IDK-LOK

Ball & Plug Valves

Rev. 01-02
Apr. 2025

IDK-LOK

V23 Series Plug Valves

Rev. 01-01
Aug. 2023

DK-LOK
Ball & Plug Valves

V23 Series Plug Valves

Pressure Rating up to 3,000 psig (206 bar)

Rev.01-01
Aug.2023

Features

- Quarter-turn operation
- Unique forward flow throttlving
- Low torque operation
- Unidirectional flow

Materials of Construction

Component	Valve Body Materials	
	Stainless Steel	Brass
	Grade/ASTM Specification	
1. Body	SS316/ A479 or A276	Brass / B16
2. Plug	PTFE-coated SS316/ A479 or A276	PTFE-coated Brass / B16
3. O-ring	PTFE-coated FKM	
4. Handle	Nylon	
5. Pin	SS316/A276	
6. Snap ring	Stainless Steel	

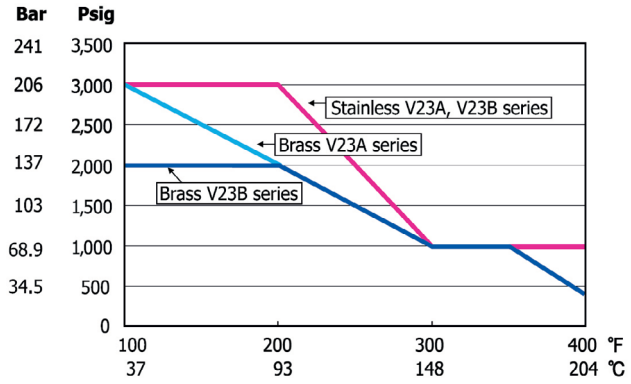
- Wetted parts and lubricants listed in blue
- Lubricant is silicone-based

Technical Data

Series	Valve Material	Pressure Rating psig	Pressure Rating bar	Temperature Rating	Plug Orifice mm (in.)
V23A	SS316	3,000	206	-10 to 400 °F (-23 to 204 °C)	4.4 (.17)
	Brass				
V23B	SS316	2,000	137		7.2 (.28)
	Brass				

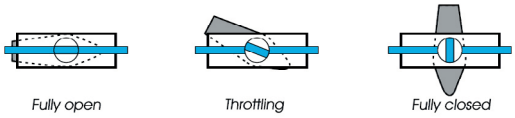
- Differential pressure is limited to maximum 150 psig (10.3bar) when reverse flow occurs.
- Throttling reverse flow may damage O-ring.

Pressure - Temperature Curves
with standard FKM O-ring

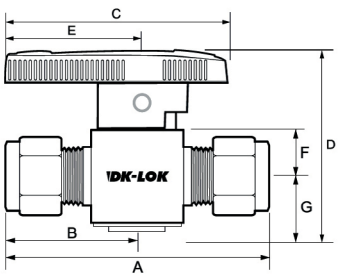


Operation

- DK-Lok plug valves provide positive shut-off, high flow capacity, and quick quarter-turn operation.
- DK-Lok plug valve provides flow throttling capability.



Ordering Information and Dimensions



Basic Ordering Number		End Connections Inlet	End Connections Outlet H	Dimensions mm (inches) A	B	C	D	E	F	G	H
V23A	D-2T-	1/8 in. DK-Lok		50.5 (1.99)	19.8 (0.78)	47.8 (1.88)	38.6 (1.52)	29.0 (1.14)	9.4 (0.37)	11.7 (0.46)	19.1 (0.75)
	D-4T-	1/4 in. DK-Lok		55.1 (2.17)							
	D-6T-	3/8 in. DK-Lok		58.2 (2.29)							
	D-6M-	6mm DK-Lok		55.1 (2.17)							
	M-2N-	1/8 in. Male NPT		38.9 (1.53)							
	M-4N-	1/4 in. Male NPT		48.3 (1.90)							
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok	51.7 (2.03)							
	MF-4N-	1/4 in. Male NPT	1/4 in. female NPT	50.8 (2.00)							
	F-2N-	1/8 in. Female NPT		45.2 (1.78)							
	F-4N-	1/4 in. Female NPT		53.1 (2.09)							
	F-4R-	1/4 in. Female ISO Tapered		56.1 (2.21)							
V23B-	D-6T-	3/8 in. DK-Lok		67.6 (2.66)	29.0 (1.14)	63.2 (2.49)	54.1 (2.13)	38.1 (1.50)	14.2 (0.56)	16.8 (0.66)	28.4 (1.12)
	D-8T-	1/2 in. DK-Lok		73.2 (2.88)							
	D-8M-	8mm DK-Lok		67.6 (2.66)							
	D-10M-	10mm DK-Lok		68.1 (2.68)							
	D-12M-	12mm DK-Lok		75.2 (2.96)							
	M-8N-	1/2 in. Male NPT		67.1 (2.64)							
	F-6N-	3/8 in. Female NPT		60.5 (2.38)							
	F-8N-	1/2 in. Female NPT		73.2 (2.88)							
	F-8R-	1/2 in. Female ISO Tapered		79.8 (3.14)							

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

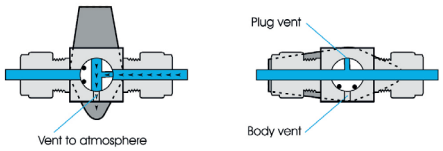
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Factory Test

• Every V23 series plug valve is factory tested for shutoff at 600psig (41.3 bar).

Optional Downstream Vent

Vent to atmosphere when valve is closed valve open



Optional vented plug and valve body provides system pressure release to atmosphere when valve is closed.

• This option reduces the maximum operation pressure to 150 psig (10.3 bar).
• To order, use designator - VH. See how to order.

Optional O-ring material

PTFE-coated FKM is standard. Choose optional O-ring material for fluid compatibility and system temperatures.

O-ring material	O-ring Designator	Temperature Range
Standard PTFE-coated FKM	EV	-20 to 400 °F (-28 to 204 °C)
PTFE-coated Buna-N	EB	-68 to 221 °F (-20 to 105 °C)
PTFE-coated EPDM	EE	-49 to 275 °F (-45 to 135 °C)

Flow Data

Basic Ordering Number		End Connections		Cv	Pressure Drop to Atmosphere, psi (bar)					
		Inlet	Outlet		Air Flow, std ft3/min (L/min) @ 70 °F (21 °C)			Water Flow, US gal/min(L/min) @ 70 °F (21 °C)		
					1 (0.068)	5 (0.34)	10 (0.68)	1 (0.068)	5 (0.34)	10 (0.68)
V23A-	D-2T-	1/8 in. DK-Lok		0.1	0.3 (8.4)	0.8 (22)	1.1 (31)	0.1 (0.37)	0.2 (0.75)	0.3 (1.1)
	D-4T-	1/4 in. DK-Lok		1.6	6.0 (169)	13 (368)	18 (509)	1.6 (6.0)	3.6 (13.6)	5.1 (19.3)
	D-6T-	3/8 in. DK-Lok		1.1	4.1 (116)	8.9 (252)	12.4 (351)	1.1 (4.1)	2.5 (9.4)	3.5 (13.2)
	D-6M-	6mm DK-Lok		1.6	6.0 (169)	13 (368)	18 (509)	1.6 (6.0)	3.6 (13.6)	5.1 (19.3)
	M-2N-	1/8 in. Male NPT		1.0	3.7 (104)	8.1 (229)	11.3 (320)	1.0 (3.7)	2.2 (8.3)	3.2 (12.1)
	M-4N-	1/4 in. Male NPT								
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok	0.9	3.3 (93)	7.3 (206)	10.1 (286)	0 .9 (3.4)	2.0 (7.5)	2.8 (10.8)
	MF-4N-	1/4 in. Male NPT	1/4 in. female NPT	1.0	3.7 (104)	8.1 (229)	11.3 (320)	1.0 (3.7)	2.2 (8.3)	3.2 (12.1)
	F-2N-	1/8 in. Female NPT		1.2	4.4 (124)	9.7 (274)	13.5 (382)	1.2 (4.5)	2.7 (10.2)	3.8 (14.3)
	F-4N-	1/4 in. Female NPT		0.9	3.3 (93)	7.3 (206)	10.1 (286)	0.9 (3.4)	2.0 (7.5)	2.8 (10.8)
	F-4R-	1/4 in. Female ISO Tapered								
V23B	D-6T-	3/8 in. DK-Lok		6.4	23.9 (676)	52.0 (1470)	72.3 (2040)	6.4 (24.2)	14.3 (54.1)	20.2 (76.4)
	D-8T-	1/2 in. DK-Lok		4.4	16.4 (464)	35.7 (1010)	49.7 (1400)	4.4 (16.6)	9.8 (37.0)	13.9 (52.6)
	D-8M-	8mm DK-Lok		6.4	23.9 (676)	52.0 (1470)	72.3 (2040)	6.4 (24.2)	14.3 (54.1)	20.2 (76.4)
	D-10M-	10mm DK-Lok								
	D-12M-	12mm DK-Lok		4.8	17.9 (506)	39.0 (1100)	54.2 (1530)	4.8 (18.1)	10.7 (40.4)	15.2 (57.5)
	M-8N-	1/2 in. Male NPT		2.4	9.0 (254)	19.5 (552)	27.1 (767)	2.4 (9.0)	5.4 (20.4)	7.6 (28.7)
	F-6N-	3/8 in. Female NPT		4.3	16.0 (453)	34.9 (988)	48.6 (1370)	4.3 (16.2)	9.6 (36.3)	13.6 (51.4)
	F-8N-	1/2 in. Female NPT		2.7	10.1 (286)	21.9 (620)	30.5 (863)	2.7 (10.2)	6.0 (22.7)	8.5 (32.1)
	F-8R-	1/2 in. Female ISO Tapered								

How to Order

Select the desired valve basic ordering number, options and body material.

V23A-D-4T-
V23B-F-8N-

EB - **VH** - **-B** **S**

O-ring Material Designator	Downstream Vent Option	Body Material Designator
Nil : PTFE-coated Viton **EB** : PTFE-coated Buna-N **EE** : PTFE-coated EPDM	**Nil** : no vent **VH** : Vent	**S** : SS316 **B** : Brass

We reserve the right t ations 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 responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

The information shown in this catalog are not for design purpose, but for reference only.
The accuracy of information is not the liability of our company.

Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK

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IDK-LOK

V81 Series Ball Valves

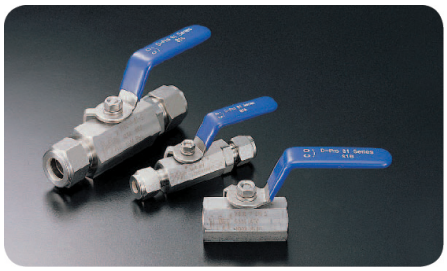
Rev. 01-01
Aug. 2023

DK-LOK
Ball & Plug Valves

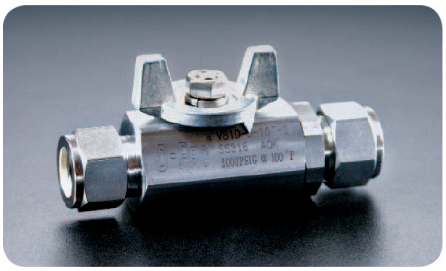
V81 Series Ball Valve

Rev.01-01
Aug.2023

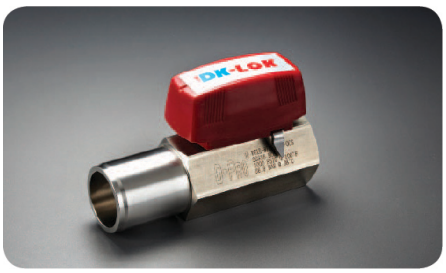
Pressures rating of 68.9 bar (1000 psig) and 137 bar (2000 psig)



Valve with lever handle
Working pressure
- PTFE seats : 68.9 bar (1000 psig)
- TFM seats : 137 bar (2000 psig)



Valve with butterfly handle
Working pressure
- PTFE seats : 68.9 bar (1000 psig)
- TFM seats not applicable



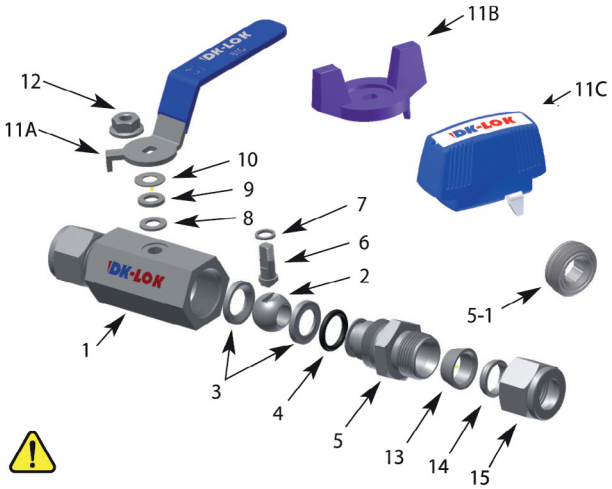
Valve with dielectric handle
Working pressure
- PTFE seats : 68.9 bar (1000 psig)
- TFM seats : 137 bar (2000 psig)

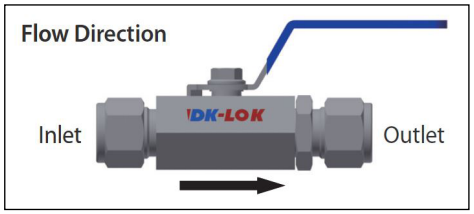
Design Features

- Compact barstock construction for high integrity
- Blow-out proof design with internally loaded stem
- Floating Ball design providing seat wear compensation
- Micro-finished ball ensures a leak-tight shut-off on pressure
- Standard lever handle, optional butterfly and dielectric handle.

Applications

V81 series ball valve offers a safe and reliable performance for a wide range of onshore and offshore applications: water, oil, gas, petrochemical and general duty applications.



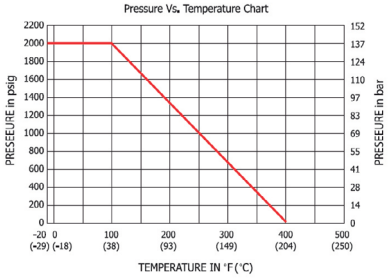


Materials of Construction

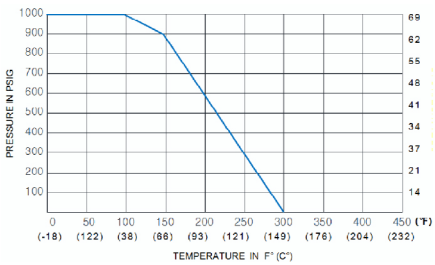
Component	Valve Body Materials	
	Stainless steel	Brass
1. Body	ASTM A276 / A479 TYPE316	ASTM B16 or JIS H3250
2. Ball	ASTM A276 TYPE316	
3. Seat (2)	PTFE / D1710 for pressure 68.9 bar (1000 psig) TFM 1600 for pressure 137 bar (2000 psig)	
4. O-Ring	FKM	NBR
5. End Connector	ASTM A276/A479 TYPE316	ASTM B16 or JIS H3250
5-1. Insert		
6. Stem	ASTM A276/A479 TYPE316	
7. Lower Packing	PTFE / D1710	
8. Upper Packing	PTFE / D1710	
9. Gland	ASTM A276/A479 TYPE316	
10. Washer	Stainless Steel	
11A. Handle	Stainless Steel Lever handle with vinyle sleeve	
11B. Handle	ZINC / ASTM B240 Butterfly handle, Nickel-plated	
11C. Handle	Dielectric Handle with Nylon(Black, Red, Blue)	
12. Lock Nut	Stainless Steel	Stainless Steel
13. Front Ferrule	ASTM A276/A479 TYPE316	ASTM B16 or JIS H3250
14. Backing Ferrule	ASTM A276/A479 TYPE316	ASTM B16 or JIS H3250
15. Nut	ASTM A276/A479 TYPE316	ASTM B16 or JIS H3250

1. V81D, V81E Locking device lever handle Type : Body Material is ASTM A351 CF8M
4. O-Ring is applicable to end connector type.
5. End Connector is for DK-Lok end connection standard, male pipe thread available.
5-1. Insert is for female pipe thread end connection.
* TFM 1600 seat is usable only with body in stainless steel.
* Wetted parts are listed in Blue.

Pressure -Temperature Curves



TFM 1600 Seat Body Material: Stainless



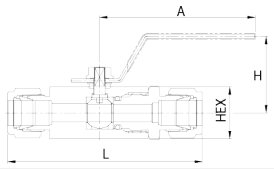
PTFE Seat Body Material: Stainless and Brass

Factory Test

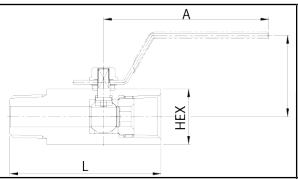
Every valve is factory tested with nitrogen gas @41 bar (600 psig) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM.
The packing is tested with nitrogen for no detectable leakage.

