GO REGULATOR

DV1 Series

2-way Diaphragm Valves

BOISWOOD
GAS AND LIQUID CONTROL TECHNOLOGIES
Pressure & Vacuum
Flow
Level & Temperature
Tube & Fittings
HVACR
Custom Services

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. Elgiloy® diaphragms ensure the utmost in corrosion resistance and life span.

Features & Benefits

- 2-way 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 (0.01cc)
- Manual ¼+ turn or pneumatic actuation
- Pressures from vacuum to 3,600 psig
- Optimal diaphragm design provides cycle life greater than 5,000,000
- 40µ sintered stainless steel air inlet filter extends life of pneumatic actuator

diaphragm valves

GO Regulator
405 Centura Court • PO Box 4866 • Spartanburg, SC 29303
Phone (864) 574-7966 Fax (864) 587-5608
www.goreg.com • sales@goreg.com

DV1 Series

Specifications

Manual ¼+ Turn Valves

BODY	316L stainless steel, Monel® and Hastelloy® C
SEATS	PCTFE (Kel-F®), Polyimide, Tefzel® and PEEK™
DIAPHRAGMS	Elgiloy® AMS 5876
WORKING TEMPERATURE RANGE	–40° to +500° F (–40° C to +260° C)
WORKING PRESSURE RANGE	Vacuum (50 torr) to 3600 psig (248 BAR)
ORIFICE SIZE	0.110˝
FLOW CAPACITY	0.17 Cv
LOW CAVITY VOLUME	0.01cc
LEAKAGE	1×10^{-9} cc/sec helium (inboard)
LIFE CYCLES	In excess of 5,000,000 cycles @ 250 psig

Operating Pressures

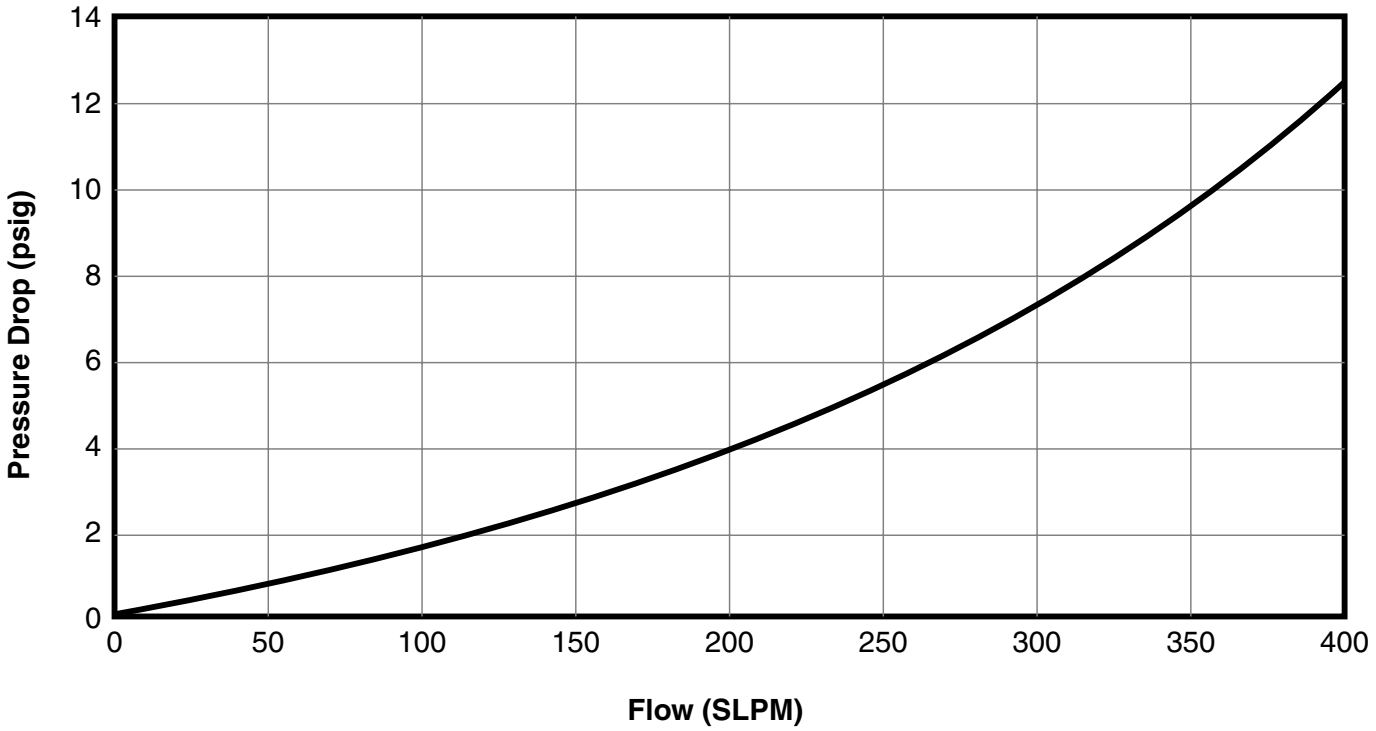
OPERATING PRESSURE	Vacuum (50 torr) to 3,600 psig
PROOF PRESSURE	7,200 psig
BURST PRESSURE	14,400 psig

