

V83 Series Swing-Out Ball Valves

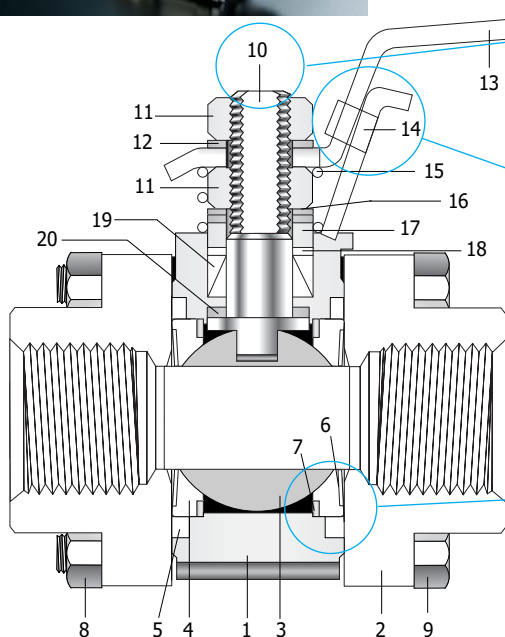
Pressure Rating up to 3000 psig (206 bar)

Catalog No. V83-2
March 2008

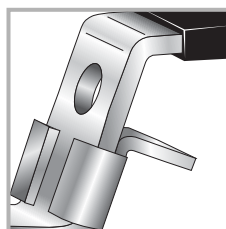


Features

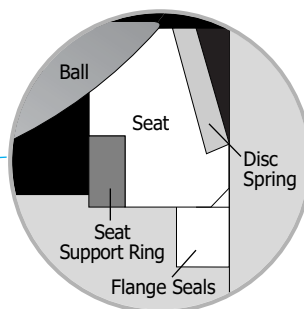
- Pressure and temperature compensation seat design
- Swing-out design for fast and easy maintenance with the valve in-line
- Chevron packing design
- 2-way (on-off) valves with quarter-turn actuation



Two flats on stem (10) and lever handle (13) indicate open or closed position of the valve.



Built-in manual locking device (14) allows locking the valve with a detent either in open or closed position. You may also apply a pad-lock to this device. Pad-lock hole: 8 mm (0.314 in.)



Compensation seat design requires no pressure to create a seal. Under high pressure, seats react on the ball movement for seals at upstream and downstream.

Table 1. Material of Construction

Component	Valve Body Materials	
	Stainless steel	Carbon Steel
1. Body	CF8M / A351	A216 WCB
2. Flanges (2)	CF8M / A351	A216 WCB
3. Ball	Type 316 / A276	
4. Seats (2)	See Table 2.	
5. Flange Seals (2)	PTFE, Optional FKM O-ring	
6. Disc Spring (2)	Type 631	
7. Seat support rings (2)	Type 316 / A276	
8. Body fasteners (4)	SS316 Gr.8M/ A193	
9. Body hex nuts (4)	SS316 Gr.8M/ A194	
10. Stem	Type 316 / A276, A479	
11. Stem Nuts (2)	SS316	
12. Tooth Washer	Stainless steel	
13. Handle	SS304 with Vinyl sleeve	
14. Locking Device	SS304	
15. Grounding spring	SS312 / A313	
16. Stem Springs (2)	Strain Hardened SS316 / A240	
17. Gland	Type 316 / A276	
18. Packing Support	PEEK (Polyetheretherketone)	
19. Upper & Lower Packing	Reinforced PTFE	
20. Stem Bearing	PEEK, Optional X750	

Wetted parts and lubricants are listed in blue.

