

Features

- Designed solely for installation in intrinsically safe areas, with properly approved and sized current and voltage-limiting safety barriers.
- Acceptable for use in hazardous locations, as classified by the National Electrical Code: Classes I, II, and III, Division 1, including Groups A through G.
- Electronically enhanced solenoids have efficient cartridge operators and nonpolarized coils with triple redundant blocking diodes.
- Capacitor stores power required to open the valve, while blocking diodes prevent it from flowing back into the wiring in the hazardous area.
- Mountable in any position.

Construction

Valve Parts in Contact with Fluids		
Body	Brass	Stainless Steel
Seals and Discs	NBR, FKM, or CR	
Sleeve	304L Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel	
Pilot Seat Cartridge	CA (Series 8316 and 8344 only)	
Rider Rings	PTFE	
Spring Retainer	CA	

Solenoid Enclosures

Standard: Watertight, Type 4.

Optional: For 316 Stainless Steel, metal Watertight Box, Type 4X (on brass bodied valves), specify prefix "WS" instead of "WP". For DIN IP65, specify prefix "ISSC". For Liquid Crystal Polymer, Watertight, Type 1, 2, 3, 4, and 4X, specify prefix "WB".
 See *Optional Features Section* for other available options.

Electrical

Normal Operating Voltage — 24 volts DC, ±10%.
 Maximum Allowable "Off" State Current to the Valves must be less than 1 mA.

Electronically Enhanced "IS" Solenoid:

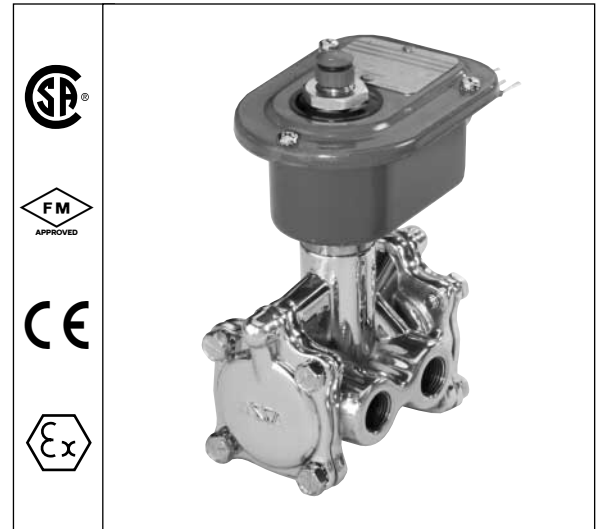
Maximum Capacitor Charge Time — 1 second
 Minimum Time between Cycles — 1 second
 Minimum Drop Current to Reset Electronic Coil — 2 mA
 Nominal Temperature Rise at 24 VDC and 300 Ohms — 2°C (36°F)
 Maximum Recommended Wire Run (#18 Wire) — 1.5 miles from barrier to valve

Important: Minimum series resistance of 200 ohms required in wiring circuit if a safety barrier is not used for non-"IS" system.

$$\text{Maximum Operating Current (amps)} = \frac{V - 2.4}{R_B + R_L + 150}$$

$$\text{Maximum Charging Current (amps)} = \frac{V - 1.8}{R_B + R_L + 52}$$

V = Supply Voltage
 R_B = Barrier or Current Limiting Resistance
 R_L = Line Resistance (wiring)



Nominal Ambient Temperature Ranges:

8314, 8362, 8317: -40°F to 140°F (-40°C to 60°C)
 All other: -4°F to 140°F (-20°C to 60°C)

Refer to *Engineering Section* for details.

Approvals:

FM approved under J.I.3W8A8. AX (3610).
 CSA certified under File LR-13976-116C.
 GENELEC EEx ia IIC T6 approved.
 Meets applicable CE directives.
 Refer to *Engineering Section* for details.

Important:

These solenoids are intended for use on clean, dry air or inert gas filtered to 50 micrometers or better. To prevent freezing, the dew point of the media should be at least 18°F (-8°C) below the minimum temperature to which any portion of the clean air or gas system could be exposed. Instrument air in compliance with ANSI/ISA Standard S7.3-1975 (R1981) exceeds the above requirements and is, therefore, an acceptable medium for these valves.

