CT76

DSV SERIES

GC Diaphragm Valve Normally Closed, with Atmospheric Reference Normally Open

DSS SERIES

GC Diaphragm Valve Normally Open, with Atmospheric Reference Normally Closed

Available as:
- Stand-alone
- Surface mount modular (ANSI/ISA-76 CT76 analyzer system)

The DSV Series[1] diaphragm valve is a GC module with two normally closed shut-off valves and an atmospheric reference.
The DSS Series[1] diaphragm valve is a GC module with two normally open shut-off valves and an atmospheric reference.
This valve is available as stand-alone.
For ANSI/ISA-76 systems please contact the factory.

[1] Patent pending

Features & Benefits

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

* CT-76 base adapter plate required for non-CT-76 manufactured surface mount systems

diaphragm valves

CRANE

Crane Instrumentation & Sampling

TECHNICAL DATA

BODY	316L stainless steel, Monel® or Hastelloy® C-276
SEATS	PCTFE or PEEK™
DIAPHRAGMS	Elgiloy® AMS 5876
ORIFICE SIZE	0.110˝ (2.8 mm)
FLOW CAPACITY	0.20 Cv
VALVE INTERNAL VOLUME**	0.231 cc
EXTERNAL LEAKAGE	1 × 10-5 cc/sec helium (inboard)
MIN. ACTUATION PRESSURE	50 psig (3 barg)

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

Operating Temperatures

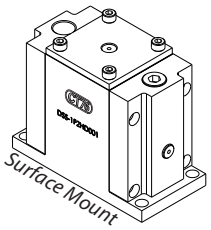
SEAT MATERIAL	TEMPERATURE	
PCTFE	-40° F to +212° F	-40° C to +100° C
PEEK™	0° F to +400° F	-18° C to +204° C

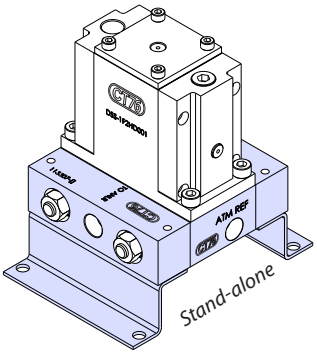
Operating Pressures

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

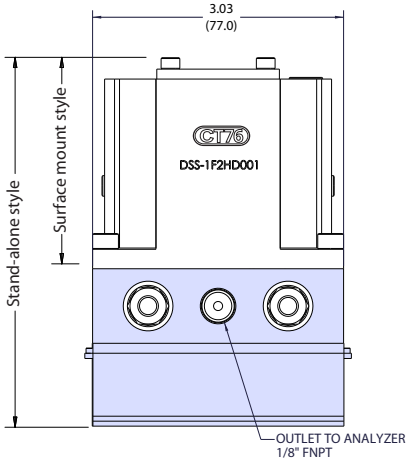
DIMENSIONS–ALL STYLES

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

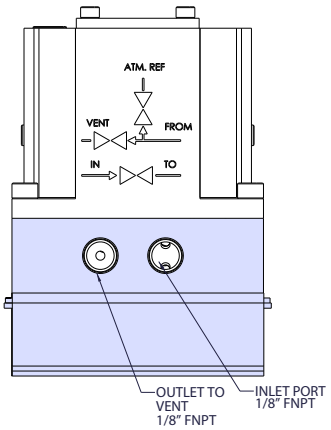




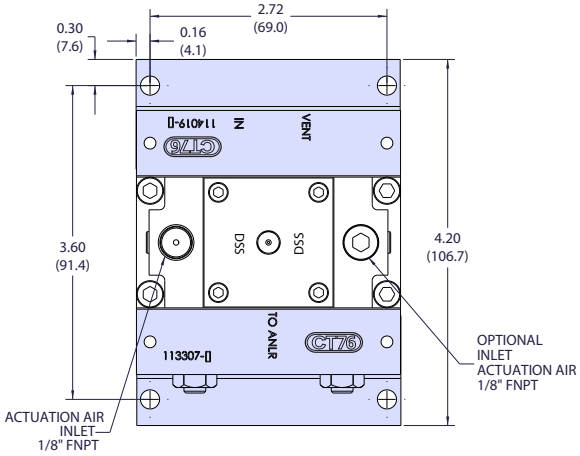
Shaded areas refer to parts and dimensions specific to stand-alone.