Table 2. Seat Materials

Pressure - Temperature Ratings

Seats	Valve Series	Pressure Rating @ -28 to 38 °C (-20 to 100 °F)	Pressure @ Max. Temperature	Lubricants
Standard Reinforced PTFE	V83A	151 bar (2200 psig)	7 bar @ 232 °C 100 psig @ 450 °F	Silicon based and PTFE based
	V83B			
	V83C			
Virgin PTFE	V83A	103 bar (1500 psig)	7 bar @ 232 °C 100 psig @ 450 °F	Silicon based and PTFE based
	V83B			
	V83C			
Carbon PTFE	V83A	172 bar (2500 psig)	7 bar @ 232 °C 100 psig @ 450 °F	PTFE based
	V83B			
	V83C			
PEEK	V83A	206 bar (3000 psig)	55 bar @ 232 °C 800 psig @ 450 °F	PTFE based
	V83B			
	V83C			
UHMWPE	V83A	206 bar (3000 psig)	17 bar @ 121 °C 250 psig @ 250 °F	Hydrocarbon based and PTFE based
	V83B			
	V83C			

Factory Test

Every valve is tested with nitrogen @ 68.9 bar (1000 psig) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM. Shell test with nitrogen @ 68.9 bar (1000 psig) is performed to a requirement of no detectable leakage with a liquid leak detector. Shell test with water at 1.5 times the working pressure is performed on request with extra cost.

Quality System Approvals



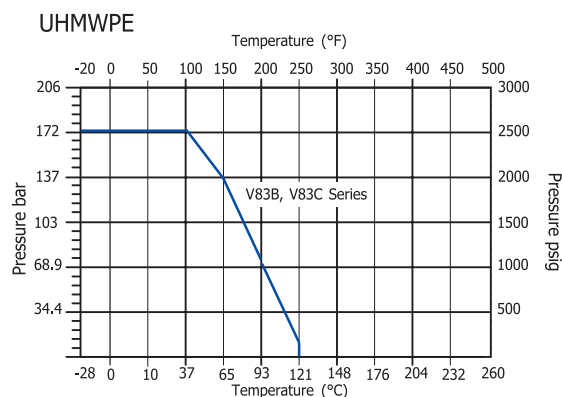
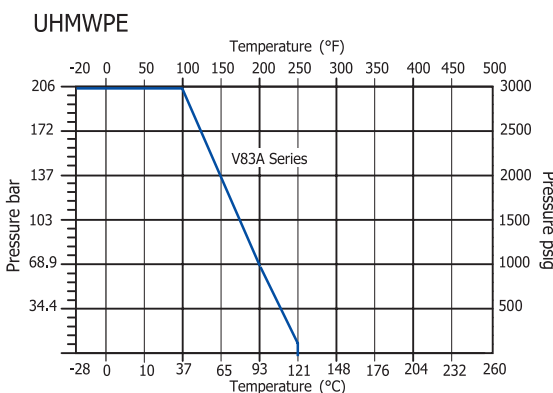
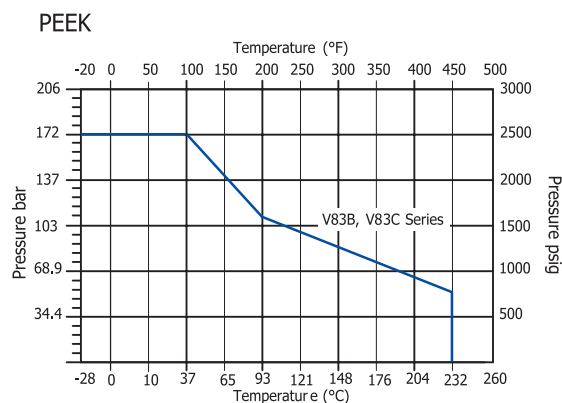
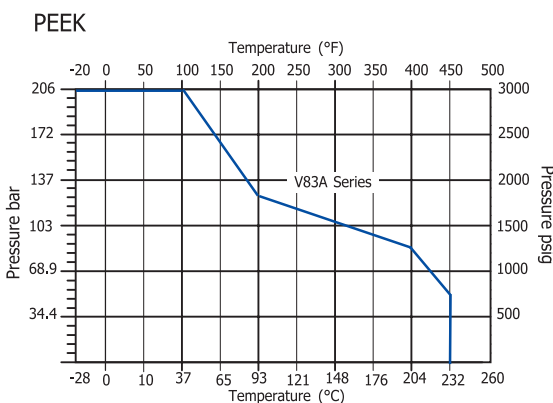
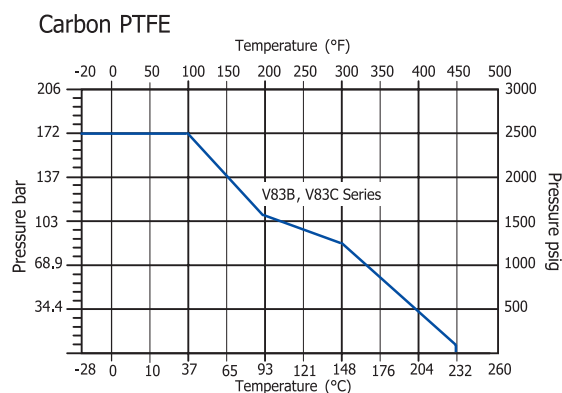
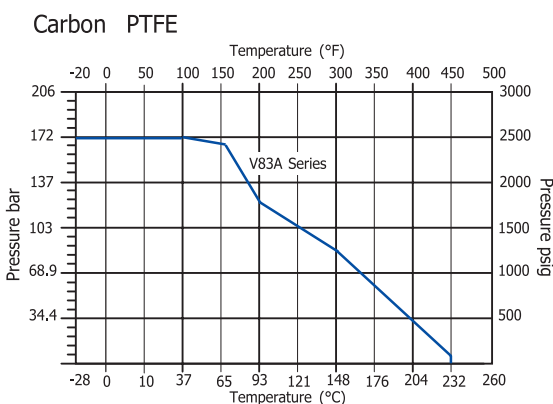
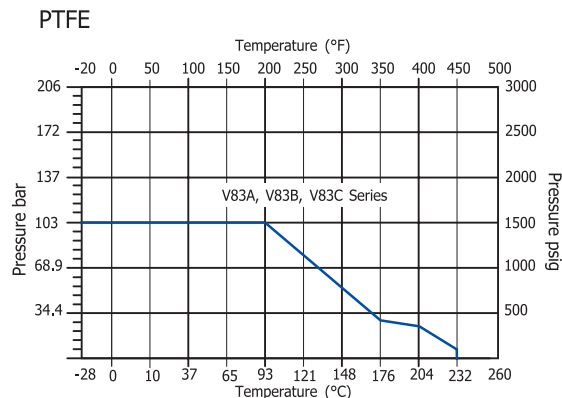
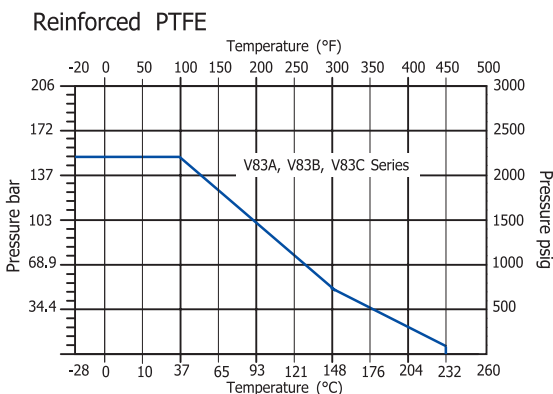
DK-Lok Tube Fitting Certification Listing



