

ASCO®

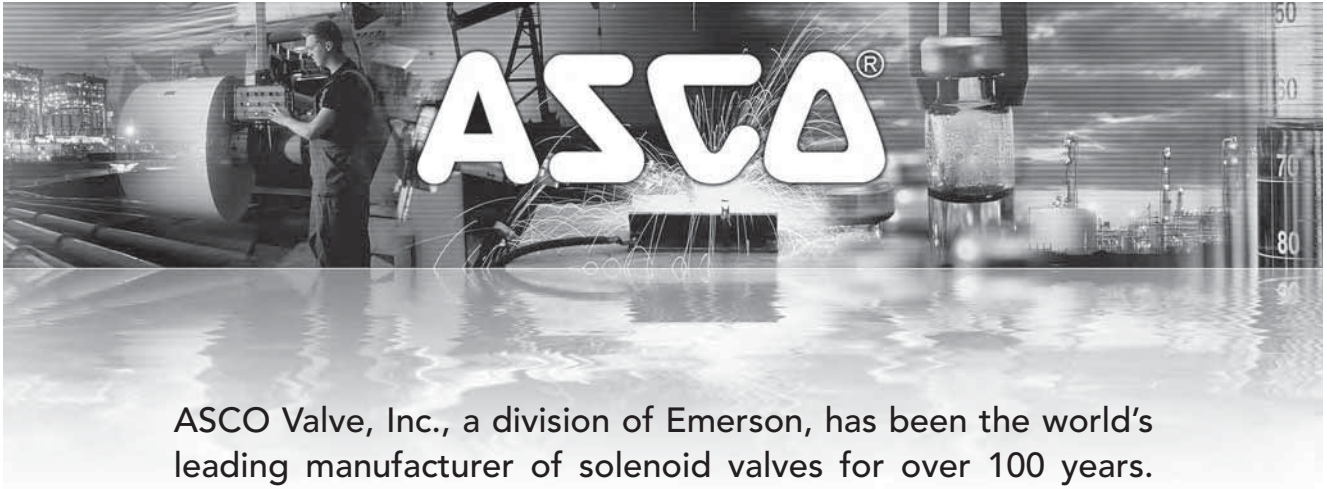


Solenoid Valves
Air Operated Valves
Combustion Products
Accessories



www.ascovalve.com





ASCO Valve, Inc., a division of Emerson, has been the world's leading manufacturer of solenoid valves for over 100 years. ASCO products are designed to control the flow of air, gas, water, oil, and steam. Our heritage of innovation has resulted in an extensive line of ASCO products that range from two position on/off valves to entire flow control solutions. Whether you need a minor modification of a core product or a complete flow control solution, we can help.

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ASCO Today Guaranteed Same Day Shipment Program

In an effort to continue our company's tradition of addressing our customers' needs, ASCO is proud to offer the ASCO Today program. Over 2000 of today's most popular products are now available for same day shipment. ASCO guarantees† to ship any order received before 3:00 P.M. EST for up to 25 pieces per product or ASCO pays the freight.



As part of our continued drive for customer service, we expanded the ASCO Today program with over 15,000 products that can be shipped within five business days.

† As industry requirements change, ASCO reserves the right to modify the contents of the program parameters without notification. Updates on this program can be obtained from the ASCO website www.ascovalve.com or by calling 800-972-2726, or by contacting your local ASCO representative or distributor and referencing the ASCO Today program.



WARNING

Improper selection or use of products and related items in catalog can cause death, serious injury, or property damage.

This document and other information from ASCO Valve, Inc., its subsidiaries and authorized distributors provide product options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product in the current product catalog. Due to the variety of operating conditions and applications for these products, the user, through analysis and testing, is solely responsible for making the final selection of the products and assuring that all performance, safety, and warning requirements of the application are met.

The product described herein, including but without limitation, product features, specifications, and options are subject to change by ASCO Valve, Inc. and its subsidiaries at any time without notice.

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Numerical Listing of Valve Series Numbers



Series	Description	Page	Series	Description	Page	Series	Description	Page
8015	Manual Reset	157	8263	Combustion Index	277	8353	Dust Collector	233
8025	Manual Reset	157	8264	Cryogenic and Liquid CO2	229	8356	General Service	59
8030	General Service	3	8266	Combustion Fuel Oil	421	8360	Plastic Body	63
8030	Electronically Enhanced	91	8267	Hot Water/Steam	247	8377	Combustion Fuel Oil	431
8030	Shielded Core	269	8290	Air Operated	207	8380	Direct Mount	189
8030	Combustion Index	277	8290	Proportional Valves	267	8401	General Service	83
8030	Vacuum	273	8300	General Service	35	8401	Direct Mount	189
8037	Manual Reset	163	8308	Intrinsically Safe	137	8402	General Service	83
8040	General Service	7	8308	Manual Reset	163	8408	Intrinsically Safe	137
8040	Combustion Index	277	8310	Manual Reset	163	8408	Manual Reset	171
8042	Combustion Fuel Gas	295	8314	General Service	39	8410	Manual Reset	171
8043	Combustion Fuel Gas	299	8314	Electronically Enhanced	91	8551	General Service Inline (3/2)	65
8044	Combustion Specialty	439	8314	Intrinsically Safe	137	8551	General Service RH II (3/2)	67
8047	Manual Reset	171	8314	Non-Incendive Field Wiring	123	8551	Direct Mount Inline	195
8200	Solenoid Operator	457	8314	Low Power	109	8551	Direct Mount RH II	199
8202	Proportional Valves	261	8315	Steam	255	8551, 8553	Intrinsically Safe	137
8203	Proportional Valves	261	8316	Air and Water	43	8551, 8553	Non-Incendive Field Wiring	123
8210	General Service	11	8316	Electronically Enhanced	91	8551, 8553	Low Power	109
8210	Electronically Enhanced	91	8316	Intrinsically Safe	137	8553	General Service Inline (5/2)	87
8210	Cryogenic and Liquid CO2	229	8316	Non-Incendive Field Wiring	123	8553	General Service RH II (5/2)	89
8210	Hot Water and Steam	247	8316	Long Life	257	8553	Direct Mount Inline	195
8210	Long Life	257	8316	Low Power	109	8553	Direct Mount RH II	199
8210	Vacuum	273	8316	Zero Minimum	47	8600 to 8604	Strainer	461
8210	Combustion Index	277	8317	General Service	49	8908	Electronic Control Unit	265
8214	Combustion Index	277	8317	Electronically Enhanced	91	125468 to 125847	Dust Collector	245
8215	General Service	7	8317	Harsh Environment	155	272839-001	Electronic Timer	467
8215	Long Life	257	8317	Intrinsically Safe	137	342	Filter, Regulator, Lubricator	469
8215	Vacuum	273	8317	Non-Incendive Field Wiring	123	AH2D	Combustion Fuel Oil	357
8220	Hot Water/Steam	247	8317	Low Power	109	AH4D	Combustion Fuel Oil	359
8221	General Service	17	8320	General Service	53	AH8D	Combustion Fuel Oil	361
8221	Hot Water and Steam	247	8320	Direct Mount	185	Control Panel	Combustion Specialty	449
8222	Cryogenic and Liquid CO2	229	8320	Dribble Control	203	F210 to F444	Air Operated	217
8222	Hot Water and Steam	247	8320	Electronically Enhanced	91	H117	Combustion Fuel Gas	367
8223	General Service	21	8320	Harsh Environment	155	H118	Combustion Fuel Gas	371
8223	Electronically Enhanced	91	8320	Long Life	257	H137	Combustion Fuel Gas	375
8223	Intrinsically Safe	137	8321	General Service	49	HOV1	Combustion Fuel Oil	425
8223	Non-Incendive Field Wiring	123	8321	Electronically Enhanced	91	HOV13	Combustion Fuel Oil	435
8223	Low Power	109	8321	Harsh Environment	155	HV216	Combustion Specialty	445
8256	General Service	23	8327	General Service	57	HV266	Combustion Fuel Gas	379
8256	Combustion Index	277	8327	Direct Mount	187	K3A4	Combustion Fuel Gas	383
8260	Dust Collector	241	8327	Manual Reset	175	K3A5	Combustion Fuel Gas	387
8260	Plastic Body	25	8329	Solenoid Operator	457	K3A6	Combustion Fuel Gas	391
8260	Shielded Core	269	8340	General Service	71	K3A7	Combustion Fuel Gas	395
8262	General Service	29	8342	General Service	75	LP Gas Sys.	Combustion Specialty	451
8262	Cryogenic and Liquid CO2	229	8342	Direct Mount	193	S261	Combustion Fuel Gas	399
8262	Dust Collector	241	8344	General Service	77	S262	Combustion Fuel Gas	403
8262	Electronically Enhanced	91	8344	Electronically Enhanced	91	SV311	Combustion Index	407
8262	Intrinsically Safe	137	8344	Intrinsically Safe	137	SV401	Combustion Fuel Oil	411
8262	Non-Incendive Field Wiring	123	8344	Non-Incendive Field Wiring	123	P210 to P444	Air Operated	217
8262	Long Life	257	8344	Long Life	257	V012	Check Valves	465
8262	Low Power	109	8344	Low Power	109	V022	Flow Control	459
8262	Vacuum	273	8345	General Service	81	V043	Quick Exhaust	463
8262	Combustion Index	277	8345	Intrinsically Safe	137	V710	Combustion Fuel Gas	363
8263	Cryogenic and Liquid CO2	229	8345	Long Life	257	HV-264-153	Low Power	109
8263	Electronically Enhanced	91	8345	Non-Incendive Field Wiring	123	HV-264-153	Manual Reset	179
8263	Hot Water and Steam	247	8345	Low Power	109			



This catalog is designed to make it easier to select and order the right valve for your application from the world's leading manufacturer of solenoid and air operated valves.

To assist in selecting the proper valve for your application, we recommend two approaches. First, if you know the valve series that meets your needs, you can go directly to the appropriate page as listed in the Numerical Listing, or the Main Index. If you do not know the proper valve Series, please refer to the Condensed Listing, which provides an overview of key specifications for all General Service valves included in this catalog. This listing is organized by valve type and operation, then indexed by pipe size, flow factor, and other vital specifications.

If you are unable to locate the desired valve in the Condensed Listing, refer to the individual valve series in the main catalog for a more complete listing.

In order to select a valve, you will need the following application information:

- Valve Type** 2-Way, 3-Way, 4-Way
- Operation** Normally Open, Normally Closed, Universal
- Pipe Size** Pipe size or flow requirement
- Media** Fluid to be controlled
- Pressure** Minimum and maximum operating pressure
- Temperature** Minimum and maximum fluid and ambient temperature (if unusual, contact technical support)
- Voltage** Voltage and frequency to be used
- Extras** Special seals, special seats, brackets, etc.

Once you have determined the above application information, the next steps can navigate you to the appropriate valve in this catalog:

Turn to the Condensed Listing section relevant to the **VALVE TYPE** and **OPERATION** you are looking for (Example: 2-Way, Normally Closed).

Locate the family of valves corresponding to the **PIPE SIZE** of the valve desired (Example: 1/8").

Select the applicable **MEDIA** and relevant **PRESSURE** rating in the "Operating Pressure Differential" column for AC or DC, respectively (Example: 300 psi for water, maximum AC).

If the field of possible valves has not been narrowed to one valve at this point, the Cv Flow Factor, Orifice Size, Maximum Fluid Temperature, or Watt Rating (power consumption) may then be used as additional deciding factors.

After the proper valve Catalog Number has been identified, refer to the "Page No." column to find more specifications on any given valve Series (Example: 8210 Series).

After you have made your selection, order by catalog number with its appropriate prefix or suffix, voltage and frequency. If necessary, include fluid handled, and the operating pressure of your application. We strongly recommend ordering strainers for your valves.

Example:

For an 8210G002 valve with an Explosionproof enclosure to control 100 psi air in a hazardous area, order:

Option Prefix and Catalog Number: EF8210G002

Voltage and Frequency: 120/60
Fluid: Air
Pressure: 100 psi

Note that Type 7 Explosionproof enclosures do not require a different catalog number. Simply add the prefix "EF."



Guaranteed Same Day Shipment Program

Over 2000 of today's most popular products are now available for same day shipment and over 15,000 products can be shipped within five business days. These valves are manufactured in facilities certified to meet ISO international quality standards and are 100% tested.

Solenoid Valves • FRLs • Micro-miniature Valves • Valve Monitoring Systems • Pressure Switches.

World Class Support

ASCO's sales and service organization is staffed by factory-trained sales engineers. They are highly qualified to verify that your selection is best for your application or to help with your selection. They can also help customize an ASCO valve to meet unique application requirements or help you contact your local Authorized Valve Distributor.

For additional technical assistance, contact technical support by calling (973) 966-2082 or email Techsales@asco.com. The Technical Support Group is available to assist in all aspects of your application or product related matters.

Visit us online at www.ascovalve.com to see our comprehensive product portfolio, online product configurators, and our complete listing of ASCO Today and 5Day products.

Condensed Listing

General Service Valves



2-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)							Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①
			Min	Maximum AC			Maximum DC			AC	DC			AC	DC	
				Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
NORMALLY CLOSED (Closed when de-energized)																
1/8	3/64	0.05	0	500	500	400	360	360	330	180	180	U8256A001V	BRASS	6.3/F	6.9/F	23
1/8	3/64	0.05	0	500	500	400	360	360	330	180	180	U8256A013V	SS	6.3/F	6.9/F	23
1/8	3/64	0.06	0	750	750	530	650	640	550	180	120	8262G001*	BRASS	6.1/F	10.6/F	29
1/8	3/64	0.06	0	750	750	530	650	640	550	180	120	8262G012	SS	6.1/F	10.6/F	29
1/8	1/16	0.08	0	400	390	230	220	220	220	180	180	U8256A002V*	BRASS	6.3/F	6.9/F	23
1/8	1/16	0.08	0	400	390	230	220	220	220	180	180	U8256A014V	SS	6.3/F	6.9/F	23
1/8	3/32	0.15	0	180	180	105	90	90	90	180	180	U8256A004V	BRASS	6.3/F	6.9/F	23
1/8	3/32	0.15	0	180	180	105	90	90	90	180	180	U8256A016V	SS	6.3/F	6.9/F	23
1/8	3/32	0.2	0	275	290	130	150	140	145	180	120	8262G014*	BRASS	6.1/F	10.6/F	29
1/8	3/32	0.2	0	275	290	130	150	140	145	180	120	8262G015	SS	6.1/F	10.6/F	29
1/8	7/64	0.19	0	135	126	80	63	63	63	180	180	U8256B045V*	BRASS	6.3/F	6.9/F	23
1/8	7/64	0.19	0	135	126	80	63	63	63	180	180	U8256B046V*	SS	6.3/F	6.9/F	23
1/8	1/8	0.34	0	155	180	140	80	80	80	180	120	8262G002*	BRASS	6.1/F	10.6/F	29
1/8	1/8	0.34	0	155	180	140	80	80	80	180	120	8262G006*	SS	6.1/F	10.6/F	29
1/8	5/16	1	0	15	-	-	-	-	-	125	-	8040H006*	ALUM	6.1/F	-	7
1/4	3/64	0.06	0	750	750	500	500	500	500	180	120	8262G019*	BRASS	6.1/F	10.6/F	29
1/4	3/64	0.06	0	750	750	500	500	500	500	180	120	8262G080*	SS	6.1/F	10.6/F	29
1/4	3/64	0.06	0	1500	1500	1100	475	475	450	140	140	8262G200*	BRASS	10.1/F	11.6/F	29
1/4	3/64	0.06	0	2200	2000	1100	-	-	-	140	140	8262G214*	SS	10.1/F	-	29
1/4	3/32	0.17	0	360	340	160	150	125	125	180	120	8262G020*	BRASS	6.1/F	10.6/F	29
1/4	3/32	0.17	0	360	340	160	150	125	125	180	120	8262G086*	SS	6.1/F	10.6/F	29
1/4	1/8	0.35	0	140	165	90	65	60	60	180	120	8262G022*	BRASS	6.1/F	10.6/F	29
1/4	1/8	0.35	0	140	165	90	65	60	60	180	120	8262G007*	SS	6.1/F	10.6/F	29
1/4	1/8	0.35	0	300	300	200	75	70	70	180	150	8262G232*	BRASS	10.1/F	11.6/F	29
1/4	9/64	0.35	0	120	120	-	50	50	-	130	120	8260G071*	PLAST	6.1/F	10.6/F	25
1/4	9/64	0.35	0	120	120	-	50	50	-	130	120	8260G054*	PLAST	6.1/F	10.6/F	25
1/4	9/64	0.35	0	120	120	-	50	50	-	130	120	8260G042	PLAST	6.1/F	10.6/F	25
1/4	5/32	0.5	0	180	200	145	40	40	45	180	150	8262G202*	BRASS	10.1/F	11.6/F	29
1/4	5/32	0.5	0	180	200	145	40	40	45	180	150	8262G220*	SS	10.1/F	11.6/F	29
1/4	7/32	0.72	0	90	100	100	25	25	25	180	150	8262G208*	BRASS	10.1/F	11.6/F	29
1/4	7/32	0.72	0	90	100	100	25	25	25	180	150	8262G226*	SS	10.1/F	11.6/F	29
1/4	7/32	0.85	0	40	50	40	17	20	21	180	120	8262G013*	BRASS	6.1/F	10.6/F	29
1/4	7/32	0.85	0	40	50	40	17	20	21	180	120	8262G036*	SS	6.1/F	10.6/F	29
1/4	9/32	0.88	0	60	75	60	18	15	18	180	150	8262G210*	BRASS	10.1/F	11.6/F	29
1/4	9/32	0.88	0	90	100	90	25	20	22	180	150	8262G212*	BRASS	17.1/F	22.6/F	29
1/4	9/32	0.88	0	90	100	90	25	20	22	180	150	8262G230*	SS	17.1/F	22.6/F	29
1/4	9/32	0.96	0	27	36	28	15	16	16	180	120	8262G090*	BRASS	6.1/F	10.6/F	29
1/4	9/32	0.96	0	27	36	28	15	16	16	180	120	8262G038*	SS	6.1/F	10.6/F	29
1/4	5/16	1.5	10	750	750	750	-	-	-	200	-	8223G021*	BRASS	10.1/F	-	21
1/4	5/16	1.5	10	1500	1500	1500	500	500	500	200	150	8223G025*	BRASS	17.1/F	22.6/F	21
1/4	5/16	1.1	0	15	-	-	-	-	-	125	-	8040H007*	ALUM	6.1/F	-	7
3/8	1/8	0.35	0	160	150	90	65	60	60	180	120	8263G002*	BRASS	6.1/F	10.6/F	29
3/8	1/8	0.35	0	160	150	90	65	60	60	180	120	8263G330*	SS	6.1/F	10.6/F	29
3/8	5/32	0.52	0	100	100	100	35	35	35	180	150	8263G200*	BRASS	10.1/F	11.6/F	29
3/8	5/32	0.52	0	100	100	100	35	35	35	180	150	8263G331*	SS	10.1/F	11.6/F	29
3/8	7/32	0.72	0	100	100	100	25	25	25	180	150	8263G206*	BRASS	17.1/F	11.6/F	29
3/8	7/32	0.72	0	100	100	100	25	25	25	180	150	8263G332	SS	17.1/F	11.6/F	29
3/8	9/32	0.85	0	100	100	70	-	-	-	180	-	8263G210*	BRASS	17.1/F	-	29
3/8	9/32	0.85	0	100	100	70	-	-	-	180	-	8263G333*	SS	17.1/F	-	29
3/8	5/16	1.5	10	750	750	750	400	400	400	200	150	8223G023*	BRASS	10.1/F	22.6/F	21
3/8	5/16	1.5	10	1500	1500	1500	500	500	500	200	150	8223G027*	BRASS	17.1/F	22.6/F	21
3/8	5/16	1.2	0	15	-	-	-	-	-	125	-	8040H008*	ALUM	6.1/F	-	7
3/8	3/8	1.5	②	150	125	-	40	40	-	180	150	8210G073*	BRASS	6.1/F	11.6/F	11
3/8	3/8	1.5	②	150	125	-	40	40	-	180	150	8210G036*	SS	6.1/F	11.6/F	11
3/8	3/8	1.8	0	7	5	-	3	3	-	180	120	8030G010*	BRASS	6.1/F	10.6/F	3
3/8	3/8	1.8	0	7	5	-	3	3	-	180	120	8030G064	SS	6.1/F	10.6/F	3
3/8	3/8	1.8	0	15	15	-	3.5	3.5	-	180	150	8030G013*	BRASS	10.1/F	11.6/F	3
3/8	3/8	1.8	0	15	15	-	3.5	3.5	-	180	150	8030G065*	SS	10.1/F	11.6/F	3
3/8	9/16	3	5	-	150	-	-	125	-	180	150	8221G001*	BRASS	6.1/F	11.6/F	17
3/8	5/8	3	0	150	150	-	40	40	-	180	150	8210G093*	BRASS	10.1/F	11.6/F	11
3/8	5/8	3	5	200	150	135	125	100	100	180	150	8210G001*	BRASS	6.1/F	11.6/F	11
3/8	5/8	3	5	300	300	300	-	-	-	175	-	8210G006*	BRASS	17.1/F	-	11
3/8	3/4	3.4	0	50	-	-	25	-	-	125	104	8215G010*	ALUM	10.1/F	11.6/F	7

① See specific valve series for detailed specifications. ② 5 psi on air, 1 psi on water. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.





Condensed Listing

General Service Valves

2-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)							Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①
			Min	Maximum AC			Maximum DC			AC	DC			AC	DC	
				Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
3/8	3/4	3.5	5	125	-	-	125	125	104	8215G001*	ALUM	6.1/F	11.6/F	7		
1/2	3/8	3.2	25	1500	1500	1500	500	500	500	200	150	8223G003*	BRASS	17.1/F	22.6/F	21
1/2	3/8	3.2	25	1500	1500	1500	500	500	500	200	150	8223G010*	SS	17.1/F	22.6/F	21
1/2	7/16	2.2	②	150	125	-	40	40	-	180	150	8210G015*	BRASS	6.1/F	11.6/F	11
1/2	7/16	2.2	②	150	125	-	40	40	-	180	150	8210G037*	SS	6.1/F	11.6/F	11
1/2	7/16	2.8	0	4	6	-	-	-	-	180	-	8030G016*	BRASS	6.1/F	-	3
1/2	7/16	2.8	0	4	6	-	-	-	-	180	-	8030G066*	SS	6.1/F	-	3
1/2	7/16	2.8	0	15	15	-	-	-	-	200	-	8030G017*	BRASS	16.1/F	-	3
1/2	7/16	2.8	0	15	15	-	-	-	-	200	-	8030G067	SS	16.1/F	-	3
1/2	9/16	3.5	5	-	150	-	-	125	-	180	150	8221G003*	BRASS	6.1/F	11.6/F	17
1/2	5/8	4	0	150	150	-	40	40	-	180	150	8210G094*	BRASS	10.1/F	11.6/F	11
1/2	5/8	4	0	150	150	125	40	40	-	175	150	8210G087*	SS	17.1/F	11.6/F	11
1/2	5/8	4	5	200	150	135	125	100	100	180	150	8210G002*	BRASS	6.1/F	11.6/F	11
1/2	5/8	4	5	300	300	300	-	-	-	175	-	8210G007*	BRASS	17.1/F	-	11
1/2	3/4	4	5	-	300	-	-	300	-	180	125	8210G227*	BRASS	17.1/F	40.6/H	11
1/2	3/4	4.4	0	50	-	-	25	-	-	125	104	8215G020*	ALUM	10.1/F	11.6/F	7
1/2	3/4	4.8	5	125	-	-	125	-	-	125	104	8215G002*	ALUM	6.1/F	11.6/F	7
1/2	3/4	5.4	0	2	-	-	-	-	-	125	-	8040G022*	ALUM	10.1/F	-	7
3/4	5/8	4.5	0	150	150	125	40	40	-	175	150	8210G088*	SS	17.1/F	11.6/F	11
3/4	5/8	5.4	0	2.5	2.5	-	-	-	-	180	-	8030G063	SS	10.1/F	-	3
3/4	3/4	5	0	2	2	-	1	1	-	180	150	8030G003*	BRASS	10.1/F	11.6/F	3
3/4	3/4	5	0	4	4	-	-	-	-	180	-	8030G043*	BRASS	17.1/F	-	3
3/4	3/4	5	0	150	150	-	40	40	-	180	150	8210G095*	BRASS	10.1/F	11.6/F	11
3/4	3/4	5	5	125	125	125	100	90	75	180	150	8210G009*	BRASS	6.1/F	11.6/F	11
3/4	3/4	5.1	0	50	-	-	25	-	-	125	104	8215G030*	ALUM	10.1/F	11.6/F	7
3/4	3/4	5.1	5	125	-	-	125	-	-	125	104	8215G003*	ALUM	6.1/F	11.6/F	7
3/4	3/4	5.5	5	-	150	-	-	125	-	180	150	8221G005*	BRASS	6.1/F	11.6/F	17
3/4	3/4	6	0	-	-	-	200	180	180	-	77	8210B026*	BRASS	-	30.6/H	11
3/4	3/4	6	0	350	300	200	-	-	-	200	77	8210G026*	BRASS	16.1/F	-	11
3/4	3/4	6.5	5	250	150	100	125	125	125	180	150	8210G003*	BRASS	6.1/F	11.6/F	11
3/4	3/4	7.8	25	750	750	750	450	450	450	200	150	8223G005*	BRASS	17.1/F	22.6/F	21
3/4	3/4	7.8	25	750	750	750	450	450	450	200	150	8223G012	SS	17.1/F	22.6/F	21
3/4	3/4	9.5	0	2	-	-	-	-	-	125	-	8040G023*	ALUM	10.1/F	-	7
1	1	11.5	5	-	150	-	-	125	-	180	150	8221G007*	BRASS	6.1/F	11.6/F	17
1	1	13	0	-	-	-	100	100	80	-	77	8210B054*	BRASS	-	30.6/H	11
1	1	13	0	-	-	-	100	100	80	-	77	8210D089*	SS	-	30.6/H	11
1	1	13	0	150	125	125	-	-	-	180	-	8210G054*	BRASS	16.1/F	-	11
1	1	13	0	150	125	125	-	-	-	180	-	8210G089*	SS	16.1/F	-	11
1	1	13	5	150	150	100	125	125	125	180	150	8210G004*	BRASS	6.1/F	11.6/F	11
1	1	13.5	0	300	225	115	-	-	-	200	-	8210G027*	BRASS	20.1/F	-	11
1	1	13.5	10	300	300	300	-	-	-	175	-	8210G078*	BRASS	17.1/F	-	11
1	1 5/8	21	0	25	-	-	25	-	-	125	77	8215B050*	ALUM	15.4/F	14.9/B	7
1 1/4	1 1/8	13	5	-	150	-	-	125	-	180	150	8221G009*	BRASS	6.1/F	11.6/F	17
1 1/4	1 1/8	15	0	-	-	-	100	100	80	-	77	8210B055*	BRASS	-	30.6/F	11
1 1/4	1 1/8	15	0	150	125	125	-	-	-	180	77	8210G055*	BRASS	16.1/F	-	11
1 1/4	1 1/8	15	5	150	150	100	125	125	125	180	150	8210G008*	BRASS	6.1/F	11.6/F	11
1 1/4	1 5/8	32	0	25	-	-	25	-	-	125	77	8215B060*	ALUM	15.4/F	14.9/B	7
1 1/2	1 1/4	22.5	0	-	-	-	100	100	80	-	77	8210B056*	BRASS	-	30.6/F	11
1 1/2	1 1/4	22.5	0	150	125	125	-	-	-	180	-	8210G056*	BRASS	16.1/F	-	11
1 1/2	1 1/4	22.5	5	150	150	100	125	125	125	180	150	8210G022*	BRASS	6.1/F	11.6/F	11
1 1/2	1 1/4	24	5	-	150	-	-	125	-	180	150	8221G011*	BRASS	6.1/F	11.6/F	17
1 1/2	1 5/8	35	0	25	-	-	25	-	-	125	77	8215B070	ALUM	15.4/F	14.9/B	7
2	1 3/4	36	5	-	150	-	-	125	-	180	150	8221G013*	BRASS	6.1/F	22.6/F	17
2	1 3/4	43	5	150	125	90	50	50	50	180	150	8210G100*	BRASS	6.1/F	11.6/F	11
2	2 3/32	60	0	25	-	-	15	-	-	125	77	8215B080*	ALUM	15.4/F	14.9/B	7
2 1/2	1 3/4	38	5	-	150	-	-	125	-	180	150	8221G015*	BRASS	6.1/F	22.6/F	17
2 1/2	1 3/4	45	5	150	125	90	50	50	50	180	150	8210G101*	BRASS	6.1/F	11.6/F	11
2 1/2	3	117	0	5	-	-	-	-	-	125	-	8215A090*	ALUM	28.2/F	-	7
3	3	138	0	5	-	-	-	-	-	125	-	8215A040*	ALUM	28.2/F	-	7
NORMALLY OPEN (Open when de-energized)																
1/8	1/16	.09	0	500	300	225	400	250	150	180	120	8262G091*	BRASS	6.1/F	10.6/F	29
1/8	1/16	.09	0	500	300	225	400	250	150	180	120	8262G092	SS	6.1/F	10.6/F	29
1/8	3/32	.15	0	275	200	150	190	110	110	180	120	8262G093	BRASS	6.1/F	10.6/F	29
1/8	3/32	.15	0	275	200	150	190	110	110	180	120	8262G094	SS	6.1/F	10.6/F	29
1/8	1/8	.21	0	125	100	85	80	60	50	180	120	8262G031*	BRASS	6.1/F	10.6/F	29

① See specific valve series for detailed specifications. ② 5 psi on air, 1 psi on water. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.



Condensed Listing

General Service Valves



2-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)							Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①
			Min	Maximum AC			Maximum DC			AC	DC			AC	DC	
				Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
1/8	1/8	0.21	0	125	100	85	80	60	50	180	120	8262G035*	SS	6.1/F	10.6/F	29
1/4	3/64	0.06	0	750	700	700	500	500	500	140	140	8262G260*	BRASS	10.1/F	11.6/F	29
1/4	3/64	0.06	0	750	700	700	500	500	500	140	140	8262G130*	SS	10.1/F	11.6/F	29
1/4	3/32	0.17	0	300	250	230	200	150	125	140	140	8262G261*	BRASS	10.1/F	11.6/F	29
1/4	3/32	0.17	0	300	250	230	200	150	125	140	140	8262G134*	SS	10.1/F	11.6/F	29
1/4	1/8	0.35	0	130	110	100	80	60	60	180	150	8262G262*	BRASS	10.1/F	11.6/F	29
1/4	1/8	0.35	0	130	110	100	80	60	60	180	150	8262G138*	SS	10.1/F	11.6/F	29
1/4	5/32	0.49	0	85	75	60	45	30	30	180	150	8262G263*	BRASS	10.1/F	11.6/F	29
1/4	5/32	0.49	0	85	75	60	45	30	30	180	150	8262G142	SS	10.1/F	11.6/F	29
1/4	7/32	0.83	0	45	45	40	25	20	20	180	150	8262G264*	BRASS	10.1/F	11.6/F	29
1/4	7/32	0.83	0	45	45	40	25	20	20	180	150	8262G148*	SS	10.1/F	11.6/F	29
1/4	9/32	0.96	0	30	25	20	15	15	15	180	150	8262G265*	BRASS	10.1/F	11.6/F	29
1/4	9/32	0.96	0	30	25	20	15	15	15	180	150	8262G152*	SS	10.1/F	11.6/F	29
3/8	3/8	1.6	0	15	15	-	-	-	-	200	-	8030G070	BRASS	16.1/F	-	3
3/8	9/16	3	5	-	-	-	-	125	-	-	150	8221 021	BRASS	-	16.8/F	17
3/8	9/16	3	5	-	150	-	-	-	-	180	-	8221G021	BRASS	16.1/F	-	17
3/8	5/8	3	0	150	150	125	125	125	80	180	150	8210G033*	BRASS	10.1/F	11.6/F	11
3/8	5/8	3	5	250	200	200	250	200	200	180	180	8210G011*	BRASS	10.1/F	11.6/F	11
3/8	3/4	3.2	0	125	-	-	125	-	-	125	104	8215G013	ALUM	10.1/F	11.6/F	7
1/2	7/16	2.2	0	15	15	-	-	-	-	200	-	8030G071*	BRASS	20.1/F	-	3
1/2	9/16	3.5	5	-	-	-	-	125	-	-	150	8221 023	BRASS	-	16.8/F	17
1/2	9/16	3.5	5	-	150	-	-	-	-	180	-	8221G023	BRASS	16.1/F	-	17
1/2	5/8	3	0	150	150	100	125	125	80	180	150	8210G030*	SS	10.1/F	11.6/F	11
1/2	5/8	4	0	150	150	125	125	125	80	180	150	8210G034*	BRASS	10.1/F	11.6/F	11
1/2	5/8	4	5	250	200	200	250	200	200	180	180	8210G012*	BRASS	10.1/F	11.6/F	11
1/2	3/4	4	0	125	-	-	125	-	-	125	104	8215G023*	ALUM	10.1/F	11.6/F	7
1/2	3/4	5	0	2	2	-	-	-	-	180	-	8030G082	BRASS	10.1/F	-	3
3/4	5/8	3	0	150	150	100	125	125	80	180	150	8210G038*	SS	10.1/F	11.6/F	11
3/4	3/4	4.6	0	125	-	-	125	-	-	125	104	8215G033*	ALUM	10.1/F	11.6/F	7
3/4	3/4	5.5	5	-	-	-	-	125	-	-	150	8221 025	BRASS	-	16.8/F	17
3/4	3/4	5.5	5	-	150	-	-	-	-	180	-	8221G025	BRASS	16.1/F	-	17
3/4	3/4	5.5	0	2	2	-	-	-	-	180	-	8030G083*	BRASS	10.1/F	-	3
3/4	3/4	5.5	0	150	150	125	125	125	80	180	150	8210G035*	BRASS	10.1/F	11.6/F	11
3/4	3/4	6.5	5	-	-	-	250	200	200	-	180	8210C013	BRASS	-	16.8/F	11
3/4	3/4	6.5	5	250	200	200	-	-	-	180	-	8210G013*	BRASS	16.1/F	-	11
1	1	11.5	5	-	-	-	-	125	-	-	150	8221 027	BRASS	-	16.8/F	17
1	1	11.5	5	-	150	-	-	-	-	180	-	8221G027*	BRASS	16.1/F	-	17
1	1	13	0	125	125	125	-	-	-	180	-	8210B057*	BRASS	20/F	-	11
1	1	13	5	-	-	-	125	125	125	-	180	8210D014*	BRASS	-	16.8/F	11
1	1	13	5	150	150	125	-	-	-	180	-	8210G014*	BRASS	16.1/F	-	11
1	1 5/8	22	0	25	-	-	15	-	-	125	77	8215C053*	ALUM	15.4/F	14.9/B	7
1 1/4	1 1/8	13	5	-	-	-	-	125	-	-	150	8221 029	BRASS	-	16.8/F	17
1 1/4	1 1/8	13	5	-	150	-	-	-	-	180	-	8221G029	BRASS	16.1/F	-	17
1 1/4	1 1/8	15	0	125	125	125	-	-	-	180	-	8210B058	BRASS	20/F	-	11
1 1/4	1 1/8	15	5	-	-	-	125	125	125	-	180	8210D018	BRASS	-	16.8/F	11
1 1/4	1 1/8	15	5	150	150	125	-	-	-	180	-	8210G018*	BRASS	16.1/F	-	11
1 1/4	1 5/8	33	0	25	-	-	15	-	-	125	77	8215C063*	ALUM	15.4/F	14.9/B	7
1 1/2	1 1/4	22.5	0	125	125	125	-	-	-	180	-	8210B059*	BRASS	20/F	-	11
1 1/2	1 1/4	22.5	5	-	-	-	125	125	125	-	180	8210D032*	BRASS	-	16.8/F	11
1 1/2	1 1/4	22.5	5	150	150	125	-	-	-	180	-	8210G032*	BRASS	16.1/F	-	11
1 1/2	1 1/4	24	5	-	-	-	-	125	-	-	150	8221 031	BRASS	-	16.8/F	17
1 1/2	1 1/4	24	5	-	150	-	-	-	-	180	-	8221G031*	BRASS	16.1/F	-	17
1 1/2	1 5/8	37	0	25	-	-	15	-	-	125	77	8215C073*	ALUM	15.4/F	14.9/B	7
2	1 3/4	36	5	-	-	-	-	125	-	-	150	8221 033	BRASS	-	16.8/F	17
2	1 3/4	36	5	-	150	-	-	-	-	180	-	8221G033	BRASS	16.1/F	-	17
2	1 3/4	43	5	-	-	-	125	125	125	-	150	8210 103*	BRASS	-	16.8/F	11
2	1 3/4	43	5	125	125	125	-	-	-	180	-	8210G103*	BRASS	16.1/F	-	11
2	2 3/32	58	0	25	-	-	15	-	-	125	77	8215C083*	ALUM	15.4/F	14.9/B	7
2 1/2	1 3/4	38	5	-	-	-	-	125	-	-	150	8221 035	BRASS	-	16.8/F	17
2 1/2	1 3/4	38	5	-	150	-	-	-	-	180	-	8221G035	BRASS	16.1/F	-	17
2 1/2	1 3/4	45	5	-	-	-	125	125	125	-	150	8210 104	BRASS	-	16.8/F	11
2 1/2	1 3/4	45	5	125	125	125	-	-	-	180	-	8210G104*	BRASS	16.1/F	-	11
2 1/2	3	117	0	5	-	-	-	-	-	125	-	8215B093	ALUM	28.2/F	-	7

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.





Condensed Listing

General Service Valves

3-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①	
	Press.	Exh.	Press.	Exh.	Min	Maximum AC			Maximum DC			AC			DC	AC		DC
						Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
NORMALLY CLOSED (Closed when de-energized)																		
1/8	3/64	-	0.04	-	0	230	230	230	120	140	135	200	104	8314G031	BRASS	10.1/F	11.6/F	39
1/8	3/64	-	0.06	-	0	200	200	200	200	200	200	180	120	8320G132*	BRASS	6.1/F	10.6/F	53
1/8	3/64	-	0.06	-	0	200	200	200	200	200	200	180	120	8320G142	SS	6.1/F	10.6/F	53
1/8	3/64	-	0.06	0.06	0	230	235	245	230	235	245	180	180	U8356A001V	BRASS	6.3/F	6.9/F	59
1/8	3/64	-	0.06	0.06	0	230	235	245	230	235	245	180	180	U8356A013V	SS	6.3/F	6.9/F	59
1/8	1/16	-	0.09	0.06	0	140	140	150	140	140	150	180	180	U8356A002V	BRASS	6.3/F	6.9/F	59
1/8	1/16	-	0.09	0.06	0	140	140	150	140	140	150	180	180	U8356A014V	SS	6.3/F	6.9/F	59
1/8	1/16	-	0.09	-	0	150	125	125	125	125	125	180	120	8320G013*	BRASS	6.1/F	10.6/F	53
1/8	1/16	-	0.09	-	0	150	125	125	125	125	125	180	120	8320G045	SS	6.1/F	10.6/F	53
1/8	3/32	-	0.13	0.06	0	75	72	77	75	72	77	180	180	U8356A004V	BRASS	6.3/F	6.9/F	57
1/8	3/32	-	0.13	0.06	0	75	72	77	75	72	77	180	180	U8356A016V	SS	6.3/F	6.9/F	57
1/8	3/32	-	0.12	-	0	100	100	100	100	100	100	180	120	8320G015*	BRASS	6.1/F	10.6/F	53
1/8	3/32	-	0.12	-	0	100	100	100	100	100	100	180	120	8320G047	SS	6.1/F	10.6/F	53
1/8	7/64	-	0.15	0.06	0	70	61	72	70	61	72	180	180	U8356B045V*	BRASS	6.3/F	6.9/F	59
1/8	7/64	-	0.15	0.06	0	70	61	72	70	61	72	180	180	U8356B046V	SS	6.3/F	6.9/F	59
1/8	1/8	-	0.13	-	0	-	-	-	250	250	250	-	180	8300D055F	BRASS	-	36.2/H	35
1/8	1/8	-	0.13	-	0	550	550	550	-	-	-	200	-	8300G055F	BRASS	20.1/F	-	35
1/8	1/8	-	0.21	-	0	40	40	40	40	40	40	180	120	8320G017*	BRASS	6.1/F	10.6/F	53
1/8	1/8	-	0.21	-	0	40	40	40	40	40	40	180	120	8320G049	SS	6.1/F	10.6/F	53
1/8	3/16	-	0.35	-	0	-	-	-	125	125	125	-	180	8300D003F	BRASS	-	36.2/H	35
1/8	3/16	-	0.35	-	0	250	250	250	-	-	-	200	-	8300G003F	BRASS	20.1/F	-	35
1/4	3/64	-	0.04	-	0	230	-	-	120	-	-	200	104	8314G022*	BRASS	10.1/F	11.6/F	39
1/4	3/64	-	0.04	-	0	230	230	230	120	140	135	200	104	8314G034*	BRASS	10.1/F	11.6/F	39
1/4	1/16	-	0.09	-	0	210	225	225	160	160	160	200	150	8320G182*	BRASS	17.1/F	11.6/F	53
1/4	1/16	-	0.07	-	0	125	125	-	125	125	-	130	120	8360G075*	PLAST	6.1/F	10.6/F	63
1/4	3/32	1/4	0.2	0.73	5	150	-	-	-	-	-	180	-	8317G023*	BRASS	10.1/F	-	49
1/4	3/32	1/4	0.2	0.73	5	150	-	-	-	-	-	180	-	8317G024*	SS	10.1/F	-	49
1/4	3/32	1/4	0.2	0.73	5	150	150	95	75	55	30	180	104	8317G035*	BRASS	10.1/F	11.6/F	49
1/4	3/32	1/4	0.2	0.73	5	150	150	95	75	55	30	180	104	8317G036*	SS	10.1/F	11.6/F	49
1/4	3/32	-	0.15	-	0	150	-	-	60	-	-	200	104	8314G023*	BRASS	10.1/F	11.6/F	39
1/4	3/32	-	0.15	-	0	150	100	100	60	70	30	200	104	8314G035*	BRASS	10.1/F	11.6/F	39
1/4	3/32	-	0.15	-	0	150	100	100	60	70	30	200	104	8314G121*	SS	10.1/F	11.6/F	39
1/4	3/32	-	0.12	-	0	150	150	150	115	115	115	200	150	8320G184*	BRASS	10.1/F	11.6/F	53
1/4	3/32	-	0.12	-	0	150	150	150	115	115	115	200	150	8320G202*	SS	10.1/F	11.6/F	53
1/4	3/32	-	0.11	-	0	100	100	-	100	100	-	130	120	8360G077*	PLAST	6.1/F	10.6/F	63
1/4	1/8	-	0.25	-	0	75	60	60	30	40	25	200	104	8314G036*	BRASS	10.1/F	11.6/F	39
1/4	1/8	-	0.25	-	0	85	85	85	60	60	60	200	150	8320G186*	BRASS	10.1/F	11.6/F	53
1/4	1/8	-	0.25	-	0	85	85	85	60	60	60	200	150	8320G203*	SS	10.1/F	11.6/F	53
1/4	1/8	-	0.16	-	0	40	40	-	40	40	-	130	120	8360G078*	PLAST	6.1/F	10.6/F	63
1/4	11/64	-	0.35	-	0	45	45	45	25	25	25	200	150	8320G188*	BRASS	10.1/F	11.6/F	53
1/4	3/16	-	0.35	-	0	-	-	-	125	125	125	-	180	8300D058F	BRASS	-	36.2/H	35
1/4	3/16	-	0.25	-	0	-	-	-	125	125	125	-	180	8300D058RF*	BRASS	-	36.2/H	35
1/4	3/16	-	0.35	-	0	250	250	250	-	-	-	200	-	8300G058F	BRASS	20.1/F	-	35
1/4	3/16	-	0.25	-	0	250	250	250	-	-	-	180	-	8300G058RF	BRASS	20.1/F	-	35
1/4	1/4	-	0.45	-	0	250	250	250	-	-	-	200	-	8300D061F*	BRASS	28/H	-	35
1/4	1/4	-	0.39	-	0	-	-	-	75	75	75	-	180	8300A081RF	BRASS	-	36.2/H	35
1/4	1/4	-	0.45	-	0	-	-	-	75	75	75	-	180	8300A081F	BRASS	-	36.2/H	35
1/4	1/4	-	0.45	-	0	190	190	190	-	-	-	200	-	8300G081F*	BRASS	20.1/F	-	35
1/4	1/4	-	0.39	-	0	150	150	150	-	-	-	180	-	8300G081RF*	BRASS	20.1/F	-	35

① See specific valve series for detailed specifications. * Qualify for ASCO TODAY and/or 5DAY Program based on voltage required.



Condensed Listing

General Service Valves



3-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①	
	Press.	Exh.	Press.	Exh.	Min	Maximum AC			Maximum DC			AC			DC	AC		DC
						Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	8551G405	ALUM	10.1	11.6	67
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	8551G406	ALUM	10.1	11.6	67
1/4	1/4	1/4	.86	-	30	150	-	-	150	-	-	140	140	SC8551A005MS	ALUM	2.5	3	65
1/4	1/4	1/4	.86	-	30	150	-	-	150	-	-	140	140	SC8551A006MS	ALUM	2.5	3	65
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	EF8551G407	Brass	10.1	11.6	67
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	EF8551G408	Brass	10.1	11.6	67
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	EV8551G413	SS	10.1	11.6	67
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	EV8551G414	SS	10.1	11.6	67
1/4	9/32	11/32	0.8	1.2	10	200	200	200	200	200	200	180	120	8321G001*	BRASS	6.1/F	10.6/F	49
1/4	5/16	-	1.5	-	0	150	-	-	120	-	-	180	120	8316G001	BRASS	10.1	11.6	47
1/4	5/16	-	1.5	-	0	150	-	-	120	-	-	180	120	EV8316G081V	SS	10.1	11.6	47
3/8	1/4	-	0.45	-	0	250	250	250	-	-	-	200	-	8300D009F*	BRASS	28/H	-	35
3/8	1/4	-	0.45	-	0	-	-	-	75	75	75	-	180	8300A082F	BRASS	-	36.2/H	35
3/8	1/4	-	0.39	-	0	-	-	-	75	75	75	-	180	8300A082RF	BRASS	-	36.2/H	35
3/8	1/4	-	0.45	-	0	190	190	190	-	-	-	200	-	8300G082F	BRASS	20.1/F	-	35
3/8	1/4	-	0.39	-	0	150	150	150	-	-	-	180	-	8300G082RF	BRASS	20.1/F	-	35
3/8	1/4	-	0.45	-	0	-	-	-	50	50	50	-	180	8300B410F	SS	-	36.2/H	35
3/8	1/4	-	0.45	-	0	150	150	150	-	-	-	200	-	8300G410F	SS	20.1/F	-	35
3/8	1/4	-	0.45	-	0	175	175	175	-	-	-	200	-	8300B411F	SS	28/H	-	35
3/8	9/32	11/32	0.8	1.2	10	200	200	200	200	200	200	180	120	8321G002*	BRASS	6.1/F	10.6/F	49
3/8	5/16	-	0.75	-	0	-	-	-	40	40	40	-	180	8300D064F	BRASS	-	36.2/H	35
3/8	5/16	-	0.53	-	0	-	-	-	40	40	40	-	180	8300D064RF	BRASS	-	36.2/H	35
3/8	5/16	-	0.75	-	0	120	120	120	-	-	-	200	-	8300G064F	BRASS	20.1/F	-	35
3/8	5/16	-	0.53	-	0	120	120	120	-	-	-	180	-	8300G064RF	BRASS	20.1/F	-	35
3/8	5/16	-	0.75	-	0	-	-	-	40	40	40	-	180	8300B412F	SS	-	36.2/H	35
3/8	5/16	-	0.75	-	0	120	120	120	-	-	-	200	-	8300G412F	SS	20.1/F	-	35
3/8	5/16	-	1.8	-	0	150	-	-	120	-	-	180	120	8316G002	BRASS	10.1	11.6	47
3/8	5/16	-	1.8	-	0	150	-	-	120	-	-	180	120	EV8316G082V	SS	10.1	11.6	47
3/8	3/8	-	1	-	0	-	-	-	30	30	30	-	180	8300D072F	BRASS	-	36.2/H	35
3/8	3/8	-	1	-	0	75	75	75	-	-	-	200	-	8300G072F	BRASS	20.1/F	-	35
3/8	3/8	-	1	-	0	-	-	-	30	30	30	-	180	8300B413F	SS	-	36.2/H	35
3/8	3/8	-	1	-	0	75	75	75	-	-	-	200	-	8300G413F	SS	20.1/F	-	35
3/8	5/8	-	4	-	-	150	-	-	120	-	-	180	120	8316G003	BRASS	10.1	11.6	47
3/8	5/8	-	2.5	-	10	250	250	-	250	250	-	180	120	8316G014*	BRASS	17.1/F	22.6/F	43
3/8	5/8	-	3	-	10	150	125	-	125	125	-	180	120	8316G054*	BRASS	6.1/F	10.6/F	43
1/2	5/16	-	0.75	-	0	-	-	-	40	40	40	-	180	8300D068F	BRASS	-	36.2/H	35
1/2	5/16	-	0.53	-	0	-	-	-	40	40	40	-	180	8300D068RF	BRASS	-	36.2/H	35
1/2	5/16	-	0.75	-	0	120	120	120	-	-	-	200	-	8300G068F*	BRASS	20.1/F	-	35
1/2	5/16	-	0.53	-	0	120	120	120	-	-	-	180	-	8300G068RF	BRASS	20.1/F	-	35
1/2	5/16	-	0.75	-	0	-	-	-	40	40	40	-	180	8300B403F	SS	-	36.2/H	35
1/2	5/16	-	0.75	-	0	120	120	120	-	-	-	200	-	8300G403F	SS	20.1/F	-	35
1/2	3/8	-	1	-	0	-	-	-	30	30	30	-	180	8300D076F	BRASS	-	36.2/H	35
1/2	3/8	-	1	-	0	75	75	75	-	-	-	200	-	8300G076F	BRASS	20.1/F	-	35
1/2	3/8	-	1	-	0	-	-	-	30	30	30	-	180	8300B404F	SS	-	36.2/H	35
1/2	3/8	-	1	-	0	75	75	75	-	-	-	200	-	8300G404F	SS	20.1/F	-	35
1/2	1/2	1/2	3.7	-	30	150	-	-	120	-	-	140	120	8553G405	ALUM	10.1	11.6	67
1/2	1/2	1/2	3.7	-	30	150	-	-	120	-	-	140	120	8553G406	ALUM	10.1	11.6	67
1/2	1/2	1/2	3.7	-	30	150	-	-	150	-	-	140	140	SC8553A005MS	ALUM	5	6.9	65
1/2	1/2	1/2	3.7	-	30	150	-	-	150	-	-	140	140	SC8553A006MS	ALUM	5	6.9	65
1/2	5/8	-	4	-	0	150	-	-	120	-	-	180	120	8316G004	BRASS	10.1	11.6	47
1/2	5/8	-	3.2	-	10	250	250	-	250	250	-	180	120	8316G024*	BRASS	17.1/F	22.6/F	43
1/2	5/8	-	3.2	-	10	150	125	-	125	125	-	180	120	8316G064*	BRASS	6.1/F	10.6/F	43
1/2	5/8	-	4	-	0	150	-	-	120	-	-	180	120	EV8316G084V	SS	10.1	11.6	47
3/4	11/16	-	4.8	-	10	150	125	-	125	125	-	180	120	8316G074*	BRASS	6.1/F	10.6/F	43
3/4	11/16	-	4.8	-	10	250	250	-	250	250	-	180	120	8316G044*	BRASS	17.1/F	22.6/F	43
1	1	-	12.5	-	10	150	125	-	125	125	-	180	120	8316G034*	BRASS	6.1/F	10.6/F	43

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.



3-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)						Max. Fluid Temp.*F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①	
	Press.	Exh.	Press.	Exh.	Min	Maximum AC			Maximum DC			AC			DC	AC		DC
						Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
NORMALLY OPEN (Open when de-energized)																		
1/8	3/64	-	.04	-	0	300	300	300	200	200	120	200	104	8314G049	BRASS	10.1/F	11.6/F	39
1/8	3/64	-	.06	-	0	200	200	200	200	200	200	180	120	8320G136*	BRASS	6.1/F	10.6/F	53
1/8	3/64	-	.06	-	0	200	200	200	200	200	200	180	120	8320G146	SS	6.1/F	10.6/F	53
1/8	3/64	-	0.06	0.06	0	175	180	175	150	122	90	180	180	U8356A005V	BRASS	6.3/F	6.9/F	59
1/8	3/64	-	0.06	0.06	0	175	180	175	150	122	90	180	180	U8356A017V	SS	6.3/F	6.9/F	59
1/8	1/16	-	.09	-	0	150	125	125	125	125	125	180	120	8320G027*	BRASS	6.1/F	10.6/F	53
1/8	1/16	-	.09	-	0	150	125	125	125	125	125	180	120	8320G051	SS	6.1/F	10.6/F	53
1/8	1/16	-	0.09	0.06	0	165	180	175	75	72	70	180	180	U8356A006V	BRASS	6.3/F	6.9/F	59
1/8	1/16	-	0.09	0.06	0	165	180	175	75	72	70	180	180	U8356A018V	SS	6.3/F	6.9/F	59
1/8	3/32	-	.12	-	0	100	100	100	100	100	100	180	120	8320G029*	BRASS	6.1/F	10.6/F	53
1/8	3/32	-	.12	-	0	100	100	100	100	100	100	180	120	8320G053	SS	6.1/F	10.6/F	53
1/8	3/32	-	0.13	0.06	0	160	175	120	86	66	40	180	180	U8356A008V	BRASS	6.3/F	6.9/F	59
1/8	3/32	-	0.13	0.06	0	160	175	120	86	66	40	180	180	U8356A020V	SS	6.3/F	6.9/F	59
1/8	7/64	-	0.15	0.06	0	148	180	99	148	157	72	180	180	U8356B054V	BRASS	6.3/F	6.9/F	59
1/8	7/64	-	0.15	0.06	0	148	180	99	148	157	72	180	180	U8356B055V	SS	6.3/F	6.9/F	59
1/8	1/8	-	.13	-	0	-	-	-	250	250	250	-	180	8300D055G	BRASS	-	36.2/H	35
1/8	1/8	-	.13	-	0	550	550	550	-	-	-	200	-	8300G055G	BRASS	20.1/F	-	35
1/8	1/8	-	.21	-	0	40	40	40	40	40	40	180	120	8320G031*	BRASS	6.1/F	10.6/F	53
1/8	1/8	-	.21	-	0	40	40	40	40	40	40	180	120	8320G055*	SS	6.1/F	10.6/F	53
1/8	3/16	-	.35	-	0	-	-	-	125	125	125	-	180	8300D003G	BRASS	-	36.2/H	35
1/8	3/16	-	.35	-	0	250	250	250	-	-	-	200	-	8300G003G*	BRASS	20.1/F	-	35
1/4	1/16	-	.09	-	0	250	250	250	160	160	160	200	150	8320G192*	BRASS	17.1/F	11.6/F	53
1/4	1/16	-	.07	-	0	125	125	-	125	125	-	130	120	8360G067	PLAST	6.1/F	10.6/F	63
1/4	3/32	1/4	.15	.73	5	160	160	95	75	45	25	180	104	8317G053	BRASS	10.1/F	11.6/F	49
1/4	3/32	1/4	.15	.73	5	160	160	95	75	45	25	180	104	8317G054	SS	10.1/F	11.6/F	49
1/4	3/32	-	.15	-	0	175	175	175	70	90	45	200	104	8314G053*	BRASS	10.1/F	11.6/F	39
1/4	3/32	-	.15	-	0	175	175	175	70	90	45	200	104	8314G122	SS	10.1/F	11.6/F	39
1/4	3/32	-	.12	-	0	150	140	140	100	100	100	200	150	8320G194*	BRASS	10.1/F	11.6/F	53
1/4	3/32	-	.12	-	0	150	140	140	100	100	100	200	150	8320G204	SS	10.1/F	11.6/F	53
1/4	3/32	-	.11	-	0	100	100	-	100	100	-	130	120	8360G069*	PLAST	6.1/F	10.6/F	63
1/4	1/8	-	.25	-	0	90	90	90	40	40	25	200	104	8314G054	BRASS	10.1/F	11.6/F	39
1/4	1/8	-	.25	-	0	70	70	70	55	55	55	200	150	8320G196*	BRASS	10.1/F	11.6/F	53
1/4	1/8	-	.25	-	0	70	70	70	55	55	55	200	150	8320G205	SS	10.1/F	11.6/F	53
1/4	1/8	-	.16	-	0	40	40	-	40	40	-	130	120	8360G070	PLAST	6.1/F	10.6/F	63
1/4	11/64	-	.35	-	0	40	40	40	30	30	30	200	150	8320G198	BRASS	10.1/F	11.6/F	53
1/4	3/16	-	.35	-	0	-	-	-	125	125	125	-	180	8300D058G	BRASS	-	36.2/H	35
1/4	3/16	-	.25	-	0	-	-	-	125	125	125	-	180	8300D058RG	BRASS	-	36.2/H	35
1/4	3/16	-	.35	-	0	250	250	250	-	-	-	200	-	8300G058G	BRASS	20.1/F	-	35
1/4	3/16	-	.25	-	0	250	250	250	-	-	-	180	-	8300G058RG	BRASS	20.1/F	-	35
1/4	1/4	-	.45	-	0	250	250	250	-	-	-	200	-	8300D061G	BRASS	28/H	-	35
1/4	1/4	-	.45	-	0	-	-	-	75	75	75	-	180	8300A081G	BRASS	-	36.2/H	35
1/4	1/4	-	.39	-	0	-	-	-	75	75	75	-	180	8300A081RG	BRASS	-	36.2/H	35
1/4	1/4	-	.45	-	0	190	190	190	-	-	-	200	-	8300G081G	BRASS	20.1/F	-	35
1/4	1/4	-	.39	-	0	150	150	150	-	-	-	180	-	8300G081RG	BRASS	20.1/F	-	35
1/4	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G003*	BRASS	6.1/F	10.6/F	49
3/8	1/4	-	.45	-	0	250	250	250	-	-	-	200	-	8300D009G	BRASS	28/H	-	35
3/8	1/4	-	.45	-	0	-	-	-	75	75	75	-	180	8300A082G	BRASS	-	36.2/H	35
3/8	1/4	-	.39	-	0	-	-	-	75	75	75	-	180	8300A082RG	BRASS	-	36.2/H	35

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.

