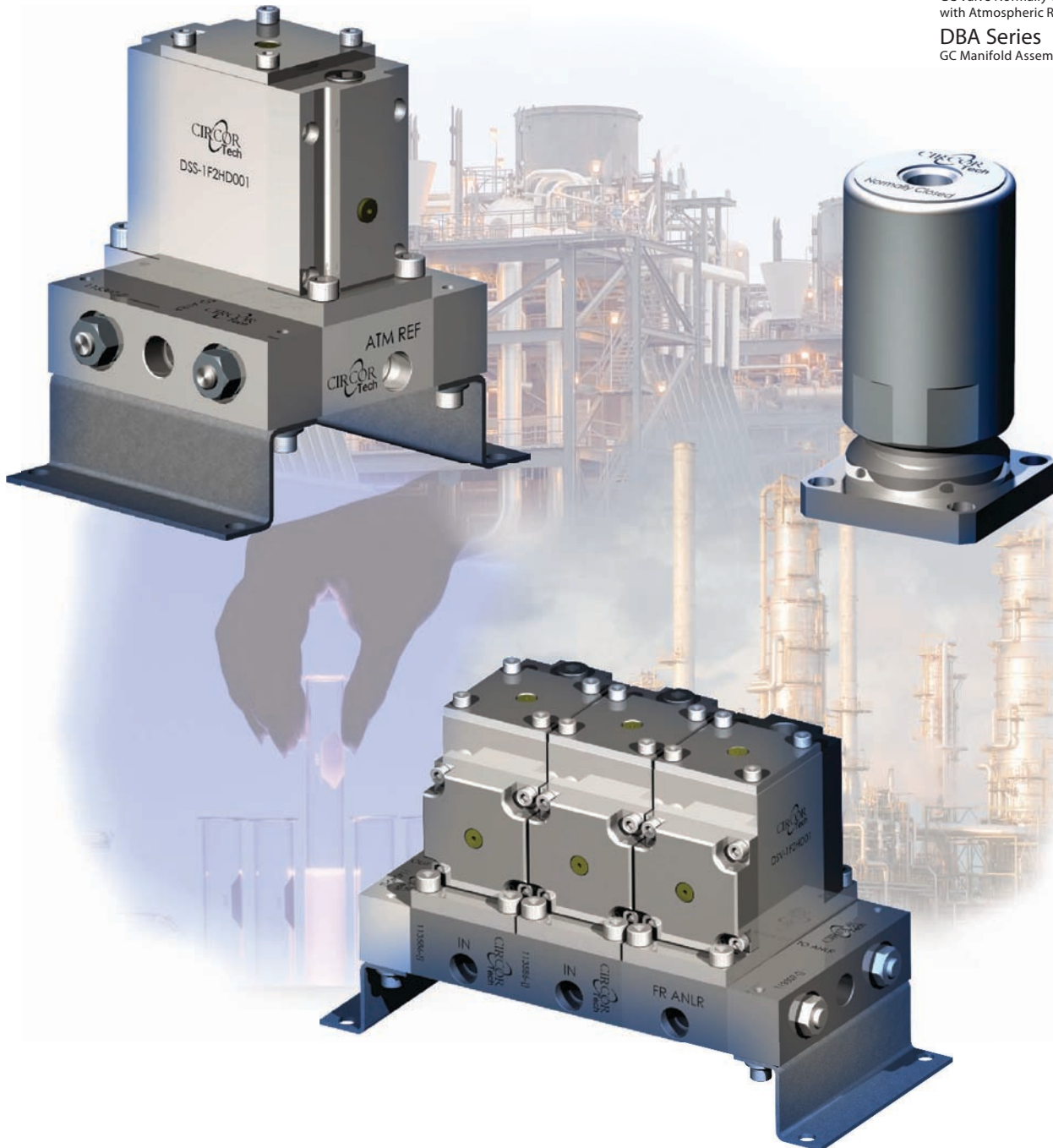


# Diaphragm Valves

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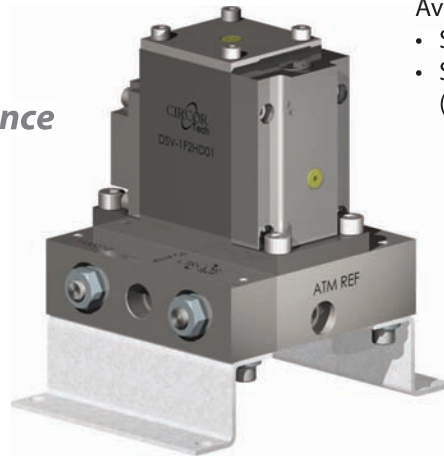
*diaphragm valves*

