

Diaphragm Valves

Index DV1 Series 2-way diaphragm valve DV3 Series 3-way diaphragm valves







GO Regulator 405 Centura Court • PO Box 4866 (29305) • Spartanburg, SC 29303 Phone (864) 574-7966 Fax (864) 574-5608 www.goreg.com • sales@goreg.com

GOregulator

DV1 Series

2-way Diaphragm Valves

The DV1 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

Features & Benefits

- 2-way on/off control
- Metal-to-metal seals to atmosphere
- Wide variety of materials for virtually all applications
 No dynamic O-rings, springs, or lubricant in wetted
- flow path
- Very low internal volume (0.42cc)
- Manual ¼-plus turn or pneumatic actuation
- Pressures from vacuum (50 torr) to 3600 psig (248 bar)*
- 40µ sintered stainless steel air inlet filter extends life of pneumatic actuator

* Valves cleaned for oxygen service are limited to 3000 psig (207 bar).

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Manual ¹/4-plus Turn Valves



Technical Data

BODY	316L stainless steel, brass, Monel® and Hastelloy® C-276
SEATS	PCTFE (Kel-F [®]), Polyimide, Tefzel [®] and PEEK [™]
DIAPHRAGMS	Elgiloy [®] AMS 5876
ORIFICE SIZE	0.110″ (2.8 mm)
FLOW CAPACITY	0.17 Cv
VALVE INTERNAL VOLUME*	0.42cc
LEAKAGE	1×10^{-9} cc/sec helium (inboard)

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

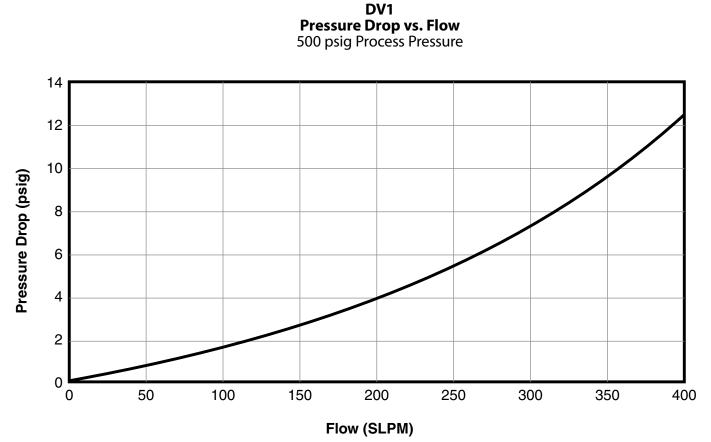
Operating Pressures

OPERATING PRESSURE*	Vacuum (50 torr) to 3600 psig (248 bar)
PROOF PRESSURE	7200 psig
BURST PRESSURE	14,400 psig
* Valves cleaned for oxvaen se	rvice are limited to 3000 psia (207 bar).

Operating Temperatures*

SEAT MATERIAL	1/4-PLUS TURN 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 +500° F (-40° C to +260° C)
*Note: Brass bodies are limited to 140°	F (60° C).

Pressure Drop vs. Flow Curve



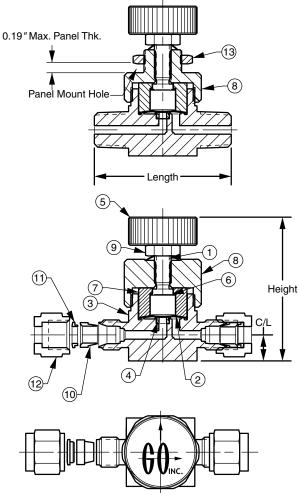
Note: Flow chart applies to all 2-way DV1 Series diaphragm valves

Materials of Construction

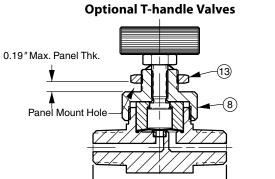
#	PART	MATERIALS
1	Stem	17-4PH stainless steel, condition H900
2	Diaphragm*	Elgiloy® AMS 5876
3	Body*	316L stainless steel, Monel®, brass, Hastelloy® C-276
4	Seat*	PCTFE (Kel-F®), Polyimide (Vespel®), Tefzel®, PEEK™
5	Handle	316 stainless steel
6	Thrust plug	brass
7	Diaphragm retainer	316 stainless steel
8	Bonnet	316L stainless steel, Monel®, brass, Hastelloy® C-276
9	Handle nut	18-8 stainless steel
10	Front ferrule*	316L stainless steel, Monel®, brass, Hastelloy® C-276
11	Rear ferrule	316L stainless steel, Monel®, brass, Hastelloy® C-276
12	Nut	316L stainless steel, Monel®, brass, Hastelloy® C-276
13	Panel-mount nut	316L stainless steel, Monel®, brass, Hastelloy® C-276