3-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)							Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①
	Press.	Exh.	Press.	Exh.	Min	Maximum AC			Maximum DC			AC	DC			AC	DC	
						Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
3/8	1/4	-	0.45	-	0	190	190	190	-	-	-	200	-	8300G082G	BRASS	20.1/F	-	35
3/8	1/4	-	0.39	-	0	150	150	150	-	-	-	180	-	8300G082RG	BRASS	20.1/F	-	35
3/8	1/4	-	0.45	-	0	-	-	-	50	50	50	-	180	8300B410G	SS	-	36.2/H	35
3/8	1/4	-	0.45	-	0	150	150	150	-	-	-	200	-	8300G410G	SS	20.1/F	-	35
3/8	1/4	-	0.45	-	0	175	175	175	-	-	-	200	-	8300B411G	SS	28/H	-	35
3/8	9/32	11/32	0.8	1.2	10	200	200	200	200	200	200	180	120	8321G004*	BRASS	6.1/F	10.6/F	49
3/8	5/16	-	0.75	-	0	-	-	-	40	40	40	-	180	8300D064G	BRASS	-	36.2/H	35
3/8	5/16	-	0.53	-	0	-	-	-	40	40	40	-	180	8300D064RG	BRASS	-	36.2/H	35
3/8	5/16	-	0.75	-	0	120	120	120	-	-	-	200	-	8300G064G	BRASS	20.1/F	-	35
3/8	5/16	-	0.53	-	0	120	120	120	-	-	-	180	-	8300G064RG	BRASS	20.1/F	-	35
3/8	5/16	-	0.75	-	0	-	-	-	40	40	40	-	180	8300B412G	SS	-	36.2/H	35
3/8	5/16	-	0.75	-	0	120	120	120	-	-	-	200	-	8300G412G	SS	20.1/F	-	35
3/8	3/8	-	1	-	0	-	-	-	30	30	30	-	180	8300D072G	BRASS	-	36.2/H	35
3/8	3/8	-	1	-	0	75	75	75	-	-	-	200	-	8300G072G	BRASS	20.1/F	-	35
3/8	3/8	-	1	-	0	-	-	-	30	30	30	-	180	8300B413G	SS	-	36.2/H	35
3/8	3/8	-	1	-	0	75	75	75	-	-	-	200	-	8300G413G	SS	20.1/F	-	35
3/8	5/8	-	2.5	-	10	250	250	-	250	250	-	180	120	8316G016*	BRASS	17.1/F	22.6/F	43
3/8	5/8	-	2.5	-	10	150	125	-	125	125	-	180	120	8316G056*	BRASS	6.1/F	10.6/F	43
1/2	5/16	-	0.75	-	0	-	-	-	40	40	40	-	180	8300D068G	BRASS	-	36.2/H	35
1/2	5/16	-	0.53	-	0	-	-	-	40	40	40	-	180	8300D068RG	BRASS	-	36.2/H	35
1/2	5/16	-	0.75	-	0	120	120	120	-	-	-	200	-	8300G068G	BRASS	20.1/F	-	35
1/2	5/16	-	0.53	-	0	120	120	120	-	-	-	180	-	8300G068RG	BRASS	20.1/F	-	35
1/2	5/16	-	0.75	-	0	-	-	-	40	40	40	-	180	8300B403G	SS	-	36.2/H	35
1/2	5/16	-	0.75	-	0	120	120	120	-	-	-	200	-	8300G403G	SS	20.1/F	-	35
1/2	3/8	-	1	-	0	-	-	-	30	30	30	-	180	8300D076G	BRASS	-	36.2/H	35
1/2	3/8	-	1	-	0	75	75	75	-	-	-	200	-	8300G076G	BRASS	20.1/F	-	35
1/2	3/8	-	1	-	0	-	-	-	30	30	30	-	180	8300B404G	SS	-	36.2/H	35
1/2	3/8	-	1	-	0	75	75	75	-	-	-	200	-	8300G404G	SS	20.1/F	-	35
1/2	5/8	-	3.2	-	10	250	250	-	250	250	-	180	120	8316G026*	BRASS	17.1/F	22.6/F	43
1/2	5/8	-	3.2	-	10	150	125	-	125	125	-	180	120	8316G066*	BRASS	6.1/F	10.6/F	43
3/4	11/16	-	4.8	-	10	250	250	-	250	250	-	180	120	8316G046*	BRASS	17.1/F	22.6/F	43
3/4	11/16	-	4.8	-	10	150	125	-	125	125	-	180	120	8316G076*	BRASS	6.1/F	10.6/F	43
1	1	-	12.5	-	10	150	125	-	125	125	-	180	120	8316G036	BRASS	6.1/F	10.6/F	43
UNIVERSAL OPERATION																		
1/8	3/64	-	0.04	-	0	160	160	160	70	65	65	200	104	8314G041*	BRASS	10.1/F	11.6/F	39
1/8	3/64	-	0.06	0.06	0	135	135	135	135	135	100	180	180	U8356A009V	BRASS	6.3/F	6.9/F	59
1/8	3/64	-	0.06	0.06	0	135	135	135	135	135	100	180	180	U8356A021V	SS	6.3/F	6.9/F	59
1/8	3/64	-	0.06	-	0	175	175	175	125	125	125	140	120	8320G130*	BRASS	9.1/F	10.6/F	53
1/8	3/64	-	0.06	-	0	175	175	175	125	125	125	140	120	8320G140*	SS	9.1/F	10.6/F	53
1/8	1/16	-	0.09	-	0	100	100	100	65	65	65	180	120	8320G001*	BRASS	9.1/F	10.6/F	53
1/8	1/16	-	0.09	-	0	100	100	100	65	65	65	180	120	8320G041	SS	9.1/F	10.6/F	53
1/8	1/16	-	0.09	0.06	0	72	72	72	72	72	72	180	180	U8356A010V	BRASS	6.3/F	6.9/F	59
1/8	1/16	-	0.09	0.06	0	72	72	72	72	72	72	180	180	U8356A022V	SS	6.3/F	6.9/F	59
1/8	3/32	-	0.12	-	0	50	50	50	50	50	50	180	120	8320G083*	BRASS	6.1/F	10.6/F	53
1/8	3/32	-	0.12	-	0	50	50	50	50	50	50	180	120	8320G087	SS	6.1/F	10.6/F	53
1/8	3/32	-	0.13	0.06	0	36	33	40	32	28	40	180	180	U8356A012V	BRASS	6.3/F	6.9/F	59
1/8	3/32	-	0.13	0.06	0	36	33	40	32	28	40	180	180	U8356A024V	SS	6.3/F	6.9/F	59
1/8	7/64	-	0.15	0.06	0	45	32	27	25	32	27	180	180	U8356B047V	BRASS	6.3/F	6.9/F	59
1/8	7/64	-	0.15	0.06	0	45	32	27	25	32	27	180	180	U8356B048V	SS	6.3/F	6.9/F	59

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.

3-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①	
	Press.	Exh.	Press.	Exh.	Min	Maximum AC			Maximum DC			AC			DC	AC		DC
						Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
1/8	1/8	-	0.13	-	0	-	-	-	125	125	125	-	180	8300D055U	BRASS	-	36.2/H	35
1/8	1/8	-	0.13	-	0	300	300	300	-	-	-	200	-	8300G055U	BRASS	20.1/F	-	35
1/8	1/8	-	0.21	-	0	30	30	30	20	20	20	180	120	8320G003*	BRASS	9.1/F	10.6/F	53
1/8	1/8	-	0.21	-	0	30	30	30	20	20	20	180	120	8320G043*	SS	9.1/F	10.6/F	53
1/8	3/16	-	0.35	-	0	-	-	-	60	60	60	-	180	8300D003U	BRASS	-	36.2/H	35
1/8	3/16	-	0.35	-	0	150	150	150	-	-	-	200	-	8300G003U	BRASS	20.1/F	-	35
1/4	3/64	-	0.04	-	0	160	160	160	70	65	65	200	104	8314G006*	BRASS	10.1/F	11.6/F	39
1/4	1/16	-	0.07	-	0	100	100	-	65	65	-	130	120	8360G071*	PLAST	9.1/F	10.6/F	63
1/4	1/16	-	0.09	-	0	125	130	130	75	75	75	200	150	8320G172*	BRASS	10.1/F	11.6/F	53
1/4	3/32	1/4	0.2	0.73	5	80	50	50	40	30	15	180	104	8317G007*	BRASS	10.1/F	11.6/F	49
1/4	3/32	1/4	0.2	0.73	5	80	50	50	40	30	15	180	104	8317G008*	SS	10.1/F	11.6/F	49
1/4	3/32	-	0.12	-	0	100	100	100	60	60	60	200	150	8320G174*	BRASS	17.1/F	11.6/F	53
1/4	3/32	-	0.12	-	0	100	100	100	60	60	60	200	150	8320G200*	SS	17.1/F	11.6/F	53
1/4	3/32	-	0.11	-	0	50	50	-	50	50	-	130	120	8360G073	PLAST	6.1/F	10.6/F	63
1/4	3/32	-	0.15	-	0	80	40	40	35	35	15	200	104	8314G007*	BRASS	10.1/F	11.6/F	39
1/4	3/32	-	0.15	-	0	80	40	40	35	35	15	200	104	8314G120*	SS	10.1/F	11.6/F	39
1/4	1/8	-	0.16	-	0	30	30	-	20	20	-	130	120	8360G074*	PLAST	9.1/F	10.6/F	63
1/4	1/8	-	0.25	-	0	45	25	25	20	15	15	200	104	8314G008*	BRASS	10.1/F	11.6/F	39
1/4	1/8	-	0.25	-	0	50	50	50	25	25	25	200	150	8320G176*	BRASS	17.1/F	11.6/F	53
1/4	1/8	-	0.25	-	0	50	50	50	25	25	25	200	150	8320G201*	SS	17.1/F	11.6/F	53
1/4	11/64	-	0.35	-	0	20	20	20	12	12	12	200	150	8320G178*	BRASS	10.1/F	11.6/F	53
1/4	3/16	-	0.35	-	0	-	-	-	60	60	60	-	180	8300D058U	BRASS	-	36.2/H	35
1/4	3/16	-	0.25	-	0	-	-	-	60	60	60	-	180	8300D058RU*	BRASS	-	36.2/H	35
1/4	3/16	-	0.35	-	0	150	150	150	-	-	-	200	-	8300G058U	BRASS	20.1/F	-	35
1/4	3/16	-	0.25	-	0	150	150	150	-	-	-	180	-	8300G058RU*	BRASS	20.1/F	-	35
1/4	1/4	-	0.45	-	0	-	-	-	35	35	35	-	180	8300A081U	BRASS	-	36.2/H	35
1/4	1/4	-	0.39	-	0	-	-	-	35	35	35	-	180	8300A081RU	BRASS	-	36.2/H	35
1/4	1/4	-	0.45	-	0	120	120	120	-	-	-	200	-	8300D061U*	BRASS	28/H	-	35
1/4	1/4	-	0.45	-	0	90	90	90	-	-	-	200	-	8300G081U	BRASS	20.1/F	-	35
1/4	1/4	-	0.39	-	0	75	75	75	-	-	-	180	-	8300G081RU	BRASS	20.1/F	-	35
1/4	1/4	-	0.49	0.56	0	150	150	150	150	150	150	176	176	8327G041*	BRASS	12.0/F	11.6/F	57
1/4	1/4	-	0.49	0.56	0	150	-	-	-	-	-	131	131	8327G051	BRASS	12.0/F	11.6/F	57
1/4	1/4	-	0.49	0.56	0	150	150	150	150	150	150	248	248	EV8327G042	SS	12.0/F	11.6/F	57
1/4	1/4	-	0.49	0.56	0	150	-	-	-	-	-	131	131	EV8327G052	SS	12.0/F	11.6/F	57
3/8	1/4	-	0.45	-	0	-	-	-	35	35	35	-	180	8300A082U	BRASS	-	36.2/H	35
3/8	1/4	-	0.39	-	0	-	-	-	35	35	35	-	180	8300A082RU	BRASS	-	36.2/H	35
3/8	1/4	-	0.45	-	0	120	120	120	-	-	-	200	-	8300D009U*	BRASS	28/H	-	35
3/8	1/4	-	0.45	-	0	90	90	90	-	-	-	200	-	8300G082U	BRASS	20.1/F	-	35
3/8	1/4	-	0.39	-	0	75	75	75	-	-	-	180	-	8300G082RU	BRASS	20.1/F	-	35
3/8	1/4	-	0.45	-	0	-	-	-	25	25	25	-	180	8300B410U	SS	-	36.2/H	35
3/8	1/4	-	0.45	-	0	75	75	75	-	-	-	200	-	8300G410U	SS	20.1/F	-	35
3/8	1/4	-	0.45	-	0	85	85	85	-	-	-	200	-	8300B411U	SS	28/H	-	35
3/8	5/16	-	0.75	-	0	-	-	-	20	20	20	-	180	8300D064U	BRASS	-	36.2/H	35
3/8	5/16	-	0.53	-	0	-	-	-	20	20	20	-	180	8300D064RU	BRASS	-	36.2/H	35
3/8	5/16	-	0.75	-	0	60	60	60	-	-	-	200	-	8300G064U	BRASS	20.1/F	-	35

① See specific valve series for detailed specifications. * Quality for ASCO TODAY and/or 5DAY Program based on voltage required.

3-Way/2 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①	
	Press.	Exh.	Press.	Exh.	Min	Maximum AC			Maximum DC			AC			DC	AC		DC
						Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
3/8	5/16	-	0.53	-	0	60	60	60	-	-	-	180	-	8300G064RU	BRASS	20.1/F	-	35
3/8	5/16	-	0.75	-	0	-	-	-	20	20	20	-	180	8300B412U	SS	-	36.2/H	35
3/8	5/16	-	0.75	-	0	60	60	60	-	-	-	200	-	8300G412U	SS	20.1/F	-	35
3/8	3/8	-	1	-	0	-	-	-	15	15	15	-	180	8300D072U	BRASS	-	36.2/H	35
3/8	3/8	-	1	-	0	35	35	35	-	-	-	200	-	8300G072U	BRASS	20.1/F	-	35
3/8	3/8	-	1	-	0	-	-	-	15	15	15	-	180	8300B413U	SS	-	36.2/H	35
3/8	3/8	-	1	-	0	35	35	35	-	-	-	200	-	8300G413U	SS	20.1/F	-	35
1/2	5/16	-	0.75	-	0	-	-	-	20	20	20	-	180	8300D068U	BRASS	-	36.2/H	35
1/2	5/16	-	0.53	-	0	-	-	-	20	20	20	-	180	8300D068RU	BRASS	-	36.2/H	35
1/2	5/16	-	0.75	-	0	60	60	60	-	-	-	200	-	8300G068U	BRASS	20.1/F	-	35
1/2	5/16	-	0.53	-	0	60	60	60	-	-	-	180	-	8300G068RU	BRASS	20.1/F	-	35
1/2	5/16	-	0.75	-	0	-	-	-	20	20	20	-	180	8300B403U	SS	-	36.2/H	35
1/2	5/16	-	0.75	-	0	60	60	60	-	-	-	200	-	8300G403U	SS	20.1/F	-	35
1/2	3/8	-	1	-	0	-	-	-	15	15	15	-	180	8300D076U	BRASS	-	36.2/H	35
1/2	3/8	-	1	-	0	35	35	35	-	-	-	200	-	8300G076U*	BRASS	20.1/F	-	35
1/2	3/8	-	1	-	0	-	-	-	15	15	15	-	180	8300B404U	SS	-	36.2/H	35
1/2	3/8	-	1	-	0	35	35	35	-	-	-	200	-	8300G404U	SS	20.1/F	-	35

① See specific valve series for detailed specifications. * Qualify for ASCO TODAY and/or 5DAY Program based on voltage required.

4-Way/2 or 3 Position Valves

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Catalog Number	Body Material	Watt Rating / Class of Coil Insulation		Page No. ①	
	Press.	Exh.	Press.	Exh.	Min	Maximum AC			Maximum DC			AC			DC	AC		DC
						Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU							
1/4	1/16	3/32	0.09	0.09	10	150	150	150	100	100	100	180	104	8345G001*	BRASS	10.1/F	11.6/F	81
1/4	1/16	3/32	0.09	0.09	10	150	150	150	100	100	100	180	104	EV8345G081	SS	10.1/F	11.6/F	81
1/4	1/16	3/32	0.09	0.09	10	150	-	-	100	-	-	180	104	8345H003*	BRASS	10.1/F	11.6/F	81
1/4	5/64	-	0.1	-	0	150	-	-	100	-	-	104	95	8340A003*	ALUM	16.7/F	19.7/F	71
1/4	5/64	-	0.08	-	0	150	-	-	100	-	-	104	95	8340A004	ALUM	16.7/F	19.7/F	71
1/4	5/64	-	0.08	-	0	150	-	-	150	-	-	104	95	8340A005	ALUM	10.5/F	19.7/F	71
1/4	5/64	-	0.1	-	0	150	-	-	100	-	-	104	95	8340A008	ALUM	10.5/F	19.7/F	71
1/4	5/64	-	0.1	-	0	150	-	-	100	-	-	130	95	8340G001*	ALUM	17.1/F	22.6/F	71
1/4	5/64	-	0.1	-	0	150	-	-	100	-	-	104	95	8340G002	ALUM	10.1/F	22.6/F	71
1/4	3/16	-	0.7	-	0	125	100	100	-	-	-	160	-	8342G001	BRASS	20.1/F	-	75
1/4	3/16	-	0.7	-	0	125	125	125	-	-	-	160	-	8342G020*	BRASS	16.1/F	-	75
1/4	3/16	-	0.7	-	0	125	100	100	-	-	-	160	-	8342G701*	SS	20.1/F	-	75
1/4	3/16	-	0.7	-	0	125	125	125	-	-	-	160	-	8342G720	SS	16.1/F	-	75
1/4	1/4	-	0.8	1	10	250	250	250	250	250	250	180	180	8344G000*	BRASS	17.1/F	22.6/F	77
1/4	1/4	-	0.8	1	10	250	200	125	125	125	100	180	120	8344G044*	BRASS	6.1/F	10.6/F	77
1/4	1/4	-	0.8	1	10	150	125	125	125	125	125	180	150	8344G070*	BRASS	10.1/F	11.6/F	77
1/4	1/4	-	0.8	-	20	150	-	-	150	-	-	135	77	U8401B101	ALUM	6.3/F	6.9/F	83
1/4	1/4	-	0.8	-	20	150	-	-	150	-	-	135	77	U8401B103	ALUM	6.3/F	6.9/F	83
1/4	1/4	-	0.8	-	20	150	-	-	150	-	-	135	77	U8401B105	ALUM	6.3/F	6.9/F	83
1/4	1/4	-	0.8	-	20	150	-	-	150	-	-	135	77	U8401B107	ALUM	6.3/F	6.9/F	83
1/4	1/4	-	0.8	-	20	150	-	-	150	-	-	135	135	8402A101	ALUM	-	-	83
1/4	1/4	-	0.8	-	20	150	-	-	150	-	-	135	135	8402A103	ALUM	-	-	83
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	8551G417	ALUM	10.1	11.6	89
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	8551G418	ALUM	10.1	11.6	89
1/4	1/4	1/4	.86	-	30	150	-	-	150	-	-	140	140	SC8551A017MS*	ALUM	2.5	3	87
1/4	1/4	1/4	.86	-	30	150	-	-	150	-	-	140	140	SC8551A018MS*	ALUM	2.5	3	87
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	8551G419	BRASS	10.1	11.6	89
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	8551G420	BRASS	10.1	11.6	89
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	EV8551G421	SS	10.1	11.6	89
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	EV8551G422	SS	10.1	11.6	89
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	8551G467	ALUM	10.1	11.6	89
1/4	1/4	1/4	.86	-	30	150	-	-	120	-	-	140	120	8551G468	ALUM	10.1	11.6	89
3/8	3/16	-	0.7	-	0	125	100	100	-	-	-	160	-	8342G003	BRASS	20.1/F	-	75
3/8	3/16	-	0.7	-	0	125	125	125	-	-	-	160	-	8342G022*	BRASS	16.1/F	-	75
3/8	3/16	-	0.7	-	0	125	100	100	-	-	-	160	-	8342G703*	SS	20.1/F	-	75
3/8	3/16	-	0.7	-	0	125	125	125	-	-	-	160	-	8342G722	SS	16.1/F	-	75
3/8	1/4	-	0.8	1	10	250	250	250	250	250	250	180	180	8344G001	BRASS	17.1/F	22.6/F	77
3/8	3/8	-	1.4	2.2	10	300	300	200	-	-	-	180	-	8344G050*	BRASS	10.1/F	-	77
3/8	3/8	-	1.4	2.2	10	150	125	125	125	125	125	180	150	8344G072*	BRASS	10.1/F	11.6/F	77
3/8	3/8	-	1.4	2.2	10	250	200	125	125	125	100	180	120	8344G080*	BRASS	6.1/F	10.6/F	77
1/2	3/8	-	1.4	2.2	10	250	250	250	250	250	250	180	180	8344G027*	BRASS	17.1/F	22.6/F	77
1/2	3/8	-	1.4	2.2	10	150	125	125	125	125	125	180	150	8344G074*	BRASS	10.1/F	11.6/F	77
1/2	3/8	-	1.4	2.2	10	250	200	125	125	125	100	180	120	8344G082*	BRASS	6.1/F	10.6/F	77
1/2	1/2	1/2	3.7	-	30	150	-	-	120	-	-	140	120	8553G417	ALUM	10.1	11.6	89
1/2	1/2	1/2	3.7	-	30	150	-	-	120	-	-	140	120	8553G418	ALUM	10.1	11.6	89
1/2	1/2	1/2	3.7	-	30	150	-	-	150	-	-	140	140	SC8553A017MS	ALUM	5	6.9	87
1/2	1/2	1/2	3.7	-	30	150	-	-	150	-	-	140	140	SC8553A018MS	ALUM	5	6.9	87
3/4	3/4	-	5.2	5.6	10	250	250	250	250	250	250	180	180	8344G029*	BRASS	17.1/F	22.6/F	77
3/4	3/4	-	5.2	5.6	10	300	300	200	125	125	100	180	120	8344G054	BRASS	10.1/F	10.6/F	77
3/4	3/4	-	5.2	5.6	10	150	125	125	125	125	125	180	150	8344G076*	BRASS	10.1/F	11.6/F	77
1	3/4	-	5.2	5.6	10	250	250	250	250	250	250	180	180	8344G031	BRASS	17.1/F	22.6/F	77
1	3/4	-	5.2	5.6	10	300	300	200	125	125	100	180	120	8344G056	BRASS	10.1/F	10.6/F	77
1	3/4	-	5.2	5.6	10	150	125	125	125	125	125	180	150	8344G078	BRASS	10.1/F	11.6/F	77

① See specific valve series for detailed specifications. * Qualify for ASCO TODAY and/or 5DAY Program based on voltage required.

Bleed-orifice or Bleed Hole

Small orifice or channel, most often located in the diaphragm or piston of pilot-operated valves, to allow the inlet flow to pressurize the top side of the diaphragm or piston.

Bonnet

Screwed plug or bolted cover on the valve body, on which the core tube with inner parts is fitted.

Coil

Electrical part of the valve consisting of a spool wound with insulated copper wire which creates a magnetic flux when energized.

Core

The soft-magnetic stainless steel part of the solenoid which is moved by magnetic forces (flux generated by the coil).

Core Spring

Spring which returns the core to the original position when the coil is de-energized.

Core Tube

Stainless steel tube, closed at one end, which isolates the media in the valve from the external solenoid parts.

Disc, Valve Disc

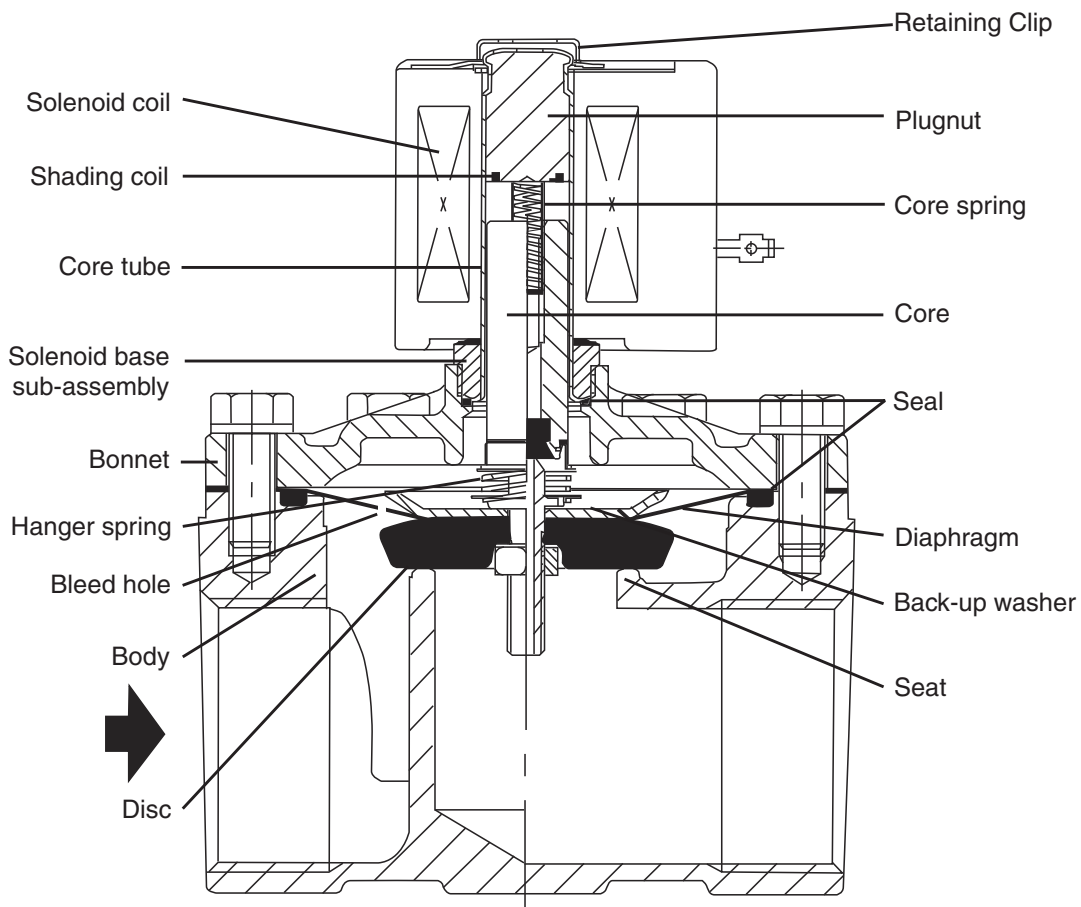
Sealing material on the core or disc-holder, which shuts off the seat orifice.

Disc-holder

Valve part, actuated by the core, in which a sealing disc is inserted.

Main Orifice

Principle passage between inlet and outlet of the valve.



Maximum Ambient Temperature

The nominal maximum ambient temperatures listed are based primarily on test conditions in determining safe limits for coil insulation. They are energized conditions, with maximum fluid temperatures existing in the valve.

Maximum Operating Pressure Differential (M.O.P.D.)

The maximum operating pressure differential refers to the difference in pressure between the inlet and the outlet sides of the valve, against which the solenoid can safely operate. If the pressure at the valve outlet is not known, the conservative approach is to regard the supply pressure as the M.O.P.D.

Minimum Ambient Temperature

The nominal limitation of 32°F (0°C) is advisable for any valve that might contain moisture (water vapor). Where freezing water is not a factor, minimum ambients as low as -4°F (-20°C) can be tolerated. In addition, special constructions are available for ambient temperatures down to -40°F (-40°C). *Consult your local ASCO sales office with your specific needs.*

Minimum Operating Pressure Differential

The minimum operating pressure differential is that which is required to open the valve and keep it open. For 2-way valves with floating piston or diaphragm, the valve will start to close below the minimum differential pressure.

Note: Direct acting hung diaphragm or hung piston valves do not require a minimum operating pressure.

For 3- and 4-way pilot valves, the minimum operating pressure is measured between the pressure and exhaust ports and must be maintained throughout the operation cycle to ensure complete transfer from one position to the other.

Pilot Orifice

Orifice located in the center of a diaphragm or piston, or in the pilot area of pilot-operated valves, opened or closed by the core.

Plugnut

Stationary soft magnetic stainless part, pressed in the closed end of the core tube, installed to improve the magnetic flux of the solenoid coil when energized.

Response Time

This is the time lapse after energizing (or de-energizing) a solenoid valve until the outlet pressure reaches a specific percentage of its maximum steady value, the outlet being connected to a circuit having specified flow parameters. Response time depends on five factors:

1. Electrical supply: AC or DC.
2. Fluid handled by the valve, viscosity and pressure level.
3. Type of operation: direct or pilot operated.
4. Size of the moving parts of the valve mechanism.
5. Circuit in which the time is measured.

Seating or Valve Seat

Geometry within valve that creates internal seal.

Shading Coil

Ring (typically copper) inserted in the core-side surface of the plugnut to limit core vibration in AC-powered solenoids.

Solenoid Base Sub-assembly

Assembly of core tube, plugnut, and bonnet.

Solenoid

Electromagnetic part of a valve, comprised of a coil, core tube, core, and enclosure.

Solenoid Construction

Internal parts in contact with the fluid are made of non-magnetic 300 and magnetic 400 Series stainless steel. In AC constructions, the shading coil is copper, except for valves in which silver is used. Other materials are available, when required. Generally, no shading coil is used in DC valves. The core tube in ASCO valves is 300 Series stainless steel and formed by deep drawing.

Solenoid Enclosure

Housing around the coil for electrical and mechanical protection, as well as protection against environmental hazards.

Valve Body

Main part of the valve, in which ports and main seats are located.

The function of a valve is shown by two figures. The first shows the number of ports, the second shows the number of valve positions (pilot ports do not count).

Example: 4/2 = 4 ports, 2 positions (open or closed).

The symbol for a valve has the same number of squares as the valve has positions.

Example: 2 positions =



Arrows in the squares show the flow direction of the fluid.

Examples: One flow path =



Two flow paths =



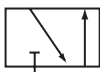
T-lines in the squares show the number of closed ports.

Example:



Two flow paths and one closed port.

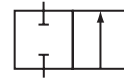
Example:



In this catalog, the vast majority of valves listed have only two positions, in which the right-hand square shows the valve unoperated and the left-hand square shows the valve operated.

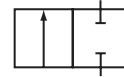
Normally Open (NO)

Example:



Normally Closed (NC)

Example:



Normally, the pipework is shown connected to the square representing the valve unoperated.

Symbols Showing Connections to Ports:

Exhaust that cannot be piped:



Exhaust that can be piped:

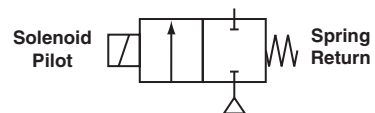


Connected to pressure source:



The methods of controlling the valve are shown as an addition to the squares. The left-hand side control shows the pilot (i.e. solenoid) and the right-hand side control shows the return pilot method (i.e. spring).

Example:



ISO Symbols for Valves Included in This Catalog:

Ports/Positions	Function	Pilot	Return Pilot	Symbol
2/2	NC	Solenoid	Spring	
2/2	NC	Solenoid/Ext. Pressure	Spring	
2/2	NC	Solenoid/Int. Pressure	Spring	
2/2	NO	Solenoid	Spring	
2/2	NC	Ext. Pressure	Spring	
2/2	NO	Ext. Pressure	Spring	
3/2	NC	Solenoid	Spring	
3/2	NC	Solenoid/Int. Pressure	Spring	
3/2	NO	Solenoid	Spring	
3/2	NO	Solenoid/Ext. Pressure	Spring	
3/2	NO	Solenoid/Int. Pressure	Spring	
3/2	U	Solenoid	Spring	
3/2	NC	Ext. Pressure	Spring	
3/2	NO	Ext. Pressure	Spring	
3/2 - (4/2)	NC	Solenoid/Int. Pressure	Spring	
4/2	-	Solenoid	Spring	
4/2	-	Solenoid/Int. Pressure	Spring	

Two-way solenoid valves have one inlet and one outlet, and are used to permit and shut off fluid flow.

Two Types of Operations Apply

Normally Closed (NC)

Fluid is shut off when the coil is de-energized, flows through the valve when the coil is energized.

Normally Open (NO)

Fluid flows through the valve when the coil is de-energized, shuts off when the coil is energized.

Two Types of Constructions Apply

Direct Acting

When the solenoid is energized, the core directly opens the orifice of a Normally Closed valve or closes the orifice in a Normally Open valve. The valve will operate at pressures from 0 psi to its rated maximum. The force needed to open the valve is proportional to the orifice size and fluid pressure. As orifice size increases, so does the required force. To open larger orifices without increasing solenoid size, internal pilots are used.

Internally Piloted

These valves use line pressure to assist operation.

When the coil is de-energized (on a Normally Closed valve), the pilot orifice is closed and line pressure is applied to the top of the piston or diaphragm through the bleed orifice, closing the valve. When the coil is energized, the core opens the pilot orifice, relieving pressure from the diaphragm or piston. Line pressure, alone, opens the valve by lifting the diaphragm or piston off the main orifice.

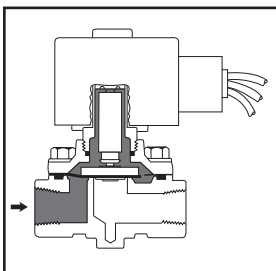
See *Engineering Section* for further details.

Standard and Optional Features

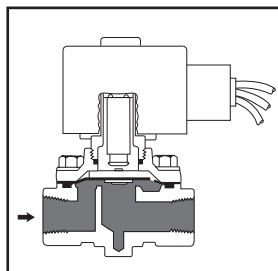
Solenoid valves are supplied, as listed, with either RedHat II molded epoxy solenoids or RedHat solenoids with metal enclosures. RedHat II valves are identified by the letter "G" or "H" in their catalog numbers; e.g., 8030G016. Many optional features may be added to your valves; e.g., high-temperature Class H molded coils, manual operators, and metering devices.

See the *Optional Features Section* for details.

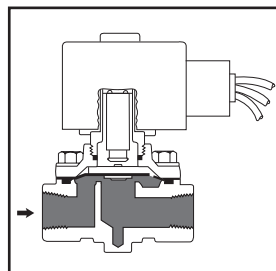
2-Way/2 Position Valves Flow Diagrams



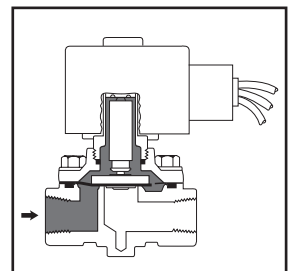
Normally Closed Valve De-Energized



Normally Closed Valve Energized



Normally Open Valve De-Energized



Normally Open Valve Energized

Index

Series	General Description	Pipe Size (NPT)	Page
8030	Low Pressure	3/8" - 3/4"	3
8040/8215	Aluminum Body	1/8" - 3"	7
8210	General Service	3/8" - 2 1/2"	11
8221	Slow Closing	3/8" - 2 1/2"	17
8223	High Pressure	1/4" - 3/4"	21
8256	Subminiature	1/8"	23
8260	Plastic Body	1/4" - 3/8"	25
8262/8263	General Service	1/8" - 3/8"	29

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Features

- Operate at low pressures: no minimum required; up to 15 psi (1 bar) maximum differential
- Normally closed or normally open operation
- Widely used for dispensing, collating, gas shutoff, vacuum holding, and tank draining applications
- Normally open valve well suited for venting systems

Construction

Valve Parts in Contact with Fluids		
Body	Brass	304 Stainless Steel
Seals and Disc	NBR	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Spring	302 Stainless Steel	
Shading Coil	Copper	Silver
Stem	PA (Normally Open)	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	40	238210	238310	238214	238314
F	11.6	10.1	25	70	238610	238710	238614	238714
F	-	16.1	35	95	272610	-	272614	-
F	16.8	-	-	-	-	97617	-	97617
F	-	17.1	40	93	238610	-	238614	-
F	-	20.1	48	240	272610	-	272614	-

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz), 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

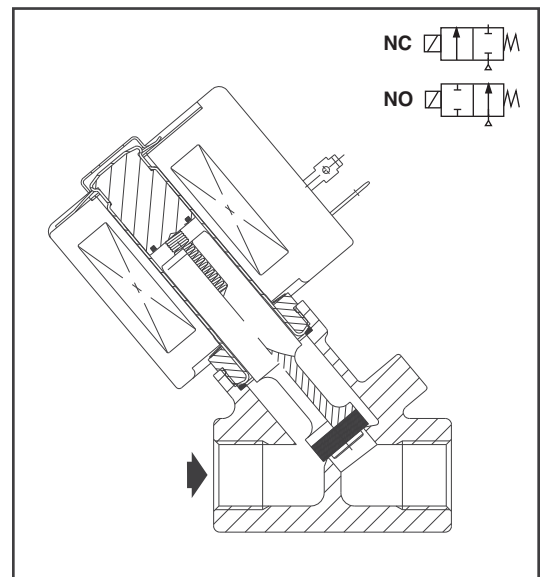
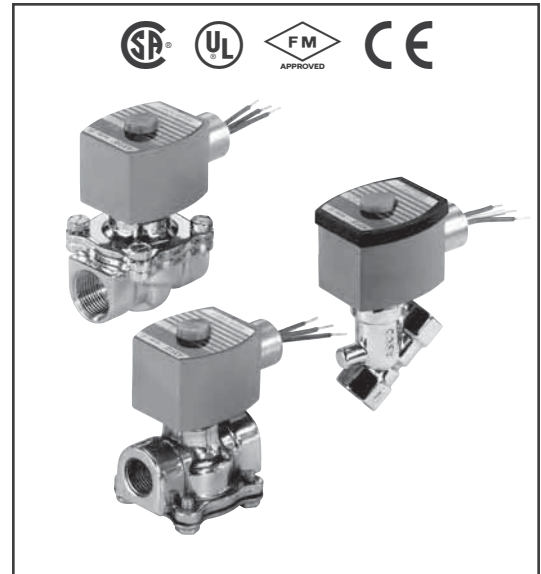
Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X (all except 16.8 watt). Metal Type 1 General Purpose housing with 7/8" hole for 1/2" conduit hub (16.8 watt)

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

Note: Wattages 16.1 and 20.1 meet Type 7 Groups A, B, C, and D; and Type 9 Groups E and F only.

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed, as indicated. FM approved (Normally closed only except 8030G017 and 8030G067). Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)				Max. Fluid Temp. °F		Brass Body			Stainless Steel Body			Watt Rating/ Class of Coil Insulation ①		
			Min.	Max. AC		Max. DC		AC	DC	Catalog Number	Const. Ref.	UL ② Listing	Catalog Number	Const. Ref.	UL ② Listing	AC	DC
				Air-Inert Gas	Water	Air-Inert Gas	Water										
NORMALLY CLOSED (Closed when de-energized)																	
3/8	3/8	1.8	0	7	5	3	3	180	120	8030G010	1	○	8030G064	1	○	6.1/F	10.6/F
3/8	3/8	1.8	0	15	15	3.5	3.5	180	150	8030G013	2	○	8030G065	2	○	10.1/F	11.6/F
1/2	7/16	2.8	0	4	6	-	-	180	-	8030G016	3	○	8030G066	3	○	6.1/F	-
1/2	7/16	2.8	0	-	-	6	6	-	180	8030A017	11	○	8030A067	11	○	-	16.8/F
1/2	7/16	2.8	0	15	15	-	-	200	-	8030G017	11	○	8030G067	11	○	16.1/F	-
3/4	3/4	5	0	2	2	1	1	180	150	8030G003	9	○	-	-	-	10.1/F	11.6/F
3/4	3/4	5	0	4	4	-	-	180	-	8030G043	9	○	-	-	-	17.1/F	-
3/4	5/8	5.4	0	2.5	2.5	-	-	180	-	-	-	-	8030G063	10	○	10.1/F	-
NORMALLY OPEN (Open when de-energized)																	
3/8	3/8	1.6	0	15	15	-	-	200	-	8030G070	12	●	-	-	-	16.1/F	-
1/2	7/16	2.2	0	15	15	-	-	200	-	8030G071	13	●	-	-	-	20.1/F	-
1/2	3/4	5	0	2	2	-	-	180	-	8030G082	7	●	-	-	-	10.1/F	-
3/4	3/4	5.5	0	2	2	-	-	180	-	8030G083	8	●	-	-	-	10.1/F	-

① On all 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ② ○ = Safety Shutoff Valve; ● = General Purpose Valve. Refer to Engineering Section (Approvals) for details.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)				Max. Fluid Temp. °C		Brass Body			Stainless Steel Body			Watt Rating/ Class of Coil Insulation ①		
			Min.	Max. AC		Max. DC		AC	DC	Catalog Number	Const. Ref.	UL ② Listing	Catalog Number	Const. Ref.	UL ② Listing	AC	DC
				Air-Inert Gas	Water	Air-Inert Gas	Water										
NORMALLY CLOSED (Closed when de-energized)																	
3/8	10	1.5	0	0.5	0.3	0.2	0.2	82	49	8030G010	1	○	8030G064	1	○	6.1/F	10.6/F
3/8	10	1.5	0	1.0	1.0	0.2	0.2	82	65	8030G013	2	○	8030G065	2	○	10.1/F	11.6/F
1/2	11	2.4	0	0.3	0.4	-	-	82	-	8030G016	3	○	8030G066	3	○	6.1/F	-
1/2	11	2.4	0	-	-	0.4	0.4	-	82	8030A017	11	○	8030A067	11	○	-	16.8/F
1/2	11	2.4	0	1.0	1.0	-	-	93	-	8030G017	11	○	8030G067	11	○	16.1/F	-
3/4	19	4.3	0	0.1	0.1	0.1	0.1	82	65	8030G003	9	○	-	-	-	10.1/F	11.6/F
3/4	19	4.3	0	0.3	0.3	-	-	82	-	8030G043	9	○	-	-	-	17.1/F	-
3/4	16	4.6	0	0.2	0.2	-	-	82	-	-	-	-	8030G063	10	○	10.1/F	-
NORMALLY OPEN (Open when de-energized)																	
3/8	10	1.4	0	1.0	1.0	-	-	93	-	8030G070	12	●	-	-	-	16.1/F	-
1/2	11	1.9	0	1.0	1.0	-	-	93	-	8030G071	13	●	-	-	-	20.1/F	-
1/2	19	4.3	0	0.1	0.1	-	-	82	-	8030G082	7	●	-	-	-	10.1/F	-
3/4	19	4.7	0	0.1	0.1	-	-	82	-	8030G083	8	●	-	-	-	10.1/F	-

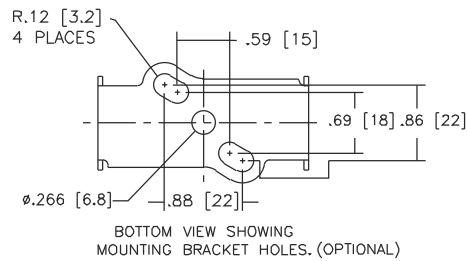
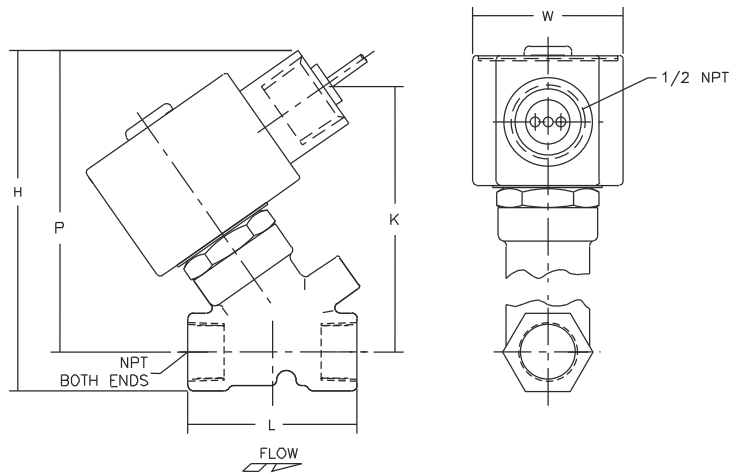
① On all 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ② ○ = Safety Shutoff Valve; ● = General Purpose Valve. Refer to Engineering Section (Approvals) for details.

Dimensions: inches (mm)

Const. Ref.		H	K	L	P	W
1	ins.	3.85	3	1.91	3.41	1.69
	mm	98	76	49	87	43
2	ins.	4	3.14	1.91	3.55	1.95
	mm	102	80	49	90	50
3	ins.	4.07	3.25	2.28	3.63	1.69
	mm	103	83	58	92	43
7	ins.	3.97	1.88	2.81	2.85	2.29
	mm	101	48	71	72	58
8	ins.	3.97	1.88	2.81	2.85	2.29
	mm	101	48	71	72	58
9	ins.	4.1	2.44	2.81	3.41	2.28
	mm	104	62	71	87	58
10	ins.	4.16	2.47	2.81	3.44	2.28
	mm	106	63	71	87	58
11	ins.	4.31	3.39	2.28	3.77	2.06
	mm	110	86	58	96	52
12	ins.	4.16	1.1	1.91	3.72	2.06
	mm	106	28	49	94	52
13	ins.	4.37	1.05	2.28	3.83	2.06
	mm	111	27	58	97	52

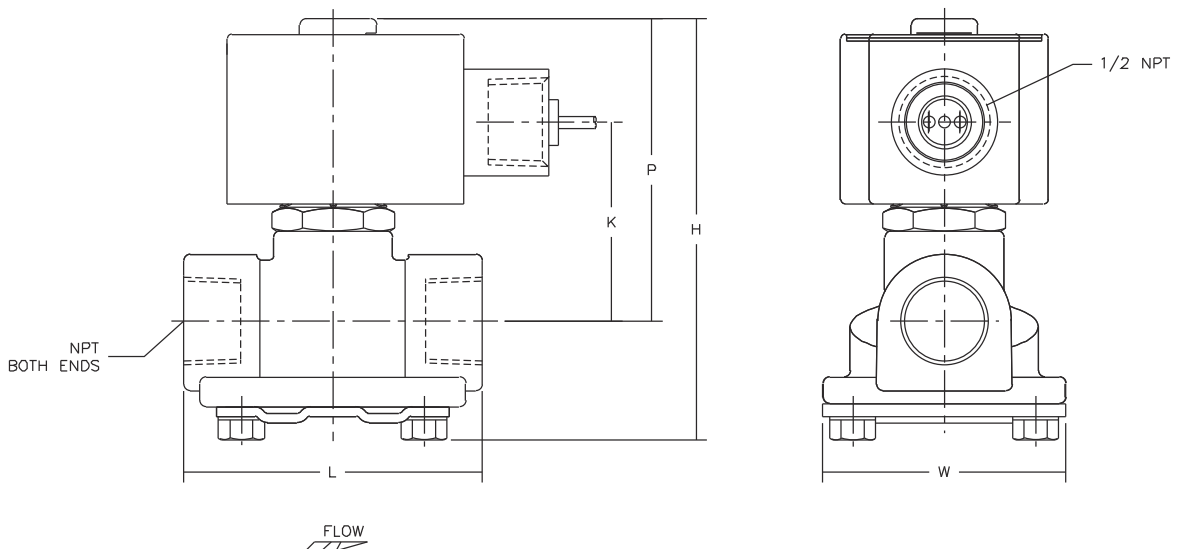
IMPORTANT: Valves may be mounted in any position, except for 8030G003 DC, which must be mounted with the solenoid vertical and upright.

Const. Ref. 1, 2, 3



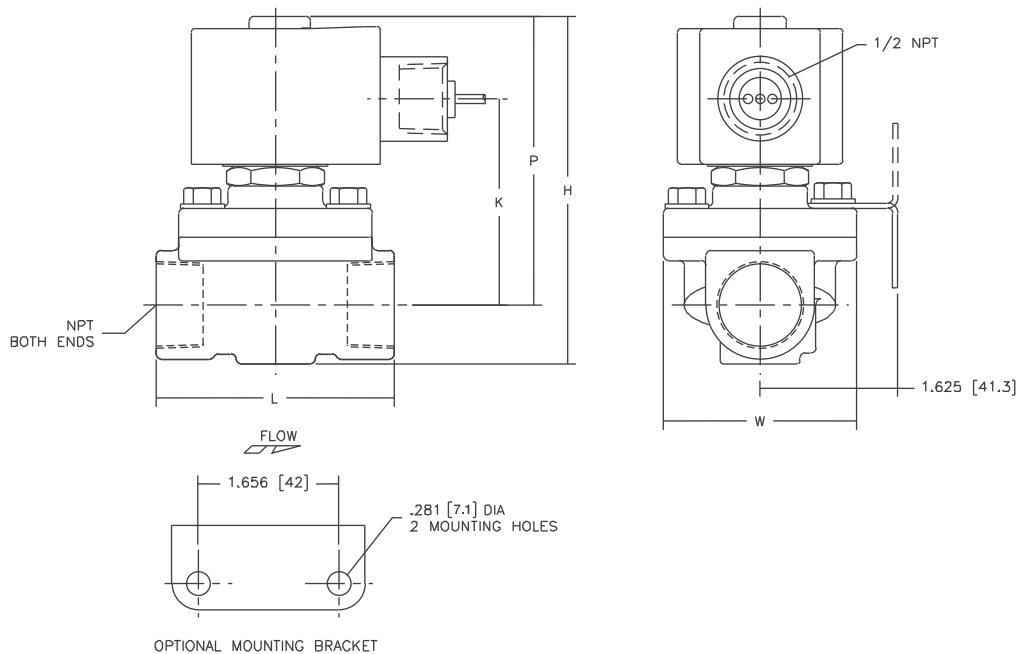
BOTTOM VIEW SHOWING MOUNTING BRACKET HOLES. (OPTIONAL)

Const. Ref. 7, 8

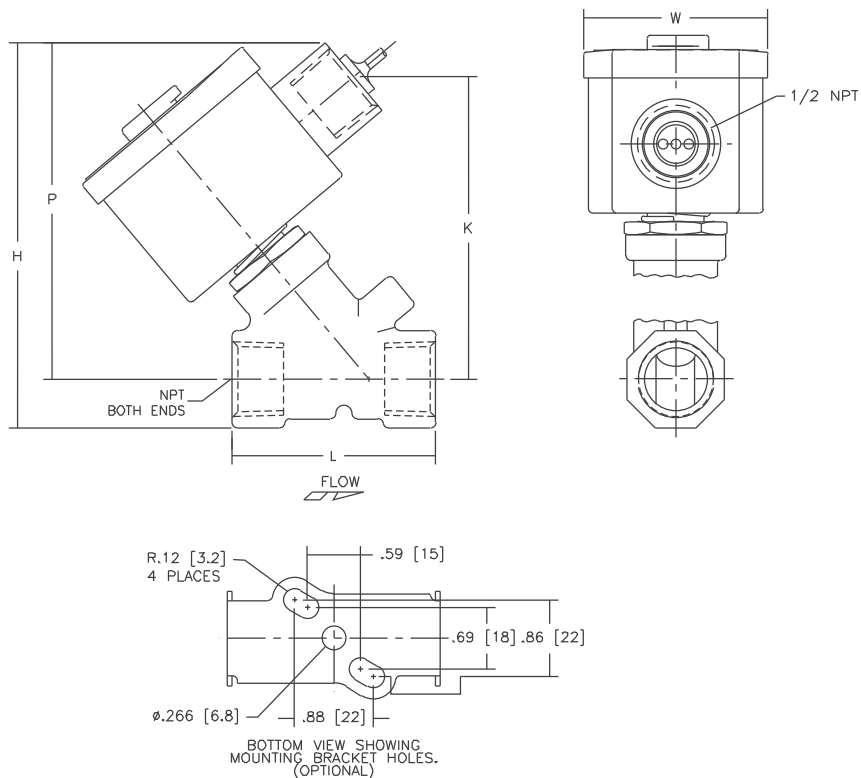


Dimensions: inches (mm)

Const. Ref. 9, 10



Const. Ref. 11, 12, 13



Features

- Lightweight, low-cost valves for air service
- Ideal for low pressure applications
- Provides high flow, Cv up to 138 (Kv 118)
- Air and vacuum service

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals, Diaphragms, Disc	NBR
Disc-Holder	PA (10.1 and 11.6 watt Normally Open only)
Core Guide	CA
Core Tube	305 Stainless Steel
Rider Rings	PTFE
Core and Plugnut	430F Stainless Steel
Springs*	302 Stainless Steel
Shading Coil	Copper

* For 8040H006, 8040H007, 8040H008, spring material is 17-7 PH

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	-	6.1	16	40	238210	-	238214	-
F	11.6	10.1	25	70	238610	238710	238614	238714
B	14.9	-	-	-	-	62691	-	-
F	-	15.4	27	160	99257	-	99257	-
F	-	28.2	50	385	206409	-	206409	-

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz), 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type I.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Raintight, Types 3, 7, and 9.

(Except EF8215A40 and EF8215A90, which are suitable for Types 3 and 7 (C and D) only and have a T2B temperature rating code.)

