

Diaphragm Valves

DV4 Series



- ❖ All-metal containment, packless
- ❖ Maximum working pressure: 3500 psig (241 bar)
- ❖ Working temperature: -100°F to 250°F (-73°C to 121°C)
- ❖ Variety of end connections

Features

- ❖ Maximum working pressure: 3500 psig (241 bar)
- ❖ Working temperature: -100°F to 250°F (-73°C to 121°C)
- ❖ Repetitive shutoff with fully contained softseat stem tip
- ❖ Position indicator ring for lever handle
- ❖ Manual or pneumatic actuation
- ❖ Aluminum piston accelerated open/close speed
- ❖ Helium leak tested, maximum leak rate of 4^{-9} x10 std cm³/s
- ❖ Different handle types and colors are available
- ❖ Can be used in vacuum applications

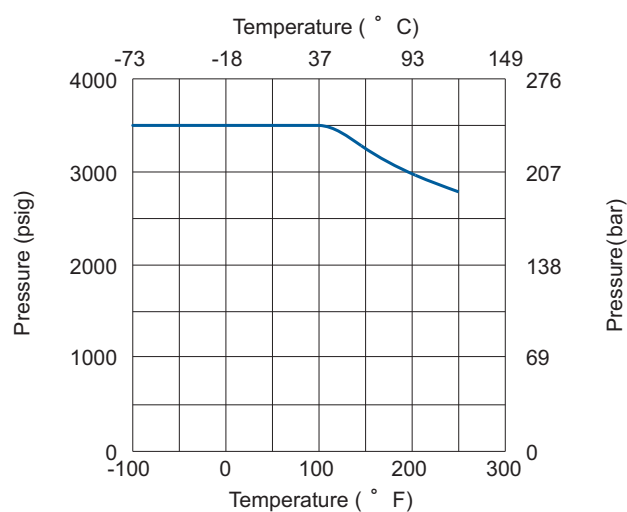
Technical Data

Sort	Max. Working Pressure psig (bar)	Working Temperature Range°C(°F)	Flow Coefficient (Cv)	Orifice in. (mm)	Operating/Operating Pressure psig (bar)
Lever handle	3500 (241)	-73 to 121 (-100 to 250)	0.14	0.156 (4.0)	Approximately one quarter turn to operate from fully open to closed
Round handle			0.30		Approximately one and one-half turns to operate from fully open to closed
Pneumatic actuator			0.20		70 to 120 (4.9 to 8.2)