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

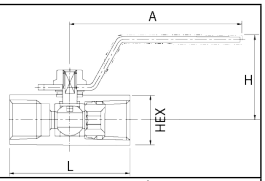
DK-Lok to DK-Lok
Lever Handle



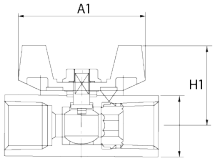
Male Pipe Thread to
Female Pipe Thread
Lever Handle



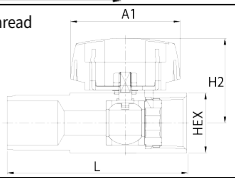
Female Pipe Thread to
Female Pipe Thread
Lever Handle



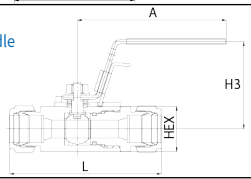
Female Pipe Thread to
Female Pipe Thread
Butterfly Handle



Weld End to Female Pipe Thread
Dielectric Handle



DK-Lok to DK-Lok
Locking device Lever Handle



Ordering Information and Table of Dimensions

Basic Ordering Number		End Connections Inlet / Outlet	Orifice mm (in.)	Cv	Dimensions mm(in.)								
					L	H	HEX	A	A1	A2	H1	H2	H3
V81A-	D-6M-	6mm DK-Lok	5 (0.2)	1.25	79 (3.11)	27.6 (1.09)	17 (11/16)	59.5 (2.34)	30.5 (1.20)	41.8 (1.65)	23.5 (0.93)	33.8 (1.33)	35.6 (1.4)
	D-4T-	1/4 in.DK-Lok		1.25	79 (3.11)								
	F-4N-	1/4 in. Female NPT		1.35	41.9 (1.65)								
	MF-4N-	1/4 in. M/F NPT		1.35	52.4 (2.06)								
V81B-	D-10M-	10mmDK-Lok	7.5 (0.3)	2.6	91.7 (3.61)	36.5 (1.44)	20.64 (13/16)	81 (3.19)	42 (1.65)	44.5 (1.75)	30 (1.18)	38.3 (1.5)	39.5 (1.56)
	D-6T-	3/8 in.DK-Lok		2.5	91.3 (3.59)								
	F-6N-	3/8 in. Female NPT		2.6	47 (1.85)								
	MF-6N-	3/8 in. M/F NPT		2.6	53.5 (2.1)								
V81C-	D-12M-	12mmDK-Lok	9 (0.35)	9.25	99.2 (3.9)	39.7 (1.56)	27 (1-1/16)	81 (3.19)	46 (1.81)	46.5 (1.83)	35.7 (1.41)	43.5 (1.71)	44.7 (1.76)
	D-8T-	1/2 in.DK-Lok		9.25	101 (3.98)								
	F-8N-	1/2 in. Female NPT		9.25	56.15 (2.21)								
	MF-8N-	1/2 in.M/F-NPT		9.25	66.6 (2.62)								
	WF-15A8N-	1/2 in.Welding/F-NPT		9.25	95.0 (3.74)								
V81D-	D-16M-	16mmDK-Lok	12.5 (0.49)	10.6	107 (4.24)	44.85 (1.76)	32 (1-1/4)	102.5 (4.04)	49.5 (1.95)	56 (2.2)	38.1 (1.50)	47.2 (1.86)	-
	D-10T-	5/8 in.DK-Lok		10.6	108 (4.25)								
	F-12N-	3/4 in.Female NPT		12.65	63 (2.48)								
	D-12T-	3/4 in.DK-Lok		12.65	107 (4.22)								
	MF-12N-	3/4 in.M/F-NPT		12.65	75.9 (2.99)								
	WF-20A12N-	3/4 in.Welding/F-NPT		12.65	100 (3.93)								
V81E-	D-16T-	1 in.DK-Lok	16 (0.63)	17.35	133 (5.23)	49.75 (1.95)	38 (1-1/2)	102.5 (4.04)	68 (2.68)	70.1 (2.76)	45 (1.77)	53.7 (2.11)	-
	F-16N-	1 in. Female NPT		17.35	78.1 (3.07)								
	WF-25A16N-	1 in. Welding/F-NPT		17.35	115 (4.53)								
V81F-	F-20N-	1 1/4 in. Female NPT	21 (0.83)	-	89 (3.50)	65 (2.56)	50 (2)	141 (5.55)					
V81G-	F-24N-	1 1/2 in.Female NPT	24 (0.94)	-	95 (3.74)	68 (2.68)	55 (2-3/16)	148 (5.83)					
V81H-	F-32N-	2 in. Female NPT	32 (1.26)	-	110 (4.33)	80 (3.15)	69.8 (2-3/4)	154 (6.06)	-	-	-	-	-

Dimensions shown are for reference only, subject to change. Dimensions with DK-Lok nuts are in finger-tight position

How to Order

Select valve ordering number, applicable option(s) from designator tables listed below.

Examples

V81A-D-6M- **VT-** **TF-** **BF-** **BK** **S**

O-ring	Seat Material	Handle	Handle Color	Body material
Nil : FKM O-ring is standard for SS316 body. **Nil** : NBR O-ring is standard for Brass body. **VT** : FKM O-ring for Brass body **BN** : NBR O-ring for Stainless Steel **NOTE** : O-ring is required for DK-Lok end connection.	**Nil** : Standard PTFE seats for 68.9 bar (1000 psig) working pressure. **TF** : Optional TFM1600 for 137 bar (2000 psig) working pressure. **NOTE** : TFM1600 seat is not applicable to Brass valve.	**Nil** : Standard lever handle **BF** : Optional butterfly handle **DH** : Dielectric handle **LD** : Locking device lever handle **NOTE** : BF option is not applicable to the valve with TF seat	**BK** : Black **BL** : Blue **RD** : Red	**S** : SS316 **B** : Brass **M** : Monel **L20** : Alloy 20 **HC** : Hastelloy C276

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-Lok accepts no liability for any improper selection, installation, operation or maintenance.

The information shown in this catalog are not for design purpose, but for reference only.
The accuracy of information is not the liability of our company.

Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK

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IDK-LOK

V82 Series Ball Valves

Rev. 01-01
Aug. 2023

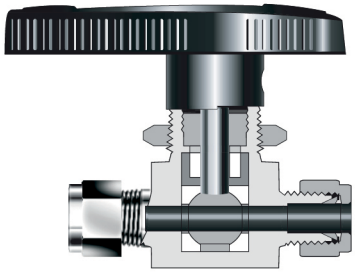
DK-LOK
Ball & Plug Valves

V82 Series Ball Valves

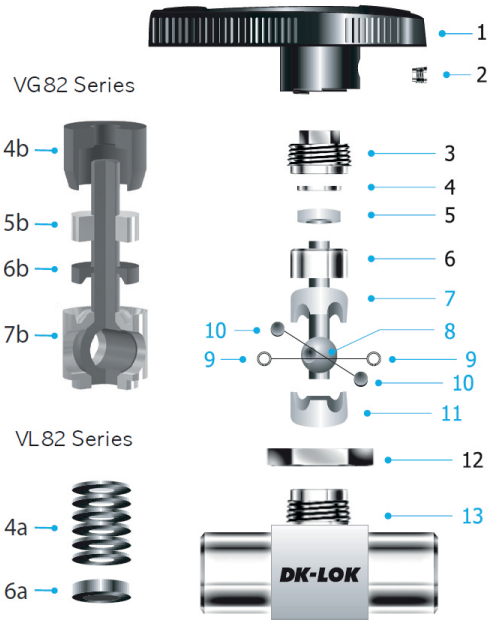
Pressure Rating up to 3,000psig

Features of V82 Series

V82 series Ball valves are classified into 3 types according to the temperature range in use. V82 series is for general use and VL82 is adequate to the low temperature range. VG82 can be used in the widen temperature range from low to high temperature. The exact temperature range of each type is referred to the technical data of the type.



- Sealing is achieved without system pressure
- Bi-directional flow
- Pressure up to 3000 psig (206 bar)
- Lowest dead space design
- Nylon Directional handle - indicates the flow through the valve.
- Panel mounting nut - is standard and permits valve to panel or actuator.
- Top-loaded packing - allows packing adjustment with the valve in-line.
- Capsule packing - fills voids in the valve body and prevents fluid entrapment.
  - allows lowest dead space.
- Support rings and discs - retains the capsule packing and prevent cold flow.
- Integral ball stem - machined from single piece bar stock.
  - eliminates the backlash during handle actuation.
- One-piece body - reduces the number of potential leak points.



Materials of Construction

Component	Valve Body Materials	
	Stainless steel	Brass
	Grade/ASTM Specification	
1. Handle	Nylon with brass insert	
2. Set Screw	stainless steel 304	
3. Packing bolt *	SS316/A276 or A479	Brass C3604
4. Upper Gland	SS316/A276 or A479	
4a. Packing Spring (VL82 series)	17-4PH/A693	
4b. Gland (VG82 series)	SS316/A276 or A479	
5. Bushing	PTFE/D1710 type 1, Grade 1, Class B	
5b. Packing (VG82 series)	PTFE/D1710 type 1, Grade 1, Class B	
6. Lower gland	SS316/A276	Brass C3604
6a. Packing Gland (VL82 series)	SS316/A276	
6b. Lower Gland (VG82 series)	SS316/A276	Brass C3604
7 & 11. Upper & Lower Packing	PTFE/D1710 type 1	
7b. Integrated Seat (VG82 series)	PFA	
8. Ball stem	SS316/A276	
9. Support rings	SS316 powered metal/B783 (fluorocarbon coating)	
10. Side discs		
12. Panel nut	SS316/A276	Brass C3604
13. Body	SS316/A276 or A479	

* Molybdenum disulfide with hydrocarbon coating.
• Note : 1. Wetted parts and lubricants are listed in blue.
2. Lubricant is Fluorinated-based. Lubricants are available for a specific application.

Operation & Packing Adjustment

- V82 valves are designed to control fluid in full open and closed position; using V82 valves to throttle the flow may reduce the valve life.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.
- Every valve working pressure is adjusted for factory test at 1,000 psig (68.9 bar) @ 21°C (70°F). For use in higher pressure or lower temperature range, the valve packing may be required for re-adjustment.
- Packing adjustment may be required during the valve in service.

Application

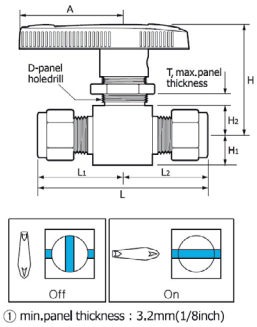
- Analytical market requiring a valve with lowest dead volume to prevent fluid entrapment which can cause contamination.
- Control Sampling Systems, and Process Instrumentation market requiring a valve with compact size, high flow capacity and directional indication of flow.

Factory Test and Packaging

- Every valve is factory tested with nitrogen gas at 1,000 psig (68.9 bar) for leakage at seat to a maximum allowable leak rate of 0.1 SCCM.The packing is tested with nitrogen gas for no detectable leakage.
- Every valve is cleaned and packaged in accordance with DK cleaning standard DC-01

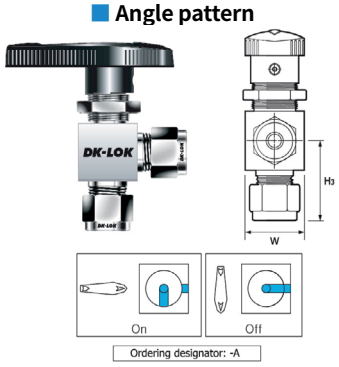
2-way On-off Valves

In-line pattern



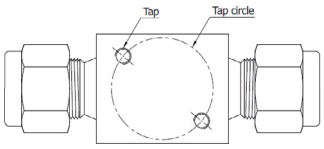
① min.panel thickness : 3.2mm(1/8inch)

Angle pattern



Ordering designator: -A

Botton mounting option (In-line Only)



Size	Tap	Tap Depth	Tap circle
V82C	M5x0.8P	5.0 mm (0.2 in.)	Ø28.7 mm (1.13 in.)
V82D			Ø38.1 mm (1.5 in.)

Ordering designator: -TM

Technical Data for V82 Series with Standard PTFE Seat

Valve series		Working Pressure		Temp. Range
In-line	Angle	psig	bar	
V82A, V82C, V82D	V82A-A, V82B-A	2500	172	10°C to 65°C 50°F to 150°F
V82B	-	3000	206	
-	V82C-A, V82D-A	1500	103	

Technical Data for VL82 Series with Standard PFA Seat

Valve Series		Working Pressure		Temp. Range
In-line	Angle	psig	bar	
VL82A, VL82C, VL82D	VL82A-A, VL82B-A	2500	172	-54°C to 65°C -65°F to 150°F
VL82B	-	3000	206	
-	VL82C-A, VL82D-A	1500	103	

Technical Data for VG82 Series with Integrated PFA Seat

Valve Series		Working Pressure		Temp. Range
In-line	Angle	psig	bar	
VG82A, VG82C, VG82D	VG82A-A, VG82B-A	2500	172	-54°C to 150°C -65°F to 302°F
VG82B	-	3000	206	
-	VG82C-A, VG82D-A	1500	103	

Ordering Information and Table of Dimensions

Basic Ordering Number		End Connections		Orifice		Cv		Dimensions mm(in.)										
		Inlet	Outlet	mm	in.	Inline	Angle	L	L1	L2	H3	H2	H1	A	T①	D	H	W
V82A-(VG82A)	D1T-	1/16" DK-Lok		1.3	0.052	0.1	-	42.7(1.68)	21.3(0.84)	21.3(0.84)	-	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	D2T-	1/8" DK-Lok		2.4	0.093	0.2	0.15	51.1(2.01)	25.7(1.01)	25.7(1.01)	24.6(0.97)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	D3M-	3mm DK-Lok		2.4	0.093	0.2	0.15	51.1(2.01)	25.7(1.01)	25.7(1.01)	24.6(0.97)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	D4T-	1/4" DK-Lok		3.2	0.125	0.6	0.35	56.1(2.21)	27.9(1.10)	27.9(1.10)	27.2(1.07)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	D6M-	6mm DK-Lok		3.2	0.125	0.6	0.35	56.1(2.21)	27.9(1.10)	27.9(1.10)	27.2(1.07)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	F2N-	1/8" Female NPT		3.2	0.125	0.5	0.3	41.1(1.62)	20.6(0.81)	20.6(0.81)	20.6(0.81)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
V82B (VG82B)	D4T-	1/4" DK-Lok		4.8	0.187	1.4	0.9	59.9(2.36)	30.0(1.18)	30.0(1.18)	29.7(1.17)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D6T-	3/8" DK-Lok		4.8	0.187	1.5	0.9	65.5(2.58)	32.8(1.29)	32.8(1.29)	32.8(1.29)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D6M-	6mm DK-Lok		4.8	0.187	1.4	0.9	60.7(2.39)	30.5(1.20)	30.5(1.20)	29.7(1.17)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D8M-	8mm DK-Lok		4.8	0.187	1.5	0.9	62.5(2.46)	31.2(1.23)	31.2(1.23)	30.5(1.20)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F2N-	1/8"Female NPT		4.8	0.187	1.2	0.7	50.8(2.00)	25.4(1.00)	25.4(1.00)	25.4(1.00)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F4N-	1/4"Female NPT		4.8	0.187	0.9	0.75	52.3(2.06)	26.2(1.03)	26.2(1.03)	26.2(1.03)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	M4N-	1/4"Male NPT		4.8	0.187	1.2	0.75	50.8(2.00)	25.4(1.00)	25.4(1.00)	26.2(1.03)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F4R-	1/4" ISO Female Tapered		4.8	0.187	0.9	-	52.3(2.06)	26.2(1.03)	26.2(1.03)	-	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
V82C	D6T-	3/8" DK-Lok		7.1	0.281	6.0	2.0	77.5(3.05)	38.6(1.52)	38.6(1.52)	38.2(1.5)	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
	D10M-	10mm DK-Lok		7.1	0.281	6.0	2.0	78.0(3.07)	38.9(1.53)	38.9(1.53)	39(1.53)	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
	F4N-	1/4"Female NPT		7.1	0.281	3.0	1.7	63.5(2.50)	31.8(1.25)	31.8(1.25)	31.8(1.25)	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
	F6N-	3/8"Female NPT		7.1	0.281	2.6	1.5	63.5(2.50)	31.8(1.25)	31.8(1.25)	31.8(1.25)	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
	F6R-	3/8" ISO Female Tapered		7.1	0.281	2.6	-	63.5(2.50)	31.8(1.25)	31.8(1.25)	-	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
V82D-	D8T-	1/2" DK-Lok		10.3	0.406	12.0	4.6	99.6(3.92)	49.8(1.96)	49.8(1.96)	49.8(1.96)	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	D12T-	3/4" DK-Lok		10.3	0.406	6.4	3.8	99.6(3.92)	49.8(1.96)	49.8(1.96)	49.5(1.94)	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	D12M-	12mm DK-Lok		9.5	0.375	12.0	4.6	99.6(3.92)	49.8(1.96)	49.8(1.96)	48.7(1.91)	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	F8N-	1/2"Female NPT		10.3	0.406	6.3	3.5	79.2(3.12)	39.6(1.56)	39.6(1.56)	39.6(1.56)	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	F8R-	1/2" ISO Female Tapered		10.3	0.406	6.3	-	79.2(3.12)	39.6(1.56)	39.6(1.56)	-	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)

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

Patterns: To order angle pattern, use -A as a suffix to the basic ordering number. Example: V82B-D-4T-A-S

Top mounting: To order Top mounting option, use -TM as a suffix to the basic ordering number. Example: V82C-D-6T-TM-S

3-way Switching Valves

Technical Data for V82 Series with Standard PTFE Seat

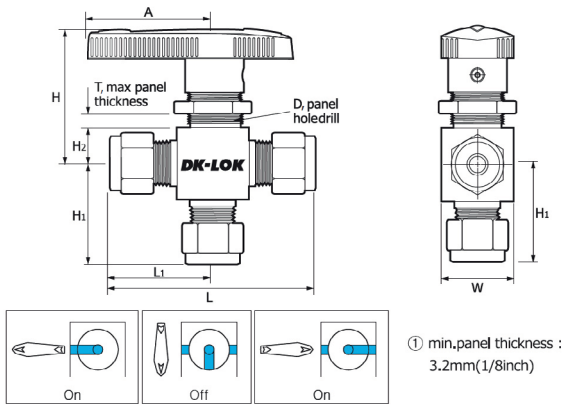
Valve series 3-way	Working Pressure		Temp. Range
	psig	bar	
V823A, V823B	2500	172	10°C to 65°C 50°F to 150°F
V823C, V823D	1500	103	

Technical Data for VL82 Series with Standard PFA Seat

Valve series 3-way	Working Pressure		Temp. Range
	psig	bar	
VL823A, VL823B	2500	172	-54°C to 65°C -65°F to 150°F
VL823C, VL823D	1500	103	

Technical Data for VG82 Series with Integrated PFA Seat

Valve series 3-way	Working Pressure		Temp. Range
	psig	bar	
VG823A, VG823B	2500	172	-54°C to 150°C -65°F to 302°F
VG823C, VG823D	1500	103	



① min.panel thickness : 3.2mm(1/8inch)

Ordering Information and Table of Dimensions

Basic Ordering Number		End Connections		Orifice		Cv	Dimensions mm(in.)								
		Inlet	Outlet	mm	in.		L	L1	H1	H2	A	T①	D	H	W
V823A-(VG823A)	D1T-	1/16" DK-Lok		1.3	0.052	0.1	42.7(1.68)	21.3(0.84)	20.6(0.81)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	D2T-	1/8" DK-Lok		2.4	0.093	0.2	51.1(2.01)	25.7(1.01)	24.6(0.97)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	D3M-	3mm DK-Lok		2.4	0.093	0.2	56.1(2.21)	27.9(1.10)	27.2(1.07)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	D4T-	1/4" DK-Lok		3.2	0.125	0.6	51.1(2.01)	25.7(1.01)	24.6(0.97)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	D6M-	6mm DK-Lok		3.2	0.125	0.6	56.1(2.21)	27.9(1.10)	27.2(1.07)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	F2N-	1/8" Female NPT		3.2	0.125	0.5	41.4(1.63)	20.6(0.81)	20.6(0.81)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
V823B-(VG823B)	D4T-	1/4" DK-Lok		4.8	0.187	1.4	60.7(2.39)	30.5(1.20)	29.7(1.17)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D6M-	6mm DK-Lok		4.8	0.187	1.4	60.7(2.39)	30.5(1.20)	29.7(1.17)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D8M-	8mm DK-Lok		4.8	0.187	1.5	62.5(2.46)	31.2(1.23)	30.5(1.20)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F4N-	1/4" Female NPT		4.8	0.187	0.9	52.3(2.06)	26.2(1.03)	26.2(1.03)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F4R-	1/4" ISO Female Tapered		4.8	0.187	0.9	52.3(2.06)	26.2(1.03)	26.2(1.03)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
V823C	D6T-	3/8" DK-Lok		7.1	0.281	6.0	73.4(2.89)	36.8(1.45)	36.3(1.43)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
	D10M-	10mm DK-Lok		7.1	0.281	6.0	78(3.07)	39(1.53)	39(1.53)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
	F4N-	1/4" Female NPT		7.1	0.281	3.0	63.5(2.50)	31.8(1.25)	31.8(1.25)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
	F6N-	3/8" Female NPT		7.1	0.281	2.6	63.5(2.50)	31.8(1.25)	31.8(1.25)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
	F6R-	3/8" ISO Female Tapered		7.1	0.281	2.6	63.5(2.50)	31.8(1.25)	31.8(1.25)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
V823D	D8T-	1/2" DK-Lok		10.3	0.406	12.0	88.4(3.48)	44.2(1.74)	44.2(1.74)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	D12T-	3/4" DK-Lok		10.3	0.406	6.4	88.4(3.48)	44.2(1.74)	44.2(1.74)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	D12M-	12mm DK-Lok		9.5	0.375	12.0	86.5(3.40)	43.2(1.70)	43.2(1.70)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	F8N-	1/2" Female NPT		10.3	0.406	6.3	79.5(3.13)	39.6(1.56)	39.6(1.56)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	F8R-	1/2" ISO Female Tapered		10.3	0.406	6.3	79.5(3.13)	39.6(1.56)	39.6(1.56)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)

