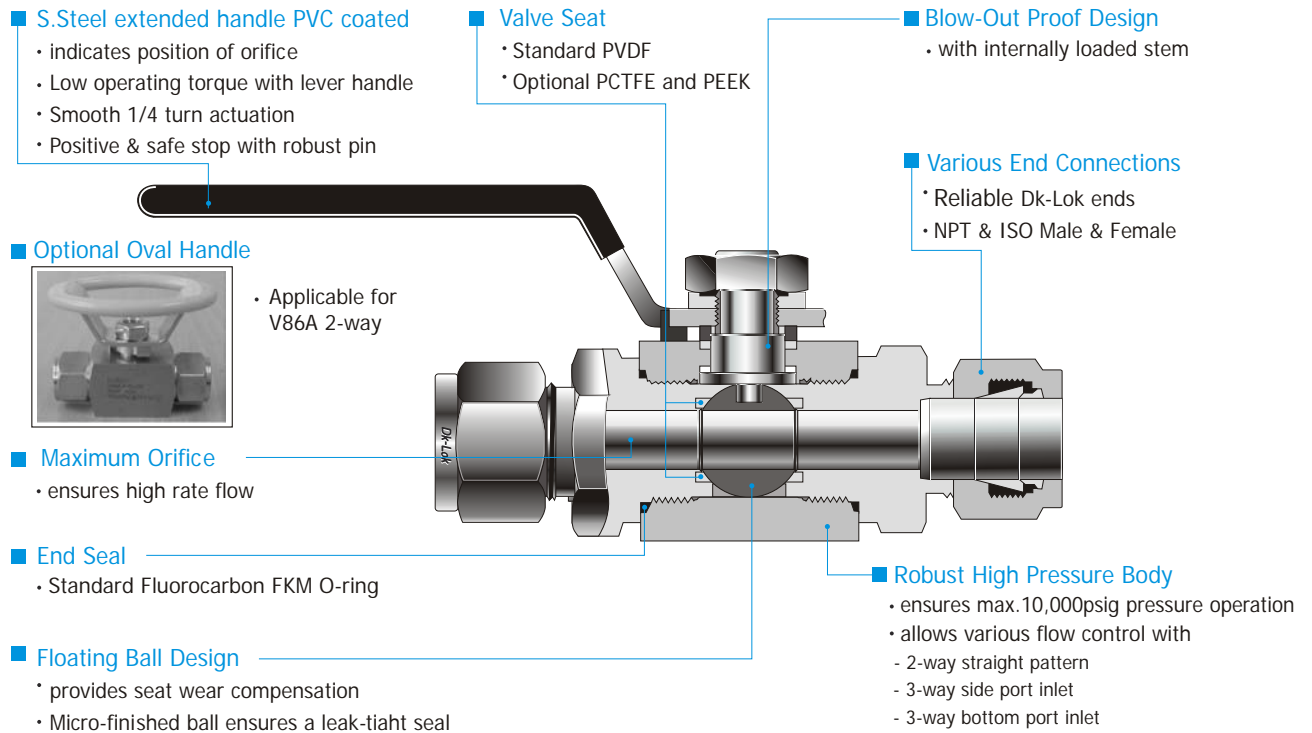


2-way Ball Valve



Design

- 2-way positive shut off and 3-way directional control of fluids in process, power and instrument application.
- All ports are suitable as inlets in full operation pressure of the valve.
- When 2-way handle perpendicular to the valve body, it indicates the shut off position.

Operation

- D-Pro 86 Series Ball valves are designed to control fluids in full open or closed position, using V86 Series ball valves to throttle the flow may reduce the valve service life.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.
- If the valve system needs to be tested at higher pressure than the valve maximum pressure, the valve must be in open position during the test so as not to damage the valve seat.
- Optional Sour Gas Service to NACE MR0175-2001

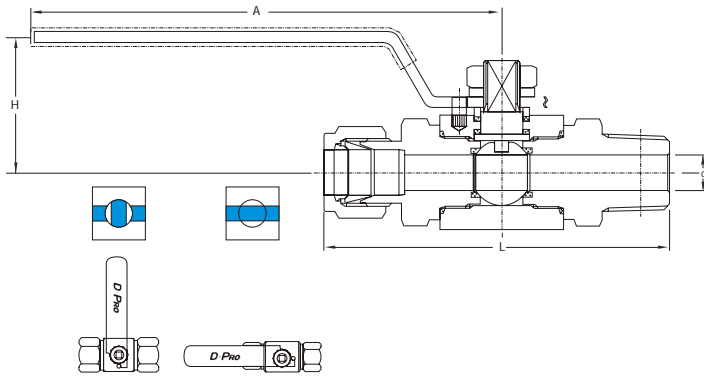
Factory Test

- Every valve is factory tested with nitrogen @1000 psig (68 bar) for leakage at the seat to a maximum allowable leak rate of 0.1 scc/min.
The stem packing is tested with nitrogen @1000 psig for no detectable leakage.