Operating Parameters	Voltage @ 86°F (30°C)		
	21.6	24.0	26.4
Maximum Series Resistance in Ohms	510	610	690
Maximum Holding Current with 300 Ohm Barrier	43	48	54
Nominal Coil Watts with 300 Ohm Barrier	0.38	0.46	0.57

Entity	Groups A-D	Groups C-D
Parameters	V max - 30 VDC	V max - 34 VDC
	I max - 100 mA	I max - 125 mA
	Capacitance = 0	Capacitance = 0
	Inductance = 0	Inductance = 0

Coil: Continuous duty molded Class A.
Minimum Operating Current: 0.028 amps.

Specifications (English units)

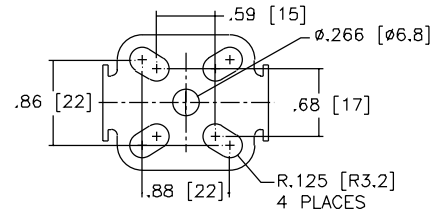
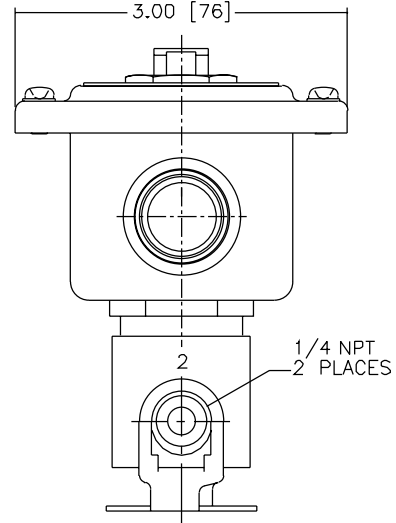
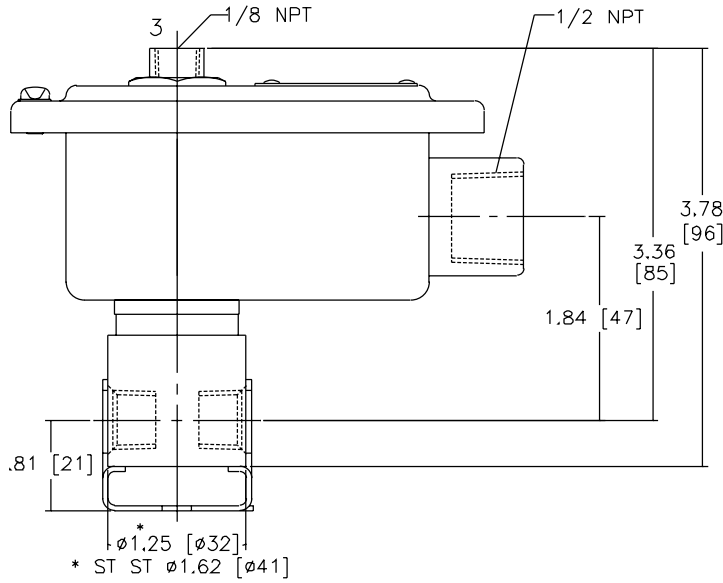
2/2 VALVES, NORMALLY CLOSED, with NBR Disc										
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Constr. Ref. No.	Catalog Number	Constr. Ref. No.
				Min.	Max.					
1/4	1/16	.08		0	150	140	WPIS8262A320	15	WSIS8262A386	15
3/8	5/16	1.5		10	150	140	WPIS8223A323	16	-	-
1/2	3/8	3.2		25	150	140	WPIS8223A303	17	WSIS8223A310	17
3/2 VALVES										
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Constr. Ref. No.	Catalog Number	Constr. Ref. No.
				Pressure to Cylinder	Cylinder to Exhaust					
1/4	1/16	.08	.08	0	150	140	WPIS8314A300 ④	1	WSIS8314A301	2
UNIVERSAL OPERATION (Pressure at port 1 or 2) with NBR Disc										
1/4	1/16	.08	.08	0	150	140	WPIS8314A300 ④	1	WSIS8314A301	2
NORMALLY CLOSED (Closed when de-energized) with NBR Diaphragm										
1/4	5/16	1.5	1.5	⑥	150	140	WPIS8316A301 ③	3	WSIS8316A381V ⑤	3
3/8	5/16	1.8	1.8	⑥	150	140	WPIS8316A302 ③	3	WSIS8316A382V ⑤	3