Operating Temperatures

SEAT MATERIAL	¼+ TURN TEMPERATURE
Tefzel®	–40° F to +140° F
PCTFE/Kel-F®	–40° F to +175° F
Polyimide/Vespel®	–40° F to +400° F
PEEK™	–40° F to +500° F

Note: Brass bodies are limited to 140° F

DV1
Pressure Drop vs Flow
500 psig Process Pressure

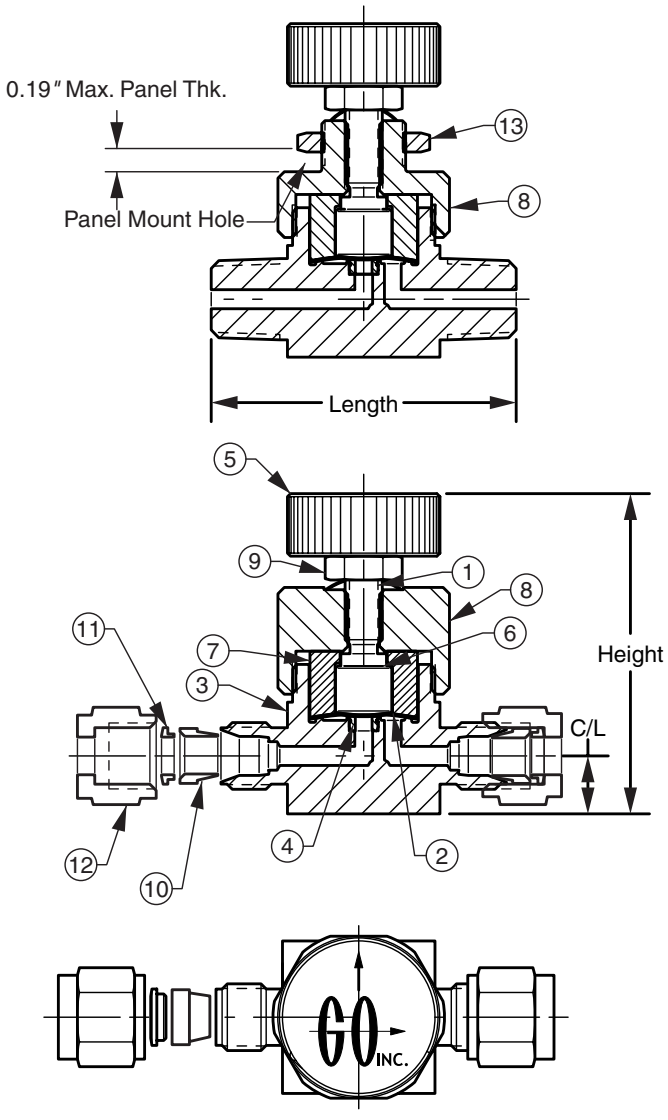


Note: Flow chart applies to all 2-way DV1 Series diaphragm valves

DV1 Series

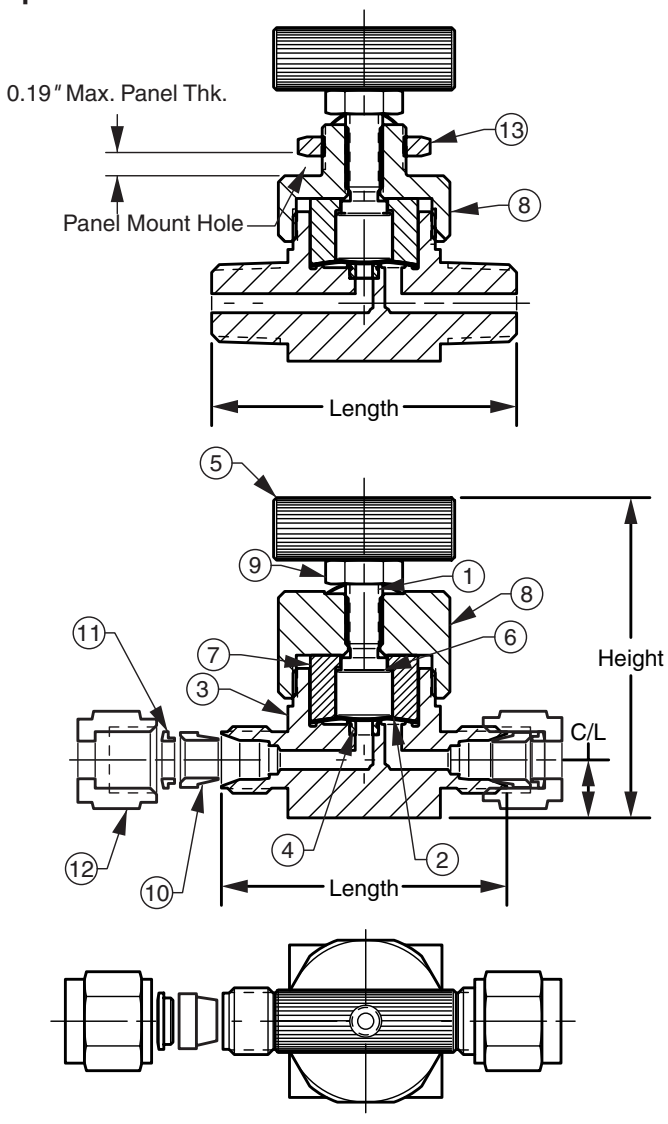
Materials of Construction

Manual ¼+ Turn Valves



Top view

Optional T-handle Valves



Top view

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

**Wetted components*

Dimensions

Manual ¼+ Turn Valves

END CONNECTION	LENGTH	HEIGHT	HANDLE RADIUS	C/L CENTER LINE	PANEL MOUNT HOLE	PANEL MOUNT THICK
¼″ MNPT	2.00″	2.44″	0.90″	0.38″	0.57″	0.19″
¼″ FNPT	2.00″	2.44″	0.90″	0.38″	0.57″	0.19″
⅛″ Gyrolok®	1.71″	2.44″	0.90″	0.38″	0.57″	0.19″
¼″ 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

DV1 Series

Specifications

Pneumatic Actuated Valves

BODY	316L stainless steel, Monel® and Hastelloy® C
SEATS	PCTFE (Kel-F®), Polyimide, Tefzel® and PEEK™
DIAPHRAGMS	Elgiloy® AMS 5876