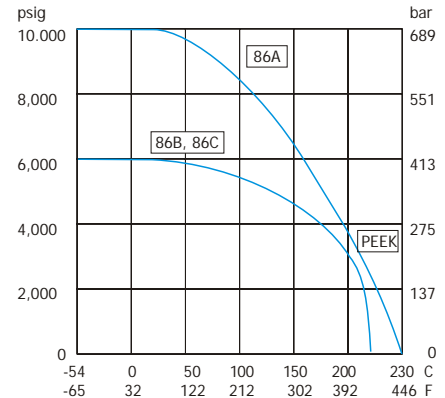
Materials of Construction

Component	Material / ASTM	Component	Material / ASTM
Body	S316 / A479, A276	Ball	F316 / A351 CF8M
Handle	S304	Seat	PVDF, optional PCTFE, PEEK
Stem	S316 / A479, A276	End Connector	S316 / A479, A276
Stem Packing	PTFE / D1710	End Seal	Fluorocarbon FKM O-ring

2-way on-off



V86 2-way Pressure-Temperature Curves for valves with PEEK seat



2-way Valve Ordering Information and Table of Dimensions

Basic Ordering Number	Orifice mm (in.)	Cv	End Connections	d mm (in.)	Dimensions mm (in.)		
			Inlet & Outlet		A	H	L
V86A-	10.0 (0.39)	1.2	1/4" Dk-Lok	4.8 (0.19)	107 (4.21)	39 (1.53)	92 (3.62)
			3/8" Dk-Lok				95 (3.74)
			1/2" Dk-Lok				106 (4.17)
		7.5	1/4" Female NPT	10.0 (0.39)			72 (2.83)
			3/8" Female NPT				75 (2.95)
			1/2" Female NPT				89 (3.50)
		3.7	1/4" Male NPT	7.1 (0.28)			84 (3.30)
			3/8" Male NPT				84 (3.30)
			1/2" Male NPT				100 (3.93)
V86B-	12.7 (0.50)	10.1	1/2" Female NPT	12.7 (0.50)	149 (5.86)	51 (2.00)	93 (3.66)
			3/4" Female NPT				102 (4.01)
			3/4" Male NPT				110 (4.33)
			5/8" Dk-Lok				116 (4.56)
			3/4" Dk-Lok				115 (4.52)
V86C-	19.0 (0.75)	30.0	3/4" Female NPT	20.0 (0.78)	149 (5.86)	56 (2.20)	108 (4.25)
			1" Female NPT				127 (5.00)
		19.0	3/4" Dk-Lok	15.8 (0.62)			125 (4.92)
			1" Dk-Lok				134 (5.27)
		30.0	3/4" Male NPT	15.8 (0.62)			119 (4.68)
			1" Male NPT				129 (5.07)

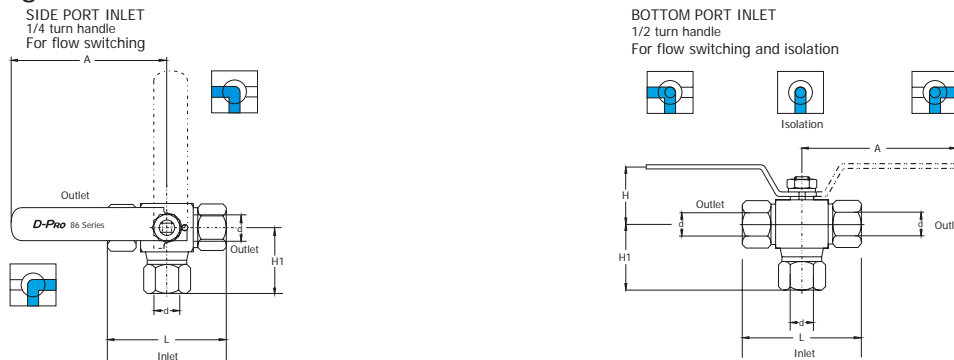
All dimensions shown are for reference only and are subject to change. Dimensions with Dk-Lok nuts are in finger-tight position.