3/8	5/8	4	4	⑥	150	140	WPIS8316A303 ③	3A	-	-
1/2	5/8	4	4	⑥	150	140	WPIS8316A304 ③	3A	WSIS8316A384V ⑤	3A
3/4	11/16	5.5	5.5	10	150	140	WPIS8316A374 ③	4	-	-
1	1	13	13	10	150	140	WPIS8316A334 ③	5	-	-
UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	②	.08	.73	5	150	140	WPIS8317A307 ①	6	WSIS8317A308 ①	7
4/2 VALVES, with NBR Disc and Seal										
1/4	1/16	.08	.08	10	150	140	WPIS8345A301 ①③	8	WSIS8345A381 ①③	8
4/2 VALVES, Brass Body with NBR Disc							Single Solenoid	Constr. Ref. No.	Dual Solenoid	Constr. Ref. No.
1/4	1/4	.80	1	10	150	140	WPIS8344A370 ①③	9	WPIS8344A344 ③	12
3/8	3/8	1.4	2.2	10	150	140	WPIS8344A372 ①③	11	WPIS8344A380 ③	10
1/2	3/8	1.4	2.2	10	150	140	WPIS8344A374 ①③	11	WPIS8344A382 ③	10
3/4	3/4	5.2	5.6	10	150	140	WPIS8344A376 ①③	13	WPIS8344A354 ③	14
1	3/4	5.2	5.6	10	150	140	WPIS8344A378 ①③	13	WPIS8344A356 ③	14
Notes:	<p>① There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas cannot be exhausted to atmosphere.</p> <p>② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".</p> <p>③ IMPORTANT: A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.</p>						<p>④ Available in 5 station N.C. Manifold.</p> <p>⑤ Diaphragm and main disc FKM only (pilot is low-temperature NBR).</p> <p>⑥ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See graph with dimensional drawings for auxiliary pressure vs. mainline pressure. Minimum 15 psi Operating Pressure Differential when selection gasket is in the internal position.</p>			

