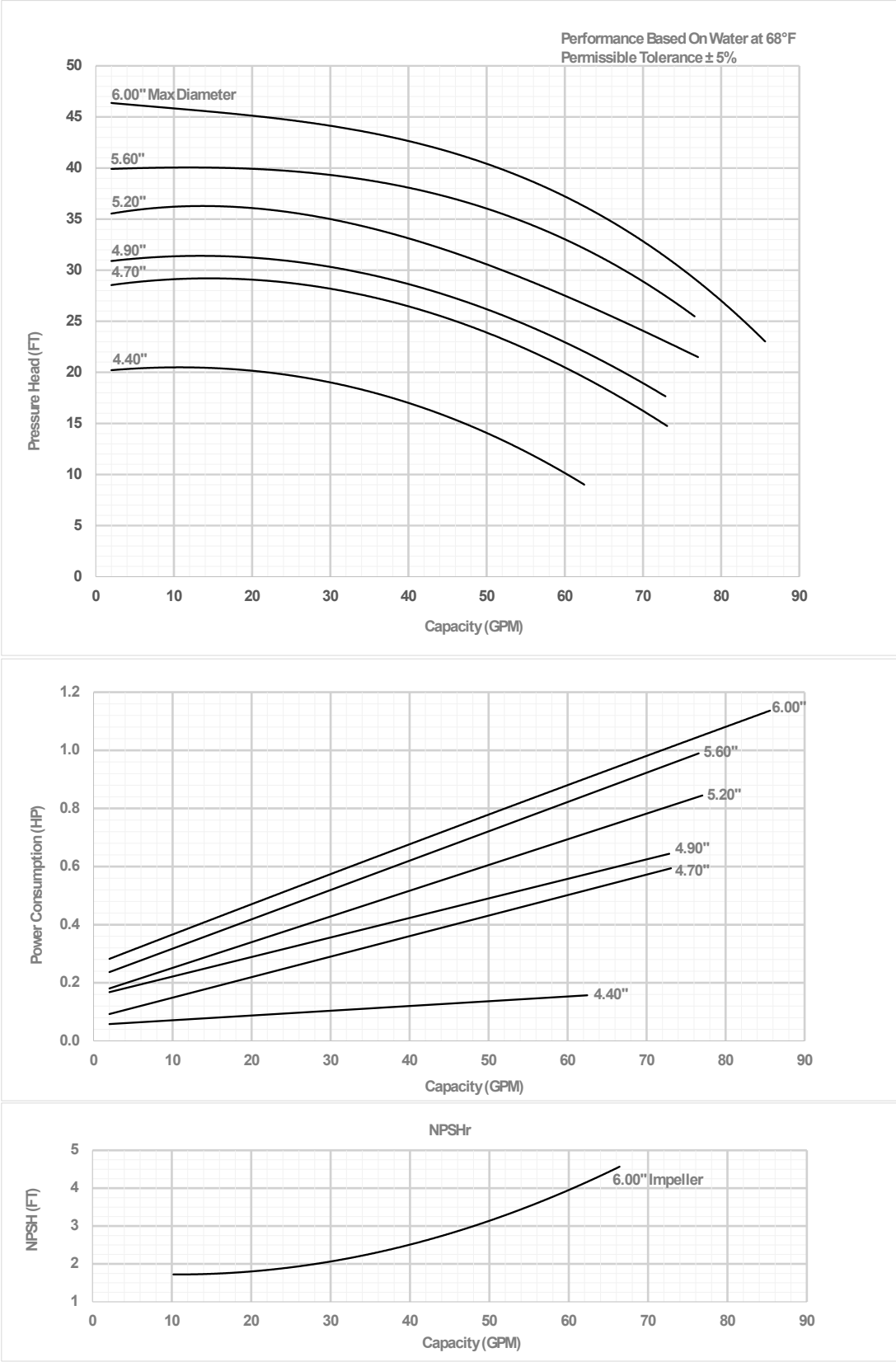
ExD 100-110 - 3500 RPM



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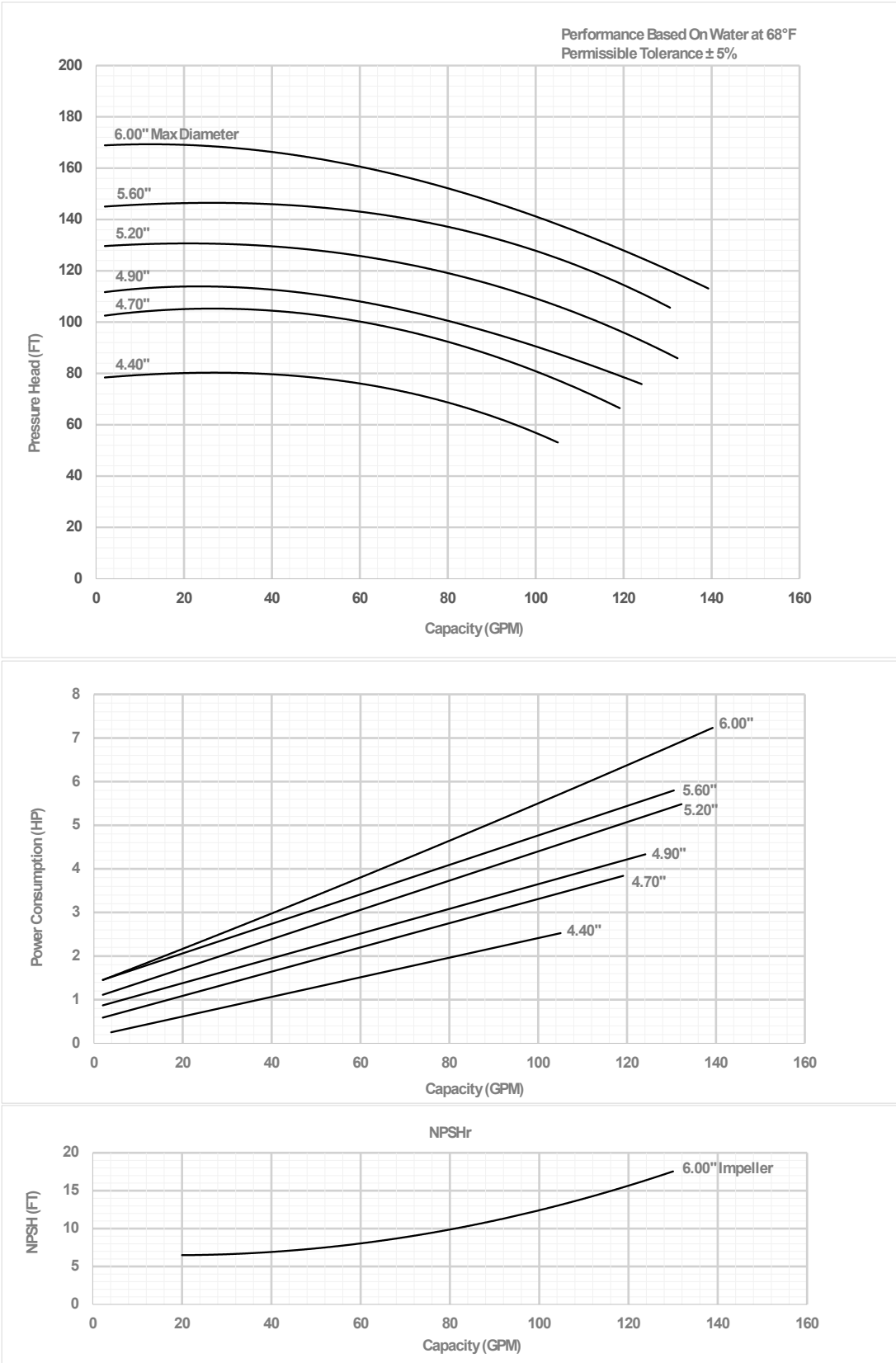
ExD-Series Centrifugal Pump - Pump Curves

ExD 120-130 - 1750 RPM



ExD-Series Centrifugal Pump - Pump Curves

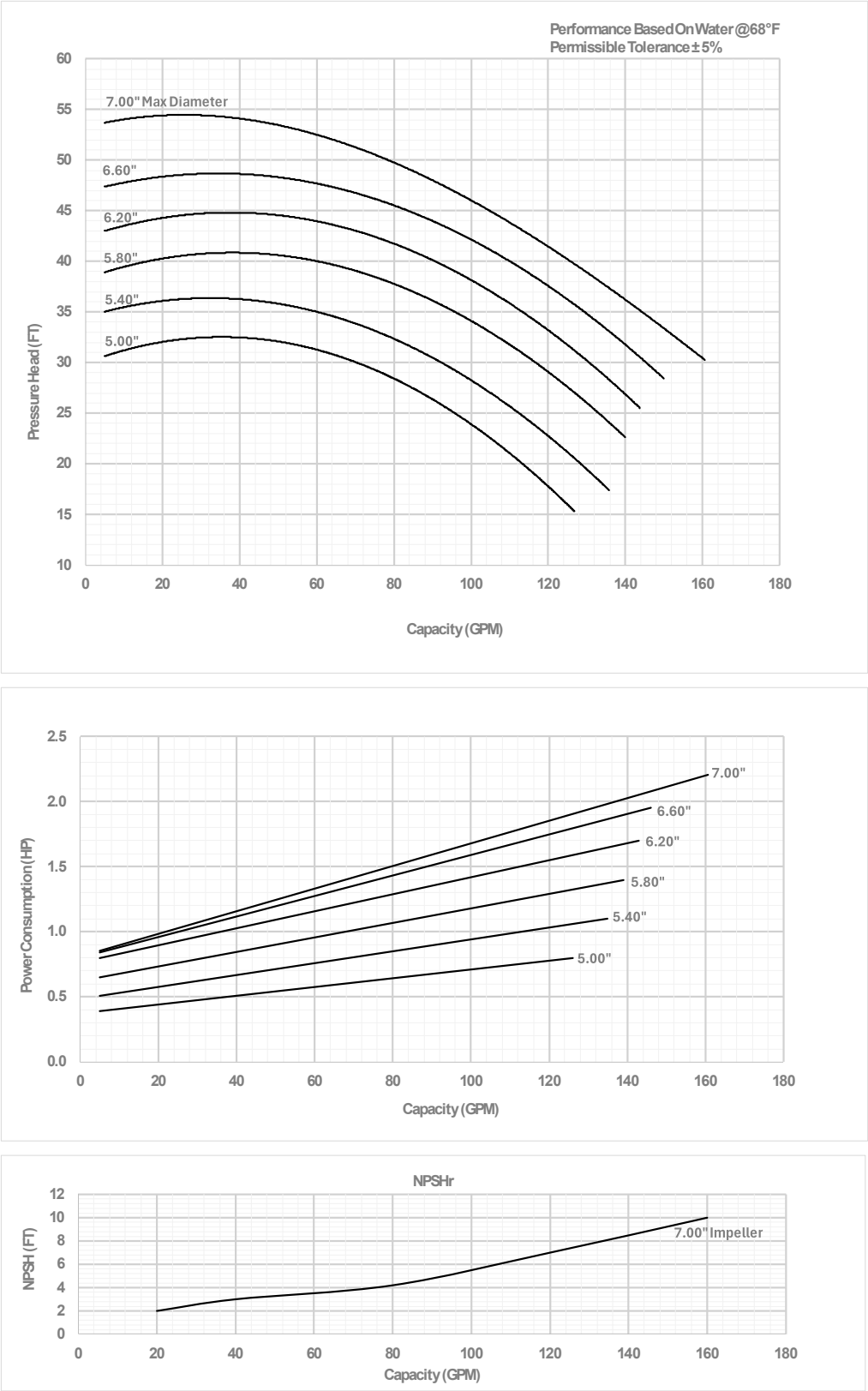
ExD 120-130 - 3500 RPM



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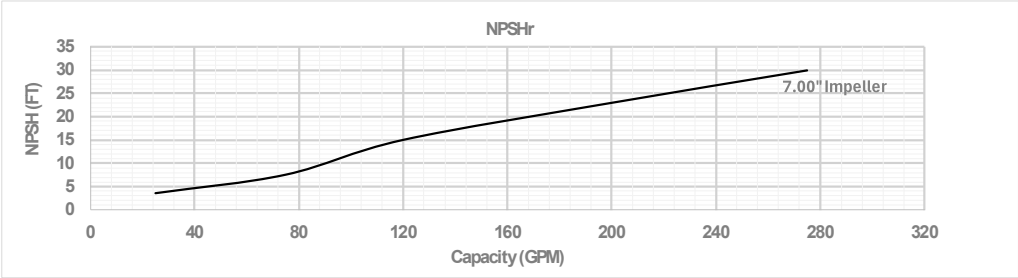
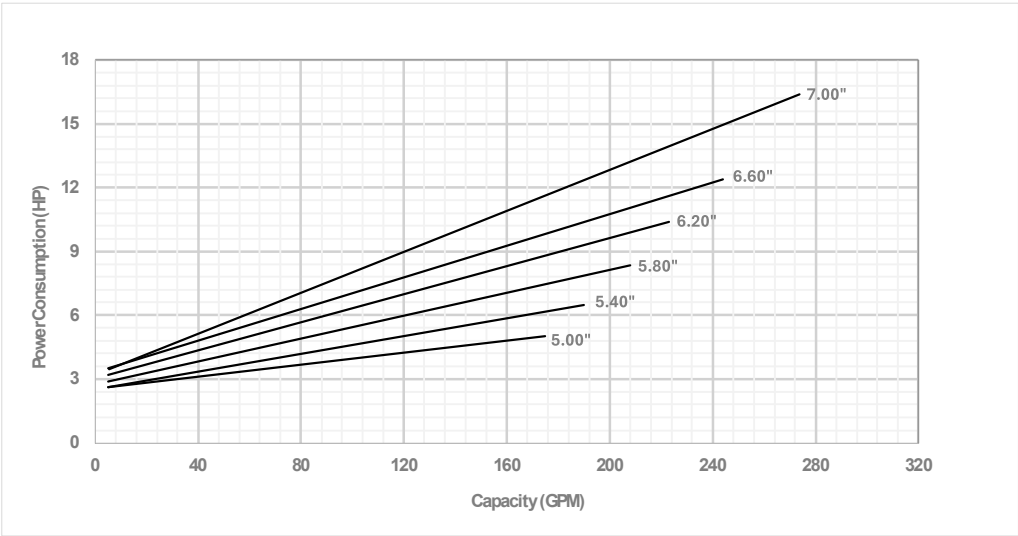
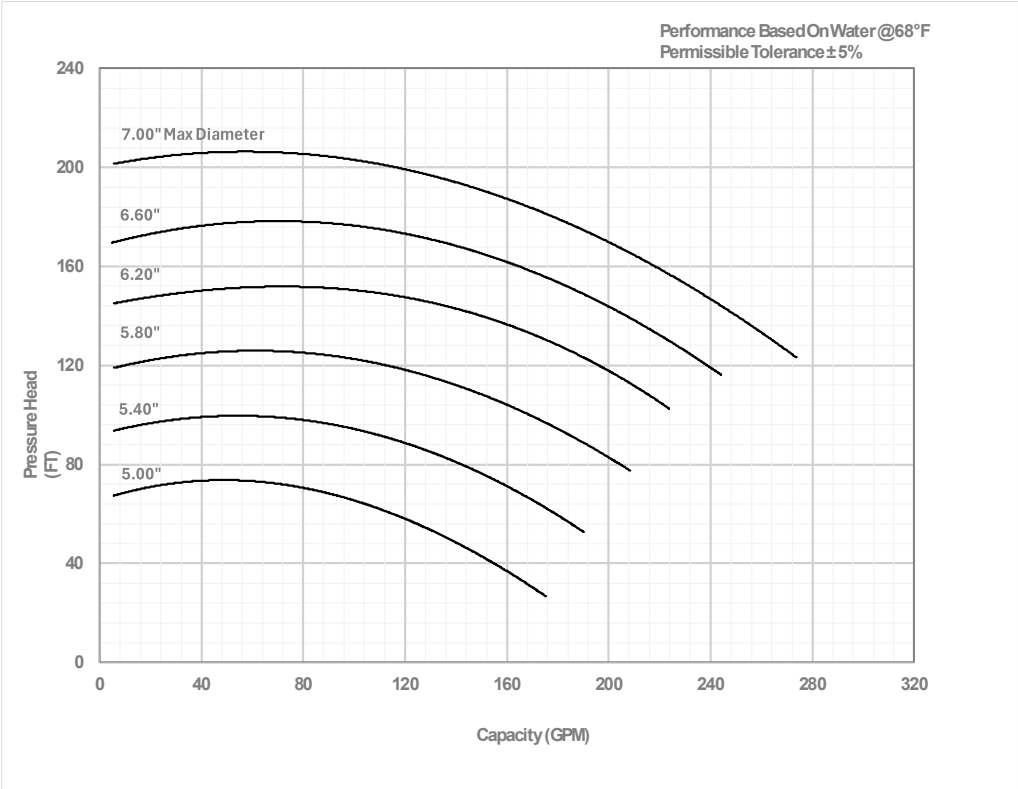
ExD-Series Centrifugal Pump - Pump Curves

ExD 200-210 - 1750 RPM



ExD-Series Centrifugal Pump - Pump Curves

ExD 200-210 - 3500 RPM

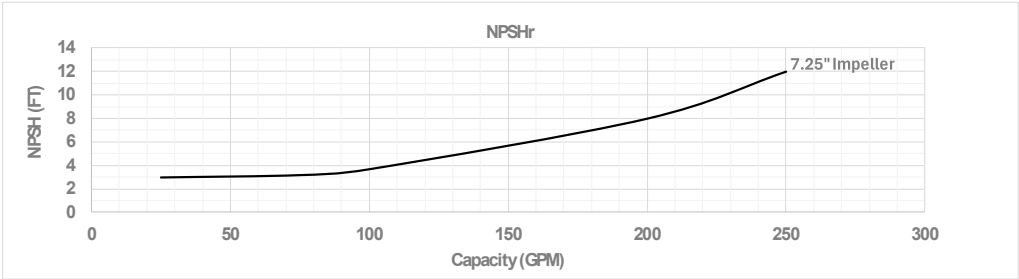
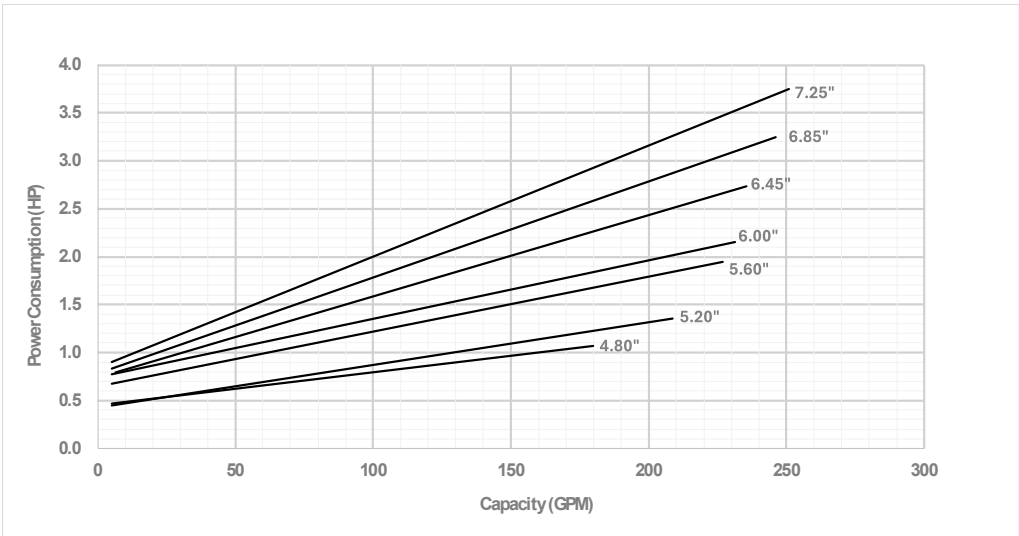
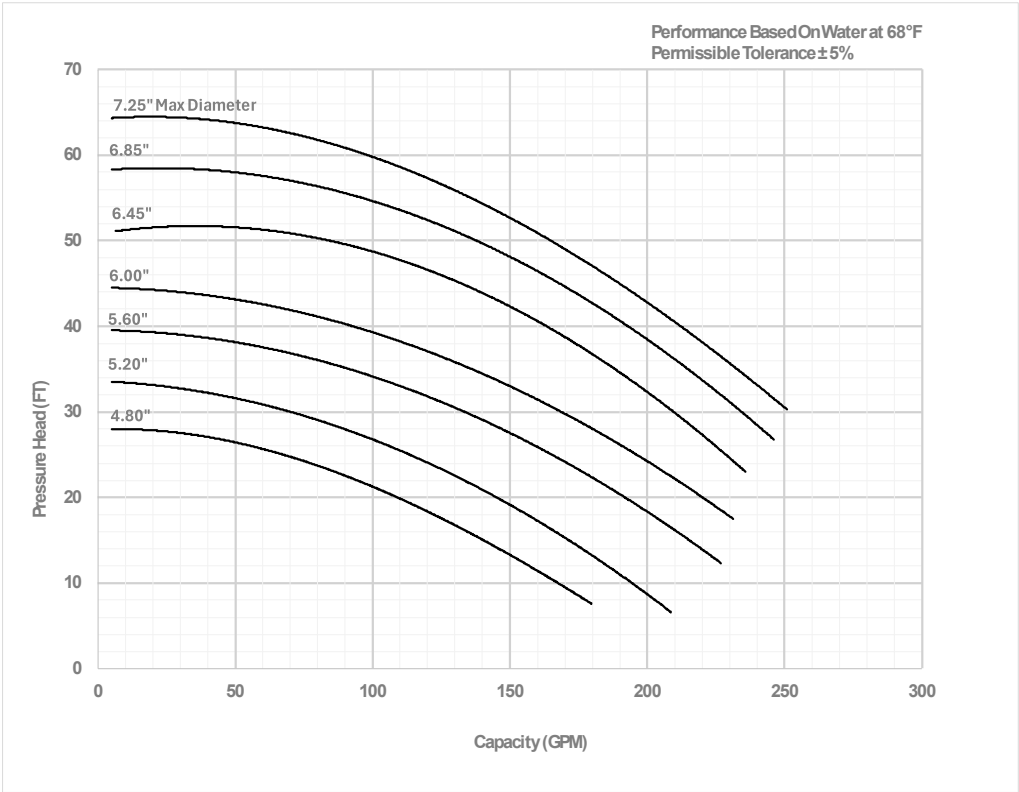


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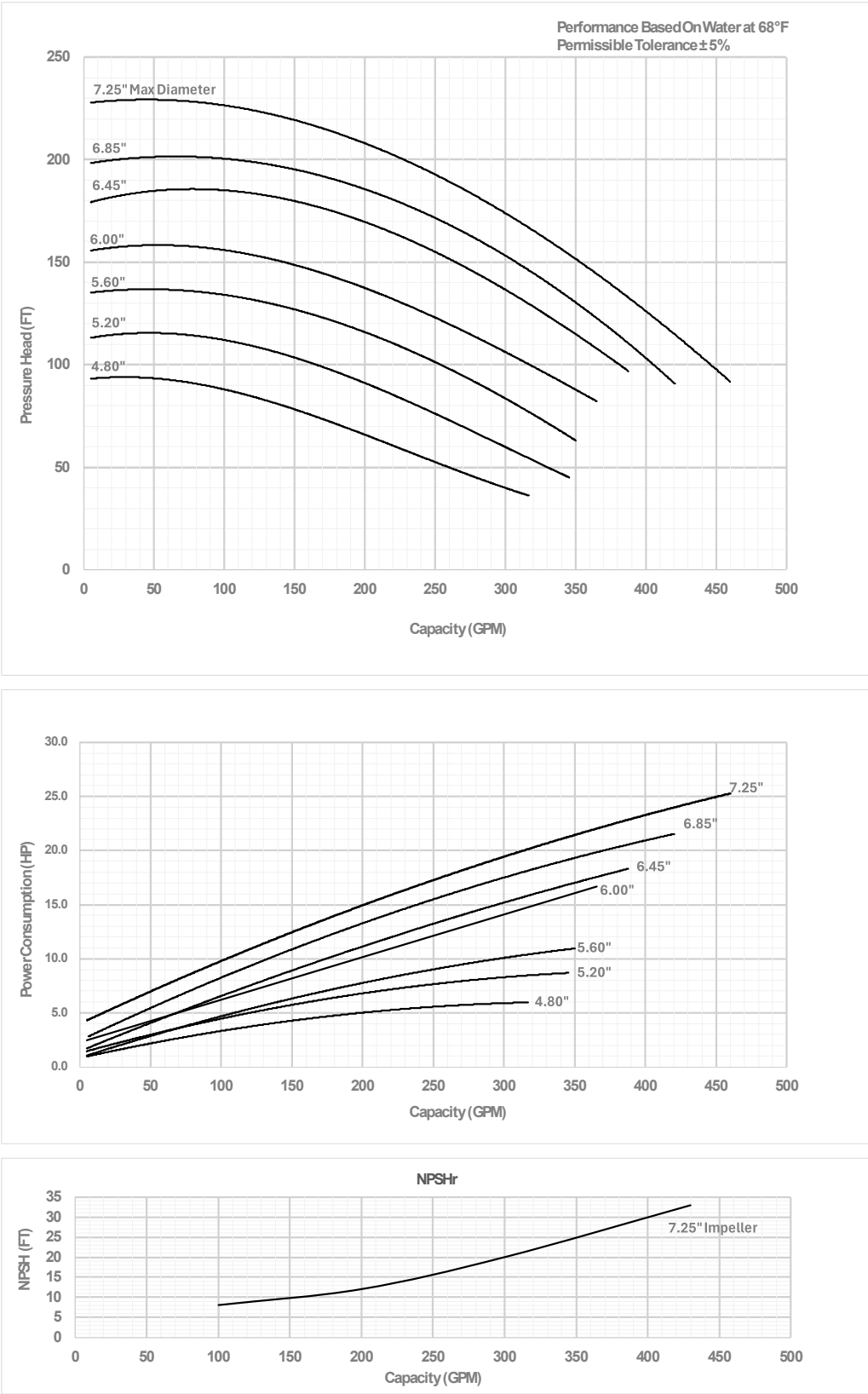
ExD-Series Centrifugal Pump - Pump Curves

ExD 220-230 - 1750 RPM



ExD-Series Centrifugal Pump - Pump Curves

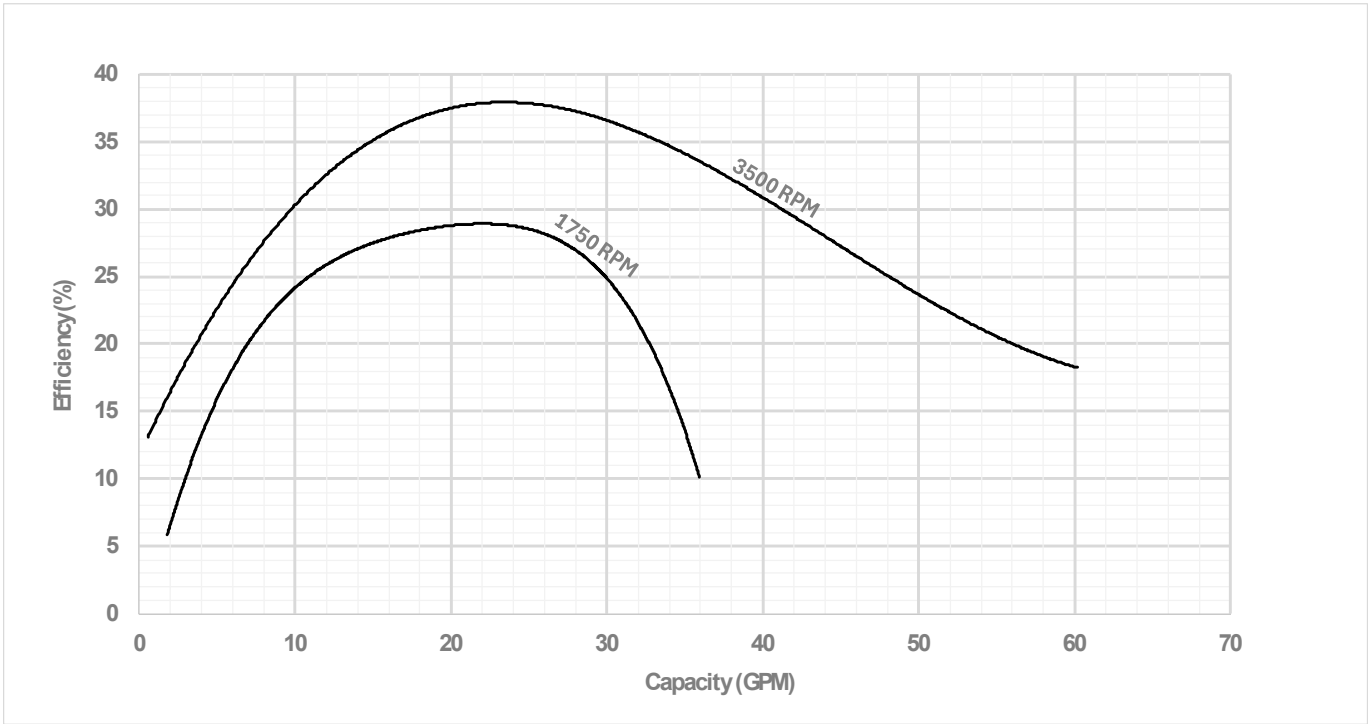
ExD 220-230 - 3500 RPM



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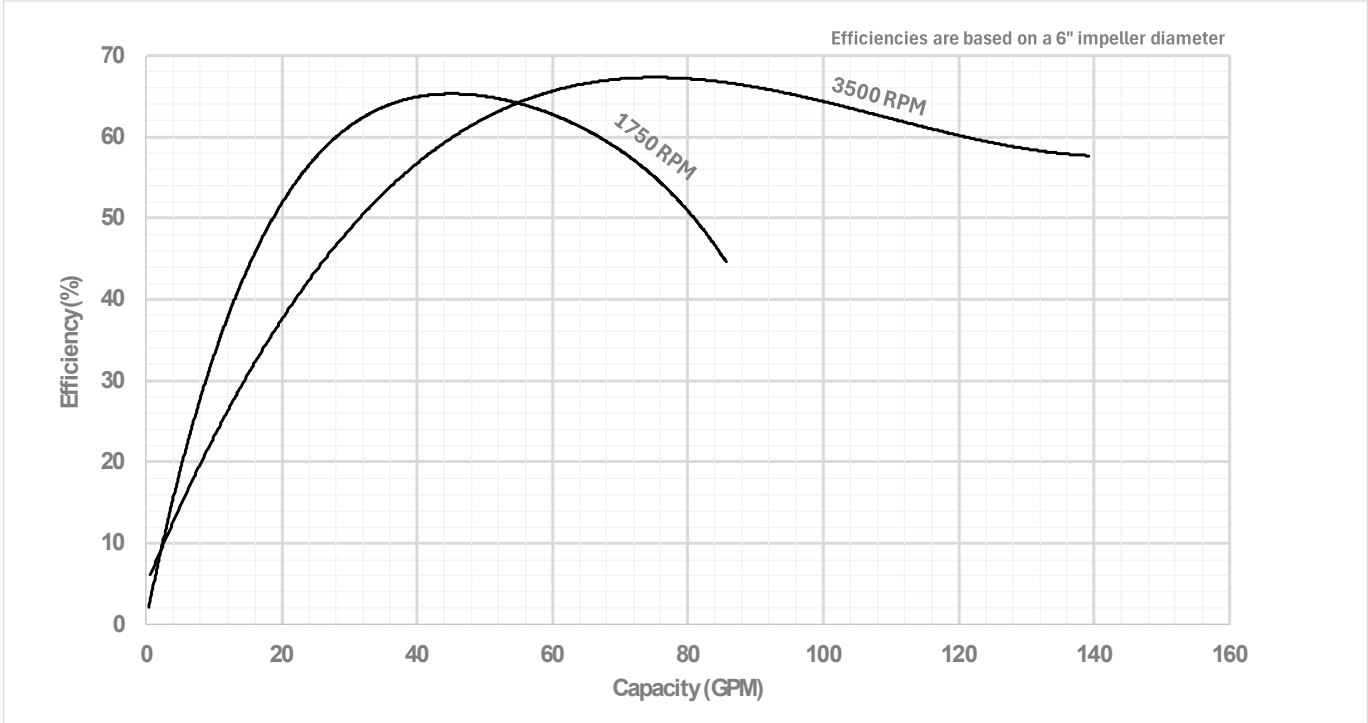
ExD-Series Centrifugal Pump - Pump Curves

ExD 100-110



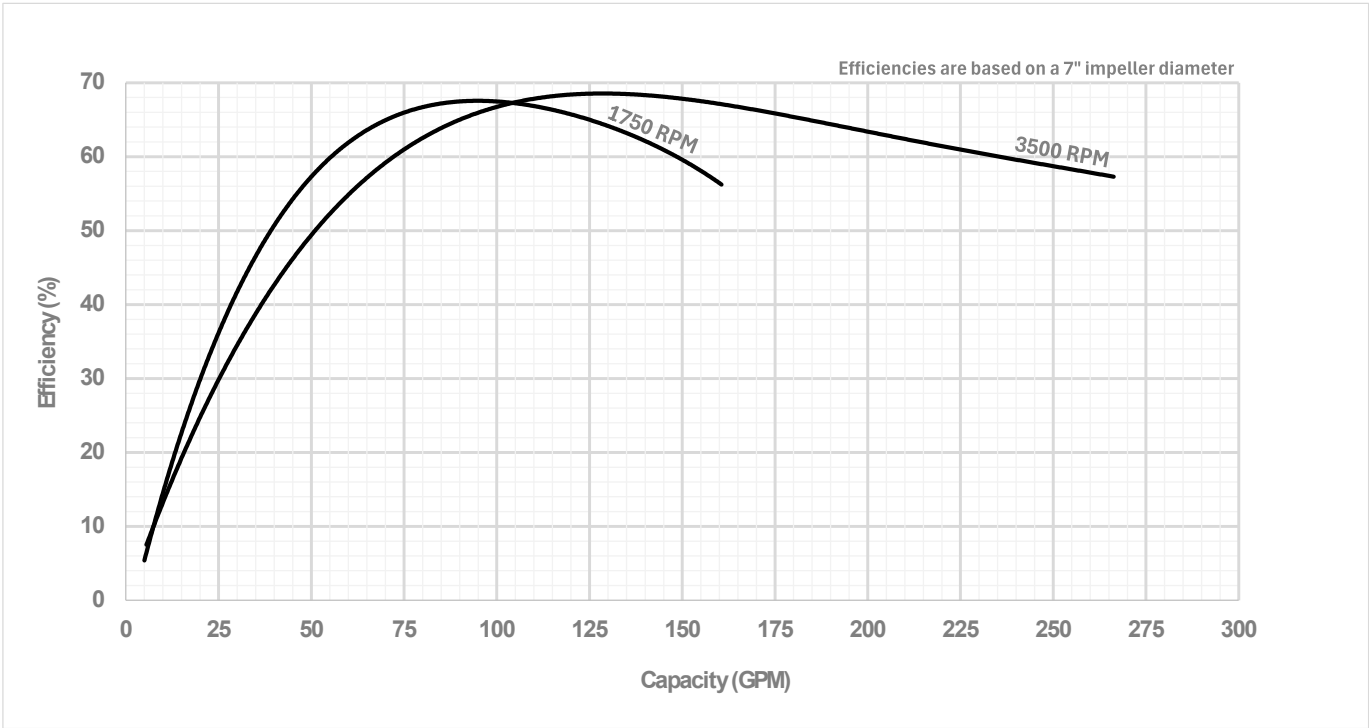
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ExD 120-130



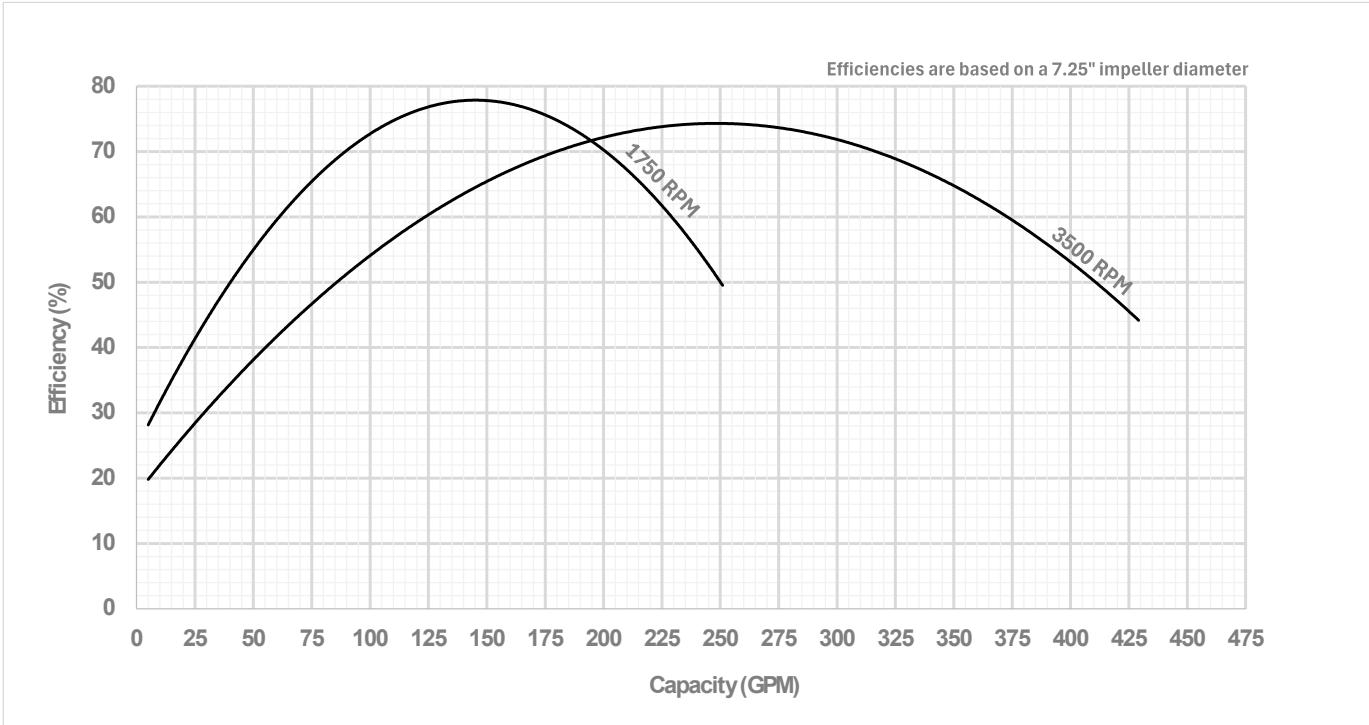
ExD-Series Centrifugal Pump - Efficiency Curves

ExD 200-210

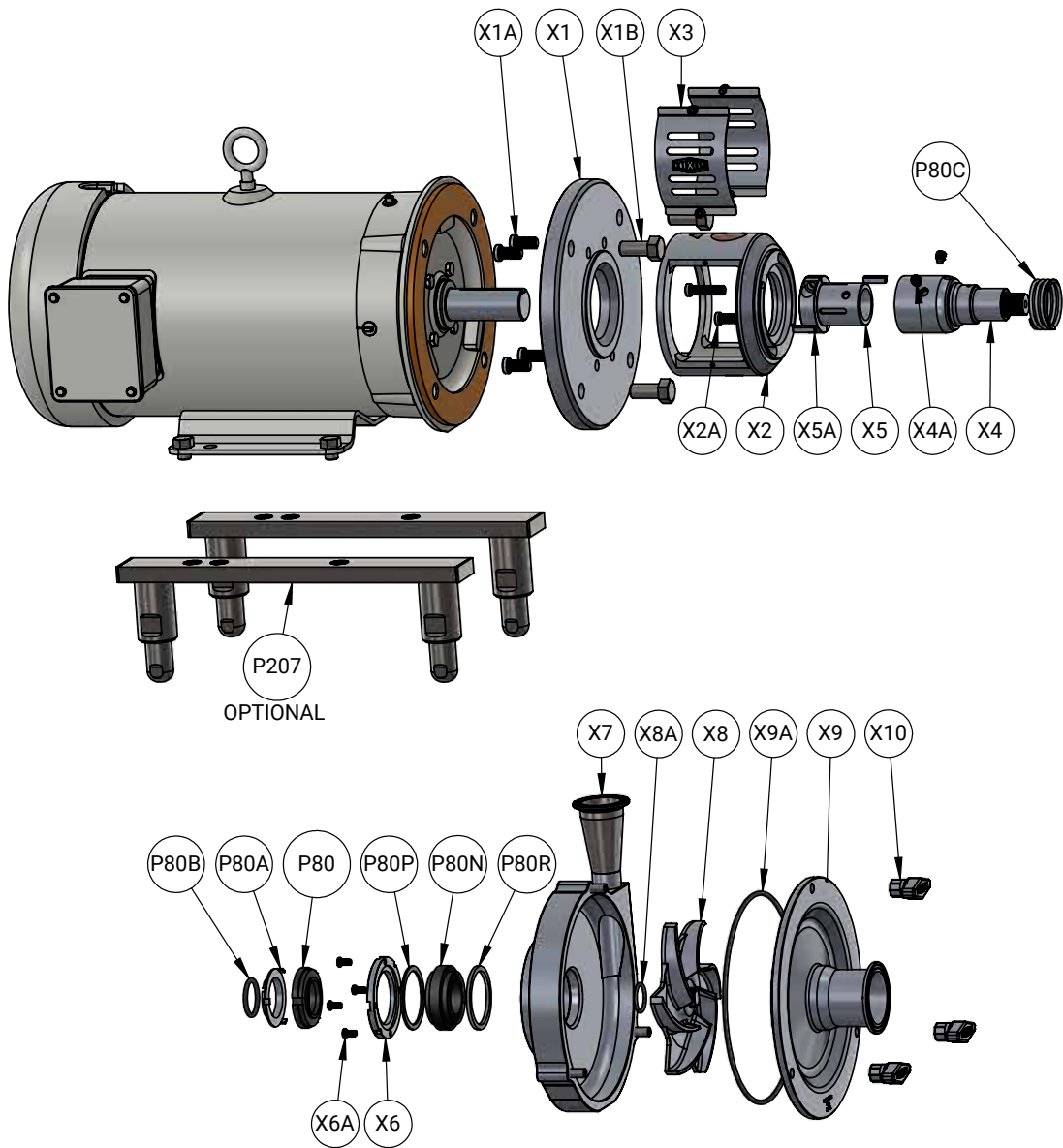


ExD 220-230

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-Series Centrifugal Pump - Bill of Materials



## ExD-Series Centrifugal Pump - Bill of Materials

### ExD 100-110

| Item # | Part #         | Description                                                            | Qty |
|--------|----------------|------------------------------------------------------------------------|-----|
| X1*    | X1-100-5614AMF | 100 series adapter to motor flange 56C and 143TC to 145TC              | 1   |
|        | X1-100-18AMF   | 100 series adapter to motor flange 182TC to 184 TC                     | 1   |
| X1A    | X1A-100-FAB    | 100 series flange to adapter bolts                                     | 4   |
| X1B*   | X1B-100-FMB56  | 100 series flange to motor bolts and lock washers 56TC to 140TC frame  | 4   |
|        | X1B-100-FMB18  | 100 series flange to motor bolts and lock washers 180TC to 250TC frame | 4   |
| X2     | X2-100-ADP     | 100 series adapter                                                     | 1   |
| X2A    | X2A-100-ACB    | 100 series adapter to casing bolts and shaft sleeve bolts              | 4   |
| X3     | X3-100-GRD     | 100 series guard set with bolts                                        | 1   |
| X4     | X4-100-SH      | 100 series stub shaft                                                  | 1   |
| X4A    | X4A-100-DPSS   | 100 series shaft dog point set screw                                   | 2   |
| X5*    | X5-100-SL56    | 100 series shaft sleeve for 56C frame                                  | 1   |
|        | X5-100-SL14    | 100 series shaft sleeve for 143TC to 145TC frame                       | 1   |
|        | X5-100-SL18    | 10 series shaft sleeve for 182TC to 184TC frame                        | 1   |
| X5A    | X5A-100-SKEY   | 100 series shaft sleeve key                                            | 2   |
| X6     | X6-100-SG      | 100 series seal gland                                                  | 1   |
| X6A    | X6A-100-SGB    | 100 series seal gland bolt                                             | 4   |
| P80*   | P80-216CS      | carbon rotary seal                                                     | 1   |
|        | P80-216SC      | silicon carbide rotary seal                                            | 1   |
|        | P80-216TC      | tungsten carbide rotary seal                                           | 1   |
| P80A   | P80A-216CP     | seal cup                                                               | 1   |
| P80B*  | P80B-216SOE    | seal O-ring EPDM                                                       | 1   |
|        | P80B-216SOV    | seal O-ring FKM                                                        | 1   |
|        | P80B-216SOB    | seal O-ring nitrile rubber                                             | 1   |
| P80C   | P80C-216SG     | seal spring                                                            | 1   |
| P80P   | P80P-216OG     | stationary outboard gasket                                             | 1   |
| P80N*  | P80N-216SC     | stationary seal silicon carbide                                        | 1   |
|        | P80N-216CER    | stationary seal ceramic                                                | 1   |
|        | P80N-216TC     | stationary seal tungsten carbide                                       | 1   |
| P80R   | P80R-216IG     | stationary inboard gasket                                              | 1   |
| X7     | X7-100-CASE-C  | 100-110 series pump casing with clamp outlet                           | 1   |
| X8     | X8-100-A400    | 100-110 series impeller 4" max diameter                                | 1   |
|        | X8-100-AXXXX   | 100-110 series trimmed impeller                                        | 1   |
| X8A*   | X8A-100-IORE   | 100 series impeller O-ring EPDM                                        | 1   |
|        | X8A-100-IORV   | 100 series impeller O-ring FKM                                         | 1   |
|        | X8A-100-IORB   | 100 series O-ring nitrile rubber                                       | 1   |
| X9*    | X9-100-CVR-C   | 100 series pump cover with clamp inlet 1"                              | 1   |
|        | X9-110-CVR-C   | 110 series pump cover with clamp inlet 1-1/2"                          | 1   |
| X9A*   | X9A-100-COR-E  | 100-110 series cover/casing O-ring EPDM                                | 1   |
|        | X9A-100-COR-V  | 100-110 series cover/casing O-ring FKM                                 | 1   |
|        | X9A-100-COR-B  | 100-110 series cover/casing O-ring nitrile rubber                      | 1   |
| X10    | X10-100-WN     | cover wing nuts                                                        | 3   |