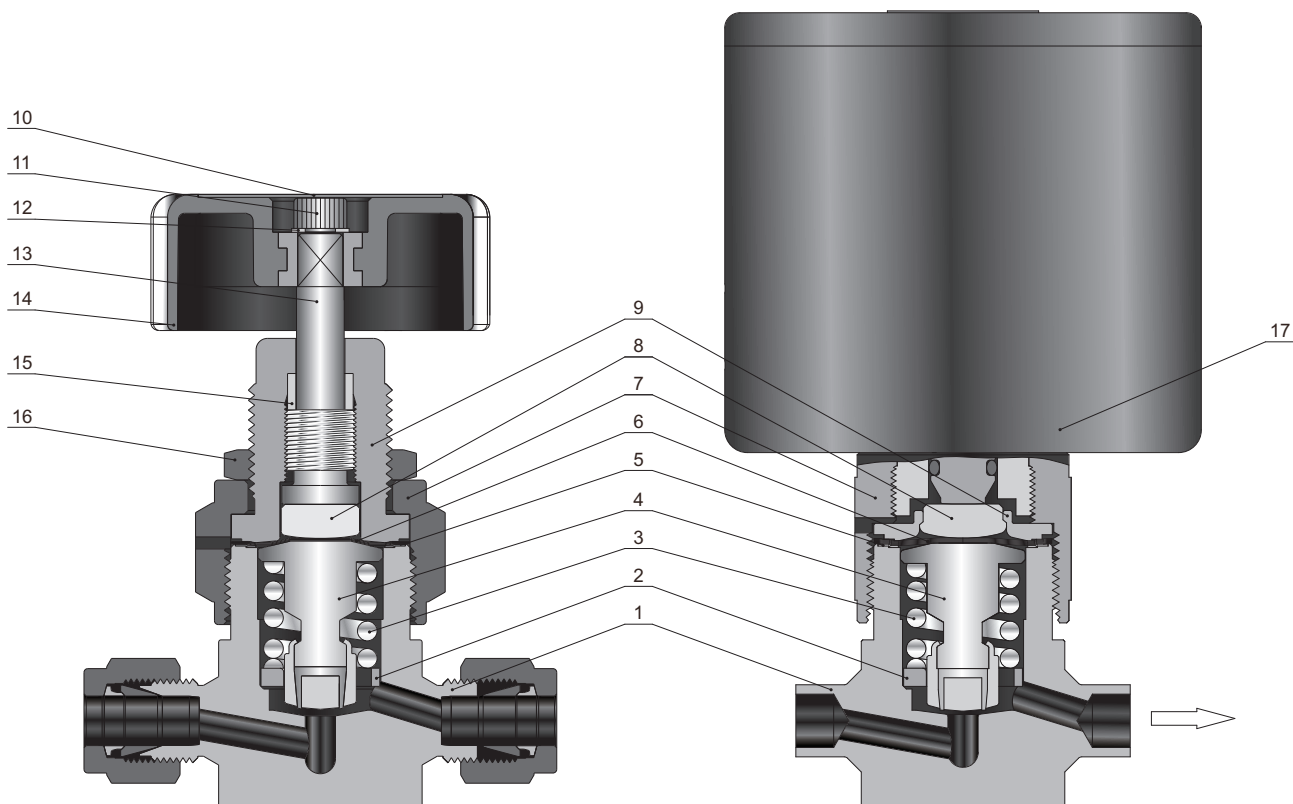
Flow Data

Pressure Drop to Atmosphere ΔP (bar)	Lever handle Cv=0.14		Round handle Cv=0.30		Pneumatic actuator Cv=0.20	
	Air std L/min	Water L/min	Air std L/min	Water L/min	Air std L/min	Water L/min
0.68	49	1.6	100	3.5	64	2.4
3.4	130	3.9	270	8.0	170	5.4
6.8	240	5.4	490	11.4	300	7.6

