

# DSV Series

*GC Diaphragm Valve,  
Normally Closed,  
with Atmospheric Reference*



- Available as:
- Stand-alone: *page 24*
  - Surface mount (ANSI/ISA-76  $\mu$ MS<sup>3</sup>™): *page 27*

The DSV Series diaphragm valve is a GC module with two normally closed shut-off valves and an atmospheric reference. It is available in two configurations: 1) stand-alone, and 2) ANSI/ISA-76 compliant configuration. It is also available as an integral piece of the DBA Series stream-switching valve manifold assembly (see page 30). Stand-alone DSV valve assemblies can be easily integrated into the ANSI/ISA-76 compliant system with the use of a simple adapter plate (see our  $\mu$ MS<sup>3</sup>™ Modular Substrate System brochure for additional information). The DSV Series is totally free of springs, bellows, packing 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. For Elgiloy® chemical compatibility see the *Technical Support* section of the CIRCOR Tech website at [www.circortech.com](http://www.circortech.com).

## Features & Benefits

- GC fast loop with atmospheric reference
- Surface mount ANSI/ISA-76 compliant\*
- 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 (1.19 cc)
- Pneumatic actuation
- Pressures from vacuum (50 torr) to 400 psig (27.6 BAR)
- Compact package (3" L × 2.6" H × 1.5" W)

\* with  $\mu$ MS<sup>3</sup>™ adapter plate

## Technical Data

<b>BODY</b>	316L stainless steel, Monel® or Hastelloy® C-276
<b>SEATS</b>	Tefzel®, PCTFE (Kel-F®), Polyimide (Vespel®), or PEEK™
<b>DIAPHRAGMS</b>	Elgiloy® AMS 5876
<b>ORIFICE SIZE</b>	0.110" (2.8 mm)
<b>FLOW CAPACITY</b>	0.13 Cv
<b>VALVE INTERNAL VOLUME*</b>	1.19 cc
<b>LEAKAGE</b>	1 × 10 <sup>-5</sup> cc/sec helium (inboard)
<b>ACTUATION PRESSURE</b>	35 psig (see chart page 27)

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

## Operating Pressures

<b>OPERATING PRESSURE</b>	Vacuum (50 torr) to 400 psig (27.6 BAR)
<b>PROOF PRESSURE</b>	1,000 psig
<b>BURST PRESSURE</b>	2,000 psig

## 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

## CIRCOR Tech

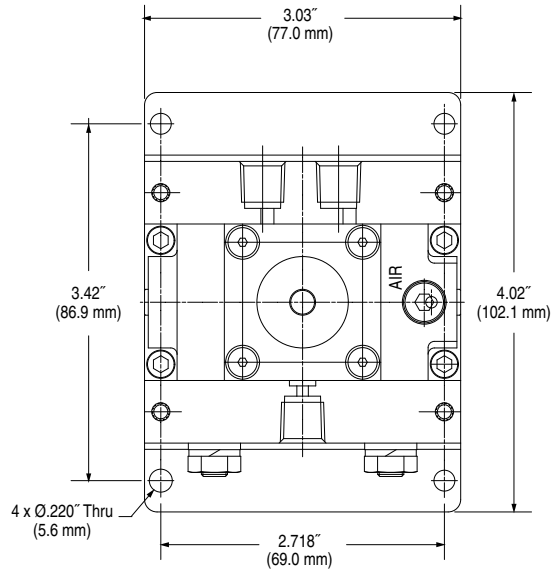
405 Centura Court • PO Box 4866 (29305) • Spartanburg, SC 29303  
 Phone (864) 574-7966 • Fax (864) 574-5608  
[www.circortech.com](http://www.circortech.com)