\*Denotes variable parts

## ExD-Series Centrifugal Pump - Bill of Materials

## ExD 120-130

| Item # | Part #         | Description                                                            | Qty |
|--------|----------------|------------------------------------------------------------------------|-----|
| X1*    | X1-100-5614AMF | 100 series adapter to motor flange 56C and 143TC to 145TC              | 1   |
|        | X1-100-18AMF   | 100 series adapter to motor flange 182TC to 184TC                      | 1   |
| X1A    | X1A-100-FAB    | 100 series flange to adapter bolts                                     | 4   |
| X1B*   | X1B-100-FMB56  | 100 series flange to motor bolts and lock washers 56TC to 140TC frame  | 4   |
|        | X1B-100-FMB18  | 100 series flange to motor bolts and lock washers 180TC to 250TC frame | 4   |
| X2     | X2-100-ADP     | 100 series adapter                                                     | 1   |
| X2A    | X2A-100-ACB    | 100 series adapter to casing bolts and shaft sleeve bolts              | 4   |
| X3     | X3-100-GRD     | 100 series guard set with bolts                                        | 1   |
| X4     | X4-100-SH      | 100 series stub shaft                                                  | 1   |
| X4A    | X4A-100-DPSS   | 100 series shaft dog point set screw                                   | 2   |
| X5*    | X5-100-SL56    | 100 series shaft sleeve for 56C frame                                  | 1   |
|        | X5-100-SL14    | 100 series shaft sleeve for 143TC to 145TC frame                       | 1   |
|        | X5-100-SL18    | 100 series shaft sleeve for 182TC to 184TC frame                       | 1   |
| X5A    | X5A-100-SKEY   | 100 series shaft sleeve key                                            | 2   |
| X6     | X6-100-SG      | 100 series seal gland                                                  | 1   |
| X6A    | X6A-100-SGB    | 100 series seal gland bolt                                             | 4   |
| P80*   | P80-216CS      | carbon rotary seal                                                     | 1   |
|        | P80-216SC      | silicon carbide rotary seal                                            | 1   |
|        | P80-216TC      | tungsten carbide rotary seal                                           | 1   |
| P80A   | P80A-216CP     | seal cup                                                               | 1   |
| P80B*  | P80B-216SOE    | seal O-ring EPDM                                                       | 1   |
|        | P80B-216SOV    | seal O-ring FKM                                                        | 1   |
|        | P80B-216SOB    | seal O-ring nitrile rubber                                             | 1   |
| P80C   | P80C-216SG     | seal spring                                                            | 1   |
| P80P   | P80P-216OG     | stationary outboard gasket                                             | 1   |
| P80N*  | P80N-216SC     | stationary seal silicon carbide                                        | 1   |
|        | P80N-216CER    | stationary seal ceramic carbide                                        | 1   |
|        | P80N-216TC     | stationary seal tungsten carbide                                       | 1   |
| P80R   | P80R-216IG     | stationary inboard gasket                                              | 1   |
| X7     | X7-120-CASE-C  | 120-130 series pump casing with clamp outlet                           | 1   |
| X8     | X8-120-A600    | 120-130 series impeller 6" max diameter                                | 1   |
|        | X8-120-AXXXX   | 120-130 series trimmed impeller                                        | 1   |
| X8A    | X8A-100-IORE   | 100 series impeller O-ring EPDM                                        | 1   |
|        | X8A-100-IORV   | 100 series impeller O-ring FKM                                         | 1   |
|        | X8A-100-IORB   | 100 series impeller O-ring nitrile rubber                              | 1   |
| X9*    | X9-120-CVR-C   | 120 series pump cover with clamp inlet 2"                              | 1   |
|        | X9-130-CVR-C   | 130 series pump cover with clamp inlet 2-1/2"                          | 1   |
| X9A*   | X9A-120-COR-E  | 120-130 series cover/casing O-ring EPDM                                | 1   |
|        | X9A-120-COR-V  | 120-130 series cover/casing O-ring FKM                                 | 1   |
|        | X9A-120-COR-B  | 120-130 series cover/casing O-ring nitrile rubber                      | 1   |
| X10    | X10-100-WN     | cover wing nuts                                                        | 3   |

## Casing Drain Options: ExD 100, 110, 120, and 130

| Item # | Part #          | Description                                        | Qty |
|--------|-----------------|----------------------------------------------------|-----|
| X7     | X7-100-CASE-C-A | ExD 100-110 pump casing with clamp outlet, Drain A | 1   |
|        | X7-100-CASE-C-D | ExD 100-110 pump casing with clamp outlet, Drain D | 1   |
|        | X7-100-CASE-C-J | ExD 100-110 pump casing with clamp outlet, Drain J | 1   |
|        | X7-100-CASE-C-K | ExD 100-110 pump casing with clamp outlet, Drain K | 1   |
|        | X7-120-CASE-C-A | ExD 120-130 pump casing with clamp outlet, Drain A | 1   |
|        | X7-120-CASE-C-D | ExD 120-130 pump casing with clamp outlet, Drain D | 1   |
|        | X7-120-CASE-C-J | ExD 120-130 pump casing with clamp outlet, Drain J | 1   |
|        | X7-120-CASE-C-K | ExD 120-130 pump casing with clamp outlet, Drain K | 1   |

\*Denotes variable parts

## ExD-Series Centrifugal Pump - Bill of Materials

## ExD 200-210

| Item # | Part #         | Description                                                            | Qty |
|--------|----------------|------------------------------------------------------------------------|-----|
| X1     | X1-200-1825AMF | 200 series adapter to motor flange 182TC to 184TC to 254TC to 256TC    | 1   |
| X1A    | X1A-100-FAB    | 100 series flange to adapter bolts                                     | 4   |
| X1B*   | X1B-100-FMB18  | 100 series flange to motor bolts and lock washers 180TC to 250TC frame | 4   |
| X2     | X2-200-ADP     | 200 series adapter                                                     | 1   |
| X2A    | X2A-200-ACB    | 200 series adapter to casing bolts and shaft sleeve bolts              | 4   |
| X3     | X3-200-GRD     | 200 series guard set with bolts                                        | 2   |
| X4     | X4-200-SH      | 200 series stub shaft                                                  | 1   |
| X4A    | X4-200-DPSS    | 200 series shaft dog point set screw                                   | 2   |
| X5*    | X5-200-SL18    | 200 series shaft sleeve for 182TC to 184TC frame                       | 1   |
|        | X5-200-SL21    | 200 series shaft sleeve for 213TC to 215TC frame                       | 1   |
|        | X5-200-SL25    | 200 series shaft sleeve for 254TC to 256TC frame                       | 1   |
| X5A    | X5A-200-SKEY   | 200 series shaft sleeve key                                            | 2   |
| X6     | X6-200-SG      | 200 series seal gland                                                  | 1   |
| X6A    | X6A-200-SGB    | 200 series seal gland bolt                                             | 4   |
| P80*   | P80-218BCS     | carbon rotary seal                                                     | 1   |
|        | P80-218BSC     | silicon carbide rotary seal                                            | 1   |
|        | P80-218BTC     | tungsten carbide rotary seal                                           | 1   |
| P80A   | P80A-218BCP    | seal cup                                                               | 1   |
| P80B*  | P80B-218BSOE   | seal O-ring EPDM                                                       | 1   |
|        | P80B-218BSOV   | seal O-ring FKM                                                        | 1   |
|        | P80B-218BSOB   | seal O-ring nitrile rubber                                             | 1   |
| P80C   | P80C-218BSG    | seal spring                                                            | 1   |
| P80P   | P80P-218BOG    | stationary outboard gasket                                             | 1   |
| P80N*  | P80N-218BSC    | stationary seal silicon carbide                                        | 1   |
|        | P80N-218BCER   | stationary seal ceramic                                                | 1   |
|        | P80N-218BTC    | stationary seal tungsten carbide                                       | 1   |
| P80R   | P80R-218BIG    | stationary inboard gasket                                              | 1   |
| X7     | X7-200-CASE-C  | 200-210 series pump casing with clamp outlet                           | 1   |
| X8     | X8-200-A700    | 200-210 series impeller 7" max diameter                                | 1   |
|        | X8-200-AXXXX   | 200-210 series trimmed impeller                                        | 1   |
| X8A*   | X8A-200-IORE   | 200 series impeller O-ring EPDM                                        | 1   |
|        | X8A-200-IORV   | 200 series impeller O-ring FKM                                         | 1   |
|        | X8A-200-IORB   | 200 series impeller O-ring nitrile rubber                              | 1   |
| X9     | X9-200-CVR-C   | 200 series pump cover with clamp inlet 2-1/2"                          | 1   |
|        | X9-210-CVR-C   | 210 series pump cover with clamp inlet 3"                              | 1   |
| X9A*   | X9A-200-COR-E  | 200-210 series cover/casing O-ring EPDM                                | 1   |
|        | X9A-200-COR-V  | 200-210 series cover/casing O-ring FKM                                 | 1   |
|        | X9A-200-COR-B  | 200-210 series cover/casing O-ring nitrile rubber                      | 1   |
| X10    | X10-200-WN     | 200 series cover wing nuts                                             | 4   |

\*Denotes variable parts

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## ExD-Series Centrifugal Pump - Bill of Materials

## ExD 220 / ExD 230

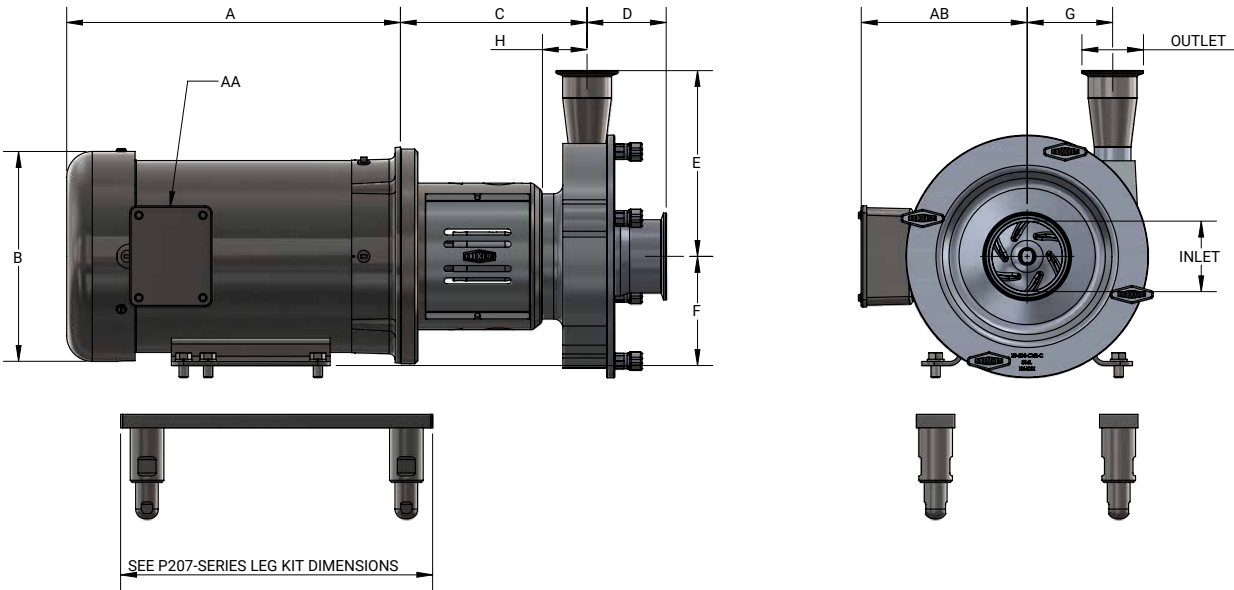
| Item # | Part #         | Description                                                            | Qty |
|--------|----------------|------------------------------------------------------------------------|-----|
| X1     | X1-200-1825AMF | 200 series adapter to motor flange 182TC to 184TC to 254TC to 256TC    | 1   |
| X1A    | X1A-100-FAB    | 100 series flange to adapter bolts                                     | 4   |
| X1B*   | X1B-100-FMB18  | 100 series flange to motor bolts and lock washers 180TC to 250TC frame | 4   |
| X2     | X2-200-ADP     | 200 series adapter                                                     | 1   |
| X2A    | X2A-200-ACB    | 200 series adapter to casing bolts and shaft sleeve bolts              | 4   |
| X3     | X3-200-GRD     | 200 series guard with bolts                                            | 2   |
| X4     | X4-200-SH      | 200 series stub shaft                                                  | 1   |
| X4A    | X4-200-DPSS    | 200 series shaft dog point set screw                                   | 2   |
| X5*    | X5-200-SL18    | 200 series shaft sleeve for 182TC to 184TC frame                       | 1   |
|        | X5-200-SL21    | 200 series shaft sleeve for 213TC to 215TC frame                       | 1   |
|        | X5-200-SL25    | 200 series shaft sleeve for 254TC to 256TC frame                       | 1   |
| X5A    | X5A-200-SKEY   | 200 series shaft sleeve key                                            | 2   |
| X6     | X6-200-SG      | 200 series seal gland                                                  | 1   |
| X6A    | X6A-200-SGB    | 200 series seal gland bolt                                             | 4   |
| P80*   | P80-218BCS     | carbon rotary seal                                                     | 1   |
|        | P80-218BSC     | silicon carbide rotary seal                                            | 1   |
| P80A   | P80A-218BCP    | seal cup                                                               | 1   |
| P80B*  | P80B-218BSOE   | seal O-ring EPDM                                                       | 1   |
|        | P80B-218BSOV   | seal O-ring FKM                                                        | 1   |
|        | P80B-218BSOB   | seal O-ring nitrile rubber                                             | 1   |
| P80C   | P80C-218BSG    | seal spring                                                            | 1   |
| P80P   | P80P-218BOG    | stationary outboard gasket                                             | 1   |
| P80N*  | P80N-218BSC    | stationary seal silicon carbide                                        | 1   |
|        | P80N-218BCER   | stationary seal ceramic                                                | 1   |
|        | P80N-218BTC    | stationary seal tungsten carbide                                       | 1   |
| P80R   | P80R-218BIG    | stationary inboard gasket                                              | 1   |
| X7     | X7-220-CASE-C  | 220-230 series pump casing with clamp outlet                           | 1   |
| X8     | X8-220-A725    | 220-230 series impeller 7-1/4" max diameter                            | 1   |
|        | X8-220-AXXX    | 220-230 series trimmed impeller                                        | 1   |
| X8A*   | X8A-200-IORE   | 200 series impeller O-ring EPDM                                        | 1   |
|        | X8A-200-IORV   | 200 series impeller O-ring FKM                                         | 1   |
|        | X8A-200-IORB   | 200 series impeller O-ring nitrile rubber                              | 1   |
| X9     | X9-220-CVR-C   | 220 series pump cover with clamp inlet 3"                              | 1   |
|        | X9-230-CVR-C   | 230 series pump cover with clamp inlet 4"                              | 1   |
| X9A*   | X9A-220-COR-E  | 220-230 series cover/casing O-ring EPDM                                | 1   |
|        | X9A-220-COR-V  | 220-230 series cover/casing O-ring FKM                                 | 1   |
|        | X9A-220-COR-B  | 220-230 series cover/casing O-ring nitrile rubber                      | 1   |
| X10    | X10-200-WN     | 200 series cover wing nuts                                             | 4   |

## Casing Drain Options - ExD 200, 210, 220, and 230

| Item # | Part #          | Description                                        | Qty |
|--------|-----------------|----------------------------------------------------|-----|
| X7     | X7-200-CASE-C-A | ExD 200-210 pump casing with clamp outlet, Drain A | 1   |
|        | X7-200-CASE-C-D | ExD 200-210 pump casing with clamp outlet, Drain D | 1   |
|        | X7-200-CASE-C-J | ExD 200-210 pump casing with clamp outlet, Drain J | 1   |
|        | X7-200-CASE-C-K | ExD 200-210 pump casing with clamp outlet, Drain K | 1   |
|        | X7-220-CASE-C-A | ExD 220-230 pump casing with clamp outlet, Drain A | 1   |
|        | X7-220-CASE-C-D | ExD 220-230 pump casing with clamp outlet, Drain D | 1   |
|        | X7-220-CASE-C-J | ExD 220-230 pump casing with clamp outlet, Drain J | 1   |
|        | X7-220-CASE-C-K | ExD 220-230 pump casing with clamp outlet, Drain K | 1   |

\*Denotes variable parts

**ExD-Series Centrifugal Pump - Dimensions**

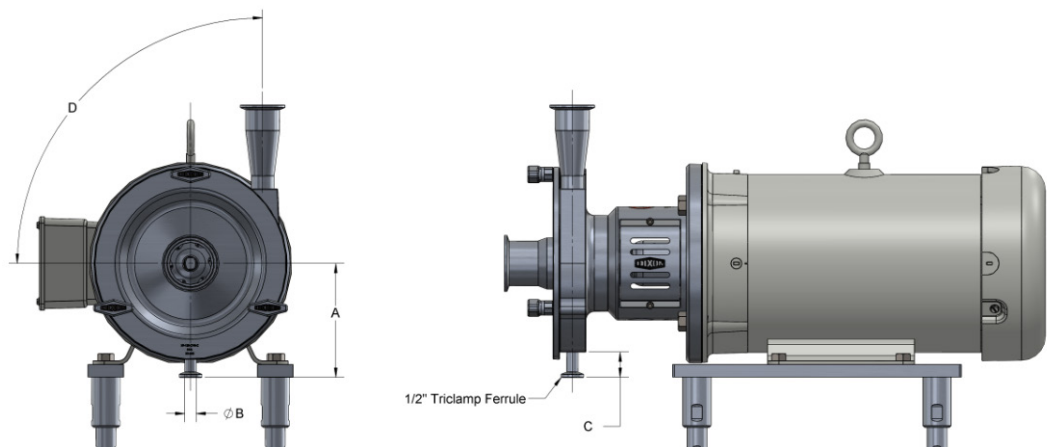


| Pump Model         | Frame Size | Inlet            | Outlet | A<br>(in) | AA (in)<br>(conduit size) | AB<br>(in) | B<br>(in) | C<br>(in) | D<br>(in) | E<br>(in) | F<br>(in) | G<br>(in) |
|--------------------|------------|------------------|--------|-----------|---------------------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| ExD 100<br>ExD 110 | 56C        | 1" (ExD 100)     | 1"     | **        | 0.50                      | 5.00       | 6.63      | 5.44      | 2.16      | 4.20      | 3.50      | 2.00      |
|                    | 143/145TC  | 1-1/2" (ExD 110) |        |           | 0.75                      | 5.25       |           |           |           |           | 4.50      |           |
|                    | 182/183TC  |                  |        |           | 0.75                      | 5.88       |           |           |           |           |           |           |
| ExD 120<br>ExD 130 | 56C        | 2" (ExD 120)     | 1-1/2" |           | 0.50                      | 5.00       | 6.63      | 5.75      | 3.00      | 6.38      | 3.50      | 3.20      |
|                    | 143/145TC  | 2-1/2" (ExD 130) |        |           | 0.75                      | 5.25       |           |           |           |           | 4.50      |           |
|                    | 182/183TC  |                  |        |           | 0.75                      | 5.88       |           |           |           |           |           |           |
| ExD 200<br>ExD 210 | 182/183TC  | 2-1/2" (ExD 200) | 2"     |           | 0.75                      | 5.88       | 7.88      | 7.63      | 3.34      | 7.62      | 4.50      | 3.50      |
|                    | 213/215TC  | 3" (ExD 210)     |        |           | 1.00                      | 7.38       | 9.56      |           |           |           | 5.25      |           |
|                    | 254/256TC  |                  |        |           | 1.00                      | 9.63       | 12.94     |           |           |           | 6.25      |           |
| ExD 220<br>ExD 230 | 182/183TC  | 3" (ExD 220)     | 2-1/2" |           | 1.00                      | 5.88       | 7.88      | 7.75      | 3.13      | 8.25      | 4.50      | 3.63      |
|                    | 213/215TC  | 4" (ExD 230)     |        |           | 1.00                      | 7.38       | 9.56      |           |           |           | 5.25      |           |
|                    | 254/256TC  |                  |        |           | 1.50                      | 9.63       | 12.94     |           |           |           | 6.25      |           |

\*\*Contact Dixon Sanitary for exact measurement. Dimension is dependent on motor selection.

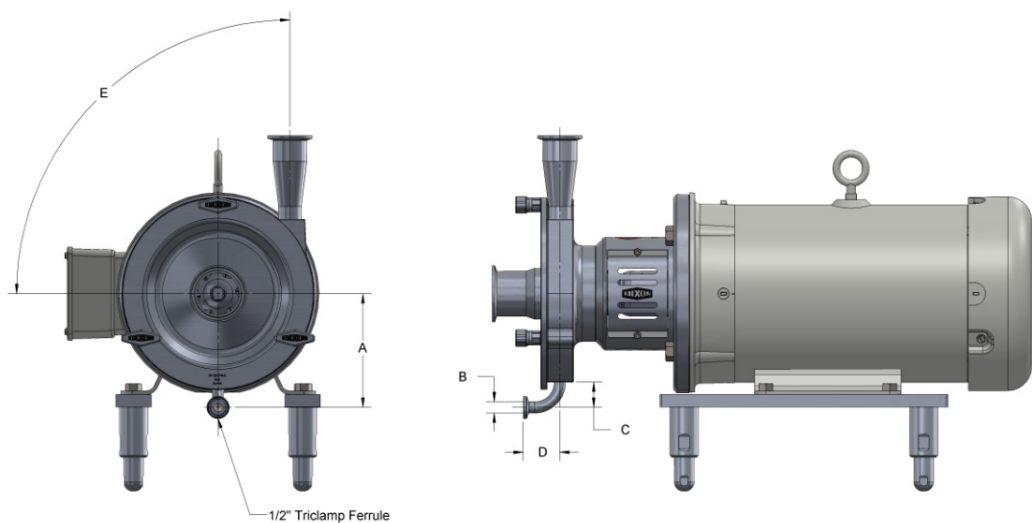
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ExD-Series Centrifugal Pump - Dimensions



| Pump Model  | Casing Drain Option | A (in) | ØB (in) | C (in) | D   |
|-------------|---------------------|--------|---------|--------|-----|
| ExD 100/110 | option A            | 3.71   | 0.50    | 1.13   | 45° |
|             | option J            |        |         |        | 90° |
| ExD 120/130 | option A            | 5.06   | 0.50    | 1.13   | 45° |
|             | option J            |        |         |        | 90° |
| ExD 200/210 | option A            | 5.70   | 0.50    | 1.13   | 45° |
|             | option J            |        |         |        | 90° |
| ExD 220/230 | option A            | 5.98   | 0.50    | 1.13   | 45° |
|             | option J            |        |         |        | 90° |

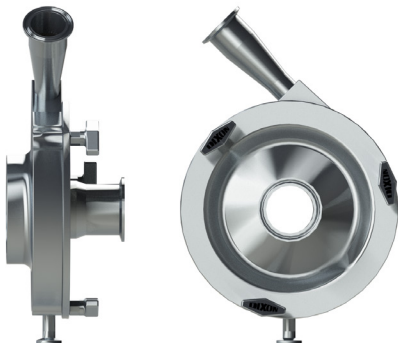
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| Pump Model  | Casing Drain Option | A (in) | ØB (in) | C (in) | D (in) | E   |
|-------------|---------------------|--------|---------|--------|--------|-----|
| ExD 100/110 | option D            | 3.71   | 0.50    | 1.13   | 1.63   | 90° |
|             | option K            |        |         |        |        | 45° |
| ExD 120/130 | option D            | 5.06   | 0.50    | 1.13   | 1.63   | 90° |
|             | option K            |        |         |        |        | 45° |
| ExD 200/210 | option D            | 5.70   | 0.50    | 1.13   | 1.63   | 90° |
|             | option K            |        |         |        |        | 45° |
| ExD 220/230 | option D            | 5.98   | 0.50    | 1.13   | 1.63   | 90° |
|             | option K            |        |         |        |        | 45° |

ExD-Series Centrifugal Pump - Casing Drain Options

Drain A



Drain J



Drain K



Drain D



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ExD-Series Centrifugal Pump - Friction Loss Chart

| Capacity<br>in U.S.<br>GPM | O.D. Tube Size      |       |     |                         |       |     |                     |       |      |                         |       |      |                    |       |      |                     |       |      |
|----------------------------|---------------------|-------|-----|-------------------------|-------|-----|---------------------|-------|------|-------------------------|-------|------|--------------------|-------|------|---------------------|-------|------|
|                            | 1"<br>I.D. = 0.870" |       |     | 1-1/2"<br>I.D. = 1.370" |       |     | 2"<br>I.D. = 1.870" |       |      | 2-1/2"<br>I.D. = 2.370" |       |      | 3"<br>I.D. = 2.870 |       |      | 4"<br>I.D. = 3.834" |       |      |
|                            | Tube                | Elbow | Tee | Tube                    | Elbow | Tee | Tube                | Elbow | Tee  | Tube                    | Elbow | Tee  | Tube               | Elbow | Tee  | Tube                | Elbow | Tee  |
| 5                          | .035                | .025  | .25 |                         |       |     |                     |       |      |                         |       |      |                    |       |      |                     |       |      |
| 10                         | .12                 | .06   | .40 | .02                     | .01   | .15 | .005                | .015  | .10  |                         |       |      |                    |       |      |                     |       |      |
| 15                         | .25                 | .10   | .80 | .04                     | .02   | .25 | .013                | .02   | .15  |                         |       |      |                    |       |      |                     |       |      |
| 20                         | .43                 | .22   | 1.5 | .06                     | .03   | .30 | .02                 | .025  | .20  | .005                    | .02   | .10  | .003               | .02   | .06  |                     |       |      |
| 25                         | .66                 | .40   | 2.3 | .08                     | .04   | .40 | .025                | .03   | .25  | .006                    | .03   | .15  | .004               | .03   | .08  |                     |       |      |
| 30                         | .93                 | .70   | 3.3 | .105                    | .55   | .55 | .035                | .05   | .30  | .008                    | .05   | .20  | .005               | .04   | .10  |                     |       |      |
| 35                         | 1.22                | 1.25  | 5.2 | .135                    | .80   | .80 | .04                 | .06   | .40  | .011                    | .06   | .25  | .006               | .05   | .13  |                     |       |      |
| 40                         |                     |       |     | .17                     | 1.0   | 1.0 | .05                 | .08   | .50  | .015                    | .07   | .30  | .007               | .06   | .15  |                     |       |      |
| 45                         |                     |       |     | .21                     | 1.3   | 1.3 | .063                | .10   | .60  | .02                     | .09   | .35  | .008               | .065  | .18  |                     |       |      |
| 50                         |                     |       |     | .25                     | 1.6   | 1.6 | .073                | .12   | .70  | .022                    | .10   | .40  | .01                | .07   | .20  |                     |       |      |
| 60                         |                     |       |     | .34                     | 2.2   | 2.2 | .10                 | .18   | .90  | .03                     | .12   | .45  | .015               | .08   | .25  |                     |       |      |
| 80                         |                     |       |     | .57                     | 3.7   | 3.7 | .16                 | .30   | 1.5  | .05                     | .15   | .55  | .02                | .10   | .40  |                     |       |      |
| 100                        |                     |       |     | .85                     | 5.8   | 5.8 | .23                 | .44   | 2.3  | .075                    | .18   | .60  | .03                | .11   | .50  | .008                | .04   | .10  |
| 120                        |                     |       |     | 1.18                    | 9.1   | 9.1 | .32                 | .64   | 3.3  | .105                    | .21   | 1.0  | .04                | .13   | .60  | .01                 | .05   | .15  |
| 140                        |                     |       |     |                         |       |     | .42                 | .85   | 4.5  | .14                     | .23   | 1.25 | .05                | .16   | .80  | .013                | .06   | .20  |
| 160                        |                     |       |     |                         |       |     | .54                 | 1.13  | 5.8  | .17                     | .28   | 1.6  | .07                | .20   | 1.1  | .015                | .07   | .25  |
| 180                        |                     |       |     |                         |       |     | .67                 | 1.45  | 7.4  | .205                    | .31   | 2.0  | .08                | .21   | 1.3  | .02                 | .08   | .30  |
| 200                        |                     |       |     |                         |       |     | .81                 | 1.82  | 9.0  | .245                    | .35   | 2.5  | .10                | .26   | 1.6  | .025                | .09   | .40  |
| 220                        |                     |       |     |                         |       |     | .95                 | 2.22  | 11.0 | .29                     | .41   | 3.0  | .12                | .30   | 1.9  | .028                | .10   | .50  |
| 240                        |                     |       |     |                         |       |     | 1.10                | 2.63  | 13.5 | .34                     | .48   | 3.7  | .14                | .33   | 2.2  | .035                | .11   | .55  |
| 260                        |                     |       |     |                         |       |     |                     |       |      | .39                     | .53   | 4.5  | .165               | .39   | 2.5  | .04                 | .115  | .60  |
| 280                        |                     |       |     |                         |       |     |                     |       |      | .45                     | .61   | 5.3  | .19                | .42   | 2.8  | .045                | .12   | .65  |
| 300                        |                     |       |     |                         |       |     |                     |       |      | .515                    | .70   | 6.2  | .22                | .50   | 3.1  | .05                 | .13   | .70  |
| 350                        |                     |       |     |                         |       |     |                     |       |      | .68                     | 1.05  | 8.5  | .28                | .67   | 4.1  | .07                 | .15   | .90  |
| 400                        |                     |       |     |                         |       |     |                     |       |      | .86                     | 1.55  | 11.0 | .38                | .88   | 5.2  | .085                | .18   | 1.2  |
| 450                        |                     |       |     |                         |       |     |                     |       |      | 1.05                    | 2.25  | 13.5 | .44                | 1.1   | 6.6  | .105                | .20   | 1.5  |
| 500                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .54                | 1.4   | 8.0  | .13                 | .23   | 1.75 |
| 550                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .64                | 1.7   | 9.5  | .15                 | .27   | 2.1  |
| 600                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .75                | 2.05  | 10.2 | .175                | .30   | 2.5  |
| 650                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .87                | 2.41  | 13.0 | .20                 | .34   | 2.8  |
| 700                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      | .10                | 2.8   | 15.0 | .23                 | .40   | 3.4  |
| 750                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      |                    |       |      | .26                 | .43   | 3.8  |
| 800                        |                     |       |     |                         |       |     |                     |       |      |                         |       |      |                    |       |      | .30                 | .50   | 4.4  |

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## ExD-Series Centrifugal Pump - Viscosity Chart

N - Newtonian, T - Thixotropic, D - Dilatant

| Reference       | Fluid                                   | Specific Gravity | Viscosity CPS   | Viscosity Type |
|-----------------|-----------------------------------------|------------------|-----------------|----------------|
| Adhesives       | Water                                   | 1.0              | 1.0             | N              |
|                 | "box" adhesives                         | 1+-              | 3,000           | T              |
|                 | PVA                                     | 1.3              | 100             | T              |
|                 | rubber and solvents                     | 1.0              | 15,000          | N              |
| Bakery          | batter                                  | 1.0              | 2,000           | T              |
|                 | butter (melted)                         | 0.98             | 18 at 140°F     | N              |
|                 | egg (whole)                             | 0.5              | 60 at 50°F      | N              |
|                 | emulsifier                              | -                | 20              | T              |
|                 | frosting                                | 1.0              | 10,000          | T              |
|                 | lecithin                                | -                | 3,250 at 125°F  | T              |
|                 | 77% sweetened condensed milk            | 1.3              | 10,000 at 77°F  | N              |
|                 | yeast slurry 15%                        | 1.0              | 180             | T              |
|                 | beer                                    | 1.0              | 1.1 at 40°F     | N              |
| Beer/Wine       | brewers concentrated yeast (80% solids) | -                | 16,000 at 40°F  | T              |
|                 | wort                                    | -                | -               | -              |
|                 | wine                                    | 1.0              | -               | -              |
|                 | caramel                                 | 1.2              | 400 at 140°F    | -              |
| Confectionery   | chocolate                               | 1.1              | 17,000 at 120°F | T              |
|                 | fudge (hot)                             | 1.1              | 36,000          | T              |
|                 | toffee                                  | 1.2              | 87,000          | T              |
|                 | face cream                              | -                | 10,000          | T              |
| Cosmetics/Soaps | hair gel                                | 1.4              | 5,000           | T              |
|                 | shampoo                                 | -                | 5,000           | T              |
|                 | toothpaste                              | -                | 20,000          | T              |
|                 | hand cleanser                           | -                | 2,000           | T              |
|                 | cottage cheese                          | 1.08             | 225             | T              |
| Dairy           | cream                                   | 1.02             | 20 at 40°F      | N              |
|                 | milk                                    | 1.03             | 1.2 at 60°F     | N              |
|                 | process cheese                          | -                | 30,000 at 160°F | T              |
|                 | yogurt                                  | -                | 1,100           | T              |
|                 | detergent concentrate                   | -                | 10              | N              |
| Dyes and Inks   | printers ink                            | 1 to 1.38        | 10,000          | T              |
|                 | dye                                     | 1.1              | 10              | N              |
|                 | gum                                     | -                | 5,000           | T              |
| Fats and Oils   | corn oil                                | 0.92             | 30              | N              |
|                 | lard                                    | 0.96             | 60 at 100°F     | N              |
|                 | linseed oil                             | 0.93             | 30 at 100°F     | N              |
|                 | peanut oil                              | 0.92             | 42 at 100°F     | N              |
|                 | soybean oil                             | 0.95             | 36 at 100°F     | N              |
|                 | vegetable oil                           | 0.92             | 3 at 300°F      | N              |
|                 | black bean paste                        | -                | 10,000          | T              |
| Misc. Foods     | cream style corn                        | -                | 130 at 190°F    | T              |
|                 | ketchup                                 | 1.11             | 560 at 145°F    | T              |
|                 | pabulum                                 | -                | 4,500           | T              |
|                 | pear pulp                               | -                | 4,000 at 160°F  | T              |
|                 | mashed potato                           | 1.0              | 20,000          | T              |
|                 | potato skins and caustic                | -                | 20,000 at 100°F | T              |
|                 | prune juice                             | 1.0              | 60 at 120°F     | T              |
|                 | orange juice concentrate                | 1.1              | 5,000 at 38°F   | T              |
|                 | tapioca pudding                         | 0.7              | 1,000 at 235°F  | T              |
|                 | mayonnaise                              | 1.0              | 5,000 at 75°F   | T              |
|                 | 33% tomato paste                        | 1.14             | 7,000           | T              |
|                 | honey                                   | 1.5              | 1,500 at 100°F  | -              |

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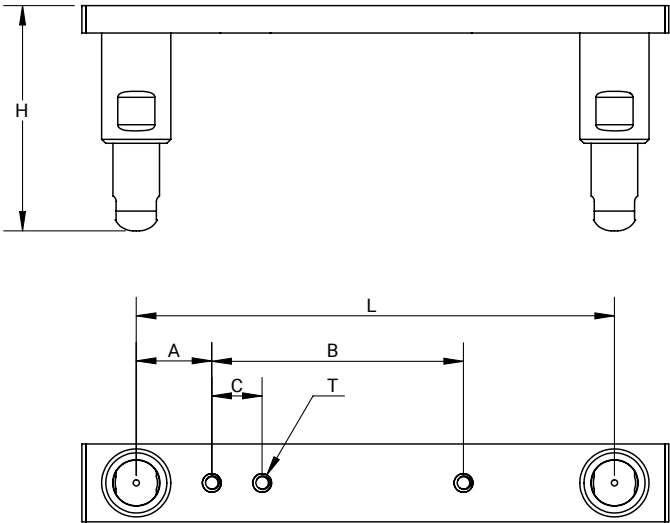
## ExD-Series Centrifugal Pump - Viscosity Chart

N - Newtonian, T - Thixotropic, D - Dilatant

|                                  | Fluid                     | Specific Gravity | Viscosity CPS            | Viscosity Type |
|----------------------------------|---------------------------|------------------|--------------------------|----------------|
| Meat Products                    | melted animal fat         | 0.9              | 43 at 100°F              | N              |
|                                  | ground beef fats          | 0.9              | 11,000 at 60°F           | T              |
|                                  | meat emulsion             | 1.0              | 22,000 at 40°F           | T              |
|                                  | pet food                  | 1.0              | 11,000 at 40°F           | T              |
|                                  | pork fat slurry           | 1.0              | 650 at 40°F              | T              |
| Misc. Chemicals                  | glycols                   | 1.1              | 35 at range              | -              |
| Paint                            | metallic auto paints      | -                | 220                      | T              |
|                                  | solvents                  | 0.8 to 0.9       | 0.5 to 10                | N              |
|                                  | titanium dioxide slurry   | -                | 10,000                   | T              |
|                                  | varnish                   | 1.06             | 140 at 100°F             | -              |
|                                  | turpentine                | 0.86             | 2 at 60°F                | -              |
| Paper and Textile                | black liquor tar          | -                | 2,000 at 300°F           | -              |
|                                  | paper coating 35%         | -                | 400                      | -              |
|                                  | sulfide 6%                | -                | 1,600                    | -              |
|                                  | black liquor              | 1.3              | 1,100 at 122°F           | -              |
|                                  | black liquor soap         | -                | 7,000 at 122°F           | -              |
| Petroleum and Petroleum Products | asphalt (unblended)       | 1.3              | 500 to 2,500             | -              |
|                                  | gasoline                  | 0.7              | 0.8 at 60°F              | N              |
|                                  | kerosene                  | 0.8              | 3 at 68°F                | N              |
|                                  | fuel oil #6               | 0.9              | 660 at 122°F             | N              |
|                                  | auto lube oil SAE 40      | 0.9              | 200 at 100°F             | N              |
|                                  | auto lube oil SAE 90      | 0.9              | 320 at 100°F             | N              |
|                                  | propane                   | 0.46             | 0.2 at 100°F             | N              |
|                                  | tars                      | 1.2              | wide range               | -              |
| Pharmaceuticals                  | castor oil                | 0.96             | 350                      | N              |
|                                  | cough syrup               | 1.0              | 190                      | N              |
|                                  | "stomach" remedy slurries | -                | 1,500                    | T              |
|                                  | pill pastes               | -                | 5,000 +/-                | T              |
| Plastic Resins <sup>1</sup>      | butadiene                 | 0.94             | 0.17 at 40°F             | -              |
|                                  | polyester resin (typ)     | 1.4              | 3,000                    | T              |
|                                  | PVA resin (typ)           | 1.3              | 65,000                   | -              |
| Starches and Gums                | corn starch Sol 22°B      | 1.18             | 32                       | T              |
|                                  | corn starch Sol 25°B      | 1.21             | 300                      | T              |
| Sugars, Syrups, Molasses         | corn syrup 41 Be          | 1.39             | 15,000 at 60°F           | N              |
|                                  | corn syrup 45 Be          | 1.45             | 12,000 at 130°F          | N              |
|                                  | glucose                   | 1.42             | 10,000 at 100°F          | -              |
|                                  | molasses A                | 1.42             | 280 to 5,000 at 100°F    | -              |
|                                  | molasses B                | 1.43 to 1.48     | 1,400 to 13,000 at 100°F | -              |
|                                  | molasses C                | 1.46 to 1.49     | 2,600 to 5,000 at 100°F  | -              |
|                                  | sugar syrups              | -                | -                        | -              |
|                                  | 60 Brix                   | 1.29             | 75 at 60°F               | N              |
|                                  | 68 Brix                   | 1.34             | 360 at 60°F              | N              |
|                                  | 76 Brix                   | 1.39             | 4,000 at 60°F            | N              |
| Water and Waste Treatment        | clarified sewage sludge   | 1.1              | 2,000 range              | -              |

<sup>1</sup>Wide variety of plastics can be pumped, viscosity varies greatly.

ExD-Series Centrifugal Pump - Leg Kits (Optional)



| Frame Size | Part #         | A (in) | B (in) | C (in) | H (in) |      | L (in) | T               |
|------------|----------------|--------|--------|--------|--------|------|--------|-----------------|
|            |                |        |        |        | Min    | Max  |        |                 |
| 56C        | P207-56LK-N    | 1.50   | 3.00   | -      | 4.60   | 5.00 | 10.50  | 5/16"-18<br>UNC |
|            | P207-56LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 140TC      | P207-14LK-N    |        | 5.00   | 1.00   | 4.60   | 5.00 | 11.50  |                 |
|            | P207-14LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 180TC      | P207-18LK-N    |        | 5.50   |        | 4.60   | 5.00 | 12.63  |                 |
|            | P207-18LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 210TC      | P207-21LK-N    |        | 7.00   | 1.50   | 4.60   | 5.00 | 15.88  |                 |
|            | P207-21LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 250TC      | P207-25LK-N    |        | 10.00  | 1.75   | 4.60   | 5.00 | 20.00  |                 |
|            | P207-25LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 280TSC     | P207-28LK-N    |        | 11.00  | 1.50   | 4.60   | 5.00 | 21.00  |                 |
|            | P207-28LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |
| 320TSC     | P207-32LK-N    |        | 12.00  |        | 4.60   | 5.00 | 2.50   |                 |
|            | P207-32LK-N-60 |        |        |        | 6.75   | 7.50 |        |                 |

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ExD-Series Centrifugal Pump - Repair Kits

- 1 - rotary seal (P80)

1 - seal cup (P80A)

1 - seal O-ring (P80B)
- 1 - seal spring (P80C)

1 - seal seat (P80N)

1 - outboard gasket (P90)
- 1 - inboard gasket (P80R)

1 - impeller O-ring (X8A)

1 - casing/cover O-ring (X9A)

| Model Number       | Elastomer      | Ceramic/Carbon  | SC/Carbon       | SC/SC           | TC/TC           |
|--------------------|----------------|-----------------|-----------------|-----------------|-----------------|
| ExD 100<br>ExD 110 | FKM            | PRK-EXD100VCC-1 | PRK-EXD100VSC-1 | PRK-EXD100VSS-1 | PRK-EXD100VTC-1 |
|                    | nitrile rubber | PRK-EXD100BCC-1 | PRK-EXD100BSC-1 | PRK-EXD100BSS-1 | PRK-EXD100BTC-1 |
|                    | EPDM           | PRK-EXD100ECC-1 | PRK-EXD100ESC-1 | PRK-EXD100ESS-1 | PRK-EXD100ETC-1 |
| ExD 120<br>ExD 130 | FKM            | PRK-EXD120VCC-1 | PRK-EXD120VSC-1 | PRK-EXD120VSS-1 | PRK-EXD120VTC-1 |
|                    | nitrile rubber | PRK-EXD120BCC-1 | PRK-EXD120BSC-1 | PRK-EXD120BSS-1 | PRK-EXD120BTC-1 |
|                    | EPDM           | PRK-EXD120ECC-1 | PRK-EXD120ESC-1 | PRK-EXD120ESS-1 | PRK-EXD120ETC-1 |
| ExD 200<br>ExD 210 | FKM            | PRK-EXD200VCC-1 | PRK-EXD200VSC-1 | PRK-EXD200VSS-1 | PRK-EXD200VTC-1 |
|                    | nitrile rubber | PRK-EXD200BCC-1 | PRK-EXD200BSC-1 | PRK-EXD200BSS-1 | PRK-EXD200BTC-1 |
|                    | EPDM           | PRK-EXD200ECC-1 | PRK-EXD200ESC-1 | PRK-EXD200ESS-1 | PRK-EXD200ETC-1 |
| ExD 220<br>ExD 230 | FKM            | PRK-EXD220VCC-1 | PRK-EXD220VSC-1 | PRK-EXD220VSS-1 | PRK-EXD220VTC-1 |
|                    | nitrile rubber | PRK-EXD220BCC-1 | PRK-EXD220BSC-1 | PRK-EXD220BSS-1 | PRK-EXD220BTC-1 |
|                    | EPDM           | PRK-EXD220ECC-1 | PRK-EXD220ESC-1 | PRK-EXD220ESS-1 | PRK-EXD220ETC-1 |

## MB100-Series Centrifugal Pump



Designed for conveying low viscosity fluids in a broad range of applications such as food, dairy, beverage, winery, and brewing markets.