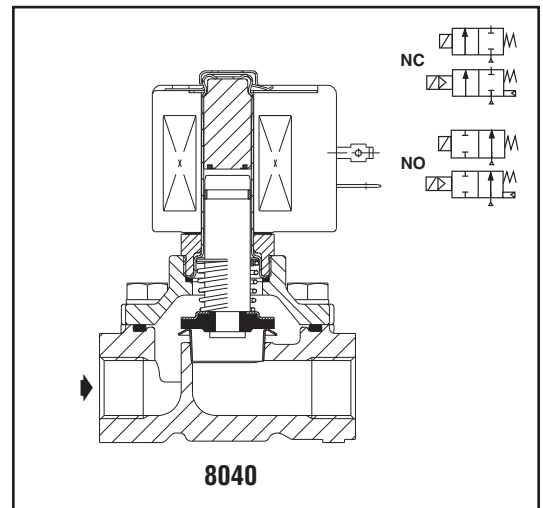
To order, add prefix "EF" to catalog number.

See *Optional Features Section* for other available options.

Nominal Ambient Temp. Ranges

Series	AC		DC	
	RedHat II/RedHat	RedHat II	RedHat	
8040	-40°F to 125°F (-40°C to 52°C)	-	-	
8215	32°F to 125°F (0°C to 52°C)	32°F to 104°F (0°C to 40°C)	32°F to 77°F (0°C to 25°C) (104°F/40°C occasionally)	

Refer to Engineering Section for details.



Approvals:

CSA certified to:

8040 Series:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 10381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

8215 Series Normally Closed:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 10381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

8215 Series Normally Open:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 10381.

UL listed, as indicated. FM approved (Normally Closed only, except Catalog Numbers 8215A090 and 8215A040). RedHat II meets applicable CE directives.

Refer to Engineering Section for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity Btu/hr ⑥	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		Aluminum Body Catalog Number	Const. Ref.		UL ⑤ Listing	Watt Rating/ Class of Coil Insulation ②	
				Min.	Max. AC	Max. DC	AC	DC		AC	DC		AC	DC
					Air-Fuel Gas	Air-Fuel Gas								
NORMALLY CLOSED (Closed when de-energized)														
1/8	5/16	1.0	53,700	0	15	-	125	-	8040H006	11		○	6.1/F	-
1/4	5/16	1.1	59,000	0	15	-	125	-	8040H007	11		○	6.1/F	-
3/8	5/16	1.2	64,400	0	15	-	125	-	8040H008	11		○	6.1/F	-
3/8	3/4	3.4	183,000	0	50	25	125	104	8215G010	2		○	10.1/F	11.6/F
3/8	3/4	3.5	-	5	125	125	125	104	8215G001 ①	1		○	6.1/F	11.6/F
1/2	3/4	5.4	291,000	0	2	-	125	-	8040G022	13A		○	10.1/F	-
1/2	3/4	4.4	238,500	0	50	25	125	104	8215G020	2		○	10.1/F	11.6/F
1/2	3/4	4.8	-	5	125	125	125	104	8215G002 ①	1		○	6.1/F	11.6/F
3/4	3/4	9.5	512,000	0	2	-	125	-	8040G023	13B		○	10.1/F	-
3/4	3/4	5.1	247,500	0	50	25	125	104	8215G030	4		○	10.1/F	11.6/F
3/4	3/4	5.1	-	5	125	125	125	104	8215G003 ①	3		○	6.1/F	11.6/F
1	1 5/8	21	1,119,000	0	25	25	125	77	8215B050 ③	6	16	○	15.4/F	14.9/B
1 1/4	1 5/8	32	1,730,000	0	25	25	125	77	8215B060 ③	6	16	○	15.4/F	14.9/B
1 1/2	1 5/8	35	1,900,000	0	25	25	125	77	8215B070 ③	6	16	○	15.4/F	14.9/B
2	2 3/32	60	3,251,000	0	25	15	125	77	8215B080 ③	7	17	○	15.4/F	14.9/B
2 1/2	3	117	5,821,000	0	5	-	125	-	8215A090	8		○	28.2/F	-
3	3	138	7,430,000	0	5	-	125	-	8215A040	8		○	28.2/F	-
NORMALLY OPEN (Open when de-energized)														
3/8	3/4	3.2	172,500	0	125	125	125	104	8215G013	9		●	10.1/F	11.6/F
1/2	3/4	4	206,250	0	125	125	125	104	8215G023	9		●	10.1/F	11.6/F
3/4	3/4	4.6	247,500	0	125	125	125	104	8215G033	10		●	10.1/F	11.6/F
1	1 5/8	22	1,191,750	0	25	15	125	77	8215C053	12	18	●	15.4/F	14.9/B
1 1/4	1 5/8	33	1,793,250	0	25	15	125	77	8215C063	12	18	●	15.4/F	14.9/B
1 1/2	1 5/8	37	1,988,250	0	25	15	125	77	8215C073	13	19	●	15.4/F	14.9/B
2	2 3/32	58	3,100,000	0	25	15	125	77	8215C083	14	20	●	15.4/F	14.9/B
2 1/2	3	117	6,290,000	0	5	-	125	-	8215B093 ④	15		●	28.2/F	-
① Do not use for Fuel Gas. ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts. ③ FM Approved Process Control Valves. See Engineering Section (Approvals) for details. ④ Type I enclosure only. ⑤ ○ = Safety Shutoff Valve; ● = General Purpose Valve. Refer to Engineering Section (Approvals) for details. ⑥ 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.														

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Gas Capacity Btu/hr ⑥	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		Aluminum Body Catalog Number	Const. Ref.		UL ⑤ Listing	Watt Rating/ Class of Coil Insulation ②	
				Min.	Max. AC	Max. DC	AC	DC		AC	DC		AC	DC
					Air-Fuel Gas	Air-Fuel Gas								
NORMALLY CLOSED (Closed when de-energized)														
1/8	7.9	.86	53,700	0	1.0	-	52	-	8040H006	11	○	6.1/F	-	
1/4	7.9	.94	59,000	0	1.0	-	52	-	8040H007	11	○	6.1/F	-	
3/8	7.9	1.03	64,400	0	1.0	-	52	-	8040H008	11	○	6.1/F	-	
3/8	19	2.91	183,000	0	3.4	1.7	52	40	8215G010	2	○	10.1/F	11.6/F	
3/8	19	3.00	-	0.3	8.6	8.6	52	40	8215G001 ①	1	○	6.1/F	11.6/F	
1/2	19	4.63	291,000	0	0.1	-	52	-	8040G022	13A	○	10.1/F	-	
1/2	19	3.77	238,500	0	3.4	1.7	52	40	8215G020	2	○	10.1/F	11.6/F	
1/2	19	4.11	-	0.3	8.6	8.6	52	40	8215G002 ①	1	○	6.1/F	11.6/F	
3/4	19	8.14	449,000	0	0.1	-	52	-	8040G023	13B	○	10.1/F	-	
3/4	19	4.37	247,500	0	3.4	1.7	52	40	8215G030	4	○	10.1/F	11.6/F	
3/4	19	4.37	-	0.3	8.6	8.6	52	40	8215G003 ①	3	○	6.1/F	11.6/F	
1	41	18.00	1,119,000	0	1.7	1.7	52	25	8215B050 ③	6	16	○	15.4/F	14.9/B
1 1/4	41	27.43	1,730,000	0	1.7	1.7	52	25	8215B060 ③	6	16	○	15.4/F	14.9/B
1 1/2	41	30.00	1,900,000	0	1.7	1.7	52	25	8215B070 ③	6	16	○	15.4/F	14.9/B
2	53	51.43	3,251,000	0	1.7	1.0	52	25	8215B080 ③	7	17	○	15.4/F	14.9/B
2 1/2	76	100.28	5,821,000	0	0.3	-	52	-	8215A090	8	○	28.2/F	-	
3	76	118.28	7,430,000	0	0.3	-	52	-	8215A040	8	○	28.2/F	-	
NORMALLY OPEN (Open when de-energized)														
3/8	19	2.74	172,500	0	8.6	8.6	52	40	8215G013	9	●	10.1/F	11.6/F	
1/2	19	3.43	206,250	0	8.6	8.6	52	40	8215G023	9	●	10.1/F	11.6/F	
3/4	19	3.94	247,500	0	8.6	8.6	52	40	8215G033	10	●	10.1/F	11.6/F	
1	41	18.86	1,191,750	0	1.7	1.0	52	25	8215C053	12	18	●	15.4/F	14.9/B
1 1/4	41	28.28	1,793,250	0	1.7	1.0	52	25	8215C063	12	18	●	15.4/F	14.9/B
1 1/2	41	31.71	1,988,250	0	1.7	1.0	52	25	8215C073	13	19	●	15.4/F	14.9/B
2	53	49.71	3,100,000	0	1.7	1.0	52	25	8215C083	14	20	●	15.4/F	14.9/B
2 1/2	76	100.28	6,290,000	0	0.3	-	52	-	8215B093 ④	15	●	28.2/F	-	

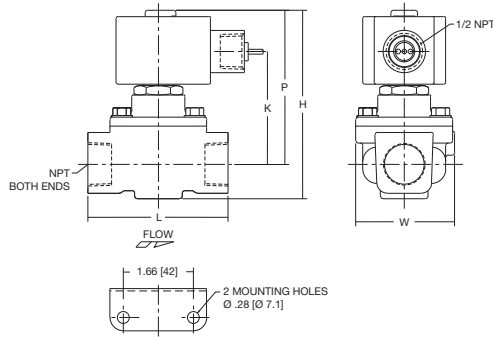
① Do not use for Fuel Gas.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ③ FM Approved Process Control Valves. See Engineering Section (Approvals) for details.
 ④ Type 1 enclosure only.
 ⑤ ○ = Safety Shutoff Valve; ● = General Purpose Valve. Refer to Engineering Section (Approvals) for details.
 ⑥ 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions: inches (mm)

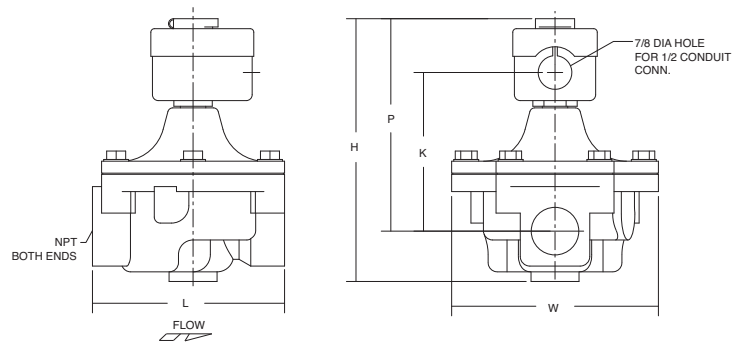
Const. Ref.		H	K	L	P	W
1	ins.	3.42	2.00	2.75	2.87	2.46
	mm	87	51	70	73	63
2	ins.	4.02	2.49	2.75	3.46	2.46
	mm	102	63	70	88	63
3	ins.	3.87	2.19	3.31	3.05	2.33
	mm	98	56	84	77	59
4	ins.	4.46	2.68	3.31	3.64	2.33
	mm	113	68	84	92	59
6 ①	ins.	6.84	4.25	5.00	5.59	5.38
	mm	174	108	127	142	137
7 ①	ins.	7.47	4.53	6.09	5.94	6.31
	mm	190	115	155	151	160
8 ①	ins.	10.25	5.75	7.79	7.91	7.94
	mm	260	146	198	201	202
9	ins.	4.42	2.72	2.75	3.86	2.36
	mm	112	69	70	98	60
10	ins.	4.86	2.72	3.31	4.04	2.36
	mm	123	69	84	103	60
11	ins.	2.74	1.44	2.00	2.30	1.69
	mm	69	36	51	58	43
12	ins.	6.84	2.22	5.00	3.63	5.38
	mm	174	56	127	92	137
13	ins.	6.84	2.16	5.00	3.56	5.38
	mm	174	55	127	90	137
13A	ins.	4.05	2.46	2.75	3.44	2.42
	mm	103	63	70	87	62
13B	ins.	4.49	2.65	3.31	3.63	2.39
	mm	114	67	84	92	61
14 ②	ins.	7.44	2.41	6.09	3.81	6.31
	mm	189	61	155	97	160
15 ②	ins.	10.25	3.07	7.80	5.22	7.94
	mm	260	78	198	133	202
16	ins.	7.59	4.03	5.00	6.34	5.38
	mm	193	102	127	161	137
17	ins.	8.19	4.38	6.09	6.69	6.31
	mm	208	111	155	170	160
18	ins.	6.16	2.09	5.00	4.41	5.38
	mm	156	53	127	112	137
19	ins.	7.59	2.03	5.00	4.34	5.38
	mm	193	52	127	110	137
20	ins.	8.19	2.28	6.09	4.59	6.31
	mm	208	58	155	117	160

IMPORTANT: Valves may be mounted in any position except all DC constructions and those marked ①, which must be mounted with the solenoid vertical and upright. Constructions marked ② must be mounted with the solenoid vertical and upright or horizontal only.

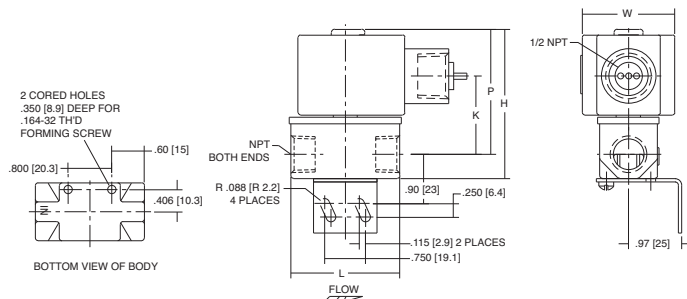
Const. Ref. 1-4, 9, 10, 13A, 13B



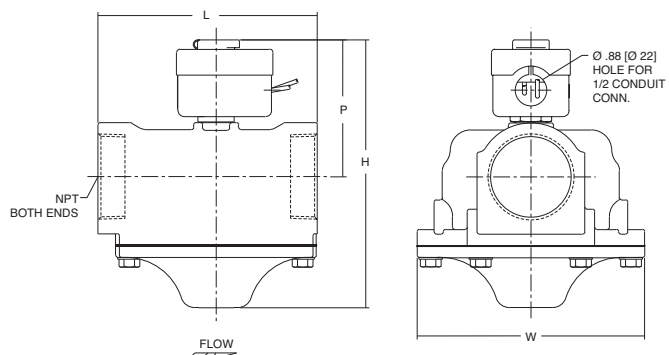
Const. Ref. 6, 7, 8, 16, 17



Const. Ref. 11



Const. Ref. 12-15, 18-20



Features

- Wide range of pressure ratings, sizes, and resilient materials provide long service life and low internal leakage
- High Flow Valves for liquid, corrosive, and air/inert gas service
- Industrial applications include:
 - Car wash
 - Laundry equipment
 - Air compressors
 - Industrial water control
 - Pumps

Construction

Valve Parts in Contact with Fluids		
Body	Brass	304 Stainless Steel
Seals and Discs	NBR or PTFE	
Disc-Holder	PA	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Shading Coil	Copper	Silver

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	-	6.1	16	40	238210	-	238214	-
F	11.6	10.1	25	70	238610	238710	238614	238714
F	16.8	16.1	35	180	272610	97617	272614	97617
F	-	17.1	40	93	238610	-	238614	-
F	-	20	43	240	99257	-	99257	-
F	-	20.1	48	240	272610	-	272614	-
H	30.6	-	-	-	-	74073	-	74073
H	40.6	-	-	-	-	238910	-	238914

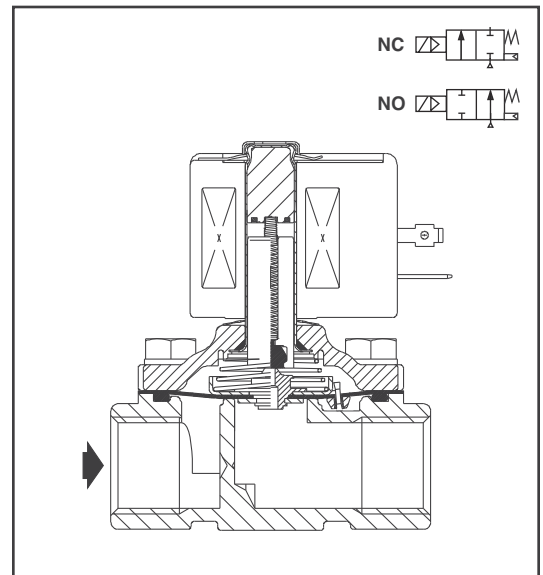
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; Red-Hat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9.

(To order, add prefix "EF" to catalog number, except Catalog Numbers 8210B057, 8210B058, and 8210B059, which are not available with Explosionproof enclosures.)
See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

RedHat II/
RedHat AC: 32°F to 125°F (0°C to 52°C)

RedHat II DC: 32°F to 104°F (0°C to 40°C)
RedHat DC: 32°F to 77°F (0°C to 25°C)
(104°F/40°C occasionally)

Refer to *Engineering Section* for details.

Approvals

CSA certified. RedHat II meets applicable CE directives.
Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)							Max. Fluid Temp. °F		Brass Body			Stainless Steel Body			Watt Rating/Class of Coil Insulation ⑦	
			Min.	Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref. ④	UL Listing ⑤	Catalog Number	Const. Ref. ④	UL Listing ⑤	AC	DC
				Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU										
NORMALLY CLOSED (Closed when de-energized), NBR or PTFE ② Seating																			
3/8	3/8	1.5	①	150	125	-	40	40	-	180	150	8210G073 ③	1P	●	8210G036 ③	1P	●	6.1/F	11.6/F
3/8	5/8	3	0	150	150	-	40	40	-	180	150	8210G093	5D	○	-	-	-	10.1/F	11.6/F
3/8	5/8	3	5	200	150	135	125	100	100	180	150	8210G001	6D	○	-	-	-	6.1/F	11.6/F
3/8	5/8	3	5	300	300	300	-	-	-	175	-	8210G006	5D	○	-	-	-	17.1/F	-
1/2	7/16	2.2	①	150	125	-	40	40	-	180	150	8210G015 ③	2P	●	8210G037 ③	2P	●	6.1/F	11.6/F
1/2	5/8	4	0	150	150	-	40	40	-	180	150	8210G094	5D	○	-	-	-	10.1/F	11.6/F
1/2	5/8	4	0	150	150	125	40	40	-	175	150	-	-	-	8210G087	7D	●	17.1/F	11.6/F
1/2	5/8	4	5	200	150	135	125	100	100	180	150	8210G002	6D	○	-	-	-	6.1/F	11.6/F
1/2	5/8	4	5	300	300	300	-	-	-	175	-	8210G007	5D	○	-	-	-	17.1/F	-
1/2	3/4	4	5	-	300	-	-	300	-	180	125	8210G227	5D	○	-	-	-	17.1/F	40.6/H
3/4	5/8	4.5	0	150	150	125	40	40	-	175	150	-	-	-	8210G088	7D	●	17.1/F	11.6/F
3/4	3/4	5	5	125	125	125	100	90	75	180	150	8210G009	9D	○	-	-	-	6.1/F	11.6/F
3/4	3/4	5	0	150	150	-	40	40	-	180	150	8210G095	8D	○	-	-	-	10.1/F	11.6/F
3/4	3/4	6.5	5	250	150	100	125	125	125	180	150	8210G003	11D	○	-	-	-	6.1/F	11.6/F
3/4	3/4	6	0	-	-	-	200	180	180	-	77	8210B026 ② ‡	10P	-	-	-	-	-	30.6/H
3/4	3/4	6	0	350	300	200	-	-	-	200	-	8210G026 ② ‡	40P	●	-	-	-	16.1F	-
1	1	13	0	-	-	-	100	100	80	-	77	8210B054 ‡	31D	-	8210D089	15D	-	-	30.6/H
1	1	13	0	150	125	125	-	-	-	180	-	8210G054	41D	●	8210G089	45D	●	16.1/F	-
1	1	13	5	150	150	100	125	125	125	180	150	8210G004	12D	○	-	-	-	6.1/F	11.6/F
1	1	13.5	0	300	225	115	-	-	-	200	-	8210G027 ‡	42P	●	-	-	-	20.1/F	-
1	1	13.5	10	300	300	300	-	-	-	175	-	8210G078 ②	13P	-	-	-	-	17.1/F	-
1 1/4	1 1/8	15	0	-	-	-	100	100	80	-	77	8210B055 ‡	32D	-	-	-	-	-	30.6/H
1 1/4	1 1/8	15	0	150	125	125	-	-	-	180	-	8210G055	43D	●	-	-	-	16.1/F	-
1 1/4	1 1/8	15	5	150	150	100	125	125	125	180	150	8210G008	16D	○	-	-	-	6.1/F	11.6/F
1 1/2	1 1/4	22.5	0	-	-	-	100	100	80	-	77	8210B056 ‡	33D	-	-	-	-	-	30.6/H
1 1/2	1 1/4	22.5	0	150	125	125	-	-	-	180	-	8210G056	44D	●	-	-	-	16.1/F	-
1 1/2	1 1/4	22.5	5	150	150	100	125	125	125	180	150	8210G022	18D	●	-	-	-	6.1/F	11.6/F
2	1 3/4	43	5	150	125	90	50	50	50	180	150	8210G100	20P	●	-	-	-	6.1/F	11.6/F
2 1/2	1 3/4	45	5	150	125	90	50	50	50	180	150	8210G101	21P	●	-	-	-	6.1/F	11.6/F
NORMALLY OPEN (Open when de-energized), NBR Seating (PA Disc-Holder, except as noted)																			
3/8	5/8	3	0	150	150	125	125	125	80	180	150	8210G033	23D	●	-	-	-	10.1/F	11.6/F
3/8	5/8	3	5	250	200	200	250	200	200	180	180	8210G011 ⑧ ⑨	39D	●	-	-	-	10.1/F	11.6/F
1/2	5/8	4	0	150	150	125	125	125	80	180	150	8210G034	23D	●	-	-	-	10.1/F	11.6/F
1/2	5/8	3	0	150	150	100	125	125	80	180	150	-	-	-	8210G030	37D	●	10.1/F	11.6/F
1/2	5/8	4	5	250	200	200	250	200	200	180	180	8210G012 ⑧ ⑨	39D	●	-	-	-	10.1/F	11.6/F
3/4	3/4	5.5	0	150	150	125	125	125	80	180	150	8210G035	25D	●	-	-	-	10.1/F	11.6/F
3/4	5/8	3	0	150	150	100	125	125	80	180	150	-	-	-	8210G038	38D	●	10.1/F	11.6/F
3/4	3/4	6.5	5	-	-	-	250	200	200	-	180	8210C013	24D	●	-	-	-	-	16.8/F
3/4	3/4	6.5	5	250	200	200	-	-	-	180	-	8210G013	46D	●	-	-	-	16.1/F	-
1	1	13	0	125	125	125	-	-	-	180	-	8210B057 ⑧ ⑨	34D	●	-	-	-	20/F	-
1	1	13	5	-	-	-	125	125	125	-	180	8210D014	26D	●	-	-	-	-	16.8/F
1	1	13	5	150	150	125	-	-	-	180	-	8210G014	47D	●	-	-	-	16.1/F	-
1 1/4	1 1/8	15	0	125	125	125	-	-	-	180	-	8210B058 ⑧ ⑨	35D	●	-	-	-	20/F	-
1 1/4	1 1/8	15	5	-	-	-	125	125	125	-	180	8210D018	28D	●	-	-	-	-	16.8/F
1 1/4	1 1/8	15	5	150	150	125	-	-	-	180	-	8210G018	48D	●	-	-	-	16.1/F	-
1 1/2	1 1/4	22.5	0	125	125	125	-	-	-	180	-	8210B059 ⑧ ⑨	36D	●	-	-	-	20/F	-
1 1/2	1 1/4	22.5	5	-	-	-	125	125	125	-	180	8210D032	29D	●	-	-	-	-	16.8/F
1 1/2	1 1/4	22.5	5	150	150	125	-	-	-	180	-	8210G032	49D	●	-	-	-	16.1/F	-
2	1 3/4	43	5	-	-	-	125	125	125	-	150	8210 103	30P	●	-	-	-	-	16.8/F
2	1 3/4	43	5	125	125	125	-	-	-	180	-	8210G103	50P	●	-	-	-	16.1/F	-
2 1/2	1 3/4	45	5	-	-	-	125	125	125	-	150	8210 104	27P	●	-	-	-	-	16.8/F
2 1/2	1 3/4	45	5	125	125	125	-	-	-	180	-	8210G104	51P	●	-	-	-	16.1/F	-

① 5 psi on Air; 1 psi on Water.
 ② Valve provided with PTFE main disc.
 ③ Valve includes Ultem (G.E. trademark) piston.
 ④ Letter "D" denotes diaphragm construction; "P" denotes piston construction.
 ⑤ Safety Shutoff Valve; ● General Purpose Valve.
 Refer to Engineering Section (Approvals) for details.

⑥ Valves not available with Explosionproof enclosures.
 ⑦ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ⑧ AC construction also has PA seating.
 ⑨ No disc-holder.
 ‡ Stainless steel disc-holder.
 † Must have solenoid mounted vertical and upright.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)									Max. Fluid Temp. °C		Brass Body			Stainless Steel Body			Watt Rating/ Class of Coil Insulation ⑦	
			Min.	Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref. ④	UL ⑤ Listing	Catalog Number	Const. Ref. ④	UL ⑤ Listing	AC	DC		
				Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU												
NORMALLY CLOSED (Closed when de-energized), NBR or PTFE ② Seating																					
3/8	10	1.29	①	10	9	-	3	3	-	82	65	8210G073 ③	1P	●	8210G036 ③	1P	●	6.1/F	11.6/F		
3/8	16	2.57	0	10	10	-	3	3	-	82	65	8210G093	5D	○	-	-	-	10.1/F	11.6/F		
3/8	16	2.57	0.3	14	10	9	9	7	7	82	65	8210G001	6D	○	-	-	-	6.1/F	11.6/F		
3/8	16	2.57	0.3	21	21	21	-	-	-	79	-	8210G006	5D	○	-	-	-	17.1/F	-		
1/2	11	1.89	①	10	9	-	3	3	-	82	65	8210G015 ③	2P	●	8210G037 ③	2P	●	6.1/F	11.6/F		
1/2	16	3.43	0	10	10	-	3	3	-	82	65	8210G094	5D	○	-	-	-	10.1/F	11.6/F		
1/2	16	3.43	0	10	10	9	3	3	-	79	65	-	-	-	8210G087	7D	●	17.1/F	11.6/F		
1/2	16	3.43	0.3	14	10	9	9	7	7	82	65	8210G002	6D	○	-	-	-	6.1/F	11.6/F		
1/2	16	3.43	0.3	21	21	21	-	-	-	79	-	8210G007	5D	○	-	-	-	17.1/F	-		
1/2	19	3.43	0.3	-	21	-	-	21	-	82	52	8210G227	5D	○	-	-	-	17.1/F	40.6H		
3/4	16	3.86	0	10	10	9	3	3	-	79	65	-	-	-	8210G088	7D	●	17.1/F	11.6/F		
3/4	19	4.29	0.3	9	9	9	7	6	5	82	65	8210G009	9D	○	-	-	-	6.1/F	11.6/F		
3/4	19	4.29	0	10	10	-	3	3	-	82	65	8210G095	8D	○	-	-	-	10.1/F	11.6/F		
3/4	19	5.57	0.3	17	10	7	9	9	9	82	65	8210G003	11D	○	-	-	-	6.1/F	11.6/F		
3/4	19	5.14	0	-	-	-	14	12	12	-	25	8210B026 ② ‡	10P	-	-	-	-	-	30.6/H		
3/4	19	5.14	0	24	21	14	-	-	-	93	-	8210G026 ② ‡	40P	●	-	-	-	-	16.1F	-	
1	25	11.14	0	-	-	-	7	7	6	-	25	8210B054 ‡	31D	-	8210D089	15D	-	-	30.6/H		
1	25	11.14	0	10	9	9	-	-	-	82	-	8210G054	41D	●	8210G089	45D	●	16.1/F	-		
1	25	11.14	0.3	10	10	7	9	9	9	82	65	8210G004	12D	○	-	-	-	6.1/F	11.6/F		
1	25	11.57	0	21	16	8	-	-	-	93	-	8210G027 ‡	42P	●	-	-	-	20.1/F	-		
1	25	11.57	0.7	21	21	21	-	-	-	79	-	8210G078 ②	13P	-	-	-	-	17.1/F	-		
1 1/4	29	12.86	0	-	-	-	7	7	6	-	25	8210B055 ‡	32D	-	-	-	-	-	30.6/H		
1 1/4	29	12.86	0	10	9	9	-	-	-	82	-	8210G055	43D	●	-	-	-	-	16.1/F	-	
1 1/4	29	12.86	0.3	10	10	7	9	9	9	82	65	8210G008	16D	○	-	-	-	6.1/F	11.6/F		
1 1/2	32	19.29	0	-	-	-	7	7	6	-	25	8210B056 ‡	33D	-	-	-	-	-	30.6/H		
1 1/2	32	19.29	0	10	9	9	-	-	-	82	-	8210G056	44D	●	-	-	-	-	16.1/F	-	
1 1/2	32	19.29	0.3	10	10	7	9	9	9	82	65	8210G022	18D	●	-	-	-	6.1/F	11.6/F		
2	44	36.86	0.3	10	9	6	3	3	3	82	65	8210G100	20P	●	-	-	-	6.1/F	11.6/F		
2 1/2	44	38.57	0.3	10	9	6	3	3	3	82	65	8210G101	21P	●	-	-	-	6.1/F	11.6/F		
NORMALLY OPEN (Open when de-energized), NBR Seating (PA Disc-Holder, except as noted)																					
3/8	16	2.57	0.0	10	10	10	9	9	9	6	82	65	8210G033	23D	●	-	-	-	10.1/F	11.6/F	
3/8	16	2.57	0.3	17	14	14	17	14	14	82	82	8210G011 ⑧ ⑨	39D	●	-	-	-	-	10.1/F	11.6/F	
1/2	16	3.43	0	10	10	9	9	9	6	82	65	8210G034	23D	●	-	-	-	-	10.1/F	11.6/F	
1/2	16	2.57	0	10	10	7	9	9	6	82	65	-	-	-	8210G030	37D	●	-	10.1/F	11.6/F	
1/2	16	3.43	0.3	17	14	14	17	14	14	82	82	8210G012 ⑧ ⑨	39D	●	-	-	-	-	10.1/F	11.6/F	
3/4	19	4.71	0	10	10	9	9	9	6	82	65	8210G035	25D	●	-	-	-	-	10.1/F	11.6/F	
3/4	16	2.57	0	10	10	7	9	9	6	82	65	-	-	-	8210G038	38D	●	-	10.1/F	11.6/F	
3/4	19	5.57	0.3	-	-	-	17	14	14	-	82	-	8210C013	24D	●	-	-	-	-	16.8/F	
3/4	19	5.57	0.3	17	14	14	-	-	-	82	-	8210G013	46D	●	-	-	-	-	16.1/F	-	
1	25	11.14	0	9	9	9	-	-	-	82	-	8210B057 ⑥ ⑩	34D	●	-	-	-	-	20/F	-	
1	25	11.14	0.3	-	-	-	9	9	9	-	82	-	8210D014	26D	●	-	-	-	-	16.8/F	
1	25	11.14	0.3	10	10	9	-	-	-	82	-	8210G014	47D	●	-	-	-	-	16.1/F	-	
1 1/4	29	12.86	0	9	9	9	-	-	-	82	-	8210B058 ⑥ ⑩	35D	●	-	-	-	-	20/F	-	
1 1/4	29	12.86	0.3	-	-	-	9	9	9	-	82	-	8210D018	28D	●	-	-	-	-	16.8/F	
1 1/4	29	12.86	0.3	10	10	9	-	-	-	82	-	8210G018	48D	●	-	-	-	-	16.1/F	-	
1 1/2	32	19.29	0	9	9	9	-	-	-	82	-	8210B059 ⑥ ⑩	36D	●	-	-	-	-	20/F	-	
1 1/2	32	19.29	0.3	-	-	-	9	9	9	-	82	-	8210D032	29D	●	-	-	-	-	16.8/F	
1 1/2	32	19.29	0.3	10	10	9	-	-	-	82	-	8210G032	49D	●	-	-	-	-	16.1/F	-	
2	44	36.86	0.3	-	-	-	9	9	9	-	65	8210 103	30P	●	-	-	-	-	16.8/F	-	
2	44	36.86	0.3	9	9	9	-	-	-	82	-	8210G103	50P	●	-	-	-	-	16.1/F	-	
2 1/2	44	38.57	0.3	-	-	-	9	9	9	-	65	8210 104	27P	●	-	-	-	-	16.8/F	-	
2 1/2	44	38.57	0.3	9	9	9	-	-	-	82	-	8210G104	51P	●	-	-	-	-	16.1/F	-	

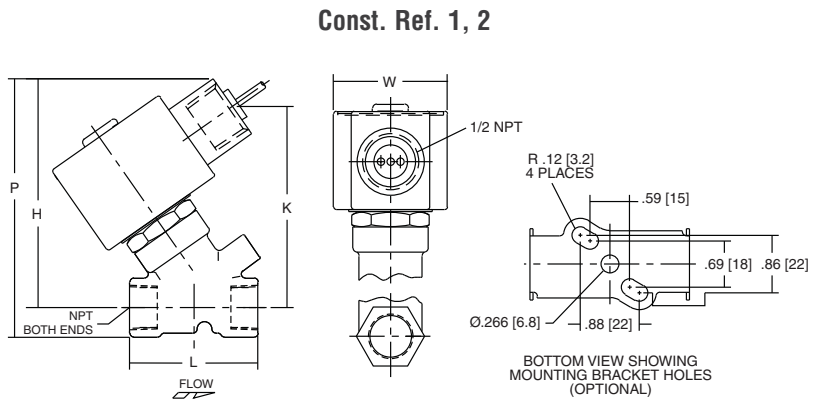
① 0.3 bar on Air; 0.0 bar on Water.
 ② Valve provided with PTFE main disc.
 ③ Valve includes Ultem (G.E. trademark) piston.
 ④ Letter "D" denotes diaphragm construction; "P" denotes piston construction.
 ⑤ ○ Safety Shutoff Valve; ● General Purpose Valve.
 Refer to Engineering Section (Approvals) for details.

⑧ Valves not available with Explosionproof enclosures.
 ⑦ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
 ⑨ AC construction also has PA seating.
 ⑩ No disc-holder.
 ● Stainless steel disc-holder.
 ‡ Must have solenoid mounted vertical and upright.

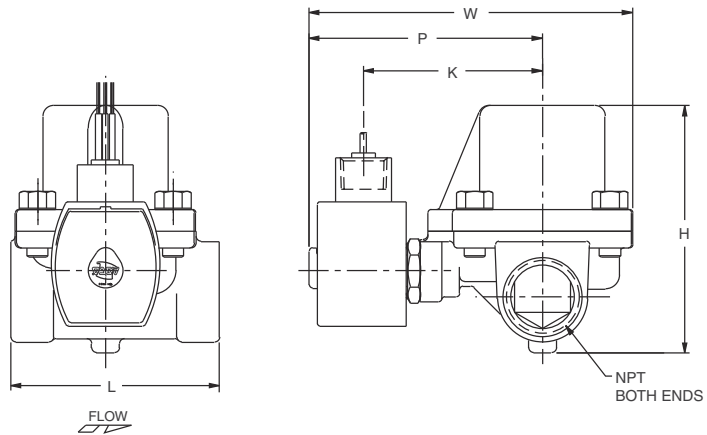
Dimensions: inches (mm)

Const. Ref.		H	K	L	P	W
1*	ins.	3.85	3.00	1.91	3.41	1.69
	mm	98	76	49	87	43
2*	ins.	4.17	3.25	2.28	3.63	1.69
	mm	106	83	58	92	43
5	ins.	3.84	2.31	2.75	3.28	2.28
	mm	98	59	70	83	58
6*	ins.	3.38	1.94	2.75	2.80	2.28
	mm	86	49	70	71	58
7	ins.	4.19	2.50	2.81	3.47	2.39
	mm	106	64	71	88	61
8	ins.	4.13	2.47	2.81	3.44	2.29
	mm	105	63	71	87	58
9*	ins.	3.66	2.10	2.81	2.96	2.28
	mm	93	53	71	75	58
10*	ins.	5.25	X	2.81	4.59	2.31
	mm	133	X	71	117	59
11*	ins.	4.16	2.66	3.84	3.52	2.75
	mm	106	68	98	89	70
12	ins.	5.64	3.15	3.75	4.01	3.36
	mm	143	80	95	102	85
13	ins.	4.44	3.22	3.75	4.19	5.81
	mm	113	82	95	106	147
15*	ins.	5.34	X	3.75	4.47	3.84
	mm	136	X	95	114	98
16	ins.	5.64	3.15	3.66	4.01	3.56
	mm	143	80	93	102	90
18	ins.	6.11	3.30	4.38	4.16	3.92
	mm	155	84	111	106	100
20*	ins.	7.33	3.71	5.06	4.57	4.87
	mm	186	94	129	116	124
21*	ins.	7.33	3.71	5.50	4.57	4.87
	mm	186	94	140	116	124
23	ins.	4.35	2.65	2.75	3.79	2.28
	mm	110	67	70	96	58
24	ins.	5.06	X	3.78	4.44	2.75
	mm	129	X	96	113	70
25	ins.	4.64	2.81	2.81	3.94	2.28
	mm	118	71	71	100	58
26	ins.	6.53	X	3.75	4.91	3.19
	mm	166	X	95	125	81
27	ins.	8.22	X	5.50	5.47	4.87
	mm	209	X	140	139	124
28	ins.	6.53	X	3.66	4.91	3.19
	mm	166	X	93	125	81
29	ins.	7.03	X	4.38	5.06	4.40
	mm	179	X	111	129	112

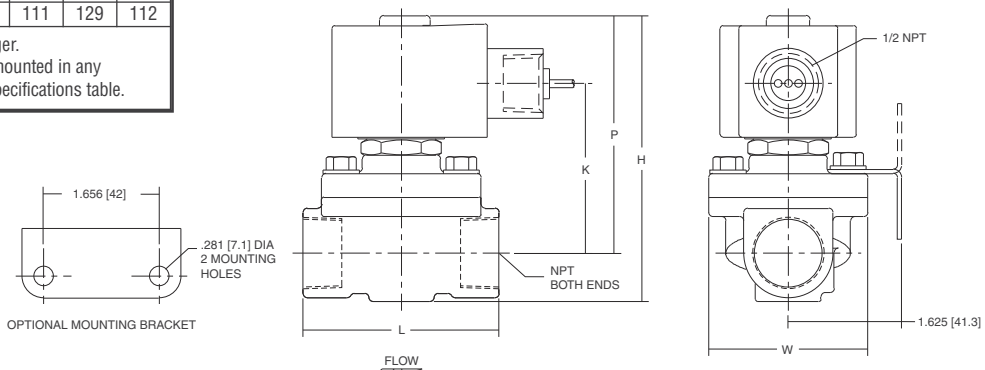
* DC dimensions slightly larger.
IMPORTANT: Valves may be mounted in any position, except as noted in specifications table.



Const. Ref. 13



Const. Ref. 5-9, 11, 20, 21, 23, 25, 37,38

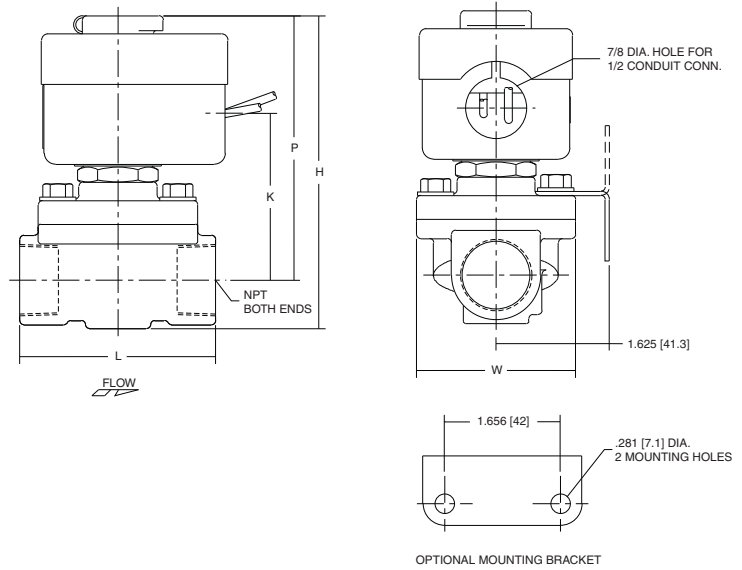


Dimensions: inches (mm)

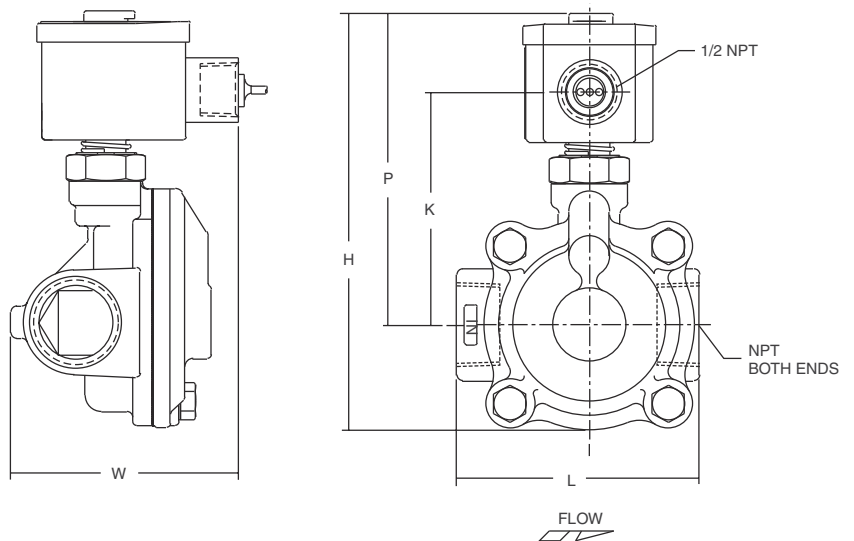
Const. Ref.		H	K	L	P	W
30	ins.	8.22	X	5.06	5.47	4.87
	mm	209	X	129	139	124
31	ins.	5.25	X	3.75	4.44	3.25
	mm	133	X	95	113	83
32	ins.	5.69	X	3.66	4.69	3.25
	mm	145	X	93	119	83
33	ins.	6.06	X	4.38	4.94	3.91
	mm	154	X	111	125	99
34	ins.	6.91	X	3.75	6.09	3.25
	mm	176	X	95	155	83
35	ins.	7.34	X	3.66	6.34	3.25
	mm	186	X	93	161	83
36	ins.	7.66	X	4.38	6.56	3.91
	mm	195	X	111	167	99
37	ins.	4.61	2.75	2.81	3.89	2.39
	mm	117	70	71	99	61
38	ins.	4.61	2.75	2.81	3.89	2.39
	mm	117	70	71	99	61
39	ins.	5.42	2.31	2.75	4.86	3.80
	mm	138	59	70	123	97
40	ins.	5.20	3.29	2.81	4.50	2.28
	mm	132	83	71	114	58
41	ins.	5.13	3.10	3.75	4.32	3.25
	mm	130	79	95	110	83
42	ins.	6.43	4.40	3.93	5.62	3.25
	mm	163	112	100	143	83
43	ins.	5.57	3.35	3.66	4.57	3.25
	mm	142	85	93	116	83
44	ins.	5.90	3.57	4.38	4.79	3.91
	mm	150	91	111	122	99
45	ins.	5.26	3.17	3.75	4.38	3.84
	mm	134	81	95	111	98
46	ins.	4.95	3.10	3.84	4.31	2.75
	mm	126	79	98	110	70
47	ins.	6.43	3.59	3.75	4.81	3.52
	mm	163	91	95	122	90
48	ins.	6.43	3.59	3.66	4.81	3.73
	mm	163	91	93	122	95
49	ins.	6.91	3.75	4.38	4.96	4.40
	mm	176	95	111	126	112
50	ins.	8.13	4.15	5.06	5.37	4.87
	mm	207	105	129	136	124
51	ins.	8.13	4.15	5.50	5.37	5.18
	mm	207	105	140	136	132

IMPORTANT: Valves may be mounted in any position, except as noted in specifications table.

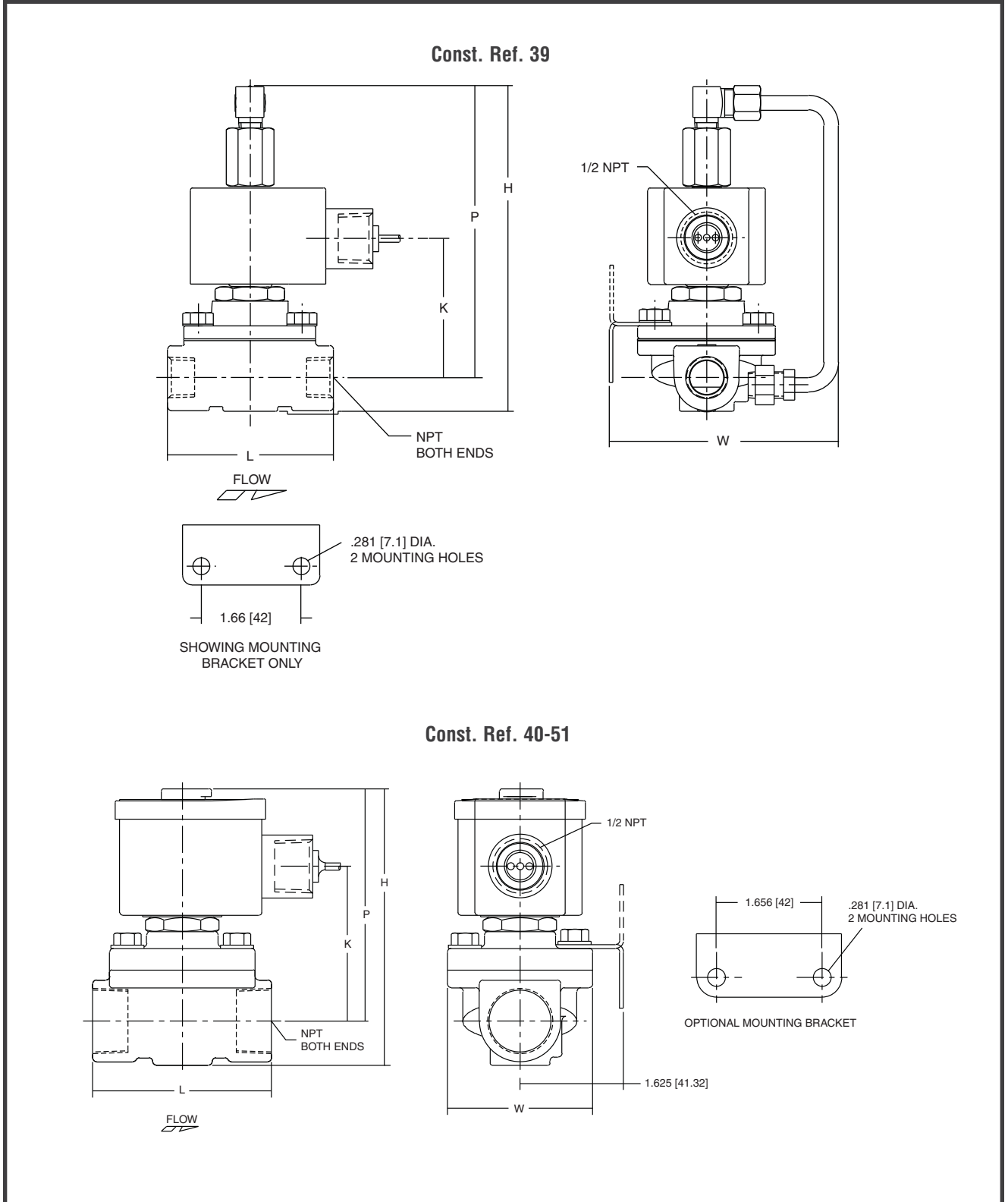
Const. Ref. 10, 15, 24, 26-36



Const. Ref. 12, 16, 18



Dimensions: inches (mm)



Features

- Pilot operated, normally open or normally closed
- Snubber slows disc closing speed to protect system against water hammer damage more effectively than other techniques
- Pressure spike due to water hammer is reduced to a point eliminating the need for suppressors or other controls in most water systems
- Fluid Controls Institute Inc. evaluations have classified these valves:

Pipe Sizes	FCI-82-1 Class
3/8", 1/2", 3/4"	CC
1", 1 1/4", 1 1/2", 2", 2 1/2"	BB

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Disc	NBR
Seals	PTFE & NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Piston	Stainless Steel or Brass
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	6.1	16	30	238210	238710	238214	238714
F	16.8	16.1	35	95	272610	97617	272614	97617
F	22.6	-	-	-	-	238710	-	238714

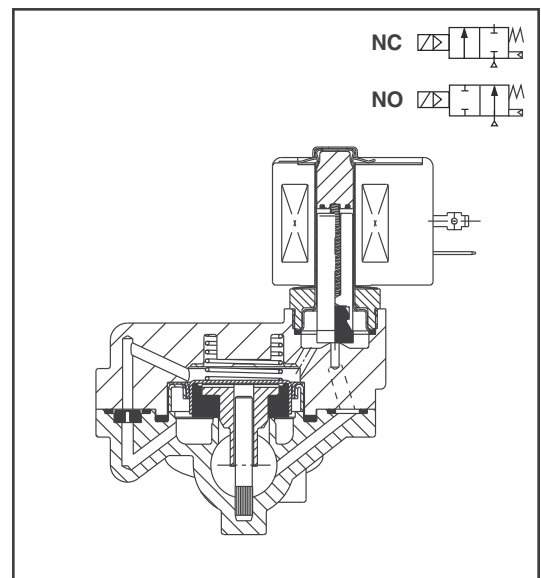
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type I.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Raintight, Types 3, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges:

- RedHat II/
- RedHat AC: 32°F to 125°F (0°C to 52°C)
- RedHat II DC: 32°F to 104°F (0°C to 40°C)
- RedHat DC: 32°F to 77°F (0°C to 25°C)
(104°F/40°C occasionally)

Refer to *Engineering Section* for details.

Approvals:

CSA certified. UL listed, General Purpose Valves.
 RedHat II meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		Brass Body Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation ③	
			Min. ①	Max. AC	Max. DC	AC	DC			AC	DC
				Water ②	Water ②						
NORMALLY CLOSED (Closed when de-energized)											
3/8	9/16	3	5	150	125	180	150	8221G001	1	6.1/F	11.6/F
1/2	9/16	3.5	5	150	125	180	150	8221G003	1	6.1/F	11.6/F
3/4	3/4	5.5	5	150	125	180	150	8221G005	2	6.1/F	11.6/F
1	1	11.5	5	150	125	180	150	8221G007	5	6.1/F	11.6/F
1 1/4	1 1/8	13	5	150	125	180	150	8221G009	6	6.1/F	11.6/F
1 1/2	1 1/4	24	5	150	125	180	150	8221G011	7	6.1/F	11.6/F
2	1 3/4	36	5	150	125	180	150	8221G013	11	6.1/F	22.6/F
2 1/2	1 3/4	38	5	150	125	180	150	8221G015	12	6.1/F	22.6/F
NORMALLY OPEN (Open when de-energized)											
3/8	9/16	3	5	-	125	-	150	8221 021	15	-	16.8/F
3/8	9/16	3	5	150	-	180	-	8221G021	3	16.1/F	-
1/2	9/16	3.5	5	-	125	-	150	8221 023	15	-	16.8/F
1/2	9/16	3.5	5	150	-	180	-	8221G023	3	16.1/F	-
3/4	3/4	5.5	5	-	125	-	150	8221 025	16	-	16.8/F
3/4	3/4	5.5	5	150	-	180	-	8221G025	4	16.1/F	-
1	1	11.5	5	-	125	-	150	8221 027	17	-	16.8/F
1	1	11.5	5	150	-	180	-	8221G027	8	16.1/F	-
1 1/4	1 1/8	13	5	-	125	-	150	8221 029	18	-	16.8/F
1 1/4	1 1/8	13	5	150	-	180	-	8221G029	9	16.1/F	-
1 1/2	1 1/4	24	5	-	125	-	150	8221 031	19	-	16.8/F
1 1/2	1 1/4	24	5	150	-	180	-	8221G031	10	16.1/F	-
2	1 3/4	36	5	-	125	-	150	8221 033	20	-	16.8/F
2	1 3/4	36	5	150	-	180	-	8221G033	13	16.1/F	-
2 1/2	1 3/4	38	5	-	125	-	150	8221 035	21	-	16.8/F
2 1/2	1 3/4	38	5	150	-	180	-	8221G035	14	16.1/F	-

① Valves require a 5 psi Minimum Pressure Differential to open. Once open, they remain open with 3 psi differential pressure.
 ② Refer to Steam/Hot Water Valve Series for Hot Water constructions.
 ③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Response time upon energization: 3/8" - 1/2" (2-4 seconds), 3/4" - 1 1/4" (4-8 seconds), 1 1/2" - 2 1/2" (8-10 seconds)

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		Brass Body Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation ③	
			Min. ①	Max. AC	Max. DC	AC	DC			AC	DC
				Water ②	Water ②						
NORMALLY CLOSED (Closed when de-energized)											
3/8	14	2.57	0.3	10	9	82	65	8221G001	1	6.1/F	11.6/F
1/2	14	3.00	0.3	10	9	82	65	8221G003	1	6.1/F	11.6/F
3/4	19	4.71	0.3	10	9	82	65	8221G005	2	6.1/F	11.6/F
1	25	9.86	0.3	10	9	82	65	8221G007	5	6.1/F	11.6/F
1 1/4	29	11.14	0.3	10	9	82	65	8221G009	6	6.1/F	11.6/F
1 1/2	32	20.57	0.3	10	9	82	65	8221G011	7	6.1/F	11.6/F
2	44	30.86	0.3	10	9	82	65	8221G013	11	6.1/F	22.6/F
2 1/2	44	32.57	0.3	10	9	82	65	8221G015	12	6.1/F	22.6/F
NORMALLY OPEN (Open when de-energized)											
3/8	14	2.57	0.3	-	9	-	65	8221 021	15	-	16.8/F
3/8	14	2.57	0.3	10	-	82	-	8221G021	3	16.1/F	-
1/2	14	3.00	0.3	-	9	-	65	8221 023	15	-	16.8/F
1/2	14	3.00	0.3	10	-	82	-	8221G023	3	16.1/F	-
3/4	19	4.71	0.3	-	9	-	65	8221 025	16	-	16.8/F
3/4	19	4.71	0.3	10	-	82	-	8221G025	4	16.1/F	-
1	25	9.86	0.3	-	9	-	65	8221 027	17	-	16.8/F
1	25	9.86	0.3	10	-	82	-	8221G027	8	16.1/F	-
1 1/4	29	11.14	0.3	-	9	-	65	8221 029	18	-	16.8/F
1 1/4	29	11.14	0.3	10	-	82	-	8221G029	9	16.1/F	-
1 1/2	32	20.57	0.3	-	9	-	65	8221 031	19	-	16.8/F
1 1/2	32	20.57	0.3	10	-	82	-	8221G031	10	16.1/F	-
2	44	30.86	0.3	-	9	-	65	8221 033	20	-	16.8/F
2	44	30.86	0.3	10	-	82	-	8221G033	13	16.1/F	-
2 1/2	44	32.57	0.3	-	9	-	65	8221 035	21	-	16.8/F
2 1/2	44	32.57	0.3	10	-	82	-	8221G035	14	16.1/F	-

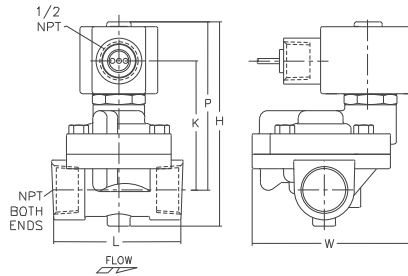
① Valves require a 0.3 bar Minimum Pressure Differential to open. Once open, they remain open with 0.2 bar differential pressure.
 ② Refer to Steam/Hot Water Valve Series for Hot Water constructions.
 ③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.
Response time upon energization: 3/8" - 1/2" (2-4 seconds), 3/4" - 1 1/4" (4-8 seconds), 1 1/2" - 2 1/2" (8-10 seconds)

Dimensions: inches (mm)

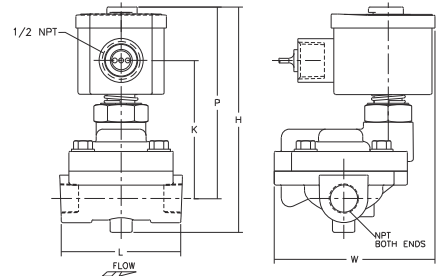
Const. Ref.	H	K	L	P	W
1	ins. 4.34	2.69	2.72	3.59	3.41
	mm 110	68	69	91	87
2	ins. 4.53	2.69	2.78	3.75	3.41
	mm 115	68	71	95	87
3	ins. 5.22	3.14	2.72	4.47	3.69
	mm 133	80	69	114	94
4	ins. 5.41	3.30	2.78	4.62	3.69
	mm 137	84	71	117	94
5	ins. 5.62	3.15	3.75	4.03	3.16
	mm 143	80	95	102	80
6	ins. 5.56	3.15	3.66	4.03	3.56
	mm 141	80	93	102	90
7	ins. 6.12	3.30	4.38	4.19	4.12
	mm 156	84	111	106	105
8	ins. 6.53	3.59	3.75	4.91	3.16
	mm 166	91	95	125	80
9	ins. 6.47	3.59	3.56	4.91	3.56
	mm 164	91	93	125	90
10	ins. 7.03	3.74	4.38	5.06	4.12
	mm 179	95	111	129	105
11	ins. 7.38	3.71	5.06	4.59	4.72
	mm 188	94	129	117	120
12	ins. 7.38	3.71	5.50	4.59	5.19
	mm 188	94	140	117	132
13	ins. 8.22	4.15	5.06	5.47	4.72
	mm 209	105	129	139	120
14	ins. 8.22	4.15	5.50	5.47	5.19
	mm 209	105	140	139	132
15	ins. 5.22	-	2.72	4.47	3.69
	mm 133	-	69	114	94
16	ins. 5.41	-	2.78	4.62	3.69
	mm 137	-	71	117	94
17	ins. 6.53	-	3.75	4.91	3.16
	mm 166	-	95	125	80
18	ins. 6.47	-	3.66	4.91	3.56
	mm 164	-	93	125	90
19	ins. 7.03	-	4.38	5.06	4.12
	mm 179	-	111	129	105
20	ins. 8.22	-	5.06	5.47	4.72
	mm 209	-	129	139	120
21	ins. 8.22	-	5.50	5.47	5.19
	mm 209	-	140	139	132

IMPORTANT: Valves may be mounted in any position.