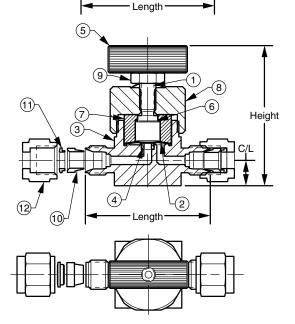
*Wetted components





Top view





Top view

Dimensions

Manual ¼-plus Turn Valves

END CONNECTION	LENGTH	HEIGHT	HANDLE RADIUS	C/L CENTER LINE	PANEL MOUNT HOLE	PANEL MOUNT THICK
1⁄4″ MNPT	2.00″	2.44″	0.90″	0.38″	0.57″	0.19″
1⁄4″ FNPT	2.00″	2.44″	0.90″	0.38″	0.57″	0.19″
⅓″ Gyrolok®	1.71″	2.44″	0.90″	0.38″	0.57″	0.19″
1⁄4″ Gyrolok®	1.87″	2.44″	0.90″	0.38″	0.57″	0.19″
¼″ NPT extended	3.15″	2.44″	0.90″	0.38″	0.57″	0.19″
6mm Gyrolok®	47.5mm	61.98mm	22.86mm	9.65mm	14.48mm	4.83mm
8mm Gyrolok®	47.5mm	61.98mm	22.86mm	9.65mm	14.48mm	4.83mm

Pneumatic Actuated Valves



Technical Data

BODY	316L stainless steel, brass, Monel® and Hastelloy® C-276
SEATS	PCTFE (Kel-F®), Polyimide (Vespel®), Tefzel® and PEEK™
DIAPHRAGMS	Elgiloy® AMS 5876
ORIFICE SIZE	0.110″ (2.8 mm)
FLOW CAPACITY	0.17 Cv
VALVE INTERNAL VOLUME*	0.42cc
LEAKAGE	1×10^{-9} cc/sec helium (inboard)
PNEUMATIC ACTUATOR	Anodized aluminum standard (other materials optional) 40µ sintered stainless steel inlet air filter

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

Operating Pressures Ratings

	SMALL DIAMETER	MEDIUM DIAMETER	LARGE DIAMETER
VALVE WORKING PRESSURE*	Vacuum (50 torr)	Vacuum (50 torr)	Vacuum (50 torr)
	to 500 psig	to 800 psig	to 3600 psig
VALVE PROOF PRESSURE	1000 psig	1600 psig	7200 psig
VALVE BURST PRESSURE	2000 psig	3600 psig	14,400 psig

* Valves cleaned for oxygen service are limited to 3000 psig (207 bar).

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)

*Note: Brass bodies are limited to 140° F (60° C).

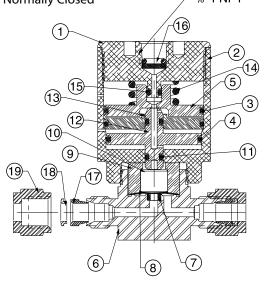
Air Actuation Pressure Requirements

PRESSURE	SMALL DIAMETER	MEDIUM DIAMETER	LARGE DIAMETER
Valve Operating Pressure	Vacuum (50 torr) to 500 psig	Vacuum (50 torr) to 800 psig	Vacuum (50 torr) to 3600 psig
Actuation Pressure Normally Closed	19 psig (0–250 psig process pressure) 39 psig (251–500 psig process pressure)	14 psig (0–250 psig process pressure) 21 psig (251–500 psig process pressure) 33 psig (501–800 psig process pressure)	50 psig (0–3600 psig process pressure)
Actuation Pressure Normally Open	36 psig (500 psig process pressure)	32 psig (800 psig process pressure)	N/A

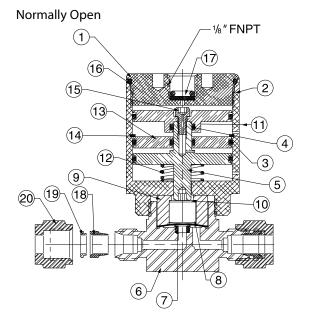
Note: Actuation/Pressure Curves available on the web at www.goreg.com