diaphragm valves

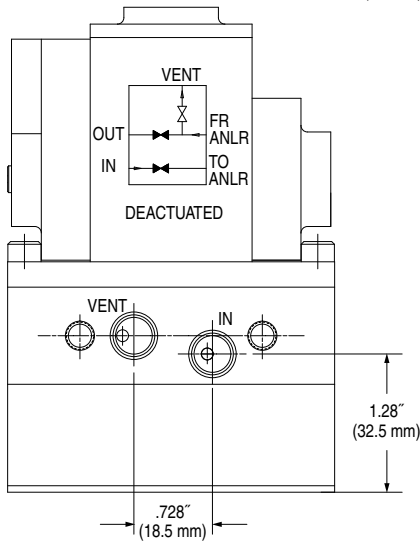
# DSV Series

## Dimensions

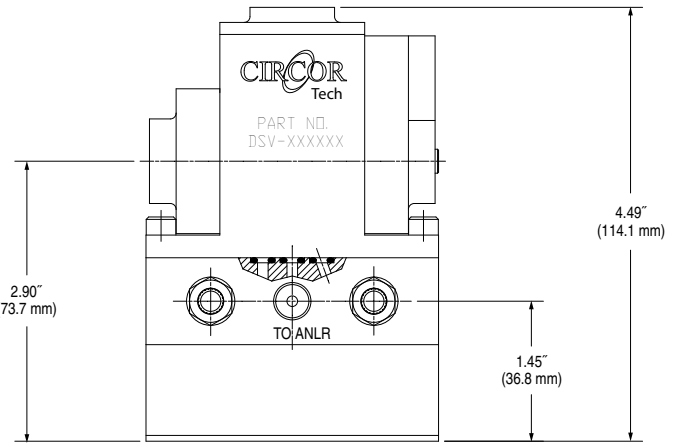
### Stand-alone



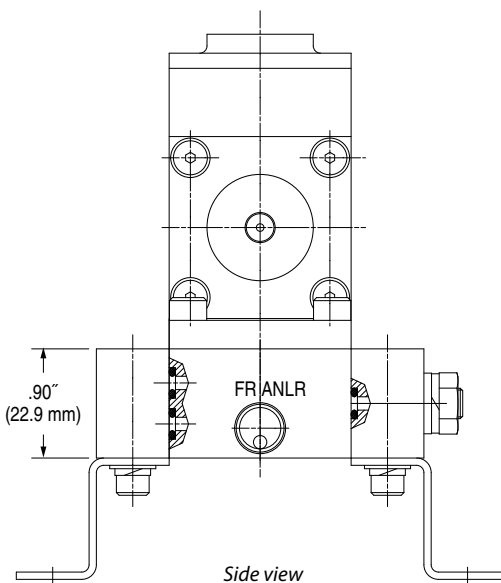
Top view



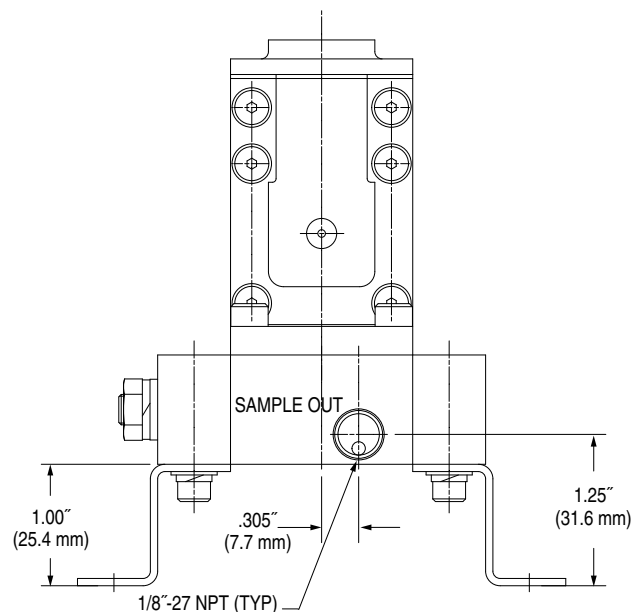
Back view



Front view



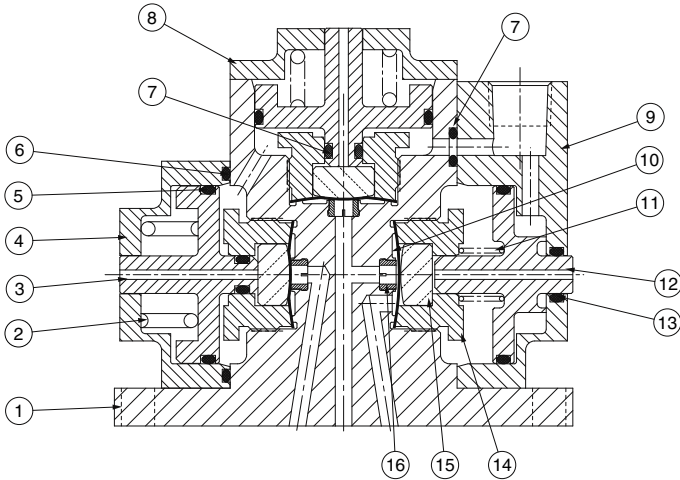
Side view



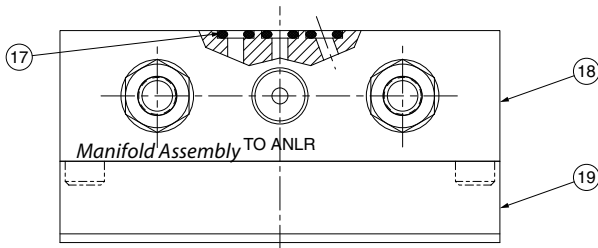
Back side view

# DSV Series

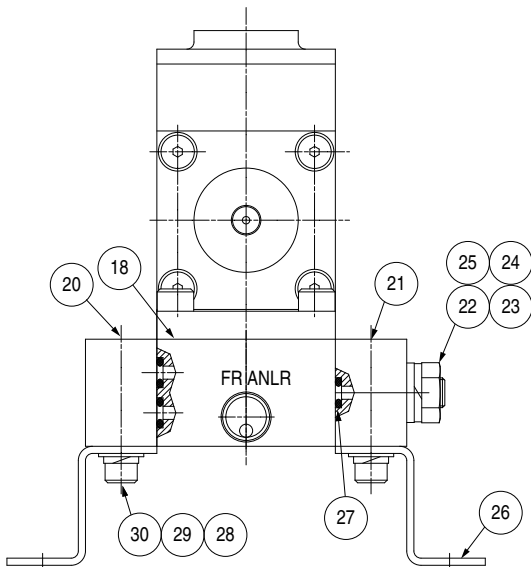
## Materials of Construction



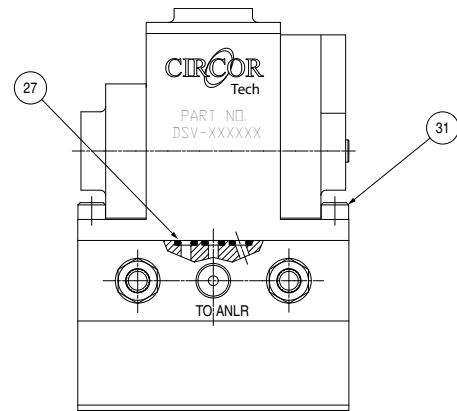
Valve - front view



Mounting bracket



Side view



Front view