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

Flow Data

2-way

Cv	Water US GPM (L/min.) @21°C (70°F) Pressure Drop to Atmosphere (Δp) psi (bar)			Air SCFM (NL/min.) @21°C (70°F) Pressure Drop to Atmosphere (Δp) psi (bar)		
	10(0.7)	50 (3.5)	100 (7.0)	10 (0.7)	50 (3.5)	100 (7.0)
0.1	0.3(1.1)	0.7 (2.6)	1.0 (3.8)	1.1 (31)	3.0 (85)	5.3 (150)
0.2	0.6(2.3)	1.4 (5.3)	2.0 (7.6)	2.3 (76)	6.0 (215)	11.0 (396)
0.5	1.6 (5.7)	3.5 (13.2)	5.0 (18.9)	5.6 (195)	15.0 (538)	27.0 (963)
0.6	1.9 (7.2)	4.2 (15.9)	6.0 (22.7)	6.8 (235)	18.0 (651)	32.0 (1161)
0.9	2.8 (10.6)	6.4 (23.8)	9.0 (34.0)	10.0 (340)	27.0 (963)	48.0 (1720)
1.2	3.8 (14.0)	8.5 (31.8)	12.0 (45.4)	14.0 (481)	36.0 (1303)	64.0 (2294)
1.5	4.7 (17.8)	11.0 (41.6)	15.0 (56.8)	17.0 (595)	45.0 (1614)	80.0 (2832)
2.4	7.6 (28.4)	17.0 (64.3)	24.0 (90.8)	27.0 (935)	72.0 (2606)	120.0 (4531)
2.6	8.2 (31.0)	18.0 (68.1)	26.0 (98.4)	29.0 (1020)	78.0 (2804)	140.0 (5098)
3.0	9.5 (35.6)	21.2 (79.5)	30.0 (113.6)	34.0 (1189)	90.0 (3115)	160.0 (5664)
6.0	19.0 (71.9)	42.0 (159.0)	60.0 (227.1)	68.0 (2351)	180.0 (6514)	320.0 (11611)
6.3	19.9 (75.5)	44.5 (170.3)	63.0 (237.0)	71.0 (2464)	190.0 (6797)	340.0 (12178)
6.4	20.2 (75.7)	45.3 (170.3)	64.0 (242.2)	72.0 (2520)	190.0 (6797)	340.0 (12178)
12.0	37.9 (143.8)	84.9 (321.7)	120.0 (454.2)	130.0 (4814)	360.0 (13027)	640.0 (22939)

2-way angle pattern and 3-way

Cv	Water US GPM (L/min.) @21°C (70°F) Pressure Drop to Atmosphere (Δp) psi (bar)			Air SCFM (NL/min.) @21°C (70°F) Pressure Drop to Atmosphere (Δp) psi (bar)		
	10(0.7)	50 (3.5)	100 (7.0)	10 (0.7)	50 (3.5)	100 (7.0)
0.08	0.3 (1.1)	0.6 (2.3)	0.8 (3.0)	0.9 (26)	2.4 (68)	4.3 (122)
0.15	0.4 (1.5)	1.0 (3.8)	1.5 (5.7)	1.7 (57)	4.5 (161)	8.0 (286)
0.30	0.9 (3.4)	2.1 (7.9)	3.0 (11.4)	3.4 (116)	9.0 (312)	16.0 (566)
0.35	1.1 (4.2)	2.4 (9.1)	3.5 (13.2)	4.0 (136)	10.0 (368)	19.0 (680)
0.75	2.3 (8.7)	5.3 (20.1)	7.5 (28.4)	8.5 (283)	22.0 (821)	40.0 (1444)
0.80	2.5 (9.5)	5.6 (21.2)	8.0 (30.3)	9.0 (312)	24.0 (878)	42.0 (1529)
0.90	2.8 (10.6)	6.3 (23.8)	9.0 (34.1)	10.0 (340)	27.0 (963)	48.0 (1728)
1.5	4.7 (17.8)	11.0 (41.6)	15.0 (56.8)	17.0 (595)	45.0 (1614)	80.0 (2832)
1.7	5.3 (20.1)	12.0 (45.4)	17.0 (64.3)	19.0 (680)	51.0 (1841)	90.0 (3115)
2.0	6.3 (23.8)	14.0 (53.0)	20.0 (75.7)	22.0 (793)	60.0 (2181)	100.0 (3965)
3.5	11.0 (41.6)	25.0 (94.6)	35.0 (132.5)	39.0 (1359)	100.0 (3682)	180.0 (6797)
3.8	12.0 (45.4)	27.0 (102.2)	38.0 (143.8)	43.0 (1501)	110.0 (3965)	200.0 (7363)
4.6	15.0 (56.8)	33.0 (124.9)	46.0 (174.1)	52.0 (1812)	140.0 (5098)	240.0 (8779)

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

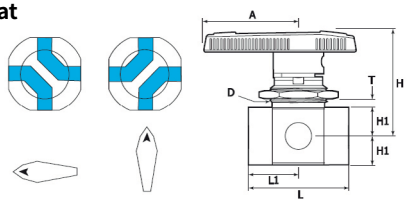
V824 Crossover 4-way Ball Valves

Features

- Crossover of two streams
- Mechanical stop ensures positive port positioning

Technical Data with standard PTFE, PFA and integrated PFA seat

Valve series	Pressure Rating psig	Pressure Rating bar	SEAT material	Temperature Range
V824A	2500	172	PTFE	10°C to 65°C 50°F to 150°F
V824B	1500	103		
VL824A	2500	172	PFA	-54°C to 65°C -65°F to 150 °F
VL824B	1500	103		
VG824A	2500	172	Integrated PFA	-54°C to 150°C -65°F to 302°F
VG824B	1500	103		



Ordering Information and Table of Dimensions

Ordering Number		End Connection	Cv	Orifice mm	Orifice in.	Dimensions, mm(in.) L	L1	H1	A	T*	D	H
V(L, G)824A-	F2N-S	1/8 in. Female NPT	0.08	1.6	0.062	39.4 (1.55)	19.8 (0.78)	11.2 (0.44)	38.9 (1.53)	4.8 (3/16)	23.1 (29/32)	42.7 (1.68)
V(L, G)824B-	F8N-S	1/2 in. Female NPT	1.6	7.1	0.281	79.5 (3.13)	39.6 (1.56)	17.5 (0.69)	76.2 (3.00)	9.7 (3/8)	38.1 (1 1/2)	61.7 (2.43)

T* indicates maximum panel thickness D : Panel Hole

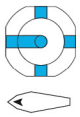
V825 Switching 5-way Ball Valves

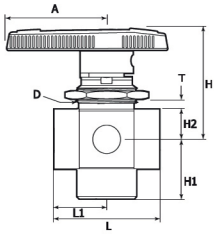
Features

- Flow switches from a single port to multiple ports or from multiple ports to a single port.
- Spring-loaded detent ensures exact port positioning.

Technical Data with standard PTFE, PFA and integrated PFA seat

Valve series	Pressure Rating psig	Pressure Rating bar	SEAT material	Temperature Range
V825A	2500	172	PTFE	10°C to 65°C 50°F to 150°F
V825B	1500	103		
VL825A	2500	172	PFA	-54°C to 65°C -65°F to 150 °F
VL825B	1500	103		
VG825A	2500	172	Integrated PFA	-54°C to 150°C -65°F to 302°F
VG825B	1500	103		





Ordering Information and Table of Dimensions

Ordering Number		End Connection	Cv	Orifice mm	Orifice in.	Dimensions, mm(in.) L	L1	H1	H2	A	T*	D	H
V(L, G)825A-	F2N-S	1/8 in. Female NPT	0.07	1.6	0.062	39.4 (1.94)	19.8 (0.78)	22.4 (0.88)	38.9 (1.53)	38.9 (1.53)	4.1 (5/32)	23.1 (29/32)	42.9 (1.69)
	F2G-S	1/8 in. ISO Parallel Threads											
V(L, G)825B-	F8N-S	1/2 in. Female NPT	3.5	10.3	0.406	79.5 (3.13)	39.6 (1.56)	17.5 (0.69)	76.2 (3.00)	76.2 (3.00)	9.7 (3/8)	38.1 (1 1/2)	61.7 (2.43)

T* indicates the maximum panel thickness. 3.2 mm (1/8 in.) minimum panel thickness. D : Panel Hole

Handle Options

Aluminum Bar
Add-AH to the valve ordering number.
Example:V824A-F-2N-AH-S

Stainless Bar
Add-BH to the valve ordering number.
Example:V824A-F-2N-BH-S

How to Order

Select applicable valve pattern, options and body material from designators listed below.

V824A-F2N -AH -B
V82B-D4T -A -NL -S
VG82A-D2T

2-way	Botton mounting	Valve with no lubricant	Bar handle	Body material
A : 2-way angle pattern	**TM** : Botton mounting **Note** : Botton mounting option is applicable only to the in-line pattern 2-way valves.	**NL** : No lubricant Valve **Note** : Valve with no lubricant is factory tested at 200 psig (13 bar). This valve pressure rating is 200 psig (13 bar).	**Nil** : Standard Nylon handle **AH** : Aluminum bar handle **BH** : Stainless bar handle	**S** : SS316 **B** : Brass

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-Lok accepts no liability for any improper selection, installation, operation or maintenance.

The information shown in this catalog are not for design purpose, but for reference only.
The accuracy of information is not the liability of our company.

Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK

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IDK-LOK

V83 Series
Swing-Out Ball Valves

Rev. 01-01
Aug. 2023

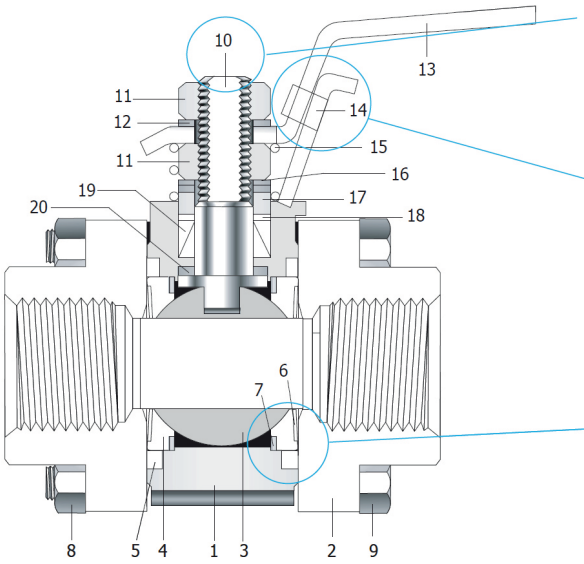
V83 Series Swing-Out Ball Valves

Rev.01-01
Aug.2023

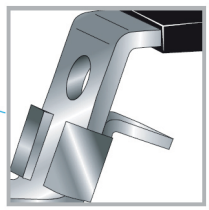
Pressure Rating up to 3,000 psig (206 bar)

Features

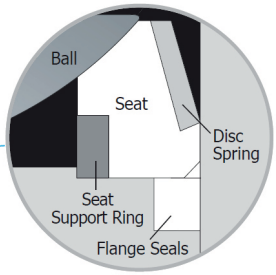
- Pressure and temperature compensation seat design.
- Swing-out design for fast and easy maintenance with the valve in-line.
- Chevron packing design.
- 2-way (on-off) valves with quarter-turn actuation.



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 sealing at upstream and downstream.

Table 1. **Material of Construction**

Component	Valve Body Materials	
	Stainless steel	Carbon Steel
	Grade/ASTM Specification	
1. Body	CF3M / A351	WCB / A216
2. Flanges (2)	CF3M / A351	WCB / A216
3. Ball	Type 316 / A276	
4. Seats (2)	See Table 2.	
5. Flange Seals (2)	PTFE	
6. Disc Spring (2)	Strain Hardened SS316	
7. Seat support rings (2)	Type 316 / A276	
8. Body fasteners (4)	SS316 Gr.B8M/ 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	
	V83B			
	V83C			
Carbon PTFE	V83A	172 bar (2500 psig)	7 bar @ 232°C 100 psig @450°F	
	V83B			
	V83C			
PEEK	V83A	206 bar (3000 psig)	55 bar @ 232°C 800 psig @ 450°F	PTFE based
	V83B	172 bar (2500 psig)		
	V83C			
UHMWPE	V83A	206 bar (3000 psig)	17 bar @ 121°C 250 psig @ 250°F	Hydrocarbon based and PTFE based
	V83B	172 bar (2500 psig)		
	V83C			

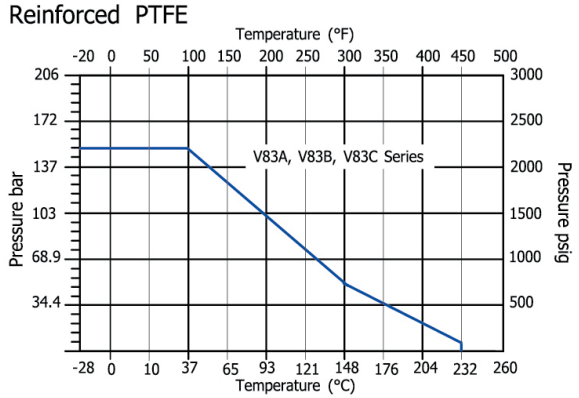
Factory Test

Every valve is tested with nitrogen @ 68.9 bar (1,000 psig) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM. Shell test with nitrogen @ 68.9 bar (1,000 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.

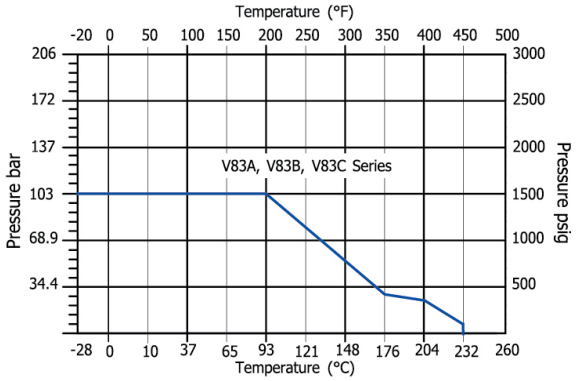
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