Materials of Construction

Pneumatic Actuated Valves Normally Closed /1/8 " FNPT



#	PART	MATERIALS
1	Housing cap	Aluminum, 316L stainless steel, Monel® & Hastelloy® C-276
2	Housing	Aluminum, 316L stainless steel, Monel® & Hastelloy® C-276
3	O-rings	Viton®
4	O-rings	Viton®
5	Upper piston	brass
6	Body*	316L stainless steel, brass, Monel [®] & Hastelloy [®] C-276
7	Seat*	PCTFE (Kel-F [®]), Polyimide (Vespel [®]), Tefzel [®] , PEEK [™]
8	Diaphragm*	Elgiloy [®] AMS 5876
9	Diaphragm retainer	316 stainless steel
10	Thrust plug	brass
11	O-ring	Viton®
12	Lower piston	brass
13	Chamber separator	brass
14	Spring	NISPAN
15	O-ring	Viton®
16	Sintered filter	316 stainless steel, 40μ
17	Front ferrule*	316L stainless steel, brass, Monel [®] & Hastelloy [®] C-276
18	Rear ferrule	316L stainless steel, brass, Monel® & Hastelloy® C-276
19	Nut	316L stainless steel, brass, Monel [®] & Hastelloy [®] C-276
*Wet	ted components	

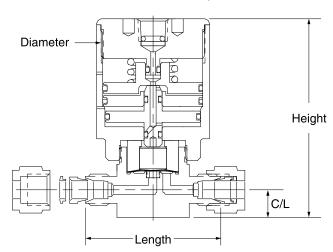


#	PART	MATERIALS
1	Housing cap	Aluminum, 316L stainless steel, Monel® & Hastelloy® C-276
2	Housing	Aluminum, 316L stainless steel, Monel® & Hastelloy® C-276
3	O-rings	Viton®
4	O-rings	Viton®
5	Piston	brass
6	Body*	316L stainless steel, brass, Monel® & Hastelloy® C-276
7	Seat*	PCTFE (Kel-F®), Polyimide (Vespel®), Tefzel®, PEEK™
8	Diaphragm*	Elgiloy® AMS 5876
9	Diaphragm retainer	316 stainless steel
10	Thrust plug	brass
11	Upper piston	brass
12	Spring	302 stainless steel
13	Chamber separator	brass
14	Retaining ring	302 stainless steel
15	Cap screw	Alloy steel
16	O-ring	Viton®
17	Sintered filter	316 stainless steel, 40µ
18	Front ferrule	316L stainless steel, brass, Monel® & Hastelloy® C-276
19	Rear ferrule	316L stainless steel, brass, Monel® & Hastelloy® C-276
20	Nut	316L stainless steel, brass, Monel® & Hastelloy® C-276
*Wet	ted components	

Dimensions

Pneumatic Small Diameter Actuator

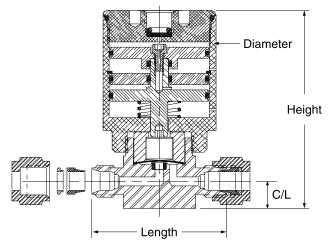
END CONNECTION	LENGTH	HEIGHT	ACTUATOR DIAMETER	C/L CENTER LINE
1⁄4″ MNPT	2.00″ (5.1 cm)	2.75″ (7.0 cm)	1.31″ (3.3 cm)	0.38″ (1.0 cm)
1⁄4″ FNPT	2.00″ (5.1 cm)	2.75″ (7.0 cm)	1.31″ (3.3 cm)	0.38″ (1.0 cm)
1∕8″ Gyrolok®	1.71″ (4.3 cm)	2.75″ (7.0 cm)	1.31″ (3.3 cm)	0.38″ (1.0 cm)
1⁄4″ Gyrolok®	1.87″ (4.8 cm)	2.75″ (7.0 cm)	1.31″ (3.3 cm)	0.38″ (1.0 cm)
¼″ NPT extended	3.15″ (8.0 cm)	2.75″ (7.0 cm)	1.31″ (3.3 cm)	0.38″ (1.0 cm)
6mm Gyrolok®	47.5mm	69.85mm	33.27mm	9.65mm
8mm Gyrolok®	47.5mm	69.85mm	33.27mm	9.65mm