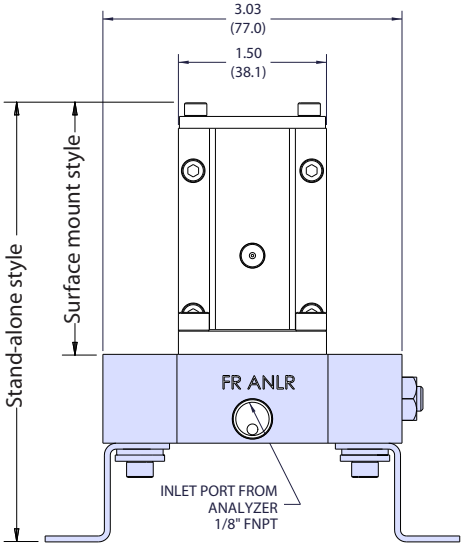
Front side view



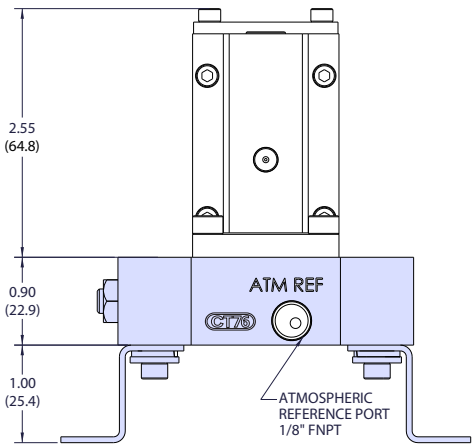
Back side view



Top view

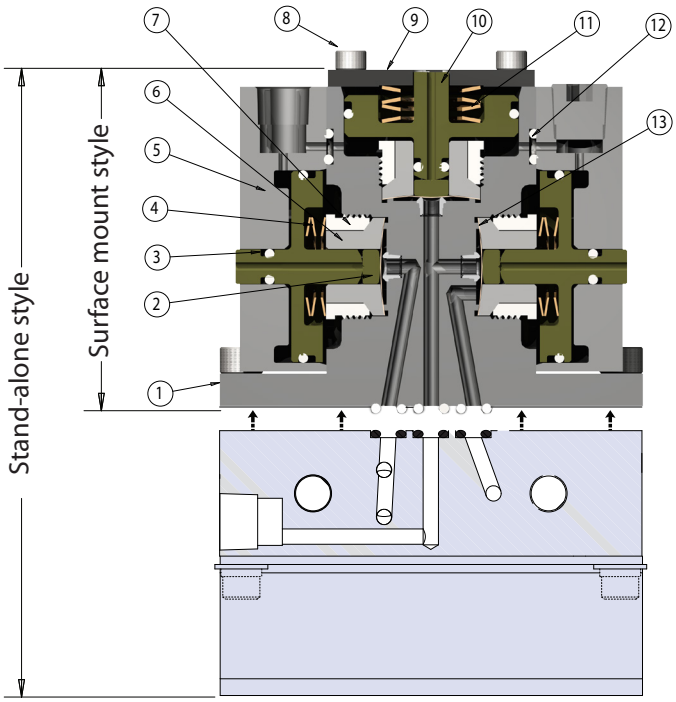


Left end view

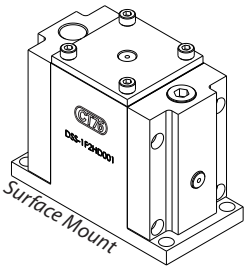


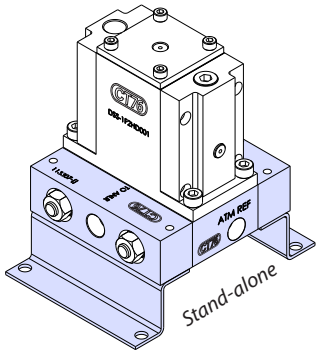
Right end view

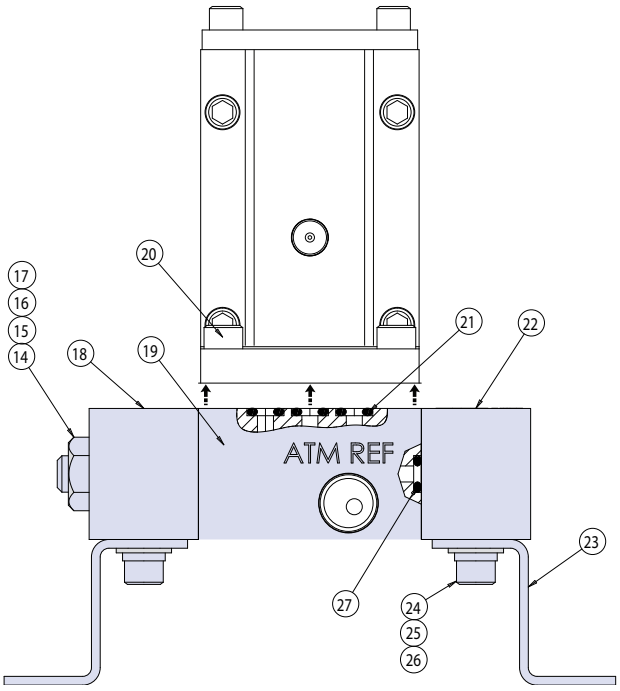
MATERIALS OF CONSTRUCTION



Right side view







Right end view

All Styles – Valve Body

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

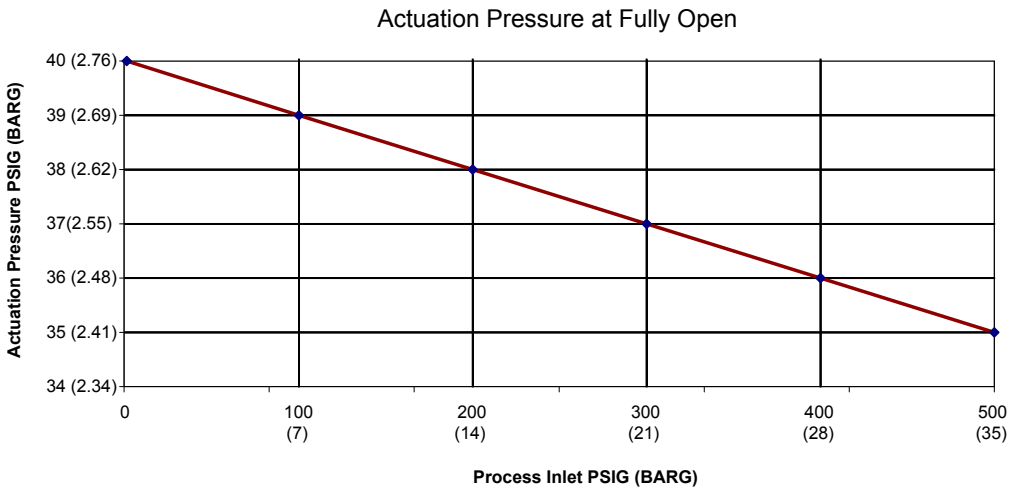
Stand-Alone and Multi-Stream Manifold Styles

14	Threaded rod	18-8 stainless steel
15	¼" flat washer	301, 302 stainless steel
16	¼" flat washer	18-8 stainless steel
17	Hex nut ¼-28	18-8 stainless steel
18	Left end plate*	316L stainless steel, Monel® or Hastelloy® C-276
19	Manifold base plate*	316L stainless steel, Monel® or Hastelloy® C-276
20	10-32 x .437 SHC screw	18-8 stainless steel
21	O-ring	Viton® or Kalrez®
22	Right end plate*	316L stainless steel, Monel® or Hastelloy® C-276
23	Mounting bracket	316 stainless steel
24	8-32 x .437 SHC screw	18-8 stainless steel
25	#8 flat washer	18-8 stainless steel
26	#8 lock washer	18-8 stainless steel
27	O-ring*	Viton® or Kalrez®