Pressure-Temperature Ratings



Materials of Construction



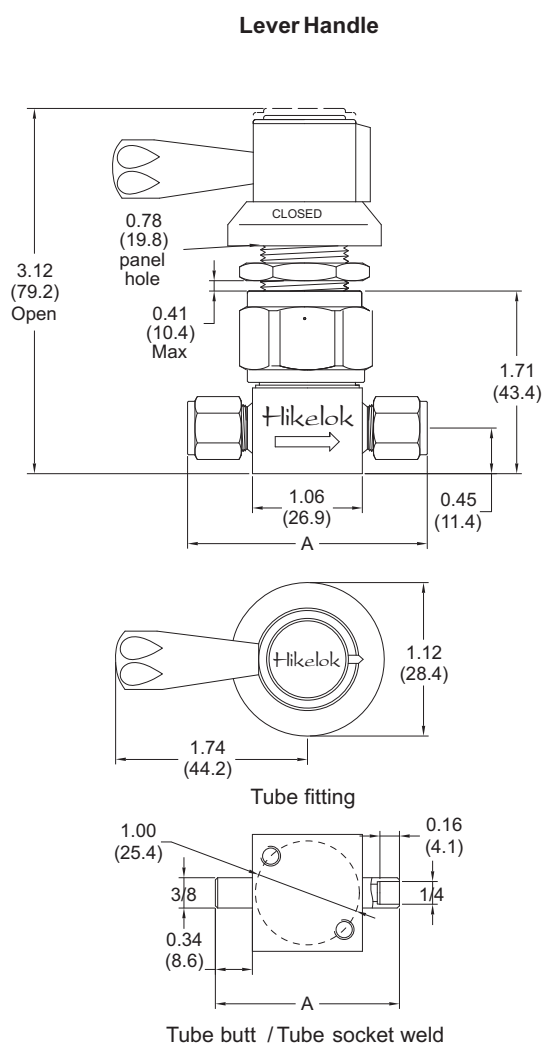
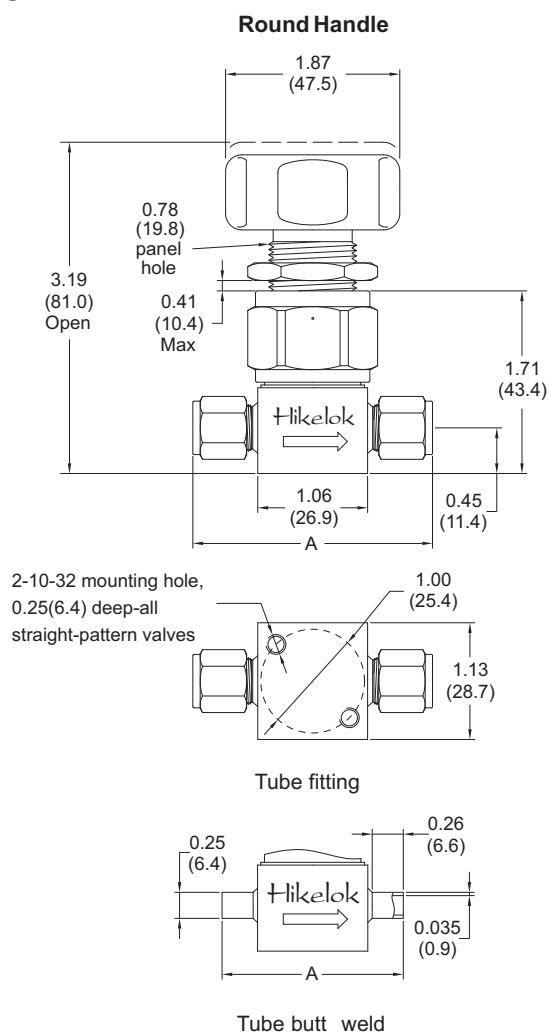
Item	Component		Material Grade/ASTM Specification	
			Manual	Pneumatic Actuation
1	Body		316 S.S./A479/316L SS/A479	
2	Guide		Electropolished 316 S.S./A479	
3	Spring		316 S.S./A313	
4	Stem assembly	Stem plug	316L S.S./A479	
		Stem insert	PCTFE/D1430	
		Stem container	316L S.S./A479	
		Stem	316L S.S./A479	
5	Gasket		PTFE-coated 316L S.S./A240	
6	Diaphragms		Elgiloy/AMS 5876	Elgiloy/AMS 5876 & C17200/B194
7	Bonnet nut		316 S.S./A479	
8	Actuator Button		C36000/B16	
9	Bonnet		316 S.S./A479	S17400/A564
10	Lable		PVC	—
11	Set Screw		304 S.S.	—
12	Gasket		65Mn	—
13	Actuator		416S.S./A582	—
14	Round Handle		ABS	—
15	Wipe Ring		PTFE	—
16	Panel mount nut		316 S.S./A479	—
17	Pneumatic Actuator		—	Aluminum 6061/B211

Product technology grade

Grade	General purpose	Special Cleaning and Packaging	Ultrahigh-purity
Material	316 SS or 316L SS		
Wetted Surface Roughness	Ra 25 µin. (0.64 µm)	Ra 10 µin. (0.25 µm)	
Process	Machine finished	Electropolished	
Process Specification	FC-01 Standard Cleaning and Packaging	FC-02 Special Cleaning and Packaging	FC-03 Ultrahigh-Purity Process Specification
Cleaning	Thrice degreasing and ultrasonic cleaning	Special cleaning with non-ozone-depleting chemicals	Ultrahigh-purity cleaning with a continuously monitored, deionized water, ultrasonic cleaning system
Assembly	At atmosphere	Performed in specially cleaned areas	Performed in ISO Class 4 work areas
Testing	Inboard helium leak tested to maximum leak rate of 4×10^{-9} std cm ³ /s		
Packing	Individually bagged	Individually bagged	Valves are double bagged and vacuum sealed in cleanroom bags