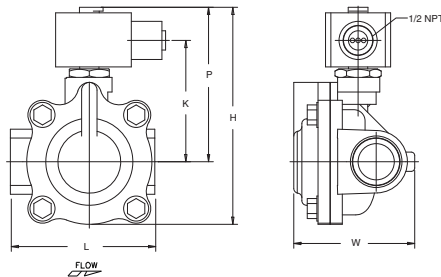
Const. Ref. 1, 2



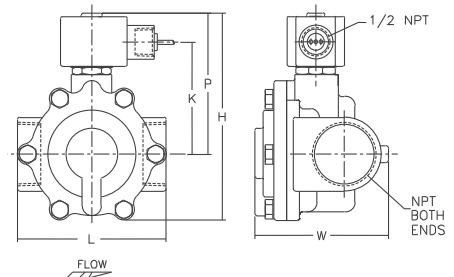
Const. Ref. 3, 4



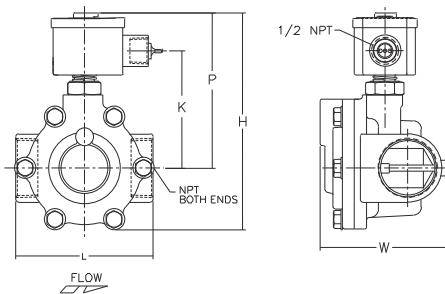
Const. Ref. 5, 6



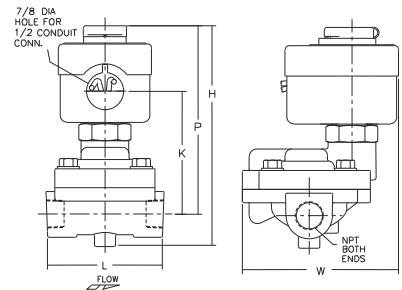
Const. Ref. 7, 11, 12



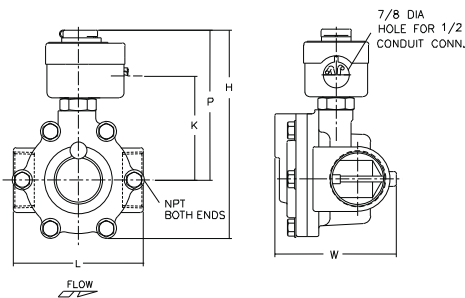
Const. Ref. 8, 9, 10, 13, 14



Const. Ref. 15, 16



Const. Ref. 17 - 21



Features

- Rugged piston construction built to withstand pressure ratings of 450 to 1500 psi
- Angle body design for high flows
- Ideal for high-pressure water applications, such as car washes
- Mountable in any position

Construction

Valve Parts in Contact with Fluids		
Body	Brass	300 Stainless Steel
Seals and Disc	NBR, PA, PTFE	PTFE, NBR
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Spring	302 Stainless Steel	
Shading Coil	Copper	Silver

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	-	10.1	25	50	238610	-	238614	-
F	22.6	17.1	40	70	238610	238710	238614	238714

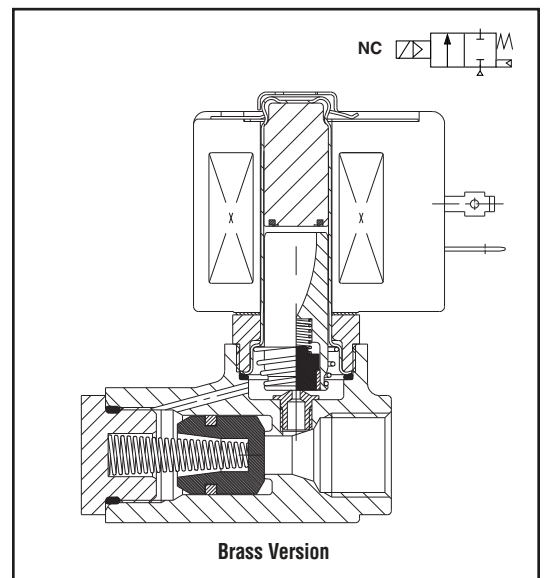
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)							Max. Fluid Temp. °F		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation	
			Min.	Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC
				Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU								
NORMALLY CLOSED (Closed when de-energized)																	
1/4	5/16	1.5	10	750	750	750	-	-	-	200	-	8223G021	1	-	-	10.1/F	-
1/4	5/16	1.5	10	1500	1500	1500	500	500	500	200	150	8223G025	1	-	-	17.1/F	22.6/F
3/8	5/16	1.5	10	750	750	750	400	400	400	200	150	8223G023	1	-	-	10.1/F	22.6/F
3/8	5/16	1.5	10	1500	1500	1500	500	500	500	200	150	8223G027	1	-	-	17.1/F	22.6/F
1/2	3/8	3.2	25	1500	1500	1500	500	500	500	200	150	8223G003	2	8223G010	4	17.1/F	22.6/F
3/4	3/4	7.8	25	750	750	750	450	450	450	200	150	8223G005	3	8223G012	5	17.1/F	22.6/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)							Max. Fluid Temp. °C		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation	
			Min.	Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC
				Air-Inert Gas	Water	Light Oil @ 300 SSU	Air-Inert Gas	Water	Light Oil @ 300 SSU								
NORMALLY CLOSED (Closed when de-energized)																	
1/4	8	1.29	0.7	52	52	52	-	-	-	93	-	8223G021	1	-	-	10.1/F	-
1/4	8	1.29	0.7	103	103	103	34	34	34	93	65	8223G025	1	-	-	17.1/F	22.6/F
3/8	8	1.29	0.7	52	52	52	28	28	28	93	65	8223G023	1	-	-	10.1/F	22.6/F
3/8	8	1.29	0.7	103	103	103	34	34	34	93	65	8223G027	1	-	-	17.1/F	22.6/F
1/2	10	2.74	1.7	103	103	103	34	34	34	93	65	8223G003	2	8223G010	4	17.1/F	22.6/F
3/4	19	6.69	1.7	52	52	52	31	31	31	93	65	8223G005	3	8223G012	5	17.1/F	22.6/F

Dimensions: inches (mm)

Const. Ref.		H	K	L	P	W
1	ins.	3.41	1.91	2.44	2.88	1.95
	mm	87	49	62	73	50
2	ins.	4.32	2.17	3.03	3.13	1.95
	mm	110	55	77	80	50
3	ins.	5.03	2.64	3.60	3.61	2.00
	mm	128	67	91	92	51
4	ins.	4.34	2.15	2.50	3.13	1.95
	mm	110	55	64	80	50
5	ins.	5.03	2.53	3.53	3.50	3.50
	mm	128	64	90	89	89

Const. Ref. 1 - 5

1/2 NPT

OUTLET

NPT 2 PLACES

INLET

INLET LOCATED ON BOTTOM FOR CAT. NO'S 8223G003, 005, 010, 012

Features

- 2-way normally closed operation
- Compact design
- Brass and 316 stainless steel body constructions
- Mountable in any position
- Available with manual operator
- NSF 61 and 169 version available for potable water and food service

Construction

Valve Parts in Contact with Fluids			
	General Purpose		NSF
Body	Brass	316 Stainless Steel	316 Stainless Steel
Core Tube/Bonnet	S.S. / Plated Steel	S.S. / S.S.	S.S. / S.S.
Core and Plugnut	Stainless Steel		
Springs	Stainless Steel		
Seals and Disc	FKM		EPDM
Shading Coil	Copper		Silver

Electrical

Prefix	Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Ambient Temp. °F	Spare Coil Family	
		DC Watts	AC				AC	DC
			Watts	VA Holding	VA Inrush			
U	F	6.9	6.3	8.8	12.1	15 to 140	400115	400115
SC	F	6.9	6.3	8.8	12.1	15 to 140	400125	400125

Standard voltages: 24, 120, 240 volts AC, 50-60 Hz. 12, 24, 120 volts DC
 Must be specified when ordering.

Solenoid Enclosures

Standard: Open frame (Prefix U) 18" leads

Optional: DIN (size 11mm, form B) (Prefix SC). Watertight/IP-65 when used with DIN connector kit for SC coils (see kits below).

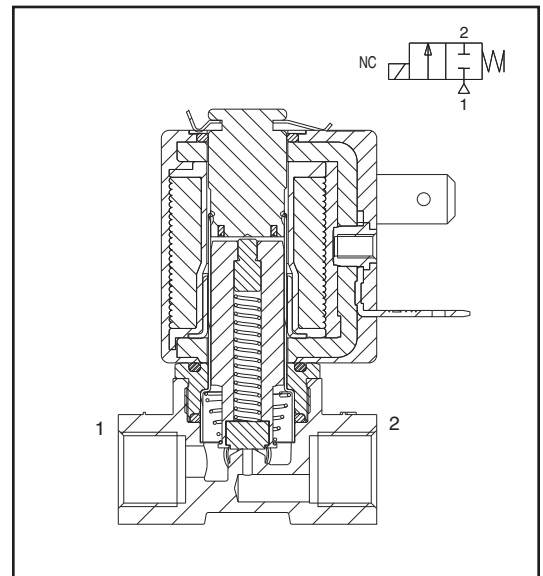
Kits

1/2" NPT conduit hub kit for leaded coils 224735-001-*
 (Kit contains 10 pcs of each: threaded hub, gasket, and attaching screw.)

DIN connector kit for SC coils 226061-001-*

(Kit contains 10 pcs of each: connector, gasket, and attaching screw.)

Mounting adapter kit 289719 (Kit contains 2 screws and plate.)



Approvals

UL recognized coil - File MH28173

CSA recognized coil - see CSA certificate No. 235748

Meets applicable CE directives

NSF 61 - Drinking water system components

NSF 169 - Special purpose food
 Equipment and Devices

The NSF Certification Program is accredited by
 the Standards Council of Canada and ANSI.

Specifications (English Units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Brass	Stainless Steel	Const. Ref.	Wattage		Approx. Shipping Weight (lbs.)
			Max. AC ①			Max. DC ①			AC	DC				AC	DC	
			Air - Inert Gas	Water	Light Oil @ 300 SSU	Air - Inert Gas	Water	Light Oil @ 300 SSU								
General Service - Normally Closed																
1/8	3/64	0.05	500	500	400	360	360	330	180	180	U8256A001V	U8256A013V	1	6.3	6.9	0.5
1/8	1/16	0.08	400	390	230	220	220	220	180	180	U8256A002V	U8256A014V	1	6.3	6.9	0.5
1/8	3/32	0.15	180	180	105	90	90	90	180	180	U8256A004V	U8256A016V	1	6.3	6.9	0.5
1/8	7/64	0.19	135	126	80	63	63	63	180	180	U8256B045V	U8256B046V	2	6.3	6.9	0.6
NSF 61 and 169 Listed																
1/8	3/32	0.15	-	200	-	-	130	-	180	180	-	U8256A103E	1	6.3	6.9	0.5
1/8	7/64	0.17	-	150	-	-	100	-	180	180	-	U8256A104E	2	6.3	6.9	0.6
1/4	3/32	0.15	-	200	-	-	130	-	180	180	-	U8256A107E	3	6.3	6.9	0.5
1/4	7/64	0.17	-	150	-	-	100	-	180	180	-	U8256A108E	3	6.3	6.9	0.6

① MS option limits max. pressures to 220 psi (unless limited by operating pressure).

Specifications (Metric Units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)						Max. Fluid Temp. °C		Brass	Stainless Steel	Const. Ref.	Wattage		Approx. Shipping Weight (kgs.)
			Max. AC ①			Max. DC ①			AC	DC				AC	DC	
			Air - Inert Gas	Water	Light Oil @ 300 SSU	Air - Inert Gas	Water	Light Oil @ 300 SSU								
General Service - Normally Closed																
1/8	1.2	0.04	34	34	27	25	25	23	82	82	U8256A001V	U8256A013V	1	6.3	6.9	0.22
1/8	1.6	0.07	27	27	16	15	15	15	82	82	U8256A002V	U8256A014V	1	6.3	6.9	0.22
1/8	2.4	0.13	12	12	7	6	6	6	82	82	U8256A004V	U8256A016V	1	6.3	6.9	0.22
1/8	2.7	0.16	9	8	5	4	4	4	82	82	U8256B045V	U8256B046V	2	6.3	6.9	0.27
NSF 61 and 169 Listed																
1/8	2.4	0.13	-	14	-	-	9	-	82	82	-	U8256A103E	1	6.3	6.9	0.22
1/8	2.7	0.16	-	10	-	-	7	-	82	82	-	U8256A104E	2	6.3	6.9	0.22
1/4	2.4	0.13	-	14	-	-	9	-	82	82	-	U8256A107E	3	6.3	6.9	0.22
1/4	2.7	0.16	-	10	-	-	7	-	82	82	-	U8256A108E	3	6.3	6.9	0.27

① MS option limits max. pressures to 15 bar (unless limited by operating pressure).

Capabilities Chart

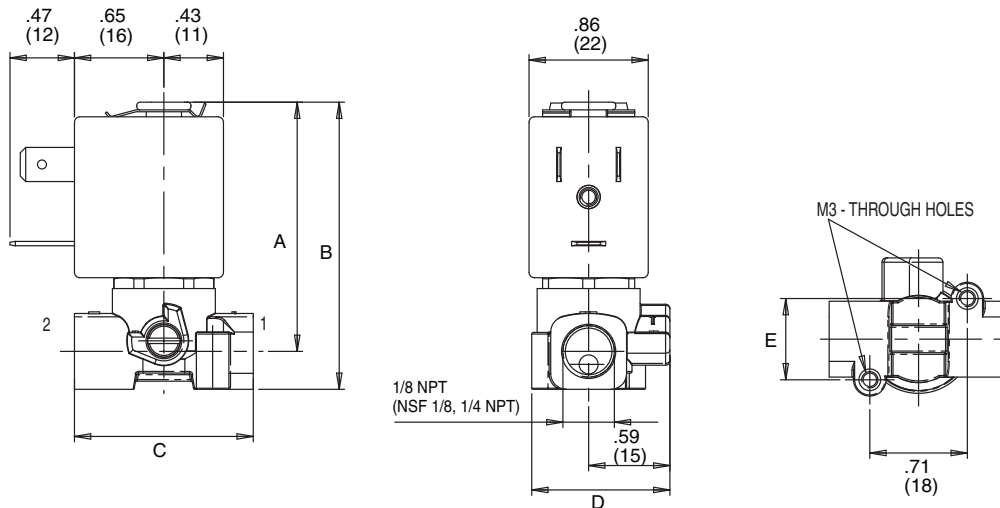
Solenoid Options ②							Base Catalog Number		Resilient Materials ①						Other		Standard Rebuild Kit		
NEMA Type 3-9	High Temp. DIN	Wiring Box Screw Terminal	Multipin	DIN	Spade	Open Frame with Leads	Brass	Stainless Steel	FKM	EPDM	RUBY	Oxygen Service	PTFE	Urethane	Vacuum	Manual Operator	Mounting Bracket	Brass AC/DC	Stainless AC/DC
-	-	-	-	SC	-	●	U8256A001V	U8256A013V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8256A002V	U8256A014V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8256A004V	U8256A016V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8256B045V	U8256B046V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8256A103E	-	●	-	-	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8256A104E	-	●	-	-	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8256A107E	-	●	-	-	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8256A108E	-	●	-	-	-	-	-	MS	-	-	-

● = Standard. ① Replace V suffix. ② Replace U prefix with SC prefix.

Dimensions: inches (mm)

Const. Ref.		A	B	C	D	E
1	ins.	1.81	2.08	1.29	1	0.59
	mm	46	53	33	25	15
2	ins.	1.98	2.25	.984	1	0.59
	mm	50	57	25	25	15
3	ins.	1.86	2.25	1.73	1.12	.83
	mm	46	57	44	28	21

Shown with DIN coil without connector



Features

- Corrosion-resistant plastic bodies
- Available with compression fitting ends for metal or plastic tube to save installation cost
- Mountable in any position
- Dispensing vending construction NSF listed

Construction

Valve Parts in Contact with Fluids	
Body	CA, PA, PP
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number	
	DC Watts	Watts	AC		General Purpose	
			VA Holding	VA Inrush	AC	DC
B	6.4	6.5	9.2	17.3	174879	180555
F	10.6	6.1	16	30	238210	238310

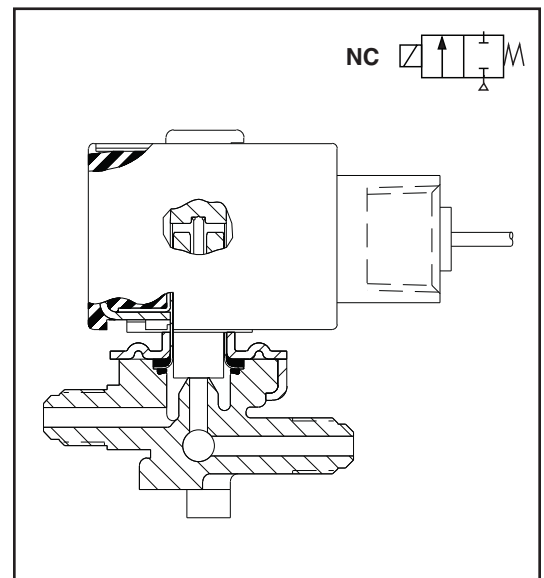
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Open Frame Solenoid, Junction Box enclosures.

See *Optional Features* Section for descriptions on these options.



Nominal Ambient Temp. Range:

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals:

CSA certified. UL Recognized Component. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Connections	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)				Max. Fluid Temp. °F		Plastic Body		Watt Rating/ Class of Coil Insulation ②	
			Max. AC		Max. DC		AC	DC	Catalog Number	Const. Ref.	AC	DC
			Air-Inert Gas	Water	Air-Inert Gas	Water						
GENERAL SERVICE CONSTRUCTION - CA Body, Watertight enclosure with leads												
1/4" Male Flare	9/64	.35	120	120	50	50	130	120	8260G042	1	6.1/F	10.6/F
Bib for 1/4" I.D. Tube	9/64	.35	120	120	50	50	130	120	8260G054	2	6.1/F	10.6/F
1/4" O.D. ① Compression	9/64	.35	120	120	50	50	130	120	8260G071	3	6.1/F	10.6/F
GENERAL SERVICE CONSTRUCTION - PP Body, Open Frame Solenoid and Spade Terminal Coils												
1/4" O.D. ① Compression	1/16	.09	150	150	60	60	130	120	USM8260 073	5	6.5/B	6.4/B
	3/32	.19	100	100	20	20	130	120	USM8260 074	5	6.5/B	6.4/B
	1/8	.31	60	60	10	10	130	120	USM8260 075	5	6.5/B	6.4/B
	5/32	.43	35	35	5	5	130	120	USM8260 076	5	6.5/B	6.4/B
DISPENSING VENDING CONSTRUCTION - NSF Listed - PP Body, Open Frame Solenoid and Spade Terminal Coils												
1/4" O.D. ① Compression	1/16	.09	150	150	60	60	130	120	USM8260 077	4	6.5/B	6.4/B
	3/32	.19	100	100	20	20	130	120	USM8260 078	4	6.5/B	6.4/B
	1/8	.31	60	60	10	10	130	120	USM8260 079	4	6.5/B	6.4/B
	5/32	.43	35	35	5	5	130	120	USM8260 080	4	6.5/B	6.4/B
PA Body, Open Frame Solenoid and Spade Terminal Coils												
3/8" O.D. ① Compression	5/16	1.3	5	5	-	-	130	-	USM8260 089	6	6.5/B	-

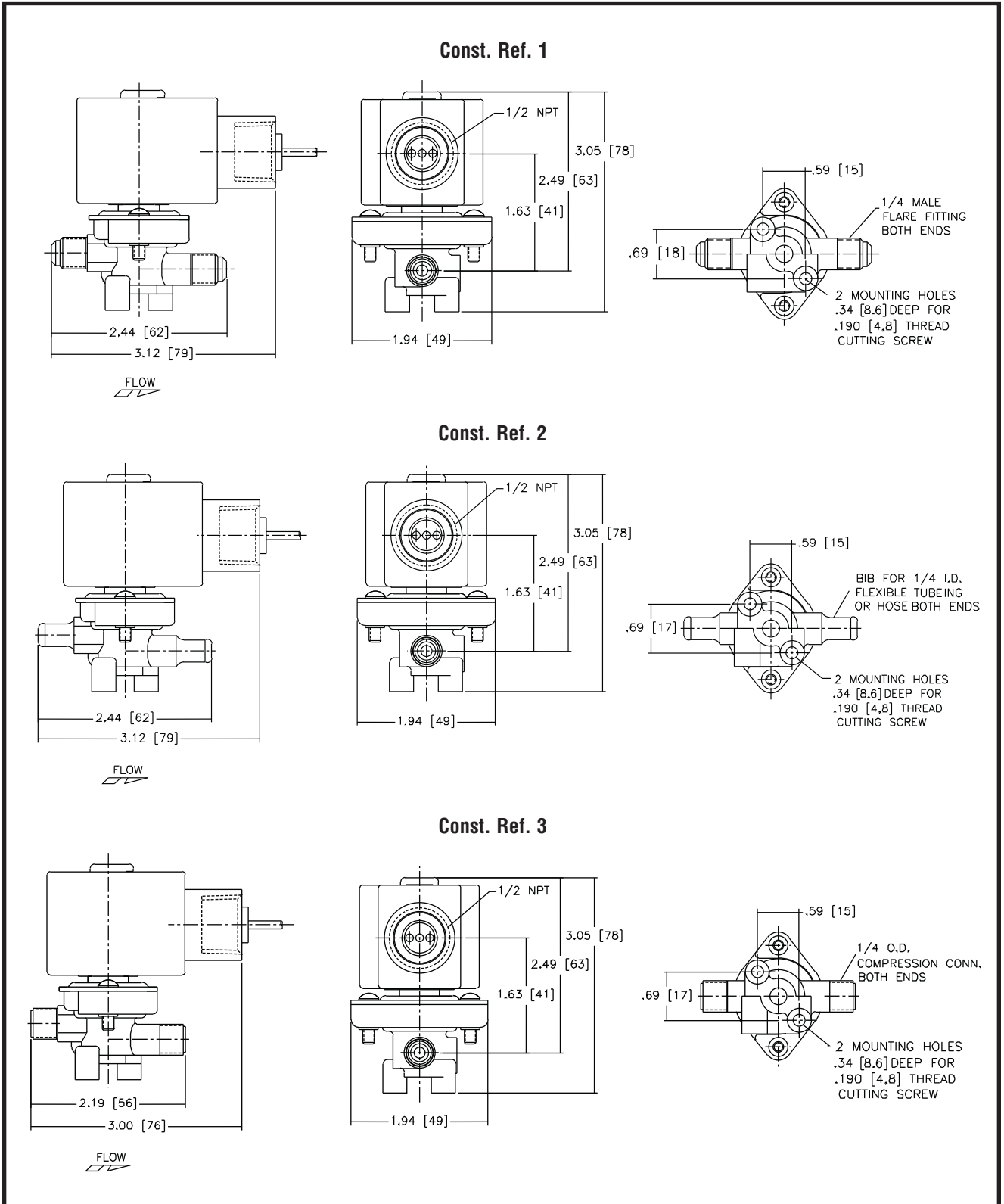
① Fittings not supplied with valve. To order, refer to Kit No. 224150 - plastic tubing, and Kit No. 224151 - metal tubing.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

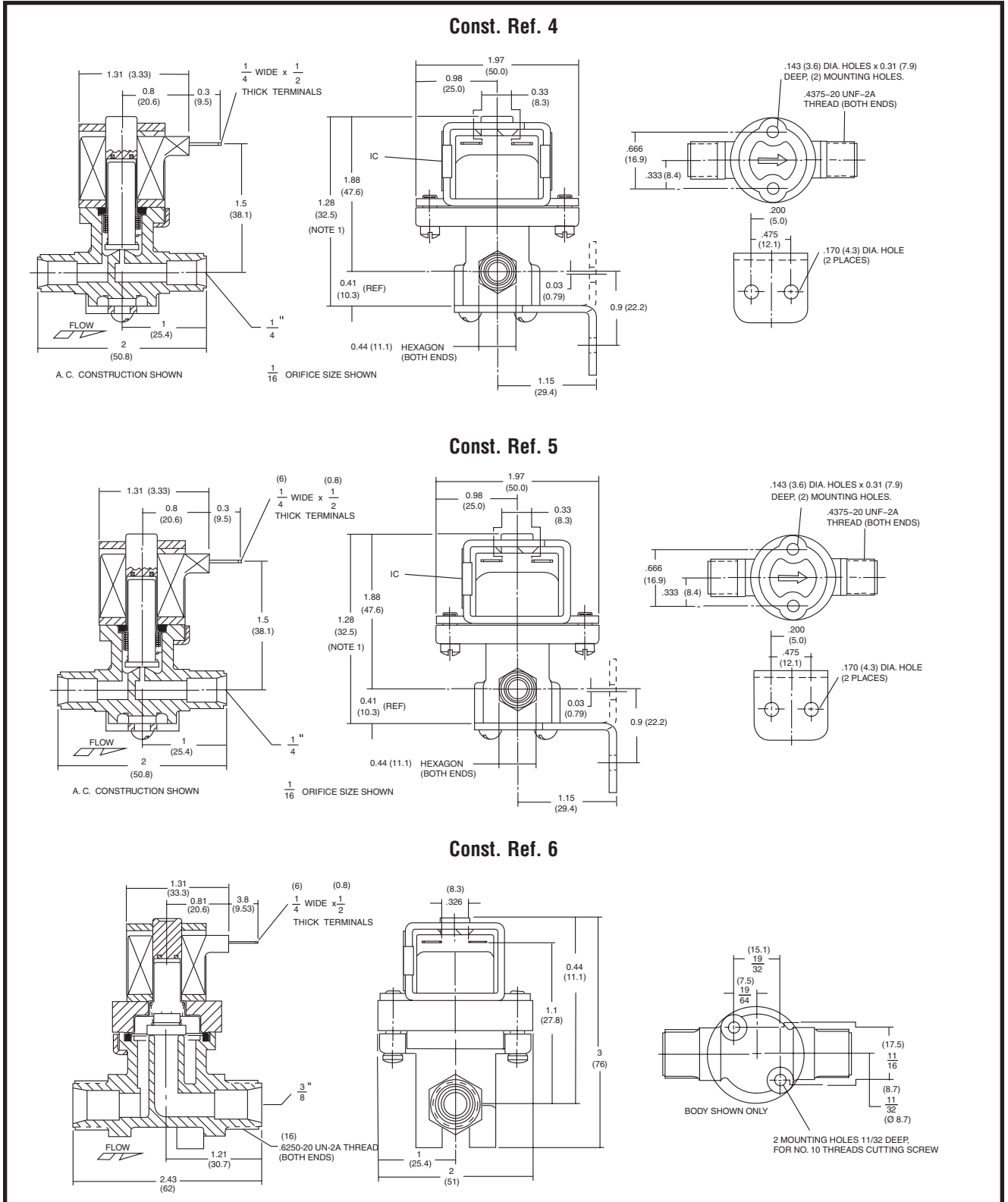
Pipe Connections	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)				Max. Fluid Temp. °C		Plastic Body		Watt Rating/ Class of Coil Insulation ②	
			Max. AC		Max. DC		AC	DC	Catalog Number	Const. Ref.	AC	DC
			Air-Inert Gas	Water	Air-Inert Gas	Water						
GENERAL SERVICE CONSTRUCTION - CA Body, Watertight enclosure with leads												
1/4" Male Flare	3.6	.30	8.3	8.3	3.4	3.4	54	49	8260G042	1	6.1/F	10.6/F
Bib for 1/4" I.D. Tube	3.6	.30	8.3	8.3	3.4	3.4	54	49	8260G054	2	6.1/F	10.6/F
1/4" O.D. ① Compression	3.6	.30	8.3	8.3	3.4	3.4	54	49	8260G071	3	6.1/F	10.6/F
GENERAL SERVICE CONSTRUCTION - PP Body, Open Frame Solenoid and Spade Terminal Coils												
1/4" O.D. ① Compression	1.6	.08	10.3	10.3	4.1	4.1	54	49	USM8260 073	5	6.5/B	6.4/B
	2.4	.16	6.9	6.9	1.4	1.4	54	49	USM8260 074	5	6.5/B	6.4/B
	3.2	.27	4.1	4.1	0.7	0.7	54	49	USM8260 075	5	6.5/B	6.4/B
	4.0	.37	2.4	2.4	0.3	0.3	54	49	USM8260 076	5	6.5/B	6.4/B
DISPENSING VENDING CONSTRUCTION - NSF Listed - PP Body, Open Frame Solenoid and Spade Terminal Coils												
1/4" O.D. ① Compression	1.6	.08	10.3	10.3	4.1	4.1	54	49	USM8260 077	4	6.5/B	6.4/B
	2.4	.16	6.9	6.9	1.4	1.4	54	49	USM8260 078	4	6.5/B	6.4/B
	3.2	.27	4.1	4.1	0.7	0.7	54	49	USM8260 079	4	6.5/B	6.4/B
	4.0	.37	2.4	2.4	0.3	0.3	54	49	USM8260 080	4	6.5/B	6.4/B
PA Body, Open Frame Solenoid and Spade Terminal Coils												
3/8" O.D. ① Compression	7.9	1.11	0.3	0.3	-	-	54	-	USM8260 089	6	6.5/B	-

① Fittings not supplied with valve. To order, refer to Kit No. 224150 - plastic tubing, and Kit No. 224151 - metal tubing.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Dimensions: inches (mm)



Dimensions: inches (mm)



Features

- Reliable, proven design with high flows
- Small poppet valves for tight shutoff
- Wide range of elastomers for specialty service
- Mountable in any position
- Brass and stainless steel constructions

Construction

Valve Parts in Contact with Fluids		
Body	Brass	303/304 Stainless Steel
Seals and Discs	NBR or Cast UR	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Shading Coil	Copper	Silver
Stem	PA (Normally Open)	

Note: All 1/8" NPT Normally Open valves contain CA. All 1/4" NPT Normally Open valves contain PA.

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	-	9.1	20	45	238210	-	238214	-
F	11.6	10.1	25	50	238610	238710	238614	238714
F	22.6	17.1	40	70	238610	238710	238614	238714

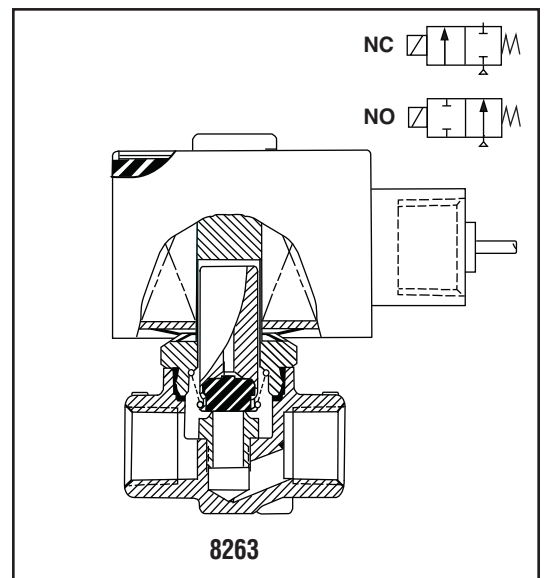
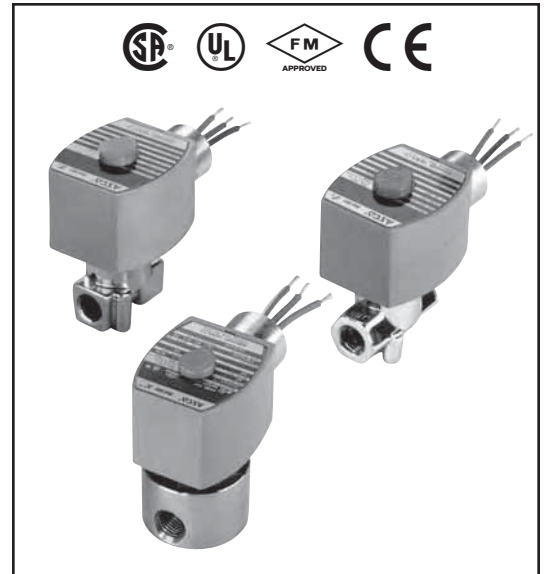
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" to catalog number)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed, as indicated. Normally Closed Valves FM approved. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Brass Body			Stainless Steel Body			Watt Rating/ Class of Coil Insulation ②	
			Max. AC			Max. DC												
			Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC	DC	Catalog Number	Const. Ref.	UL ③ Listing	Catalog Number	Const. Ref.	UL ③ Listing	AC	DC
NORMALLY CLOSED (Closed when de-energized), NBR Disc																		
1/8	3/64	.06	750	750	530	650	640	550	180	120	8262G001	1	○	8262G012	1	○	6.1/F	10.6/F
1/8	3/32	.20	275	290	130	150	140	145	180	120	8262G014	1	○	8262G015	1	○	6.1/F	10.6/F
1/8	1/8	.34	155	180	140	80	80	80	180	120	8262G002	1	○	8262G006	1	○	6.1/F	10.6/F
1/4	3/64	.06	750	750	500	500	500	500	180	120	8262G019	16	○	8262G080	11	○	6.1/F	10.6/F
1/4	3/64	.06	1500	1500	1100	475	475	450	140	140	8262G200 ①	17	●	-	-	-	10.1/F	11.6/F
1/4	3/64	.06	2200	2000	1100	-	-	-	140	140	-	-	-	8262G214 ①	12	●	10.1/F	-
1/4	3/32	.17	360	340	160	150	125	125	180	120	8262G020	16	○	8262G086	11	○	6.1/F	10.6/F
1/4	3/32	.17	500	500	280	-	-	-	180	-	8262G021	16	○	-	-	-	9.1/F	-
1/4	1/8	.35	140	165	90	65	60	60	180	120	8262G022	16	○	8262G007	11	○	6.1/F	10.6/F
1/4	1/8	.35	300	300	200	75	70	70	180	150	8262G232	17	○	-	-	-	10.1/F	11.6/F
1/4	5/32	.50	180	200	145	40	40	45	180	150	8262G202	4	○	8262G220	12	○	10.1/F	11.6/F
1/4	7/32	.72	90	100	100	25	25	25	180	150	8262G208	4	○	8262G226	12	○	10.1/F	11.6/F
1/4	7/32	.85	40	50	40	17	20	21	180	120	8262G013	2	○	8262G036	11	○	6.1/F	10.6/F
1/4	9/32	.88	60	75	60	18	15	18	180	150	8262G210	4	○	-	-	-	10.1/F	11.6/F
1/4	9/32	.88	90	100	90	25	20	22	180	150	8262G212	6	○	8262G230	13	○	17.1/F	22.6/F
1/4	9/32	.96	27	36	28	15	16	16	180	120	8262G090	2	○	8262G038	11	○	6.1/F	10.6/F
3/8	1/8	.35	160	150	90	65	60	60	180	120	8263G002	3	○	8263G330	3	○	6.1/F	10.6/F
3/8	5/32	.52	100	100	100	35	35	35	180	150	8263G200	5	○	8263G331	5	○	10.1/F	11.6/F
3/8	7/32	.72	100	100	100	25	25	25	180	150	8263G206	5	○	8263G332	5	○	17.1/F	11.6/F
3/8	9/32	.85	100	100	70	-	-	-	180	-	8263G210	7	○	8263G333	7	○	17.1/F	-
NORMALLY OPEN (Open when de-energized), NBR Disc (except where noted)																		
1/8	1/16	.09	500	300	225	400	250	150	180	120	8262G091	8	●	8262G092	8	●	6.1/F	10.6/F
1/8	3/32	.15	275	200	150	190	110	110	180	120	8262G093	8	●	8262G094	8	●	6.1/F	10.6/F
1/8	1/8	.21	125	100	85	80	60	50	180	120	8262G031	8	●	8262G035	8	●	6.1/F	10.6/F
1/4	3/64	.06	750	700	700	500	500	500	140	140	8262G260 ①	9	●	8262G130 ①	14	●	10.1/F	11.6/F
1/4	3/32	.17	300	250	230	200	150	125	140	140	8262G261 ①	9	●	8262G134 ①	14	●	10.1/F	11.6/F
1/4	1/8	.35	130	110	100	80	60	60	180	150	8262G262	9	●	8262G138	14	●	10.1/F	11.6/F
1/4	5/32	.49	85	75	60	45	30	30	180	150	8262G263	4	●	8262G142	14	●	10.1/F	11.6/F
1/4	7/32	.83	45	45	40	25	20	20	180	150	8262G264	4	●	8262G148	14	●	10.1/F	11.6/F
1/4	9/32	.96	30	25	20	15	15	15	180	150	8262G265	4	●	8262G152	14	●	10.1/F	11.6/F

① Cast UR disc supplied as standard.
 ② On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ③ ○ Safety Shutoff Valve; ● General Purpose Valve. Refer to Engineering Section (Approvals) for details.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m ³ /h)	Operating Pressure Differential (bar)						Max. Fluid Temp. °C		Brass Body			Stainless Steel Body			Watt Rating/ Class of Coil Insulation ②	
			Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	UL ③ Listing	Catalog Number	Const. Ref.	UL ③ Listing	AC	DC
			Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Air-Inert Gas	Water	Lt. Oil @ 300 SSU										
NORMALLY CLOSED (Closed when de-energized), NBR Disc																		
1/8	1.2	.05	52	52	37	45	44	38	82	49	8262G001	1	○	8262G012	1	○	6.1/F	10.6/F
1/8	2.4	.17	19	20	9	10	10	10	82	49	8262G014	1	○	8262G015	1	○	6.1/F	10.6/F
1/8	3.2	.29	11	12	10	6	6	6	82	49	8262G002	1	○	8262G006	1	○	6.1/F	10.6/F
1/4	1.2	.05	52	52	34	34	34	34	82	49	8262G019	16	○	8262G080	11	○	6.1/F	10.6/F
1/4	1.2	.05	103	103	76	33	33	31	60	60	8262G200 ①	17	●	-	-	-	10.1/F	11.6/F
1/4	1.2	.05	152	138	76	-	-	-	60	60	-	-	-	8262G214 ①	12	●	10.1/F	-
1/4	2.4	.15	25	23	11	10	9	9	82	49	8262G020	16	○	8262G086	11	○	6.1/F	10.6/F
1/4	2.4	.15	34	34	19	-	-	-	82	-	8262G021	16	○	-	-	-	9.1/F	-
1/4	3.2	.30	10	11	6	4	4	4	82	49	8262G022	16	○	8262G007	11	○	6.1/F	10.6/F
1/4	3.2	.30	21	21	14	5	5	5	82	65	8262G232	17	○	-	-	-	10.1/F	11.6/F
1/4	4.0	.43	12	14	10	3	3	3	82	65	8262G202	4	○	8262G220	12	○	10.1/F	11.6/F
1/4	5.6	.62	6	7	7	2	2	2	82	65	8262G208	4	○	8262G226	12	○	10.1/F	11.6/F
1/4	5.6	.73	3	3	3	1	1	1	82	49	8262G013	2	○	8262G036	11	○	6.1/F	10.6/F
1/4	7.1	.75	4	5	4	1	1	1	82	65	8262G210	4	○	-	-	-	10.1/F	11.6/F
1/4	7.1	.75	6	7	6	2	1	2	82	65	8262G212	6	○	8262G230	13	○	17.1/F	22.6/F
1/4	7.1	.82	2	2	2	1	1	1	82	49	8262G090	2	○	8262G038	11	○	6.1/F	10.6/F
3/8	3.3	.30	11	10	6	4	4	4	82	49	8263G002	3	○	8263G330	3	○	6.1/F	10.6/F
3/8	4.0	.45	7	7	7	2	2	2	82	65	8263G200	5	○	8263G331	5	○	10.1/F	11.6/F
3/8	5.6	.62	7	7	7	2	2	2	82	65	8263G206	5	○	8263G332	5	○	17.1/F	11.6/F
3/8	7.1	.73	7	7	5	-	-	-	82	-	8263G210	7	○	8263G333	7	○	17.1/F	-
NORMALLY OPEN (Open when de-energized), NBR Disc (except where noted)																		
1/8	1.6	.08	34	21	16	28	17	10	82	49	8262G091	8	●	8262G092	8	●	6.1/F	10.6/F
1/8	2.4	.13	19	14	10	13	8	8	82	49	8262G093	8	●	8262G094	8	●	6.1/F	10.6/F
1/8	3.2	.18	9	7	6	6	4	3	82	49	8262G031	8	●	8262G035	8	●	6.1/F	10.6/F
1/4	1.2	.05	52	48	48	34	34	34	60	60	8262G260 ①	9	●	8262G130 ①	14	●	10.1/F	11.6/F
1/4	2.4	.15	21	17	16	14	10	9	60	60	8262G261 ①	9	●	8262G134 ①	14	●	10.1/F	11.6/F
1/4	3.2	.30	9	8	7	6	4	4	82	65	8262G262	9	●	8262G138	14	●	10.1/F	11.6/F
1/4	4.0	.42	6	5	4	3	2	2	82	65	8262G263	4	●	8262G142	14	●	10.1/F	11.6/F
1/4	5.6	.71	3	3	3	2	1	1	82	65	8262G264	4	●	8262G148	14	●	10.1/F	11.6/F
1/4	7.1	.82	2	2	1	1	1	1	82	65	8262G265	4	●	8262G152	14	●	10.1/F	11.6/F

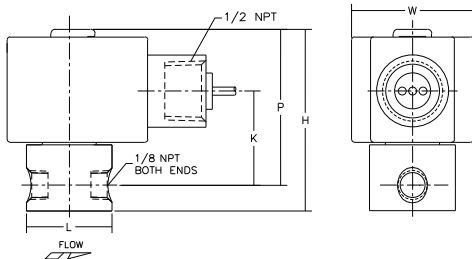
① Cast UR disc supplied as standard.
 ② On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ③ ○ Safety Shutoff Valve; ● General Purpose Valve. Refer to Engineering Section (Approvals) for details.

Dimensions: inches (mm)

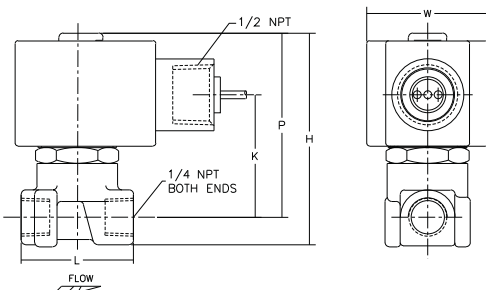
Const. Ref.		H	K	L	P	W
1	ins.	2.52	1.30	1.19	2.16	1.69
	mm	64	33	30	55	43
2	ins.	2.98	1.71	1.56	2.57	1.69
	mm	76	43	40	65	43
3	ins.	3.07	1.63	1.88	2.49	1.69
	mm	78	41	48	63	43
4	ins.	3.20	1.78	1.56	2.79	1.95
	mm	81	45	40	71	50
5	ins.	3.25	1.70	2.00	2.77	1.95
	mm	83	43	51	70	50
6	ins.	3.16	1.78	1.56	2.75	1.95
	mm	80	45	40	70	50
7	ins.	3.25	1.70	2.00	2.67	1.95
	mm	83	43	51	68	50
8	ins.	3.15	1.32	1.19	2.18	1.69
	mm	80	34	30	55	43
9	ins.	3.23	1.67	1.25	2.81	1.95
	mm	82	42	32	71	50
11	ins.	2.94	1.71	1.56	2.57	1.69
	mm	75	43	40	65	43
12	ins.	3.12	1.78	1.56	2.75	1.95
	mm	79	45	40	70	50
13	ins.	3.12	1.78	1.56	2.75	1.95
	mm	79	45	40	70	50
14	ins.	3.16	1.65	1.56	2.79	1.95
	mm	80	42	40	71	50
16	ins.	3.01	1.73	1.25	2.59	1.69
	mm	76	44	32	66	43
17	ins.	3.19	1.80	1.25	2.77	1.95
	mm	81	46	32	70	50

IMPORTANT: Valves may be mounted in any position.

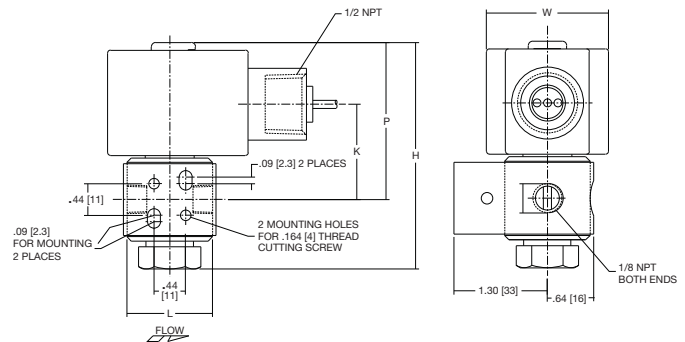
Const. Ref. 1



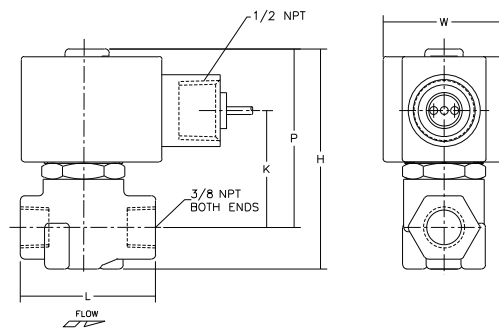
Const. Ref. 2, 4, 6, 9



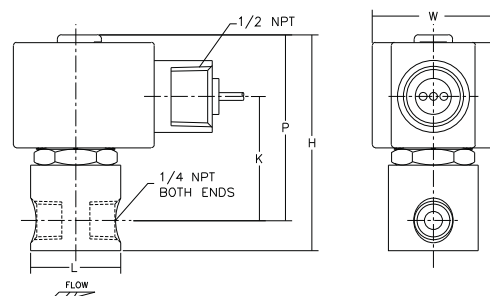
Const. Refs. 8



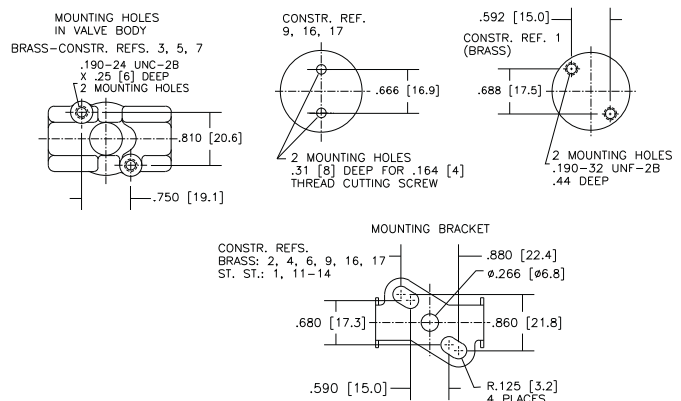
Const. Ref. 3, 5, 7



Const. Ref. 11-14, 16, 17



Mounting Details



Three-way valves have three pipe connections and two orifices. When one orifice is open, the other is closed, and vice versa. They are commonly used to alternately apply pressure to and exhaust pressure from a valve actuator or a single-acting cylinder.

Three Types of Operations Apply

Normally Closed (NC)

When the valve is de-energized, the pressure port is closed and the exhaust port is connected to the cylinder port. When the valve is energized, the exhaust port is closed and the pressure port is connected to the cylinder port.

Normally Open (NO)

When the valve is de-energized, the pressure port is connected to the cylinder port and the exhaust port is closed. When the valve is energized, the pressure port is closed and the cylinder port is connected to the exhaust port.

Universal (Univ)

This allows the valve to be connected in either the Normally Closed or Normally Open position... or to select one of two fluids or to divert flow from one port to another.

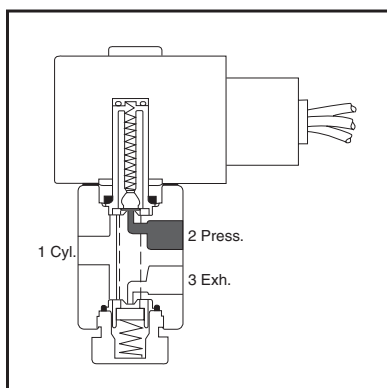
See *Engineering Section* for further details.

Standard and Optional Features

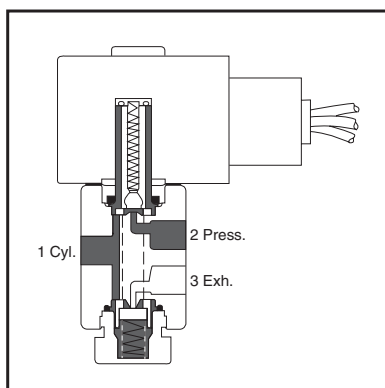
Solenoid valves are supplied, as listed, with either RedHat II molded epoxy solenoids or RedHat solenoids with metal enclosures. RedHat II valves are identified by the letter "G" or "H" in their catalog numbers; e.g., 8320G001. Many optional features may be added to your valves; e.g. high-temperature Class H molded coils and manual operators.

See the *Optional Features Section* for details.

3-Way/2 Position NC Valves Flow Diagrams



De-Energized



Energized

Index

Series	General Description	Pipe Size (NPT)	Page
8300/8315	General Service	1/8" - 1/2"	35
8314	General Service	1/8" - 1/4"	39
8316	Air and Water	3/8" - 1"	43
8316	Zero Minimum	1/4" - 1/2"	47
8317/8321	Quick Exhaust	1/4" and 3/8"	49
8320	General Service	1/8" - 1/4"	53
8327	High Flow Direct Acting	1/4"	57
8356	Subminiature	1/8"	59
8360	Plastic Body	1/4"	63
8551/8553	Inline Spool Valve	1/4" and 1/2"	65
8551/8553	RedHat II Spool Valve	1/4" and 1/2"	67

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www.ascovalve.com



Features

- Designed for high flow and high pressure service
- Direct acting, requires no minimum operating pressure
- Choice of metal seating materials to handle aggressive fluids, or resilient seating for airtight shutoff
- Ideal for power plants and similar applications

Construction

Valve Parts in Contact with Fluids		
Body	Brass	304 Stainless Steel
Disc	303 Stainless Steel (Metal), PA, or Brass (Resilient)	
Seats	NBR, Phosphor Bronze	303 Stainless Steel
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel, 17-7PH, or Inconel	
Shading Coil	Copper	Silver
Gaskets	NBR	PTFE

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	-	20.1	43	240	272610	-	272614	-
H	36.2	28	60	330	222345	222184	222345	222184
H	-	16.1	35	180	272810	-	272814	-
H	-	28.2	50	385	224195	-	224195	-

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.

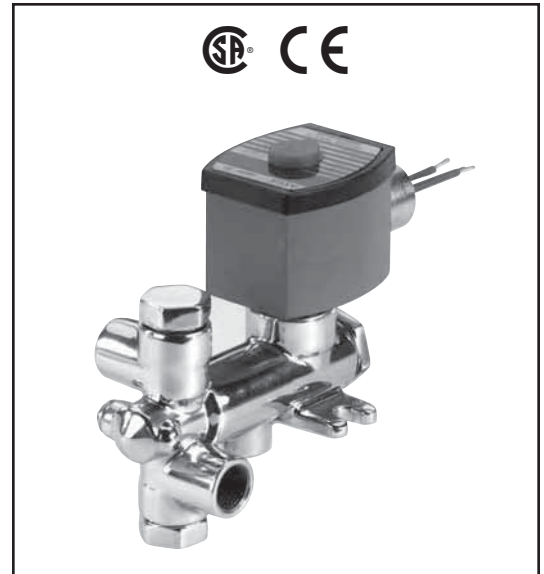
Note: 125 and 250 volts DC are battery voltages applied in power plants. Special AC and DC constructions are available to pilot power plant control valves. Consult your local ASCO sales office for details.

Solenoid Enclosures

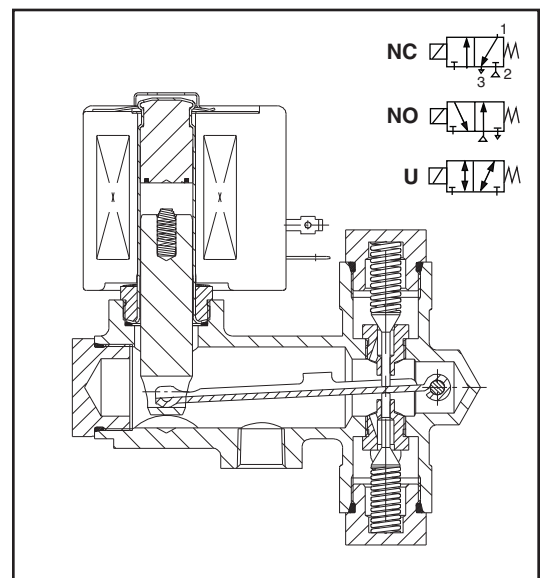
Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9. See footnote on next page. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



3-WAY



Nominal Ambient Temp. Ranges:

Class F Coils AC: 32°F to 125°F (0°C to 52°C)

Class H Coils AC: 32°F to 140°F (0°C to 59°C)

Class H Coils DC: 32°F to 77°F (0°C to 25°C)

(104°F/40°C occasionally)

Refer to *Engineering Section* for details.

Approvals

CSA certified (8300 Series only).

Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)				Max. Fluid Temp. °F		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation	
			Air-Inert Gas, Water, Lt. Oil						Catalog Number	Const. Ref.	Catalog Number	Const. Ref.		
			Max. AC		Max. DC		Add Suffix "F" for NC, "G" for NO, "U" for Univ. ①							
			NC/NO	Univ.	NC/NO	Univ.	AC	DC					AC	DC
METAL SEATS AND DISCS														
1/8	1/8	.13	-	-	250	125	-	180	8300D055	1	-	-	-	36.2/H
1/8	1/8	.13	550	300	-	-	200	-	8300G055	1	-	-	20.1/F	-
1/8	3/16	.35	-	-	125	60	-	180	8300D003	1	-	-	-	36.2/H
1/8	3/16	.35	250	150	-	-	200	-	8300G003	1	-	-	20.1/F	-
1/4	3/16	.35	-	-	125	60	-	180	8300D058	1	-	-	-	36.2/H
1/4	3/16	.35	250	150	-	-	200	-	8300G058	1	-	-	20.1/F	-
1/4	1/4	.45	-	-	75	35	-	180	8300A081	1	-	-	-	36.2/H
1/4	1/4	.45	190	90	-	-	200	-	8300G081	1	-	-	20.1/F	-
1/4	1/4	.45	250	120	-	-	200	-	8300D061 ②	1	-	-	28/H	-
3/8	1/4	.45	-	-	50	25	-	180	-	-	8300B410	2	-	36.2/H
3/8	1/4	.45	150	75	-	-	200	-	-	-	8300G410	2	20.1/F	-
3/8	1/4	.45	-	-	75	35	-	180	8300A082	1	-	-	-	36.2/H
3/8	1/4	.45	190	90	-	-	200	-	8300G082	1	-	-	20.1/F	-
3/8	1/4	.45	250	120	-	-	200	-	8300D009 ②	1	-	-	28/H	-
3/8	1/4	.45	175	85	-	-	200	-	-	-	8300B411 ②	2	28/H	-
3/8	5/16	.75	-	-	40	20	-	180	8300D064	2	8300B412	2	-	36.2/H
3/8	5/16	.75	120	60	-	-	200	-	8300G064	2	8300G412	2	20.1/F	-
3/8	3/8	1.00	-	-	30	15	-	180	8300D072	2	8300B413	2	-	36.2/H
3/8	3/8	1.00	75	35	-	-	200	-	8300G072	2	8300G413	2	20.1/F	-
1/2	5/16	.75	-	-	40	20	-	180	8300D068	2	8300B403	3	-	36.2/H
1/2	5/16	.75	120	60	-	-	200	-	8300G068	2	8300G403	3	20.1/F	-
1/2	3/8	1.00	-	-	30	15	-	180	8300D076	2	8300B404	3	-	36.2/H
1/2	3/8	1.00	75	35	-	-	200	-	8300G076	2	8300G404	3	20.1/F	-
NBR SEATS AND BRASS DISCS														
1/4	3/16	.25	-	-	125	60	-	180	8300D058R	1	-	-	-	36.2/H
1/4	3/16	.25	250	150	-	-	180	-	8300G058R	1	-	-	20.1/F	-
1/4	1/4	.39	-	-	75	35	-	180	8300A081R	1	-	-	-	36.2/H
1/4	1/4	.39	150	75	-	-	180	-	8300G081R	1	-	-	20.1/F	-
3/8	1/4	.39	-	-	75	35	-	180	8300A082R	1	-	-	-	36.2/H
3/8	1/4	.39	150	75	-	-	180	-	8300G082R	1	-	-	20.1/F	-
3/8	5/16	.53	-	-	40	20	-	180	8300D064R	2	-	-	-	36.2/H
3/8	5/16	.53	120	60	-	-	180	-	8300G064R	2	-	-	20.1/F	-
1/2	5/16	.53	-	-	40	20	-	180	8300D068R	2	-	-	-	36.2/H
1/2	5/16	.53	120	60	-	-	180	-	8300G068R	2	-	-	20.1/F	-
PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY														
1/4	1/4	.45	100	50	-	-	344	-	8315G002	1	-	-	16.1/H	-
3/8	1/4	.45	100	50	-	-	344	-	8315G003	1	-	-	16.1/H	-
3/8	5/16	.75	100	50	-	-	344	-	8315 034	4	-	-	28.2/H	-
1/2	5/16	.75	100	50	-	-	344	-	8315 035	4	-	-	28.2/H	-

① NC = Normally Closed: Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port.
 ② "EF" Prefix variations are suitable for enclosures Types 3, 4, 7 (C&D), and 9 (E) only and have a temperature range code T3A. Refer to Engineering Section for details.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)				Max. Fluid Temp. °C		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation	
			Air-Inert Gas, Water, Lt. Oil						Add Suffix "F" for NC, "G" for NO, "U" for Univ. ①					
			Max. AC		Max. DC									
			NC/NO	Univ.	NC/NO	Univ.	AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC
METAL SEATS AND DISCS														
1/8	3	.11	-	-	17	9	-	82	8300D055	1	-	-	-	36.2/H
1/8	3	.11	38	21	-	-	93	-	8300G055	1	-	-	20.1/F	-
1/8	5	.30	-	-	9	4	-	82	8300D003	1	-	-	-	36.2/H
1/8	5	.30	17	10	-	-	93	-	8300G003	1	-	-	20.1/F	-
1/4	5	.30	-	-	9	4	-	82	8300D058	1	-	-	-	36.2/H
1/4	5	.30	17	10	-	-	93	-	8300G058	1	-	-	20.1/F	-
1/4	6	.39	-	-	5	2	-	82	8300A081	1	-	-	-	36.2/H
1/4	6	.39	13	6	-	-	93	-	8300G081	1	-	-	20.1/F	-
1/4	6	.39	17	8	-	-	93	-	8300D061 ②	1	-	-	28/H	-
3/8	6	.39	-	-	3	2	-	82	-	-	8300B410	2	-	36.2/H
3/8	6	.39	10	5	-	-	93	-	-	-	8300G410	2	20.1/F	-
3/8	6	.39	-	-	5	2	-	82	8300A082	1	-	-	-	36.2/H
3/8	6	.39	13	6	-	-	93	-	8300G082	1	-	-	20.1/F	-
3/8	6	.39	17	8	-	-	93	-	8300D009 ②	1	-	-	28/H	-
3/8	6	.39	12	6	-	-	93	-	-	-	8300B411 ②	2	28/H	-
3/8	8	.64	-	-	3	1	-	82	8300D064	2	8300B412	2	-	36.2/H
3/8	8	.64	8	4	-	-	93	-	8300G064	2	8300G412	2	20.1/F	-
3/8	10	.86	-	-	2	1	-	82	8300D072	2	8300B413	2	-	36.2/H
3/8	10	.86	5	2	-	-	93	-	8300G072	2	8300G413	2	20.1/F	-
1/2	8	.64	-	-	3	1	-	82	8300D068	2	8300B403	3	-	36.2/H
1/2	8	.64	8	4	-	-	93	-	8300G068	2	8300G403	3	20.1/F	-
1/2	10	.86	-	-	2	1	-	82	8300D076	2	8300B404	3	-	36.2/H
1/2	10	.86	5	2	-	-	93	-	8300G076	2	8300G404	3	20.1/F	-
NBR SEATS AND BRASS DISCS														
1/4	5	.21	-	-	9	4	-	82	8300D058R	1	-	-	-	36.2/H
1/4	5	.21	17	10	-	-	82	-	8300G058R	1	-	-	20.1/F	-
1/4	6	.33	-	-	5	2	-	82	8300A081R	1	-	-	-	36.2/H
1/4	6	.33	10	5	-	-	82	-	8300G081R	1	-	-	20.1/F	-
3/8	6	.33	-	-	5	2	-	82	8300A082R	1	-	-	-	36.2/H
3/8	6	.33	10	5	-	-	82	-	8300G082R	1	-	-	20.1/F	-
3/8	8	.45	-	-	3	1	-	82	8300D064R	2	-	-	-	36.2/H
3/8	8	.45	8	4	-	-	82	-	8300G064R	2	-	-	20.1/F	-
1/2	8	.45	-	-	3	1	-	82	8300D068R	2	-	-	-	36.2/H
1/2	8	.45	8	4	-	-	82	-	8300G068R	2	-	-	20.1/F	-
PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY														
1/4	.5	.39	7	3	-	-	173	-	8315G002	1	-	-	16.1/H	-
3/8	.5	.39	7	3	-	-	173	-	8315G003	1	-	-	16.1/H	-
3/8	.6	.64	7	3	-	-	173	-	8315 034	4	-	-	28.2/H	-
1/2	.6	.64	7	3	-	-	173	-	8315 035	4	-	-	28.2/H	-

① NC = Normally Closed; Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port.
 ② "EF" Prefix variations are suitable for enclosures Types 3, 4, 7 (C&D), and 9 (E) only and have a temperature range code T3A. Refer to Engineering Section for details.

3-WAY

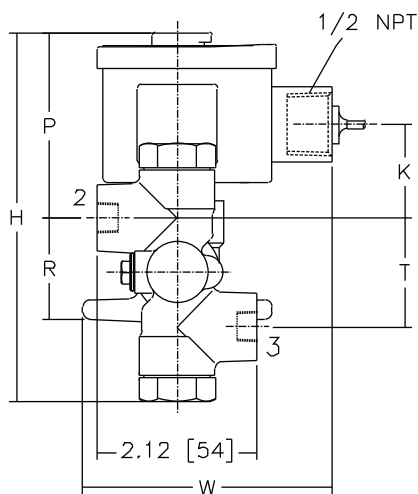
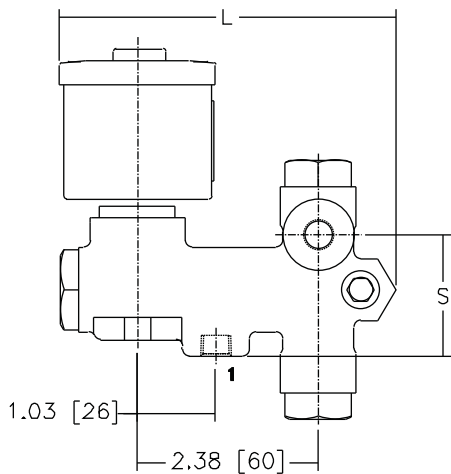


Dimensions: inches (mm)

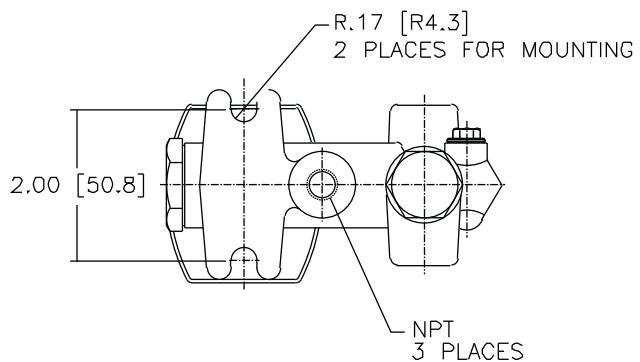
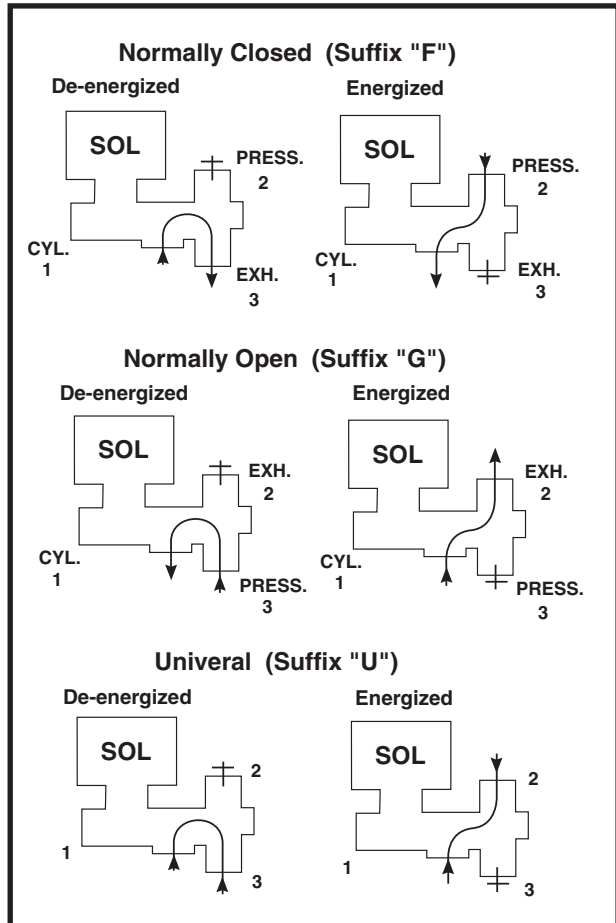
Const. Ref.		H	K	L	P	R	S	W	T
1	ins.	4.89	1.44	4.44	2.46	1.34	1.60	3.30	1.44
	mm	124	37	113	62	34	40	84	37
2	ins.	5.91	1.88	4.44	2.37	1.66	2.00	3.30	1.88
	mm	150	48	113	60	42	51	84	48
3	ins.	5.90	1.88	4.62	2.37	1.66	2.00	3.55	1.88
	mm	150	48	117	60	42	51	90	48
4	ins.	4.89	1.44	4.44	2.46	1.34	1.60	3.30	1.44
	mm	124	37	113	62	34	40	84	37

IMPORTANT: Valves must be mounted vertical and upright.

Const. Ref. 1, 2, 3, 4



Flow Diagrams



Features

- No minimum operating pressure required
- The original 3-way valve design
- High-speed general service
- Simplest valve for basic 3-way piloting operation, only a spring and two moving parts
- Moderate flow pilots, smaller control valves and actuators
- Can also be used for low-volume fluid diversion

Construction

Valve Parts in Contact with Fluids		
Body	Brass	303 Stainless Steel
Seals and Disc	NBR, PA	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel and 17-7PH Stainless Steel	
Shading Coil	Copper	Silver
Core Guide	CA (All AC valves and 1/8" orifice Normally Open DC valves)	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

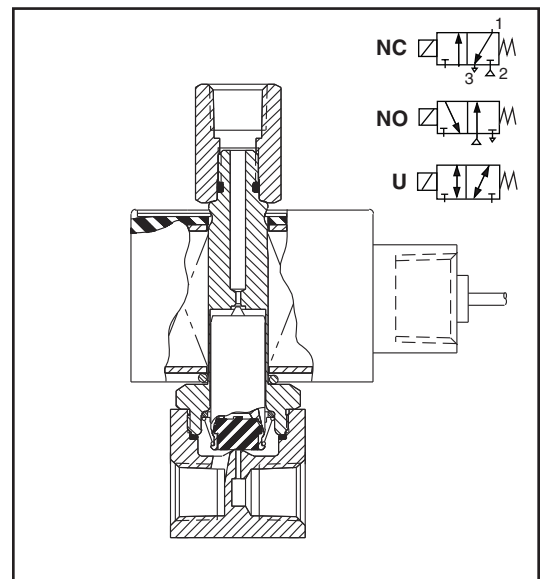
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



3-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation	
			Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC
			Air-Inert Gas	Water	Lt. Oil @ 45 SSU	Air-Inert Gas	Water	Lt. Oil @ 45 SSU								
UNIVERSAL OPERATION (Pressure at any port)																
1/8	3/64	.04	160	160	160	70	65	65	200	104	8314G041	1	-	-	10.1/F	11.6/F
1/4	3/64	.04	160	160	160	70	65	65	200	104	8314G006	2	-	-	10.1/F	11.6/F
1/4	3/32	.15	80	40	40	35	35	15	200	104	8314G007	2	8314G120 ①	4	10.1/F	11.6/F
1/4	1/8	.25	45	25	25	20	15	15	200	104	8314G008	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																
1/8	3/64	.04	230	230	230	120	140	135	200	104	8314G031	1	-	-	10.1/F	11.6/F
1/4	3/64	.04	230	230	230	120	140	135	200	104	8314G034	2	-	-	10.1/F	11.6/F
1/4	3/32	.15	150	100	100	60	70	30	200	104	8314G035	2	8314G121 ①	4	10.1/F	11.6/F
1/4	1/8	.25	75	60	60	30	40	25	200	104	8314G036	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized), Air Only - Exhausts to Atmosphere																
1/4	3/64	.04	230	-	-	120	-	-	200	104	8314G022	3	-	-	10.1/F	11.6/F
1/4	3/32	.15	150	-	-	60	-	-	200	104	8314G023	3	-	-	10.1/F	11.6/F
NORMALLY OPEN (Open when de-energized)																
1/8	3/64	.04	300	300	300	200	200	120	200	104	8314G049	1	-	-	10.1/F	11.6/F
1/4	3/32	.15	175	175	175	70	90	45	200	104	8314G053	2	8314G122 ①	4	10.1/F	11.6/F
1/4	1/8	.25	90	90	90	40	40	25	200	104	8314G054	2	-	-	10.1/F	11.6/F

① Can be used for **dry** natural gas service with the EF prefix.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)						Max. Fluid Temp. °C		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation	
			Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC
			Air-Inert Gas	Water	Lt. Oil @ 45 SSU	Air-Inert Gas	Water	Lt. Oil @ 45 SSU								
UNIVERSAL OPERATION (Pressure at any port)																
1/8	1	.03	11	11	11	5	4	4	93	40	8314G041	1	-	-	10.1/F	11.6/F
1/4	1	.03	11	11	11	5	4	4	93	40	8314G006	2	-	-	10.1/F	11.6/F
1/4	2	.13	6	3	3	2	2	1	93	40	8314G007	2	8314G120 ①	4	10.1/F	11.6/F
1/4	3	.21	3	2	2	1	1	1	93	40	8314G008	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																
1/8	1	.03	16	16	16	8	10	9	93	40	8314G031	1	-	-	10.1/F	11.6/F
1/4	1	.03	16	16	16	8	10	9	93	40	8314G034	2	-	-	10.1/F	11.6/F
1/4	2	.13	10	7	7	4	5	2	93	40	8314G035	2	8314G121 ①	4	10.1/F	11.6/F
1/4	3	.21	5	4	4	2	3	2	93	40	8314G036	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized), Air Only - Exhausts to Atmosphere																
1/4	1	.03	16	-	-	8	-	-	93	40	8314G022	3	-	-	10.1/F	11.6/F
1/4	2	.13	10	-	-	4	-	-	93	40	8314G023	3	-	-	10.1/F	11.6/F
NORMALLY OPEN (Open when de-energized)																
1/8	1	.03	21	21	21	14	14	8	93	40	8314G049	1	-	-	10.1/F	11.6/F
1/4	2	.13	12	12	12	5	6	3	93	40	8314G053	2	8314G122 ①	4	10.1/F	11.6/F
1/4	3	.21	6	6	6	3	3	2	93	40	8314G054	2	-	-	10.1/F	11.6/F

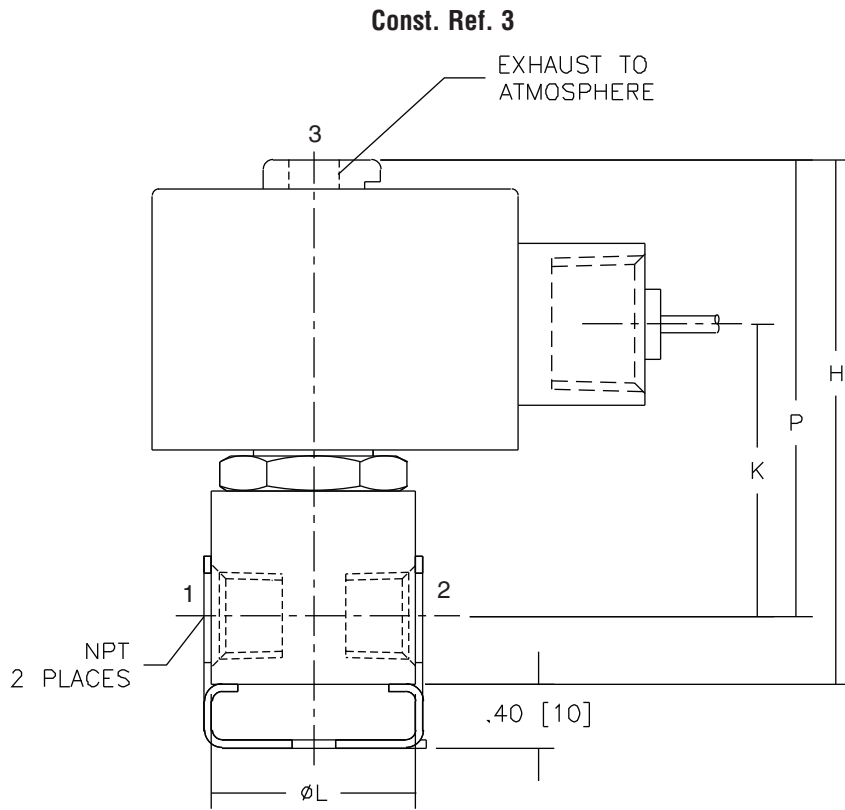
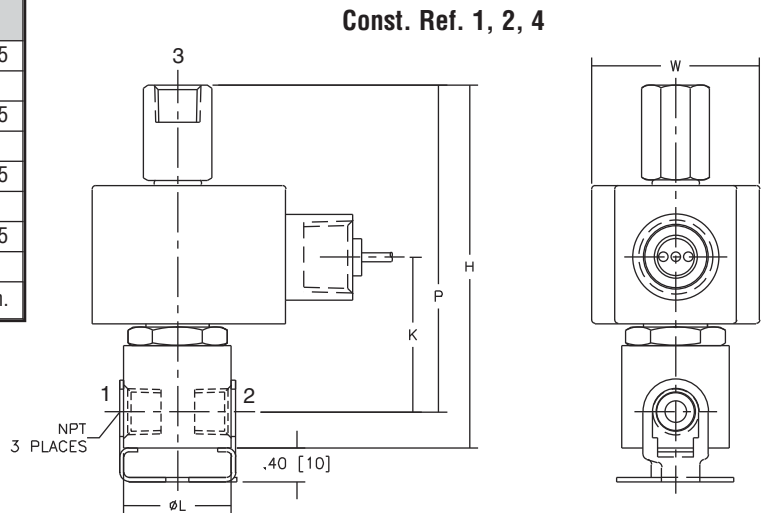
① Can be used for **dry** natural gas service with the EF prefix.

Dimensions: inches (mm)

3-WAY

Const. Ref.		H	K	L	P	W
1	ins.	3.87	1.67	Ø1.19	3.51	1.95
	mm	98	42	Ø30	89	50
2	ins.	4.21	1.80	Ø1.25	3.79	1.95
	mm	107	46	Ø32	96	50
3	ins.	3.34	1.80	Ø1.25	2.92	1.95
	mm	85	46	Ø32	74	50
4	ins.	4.14	1.78	Ø1.63	3.77	1.95
	mm	105	45	Ø41	96	50

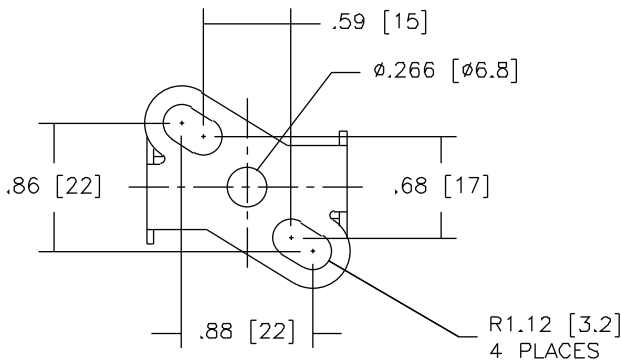
IMPORTANT: Valves can be mounted in any position.



Dimensions: inches (mm)

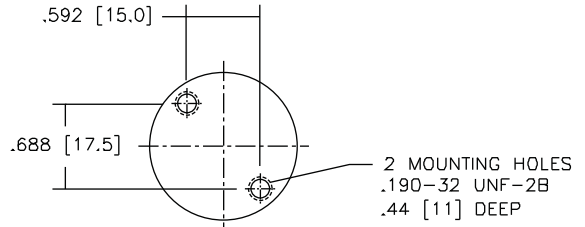
**Mounting Bracket Standard
1/4 NPT Size only**

Const. Ref. 2, 3, 4

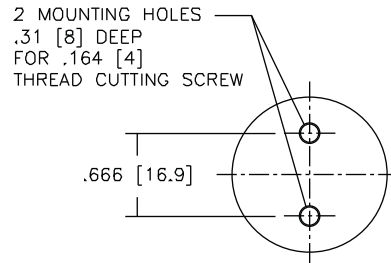


Mounting Holes in Valve Body

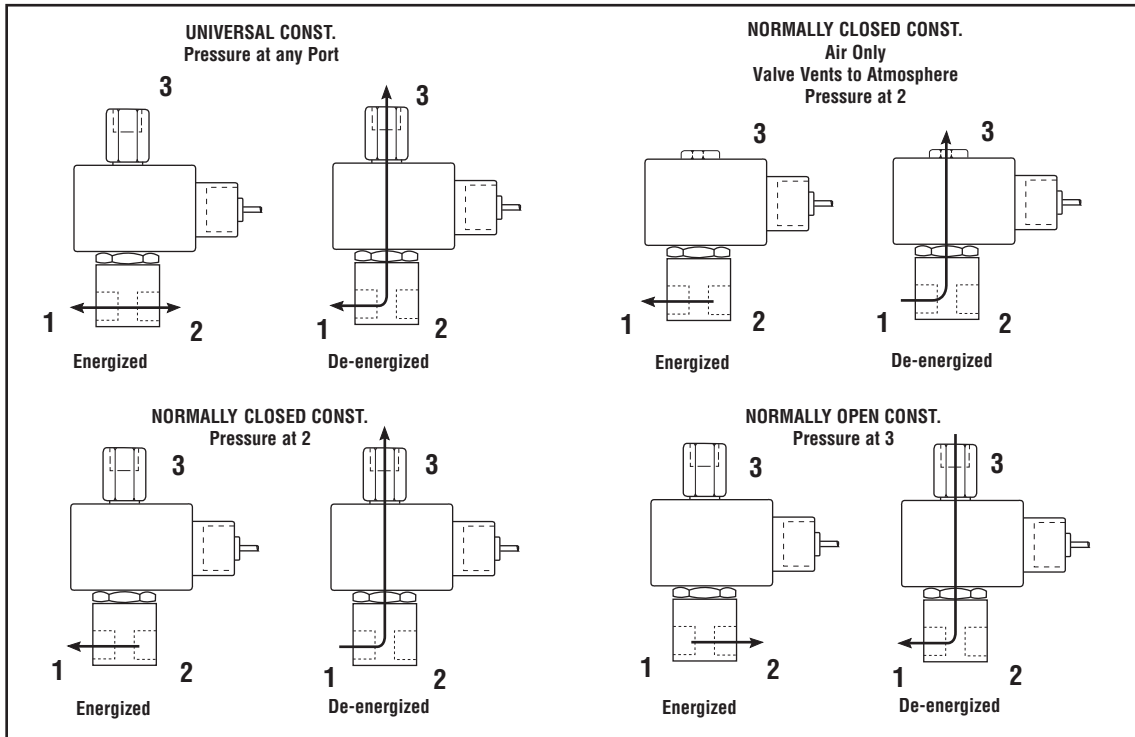
Const. Ref. 1



Const. Ref. 2, 3



FLOW DIAGRAMS



Features

- Diaphragm poppet valves suitable for controlling air, inert gas, and liquids
- Internal piloting controls large orifices to provide high flows
- Can be used to pilot large actuators to provide quick closing of large control valves
- Resilient seating for tight shutoff
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Diaphragm Assembly	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Springs	302 Stainless Steel and 17-7PH Stainless Steel
Shading Coil	Copper
Pilot Seat Cartridge and Disc-Holder	CA

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC Watts	VA Holding	VA Inrush	General Purpose		Explosionproof	
					AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	22.6	17.1	40	70	238610	238710	238614	238714

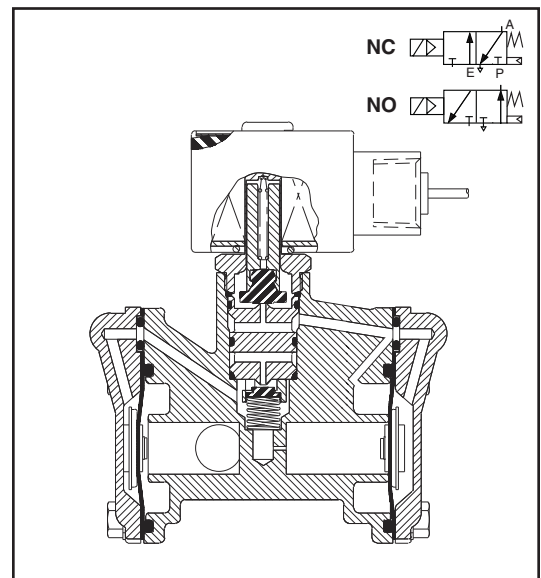
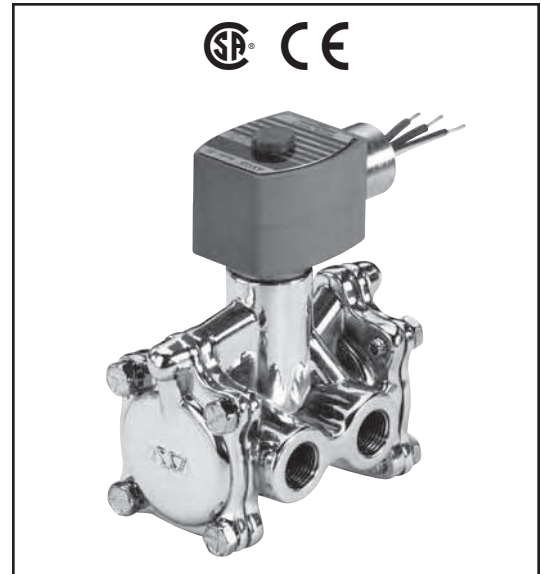
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets applicable CE directives.

Refer to *Engineering Section* for details.

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.

3-WAY

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)				Max. Fluid Temp. °F		Brass Body		Const. Ref.	Watt Rating/ Class of Coil Insulation ②	
			Min. ①	Max. AC		Max. DC		AC	DC	Catalog Number		AC	DC
				Air-Inert Gas	Water	Air-Inert Gas	Water						
NORMALLY CLOSED (Closed when de-energized)													
3/8	5/8	2.5	10	150	125	125	125	180	120	8316G054	1	6.1/F	10.6/F
3/8	5/8	2.5	10	250	250	250	250	180	120	8316G014	2	17.1/F	22.6/F
1/2	5/8	3.2	10	150	125	125	125	180	120	8316G064	1	6.1/F	10.6/F
1/2	5/8	3.2	10	250	250	250	250	180	120	8316G024	2	17.1/F	22.6/F
3/4	11/16	4.8	10	150	125	125	125	180	120	8316G074	3	6.1/F	10.6/F
3/4	11/16	4.8	10	250	250	250	250	180	120	8316G044	4	17.1/F	22.6/F
1	1	12.5	10	150	125	125	125	180	120	8316G034	5	6.1/F	10.6/F
NORMALLY OPEN (Open when de-energized)													
3/8	5/8	2.5	10	150	125	125	125	180	120	8316G056	1	6.1/F	10.6/F
3/8	5/8	2.5	10	250	250	250	250	180	120	8316G016	2	17.1/F	22.6/F
1/2	5/8	3.2	10	150	125	125	125	180	120	8316G066	1	6.1/F	10.6/F
1/2	5/8	3.2	10	250	250	250	250	180	120	8316G026	2	17.1/F	22.6/F
3/4	11/16	4.8	10	150	125	125	125	180	120	8316G076	3	6.1/F	10.6/F
3/4	11/16	4.8	10	250	250	250	250	180	120	8316G046	4	17.1/F	22.6/F
1	1	12.5	10	150	125	125	125	180	120	8316G036	5	6.1/F	10.6/F

① 10 psi Minimum Operating Pressure Differential required. Valve vents to "zero" psi.
 ② On 50 hertz service, the watt rating for 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

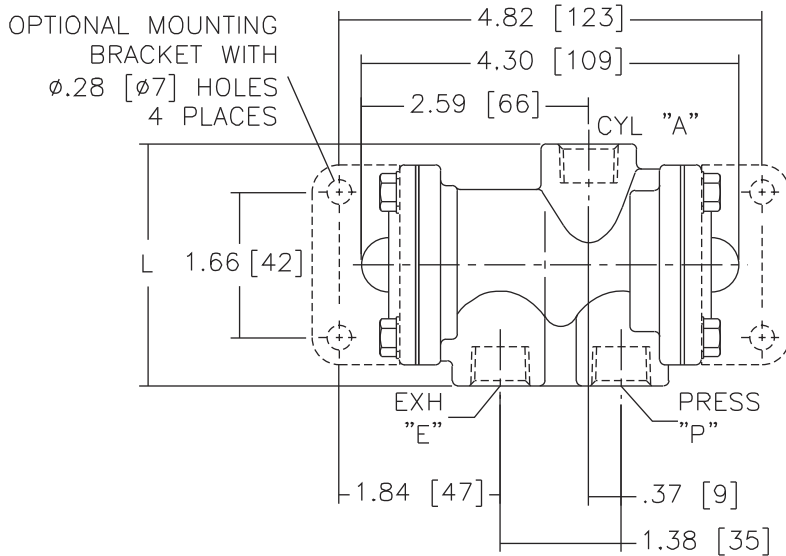
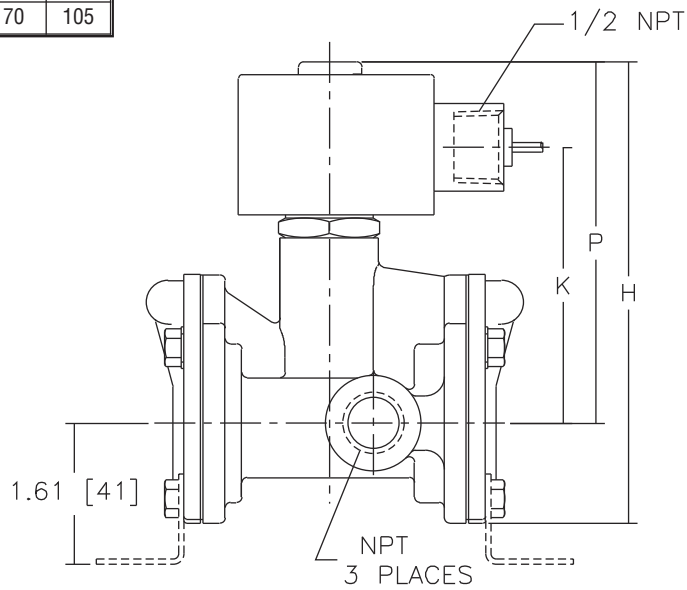
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)				Max. Fluid Temp. °C		Brass Body		Const. Ref.	Watt Rating/ Class of Coil Insulation ②	
			Min. ①	Max. AC		Max. DC		AC	DC	Catalog Number		AC	DC
				Air-Inert Gas	Water	Air-Inert Gas	Water						
NORMALLY CLOSED (Closed when de-energized)													
3/8	16	2.14	0.7	10	9	9	9	82	49	8316G054	1	6.1/F	10.6/F
3/8	16	2.14	0.7	17	17	17	17	82	49	8316G014	2	17.1/F	22.6/F
1/2	16	2.74	0.7	10	9	9	9	82	49	8316G064	1	6.1/F	10.6/F
1/2	16	2.74	0.7	17	17	17	17	82	49	8316G024	2	17.1/F	22.6/F
3/4	17	4.11	0.7	10	9	9	9	82	49	8316G074	3	6.1/F	10.6/F
3/4	17	4.11	0.7	17	17	17	17	82	49	8316G044	4	17.1/F	22.6/F
1	25	10.17	0.7	10	9	9	9	82	49	8316G034	5	6.1/F	10.6/F
NORMALLY OPEN (Open when de-energized)													
3/8	16	2.14	0.7	10	9	9	9	82	49	8316G056	1	6.1/F	10.6/F
3/8	16	2.14	0.7	17	17	17	17	82	49	8316G016	2	17.1/F	22.6/F
1/2	16	2.74	0.7	10	9	9	9	82	49	8316G066	1	6.1/F	10.6/F
1/2	16	2.74	0.7	17	17	17	17	82	49	8316G026	2	17.1/F	22.6/F
3/4	17	4.11	0.7	10	9	9	9	82	49	8316G076	3	6.1/F	10.6/F
3/4	17	4.11	0.7	17	17	17	17	82	49	8316G046	4	17.1/F	22.6/F
1	25	10.71	0.7	10	9	9	9	82	49	8316G036	5	6.1/F	10.6/F

① 1 bar Minimum Operating Pressure Differential required. Valve vents to "zero" bar.
 ② On 50 hertz service, the watt rating for 6.1/F solenoid is 8.1 watts.

Dimensions: inches (mm)

Const. Ref.		H	K	L	P
1	ins.	5.08	3.08	2.76	3.94
	mm	129	78	70	100
2	ins.	5.26	3.15	2.76	4.12
	mm	134	80	70	105

Const. Ref. 1,2

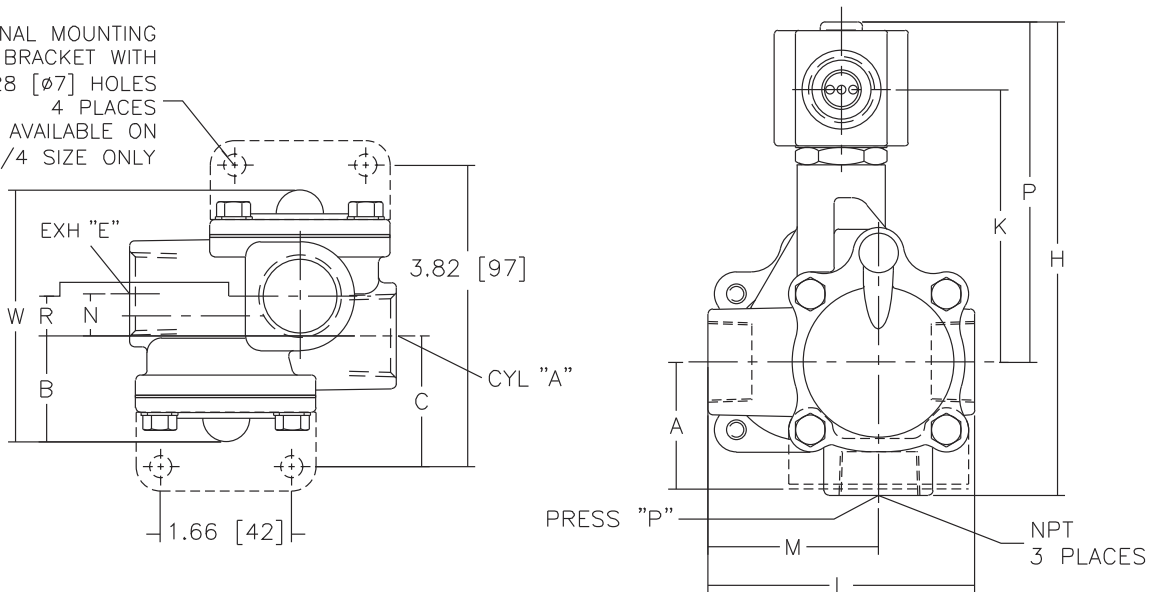


Dimensions: inches (mm)

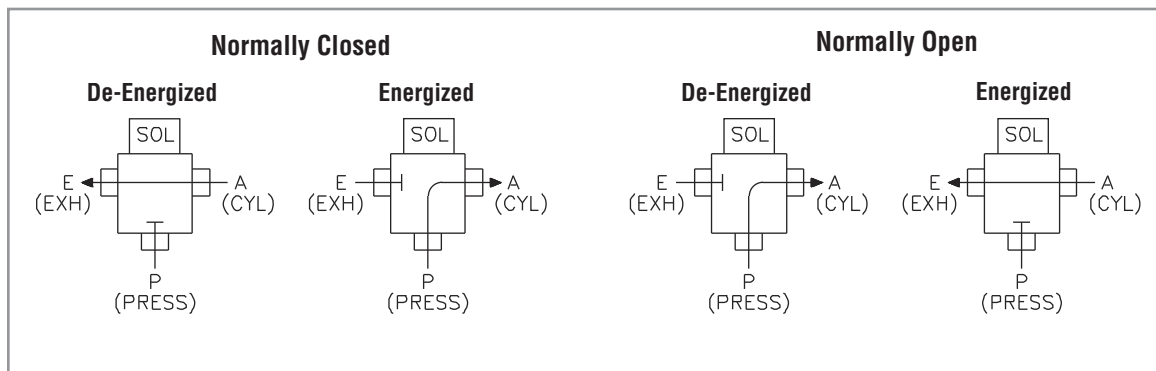
Const. Ref.		A	B	C	H	K	L	M	N	P	R	W
3	ins.	1.61	1.41	1.66	6.01	3.46	3.38	2.16	.53	4.32	.50	3.31
	mm	41	36	42	153	88	86	55	13	110	13	84
4	ins.	1.61	1.41	1.66	6.19	3.53	3.38	2.16	.53	4.50	.50	3.31
	mm	41	36	42	157	90	86	55	13	114	13	84
5	ins.	X	1.80	X	6.63	3.71	4.44	2.81	.88	4.57	1.74	5.32
	mm	X	46	X	168	94	113	71	22	116	44	135

Const. Ref. 3, 4, 5

OPTIONAL MOUNTING BRACKET WITH $\phi.28$ [$\phi 7$] HOLES 4 PLACES AVAILABLE ON 3/4 SIZE ONLY



FLOW DIAGRAMS



Features

- Brass body construction for general atmospheres; stainless steel for corrosive atmospheres
- Can be internally piloted, or externally piloted to convert valve to zero minimum operation by flipping a gasket
- When externally piloted, loss of electrical power or auxiliary air exhausts air from the actuator and shifts process valve to its original position
- When internally piloted, loss of electric power returns the valve to its original position
- Also available with Low Power or Intrinsically Safe solenoids. See *Special Service Valve Section*

Construction

Valve Parts in Contact with Fluids		
Body	Brass	316 Stainless Steel
End Plate	304 Stainless Steel	316 Stainless Steel
Seals and Discs	Low Temp NBR	FKM (Suffix V)
Core Tube	305 Stainless Steel	
Core Guide	CA	
Shading Coil	Copper	Silver

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number					
	DC Watts	AC			General Purpose		Explosionproof (EF)		Explosionproof (EV)	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	272614	238714	274614	274714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts, AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Brass Body Valves:

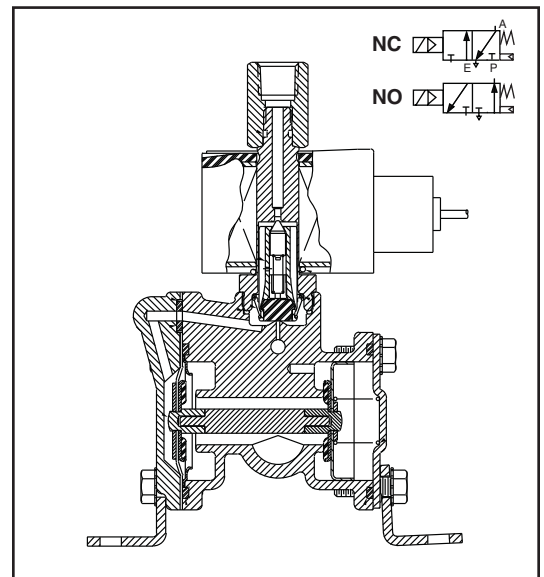
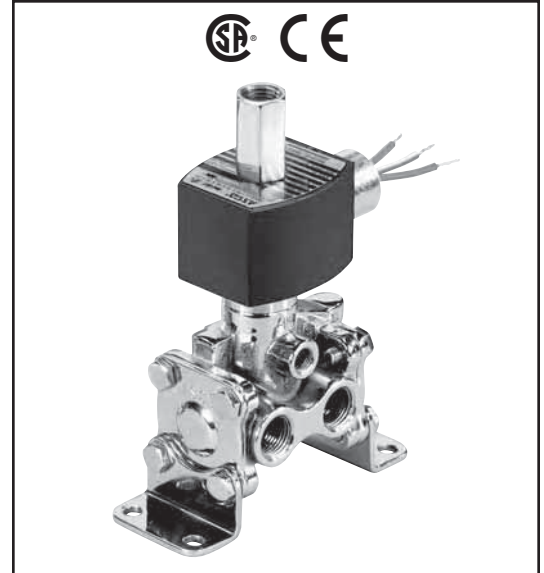
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (Add prefix "EF" to catalog number.)

Stainless Steel Valves:

Standard: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

Standard Construction:

AC: -4°F to 125°F (-20°C to 52°C)

DC: -4°F to 104°F (-20°C to 40°C)

-40°F on certain models (consult factory)

Suffix V Construction:

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Approvals

Valves with prefix "EF" or "EV"; UL approved and CSA certified solenoid. Meets applicable CE directives.

Installation

All valves may be mounted in any position.

316 Stainless Steel mounting brackets available from ASCO. Add suffix "MB".

3-WAY

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	CV Flow Factor	Min.	Max. Air Press.(psi)		Catalog Number		Const. Ref.	Max. Fluid Temp.°F		Watt Rating/ Class of Coil Insulation	
				AC	DC	Brass Body	Stainless Steel		AC	DC	AC	DC
NORMALLY CLOSED (Closed when de-energized) ①												
1/4	5/16	1.5	②	150	120	8316G001	EV8316G081V	1	180	120	10.1/F	11.6/F
3/8	5/16	1.5	②	150	120	8316G002	EV8316G082V	1	180	120	10.1/F	11.6/F
3/8	5/8	4	②	150	120	8316G003	-	3	180	120	10.1/F	11.6/F
1/2	5/8	4	②	150	120	8316G004	EV8316G084V	3	180	120	10.1/F	11.6/F

① Consult factory for Normally Open. ② Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See graph below for pilot line pressure vs. mainline pressure. Minimum 15 psi (1 bar) operating pressure differential when selection gasket is in the internal position.

IMPORTANT: Internal mode Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area and unrestricted. ASCO flow controls and similar components must be installed in the cylinder lines only.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Min.	Max. Air Press. (bar)		Catalog Number		Const. Ref.	Max. Fluid Temp.°C		Watt Rating/ Class of Coil Insulation	
				AC	DC	Brass Body	Stainless Steel		AC	DC	AC	DC
NORMALLY CLOSED (Closed when de-energized) ①												
1/4	8	1.29	②	10	8	8316G001	EV8316G081V	1	82	49	10.1/F	11.6/F
3/8	8	1.37	②	10	8	8316G002	EV8316G082V	1	82	49	10.1/F	11.6/F
3/8	16	3.43	②	10	8	8316G003	-	3	82	49	10.1/F	11.6/F
1/2	16	3.43	②	10	8	8316G004	EV8316G084V	3	82	49	10.1/F	11.6/F

Dimensions: inches (mm)

MAINLINE PRESSURE vs. PILOT LINE PRESSURE WHEN SELECTION GASKET IS IN EXTERNAL POSITION

Const. Ref. 1

Const. Ref. 3

INTERNAL PILOTING MODE FLOW DIAGRAMS

De-Energized	Energized

EXTERNAL PILOTING MODE FLOW DIAGRAMS

De-Energized with Auxiliary Pressure Applied	Energized with Auxiliary Pressure Applied

Features

- Designed for quick venting to 0 psi through the exhaust orifice
- Resilient seated poppets for tight shutoff
- Air is exhausted to quickly shift control valves
- Multi-industry applications
- Mountable in any position

Construction

Valve Parts in Contact with Fluids		
Body	Brass	304 Stainless Steel
Seals and Disc	NBR (PA upper disc for 8317 Series)	
Diaphragm	CR (8317 Series only)	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel and 17-7 PH Stainless Steel	
Shading Coil	Copper	Silver
Pilot Seat Cartridge and Disc-Holder	CA (8321 Series only)	
Piston	Brass and 303 Stainless Steel (8321 only)	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	11.6	10.1	25	50	238610	238710	238614	238714

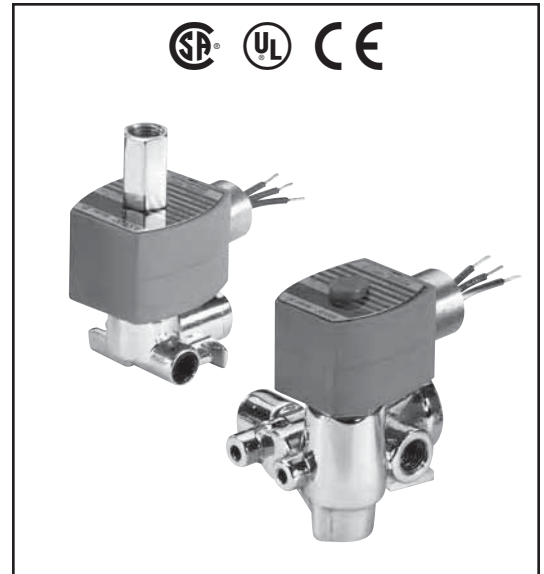
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

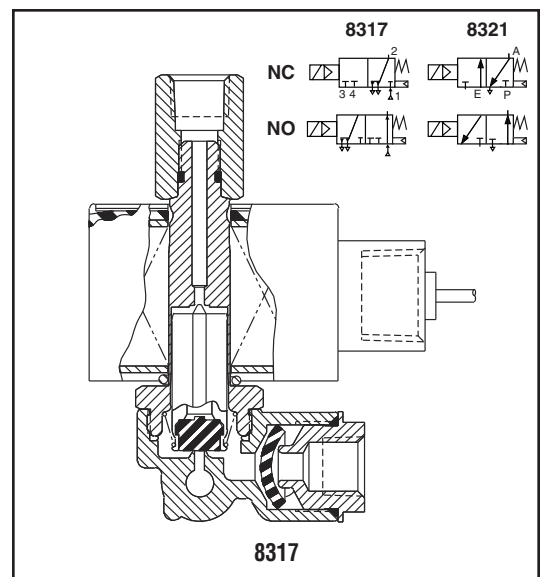
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to the catalog number.)

See *Optional Features Section* for other available options.



3-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

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.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)								Max. Fluid Temp. °F		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation ③	
	Press.	Exh.	Press.	Exh.	Min. ①	Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC	
						Air-Inert Gas	Water	Lt. Oil ① @45 SSU	Air-Inert Gas	Water	Lt. Oil ① @45 SSU									
NORMALLY CLOSED (Pressure at Port 2) / NORMALLY OPEN (Pressure at Port 3)																				
1/4	3/32	1/4	.20	.73	5 ②	80	50	50	40	30	15	180	104	8317G007	2	8317G008	4	10.1/F	11.6/F	
NORMALLY CLOSED (Closed when de-energized)																				
1/4	3/32	1/4	.20	.73	5 ②	150	150	95	75	55	30	180	104	8317G035	2	8317G036	4	10.1/F	11.6/F	
1/4	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G001	3	-	-	6.1/F	10.6/F	
3/8	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G002	3	-	-	6.1/F	10.6/F	
NORMALLY CLOSED (Closed when de-energized), Air Only - Vents to Atmosphere																				
1/4	3/32	1/4	.20	.73	5	150	-	-	-	-	-	180	-	8317G023	1	8317G024	5	10.1/F	-	
NORMALLY OPEN (Open when de-energized)																				
1/4	3/32	1/4	.15	.73	5 ②	160	160	95	75	45	25	180	104	8317G053	2	8317G054	4	10.1/F	11.6/F	
1/4	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G003	3	-	-	6.1/F	10.6/F	
3/8	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G004	3	-	-	6.1/F	10.6/F	

① Rating for 8321 valves established with 300 SSU light oil. ② Minimum Operating Pressure Differential on light oil is 10 psi.
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

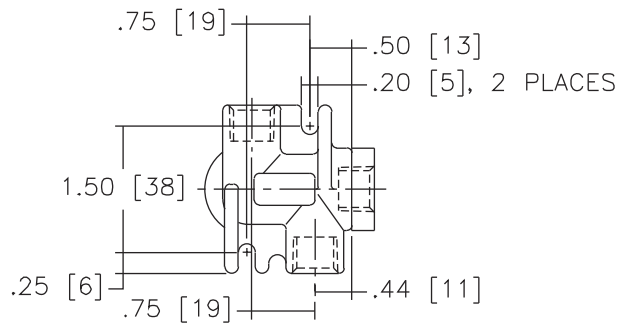
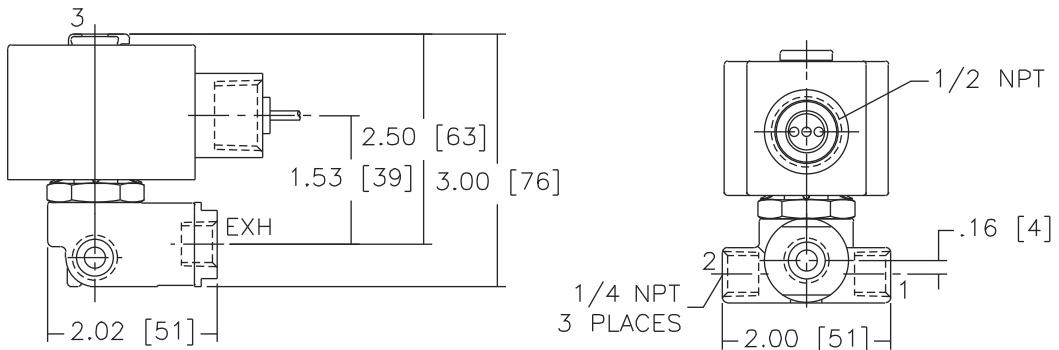
Pipe Size (ins.)	Orifice Size (mm)		Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)								Max. Fluid Temp. °C		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation ③	
	Press.	Exh.	Press.	Exh.	Min. ①	Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC	
						Air-Inert Gas	Water	Lt. Oil ① @45 SSU	Air-Inert Gas	Water	Lt. Oil ① @45 SSU									
NORMALLY CLOSED (Pressure at Port 2) / NORMALLY OPEN (Pressure at Port 3)																				
1/4	2	6	.17	.63	.3 ②	6	3	3	2.7	2	1	82	40	8317G007	2	8317G008	4	10.1/F	11.6/F	
NORMALLY CLOSED (Closed when de-energized)																				
1/4	2	6	.17	.63	.3 ②	10	7	7	5	4	2	82	40	8317G035	2	8317G036	4	10.1/F	11.6/F	
1/4	7	9	.69	1.03	.7	14	14	14	14	14	14	82	49	8321G001	3	-	-	6.1/F	10.6/F	
3/8	7	9	.69	1.03	.7	14	14	14	14	14	14	82	49	8321G002	3	-	-	6.1/F	10.6/F	
NORMALLY CLOSED (Closed when de-energized), Air Only - Vents to Atmosphere																				
1/4	2	6	.17	.63	.3	10	-	-	-	-	-	82	-	8317G023	1	8317G024	5	10.1/F	-	
NORMALLY OPEN (Open when de-energized)																				
1/4	2	6	.13	.63	.3 ②	11	11	7	5	3	2	82	40	8317G053	2	8317G054	4	10.1/F	11.6/F	
1/4	7	9	.69	1.03	.7	14	14	14	14	14	14	82	49	8321G003	3	-	-	6.1/F	10.6/F	
3/8	7	9	.69	1.03	.7	14	14	14	14	14	14	82	49	8321G004	3	-	-	6.1/F	10.6/F	

① Rating for 8321 valves established with 300 SSU light oil. ② Minimum Operating Pressure Differential on light oil is .7 bar.
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

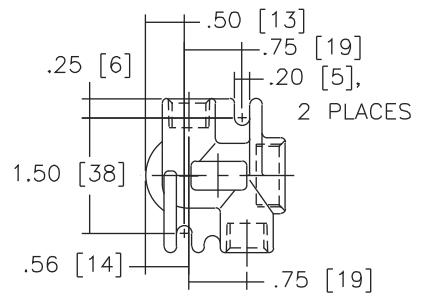
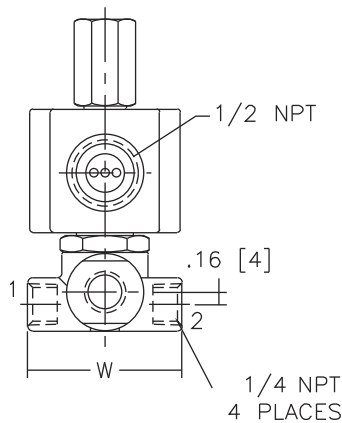
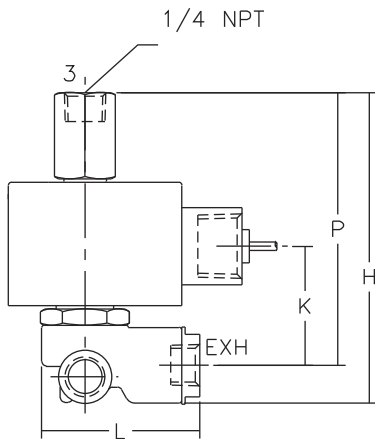
Dimensions: inches (mm)

Const. Ref.		H	K	L	P	W
2	ins.	4.04	1.55	2.05	3.54	2.00
	mm	103	39	52	90	51
4	ins.	4.02	1.53	2.02	3.52	2.00
	mm	102	39	51	89	51

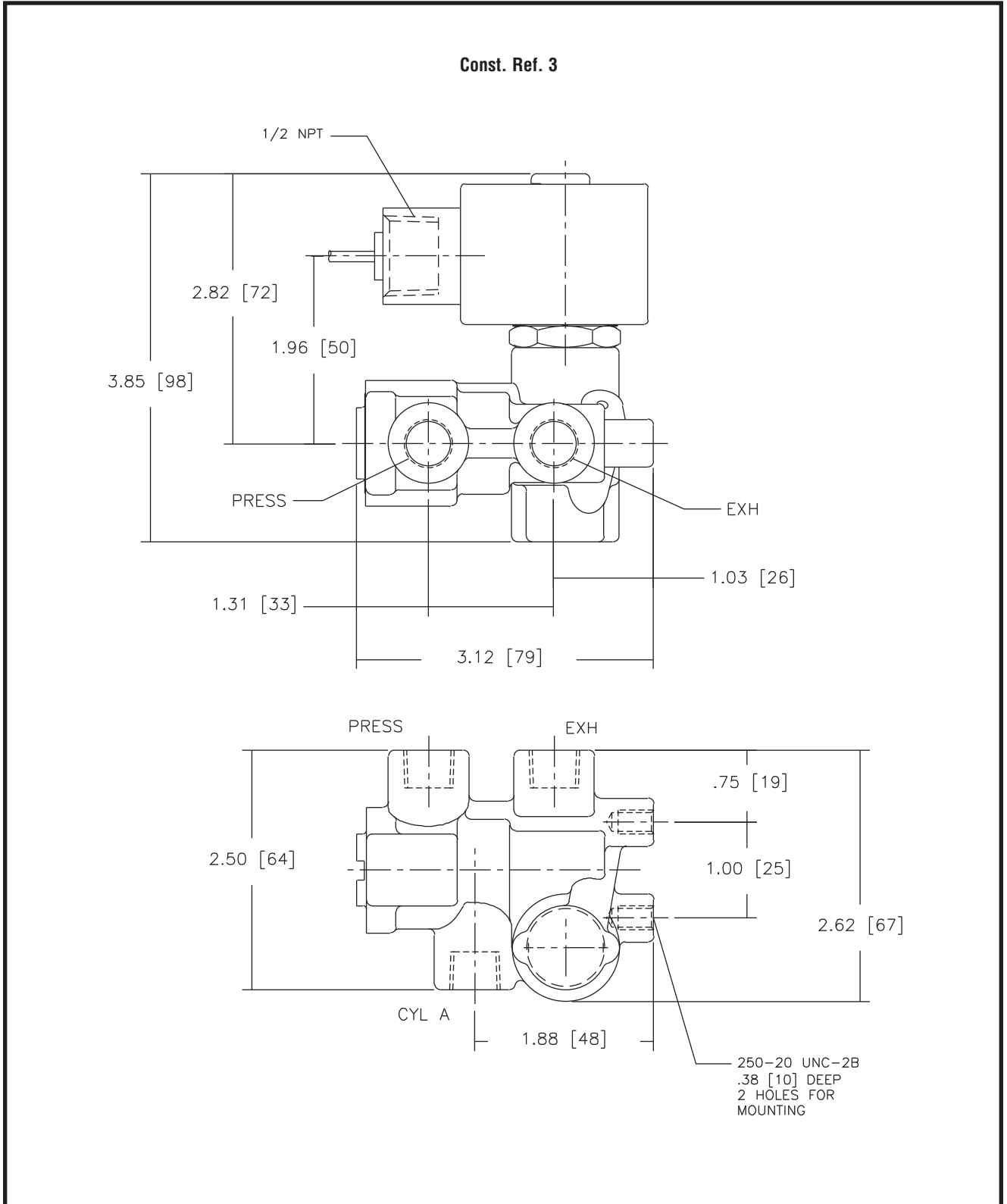
Const. Ref. 1, 5



Const. Ref. 2, 4



Dimensions: inches (mm)



Features

- All NPT connections are in the valve body to allow in-line piping
- No Minimum Operating Pressure Differential required
- Broadest range of applications
- Mountable in any position

Construction

Valve Parts in Contact with Fluids		
Body	Brass	303 Stainless Steel
Seals and Disc	NBR or Cast UR, as Listed	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel	
Shading Coil	Copper	Silver
Disc-Holder	CA	
Core Guide	CA (10.1 and 17.1 Watt only)	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	-	9.1	25	40	238210	-	238214	-
F	11.6	10.1	25	50	238610	238710	238614	238714
F	-	17.1	40	70	238610	-	238614	-

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

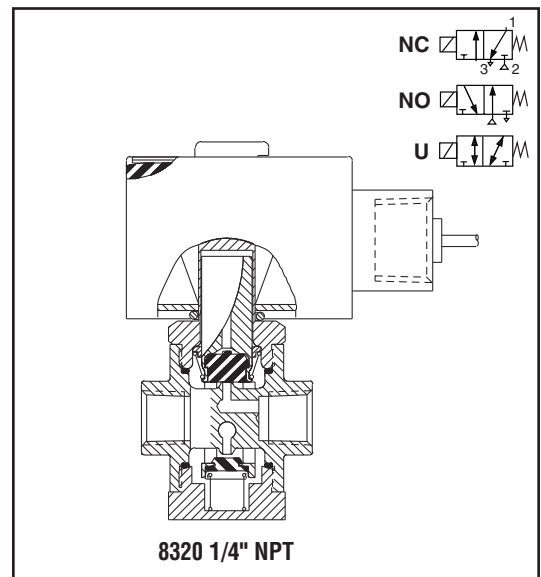
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to the catalog number.)