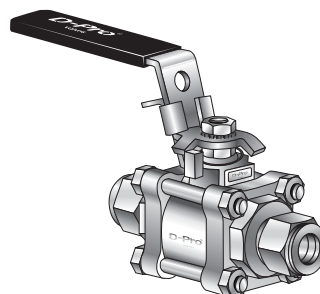
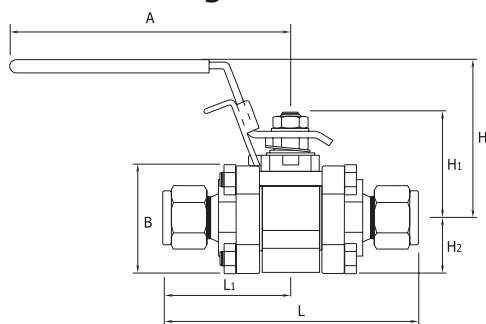
D-Pro Valve Certification Listing



PRESSURE-TEMPERATURE GRAPH

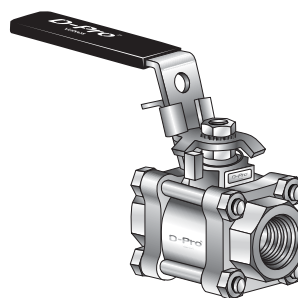
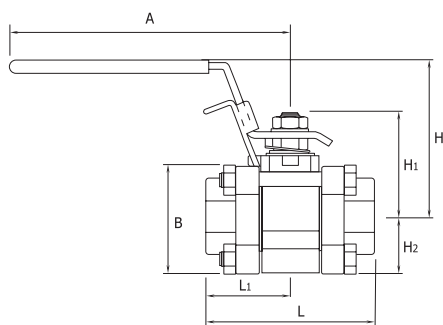


DK-LOK Tube Fitting End Connections



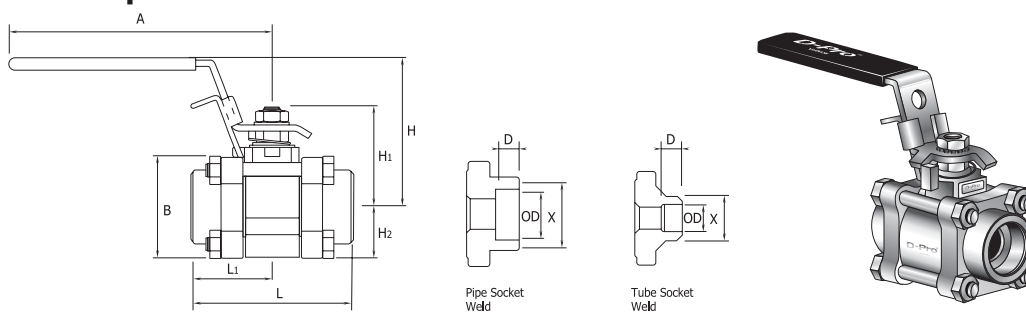
Basic Ordering number	End Connection	Orifice		Cv	Dimension mm (in.)						
		mm	in.		L	L1	H	H1	H2	A	B
Fractional DK-LOK											
V83A-D4T-	1/4 in.	4.8	0.188	1.2	80.8	40.40	47.7	31.8	16.75	57.2	33.0
V83A-D6T-	3/8 in.	7.1	0.281	3.8	(3.18)	(1.59)	(1.88)	(1.25)	(0.66)	(2.25)	(1.30)
V83B-D8T-	1/2 in.	10.4	0.411	7.5	103.8	51.90	64.8	44.2	22.25	111.0	44.5
V83B-D12T-	3/4 in.	13.1	0.516	13.6	(4.09)	(2.04)	(2.55)	(1.74)	(0.88)	(4.37)	(1.75)
V83C-D16T-	1 in.	22.2	0.875	40.0	136.7	68.35	79.0	61.9	31.00	149.4	62.0
					(5.38)	(2.69)	(3.11)	(2.44)	(1.22)	(5.88)	(2.44)
Metric DK-LOK											
V83A-D6M-	6 mm	4.8	0.188	1.2	80.8 (3.18)	40.40 (1.59)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-D8M-	8 mm	6.4	0.250	2.5							
V83A-D10M-	10 mm	7.1	0.281	3.8							
V83B-D12M-	12 mm	10.4	0.411	7.5	103.8 (4.09)	51.90 (2.04)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-D25M-	25 mm	22.2	0.875	40.0	136.7 (5.38)	68.35 (2.69)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)