* Wetted components

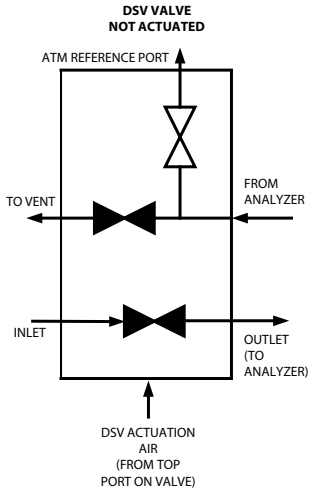
DSS SERIES

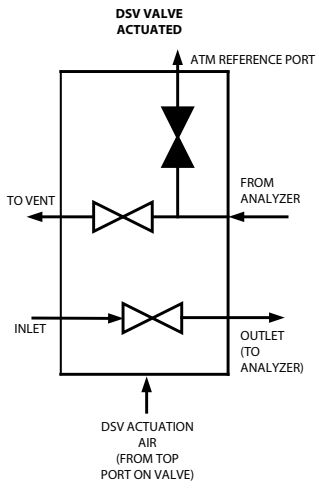
ACTUATION PRESSURE CURVE



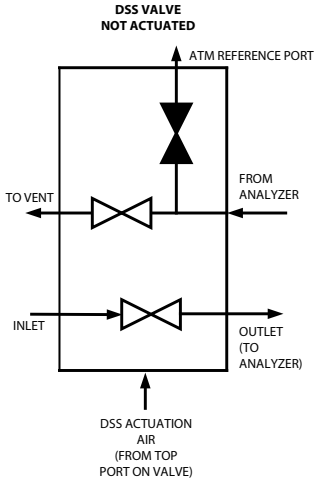
TYPICAL FLOW SCHEMATICS

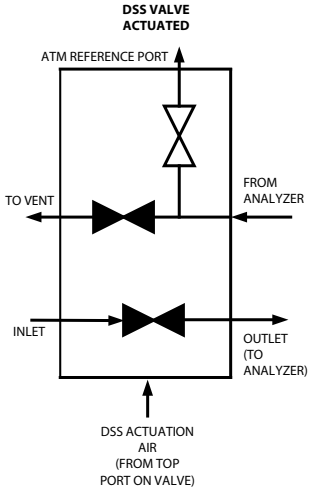
DSV





DSS





HOW TO ORDER

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

Product Family		Material Designator	Process Connection Type	Seat Material	Process O-Ring Material	Surface Treatment	# of Streams	Description
DSV / DSS	-							GC Diaphragm Valve Normally Closed, with atmospheric reference Nomally Open GC Diaphragm Valve Normally Open, with atmospheric reference Normally Closed
		1						SST
		4						Monel
		6						Hastelloy
			00					Surface mount valve *1
			F2					Stand alone valve with 1/8" FNPT
				H				Kel-F Seat
				Q				Peek Seat
					X			Surface mount valve
					D			Viton® o-rings
					K			Perfluoroelastomer (Kalrez®) o-rings
					F			PTFE o-rings *2
						0		Finish as processed
						1		Cleaned for O2
						5		Silco Steel coated
						9		Sulfinert coated
							01	1 Valve stack

PART NUMBER EXAMPLE CONFIGURATION

Part Number	Description
DSS-1F2HD001	GC Diaphragm Valve Normally Open, with atmospheric reference Normally Closed with 1/8" FNPT process connection, Kel-F seats, and Viton process o-rings
DSS-100HX0	Surface mount DSS valve with Kel-F seats, and Viton process o-rings
Note *1	The -100 part number designator is used to identify a surface mount valve. This valve will not contain the 1/8" FNPT connection or manifold. The only acceptable process o-ring selection for the -100 version of the DSS valve is X.
Note *2	PTFE o-rings are available however over time they exhibit some element of cold fl ow under the pressure of sealing which can potentially lead to fl ow restrictions or envelope leakage. If PTFE o-rings are desired it is suggested by CT76 that the valves be placed on an o-ring replacement preventative maintenance program to help off set unplanned down time due to the sample valves.

CT76

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