See *Optional Features Section* for other available options.



3-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Brass Body		Stainless Steel Body		Watt Rating/Class of Coil Insulation ^②	
			Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC
			Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Air-Inert Gas	Water	Lt. Oil @ 300 SSU								
UNIVERSAL OPERATION (Pressure at any port)																
1/8	3/64	.06	175	175	175	125	125	125	140	120	8320G130 ①	1	8320G140 ①	1	9.1/F	10.6/F
1/8	1/16	.09	100	100	100	65	65	65	180	120	8320G001	1	8320G041 ③	1	9.1/F	10.6/F
1/8	3/32	.12	50	50	50	50	50	50	180	120	8320G083	1	8320G087 ③	1	6.1/F	10.6/F
1/8	1/8	.21	30	30	30	20	20	20	180	120	8320G003	1	8320G043 ③	1	9.1/F	10.6/F
1/4	1/16	.09	125	130	130	75	75	75	200	150	8320G172	2	-	-	10.1/F	11.6/F
1/4	3/32	.12	100	100	100	60	60	60	200	150	8320G174	2	8320G200 ③	3	17.1/F	11.6/F
1/4	1/8	.25	50	50	50	25	25	25	200	150	8320G176	2	8320G201 ③	3	17.1/F	11.6/F
1/4	11/64	.35	20	20	20	12	12	12	200	150	8320G178	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																
1/8	3/64	.06	200	200	200	200	200	200	180	120	8320G132	1	8320G142 ③	1	6.1/F	10.6/F
1/8	1/16	.09	150	125	125	125	125	125	180	120	8320G013	1	8320G045 ③	1	6.1/F	10.6/F
1/8	3/32	.12	100	100	100	100	100	100	180	120	8320G015	1	8320G047 ③	1	6.1/F	10.6/F
1/8	1/8	.21	40	40	40	40	40	40	180	120	8320G017	1	8320G049 ③	1	6.1/F	10.6/F
1/4	1/16	.09	210	225	225	160	160	160	200	150	8320G182	2	-	-	17.1/F	11.6/F
1/4	3/32	.12	150	150	150	115	115	115	200	150	8320G184	2	8320G202 ③	3	10.1/F	11.6/F
1/4	1/8	.25	85	85	85	60	60	60	200	150	8320G186	2	8320G203 ③	3	10.1/F	11.6/F
1/4	11/64	.35	45	45	45	25	25	25	200	150	8320G188	2	-	-	10.1/F	11.6/F
NORMALLY OPEN (Open when de-energized)																
1/8	3/64	.06	200	200	200	200	200	200	180	120	8320G136	1	8320G146 ③	1	6.1/F	10.6/F
1/8	1/16	.09	150	125	125	125	125	125	180	120	8320G027	1	8320G051 ③	1	6.1/F	10.6/F
1/8	3/32	.12	100	100	100	100	100	100	180	120	8320G029	1	8320G053 ③	1	6.1/F	10.6/F
1/8	1/8	.21	40	40	40	40	40	40	180	120	8320G031	1	8320G055 ③	1	6.1/F	11.6/F
1/4	1/16	.09	250	250	250	160	160	160	200	150	8320G192	2	-	-	17.1/F	11.6/F
1/4	3/32	.12	150	140	140	100	100	100	200	150	8320G194	2	8320G204 ③	3	10.1/F	11.6/F
1/4	1/8	.25	70	70	70	55	55	55	200	150	8320G196	2	8320G205 ③	3	10.1/F	11.6/F
1/4	11/64	.35	40	40	40	30	30	30	200	150	8320G198	2	-	-	10.1/F	11.6/F

① Supplied with cast UR disc.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.
 ③ Can be used for **dry** natural gas service with the EF prefix.

Specifications (Metric units)

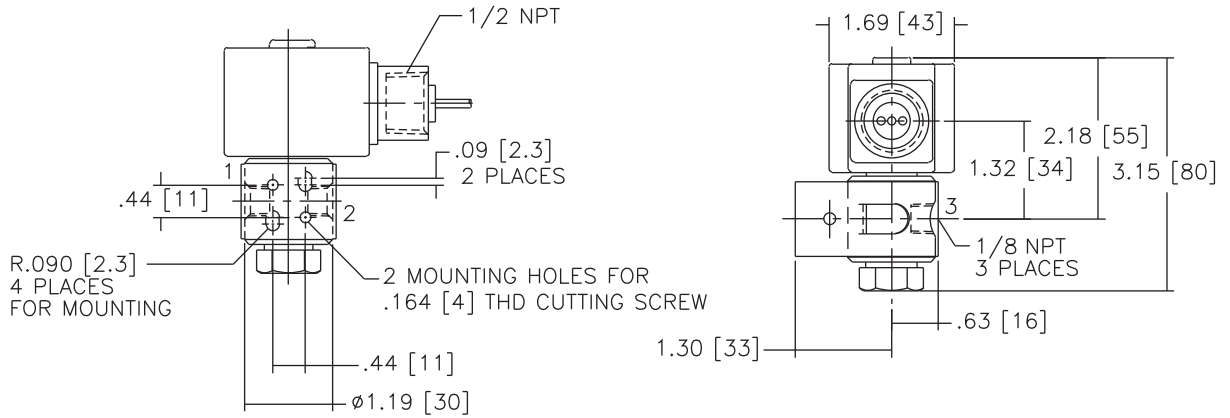
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)						Max. Fluid Temp. °C		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation ^②	
			Max. AC			Max. DC			AC	DC	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	AC	DC
			Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Air-Inert Gas	Water	Lt. Oil @ 300 SSU								
UNIVERSAL OPERATION (Pressure at any port)																
1/8	1.2	.05	12	12	12	9	9	9	60	49	8320G130 ①	1	8320G140 ①	1	9.1/F	10.6/F
1/8	1.6	.08	7	7	7	4	4	4	82	49	8320G001	1	8320G041 ③	1	9.1/F	10.6/F
1/8	2.4	.10	3	3	3	3	3	3	82	49	8320G083	1	8320G087 ③	1	6.1/F	10.6/F
1/8	3.2	.18	2	2	2	1	1	1	82	49	8320G003	1	8320G043 ③	1	9.1/F	10.6/F
1/4	1.6	.08	9	9	9	5	5	5	93	65	8320G172	2	-	-	10.1/F	11.6/F
1/4	2.4	.10	7	7	7	4	4	4	93	65	8320G174	2	8320G200 ③	3	17.1/F	11.6/F
1/4	3.2	.21	3	3	3	2	2	2	93	65	8320G176	2	8320G201 ③	3	17.1/F	11.6/F
1/4	4.4	.30	1	1	1	1	1	1	93	65	8320G178	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																
1/8	1.2	.05	14	14	14	14	14	14	82	49	8320G132	1	8320G142 ③	1	6.1/F	10.6/F
1/8	1.6	.08	10	9	9	9	9	9	82	49	8320G013	1	8320G045 ③	1	6.1/F	10.6/F
1/8	2.4	.10	7	7	7	7	7	7	82	49	8320G015	1	8320G047 ③	1	6.1/F	10.6/F
1/8	3.2	.18	3	3	3	3	3	3	82	49	8320G017	1	8320G049 ③	1	6.1/F	10.6/F
1/4	1.6	.08	14	16	16	11	11	11	93	65	8320G182	2	-	-	17.1/F	11.6/F
1/4	2.4	.10	10	10	10	8	8	8	93	65	8320G184	2	8320G202 ③	3	10.1/F	11.6/F
1/4	3.2	.21	6	6	6	4	4	4	93	65	8320G186	2	8320G203 ③	3	10.1/F	11.6/F
1/4	4.4	.30	3	3	3	2	2	2	93	65	8320G188	2	-	-	10.1/F	11.6/F
NORMALLY OPEN (Open when de-energized)																
1/8	1.2	.05	14	14	14	14	14	14	82	48	8320G136	1	8320G146 ③	1	6.1/F	10.6/F
1/8	1.6	.08	10	9	9	9	9	9	82	48	8320G027	1	8320G051 ③	1	6.1/F	10.6/F
1/8	2.4	.01	7	7	7	7	7	7	82	48	8320G029	1	8320G053 ③	1	6.1/F	10.6/F
1/8	3.2	.18	3	3	3	3	3	3	82	48	8320G031	1	8320G055 ③	1	6.1/F	11.6/F
1/4	1.6	.08	17	17	17	11	11	11	93	65	8320G192	2	-	-	17.1/F	11.6/F
1/4	2.4	.10	10	10	10	7	7	7	93	65	8320G194	2	8320G204 ③	3	10.1/F	11.6/F
1/4	3.2	.21	5	5	5	4	4	4	93	65	8320G196	2	8320G205 ③	3	10.1/F	11.6/F
1/4	4.4	.30	3	3	3	2	2	2	93	65	8320G198	2	-	-	10.1/F	11.6/F

① Supplied with cast UR disc.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.
 ③ Can be used for *dry* natural gas service with the EF prefix.

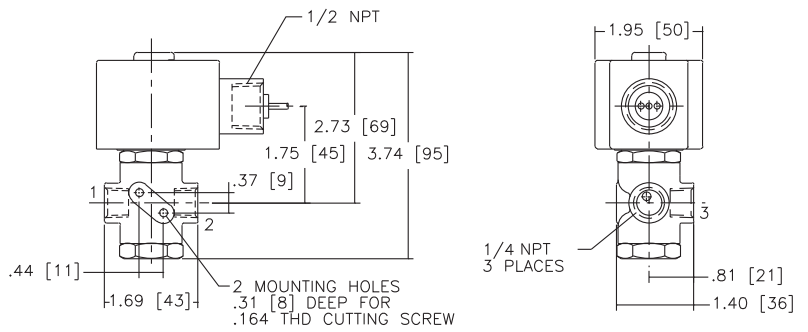
3-WAY

Dimensions: inches (mm)

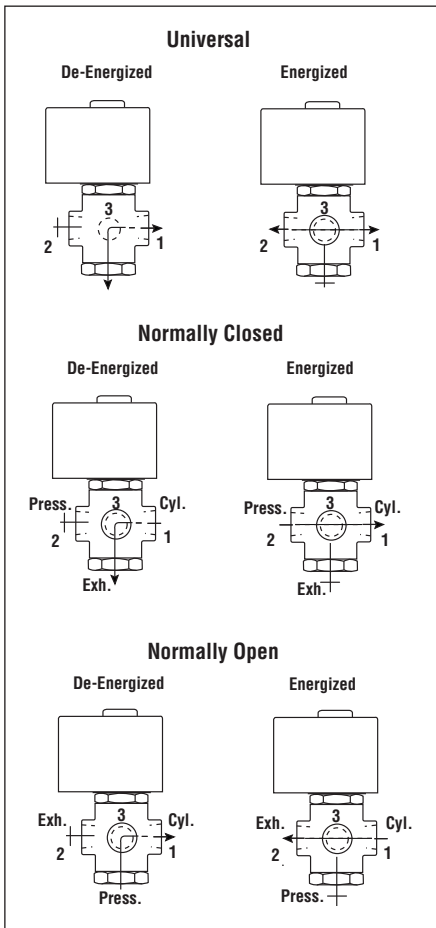
Const. Ref. 1



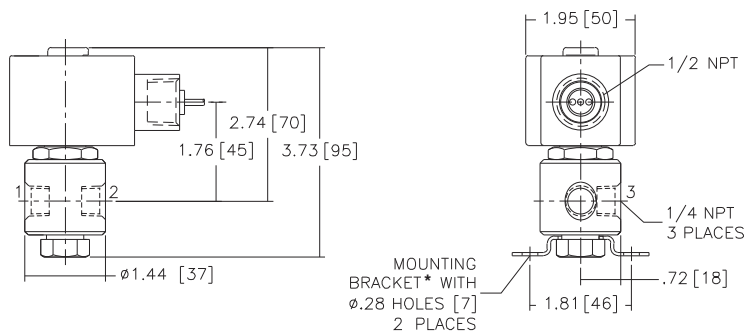
Const. Ref. 2



FLOW DIAGRAMS



Const. Ref. 3



* MOUNTING BRACKET WITH Ø.28 HOLES [7] 2 PLACES
* MOUNTING BRACKET IS STANDARD ON THIS CONSTRUCTION

Features

- Designed for high flow piloting with no minimum operating pressure required; e.g. power plants, refineries, chemical processing
- Balanced Poppet construction for high flow at minimum power levels
- PTFE rider rings and graphite-filled seals reduce friction and eliminate sticking to provide exceptional service life
- 316 Stainless Steel construction for highly corrosive atmospheres
- Available with manual reset
 See *Special Service Section*

Construction

Valve Parts in Contact with Fluids		
Body	Brass	316 Stainless Steel
Core Tube	305 Stainless Steel	
Stem and Insert	303 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
O-ring Holder	430F Stainless Steel	
Springs	302 Stainless Steel	
Seals and Discs	NBR	FKM
	VMQ (Low-Temperature Construction)	
Rider Ring	PTFE	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	12	12	12	276000	238710	276002	238714

Standard Voltages: 24/50-60, 120/50-60, 240/50-60, and 480/50-60, or 6, 12, 24, 120, and 240 DC.

Solenoid Enclosures

Standard:

For Brass Valves: Standard Solenoid enclosure is Types, 1, 2, 3, 3S, 4, and 4X.

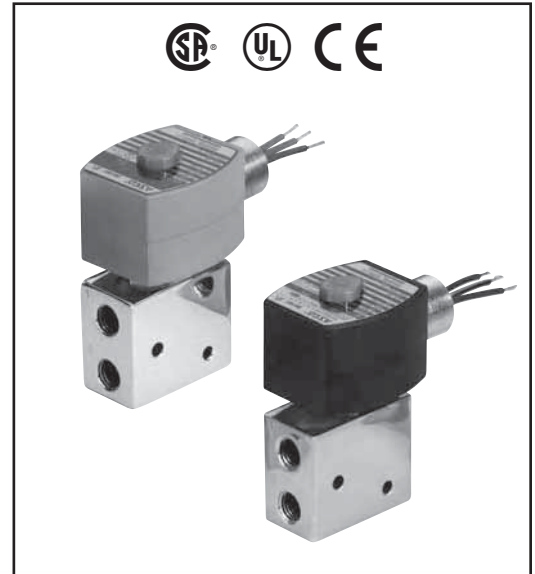
For 316 Stainless Steel valves: Standard Solenoid enclosure is Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, and 6P.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)

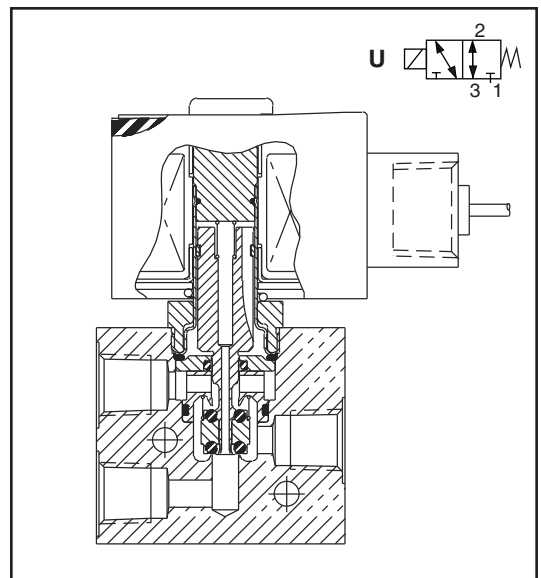
See *Optional Features Section* for other available options.

SIL (Safety Integrity Level) Information:

- PFD (Probability of Failure on Demand) $<4 \times 10^{-7}$ at a confidence factor of 95%.
- SFF (Safe Failure Fraction) according to IEC 61508-2 Table A1 is ≥ 0.99 .
- Only constructions without manual operators apply to the above criteria.



3-WAY



Nominal Ambient Temp. Ranges

8327G041, 042, 021, 022, 031, 032:

-4°F to 131°F (-20°C to 55°C)

8327G051 and 052:

-40°F to 131°F (-40°C to 55°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Maximum Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Brass Body	316 Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3	Air-Inert Gas	Water	Light Oil @ 300 SSU		Catalog Number	Catalog Number		AC	DC
UNIVERSAL OPERATION (Pressure at any port)												
1/4	1/4	.49	.56	150	150	150	176	8327G041	-	1	12.0/F	11.6/F
1/4	1/4	.49	.56	150	150	150	248	-	EV8327G042	1	12.0/F	11.6/F
UNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port)												
1/4	1/4	.49	.56	150	-	-	131	8327G051	-	1	12.0/F	11.6/F
1/4	1/4	.49	.56	150	-	-	131	-	EV8327G052	1	12.0/F	11.6/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Maximum Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Brass Body	316 Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3	Air-Inert Gas	Water	Light Oil @ 300 SSU		Catalog Number	Catalog Number		AC	DC
UNIVERSAL OPERATION (Pressure at any port)												
1/4	6	.42	.48	10	10	10	80	8327G041	-	1	12.0/F	11.6/F
1/4	6	.42	.48	10	10	10	120	-	EV8327G042	1	12.0/F	11.6/F
UNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port)												
1/4	6	.42	.48	10	-	-	55	8327G051	-	1	12.0/F	11.6/F
1/4	6	.42	.48	10	-	-	55	-	EV8327G052	1	12.0/F	11.6/F

Dimensions: inches (mm)

FLOW DIAGRAMS

OPERATION	DE-ENERGIZED	ENERGIZED
NORMALLY CLOSED PRESSURE AT 3		
NORMALLY OPEN PRESSURE AT 1		
UNIVERSAL PRESSURE AT ANY PORT		

Const. Ref. 1

IMPORTANT: Valves may be mounted in any position.

Features

- 3-way normally closed, normally open, or universal operation
- Compact design
- Brass and 316 stainless steel body constructions
- Mountable in any position
- Available with manual operator
- NSF 61 and 169 version available for potable water and food service

Construction

Valve Parts in Contact with Fluids			
	General Purpose		NSF
Body	Brass	316 Stainless Steel	316 Stainless Steel
Core Tube/Bonnet	S.S. / Plated Steel	S.S. / S.S.	S.S. / S.S.
Core and Plugnut	Stainless Steel		
Springs	Stainless Steel		
Seals and Disc	FKM		EPDM
Shading Coil	Copper		Silver

Electrical

Prefix	Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Ambient Temp. °F	Spare Coil Family	
		DC Watts	AC				AC	DC
			Watts	VA Holding	VA Inrush			
U	F	6.9	6.3	8.8	12.1	15 to 140	400115	400115
SC	F	6.9	6.3	8.8	12.1	15 to 140	400125	400125

Standard voltages: 24, 120, 240 volts AC, 50-60 Hz. 12, 24, 120 volts DC
 Must be specified when ordering.

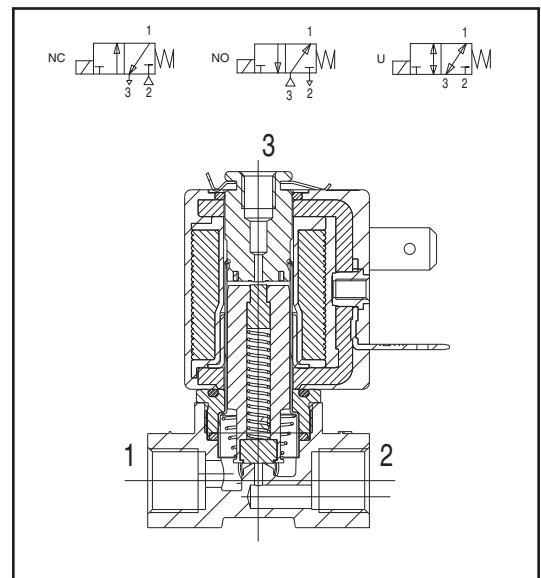
Solenoid Enclosures

Standard: Open frame (Prefix U) 18" leads

Optional: DIN (size 11mm, form B) (Prefix SC). Watertight/IP-65 when used with DIN connector kit for SC coils (see kits below).

Kits

- 1/2" NPT conduit hub kit for leaded coils 224735-001-*
 (Kit contains 10 pcs of each: threaded hub, gasket, and attaching screw.)
- DIN connector kit for SC coils 226061-001-*
 (Kit contains 10 pcs of each: connector, gasket, and attaching screw.)
- Mounting adapter kit 289719 (Kit contains 2 screws and plate.)
- M5 to 1/8" port adaptors: HV289666001 (Brass), HV289667001 (SS)
 (Kit contains 10 pcs)



Approvals

UL recognized coil - File MH28173

CSA recognized coil - see CSA certificate No. 235748

Meets applicable CE directives

NSF 61 - Drinking water system components

NSF 169 - Special purpose food Equipment and Devices

The NSF Certification Program is accredited by the Standards Council of Canada and ANSI.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow		Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Brass	Stainless Steel	Const. Ref.	Wattage		Approx. Shipping Weight (lbs.)
				Max. AC ①			Max. DC ①										
		At Port 2	At Port 3	Air - Inert Gas	Water	Light Oil @ 300 SSU	Air - Inert Gas	Water	Light Oil @ 300 SSU	AC	DC						
General Service - Normally Closed																	
1/8	3/64	0.06	0.06	230	235	245	230	235	245	180	180	U8356A001V	U8356A013V	1	6.3	6.9	0.5
1/8	1/16	0.09	0.06	140	140	150	140	140	150	180	180	U8356A002V	U8356A014V	1	6.3	6.9	0.5
1/8	3/32	0.13	0.06	75	72	77	75	72	77	180	180	U8356A004V	U8356A016V	1	6.3	6.9	0.5
1/8	7/64	0.15	0.06	70	61	72	70	61	72	180	180	U8356B045V	U8356B046V	2	6.3	6.9	0.6
NSF 61 and 169 Listed - Normally Closed																	
1/8	3/32	0.13	0.04	-	70	-	-	70	-	180	180	-	U8356A103E	1	6.3	6.9	0.5
1/4	3/32	0.13	0.04	-	70	-	-	70	-	180	180	-	U8356A115E	3	6.3	6.9	0.5
General Service - Normally Open																	
1/8	3/64	0.06	0.06	175	180	175	150	122	90	180	180	U8356A005V	U8356A017V	1	6.3	6.9	0.5
1/8	1/16	0.09	0.06	165	180	175	75	72	70	180	180	U8356A006V	U8356A018V	1	6.3	6.9	0.5
1/8	3/32	0.13	0.06	160	175	120	86	66	40	180	180	U8356A008V	U8356A020V	1	6.3	6.9	0.5
1/8	7/64	0.15	0.06	148	180	99	148	157	72	180	180	U8356B054V	U8356B055V	2	6.3	6.9	0.6
NSF 61 and 169 Listed - Normally Open																	
1/8	3/32	0.13	0.04	-	140	-	-	85	-	180	180	-	U8356A107E	1	6.3	6.9	0.5
1/4	3/32	0.13	0.04	-	140	-	-	85	-	180	180	-	U8356A119E	3	6.3	6.9	0.5
General Service - Universal																	
1/8	3/64	0.06	0.06	135	135	135	135	135	100	180	180	U8356A009V	U8356A021V	1	6.3	6.9	0.5
1/8	1/16	0.09	0.06	72	72	72	72	72	72	180	180	U8356A010V	U8356A022V	1	6.3	6.9	0.5
1/8	3/32	0.13	0.06	36	33	40	32	28	40	180	180	U8356A012V	U8356A024V	1	6.3	6.9	0.5
1/8	7/64	0.15	0.06	45	32	27	25	32	27	180	180	U8356B047V	U8356B048V	2	6.3	6.9	0.6
NSF 61 and 169 Listed - Universal																	
1/8	3/32	0.13	0.04	-	35	-	-	35	-	180	180	-	U8356A111E	1	6.3	6.9	0.5
1/4	3/32	0.13	0.04	-	35	-	-	35	-	180	180	-	U8356A123E	3	6.3	6.9	0.5

① MS option limits pressures to 220 psi (unless limited by operating pressure).

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)						Max. Fluid Temp. °C		Brass	Stainless Steel	Const. Ref.	Wattage		Approx. Shipping Weight (kgs.)
				Max. AC ①			Max. DC ①								AC	DC	
		At Port 2	At Port 3	Air - Inert Gas	Water	Light Oil @ 300 SSU	Air - Inert Gas	Water	Light Oil @ 300 SSU								
General Service - Normally Closed																	
1/8	1.2	0.05	0.05	16	16	17	16	16	17	82	82	U8356A001V	U8356A013V	1	6.3	6.9	0.22
1/8	1.6	0.08	0.05	9	9	10	9	9	10	82	82	U8356A002V	U8356A014V	1	6.3	6.9	0.22
1/8	2.4	0.11	0.05	5	5	5	5	5	5	82	82	U8356A004V	U8356A016V	1	6.3	6.9	0.22
1/8	2.7	0.13	0.05	4	4	5	4	4	5	82	82	U8356B045V	U8356B046V	2	6.3	6.9	0.27
NSF 61 and 169 Listed - Normally Closed																	
1/8	2.4	0.11	0.03	-	5	-	-	5	-	82	82	-	U8356A103E	1	6.3	6.9	0.22
1/4	2.4	0.11	0.03	-	5	-	-	5	-	82	82	-	U8356A115E	3	6.3	6.9	0.22
General Service - Normally Open																	
1/8	1.2	0.05	0.05	12	12	12	10	8	6	82	82	U8356A005V	U8356A017V	1	6.3	6.9	0.22
1/8	1.6	0.08	0.05	11	12	12	5	5	5	82	82	U8356A006V	U8356A018V	1	6.3	6.9	0.22
1/8	2.4	0.11	0.05	11	12	8	6	4	2	82	82	U8356A008V	U8356A020V	1	6.3	6.9	0.22
1/8	2.7	0.15	0.05	10	12	7	10	10	5	82	82	U8356B054V	U8356B055V	2	6.3	6.9	0.27
NSF 61 and 169 Listed - Normally Open																	
1/8	2.4	0.11	0.03	-	10	-	-	6	-	82	82	-	U8356A107E	1	6.3	6.9	0.22
1/4	2.4	0.11	0.03	-	10	-	-	6	-	82	82	-	U8356A119E	3	6.3	6.9	0.22
General Service - Universal																	
1/8	1.2	0.05	0.05	9	9	9	9	9	7	82	82	U8356A009V	U8356A021V	1	6.3	6.9	0.22
1/8	1.6	0.08	0.05	5	5	5	5	5	5	82	82	U8356A010V	U8356A022V	1	6.3	6.9	0.22
1/8	2.4	0.11	0.05	2	2	3	2	2	3	82	82	U8356A012V	U8356A024V	1	6.3	6.9	0.22
1/8	2.7	0.13	0.05	3	2	2	1.7	2	2	82	82	U8356B047V	U8356B048V	2	6.3	6.9	0.27
NSF 61 and 169 Listed - Universal																	
1/8	2.4	0.11	0.03	-	2	-	-	2	-	82	82	-	U8356A111E	1	6.3	6.9	0.22
1/4	2.4	0.11	0.03	-	2	-	-	2	-	82	82	-	U8356A123E	3	6.3	6.9	0.22

① MS option limits pressures to 15 bar (unless limited by operating pressure).

3-WAY

Capabilities Chart

Solenoid Options ②							Base Catalog Number		Resilient Materials ①							Other		Standard Rebuild Kit	
NEMA Type 3-9	High Temp. DIN	Wiring Box Screw Terminal	Multipin	DIN	Spade	Open Frame with Leads	Brass	Stainless Steel	FKM	EPDM	RUBY	Oxygen Service	PTFE	Urethane	Vacuum	Manual Operator	Mounting Bracket	Brass AC/DC	Stainless AC/DC
-	-	-	-	SC	-	●	U8356A001V	U8356A013V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356A002V	U8356A014V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356A004V	U8356A016V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356B045V	U8356B046V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8356A103E	-	●	-	-	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8356A115E	-	●	-	-	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356A005V	U8356A017V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356A006V	U8356A018V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356A008V	U8356A020V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356B054V	U8356B055V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8356A107E	-	●	-	-	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8356A119E	-	●	-	-	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356A009V	U8356A021V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356A010V	U8356A022V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356A012V	U8356A024V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	U8356B047V	U8356B048V	●	E	-	NV	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8356A111E	-	●	-	-	-	-	-	MS	-	-	-
-	-	-	-	SC	-	●	-	U8356A123E	-	●	-	-	-	-	-	MS	-	-	-

● = Standard. ① Replace V suffix. ② Replace U prefix with SC prefix.

Dimensions: inches (mm)

Const. Ref.		A	B	C	D	E
1	ins.	1.81	2.08	1.29	1	0.59
	mm	46	53	33	25	15
2	ins.	1.98	2.25	.984	1	0.59
	mm	50	57	25	25	15
3	ins.	1.86	2.25	1.73	1.12	.83
	mm	46	57	44	28	21

Shown with DIN coil without connector

1/8 NPT THREADED ADAPTOR PORT 3
(ADD .59 (15) TO HEIGHT DIMENSIONS)
KIT #
BRASS HV289666001
S. S. HV289667001
(PKG OF 10 PCS)

M3 - THROUGH HOLES

1/8 NPT (NSF 1/8, 1/4 NPT)

8356_NSFR1

Features

- Available with compression fitting ends for metal or plastic tube to save installation cost
- Direct acting for reliable performance; resilient seating for tight shutoff
- Operation similar to 8320, but with plastic body
- Ideal valve for dispensing, damper control, and water applications
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	CA
Disc	NBR
Disc-Holder	CA
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel and 17-7PH Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number	
	DC Watts	AC			General Purpose	
		Watts	VA Holding	VA Inrush	AC	DC
F	10.6	6.1	16	30	238210	238310
F	-	9.1	25	40	238210	-

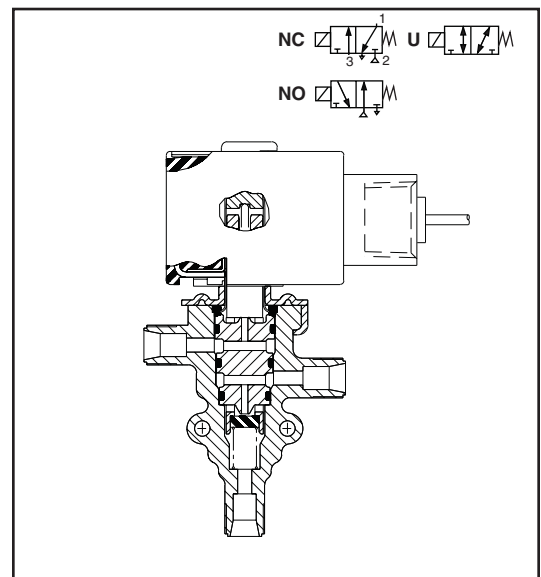
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Open Frame Solenoid, Junction Box.

See *Optional Features* Section for descriptions on these and other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL recognized components.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

3-WAY

Specifications (English units)

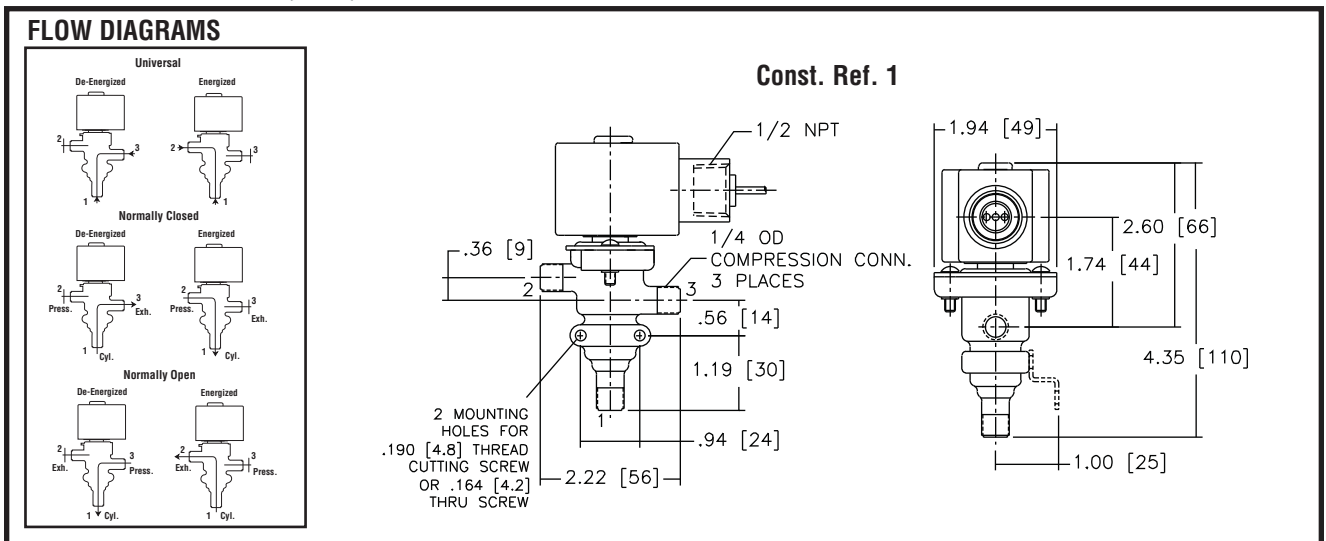
Pipe Connections	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)				Max. Fluid Temp. °F		Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation ②	
			Max. AC		Max. DC		AC	DC			AC	DC
			Air-Inert Gas	Water	Air-Inert Gas	Water						
UNIVERSAL OPERATION (Pressure at any port)												
1/4" O.D. Compression ①	1/16	.07	100	100	65	65	130	120	8360G071	1	9.1/F	10.6/F
	3/32	.11	50	50	50	50	130	120	8360G073	1	6.1/F	10.6/F
	1/8	.16	30	30	20	20	130	120	8360G074	1	9.1/F	10.6/F
NORMALLY CLOSED (Closed when de-energized)												
1/4" O.D. Compression ①	1/16	.07	125	125	125	125	130	120	8360G075	1	6.1/F	10.6/F
	3/32	.11	100	100	100	100	130	120	8360G077	1	6.1/F	10.6/F
	1/8	.16	40	40	40	40	130	120	8360G078	1	6.1/F	10.6/F
NORMALLY OPEN (Open when de-energized)												
1/4" O.D. Compression ①	1/16	.07	125	125	125	125	130	120	8360G067	1	6.1/F	10.6/F
	3/32	.11	100	100	100	100	130	120	8360G069	1	6.1/F	10.6/F
	1/8	.16	40	40	40	40	130	120	8360G070	1	6.1/F	10.6/F

① Fittings not supplied with valve. To order, refer to List Price Schedule.
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.

Specifications (Metric units)

Pipe Connections	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)				Max. Fluid Temp. °C		Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation ②	
			Max. AC		Max. DC		AC	DC			AC	DC
			Air-Inert Gas	Water	Air-Inert Gas	Water						
UNIVERSAL OPERATION (Pressure at any port)												
1/4" O.D. Compression ①	1.6	.06	7	7	4	4	54	49	8360G071	1	9.1/F	10.6/F
	2.4	.09	3	3	3	3	54	49	8360G073	1	6.1/F	10.6/F
	3.2	.14	2	2	1	1	54	49	8360G074	1	9.1/F	10.6/F
NORMALLY CLOSED (Closed when de-energized)												
1/4" O.D. Compression ①	1.6	.06	9	9	9	9	54	49	8360G075	1	6.1/F	10.6/F
	2.4	.09	7	7	7	7	54	49	8360G077	1	6.1/F	10.6/F
	3.2	.14	3	3	3	3	54	49	8360G078	1	6.1/F	10.6/F
NORMALLY OPEN (Open when de-energized)												
1/4" O.D. Compression ①	1.6	.06	9	9	9	9	54	49	8360G067	1	6.1/F	10.6/F
	2.4	.09	7	7	7	7	54	49	8360G069	1	6.1/F	10.6/F
	3.2	.14	3	3	3	3	54	49	8360G070	1	6.1/F	10.6/F

Dimensions: inches (mm)



Features

- Compact spool valve with threaded port connections
- All exhaust ports are pipable, providing better protection against harsh environments
- Standard manual operator
- DIN, Watertight and Explosionproof solenoids available
- Single and dual solenoid constructions
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Black Anodized Aluminum
Spring	Phosphate Treated Black Steel
Shading Coil	Copper
Seals	NBR + PUR
Core and Core Tube	Stainless Steel/Brass
End Covers	6/6 Glass Filled PA/FG
Spool	Aluminum
Internal Parts	Zamak, Steel, CA, Aluminum

Electrical

Standard Coil and Class of Insulation	Enclosure Type	Watt Rating and Power Consumption				Spare Coil Part Number	
		DC Watts	AC Watts	VA Holding	VA Inrush	AC	DC
F	SC	3	2.5	3.5	6	400125	400125
F	SC	6.9	5	7	15	43004649	43004647
F	EF	6.9	6.3	7	10.1	266762	270007
F	WT	6.9	6.3	7	10.1	266763	270008

Standard Voltages: SC: 24, 120, 240 Volts AC, 50-60 Hz; 12, 24, 120 Volts DC.
 WT and EF: 24/50-60HZ, (120/60, 110-120/50)①, (240/60, 220-240/50)② Volts AC;
 6, 12, 24, 120 Volts DC.
 ① Order as 120/60, 110/50
 ② Order as 240/60, 220/50

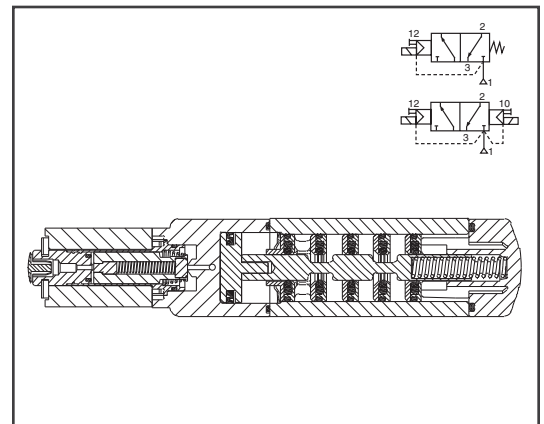
Solenoid Enclosures

Standard: - Prefix

SC = IP65 type DIN (open frame) per 46244

WT = Combination General Purpose and Watertight Types 1, 2, 3, 3S, 4, and 4X

EF = Combination Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, 6P, 7, 9 Class I, Div. 1 (Groups A - D) and Class II, Div. 1 Type 9 (Groups E-G)



Nominal Ambient Temp. Ranges

SC: AC/DC: 5°F to +140°F (-15°C to 60°C)

EF: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

WT: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

Note: For temperatures below 32°F (0°C) moisture-free air must be used.

Refer to Engineering Section for details.

Approvals

SC (2.5W and 3W only) UL recognized component, CSA certified.

WT: UL recognized component, CSA certified.

EF: UL and CSA solenoid approval.

Meets applicable CE directives.

Refer to Engineering Section for details.

Note

When mounting inline 8551 valves with WT & EF solenoids (6.3 & 6.9 watts), ASCO recommends using two (2) 1/8" thick washers under the valve body to provide clearance for the solenoid coil.

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Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Fluid Temp. °F (for single and dual solenoid)			Single Solenoid	Dual Solenoid	Watt Rating/ Class of Coil Insulation	
			Min.	Max.	Min.	Max. AC	Max. DC	Catalog Number	Catalog Number	AC	DC
OPEN FRAME DIN COIL											
1/4	1/4	.86	30	150	5	140	140	SC8551A005MS	SC8551A006MS	2.5	3
1/2	1/2	3.7	30	150	-15	140	140	SC8553A005MS	SC8553A006MS	5	6.9
WATERTIGHT ENCLOSURE											
1/4	1/4	.86	30	150	5	104	77	WT8551A005MS	WT8551A006MS	6.3	6.9
1/2	1/2	3.7	30	150	-15	140	140	WT8553A005MS	WT8553A006MS	6.3	6.9
EXPLOSIONPROOF ENCLOSURE											
1/4	1/4	.86	30	150	5	104	77	EF8551A005MS	EF8551A006MS	6.3	6.9
1/2	1/2	3.7	30	150	-15	140	140	EF8553A005MS	EF8553A006MS	6.3	6.9

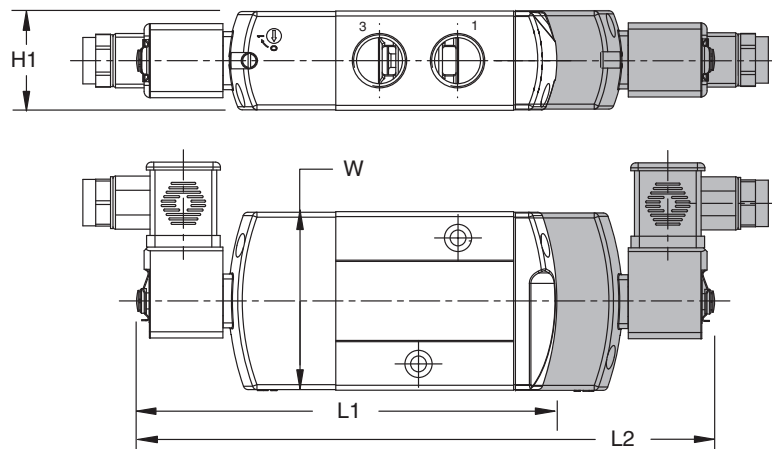
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Fluid Temp. °C (for single and dual solenoid)			Single Solenoid	Dual Solenoid	Watt Rating/ Class of Coil Insulation	
			Min.	Max.	Min.	Max. AC	Max. DC	Catalog Number	Catalog Number	AC	DC
OPEN FRAME DIN COIL											
1/4	6	.75	2	10	-15	60	60	SC8551A005MS	SC8551A006MS	2.5	3
1/2	13	3.15	2	10	-25	60	60	SC8553A005MS	SC8553A006MS	5	6.9
WATERTIGHT ENCLOSURE											
1/4	6	.75	2	10	-15	40	25	WT8551A005MS	WT8551A006MS	6.3	6.9
1/2	13	3.15	2	10	-25	60	60	WT8553A005MS	WT8553A006MS	6.3	6.9
EXPLOSIONPROOF ENCLOSURE											
1/4	6	.75	2	10	-15	40	25	EF8551A005MS	EF8551A006MS	6.3	6.9
1/2	13	3.15	2	10	-25	60	60	EF8553A005MS	EF8553A006MS	6.3	6.9

Dimensions inches (mm)

Series	8551	8553
NPT	1/4	1/2
L1	5.69 (145)	6.70 (170)
L2	7.79 (198)	9.18 (233)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

NOTE: Valve shown with CM22 DIN terminal coil and connector. Connector sold separately.



Features

- Compact Spool Valve
- Single and dual solenoid constructions available
- Unique design combines hard T-seals and flexible o-rings, provides bubble-tight shutoff, resistance to dirt and multimillion cycle life controlling air or inert gas
- Low Power and Intrinsically Safe construction available
See Special Service Pilot Valve Section for details

Construction

Valve Parts in Contact with Fluids			
Body	Aluminum, Black Anodized	Brass	316L Stainless Steel
End Cover (Spring end)	Glass-filled Polyamide	Brass	316L Stainless Steel
Spool Valve Internals	Zamak, Stainless Steel, Acetal (POM), Aluminum	Brass, Acetal (POM), Delrin	
Pilot End Covers	Aluminum, Black Anodized	Brass	316L Stainless Steel
Core Tube	Stainless Steel		
Core and Plugnut	Stainless Steel		
Springs	Stainless Steel		
Seals and Discs	NBR		
Top Disc	Nylon (PA)		
Core Guide	Acetal		
Seat and Seat Insert	Brass, Acetal		
Shading Coil	Copper		
Rider Ring (low power)	PTFE		

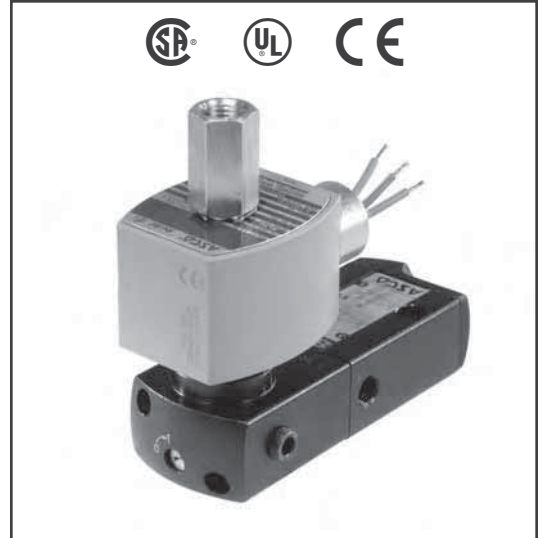
Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714

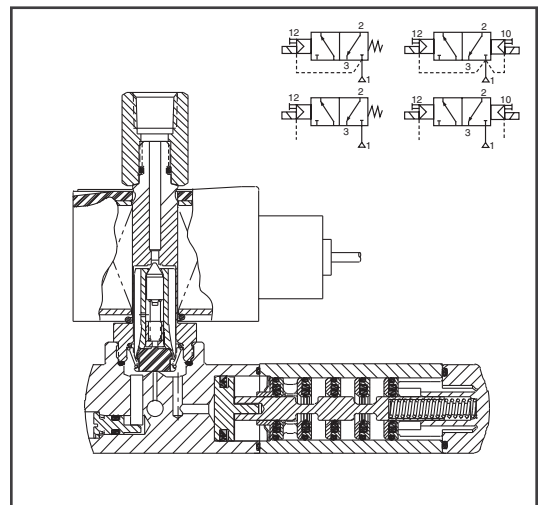
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or "EV" for stainless steel) to catalog number.)
See Optional Features Section for other available options.



3-WAY



Nominal Ambient Temp. Ranges

Body Material	Description
Aluminum	AC: 5°F to 125°F (-15°C to 52°C) DC: 5°F to 104°F (-15°C to 40°C)
Brass	AC: -40°F to 125°F (-40°C to 52°C)
Stainless Steel	DC: -40°F to 104°F (-40°C to 40°C)

Approvals

UL/CSA approvals for aluminum constructions pending. EF and EV are UL listed solenoids. CSA certified. Meet applicable CE directives.
Refer to Engineering Section for details.

Specifications (English units)

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid							Dual Solenoid									
				Operating Pressure Differential (psi)			Max. Fluid Temp. °F		Catalog Number	Const. Ref.	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		Catalog Number	Const. Ref.	Watt Rating/Class of Coil Insulation		
				Air-Inert Gas			AC	DC			Min.	AC	DC	AC	DC			AC	DC	AC
				Min.	Max. AC	Max. DC			Min.	Max. AC						Max. DC	AC			
Aluminum	1/4	1/4	.86	30	150	120	140	120	8551G405	1	30	150	120	140	120	8551G406	1	10.1/F	11.6/F	
Brass									EF8551G407 ①							EF8551G408 ①				
316L Stainless Steel									EV8551G413 ②							EV8551G414 ②				
Aluminum	1/2	1/2	3.7						8553G405											

① Brass construction supplied standard with EF solenoid. ② Stainless steel construction supplied standard with EV solenoid.

Specifications (Metric units)

Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Single Solenoid							Dual Solenoid								
				Operating Pressure Differential (bar)			Max. Fluid Temp. °C		Catalog Number	Const. Ref.	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		Catalog Number	Const. Ref.	Watt Rating/Class of Coil Insulation	
				Air-Inert Gas			AC	DC			Min.	AC	DC	AC	DC			AC	DC
				Min.	Max. AC	Max. DC			Min.	Max. AC						Max. DC	AC		
Aluminum	1/4	6.4	.75	2	10	8.2	60	48	8551G405	1	2	10	8.2	60	48	8551G406	1	10.1/F	11.6/F
Brass									EF8551G407 ①							EF8551G408 ①			
316L Stainless Steel									EV8551G413 ②							EV8551G414 ②			
Aluminum	1/2	13	3.15						8553G405										

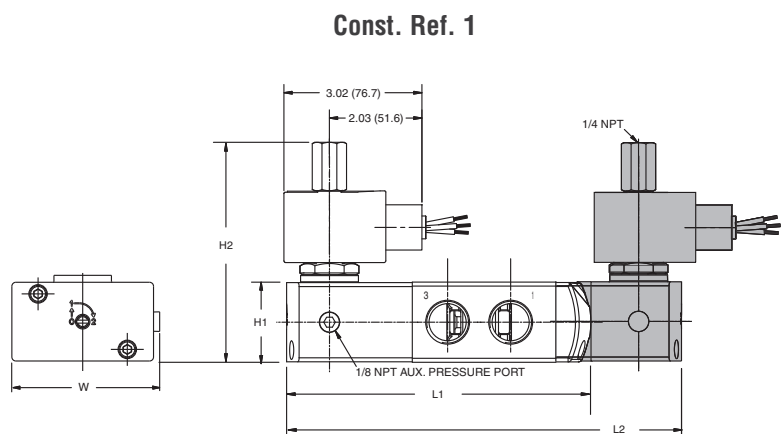
① Brass construction supplied standard with EF solenoid. ② Stainless steel construction supplied standard with EV solenoid.

Dimensions inches (mm)

Series	8551	8553
NPT	1/4	1/2
L1 ①	5.12 (132)	6.00 (153)
L2 ①	6.73 (171)	7.80 (198)
H2	4.38 (111)	4.77 (121)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

① Manual override option MH adds .250" (6.4), MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand





4-Way/2 and 3 Position Valves

4-WAY

Four-ported valves are generally used to operate double-acting cylinders or actuators.

They have four or five pipe connections, commonly called ports:

- One pressure inlet.
- Two cylinder ports providing pressure to the double-acting cylinder or actuator.
- One or two outlets to exhaust pressure from the cylinders.

In a de-energized position, pressure is connected to one cylinder port; the other port is connected to the exhaust. In an energized position, pressure and exhaust are reversed.

Four ports means less piping is required. With five ports, independent speed controls can be mounted in each port.

Three Types of Constructions Apply

Single Solenoid

When the solenoid is energized, the valve shifts, then returns to the original position when de-energized.

