

HYC-Series Y-Ball Check Valve¹



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-series 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", 2", 2-1/2", 3"

Features

- Improved flow performance and ball stabilization¹
- Patent pending ball cap stabilizer¹
- 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 Valve¹



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

HYC-Series Cracking Pressure and Flow Coefficient

| Size | Cracking Pressure (in) (H ₂ O) | | Seating Pressure (in) (H ₂ 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" |

¹The improved design of the HYC-Series Y-Ball Check Valve is launching in 2026. This will be the new standard design.

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

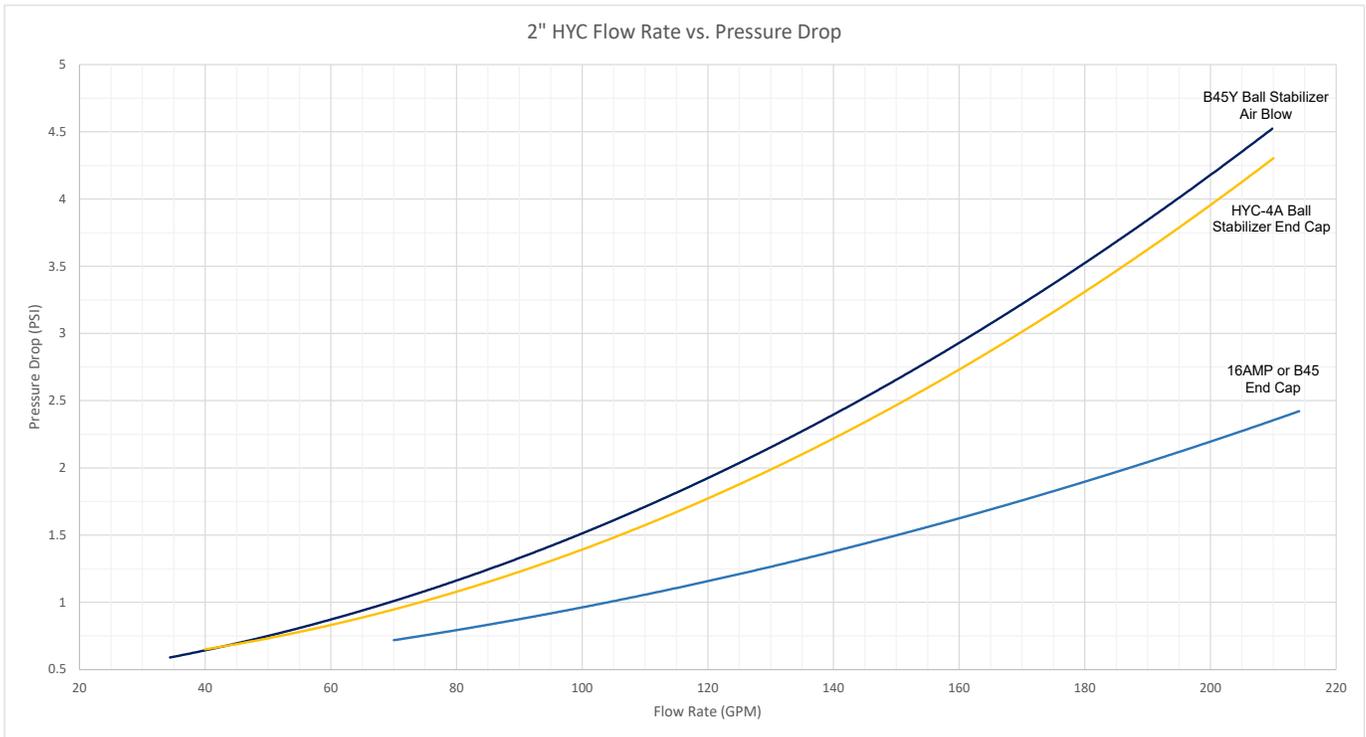
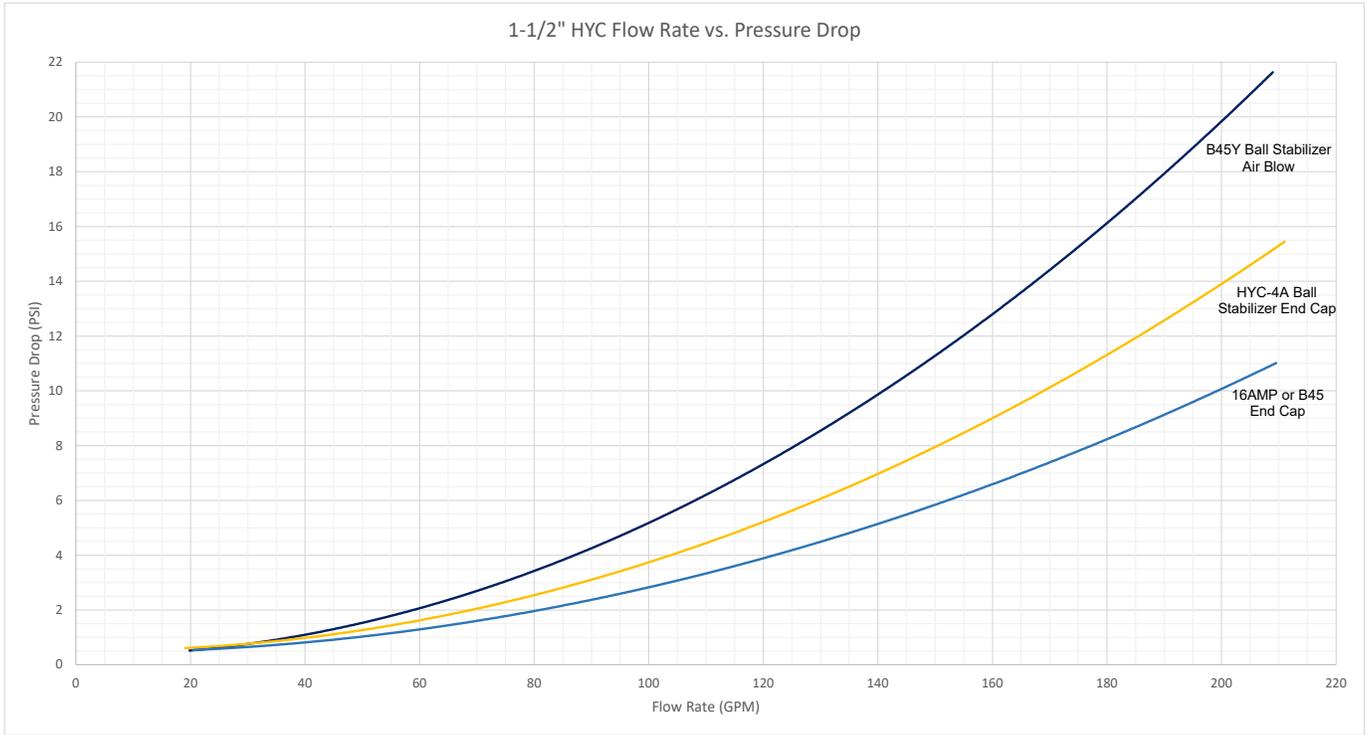
HYC-Series Y-Ball Check Valve - Part Number Key