Dimensions

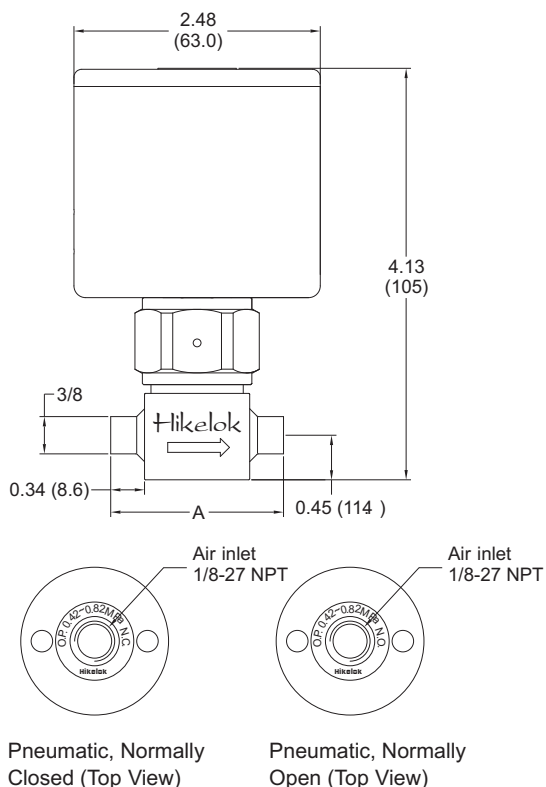
Straight Patterns



Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)	Orifice in. (mm)
		A	
DV4-F4-	1/4" Hikelok	2.46 (62.5)	
DV4-F6-	3/8" Hikelok	2.58 (65.5)	
DV4-M6-	6 mm Hikelok	2.46 (62.5)	
DV4-M8-	8 mm Hikelok	2.53 (64.3)	
DV4-FBW4-	1/4" Tube butt weld	1.74 (44.2)	
DV4-FBW6-	3/8" Tube butt weld	1.74 (44.2)	
DV4-FBW6-FSW4-	3/8" Tube butt weld to 1/4" tube socket weld	1.75 (44.4)	0.156(4.0)
DV4-FBW8-FSW6-	1/2" Tube butt weld to 3/8" tube socket weld	1.81 (46.0)	
DV4-NPT4-	1/4" Male NPT	2.46 (62.5)	
DV4-FNPT4-	1/4" Female NPT	2.46 (62.5)	
DV4-GFS4-	1/4" Male GFS	2.30 (58.4)	
DV4-FGFS4-	1/4" Female GFS	2.76 (70.1)	
DV4-FGFS4-GFS4-	1/4" Female GFS to 1/4" Male GFS	2.54 (64.5)	
DV4-GFS4-FGFS4-	1/4" Male GFS to 1/4" Female GFS	2.54 (64.5)	

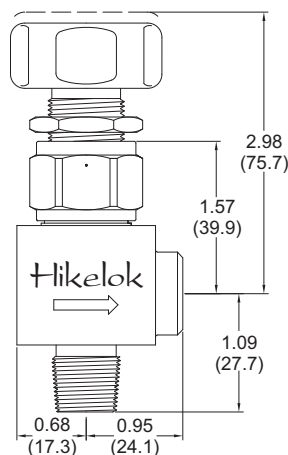
Straight Patterns

Pneumatic Actuator

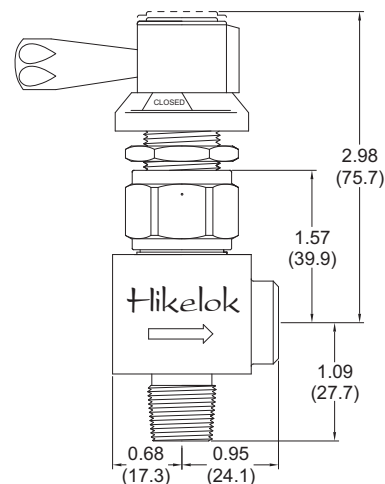


Angle Patterns

Round Handle



Lever Handle



Basic Ordering Number	Connection Type and Size	
	Inlet	Outlet
DV4-NPT4-FNPT4-	1/4 NPT Male NPT	1/4 NPT Female NPT

How to Order

DV4 — **FGFS4** — **GFS4** — **T** — **EA** — **NC** — **316L**

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Stem Tip Material	Handle Color	Flow Pattern	Actuator	Body Material
DV4	F Fractional Tube Fitting	2 1/8"	Same as inlet type and inlet size		PCTFE	Blue	Straight	Round Handle	316 316 S.S.
		4 1/4"			T PTFE	C Red	A Angle		316L 316L S.S.
	M Metric Tube Fitting	6 6 mm	If outlet and inlet are the same, eliminate the outlet designator		V Polyimide	G Gold		NC Pneumatic, Normally Closed	
	FBW Fractional Tube Butt Weld	8 1/2 "				E Green			
	MBW Metric Tube Butt Weld					B Black		NO Pneumatic, Normally Open	
	GFS Male GFS Fitting					P Purple			
	FGFS Female GFS Fitting					O Orange			
	NPT Male NPT					I Pink			
	FNPT Female NPT					R Brown			
						S Silver			
						W White			
						Y Yellow			