Female Pipe Thread End Connections



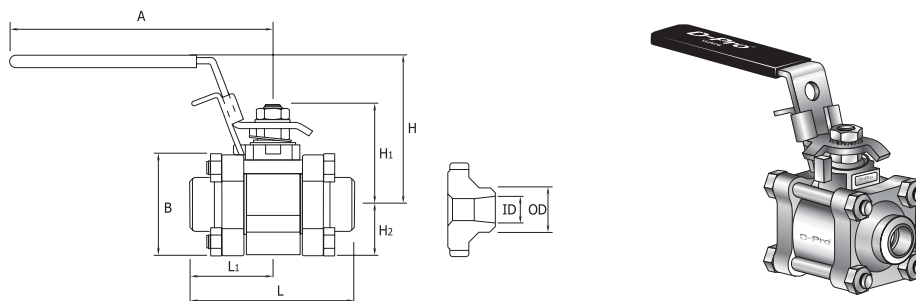
Basic Ordering number	End Connection	Orifice		Cv	Dimension mm (in.)						
		mm	in.		L	L1	H	H1	H2	A	B
Female NPT Ends											
V83A-F2N-	1/8 in.	7.1	0.281	3.8	55.4	27.70	47.7	31.8	16.75	57.2	33.0
V83A-F4N-	1/4 in.				(2.18)	(1.09)	(1.88)	(1.25)	(0.66)	(2.25)	(1.30)
V83B-F6N-	3/8 in.	13.1	0.516	12.0	68.9	34.45	64.8	44.2	22.25	111.0	44.5
V83B-F8N-	1/2 in.				(2.71)	(1.36)	(2.55)	(1.74)	(0.88)	(4.37)	(1.75)
V83C-F12N-	3/4 in.	22.2	0.875	31.0	92.0	46.00	79.0	61.9	31.00	149.4	62.0
V83C-F16N-	1 in.			38.0	(3.62)	(1.81)	(3.11)	(2.44)	(1.22)	(5.88)	(2.44)
Female ISO Tapered Ends											
V83A-F4R-	1/4 in.	7.1	0.281	3.8	55.4	27.70	47.7	31.8	16.75	57.2	33.0
					(2.18)	(1.09)	(1.88)	(1.25)	(0.66)	(2.25)	(1.30)
V83B-F8R-	1/2 in.	13.1	0.516	12.0	68.9	34.45	64.8	44.2	22.25	111.0	44.5
					(2.71)	(1.36)	(2.55)	(1.74)	(0.88)	(4.37)	(1.75)
V83C-F12R-	3/4 in.	22.2	0.875	31.0	92.0	46.00	79.0	61.9	31.00	149.4	62.0
V83C-F16R-	1 in.			38.0	(3.62)	(1.81)					
					114.3	57.15					
					(4.50)	(2.25)					

■ Tube and Pipe Socket Weld End Connections



Basic Ordering number	End Connection	Orifice		Cv	Dimension mm (in.)									
		mm	in.		OD	X	D	L	L1	H	H1	H2	A	B
Tube Socket Weld														
V83A-SW4T-	1/4 in.	4.8	0.188	1.2	6.50 (0.26)	13.70 (0.54)	7.1 (0.28)	55.4 (2.18)	27.70 (1.09)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-SW6T-	3/8 in.	7.1	0.281	3.8	9.70 (0.38)	17.10 (0.67)	7.9 (0.31)							
V83B-SW8T-	1/2 in.	10.4	0.411	7.5	12.90 (0.51)	21.30 (0.84)	9.7 (0.38)							
V83B-SW12T-	3/4 in.	13.1	0.516	13.6	19.20 (0.76)	26.70 (1.05)	11.2 (0.44)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-SW16T-	1 in.	22.2	0.875	40.0	25.65 (1.01)	33.40 (1.31)	16.0 (0.63)	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
Pipe Socket Weld														
V83B-SW8P-	1/2 in.	13.1	0.516	15.0	21.80 (0.86)	31.20 (1.23)	9.7 (0.38)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-SW12P-	3/4 in.	22.2	0.875	36.0	27.20 (1.07)	42.16 (1.66)	12.7 (0.50)	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
V83C-SW16P-	1 in.			42.0	33.90 (1.33)	45.30 (1.78)								