**CIRCOR Tech**

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

## DSV Series

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



Available as:

- Stand-alone
- Surface mount modular (ANSI/ISA-76  $\mu$ MS<sup>3</sup>® sampling system)

The DSV Series<sup>1</sup> diaphragm valve is a GC module with two normally closed shut-off valves and an atmospheric reference. This series 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 29).

DSV Series valves are totally free of springs, bellows, packing, and lubricants in the process wetted area. Stand-alone DSV valve assemblies can be easily integrated into an ANSI/ISA-76 compliant system with the use of a simple adapter plate (see our  $\mu$ MS<sup>3</sup>® Modular Substrate System brochure CTMS3 for additional information).

### Features & Benefits

- GC fast loop with atmospheric reference
- Surface mount ANSI/ISA-76 compliant\*
- Metal-to-metal seals to atmosphere to prevent leakage
- Replaceable seats for extended service life
- Wide choice of materials for virtually all applications
- No dynamic o-rings, springs, or lubricant in wetted flow path to prevent sample contamination
- Stacked diaphragms for extended service life
- Very low internal volume 0.231 cc
- Pneumatic actuation (top actuation only)
- Pressures from vacuum (50 torr) to 500 psig (34 barg)
- Compact valve body (3" L × 2.6" H × 1.5" W)
- Interlocking pins between valve body and manifold baseplate to ensure 100% correct reassembly

\*  $\mu$ MS<sup>3</sup>® base adapter plate CT113561-[] required for non-CIRCOR Tech manufactured surface mount systems - consult factory

### Technical Data

<b>BODY</b>	316L stainless steel, Monel® or Hastelloy® C-276
<b>SEATS</b>	PCTFE or PEEK™
<b>DIAPHRAGMS</b>	Elgiloy® AMS 5876
<b>ORIFICE SIZE</b>	0.110" (2.8 mm)
<b>FLOW CAPACITY</b>	0.20 Cv
<b>VALVE INTERNAL VOLUME**</b>	0.231 cc
<b>EXTERNAL LEAKAGE</b>	1 × 10 <sup>-5</sup> cc/sec helium (inboard)
<b>ACTUATION PRESSURE</b>	50 psig (see chart page 27)

\*\* Internal volume is defined as area from the main analyzer isolation valve to the analyzer outlet port.

### Operating Pressures

<b>OPERATING PRESSURE</b>	Vacuum (50 torr) to 500 psig (34 barg)
<b>PROOF PRESSURE</b>	2000 psig (138 barg)
<b>BURST PRESSURE</b>	8000 psig (552 barg)

### Operating Temperatures

SEAT MATERIAL	TEMPERATURE	
PCTFE	-40° F to +212° F	-40° C to +100° C
PEEK™	0° F to +400° F	-18° C to +204° C

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<sup>1</sup> Patent pending

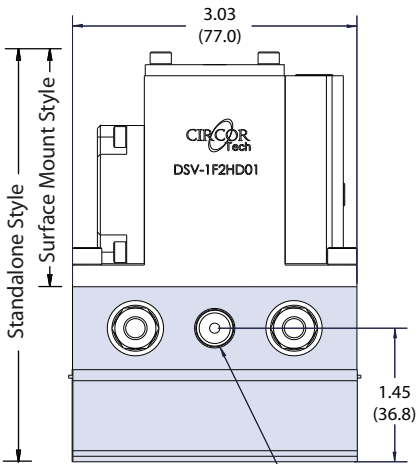
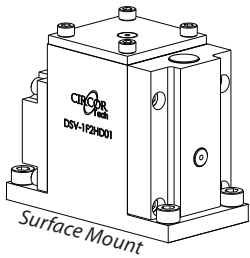
diaphragm valves

# DSV Series

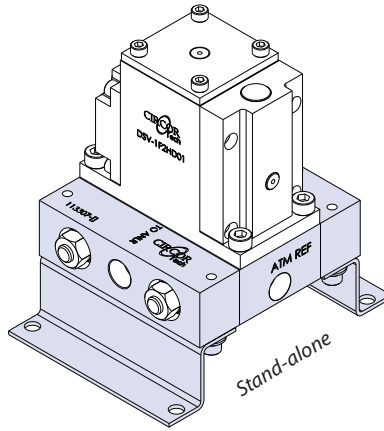
## Dimensions - All Styles

Dimensions are in inches (millimeters) for reference only and are subject to change.