WORKING TEMPERATURE RANGE	–40° to +400° F (–40° C to +204° C)
WORKING PRESSURE RANGE	Vacuum (50 torr) to 3,600 psig (248 BAR)
ORIFICE SIZE	0.110″
FLOW CAPACITY	0.17 Cv
LOW CAVITY VOLUME	0.01cc
LEAKAGE	1×10^{-9} cc/sec helium (inboard)
PNEUMATIC ACTUATOR	Anodized aluminum standard (other materials optional) 40µ sintered stainless steel inlet air filter
LIFE CYCLES	In excess of 5,000,000 cycles @ 250 psig

Operating Pressures Ratings

	SMALL DIAMETER	MEDIUM DIAMETER	LARGE DIAMETER
VALVE WORKING PRESSURE	Vacuum (50 torr) to 500 psig	Vacuum (50 torr) to 800 psig	Vacuum (50 torr) to 3,600 psig
VALVE PROOF PRESSURE	1,000 psig	1,600 psig	7,200 psig
VALVE BURST PRESSURE	2,000 psig	3,600 psig	14,400 psig

Operating Temperatures

SEAT MATERIAL	TEMPERATURE
Tefzel®	–40° F to +140° F
PCTFE/Kel-F®	–40° F to +175° F
Polyimide/Vespel®	–40° F to +400° F
PEEK™	–40° F to +400° F

Note: Brass bodies are limited to 140° F

Air Actuation Pressure Requirements (psig nominal)

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 3,600 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 (0–3,600 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