PRESSURE-TEMPEATURE GRAPH

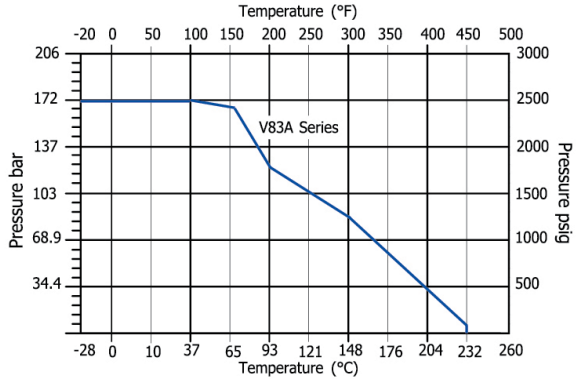
Reinforced PTFE



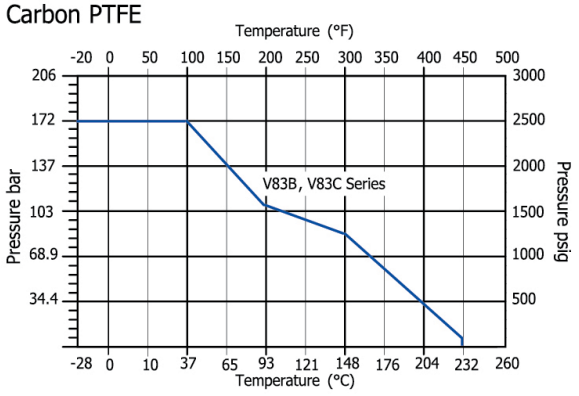
PTFE



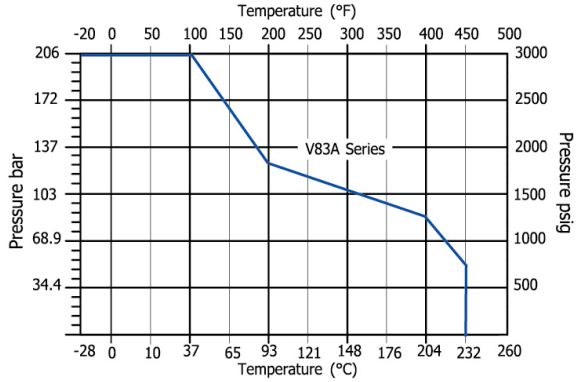
Carbon PTFE



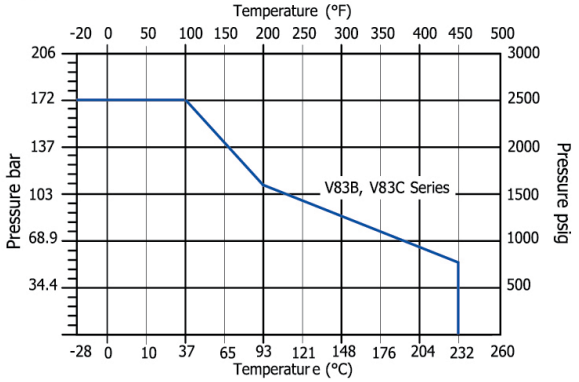
Carbon PTFE



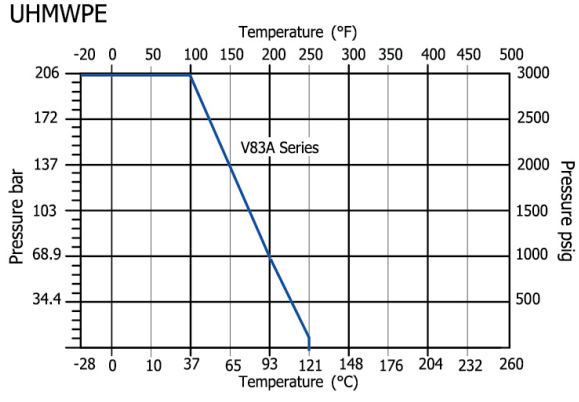
PEEK



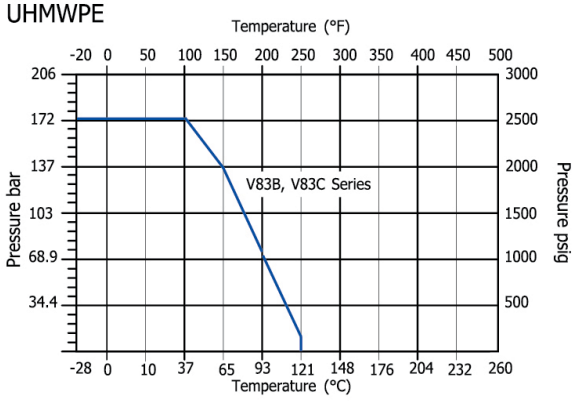
PEEK



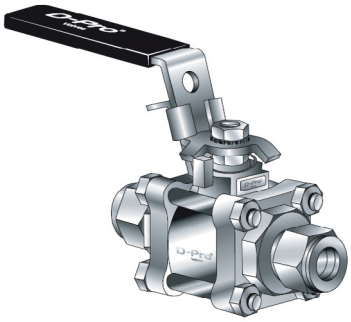
UHMWPE

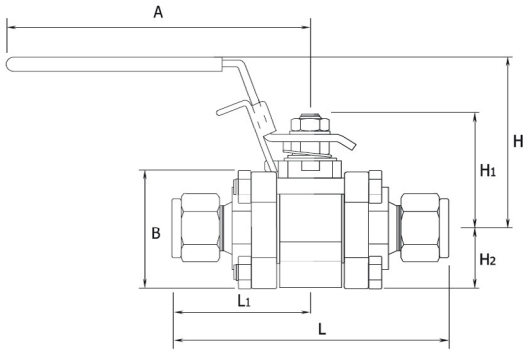


UHMWPE



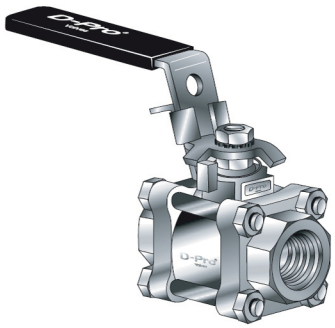
DK-Lok Tube Fitting End Connections

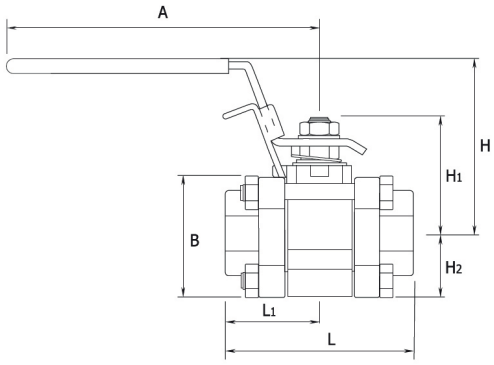




Basic Ordering number	End Connection	Orifice		Cv	Dimension mm(in.)						
		mm	in.		L	L1	H	H1	H2	A	B
Fractional DK-Lok											
V83A-D4T-	1/4 in.	4.8	0.188	1.2	80.8 (3.18)	40.40 (1.59)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-D6T-	3/8 in.	7.1	0.281	3.8							
V83B-D8T-	1/2 in.	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)
V83B-D12T-	3/4 in.	13.1	0.516	13.6							
V83C-D16T-	1 in.	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)
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

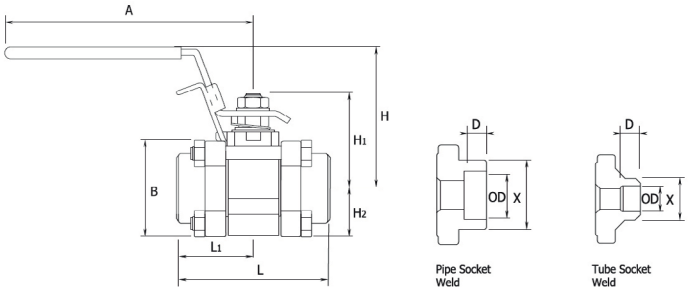




Basic Ordering number	End Connection	Orifice		Cv	Dimension mm(in.)						
		mm	in.		L	L1	H	H1	H2	A	B
Female NPT Ends											
V83A-F2N-	1/8 in.	7.1	0.281	3.8	55.4 (2.18)	27.70 (1.09)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-F4N-	1/4 in.										
V83B-F6N-	3/8 in.	13.1	0.516	12.0	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-F8N-	1/2 in.										
V83C-F12N-	3/4 in.	22.2	0.875	31.0	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-F16N-	1 in.			38.0							
Female ISO Tapered Ends											
V83A-F4R-	1/4 in.	7.1	0.281	3.8	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)
V83B-F8R-	1/2 in.	13.1	0.516	12.0	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-F12R-	3/4 in.	22.2	0.875	31.0	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-F16R-	1 in.			38.0	114.3 (4.50)	57.15 (2.25)					

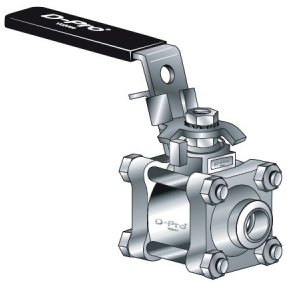
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

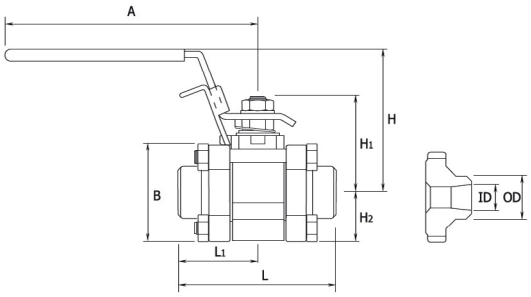
Tube and Pipe Socket Weld End Connections



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)	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-SW12T-	3/4 in.	13.1	0.516	13.6	19.20 (0.76)	26.70 (1.05)	11.2 (0.44)							
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

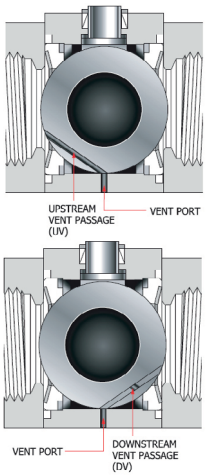




Basic Ordering number	End Connection	Orifice		Cv	Dimension mm(in.)								
		mm	in.		OD	ID	L	L1	H	H1	H2	A	B
Schedule 10													
V83A-W4P10-	1/4 in.	7.1	0.271	1.2	13.70 (0.54)	10.40 (0.41)	52.4 (2.06)	26.20 (1.03)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83B-W8P10-	1/2 in.	13.1	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.	7.1	0.271	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.	7.1	0.271	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)

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

External Vent Options



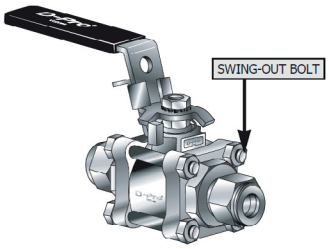
The vent passage is isolated from the ball bore. The valve in closed position, system fluids vent through vent passage to the vent port.
The valve in open position, no venting occurs, system fluids flow through the valve.
Choose either the Downstream Vent (DV) or Upstream Vent (UP) option.

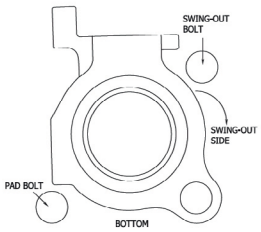
External Vented Valve Rating

Upstream and downstream

Seat Material	Valve Series	Pressure, bar (psi)	Pressure @ Max. Temp.
Reinforced PTFE Virgin PTFE Carbon PTFE	V83A	68.9 (1000) @ -28 to 37°C (-20 to 100°F)	7 bar @ 232°C (100 psig @ 450°F)
	V83B		
	V83C		
PEEK	V83A		7 bar @ 232°C (100 psig @ 450°F)
	V83B		55 bar @ 232°C (800 psig @ 450°F)
	V83C		
UHMWPE	V83A		17 bar @ 121°C (250 psig @ 250°F)
	V83B		
	V83C		

Maintenance Kits





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- V83B- V83C-	**Nil** :Reinforced PTFE **VP** : Virgin PTFE **CP** : Carbon PTFE **PK** : PEEK **UH** : UHMWPE	**Nil** : Reinforced PTFE

To order, add - SEAT as a suffix to the ordering number. i.e., V83B-PK-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- V83B- V83C-	**Nil** :Reinforced PTFE	**PK** : PEEK 7 : X750

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- V83B- V83C-	**Nil** :Reinforced PTFE

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

Fastener Kits

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

Valve Series	Flange Seal Designator
V83A- V83B- V83C-	Gr. B8M

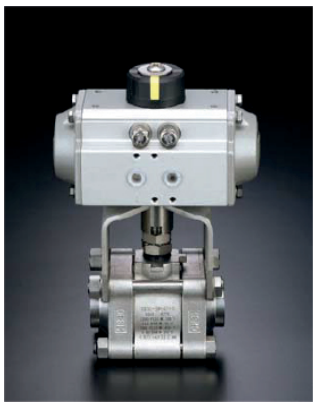
To order, add - BOLT as a suffix to the ordering number.
i.e., V83A-BOLT

- **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 responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

P series Rack and Pinion Pneumatic Actuator



Model shown:

V83A single
V83A double
V83B double

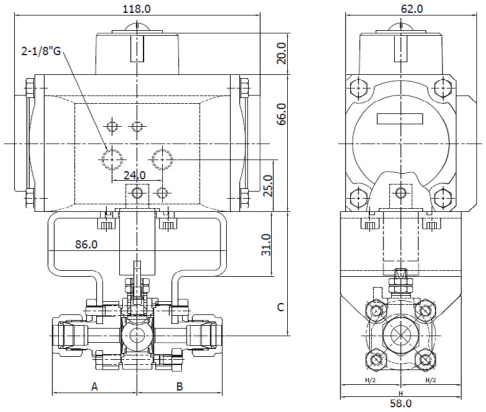
A,B dimension

V83A: 40.71
V83B: 52.24

C dimension

V83A: 61.45
V83B: 65.62

Unit: mm



Actuator Material of Construction

Parts	Standard Matetial
Body	Extruded Aluminum Alloy with external & internal corrosion protection.
Piston (Rack)	Die Cast Aluminum Alloy Anodized.
Drive Shaft (Pinion)	Steel Alloy Nickel Plated.
Spring	Spring Alloy Steel Nickel Plated. (min. 5, max. 12 spring)
End Cap	Die Cast Aluminum Alloy Polyester Coated.
O-Ring	NBR is standard. Optional FKM and Silicon.

Table 1. **Technical Information**

Actuator operating temperature (°C)

- Standard : NBR O-Ring -40 to 80.
- Low Temperature : Silicon O-Ring -55 to 80 (Designator : **LT**).
- High Temperature : FKM O-Ring -15 to 150 (Designator : **HT**).
- Air-pressure : Min. 2.5 bar, Max. 8 bar.
- Air supply end connection: Female G 1/8 inch (ISO 228-1).
- Position indicator is standard.

Table 2. **Single Return 90 Deg. Actuator**

Valve series	Ordering Number		Dimensions	Weight	Moment Values P=6 bar	Air Consumption	Mounting Bracket Ordering Number	Actuator Operating Temperature Options
	Normal Close	Normal Open	L x H x W unit: mm	Kg	Nm	Liter		
V83A	PCS1	POS1	118x86x62	0.9	3.5	0.10	V83A-SMB	Nil : Standard Temp. LT : Low Temp. HT : High Temp.
V83B	PCS3	POS3	140.5x89x70.5	1.13	7.4	0.15	V83B-SMB	
V83C	PCS4	POS4	210.5x122x94.5	3.09	17.7	0.49	V83C-SMB	

Table 3. **Double Return 90 Deg. Actuator**

Valve series	Ordering Number	Weight Unit: Kg	L x H x W unit: mm	Moment Values P=6 bar	Air Consumption	Mounting Bracket Ordering Number	Mounting Bracket Ordering Number
				Nm	Liter		
V83A	PD1	0.75	118x86x62	14.4	0.10	V83A-DMB	Nil : Standard Temp. LT : Low Temp. HT : High Temp.
V83B	PD1	0.75	118x86x62	14.4	0.10	V83B-DMB	
V83C	PD2	1.03	140.5x89x70.5	19.9	0.15	V83C-DMB	

Mount bracket : Field assembly kit includes mount bracket, valve to actuator connector, special size of valve body fasteners, fastener washers, bracket bolts and assembly manual.

How to Order

Select applicable valve pattern, seat options, pneumatic actuator, and the actuator temperature option from designator listed below.

V83A-D4T	**-PK**					**-PCS1**	**-HT**	**-S**
V83C-D25M		**- 7**				**-PD2**		**-S**
Seat Material	Stem Bearing	Flange Seals	External Vent	Handle	Factory Assembled Actuator	Actuator Temperature Options	Body & Flange Material	
Nil : Reinforced PTFE **VP** : Virgin PTFE **CP** : Carbon PTFE **PK** : PEEK **UH** : UHMWPE	**Nil** : PEEK **7** : X750	**Nil** : Standard PTFE	**UV** : External Upstream **DV** : External Downstream	**Nil** : Lever Handle **OH** : Oval Handle	• Single return, see Table 2. • Double return, see Table 3.	**Nil** : Standard Temp. **LT** : Low Temp. **HT** : High Temp.	**S** : A351 CF8M **L** : A351 CF3M **C** : A216 Gr. WCB	

The information shown in this catalog are not for design purpose, but for reference only.
The accuracy of information is not the liability of our company.

Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK

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V86-VC86 Series Valves

Rev. 01-01
Aug. 2023

DK-LOK
Ball & Plug Valves

V86 Series Ball Valves
VC86 Series CNG/NGV Valves

Pressure Rating up to 689 bar (10,000psig)

Features

- High pressure up to 10,000 psi (689 bar).
- Blowout proof design with internally loaded stem.
- Handle indicates the flow direction.
- Positive stop with a robust stop pin.
- High flow rate with maximum orifice.
- Various end ports including DK-Lok tube port.
- Various flow control with side and bottom inlet port on 3-way diverter valves.

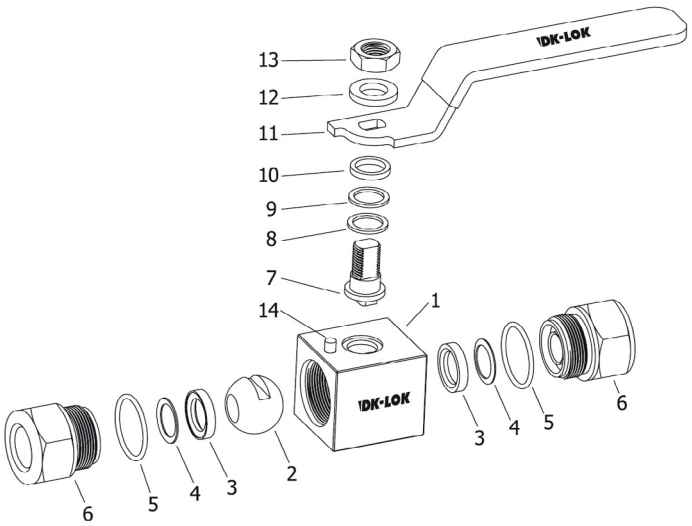


Table 1. **Materials of Construction**

	Component	Materials Grade/ASTM Specification
1	Body	SS316/A276 or A479
2	Ball	
3	Seat (2)	PVDF, standard for V86 Series Optional PCTFE PEEK, standard for VC86 Series
4	Disc Spring (2)	Type 630/A564, applicable to VC86 Series
5	End Seal (2)	FKM Oring for V86 Series HNBR O-ring for VC86 Series
6	End Connector (2)	SS316/A276 or A479
7	Stem	
8	Bearing	PTFE
9	Packing	
10	Gland	SS316/ ASTM A276 or ASTM A479
11	Lever Handle	SS304 handle with vinyl sleeve
	Optional Oval Handle	
12	Washer	SS304
13	Stem Nut	SS304
14	Stop Pin	SS304

- Wetted parts and lubricants listed in blue.
- Fluorinated-based lubricant

CNG/NGV Certifications

VC86 Series with PEEK seat and HNBR O-rings are available with CNG/NGV certifications.
The sealing material of seat and O-rings are selected for compatible with CNG.
VC86 Series with the live loaded compensation disc spring reacts on ball movement in both low and high pressure systems in CNG and NGV applications.

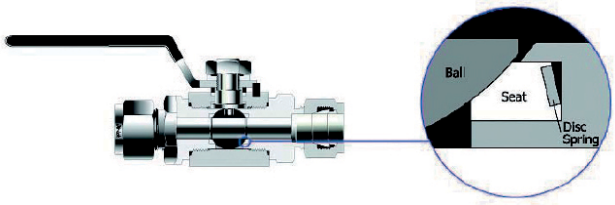


Table 2. Pressure - Temperature Rating for CNG Service

Valve Series	Certificates	ECE R110	ANSI / AGA NGV 3.1-1995 CGV NGV 12.3-M95	ANSI / IAS NGV 4.6-1999 CSA 12.56-M99	ISO 15500
VC86 Series 2-way ball valves	Certificate No.	110R-000181	2010-REPORT-002 (00)	2010-REPORT-003 (00)	2010-REPORT-001- (00)
	Classification	Class 6	manual valve	manual valve (Class B)	manual valve
	Temperature	-40 to 120 °C (-40 to 250 °F)	-40 to 121 °C (-40 to 250 °F)	-40 to 65 °C (-40 to 150 °F)	-40 to 121 °C (-40 to 250 °F)
	Working Pressure	274 bar @ 120 °C	273 bar @ 121 °C	293 bar @ 65 °C	273 bar @ 121 °C

Operation

- 2-way positive shut off and 3-way directional control of fluids in process, power and instrument application.
- Valves are designed to control fluids in full open or full closed position.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.
- Valves must be in open position during system test not to damage the valve seat.
- Sour Gas Service NACE MR0175 available.