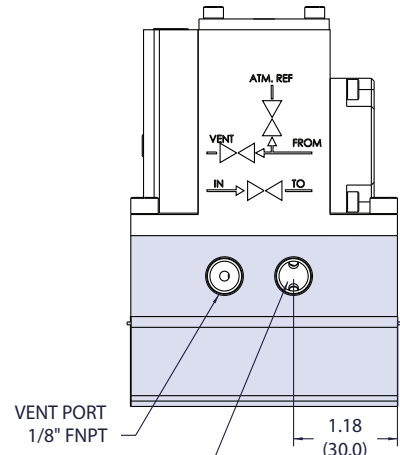
Shaded areas refer to parts and dimensions specific to stand-alone.



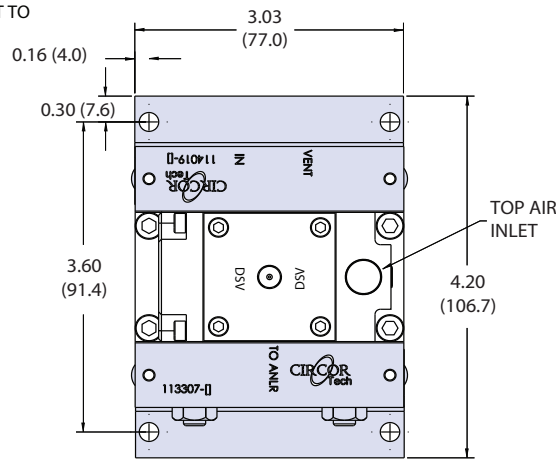
Front side view  
OUTLET PORT TO ANALYZER 1/8" FNPT