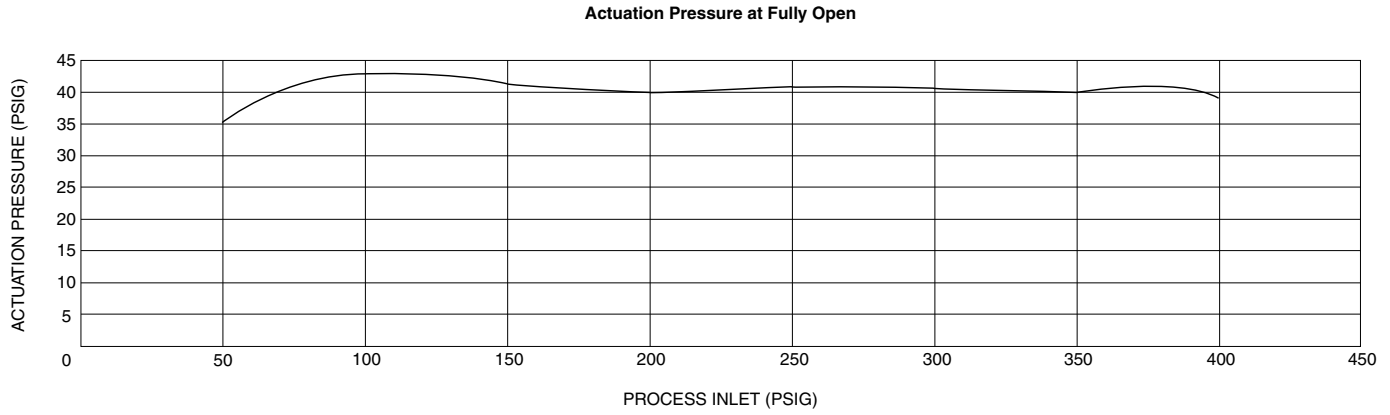
#	PART	MATERIALS
1	Body*	316L stainless steel, Monel® & Hastelloy® C-276
2	Spring	316 stainless steel
3	Piston	316 stainless steel
4	Cap	316 stainless steel
5	O-ring	Viton®
6	O-ring	Viton®
7	O-ring	Viton®
8	Cap	316 stainless steel
9	Cap	316 stainless steel
10	Diaphragm*	Elgiloy® AMS 5876
11	Spring	17-7PH stainless steel
12	Piston	316 stainless steel
13	O-ring	Viton®
14	Retainer	316 stainless steel
15	Thrust plug	Brass
16	Seat*	Tefzel®, PCTFE (Kel-F®), Polyimide (VespeI®), and PEEK™
17	O-ring*	Viton®, Kalrez®, or Teflon®
18	Manifold baseplate*	316L stainless steel, Monel® & Hastelloy® C-276
19	Mounting bracket (optional)	316 stainless steel
20	End plate*	316L stainless steel, Monel® & Hastelloy® C-276
21	End plate with vent*	316L stainless steel, Monel® & Hastelloy® C-276
22	Flat washer	18-8 stainless steel
23	Lock washer	18-8 stainless steel
24	Nut	18-8 stainless steel
25	Thread rod	18-8 stainless steel
26	Bracket	316 stainless steel
27	O-ring*	Viton®, Kalrez®, or Teflon®
28	Screw	18-8 stainless steel
29	Flat washer	18-8 stainless steel
30	Lock washer	18-8 stainless steel
31	Screw	18-8 stainless steel