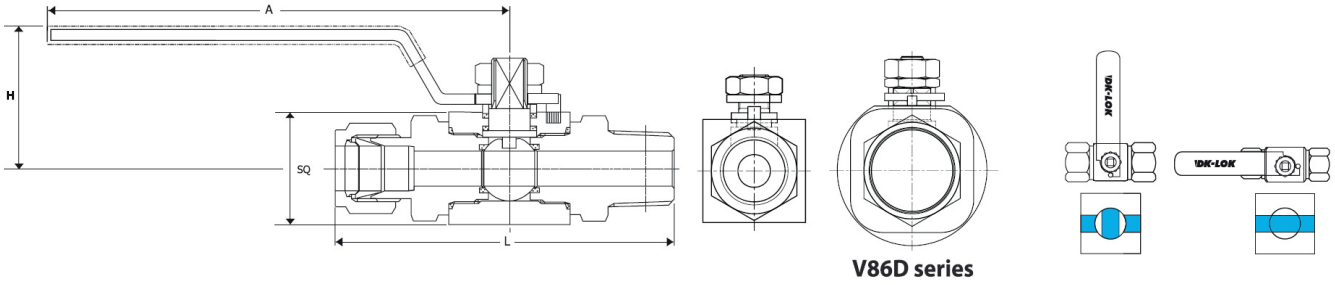
Factory Test

Every valve is tested with nitrogen gas @1,000 psig (68 bar) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM. The stem packing is tested with nitrogen gas @1,000 psig for no detectable leakage.

Cleaning and Packaging

Every valve is cleaned and packaged in accordance with DK-Lok cleaning standard DC-01. Special cleaning and packaging in accordance with DK-Lok DC-11 ensures compliance with product cleaning of ASTM G93 Level C is available for valves with PCTFE seat.

2-Way On-off Valves



Ordering Information and Dimensions

Basic Ordering Number		End Connections Inlet & Outlet	Orifice mm (in.)	Cv	Dimensions mm(in.) A	H	L	SQ
V86A- VC86A-	D-4T	1/4 in.DK-Lok	4.8 (0.19)	1.2	108.3 (4.26)	38.4 (1.52)	97.12 (3.82)	32.0 (1.26)
	D-6T	3/8 in.DK-Lok	7.1 (0.28)	3.7			104.5 (4.11)	
	D-8T	1/2 in.DK-Lok	10.0 (0.39)	7.5			109.6 (4.31)	
	F-4N	1/4 in.Female NPT					74.0 (2.91)	
	F-6N	3/8 in.Female NPT					77.0 (3.03)	
	F-8N	1/2 in.Female NPT					85.0 (3.35)	
	M-4N	1/4 in.Male NPT	7.1 (0.28)	3.7			95.4 (3.76)	
	M-6N	3/8 in. Male NPT	10.0 (0.39)	7.2			95.4 (3.76)	
	M-8N	1/2 in.Male NPT		7.5			100.2 (3.94)	
V86B- VC86B-	F-8N	1/2 in.Female NPT	12.7 (0.50)	10.1	149.0 (5.86)	50.8 (2.00)	89.0 (3.50)	40.0 (1.57)
	F-12N	3/4 in.Female NPT					90.0 (3.54)	
	D-12M	12mmDK-Lok	10.0 (0.39)				112.6 (4.43)	
	D-16M	16mmDK-Lok	12.7 (0.50)				115.0 (4.53)	
	D-8T	1/2 in.DK-Lok	10.4 (0.41)				114.6 (4.51)	
	D-10T	5/8 in.DK-Lok	12.7 (0.50)				114.4 (4.50)	
	D-12T	3/4 in.DK-Lok					114.8 (4.52)	
V86C- VC86C-	F-12N	3/4 in.Female NPT	19.0 (0.75)	30.0	149.0 (5.86)	56.0 (2.20)	96.0 (3.78)	50.0 (1.97)
	F-16N	1 in.Female NPT					111.0 (4.37)	
	D-12T	3/4 in.DK-Lok	15.7 (0.62)	19.0			125.0 (4.92)	
	D-16T	1 in.DK-Lok	19.0 (0.75)	30.0			134.0 (5.27)	
	M-12N	3/4 in.Male NPT	15.7 (0.62)	19.0			119.0 (4.68)	
	M-16N	1 in.Male NPT	19.0 (0.75)	30.0			129.0 (5.07)	
VC86D-	F -16N	1 in.Female NPT	25.0 (0.98)	Full Bore	193.7 (7.62)	84.1 (3.31)	112.90 (4.44)	70 (2.76)

CNG valve ordering number :
The basic ordering number listed in black are not for CNG/NGV applicable valves.

Table 3. **2-Way Valve Actuation Torque**

Standard Valves

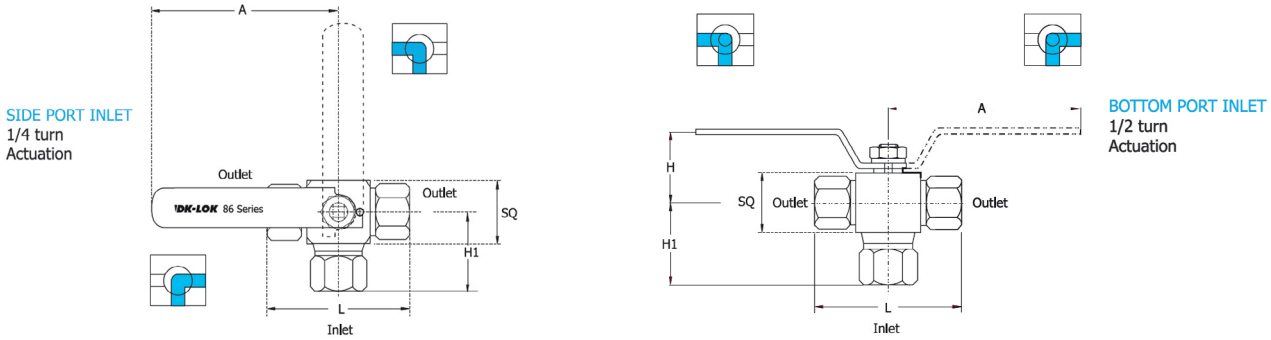
Valve Series	System Pressures, bar (psig) 0 (0)	334 (5000)	413 (6000)
	Torque	Unit: Nm	
V86A	3.92 (2.89)	-	6.37 (4.69)
V86B	7.35 (5.42)	10.30 (7.59)	-
V86C	12.26 (9.04)	19.61 (14.46)	-

CNG/NGV Valves

Valve Series	System Pressures, bar (psig) 0 (0)	344 (5000)
	Torque	Unit: Nm
VC86B	5.19	10.59
VC86C	2.15	5.88
VC86D	7.35	9.80

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

3-Way Diverter Valves



V86 3-way ball valve is designed to switch media through the inlet port and direct it to out of two outlet ports.

Ordering Information and Dimensions

Basic Ordering Number		End Connections	Orifice	Dimensions mm(in.)				SQ
			mm (in.)	A	H	H1	L	
V86A-	3*- D-4T-	1/4 in. DK-Lok	4.8 (0.19)	108.3 (4.26)	38.4 (1.52)	50.9 (2.0)	97.12 (3.82)	32.0 (1.26)
	3*- D-6T-	3/8 in. DK-Lok	7.1 (0.28)			53.0 (2.09)	104.5 (4.11)	
	3*- D-8T-	1/2 in. DK-Lok	10.0 (0.39)			55.8 (2.20)	109.6 (4.31)	
	3*- F-4N -	1/4 in. Female NPT				40.0 (1.57)	74.0 (2.91)	
	3*- F-6N-	3/8 in. Female NPT				41.5 (1.64)	77.0 (3.03)	
	3*- F-8N-	1/2 in. Female NPT				45.5 (1.79)	85.0 (3.35)	
V86B-	3*- F-8N-	1/2 in. Female NPT	12.7 (0.50)	149.0 (5.86)	50.8 (2.00)	55.0 (2.17)	89.0 (3.50)	40.0 (1.57)
	3*- F-12N-	3/4 in. Female NPT				55.0 (2.17)	90.0 (3.54)	
	3*- D-10T-	5/8 in. DK-Lok				67.2 (2.66)	114.4 (4.50)	
	3*- D-12T-	3/4 in. DK-Lok				67.7 (2.66)	115.0 (4.53)	
V86C-	3*- D-12T-	3/4 in. DK-Lok	15.7 (0.62)	149.0 (5.86)	56.0 (2.20)	75.3 (2.96)	125.0 (4.92)	50.0 (1.97)
	3*- D-16T-	1 in.DK-Lok	19.0 (0.75)			80.0 (3.15)	134.0 (5.27)	
	3*- F-12N-	3/4 in. Female NPT				59.5 (2.34)	96.0 (3.78)	
	3*- F-16N-	1 in. Female NPT				67.0 (2.64)	111.0 (4.37)	

All dimensions shown are for reference only and are subject to change.

Side and Bottom Port Valve Ordering Information
To order side port entry valve, replace * with S, to order bottom port entry valve, replace * with B.
Examples : V86A-3**S**-D-4T-S, V86A-3**B**-D-4T-S.

Table 4. **3-way Valve Actuation Torque**

Valve Series	System Pressures, bar (psig)		
	0 (0)	206 (3000)	275 (4000)
	Torque		Unit: Nm
V86A	3.92	-	4.90
V86B	7.35	7.85	-

Table 5. 2-way Valve Pressure and Temperature Rating

Valve Series	Seat Material	Maximum Working Pressure at -54~21°C (-65~70°F) psig (bar)	Temperature Rating °C(°F)
V86A	PVDF	6,000 (413)	-30 to 130 (-22 to 266)
	PCTFE		-30 to 180 (-22 to 356)
	PEEK	10,000 (689)	-54 to 260 (-65 to 500)
V86B V86C	PVDF	5,000 (344)	-30 to 110 (-22 to 230)
	PCTFE		-30 to 160 (-22 to 320)
	PEEK	6,000 (413)	-40 to 210 (-40 to 410)
V86D	PCTFE	6,000 (413)	-40 to 160 (-40 to 320)

Note : Refer to table 2 for VC86 series's Pressure and Temperature Rating

Table 6. **3-way Valve Pressure and Temperature Rating**

Valve Series	Seat	Maximum Working Pressure at -54~21°C (-65~70°F) psig (bar)	Temperature Rating °C(°F)
V86A-3*	PVDF	4,000 (275)	-30 to 130 (-22 to 266)
	PCTFE		-30 to 180 (-22 to 356)
	PEEK	6,000 (413)	-40 to 230 (-40 to 446)
V86B-3* V86C-3*	PVDF	3,000 (206)	-30 to 110 (-22 to 230)
	PCTFE		-30 to 160 (-22 to 320)
	PEEK	4,000 (275)	-40 to 210 (-40 to 410)

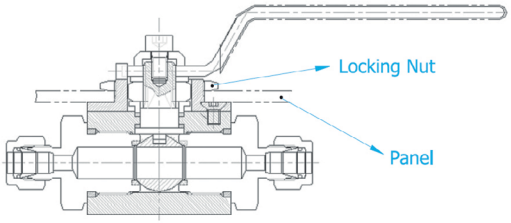
Options

Locking Nut & Panel Mounting

Ordering designator : **P1**
Addition locking nut below handle makes the valve panel mountable.
Disassemble the handle prior to panel mounting.

mm (in.)

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

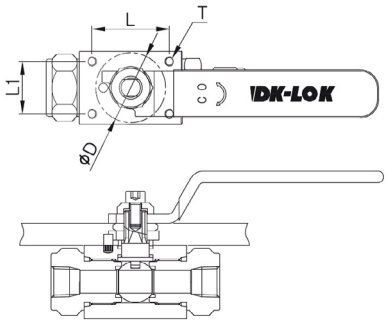


Screw Hole for Panel Mounting

Ordering Designator : **P2**
Additional four (4) screw holes on the top of valve makes the valve panel mountable.
Disassemble the handle prior to panel mounting.

mm (in.)

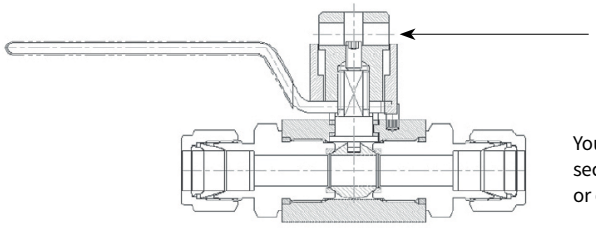
Valve Series	L	L1	T	D
V86A	34.0 (1.33)	23.0 (0.91)	M4×0.7P	30.0 (1.18)
V86B	36.0 (1.42)	29.0 (1.14)	M5×0.8P	38.0 (1.50)
V86C	40.0 (1.57)	35.0 (1.37)	M6×1.0P	38.0 (1.50)



" Lift-Turn" Locking Device

Ordering Designator : **LD**
Dk Tech patented “Lift-Turn” safety locking device allows you to lock the valve manually either in open or close position.
The locking device consists of study upper and lower locking detents made out of stainless steel.

Note : LD option applicable to 2-way valves.



Pad-Lock applicable 7.2mm (0.28in) hole constructed on upper locking detent.

You may apply a pad-lock to secure the valve in the open or close position.

Ordering Information

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

V86A-D-4T	**-PC**			**-OH**	**-S**
V86B-F-12N			**-LD**		**-S**
VC86B-D-12M		**-PC**			**-S**

Seat	Panel Mounting	Locking Device	Handle	Body Material
Nil : PEEK, standard for VC86 series **Nil** : PVDF, standard for V86 series **PC** : PCTFE **PK** : PEEK **PV** : PVDF	**P1** : Locking nut & panel mounting **P2** : Screw hole for panel mounting	**LD** : Locking Device	**Nil** : Standard Lever Handle **OH** : Oval Handle OH option is applicable to 2-way V86A Series valves.	**S** : SS316

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-Lok accepts no liability for any improper selection, installation, operation or maintenance.

The information shown in this catalog are not for design purpose, but for reference only.
The accuracy of information is not the liability of our company.

Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK

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IDK-LOK

VH86 Series

Rev. 01-01
Aug. 2023

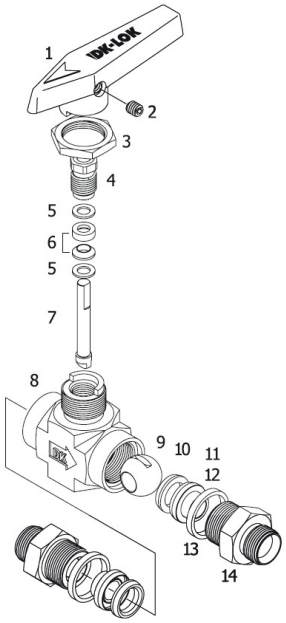
VH86 Series

High Pressure Multi Purpose Ball Valves

Rev.01-01
Aug.2023

Features

- High flow in a compact design.
- High pressure capacity designed for blow-out proof with internally loaded ball stem.
- Micro-finished ball provides a positive seal.
- 90 degree actuation for 2-way and 180 degree actuation for 3-way ball valves.
- Panel mounting as standard.
- Chevron stem seal, adjustable with the handle disassembled.
- Handle indicates flow direction.
- Low operating torques and positive handle stops.
- Optional pneumatic actuation.



Material of Construction

Components	Valve Body Material Stainless Steel Grade/ASTM Specification
1. Handle	Nylon with brass insert
2. Set Screw	Stainless steel
3. Panel Nut	SS316/A276
4. Packing bolt*	
5. Upper / Lower Gland	
6. Stem Chevron Packing	PTFE/D1710 type 1, Grade 1, Class B
7. Stem	SS316/A276
8. Body	SS316/A182 Type F316
9. Ball	SS316/A276
10. Seat (2)	Standard PCTFE (Kel-F), optional PTFE, PEEK
11. Retainer (2)	SS316/A276
12. Retainer Seal (2)	PTFE/D1710 type 1, Grade 1, Class B
13. End Connector Seal (2)	
14. End Connector (2)	SS316/A276

* Molybdenum disulfide with hydrocarbon coating
  - Wetted parts and lubricants are listed in blue.
  - Lubricant is Fluorinated-based.

Operation and Packing Adjustment

- VH86 valves are designed to control fluid in full open and closed position, using VH86 valves to throttle the flow may reduce the valve life.
- Stem packing can be adjustable with the handle disassembled. Tighten packing bolt clockwise to tighten the stem packing.
- 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 applicable.

Application

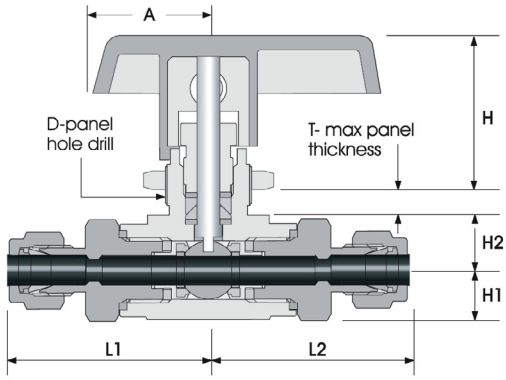
VH86 series ball valve offers a safe and reliable performance in a wide range of onshore and offshore applications: Water, oil, gas, petrochemical in heavy duty applications.

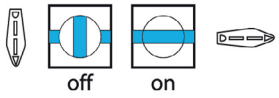
Factory Test, Cleaning and Packaging

- Every valve is factory tested with nitrogen gas at 1,000 psig (68.9 bar) for leakage at seat to a maximum allowable leak rate of 0.1 SCCM. The packing is tested with nitrogen gas for no detectable leakage.
- Every valve is cleaned and packaged in accordance with DK cleaning standard DC-01.

Bi-directional 2-way Ball Valves

In-line patten





Technical Data

Valve Series	Sealing Materials			Pressure Rating @-27 to 37 °C (-20 to 100 °F)	Temperature Rating
	Seat	Stem Packing	Retainer / End Seal		
VH86A, VH86B, and VH86C series	PCTFE	PTFE	PTFE	6,000 psig (413 bar)	-30 to 180 °C (-22 to 356 °F)
	PEEK	PTFE	PTFE	6,000 psig (413 bar)	-54 to 230 °C (-65 to 446 °F)
	PTFE	PTFE	PTFE	1,500 psig (103 bar)	-30 to 176 °C (-22 to 349 °F)

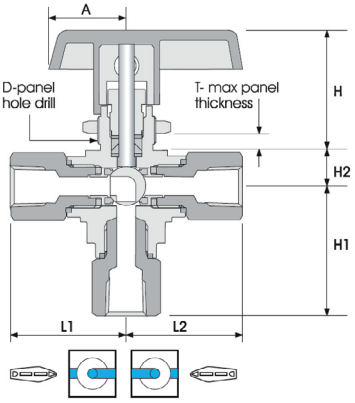
•PCTFE is standard seat material.