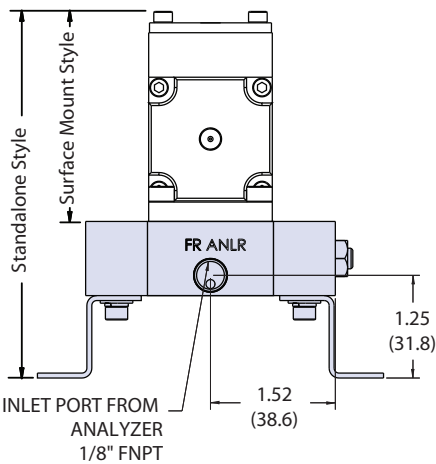
Stand-alone



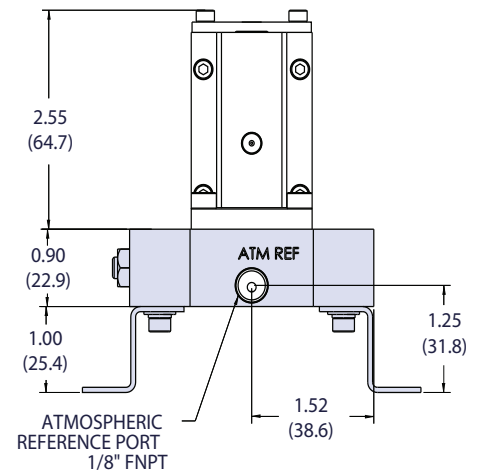
Back side view



Top view



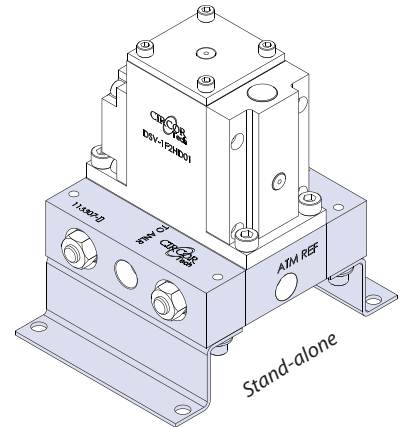
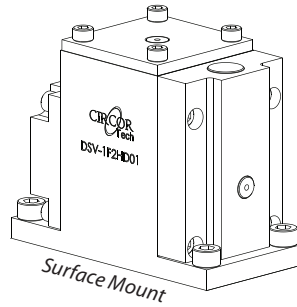
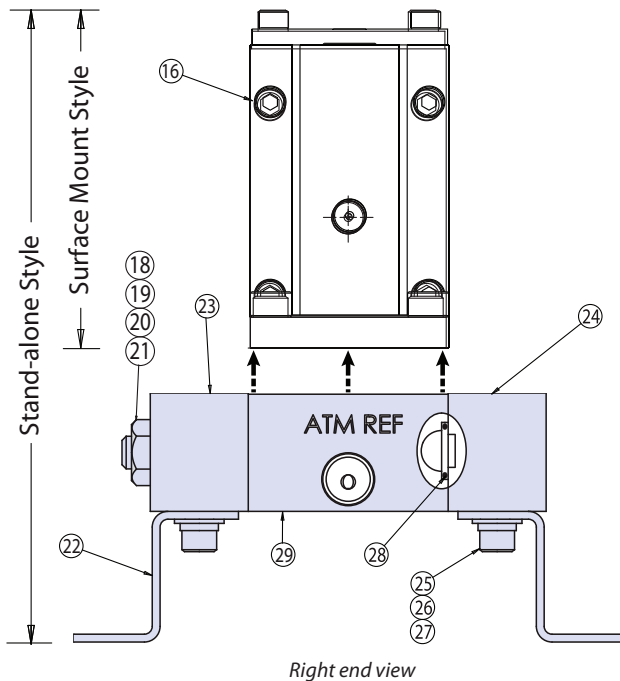
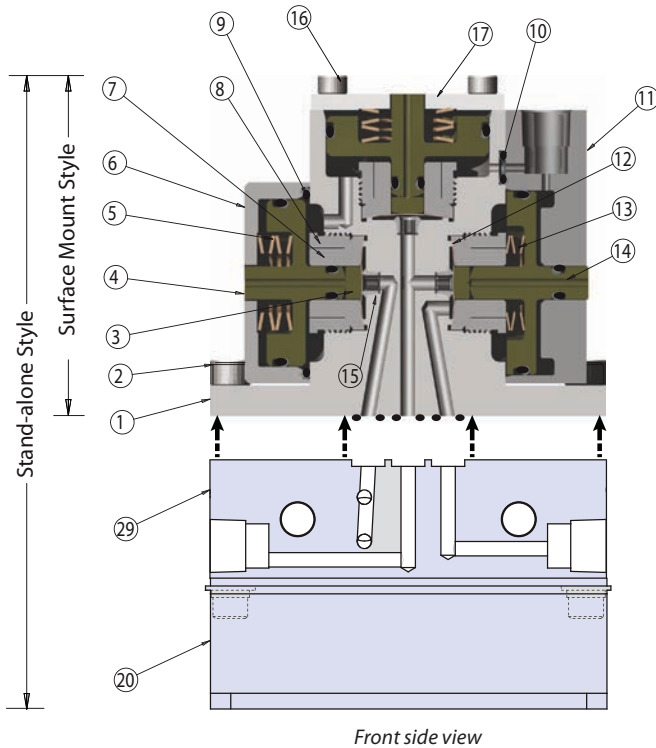
Left end view



Right end view

# DSV Series

## Materials of Construction



### Both Styles - Valve Body

#	PART	MATERIALS
1	Body*	316L stainless steel, Monel® & Hastelloy® C-276
2	10-32 x .50 screw	18-8 stainless steel
3	Thrust plug	Delrin® or PEEK™
4	N. C. piston	Delrin® or PEEK™
5	N. C. spring stack	18-8 stainless steel
6	N. C. cap	316L stainless steel
7	Compression collet	316L stainless steel
8	Retainer nut	316L stainless steel
9	O-ring	Viton®
10	O-ring	Viton®
11	N. O. cap	316L stainless steel
12	Diaphragm*	Elgiloy®
13	N. O. spring stack	18-8 stainless steel
14	N. O. piston	Delrin® or PEEK™
15	Seat*	PCTFE or PEEK™
16	6-32 x .375 HSC screw	18-8 stainless steel
17	Top cap	316L stainless steel