Specifications (Metric units)

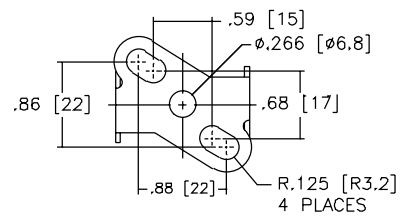
2/2 VALVES, NORMALLY CLOSED, with NBR Disc										
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m ³ /h)		Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Constr. Ref. No.	Catalog Number	Constr. Ref. No.
				Min.	Max.					
1/4	1	.07		0	10.3425	59	WPIS8262A320	15	WSIS8262A386	15
3/8	8	1.29		0.6895	10.3425	59	WPIS8223A323	16	-	-
1/2	10	2.74		1.72375	10.3425	59	WPIS8223A303	17	WSIS8223A310	17
3/2 VALVES										
Pipe Size (ins.)	Orifice Size (ins.)	Kv Flow Factor (m ³ /h)		Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Constr. Ref. No.	Catalog Number	Constr. Ref. No.
				Pressure to Cylinder	Cylinder to Exhaust					
UNIVERSAL OPERATION (Pressure at port 1 or 2) with NBR Disc										
1/4	2	.07	.07	0	10.3	59	WPIS8314A300 ④	1	WSIS8314A301	2
NORMALLY CLOSED (Closed when de-energized) with NBR Diaphragm										
1/4	8	1.29	1.29	⑥	10.3	59	WPIS8316A301 ③	3	WSIS8316A381V ⑤	3
3/8	8	1.54	1.54	⑥	10.3	59	WPIS8316A302 ③	3	WSIS8316A382V ⑤	3
3/8	16	3.43	3.43	⑥	10.3	59	WPIS8316A303 ③	3A	-	-
1/2	16	3.43	3.43	⑥	10.3	59	WPIS8316A304 ③	3A	WSIS8316A384V ⑤	3A
3/4	17	4.71	4.71	0.7	10.3	59	WPIS8316A374 ③	4	-	-
1	25	11.14	11.14	0.7	10.3	59	WPIS8316A334 ③	5	-	-
UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	②	.07	.63	0.3	10.3	59	WPIS8317A307 ①	6	WSIS8317A308①	7
4/2 VALVES, with NBR Disc and Seal										
1/4	2	.07	.07	0.7	10.3	59	WPIS8345A301 ①③	8	WSIS8345A381 ①③	8
4/2 VALVES, Brass Body with NBR Disc							Single Solenoid	Constr. Ref. No.	Dual Solenoid	Constr. Ref. No.
1/4	6	.69	.86	0.7	10.3	59	WPIS8344A370 ①③	9	WPIS8344A344 ③	12
3/8	10	1.20	1.89	0.7	10.3	59	WPIS8344A372 ①③	11	WPIS8344A380 ③	10
1/2	10	1.20	1.89	0.7	10.3	59	WPIS8344A374 ①③	11	WPIS8344A382 ③	10
3/4	19	4.46	4.80	0.7	10.3	59	WPIS8344A376 ①③	13	WPIS8344A354 ③	14
1	19	4.46	4.80	0.7	10.3	59	WPIS8344A378 ①③	13	WPIS8344A356 ③	14
Notes:	① There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas cannot be exhausted to atmosphere. ② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4". ③ IMPORTANT: A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.						④ Available in 5 station N.C. Manifold. ⑤ Diaphragm and main disc FKM only (pilot is low-temperature NBR). ⑥ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See graph on next page for auxiliary pressure vs. mainline pressure. Minimum 1 bar Operating Pressure Differential when selection gasket is in the internal position.			