Ordering Information and Dimensions

Basic Ordering Number		End Connections		Orifice		Cv	Dimensions mm(in.)							
		Inlet	Outlet	mm	inch		L1	L2	H1	H2	H	A	D	T
VH86A-	D-1T-	1/16" DK-Lok		1.3	0.052	0.06	33.0(1.30)	33.0(1.30)	9.5 (0.37)	8.5 (0.33)	24.8 (0.98)	19.1 (0.75)	14.7 (0.58)	3.3 (0.13)
	D-2T-	1/8" DK-Lok		2.4	0.0945	0.21	34.5(1.36)	34.5(1.36)						
	F-2N-	1/8" Female NPT		4.2	0.165	0.43	27.2(1.07)	27.2(1.07)						
	M-2N-	1/8" Male NPT		4.2	0.165	0.43	30.0(1.18)	30.0(1.18)						
	D-4T-	1/4" DK-Lok		4.2	0.165	0.43	37.6(1.48)	37.6(1.48)						
	M-4N-	1/4" Male NPT		4.2	0.165	0.43	34.3(1.35)	34.3(1.35)						
	D-3M-	3mm DK-Lok		2.2	0.086	0.18	34.8(1.37)	34.8(1.37)						
VH86B-	D-2T-	1/8" DK-Lok		2.4	0.0945	0.26	41.9(1.65)	41.9(1.65)	10.7 (0.42)	11.9 (0.47)	38.9 (1.53)	25.4 (1.00)	19.6 (0.77)	6.4 (0.25)
	D-4T-	1/4" DK-Lok		4.7	0.185	1.04	44.2(1.74)	44.2(1.74)						
	MD-4N4T-	1/4" Male NPT	1/4" DK-Lok					41.1(1.62)						
	FD-4F4T-	1/4" Female NPT	1/4" DK-Lok					38.4(1.51)						
	F-4N-	1/4" Female NPT		6.4	0.252	2.34	38.4(1.51)	38.4(1.51)						
	M-4N-	1/4" Male NPT					41.1(1.62)	41.1(1.62)						
	MF-4N-	1/4" Male NPT	1/4" Female NPT				38.4(1.51)							
	MD-4N6T-	1/4" Male NPT	3/8" DK-Lok				45.7(1.8)							
	FD-4N6T-	1/4" Female NPT	3/8" DK-Lok					38.4(1.51)						
	D-6T-	3/8" DK-Lok						45.7(1.8)						
	M-6N-	3/8" Male NPT					82.2(3.24)							
	D-6M-	6 mm DK-Lok		4.7	0.185	1.04	89.0(3.50)							
	D-8M-	8 mm DK-Lok		6.4	0.252	2.34	90.4(3.56)							
	D-10M-	10 mm DK-Lok					92.0(3.62)							
VH86C-	F-6N-	3/8" Female NPT		10.3	0.406	6.42	99.0(3.90)		17.5 (0.69)	17.8 (0.70)	44.2 (1.74)	38.1 (1.50)	22.9 (0.90)	9.7 (0.38)
	F-8N-	1/2" Female NPT					109.20(4.30)							
	D-8T-	1/2" DK-Lok					118.8(4.68)							
	M-8N-	1/2" Male NPT					112.8(4.44)							
	D-12T-	3/4" DK-Lok					118.4(4.66)							
	D-12M-	12 mm DK-Lok		9.5	0.375	5.57	116.68(4.59)							
	D-16M-	16 mm DK-Lok		10.3	0.406	6.42	118.4(4.66)							

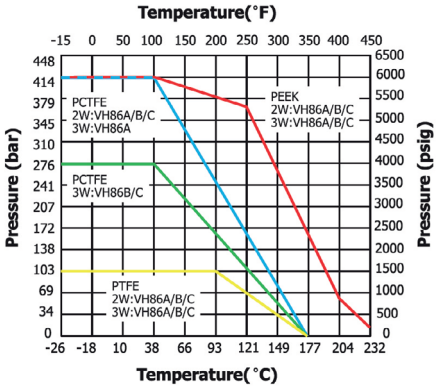
All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

3-way Diverter Ball Valves



VH86 3-way Ball Valve is designed to switch media through the bottom port and direct it to out of two outlet ports.

Pressure-Temperature Curve



Legend : 2W:2-Way VH86 ball valves
3W:3-Way VH86 ball valves

Technical Data

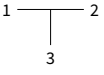
Valve Series	Sealing Materials			Pressure Rating @-27 to 37 °C (-20 to 100 °F)	Temperature Rating °C (°F)
	Seat	Stem Packing	Retainer / End Seal		
VH86A-3B	PCTFE	PTFE	PTFE	6,000 psig (413 bar)	-30 to 180 °C (-22 to 356 °F)
	PEEK	PTFE	PTFE	6,000 psig (413 bar)	-54 to 230 °C (-65 to 446 °F)
	PTFE	PTFE	PTFE	1,500 psig (103 bar)	-30 to 176 °C (-22 to 349 °F)
VH86B-3B VH86C-3B	PCTFE	PTFE	PTFE	4,000 psig (276 bar)	-50 to 180 °C (-58 to 356 °F)
	PEEK	PTFE	PTFE	6,000 psig (413 bar)	-54 to 230 °C (-65 to 446 °F)
	PTFE	PTFE	PTFE	1,500 psig (103 bar)	-30 to 176 °C (-22 to 349 °F)

Ordering Information and Dimensions

Basic Ordering Number		End Connections	Orifice		Cv	Dimensions mm(in.)							
			mm	inch		L1	L2	H1	H2	H	A	D	T
VH86A-3B-	D-1T-	1/16" DK-Lok	1.3	0.052	0.06	33.0 (1.30)	33.0 (1.30)	35.3(1.39)	8.4 (0.33)	24.8 (0.98)	19.1 (0.75)	14.7 (0.58)	3.3 (0.13)
	D-2T-	1/8" DK-Lok	2.4	0.093	0.21	34.5 (1.36)	34.5 (1.36)	36.8(1.45)					
	F-2N-	1/8" Female NPT	4.2	0.165	0.63	27.2 (1.07)	27.2 (1.07)	29.2(1.15)					
	M-2N-	1/8" Male NPT	4.2	0.165	0.59	30.0 (1.18)	30.0 (1.18)	32.0(1.26)					
	D-4T-	1/4" DK-Lok	4.2	0.165	0.63	37.6 (1.48)	37.6 (1.48)	39.6(1.56)					
	M-4N-	1/4" Male NPT	4.2	0.165	0.59	34.3 (1.35)	34.3 (1.35)	36.3(1.43)					
VH86B-3B-	D-2T-	1/8" DK-Lok	2.4	0.093	0.21	41.9 (1.65)	41.9 (1.65)	45.5(1.79)	11.9 (0.47)	38.9 (1.53)	25.4 (1.00)	19.6 (0.77)	6.4 (0.25)
	D-4T-	1/4" DK-Lok	4.7	0.187	0.70	44.2 (1.74)	44.2 (1.74)	47.8 (1.88)					
	F-4N-	1/4" Female NPT	5.0	0.196	0.87	38.4 (1.51)	38.4 (1.51)	41.9 (1.65)					
	DDM-T4N-*	1/4" DK-Lok, 1/4" Male NPT	4.7	0.187	0.70	44.2 (1.74)	44.2 (1.74)	47.8 (1.88)					
	M-4N-	1/4" Male NPT	5.0	0.196	0.87	41.1 (1.62)	41.1 (1.62)	44.7 (1.76)					
	D-6T-	3/8" DK-Lok				45.7 (1.8)	45.7 (1.8)	49.3 (1.94)					
	M-6N-	3/8" Male NPT				41.1 (1.62)	41.1 (1.62)	44.7 (1.76)					
	D-6M-	6 mm DK-Lok	4.7	0.187	0.70	44.5 (1.75)	44.5 (1.75)	47.8 (1.88)					
	D-8M-	8 mm DK-Lok	5.0	0.196	0.87	45.2 (1.78)	45.2 (1.78)	48.5 (1.91)					
	D-10M-	10 mm DK-Lok				46.0 (1.81)	46.0 (1.81)	49.5 (1.95)					
VH86C-3B-	F-6N-	3/8" Female NPT	10.3	0.406	3.62	49.5 (1.95)	49.5 (1.95)	58.2 (2.29)	17.8 (0.70)	44.2 (1.74)	38.1 (1.50)	22.9 (0.90)	9.7 (0.38)
	F-8N-	1/2" Female NPT				54.6 (2.15)	54.6 (2.15)	63.2 (2.49)					
	D-8T-	1/2" DK-Lok				59.4 (2.34)	59.4 (2.34)	68.1 (2.68)					
	DDF-8T8F-*	1/2" DK-Lok, 1/2" Female NPT						63.2 (2.49)					
	M-8N-	1/2" Male NPT				56.4 (2.22)	56.4 (2.22)	65.8 (2.59)					
	D-12T-	3/4" DK-Lok				58.9 (2.32)	58.9 (2.32)	68.1 (2.68)					
	D-12M-	12 mm DK-Lok	9.5	0.375	3.46			67.8 (2.67)					
	D-16M-	16 mm DK-Lok	10.3	0.406	3.62	59.2 (2.34)	59.2 (2.34)	65.5 (2.58)					

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

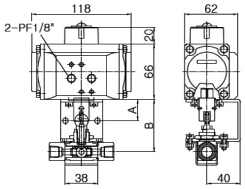
* VH86 3-way ball valves are described by first the outlet ports (1) and (2) and next the bottom inlet port (3).



All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

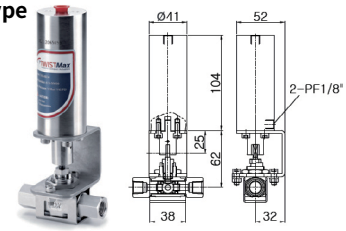
P series Rack and Pinion Pneumatic Actuator

A Type



Model shown: VH86B/C series
A dimension
VH86B: 25.00
VH86C:27.50
B dimension(Unit: mm)
VH86B: 62.00
VH86C:90.90

B Type



Model shown
: VH86B series

Table 1. **Actuator Material of Construction**

Parts	Standard Material
Body	Extruded Aluminum Alloy with external & internal corrosion protection.
Piston (Rack)	Die Cast Aluminum Alloy Anodized.
Drive Shaft (Pinion)	Steel Alloy Nickel Plated.
Spring	Spring Alloy Steel Nickel Plated. (min. 5, max. 12 spring)
End Cap	Die Cast Aluminum Alloy Polyester Coated.
O-Ring	NBR is standard. Optional FKM and Silicon.

• Body : Stainless Steel structure
Standard – Stainless Steel 304L
Option – Stainless Steel 316L

Technical Information

Actuator operating temperature (°C)
- Standard : NBR O-Ring - 20 to 80.
- Low Temperature : Silicon O-Ring -40 to 80 (Designator : **LT**).
- High Temperature : FKM O-Ring -15 to 150 (Designator : **HT**).
- Air-pressure : Min. 2.5 bar, Max. 8 bar.
- Air supply end connection : Female G 1/8 inch (ISO 228-1).
- Position indicator is standard.

Actuator operating temperature (°C)
- 10 to 60
- For TWISTMax actuators wider temperature range please refer to DK-LOK representative
- Air-pressure: Min. 4 bar, Max. 8 bar.
- Air supply end connection: Female G 1/8 inch (ISO 228-1).
- Position indicator is optional.

Table 2. **Single Return 90 Deg. Actuator**

Actuator Type	Valve series	Ordering Number		Dimensions	Weight	Moment Values P=6 bar	Air Consumption	Mounting Bracket Ordering Number	Actuator Operating Temperature Options
		Normal Close	Normal Open	L x H x W unit: mm	Kg	Nm	Liter		
A Type	VH86A	PCS1	POS1	118x86x62	0.9	3.5	0.1	VH86A-SMB	**Nil** : Standard Temp. **LT** : Low Temp. **HT** : High Temp.
	VH86B							VH86B-SMB	
	VH86C	PCS2	POS2			5.0		VH86C-SMB	
B Type	VH86A/B/C	TCS1	TOS1	ø 41x104	0.5	7.5	0.04	VH86A/B/C-TMB	-

Mount bracket : Field assembly kit includes mount bracket, valve to actuator, bracket bolts and assembly manual.

Table 3. **Double Return 90 Deg. Actuator**

Actuator Type	Valve series	Ordering Number	L x H x W unit: mm	Weight Unit: Kg	Moment Values P=6 bar	Air Consumption	Mounting Bracket Ordering Number	Actuator Operating Temperature Options
					Nm	Liter		
A Type	VH86A	PD1	118x86x62	0.75	14.4	0.1	VH86A-DMB	**Nil** : Standard Temp. **LT** : Low Temp. **HT** : High Temp.
	VH86B						VH86B-DMB	
	VH86C						VH86C-DMB	
B Type	VH86A/B/C	TD1	ø 41x104	0.4	20.5	0.1	VH86A/B/C-TMB	-

How to Order

Select applicable valve pattern, seat options, pneumatic actuator, and the actuator temperature option from designator listed below.

VH86B-D-6T- **-PK** **-PCS1** **-HT** **-S**

VH86C-D-12T **-SG** **-S**

Seat Materials	Sour Gas	Factory Assembled Actuator	Actuator Temperature Options	Valve Body Material
Nil : PCTFE **PK** : PEEK **PE** : PTFE	**SG** : Sour Gas	For single return, see Table 2. For double return, see Table 3.	**Nil** : Standard Temp. **LT** : Low Temp. **HT** : High Temp.	**S** : SS316

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-Lok accepts no liability for any improper selection, installation, operation or maintenance.

The information shown in this catalog are not for design purpose, but for reference only.
The accuracy of information is not the liability of our company.

Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK

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VT86 Series
Trunnion Ball Vavles

Rev. 02-02
Aug. 2024

DK-LOK®
Ball & Plug Valves

VT86 Series Trunnion Ball Valves

Rev.02-02
Aug.2024

VT86 Series Pressure Rating up to 413bar (6,000 psig)
VTH86 Series pressure Rating up to 689bar (10,000 psig)
VCT86 Series CNG/NGV Valves

Features

- The Trunnion ball valve is featured by blowout-proof design with cylindrical extensions at the top and bottom of the ball.
- The trunnion prevents the ball from shifting and permits the ball to rotate on a vertical axis.
- Integral ball stem machined from single piece of bar stock eliminates the backlash during handle actuation.
- Panel mounting nut is standard permitting valve to panel or actuator

Technical Data

Valve Series	Seat Material	Temperature Rating ° C (°F)	Pressure Rating at 37 °C (100°F)
VT86	PCTFE	-17 to 121 (0 to 250)	413bar (6,000psig)
	PEEK	- 17 to 232 (0 to 450)	413bar (6,000psig)
	PTFE		103bar (1,500psig)
VTH86	PEEK	-17 to 232 (0 to 450)	413 to 689bar (6,000 to 10,000psig)

Operation

- Valves that have not been actuated for a period of time may have a higher initial actuation torque.
- VT86 Series ball valves are designed to control fluid in full open and full closed position.

Factory Test

Every valve is factory tested with nitrogen gas at 68.9bar (1,000psig) for leakage to a maximum allowable leak rate of 0.1 SCCM at seat. Hydraulic shell test is optionally performed at 1.5 times the working pressure to a requirement of no detectable leakage with a liquid leak detector.

Cleaning and Packaging

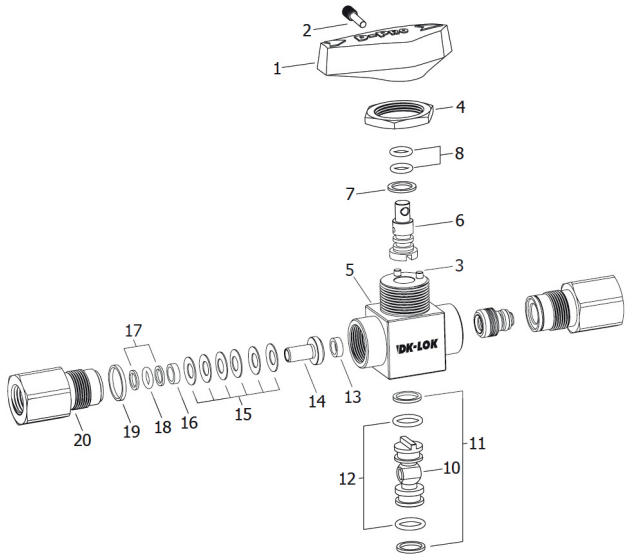
Every valve is cleaned and packaged in accordance with DK-Lok cleaning standard DC-01. Special cleaning and packaging in accordance with DK-Lok standard DC-11 ensures compliance with product cleaning of ASTM G93 Level C is available on request for valves with PCTFE and PTFE seats.

CNG/NGV Certifications

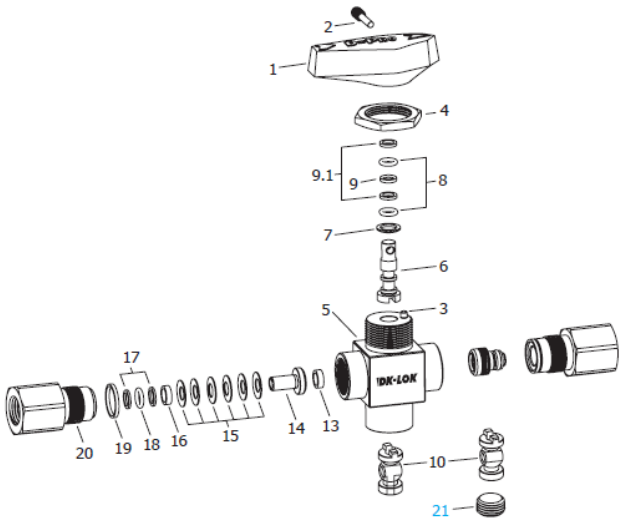
VCT86 and VCT863 Series valve provides leak-tight integrity in both low and high pressure systems in CNG and NGV applications. Valves with PEEK seat and HNBR O-Ring are compatible with CNG fluid.

Valve Series	Certificates	ECE R110	ANSI / AGA NGV 3.1-1995 CGV NGV 12.3-M95	ANSI /IAS NGV 4.6-1999 CSA 12.56-M99	ISO 15500
VCT86 Series 2-way ball valves	Certificate No.	E24 110R05/00*0083*00	72160895-NGV 3.1	72160895-NGV 4.6	72160895-ISO 15500-4
	Classification	Class 6	manual valve	manual valve (Class B)	manual valve
	Temperature	-40 to +120°C (-40 to 250°F)	-40 to +120°C (-40 to 250°F)	-40 to +65°C (-40 to 150°F)	-40 to +120°C (-40 to 250°F)
	Pressure	W.P 274 bar @ 120°C	S.P 273 bar @ 21°C	S.P 293 bar @ 21°C	W.P 273 bar @ 120°C
VCT863 Series 3-way ball valves	Certificate No.	E24*110R05/00*0083	72160895-NGV3.1	72160895-NGV 4.6	72160895-ISO 15500-4
	Classification	Class 6	manual valve	manual valve (Class B)	manual valve
	Temperature	-40 to +120°C (-40 to 250°F)	-40 to +120°C (-40 to 250°F)	-40 to +65°C (-40 to 150°F)	-40 to +120°C (-40 to 250°F)
	Pressure	W.P 274 bar @ 120°C	S.P 273 bar @ 21°C	S.P 293 bar @ 21°C	W.P 274 bar @ 120°C

VT86 / VCT86 Series For 2-Way



VT86 / VCT86 Series For 3-Way & VTH86 Series For 2-Way, 3-Way



VTH86 Series For 2-Way

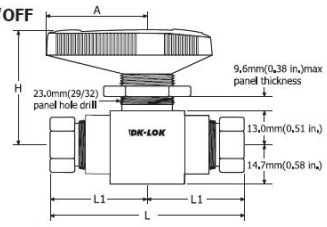
3-Way valve with an arrow marking on the top of 6. stem.
The arrow marking helps set a direction of the valve handle after the handle is removed from its mounting panel.