Dual Solenoid

When one solenoid is energized, the valve shifts, then returns when the other solenoid is energized. They may be energized momentarily or continuously, but never concurrently. Some valves, both single and dual solenoid, may change position on loss of fluid pressure.

Single Air Operator

When the operator is pressurized, the valve shifts, then returns when the pressure is removed.

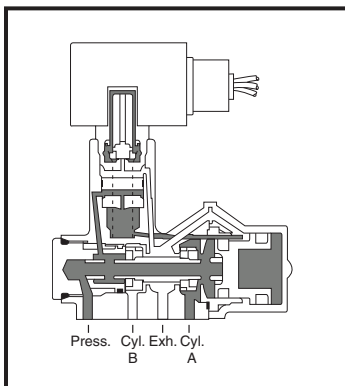
See Engineering Section for further details.

Standard and Optional Features

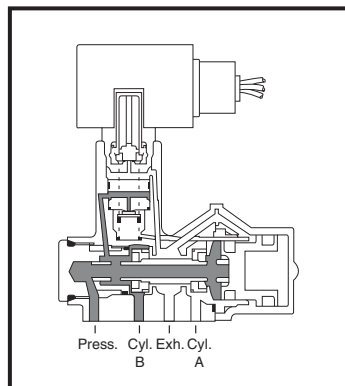
Solenoid valves are supplied, as listed, with either RedHat II molded epoxy solenoids or RedHat solenoids with metal enclosures (except for Series 8401). RedHat II valves are identified by the letter "G" or "H" in their catalog numbers; e.g., 8344-G027. Many optional features may be added to your valves; e.g., high-temperature Class H molded coils and manual operators.

See the Optional Features Section for details..

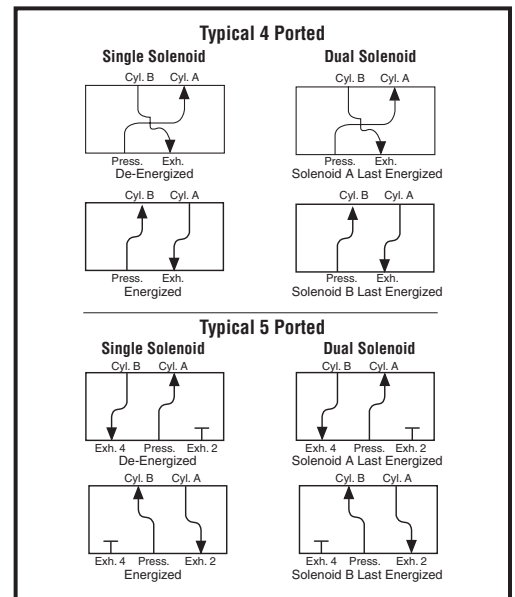
4 and 5-Ported Valves Flow Diagrams



De-Energized



Energized



Index

Series	General Description	Pipe Size (NPT)	Page
8340	Air Only	1/4"	71
8342	General Service	1/4" and 3/8"	75
8344	Piston/Poppet	1/4" - 1"	77
8345	General Service	1/4"	81
8401/8402	Slide Valve	1/4"	83
8551/8553	Inline Spool Valve	1/4" and 1/2"	87
8551/8553	RedHat II Spool Valve	1/4" and 1/2"	89



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Features

- Air-only design for cylinder control
- Up to eight single and dual solenoid valves, in any combination, can be manifolded
- Sub-base constructions have separate cylinder connections and common pressure and exhaust connections at each end. Can be assembled in the field by simply inserting tie rods through holes in base
- Group-mounted constructions have common pressure connections at each end and separate cylinder and exhaust connections
- Can be factory assembled or grouped in the field with strong snap-on clamps, supplied

Construction

Valve Parts in Contact with Fluids	
Body	Hard Anodized Aluminum
Disc	PE
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Spring	302 Stainless Steel
Shading Coil	Copper
Seals	NBR
Miscellaneous	PA, CA

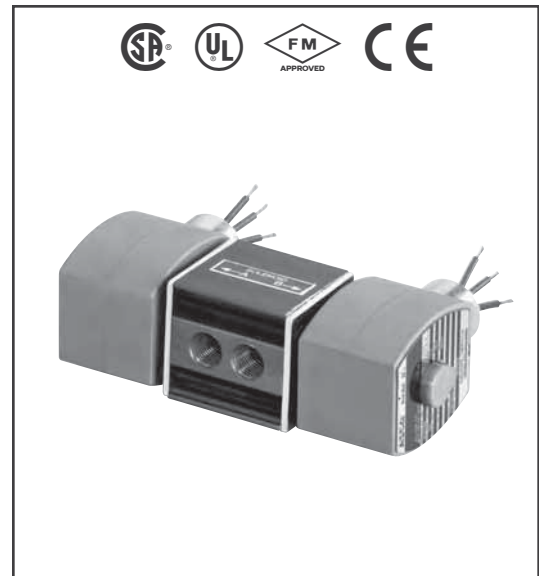
Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	-	10.5	24	65	64982	-	64982	-
F	19.7	16.7	36	85	64982	66611	64982	66611
F	-	10.1	25	70	238610	-	238614	-
F	22.6	17.1	40	93	238610	238710	238614	238714

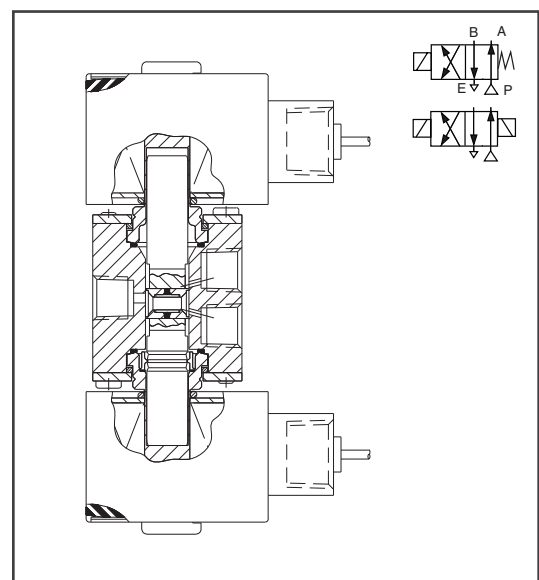
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat - Type 1.
Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9 (For 8340G001 and 8340G002 only); RedHat - Types 3, 4, 4X, 7, and 9. (To order, add prefix "EF" to catalog number.)
 See *Optional Features Section* for other available options.



4-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)
 DC: 32°F to 77°F (0°C to 25°C)(104°F/40°C occasionally)
 Refer to *Engineering Section* for details.

Leakage

Break-in leakage rate of 2 SCFH is reduced to a very slight amount as the valve wears in.

Approvals

CSA certified. AC is UL listed as General Purpose Valve. RedHat II meets applicable CE directives.
 Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid Temp. °F		Aluminum Body Catalog Number	Watt Rating/ Class of Coil Insulation	
			Max. AC	Max. DC	AC	DC		AC	DC
			Air-Inert Gas	Air-Inert Gas					
SINGLE VALVE CONSTRUCTION - Single Solenoid									
1/4	5/64	.10	150	100	130	95	8340G001	17.1/F	22.6/F
SINGLE VALVE CONSTRUCTION - Dual Solenoid									
1/4	5/64	.10	150	100	104	95	8340G002	10.1/F	22.6/F
GROUP MOUNTED CONSTRUCTION - Single Solenoid									
1/4	5/64	.10	150	100	104	95	8340A003	16.7/F	19.7/F
GROUP MOUNTED CONSTRUCTION - Dual Solenoid									
1/4	5/64	.10	150	100	104 ①	95 ①	8340A008	10.5/F	19.7/F
SUB-BASE MOUNTED CONSTRUCTION - Single Solenoid									
1/4	5/64	.08	150	100	104	95	8340A004	16.7/F	19.7/F
SUB-BASE MOUNTED CONSTRUCTION - Dual Solenoid									
1/4	5/64	.08	150	100	104 ①	95 ①	8340A005	10.5/F	19.7/F

① Rating shown for individual mounted valves; when group mounted, maximum UL allowable fluid and ambient temperature is 86°F.

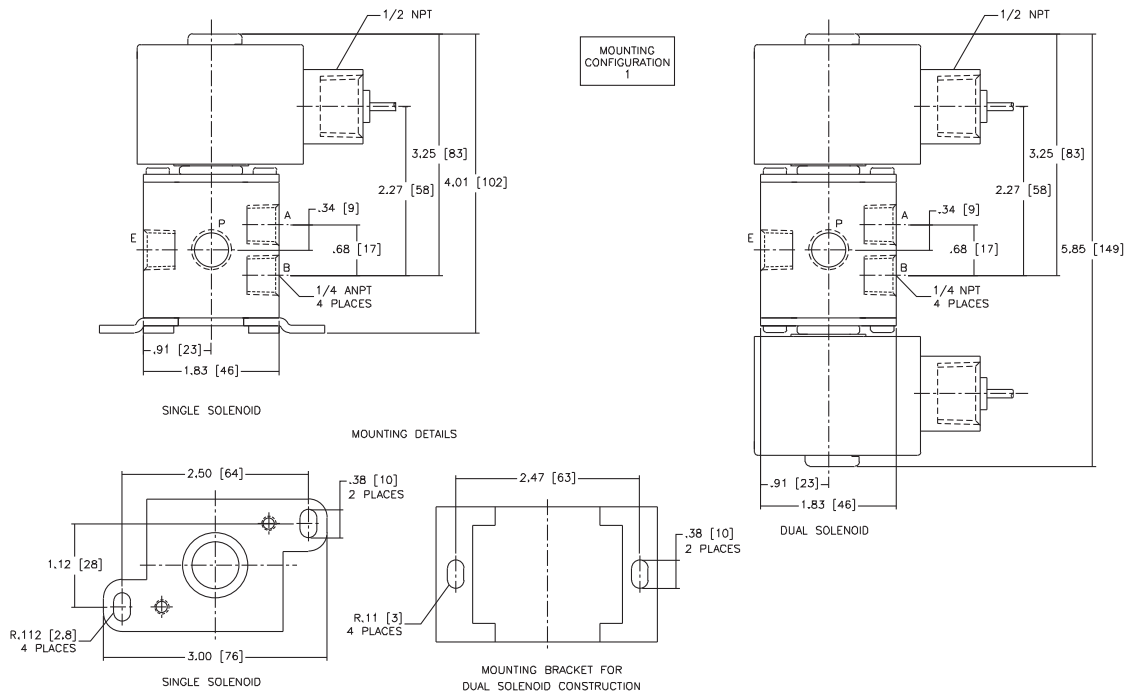
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Max. Fluid Temp. °C		Aluminum Body Catalog Number	Watt Rating/ Class of Coil Insulation	
			Max. AC	Max. DC	AC	DC		AC	DC
			Air-Inert Gas	Air-Inert Gas					
SINGLE VALVE CONSTRUCTION - Single Solenoid									
1/4	2.0	.09	10	7	54	35	8340G001	17.1/F	22.6/F
SINGLE VALVE CONSTRUCTION - Dual Solenoid									
1/4	2.0	.09	10	7	40	35	8340G002	10.1/F	22.6/F
GROUP MOUNTED CONSTRUCTION - Single Solenoid									
1/4	2.0	.09	10	7	40	35	8340A003	16.7/F	19.7/F
GROUP MOUNTED CONSTRUCTION - Dual Solenoid									
1/4	2.0	.09	10	7	40 ①	35 ①	8340A008	10.5/F	19.7/F
SUB-BASE MOUNTED CONSTRUCTION - Single Solenoid									
1/4	2.0	.07	10	7	40	35	8340A004	16.7/F	19.7/F
SUB-BASE MOUNTED CONSTRUCTION - Dual Solenoid									
1/4	2.0	.07	10	7	40 ①	35 ①	8340A005	10.5/F	19.7/F

① Rating shown for individual mounted valves; when group mounted, maximum UL allowable fluid and ambient temperature is 30°C.

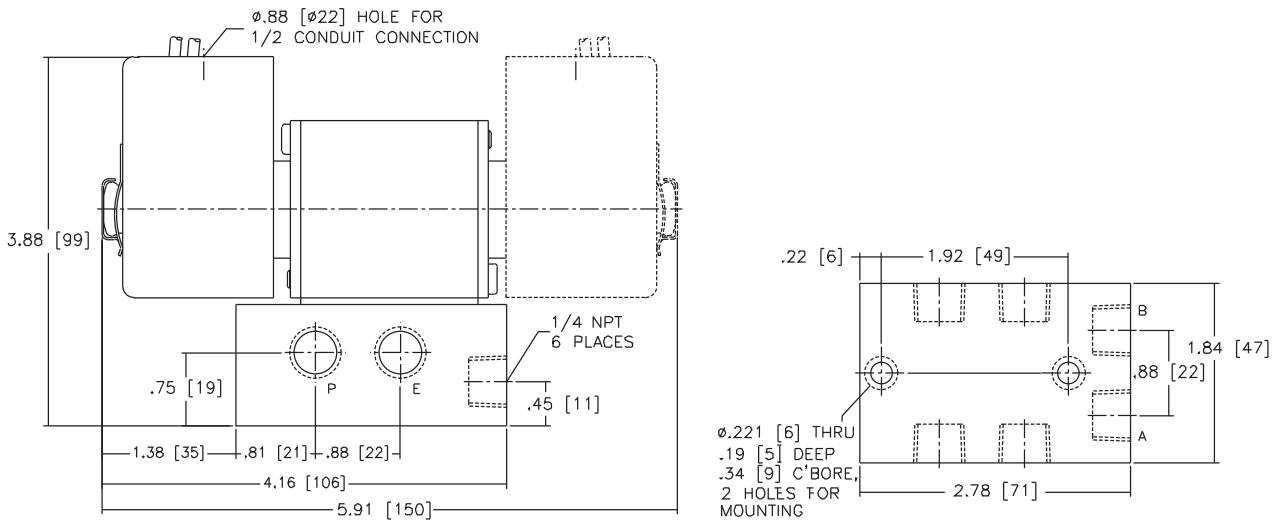
Dimensions: inches (mm)

Single Valve Construction - Single And Dual Solenoids



4-WAY

Sub-Base Mounted Single and Dual Solenoid Construction



Note: Dual solenoid shown dotted in.

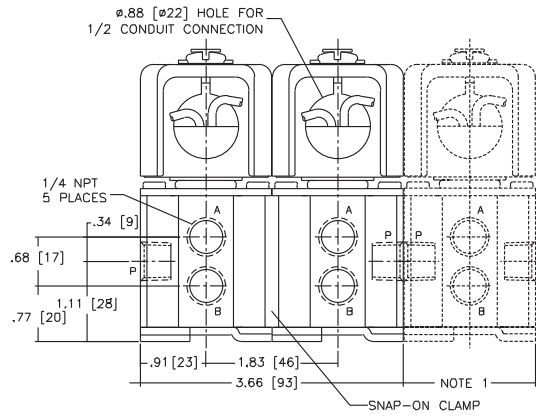
Dimensions: inches (mm)

4-WAY

Mounting Brackets		
Catalog Number	With General Purpose Solenoid Enclosure	When Manual Operator is Used
8340G001	Mounting Holes on Body	Order Kit No. 206-737
8340G002	Standard	NA
8340A003	Mounting Holes on Body	Order Kit No. 206-554
8340A004	Mounting Holes on Body	NA
8340A005	Mounting Holes on Body	NA
8340A008	Standard when factory assembled, but must order Kit No. 206-554 for Individual valves.	NA

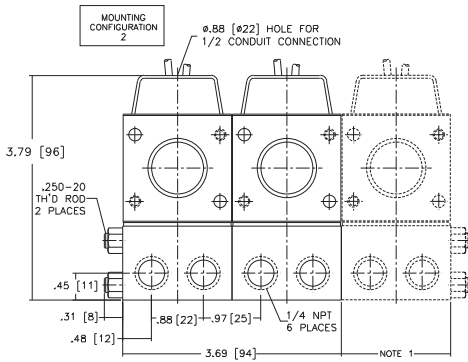
NA - Not Available

**Group-Mounted Construction
Single Solenoid**

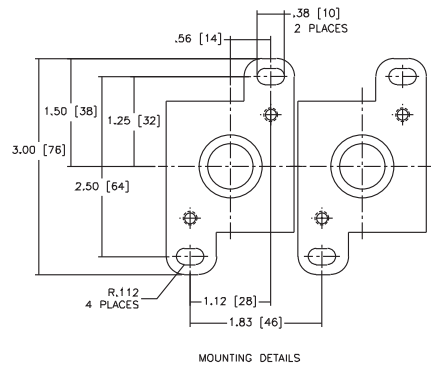


NOTE 1: FOR EACH ADDITIONAL VALVE ADD 1.83 [46].

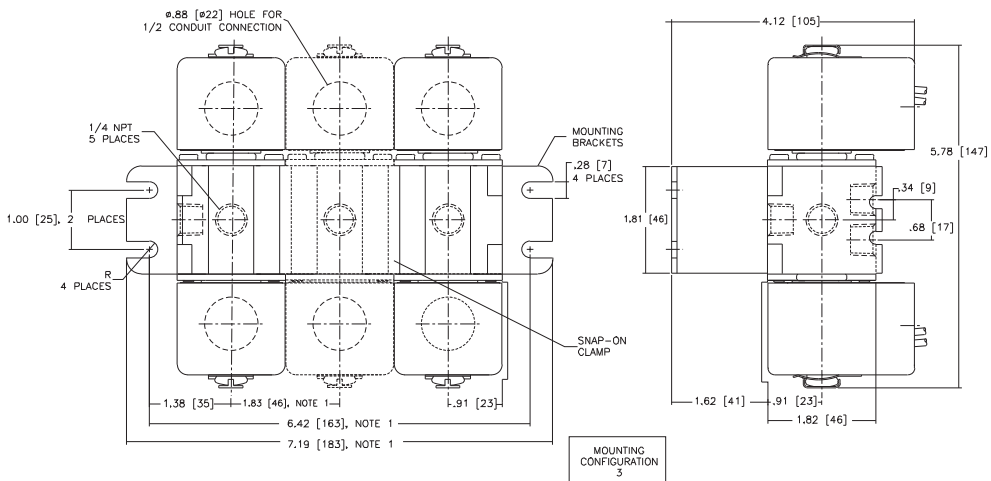
**Sub-Base Mounted Construction
(Shown As Group-Mounted)**



NOTE 1: FOR EACH ADDITIONAL VALVE ADD 1.84 [47].



Group-Mounted Construction - Dual Solenoid



NOTE 1: THIS DIMENSION IS FOR ONE VALVE;
FOR EACH ADDITIONAL VALVE ADD 1.83 [46].

Features

- Direct acting operation and high flow construction
- Direct acting, high flow slide-style valve
- Optional flow control regulates cylinder speed independently, in either direction
- Mechanical detent on dual solenoids holds last position, even after loss of electric power, pneumatics or pressure
- No Minimum Operating Pressure Differential required to shift valve
- Dual solenoid operation: solenoid may be energized momentarily (1/10 second) or continuously
- Mountable in any position

Construction

Valve Parts in Contact with Fluids		
Body	Brass	304 Stainless Steel
Seals and Discs	NBR and FKM	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel / 17-7 PH Stainless Steel	
Shading Coil	Copper	
Sleeve	PA	
Seats	Graphite-filled PTFE	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Spare Coil Part Number	
	AC			General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush	AC	AC
F	16.1	35	115	272610	272614
F	20.1	45	140	272610	272614

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 24, 110, 115, 220, 230 volts AC, 50 Hz. Other voltages are available when required.

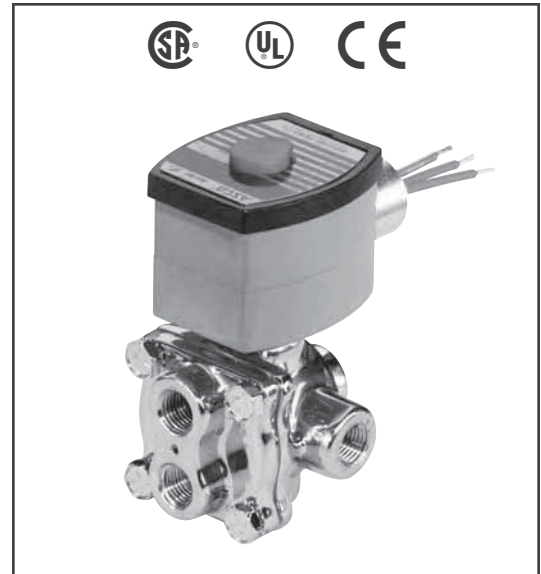
Note: No combination 120/60, 110/50 coil available. Must order either 120/60 or 110/50, etc.

Solenoid Enclosures

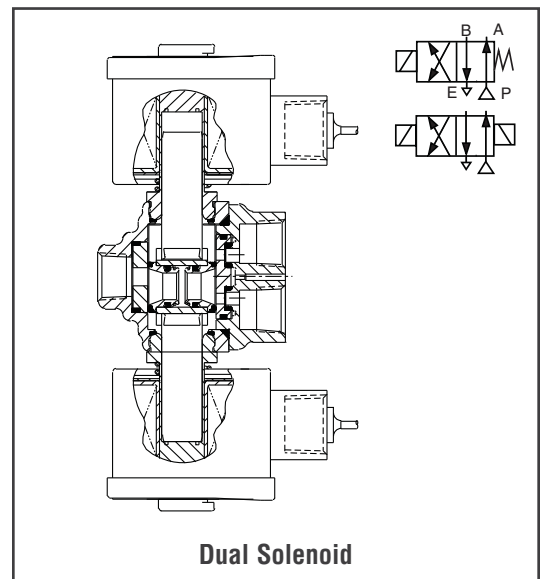
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



4-WAY



Nominal Ambient Temp. Ranges

Standard Class F insulation: 32°F to 125°F (0°C to 52°C)
 Optional Class H insulation: 32°F to 140°F (0°C to 60°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed as General Purpose Valves. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor ①	Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation
			Max. AC				Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	
			Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC					AC
SINGLE SOLENOID CONSTRUCTION											
1/4	3/16	.70	125	100	100	160	8342G001	1	8342G701	2	20.1/F
3/8	3/16	.70	125	100	100	160	8342G003	1	8342G703	2	20.1/F
DUAL SOLENOID CONSTRUCTION											
1/4	3/16	.70	125	125	125	160	8342G020	3	8342G720	4	16.1/F
3/8	3/16	.70	125	125	125	160	8342G022	3	8342G722	4	16.1/F

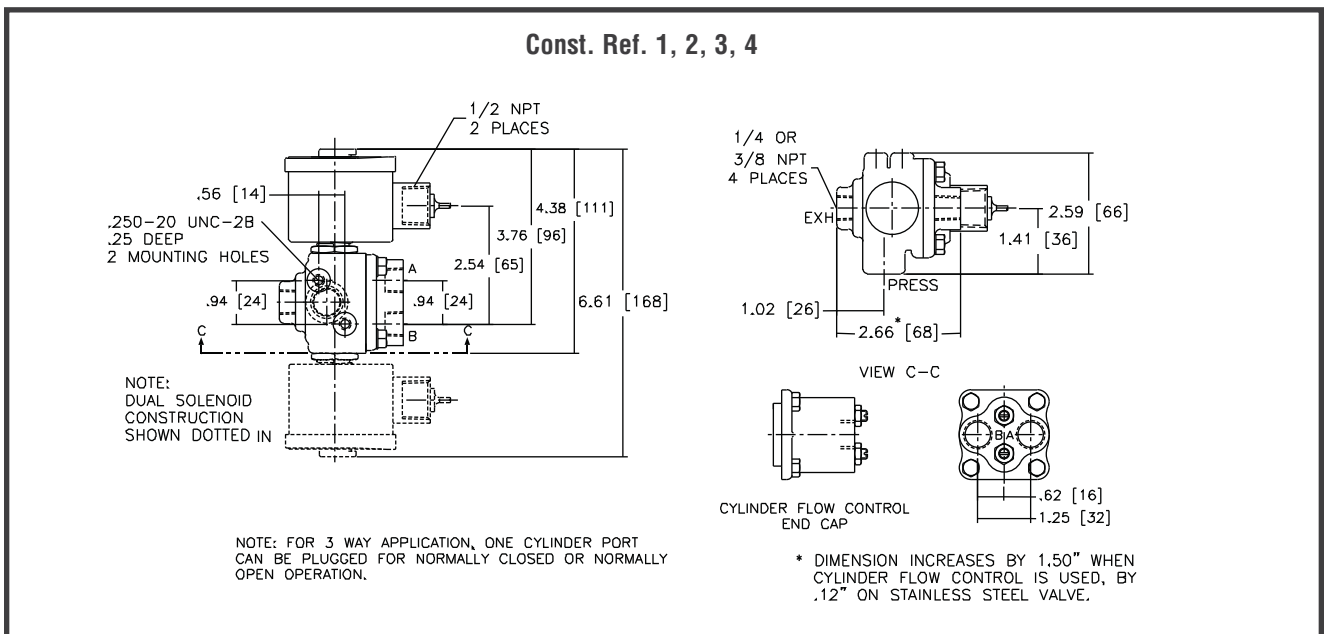
① With built-in flow control (Suffix "M"), the Cv is 0.44 and an 0.5 psi minimum operating pressure is required.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h) ①	Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation
			Max. AC				Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	
			Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC					AC
SINGLE SOLENOID CONSTRUCTION											
1/4	4.8	.60	9	7	7	71	8342G001	1	8342G701	2	20.1/F
3/8	4.8	.60	9	7	7	71	8342G003	1	8342G703	2	20.1/F
DUAL SOLENOID CONSTRUCTION											
1/4	4.8	.60	9	9	9	71	8342G020	3	8342G720	4	16.1/F
3/8	4.8	.60	9	9	9	71	8342G022	3	8342G722	4	16.1/F

① With built-in flow control (Suffix "M"), the Kv is 0.38 and an 0.03 bar minimum operating pressure is required.

Dimensions inches (mm)



Features

- Sturdy, robust construction
- Piston-operated poppet design provides high flow
- For use with air or water
- Wide range of sizes and flow rates
- Single or dual solenoid constructions
- Dual solenoid can be shifted with a momentary signal and remain in position even if electrical power is lost
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel / 17-7PH Stainless Steel
Shading Coil	Copper
Pilot Seat Cartridge and Disc-Holder	CA
Shaft Gasket	PA

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	11.6	10.1	25	50	238610	238710	238614	238714
F	22.6	17.1	40	70	238610	238710	238614	238714

Dual Solenoid Operation: Minimum coil on-time for dual solenoid valves is 0.3 seconds on air service and 1.0 seconds on liquids.

Caution: Do not energize both solenoids simultaneously.
 Refer to Engineering Section for details.

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

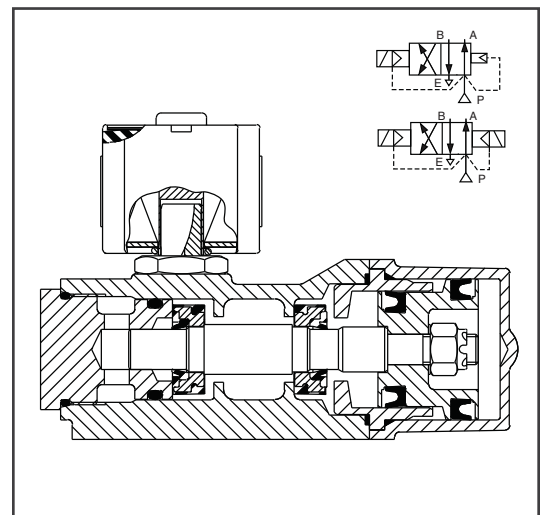
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" to the catalog number.)

See *Optional Features Section* for other available options.



4-WAY



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to Engineering Section for details.

Approvals

CSA certified. Meets applicable CE directives.

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.

- Loss of air pressure may allow valve to shift on dual solenoid constructions.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi)							Max. Fluid Temp. °F		Brass Body		Watt Rating/ Class of Coil Insulation	
				① Min.	Max. AC			Max. DC								
		Press.	Exh.		Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC	DC	Catalog Number	Const. Ref.	AC	DC
SINGLE SOLENOID																
1/4	1/4	.80	1.0	10	150	125	125	125	125	125	180	150	8344G070	1	10.1/F	11.6/F
1/4	1/4	.80	1.0	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G000	1	17.1/F	22.6/F
3/8	3/8	1.4	2.2	10	150	125	125	125	125	125	180	150	8344G072	2	10.1/F	11.6/F
3/8	1/4	.80	1.0	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G001	1	17.1/F	22.6/F
1/2	3/8	1.4	2.2	10	150	125	125	125	125	125	180	150	8344G074	2	10.1/F	11.6/F
1/2	3/8	1.4	2.2	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G027	2	17.1/F	22.6/F
3/4	3/4	5.2	5.6	10	150	125	125	125	125	125	180	150	8344G076	3	10.1/F	11.6/F
3/4	3/4	5.2	5.6	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G029	3	17.1/F	22.6/F
1	3/4	5.2	5.6	10	150	125	125	125	125	125	180	150	8344G078	3	10.1/F	11.6/F
1	3/4	5.2	5.6	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G031	3	17.1/F	22.6/F
DUAL SOLENOID ③																
1/4	1/4	.80	1.0	10	250	200	125	125	125	100	180	120	8344G044	4	6.1/F	10.6/F
3/8	3/8	1.4	2.2	10	250	200	125	125	125	100	180	120	8344G080	6	6.1/F	10.6/F
3/8	3/8	1.4	2.2	10	300	300	200	-	-	-	180	-	8344G050	7	10.1/F	-
1/2	3/8	1.4	2.2	10	250	200	125	125	125	100	180	120	8344G082	6	6.1/F	10.6/F
3/4	3/4	5.2	5.6	10	300	300	200	125	125	100	180	120	8344G054	8	10.1/F	10.6/F
1	3/4	5.2	5.6	10	300	300	200	125	125	100	180	120	8344G056	8	10.1/F	10.6/F

① 25 psi (1.7 bar) minimum on light oil service. ② For best results, do not use valve rated 250 psi (17 bar) on mainline pressure of less than 125 psi (9 bar).
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

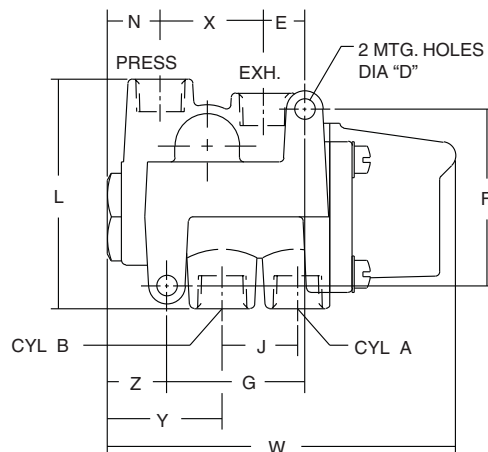
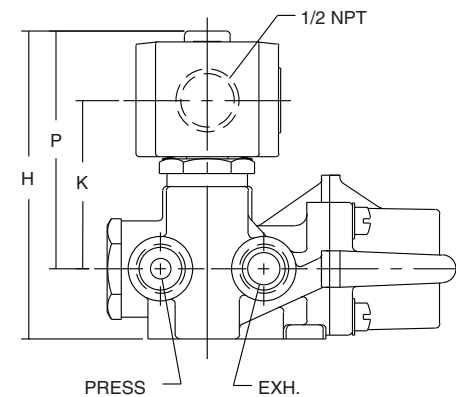
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)							Max. Fluid Temp. °C		Brass Body		Watt Rating/ Class of Coil Insulation	
				① Min.	Max. AC			Max. DC								
		Press.	Exh.		Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC	DC	Catalog Number	Const. Ref.	AC	DC
SINGLE SOLENOID																
1/4	6	.69	.86	0.7	10	9	9	9	9	9	82	65	8344G070	1	10.1/F	11.6/F
1/4	6	.69	.86	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	82	82	8344G000	1	17.1/F	22.6/F
3/8	10	1.2	1.89	0.7	10	9	9	9	9	9	82	65	8344G072	2	10.1/F	11.6/F
3/8	6	.69	.86	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	82	82	8344G001	1	17.1/F	22.6/F
1/2	10	1.2	1.89	0.7	10	9	9	9	9	9	82	65	8344G074	2	10.1/F	11.6/F
1/2	10	1.2	1.89	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	82	82	8344G027	2	17.1/F	22.6/F
3/4	19	4.5	4.80	0.7	10	9	9	9	9	9	82	65	8344G076	3	10.1/F	11.6/F
3/4	19	4.5	4.80	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	82	82	8344G029	3	17.1/F	22.6/F
1	19	4.5	4.80	0.7	10	9	9	9	9	9	82	65	8344G078	3	10.1/F	11.6/F
1	19	4.5	4.80	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	82	82	8344G031	3	17.1/F	22.6/F
DUAL SOLENOID ③																
1/4	6	.80	.86	0.7	17	14	9	9	9	7	82	49	8344G044	4	6.1/F	10.6/F
3/8	10	1.4	1.89	0.7	17	14	9	9	9	7	82	49	8344G080	6	6.1/F	10.6/F
3/8	10	1.4	1.89	0.7	21	21	14	-	-	-	82	-	8344G050	7	10.1/F	-
1/2	10	1.4	1.89	0.7	17	14	9	9	9	7	82	49	8344G082	6	6.1/F	10.6/F
3/4	19	5.2	4.80	0.7	21	21	14	9	9	7	82	49	8344G054	8	10.1/F	10.6/F
1	19	5.2	4.80	0.7	21	21	14	9	9	7	82	49	8344G056	8	10.1/F	10.6/F

① 25 psi (1.7 bar) minimum on light oil service. ② For best results, do not use valve rated 250 psi (17 bar) on mainline pressure of less than 125 psi (9 bar).
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Dimensions inches (mm)

Const. Ref.		ØD	E	F	G	H	J	K	L	N	P	W	X	Y	Z	Exhaust Pipe Size
1	ins.	Ø .28	.56	2.41	1.88	4.08	1.03	2.15	3.13	.72	3.12	4.75	1.41	1.56	.81	3/8
	mm	Ø 7.1	14	61	48	104	26	55	80	18	79	121	36	40	21	3/8
2	ins.	Ø .34	.75	3.12	2.63	4.06	1.50	1.97	3.18	.83	2.94	6.06	1.88	1.90	.84	1/2
	mm	Ø 8.6	19	79	67	103	38	50	81	21	75	154	47	48	21	1/2
3	ins.	Ø .34	1.34	3.81	3.88	4.86	2.09	2.34	4.56	1.56	3.31	8.25	2.12	2.63	1.16	1
	mm	Ø 8.6	34	97	99	123	53	59	116	39	84	210	54	67	30	1
4	ins.	Ø .28	.56	2.41	1.88	4.34	1.03	2.52	3.13	.72	3.38	4.81	1.41	1.56	.81	3/8
	mm	Ø 7.1	14	61	48	110	26	64	80	18	86	122	36	40	21	3/8
6	ins.	Ø .34	.75	3.12	2.63	4.50	1.50	2.52	3.18	.83	3.38	6.06	1.88	1.90	.84	1/2
	mm	Ø 8.6	19	79	67	114	38	64	81	21	86	154	47	48	21	1/2
7	ins.	Ø .34	.75	3.12	2.63	4.68	1.50	2.59	3.18	.83	3.56	6.06	1.88	1.90	.84	1/2
	mm	Ø 8.6	19	79	67	119	38	66	81	21	90	154	47	48	21	1/2
8	ins.	Ø .34	1.34	3.81	3.88	5.56	2.09	3.03	4.56	1.55	4.00	8.25	2.12	2.63	1.16	1
	mm	Ø 8.6	34	97	99	141	53	77	116	39	102	210	54	67	30	1

Const. Ref 1 - 3

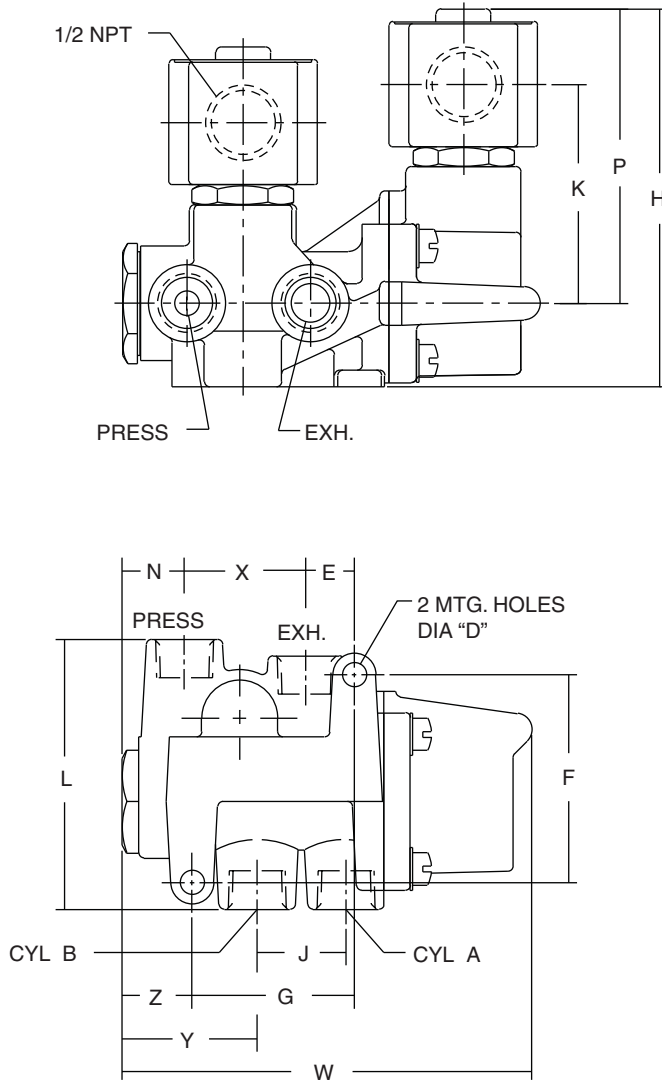


4-WAY

Dimensions inches (mm)

4-WAY

Const. Ref. 4 - 8



Features

- Compact valves for general service applications
- Low-cost, 4-way valve when low flow is sufficient
- Mountable in any position

Construction

Valve Parts in Contact with Fluids		
Body	Brass	316 Stainless Steel
Seals and Disc	NBR and PA	FKM, PA and UR
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Shading Coil	Copper	Silver
Piston	PA	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number					
	DC Watts	AC			General Purpose		Explosionproof (EF)		Explosionproof (EV)	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714	274614	274714

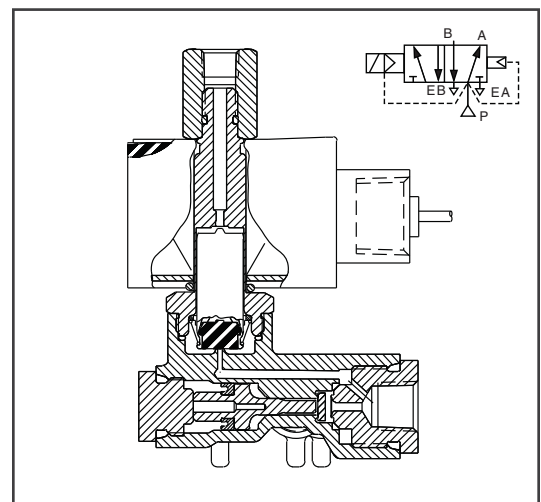
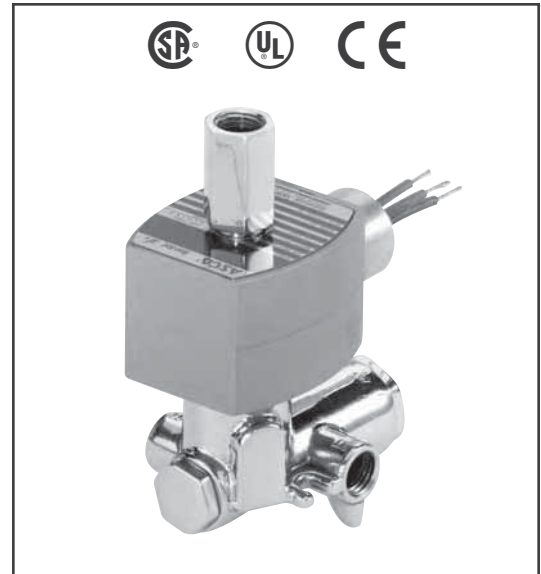
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed as General Purpose Valve.

EV8345G081 solenoid only UL approved.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

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.

Refer to *Engineering Section* for details.

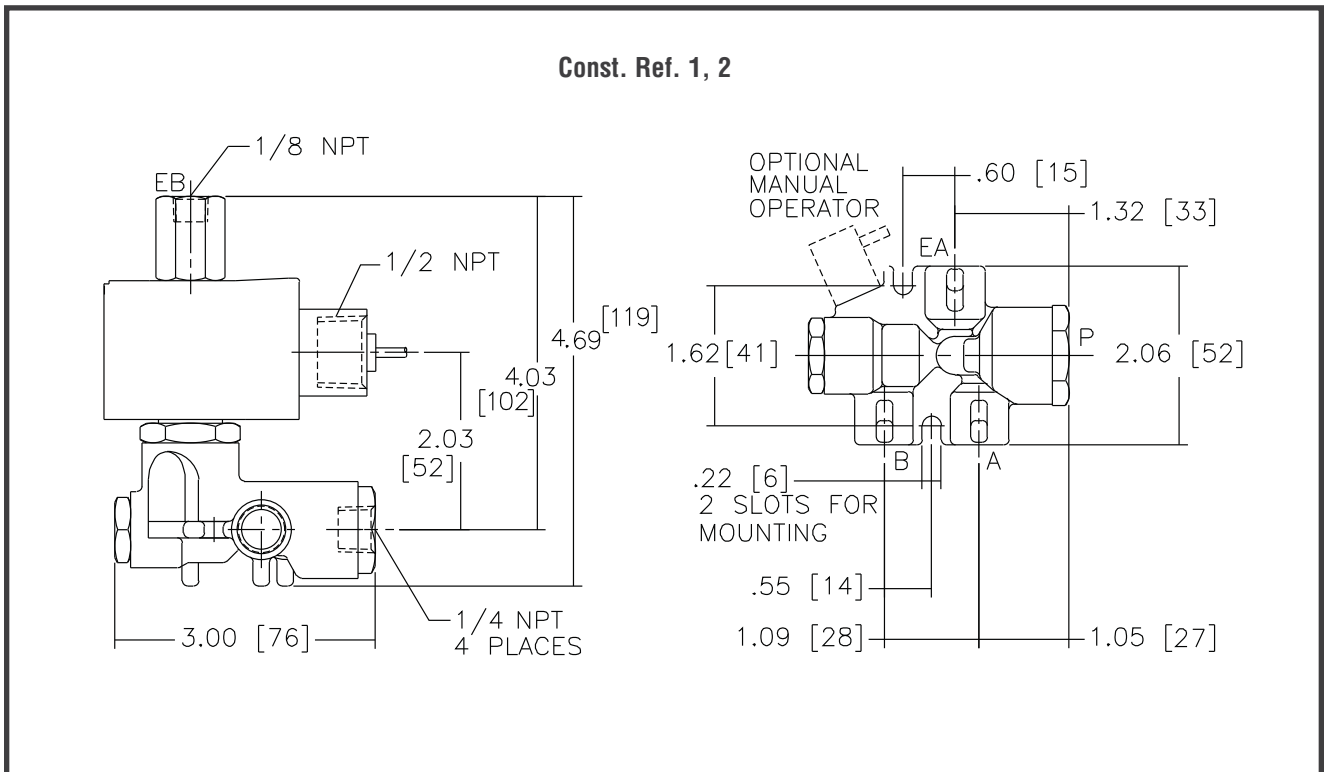
Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Brass Body		Stainless Steel Body		Watt Rating/Class of Coil Insulation	
	Press.	Exh.	Inlet	Exh.	Max. AC			Max. DC			AC	DC	Catalog Number	Catalog Number	Const. Ref.	AC	DC	
					Min.	Air-Inert Gas	Water	Lt. Oil @ 50 SSU	Air-Inert Gas	Water								Lt. Oil @ 50 SSU
SINGLE SOLENOID																		
1/4	1/16	3/32	.09	.09	10	150	150	150	100	100	100	180	104	8345G001	EV8345G081	1	10.1/F	11.6/F
SINGLE SOLENOID AIR-ONLY CONSTRUCTION - Exhaust to Atmosphere																		
1/4	1/16	3/32	.09	.09	10	150	-	-	100	-	-	180	104	8345H003	-	2	10.1/F	11.6/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)		Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)						Max. Fluid Temp. °C		Brass Body		Stainless Steel Body		Watt Rating/Class of Coil Insulation	
	Press.	Exh.	Inlet	Exh.	Max. AC			Max. DC			AC	DC	Catalog Number	Catalog Number	Const. Ref.	AC	DC	
					Min.	Air-Inert Gas	Water	Lt. Oil @ 50 SSU	Air-Inert Gas	Water								Lt. Oil @ 50 SSU
SINGLE SOLENOID																		
1/4	2	2	.08	.08	0.7	10	10	10	7	7	7	82	40	8345G001	EV8345G081	1	10.1/F	11.6/F
SINGLE SOLENOID AIR-ONLY CONSTRUCTION - Exhaust to Atmosphere																		
1/4	2	2	.08	.08	0.7	10	-	-	7	-	-	82	40	8345H003	-	2	10.1/F	11.6/F

Dimensions inches (mm)



Features

- Unique sliding, sealing member
- Optional flow control regulates cylinder speed in either direction
- Dual solenoid versions hold last position, even after loss of electric power
- Dual solenoid operation: solenoid may be energized momentarily (1/10 second) or continuously
- Air/inert gas service only
- Durable and "non-sticking" sealing method
- Standard manual operator both momentary and maintained
- Optional flow control provides adjustable Cv from 0.2 to 0.8

Construction

Valve Parts in Contact with Fluids	
Main Valve Body, Sub- and Manifold Base, End Caps	Aluminum
Pilot Valve Body	Molded CA
End Caps	Stainless Steel (non-metering) Molded CA (metering)
Seals	NBR (Carboxylated Nitrile)
Spool	Molded Delrin
Slide	Molded Delrin
Flow Plate	Ceramic (alumina)
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core and Plugnut	302 Stainless Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption					
	DC Watts	AC			Spare Coil Part No.	
		Watts	VA Holding	VA Inrush	AC	DC
F	6.9	6.3	8.8	12.1	400125	400125

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

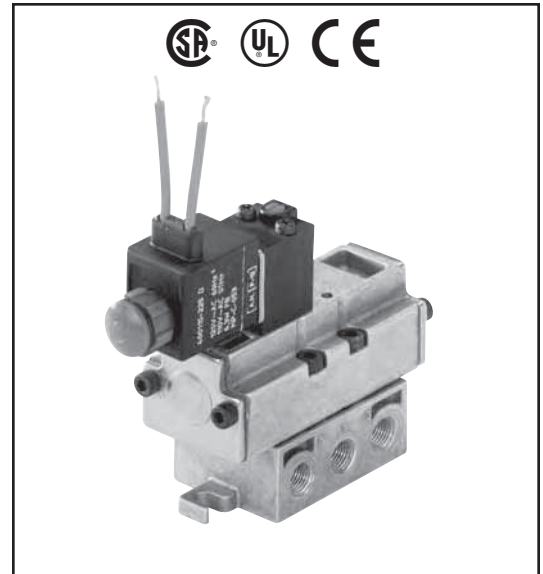
Solenoid Enclosures

Standard: Open Frame Solenoid.

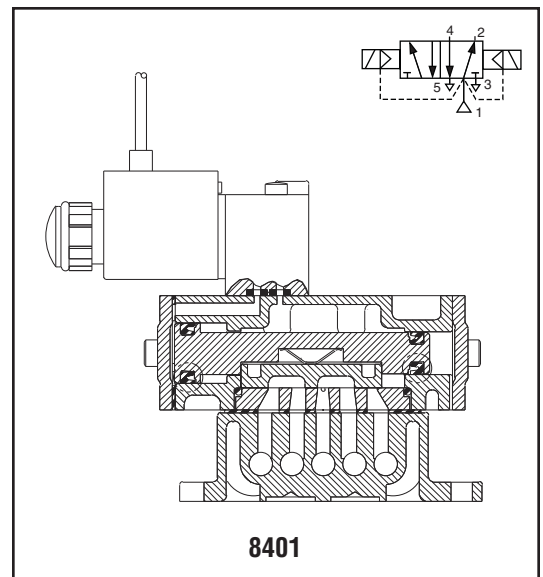
Optional: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

(To order, substitute with prefix "WT".) Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, substitute with prefix "EF".)

See *Optional Features Section* for other available options.



4-WAY



Nominal Ambient Temp. Ranges

Standard Class F insulation:

AC: 0°F to 135°F (-18°C to 57°C) ("U" and "SC" prefix)

AC: 0°F to 104°F (-18°C to 40°C)

(optional "WT" or "EF" prefix)

DC: 0°F to 77°F (-18°C to 25°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL recognized components for "U" and "SC" prefix. With prefix "WT", UL listed as a General Purpose Valve. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Main Line Supply Pressure (psi)			Max. Fluid Temp. °F		Molded Epoxy Open Frame Solenoid				Watt Rating/ Class of Coil Insulation		
			Min.	Air-Inert Gas		AC	DC	Sub-Base Mounted		Manifold Mounted		AC	DC	
				Max. AC	Max. DC			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.			
SINGLE SOLENOID														
1/4	1/4	.80	20	150	150	135	77	U8401B101	2	U8401B103	3	6.3/F	6.9/F	
DUAL SOLENOID														
1/4	1/4	.80	20	150	150	135	77	U8401B105	5	U8401B107	6	6.3/F	6.9/F	
SINGLE AIR PILOTED														
1/4	1/4	.80	20	150	150	135	135	8402A101	8	8402A103	9	-	-	

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Main Line Supply Pressure (bar)			Max. Fluid Temp. °C		Molded Epoxy Open Frame Solenoid				Watt Rating/ Class of Coil Insulation		
			Min.	Air-Inert Gas		AC	DC	Sub-Base Mounted		Manifold Mounted		AC	DC	
				Max. AC	Max. DC			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.			
SINGLE SOLENOID														
1/4	6	.69	1.4	10	10	57	25	U8401B101	2	U8401B103	3	6.3/F	6.9/F	
DUAL SOLENOID														
1/4	6	.69	1.4	10	10	57	25	U8401B105	5	U8401B107	6	6.3/F	6.9/F	
SINGLE AIR PILOTED														
1/4	6	.69	1.4	10	10	57	57	8402A101	8	8402A103	9	-	-	

Dimensions: inches (mm)

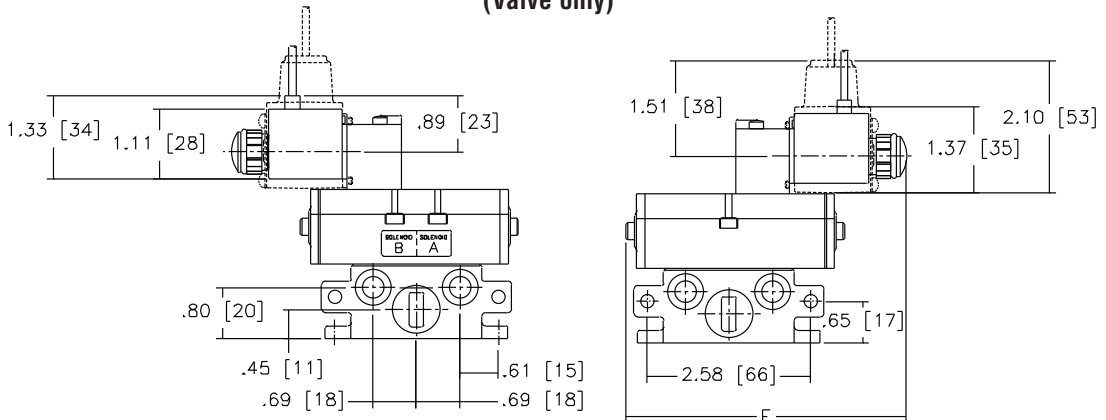
Const. Ref.	A	B	C	E	F
2	ins. .73	.60	.80	1.02	4.43 ①
	mm 19	15	20	26	112 ①
3	ins. X	X	.79	.91	4.43 ①
	mm X	X	20	23	112 ①
5	ins. .73	.60	.80	1.02	X
	mm 19	15	20	26	X

① Add .54 (13.7mm) for metering.
See drawings for dimensions not shown.
Note: "EF" and "WT" dimensions shown by dotted lines.
IMPORTANT: Valve can be mounted in any position.

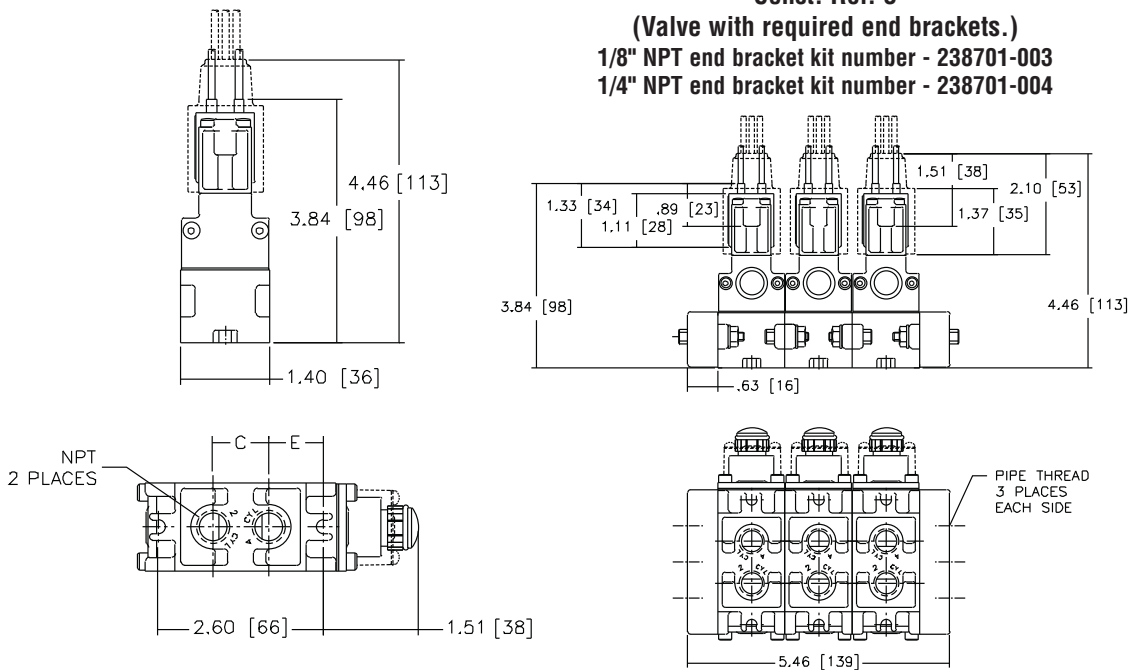
Const. Ref. 2

Dimensions: inches (mm)

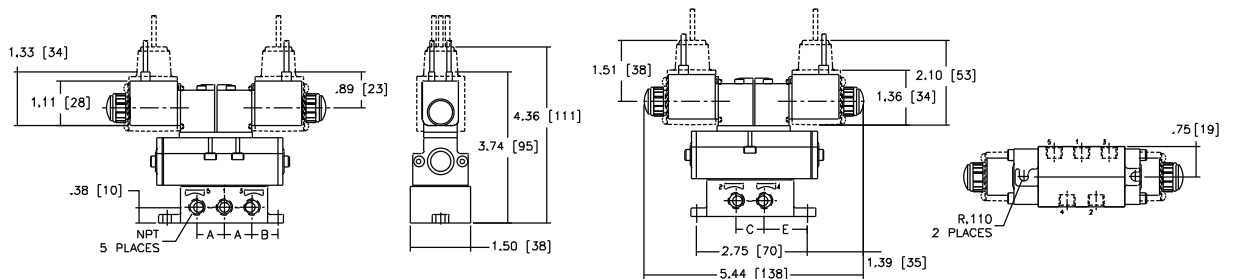
**Const. Ref. 3
(Valve only)**



**Const. Ref. 3
(Valve with required end brackets.)
1/8" NPT end bracket kit number - 238701-003
1/4" NPT end bracket kit number - 238701-004**



Const. Ref. 5



4-WAY

Dimensions: inches (mm)

4-WAY

Const. Ref.		A	B	C	E	F	G	H
6*	ins.	X	X	.79	.91	X	X	X
	mm	X	X	20	23	X	X	X
8	ins.	.73	.60	.80	1.02	.41	3.45 ②	1.22 ①
	mm	19	15	20	26	10	88 ②	31 ①
9*	ins.	X	X	.79	.91	X	3.45 ②	1.22 ①
	mm	X	X	20	23	X	88 ②	31 ①

① Add .54 (13.7 mm) for metering. ② Add 1.07 (27.2 mm)

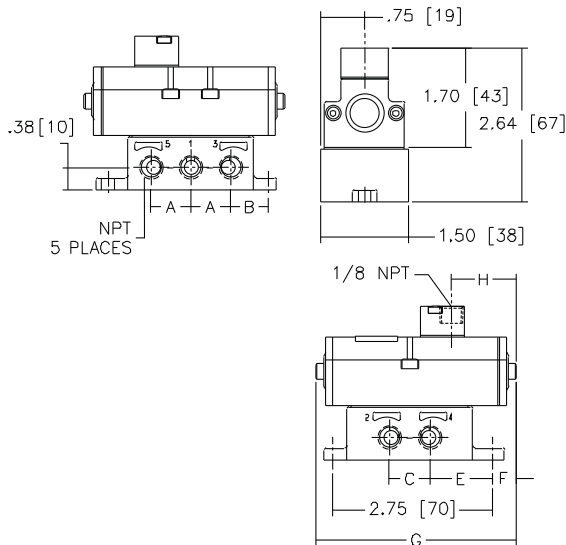
See drawings for dimensions not shown.