Pneumatic Medium Diameter Actuator

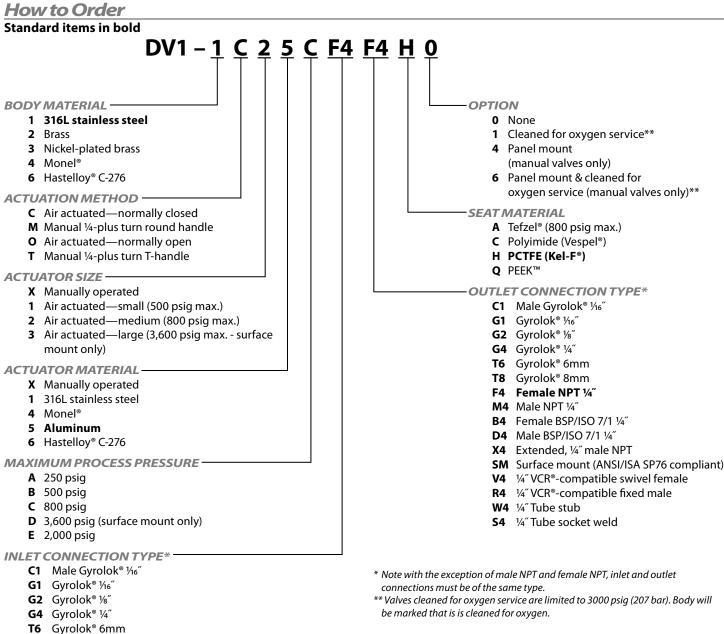
END CONNECTION	LENGTH	HEIGHT	ACTUATOR DIAMETER	C/L CENTER LINE
1⁄4″ MNPT	2.00″ (5.1 cm)	2.75″ (7.0 cm)	1.56″ (4.0 cm)	0.38″ (1.0 cm)
1⁄4″ FNPT	2.00″ (5.1 cm)	2.75″ (7.0 cm)	1.56″ (4.0 cm)	0.38″ (1.0 cm)
1∕ෳ″ Gyrolok®	1.71″ (4.3 cm)	2.75″ (7.0 cm)	1.56″ (4.0 cm)	0.38″ (1.0 cm)
1⁄4″ Gyrolok®	1.87″ (4.8 cm)	2.75″ (7.0 cm)	1.56″ (4.0 cm)	0.38″ (1.0 cm)
1/4" NPT extended	3.15″ (8.0 cm)	2.75″ (7.0 cm)	1.56″ (4.0 cm)	0.38″ (1.0 cm)
6mm Gyrolok®	47.5mm	69.85mm	39.62mm	9.65mm
8mm Gyrolok®	47.5mm	69.85mm	39.62mm	9.65mm

Normally Open



Pneumatic Large Diameter Actuator

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END CONNECTION	LENGTH	HEIGHT	ACTUATOR DIAMETER	C/L CENTER LINE
1⁄4″ MNPT	2.00″ (5.1 cm)	3.25″ (8.3 cm)	2.36″ (6.0 cm)	0.38″ (1.0 cm)
1⁄4″ FNPT	2.00″ (5.1 cm)	3.25″ (8.3 cm)	2.36″ (6.0 cm)	0.38″ (1.0 cm)
1∕8″ Gyrolok®	1.71″ (4.3 cm)	3.25″ (8.3 cm)	2.36″ (6.0 cm)	0.38″ (1.0 cm)
1⁄4″ Gyrolok®	1.87″ (4.8 cm)	3.25″ (8.3 cm)	2.36″ (6.0 cm)	0.38″ (1.0 cm)
1/4" NPT extended	3.15″ (8.0 cm)	3.25″ (8.3 cm)	2.36″ (6.0 cm)	0.38″ (1.0 cm)
6mm Gyrolok®	47.5mm	82.55mm	59.94mm	9.65mm
8mm Gyrolok®	47.5mm	82.55mm	59.94mm	9.65mm



- T8 Gyrolok® 8mm
- F4 Female NPT 1/4"
- M4 Male NPT 1/4"
- B4 Female BSP/ISO 7/1 1/4"
- D4 Male BSP/ISO 7/1 1/4"
- X4 Extended, ¼" male NPT
- SM Surface mount (ANSI/ISA SP76 compliant)
- V4 1/4" VCR®-compatible swivel female
- **R4** ¹/₄" VCR[®]-compatible fixed male
- W4 ¼″ Tube stub
- **S4** ¹/₄" Tube socket weld