| HYC-Series Y-Ball Check Valve Part Number Key Example: HYCEP150CCAE | | Series | Elastomer | Ball Material | Size | End Connections | Surface 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 ¹ | 11 | | | | | | | |
| Male NPT ¹ | 22 | | | | | | | |
| Surface Finish | Code | | | | | | | |
| 32 Ra (I.D. mech. polished) (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 customer specified ID marking | E | | | | | | | |
| 25 Ra (I.D. mech. polished) with customer specified ID marking | F | | | | | | | |
| 20 Ra (I.D. mech. polished) with customer specified ID marking | G | | | | | | | |
| 15 Ra (I.D. mech. polished) with customer specified ID marking | H | | | | | | | |
| Options | Code | | | | | | | |
| Ball stabilizer end cap (standard) | E | | | | | | | ← |
| 1/4" male air line quick connect ² | F | | | | | | | |
| 1/2" NPT cap ² | I | | | | | | | |
| 1" hose barb ² | K | | | | | | | |

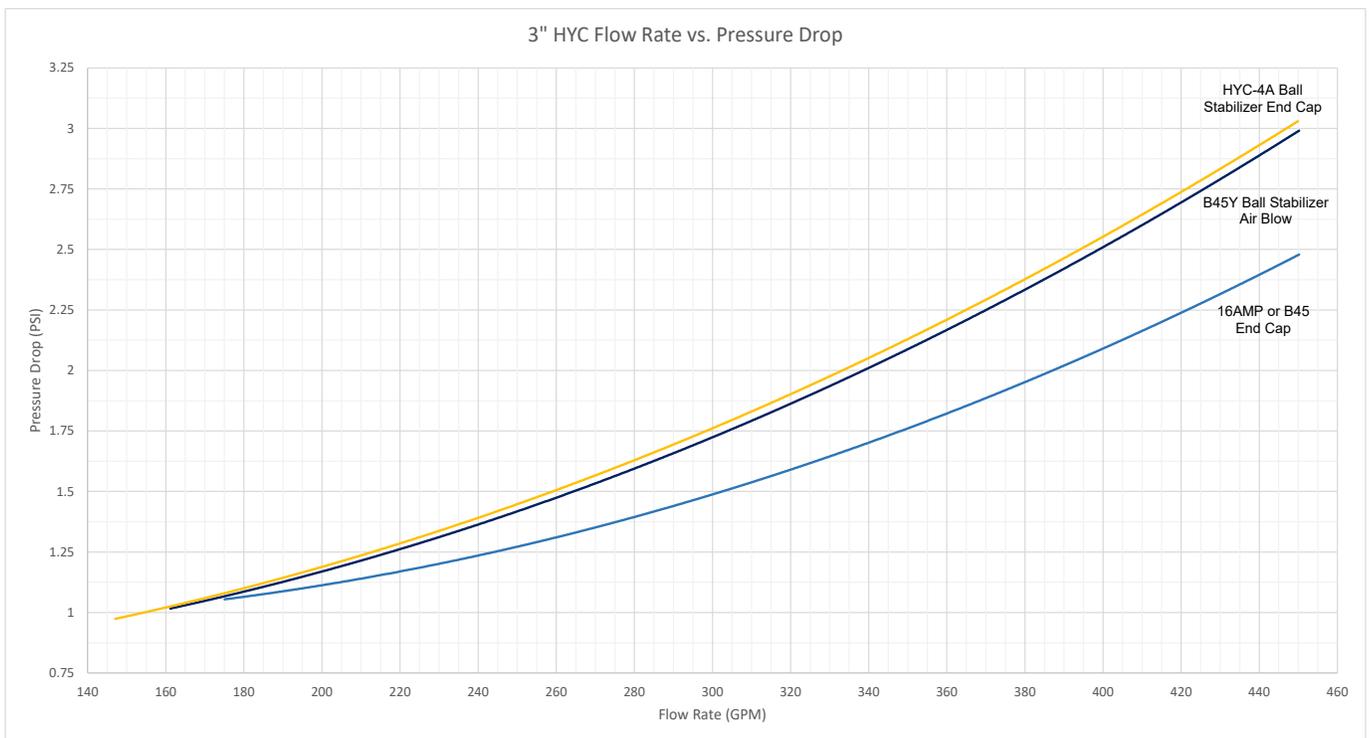
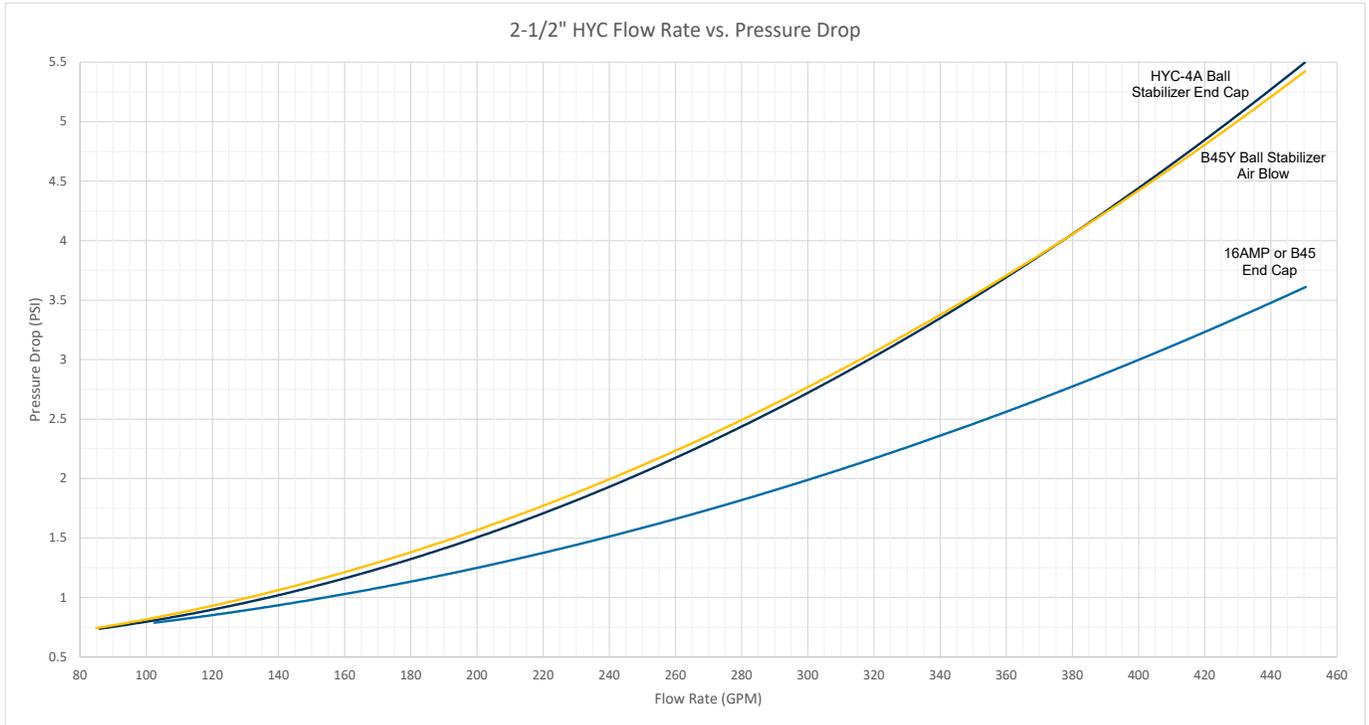
¹Not a sanitary connection