2-way Handle Turn Torque Table

Unit: N-m (lbs-ft)

Valve Series	Applied Pressures bar (psig)						
	0 (0)	68.9 (1000)	137 (2000)	206 (3000)	275 (4000)	344 (5000)	413 (6000)
V86A	0.30 (0.22)	0.35 (0.25)	0.40 (0.29)	0.40 (0.29)	0.40 (0.29)	0.40 (0.29)	0.45 (0.33)
V86B	1.20 (0.88)	1.50 (1.10)	1.70 (1.25)	1.70 (1.25)	1.80 (1.32)	1.90 (1.40)	2.00 (1.47)
V86C	1.70 (1.25)	1.80 (1.32)	1.90 (1.40)	2.00 (1.47)	2.10 (1.55)	2.20 (1.62)	2.30 (1.69)

3-way switching



3-way Valve Ordering Information and Table of Dimensions

Basic Ordering Number		Orifice mm (in.)	End Connections		d mm (in.)	Dimensions mm (in.)			
			Inlet & Outlet			A	H	H1	L
V86A-	3* - D-4T-	10.0 (0.39)	1/4" Dk-Lok		4.8 (0.19)	107 (4.21)	39 (1.53)	53.5 (2.10)	92 (3.62)
	3* - D-6T-		3/8" Dk-Lok		7.1 (0.28)				
	3* - D-8T-		1/2" Dk-Lok		10.0 (0.39)				
	3* - F-4N -		1/4" Female NPT						
	3* - F-6N-		3/8" Female NPT						
	3* - F-8N-		1/2" Female NPT						
V86B-	3* - F-8N-	12.7 (0.50)	1/2" Female NPT		12.7 (0.50)	149 (5.86)	51 (2.00)	49.7 (1.95)	93 (3.66)
	3* - F-12N-		3/4" Female NPT						
	3* - D-10T-		5/8" Dk-Lok						
	3* - D-12T-		3/4" Dk-Lok						
V86C-	3* - D-12T-	19.0 (0.75)	3/4" Dk-Lok		15.8 (0.62)	149 (5.86)	56 (2.20)	70.0 (2.75)	125 (4.92)
	3* - D-16T-		1" Dk-Lok						
	3* - F-12N-		3/4" Female NPT		20.0 (0.79)				
	3* - F-16N-		1" Female NPT						

All dimensions shown are for reference only and are subject to change. Dimensions with Dk-Lok nuts are in finger-tight position. Ordering information: * "S" for side entry 3 - way ordering i.e., V86A-3S-D-4T, * "B" for bottom entry 3 - way ordering i.e. V86A-3B-D-4T

3-way Handle Turn Torque Table

Unit: N-m (lbs-ft)

Valve Series	Applied Pressures bar (psig)						
	0 (0)	68.9 (1000)	137 (2000)	206 (3000)	275 (4000)	344 (5000)	413 (6000)
V86A	0.27 (0.20)	0.31 (0.23)	0.36 (0.26)	0.36 (0.26)	0.36 (0.26)	0.36 (0.26)	0.40 (0.29)
V86B	1.08 (0.79)	1.35 (0.99)	1.53 (1.13)	1.53 (1.13)	1.62 (1.19)	-	-
V86C	1.53 (1.13)	1.62 (1.19)	1.71 (1.26)	1.80 (1.32)	1.90 (1.40)	-	-

2-way Valve Pressure and Temperature Rating Table

Valve Series	Sealing Materials			Pressure Rating @ -54 to 21 C (-65 to 70 F)	Temperature Rating
	Seat	Stem Packing	End Seal		
V86A	PVDF	PTFE	FKM	6,000 psig (413 bar)	-30 to 130 C (-22 to 265 F)
	PCTFE				-30 to 180 C (-22 to 355 F)
	PEEK				10,000 psig (689 bar)
V86B V86C	PVDF	PTFE	FKM	5,000 psig (344 bar)	-23 to 110 C (-9 to 230 F)
	PCTFE				-23 to 160 C (-9 to 320 F)
	PEEK				6,000 psig (413 bar)