Dimensions: inches (mm)

Constr. Ref. 1, 2

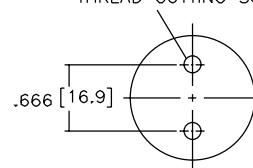


CONSTR. 2
MTG BRACKET FOR ST ST.

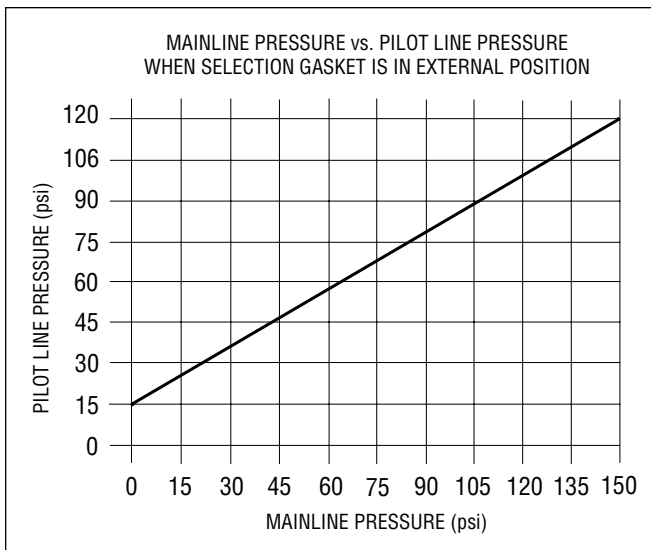


CONSTR. 1
MTG BRACKET FOR BRASS

2 MOUNTING HOLES
0.147 [3.7]
.31 [8] DEEP FOR .164 [4.2]
THREAD CUTTING SCREW

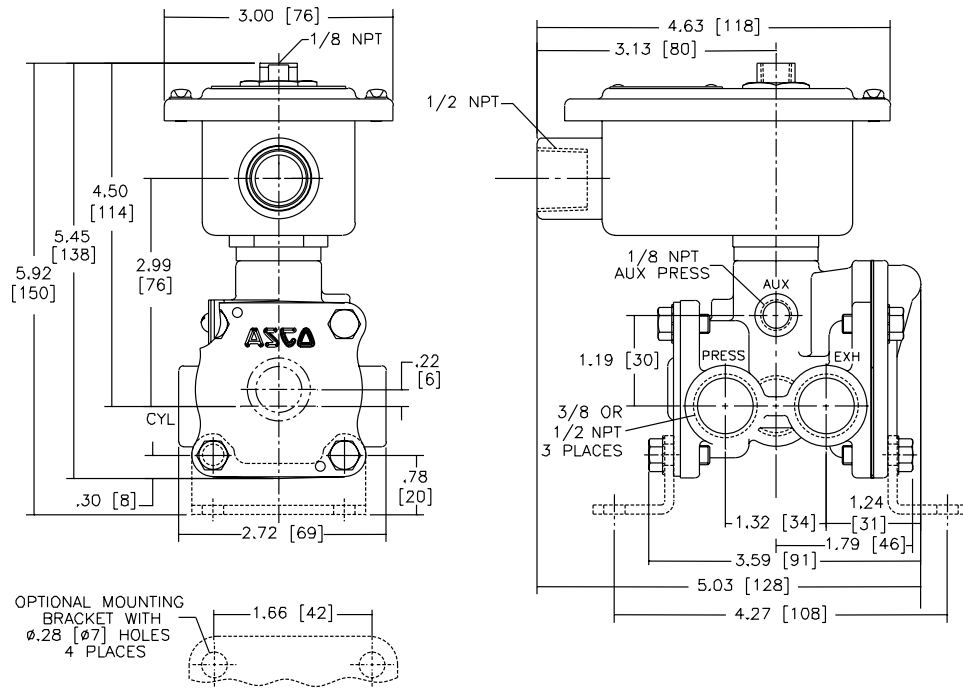


MOUNTING HOLES
IN BRASS BODY

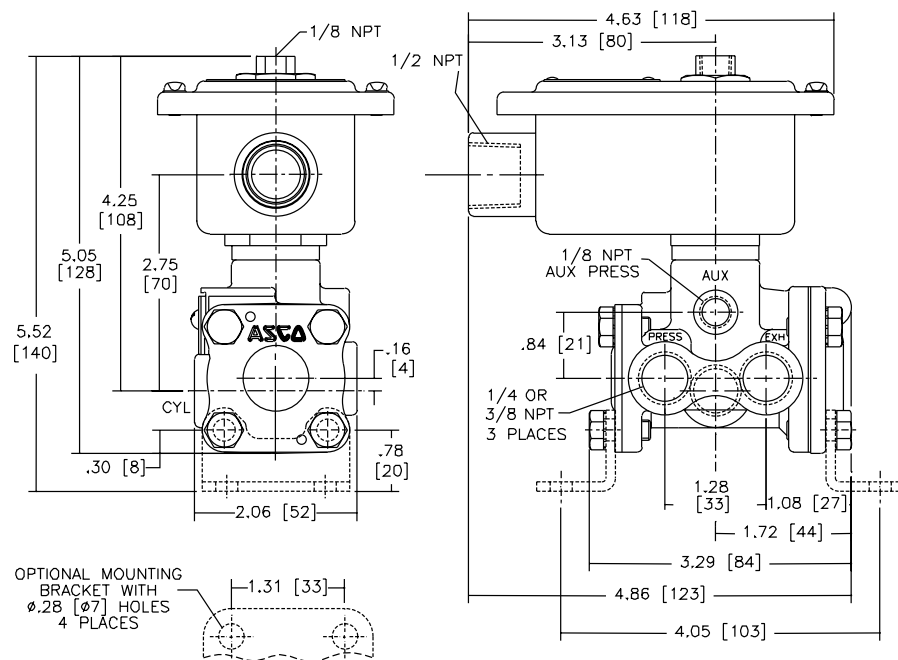


Dimensions: inches (mm)