\* Wetted components

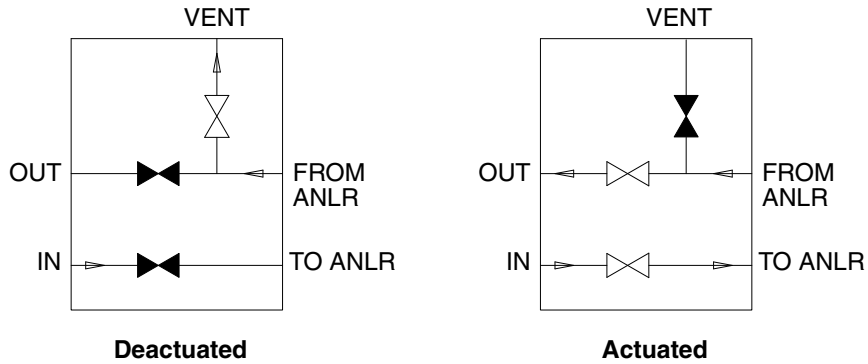
# DSV Series

## Actuation Pressure Curve

Stand-alone



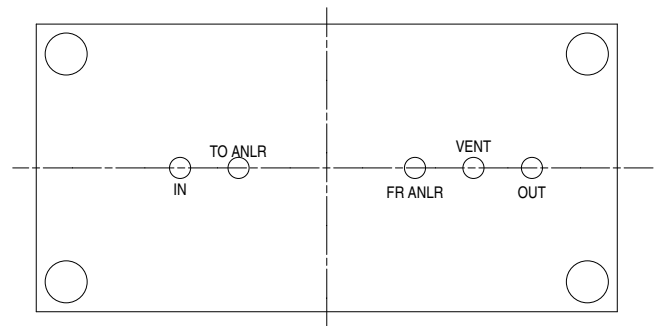
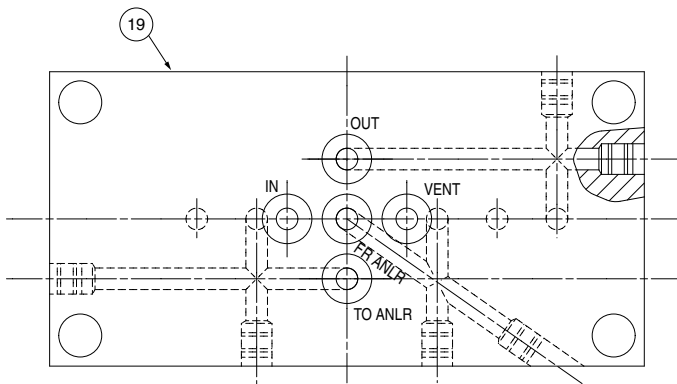
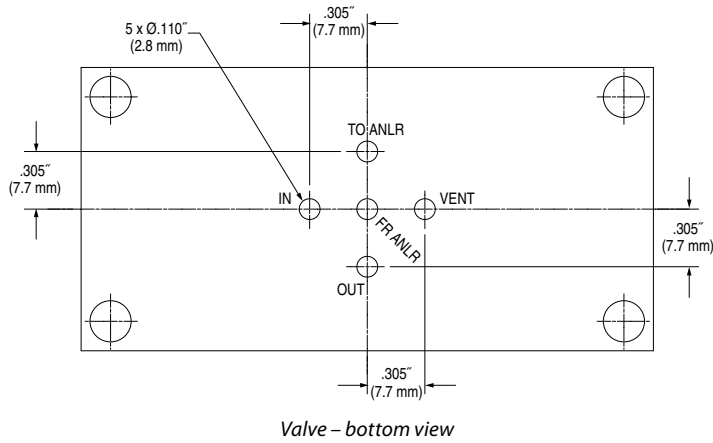
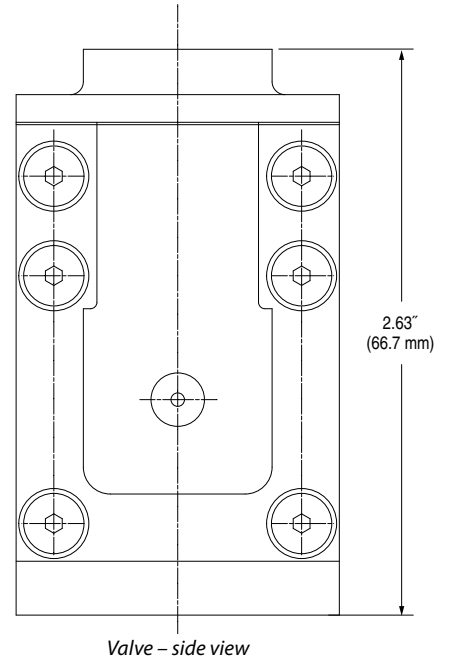
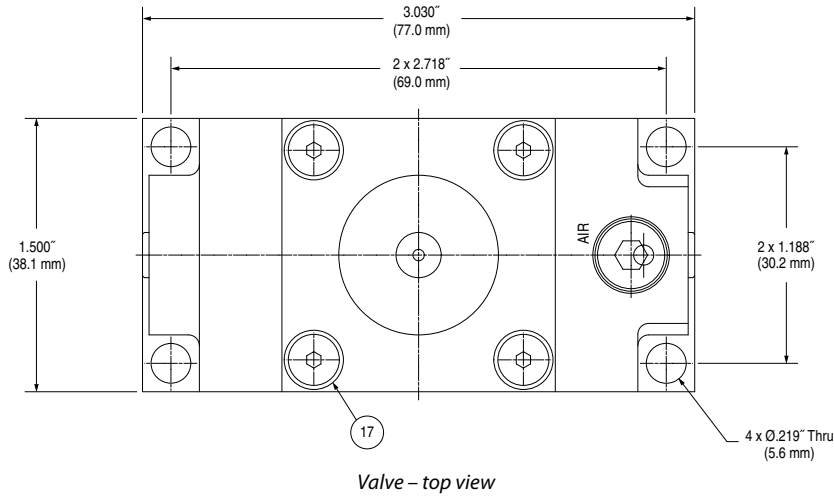
## Typical Flow Schematic