GO Diaphragm Valves 7

GOREGULATOR **DV3 Series** 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

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

TEMPERATURE		
-40° F to +140° F (-40° C to +60° C)		
-40° F to +300° F (-40° C to +149° C)		
40° F to +400° F (-40° C to +204° C)		
40° F to +400° F (-40° C to +204° C)		

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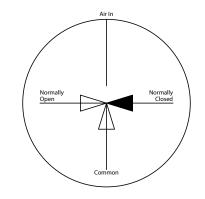
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DV3 Series

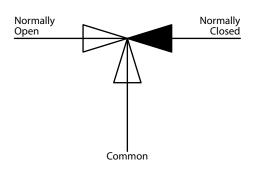
Air Actuation Pressure Requirements

(psig nominal)

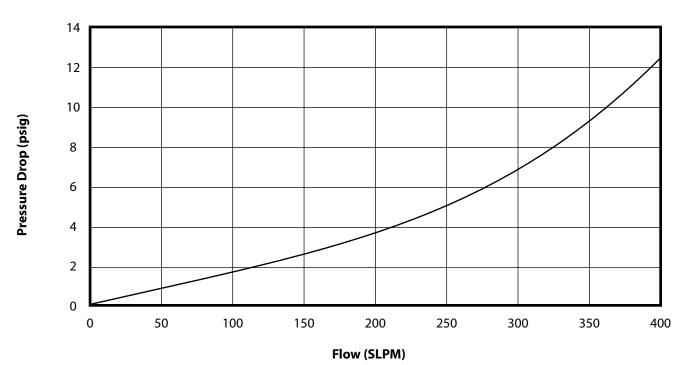
	PROCESS PRESSURE	ACTUATION PRESSURE
	0-250	44
SINGLE PISTON	251-500	76
	501-800	100
	0-250	22
DOUBLE PISTON	251-500	38
	501-800	50



Typical Flow Schematic



Pressure Drop vs. Flow Curve

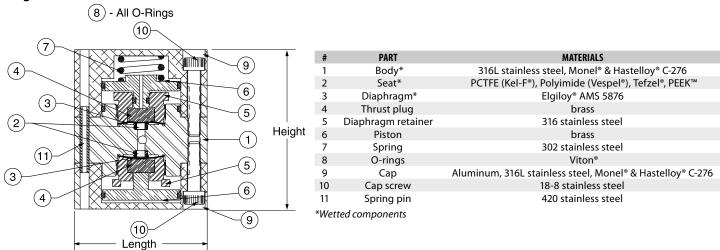


DV3 Pressure Drop vs. Flow 500 psig Process Pressure

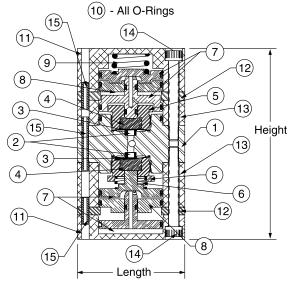
DV3 Series

Materials of Construction

Single Piston Actuators



Double Piston Actuators

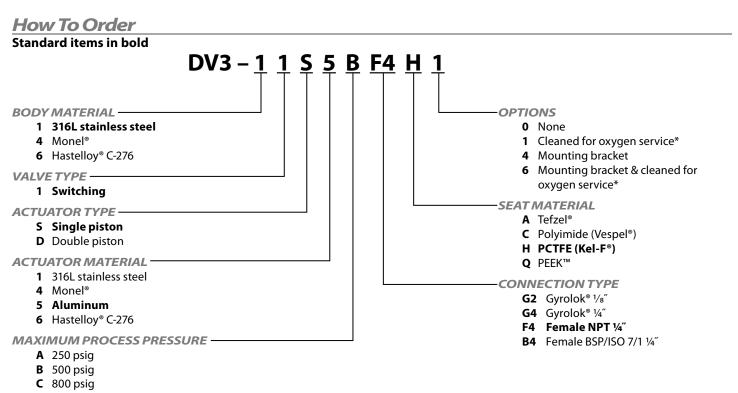


#	PART	MATERIALS	
1	Body*	316L stainless steel, Monel [®] & Hastelloy [®] C-276	
2	Seat*	PCTFE (Kel-F®), Polyimide (Vespel®), Tefzel®, PEEK™	
3	Diaphragm*	Elgiloy® AMS 5876	
4	Thrust plug	brass	
5	Diaphragm retainer	316 stainless steel	
6	Spring	302 stainless steel	
7	Piston	brass	
8	Chamber separator	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)

DV3 Series



* 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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Panels Plus

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томсо

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