### Certifications

- 3A approved
- Elastomers meet FDA 21CFR 177.2600 and 3A 18-03 Class I

### Size

- 1" outlet x 1-1/2" inlet

### Features

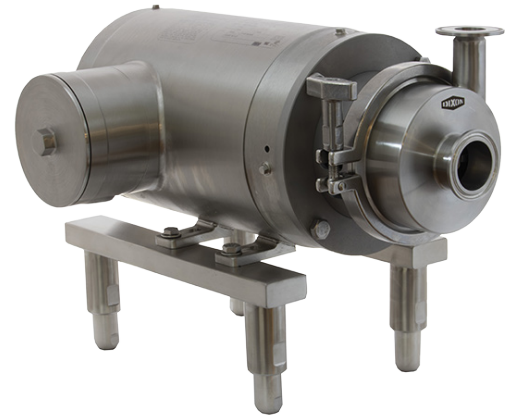
- Standard clamp
  - Uses a standard 4" tube clamp for easy removal and adjustment of the casing
  - Eliminates post and tab construction
- Seal design
  - Robust single mechanical seal design with silicon carbide stationary seal-face and carbon rotary seal-face
- Seal performance
  - Efficient seal path promotes seal cooling and provides less restrictions to adequately clean the seal
- Impeller and shaft design
  - Sealed impeller provides optimal hygienic performance while the split shaft compression collar improves shaft concentricity, reduces vibration, and improves seal life
- Drop-in replacement for other C-100 series pumps
- Wet end mounts to a standard 56C frame motor

### Materials

- Product contact metal components: AISI 316L stainless steel, FKM, EPDM, PTFE
- Non-product contact components: AISI 304 stainless steel
- Product contact seals: carbon and silicon carbide

### Specifications

- Standard connection: clamp
- Minimum operating temperature: **32°F (0°C)**
- Maximum operating temperature: **212°F (100°C)**
- Viscosity range: 1 - 500 cP
- Surface Finish
  - Product contact metal components: ≤ 32 Ra
  - Non-product contact metal components: ≤ 63 Ra
- Seal type: single mechanical
- Performance characteristics
  - Nominal capacity: up to **75 GPM**
  - Nominal speed: up to 3500 RPM - 60 Hz
- Motors and mounting
  - Motor frame size: NEMA 56C C-face
  - Speeds: 1750 and 3500 RPM
  - Enclosure: TENV or TEFC, stainless steel or epoxy white washdown
- Cleaning method
  - CIP: clean-in-place
- Weight: 9 lbs without motor



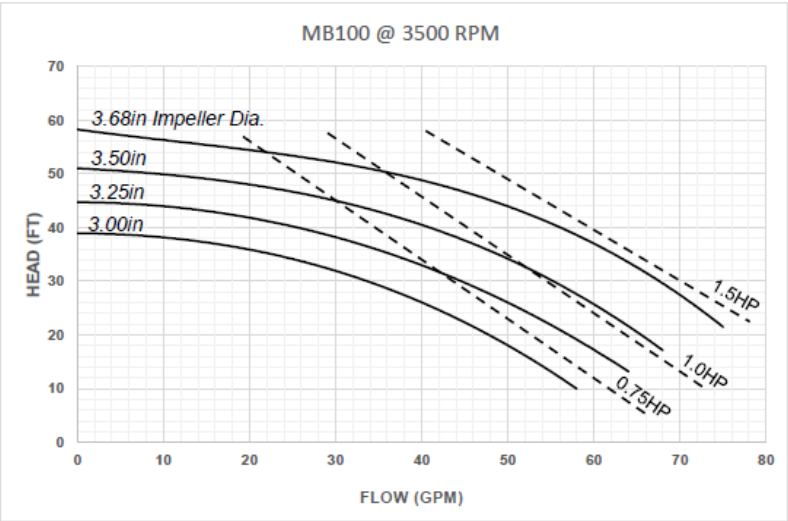
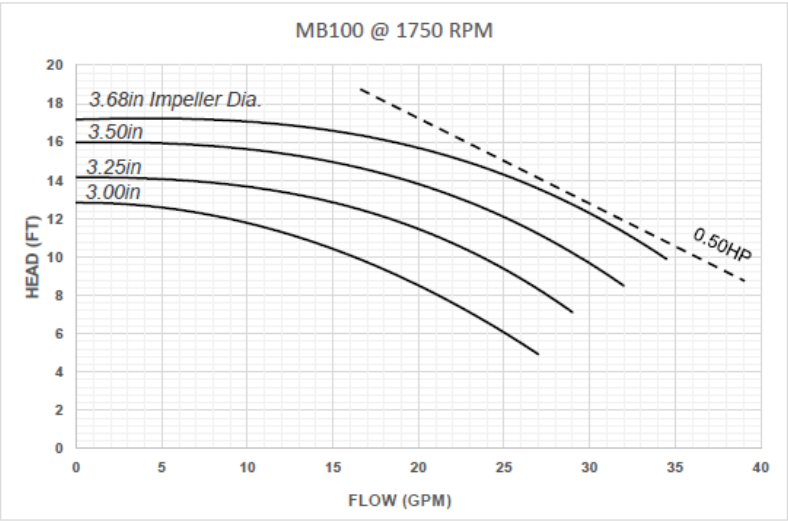
## MB100-Series Centrifugal Pump - Part Number Key

| MB100-Series Centrifugal Pump<br>Part Number Key<br>Example: MB15A01C1EA1A01 |             | Series | Port<br>Size | Finish | Impeller<br>Size | Connections | Seal<br>Type | Elastomer | Frame<br>Size | Motor<br>Type | Electrical | Power<br>and<br>Speed |
|------------------------------------------------------------------------------|-------------|--------|--------------|--------|------------------|-------------|--------------|-----------|---------------|---------------|------------|-----------------------|
|                                                                              |             | MB     | 15           | A      | 01               | C           | 1            | E         | A             | 1             | A          | 01                    |
| <b>Series</b>                                                                | <b>Code</b> | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| MB100                                                                        | MB          |        |              |        |                  |             |              |           |               |               |            |                       |
| <b>Port Size</b>                                                             | <b>Code</b> | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 1-1/2" inlet x 1" outlet                                                     | 15          |        |              |        |                  |             |              |           |               |               |            |                       |
| <b>Surface Finish</b>                                                        | <b>Code</b> | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 32 Ra (I.D. mech. polish)                                                    | A           |        |              |        |                  |             |              |           |               |               |            |                       |
| 25 Ra (I.D. mech. polish)                                                    | B           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 20 Ra (I.D. mech. polish)                                                    | C           |        |              |        |                  |             |              |           |               |               |            |                       |
| <b>Impeller Size</b>                                                         | <b>Code</b> | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 3.68"                                                                        | 01          |        |              |        |                  |             |              |           |               |               |            |                       |
| 3.5"                                                                         | 02          | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 3.25"                                                                        | 03          |        |              |        |                  |             |              |           |               |               |            |                       |
| 3"                                                                           | 04          | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| <b>Connections</b>                                                           | <b>Code</b> |        |              |        |                  |             |              |           |               |               |            |                       |
| Clamp                                                                        | C           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| Weld                                                                         | B           |        |              |        |                  |             |              |           |               |               |            |                       |
| Female I-line                                                                | F           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| Male I-line                                                                  | M           |        |              |        |                  |             |              |           |               |               |            |                       |
| Threaded bevel                                                               | T           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| Plain bevel                                                                  | P           |        |              |        |                  |             |              |           |               |               |            |                       |
| Q-line                                                                       | Q           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| <b>Seal Type</b>                                                             | <b>Code</b> |        |              |        |                  |             |              |           |               |               |            |                       |
| Single mechanical SC vs carbon                                               | 1           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| <b>Elastomer</b>                                                             | <b>Code</b> |        |              |        |                  |             |              |           |               |               |            |                       |
| EPDM                                                                         | E           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| FKM                                                                          | V           |        |              |        |                  |             |              |           |               |               |            |                       |
| <b>Frame Size</b>                                                            | <b>Code</b> | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| NEMA 56C                                                                     | A           |        |              |        |                  |             |              |           |               |               |            |                       |
| <b>Motor Type</b>                                                            | <b>Code</b> | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| Baldor SS washdown                                                           | 1           |        |              |        |                  |             |              |           |               |               |            |                       |
| Sterling SS washdown                                                         | 2           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| Baldor white epoxy painted washdown                                          | 3           |        |              |        |                  |             |              |           |               |               |            |                       |
| Sterling white epoxy painted washdown                                        | 4           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| <b>Electrical</b>                                                            | <b>Code</b> |        |              |        |                  |             |              |           |               |               |            |                       |
| 1PH/60Hz 115/230V                                                            | A           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 3PH/60Hz 208-230/460V                                                        | B           |        |              |        |                  |             |              |           |               |               |            |                       |
| 3PH/50Hz 190/380V                                                            | C           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 3PH/50Hz 380/460V                                                            | D           |        |              |        |                  |             |              |           |               |               |            |                       |
| 3PH/50Hz 220/380/440V                                                        | E           | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 3PH/50Hz 220/380/415V                                                        | F           |        |              |        |                  |             |              |           |               |               |            |                       |
| <b>Power and Speed</b>                                                       | <b>Code</b> | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 0.75HP at 3500 RPM                                                           | 01          |        |              |        |                  |             |              |           |               |               |            |                       |
| 1.0HP at 3500 RPM                                                            | 02          | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
| 1.5HP at 3500 RPM                                                            | 03          |        |              |        |                  |             |              |           |               |               |            |                       |
| 0.5HP at 1750 RPM                                                            | 04          | ←      | ←            | ←      | ←                | ←           | ←            | ←         | ←             | ←             | ←          | ←                     |
|                                                                              |             |        |              |        |                  |             |              |           |               |               |            |                       |

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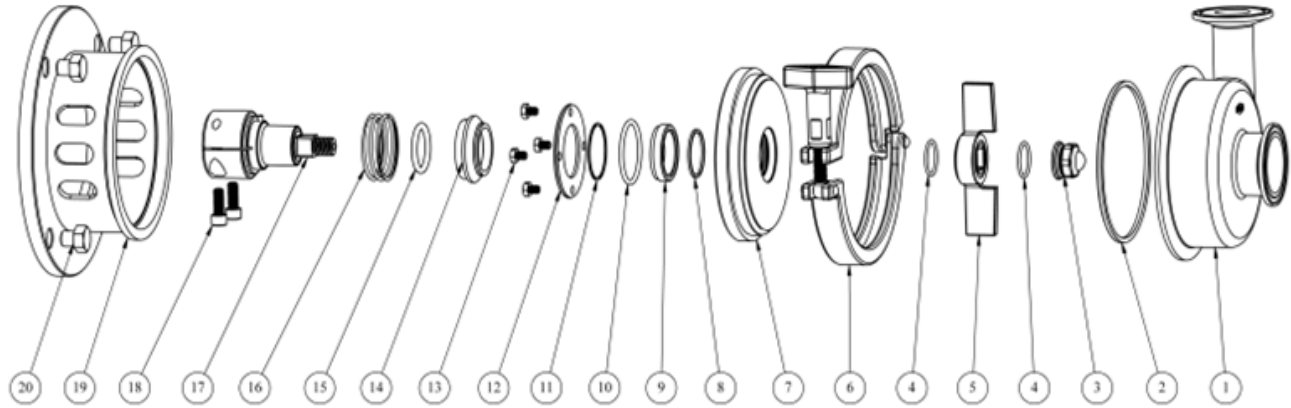
**MB100-Series Centrifugal Pump - Pump Curve**

Based on H<sub>2</sub>O at 70°F (21°C)  
Frequency: 60 HZ  
RPM: 1750 and 3500  
Size: 1-1/2" x 1" x 3.68"



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**MB100-Series Centrifugal Pump - Bill of Materials**



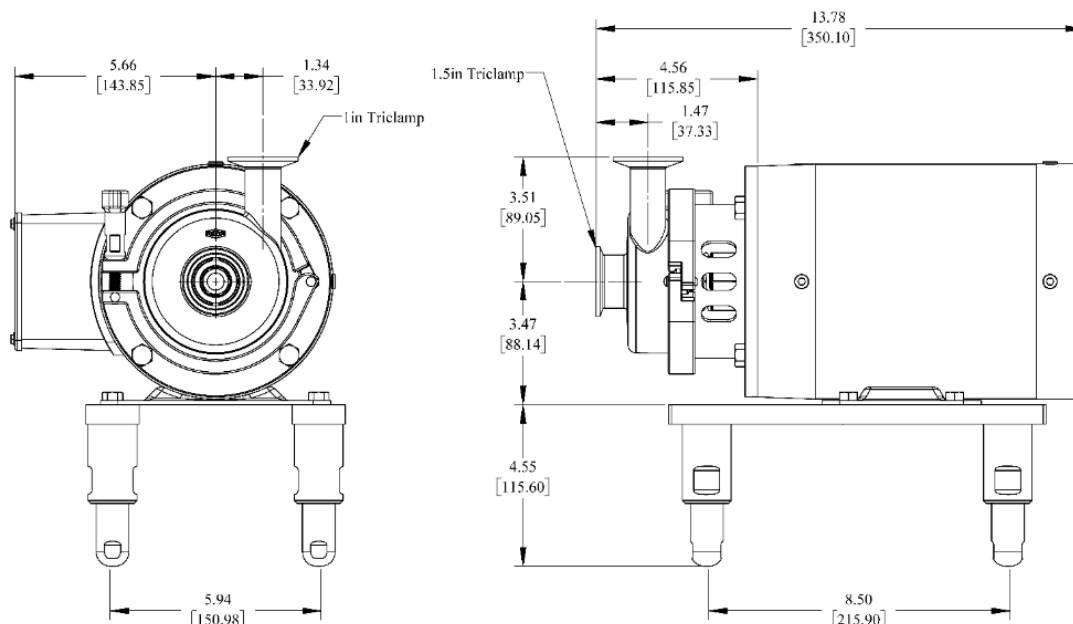
## MB100-Series Centrifugal Pump - Bill of Materials

| Item # | Description                    | Part #         | Material                 | Qty |
|--------|--------------------------------|----------------|--------------------------|-----|
| 1      | casing                         | MB100-PC-C     | 316L SS                  | 1   |
| 2      | casing seal*                   | MB100-PCOR-V   | FKM                      | 1   |
| 3      | impeller nut                   | MB100-IN       | 316L SS                  | 1   |
| 4      | impeller O-ring*               | MB100-NOR-V    | FKM                      | 2   |
| 5      | impeller (3.680" diameter)     | MB100-IMP-3680 | CF3M                     | 1   |
| 6      | casing clamp                   | 13MHHM400      | CF8                      | 1   |
| 7      | backplate                      | MB100-BKPL     | 316L SS                  | 1   |
| 8      | stationary seal gasket - inner | MB100-SSIG     | PTFE                     | 1   |
| 9      | stationary seal                | MB100-SS-SC    | sintered silicon carbide | 1   |
| 10     | stationary seal O-ring*        | MB100-SSOR-V   | FKM                      | 1   |
| 11     | stationary seal gasket - outer | MB100-SSOG     | PTFE                     | 1   |
| 12     | backplate seal ring            | MB100-SSP      | 304 SS                   | 1   |
| 13     | seal plate screw               | MB100-SPS      | 18-8                     | 4   |
| 14     | rotary seal                    | MB100-RS-C     | carbon                   | 1   |
| 15     | rotary seal O-ring*            | MB100-RSOR-V   | FKM                      | 1   |
| 16     | seal spring                    | MB100-SPR      | 304 SS                   | 1   |
| 17     | stub shaft (56C)               | MB100-SHFT     | 316L SS                  | 1   |
| 18     | stub shaft bolt                | MB100-SBOLT    | 18-8                     | 1   |
| 19     | adapter                        | MB100-ADP      | 304 SS                   | 1   |
| 20     | adapter bolt                   | P71B-114B-56AB | 18-8                     | 4   |

\*Optional available materials (see table below for component part numbers).

| Item # | Description             | Part #       | Material | Qty |
|--------|-------------------------|--------------|----------|-----|
| 2      | casing seal*            | MB100-PCOR-E | EPDM     | 1   |
| 4      | impeller O-ring*        | MB100-NOR-E  | EPDM     | 2   |
| 10     | stationary seal O-ring* | MB100-SSOR-E | EPDM     | 1   |
| 15     | rotary seal O-ring*     | MB100-RSOR-E | EPDM     | 1   |

## MB100-Series Centrifugal Pump - Dimensions



## MB100-Series Centrifugal Pump - Repair Kits

### Complete Rebuild Seal Repair Kits

| Pump Model | Soft Seal Material | Rotary Seal Material | Stationary Seal Material | Kit Part #  | Kit Includes (item #)      | Repair Kit BOM |              |     |
|------------|--------------------|----------------------|--------------------------|-------------|----------------------------|----------------|--------------|-----|
|            |                    |                      |                          |             |                            | Item #         | Part #       | Qty |
| MB100      | FKM                | carbon               | silicon carbide          | MB100-SK1-V | 2, 4, 8, 9, 10, 11, 14, 15 | 2              | MB100-PCOR-V | 1   |
|            |                    |                      |                          |             |                            | 4              | MB100-NOR-V  | 1   |
|            |                    |                      |                          |             |                            | 8              | MB100-SSIG   | 1   |
|            |                    |                      |                          |             |                            | 9              | MB100-SS-SC  | 1   |
|            |                    |                      |                          |             |                            | 10             | MB100-SSOR-V | 1   |
|            |                    |                      |                          |             |                            | 11             | MB100-SSOG   | 1   |
|            |                    |                      |                          |             |                            | 14             | MB100-RS-C   | 1   |
|            |                    |                      |                          |             |                            | 15             | MB100-RSOR-V | 1   |
| Pump Model | Soft Seal Material | Rotary Seal Material | Stationary Seal Material | Kit Part #  | Kit Includes (item #)      | Repair Kit BOM |              |     |
|            |                    |                      |                          |             |                            | Item #         | Part #       | Qty |
| MB100      | EPDM               | carbon               | silicon carbide          | MB100-SK1-E | 2, 4, 8, 9, 10, 11, 14, 15 | 2              | MB100-PCOR-E | 1   |
|            |                    |                      |                          |             |                            | 4              | MB100-NOR-E  | 1   |
|            |                    |                      |                          |             |                            | 8              | MB100-SSIG   | 1   |
|            |                    |                      |                          |             |                            | 9              | MB100-SS-SC  | 1   |
|            |                    |                      |                          |             |                            | 10             | MB100-SSOR-E | 1   |
|            |                    |                      |                          |             |                            | 11             | MB100-SSOG   | 1   |
|            |                    |                      |                          |             |                            | 14             | MB100-RS-C   | 1   |
|            |                    |                      |                          |             |                            | 15             | MB100-RSOR-E | 1   |

### Soft Seal Repair Kits

| Pump Model | Soft Seal Material | Kit Part #  | Kit Includes (item #) | Repair Kit BOM |              |     |
|------------|--------------------|-------------|-----------------------|----------------|--------------|-----|
|            |                    |             |                       | Item #         | Part #       | Qty |
| MB100      | FKM                | MB100-SK2-V | 2, 4, 10, 15          | 2              | MB100-PCOR-V | 1   |
|            |                    |             |                       | 4              | MB100-NOR-V  | 1   |
|            |                    |             |                       | 10             | MB100-SSOR-V | 1   |
|            |                    |             |                       | 15             | MB100-RSOR-V | 1   |
| Pump Model | Soft Seal Material | Kit Part #  | Kit Includes (item #) | Repair Kit BOM |              |     |
|            |                    |             |                       | Item #         | Part #       | Qty |
| MB100      | EPDM               | MB100-SK2-E | 2, 4, 10, 15          | 2              | MB100-PCOR-E | 1   |
|            |                    |             |                       | 4              | MB100-NOR-E  | 1   |
|            |                    |             |                       | 10             | MB100-SSOR-E | 1   |
|            |                    |             |                       | 15             | MB100-RSOR-E | 1   |

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Dixon®/Packo RZL-Series Rotary Lobe Pump



Designed for conveying fluids in the low to high viscosity range with gentle product handling in a broad range of applications from dairy, food, beverage, pharmaceutical, cosmetics, bakery, and chemical industries.

RZL-series pumps can be fitted with a variety of features and rotors to adapt to almost all hygienic pumping tasks. The pumps can be customized to achieve optimum function and performance for your process.

Sizes

- 1", 1-1/2", 2", 2-1/2", 3", 4", 5"

Features

- Universal mounting - pumps can be mounted with top or bottom shaft drive and vertical or horizontal inlet/outlet
- Stainless steel gear box with single oil reservoir made from precision casting offers paint free and rust free long lasting durability for 100-300 series
  - 400 series gear box is constructed of cast iron
- Helical timing gears drive the rotors with less vibration to extend pump efficiency and seal life
- Front loaded seals provide faster maintenance, easier cleaning, and less down time
- Stainless steel shims between the gearbox and casing make it easy to adjust rotor clearance without having to completely disassemble the gear box
- Base mount and cart packages available

Materials

- Product contact metal components: 316L stainless steel
- Product contact elastomers: EPDM, nitrile rubber, FKM

Specifications

- Standard connections: clamp
- Minimum operating temperature: **14°F (-10°C)**
- Maximum operating temperature (standard rotors): **248°F (120°C)**
- Maximum operating temperature (high temp rotors): **356°F (180°C)**
- Viscosity range: 1 - 1,000,000 cP
- Shaft seal data
  - Seal options: single mechanical, double mechanical, O-ring, and triple lip
  - Maximum flushing water pressure: **7 PSI (0.5 bar)**
  - Flushing water consumption: 30~60 cubic inches/min (0.25~0.5 liter/min)
  - Stationary seal ring material: tungsten carbide
  - Rotating seal ring material: tungsten carbide (standard), silicon carbide (optional)
  - Triple lip seal material: RTFE
- Surface Finish
  - Product Contact Metal Components: **Ra ≤ 32**
- Gearbox oil type: Shell Omala S2 G 150 or equivalent grade



RZL-Series Maximum RPM

| Viscosity (cP)   | RZL Model #             |     |     |     |     |     |     |     |     |
|------------------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|                  | 110                     | 115 | 120 | 220 | 225 | 330 | 340 | 440 | 450 |
|                  | Recommended Maximum RPM |     |     |     |     |     |     |     |     |
| 1 - 100          | 1000                    | 800 | 800 | 700 | 700 | 600 | 600 | 500 | 500 |
| 100 - 1,000      | 667                     | 533 | 533 | 467 | 467 | 400 | 400 | 333 | 333 |
| 1,000 - 5,000    | 417                     | 333 | 333 | 292 | 292 | 250 | 250 | 208 | 208 |
| 5,000 - 10,000   | 250                     | 200 | 200 | 175 | 175 | 150 | 150 | 125 | 125 |
| 10,000 - 20,000  | 167                     | 133 | 133 | 117 | 117 | 100 | 100 | 83  | 83  |
| 20,000 - 50,000  | 117                     | 93  | 93  | 82  | 82  | 70  | 75  | 58  | 58  |
| 50,000 - 100,000 | 83                      | 67  | 67  | 58  | 58  | 50  | 50  | 42  | 42  |

NOTE: This maximum RPM speed is calculated and estimated within the ideal operational condition.  
Pressure, solid (particle), operation hour, and other operational conditions effect this maximum RPM.  
High RPM is not recommended for pump durability.

### Dixon®/Packo RZL-Series Rotary Lobe Pump - Pump Models

| Model   | Gal/Rev | ΔP (PSI) <sup>1</sup> | Port Size | Max Solid Size (in) |
|---------|---------|-----------------------|-----------|---------------------|
| RZL 105 | 0.005   | 300                   | 1"        | 2 x 3/4             |
| RZL 110 | 0.01    | 300                   | 1"        |                     |
| RZL 115 | 0.03    | 175                   | 1-1/2"    |                     |
| RZL 120 | 0.06    | 115                   | 2"        |                     |
| RZL 220 | 0.11    | 175                   | 2"        | 2-1/2 x 1           |
| RZL 225 | 0.16    | 115                   | 2-1/2"    |                     |
| RZL 330 | 0.27    | 175                   | 3"        | 3 x 2               |
| RZL 340 | 0.38    | 115                   | 4"        |                     |
| RZL 440 | 0.6     | 175                   | 4"        | 4 x 2               |
| RZL 450 | 0.88    | 115                   | 5"        |                     |

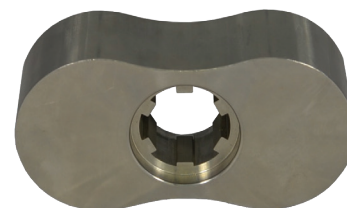
### RZL-Series Rotary Lobe Pump - Rotary Lobes



bi-wing



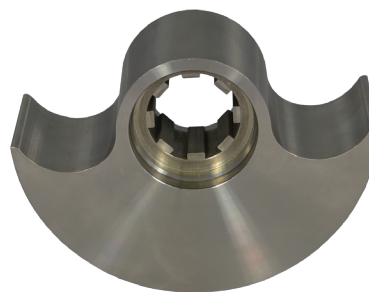
heli-lobe



bi-lobe



tri-lobe



single-wing

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### RZL-Series Rotary Lobe Pump - Maximum Speed (RPM) (1 - 100 cP)

| Model   | Bi-Wing | Heli-Lobe <sup>1</sup> | Bi-Lobe | Tri-Lobe | Single-Wing | Multi-Lobe |
|---------|---------|------------------------|---------|----------|-------------|------------|
| RZL 105 | -       | -                      | -       | -        | -           | 800        |
| RZL 110 | 800     | -                      | -       | -        | -           | 800        |
| RZL 115 | 800     | 800                    | 800     | 800      | 100         | 800        |
| RZL 120 | 800     | 800                    | 800     | 800      | 100         | 800        |
| RZL 220 | 700     | 700                    | 700     | 700      | 100         | -          |
| RZL 225 | 700     | 700                    | 700     | 700      | 100         | -          |
| RZL 330 | 600     | 600                    | 600     | 600      | 100         | -          |
| RZL 340 | 600     | 600                    | 600     | 600      | 100         | -          |
| RZL 440 | 500     | 500                    | 500     | 500      | 100         | -          |
| RZL 450 | 500     | 500                    | 500     | 500      | 100         | -          |

<sup>1</sup>Pulsation free heli-lobe rotors give the pump increased capacity.



## RZL-Series Rotary Lobe Pump - Part Number Key

| RZL-Series Rotary Lobe Pump<br>Part Number Key<br>Example: RZL105M1ESWAGS_                         |      | Series | Model | Port | Seal | Elastomer | Rotor Type | Rotor Material | Position | Gear Casing Material | Options |
|----------------------------------------------------------------------------------------------------|------|--------|-------|------|------|-----------|------------|----------------|----------|----------------------|---------|
|                                                                                                    |      | RZL    | 105   | M    | 1    | E         | SW         | A              | G        | S                    |         |
| Series                                                                                             | Code |        |       |      |      |           |            |                |          |                      |         |
| RZL                                                                                                | RZL  |        |       |      |      |           |            |                |          |                      |         |
| Model                                                                                              | Code |        |       |      |      |           |            |                |          |                      |         |
| 105 - 1" port (0.005 gal/rev)                                                                      | 105  |        |       |      |      |           |            |                |          |                      |         |
| 110 - 1" port (0.01 gal/rev)                                                                       | 110  |        |       |      |      |           |            |                |          |                      |         |
| 115 - 1-1/2" port (0.03 gal/rev)                                                                   | 115  |        |       |      |      |           |            |                |          |                      |         |
| 120 - 2" port (0.06 gal/rev)                                                                       | 120  |        |       |      |      |           |            |                |          |                      |         |
| 220 - 2" port (0.11 gal/rev)                                                                       | 220  |        |       |      |      |           |            |                |          |                      |         |
| 225 - 2-1/2" port (0.16 gal/rev)                                                                   | 225  |        |       |      |      |           |            |                |          |                      |         |
| 330 - 3" port (0.27 gal/rev)                                                                       | 330  |        |       |      |      |           |            |                |          |                      |         |
| 340 - 4" port (0.38 gal/rev)                                                                       | 340  |        |       |      |      |           |            |                |          |                      |         |
| 440 - 4" port (0.60 gal/rev)                                                                       | 440  |        |       |      |      |           |            |                |          |                      |         |
| 450 - 5" port (0.88 gal/rev)                                                                       | 450  |        |       |      |      |           |            |                |          |                      |         |
| Port                                                                                               | Code |        |       |      |      |           |            |                |          |                      |         |
| Clamp                                                                                              | M    |        |       |      |      |           |            |                |          |                      |         |
| Weld                                                                                               | W    |        |       |      |      |           |            |                |          |                      |         |
| Bevel seat                                                                                         | B    |        |       |      |      |           |            |                |          |                      |         |
| 150lb flange*                                                                                      | K    |        |       |      |      |           |            |                |          |                      |         |
| Male NPT*                                                                                          | N    |        |       |      |      |           |            |                |          |                      |         |
| Male NPT reduced to 1-1/2"                                                                         | P    |        |       |      |      |           |            |                |          |                      |         |
| DIN male                                                                                           | 3    |        |       |      |      |           |            |                |          |                      |         |
| SMS male                                                                                           | 5    |        |       |      |      |           |            |                |          |                      |         |
| Seal                                                                                               | Code |        |       |      |      |           |            |                |          |                      |         |
| Single O-ring*                                                                                     | 1    |        |       |      |      |           |            |                |          |                      |         |
| Single mechanical seal TC/TC - tungsten carbide vs tungsten carbide                                | 2    |        |       |      |      |           |            |                |          |                      |         |
| Triple lip seal*                                                                                   | 3    |        |       |      |      |           |            |                |          |                      |         |
| Double mechanical seal w flush TC/TC/C - carbon vs tungsten carbide vs tungsten carbide with flush | 4    |        |       |      |      |           |            |                |          |                      |         |
| Elastomer                                                                                          | Code |        |       |      |      |           |            |                |          |                      |         |
| EPDM                                                                                               | E    |        |       |      |      |           |            |                |          |                      |         |
| nitrile rubber                                                                                     | B    |        |       |      |      |           |            |                |          |                      |         |
| FKM                                                                                                | V    |        |       |      |      |           |            |                |          |                      |         |
| Contact Dixon Sanitary for other options.                                                          |      |        |       |      |      |           |            |                |          |                      |         |
| Rotor Type                                                                                         | Code |        |       |      |      |           |            |                |          |                      |         |
| Single wing (not available in RZL105 and RZL110)                                                   | SW   |        |       |      |      |           |            |                |          |                      |         |
| Bi-wing (standard) (not available in RZL105)                                                       | BW   |        |       |      |      |           |            |                |          |                      |         |
| Bi-lobe (not available in RZL105 and RZL110)                                                       | BL   |        |       |      |      |           |            |                |          |                      |         |
| Tri-lobe (not available in RZL105 and RZL110)                                                      | 3L   |        |       |      |      |           |            |                |          |                      |         |
| Multi-lobe (only available in RZL105, RZL110, RZL115, RZL120)                                      | 5L   |        |       |      |      |           |            |                |          |                      |         |
| Heli-lobe (not available in RZL105 and RZL110)                                                     | HL   |        |       |      |      |           |            |                |          |                      |         |
| Hot clearance bi-wing (not available in RZL105)                                                    | HB   |        |       |      |      |           |            |                |          |                      |         |
| Hot clearance tri-lobe (not available in RZL105 and RZL110)                                        | H3   |        |       |      |      |           |            |                |          |                      |         |
| Hot clearance heli-lobe (not available in RZL105 and RZL110)                                       | HH   |        |       |      |      |           |            |                |          |                      |         |

\*Not 3A or EHEDGE certified

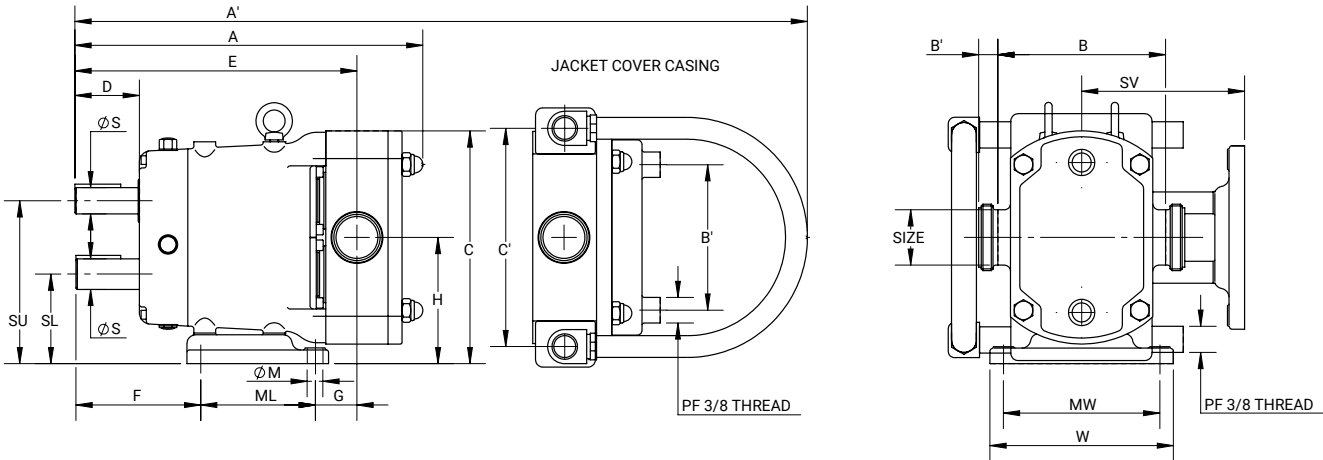
\*Not 3A or EHEDGE certified

## RZL-Series Rotary Lobe Pump - Part Number Key

| RZL-Series Rotary Lobe Pump<br>Part Number Key<br>Example: RZL105M1ESWAGS_            |       | Series | Model | Port | Seal | Elastomer | Rotor Type | Rotor Material | Position | Gear Casing Material | Options |
|---------------------------------------------------------------------------------------|-------|--------|-------|------|------|-----------|------------|----------------|----------|----------------------|---------|
|                                                                                       |       | RZL    | 105   | M    | 1    | E         | SW         | A              | G        | S                    |         |
| Rotor Material                                                                        | Code  |        |       |      |      |           |            |                |          |                      |         |
| Stainless steel                                                                       | A     |        |       |      |      |           |            |                |          |                      |         |
| Contact Dixon Sanitary for other options                                              |       |        |       |      |      |           |            |                |          |                      |         |
| Position                                                                              | Code  |        |       |      |      |           |            |                |          |                      |         |
| Horizontal lower shaft                                                                | G     |        |       |      |      |           |            |                |          |                      |         |
| Horizontal top shaft                                                                  | H     |        |       |      |      |           |            |                |          |                      |         |
| Vertical left shaft (view from front)                                                 | V     |        |       |      |      |           |            |                |          |                      |         |
| Vertical right shaft (view from front)                                                | W     |        |       |      |      |           |            |                |          |                      |         |
| Gear Casing Material                                                                  | Code  |        |       |      |      |           |            |                |          |                      |         |
| Stainless steel (standard for 100-300 series, not available for 400 series)           | S     |        |       |      |      |           |            |                |          |                      |         |
| Epoxy painted                                                                         | E     |        |       |      |      |           |            |                |          |                      |         |
| Options                                                                               | Code  |        |       |      |      |           |            |                |          |                      |         |
| None                                                                                  | blank |        |       |      |      |           |            |                |          |                      |         |
| Front cover jacket                                                                    | A     |        |       |      |      |           |            |                |          |                      |         |
| Rectangular inlet                                                                     | B     |        |       |      |      |           |            |                |          |                      |         |
| Pressure relief valve cover                                                           | C     |        |       |      |      |           |            |                |          |                      |         |
| Front bearing cover                                                                   | D     |        |       |      |      |           |            |                |          |                      |         |
| Casing jacket                                                                         | G     |        |       |      |      |           |            |                |          |                      |         |
| Special gearcase air relief valve                                                     | H     |        |       |      |      |           |            |                |          |                      |         |
| Front cover and casing jacketed                                                       | J     |        |       |      |      |           |            |                |          |                      |         |
| Special face to face dim                                                              | O     |        |       |      |      |           |            |                |          |                      |         |
| Special rotor nut and tool                                                            | R     |        |       |      |      |           |            |                |          |                      |         |
| 6" extension                                                                          | Z     |        |       |      |      |           |            |                |          |                      |         |
| TC/TC self contained flush/acrylic (only used with double mechanical seal with flush) | 7     |        |       |      |      |           |            |                |          |                      |         |
| No foot plate                                                                         | K     |        |       |      |      |           |            |                |          |                      |         |
| Rectangular inlet with special gearcase air relief valve                              | L     |        |       |      |      |           |            |                |          |                      |         |

NOTE: Contact Dixon Sanitary for other options.

RZL-Series Rotary Lobe Pump - Dimensions



| Model   | A<br>(in) | B<br>(in) | C<br>(in) | D<br>(in) | E<br>(in) | F<br>(in) | G<br>(in) | H<br>(in) | Mounting Dimensions    |            |            |           | Shaft Dimensions |            |            |            | Shaft Keyway   |               |      |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------------|------------|------------|-----------|------------------|------------|------------|------------|----------------|---------------|------|
|         |           |           |           |           |           |           |           |           | M <sup>1</sup><br>(mm) | ML<br>(in) | MW<br>(in) | W<br>(in) | S<br>(mm)        | SL<br>(in) | SU<br>(in) | SV<br>(in) | Length<br>(mm) | Width<br>(mm) |      |
| RZL 105 | 10.40     | 5.98      | 7.80      | 1.85      | 8.62      | 3.78      | 1.54      | 4.29      | 9                      | 3.31       | 5.28       | 6.22      | 22               | 3.03       | 5.55       | 5.55       | 34             | 8             |      |
| RZL 110 |           |           | 7.68      |           | 8.35      |           |           |           |                        |            |            |           |                  |            |            |            |                |               |      |
| RZL 115 | 10.80     |           | 7.80      |           | 8.74      |           |           |           |                        |            |            |           |                  |            |            |            |                |               | 1.65 |
| RZL 120 | 11.42     |           |           |           | 9.02      |           |           |           |                        |            |            |           |                  |            |            |            |                |               | 1.93 |
| RZL 220 | 14.84     | 7.40      | 10.12     | 2.32      | 12.09     | 5.08      | 1.81      | 5.63      | 11                     | 5.20       | 7.09       | 8.27      | 32               | 3.98       | 7.28       | 7.28       | 53             | 10            |      |
| RZL 225 | 15.75     |           |           |           | 16.60     |           | 2.13      |           |                        |            |            |           |                  |            |            |            |                |               |      |
| RZL 330 | 18.70     | 9.53      | 13.54     | 2.76      | 15.32     | 6.06      | 2.95      | 7.32      | 13                     | 6.30       | 9.53       | 11.26     | 45               | 5.06       | 9.59       | 9.59       | 57             | 14            |      |
| RZL 340 | 19.69     |           |           |           | 15.83     |           | 3.47      |           |                        |            |            |           |                  |            |            |            |                |               |      |
| RZL 440 | 24.41     | 12.76     | 18.03     | 3.15      | 19.88     | 7.80      | 3.94      | 9.72      | 15                     | 8.27       | 12.60      | 14.96     | 55               | 6.69       | 12.76      | 12.76      | 67             |               |      |
| RZL 450 | 25.79     |           |           |           | 20.55     |           | 4.61      |           |                        |            |            |           |                  |            |            |            |                |               |      |

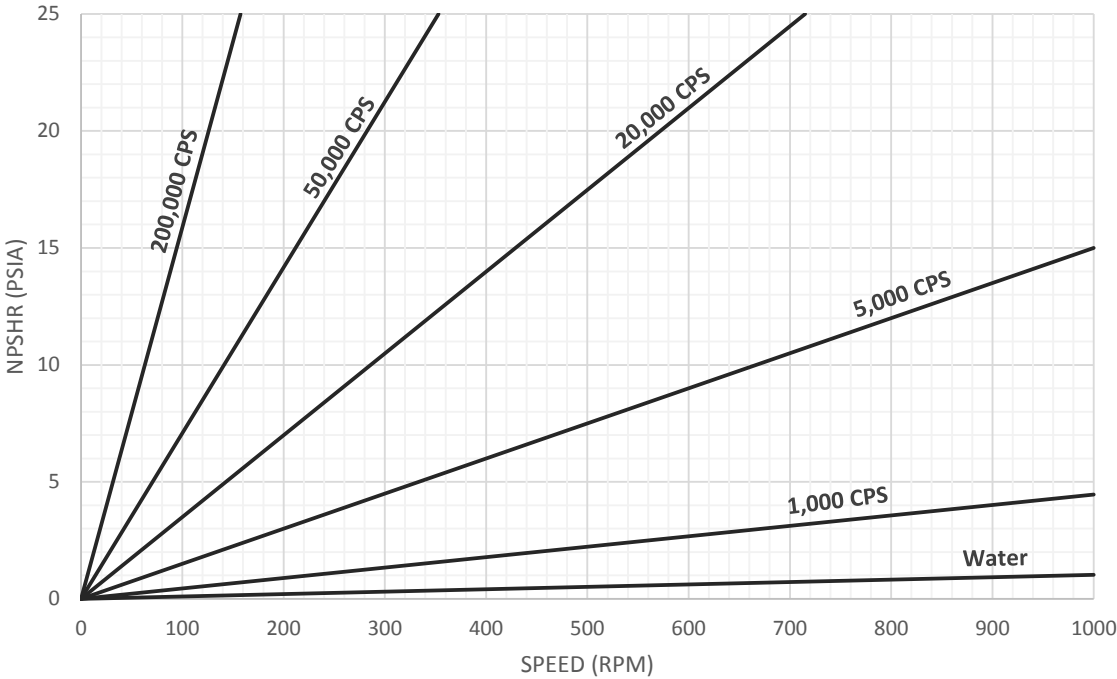
<sup>1</sup>Quantity 4 mounting bolt holes

| Model   | Port Size | Dimension B' (in) |            |       |       |        | Jacket Cover Casing |         |         | Weight (lbs) |
|---------|-----------|-------------------|------------|-------|-------|--------|---------------------|---------|---------|--------------|
|         |           | Clamp             | Bevel Seat | DIN   | SMS   | Flange | A' (in)             | B' (in) | C' (in) |              |
| RZL 105 | 1"        | 0.79              | 1.02       | 0.98  | 1.10  | 1.18   | 16.73               | 4.80    | 7.09    | 37           |
| RZL 110 | 1"        |                   |            | 1.18  |       |        | 0.79                |         |         | 16.93        |
| RZL 115 | 1-1/2"    | 0.87              |            |       | 17.32 |        |                     |         |         | 44           |
| RZL 120 | 2"        |                   |            |       | 1.38  |        | 23.82               | 6.77    | 9.25    | 93           |
| RZL 220 | 2"        | 1.10              |            | 1.57  |       | 24.80  | 106                 |         |         |              |
| RZL 225 | 2-1/2"    |                   |            |       | 1.77  | 1.38   | 2.13                | 28.35   | 9.69    | 12.13        |
| RZL 330 | 3"        | 1.81              |            | 28.29 |       |        |                     | 227     |         |              |
| RZL 340 | 4"        |                   |            | 1.18  | 32.68 |        |                     | 14.09   | 16.54   | 496          |
| RZL 440 | 4"        |                   |            |       | 35.28 |        |                     |         |         | 551          |
| RZL 450 | 5"        |                   |            |       |       |        |                     |         |         |              |

RZL-Series Rotary Lobe Pump - 100 Series Pump Curves

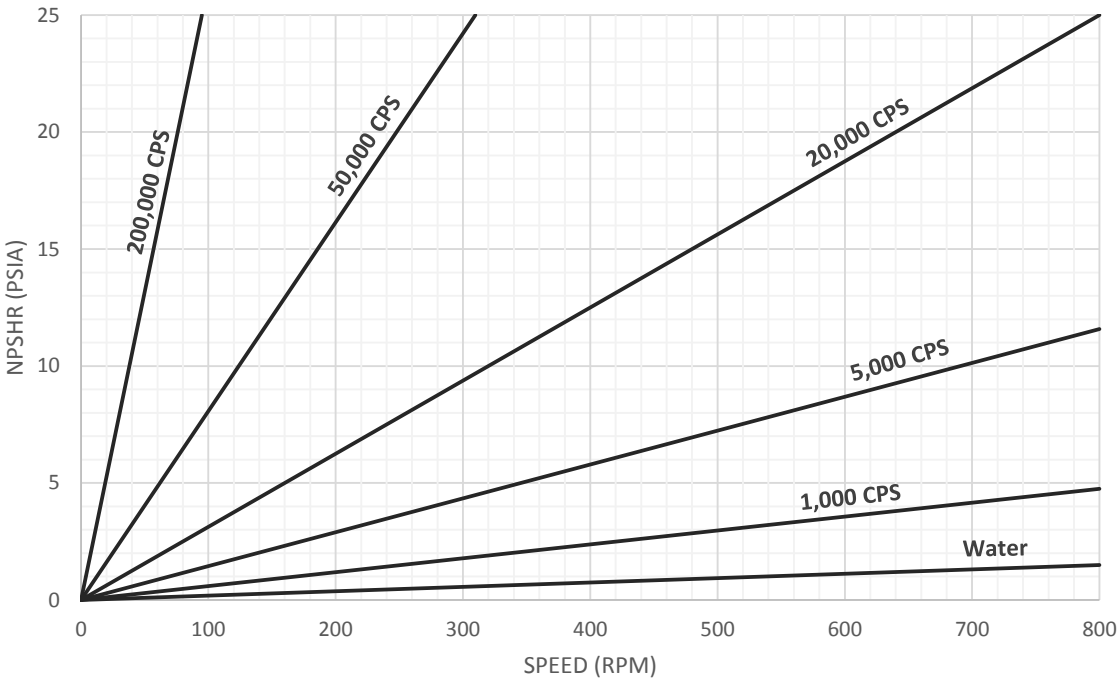
RZL 110 NPSHR

Port size: 1" x 1"



RZL 115 NPSHR

Port size: 1-1/2" x 1-1/2"

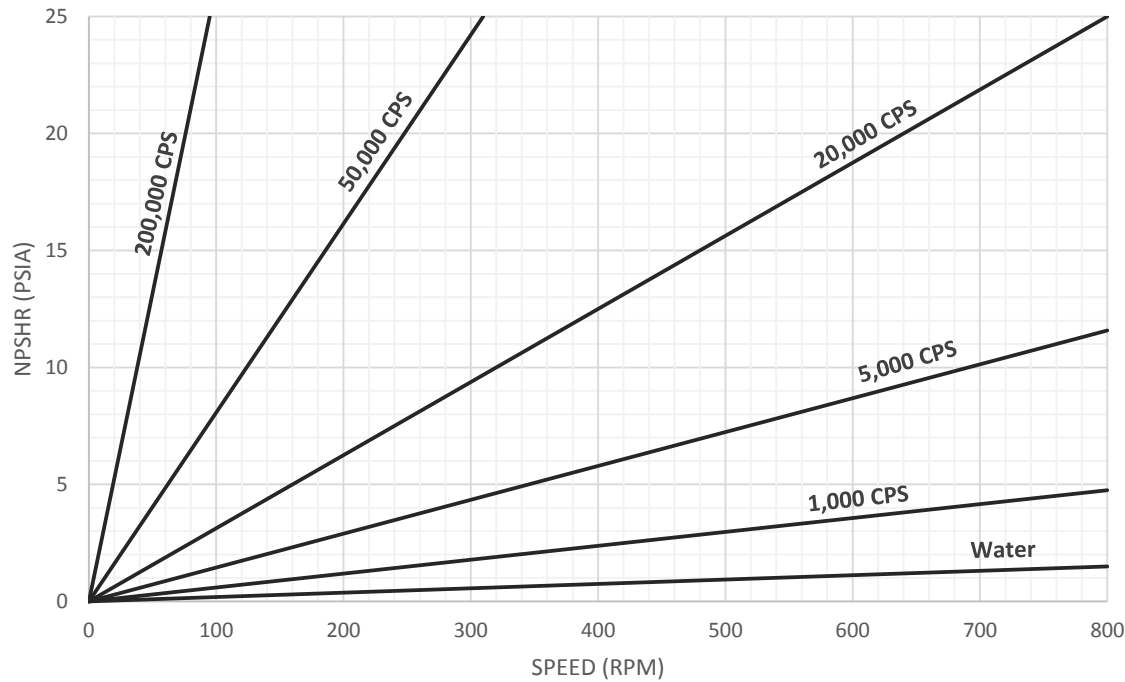


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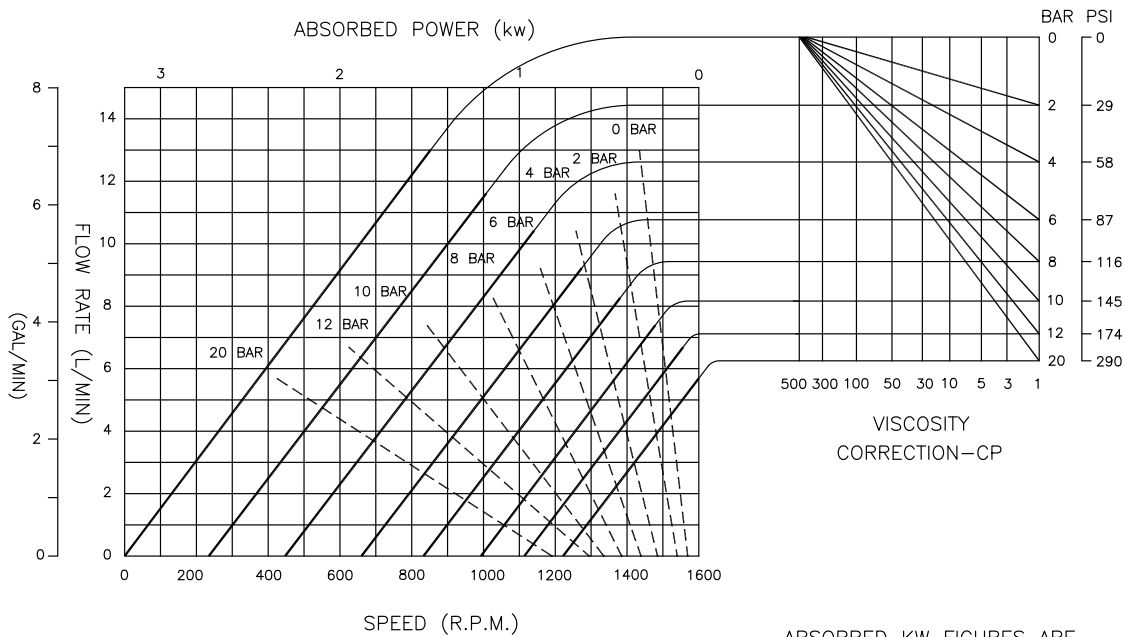
RZL-Series Rotary Lobe Pump - 100 Series Pump Curves