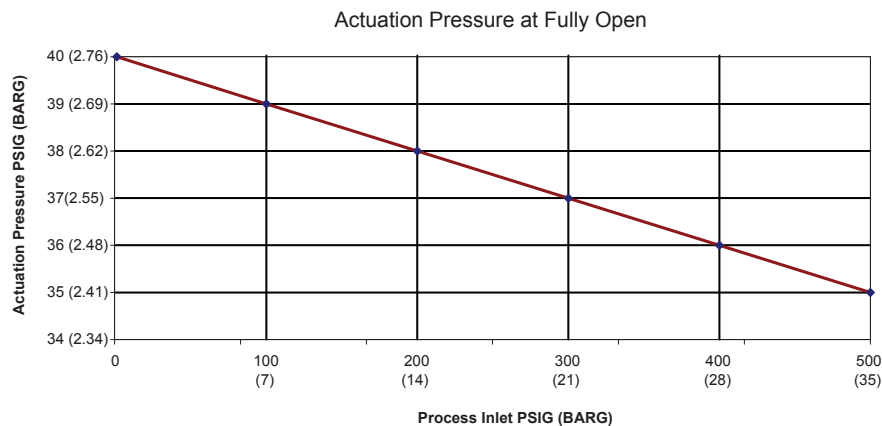
### Stand-alone Style

18	Threaded rod	18-8 stainless steel
19	.25" flat washer	301 stainless steel
20	.25" lock washer	18-8 stainless steel
21	.25" hex nut	18-8 stainless steel
22	Mounting bracket	316 stainless steel
23	Left end plate*	316L stainless steel, Monel® or Hastelloy® C-276
24	Right end plate*	316L stainless steel, Monel® or Hastelloy® C-276
25	8-32 x .50 SHCS screw	18-8 stainless steel
26	#8 flat washer	18-8 stainless steel
27	#8 lock washer	18-8 stainless steel
28	O-ring*	Viton® or Kalrez®
29	Manifold baseplate*	316L stainless steel, Monel® or Hastelloy® C-276

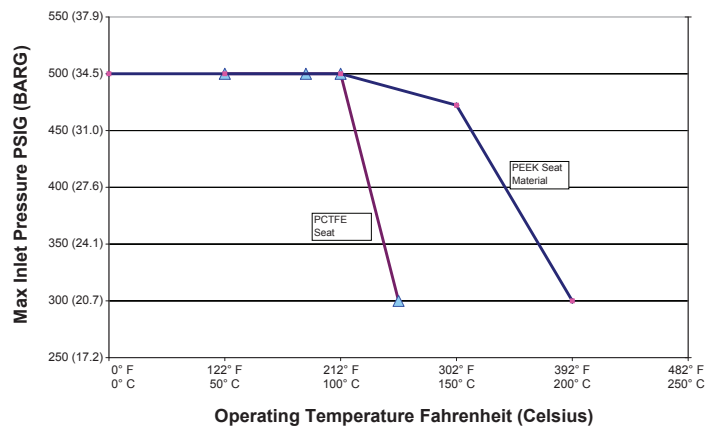
\* Wetted components

# DSV Series

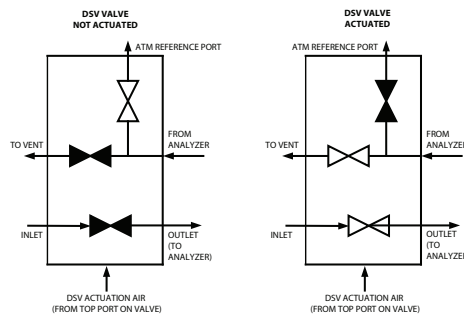
## Actuation Pressure Curve



## Pressure Temperature Curves



## 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

- H PCTFE (Delrin® pistons)**
- Q PEEK™ (PEEK pistons)

### OPTIONS

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

### O-RING MATERIAL

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

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

\*\* Restek Corp. coatings

\*\*\* Required for surface mount units