# DSV Series

## Dimensions

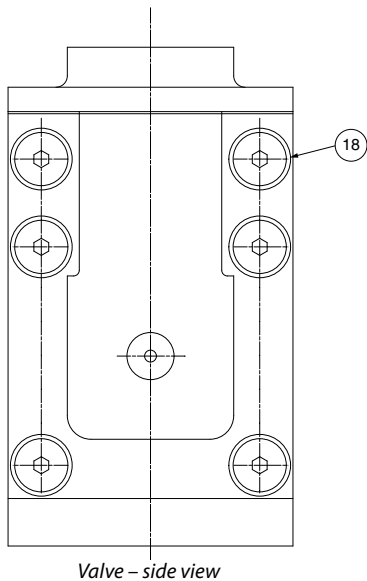
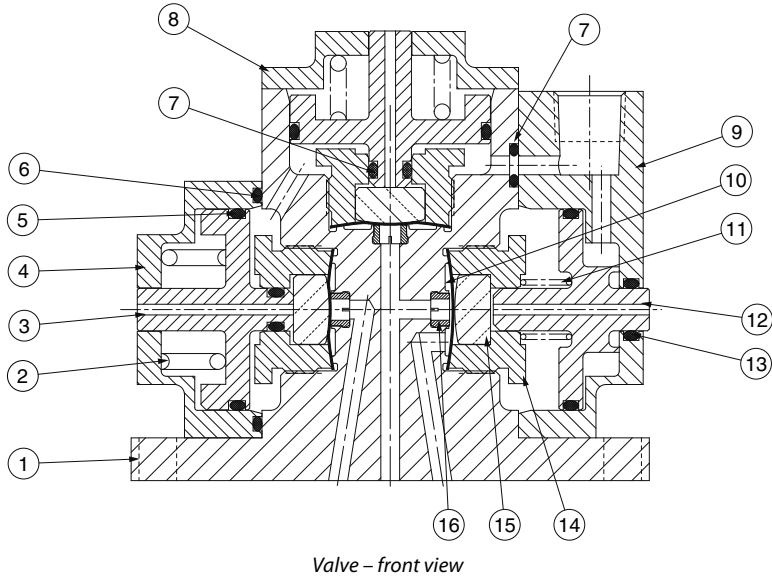
### Surface Mount (ANSI/ISA-76 compliant)



# DSV Series

## Materials of Construction

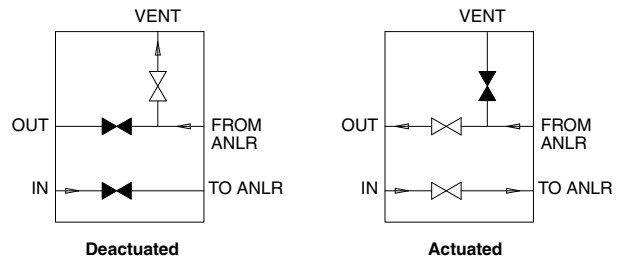
### Surface Mount (ANSI/ISA-76 compliant)



#	PART	MATERIALS
1	Body*	316L stainless steel, Monel® & Hastelloy® C-276
2	Spring	316 stainless steel
3	Piston	316 stainless steel
4	Cap	316 stainless steel
5	O-ring	Viton®
6	O-ring	Viton®
7	O-ring	Viton®
8	Cap	316 stainless steel
9	Cap	316 stainless steel
10	Diaphragm*	Elgiloy® AMS 5876
11	Spring	17-7PH stainless steel
12	Piston	316 stainless steel
13	O-ring	Viton®
14	Retainer	316 stainless steel
15	Thrust plug	Brass
16	Seat*	Tefzel®, PCTFE (Kel-F®), Polyimide (VespeI®), and PEEK™
17	SHC Screw - see pg. 27	18-8 stainless steel
18	SHC Screw	18-8 stainless steel
19	µMS <sup>3</sup> ™ Adapter plate* - see pg. 27 (ANSI/ISA-76 compliant) supplied separately	316L stainless steel
20	O-ring* - not shown	Viton®, Kalrez®, or Teflon®

\* Wetted components

## Typical Flow Schematic



## How to Order

**STANDARD ITEMS IN BOLD.** Consult Customer Service for pricing and lead times for non-standard items.

**DSV - 1 F2 H D 0 01**

### BODY MATERIAL

- 1** 316L stainless steel
- 4** Monel®
- 6** Hastelloy® C-276

### CONNECTION TYPE

- 00** Surface mount only\*\*\*
- F2** 1/8" female NPT

### SEAT MATERIAL

- A** Tefzel®
- C** Polyimide (VespeI®)
- H** PCTFE (Kel-F®)
- Q** PEEK™

### OPTIONS

- 0** None
- 1** Cleaned for oxygen service
- 5** Silcosteel® passivated\*\*

### O-RING MATERIAL

- D** Viton®
- F** Teflon®
- K** Kalrez®
- X** Surface mount o-ring\*\*\* (supplied with valve)

\* Available as special (not suitable for all applications)

\*\* Other Restek Corp. coatings (Sulfinert®, Silcosteel®-CR) available on request.

\*\*\* Required for surface mount units.