RZL 120 NPSHR

Port size: 2" x 2"



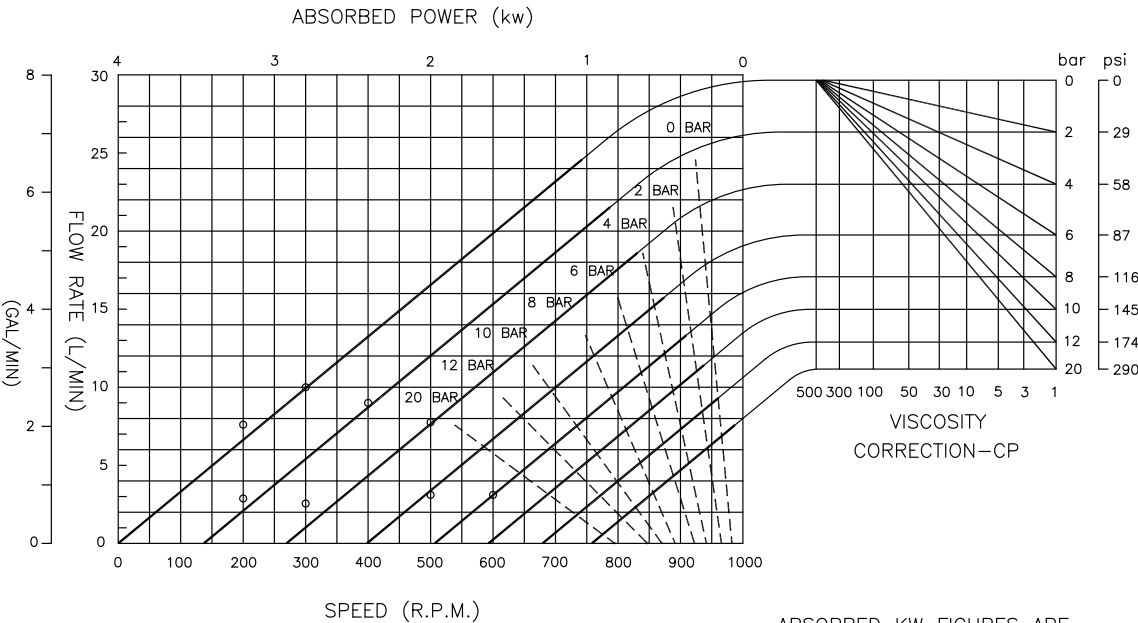
RZL 105 Multi-Lobe Capacity



ABSORBED KW FIGURES ARE FOR 1CP VISCOSITY

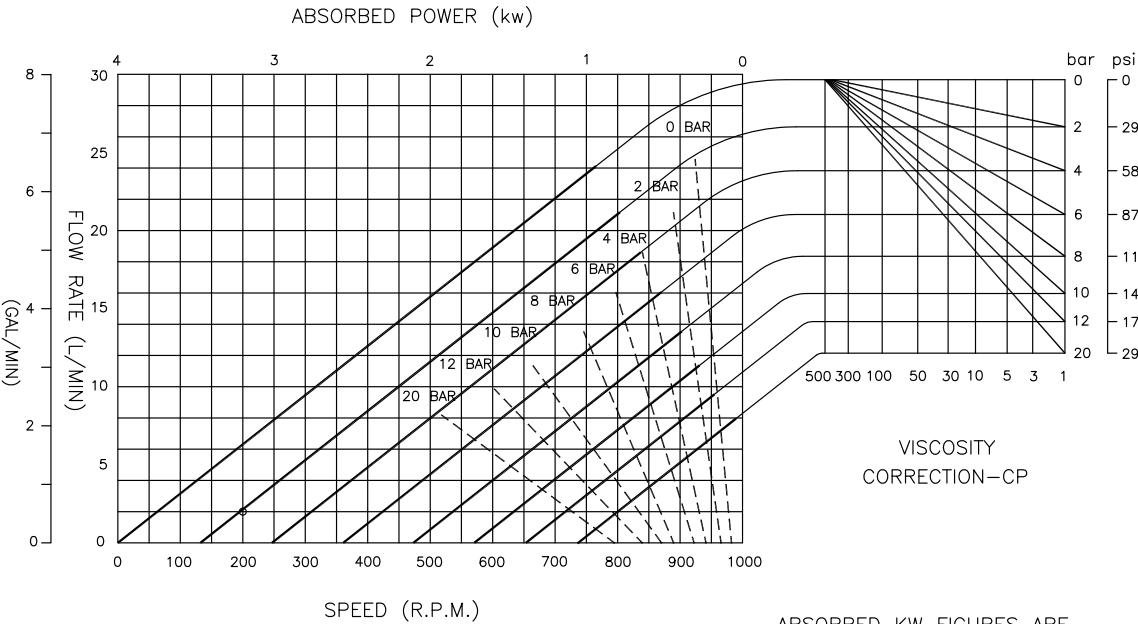
RZL-Series Rotary Lobe Pump - 100 Series Pump Curves

RZL 110 Bi-Wing Capacity



ABSORBED KW FIGURES ARE FOR 1CP VISCOSITY

RZL 110 Multi-Lobe Capacity

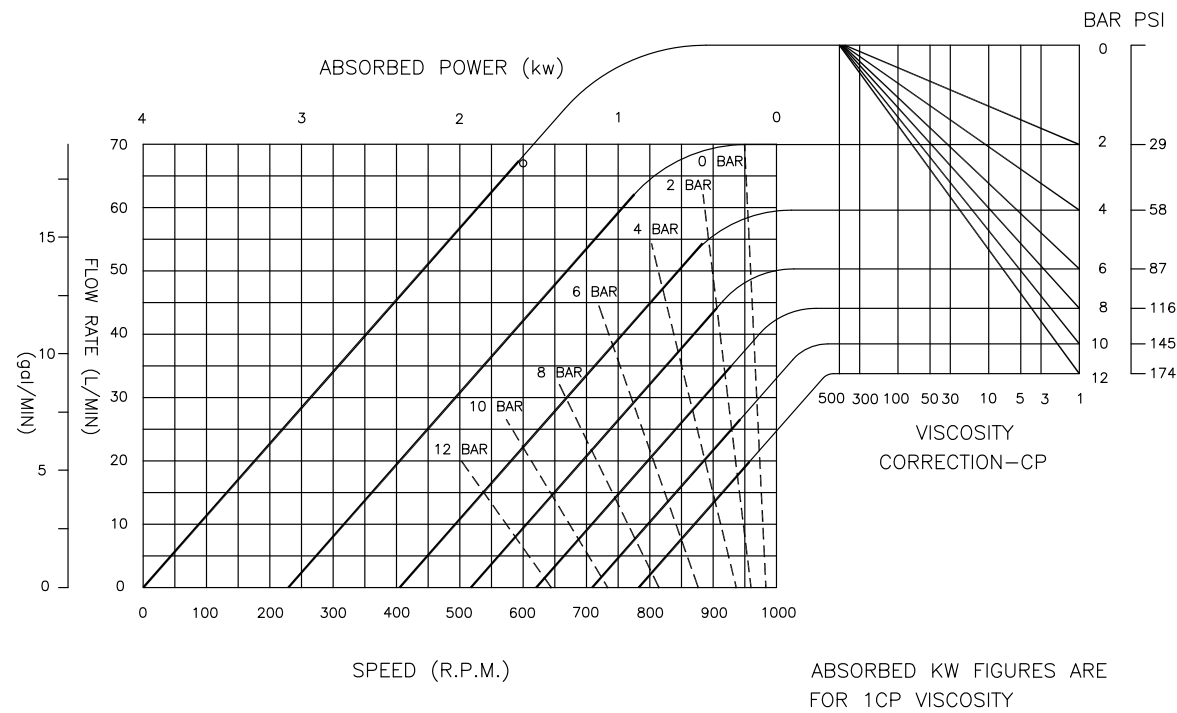


ABSORBED KW FIGURES ARE FOR 1CP VISCOSITY

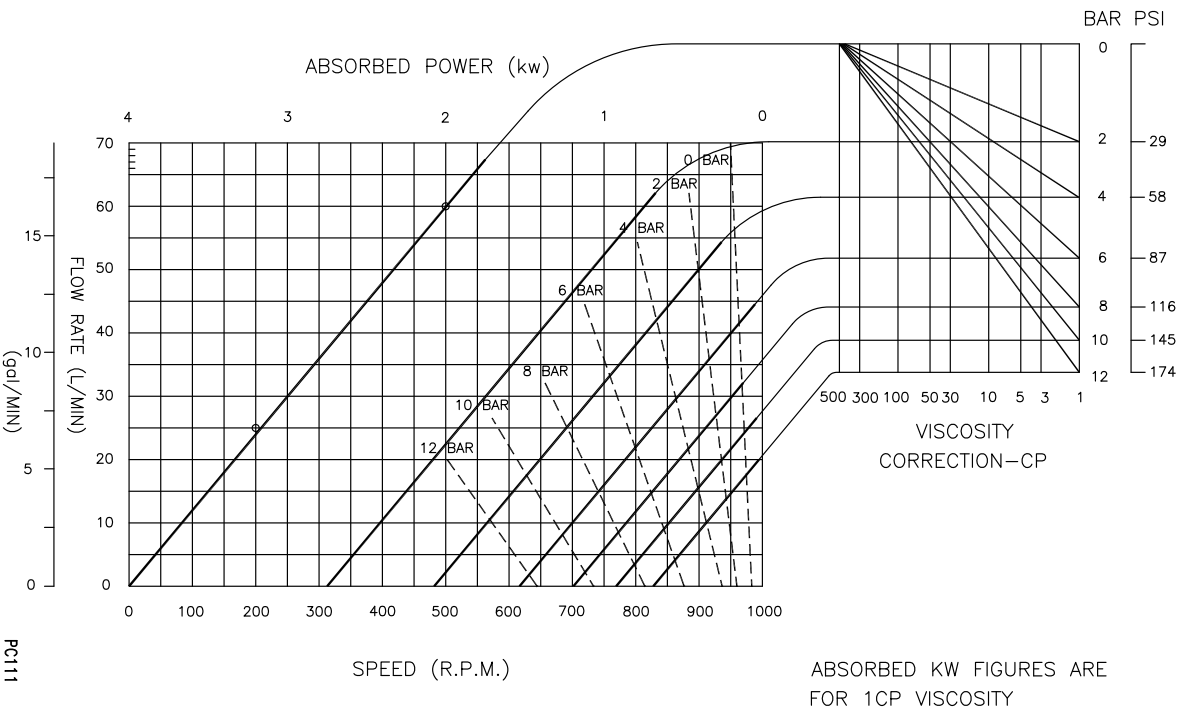


RZL-Series Rotary Lobe Pump - 100 Series Pump Curves

RZL 115 Bi-Wing Capacity



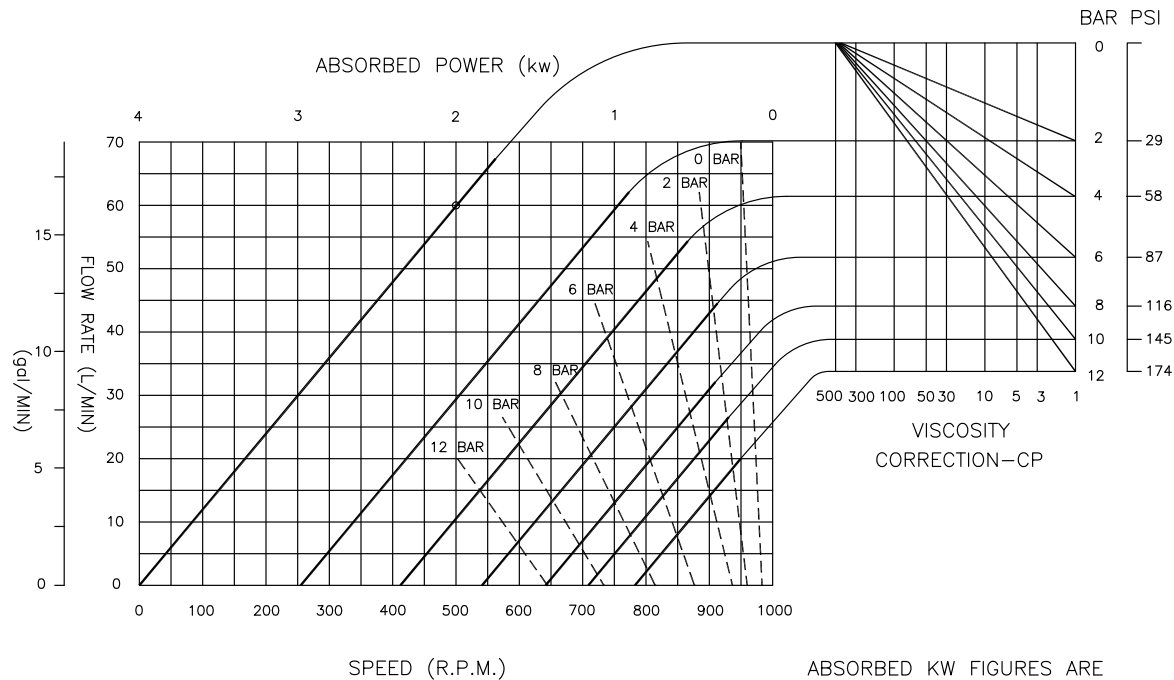
RZL 115 Heli-Lobe Capacity



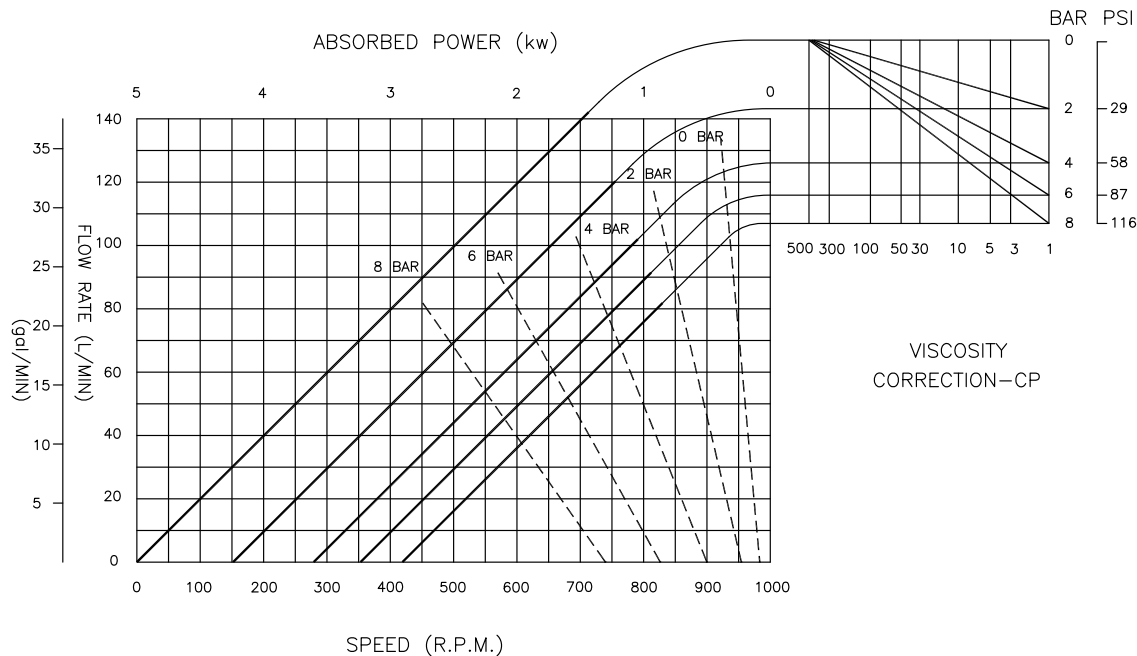
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**RZL-Series Rotary Lobe Pump - 100 Series Pump Curves**

**RZL 115 Tri-Lobe Capacity**



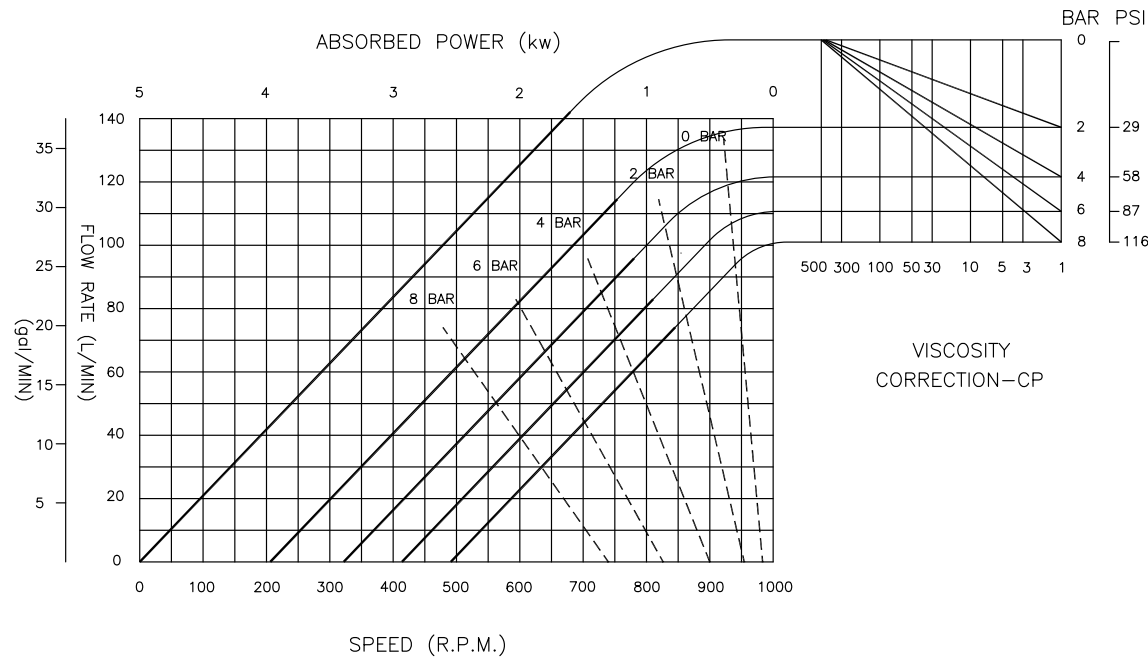
**RZL 120 Bi-Wing Capacity**



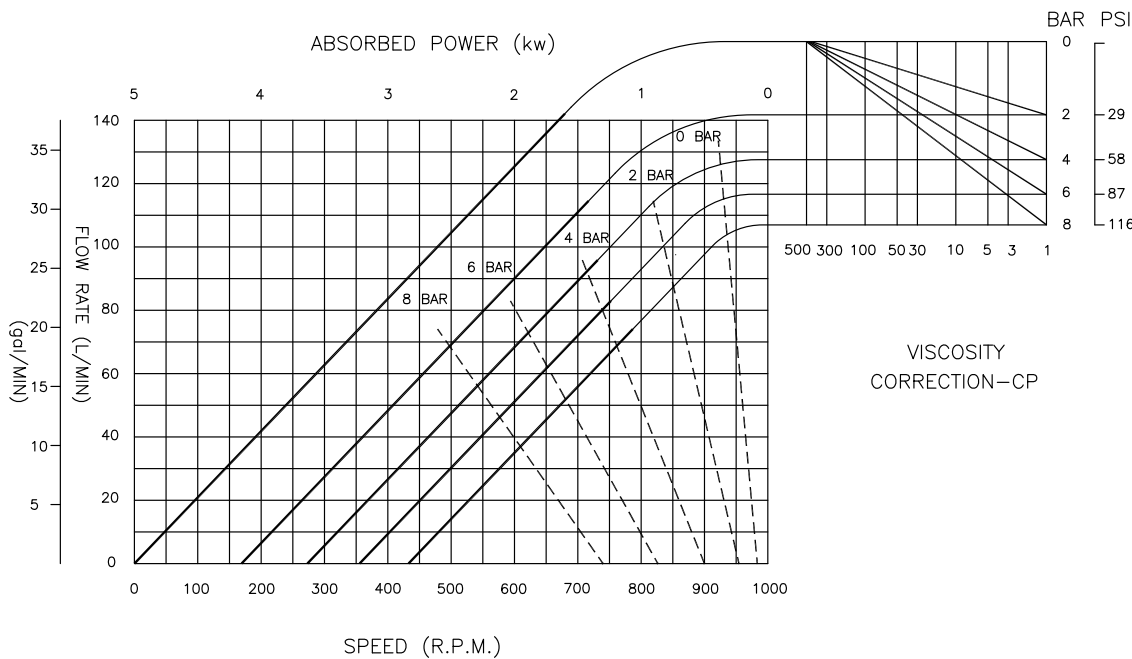


RZL-Series Rotary Lobe Pump - 100 Series Pump Curves

RZL 120 Heli-Lobe Capacity



RZL 120 Tri-Lobe Capacity

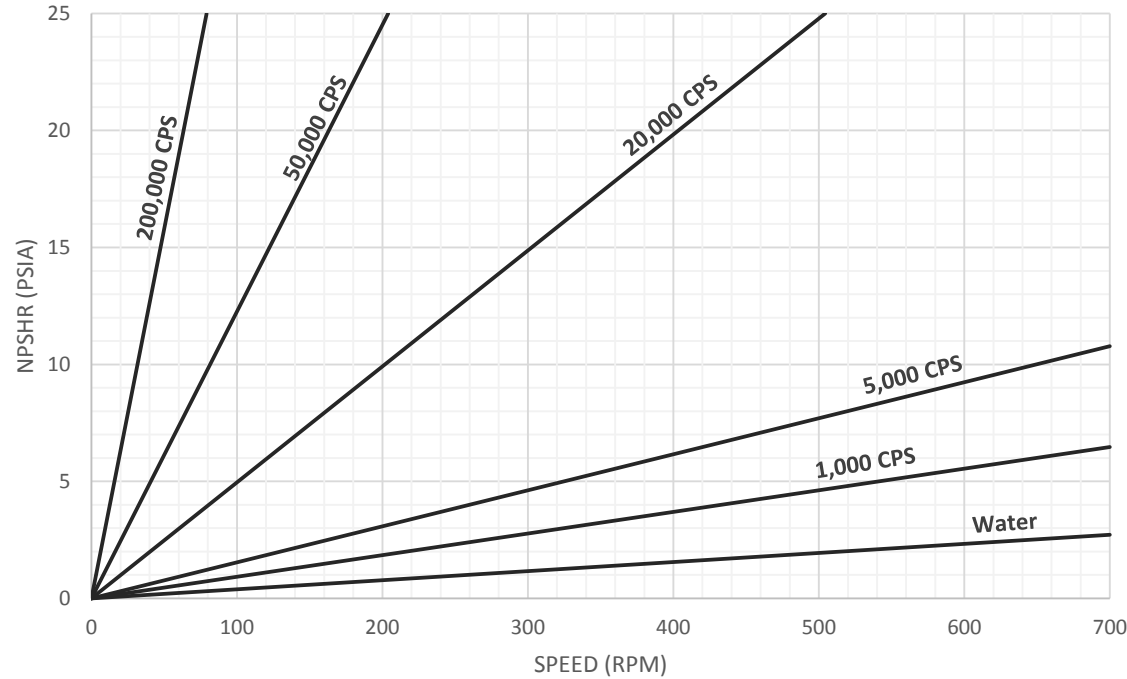


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RZL-Series Rotary Lobe Pump - 200 Series Pump Curves

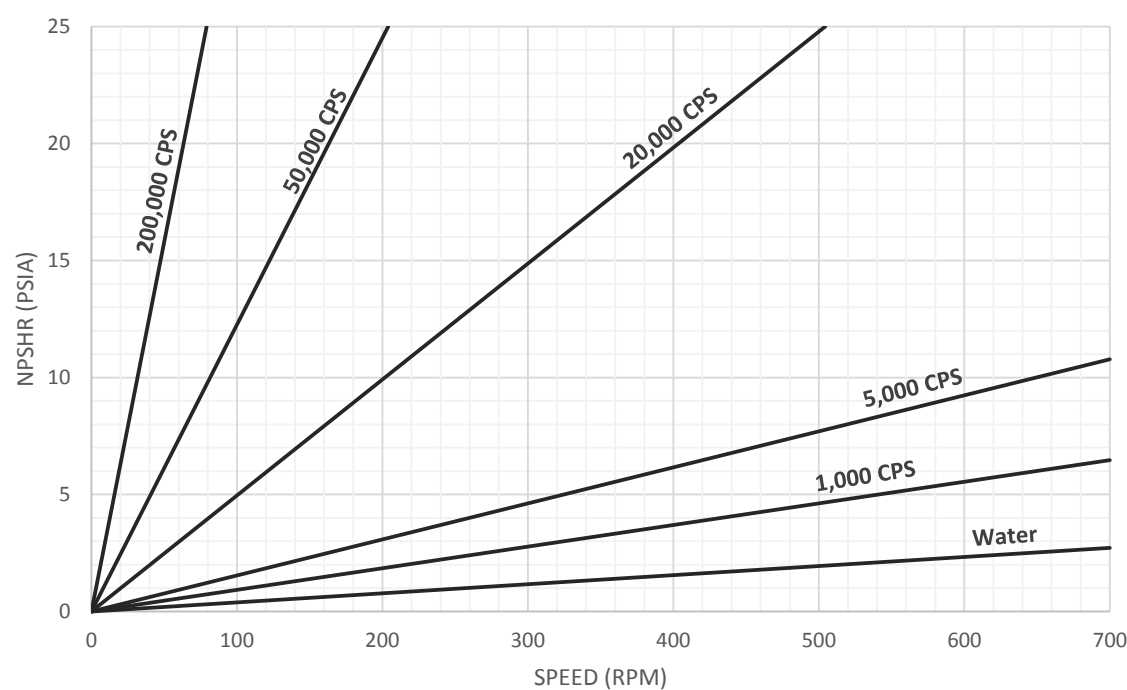
RZL 220 NPSHR

Port size: 2" x 2"



RZL 225 NPSHR

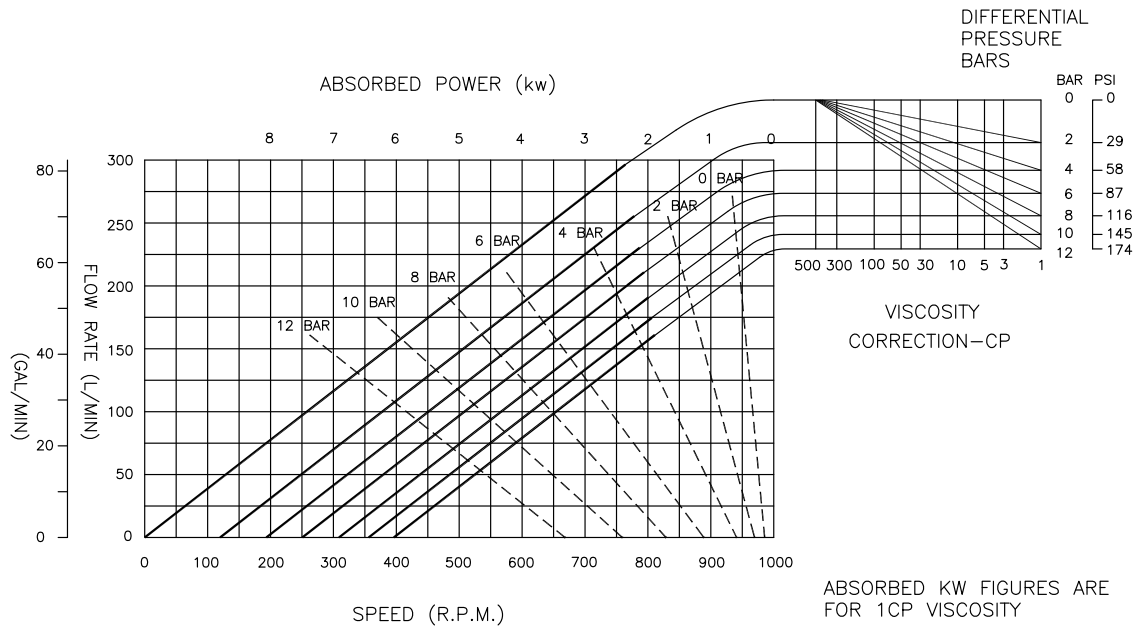
Port size: 2-1/2" x 2-1/2"



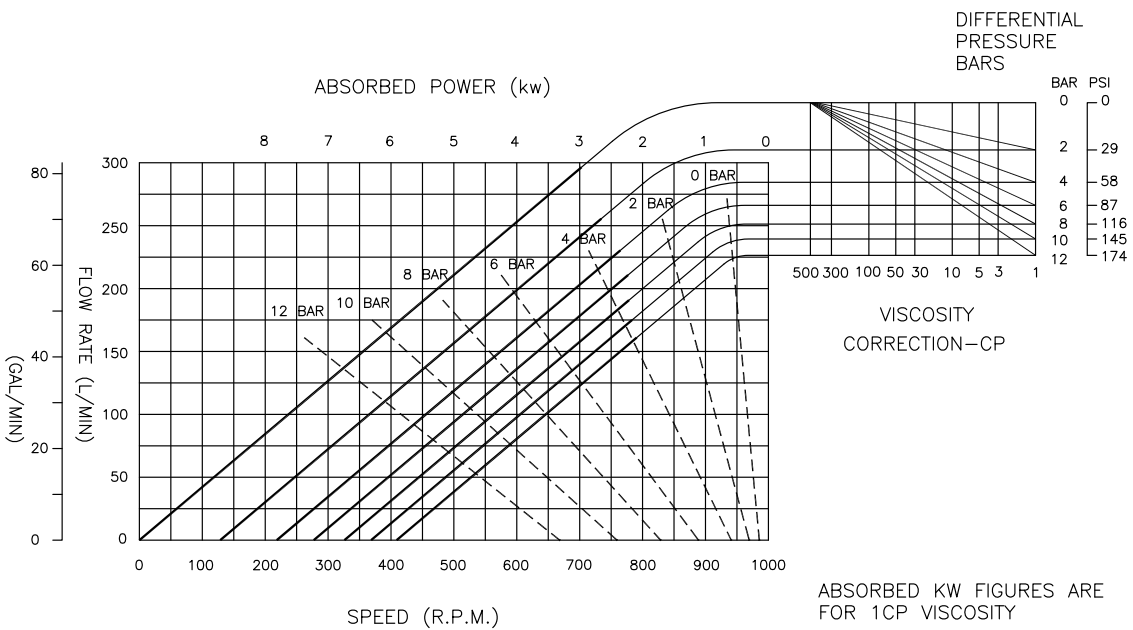
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RZL-Series Rotary Lobe Pump - 200 Series Pump Curves

RZL 220 Bi-Wing Capacity

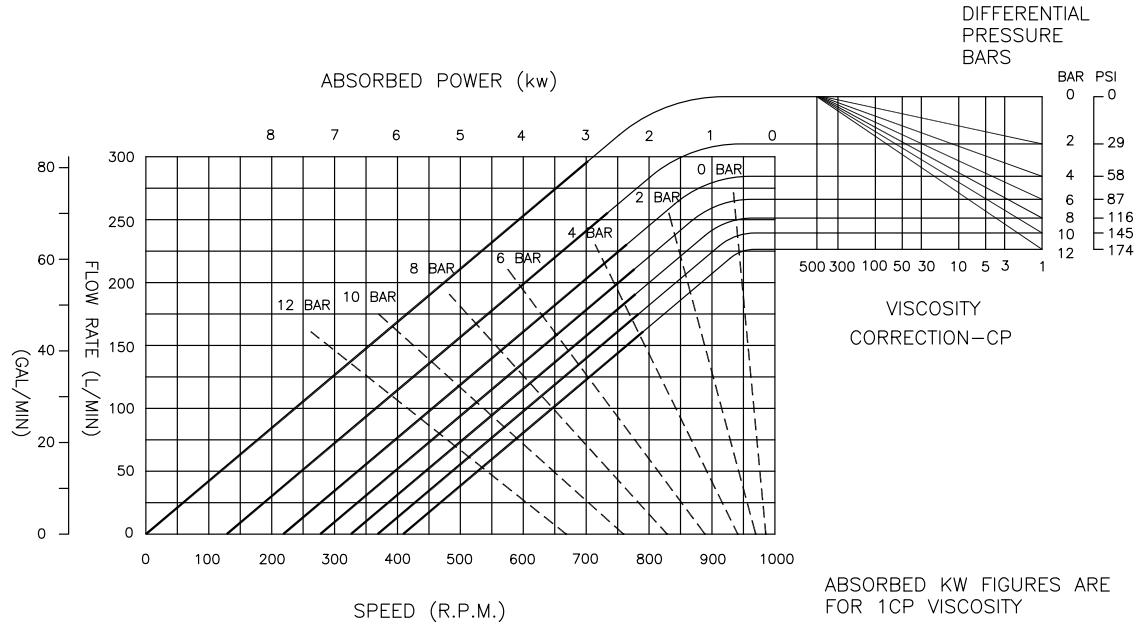


RZL 220 Heli-Lobe Capacity

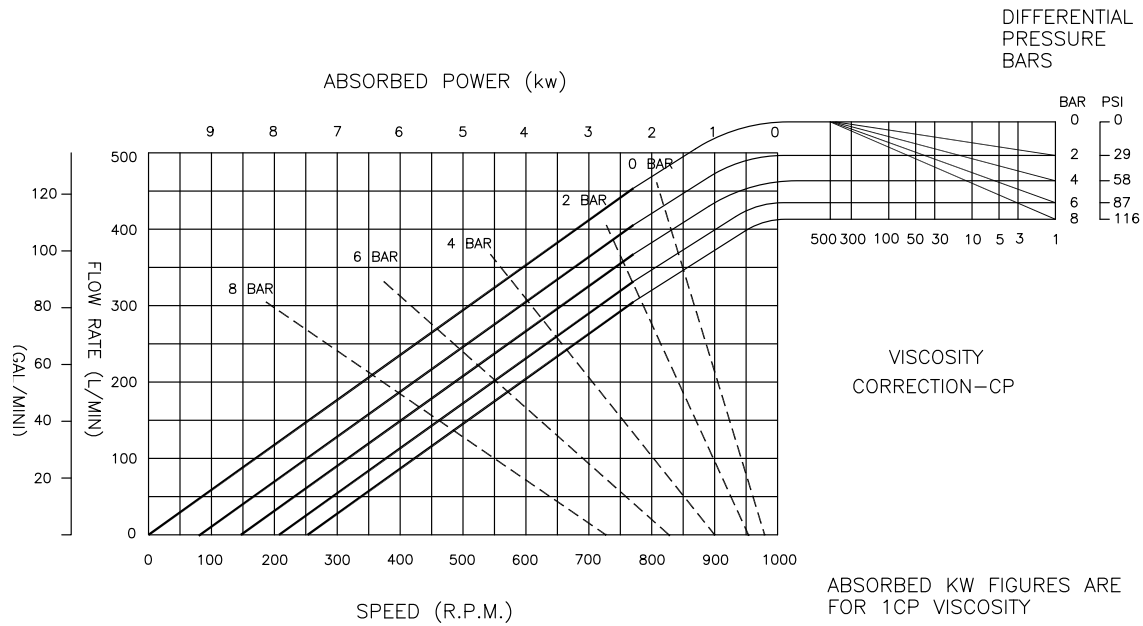


**RZL-Series Rotary Lobe Pump - 200 Series Pump Curves**

**RZL 220 Tri-Lobe Capacity**

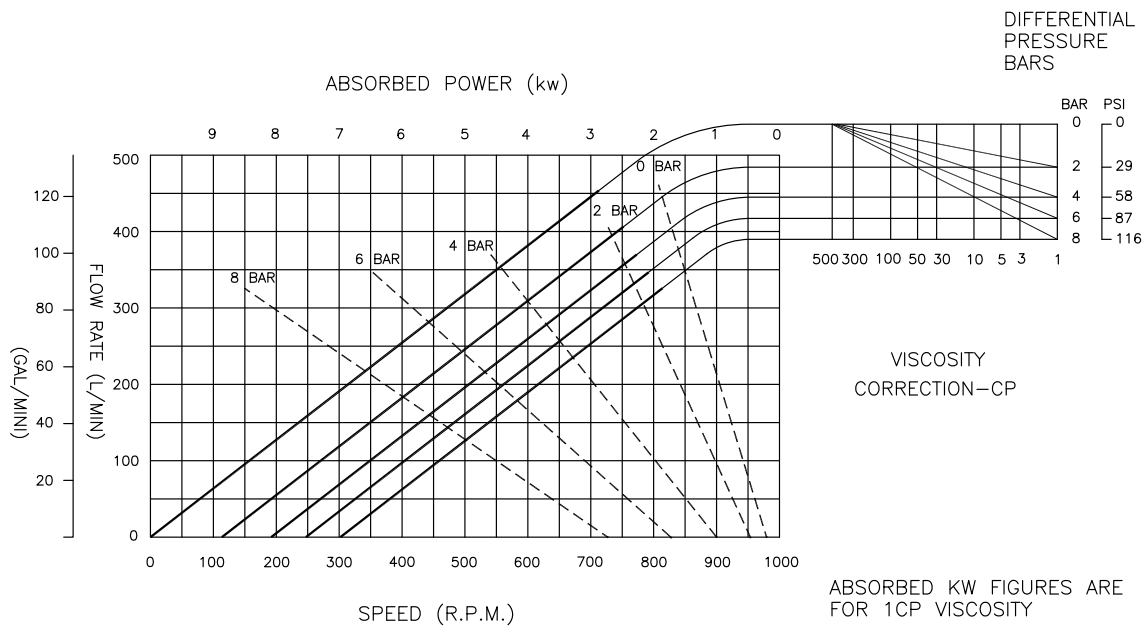


**RZL 225 Bi-Wing Capacity**

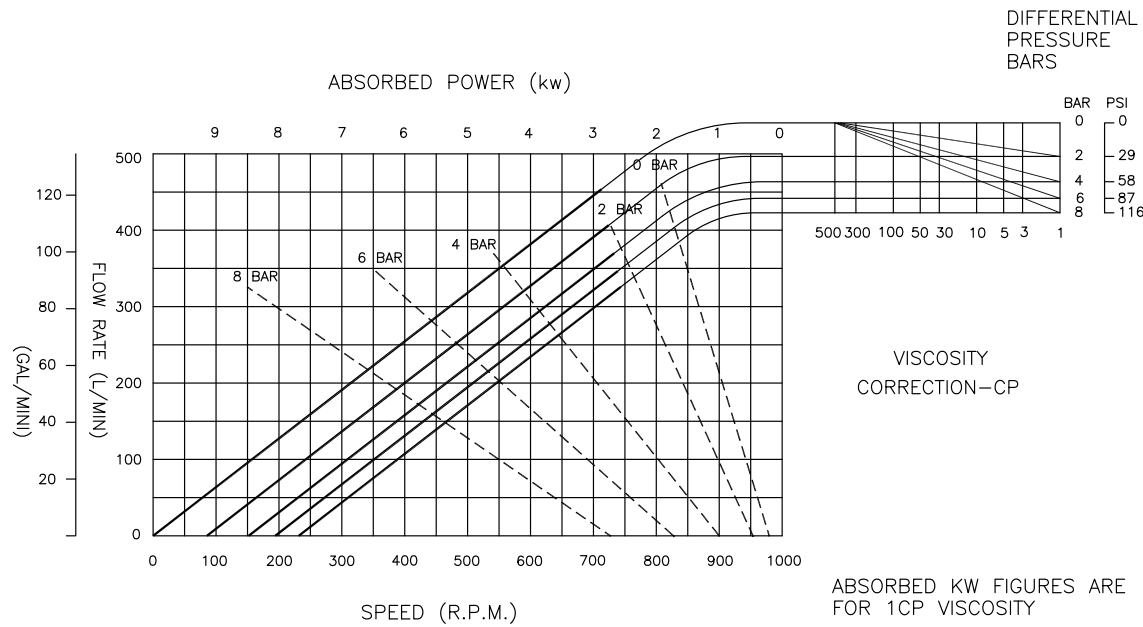


RZL-Series Rotary Lobe Pump - 200 Series Pump Curves

RZL 225 Heli-Lobe Capacity



RZL 225 Tri-Lobe Capacity

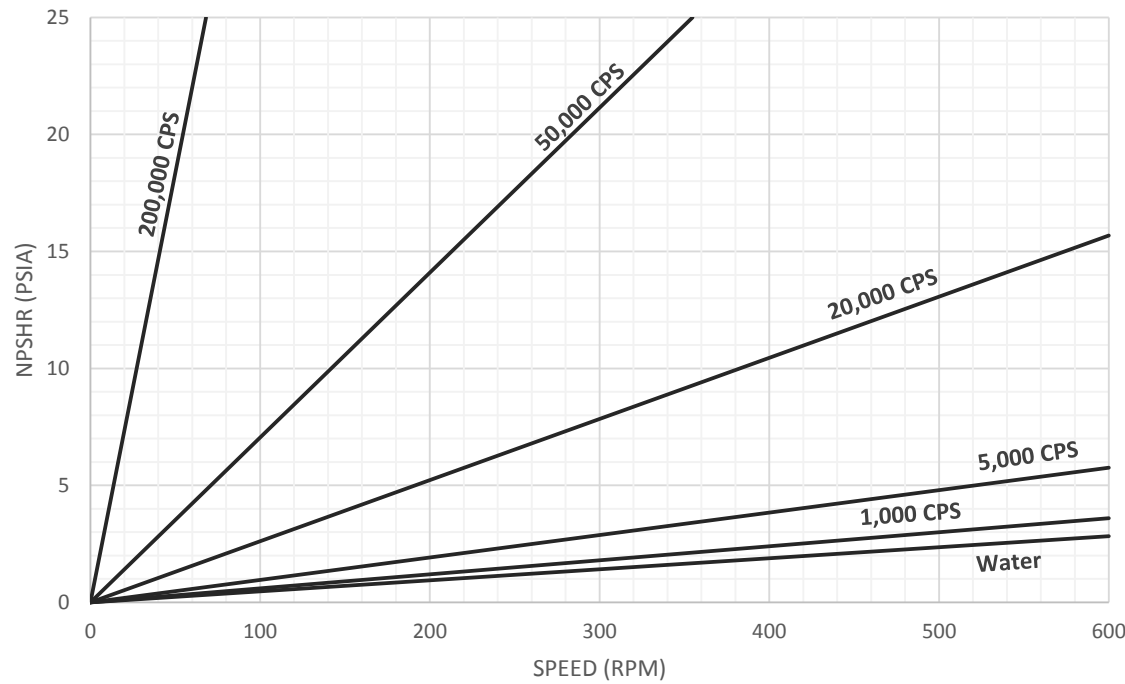


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RZL-Series Rotary Lobe Pump - 300 Series Pump Curves

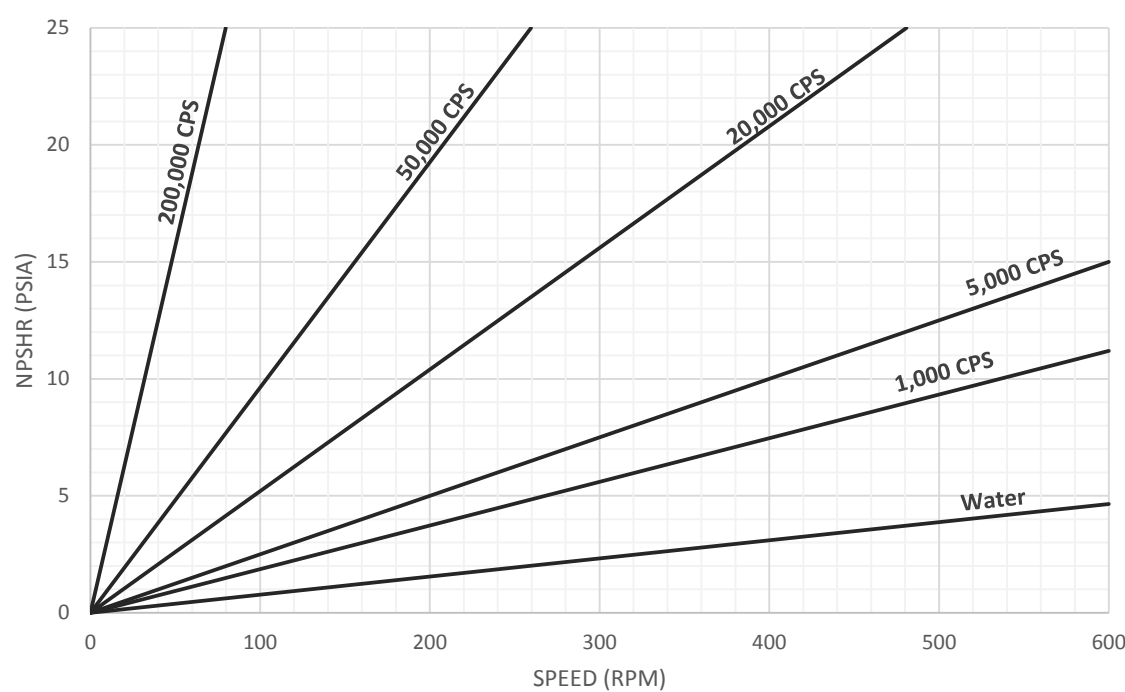
RZL 330 NPSHR

Port size: 3" x 3"