■ Pipe Butt Weld End Connections



Basic Ordering number	End Connection	Orifice		Cv	Dimension mm (in.)								
		mm	in.		OD	ID	L	L1	H	H1	H2	A	B
Schedule 10													
V83A-W4P10-	1/4 in.	4.8	0.188	1.2	13.70 (0.54)	10.40 (0.41)	52.4 (2.06)	26.20 (1.03)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83B-W8P10-	1/2 in.	13.1	0.516	15.0	21.30 (0.84)	17.10 (0.67)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-W12P10-	3/4 in.	22.2	0.875	36.0	26.67 (1.05)	22.45 (0.88)	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
V83C-W16P10-	1 in.			40.0	33.40 (1.31)	27.90 (1.10)	88.9 (3.50)	44.45 (1.75)					
Schedule 40													
V83A-W4P40-	1/4 in.	4.8	0.188	1.2	13.70 (0.54)	9.20 (0.36)	52.4 (2.06)	26.20 (1.03)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83B-W8P40-	1/2 in.	13.1	0.516	15.0	21.30 (0.84)	15.80 (0.62)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-W12P40-	3/4 in.	22.2	0.875	36.0	26.67 (1.05)	20.93 (0.82)	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
V83C-W16P40-	1 in.			40.0	33.40 (1.31)	26.60 (1.05)	88.9 (3.50)	44.45 (1.75)					
Schedule 80													
V83A-W4P80-	1/4 in.	4.8	0.188	1.2	13.70 (0.54)	7.70 (0.30)	52.4 (2.06)	26.20 (1.03)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-W6P80-	3/8 in.	7.1	0.281	3.8	17.10 (0.67)	10.70 (0.42)							
V83B-W8P80-	1/2 in.	10.4	0.411	7.5	21.30 (0.84)	13.90 (0.55)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83B-W12P80-	3/4 in.	13.1	0.516	13.6	26.70 (1.05)	18.80 (0.74)							
V83C-W16P80-	1 in.	22.2	0.875	40.0	33.40 (1.31)	23.90 (0.94)	88.9 (3.50)	44.45 (1.75)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)

How To Order

Select the desired basic ordering number, and options from the designators listed below.

V83C-SW16P

-7

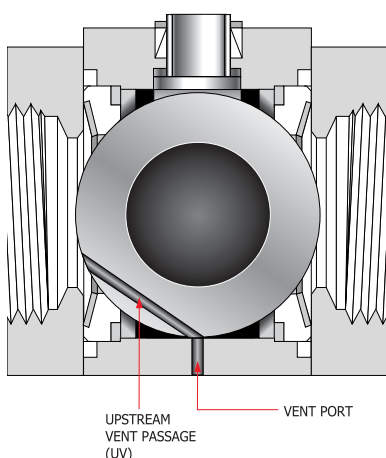
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-OH

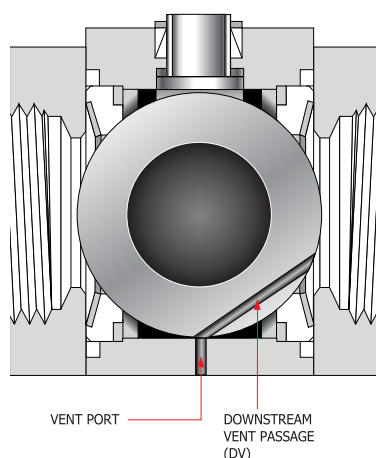
-S

Seat Material	Stem Bearing	Flange Seals	External Vent	Handle	Body & Flange Material
<ul style="list-style-type: none"> Nil: Reinforced PTFE VP: Virgin PTFE CP: Carbon PTFE PK: PEEK UH: UHMWPE 	<ul style="list-style-type: none"> Nil: PEEK 7: X750 	<ul style="list-style-type: none"> Nil: PTFE VT: FKM O-ring 	<ul style="list-style-type: none"> UV: External Upstream vent DV: External Downstream vent 	<ul style="list-style-type: none"> Nil : Lever Handle OH: Oval Handle 	<ul style="list-style-type: none"> S: A351 CF8M L: A351 CF3M C: A216 Gr. WCB

External Vent Options



Valves in closed position



The vent passage is isolated from the ball bore. When the valve is closed, system fluids vent through vent passage to the vent port. When the valve is open, no venting occurs, system fluids flow through the valve.

