

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

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)**
- Materials of construction
 - Product contact metal components: CF8M (316)
 - Non-product metal components: AISI 304
 - Product contact seals: EPDM, FKM
 - Ball: PTFE, EPDM, FKM, NBR
- Surface finish
 - Product contact metal components: Ra ≤ 32 standard (see part number key for alternative finishes)



HYC-Series 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

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 Part Number Key Example: HYCEP150CCAA		Series	Elastomer	Ball Material	Size	End Connection	Surface Finish	Airflow Check Valve Option
		HYC	E	P	150	CC	A	A
Series	Code							
HYC	HYC	←						
Elastomer	Code							
EPDM	E		←					
FKM	V							
Ball Material	Code							
Nitrile	B							
EPDM	E							
PTFE (standard)	P			←				
FKM	V							
Size	Code							
1-1/2"	150				←			
2"	200							
2-1/2"	250							
3"	300							
End 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*	11							
Male NPT*	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							
Airflow Check Valve Options	Code							
None	A							←
1/4" Male Air Line Quick Connect	B							
1/2" NPT cap	C							
1" Hose Barb	D							

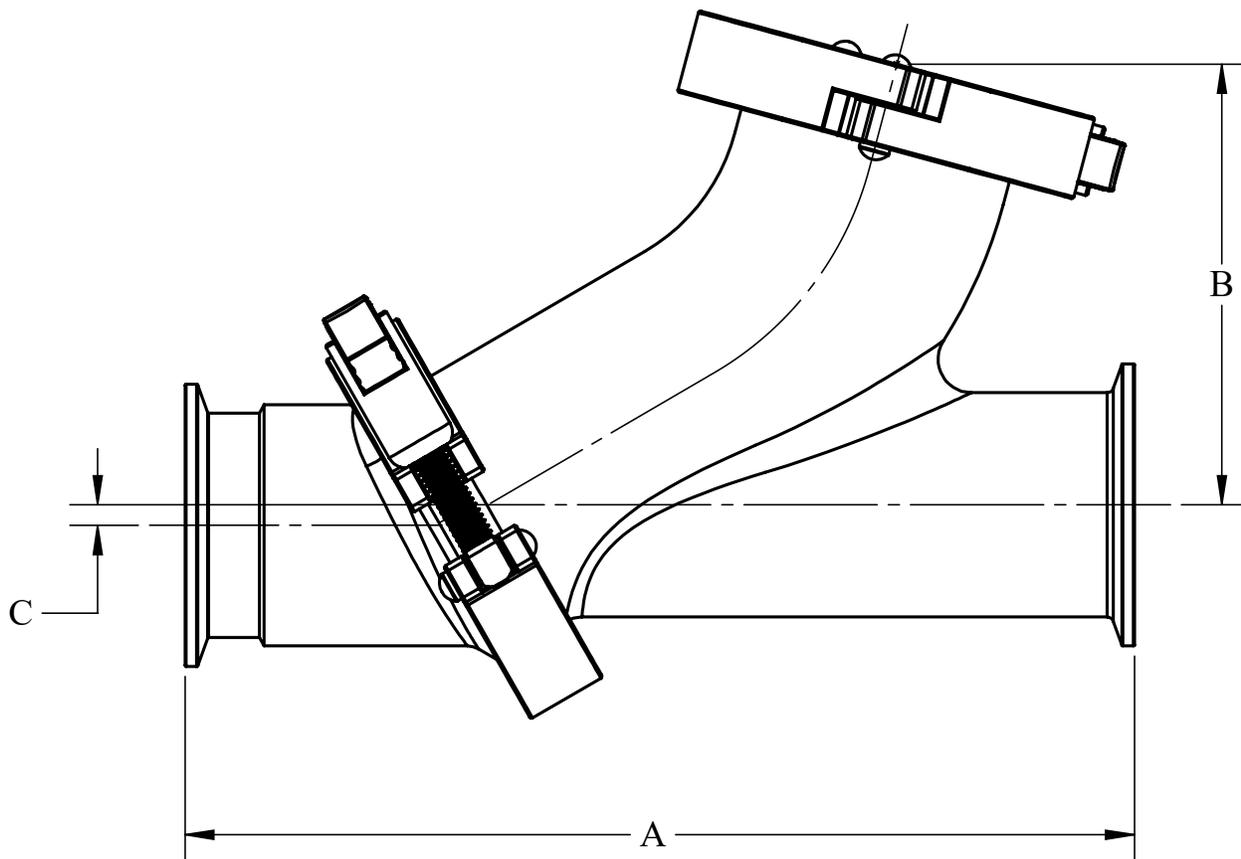