3-way Valve Pressure and Temperature Rating Table

Valve Series	Sealing Materials			Pressure Rating @ -54 to 21 C (-65 to 70 F)	Temperature Rating
	Seat	Stem Packing	End Seal		
V86A	PVDF	PTFE	FKM	4,000 psig (275 bar)	-30 to 130 C (-22 to 265 F)
	PCTFE				-30 to 180 C (-22 to 355 F)
	PEEK				6,000 psig (413 bar)
V86B V86C	PVDF	PTFE	FKM	3,000 psig (206 bar)	-23 to 110 C (-9 to 230 F)
	PCTFE				-23 to 160 C (-9 to 320 F)
	PEEK				4,000 psig (275 bar)

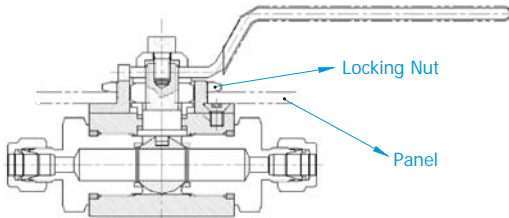
Note : Pressure ratings of valves are sometimes limited to the maximum working pressure of pipe ends and the tubing connected. Please refer to Dk-Lok catalog for details.

Optional Panel Mounting

Please choose suitable panel mounting from the two options below;

Locking nut panel mounting

Ordering designator : P1



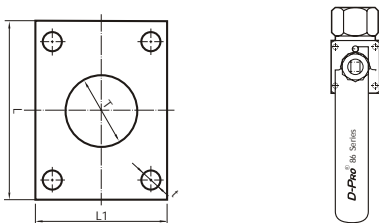
P1- Panel Mount Information

Unit: mm (in.)

Valve Series	Panel Hole Drill	Panel Thickness
V86A	30.0 (1.18)	Max. 4.0 (0.157)
V86B	38.0 (1.50)	Max. 4.0 (0.157)
V86C	38.0 (1.50)	Max. 4.0 (0.157)

Screw hole panel mounting

Ordering designator : P2



P2 - Panel Mount Information

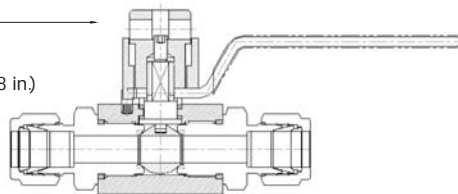
Unit : mm (in.)

Valve Series	L	L1	t	T
V86A	34.0 (1.33)	26.0 (1.02)	4.0 (0.15)	30.0 (1.18)
V86B	36.0 (1.42)	29.0 (1.14)	5.0 (0.20)	38.0 (1.50)
V86C	40.0 (1.57)	35.0 (1.37)	6.0 (0.23)	38.0 (1.50)

Optional "Lift-Turn" Locking Device

Ordering designator: LD

- Pad-Lock Mounting
You may also apply a pad-lock to this unique locking device.
Pad-lock Hole Dia.7.2 mm (0.28 in)



Dk patented "Lift-Turn" safety locking device allows you to manually lock the valve in either an opened or closed position. The Lock Device is made with study stainless steel upper and lower locking detents.

Note : LD option is not applicable for the 3-way bottom port inlet valves.

Ordering Information

Select the applicable option(s) from designators listed below.

Seat	Panel Mounting	Locking Device	Handle	Valve Material Designator
<ul style="list-style-type: none"> • Nil: Standard PVDF • PC: PCTFE • PK: PEEK • PA: PFA 	<ul style="list-style-type: none"> • P1: Locking nut panel mounting • P2: Screw hole panel mounting 	<ul style="list-style-type: none"> • LD: Locking device 	<ul style="list-style-type: none"> • Nil: Standard lever handle • OH: Oval handle <p>Note: OH option is only applicable for:</p> <ul style="list-style-type: none"> • V86A- 2-way • V86A- 2-way with P2 option 	<ul style="list-style-type: none"> • S: S316 • HC: Hastelloy C-276
<p>Note: Panel mounting option and Locking device option are not applicable at the same valve.</p>				

Examples:

- V86A-D-8T-S ordering S316 V86A-D-8T with standard PVDF seat, PTFE stem packing and lever handle.
- V86A-D-8T-PK-P2-OH-S ordering S316 V86A-D-8T with optional PEEK seat, P2 Panel Mounting and Oval handle.

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.

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