Constr. Ref. 3A



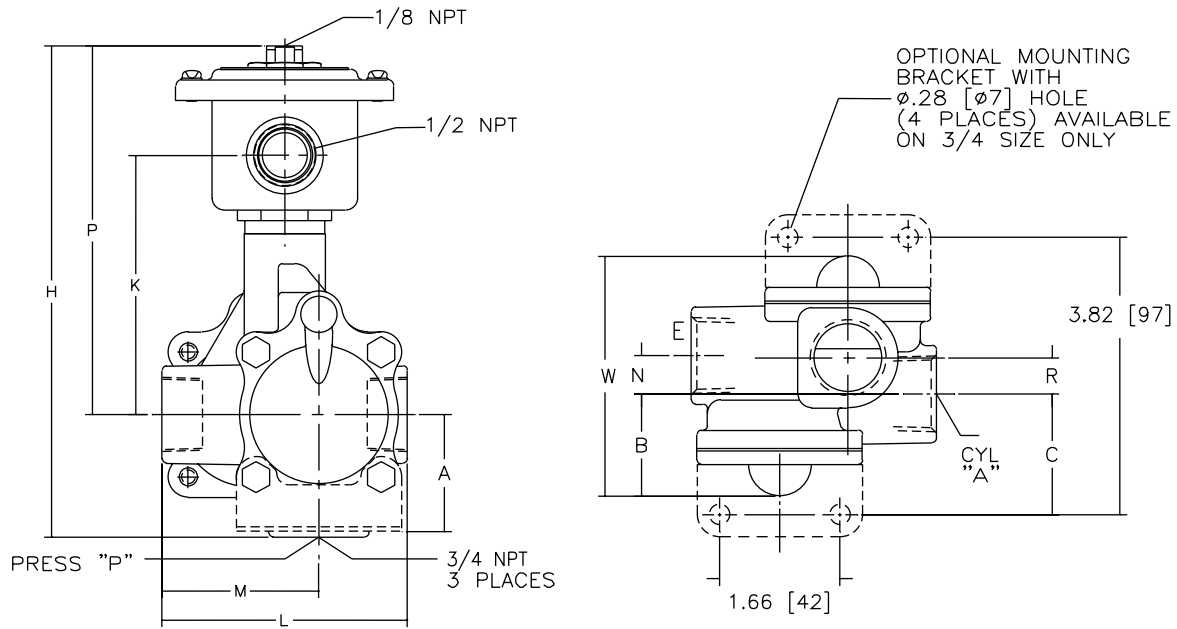
Constr. Ref. 3



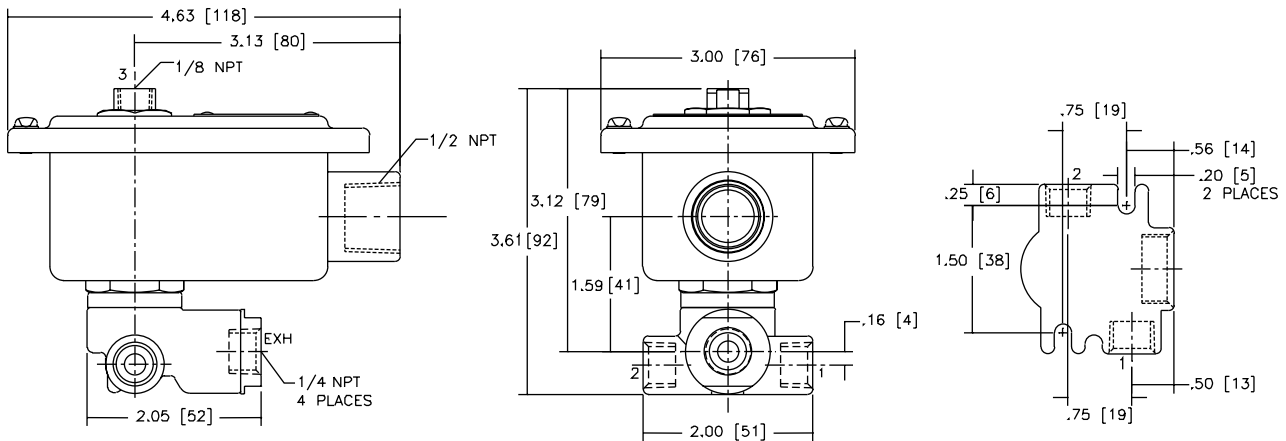
Dimensions: inches (mm)

Constr. Ref. No.		A	B	C	H	K	L	M	N	P	R	W
4	ins.	X	1.78	X	7.40	3.82	4.44	2.81	.87	5.34	1.74	5.32
	mm	X	45	X	188	97	113	71	22	136	44	135
5	ins.	1.61	1.41	1.66	6.78	3.57	3.38	2.16	.53	5.09	.50	3.31
	mm	41	36	42	172	91	86	55	13	129	13	84