RZL 340 NPSHR

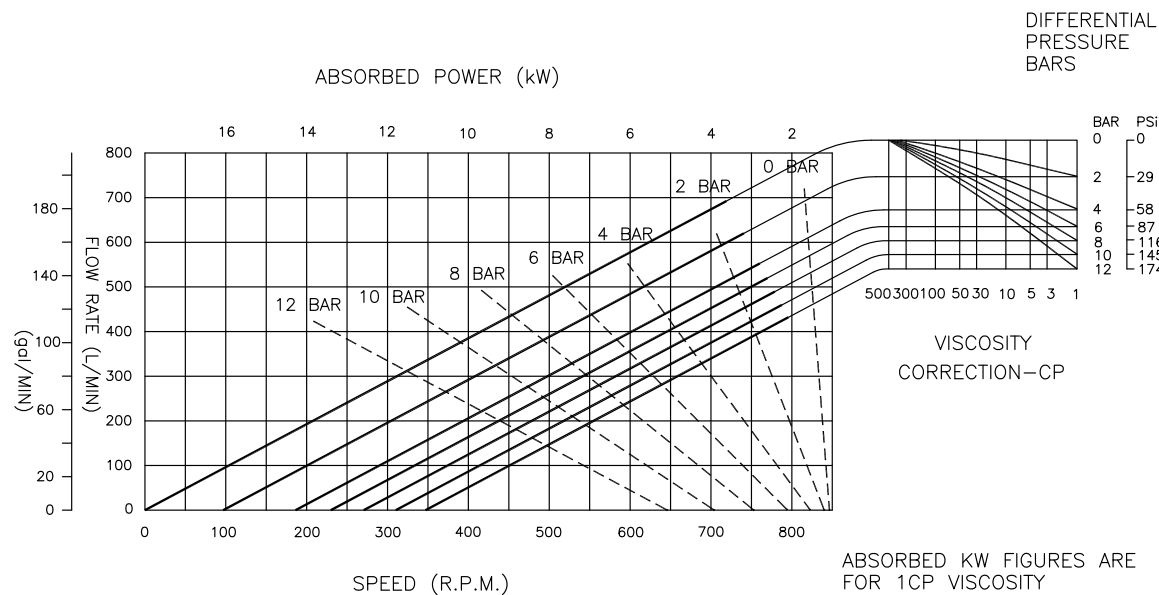
Port size: 4" x 4"



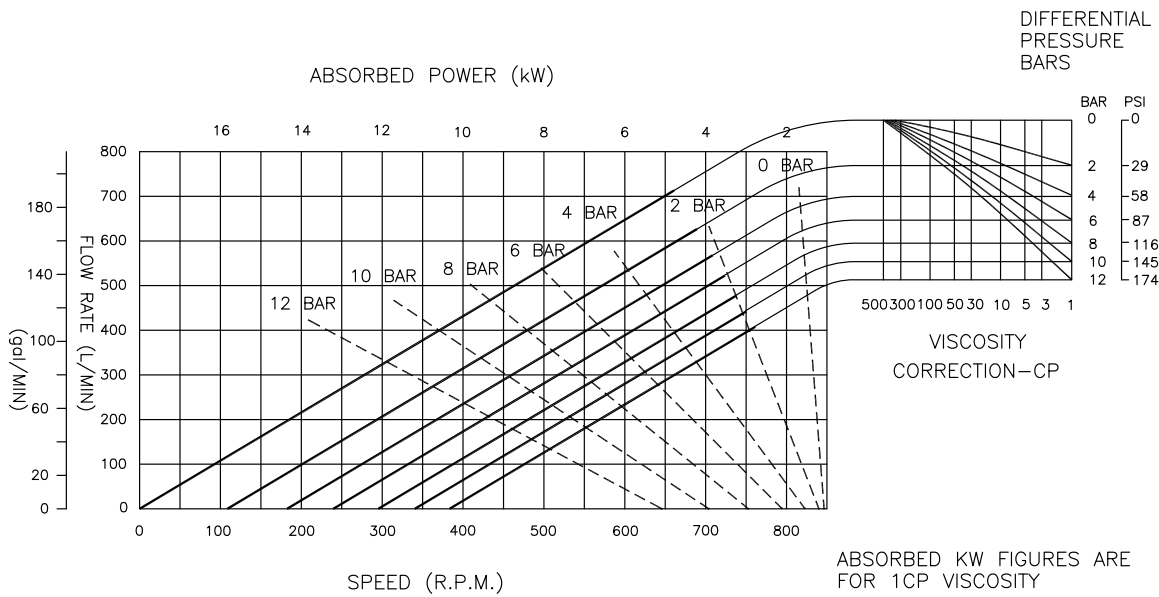
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RZL-Series Rotary Lobe Pump - 300 Series Pump Curves

RZL 330 Bi-Wing Capacity

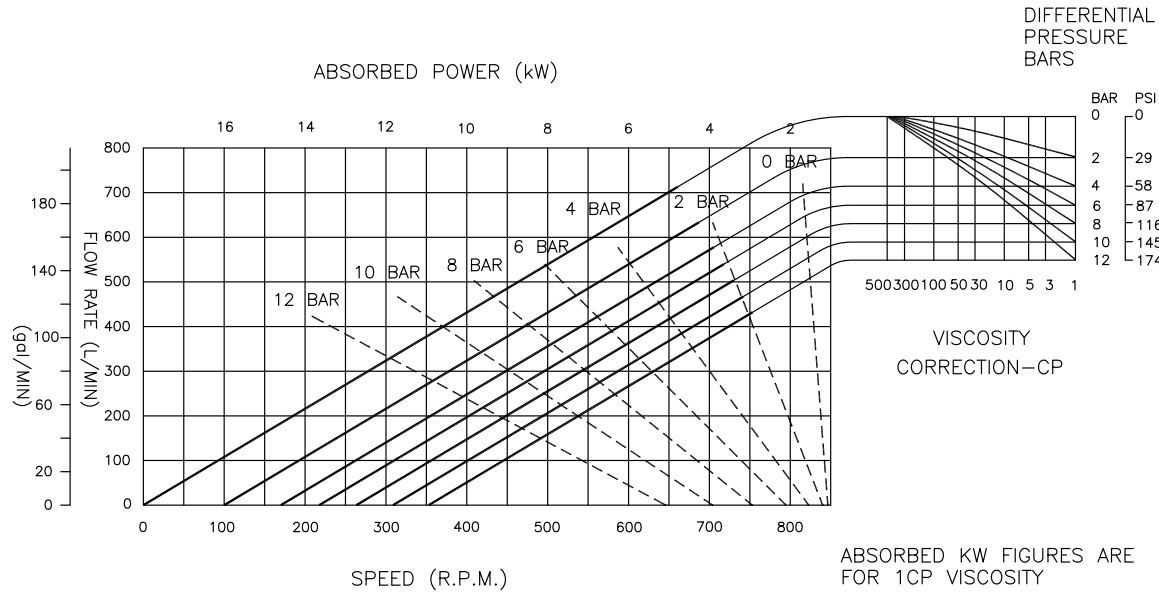


RZL 330 Heli-Lobe Capacity

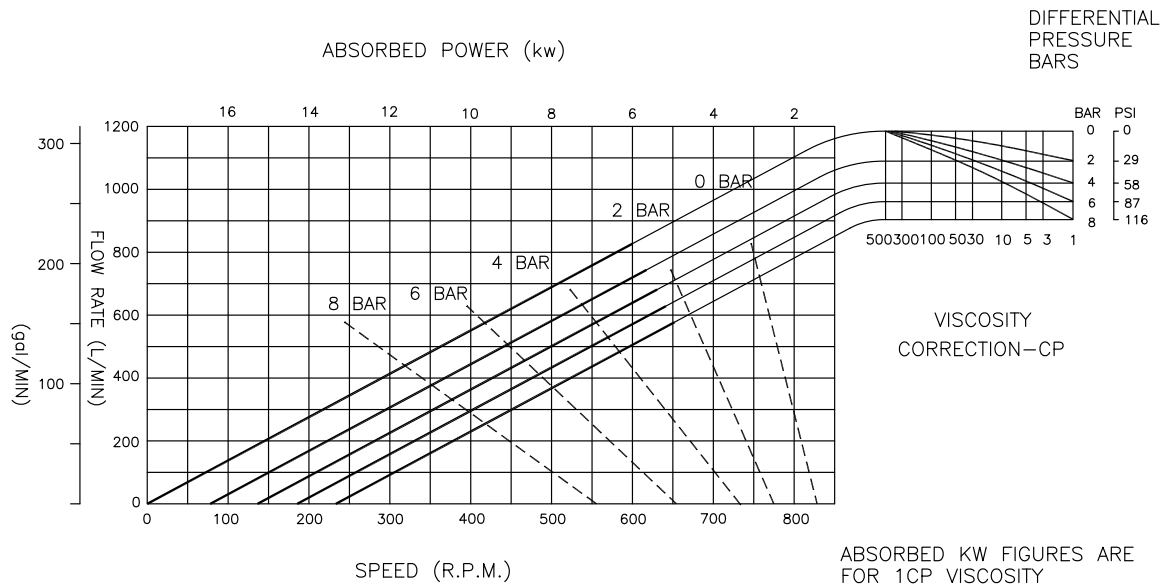


**RZL-Series Rotary Lobe Pump - 300 Series Pump Curves**

**RZL 330 Tri-Lobe Capacity**



**RZL 340 Bi-Wing Capacity**

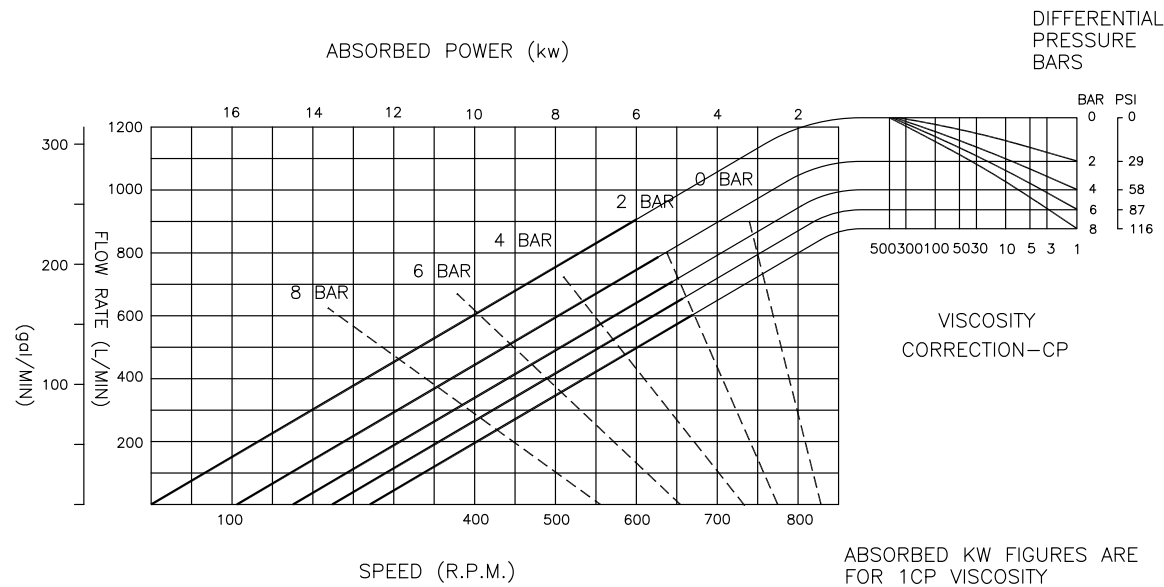


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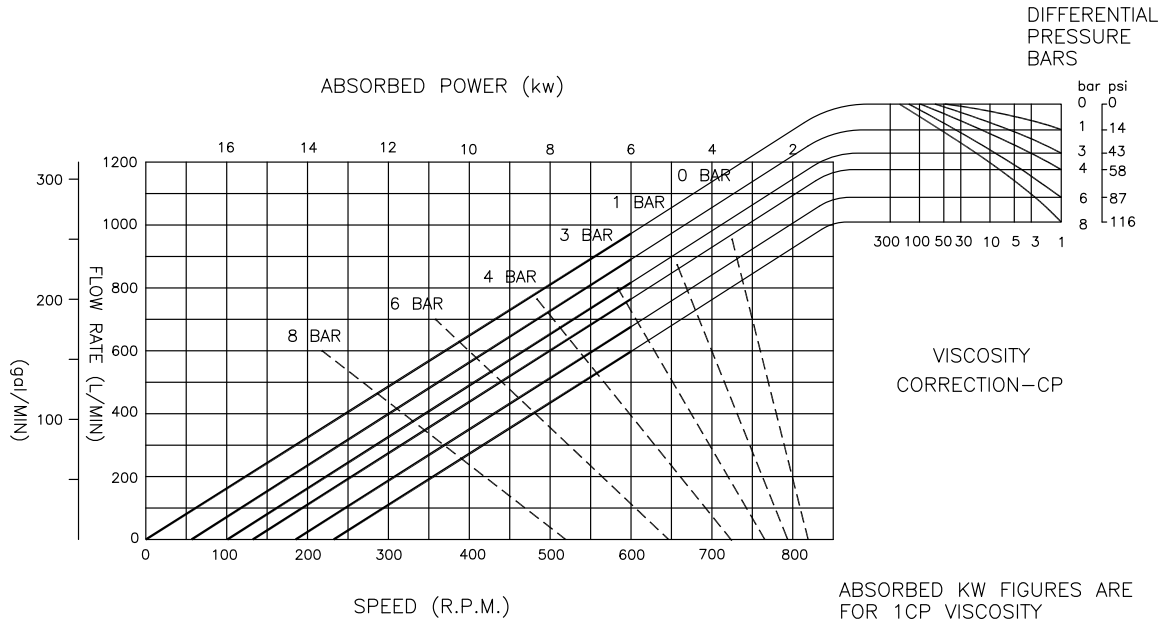


RZL-Series Rotary Lobe Pump - 300 Series Pump Curves

RZL 340 Heli-Lobe Capacity

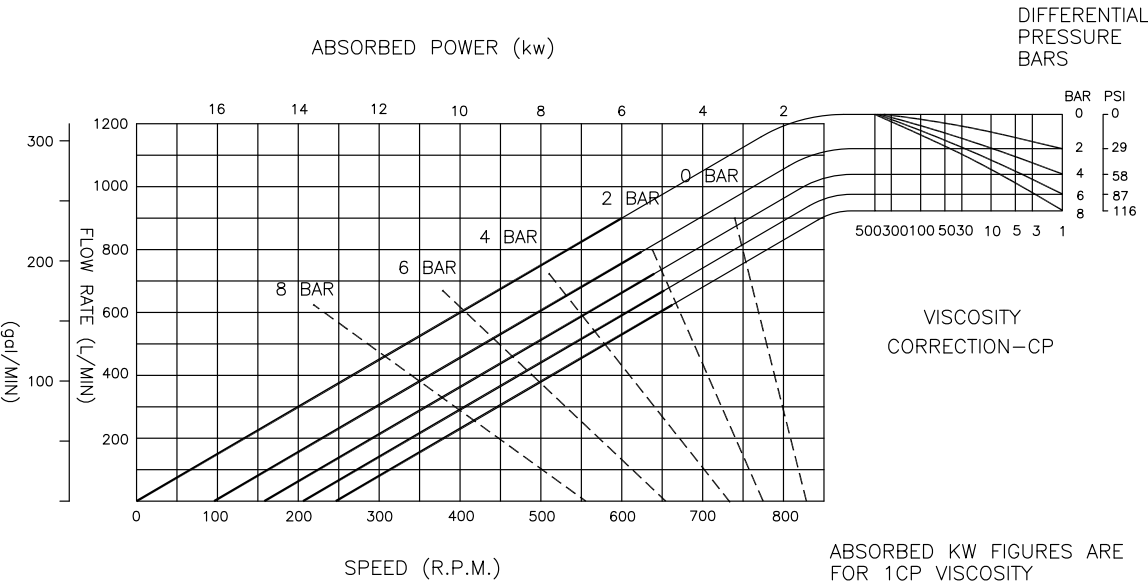


RZL 340 Rubber Heli-Lobe Capacity



RZL-Series Rotary Lobe Pump - 300 Series Pump Curves

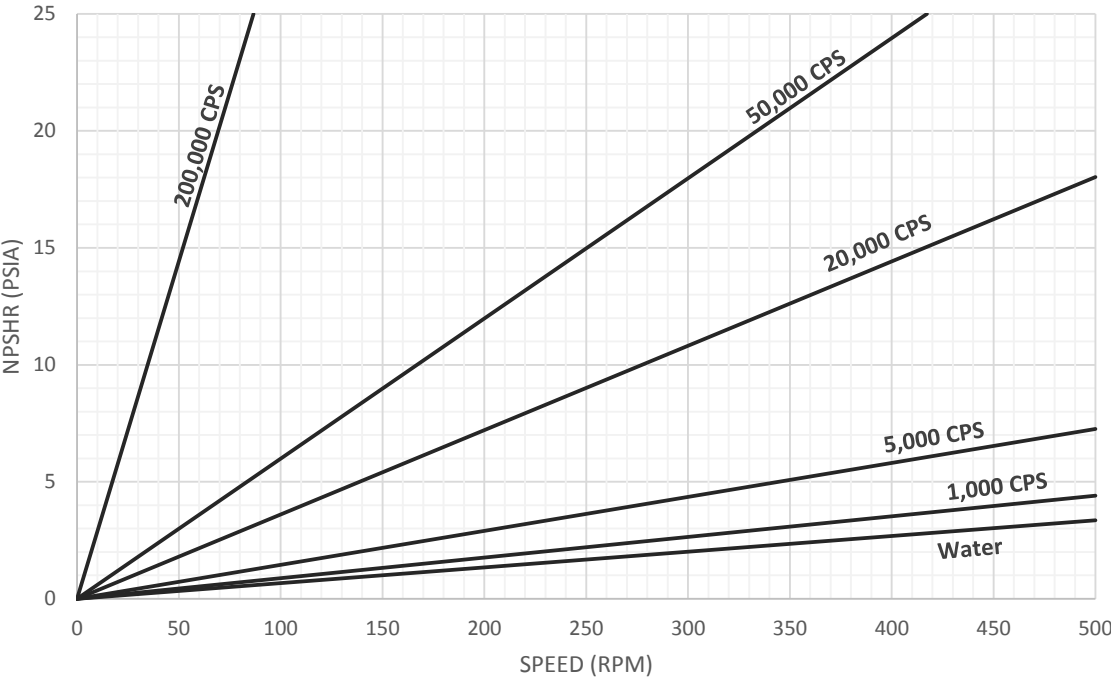
RZL 340 Tri-Lobe Capacity



RZL-Series Rotary Lobe Pump - 400 Series Pump Curves

RZL 440 NPSHR

Port size: 4" x 4"

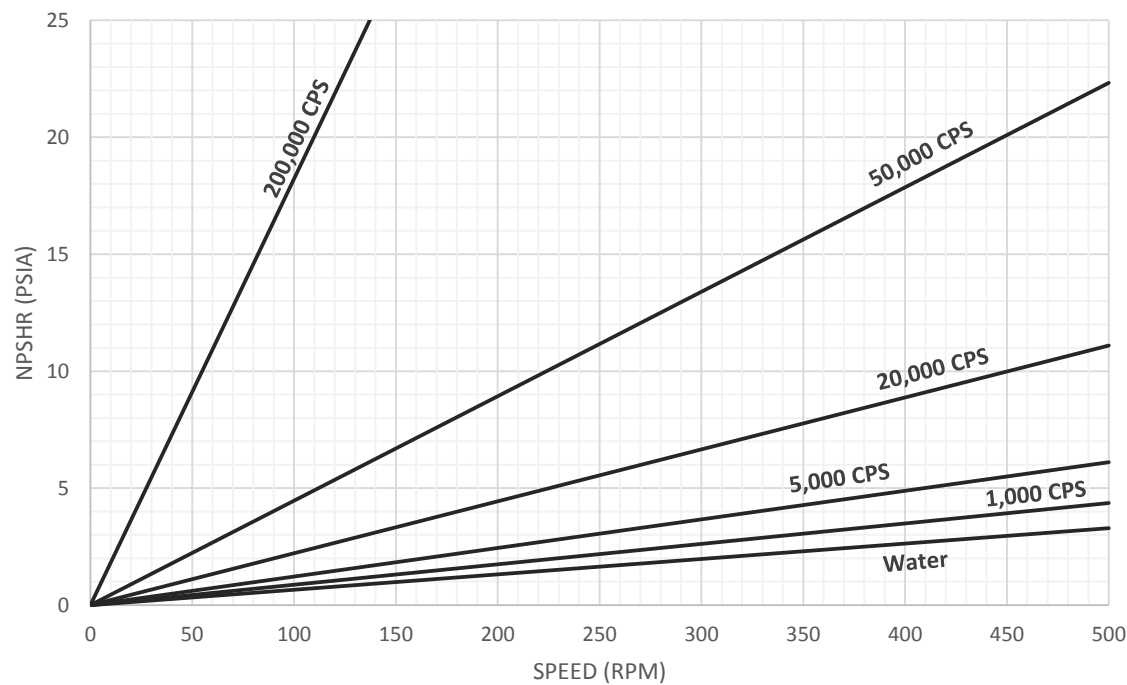


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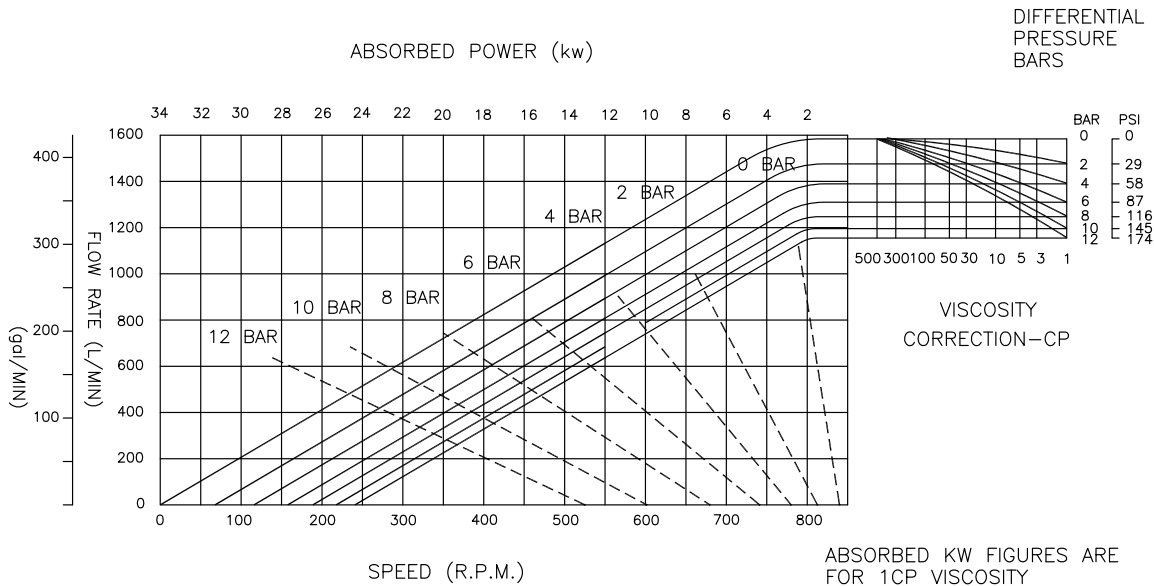
RZL-Series Rotary Lobe Pump - 400 Series Pump Curves

RZL 450 NPSHR

Port size: 5" x 5"

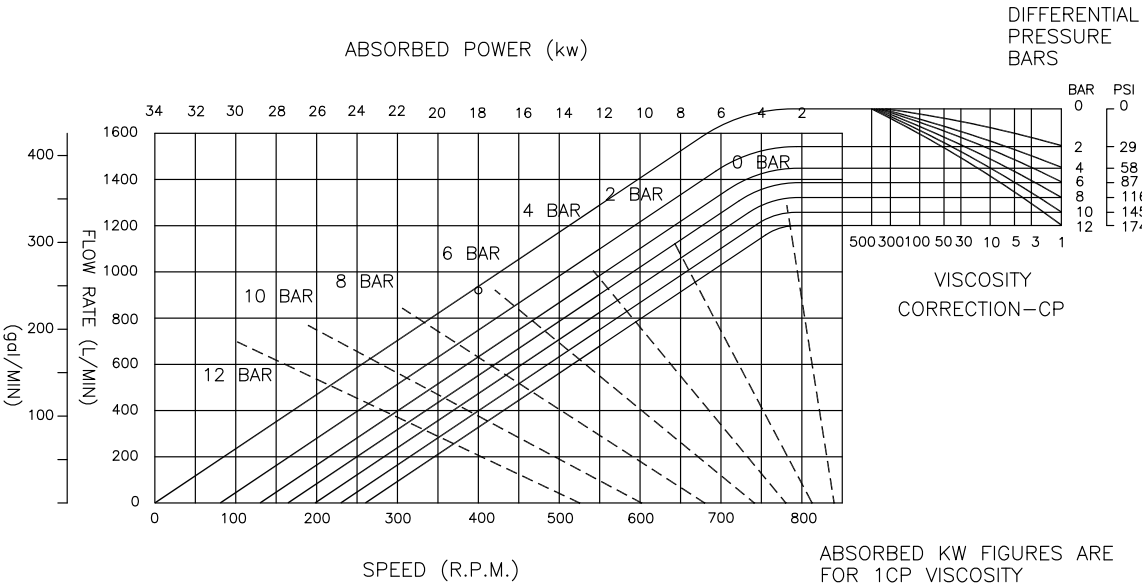


RZL 440 Bi-Wing Capacity

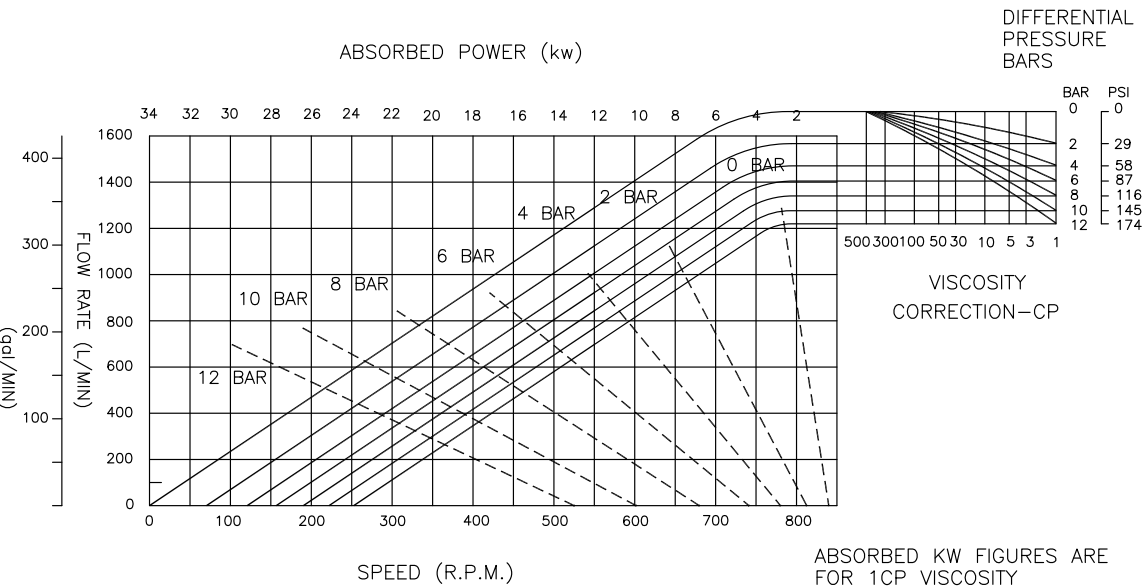


RZL-Series Rotary Lobe Pump - 400 Series Pump Curves

RZL 440 Heli-Lobe Capacity

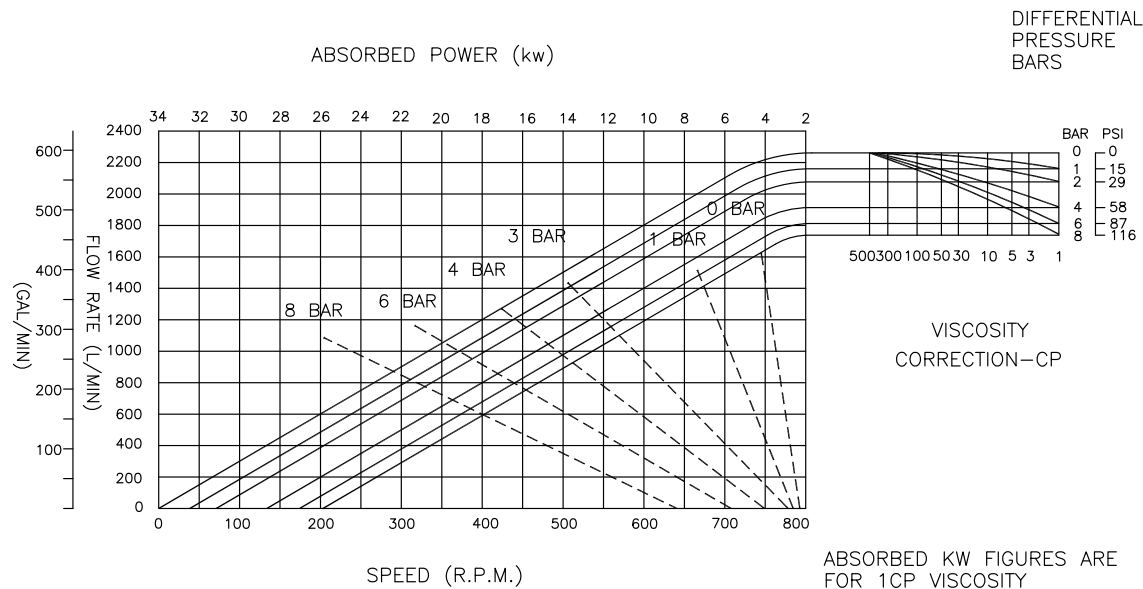


RZL 440 Tri-Lobe Capacity

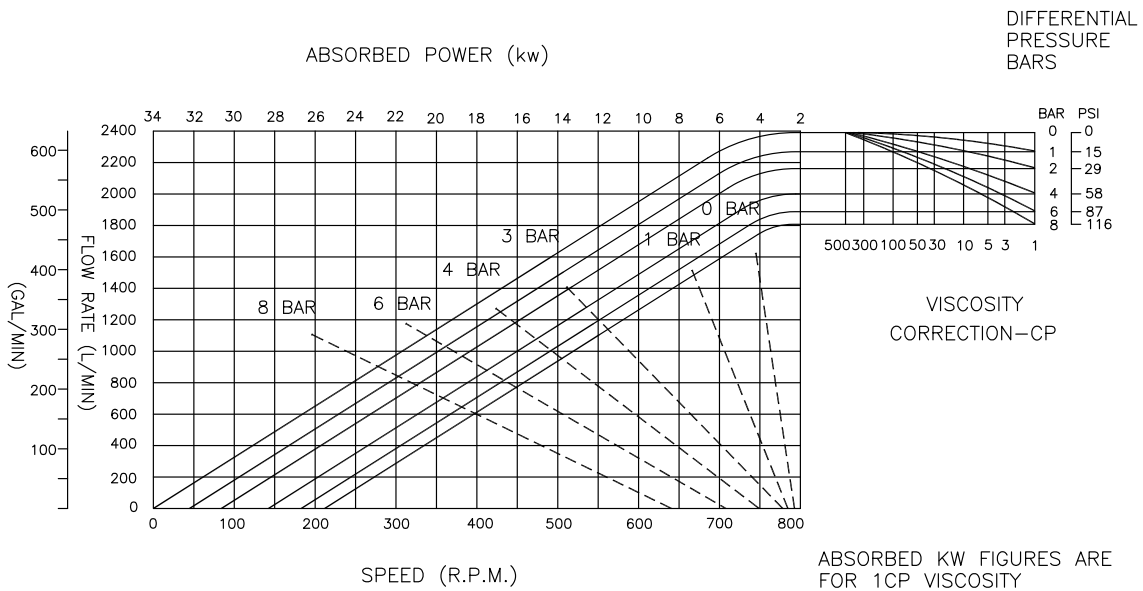


RZL-Series Rotary Lobe Pump - 400 Series Pump Curves

RZL 450 Bi-Wing Capacity

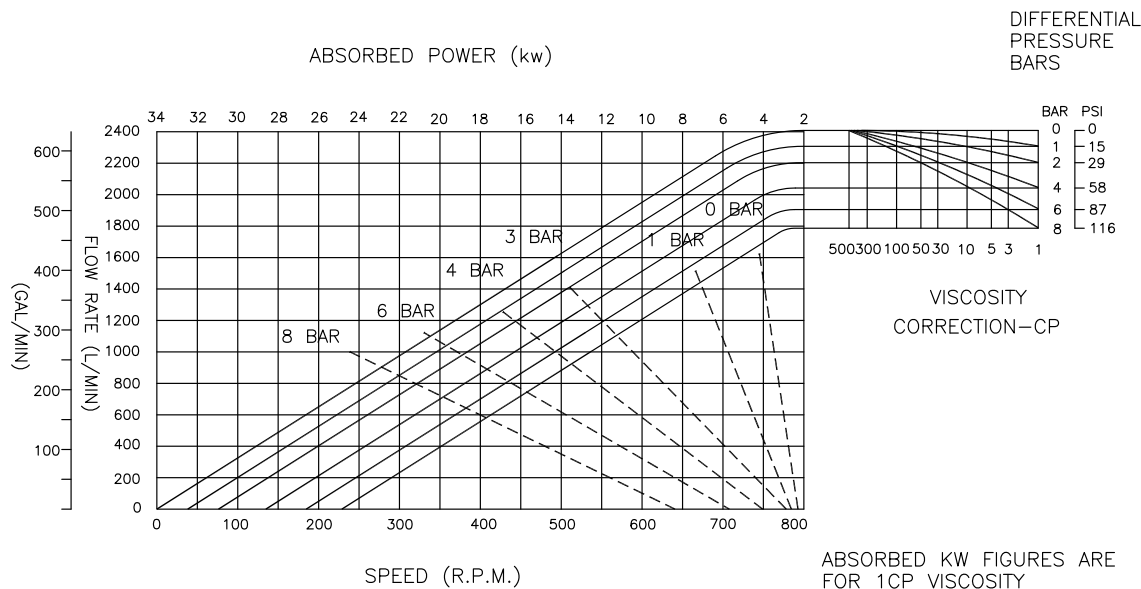


RZL 450 Heli-Lobe Capacity

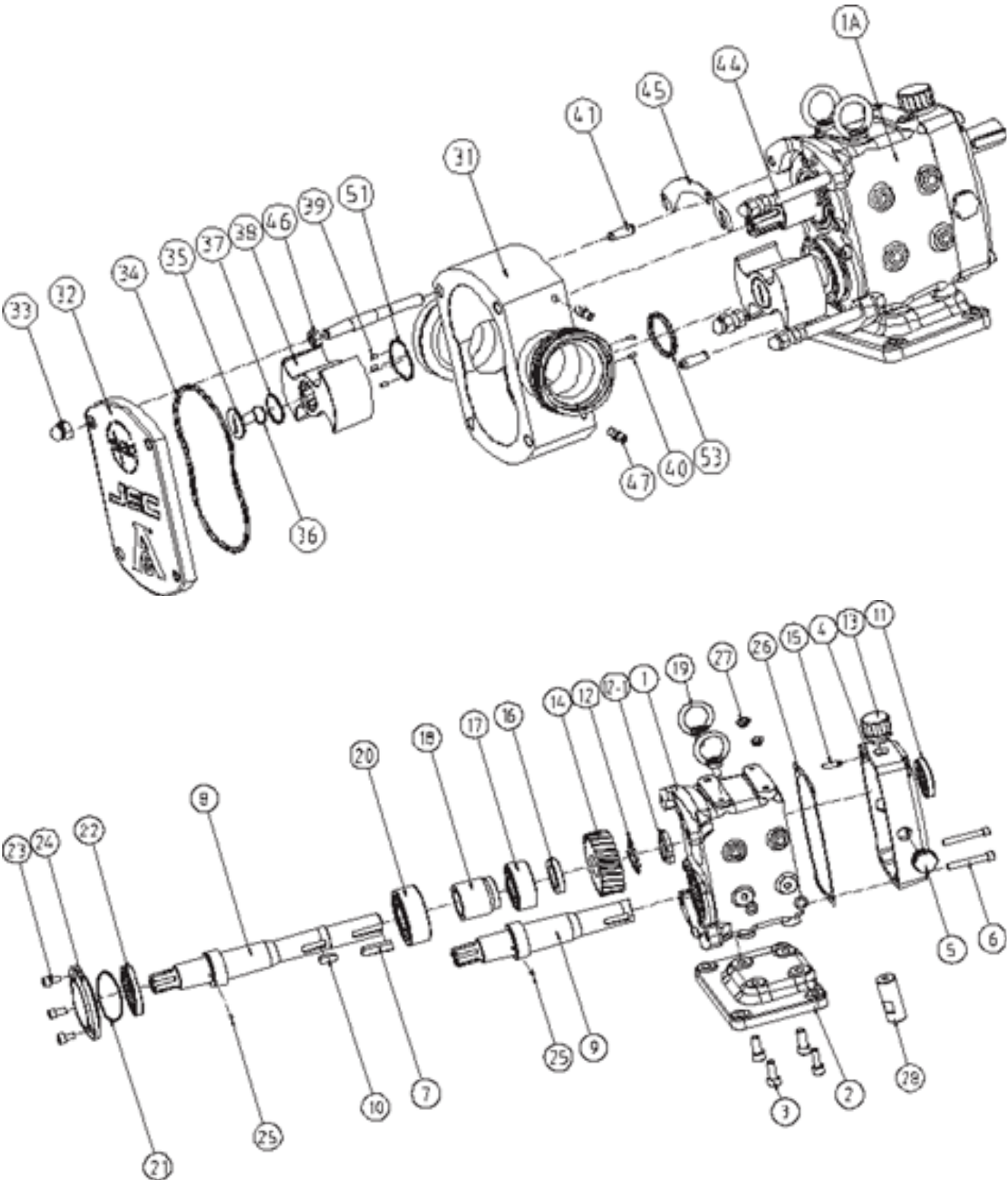


**RZL-Series Rotary Lobe Pump - 400 Series Pump Curves**

**RZL 450 Tri-Lobe Capacity**



RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials  
Basic Assembly (Single M/Seal)



## RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

### Gear Box Assembly (Basic)

| Item # | Part #          | Description                          | Material       | Used                | Qty |
|--------|-----------------|--------------------------------------|----------------|---------------------|-----|
| 1      | RZL-115B-GBSS   | gear box                             | SUS304         | RZL 100             | 1   |
| 2      | RZL-115B-GBSSB  | base, gear box                       | SUS304         | RZL 100             | 1   |
| 3      | RZL-115B-BWB    | wrench bolt, base (M8x20L)           | SUS304         | RZL 100             | 4   |
| 4      | RZL-115B-GBCSS  | cover, gear box                      | SUS304         | RZL 100             | 1   |
| 5      | RZL-115B-PLD    | plug, level, drain                   | -              | RZL100/200          | 3   |
| 6      | RZL-115B-GBWB   | wrench bolt, gear box cover (M6x45L) | S45C           | RZL 100             | 4   |
| 7      | RZL-115B-DSLEY  | key, shaft (8x7x34)                  | S45C           | RZL 100             | 1   |
| 8      | RZL-115-DSHAFT  | shaft, drive                         | SUS304         | RZL 105/110/115     | 1   |
|        | RZL-120-DSHAFT  | shaft, drive                         | SUS304         | RZL 120             | 1   |
| 9      | RZL-115-ISHAFT  | shaft, idle                          | SUS304         | RZL 105/110/115     | 1   |
|        | RZL-120-ISHAFT  | shaft, idle                          | SUS304         | RZL 120             | 1   |
| 10     | RZL-115B-GKEY   | key, gear (8x7x21)                   | S45C           | RZL 100             | 2   |
| 11     | RZL-115B-OSCB   | oil seal, cover (23x43x7t)           | nitrile rubber | RZL 100             | 1   |
|        | RZL-115B-OSCV   | oil seal, cover (23x43x7t)           | FKM            | RZL 100             | 1   |
| 12     | RZL-115B-TGWASH | lock washer                          | S45C           | RZL 100             | 2   |
| 12-1   | RZL-115B-TGNUT  | lock nut                             | S45C           | RZL 100             | 2   |
| 13     | RZL-115B-RVLV   | breather, gear box                   | PE             | RZL 100/200         | 1   |
| 14     | RZL-115B-TGHELG | helical gear                         | S45C           | RZL 100             | 2   |
| 15     | RZL-115B-GBDOW  | dowel, gear box $\phi 6$ )           | SUS304         | RZL 100             | 2   |
| 16     | RZL-115B-GSPAC  | spacer, gear ( $\phi 35 \times 5L$ ) | S45C           | RZL 100/200/300/400 | 2   |
| 17     | RZL-115B-RBEAR  | bearing, rear (#5205)                | -              | RZL 100/200/300/400 | 2   |
| 18     | RZL-115B-BSPAC  | spacer, bearing                      | S45C           | RZL 100/200/300/400 | 2   |
| 19     | RZL-115B-IBOLT  | I-bolt / M8                          | SUS304         | RZL 100/200/300/400 | 2   |
| 20     | RZL-115B-FBEAR  | bearing, front (#5206)               | -              | RZL 100/200/300/400 | 2   |
| 21     | RZL-115B-OSGOV  | O-ring, oil seal gland (AN035)       | FKM            | RZL 100/200/300/400 | 2   |
| 22     | RZL-115B-OSGB   | oil seal, gear box (38x55x9t)        | nitrile rubber | RZL 100/200/300/400 | 2   |
|        | RZL-115B-OSGV   | oil seal, gear box (38x55x9t)        | FKM            | RZL 100/200/300/400 | 2   |
| 23     | RZL-115B-OSGWB  | wrench bolt, oil seal gland (M6x12L) | SUS304         | RZL 100             | 6   |
| 24     | RZL-115B-OSGLD  | gland, oil seal                      | SUS304         | RZL 100             | 2   |
| 25     | RZL-115B-DSPIN  | pin, double seal                     | SUS304         | RZL 100             | 2   |
| 26     | RZL-115B-GCGP   | gasket                               | paper          | RZL 100             | 1   |
| 27     | RZL-115B-PLUG   | plug (M8)                            | PE             | RZL 100             | 8   |
| 28     | RZL-115B-VADAPT | vertical adapter                     | SUS304         | RZL 100             | 4   |
| 29     | RZL-115B-LFP    | pad, leg feet                        | SS + rubber    | RZL series          | 4   |
| 30     | RZL-115B-ERT    | rotor tool, extraction               | SUS304         | RZL series          | 1   |
| 31A*   | RZL-115B-GUARD  | safety guard (casing)                | SUS304         | RZL 100             | 2   |
| 31B*   | RZL-115B-GB     | guard wrench bolt M5x8               | SUS304         | RZL 100/200         | 4   |

\*Items are not pictured on the exploded view. For more information please contact Dixon Sanitary at 800.789.1718.



## RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

## Pump Assembly

| Item # | Part #          | Description                 | Material       | Used            | Qty |
|--------|-----------------|-----------------------------|----------------|-----------------|-----|
| 1A     | RZL-115-GBASS   | gear box assembly           | SUS304         | RZL 115/110/105 | 1   |
|        | RZL-120-GBASS   | gear box assembly           | SUS304         | RZL 120         | 1   |
| 31     | See page 65     | rotor case                  | SUS316L        | RZL 100         | 1   |
| 32     | RZL-105-FCVR    | front cover                 | SUS316L        | RZL 105         | 1   |
|        | RZL-110-FCVR    | front cover                 | SUS316L        | RZL 110         | 1   |
|        | RZL-115B-RCVR   | front cover                 | SUS316L        | RZL 115/120     | 1   |
| 33     | RZL-115B-CNUT   | cap nut                     | SUS304         | RZL 115/120     | 4   |
| 34     | RZL-105-FCORB   | O-ring, front cover (AN246) | nitrile rubber | RZL 105         | 1   |
|        | RZL-105-FCORE   | O-ring, front cover (AN246) | EPDM           |                 | 1   |
|        | RZL-105-FCORV   | O-ring, front cover (AN246) | FKM            |                 | 1   |
|        | RZL-110-FCORB   | O-ring, front cover (AN248) | nitrile rubber | RZL 110         | 1   |
|        | RZL-110-FCORE   | O-ring, front cover (AN248) | EPDM           |                 | 1   |
|        | RZL-110-FCORV   | O-ring, front cover (AN248) | FKM            |                 | 1   |
|        | RZL-115B-FCORB  | O-ring, front cover (AN251) | nitrile rubber | RZL 115/120     | 1   |
|        | RZL-115B-FCORE  | O-ring, front cover (AN251) | EPDM           |                 | 1   |
|        | RZL-115B-FCORV  | O-ring, front cover (AN251) | FKM            |                 | 1   |
| 35     | RZL-115B-RBOLT  | rotor bolt                  | SUS316L        | RZL 100         | 2   |
| 36     | RZL-115B-RBW    | rotor bolt spring washer    | SUS304         |                 | 2   |
| 37     | RZL-115B-RBORB  | O-ring, rotor bolt (AN021)  | nitrile rubber |                 | 2   |
|        | RZL-115B-RBORE  | O-ring, rotor bolt (AN021)  | EPDM           |                 | 2   |
|        | RZL-115B-RBORV  | O-ring, rotor bolt (AN021)  | FKM            |                 | 2   |
| 38     | see page 453    | rotor                       | SUS316L        | RZL 100         | 2   |
| 39     | RZL-115B-RTSLP  | seal pin, rotor             | SUS304         |                 | 6   |
| 40     | RZL-115B-CSSLP  | seal pin, case              | SUS304         |                 | 4   |
| 41     | RZL-115B-RCDOW  | dowel, rotor case (φ6)      | SUS304         | RZL 100         | 2   |
| 44     | RZL-105B-CSSB   | stud bolt, case (M8)        | SUS304         | RZL 105/110     | 4   |
|        | RZL-115-CSSB    | stud bolt, case (M8)        | SUS304         | RZL 115         | 4   |
|        | RZL-120-CSSB    | stud bolt, case (M8)        | SUS304         | RZL 120         | 4   |
| 45     | RZL-115B-SHIM05 | shim, 0.05mm                | SUS304         | RZL 100         | 2   |
|        | RZL-115B-SHIM1  | shim, 0.1mm                 | SUS304         |                 | 2   |
| 46     | RZL-115B-SBHYN  | hex nut, stud bolt (M8)     | SUS304         |                 | 4   |
| 47     | RZL-115B-FSNIP  | nipple, flush (PT 1/8")     | SUS304         |                 | 2   |
| 51     | RZL-115B-RTORB  | O-ring, rotor (AN028)       | nitrile rubber | RZL 100         | 2   |
|        | RZL-115B-RTORE  | O-ring, rotor (AN028)       | EPDM           |                 | 2   |
|        | RZL-115B-RTORV  | O-ring, rotor (AN028)       | FKM            |                 | 2   |
| 53     | RZL-115B-RCORB  | O-ring, rotor case (AN220)  | nitrile rubber | RZL 100         | 2   |
|        | RZL-115B-RCORE  | O-ring, rotor case (AN220)  | EPDM           |                 | 2   |
|        | RZL-115B-RCORV  | O-ring, rotor case (AN220)  | FKM            |                 | 2   |

NOTE: Please contact Dixon Sanitary or a local distributor for purchased product (rotor case, front cover, gear box, stud bolt, and shim) before October, 2011.