Dimensions

Pneumatic Actuated Valves

Pneumatic Small Diameter Actuator

END CONNECTION	LENGTH	HEIGHT	ACTUATOR DIAMETER	C/L CENTER LINE
¼″ MNPT	2.00″	2.75″	1.31″	0.38″
¼″ FNPT	2.00″	2.75″	1.31″	0.38″
⅛″ Gyrolok®	1.71″	2.75″	1.31″	0.38″
¼″ Gyrolok®	1.87″	2.75″	1.31″	0.38″
¼″ NPT extended	3.15″	2.75″	1.31″	0.38″
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
¼″ MNPT	2.00″	2.75″	1.56″	0.38″
¼″ FNPT	2.00″	2.75″	1.56″	0.38″
⅛″ Gyrolok®	1.71″	2.75″	1.56″	0.38″
¼″ Gyrolok®	1.87″	2.75″	1.56″	0.38″
¼″ NPT extended	3.15″	2.75″	1.56″	0.38″
6mm Gyrolok®	47.5mm	69.85mm	39.62mm	9.65mm
8mm Gyrolok®	47.5mm	69.85mm	39.62mm	9.65mm

Pneumatic Large Diameter Actuator

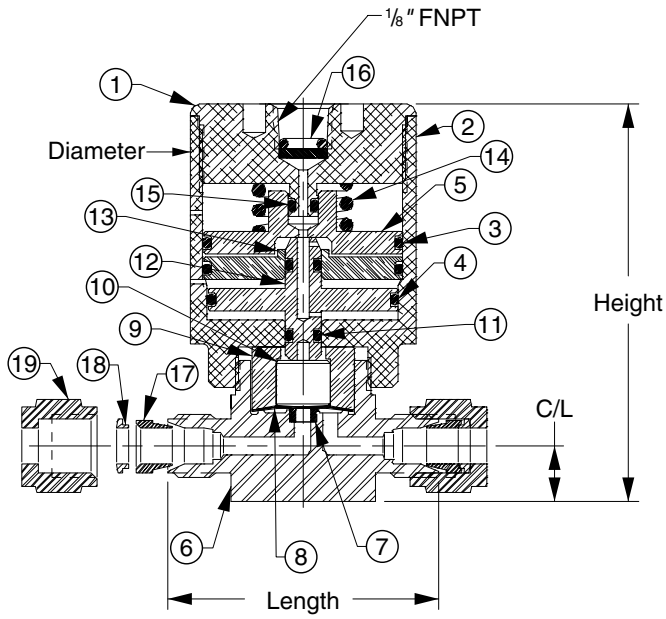
END CONNECTION	LENGTH	HEIGHT	ACTUATOR DIAMETER	C/L CENTER LINE
¼″ MNPT	2.00″	3.25″	2.36″	0.38″
¼″ FNPT	2.00″	3.25″	2.36″	0.38″
⅛″ Gyrolok®	1.71″	3.25″	2.36″	0.38″
¼″ Gyrolok®	1.87″	3.25″	2.36″	0.38″
¼″ NPT extended	3.15″	3.25″	2.36″	0.38″
6mm Gyrolok®	47.5mm	82.55mm	59.94mm	9.65mm
8mm Gyrolok®	47.5mm	82.55mm	59.94mm	9.65mm

DV1 Series

Materials of Construction

Pneumatic Actuated Valves

Normally Closed

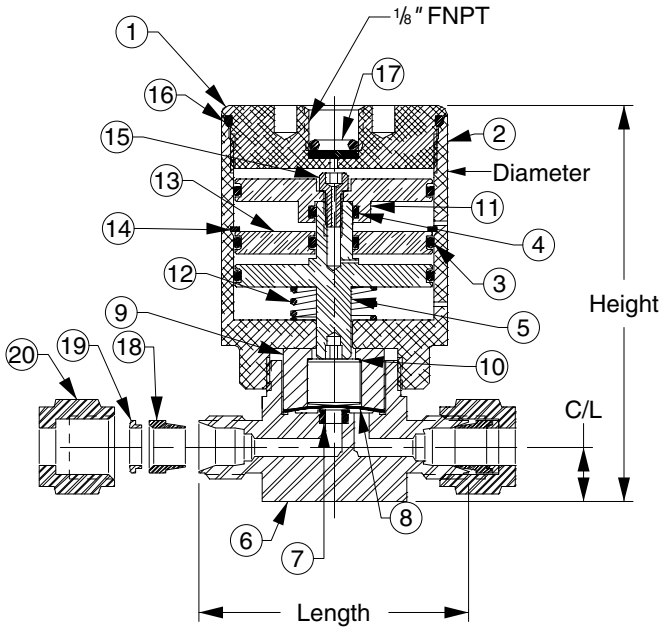


See dimension on previous page.