Constr. Ref. 4, 5

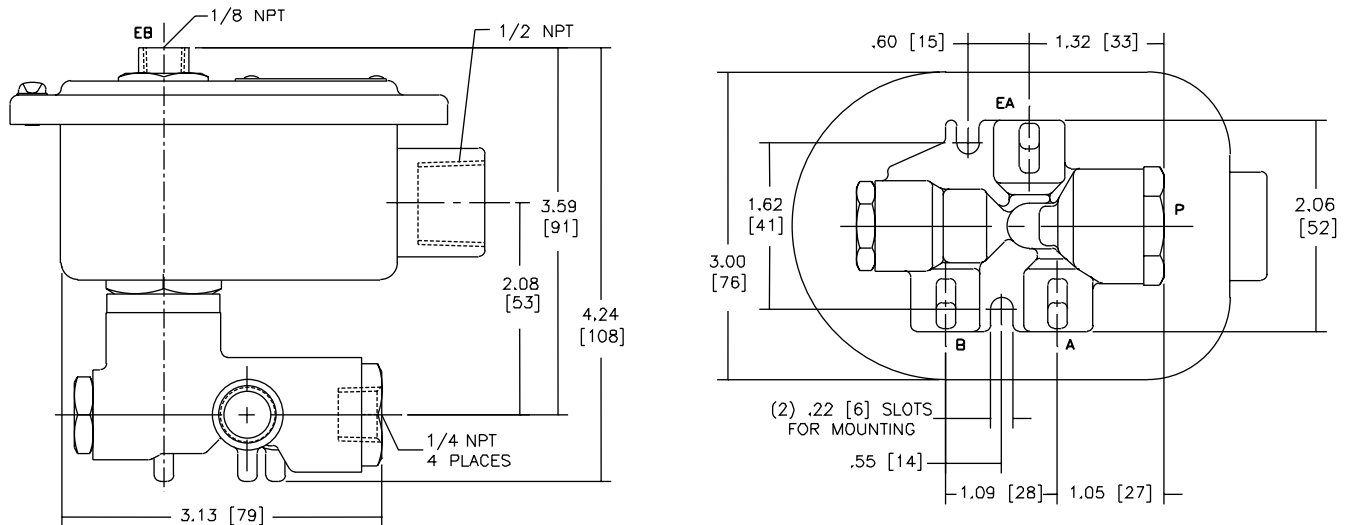


Constr. Ref. 6, 7



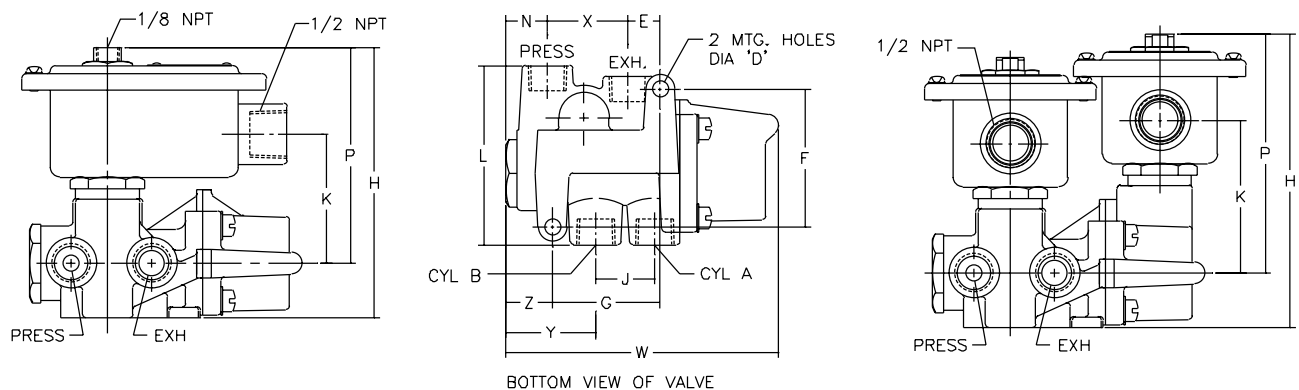
Dimensions: inches (mm)