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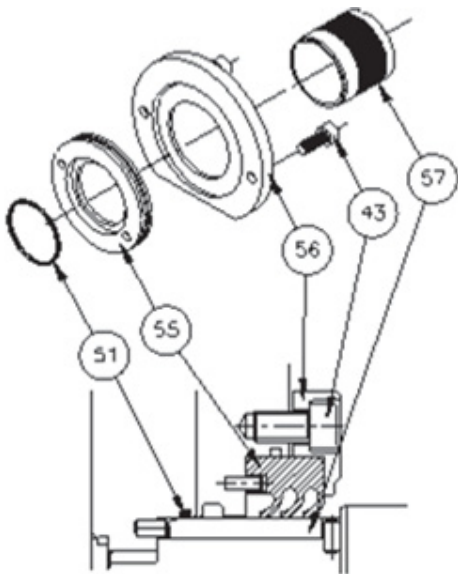
### Rotor Case/Rotor

| Item # | Part #         | Description                                  | Material     | Used        | Qty |
|--------|----------------|----------------------------------------------|--------------|-------------|-----|
| 31     | RZL-105-RCCLMP | rotor case - 1" tri-clamp                    | SUS316L      | RZL 105/110 | 1   |
|        | RZL-105-RCFLNG | rotor case - 1" flange                       | SUS316L      |             | 1   |
|        | RZL-115-RCCLMP | rotor case - 1-1/2" tri-clamp                | SUS316L      | RZL 115     | 1   |
|        | RZL-115-RCFLNG | rotor case - 1-1/2" flange                   | SUS316L      |             | 1   |
|        | RZL-120-RCCLMP | rotor case - 2" tri-clamp                    | SUS316L      | RZL 120     | 1   |
|        | RZL-120-RCFLNG | rotor case - 2" flange                       | SUS316L      |             | 1   |
| 38     | RZL-105-MLA    | rotor set (2), multi-lobe                    | SUS316L      | RZL 105     | 2   |
|        | RZL-105-MLARV  | rotor set (2), multi-lobe, relief valve      | SUS316L      | RZL 105     | 2   |
|        | RZL-110-BWA    | rotor set (2), bi-wing                       | SUS316L      | RZL 110     | 2   |
|        | RZL-110-BWARV  | rotor set (2), bi-wing, relief valve         | SUS316L      |             | 2   |
|        | RZL-110-BWTIA  | rotor set (2), bi-wing, PTFE inserted        | SUS316L/PTFE |             | 2   |
|        | RZL-110-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L      |             | 2   |
|        | RZL-110-MLA    | rotor set (2), multi-lobe                    | SUS316L      |             | 2   |
|        | RZL-115-SWA    | rotor set (2), single-wing                   | SUS316L      | RZL 115     | 2   |
|        | RZL-115-BWA    | rotor set (2), bi-wing                       | SUS316L      |             | 2   |
|        | RZL-115-BWTIA  | rotor set (2), bi-wing PTFE inserted         | SUS316L/PTFE |             | 2   |
|        | RZL-115-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L      |             | 2   |
|        | RZL-115-BLA    | rotor set (2), bi-lobe                       | SUS316L      |             | 2   |
|        | RZL-115-3LA    | rotor set (2), tri-lobe                      | SUS316L      |             | 2   |
|        | RZL-115-H3LA   | rotor set (2), tri-lobe, high temp clearance | SUS316L      |             | 2   |
|        | RZL-115-HELIA  | rotor set (2), heli-lobe                     | SUS316L      |             | 2   |
|        | RZL-115-MLA    | rotor set (2), multi-lobe                    | SUS316L      |             | 2   |
|        | RZL-120-SWA    | rotor set (2), single-wing                   | SUS316L      | RZL 120     | 2   |
|        | RZL-120-BWA    | rotor set (2), bi-wing                       | SUS316L      |             | 2   |
|        | RZL-120-BWTIA  | rotor set (2), bi-wing PTFE inserted         | SUS316L/PTFE |             | 2   |
|        | RZL-120-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L      |             | 2   |
|        | RZL-120-BLA    | rotor set (2), bi-lobe                       | SUS316L      |             | 2   |
|        | RZL-120-3LA    | rotor set (2), tri-lobe                      | SUS316L      |             | 2   |
|        | RZL-120-H3LA   | rotor set (2), tri-lobe, high temp clearance | SUS316L      |             | 2   |
|        | RZL-120-HELIA  | rotor set (2), heli-lobe                     | SUS316L      |             | 2   |
|        | RZL-120-MLA    | rotor set (2), multi-lobe                    | SUS316L      |             | 2   |
|        | RZL-120-RHELIA | rotor set (2), heli-lobe                     | EPDM         |             | 2   |

NOTE: All standard rotor cases do not have tap holes for flushing on jacketed options.

RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

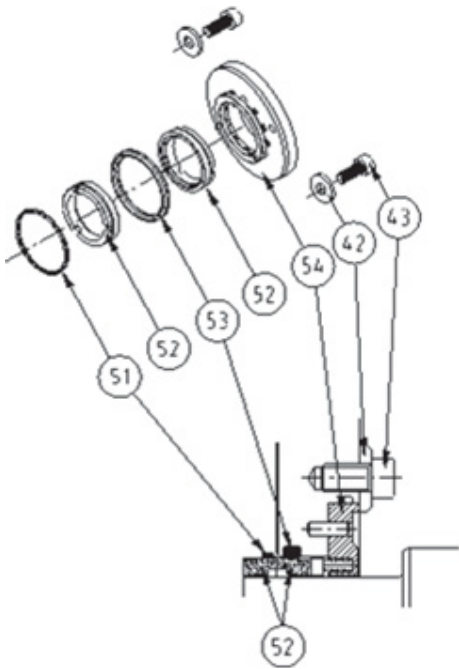
Triple Lip Seal



| Item # | Part #          | Description                        | Material       | Used    | Qty |
|--------|-----------------|------------------------------------|----------------|---------|-----|
| 43     | RZL-115B-MSGWB  | wrench bolt, M/seal gland (M6x10L) | SUS304         | RZL 100 | 4   |
| 51     | RZL-115B-RTORB  | O-ring, rotor (AN028)              | nitrile rubber |         | 2   |
|        | RZL-115B-RTORE  | O-ring, rotor (AN028)              | EPDM           |         | 2   |
|        | RZL-115B-RTORV  | O-ring, rotor (AN028)              | FKM            |         | 2   |
| 56     | RZL-115B-LSC    | lip seal cover                     | SUS304         |         | 2   |
| 55     | RZL-115B-TRPLSC | triple lip seal, product           | PTFE + copper  |         | 2   |
|        | RZL-115B-TRPLS  | triple lip seal, product           | PTFE + glass   |         | 2   |
| 57     | RZL-115B-CERCS  | ceramic coated sleeve, product     | ceramic/SUS304 |         | 2   |

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Single Mechanical Seal

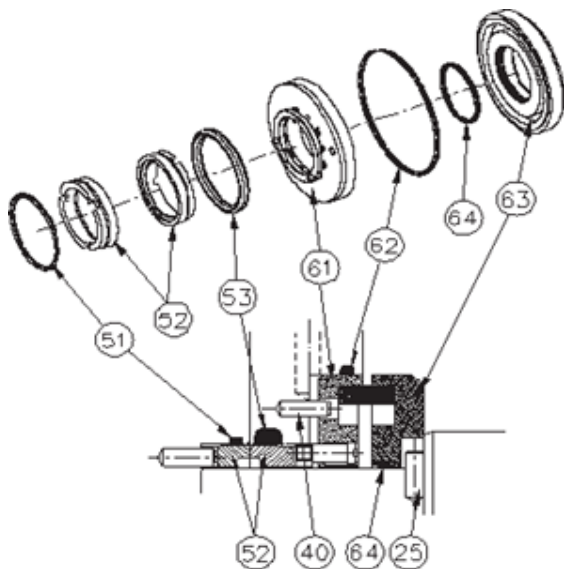


| Item # | Part #          | Description                        | Material       | Used    | Qty |
|--------|-----------------|------------------------------------|----------------|---------|-----|
| 42     | RZL-115B-MSGFW  | flat washer, M/Seal gland (ϕ6)     | SUS304         | RZL 100 | 4   |
| 43     | RZL-115B-MSGWB  | wrench bolt, M/seal gland (M6x10L) | SUS304         |         | 4   |
| 51     | RZL-115B-RTORB  | O-ring, rotor (AN028)              | nitrile rubber |         | 2   |
|        | RZL-115B-RTORE  | O-ring, rotor (AN028)              | EPDM           |         | 2   |
|        | RZL-115B-RTORV  | O-ring, rotor (AN028)              | FKM            |         | 2   |
| 52     | RZL-115B-TCSEAL | seal ring                          | TC             |         | 4   |
| 53     | RZL-115B-RCORB  | O-ring, rotor case (AN220)         | nitrile rubber |         | 2   |
|        | RZL-115B-RCORE  | O-ring, rotor case (AN220)         | EPDM           |         | 2   |
|        | RZL-115B-RCORV  | O-ring, rotor case (AN220)         | FKM            |         | 2   |
| 54     | RZL-115B-CSSB   | single seal body, case             | SUS304         |         | 2   |

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RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

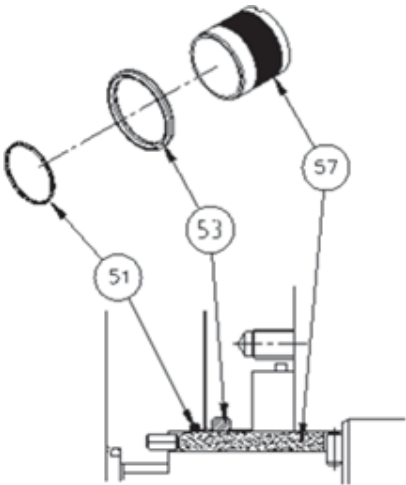
Double Mechanical Seal



| Item # | Part #          | Description                           | Material       | Used    | Qty |
|--------|-----------------|---------------------------------------|----------------|---------|-----|
| 51     | RZL-115B-RTORB  | O-ring, rotor (AN028)                 | nitrile rubber | RZL 100 | 2   |
|        | RZL-115B-RTORE  | O-ring, rotor (AN028)                 | EPDM           |         | 2   |
|        | RZL-115B-RTORV  | O-ring, rotor (AN028)                 | FKM            |         | 2   |
| 52     | RZL-115B-TCSEAL | seal ring                             | TC             |         | 4   |
| 53     | RZL-115B-RCORB  | O-ring, rotor case (AN220)            | nitrile rubber |         | 2   |
|        | RZL-115B-RCORE  | O-ring, rotor case (AN220)            | EPDM           |         | 2   |
|        | RZL-115B-RCORV  | O-ring, rotor case (AN220)            | FKM            |         | 2   |
| 61     | RZL-115B-CDSBTC | double seal body, case                | TC/SUS304      |         | 2   |
|        | RZL-115B-CDHPTC | double seal body, case, high pressure | TC/SUS304      |         | 2   |
| 62     | RZL-115B-CORDSB | O-ring, case, double seal (AN036)     | nitrile rubber |         | 2   |
|        | RZL-115B-CORDSE | O-ring, case, double seal (AN036)     | EPDM           |         | 2   |
|        | RZL-115B-CORDSV | O-ring, case, double seal (AN036)     | FKM            |         | 2   |
| 63     | RZL-115B-SDSBC  | rotation part, double seal, shaft     | carbon/SUS304  |         | 2   |
| 64     | RZL-115B-SORDSB | O-ring, shaft, double seal (AN023)    | nitrile rubber |         | 2   |
|        | RZL-115B-SORDSE | O-ring, shaft, double seal (AN023)    | EPDM           |         | 2   |
|        | RZL-115B-SORDSV | O-ring, shaft, double seal (AN023)    | FKM            |         | 2   |

RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

Single O-ring Seal

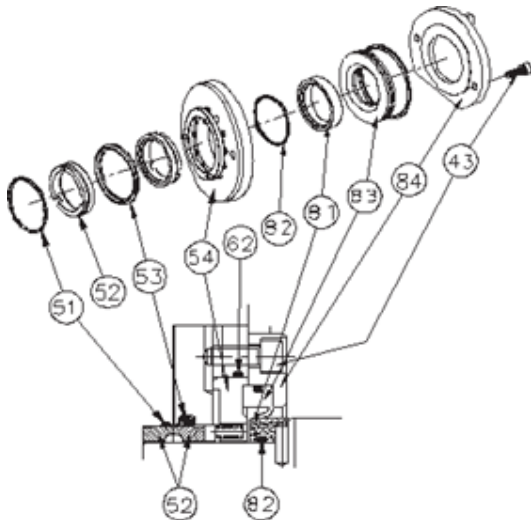


| Item # | Part #         | Description                   | Material       | Used    | Qty |
|--------|----------------|-------------------------------|----------------|---------|-----|
| 42     | RZL-115B-MSGFW | flat washer, seal gland (φ6)  | SUS304         | RZL 100 | 4   |
| 43     | RZL-115B-MSGWB | wrench bolt, gland (M6x10L)   | SUS304         |         | 4   |
| 51     | RZL-115B-RTORB | O-ring, rotor (AN028)         | nitrile rubber |         | 2   |
|        | RZL-115B-RTORE | O-ring, rotor (AN028)         | EPDM           |         | 2   |
|        | RZL-115B-RTORV | O-ring, rotor (AN028)         | FKM            |         | 2   |
| 53     | RZL-115B-RCORB | O-ring, rotor case (AN220)    | nitrile rubber |         | 2   |
|        | RZL-115B-RCORE | O-ring, rotor case (AN220)    | EPDM           |         | 2   |
|        | RZL-115B-RCORV | O-ring, rotor case (AN220)    | FKM            |         | 2   |
| 57     | RZL-115B-CERCS | ceramic coated sleeve product | ceramic/ss     |         | 2   |

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RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

Single Mechanical Seal with Flush

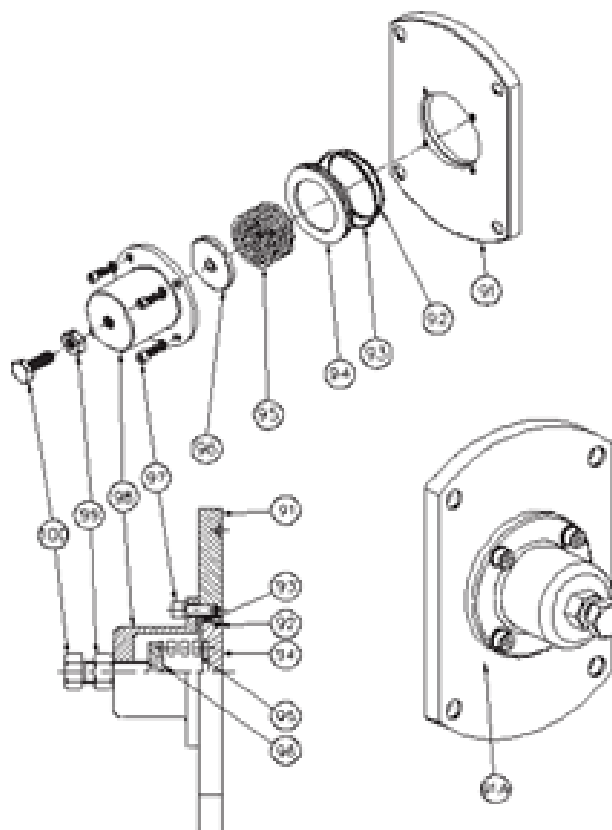


| Item # | Part #          | Description                              | Material       | Used    | Qty |
|--------|-----------------|------------------------------------------|----------------|---------|-----|
| 43     | RZL-115B-MSGWB  | wrench bolt, lip seal gland (M6x10L)     | SUS304         | RZL 100 | 4   |
| 51     | RZL-115B-RTORB  | O-ring, rotor (AN028)                    | nitrile rubber |         | 2   |
|        | RZL-115B-RTORE  | O-ring, rotor (AN028)                    | EPDM           |         | 2   |
|        | RZL-115B-RTORV  | O-ring, rotor (AN028)                    | FKM            |         | 2   |
| 52     | RZL-115B-TCSEAL | mechanical seal ring                     | TC             |         | 4   |
| 53     | RZL-115B-RCORB  | O-ring, rotor case (AN220)               | nitrile rubber |         | 2   |
|        | RZL-115B-RCORE  | O-ring, rotor case (AN220)               | EPDM           |         | 2   |
|        | RZL-115B-RCORV  | O-ring, rotor case (AN220)               | FKM            |         | 2   |
| 54     | RZL-115B-CSSB   | single seal body, case                   | SUS304         |         | 2   |
| 62     | RZL-CORDSB      | O-ring, flushed seal case (AN036)        | nitrile rubber |         | 2   |
|        | RZL-115B-CORDSE | O-ring, flushed seal case (AN036)        | EPDM           |         | 2   |
|        | RZL-115B-CORDSV | O-ring, flushed seal case (AN036)        | FKM            |         | 2   |
| 81     | RZL-115B-CERFL  | ceramic sleeve, flushing                 | ceramic        |         | 2   |
| 82     | RZL-115B-ORFLB  | O-ring, ceramic sleeve, flushing (AN023) | nitrile rubber |         | 2   |
|        | RZL-115B-ORFLE  | O-ring, ceramic sleeve, flushing (AN023) | EPDM           |         | 2   |
|        | RZL-115B-ORFLV  | O-ring, ceramic sleeve, flushing (AN023) | FKM            |         | 2   |
| 83     | RZL-115B-LSFLT  | lip seal, flushing                       | PTFE           |         | 2   |
| 84     | RZL-115B-SLPFLG | gland, lip seal, flushing                | SUS304         |         | 2   |

NOTE: Requires tapped casing.

## RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

Pressure Relief Front Cover



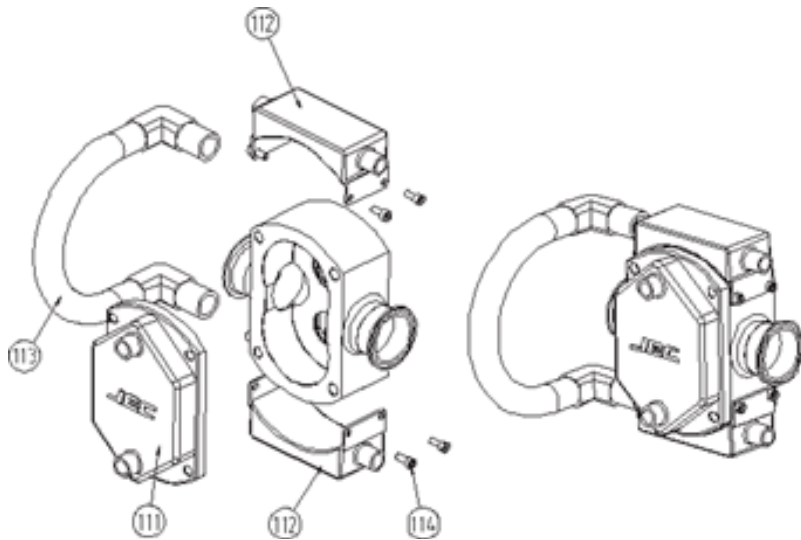
| Item # | Part #        | Description                          | Material       | Used        | Qty |
|--------|---------------|--------------------------------------|----------------|-------------|-----|
| 91     | RZL-105-RVFC  | front cover, relief valve            | SUS316L        | RZL 105     | 1   |
|        | RZL-110-RVFC  | front cover, relief valve            | SUS316L        | RZL 100     | 1   |
|        | RZL-115B-RVFC | front cover, relief valve            | SUS316L        | RZL 115/120 | 1   |
| 91A    | RZL-105-C     | pressure relief front cover assembly | SUS316L        | RZL 105     | 1   |
|        | RZL-110-C     | pressure relief front cover assembly | SUS316L        | RZL 110     | 1   |
|        | RZL-115B-C    | pressure relief cover assembly       | SUS316L        | RZL 115/120 | 1   |
| 92     | RZL-115B-OR1B | O-ring, 1 stage, plate (AN138)       | nitrile rubber | RZL 100     | 1   |
|        | RZL-115B-OR1E | O-ring, 1 stage, plate (AN138)       | EPDM           |             | 1   |
|        | RZL-115B-OR1V | O-ring, 1 stage, plate (AN138)       | FKM            |             | 1   |
| 93     | RZL-115B-OR2B | O-ring, 2 stage, plate (AN135)       | nitrile rubber |             | 1   |
|        | RZL-115B-OR2E | O-ring, 2 stage, plate (AN135)       | EPDM           |             | 1   |
|        | RZL-115B-OR2V | O-ring, 2 stage, plate (AN135)       | FKM            |             | 1   |
| 94     | RZL-115B-VP   | plate, valve                         | SUS316L        |             | 1   |
| 95     | RZL-115B-RVSP | spring                               | SS41 + Cr      |             | 1   |
| 96     | RZL-115B-SPGP | plate, spring                        | SUS304         |             | 1   |
| 97     | RZL-115B-RVWB | wrench bolt (M6x20) with washer      | SUS304         |             | 4   |
| 98     | RZL-115B-RVC  | cover, relief valve                  | SUS304         |             | 1   |
| 99     | RZL-115B-RVLN | lock nut (M12)                       | SUS304         |             | 1   |
| 100    | RZL-115B-RVAB | adjusting bolt (M12x60)              | SUS304         |             | 1   |

NOTE: Must supply setting pressure.



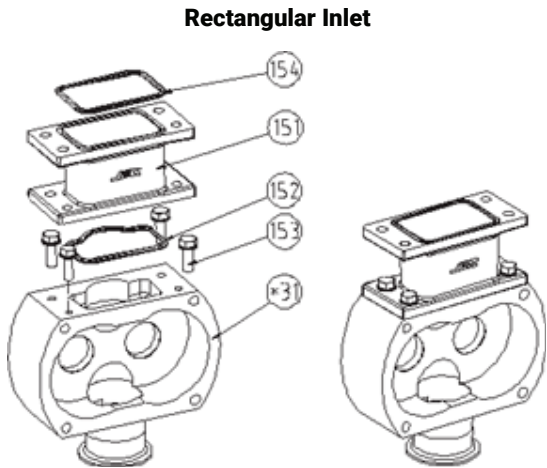
RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

Jacket Front Cover and Case



| Item # | Part #       | Description                 | Material | Used        | Qty |
|--------|--------------|-----------------------------|----------|-------------|-----|
| 111    | RZL-105B-FCJ | jacket, front cover         | SUS316L  | RZL 105/110 | 1   |
|        | RZL-115B-FCJ | jacket, front cover         | SUS316L  | RZL 115/120 | 1   |
| 112    | RZL-110B-CTJ | jacket, case top            | SUS304   | RZL 110/115 | 1   |
|        | RZL-110B-CBJ | jacket, case bottom         | SUS304   |             | 1   |
|        | RZL-120-CTJ  | jacket, case top            | SUS304   | RZL 120     | 1   |
|        | RZL-120-CBJ  | jacket, case bottom         | SUS304   |             | 1   |
| 113    | RZL-115B-JT  | tube, jacket                | SUS304   | RZL 100     | 1   |
| 114    | RZL-115B-JWB | wrench bolt, jacket (M8x20) | SUS304   | RZL 100     | 2   |

RZL-Series Rotary Lobe Pump - 100 Series Bill of Materials

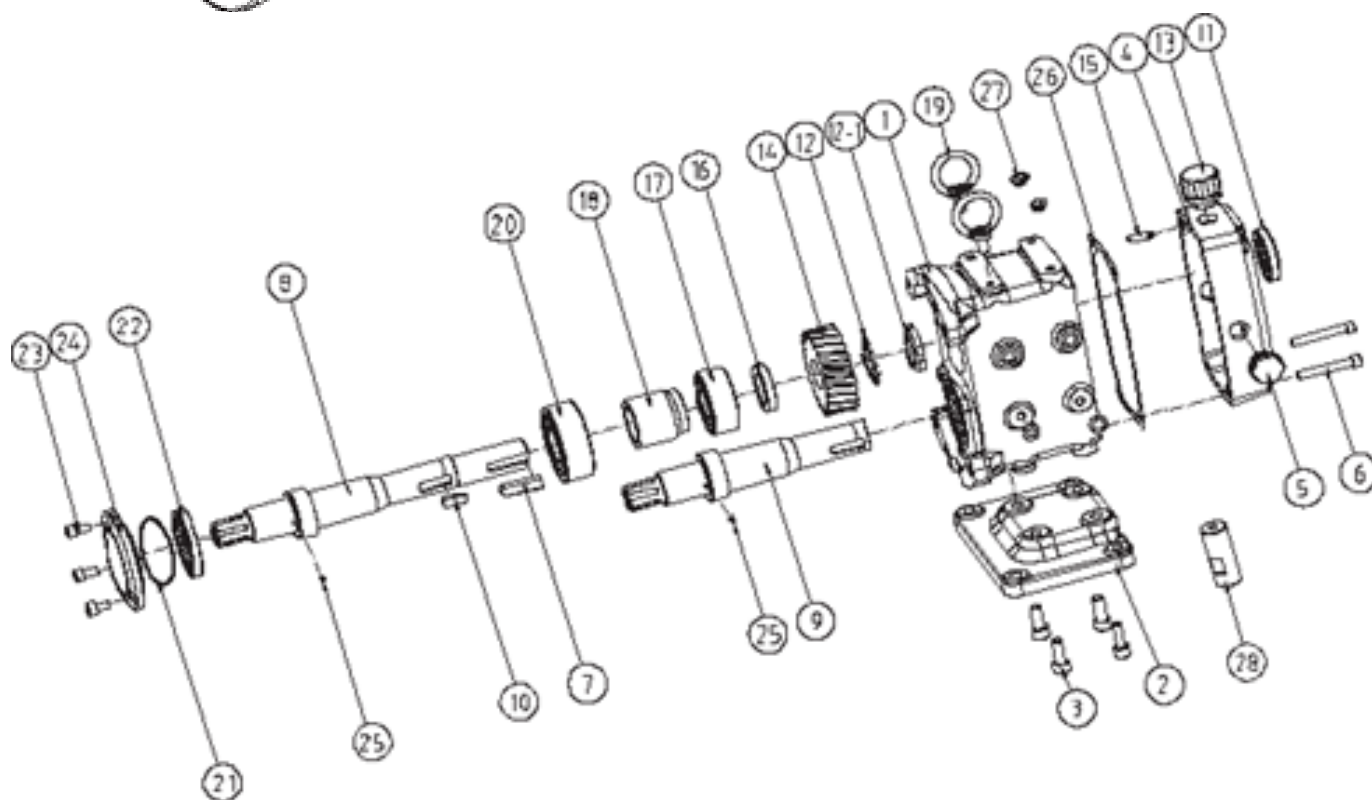
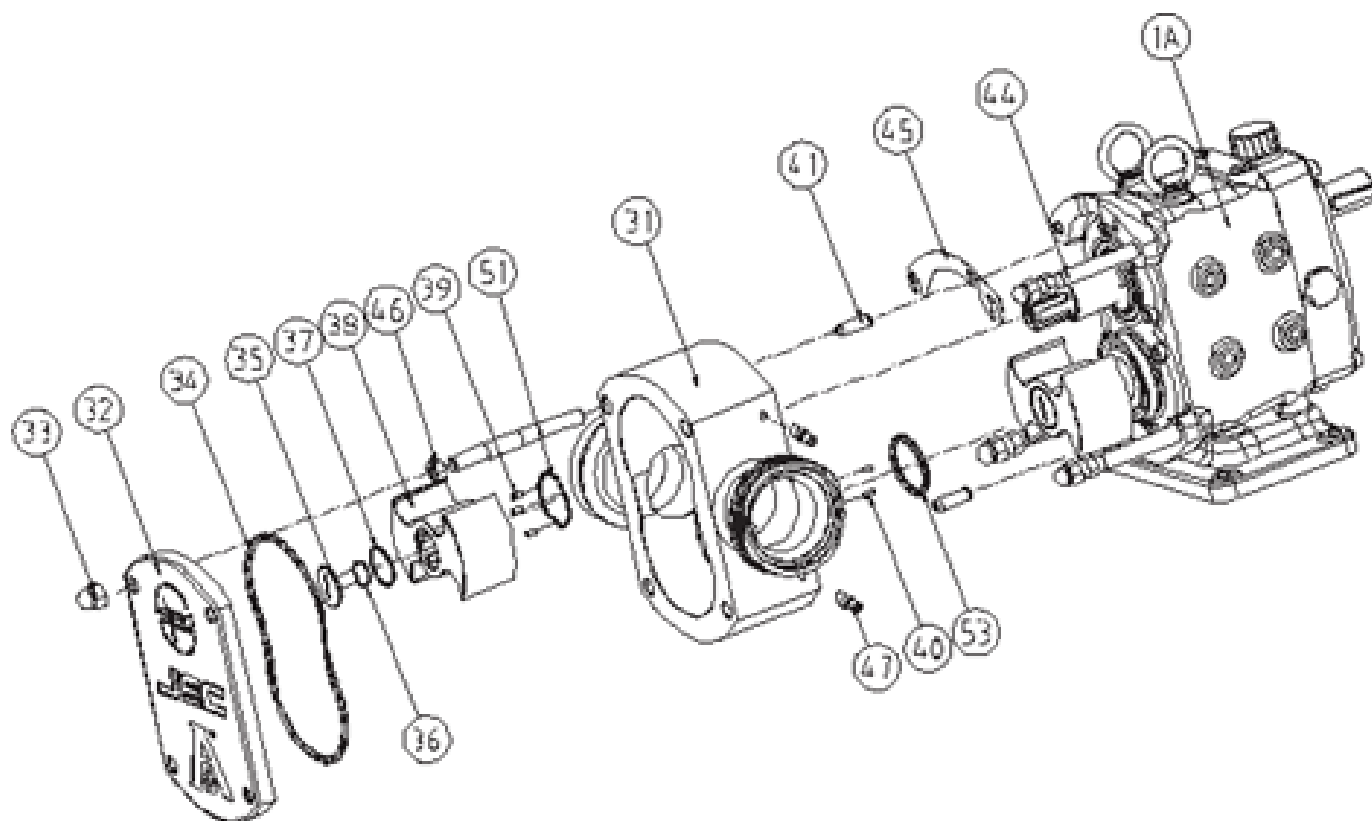


| Item # | Part #         | Description                                   | Material       | Used    | Qty |
|--------|----------------|-----------------------------------------------|----------------|---------|-----|
| 151    | RZL-120-RCRIA  | adapter, rectangular inlet                    | SUS304         | RZL 120 | 1   |
| 152    | RZL-120RIORB   | O-ring, rectangular inlet (AN233)             | nitrile rubber |         | 1   |
|        | RZL-120-RIOR   | O-ring, rectangular inlet (AN233)             | EPDM           |         | 1   |
|        | RZL-120-RIORV  | O-ring, rectangular inlet (AN233)             | FKM            |         | 1   |
| 153    | RZL-120-RIHBSW | hex bolt and S/W (M8x25)                      | SUS304         |         | 4   |
| 154    | RZL-120-ROORB  | O-ring, rectangular adapter (AN234)           | nitrile rubber |         | 1   |
|        | RZL-120-ROOR   | O-ring, rectangular adapter (AN234)           | EPDM           |         | 1   |
|        | RZL-120-ROORV  | O-ring, rectangular adapter (AN234)           | FKM            |         | 1   |
| 31     | RZL-120-RCRI2C | rotor case - rectangular inlet / 2" tri-clamp | SUS316L        |         | 1   |
|        | RZL-120-RFLG   | rotor case - rectangular inlet / 2" flange    | SUS316L        |         | 1   |

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## RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

### Basic Assembly (Single M/Seal)



## RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

### Gear Box Assembly (Basic)

| Item # | Part #          | Description                          | Material       | Used          | Qty |
|--------|-----------------|--------------------------------------|----------------|---------------|-----|
| 1      | RZL-220B-GBSS   | gear box                             | SUS304         | RZL200        | 1   |
| 2      | RZL-220B-GBSSB  | base, gear box                       | SUS304         | RZL200        | 1   |
| 3      | RZL-220B-BWB    | wrench bolt, base (M10x25L)          | SUS304         | -             | 4   |
| 4      | RZL-220B-GBCSS  | cover, gear box                      | SUS304         | RZL200        | 1   |
|        | RZL-220BCFI     | cover, gear box, flange integrated   | FCD40          | -             | 1   |
| 5      | RZL-115B-PLD    | plug, level, drain                   | -              | RZL100/RZL200 | 3   |
| 6      | RZL-220B-GBWB   | wrench bolt, gear box cover (M8x65L) | SUS304         | -             | 4   |
| 7      | RZL-220B-DSKEY  | key, shaft (10x8x53)                 | S45C           | -             | 1   |
| 8      | RZL-220-DSHAFT  | shaft, drive                         | SUS304         | RZL220        | 1   |
|        | RZL-225-DSHAFT  | shaft, drive                         | SUS304         | RZL225        | 1   |
| 9      | RZL-220-ISHAFT  | shaft, idle                          | SUS304         | RZL220        | 1   |
|        | RZL-225-ISHAFT  | shaft, idle                          | SUS304         | RZL225        | 1   |
| 10     | RZL-220B-GKEY   | key, gear (10x8x27)                  | S45C           | RZL200        | 2   |
| 11     | RZL-220B-OSCB   | oil seal, cover (32x52x8t)           | nitrile rubber |               | 1   |
|        | RZL-220B-OSCV   | oil seal, cover (32x52x8t)           | FKM            |               | 1   |
| 12     | RZL-220B-TGWASH | lock washer                          | S45C           |               | 2   |
| 12-1   | RZL-220B-TGNUT  | lock nut                             | S45C           |               | 2   |
| 13     | RZL-220B-RVLV   | breather, gear box                   | PE             | RZL100/RZL200 | 1   |
| 14     | RZL-220B-TGHELG | helical gear                         | S45C           | RZL200        | 1   |
| 15     | RZL-220B-GBDOW  | dowel, gear box (φ10)                | SUS304         |               | 2   |
| 16     | RZL-220B-GSPAC  | spacer, gear (φ35x6L)                | S45C           |               | 2   |
| 17     | RZL-220B-RBEAR  | bearing, rear (#5207)                | S45C           |               | 2   |
| 18     | RZL-220B-BSPAC  | spacer, bearing                      | S45C           |               | 2   |
| 19     | RZL-220B-IBOLT  | I-bolt/M10                           | SUS304         |               | 2   |
| 20     | RZL-220B-FBEAR  | bearing, front (#5208)               | S45C           |               | 2   |
| 21     | RZL-220B-OSGOV  | O-ring, oil seal gland (AN041)       | FKM            |               | 2   |
| 22     | RZL-220B-OSGB   | oil seal, gear box (48x70x12t)       | nitrile rubber |               | 2   |
|        | RZL-220B-OSGV   | oil seal, gear box (48x70x12t)       | FKM            |               | 2   |
| 23     | RZL-220B-OSGWB  | wrench bolt, oil seal gland (M8x15L) | SUS304         | RZL200        | 6   |
| 24     | RZL-220B-OSGLD  | gland, oil seal                      | SUS304         |               | 2   |
| 25     | RZL-220B-DSPIN  | pin, double seal                     | SUS304         |               | 2   |
| 26     | RZL-220B-GCGP   | gasket                               | paper          |               | 1   |
| 27     | RZL-220B-PLUG   | plug (M10)                           | PE             |               | 8   |
| 28     | RZL-220B-VADPT  | vertical adapter                     | SUS304         | RZL200        | 4   |
| 29     | RZL-115B-LFP    | pad, leg feet                        | SS + rubber    | RZL series    | 4   |
| 30     | RZL-115B-ERT    | rotor tool, extraction               | SUS304         | RZL series    | 1   |
| 31A*   | RZL-220B-GUARD  | safety guard (casing)                | SUS304         | RZL 200       | 2   |
| 31B*   | RZL-115B-GB     | guard wrench bolt M5x8               | SUS304         | RZL100/200    | 4   |

\*Items are not pictured on the exploded view. For more information please contact Dixon Sanitary at 800.789.1718.

## RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

### Pump Assembly

| Item # | Part #          | Description                    | Material       | Used   | Qty |
|--------|-----------------|--------------------------------|----------------|--------|-----|
| 1A     | RZL-220-GBASS   | gear box assembly              | SUS304         | RZL220 | 1   |
| 1A     | RZL-225-GBASS   | gear box assembly              | SUS304         | RZL225 | 1   |
| 31     | see page 65**   | rotor case                     | SUS316L        | RZL200 | 1   |
| 32     | RZL-220B-FCVR   | front cover                    | SUS316L        | RZL200 | 1   |
| 33     | RZL-220B-CNUT   | cap nut (M12)                  | SUS304         | RZL200 | 4   |
| 34     | RZL-220B-FCORB  | O-ring for front cover (AN261) | nitrile rubber | RZL200 | 1   |
|        | RZL-220B-FCORE  | O-ring for front cover (AN261) | EPDM           |        | 1   |
|        | RZL-220B-FCORV  | O-ring for front cover (AN261) | FKM            |        | 1   |
| 36     | RZL-220B-RBW    | rotor bolt spring washer       | SUS304         |        | 2   |
| 37     | RZL-220B-RBORB  | O-ring, rotor bolt (AN125)     | nitrile rubber |        | 2   |
|        | RZL-220B-RBORE  | O-ring, rotor bolt (AN125)     | EPDM           |        | 2   |
| 38     | see page 465    | rotor                          | SUS316L        | RZL200 | 2   |
| 39     | RZL-220B-RTSLP  | seal pin, rotor                | SUS304         | RZL200 | 6   |
| 40     | RZL-220B-CSSLP  | seal pin, case                 | SUS304         |        | 4   |
| 41     | RZL-220B-RCDOW  | dowel, rotor case (φ8)         | SUS304         |        | 2   |
| 44     | RZL-220-CSSB    | stud bolt, case (M10)          | SUS304         | RZL220 | 4   |
|        | RZL-225-CSSB    | stud bolt, case (M10)          | SUS304         | RZL225 | 4   |
| 45     | RZL-220B-SHIM05 | shim (0.05mm)                  | SUS304         | RZL200 | 2   |
|        | RZL-220B-SHIM1  | shim (0.1mm)                   | SUS304         | RZL200 | 2   |
| 46     | RZL-220B-SBHXN  | hex nut, stud bolt (M10)       | SUS304         | RZL200 | 4   |
| 47     | RZL-220B-FSNIP  | nipple, flush (PT 1/8")        | SUS304         | RZL200 | 2   |
| 51     | RZL-220B-RTORB  | O-ring, rotor (AN031)          | nitrile rubber |        | 2   |
|        | RZL-220B-RTORE  | O-ring, rotor (AN031)          | EPDM           |        | 2   |
|        | RZL-220B-RTORV  | O-ring, rotor (AN031)          | FKM            |        | 2   |
| 53     | RZL-220B-RTORB  | O-ring, rotor case (AN225)     | nitrile rubber | RZL200 | 2   |
|        | RZL-220B-RCORE  | O-ring, rotor case (AN225)     | EPDM           |        | 2   |
|        | RZL-220B-RCORV  | O-ring, rotor case (AN225)     | FKM            |        | 2   |

NOTE: Please contact Dixon Sanitary or local distributor for purchased product (rotor case, front cover, gear box, stud bolt, and shim) before October, 2011.

## RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

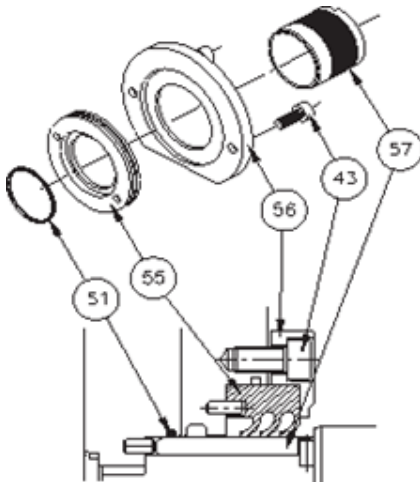
### Rotor Case/Rotor

| Item # | Part #         | Description                                  | Material     | Used   | Qty |
|--------|----------------|----------------------------------------------|--------------|--------|-----|
| 31     | RZL-220-RCCLMP | rotor case - 2" clamp                        | SUS316L      | RZL220 | 1   |
|        | RZL-220-RCFLNG | rotor case - 2" flange                       | SUS316L      |        | 1   |
|        | RZL-225-RCCLMP | rotor case - 2-1/2" clamp                    | SUS316L      | RZL225 | 1   |
|        | RZL-225-RCFLNG | rotor case - 2-1/2" flange                   | SUS316L      |        | 1   |
| 38     | RZL-220-SWA    | rotor set (2), single-wing                   | SUS316L      | RZL220 | 2   |
|        | RZL-220-BWA    | rotor set (2), bi-wing                       | SUS316L      |        | 2   |
|        | RZL-220-BWTIA  | rotor set (2), bi-wing, PTFE inserted        | SUS316L/PTFE |        | 2   |
|        | RZL-220-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L      |        | 2   |
|        | RZL-220-BLA    | rotor set (2), bi-lobe                       | SUS316L      |        | 2   |
|        | RZL-220-3LA    | rotor set (2), tri-lobe                      | SUS316L      |        | 2   |
|        | RZL-220-H3LA   | rotor set (2), tri-lobe, high temp clearance | SUS316L      |        | 2   |
|        | RZL-220-HELIA  | rotor set (2), heli-lobe                     | SUS316L      |        | 2   |
|        | RZL-225-SWA    | rotor set (2), single-wing                   | SUS316L      | RZL225 | 2   |
|        | RZL-225-BWA    | rotor set (2), bi-wing                       | SUS316L      |        | 2   |
|        | RZL-225-BWTIA  | rotor set (2), bi-wing, PTFE inserted        | SUS316L/PTFE |        | 2   |
|        | RZL-225-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L      |        | 2   |
|        | RZL-225-BLA    | rotor set (2), bi-lobe                       | SUS316L      |        | 2   |
|        | RZL-225-3LA    | rotor set (2), tri-lobe                      | SUS316L      |        | 2   |
|        | RZL-225-H3LA   | rotor set (2), tri-lobe, high temp clearance | SUS316L      |        | 2   |
|        | RZL-225-HELIA  | rotor set (2), heli-lobe                     | SUS316L      |        | 2   |
|        | RZL-225-RHELIA | rotor set (2), heli-lobe                     | EPDM         |        | 2   |

NOTE: All standard rotor cases do not have tap holes for flushing on jacketed options.

RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

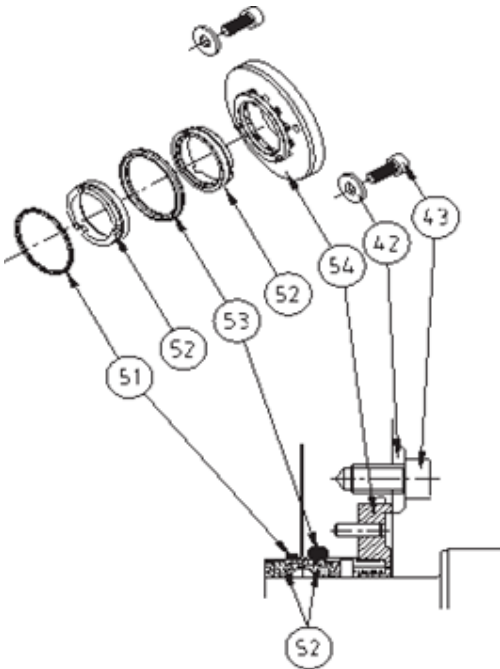
Triple Lip Seal



| Item # | Part #          | Description                        | Material       | Used   | Qty |
|--------|-----------------|------------------------------------|----------------|--------|-----|
| 43     | RZL-220B-MSGWB  | wrench bolt, M/seal gland (M6x10L) | SUS304         | RZL200 | 4   |
| 51     | RZL-220B-RTORB  | O-ring, rotor (AN031)              | nitrile rubber |        | 2   |
|        | RZL-220B-RTORE  | O-ring, rotor (AN031)              | EPDM           |        | 2   |
|        | RZL-220B-RTORV  | O-ring, rotor (AN031)              | FKM            |        | 2   |
| 55     | RZL-220B-TRPLSC | triple lip seal, product           | PTFE + copper  |        | 2   |
|        | RZL-220B-TRPLS  | triple lip seal, product           | PTFE + glass   |        | 2   |
| 56     | RZL-220B-LSC    | lip seal cover                     | SUS304         |        | 2   |
| 57     | RZL-220B-CERCS  | ceramic coated sleeve, product     | ceramic/SUS304 |        | 2   |

# RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

## Single Mechanical Seal



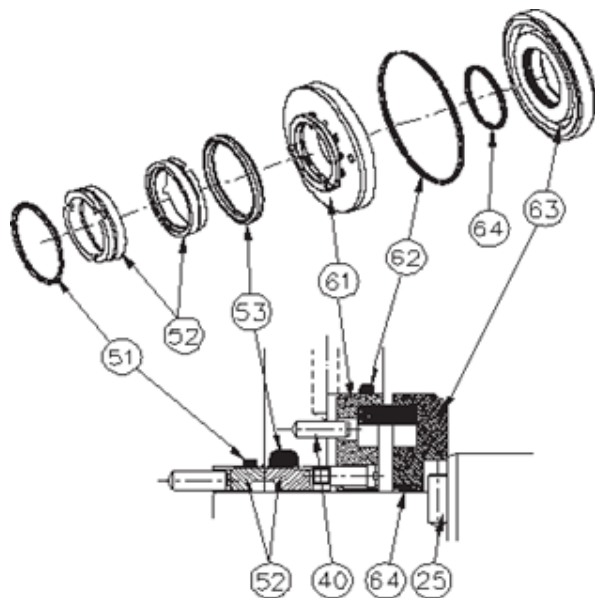
| Item # | Part #          | Description                        | Material       | Used   | Qty |
|--------|-----------------|------------------------------------|----------------|--------|-----|
| 42     | RZL-220B-MSGFW  | flat washer, M/Seal gland (φ6)     | SUS304         | RZL200 | 4   |
| 43     | RZL-220B-MSGWB  | wrench bolt, M/Seal gland (M6x10L) | SUS304         |        | 4   |
| 51     | RZL-220B-RTORB  | O-ring, rotor (AN031)              | nitrile rubber |        | 2   |
|        | RZL-220B-RTORE  | O-ring, rotor (AN031)              | EPDM           |        | 2   |
|        | RZL-220B-RTORV  | O-ring, rotor (AN031)              | FKM            |        | 2   |
| 52     | RZL-220B-TCSEAL | seal ring                          | TC             | RZL225 | 4   |
| 53     | RZL-220B-RCORB  | O-ring, rotor case (AN225)         | nitrile rubber | RZL200 | 2   |
|        | RZL-220B-RCORE  | O-ring, rotor case (AN225)         | EPDM           |        | 2   |
|        | RZL-220B-RCORV  | O-ring, rotor case (AN225)         | FKM            |        | 2   |
| 54     | RZL-220B-CSSB   | single seal body, case             | SUS304         |        | 2   |

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RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

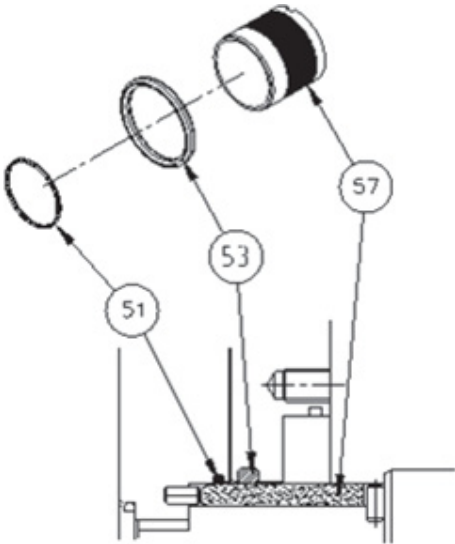
Double Mechanical Seal



| Item # | Part #          | Description                           | Material       | Used   | Qty |
|--------|-----------------|---------------------------------------|----------------|--------|-----|
| 51     | RZL-220B-RTORB  | O-ring, rotor (AN031)                 | nitrile rubber | RZL200 | 2   |
|        | RZL-220B-RTORE  | O-ring, rotor (AN031)                 | EPDM           |        | 2   |
|        | RZL-220B-RTORV  | O-ring, rotor (AN031)                 | FKM            |        | 2   |
| 52     | RZL-220B-TCSEAL | seal ring                             | TC             | RZL225 | 4   |
| 53     | RZL-220B-RCORB  | O-ring, rotor case (AN225)            | nitrile rubber | RZL200 | 2   |
|        | RZL-220B-RCORE  | O-ring, rotor case (AN225)            | EPDM           |        | 2   |
|        | RZL-220B-RCORV  | O-ring, rotor case (An225)            | FKM            |        | 2   |
| 61     | RZL-220B-CDSBTC | double seal body, case                | TC/SUS304      |        | 2   |
|        | RZL-220B-CDHPTC | double seal body, case, high pressure | TC/SUS304      |        | 2   |
| 62     | RZL-220B-CORDSB | O-ring, case, double seal (AN039)     | nitrile rubber |        | 2   |
|        | RZL-220B-CORDSE | O-ring, case, double seal (AN039)     | EPDM           |        | 2   |
|        | RZL-220B-CORDSV | O-ring, case, double seal (AN039)     | FKM            |        | 2   |
| 63     | RZL-220B-SDSBC  | rotation part, double seal, shaft     | carbon/SUS304  |        | 2   |
| 64     | RZL-220B-SORDSB | O-ring, shaft, double seal (AN029)    | nitrile rubber |        | 2   |
|        | RZL-220B-SORDSE | O-ring, shaft, double seal (AN029)    | EPDM           |        | 2   |
|        | RZL-220B-SORDSV | O-ring, shaft, double seal (AN029)    | FKM            |        | 2   |

RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

Single O-ring Seal

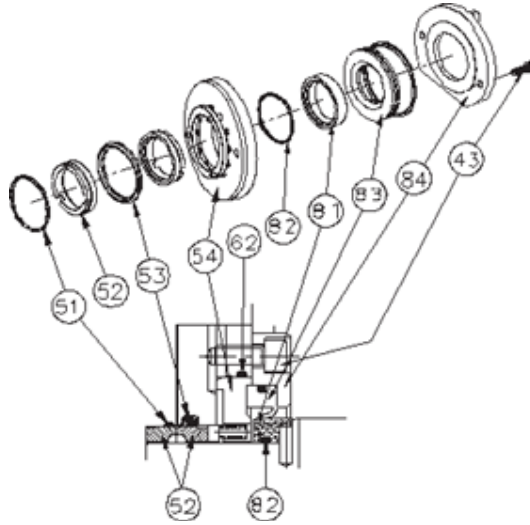


| Item # | Part #         | Description                | Material       | Used    | Qty |
|--------|----------------|----------------------------|----------------|---------|-----|
| 51     | RZL-220B-RTORB | O-ring, rotor (AN031)      | nitrile rubber | RZL 200 | 2   |
|        | RZL-220B-RTORE | O-ring, rotor (AN031)      | EPDM           |         | 2   |
|        | RZL-220B-RTORV | O-ring, rotor (AN031)      | FKM            |         | 2   |
| 53     | RZL-220B-RCORB | O-ring, rotor case (AN225) | nitrile rubber |         | 2   |
|        | RZL-220B-RCORE | O-ring, rotor case (AN225) | EPDM           |         | 2   |
|        | RZL-220B-RCORV | O-ring, rotor case (AN225) | FKM            |         | 2   |
| 57     | RZL-220B-CERCS | ceramic coated sleeve      | ceramic/ss     |         | 2   |

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## RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

### Single Mechanical Seal with Flush

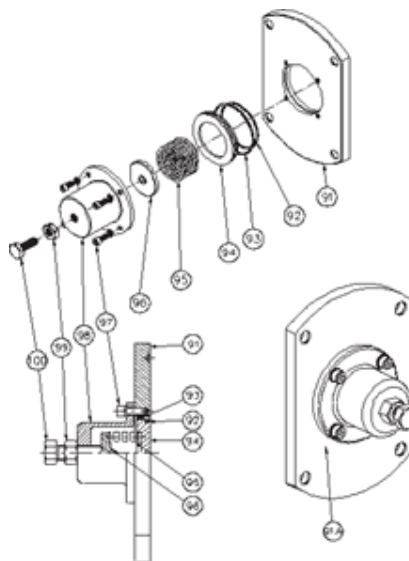


| Item # | Part #          | Description                              | Material       | Used   | Qty |
|--------|-----------------|------------------------------------------|----------------|--------|-----|
| 43     | RZL-220B-MSGWB  | wrench bolt for lip seal gland (M6x10L)  | SUS304         | RZL200 | 4   |
| 51     | RZL-220B-RTORB  | O-ring, rotor (AN031)                    | nitrile rubber |        | 2   |
|        | RZL-220B-RTORE  | O-ring, rotor (AN031)                    | EPDM           |        | 2   |
|        | RZL-220B-RTORV  | O-ring, rotor (AN031)                    | FKM            |        | 2   |
| 52     | RZL-220B-TCSEAL | mechanical seal ring                     | TC             | RZL225 | 4   |
| 53     | RZL-220B-RCORB  | O-ring, rotor case (AN225)               | nitrile rubber | RZL200 | 2   |
|        | RZL-220B-RCORE  | O-ring, rotor case (AN225)               | EPDM           |        | 2   |
|        | RZL-220B-RCORV  | O-ring, rotor case (AN225)               | FKM            |        | 2   |
| 62     | RZL-220B-CORDSB | O-ring, flushing seal case (AN039)       | nitrile rubber |        | 2   |
|        | RZL-220B-CORDSE | O-ring, flushing seal case (AN039)       | EPDM           |        | 2   |
|        | RZL-220B-CORDSV | O-ring, flushing seal case (AN039)       | FKM            |        | 2   |
| 54     | RZL-220B-CSSB   | seal base, single mechanical             | SUS304         |        | 2   |
| 81     | RZL-220B-CERFL  | ceramic sleeve for flushing              | ceramic        |        | 2   |
| 82     | RZL-220B-ORFLB  | O-ring, ceramic sleeve, flushing (AN029) | nitrile rubber |        | 2   |
|        | RZL-220B-ORFLE  | O-ring, ceramic sleeve, flushing (AN029) | EPDM           |        | 2   |
|        | RZL-220B-ORFLV  | O-ring, ceramic sleeve, flushing (AN029) | FKM            |        | 2   |
| 83     | RZL-220B-LSFLT  | PTFE - lip seal for flushing             | PTFE           |        | 2   |
| 84     | RZL-220B-SLPFLG | seal/lip seal gland for flushing         | SUS304         |        | 2   |

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## RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

### Pressure Relief Front Cover

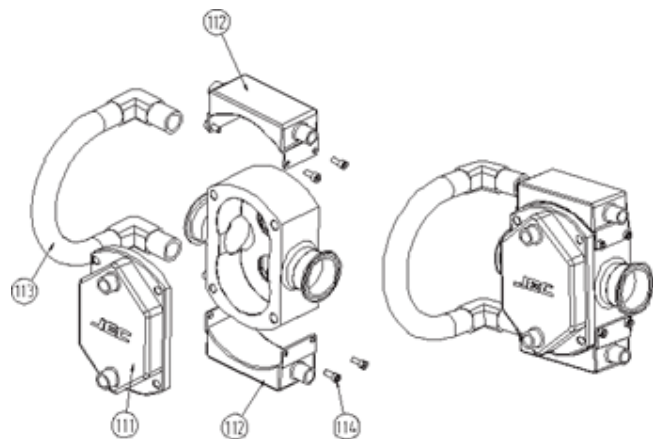


| Item # | Part #        | Description                           | Material       | Used   | Qty |
|--------|---------------|---------------------------------------|----------------|--------|-----|
| 91     | RZL-220B-RVFC | front cover, relief valve             | SUS316L        | RZL200 | 1   |
| 91A    | RZL-220B-C    | pressure relief, front cover assembly | SUS316L        |        | 1   |
| 92     | RZL-220B-OR1B | O-ring, 1 stage, plate (AN148)        | nitrile rubber |        | 1   |
|        | RZL-220B-OR1E | O-ring, 1 stage, plate (AN148)        | EPDM           |        | 1   |
|        | RZL-220B-OR1V | O-ring, 1 stage, plate (AN148)        | FKM            |        | 1   |
| 93     | RZL-220B-OR2B | O-ring, 2 stage, plate (AN145)        | nitrile rubber |        | 1   |
|        | RZL-220B-OR2E | O-ring, 2 stage, plate (AN145)        | EPDM           |        | 1   |
|        | RZL-220B-OR2V | O-ring, 2 stage, plate (AN145)        | FKM            |        | 1   |
| 94     | RZL-220B-VP   | plate, valve                          | SUS316L        |        | 1   |
| 95     | RZL-220B-RVSP | spring                                | SS41 + Cr      |        | 1   |
| 96     | RZL-220B-SPGP | plate, spring                         | SUS304         |        | 1   |
| 97     | RZL-220B-RVWB | wrench bolt (M6x20L)                  | SUS304         |        | 4   |
| 98     | RZL-220B-RVC  | cover, relief valve                   | SUS304         |        | 1   |
| 99     | RZL-220B-RVLN | lock nut (M12)                        | SUS304         |        | 1   |
| 100    | RZL-220B-RVAB | adjusting bolt (M12x60)               | SUS304         |        | 1   |

NOTE: Must supply setting pressure.

RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

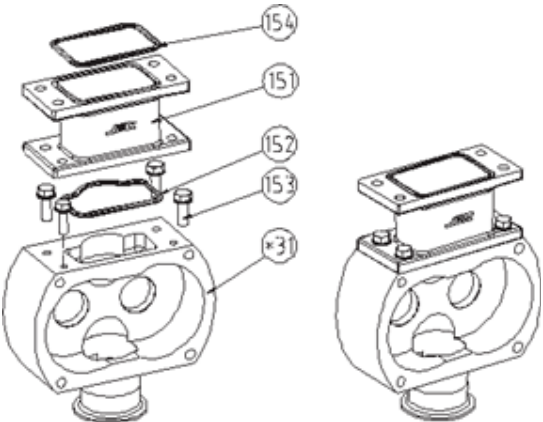
Jacket Front Cover and Case



| Item # | Part #       | Description                 | Material | Used   | Qty |
|--------|--------------|-----------------------------|----------|--------|-----|
| 111    | RAL-220B-FCJ | front cover jacket          | SUS316L  | RZL200 | 1   |
| 112    | RZL-220-CTJ  | jacket, case top            | SUS304   | RZL200 | 1   |
|        | RZL-220-CBJ  | jacket, case bottom         | SUS304   |        | 1   |
|        | RZL-225-CTJ  | jacket, case top            | SUS304   | RZL225 | 1   |
|        | RZL-225-CBJ  | jacket, case bottom         | SUS304   |        | 1   |
| 113    | RZL-220B-JT  | tube, jacket                | SUS304   | RZL225 | 1   |
| 114    | RZL-220B-JWB | wrench bolt, jacket (M8x25) | SUS304   | RZL100 | 2   |

# RZL-Series Rotary Lobe Pump - 200 Series Bill of Materials

Rectangular Inlet

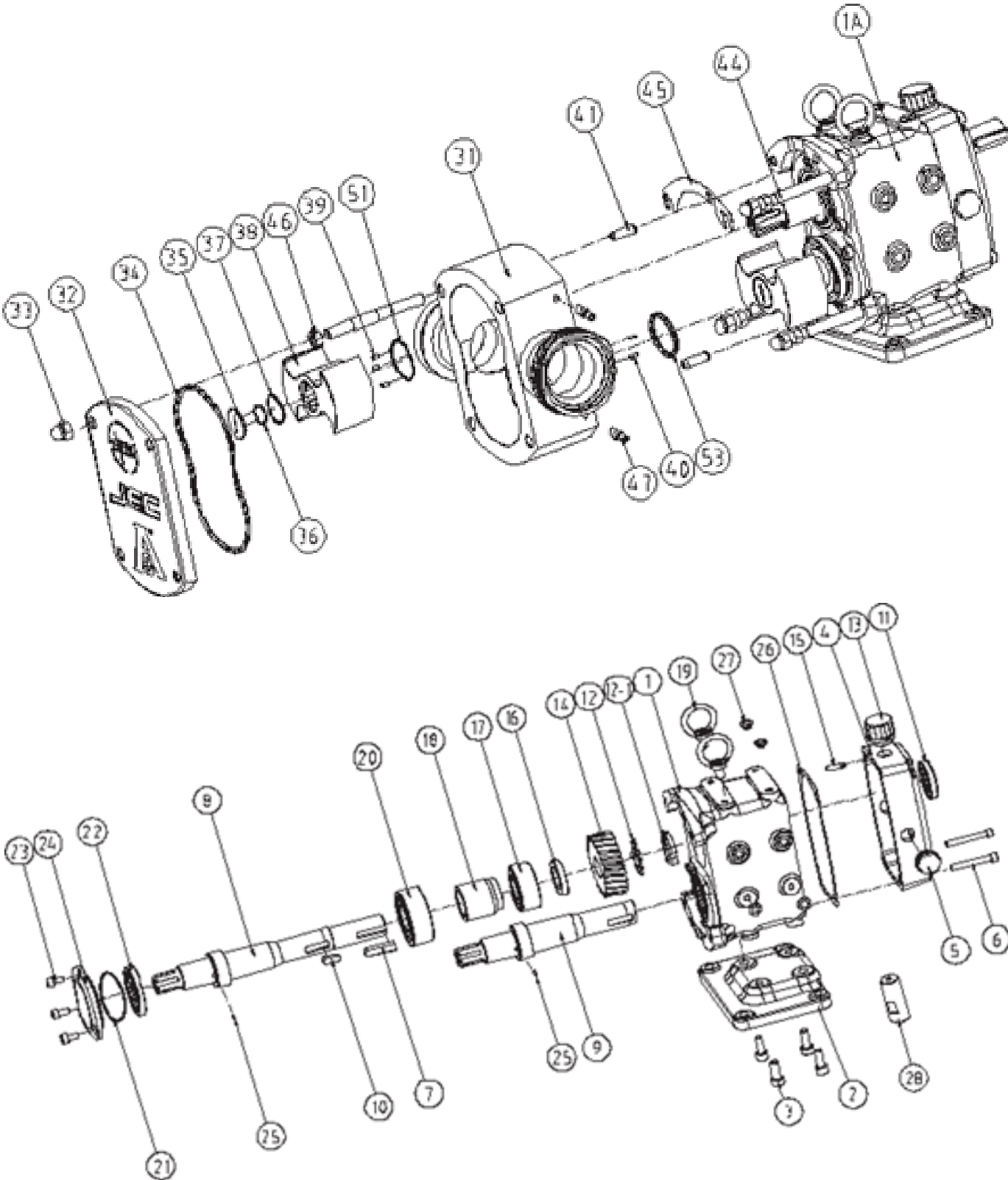


| Item # | Part #         | Description                         | Material       | Used   | Qty |
|--------|----------------|-------------------------------------|----------------|--------|-----|
| 151    | RZL-220-RCRIA  | adapter, rectangular inlet          | SUS304         | RZL220 | 1   |
|        | RZL-220-RCRIA  | adapter, rectangular inlet          | SUS304         | RZL225 | 1   |
| 152    | RZL-220-RIORB  | O-ring, rectangular inlet (AN238)   | nitrile rubber | RZL220 | 1   |
|        | RZL-220-RIOR   | O-ring, rectangular inlet (AN238)   | EPDM           |        | 1   |
|        | RZL-220-RIORV  | O-ring, rectangular inlet (AN238)   | FKM            |        | 1   |
|        | RZL-220-RIORB  | O-ring, rectangular inlet (AN243)   | nitrile rubber | RZL225 | 1   |
|        | RZL-225-RIOR   | O-ring, rectangular inlet (AN243)   | EPDM           |        | 1   |
|        | RZL-225-RIORV  | O-ring, rectangular inlet (AN243)   | FKM            |        | 1   |
|        |                |                                     |                |        |     |
| 153    | RZL-220B-RIHB  | hex bolt and S/W (M8x25)            | SUS304         | RZL200 | 4   |
| 154    | RZL-220B-ROORB | O-ring, rectangular adapter (AN240) | nitrile rubber | RZL220 | 1   |
|        | RZL-220-ROOR   | O-ring, rectangular adapter (AN240) | EPDM           |        | 1   |
|        | RZL-220-ROORV  | O-ring, rectangular adapter (AN240) | FKM            |        | 1   |
|        | RZL-225-ROORB  | O-ring, rectangular adapter (AN245) | nitrile rubber | RZL225 | 1   |
|        | RZL-225-ROOR   | O-ring, rectangular adapter (AN245) | EPDM           |        | 1   |
|        | RZL-225-ROORV  | O-ring, rectangular adapter (AN245) | FKM            |        | 1   |
|        |                |                                     |                |        |     |

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RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

Basic Assembly (Single M/Seal)



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## RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

### Gear Box Assembly (Basic)

| Item # | Part #          | Description                           | Material       | Used        | Qty |
|--------|-----------------|---------------------------------------|----------------|-------------|-----|
| 1      | RZL-330B-GBSS   | gear box                              | SUS304         | RZL300      | 1   |
| 2      | RZL-330B-GBSSB  | base, gear box                        | SUS304         |             | 1   |
| 3      | RZL-330B-BWB    | wrench bolt, base (M12x30L)           | SUS304         |             | 4   |
| 4      | RZL-330B-GBCSS  | cover, gear box                       | SUS304         |             | 1   |
| 5      | RZL-330B-PLD    | plug, level, drain                    | -              |             | 3   |
| 6      | RZL-330B-GBWB   | wrench bolt, gear box cover (M8x70L)  | SUS304         |             | 4   |
| 7      | RZL-330B-DSKEY  | key, shaft (14x9x53)                  | S45C           |             | 1   |
| 8      | RZL-330-DSHAFT  | shaft, drive                          | SUS304         | RZL330      | 1   |
|        | RZL-340-DSHAFT  | shaft, drive                          | SUS304         | RZL340      | 1   |
| 9      | RZL-330-ISHAFT  | shaft, idle                           | SUS304         | RZL330      | 1   |
|        | RZL-340-ISHAFT  | shaft, idle                           | SUS304         | RZL340      | 1   |
| 10     | RZL-330B-GKEY   | key, gear (14x9x35)                   | S45C           | RZL300      | 2   |
| 11     | RZL-330B-OSCB   | oil seal, cover (45x70x12t)           | nitrile rubber |             | 1   |
|        | RZL-330B-OSCV   | oil seal, cover (45x70x12t)           | FKM            |             | 1   |
| 12     | RZL-330B-TGWASH | lock washer                           | S45C           |             | 2   |
| 12-1   | RZL-330B-TGNUT  | lock nut                              | S45C           |             | 2   |
| 13     | RZL-330B-RVLV   | breather, gear box                    | PE             |             | 1   |
| 14     | RZL-330B-TGHELG | helical gear                          | S45C           |             | 2   |
| 15     | RZL-330B-GBDOW  | dowel, gear box (φ8)                  | SUS304         |             | 2   |
| 16     | RZL-330B-GSPAC  | spacer, gear (φ35x6L)                 | S45C           |             | 2   |
| 17     | RZL-330B-RBEAR  | bearing, rear (#5210)                 | S45C           |             | 2   |
| 18     | RZL-330B-BSPAC  | spacer, bearing                       | S45C           |             | 2   |
| 19     | RZL-330B-IBOLT  | I-bolt / M8                           | SUS304         |             | 2   |
| 20     | RZL-330B-FBEAR  | bearing, front (#5212)                | S45C           |             | 2   |
| 21     | RZL-330B-OSGOV  | O-ring, oil seal gland (AN045)        | FKM            |             | 2   |
| 22     | RZL-330B-OSGB   | oil seal, gear box (65x90x12t)        | nitrile rubber |             | 2   |
|        | RZL-330B-OSGV   | oil seal, gear box (65x90x12t)        | FKM            |             | 2   |
| 23     | RZL-330B-OSGWB  | wrench bolt, oil seal gland (M12x25L) | SUS304         | RZL300      | 6   |
| 24     | RZL-330B-OSGLD  | gland, oil seal                       | SUS304         |             | 2   |
| 25     | RZL-330B-DSPIN  | pin, double seal                      | SUS304         |             | 2   |
| 26     | RZL-330B-GCGP   | gasket                                | paper          |             | 1   |
| 27     | RZL-330B-PLUG   | plug (M12)                            | PE             |             | 8   |
| 28     | RZL-330B-VADPT  | vertical adapter                      | SUS304         | RZL300      | 4   |
| 29     | RZL-115B-LFP    | pad, leg feet                         | SS + rubber    | RZL series  | 4   |
| 30     | RZL-115B-ERT    | rotor tool, extraction                | FCD40          | RZL series  | 1   |
| 31A*   | RZL-330B-GUARD  | safety guard (casing)                 | SUS304         | RZL 300     | 2   |
| 31B*   | RZL-330B-GB     | guard wrench bolt M6x8                | SUS304         | RZL 300/400 | 4   |

\*Items are not pictured on the exploded view. For more information please contact Dixon Sanitary at 800.789.1718.



## RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

### Pump Assembly

| Item # | Part #          | Description                         | Material       | Used   | Qty          |          |
|--------|-----------------|-------------------------------------|----------------|--------|--------------|----------|
|        |                 |                                     |                |        | Per Assembly | Per Pump |
| 1A     | RZL-330-GBASS   | gear box assembly - stainless steel | SUS304         | RZL330 | 1            | 1        |
|        | RZL-340-GBASS   | gear box assembly - stainless steel | SUS304         | RZL340 | 1            | 1        |
| 31     | see page 54     | rotor case                          | SUS316L        | RZL300 | 1            | 1        |
| 32     | RZL-330B-FCVR   | front cover                         | SUS316L        |        | 1            | 1        |
| 33     | RZL-330B-CNUT   | cap nut                             | SUS304         |        | 1            | 4        |
| 34     | RZL-330B-FCORB  | O-ring, front cover (AN271)         | nitrile rubber |        | 1            | 1        |
|        | RZL-330B-FCORE  | O-ring, front cover (AN271)         | EPDM           |        | 1            | 1        |
|        | RZL-330B-FCORV  | O-ring, front cover (AN271)         | FKM            |        | 1            | 1        |
| 36     | RZL-330B-RBW    | rotor bolt and spring washer        | SUS304         |        | 1            | 2        |
| 37     | RZL-330B-RBORB  | O-ring, rotor bolt (AN225)          | nitrile rubber |        | 1            | 2        |
|        | RZL-330B-RBORE  | O-ring, rotor bolt (AN225)          | EPDM           |        | 1            | 2        |
|        | RZL-330B-RBORV  | O-ring, rotor bolt (AN225)          | FKM            |        | 1            | 2        |
| 38     | see page 477    | rotor                               | SUS316L        |        | 1            | 2        |
| 39     | RZL-330B-RTSLP  | seal pin, rotor                     | SUS304         |        | 3            | 6        |
| 40     | RZL-330B-CSSLP  | seal pin, case                      | SUS304         |        | 2            | 4        |
| 41     | RZL-330B-RCDOW  | dowel, rotor case (φ13)             | SUS304         |        | 1            | 2        |
| 44     | RZL-330-CSSB    | stud bolt, case                     | SUS304         | RZL330 | 1            | 4        |
|        | RZL-340-CSSB    | stud bolt, case                     | SUS304         | RZL340 | 1            | 4        |
| 45     | RZL-330B-SHIM05 | shim (0.05mm)                       | SUS304         | RZL300 | 1            | 2        |
|        | RZL-330B-SHIM1  | shim (0.1mm)                        | SUS304         | RZL300 | 1            | 2        |
|        | RZL-330B-SHIM2  | shim (0.2mm)                        | SUS304         | RZL300 | 1            | 2        |
| 46     | RZL-330B-SBHYN  | hex nut, stud bolt (M14)            | SUS304         | RZL300 | 2            | 4        |
| 47     | RZL-330B-FSNIP  | nipple, flush (PT 1/8")             | SUS304         | RZL300 | 1            | 2        |
| 51     | RZL-330B-RTORB  | O-ring, rotor (AN142)               | nitrile rubber |        | 1            | 2        |
|        | RZL-330B-RTORE  | O-ring, rotor (AN142)               | EPDM           |        | 1            | 2        |
|        | RZL-330B-RTORV  | O-ring, rotor (AN142)               | FKM            |        | 1            | 2        |
| 53     | RZL-330B-RCORB  | O-ring, rotor case (AN230)          | nitrile rubber | RZL300 | 1            | 2        |
|        | RZL-330B-RCORE  | O-ring, rotor case (AN230)          | EPDM           |        | 1            | 2        |
|        | RZL-330B-RCORV  | O-ring, rotor case (AN230)          | FKM            |        | 1            | 2        |

NOTE: Please contact Dixon Sanitary or local distributor for purchased product (rotor case, front cover, gear box, stud bolt, and shim) before October, 2011.

## RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

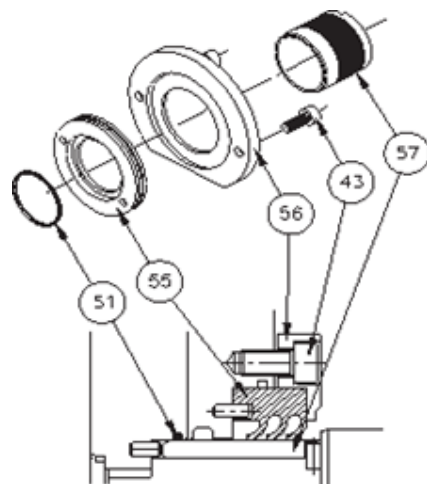
### Rotor Case/Rotor

| Item # | Part #         | Description                                  | Material       | Used   | Qty |
|--------|----------------|----------------------------------------------|----------------|--------|-----|
| 31     | RZL-330-RCCLMP | rotor case - 3" tri-clamp                    | SUS316L        | RZL330 | 1   |
|        | RZL-330-RCFLNG | rotor case - 3" flanger                      | SUS316L        |        | 1   |
|        | RZL-340-RCCLMP | rotor case - 4" tri-clamp                    | SUS316L        | RZL340 | 1   |
|        | RZL-340-RCFLNG | rotor case 4" flange                         | SUS316L        |        | 1   |
| 38     | RZL-330-SWA    | rotor set (2), single-wing                   | SUS316L        | RZL330 | 1   |
|        | RZL-330-BWA    | rotor set (2), bi-wing                       | SUS316L        |        | 1   |
|        | RZL-330-BWTIA  | rotor set (2), bi-wing, PTFE inserted        | SUS316L / PTFE |        | 1   |
|        | RZL-330-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L        |        | 1   |
|        | RZL-330-BLA    | rotor set (2), bi-lobe                       | SUS316L        |        | 1   |
|        | RZL-330-3LA    | rotor set (2), tri-lobe                      | SUS316L        |        | 1   |
|        | RZL-330-H3LA   | rotor set (2), tri-lobe, high temp clearance | SUS316L        |        | 1   |
|        | RZL-330-HELIA  | rotor set (2), heli-lobe                     | SUS316L        |        | 1   |
|        | RZL-340-SWA    | rotor set (2), single-wing                   | SUS316L        | RZL340 | 1   |
|        | RZL-340-BWA    | rotor set (2), bi-wing                       | SUS316L        |        | 1   |
|        | RZL-340-BWTIA  | rotor set (2), bi-wing, PTFE inserted        | SUS316L / PTFE |        | 1   |
|        | RZL-340-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L        |        | 1   |
|        | RZL-340-BLA    | rotor set (2), bi-lobe                       | SUS316L        |        | 1   |
|        | RZL-340-3LA    | rotor set (2), tri-lobe                      | SUS316L        |        | 1   |
|        | RZL-340-H3LA   | rotor set (2), tri-lobe, high temp clearance | SUS316L        |        | 1   |
|        | RZL-340-HELIA  | rotor set (2), heli-lobe                     | SUS316L        |        | 1   |
|        | RZL-340-RHELIA | rotor set (2), heli-lobe                     | EPDM           |        | 1   |

NOTE: All standard rotor cases do not have tap holes for flushing on jacketed options.

RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

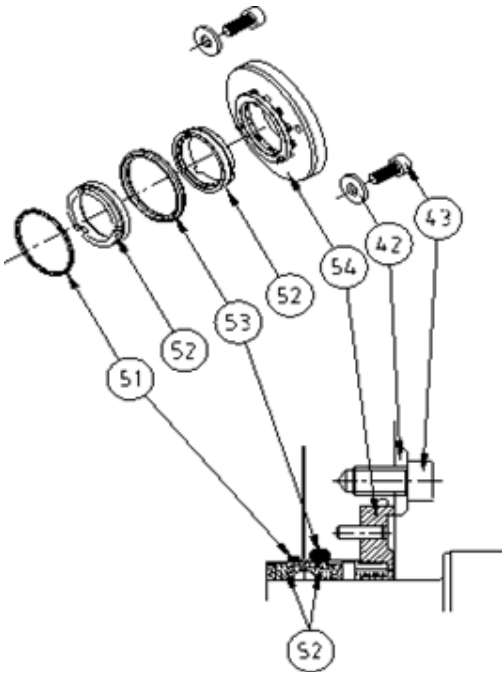
Triple Lip Seal



| Item # | Part #          | Description                        | Material       | Used   | Qty |
|--------|-----------------|------------------------------------|----------------|--------|-----|
| 43     | RZL-330B-MSGWB  | wrench bolt, M/Seal gland (M6x10L) | SUS304         | RZL300 | 4   |
| 51     | RZL-330B-RTORB  | O-ring, rotor (AN142)              | nitrile rubber |        | 2   |
|        | RZL-330B-RTORE  | O-ring, rotor (AN142)              | EPDM           |        | 2   |
|        | RZL-330B-RTORV  | O-ring, rotor (AN142)              | FKM            |        | 2   |
| 55     | RZL-330B-TRPLSC | triple lip seal, product           | PTFE + copper  |        | 2   |
|        | RZL-330B-TRPLS  | triple lip seal, product           | PTFE + glass   |        | 2   |
| 56     | RZL-330B-LSC    | lip seal cover                     | SUS304         |        | 2   |
| 57     | RZL-330B-CERCS  | ceramic coated sleeve, product     | ceramic SUS304 |        | 2   |

# RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

Single Mechanical Seal

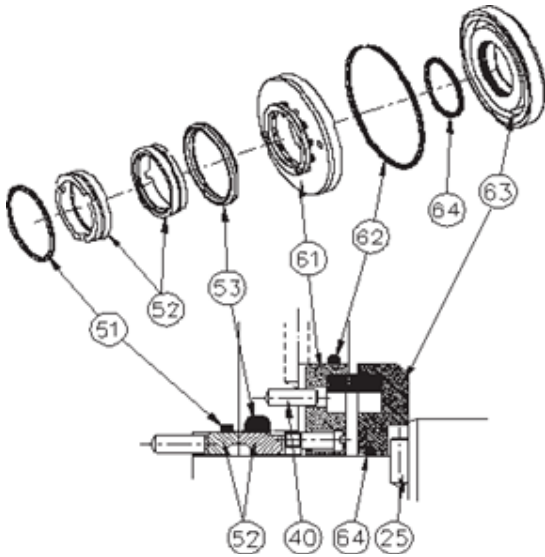


| Item # | Part #          | Description                        | Material       | Used   | Qty |
|--------|-----------------|------------------------------------|----------------|--------|-----|
| 42     | RZL-330B-MSGFW  | flat washer, M/Seal gland (φ6)     | SUS304         | RZL300 | 4   |
| 43     | RZL-330B-MSGWB  | wrench bolt, M/Seal gland (M6x10L) | SUS304         |        | 4   |
| 51     | RZL-330B-RTORB  | O-ring, rotor (AN142)              | nitrile rubber |        | 2   |
|        | RZL-330B-RTORE  | O-ring, rotor (AN142)              | EPDM           |        | 2   |
|        | RZL-330B-RTORV  | O-ring, rotor (AN142)              | FKM            |        | 2   |
| 52     | RZL-330B-TCSEAL | seal ring                          | TC             | RZL340 | 4   |
|        | RZL-340-RHLTCR  | seal ring, rubber heli-lobe        | TC             |        | 4   |
| 53     | RZL-330B-RCORB  | O-ring, rotor case (AN230)         | nitrile rubber | RZL300 | 2   |
|        | RZL-330B-RCORE  | O-ring, rotor case (AN230)         | EPDM           |        | 2   |
|        | RZL-330B-RCORV  | O-ring, rotor case (AN230)         | FKM            |        | 2   |
| 54     | RZL-330B-CSSB   | single seal body, case             | SUS304         |        | 2   |

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RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

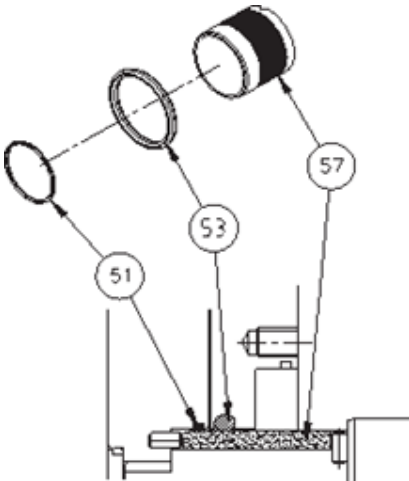
Double Mechanical Seal



| Item # | Part #          | Description                           | Material       | Used   | Qty |
|--------|-----------------|---------------------------------------|----------------|--------|-----|
| 51     | RZL-330B-RTORB  | O-ring, rotor (AN142)                 | nitrile rubber | RZL300 | 2   |
|        | RZL-330B-RTORE  | O-ring, rotor (AN142)                 | EPDM           |        | 2   |
|        | RZL-330B-RTORV  | O-ring, rotor (AN142)                 | FKM            |        | 2   |
| 52     | RZL-330B-TCSEAL | seal ring                             | TC             | RZL340 | 4   |
|        | RZL-340-RHLTCSR | seal ring, rubber heli-lobe           | TC             |        | 4   |
| 53     | RZL-330B-RCORB  | O-ring, rotor case (AN230)            | nitrile rubber | RZL300 | 2   |
|        | RZL-330B-RCORE  | O-ring, rotor case (AN230)            | EPDM           |        | 2   |
|        | RZL-330B-RCORV  | O-ring, rotor case (AN230)            | FKM            |        | 2   |
| 61     | RZL-330B-CDSBTC | double seal body case                 | TC/SUS304      |        | 2   |
|        | RZL-330B-CDHPTC | double seal body, case, high pressure | TC/SUS304      |        | 2   |
| 62     | RZL-330B-CORDSB | O-ring, case, double seal (AN043)     | nitrile rubber |        | 2   |
|        | RZL-330B-CORDSE | O-ring, case, double seal (AN043)     | EPDM           |        | 2   |
|        | RZL-330B-CORDSV | O-ring, case, double seal (AN043)     | FKM            |        | 2   |
| 63     | RZL-330B-SDSBC  | rotation part, double seal, shaft     | carbon/SUS304  |        | 2   |
| 64     | RZL-330B-SORDSB | O-ring, shaft, double seal (AN033)    | nitrile rubber |        | 2   |
|        | RZL-330B-SORDSE | O-ring, shaft, double seal (AN033)    | EPDM           |        | 2   |
|        | RZL-330B-SORDSV | O-ring, shaft, double seal (AN033)    | FKM            |        | 2   |

RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

Single O-ring Seal

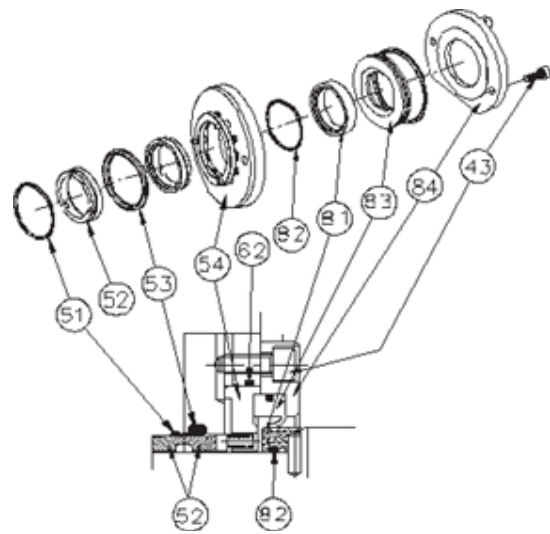


| Item # | Part #         | Description                | Material       | Used    | Qty |
|--------|----------------|----------------------------|----------------|---------|-----|
| 51     | RZL-330B-RTORB | O-ring, rotor (AN142)      | nitrile rubber | RZL 300 | 2   |
|        | RZL-330B-RTORE | O-ring, rotor (AN142)      | EPDM           |         | 2   |
|        | RZL-330B-RTORV | O-ring, rotor (AN142)      | FKM            |         | 2   |
| 53     | RZL-330B-RCORB | O-ring, rotor case (AN230) | nitrile rubber |         | 2   |
|        | RZL-330B-RCORE | O-ring, rotor case (AN230) | EPDM           |         | 2   |
|        | RZL-330B-RCORV | O-ring, rotor case (AN230) | FKM            |         | 2   |
| 57     | RZL-330B-CERCS | ceramic coated sleeve      | ceramic/SUS304 |         | 2   |

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RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

Single Mechanical Seal with Flush

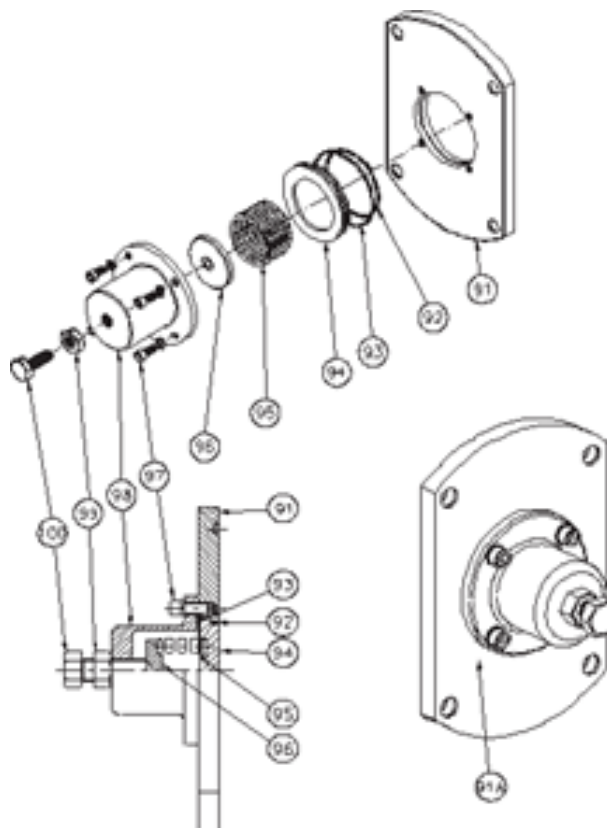


| Item # | Part #          | Description                              | Material       | Used   | Qty |
|--------|-----------------|------------------------------------------|----------------|--------|-----|
| 43     | RZL-330B-MSGWB  | wrench bolt, lip seal gland (M6x10L)     | SUS304         | RZL300 | 4   |
| 51     | RZL-330B-RTORB  | O-ring, rotor (AN142)                    | nitrile rubber |        | 2   |
|        | RZL-330B-RTORE  | O-ring, rotor (AN142)                    | EPDM           |        | 2   |
|        | RZL-330B-RTORV  | O-ring, rotor (AN142)                    | FKM            |        | 2   |
| 52     | RZL-330B-TCSEAL | mechanical seal ring                     | TC             | RZL340 | 4   |
| 53     | RZL-330B-RCORB  | O-ring, rotor case (AN230)               | nitrile rubber | RZL300 | 2   |
|        | RZL-330B-RCORE  | O-ring, rotor case (AN230)               | EPDM           |        | 2   |
|        | RZL-330B-RCORV  | O-ring, rotor case (AN230)               | FKM            |        | 2   |
| 54     | RZL-330B-CSSB   | seal base, single mechanical             | SUS304         |        | 2   |
| 62     | RZL-330B-CORDSB | O-ring, flushed seal case (AN042)        | nitrile rubber |        | 2   |
|        | RZL-330B-CORDSE | O-ring, flushed seal case (AN042)        | EPDM           |        | 2   |
|        | RZL-330B-CORDSV | O-ring, flushed seal case (AN042)        | FKM            |        | 2   |
| 81     | RZL-330B-CERFL  | ceramic sleeve, flushing                 | ceramic        |        | 2   |
| 83     | RZL-330B-LSFLT  | lip seal, flushing                       | PTFE           |        | 2   |
| 82     | RZL-330B-ORFLB  | O-ring, ceramic sleeve, flushing (AN033) | nitrile rubber |        | 2   |
|        | RZL-330B-ORFLE  | O-ring, ceramic sleeve, flushing (AN033) | EPDM           |        | 2   |
|        | RZL-330B-ORFLV  | O-ring, ceramic sleeve, flushing (AN033) | FKM            |        | 2   |
| 84     | RZL-330B-SLPFLG | gland, flushing                          | SUS304         |        | 2   |

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## RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

### Pressure Relief Front Cover



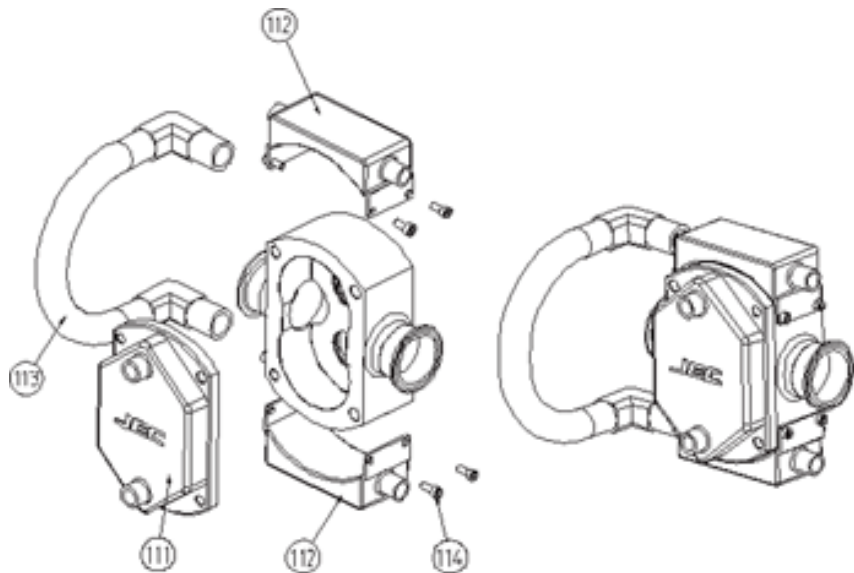
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| Item # | Part #        | Description                          | Material       | Used   | Qty |
|--------|---------------|--------------------------------------|----------------|--------|-----|
| 91     | RZL-330B-RVFC | front cover, relief valve            | SUS316L        | RZL300 | 1   |
| 91A    | RZL-330B-C    | pressure relief front cover assembly | SUS316L        |        | 1   |
| 92     | RZL-330B-OR1B | O-ring, 1 stage, plate (AN242)       | nitrile rubber |        | 1   |
|        | RZL-330B-OR1E | O-ring, 1 stage, plate (AN242)       | EPDM           |        | 1   |
|        | RZL-330B-OR1V | O-ring, 1 stage, plate (AN242)       | FKM            |        | 1   |
| 93     | RZL-330B-OR2B | O-ring, 2 stage, plate (AN239)       | nitrile rubber |        | 1   |
|        | RZL-330B-OR2E | O-ring, 2 stage plate (AN239)        | EPDM           |        | 1   |
|        | RZL-330B-OR2V | O-ring, 2 stage plate (AN239)        | FKM            |        | 1   |
| 94     | RZL-330B-VP   | plate, valve                         | SUS316L        |        | 1   |
| 95     | RZL-330B-RVSP | spring                               | SS41 + Cr      |        | 1   |
| 96     | RZL-330B-SPGP | plate, spring                        | SUS304         |        | 1   |
| 97     | RZL-330B-RVWB | wrench, bolt                         | SUS304         |        | 4   |
| 98     | RZL-330B-RVC  | cover relief valve (M8x25)           | SUS304         |        | 1   |
| 99     | RZL-330B-RVLN | lock nut (M20)                       | SUS304         |        | 1   |
| 100    | RZL-330B-RVAB | adjusting bolt (M20x80L)             | SUS304         |        | 1   |



RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

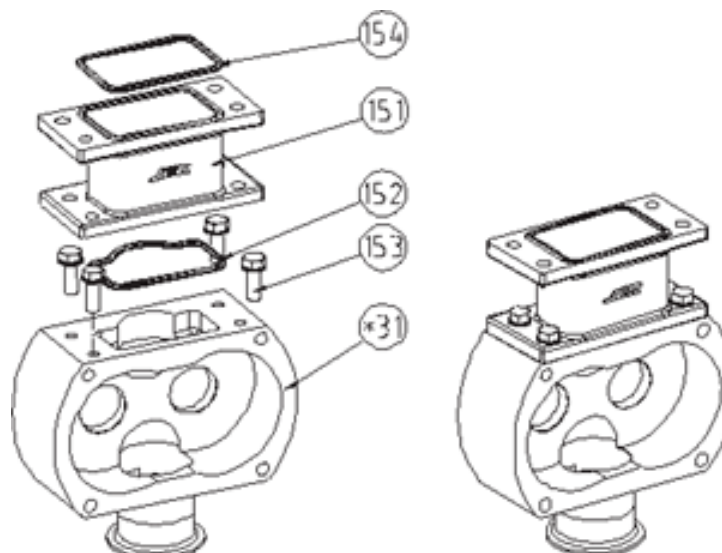
Jacket Front Cover and Case



| Item # | Part #       | Description         | Material | Used   | Qty |
|--------|--------------|---------------------|----------|--------|-----|
| 111    | RZL-330B-FCJ | front cover jacket  | SUS316L  | RZL300 | 1   |
| 112    | RZL-330-CTJ  | jacket, case top    | SUS304   | RZL330 | 1   |
|        | RZL-330-CBJ  | jacket, case bottom | SUS304   |        | 1   |
|        | RZL-340-CTJ  | jacket, case top    | SUS304   | RZL340 | 1   |
|        | RZL-340-CBJ  | jacket, case bottom | SUS304   |        | 1   |
|        |              |                     |          |        |     |
| 113    | RZL-330-JT   | tube, jacket        | SUS304   | RZL330 | 1   |
|        | RZL-340-JT   | tube, jacket        | SUS304   | RZL340 | 1   |
| 114    | RZL-330B-JWB | wrench bolt, jacket | SUS304   | RZL300 | 4   |

## RZL-Series Rotary Lobe Pump - 300 Series Bill of Materials

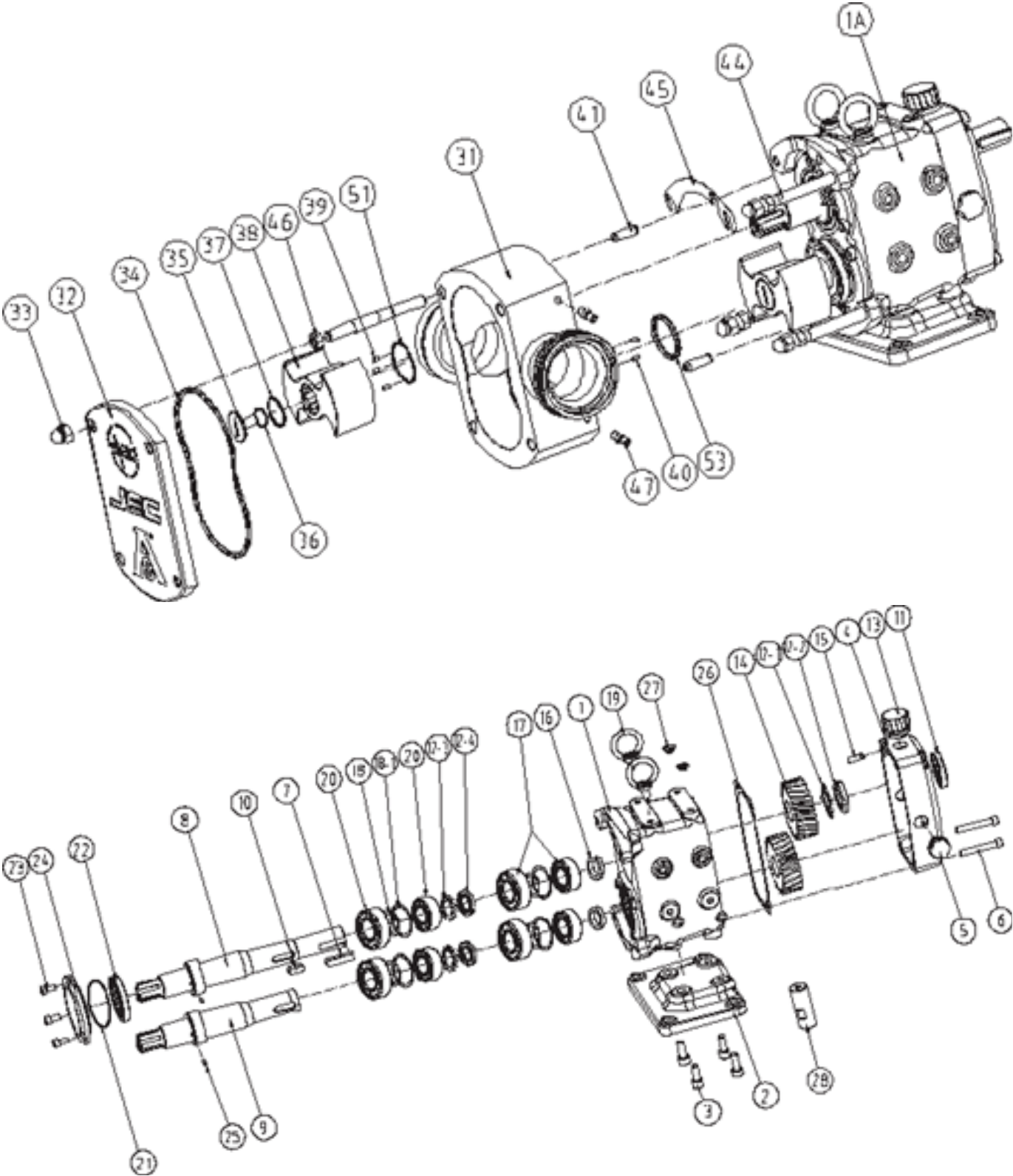
Rectangular Inlet



| Item # | Part #         | Description                                    | Material       | Used   | Qty |
|--------|----------------|------------------------------------------------|----------------|--------|-----|
| 151    | RZL-330-RCRIA  | adapter, rectangular inlet                     | SUS304         | RZL330 | 1   |
|        | RZL-330-RCRIA  | adapter, rectangular inlet                     | SUS304         | RZL340 | 1   |
| 152    | RZL-330-RIORB  | O-ring, rectangular inlet (AN248)              | nitrile rubber | RZL330 | 1   |
|        | RZL-330-R10R   | O-ring, rectangular inlet (AN248)              | EPDM           |        | 1   |
|        | RZL-330-RIORV  | O-ring, rectangular inlet (AN248)              | FKM            |        | 1   |
|        | RZL-340-RIORB  | O-ring, rectangular inlet (AN248)              | nitrile rubber | RZL340 | 1   |
|        | RZL-340-RIOR   | O-ring, rectangular inlet (AN248)              | EPDM           |        | 1   |
|        | RZL-340-RIORV  | O-ring, rectangular inlet (AN248)              | FKM            |        | 1   |
|        | RZL-340-RIORV  | O-ring, rectangular inlet (AN248)              | FKM            |        | 1   |
| 153    | RZL-330B-RIHB  | hex bolt and S/W (M10x30)                      | SUS304         | RZL300 | 4   |
| 154    | RZL-330-ROORB  | O-ring, rectangular adapter (AN257)            | nitrile rubber | RZL330 | 1   |
|        | RZL-330-ROOR   | O-ring, rectangular adapter (AN257)            | EPDM           |        | 1   |
|        | RZL-330-ROORV  | O-ring, rectangular adapter (AN257)            | FKM            |        | 1   |
|        | RZL-340-ROORB  | O-ring, rectangular adapter (AN260)            | nitrile rubber | RZL340 | 1   |
|        | RZL-340-ROOR   | O-ring, rectangular adapter (AN260)            | EPDM           |        | 1   |
|        | RZL-340-ROORV  | O-ring, rectangular adapter (AN260)            | FKM            |        | 1   |
|        | RZL-340-ROORV  | O-ring, rectangular adapter (AN260)            | FKM            |        | 1   |
| 31     | RZL-330-RCRI2C | rotor case - rectangular inlet / 3" tri-clamp  | SUS316L        | RZL300 | 1   |
|        | RZL-330B-RFLG  | rotor case - rectangular inlet / 3" JIS flange | SUS316L        |        | 1   |

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RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials  
Basic Assembly (Single M/Seal)



## RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

### Gear Box Assembly (Basic)

| Item # | Part #          | Description                           | Material       | Used        | Qty |
|--------|-----------------|---------------------------------------|----------------|-------------|-----|
| 1      | RZL-440B-GBCI   | gear box                              | FCD40          | RZL400      | 1   |
| 2      | RZL-440B-GBCIB  | base, gear box                        | FCD40          | RZL400      | 1   |
| 3      | RZL-440B-BWB    | wrench bolt, base (M14x35L)           | SUS304         |             | 4   |
| 4      | RZL-440B-GBCCI  | cover, gear box                       | FCD40          |             | 1   |
|        | RZL-440B-GBCSS  | cover, gear box                       | SUS304         |             | 1   |
| 5      | RZL-330B-PLD    | plug, level, drain                    | -              | RZL300/400  | 3   |
| 6      | RZL-440B-GBWB   | wrench bolt, gear box cover (M10x90L) | SUS304         | RZL440      | 4   |
| 7      | RZL-440B-DSKEY  | key, gear (14x9x67)                   | S45C           |             | 2   |
| 8      | RZL-440-DSHAFT  | shaft, drive                          | SUS304         |             | 1   |
|        | RZL-450-DSHAFT  | shaft, drive                          | SUS304         | RZL450      | 1   |
| 9      | RZL-440-ISHAFT  | shaft, idle                           | SUS304         | RZL440      | 1   |
|        | RZL-450-ISHAFT  | shaft, idle                           | SUS304         | RZL450      | 1   |
| 10     | RZL-440B-GKEY   | key, gear (14x9x53)                   | S45C           | RZL400      | 2   |
| 11     | RZL-440B-OSCB   | oil seal, cover (55x82x12t)           | nitrile rubber |             | 1   |
|        | RZL-440B-OSCV   | oil seal, cover (55x82x12t)           | FKM            |             | 1   |
| 12-1   | RZL-440B-TGWSHD | lock washer, drive shaft              | S45C           | RZL400      | 2   |
| 12-2   | RZL-440B-TGNUTD | lock nut, drive shaft                 | S45C           |             | 2   |
| 12-3   | RZL-440B-TGWSHI | lock washer, idle shaft               | S45C           |             | 2   |
| 12-4   | RZL-440B-TGNUTI | lock nut, idle shaft                  | S45C           |             | 4   |
| 13     | RZL-440B-RVLV   | breather, gear box                    | PE             | RZL400      | 1   |
| 14     | RZL-440B-TGHELG | helical gear                          | S45C           |             | 2   |
| 15     | RZL-440B-GBDOW  | dowel, gear box (φ8)                  | SUS304         |             | 2   |
| 16     | RZL-440B-GSPAC  | spacer, gear (φ35x5L)                 | S45C           | RZL400      | 2   |
| 17     | RZL-440B-RBEAR  | bearing, rear (#E32213J)              | -              |             | 4   |
| 18     | RZL-440B-BSPCI  | spacer, bearing (inner)               | S45C           |             | 4   |
| 18-1   | RZL-440B-BSPCO  | spacer, bearing (outer)               | S45C           |             | 4   |
| 19     | RZL-440B-IBOLT  | I-bolt / M14                          | SUS            |             | 2   |
|        | RZL-440B-FBEAR  | bearing, front (#E32215J)             | -              |             | 4   |
| 21     | RZL-440B-OSGOV  | O-ring, oil seal gland (AN049)        | FKM            |             | 2   |
| 22     | RZL-440B-OSGB   | oil seal, gear box (85x110x13t)       | nitrile rubber |             | 2   |
|        | RZL-440B-OSGV   | oil seal, gear box (85x110x13t)       | FKM            |             | 2   |
| 23     | RZL-440B-OSGWB  | wrench bolt, oil seal gland (M12x25L) | SUS304         |             | 8   |
| 24     | RZL-440B-OSGLD  | gland, oil seal                       | SUS304         |             | 2   |
| 25     | RZL-440B-DSPIN  | pin, double seal                      | SUS304         |             | 4   |
| 26     | RZL-440B-GCGP   | gasket                                | paper          |             | 1   |
| 27     | RZL-440B-PLUG   | plug (M14)                            | PE             |             | 8   |
| 28     | RZL-440B-VADPT  | vertical adapter                      | SUS304         | RZL400      | 4   |
| 29     | RZL-115B-LFP    | pad, leg feet                         | SS + rubber    | RZL series  | 4   |
| 30     | RZL-115B-ERT    | rotor tool, extraction                | SUS304         | RZL series  | 1   |
| 31A*   | RZL-440B-GUARD  | safety guard (casing)                 | SUS304         | RZL 400     | 2   |
| 31B*   | RZL-330B-GB     | guard wrench bolt M6x8                | SUS304         | RZL 300/400 | 4   |

\*Items are not pictured on the exploded view. For more information please contact Dixon Sanitary at 800.789.1718.

## RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

## Pump Assembly

| Item # | Part #          | Description                    | Material       | Used   | Qty |
|--------|-----------------|--------------------------------|----------------|--------|-----|
| 1A     | RZL-440-GBAW    | gear box assembly - white      | FCD40          | RZL440 | 1   |
|        | RZL-450-GBAW    | gear box assembly - white      | FCD40          |        | 1   |
| 31     | see page 54     | rotor case                     | SUS316L        | RZL400 | 1   |
| 32     | RZL-440B-FCVR   | front cover                    | SUS316L        | RZL400 | 1   |
| 33     | RZL-440B-CNUT   | cap nut                        | SUS304         |        | 4   |
| 34     | RZL-440B-FCORB  | O-ring, front cover (AN278)    | nitrile rubber |        | 1   |
|        | RZL-440B-FCORE  | O-ring, front cover (AN278)    | EPDM           |        | 1   |
|        | RZL-440B-FCORV  | O-ring, front cover (AN278)    | FKM            |        | 1   |
| 36     | RZL-440B-RBW    | spring washer                  | SUS304         |        | 2   |
| 37     | RZL-440B-RBORB  | O-ring, rotor bolt (AN228)     | nitrile rubber |        | 2   |
|        | RZL-440B-RBORE  | O-ring, rotor bolt (AN228)     | EPDM           |        | 2   |
|        | RZL-440B-RBORV  | O-ring, rotor bolt (AN228)     | FKM            |        | 2   |
| 38     | see page 489    | rotor                          | SUS304         |        | 6   |
| 39     | RZL-440B-RTSLP  | rotor, seal pin                | SUS316L        | RZL400 | 2   |
| 40     | RZL-440B-CSSLP  | seal pin, case                 | SUS304         | RZL400 | 4   |
| 41     | RZL-440B-RCDOW  | dowel, rotor case (φ15)        | SUS304         | RZL400 | 2   |
| 44     | RZL-440-CSSB    | stud bolt, case (M20x198L)     | SUS304         | RZL440 | 4   |
|        | RZL-450-CSSB    | stud bolt, case (M20x223L)     | SUS304         | RZL450 | 4   |
| 45     | RZL-440B-SHIM05 | shim (0.05 mm)                 | SUS304         | RZL400 | 2   |
|        | RZL-440B-SHIM1  | shim (0.1 mm)                  | SUS304         |        | 2   |
|        | RZL-440B-SHIM2  | shim (0.2 mm)                  | SUS304         |        | 2   |
| 46     | RZL-440B-SBHXN  | hex nut, stud bolt (M10, 14mm) | SUS304         |        | 4   |
| 47     | RZL-440B-FSNIP  | nipple, flush                  | SUS304         |        | 2   |
| 51     | RZL-440B-RTORE  | O-ring, rotor (AN151)          | EPDM           |        | 2   |
|        | RZL-440B-RTORV  | O-ring, rotor (AN151)          | FKM            |        | 2   |
| 53     | RZL-440B-RCORE  | O-ring, rotor case (AN235)     | EPDM           |        | 2   |
|        | RZL-440B-RCORV  | O-ring, rotor case (AN235)     | FKM            |        | 2   |

## RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

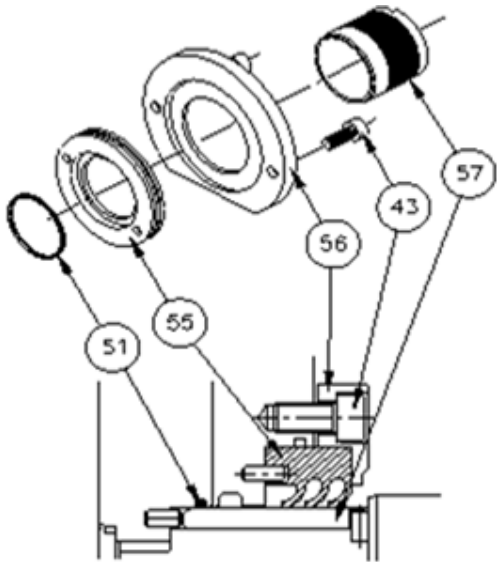
### Rotor Case/Rotor

| Item # | Part #         | Description                                  | Material     | Used   | Qty |
|--------|----------------|----------------------------------------------|--------------|--------|-----|
| 31     | RZL-440-RCCLMP | rotor case - 4" tri-clamp                    | SUS316L      | RZL440 | 1   |
| 31     | RZL-450-RCCLMP | rotor case - 5" tri-clamp / 5" tri-clamp     | SUS316L      | RZL450 | 1   |
|        | RZL-450-RCFLNG | rotor case - 5" flanger                      | SUS316L      |        | 1   |
| 38     | RZL-440-SWA    | rotor set (2), single-wing                   | SUS316L      | RZL440 | 2   |
|        | RZL-440-BWA    | rotor set (2), bi-wing                       | SUS316L      |        | 2   |
|        | RZL-440-BWTIA  | rotor set (2), bi-wing, PTFE inserted        | SUS316L/PTFE |        | 2   |
|        | RZL-440-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L      |        | 2   |
|        | RZL-440-BLA    | rotor set (2), bi-lobe                       | SUS316L      |        | 2   |
|        | RZL-440-3LA    | rotor set (2), tri-lobe                      | SUS316L      |        | 2   |
|        | RZL-440-HTLA   | rotor set (2), tri-lobe, high temp clearance | SUS316L      |        | 2   |
|        | RZL-440-HELIA  | rotor set (2), heli-lobe                     | SUS316L      |        | 2   |
|        | RZL-450-SWA    | rotor set (2), single-wing                   | SUS316L      | RZL450 | 2   |
|        | RZL-450-BWA    | rotor set (2), bi-wing                       | SUS316L      |        | 2   |
|        | RZL-450-BWTIA  | rotor set (2), bi-wing, PTFE inserted        | SUS316L      |        | 2   |
|        | RZL-450-HWA    | rotor set (2), bi-wing, high temp clearance  | SUS316L      |        | 2   |
|        | RZL-450-BLA    | rotor set (2), bi-lobe                       | SUS316L      |        | 2   |
|        | RZL-450-3LA    | rotor set (2), tri-lobe                      | SUS316L      |        | 2   |
|        | RZL-450-HTLA   | rotor set (2), tri-lobe, high temp clearance | SUS316L      |        | 2   |
|        | RZL-450-HELIA  | rotor set (2), heli-lobe                     | SUS316L      |        | 2   |

NOTE: All standard rotor cases do not have tap holes for flushing on jacketed options.

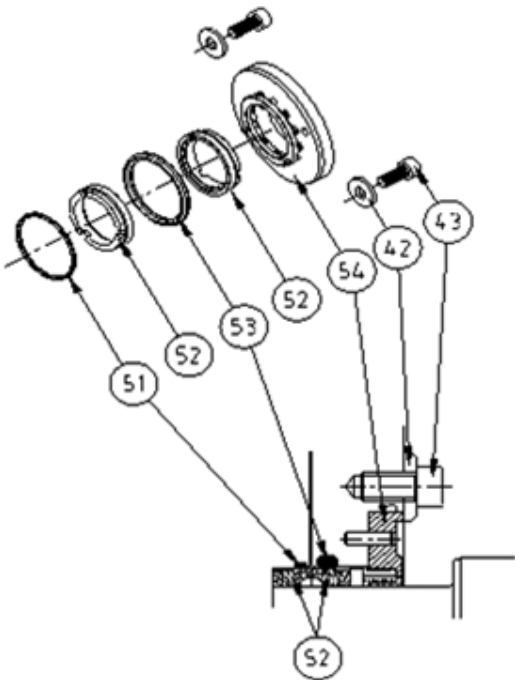
RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

Triple Lip Seal



| Item # | Part #          | Description                        | Material       | Used   | Qty |
|--------|-----------------|------------------------------------|----------------|--------|-----|
| 43     | RZL-440B-MSGWB  | wrench bolt, M/Seal gland (M6x10L) | SUS304         | RZL400 | 4   |
| 51     | RZL-440B-RTORB  | O-ring, rotor (AN151)              | nitrile rubber |        | 2   |
|        | RZL-440B-RTORE  | O-ring, rotor (AN151)              | EPDM           |        | 2   |
|        | RZL-440B-RTORV  | O-ring, rotor (AN151)              | FKM            |        | 2   |
| 55     | RZL-440B-TRPLSC | triple lip seal, product           | PTFE + copper  |        | 2   |
|        | RZL-440B-TRPLS  | triple lip seal, product           | PTFE + glass   |        | 2   |
| 56     | RZL-440B-LSC    | lip seal cover                     | SUS304         |        | 2   |
| 57     | RZL-440B-CERCS  | ceramic coated sleeve, product     | ceramic/304    |        | 2   |

**RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials**  
**Single Mechanical Seal**



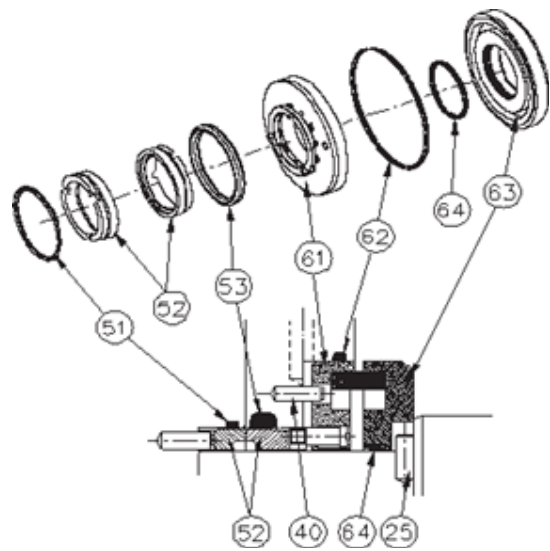
| Item # | Part #          | Description                        | Material       | Used   | Qty |
|--------|-----------------|------------------------------------|----------------|--------|-----|
| 42     | RZL-440B-MSGFW  | flat washer, M/Seal gland (φ6)     | SUS304         | RZL400 | 4   |
| 43     | RZL-440B-MSGWB  | wrench bolt, M/Seal gland (M6x10L) | SUS304         |        | 4   |
| 51     | RZL-440B-RTORB  | O-ring, rotor (AN151)              | nitrile rubber |        | 2   |
|        | RZL-440B-RTORE  | O-ring, rotor (AN151)              | EPDM           |        | 2   |
|        | RZL-440B-RTORV  | O-ring, rotor (AN151)              | FKM            |        | 2   |
| 52     | RZL-440B-TCSEAL | seal ring                          | TC             | RZL450 | 4   |
| 53     | RZL-440B-RCORB  | O-ring, rotor case (AN234)         | nitrile rubber | RZL400 | 2   |
|        | RZL-440B-RCORE  | O-ring, rotor case (AN234)         | EPDM           |        | 2   |
|        | RZL-440B-RCORV  | O-ring, rotor case (AN234)         | FKM            |        | 2   |
| 54     | RZL-440B-CSSB   | single seal body, case             | SUS304         |        | 2   |

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RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

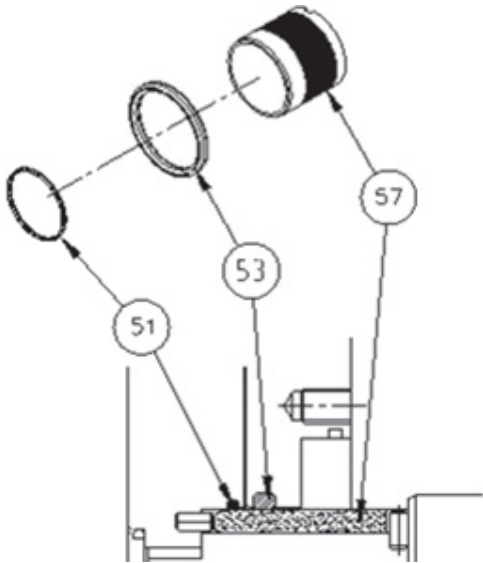
Double Mechanical Seal



| Item # | Part #          | Description                           | Material       | Used   | Qty |
|--------|-----------------|---------------------------------------|----------------|--------|-----|
| 51     | RZL-440B-RTORB  | O-ring, rotor (AN151)                 | nitrile rubber | RZL400 | 2   |
|        | RZL-440B-RTORE  | O-ring, rotor (AN151)                 | EPDM           |        | 2   |
|        | RZL-440B-RTORV  | O-ring, rotor (AN151)                 | FKM            |        | 2   |
| 52     | RZL-440B-TCSEAL | seal ring                             | TC             | RZL450 | 4   |
| 53     | RZL-440B-RCORB  | O-ring, rotor case (AN234)            | nitrile rubber | RZL400 | 2   |
|        | RZL-440B-RCORE  | O-ring, rotor case (AN234)            | EPDM           |        | 2   |
|        | RZL-440B-RCORV  | O-ring, rotor case (AN234)            | FKM            |        | 2   |
| 61     | RZL-440B-CDSBTC | double seal body, case                | TC/SUS304      |        | 2   |
|        | RZL-440B-CDHPTC | double seal body, case, high pressure | TC/SUS304      |        | 2   |
| 62     | RZL-440B-CORDSB | O-ring, case, double seal (AN045)     | nitrile rubber |        | 2   |
|        | RZL-440B-CORDSE | O-ring, case, double seal (AN045)     | EPDM           |        | 2   |
|        | RZL-440B-CORDSV | O-ring, case, double seal (AN045)     | FKM            |        | 2   |
| 63     | RZL-440B-SDSBC  | rotation part, double seal, shaft     | carbon/SUS304  |        | 2   |
| 64     | RZL-440B-SORDSB | O-ring, shaft, double seal (AN038)    | nitrile rubber |        | 2   |
|        | RZL-440B-SORDSE | O-ring, shaft, double seal (AN038)    | EPDM           |        | 2   |
|        | RZL-440B-SORDSV | O-ring, shaft, double seal (AN038)    | FKM            |        | 2   |

RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

Single O-ring Seal

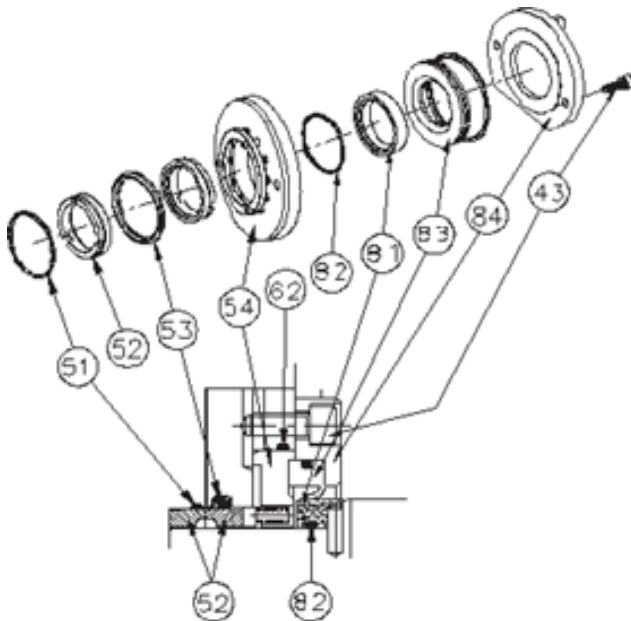


| Item # | Part #         | Description                | Material       | Used    | Qty |
|--------|----------------|----------------------------|----------------|---------|-----|
| 51     | RZL-440B-RTORB | O-ring, rotor (AN151)      | nitrile rubber | RZL 400 | 2   |
|        | RZL-440B-RTORE | O-ring, rotor (AN151)      | EPDM           |         | 2   |
|        | RZL-440B-RTORV | O-ring, rotor (AN151)      | FKM            |         | 2   |
| 53     | RZL-440B-RCORB | O-ring, rotor case (AN234) | nitrile rubber |         | 2   |
|        | RZL-440B-RCORE | O-ring, rotor case (AN234) | EPDM           |         | 2   |
|        | RZL-440B-RCORV | O-ring, rotor case (AN234) | FKM            |         | 2   |
| 57     | RZL-440B-CERCS | ceramic coated sleeve      | ceramic/ss     |         | 2   |

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RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

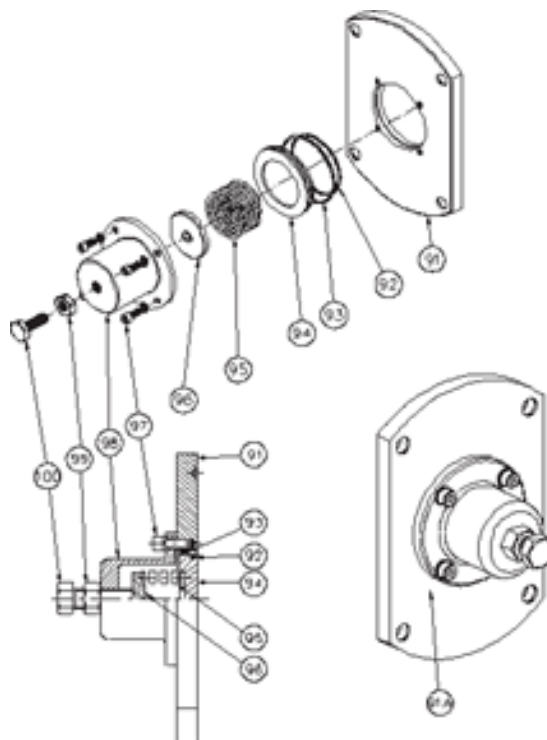
Single Mechanical Seal with Flush



| Item # | Part #          | Description                              | Material       | Used   | Qty |
|--------|-----------------|------------------------------------------|----------------|--------|-----|
| 43     | RZL-440B-MSGWB  | wrench bolt, lip seal gland (M6x10L)     | SUS304         | RZL400 | 4   |
| 51     | RZL-440B-RTORB  | O-ring, rotor (AN151)                    | nitrile rubber |        | 2   |
|        | RZL-440B-RTORE  | O-ring, rotor (AN151)                    | EPDM           |        | 2   |
|        | RZL-440B-RTORV  | O-ring, rotor (AN151)                    | FKM            |        | 2   |
| 52     | RZL-440B-TCSEAL | seal ring                                | TC             | RZL450 | 4   |
| 53     | RZL-440B-RCORB  | O-ring, rotor case (AN234)               | nitrile rubber | RZL400 | 2   |
|        | RZL-440B-RCORE  | O-ring, rotor case (AN234)               | EPDM           |        | 2   |
|        | RZL-440B-RCORV  | O-ring, rotor case (AN234)               | FKM            |        | 2   |
| 54     | RZL-440B-CSSB   | seal base, single mech.                  | SUS304         |        | 4   |
| 62     | RZL-440B-CORDSB | O-ring, flushed seal, case (AN045)       | nitrile rubber |        | 2   |
|        | RZL-440B-CORDSE | O-ring, flushed seal, case (AN045)       | EPDM           |        | 2   |
|        | RZL-440B-CORDSV | O-ring, flushed seal, case (AN045)       | FKM            |        | 2   |
| 81     | RZL-440B-CERFL  | ceramic sleeve, flushing                 | ceramic        |        | 2   |
| 82     | RZL-440B-ORFLB  | O-ring, ceramic sleeve, flushing (AN038) | nitrile rubber |        | 2   |
|        | RZL-440B-ORFLE  | O-ring, ceramic sleeve, flushing (AN038) | EPDM           |        | 2   |
|        | RZL-440B-ORFLV  | O-ring, ceramic sleeve, flushing (AN038) | FKM            |        | 2   |
| 83     | RZL-440B-LSFLT  | lip seal, flushing                       | PTFE           |        | 4   |
| 84     | RZL-440B-SLPFLG | gland, lip seal, flushing                | SUS304         |        | 2   |

## RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

### Pressure Relief Front Cover

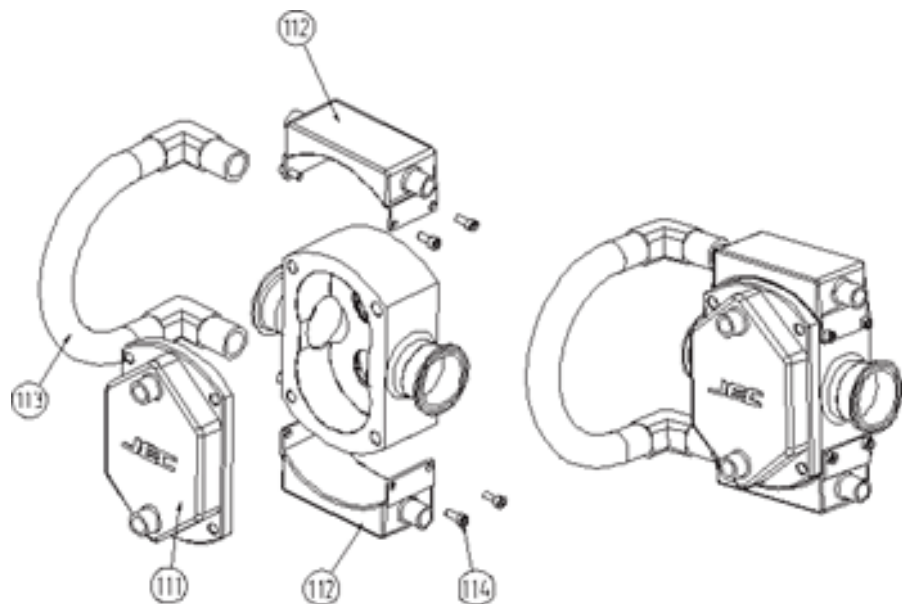


| Item # | Part #        | Description                          | Material       | Used   | Qty |
|--------|---------------|--------------------------------------|----------------|--------|-----|
| 91     | RZL-440B-RVFC | front cover, relief valve            | SUS316L        | RZL400 | 1   |
| 91A    | RZL-440B-C    | pressure relief front cover assembly | SUS316L        |        | 1   |
| 92     | RZL-440B-OR1B | O-ring, 1 stage, plate (AN252)       | nitrile rubber |        | 1   |
|        | RZL-440B-OR1E | O-ring, 1 stage, plate (AN252)       | EPDM           |        | 1   |
|        | RZL-440B-OR1V | O-ring, 1 stage, plate (AN252)       | FKM            |        | 1   |
| 93     | RZL-440B-OR2B | O-ring, 2 stage, plate (AN249)       | nitrile rubber |        | 1   |
|        | RZL-440B-OR2E | O-ring, 2 stage, plate (AN249)       | EPDM           |        | 1   |
|        | RZL-440B-OR2V | O-ring, 2 stage, plate (AN249)       | FKM            |        | 1   |
| 94     | RZL-440B-VP   | plate, valve                         | SUS316L        |        | 1   |
| 95     | RZL-440B-RVSP | spring                               | SS41 + Cr      |        | 1   |
| 96     | RZL-440B-SPGP | plate, spring                        | SUS304         |        | 1   |
| 97     | RZL-440B-RVWB | wrench bolt (M8x25)                  | SUS304         |        | 4   |
| 98     | RZL-440B-RVC  | cover, relief valve                  | SUS304         |        | 1   |
| 99     | RZL-440B-RVLN | lock nut (M20)                       | SUS304         |        | 1   |
| 100    | RZL-440B-RVAB | adjusting bolt (M20x80)              | SUS304         |        | 1   |

NOTE: Must supply setting pressure.

RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

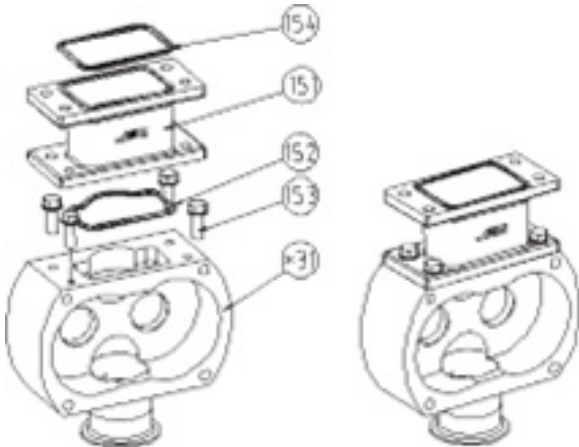
Jacket Front Cover and Case



| Item # | Part #       | Description                  | Material | Used   | Qty |
|--------|--------------|------------------------------|----------|--------|-----|
| 111    | RZL-440B-FCJ | front cover jacket           | SUS316   | RZL400 | 1   |
| 112    | RZL-440-CTJ  | jacket, case top             | SUS304   | RZL440 | 1   |
|        | RZL-440-CBJ  | jacket, case bottom          | SUS304   |        | 1   |
|        | RZL-450-CTJ  | jacket, case top             | SUS304   |        | 1   |
|        | RZL-450-CBJ  | jacket, case bottom          | SUS304   | RZL450 | 1   |
|        |              |                              |          |        |     |
| 113    | RZL-440B-JT  | tube, jacket                 | SUS304   | RZL400 | 1   |
|        | RZL-440B-JWB | wrench bolt, jacket (M8x15L) | SUS304   |        | 8   |

RZL-Series Rotary Lobe Pump - 400 Series Bill of Materials

Rectangular Inlet



| Item # | Part #         | Description                                   | Material       | Used   | Qty |
|--------|----------------|-----------------------------------------------|----------------|--------|-----|
| 31     | RZL-440-RCRI2C | rotor case - rectangular inlet / 5" tri-clamp | SUS316L        | RZL400 | 1   |
|        | RZL-440B-RFLG  | rotor case - rectangular inlet / 5" flange    | SCS14          |        | 1   |
| 152    | RZL-440B-RIORB | O-ring, rectangular inlet (AN262)             | nitrile rubber |        | 1   |
|        | RZL-440B-RIOR  | O-ring, rectangular inlet (AN262)             | EPDM           |        | 1   |
|        | RZL-440B-RIORV | O-ring, rectangular inlet (AN262)             | FKM            |        | 4   |

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RZL-Series Rotary Lobe Pump - 100 Series Repair Kits

Complete Replacement Seal Kits

| Part #                                           | Description                        | Material |
|--------------------------------------------------|------------------------------------|----------|
| RZL-115B-3E-KIT                                  | triple lip seal repair kit         | EPDM     |
| RZL-115B-3V-KIT                                  | triple lip seal repair kit         | FKM      |
| Repair kit includes items 51, 55, 56, and 57     |                                    |          |
| RZL-115B-2E-KIT                                  | single mech. seal repair kit TC/TC | EPDM     |
| RZL-115B-2V-KIT                                  | single mech. seal repair kit TC/TC | FKM      |
| Repair kit includes items 51, 52, and 53         |                                    |          |
| RZL-115B-4E-KIT                                  | double mech. seal repair kit TC/TC | EPDM     |
| RZL-115B-4V-KIT                                  | double mech. seal repair kit TC/TC | FKM      |
| Repair kit includes items 51, 52, 53, 62, and 64 |                                    |          |

Pump Elastomers Only

| Part #                                               | Description                       | Material |
|------------------------------------------------------|-----------------------------------|----------|
| RZL-115B-3E-EK                                       | triple lip seal EPDM elastomers   | EPDM     |
| RZL-115B-3V-EK                                       | triple lip seal FKM elastomers    | FKM      |
| Repair kit includes items 34, 37, 51, and 55         |                                   |          |
| RZL-115B-2E-EK                                       | single mech. seal EPDM elastomers | EPDM     |
| RZL-115B-2V-EK                                       | single mech. seal FKM elastomers  | FKM      |
| Repair kit includes items 34, 37, 51, and 53         |                                   |          |
| RZL-115B-4E-EK                                       | double mech. seal EPDM elastomers | EPDM     |
| RZL-115B-4V-EK                                       | double mech. seal FKM elastomers  | FKM      |
| Repair kit includes items 34, 37, 51, 53, 62, and 64 |                                   |          |

Set of TC Seats

| Part #                      | Description  | Material |
|-----------------------------|--------------|----------|
| RZL-115B-TC-SET             | TC seal ring | -        |
| Repair kit includes item 52 |              |          |

## RZL-Series Rotary Lobe Pump - 200 Series Repair Kits

### Complete Replacement Seal Kits

| Part #          | Description                        | Material | Kit Includes                 |
|-----------------|------------------------------------|----------|------------------------------|
| RZL-220B-3E-KIT | triple lip seal repair kit         | EPDM     | items 51, 55, 56, and 57     |
| RZL-220B-3V-KIT | triple lip seal repair kit         | FKM      |                              |
| RZL-220B-2E-KIT | single mech. seal repair kit TC/TC | EPDM     | items 51, 52, and 53         |
| RZL-220B-2V-KIT | single mech. seal repair kit TC/TC | FKM      |                              |
| RZL-220B-4E-KIT | double mech. seal repair kit TC/TC | EPDM     | items 51, 52, 53, 62, and 64 |
| RZL-220B-4V-KIT | double mech. seal repair kit TC/TC | FKM      |                              |

### Pump Elastomers Only

| Part #         | Description                       | Material | Kit Includes                     |
|----------------|-----------------------------------|----------|----------------------------------|
| RZL-220B-3E-EK | triple lip seal EPDM elastomers   | EPDM     | items 34, 37, 51, and 55         |
| RZL-220B-3V-EK | triple lip seal FKM elastomers    | FKM      |                                  |
| RZL-220B-2E-EK | single mech. seal EPDM elastomers | EPDM     | items 34, 37, 51, and 53         |
| RZL-220B-2V-EK | single mech. seal FKM elastomers  | FKM      |                                  |
| RZL-220B-4E-EK | double mech. seal EPDM elastomers | EPDM     | items 34, 37, 51, 53, 62, and 64 |
| RZL-220B-4V-EK | double mech. seal FKM elastomers  | FKM      |                                  |

### Set of TC Seats

| Part #          | Description  | Material | Kit Includes |
|-----------------|--------------|----------|--------------|
| RZL-220B-TC-SET | TC seal ring | -        | item 52      |



RZL-Series Rotary Lobe Pump - 300 Series Repair Kits  
Complete Replacement Seal Kits

| Part #          | Description                        | Material | Kit Includes                 |
|-----------------|------------------------------------|----------|------------------------------|
| RZL-330B-3E-KIT | triple lip seal repair kit         | EPDM     | items 51, 55, 56, and 57     |
| RZL-330B-3V-KIT | triple lip seal repair kit         | FKM      |                              |
| RZL-330B-2E-KIT | single mech. seal repair kit TC/TC | EPDM     | items 51, 52, and 53         |
| RZL-330B-2V-KIT | single mech. seal repair kit TC/TC | FKM      |                              |
| RZL-330B-4E-KIT | double mech. seal repair kit TC/TC | EPDM     | items 51, 52, 53, 62, and 64 |
| RZL-330B-4V-KIT | double mech. seal repair kit TC/TC | FKM      |                              |

Pump Elastomers Only

| Part #         | Description                  | Material | Kit Includes                     |
|----------------|------------------------------|----------|----------------------------------|
| RZL-330B-3E-EK | triple lip seal elastomers   | EPDM     | items 34, 37, 51, and 55         |
| RZL-330B-3V-EK | triple lip seal elastomers   | FKM      |                                  |
| RZL-330B-2E-EK | single mech. seal elastomers | EPDM     | items 34, 37, 51, and 53         |
| RZL-330B-2V-EK | single mech. seal elastomers | FKM      |                                  |
| RZL-330B-4E-EK | double mech. seal elastomers | EPDM     | items 34, 37, 51, 53, 62, and 64 |
| RZL-330B-4V-EK | double mech. seal elastomers | FKM      |                                  |

Set of TC Seats

| Part #          | Description  | Material | Kit Includes |
|-----------------|--------------|----------|--------------|
| RZL-330B-TC-SET | TC seal ring | -        | item 52      |

## RZL-Series Rotary Lobe Pump - 400 Series Repair Kits

### Complete Replacement Seal Kits

| Part #          | Description                        | Material | Kit Includes                 |
|-----------------|------------------------------------|----------|------------------------------|
| RZL-440B-3E-KIT | triple lip seal repair kit         | EPDM     | items 51, 55, 56, and 57     |
| RZL-440B-3V-KIT | triple lip seal repair kit         | FKM      |                              |
| RZL-440B-2E-KIT | single mech. seal repair kit TC/TC | EPDM     | items 51, 52, and 53         |
| RZL-440B-2V-KIT | single mech. seal repair kit TC/TC | FKM      |                              |
| RZL-440B-4E-KIT | double mech. seal repair kit TC/TC | EPDM     | items 51, 52, 53, 62, and 64 |
| RZL-440B-4V-KIT | double mech. seal repair kit TC/TC | FKM      |                              |

### Pump Elastomers Only

| Part #         | Description                  | Material | Kit Includes                     |
|----------------|------------------------------|----------|----------------------------------|
| RZL-440B-3E-EK | triple lip seal elastomers   | EPDM     | items 34, 37, 51, and 55         |
| RZL-440B-3V-EK | triple lip seal elastomers   | FKM      |                                  |
| RZL-440B-2E-EK | single mech. seal elastomers | EPDM     | items 34, 37, 51, and 53         |
| RZL-440B-2V-EK | single mech. seal elastomers | FKM      |                                  |
| RZL-440B-4E-EK | double mech. seal elastomers | EPDM     | items 34, 37, 51, 53, 62, and 64 |
| RZL-440B-4V-EK | double mech. seal elastomers | FKM      |                                  |

### Set of TC Seats

| Part #          | Description  | Material | Kit Includes |
|-----------------|--------------|----------|--------------|
| RZL-440B-TC-SET | TC seal ring | -        | item 52      |

Notes

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