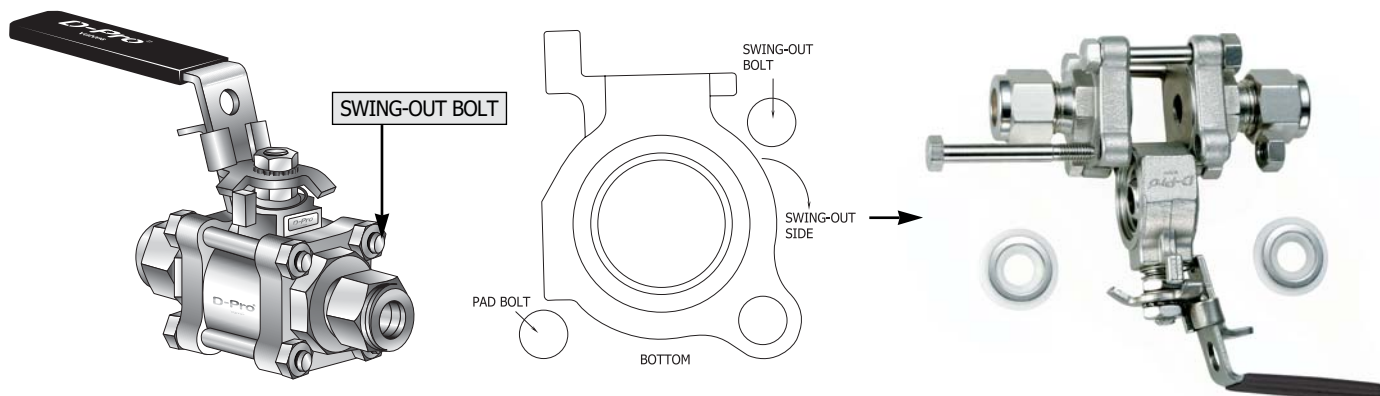
Choose either the Downstream Vent (DV) or Upstream Vent (UP) option.

External Vented Valve Rating

Upstream and downstream

Seat Material	Valve Series	Pressure @ -28 to 37 °C (-20 to 100 °F)	Pressure @ Max. Temp.
Reinforced PTFE	V83A	68.9 bar (1000 psig)	68.9 bar @ 232 °C (100 psig @ 450 °F)
	V83B		
	V83C		
Virgin PTFE	V83A	68.9 bar (1000 psig)	68.9 bar @ 232 °C (100 psig @ 450 °F)
	V83B		
	V83C		
Carbon PTFE	V83A	68.9 bar (1000 psig)	68.9 bar @ 232 °C (100 psig @ 450 °F)
	V83B		
	V83C		
PEEK	V83A	68.9 bar (1000 psig)	68.9 bar @ 232 °C (100 psig @ 450 °F)
	V83B		55 bar @ 232 °C (800 psig @ 450 °F)
	V83C		
UHMWPE	V83A	68.9 bar (1000 psig)	17 bar @ 121 °C (250 psig @ 250 °F)
	V83B		
	V83C		

Maintenance Kits



For maintenance, unscrew the swing-out bolt and loosen other three bolts. This allows users to swing-out the body, keeping the valve in-line.

Seat Seal Kits

Kit contains each two pieces of seats, seat support rings, disc springs and flange seals.

Valve Series	Seat Material Designator	Flange Seal Designator
V83A-	Nil: Reinforced PTFE	Nil: Reinforced PTFE VT: FKM O-ring
V83B-	VP: Virgin PTFE	
V83C-	CP: Carbon PTFE	
	PK: PEEK	
	UH: UHMWPE	

To order, add - SEAT as a suffix to the ordering number.
i.e., V83B-PK-VT-SEAT

Packing Seal Kits

Kit contains each one piece of upper & lower packing, packing gland, packing support and stem bearing.

Valve Series	Packing Material Designator	Stem Bearing Designator
V83A-	Nil: Reinforced PTFE	PK: PEEK 7: X750
V83B-		
V83C-		

To order, add - PKG as a suffix to the ordering number.
i.e., V83B-PK-PKG

Flange Seal Kits

Kit contains two flange seals.

Valve Series	Flange Seal Designator
V83A-	Nil: Reinforced PTFE VT: FKM O-ring
V83B-	
V83C-	

To order, add - FL as a suffix to the ordering number.
i.e., V83A-VT-FL

Fastener Kits

Kit contains each four pieces of body fasteners, body hex nuts and one stem nut.

Valve Series	Fastener Material
V83A-	Gr. B8M
V83B-	
V83C-	

To order, add - BOLT as a suffix to the ordering number.
i.e., V83A-BOLT

- All dimensions shown in this catalog are for reference only and are subject to change.
- Dimensions with DK-LOK nuts are in finger-tight position.
- We reserve the right to change specifications stated in this catalog for our continuing program of improvement.

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. Dk Tech accepts no liability for any improper selection, installation, operation or maintenance.