Materials of Construction

Component	VT86/VCT86 Series		VTH86 Series	
	2-Way	3-Way	2-Way	3-Way
	Grade/ASTM Specification			
1. Handle	Nylon with brass insert			
2. Set screw	SS316/A276			
3. Stop pin (2-Way - 2, 3-Way - 1)	SS316			
4. Panel nut	SS316/A479 or A276			
5. Body	SS316/A182(Forging Standard) or A479 or A276 (Optional)			
6. Stem	SS316/A479 or A276			
7. Stem bearing	PEEK			
8. Stem O-rings (2)	FKM O-ring (HNBR for VCT86/VCT863 Series)		FKM O-ring	
9. Stem support ring	-	PEEK		
9.1. Stem backup rings (2)	-	PTFE/D1710, type 1		
10. Trunnion ball	SS316/A479 or A276			
11. Trunnion ball back-up rings (2)	Reinforced PTFE	-		
12. Trunnion ball O-rings (2)	FKM O-ring (HNBR for VCT86 Series)	-		
13. Seats (2)	PCTFE, optional PTFE, PEEK (PEEK for VCT86/VCT863 Series)		PEEK	
14. Seat carriers (2)	SS316/A479 or A276			
15. Seat springs (12)	Alloy X-750/AMS 5542			
16. Seat carrier guides (2)	SS316/A479 or A276			
17. Seat carrier back-up rings (4)	Reinforced PTFE			
18. Seat carrier O-rings (2)	FKM O-ring (HNBR for VCT86/VCT863 Series)		FKM O-ring	
19. End connector seals (2)	PTFE/D1710,type 1			
20. End connectors (2)	SS316/A479 or A276			
21. Plug	-		SS316/A479 or A276	-

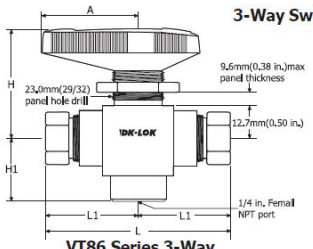
• Wetted components and lubricants are listed in BLUE.
• **Lubricants** : Molybdenum disulfide and fluorinated based.

2-Way ON/OFF



VT86 Series 2-Way

3-Way Switching



VT86 Series 3-Way
VTH86 Series 2/3-Way

Ordering Information and Dimensions

VT86 Series Basic Ordering Number		Cv	Orifice mm (in.)	VTH86 Series Basic Ordering Number		Cv	Orifice mm (in.)	End Connection	Dimensions, mm (in.)			
									L	L1	H	A
2-Way				2-Way								
VT86- VCT86-	F2N-	1.2	4.75 (0.187)	VTH86-	F2N-	1.2	4.75 (0.187)	1/8 in. Female NPT	76.2(3)	3.81(1.5)	46.7 (1.83)	38.0 (1.50)
	F4N-	1			-	1		1/4 in. Female NPT				
	-	-			F4N-	1		1/4 in. Female NPT	98.5(3.88)	49.3(1.94)		
	F8N-	1.2			-	-		1/2 in. Female NPT	81.2(3.2)	40.6(1.6)		
	D4T-	1.6			D4T-	1.6		1/4 in. DK-Lok	105 (4.14)	52.6 (2.07)		
	D6T-	1.4			D6T-	1.4		3/8 in. DK-Lok	112 (4.39)	55.6 (2.19)		
	D8T-	1			D8T-	1		1/2 in. DK-Lok	117 (4.60)	58.4 (2.30)		
	D6M-	1.6			D6M-	1.6		6mm DK-Lok	105 (4.14)	52.6 (2.07)		
	D8M-	1.5			D8M-	1.5		8mm DK-Lok	105 (4.14)	52.6 (2.07)		
	D10M-	1.3			D10M-	1.3		10mm DK-Lok	112 (4.41)	55.9 (2.20)		
	D12M-	1			D12M-	1		12mm DK-Lok	117(4.6)	58.4(2.3)		
3-Way				3-Way								
VT863- VCT863-	F2N-	0.75	4.75 (0.187)	VTH863-	F2N-	0.75	4.75 (0.187)	1/8 in. Female NPT	76.2(3)	3.81(1.5)	46.7 (1.83)	38.0 (1.50)
	F4N-				-			1/4 in. Female NPT	76.2(3)	38.1(1.5)		
	-				F4N-			1/4 in. Female NPT	81.2(3.2)	40.6(1.6)		
	D4T-				D4T-			1/4 in. DK-Lok	105 (4.14)	52.6 (2.07)		
	D6T-				D6T-			3/8 in. DK-Lok	112 (4.39)	55.6 (2.19)		
	D8T-				D8T-			1/2 in. DK-Lok	117 (4.60)	58.4 (2.30)		
	D6M-				D6M-			6mm DK-Lok	105 (4.14)	52.6 (2.07)		
	D8M-				D8M-			8mm DK-Lok	105 (4.14)	52.6 (2.07)		
	D10M-				D10M-			10mm DK-Lok	112 (4.41)	55.9 (2.20)		
	D12M-				D12M-			12mm DK-Lok	117(4.6)	58.4(2.3)		

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

* **CNG/NGV valve ordering number** : Basic ordering numbers listed in blue are for CNG/NGV valves as well.

Flow Rate

VT86 series Flow Data @ 21 °C (70 °F)

Flow Rate	Pressure Drop to Atmosphere (ΔP) in bar (psig)	3-Way	2-Way					
		Cv 0.75	Cv 1	Cv 1.2	Cv 1.3	Cv 1.4	Cv 1.5	Cv 1.6
Water L/min (U.S.GPM)	0.68 (10)	9.0(2.4)	12.1 (3.2)	14.3 (3.8)	15.5 (4.1)	17.8 (4.4)	17.8 (4.7)	19.3 (5.1)
	3.4 (50)	20.0 (5.3)	26.8 (7.1)	32.1 (8.5)	34.8 (9.2)	37.4 (9.9)	40.1 (10.6)	42.7 (11.3)
	6.8 (100)	28.3 (7.5)	37.8 (10.0)	45.4 (12.0)	49.2 (13.0)	53.0 (14.0)	56.7 (15.0)	60.5 (16.0)
Air std L/min (SCFM)	0.68 (10)	226 (8.0)	311 (11.0)	396 (14.0)	424 (15.0)	453 (16.0)	481 (17.0)	509 (18.0)
	3.4 (50)	651 (23.0)	849 (30.0)	1019 (36.0)	1104 (39.0)	1189 (42.0)	1274 (45.0)	1359 (48.0)
	6.8 (100)	1132 (40.0)	1500 (53.0)	1812 (64.0)	1953 (69.0)	2095 (74.0)	2265 (80.0)	2406 (85.0)

VTH86 series Flow Data @21 °C (70°F)

Flow Rate	Pressure Drop to Atmosphere (ΔP) in bar (psig)	3-Way	2-Way					
		Cv 0.75	Cv 1	Cv 1.2	Cv 1.3	Cv 1.4	Cv 1.5	Cv 1.6
Water L/min (U.S.GPM)	10.3 (150)	34.8 (9.2)	45.4 (12)	56.7 (15)	60.5 (16)	64.3 (17)	68.1 (18)	74.1 (19.6)
	41.3 (600)	69.1 (18)	94 (25)	109 (29)	121 (32)	128 (34)	140 (37)	147 (39)
	68.9 (1000)	90.8 (24)	143 (38)	143 (38)	155 (41)	166 (44)	178 (47)	189 (50)
Air std L/min (SCFM)	10.3 (150)	1614 (57)	2152 (76)	2805 (92)	2803 (99)	3029 (107)	3256 (115)	3454 (122)
	41.3 (600)	5946 (210)	8070 (285)	9627 (340)	10 505 (371)	11 298 (399)	12 119 (428)	12 912 (456)
	68.9 (1000)	9912 (350)	13 308(470)	16 140 (570)	17 272 (610)	18 688 (660)	19 821 (700)	21 321 (750)

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

VT86 Series Pressure-Temperature Ratings

Body material		316 Stainless steel					
Seat material		PCTFE		PTFE		PEEK	
Temperature		bar	psig	bar	psig	bar	psig
°C	°F	Working Pressure					
-17 to 37	0 to 100	413	6000	103	1500	413	6000
65	150	206	3000	77.5	1125	399	5800
93	200	137	2000	51.6	750	344	5000
121	250	69	1000	43	625	282	4100
148	300	-	-	34.4	500	220	3200
176	350	-	-	25.8	375	158	2300
204	400	-	-	17.2	250	96.4	1400
232	450	-	-	8.6	125	34.4	500

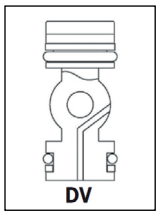
VTH86 Series Pressure-Temperature Ratings

Body material		316 Stainless steel							
End Connection	DK-Lok	6M, 1/4 in.		8M, 3/8 in.		12M, 1/2 in.		10M	
	Female NPT	1/8, 1/4 in.		-		-		-	
Seat material		PEEK							
Temperature		Working Pressure							
°C	°F	bar	psig	bar	psig	bar	psig	bar	psig
-17 to 37	0 to 100	689	10000	516	7500	454	6600	413	6000
65	150	516	7500	516	7500	454	6600	406	5900
93	200	344	5000	344	5000	344	5000	344	5000
121	250	282	4100	282	4100	282	4100	282	4100
148	300	220	3200	220	3200	220	3200	220	3200
176	350	158	2300	158	2300	158	2300	158	2300
204	400	96.4	1400	96.4	1400	96.4	1400	96.4	1400
232	450	34.4	500	34.4	500	34.4	500	34.4	500

Options

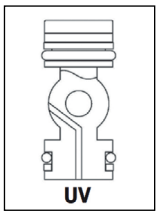
VT86 Series 2-Way Valve External Vent Options

A downstream or upstream vent option on VT86 Series 2-Way ball valve is available. The vent port is constructed on trunnion ball. The vent port activates when the valve is in closed position. This option reduces the valve pressure rating to 34.4bar (500 psig).



Downstream Vent
Ordering designator - DV

When a downstream vent valve in closed position, shutoff at the upstream seat occurs. Downstream system media flows into the vent hole and vents out to atmosphere through the valve bottom.



Upstream Vent
Ordering designator - UV

When a upstream vent valve in closed position, shutoff at the downstream seat occurs. Upstream system media flows into the vent hole and vents out to atmosphere through the valve bottom.

Service Kit

For field assembly, service kit with a maintenance instruction is available. Service kit contains wetted parts including trunnion ball, stem assembly and seat carrier assembly. To order the service kit, prefix SK- to the valve series. i.e., SK-VCT863, SK-VTH863.

How to Order

Select applicable valve basic ordering number, options and body material designator listed below.

VT86-D4T	**-PK**	**-DV**	**-S**
VTH86-D12M			**-S**
VCT86-F4N			**-S**

Seat Materials	O-ring Materials	External Vent Options	Body Material
Nil : Standard PCTFE for VT86 Series **Nil** : Standard PEEK for VTH86 Series **Nil** : Standard PEEK for VCT86 Series **PC** : PCTFE **PK** : PEEK **PE** : PTFE	**Nil** : Standard FKM for VT86 and VTH86 Series **Nil** : Standard HNBR for VCT86 Series Note : Optional O-rings applicable to; 8. Stem O-rings 12. Trunnion ball O-rings 18. Seat carrier O-rings	**DV** : Downstream Vent **UV** : Upstream Vent Note : Vent option available on VT86 2-Way ball valves.	**S** : Stainless steel 316 / A182 **A479** : Stainless steel 316 / A479 or A276

Safe Valve Selection

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Safe Component Selection

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DK-LOK

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Tel. +82-55-338-0114 Fax. +82-55-901-0141 **www.dklok.com**

IDK-LOK

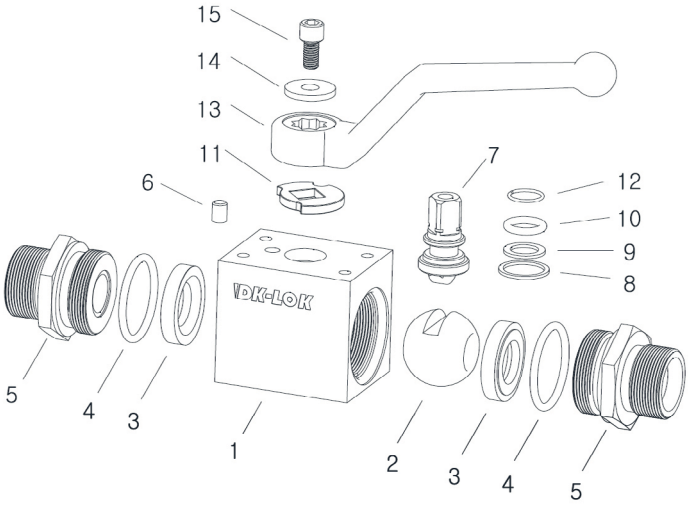
V87 Series Ball Valves / DIN Standard

Rev. 01-01
Aug. 2023

V87 Series Ball Valves, DIN Standard

Rev.01-01
Aug.2023

Pressure Rating up to 500 bar(7,250 psig)



Features

- Pressure Rating up to 500 bar (7,250 psi)
- Positive stop with robust stop pin
- Various end ports including DIN Standard port

Features

- Hydraulic fluids
- Compressed Air
- Fuel oil system

Material of Construction

Component	Valve Body Material	
	Stainless Steel	Carbon Steel
	Grade/ASTM, JIS Specification	
1. Body	SS316/A276	S45C
2. Ball	SS316/A276	SS316/A276
3. Seat	POM	
4. o-ring	FKM	NBR
5. Connector	SS316/A276	S45C
6. Pin	SS316	
7. Stem	SS316/A276	S45C
8. Bearing	POM	
9. Stem ring	POM	
10. Stem o-ring	FKM	
11. Stopper	SS304	
12. Snap ring	SS304	
13. Handle	SS316	S45C
14. Washer	SS304	
15. Screw	SS304	SS41

· Wetted parts and lubricants listed in blue.
· Fluorinated-based lubricant

Factory Testing

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

Optional Seat Material

Rating based on valve with standard POM seat.

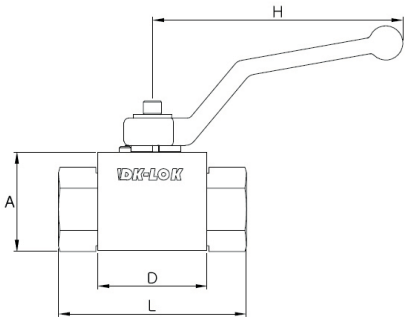
Seat	Temperature Rating ° C (°F)
POM, PEEK	-30 to 100 (-22 to 212)
PTFE	-54 to 65 (-65 to 149)

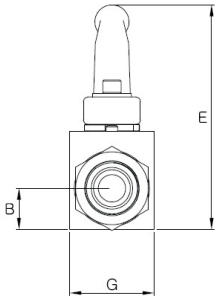
Optional O-ring Materials

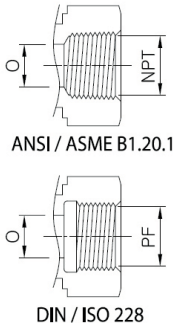
FKM O-Rings are standard. Add the designator to the ordering number for valve with optional O-ring material.

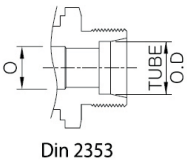
O-ring Materials	Designator	Temperature Rating ° C (°F)
FKM	Nil	-23 ~ 190 (-10 ~375)
NBR	BN	-23 ~ 121 (-10 ~ 250)
EPDM	EP	-45 ~ 148 (-50 ~ 300)
FFKM	KZ	-30 ~ 210 (-22 ~ 410)

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.









Ordering Information and Table of Dimensions

Basic Ordering Number		End Connections	DN O	PN bar	Dimensions, mm A	B	E	G	D	L	H
V87A-	F2N	1/8 in. Female NPT	4	500	35	14.5	96.5	30	42.0	71.0	110
	F4N	1/4 in. Female NPT	6								
	F2G	1/8 in. Female PF	4								
	F4G	1/4 in. Female PF	6								
	N6L	6mm	6							76.0	
	N8L	8mm									
	N10L	10mm									
	N8S	8mm	4								
	N10S	10mm	6								
	N12S	12mm	8								
V87B-	F6N	3/8 in. Female NPT	10	500	40	18.5	101.5	35	44.4	73.0	110
	F6G	3/8 in. Female PF									
	N12L	12mm								79.5	
	N14S	14mm								82.5	
V87C-	F8N	1/2 in. Female NPT	13	500	43	19.5	104.5	37	48.4	83.0	110
	F8G	1/2 in. Female PF									
	N15L	15mm								87.0	
	N18L	18mm									
	N16S	16mm								89.0	
	N20S	20mm								93.0	
V87D-	F12N	3/4 in. Female NPT	20	400	55	23.5	130.0	45	62.5	95.0	175
	F12G	3/4 in. Female PF									
	N22L	22mm								110.0	
	N25S	25mm								111.0	
V87E-	F16N	1 in. Female NPT	20	350	65	29.5	140.0	55	66.5	112.0	175
	F16G	1 in. Female PF									
	N28L	28mm	25							117.0	
	N35L	35mm								119.0	
	N42L	42mm									
	N30S	30mm								121.0	
	N38S	38mm								131.0	

Ordering Information

Select valve basic ordering number, applicable options and body material.

