

3-way Diaphragm Valves

The DV3 Series Diaphragm Valves are totally free of springs, bellows, packing, o-rings and lubricants in the process wetted area. Metal-to-metal seals to atmosphere ensure that there is no leaching of undesirable elements into the flow stream and no leakage of process material into the atmosphere. Elgiloy® diaphragms ensure the utmost in corrosion resistance and life span.



Typical Applications

- Analytical Instrumentation
- Petrochemical
- Pharmaceutical
- Chemical

Technical Data

BODY	316L stainless steel, Monel® and Hastelloy® C-276	
SEATS	PCTFE (Kel-F®), Polyimide (Vespel®), Tefzel® and PEEK™	
DIAPHRAGMS	Elgiloy® AMS 5876	
ORIFICE SIZE	0.110"	
FLOW CAPACITY	0.17 Cv	
VALVE INTERNAL VOLUME*	0.25cc	
LEAKAGE	1×10^{-9} cc/sec helium (inboard)	

Features & Benefits

- 3-way switching on/off control
- Metal-to-metal seals to atmosphere
- Wide variety of materials for virtually all applications
- No o-rings, springs, or lubricant in wetted flow path
- Very low internal volume (0.25cc)
- Pneumatic actuation
- Pressures from vacuum to 800 (50 torr) psig (55.2 bar)
- 40µ sintered stainless steel air inlet filter extends life of pneumatic actuator

Operating Pressures

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OPERATING PRESSURE	Vacuum (50 torr) to 800 psig
PROOF PRESSURE	1600 psig
BURST PRESSURE	3200 psig

^{*} Dead volume in machined passages of the valve body between mounting surface and sealing diaphragm(s).

Operating Temperatures

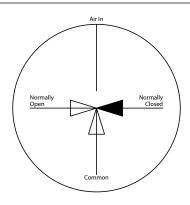
SEAT MATERIAL	TEMPERATURE
Tefzel®	-40° F to +140° F (-40° C to +60° C)
PCTFE (Kel-F®)	-40° F to +300° F (-40° C to +149° C)
Polyimide (Vespel®)	-40° F to +400° F (-40° C to +204° C)
PEEK™	-40° F to +400° F (-40° C to +204° C)

HOKE Incorporated

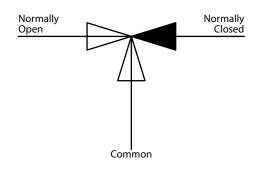
Air Actuation Pressure Requirements

(psig nominal)

	PROCESS PRESSURE	ACTUATION PRESSURE
	0-250	44
SINGLE PISTON	251-500	76
	501-800	100
	0-250	22
DOUBLE PISTON	251-500	38
	501-800	50

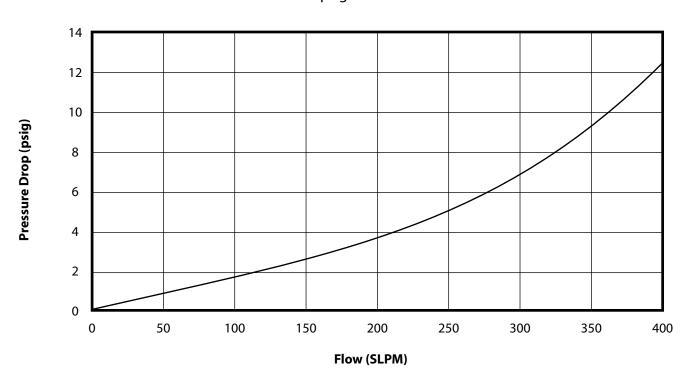


Typical Flow Schematic



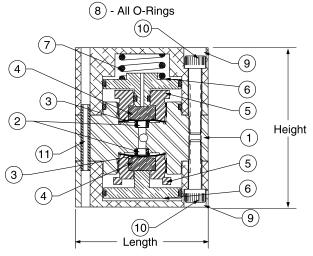
Pressure Drop vs. Flow Curve

DV3 Pressure Drop vs. Flow500 psig Process Pressure



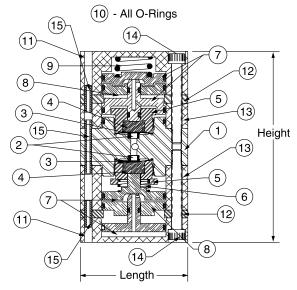
Materials of Construction

Single Piston Actuators



#	PART	MATERIALS
1	Body*	316L stainless steel, Monel® & Hastelloy® C-276
2	Seat*	PCTFE (Kel-F®), Polyimide (Vespel®), Tefzel®, PEEK™
3	Diaphragm*	Elgiloy® AMS 5876
4	Thrust plug	brass
5	Diaphragm retainer	316 stainless steel
6	Piston	brass
7	Spring	302 stainless steel
8	O-rings	Viton [®]
9	Cap	Aluminum, 316L stainless steel, Monel® & Hastelloy® C-276
10	Cap screw	18-8 stainless steel
11	Spring pin	420 stainless steel
*Wet	ted components	

Double Piston Actuators



#	PART	MATERIALS
1	Body*	316L stainless steel, Monel® & Hastelloy® C-276
2	Seat*	PCTFE (Kel-F®), Polyimide (Vespel®), Tefzel®, PEEK™
3	Diaphragm*	Elgiloy® AMS 5876
4	Thrust plug	brass
5	Diaphragm retainer	316 stainless steel
6	Spring	302 stainless steel
7	Piston	brass
8	Chamber separator	brass
9	Spring	302 stainless steel
10	O-rings	Viton®
11	Cap	Aluminum, 316L stainless steel, Monel® & Hastelloy® C-276
12	Ledge plate	Aluminum, 316L stainless steel, Monel® & Hastelloy® C-276
13	Riser	Aluminum, 316L stainless steel, Monel® & Hastelloy® C-276
14	Cap screw	18-8 stainless steel
15	Spring pin	420 stainless steel
*Wet	ted components	

Dimensions

PISTON TYPE	LENGTH	HEIGHT
Single	2.0" (50.8 mm)	2.52" (64.01 mm)
Double	2.0" (50.8 mm)	3.67" (93.22 mm)

How To Order

MAXIMUM PROCESS PRESSURE -

A 250 psig **B** 500 psig **C** 800 psig

Standard items in bold DV3 - 1 1 S 5 B F4 H 1 H **BODY MATERIAL** -**OPTIONS** 1 316L stainless steel 0 None 4 Monel® 1 Cleaned for oxygen service* 6 Hastelloy® C-276 4 Mounting bracket 6 Mounting bracket & cleaned for VALVE TYPE oxygen service* 1 Switching -SEAT MATERIAL **ACTUATOR TYPE-**A Tefzel® S Single piston C Polyimide (Vespel®) **D** Double piston H PCTFE (Kel-F®) **ACTUATOR MATERIAL Q** PEEK™ 1 316L stainless steel **-CONNECTION TYPE** 4 Monel® G2 Gyrolok® 1/8" 5 Aluminum **G4** Gyrolok® 1/4" 6 Hastelloy® C-276 F4 Female NPT 1/4"

B4 Female BSP/ISO 7/1 1/4"

^{*} Valve body will be marked that it is cleaned for oxygen.

For Your Safety

It is solely the responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation, and maintenance of these products. Material compatibility, product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.

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