²Air blow check valve with ball stabilizer

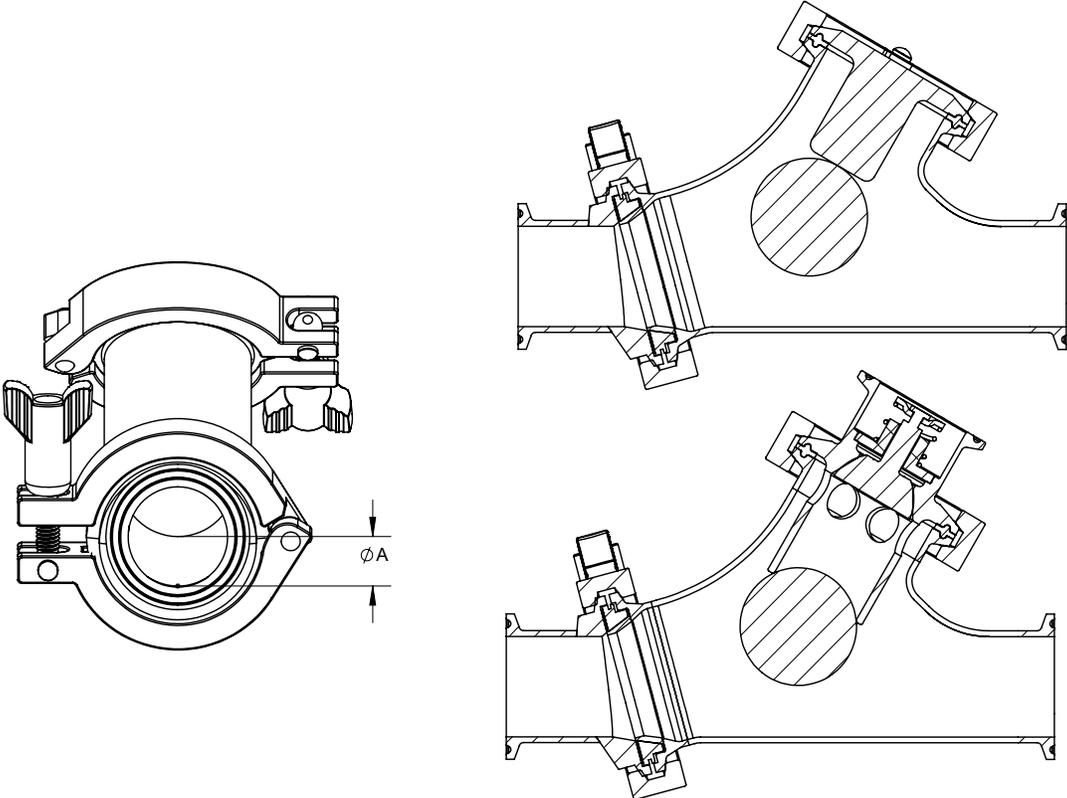
HYC-Series Y-Ball Check Valve - Pressure Drop Charts