V87A - F4N - **BN-** **S**
V87B - N12L - **EP-** **L**
V87D - N30S - **KZ-** **PE**

O-ring Material Designator	Seat Material Designator	Valve Body Material Designator
Nil : FKM **BN** : NBR **EP** : EPDM **KZ** : FFKM	**Nil** : POM **PE** : PTFE **PK** : PEEK	**S** : 316 stainless steel **L** : 316L stainless steel **C** : Carbon steel

Safe Valve Selection

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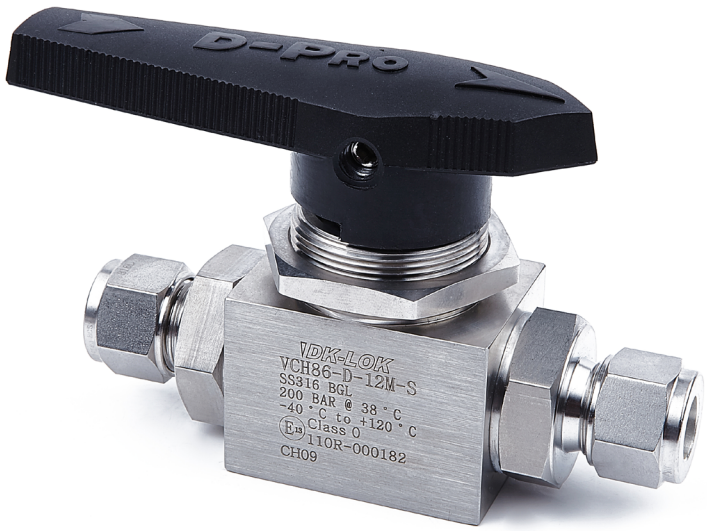
VDK-LOK

VCH86 Series
Alternative Fuel Service Ball Valve

Rev. 01-02
Oct. 2023



CNG/NGV Valves

VCH86 Series Alternative Fuel Service Ball Valve

Rev.01-02
Oct.2023

Features

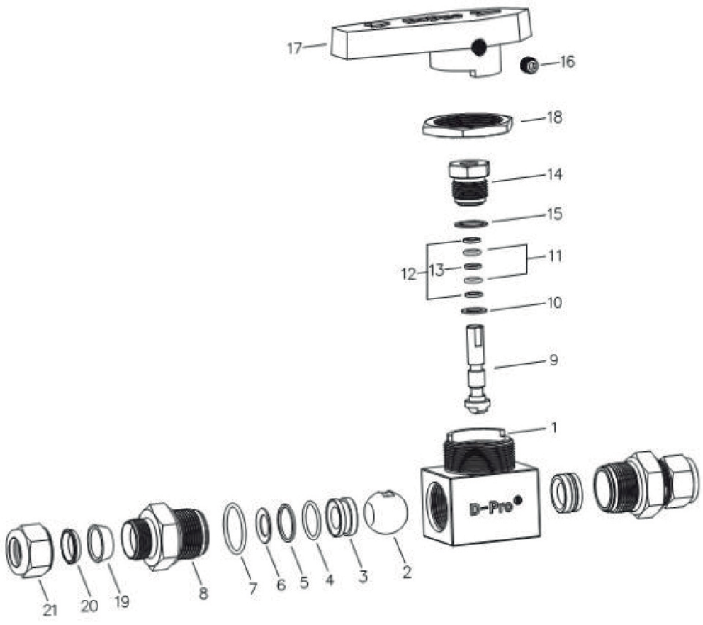
- Wetted components are compatible with compressed natural gas (CNG), liquid petroleum gas, gaseous and liquid hydrogen.
- Sturdy body and end connections made out of stainless 316 barstock.
- Maximum pressure rating: 413 bar (6000 psig).
- Temperature rating: - 40 to 121°C (-40 to 250°F).

Pressure-Temperature Ratings

End Connections	DK-LOK Tube Fitting			Female Pipe	
	3/8 in. 1/2 in. 12 mm	3/4 in. 16 mm	1 in.	3/8 in. 1/2 in.	3/4 in.
Temperature °C (°F)	Working Pressure bar (psig)				
- 40 to 93 (-40 to 200)	413 (6000)	400 (5800)	323 (4680)	413 (6000)	381 (5520)
121 (250)	413 (6000)	395 (5720)	320 (4640)	413 (6000)	381 (5520)

CNG/NGV Certifications

Certificates	ECE R110	ANSI / CSA NGV 3.1:20	ANSI /CSA NGV 4.6:20	ISO 15500 – 4:2020
Certificate No.	E24 110R05/00*0083*00	72160895-NGV 3.1	72160895-NGV 4.6	72160895-ISO 15500-4
Classification	Class 6	manual valve	manual valve (Class B)	manual valve
Temperature	-40 to +120 C (-40 to 250 F)	-40 to 121 C (-40 to 250 F)	-40 to 65 C (-40 to 150 F)	- 40 to 120 C (-40 to 250 F)
Working Pressure	W.P 274 bar @ 120 C	S.P 273 bar @ 21 C	S.P 293 bar @ 21 C	W.P 274 bar @ 120 C



Materials of Construction

No.	Component	Glade / ASTM specification
1	Body	SS316/A276, A479
2	Ball	SS316/A276, A479
3	Seat(2)	PEEK
4	Seat O-ring (2)	HNBR
5	Seat Backup Ring (2)	PTFE /D1710
6	Disc Spring (2)	SS316
7	Connector Oring (2)	HNBR
8	End Connector (2)	SS316/A276, A479
9	Stem	SS316/A276, A479
10	Stem Seat Bearing	PEEK
11	Stem O-ring (2)	HNBR/D2000
12	Stem Guide Ring	PTFE /D1710
13	Stem Backup Ring (2)	PEEK
14	Packing Bolt	SS316/A276, A479
15	Packing Bolt Gasket	SS316/A240 Silver-plated
16	Set Screw	SS316 Stainless steel
17	Handle	Nylon with brass insert
18	Panel Nut	SS316
19 20,21	Dk-Lok Nut and Ferrule set (2)	SS316 Stainless steel

• Wetted components are listed in BLUE.

Factory Testing

Every valve is factory tested with nitrogen @ 1000 psig (68 bar). Seats have a maximum allowable leak rate of 0.1 std cm^3/min.
The stem packing is tested with nitrogen @ 1000 psig (68 bar) for no detectable leakage.

Cleaning and Packaging

Valves are cleaned and packaged in accordance with DK-LOK cleaning standard DC-01. Special cleaning and packaging in accordance with DK-LOK DC-11 ensures compliance with product cleaning of ASTM G93 Level C is available on request.

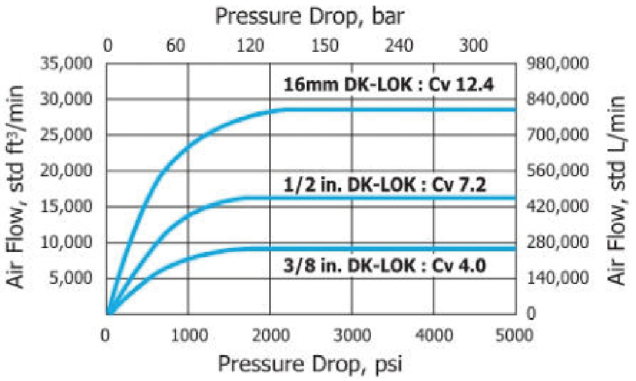
Operation

- VCH86 ball valves are designed for fully open and close operation.
- Valves that have not be actuated for a period of time may have a higher initial actuation torque.

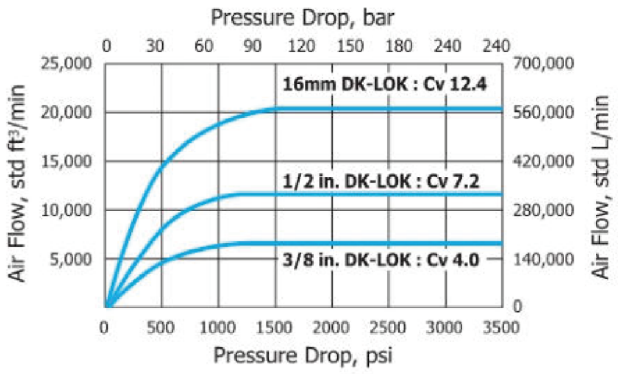
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

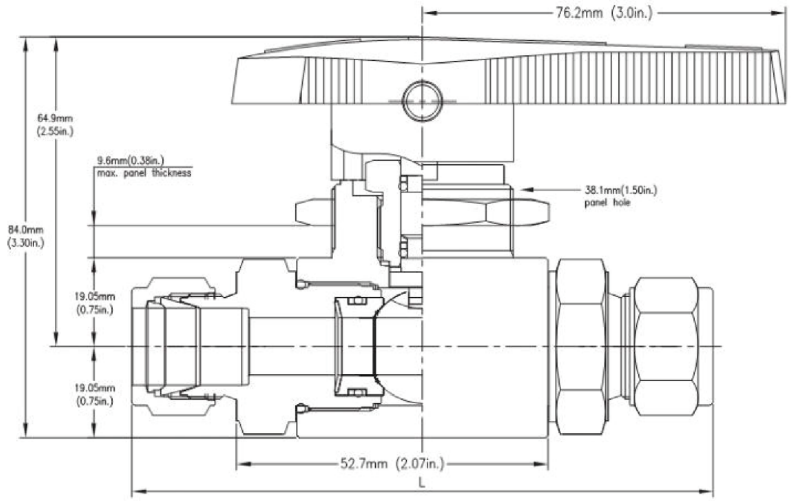
Flow Data @ 21°C (70°F)

Air Pressure 350 bar (5000 psig)



Air Pressure 250 bar (3600 psig)





Ordering information and Table of Dimensions

Ordering Number		End Connections	Orifice		Cv	Dimensions
			mm	in.		L
VCH86-	D-6T-S	3/8 in. DK-LOK	7.1	0.281	4.0	116 mm (4.57 in.)
	D-8T-S	1/2 in. DK-LOK	10.3	0.406	7.2	122 mm (4.8 in.)
	D-12T-S	3/4 in. DK-LOK	12.0	0.472	7.1	
	D-16T-S	1 in. DK-LOK (1)	12.0	0.472	6.5	130 mm (5.10 in.)
	D-10M-S	10 mm DK-LOK	7.1	0.281	4.0	116 mm (4.57 in.)
	D-12M-S	12 mm DK-LOK	10.3	0.406	5.2	112 mm (4.40 in.)
	D-16M-S	16 mm DK-LOK	12.0	0.472	12.4	122 mm (4.80 in.)
	F-6N-S	3/8 in. Female pipe	12.0	0.472	11.0	102 mm (4.00 in.)
	F-8N-S	1/2 in. Female NPT	12.0	0.472	13.8	
	F-8R-S	1/2 in. Female PT	12.0	0.472	13.8	
	F-12N-S	3/4 in. Female NPT (1)	12.0	0.472	7.8	

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

(1) Not recommended for panel mounting.

Safe Valve Selection

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Maintenance Kits

The seat seal kit includes a seat, seat o-ring, seat back-up ring, and disc spring, two each.

Seat seal kit ordering number : SK-VCH86

* It is recommended to replace it with a seat spare kit if leakage occurs after prolonged use of the product.

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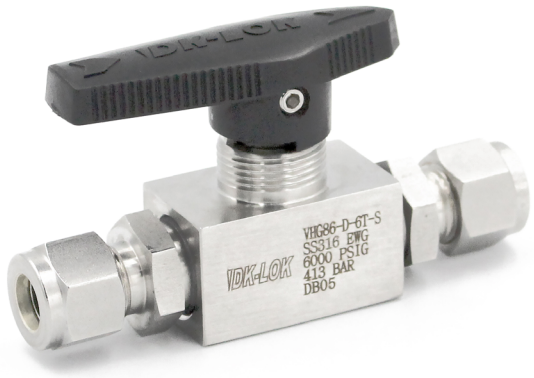
VDK-LOK

VHG86 Series
Ball Valve

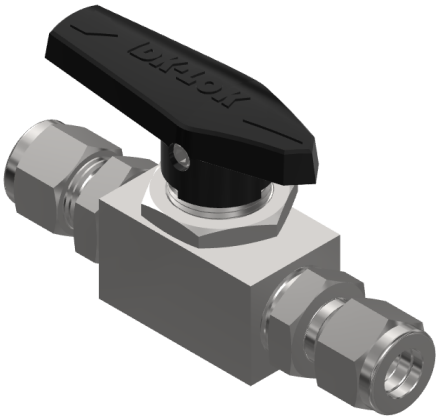
Rev. 01-01
Aug 2024



VHG86 Series Ball Valve

Pressure rating of 413 bar (6000psig)

Rev.01-01
Aug.2024



Features

· Temperatures from −40 to 150°C (-40 to 302 °F)

	Temperature °C (°F)	Working Pressure bar (psig)
FKM	-17 (0) to 121 (250)	413 (6000)
	122 (251) to 150 (302)	206 (3000)
EPDM	-40 (-40) to 65 (150)	413 (6000)
	66 (151) to 121 (250)	117 (1700)
HNBR	-40 (-40) to 65 (150)	413 (6000)
	66 (151) to 150 (302)	117 (1700)

· Spring loaded PEEK seats
· Low torque Quarter-turn operation
· Indicates flow direction, open/closed position
· High-flow capacity in a compact design

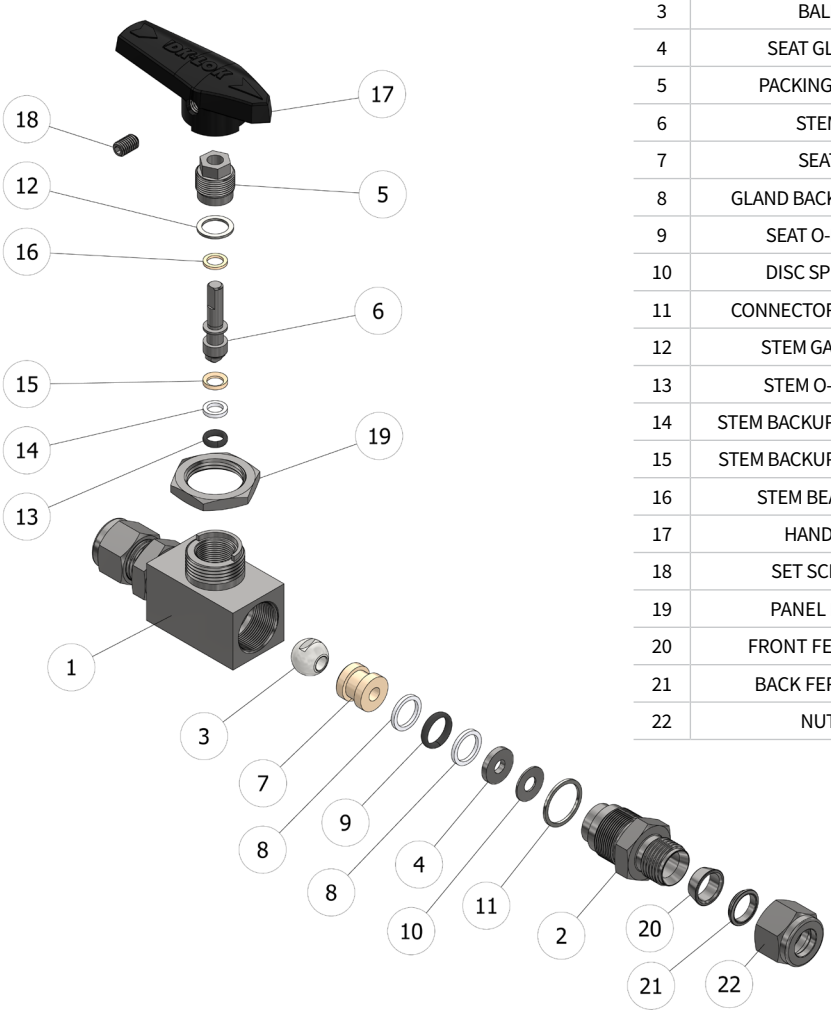


Table 1. Materials of Construction

No.	Componet	Materials	Q'ty
1	BODY	ASTM A 276 TYPE316	1
2	END CONNECTOR	ASTM A 276 TYPE316	2
3	BALL	ASTM A 276 TYPE316	1
4	SEAT GLAND	ASTM A 276 TYPE316	2
5	PACKING BOLT	ASTM A 276 TYPE316	1
6	STEM	ASTM A 276 TYPE316	1
7	SEAT	PEEK	2
8	GLAND BACKUP RING	PTFE	4
9	SEAT O-RING	FKM / EPDM / HNBR	2
10	DISC SPRING	51CrV4 / SUP10	2
11	CONNECTOR GASKET	ASTM A 276 TYPE316	2
12	STEM GASKET	ASTM A 276 TYPE316	1
13	STEM O-RING	FKM / EPDM / HNBR	1
14	STEM BACKUP RING (UP)	PTFE	1
15	STEM BACKUP RING (LO)	PEEK	1
16	STEM BEARING	PEEK	1
17	HANDLE	NYLON WITH ZINC INSERT	1
18	SET SCREW	STAINLESS STEEL	1
19	PANEL NUT	STAINLESS STEEL	1
20	FRONT FERRULE	STAINLESS STEEL	2
21	BACK FERRULE	STAINLESS STEEL	2
22	NUT	STAINLESS STEEL	2

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Ordering Information and Table of Dimensions

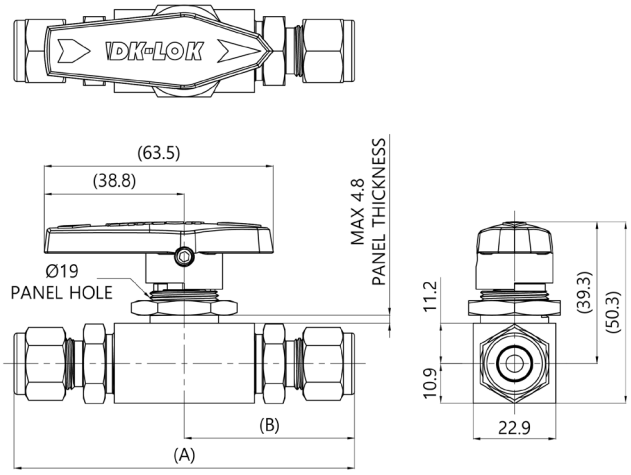


Table 2. Basic Ordering Number and Dimensions

Basic Ordering Number		End Connection Inlet / Outlet	Cv	Orifice mm (in)	Dimensions, mm (in)	
					A	B
VHG86	D-4T	1/4 in. DK-Lok	1.3	4.8 (0.188)	90.96 (3.58)	45.48 (1.79)
	D-6T	3/8 in. DK-Lok	1.4		94.44 (3.72)	47.22 (1.86)
	D-6M	6mm DK-Lok	1.3		90.96 (3.58)	45.48 (1.79)
	D-8M	8mm DK-Lok	1.3		92.3 (3.63)	46.15 (1.82)
	F-4N	1/4 in. Female NPT	1.2		76.4 (3.01)	38.2 (1.50)
	M-4N	1/4 in. Male NPT	1.1		84.2 (3.31)	42.1 (1.66)
	F-4R	1/4 in. Female PT	1.2		76.4 (3.01)	38.2 (1.5)

How to Order

Select valve ordering number, applicable option(s) from designators tables listed below.

VHG86-D-6T-

O-Ring	Handle	Body Materials
Nil : FKM (-17 ~ 150°C / 0 ~ 302°F) **EP** : EPDM (-40 ~ 121°C / -40 ~ 250°F) **HN** : HNBR (-40 ~ 150°C / -40 ~ 302°F)	**Nil** : Standard Nylon Handle	**S** : SS316

Factory Test

Every valve is factory tested with nitrogen gas @69 bar (1,000 psig) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM.
The packing is tested with nitrogen for no detectable leakage.

Important Information About Ball Valves

* Ball valves are designed to be used in a fully open or fully closed position.
* Valves that have not been cycled for a period of time may have a higher initial actuation torque.

Safe Valve Selection

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