#	PART	MATERIALS
1	Housing cap	Aluminum, 316L stainless steel, Monel® & Hastelloy® C
2	Housing	Aluminum, 316L stainless steel, Monel® & Hastelloy® C
3	O-rings	Viton®
4	O-rings	Viton®
5	Upper piston	Brass
6	Body*	316L stainless steel, brass, Monel® & Hastelloy® C
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
18	Rear ferrule	316L stainless steel, brass, Monel® & Hastelloy® C
19	Nut	316L stainless steel, brass, Monel® & Hastelloy® C

**Wetted components*

Normally Open



See dimension on previous page.

#	PART	MATERIALS
1	Housing cap	Aluminum, 316L stainless steel, Monel® & Hastelloy® C
2	Housing	Aluminum, 316L stainless steel, Monel® & Hastelloy® C
3	O-rings	Viton®
4	O-rings	Viton®
5	Piston	Brass
6	Body*	316L stainless steel, brass, Monel® & Hastelloy® C
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
19	Rear ferrule	316L stainless steel, brass, Monel® & Hastelloy® C
20	Nut	316L stainless steel, brass, Monel® & Hastelloy® C

**Wetted components*

DV1 Series

How to Order

Standard items in bold

DV1 – 1 C 2 5 C G4 G4 H 0

BODY MATERIAL
- **1 316L stainless steel**
- **2** Brass
- **3** Nickel-plated brass
- **4** Monel®
- **6** Hastelloy® C

ACTUATION METHOD
- **M** Manual ¼plus-turn round handle
- **T** Manual ¼-turn T-handle
- **C** Air actuated—normally closed
- **O** Air actuated—normally open

ACTUATOR SIZE
- **X** Manually operated
- **1** Air actuated—small (500 psig max.)
- **2** Air actuated—medium (800 psig max.)
- **3** Air actuated—large (3,600 psig max.)

ACTUATOR MATERIAL
- **X** Manually operated
- **1** 316L stainless steel
- **4** Monel®
- **5 Aluminum**
- **6** Hastelloy® C

MAXIMUM PROCESS PRESSURE
- **A** 250 psig
- **B** 500 psig
- **C** 800 psig
- **D** 3,600 psig
- **E** 2,000 psig

INLET CONNECTION TYPE*
- **C1** Male Gyrolok® 1⁄16″
- **G1** Gyrolok® 1⁄16″
- **G2** Gyrolok® 1⁄8″
- **G4** Gyrolok® ¼″
- **T6** Gyrolok® 6mm
- **T8** Gyrolok® 8mm
- **F4 Female NPT ¼″**
- **M4** Male NPT ¼″
- **B4** Female BSP/ISO 7/1 ¼″
- **D4** Male BSP/ISO 7/1 ¼″
- **X4** Extended, ¼″ male NPT
- **SM** Surface mount (ANSI/ISA SP76 compliant)
- **V4** ¼″ VCR®-compatible swivel female
- **R4** ¼″ VCR®-compatible fixed male
- **W4** ¼″ tube stub
- **S4** ¼″ tube socket weld

OPTION
- **0** None
- **1** Cleaned for oxygen service
- **4** Panel mount (manual valves only)
- **6** Panel mount & cleaned for oxygen service (manual valves only)

SEAT MATERIAL
- **A** Tefzel® (800 psig max.)
- **C** Polyimide (Vespel®)
- **H PCTFE (Kel-F®)**
- **Q** PEEK™

OUTLET CONNECTION TYPE*
- **C1** Male Gyrolok® 1⁄16″
- **G1** Gyrolok® 1⁄16″
- **G2** Gyrolok® 1⁄8″
- **G4** Gyrolok® ¼″
- **T6** Gyrolok® 6mm
- **T8** Gyrolok® 8mm
- **F4 Female NPT ¼″**
- **M4** Male NPT ¼″
- **B4** Female BSP/ISO 7/1 ¼″
- **D4** Male BSP/ISO 7/1 ¼″
- **X4** Extended, ¼″ male NPT
- **SM** Surface mount (ANSI/ISA SP76 compliant)
- **V4** ¼″ VCR®-compatible swivel female
- **R4** ¼″ VCR®-compatible fixed male
- **W4** ¼″ tube stub
- **S4** ¼″ tube socket weld

** Note with the exception of male NPT and female NPT, inlet and outlet connections must be of the same type.*

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Viton® is a registered trademark of DuPont Dow Elastomers.
Vespel® is a registered trademark of E.I. du Pont de Nemours and Company.
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Monel® is a registered trademark of Special Metals Corporation.
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Kel-F® is a registered trademark of 3M Company.
Elgiloy® is a registered trademark of Elgiloy Specialty Metals.
PEEK™ is a trademark of Victrex PLC.
VCR® is a registered trademark of Cajon Co.

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.