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

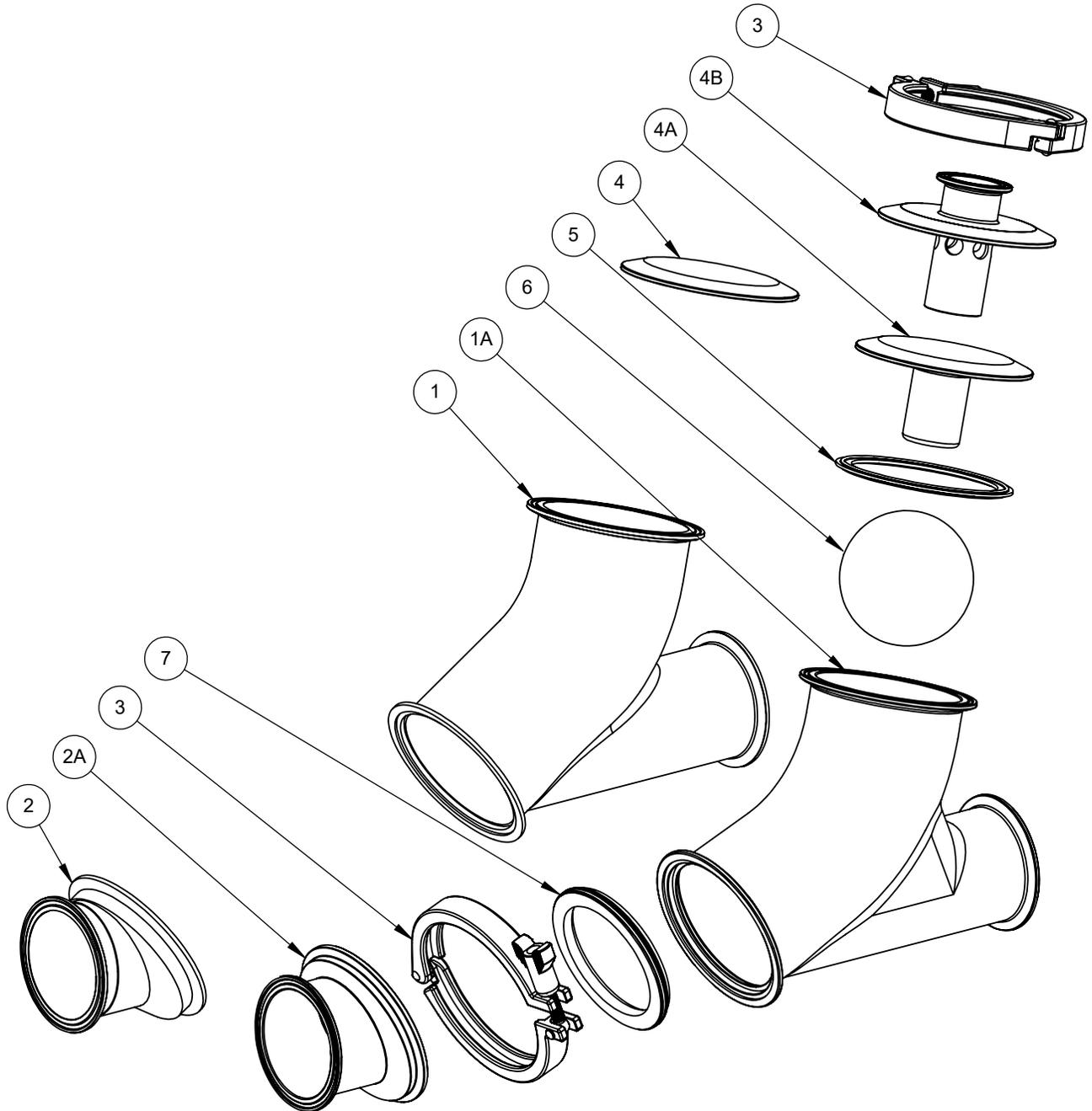


HYC-Series Y-Ball Check Valve - Maximum Particulate Diameter



| 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 - 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 (pre-2024 design) | 316L | 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 (2024 revised design) | 316L | 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-2024 design) | 316L | 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 (2024 revised design) | 316L | 1 |
| | 2" | HYC-2A-200 | | | 1 |
| | 2-1/2" | HYC-2A-250 | | | 1 |
| | 3" | HYC-2A-300 | | | 1 |
| 3 | 1-1/2" | 13MHHM200SN | clamp | CF8 | 2 |
| | 2" | 13MHHM250SN | | | 2 |
| | 2-1/2" | 13MHHM300SN | | | 2 |
| | 3" | 13MHHM400SN | | | 2 |
| 4 | 1-1/2" | 16AMP-R200 | end cap | 316L | 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 | 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 ¹ | 316L | 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 |