Constr. Ref. 8



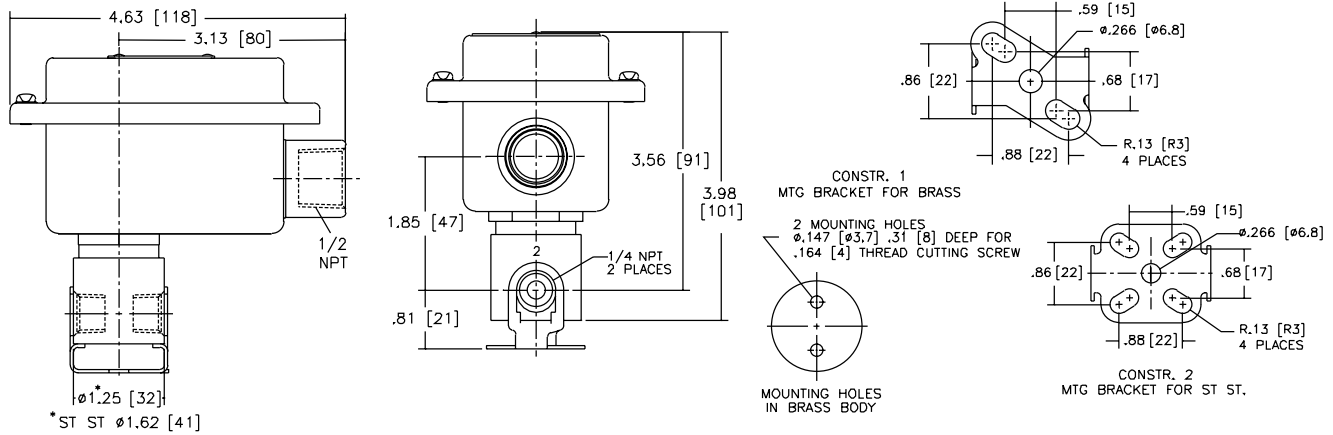
Constr. Ref. No.		D	E	F	G	H	J	K	L	N	P	W	X	Y	Z	Exhaust Pipe Size
9	ins.	Ø.28	.56	2.41	1.88	4.67	1.03	2.19	3.13	.72	3.71	4.75	1.41	1.56	.81	3/8
	mm	Ø7.1	14	61	48	119	26	56	80	18	94	121	36	40	21	3/8
10	ins.	Ø.34	.77	3.12	2.62	5.43	1.50	2.63	3.18	.83	4.30	6.06	1.86	1.90	.84	1/2
	mm	Ø8.6	20	79	67	139	38	67	81	21	111	154	47	48	21	1/2
11	ins.	Ø.34	.77	3.12	2.62	4.65	1.50	2.00	3.18	.83	3.53	6.06	1.86	1.90	.84	1/2
	mm	Ø8.6	20	79	67	118	38	51	81	21	90	154	47	48	21	1/2
12	ins.	Ø.28	.56	2.41	1.88	5.23	1.03	2.60	3.13	.72	4.28	4.75	1.41	1.56	.81	3/8
	mm	Ø7.1	14	61	48	133	26	66	80	18	109	121	36	40	21	3/8
13	ins.	Ø.34	1.37	3.81	3.88	5.45	2.09	2.38	4.56	1.55	3.90	8.25	2.12	2.63	1.16	1
	mm	Ø8.6	35	97	99	138	53	61	116	39	99	210	54	67	30	1
14	ins.	Ø.34	1.37	3.81	3.88	6.24	2.09	3.07	4.56	1.55	4.10	8.25	2.12	2.63	1.16	1
	mm	Ø8.6	35	97	99	158	53	78	116	39	104	210	54	67	30	1

Constr. Ref. 9, 10, 11, 12, 13, 14

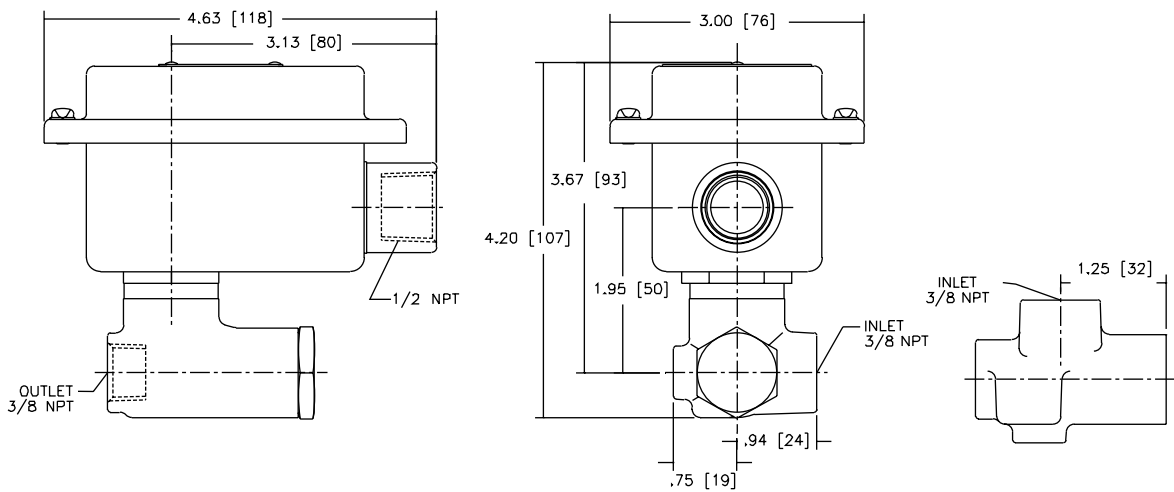


Dimensions: inches (mm)

Constr. Ref. 15



Constr. Ref. 16



Constr. Ref. 17