*Not a sanitary connection

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

Capacity (US 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

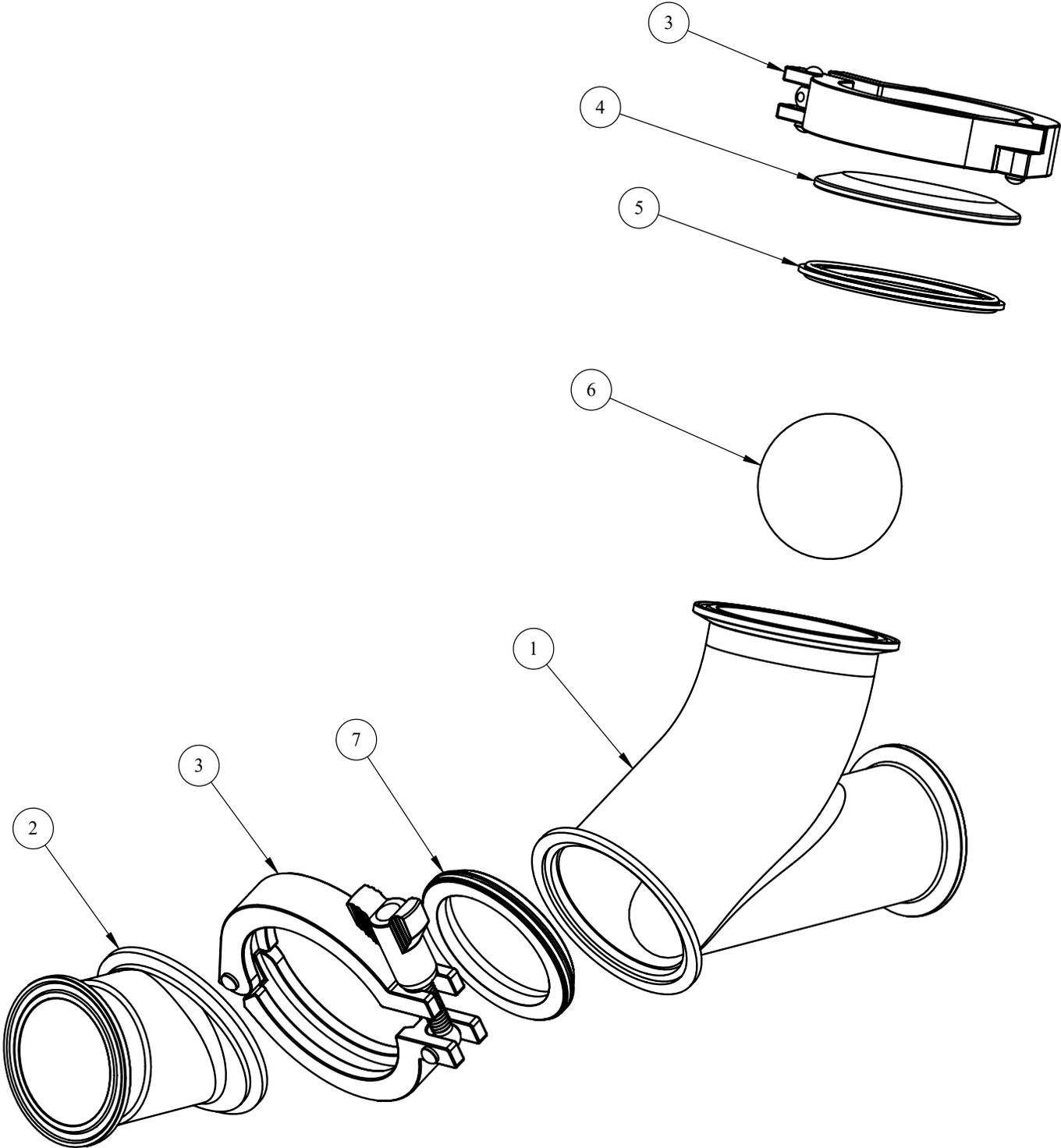
$$\Delta P = [GPM/Cv]^2 G$$

HYC-Series Y-Ball Check Valve - Dimensions



Size	A (in)	B (in)	C (in)	PTFE Ball ϕ (in)	Rubber Ball ϕ (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

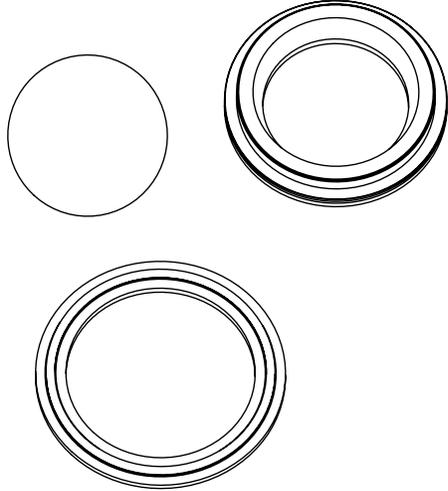
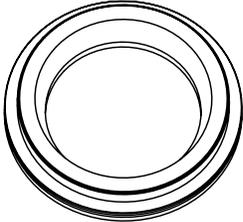
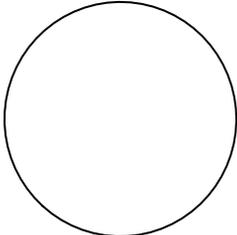
HYC-Series Y-Ball Check Valve - Bill of Materials



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

Item	HYC Valve Size	Part Number	Description	Material	Quantity
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"	13MHM200	clamp	CF8	2
	2"	13MHM250			2
	2-1/2"	13MHM300			2
	3"	13MHM400			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 Number	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) 
		2"	HYC-RK-E-P-200	
		2-1/2"	HYC-RK-E-P-250	
		3"	HYC-RK-E-P-300	
	EPDM & NBR 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 & NBR 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) 
		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) 
		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		

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