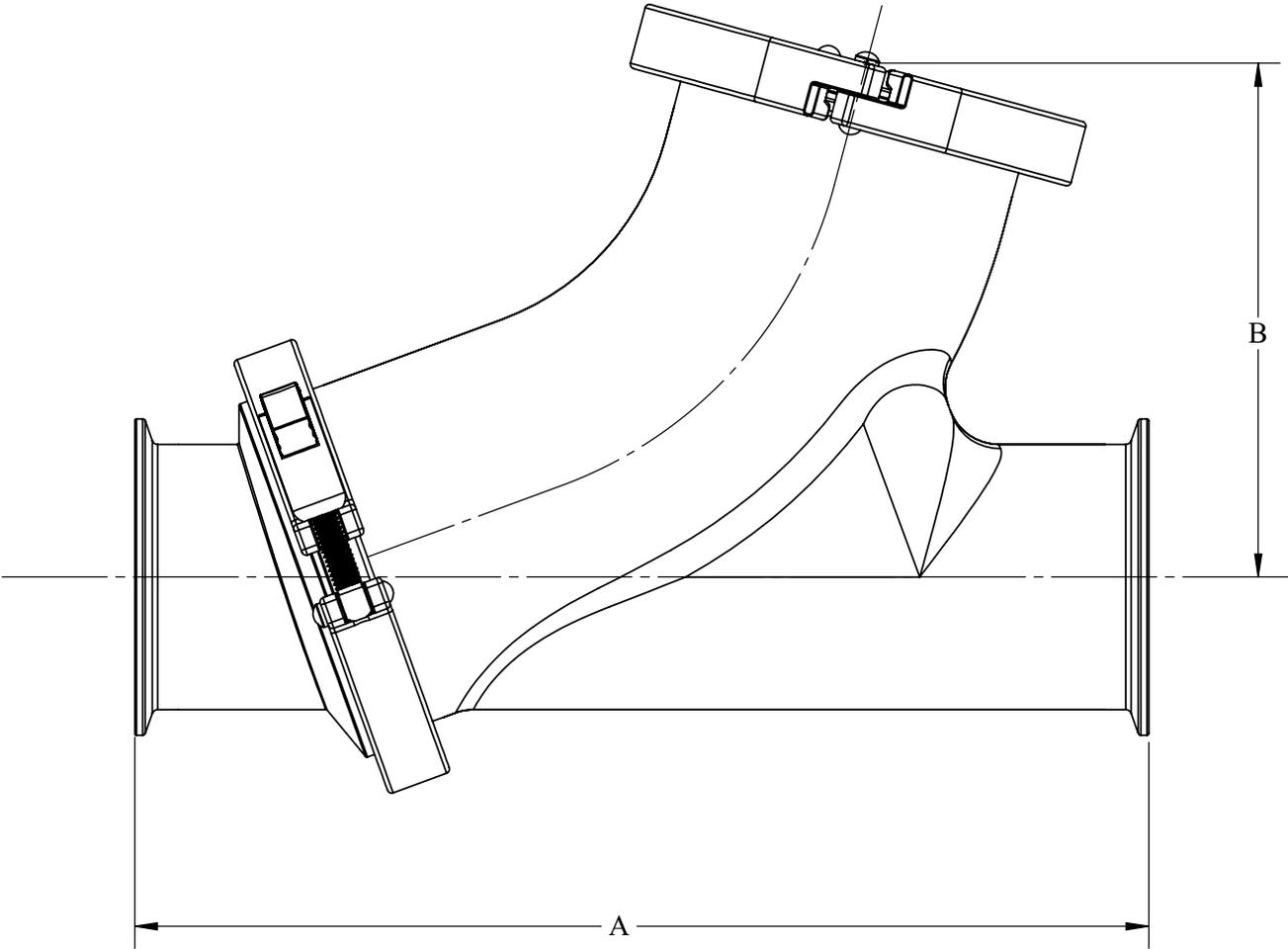
¹See B45-series EPRG for air end connection options.

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 (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 2026.

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 - 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 |
| | | 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 |
| | | 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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