Note: "EF" and "WT" dimensions shown by dotted lines. Male 1/2" connection on EF/WT coil, conduit connector provided.

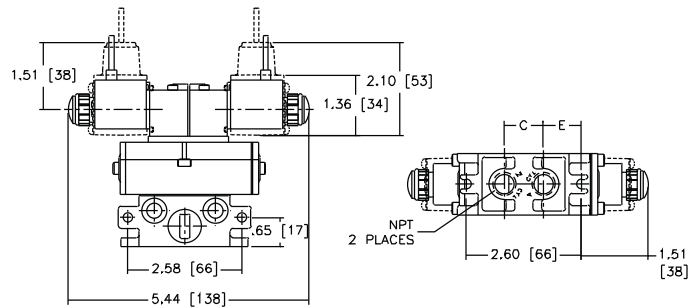
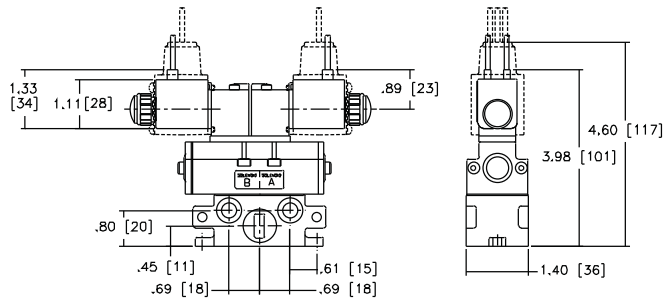
*For dimensions with required end brackets see Const. Ref. 3.

IMPORTANT: Valve can be mounted in any position.

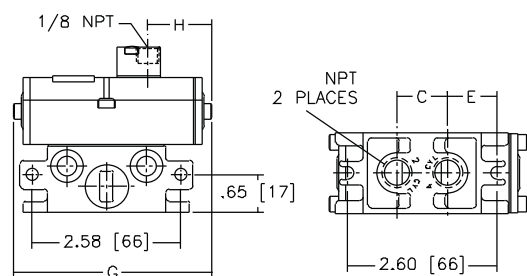
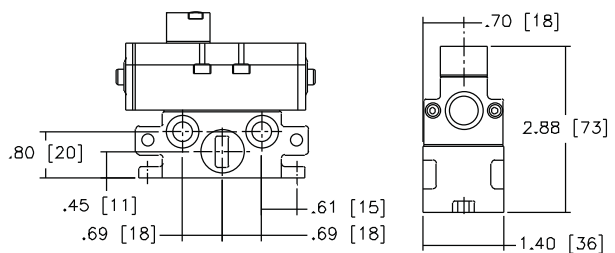
Const. Ref. 8



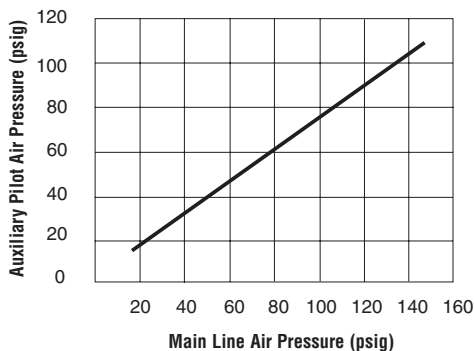
Const. Ref. 6



Const. Ref. 9



SINGLE AIR PILOTED VALVES
Auxiliary Pilot Air Pressure vs. Main Line Air Pressure



Features

- Compact spool valve with threaded port connections
- All exhaust ports are pipable, providing better protection against harsh environments
- Standard manual operator
- DIN, Watertight and Explosionproof solenoids available
- Single and dual solenoid constructions
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Black Anodized Aluminum
Spring	Phosphate Treated Black Steel
Shading Coil	Copper
Seals	NBR + PUR
Core and Core Tube	Stainless Steel/Brass
End Covers	6/6 Glass Filled PA/FG
Spool	Aluminum
Internal Parts	Zamak, Steel, CA, Aluminum

Electrical

Standard Coil and Class of Insulation	Enclosure Type	Watt Rating and Power Consumption				Spare Coil Part Number	
		DC Watts	AC Watts	VA Holding	VA Inrush	AC	DC
F	SC	3	2.5	3.5	6	400125	400125
F	SC	6.9	5	7	15	43004649	43004647
F	EF	6.9	6.3	7	10.1	266762	270007
F	WT	6.9	6.3	7	10.1	266763	270008

Standard Voltages: SC: 24, 120, 240 Volts AC, 50-60 Hz; 12, 24, 120 Volts DC.
 WT and EF: 24/50-60HZ, (120/60, 110-120/50)①, (240/60, 220-240/50)② Volts AC;
 6, 12, 24, 120 Volts DC.
 ① Order as 120/60, 110/50
 ② Order as 240/60, 220/50

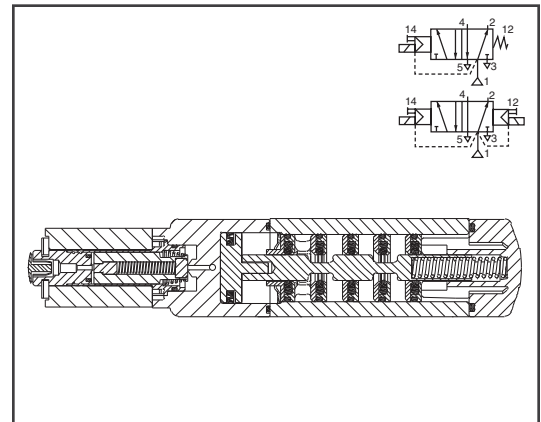
Solenoid Enclosures

Standard: - Prefix

SC = IP65 type DIN (open frame) per 46244

WT = Combination General Purpose and Watertight Types 1, 2, 3, 3S, 4, and 4X

EF = Combination Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, 6P, 7, 9 Class I, Div. 1 (Groups A - D) and Class II, Div. 1 Type 9 (Groups E-G)



Nominal Ambient Temp. Ranges

SC: AC/DC: 5°F to +140°F (-15°C to 60°C)

EF: AC: 5°F to +104°F (-15°C to 40°C)
 DC: 5°F to +77°F (-15°C to 25°C)

WT: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

Note: For temperatures below 32°F (0°C) moisture-free air must be used.

Refer to Engineering Section for details.

Approvals

SC (2.5W and 3W only) UL recognized component, CSA certified.

WT: UL recognized component, CSA certified.

EF: UL and CSA solenoid approval.
 Meets applicable CE directives.

Refer to Engineering Section for details.

Note

When mounting inline 8551 valves with WT & EF solenoids (6.3 & 6.9 watts), ASCO recommends using two (2) 1/8" thick washers under the valve body to provide clearance for the solenoid coil.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Fluid Temp. °F (for single and dual solenoid)			Single Solenoid	Dual Solenoid	Watt Rating/ Class of Coil Insulation	
			Min.	Max.	Min.	Max. AC	Max. DC	Catalog Number	Catalog Number	AC	DC
OPEN FRAME DIN COIL											
1/4	1/4	.86	30	150	5	140	140	SC8551A017MS	SC8551A018MS	2.5	3
1/2	1/2	3.7	30	150	-15	140	140	SC8553A017MS	SC8553A018MS	5	6.9
WATERTIGHT ENCLOSURE											
1/4	1/4	.86	30	150	5	104	77	WT8551A017MS	WT8551A018MS	6.3	6.9
1/2	1/2	3.7	30	150	-15	140	140	WT8553A017MS	WT8553A018MS	6.3	6.9
EXPLOSIONPROOF ENCLOSURE											
1/4	1/4	.86	30	150	5	104	77	EF8551A017MS	EF8551A018MS	6.3	6.9
1/2	1/2	3.7	30	150	-15	140	140	EF8553A017MS	EF8553A018MS	6.3	6.9

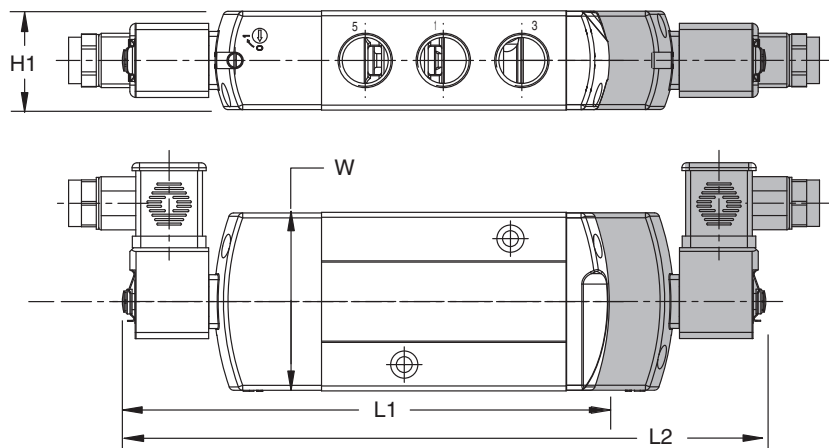
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Fluid Temp. °C (for single and dual solenoid)			Single Solenoid	Dual Solenoid	Watt Rating/ Class of Coil Insulation	
			Min.	Max.	Min.	Max. AC	Max. DC	Catalog Number	Catalog Number	AC	DC
OPEN FRAME DIN COIL											
1/4	6	.75	2	10	-15	60	60	SC8551A017MS	SC8551A018MS	2.5	3
1/2	13	3.15	2	10	-25	60	60	SC8553A017MS	SC8553A018MS	5	6.9
WATERTIGHT ENCLOSURE											
1/4	6	.75	2	10	-15	40	25	WT8551A017MS	WT8551A018MS	6.3	6.9
1/2	13	3.15	2	10	-25	60	60	WT8553A017MS	WT8553A018MS	6.3	6.9
EXPLOSIONPROOF ENCLOSURE											
1/4	6	.75	2	10	-15	40	25	EF8551A017MS	EF8551A018MS	6.3	6.9
1/2	13	3.15	2	10	-25	60	60	EF8553A017MS	EF8553A018MS	6.3	6.9

Dimensions inches (mm)

Series	8551	8553
NPT	1/4	1/2
L1	6.18 (157)	7.76 (197)
L2	8.28 (210)	10.25 (260)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

NOTE: Valve shown with CM22 DIN terminal coil and connector. Connector sold separately.



Features

- Compact Spool Valve
- Single and dual solenoid constructions available
- Unique design combines hard T-seals and flexible o-rings, provides bubble-tight shutoff, resistance to dirt and multimillion cycle life controlling air or inert gas
- Low Power and Intrinsically Safe construction available
See Special Service Pilot Valve Section for details

Construction

Valve Parts in Contact with Fluids			
Body	Aluminum, Black Anodized	Brass	316L Stainless Steel
End Cover (Spring end)	Glass-filled Polyamide	Brass	316L Stainless Steel
Spool Valve Internals	Zamak, Stainless Steel, Acetal (POM), Aluminum	Brass, Acetal (POM), Delrin	
Pilot End Covers	Aluminum, Black Anodized	Brass	316L Stainless Steel
Core Tube	Stainless Steel		
Core and Plugnut	Stainless Steel		
Springs	Stainless Steel		
Seals and Discs	NBR		
Top Disc	Nylon (PA)		
Core Guide	Acetal		
Seat and Seat Insert	Brass, Acetal		
Shading Coil	Copper		
Rider Ring (low power)	PTFE		

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714

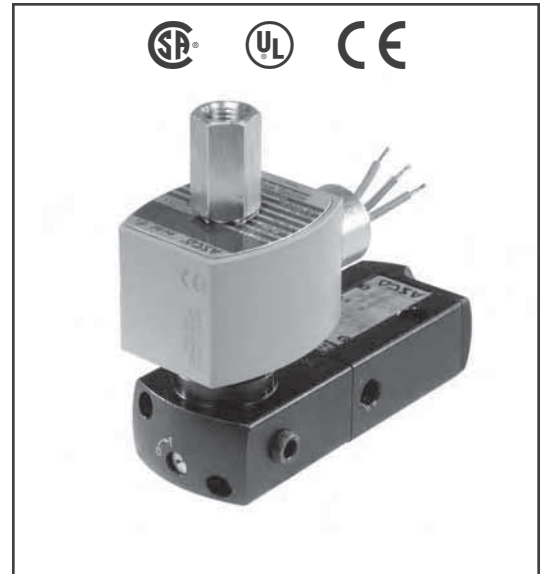
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

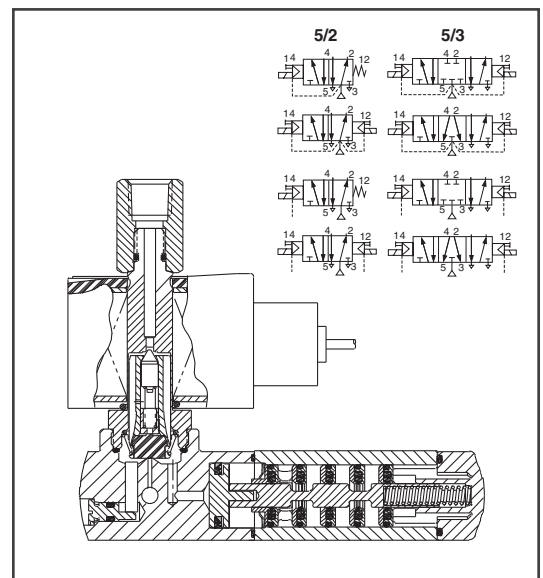
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or "EV" for stainless steel) to catalog number.)

See Optional Features Section for other available options.



4-WAY



Nominal Ambient Temp. Ranges

Body Material	Description
Aluminum	AC: 5°F to 125°F (-15°C to 52°C) DC: 5°F to 104°F (-15°C to 40°C)
Brass	AC: -40°F to 125°F (-40°C to 52°C)
Stainless Steel	DC: -40°F to 104°F (-40°C to 40°C)

Approvals

UL/CSA approvals for aluminum constructions pending. EF and EV are UL listed solenoids. CSA certified. Meet applicable CE directives.

Refer to Engineering Section for details.

Specifications (English units)

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid						Dual Solenoid											
				Operating Pressure Differential (psi)			Max. Fluid Temp. °F			Catalog Number	Const. Ref.	Operating Pressure Differential (psi)			Max. Fluid Temp. °F			Catalog Number	Const. Ref.	Watt Rating/Class of Coil Insulation	
				Air-Inert Gas								Air-Inert Gas								AC	DC
				Min.	Max. AC	Max. DC	AC	DC	Min.			Max. AC	Max. DC	AC	DC						
Aluminum 5/2	1/4	1/4	.86	30	150	120	140	120	8551G417	1	30	150	120	140	120	8551G418	1	10.1/F	11.6/F		
Aluminum 5/3 Center Closed									-							8551G467					
Aluminum 5/3 Center Open									-							8551G468					
Brass 5/2									EF8551G419 ①							EF8551G420 ①					
316L Stainless Steel 5/2									EV8551G421 ②							EV8551G422 ②					
Aluminum 5/2	1/2	1/2	3.7						8553G417												

① Brass construction supplied standard with EF solenoid. ② Stainless steel construction supplied standard with EV solenoid.

Specifications (Metric units)

Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Single Solenoid						Dual Solenoid											
				Operating Pressure Differential (bar)			Max. Fluid Temp. °C			Catalog Number	Const. Ref.	Operating Pressure Differential (bar)			Max. Fluid Temp. °C			Catalog Number	Const. Ref.	Watt Rating/Class of Coil Insulation	
				Air-Inert Gas								Air-Inert Gas								AC	DC
				Min.	Max. AC	Max. DC	AC	DC	Min.			Max. AC	Max. DC	AC	DC						
Aluminum 5/2	1/4	6.4	.75	2	10	8.2	60	48	8551G417	1	2	10	8.2	60	48	8551G418	1	10.1/F	11.6/F		
Aluminum 5/3 Center Closed									-							8551G467					
Aluminum 5/3 Center Open									-							8551G468					
Brass 5/2									EF8551G419 ①							EF8551G420 ①					
316L Stainless Steel 5/2									EV8551G421 ②							EV8551G422 ②					
Aluminum 5/2	1/2	13	3.15						8553G417												

① Brass construction supplied standard with EF solenoid. ② Stainless steel construction supplied standard with EV solenoid.

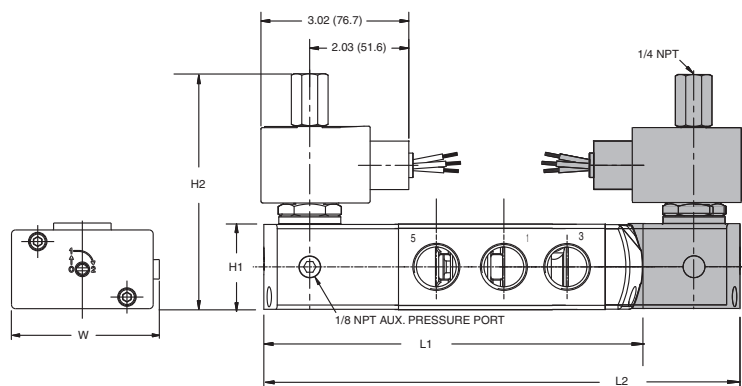
Dimensions inches (mm)

Series	8551	8553
NPT	1/4	1/2
L1 ①	5.63 (143)	7.06 (179)
L2 ①	7.20 (183)	8.86 (225)
H2	4.38 (111)	4.77 (121)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

① Manual override option MH adds .250", MS option adds .468" to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Const. Ref. 1





Electronically Enhanced Solenoid Valves (Next Generation)

RedHat Next Generation is the future of solenoid valve technology, designed and manufactured to provide new capabilities. The Next Generation of solenoid valves provides lower operating cost, and represents an advancement in the performance, reliability, and ruggedness that you have come to expect from ASCO.

RedHat Next Generation valves use electronics technology to manage power, providing a new standard of operation. The solenoid incorporates a power management circuit providing lower power consumption, enhanced pressure and flow ratings, and electrical surge suppression to both the solenoid and electronic controls.

The new solenoid draws only 2 watts of power. A conventional solenoid with the same performance can draw as high as 17 watts of power. The savings in power usage over the installed life of the valve will lower the total cost of ownership up to 14%.

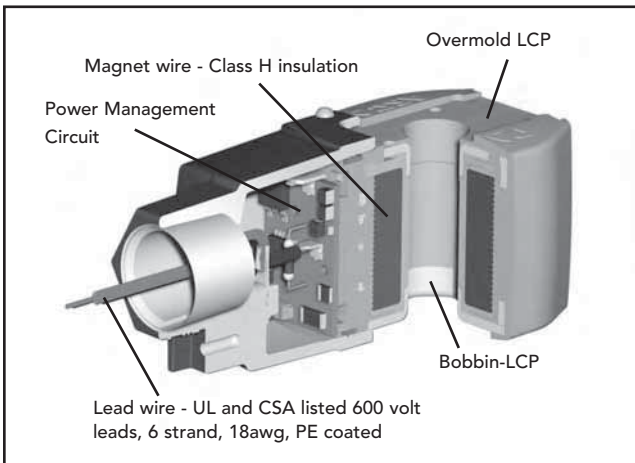
The new technology accepts both AC and DC voltages without sacrificing flow or pressure specifications. DC performance has been increased by 150% to 500% from today's

industry standards, making the valves' DC characteristics equivalent to AC pressure and flow values. This simplifies your control by eliminating the need for AC output cards, reduces wiring costs, and provides safer working environments for users operating on DC.

RedHat Next Generation coils are offered in three voltage ranges covering most electrical requirements – 100-240/AC or DC, 24-99/AC or DC, or 12-24/DC. Each coil has built-in electrical surge suppression that protects the coil from external voltage spikes and eliminates inductive voltage spikes associated with conventional solenoids. An optional solenoid is available for use in Class I, Division 2 hazardous locations.

ASCO RedHat Next Generation addresses many other operating characteristics that will further improve the life of your solenoid valves. These include a much lower temperature rise, and an increase in valve ambient temperature rating to 140°F/60°C. Because of our confidence in the rugged design of the RedHat Next Generation solenoids, ASCO is pleased to extend a 3-year warranty on the coils.

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Index

General Description	Pipe Size (NPT)	Page
2-Way Normally Closed	1/4" - 2"	94-98
2-Way Normally Open	1/4" - 3/4"	94-98
3-Way Normally Closed	1/4" - 3/4"	99-103
3-Way Normally Open	1/4"	99-103
3-Way Universal	1/4"	99-103
4-Way Inline	1/4" - 1"	104-106



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Features

- Increase in DC pressure ratings to AC levels on all products (up to a 500% improvement)
- Lower power operation
- Voltage ranging
- Built in surge suppression
- Elimination of AC hum
- Increase in AC and DC operating temperatures
- Low solenoid temperature rise
- Longer coil life due to lower operating temperatures and electrical surge suppression
- Solenoid approvals to UL, CSA, and CE directives
- Available with Class I, Division 2 coils (EE prefix)



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How to order

Find the valve that you are looking for in the provided specifications tables.

The tables contain the following information designed to help you in making your selection:

Pipe Size (ins.)	Orifice Dia. (ins.)	Cv Flow	Operating Pressure Differential (psi)				Max Fluid Temp. °F	Brass ①	Const. Ref.	Agency		Stainless Steel	Const. Ref.	Agency		Wattage AC/DC	Approx. Shipping Weight (lbs.)
			Min.	Max. AC/DC						UL	UL						
				Air-Inert Gas	Water	Light Oil											
1/2	5/8	4	0	150	150	-	180	8210P094	4	○	-	-	-	-	2	3.2	

① When ordering a valve product, specify the ASCO base catalog number (Ex. **8210P094**). This number will always be 8 digits long.

Choose one of the three operating voltage ranges (100-240V/50-60Hz/DC, 24-99V/50-60Hz/DC or 12-24/DC) and add it to the base catalog number (Ex. 8210P094 **24-99V/50-60Hz/DC**).

If you want to enhance the product with one or more of the options allowed in the Optional Features Chart for that catalog number, please add the appropriate prefix or suffix (as shown):

Pipe Size (ins.)	Orifice Dia. (ins.)	Solenoid Options ②	Base Catalog Number		Resilient Materials ③								Other ③		Standard Rebuild Kit ④	
		Class I, Division 2 Coil	Brass	Stainless Steel	NBR	FKM	EPDM	Neoprene	Oxygen Service	PTFE	Urethane	Vacuum	Manual Operator	Mounting Bracket	Brass AC/DC	Stainless Steel AC/DC
1/2	5/8	EE	8210P094	-	●	V	E	J	N	-	-	VH	MO	MB	322670	-

② Optional Class I, Division 2 solenoid (Ex. **EE8210P094** 24-99V/50-60Hz/DC)

③ If an FKM elastomer and manual operator are required, add VMO to the back of the base catalog number. (Ex. 8210P094**VMO** 24-99V/50-60Hz/DC)

④ When ordering a rebuild kit for a valve, supply the rebuild kit number as shown in the table. (Ex. 322670) When ordering a rebuild kit for a valve with a suffix, add the suffix to the appropriate standard rebuild kit. (Ex. The rebuild kit for the above valve with FKM is 322670-V)

All constructions are available with prefix EE for Class I, Division 2 requirements.

When ordering a replacement coil, select from the following:

Voltage Range	Valve Prefix	Replacement Coil Part Number
100-240V/50-60Hz/DC	-	250404-601-*
24-99V/50-60Hz/DC	-	250404-602-*
12-24/DC	-	250404-603-*
100-240V/50-60Hz/DC	EE	250504-601-*
24-99V/50-60Hz/DC	EE	250504-602-*
12-24/DC	EE	250504-603-*

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Class I, Division 2 for Hazardous Locations and Watertight, Types 3, 3S, 4, 4X. (To order, add prefix "EE" to catalog number.)

Note

See Engineering Section for valve parts in contact with fluids and additional information.

2-Way Features

- Two-way (2/2) Next Generation solenoid valves have one inlet port and one outlet port
- Control of air, water, light oil, and non-corrosive media
- Normally closed (opens when energized) and normally open (closed when energized) operation
- Pipe sizes – 1/4 to 2 inch

2-Way Specifications (English units)

Pipe Size (ins.)	Orifice Dia. (ins.)	Cv Flow	Operating Pressure Differential (psi)				Max Fluid Temp. °F	Brass	Const. Ref.	Agency UL	Stainless Steel	Const. Ref.	Agency UL	Wattage AC/DC	Approx. Shipping Weight (lbs.)
			Max. AC/DC			Min.									
			Air-Inert Gas	Water	Light Oil @ 300 SSU										
General Service - Normally Closed															
1/4	1/8	0.34	0	500	500	330	180	8262P232	1	○	-	-	-	2	2.4
1/4	5/32	0.47	0	290	250	250	180	8262P202	1	○	8262P220	1	○	2	2.4
1/4	7/32	0.72	0	145	125	120	180	8262P208	1	○	8262P226	1	○	2	2.4
1/4	9/32	0.96	0	90	85	80	180	8262P212	1	○	8262P230	1	○	2	2.4
1/4	5/16	1.5	10	1500	1500	1500	180	8223P025	2	-	-	-	-	2	2.9
3/8	5/32	0.52	0	150	150	100	180	8263P200	3	○	-	-	-	2	1.8
3/8	9/32	0.85	0	80	80	70	180	8263P210	3	○	-	-	-	2	2.3
3/8	5/16	1.5	10	1500	1500	1500	180	8223P027	2	-	-	-	-	2	2.9
3/8	5/8	3	0	150	150	-	180	8210P093	4	○	-	-	-	2	3.2
1/2	3/8	3.2	25	1500	1500	1500	180	8223P003	5	-	8223P010	6	-	2	3.4
1/2	5/8	4	0	150	150	-	180	8210P094	4	○	-	-	-	2	3.2
1/2	5/8	4	0	150	150	125	180	-	-	-	8210P087	7	●	2	3.5
1/2	5/8	4	5	300	300	300	180	8210P007	4	○	-	-	-	2	3.2
3/4	5/8	4.5	0	150	150	125	180	-	-	-	8210P088	7	●	2	3.5
3/4	3/4	5	0	150	150	-	180	8210P095	7	○	-	-	-	2	3.4
3/4	3/4	5	0	3	3	-	180	8030P003	8	○	-	-	-	2	3.4
3/4	3/4	7.8	25	750	750	750	180	8223P005	9	-	-	-	-	2	4.4
1	1	13	5	150	150	100	180	8210P004	10	○	-	-	-	2	5.4
1 1/4	1 1/8	15	5	150	150	100	180	8210P008	10	○	-	-	-	2	6.6
1 1/2	1 1/4	22.5	5	150	150	100	180	8210P022	11	○	-	-	-	2	7.7
2	1 3/4	43	5	150	125	90	180	8210P100	12	●	-	-	-	2	9.9
General Service - Normally Open															
1/4	3/32	0.17	0	300	250	230	140	8262P261	13	●	-	-	-	2	2.6
1/4	1/8	0.35	0	130	110	100	180	8262P262	13	●	-	-	-	2	2.6
1/4	5/32	0.49	0	85	75	60	180	8262P263	14	●	-	-	-	2	2.6
1/4	9/32	0.96	0	30	20	20	180	8262P265	14	●	-	-	-	2	2.6
3/8	5/8	3	0	150	150	125	180	8210P033	15	●	-	-	-	2	3.4
1/2	5/8	4	0	150	150	125	180	8210P034	15	●	-	-	-	2	3.4
3/4	3/4	5.5	0	150	150	125	180	8210P035	16	●	-	-	-	2	4.2
3/4	3/4	5.5	0	2	2	-	180	8030P083	17	●	-	-	-	2	3.4

○ = Safety Shut-off Valve. ● = General Purpose Valve

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2-Way Specifications (Metric units)

Pipe Size (ins.)	Orifice Dia. (mm)	Kv Flow	Operating Pressure Differential (bar)				Max Fluid Temp. °C	Brass	Const. Ref.	Agency UL	Stainless Steel	Const. Ref.	Agency UL	Wattage AC/DC	Approx. Shipping Weight (kgs)
			Min.	Max. AC/DC											
				Air-Inert Gas	Water	Light Oil @ 300 SSU									
General Service - Normally Closed															
1/4	3.2	0.29	0	34	34	22	82	8262P232	1	○	-	-	-	2	1.1
1/4	3.9	0.4	0	20	17	17	82	8262P202	1	○	8262P220	1	○	2	1.1
1/4	5.5	0.62	0	10	8	8	82	8262P208	1	○	8262P226	1	○	2	1.1
1/4	7.1	0.83	0	6	5	5	82	8262P212	1	○	8262P230	1	○	2	1.1
1/4	7.9	1.3	0.7	103	103	103	82	8223P025	2	-	-	-	-	2	1.3
3/8	3.9	0.45	0	10	10	7	82	8263P200	3	○	-	-	-	2	0.8
3/8	7.1	0.73	0	5	5	5	82	8263P210	3	○	-	-	-	2	1
3/8	7.9	1.3	0.7	103	103	103	82	8223P027	2	-	-	-	-	2	1.3
3/8	15.8	2.6	0	10	10	-	82	8210P093	4	○	-	-	-	2	1.4
1/2	9.5	2.7	1.7	103	103	103	82	8223P003	5	-	8223P010	6	-	2	1.5
1/2	15.8	3.4	0	10	10	-	82	8210P094	4	○	-	-	-	2	1.4
1/2	15.8	3.4	0	10	10	8	82	-	-	-	8210P087	7	●	2	1.6
1/2	15.8	3.4	0.3	20	20	20	82	8210P007	4	○	-	-	-	2	1.4
3/4	15.8	3.9	0	10	10	8	82	-	-	-	8210P088	7	●	2	1.6
3/4	19	4.3	0	150	150	-	82	8210P095	7	○	-	-	-	2	1.5
3/4	19	4.3	0	0.2	0.2	-	82	8030P003	8	○	-	-	-	2	1.5
3/4	19	6.7	1.7	51	51	51	82	8223P005	9	-	-	-	-	2	2
1	25.4	11.2	0.3	10	10	7	82	8210P004	10	○	-	-	-	2	2.4
1 1/4	28.5	13	0.3	10	10	7	82	8210P008	10	○	-	-	-	2	3
1 1/2	31.7	19.4	0.3	10	10	7	82	8210P022	11	○	-	-	-	2	3.5
2	44.4	37	0.3	10	8	6	82	8210P100	12	●	-	-	-	2	4.5
General Service - Normally Open															
1/4	2.3	0.14	0	20	17	16	60	8262P261	13	●	-	-	-	2	1.2
1/4	3.1	0.3	0	9	7	7	82	8262P262	13	●	-	-	-	2	1.2
1/4	3.9	0.42	0	6	5	4	82	8262P263	14	●	-	-	-	2	1.2
1/4	7.1	0.83	0	2	1	1	82	8262P265	14	●	-	-	-	2	1.2
3/8	15.8	2.6	0	10	10	8	82	8210P033	15	●	-	-	-	2	1.5
1/2	15.8	3.4	0	10	10	8	82	8210P034	15	●	-	-	-	2	1.5
3/4	19	4.7	0	10	10	8	82	8210P035	16	●	-	-	-	2	2
3/4	19	4.7	0	0.1	0.1	-	82	8030P083	17	●	-	-	-	2	4.5

○ = Safety Shut-off Valve. ● = General Purpose Valve

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2-Way Optional Features Chart

Pipe Size (ins.)	Orifice Dia. (ins.)	Base Catalog Number		Resilient Materials									Other		Standard Rebuild Kit	
		Brass	Stainless Steel	NBR	FKM	EPDM	Neoprene	Oxygen Service	PTFE ②	Urethane	Vacuum	Manual Operator	Mounting Bracket	Brass AC/DC	Stainless Steel AC/DC	
1/4	3/32	8262P261	-	-	V	E	J	N	T	●	-	-	-	-	322777	-
1/4	1/8	8262P232	-	●	V	E	J	N	T	-	-	MS ⑤	⑥	322595	-	
1/4	1/8	8262P262	-	●	V	E	J	N	T	-	-	-	-	322778	-	
1/4	5/32	8262P202	8262P220	●	V	E	J	N	T	-	-	MS	⑥	322595	322596	
1/4	5/32	8262P263	-	●	V	E	J	N	T	-	-	-	-	322778	-	
1/4	7/32	8262P208	8262P226	●	V	E	J	N	T	-	-	MS	⑥	322595	322596	
1/4	9/32	8262P212	8262P230	●	V	E	J	N	T	-	VH	MS	⑥	322595	322596	
1/4	9/32	8262P265	-	●	V	E	J	N	T	-	-	-	-	322778	-	
1/4	5/16	8223P025 ④	-	●	-	-	-	-	-	-	-	-	-	322815	-	
3/8	5/32	8263P200	-	●	V	E	J	N	T	-	-	-	-	322806	-	
3/8	9/32	8263P210	-	●	V	E	J	N	T	-	-	-	-	322807	-	
3/8	5/16	8223P027 ④	-	●	-	-	-	-	-	-	-	-	-	322815	-	
3/8	5/8	8210P093	-	●	V	E	J	N	-	-	VH	MO	MB	322670	-	
3/8	5/8	8210P033	-	●	V	E	J	N	-	-	VH	-	MB	322770	-	
1/2	3/8	8223P003 ④	8223P010 ①	●	-	-	-	-	-	-	-	-	-	322816	322817	
1/2	5/8	8210P094	-	●	V	E	J	N	-	-	VH	MO	MB	322670	-	
1/2	5/8	8210P034	-	●	V	E	J	N	-	-	VH	-	MB	322770	-	
1/2	5/8	-	8210P087	●	V	E	J	N	-	-	-	MO	MB	-	322676	
1/2	5/8	8210P007	-	●	V	E	J	N	-	-	-	MO ③	MB	322654	-	
3/4	5/8	-	8210P088	●	V	E	J	N	-	-	-	MO	MB	-	322676	
3/4	3/4	8210P095	-	●	V	E	J	N	-	-	VH	MO	MB	322673	-	
3/4	3/4	8030P003	-	●	V	E	J	N	-	-	-	MO	MB	322758	-	
3/4	3/4	8210P035	-	●	V	E	J	N	-	-	VH	-	MB	322771	-	
3/4	3/4	8030P083	-	●	V	E	J	N	-	-	-	-	MB	322763	-	
3/4	3/4	8223P005 ④	-	●	-	-	-	-	-	-	-	-	-	322818	-	
1	1	8210P004	-	●	V	E	J	N	-	-	-	MO	-	322677	-	
1 1/4	1 1/8	8210P008	-	●	V	E	J	N	-	-	-	MO	-	322680	-	
1 1/2	1 1/4	8210P022	-	●	V	E	J	N	-	-	-	MO	-	322680	-	
2	1 3/4	8210P100	-	●	V	E	J	N	-	-	-	MO	-	322682	-	

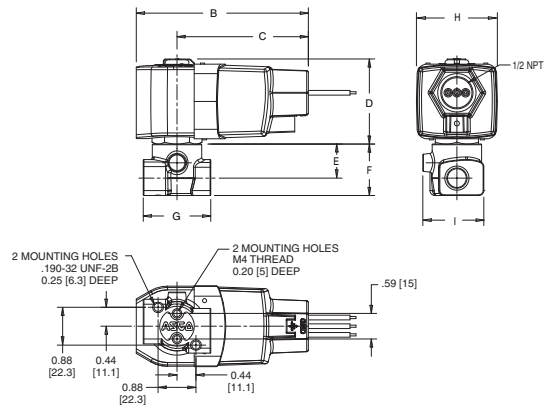
● = Standard. Other options may be available. All option combinations may not be available. Please consult your local ASCO contact.
 ① Valve contains PTFE main disc; ② Pressure rating reduced by 25%; ③ Pressure rating limited to 250 psi; ④ Valve contains Nylon 11 piston.
 ⑤ Pressure rating limited to 400 psi. ⑥ Valves supplied with mounting holes in body.

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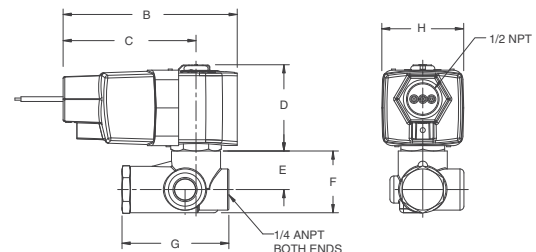
Dimensions: inches (mm)

Const. Ref.		B	C	D	E	F	G	H	I
1	ins	4.00	3.04	1.97	0.79	1.19	1.56	1.87	1.41
	mm	101.60	77.22	50.04	20.07	30.23	39.62	47.50	35.81
2	ins	4.00	3.04	1.97	0.88	1.41	2.44	1.87	-
	mm	101.60	77.22	50.04	22.35	35.81	61.98	47.50	-
3	ins	4.00	3.04	1.97	0.67	1.25	1.88	1.87	1.15
	mm	101.60	77.22	50.04	17.02	31.75	47.75	47.50	29.21
4	ins	4.00	3.04	1.97	1.28	1.84	2.75	1.87	2.28
	mm	101.60	77.22	50.04	32.51	46.74	69.85	47.50	57.91
5	ins	4.00	3.04	1.97	1.05	2.31	-	1.87	3.03
	mm	101.60	77.22	50.04	26.67	58.67	-	47.50	76.96
6	ins	4.00	3.04	1.97	1.13	2.31	-	1.87	3.13
	mm	101.60	77.22	50.04	28.70	58.67	-	47.50	79.50
7	ins	4.00	3.04	1.97	1.46	2.19	2.81	1.87	2.28
	mm	101.60	77.22	50.04	37.08	55.63	71.37	47.50	57.91
8	ins	4.00	3.04	1.97	1.44	2.13	2.81	1.87	2.28
	mm	101.60	77.22	50.04	36.58	54.10	71.37	47.50	57.91
9	ins	4.00	3.04	1.97	1.61	3.03	-	1.87	3.6
	mm	101.60	77.22	50.04	40.89	76.96	-	47.50	91.44
10	ins	4.00	3.04	1.97	2.21	3.67	3.75	1.87	-
	mm	101.60	77.22	50.04	56.13	93.22	95.25	47.50	-
11	ins	4.00	3.04	1.97	2.36	4.14	4.38	1.87	3.92
	mm	101.60	77.22	50.04	59.94	105.16	111.25	47.50	99.57
12	ins	4.00	3.04	1.97	2.75	5.52	5.06	1.87	4.72
	mm	101.60	77.22	50.04	69.85	140.21	128.52	47.50	119.89
13	ins	4.00	3.04	1.97	0.79	1.19	1.25	1.87	1.19
	mm	101.60	77.22	50.04	20.07	30.23	31.75	47.50	30.23
14	ins	4.00	3.04	1.97	0.79	1.19	1.56	1.87	1.19
	mm	101.60	77.22	50.04	20.07	30.23	39.62	47.50	30.23
15	ins	4.00	3.04	1.97	1.72	2.18	2.75	1.87	2.28
	mm	101.60	77.22	50.04	43.69	55.37	69.85	47.50	57.91
16	ins	4.00	3.04	1.97	1.88	2.57	2.81	1.87	2.28
	mm	101.60	77.22	50.04	47.75	65.28	71.37	47.50	57.91
17	ins	4.00	3.04	1.97	0.85	1.81	2.81	1.87	2.28
	mm	101.60	77.22	50.04	21.59	45.97	71.37	47.50	57.91

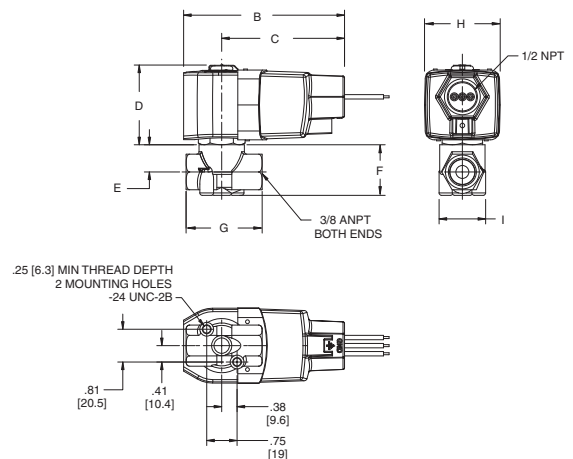
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Const. Ref. 2



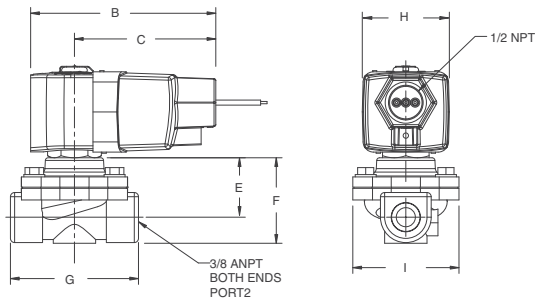
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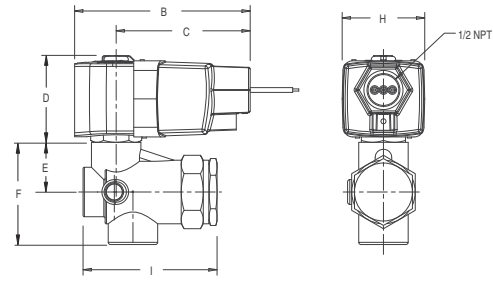
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Dimensions: inches (mm)

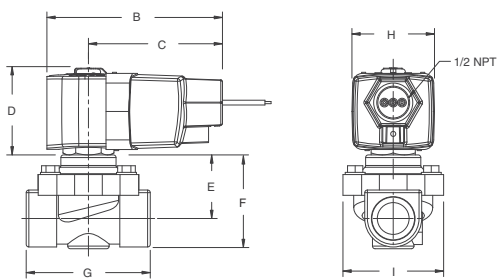
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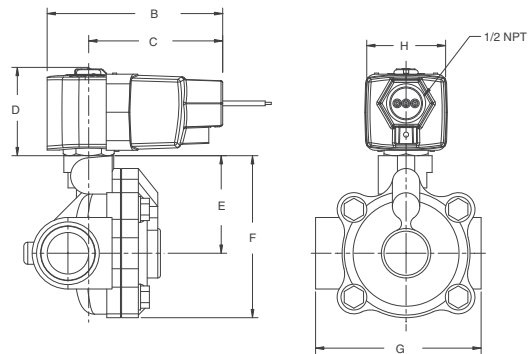
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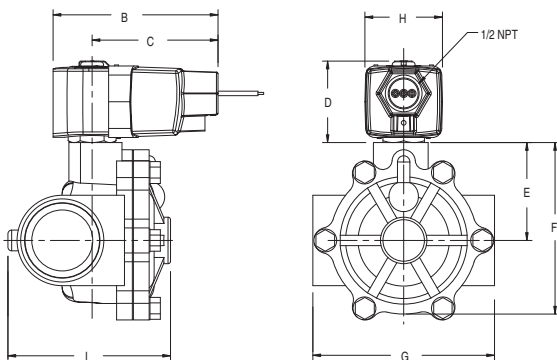
Const. Ref. 8



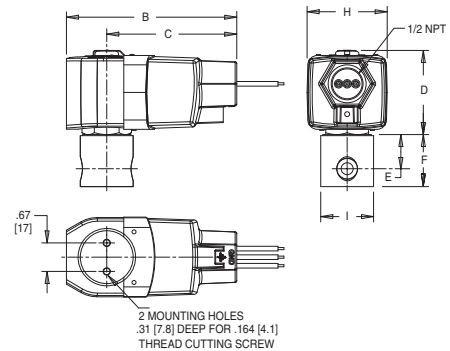
Const. Ref. 10



Const. Ref. 11, 12



Const. Ref. 13, 14



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3-Way Features

- Three-way (3/2) Next Generation solenoid valves have three ports and two orifices. When one orifice is open, the other is closed
- Control of air, water, light oil, and other non-corrosive media
- Normally closed (pressure to cylinder port when energized) operation
- Normally open (cylinder port exhausts when energized) operation
- Universal operation (can function as normally open, normally closed, diverter of fluid flow, or selector of 2 fluid sources configurable by piping)
- Pipe sizes – 1/4 to 3/4 inch

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3-Way Specifications (English units)

Pipe Size (ins.)	Orifice Dia. (ins.)	Cv Flow	Operating Pressure Differential (psi)				Max. Fluid Temp. °F	Brass	Const. Ref.	Agency		Stainless Steel	Const. Ref.	Agency		Wattage AC/DC	Approx. Shipping Weight (lbs.)
			Min.	Max. AC/DC						UL	UL						
				Air-Inert Gas	Water	Light Oil @ 300 SSU											
General Service - Normally Closed																	
1/4	3/32 ③	0.17 ③	0	205	205	205*	180	8314P035	1	●	8314P121	1	●	2	2.6		
1/4	1/8	0.27	0	145	145	145*	180	8314P036	1	●	-	-	-	2	2.6		
1/4	5/64	0.12	0	232	232	232	180	8320P182	2	●	-	-	-	2	2.5		
1/4	7/64	0.23	0	150	150	150	180	8320P184	2	●	-	-	-	2	2.5		
1/4	5/32	0.35	0	75	75	75	180	8320P186	2	●	-	-	-	2	2.5		
1/4	3/32 ①	0.20 ①	5 ④	150	150	100*	180	8317P035	3	●	-	-	-	2	2.7		
1/4	9/32 ②	0.80 ②	10	200	200	200*	180	8321P001	4	●	-	-	-	2	3.8		
3/8	9/32 ②	0.80 ②	10	200	200	200*	180	8321P002	4	●	-	-	-	2	3.8		
3/8	5/8	2.5	10	250	250	-	180	8316P054	5	●	-	-	-	2	4.9		
1/2	5/8	3.2	10	250	250	-	180	8316P064	5	●	-	-	-	2	4.9		
3/4	11/16	4.8	10	250	250	-	180	8316P074	6	●	-	-	-	2	5.1		
General Service - Normally Open																	
1/4	5/64	0.12	0	210	210	210	180	8320P192	2	●	-	-	-	2	2.5		
1/4	7/64	0.23	0	150	150	150	180	8320P194	2	●	-	-	-	2	2.5		
General Service - Universal Operation																	
1/4	5/64	0.12	0	116	116	116	180	8320P172	2	●	-	-	-	2	2.5		
1/4	7/64	0.23	0	60	60	60	180	8320P174	2	●	-	-	-	2	2.5		
1/4	5/32	0.35	0	35	35	35	180	8320P176	2	●	-	-	-	2	2.5		

● = General Purpose Valve. ① 1/4" exhaust orifice with 0.73 Cv flow; ② 11/32" exhaust orifice with 1.20 Cv flow; ③ 3/32" exhaust orifice with 0.27 Cv flow.
④ 10 psi minimum for light oils. * 45 SSU.

3-Way Specifications (Metric units)

Pipe Size (ins.)	Orifice Dia. (mm)	Kv Flow	Operating Pressure Differential (bar)				Max. Fluid Temp. °C	Brass	Const. Ref.	Agency		Stainless Steel	Const. Ref.	Agency		Wattage AC/DC	Approx. Shipping Weight (kgs.)
			Min.	Max. AC/DC						UL	UL						
				Air-Inert Gas	Water	Light Oil @ 300 SSU											
General Service - Normally Closed																	
1/4	2.3 ③	0.14 ③	0	14	14	14*	82	8314P035	1	●	8314P121	1	●	2	1.2		
1/4	3.1	0.23	0	10	10	10*	82	8314P036	1	●	-	-	-	2	1.2		
1/4	1.9	0.1	0	16	16	16	82	8320P182	2	●	-	-	-	2	1.1		
1/4	2.7	0.2	0	10	10	10	82	8320P184	2	●	-	-	-	2	1.1		
1/4	3.9	0.3	0	5	5	5	82	8320P186	2	●	-	-	-	2	1.1		
1/4	2.3 ①	0.17 ①	0.3 ④	10	10	7*	82	8317P035	3	●	-	-	-	2	1.2		
1/4	7.1 ②	0.7 ②	0.7	14	14	14*	82	8321P001	4	●	-	-	-	2	1.7		
3/8	7.1 ②	0.7 ②	0.7	14	14	14*	82	8321P002	4	●	-	-	-	2	1.7		
3/8	3.3	2.1	0.7	17	17	-	82	8316P054	5	●	-	-	-	2	2.2		
1/2	3.3	2.7	0.7	17	17	-	82	8316P064	5	●	-	-	-	2	2.2		
3/4	17	4.1	0.7	17	17	-	82	8316P074	6	●	-	-	-	2	2.3		
General Service - Normally Open																	
1/4	2	0.1	0	14	14	14	82	8320P192	2	●	-	-	-	2	1.1		
1/4	2.7	0.2	0	10	10	10	82	8320P194	2	●	-	-	-	2	1.1		
General Service - Universal Operation																	
1/4	2	0.1	0	8	8	8	82	8320P172	2	●	-	-	-	2	1.1		
1/4	2.7	0.2	0	4	4	4	82	8320P174	2	●	-	-	-	2	1.1		
1/4	3.9	0.3	0	2	2	2	82	8320P176	2	●	-	-	-	2	1.1		

● = General Purpose Valve. ① 6.3mm exhaust orifice with 0.63 Kv flow; ② 8.7mm exhaust orifice with 1.0 Kv flow; ③ 2.4mm exhaust orifice with 0.23 Kv flow.
④ 0.7 bar minimum for light oils. * 45 SSU.

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3-Way Optional Features Chart

Pipe Size (ins.)	Orifice Dia. (ins.)	Base Catalog Number		Resilient Materials								Other		Standard Rebuild Kit	
		Brass	Stainless Steel	NBR	FKM	EPDM	Neoprene	Oxygen Service	PTFE ①	Urethane	Vacuum	Manual Operator ③	Mounting Bracket	Brass AC/DC	Stainless Steel AC/DC
1/4	5/64	8320P182	-	●	V	E	J	N	T	-	-	MO/MS	MB	322722	-
1/4	5/64	8320P192	-	●	V	E	J	N	T	-	-	MO/MS ④	MB	322723	-
1/4	5/64	8320P172	-	●	V	E	J	N	T	-	-	MO/MS ④	MB	322721	-
1/4	3/32	8314P035	8314P121	● ②	V	E	-	N	-	-	-	MS	MB	322864	322872
1/4	3/32	8317P035	-	● ②	V	-	-	N	-	-	-	-	-	322919	-
1/4	7/64	8320P184	-	●	V	E	J	N	T	-	-	MO/MS	MB	322722	-
1/4	7/64	8320P194	-	●	V	E	J	N	T	-	-	MO/MS ④	MB	322723	-
1/4	7/64	8320P174	-	●	V	E	J	N	T	-	-	MO/MS ④	MB	322721	-
1/4	1/8	8314P036	-	● ②	V	E	-	N	-	-	-	MS	MB	322864	-
1/4	5/32	8320P186	-	●	V	E	J	N	T	-	-	MO/MS	MB	322722	-
1/4	5/32	8320P176	-	●	V	E	J	N	T	-	-	MO/MS ④	MB	322721	-
1/4	9/32	8321P001	-	●	V	E	-	-	-	-	-	MO/MS	-	322688	-
3/8	9/32	8321P002	-	●	V	E	-	-	-	-	-	MO/MS	-	322688	-
3/8	5/8	8316P054	-	●	V	E	J	N	-	-	-	MO	MB	322690	-
1/2	5/8	8316P064	-	●	V	E	J	N	-	-	-	MO	MB	322690	-
3/4	11/16	8316P074	-	●	V	E	J	N	-	-	-	MO	MB	322692	-

● = Standard. Other options may be available. All option combinations may not be available. Please consult your local ASCO contact.
 ① Pressure rating reduced by 25%; ② Upper disc is FKM; ③ Not available with PTFE resilient materials. ④ Pressure rating limited to 100 psi (6.9 bar) for MO constructions.

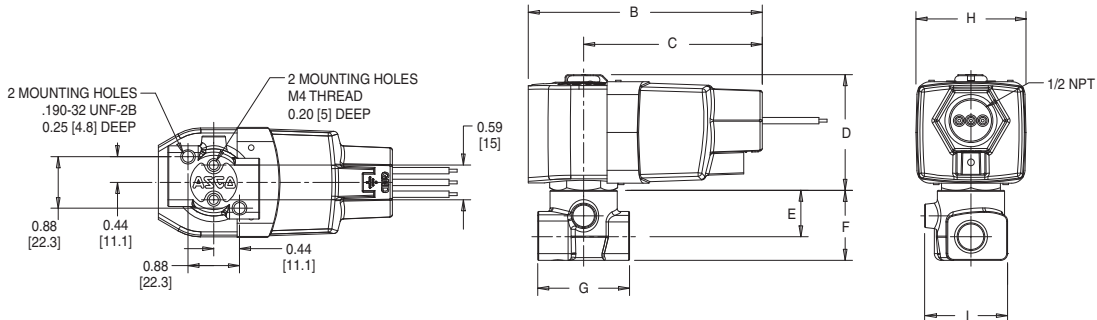
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Dimensions: inches (mm)

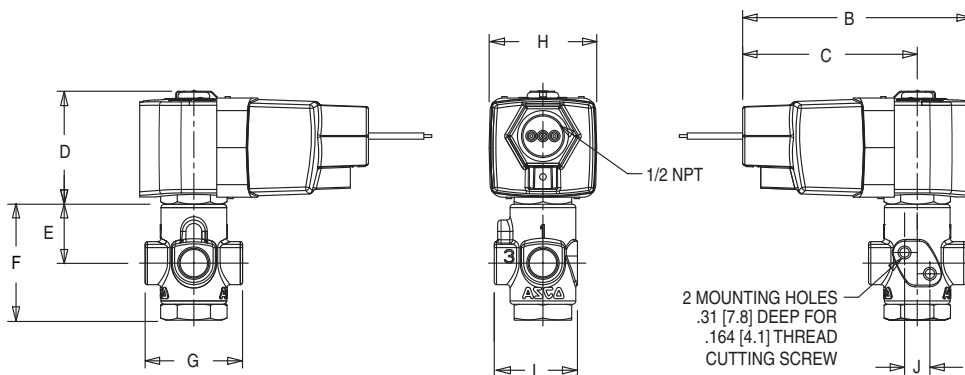
Const. Ref.		B	C	D	E	F	G	H	I	J
1	ins.	4.00	3.04	2.09	0.79	1.19	1.56	1.87	1.41	0.44
	mm	101.60	77.22	53.09	20.07	30.23	39.62	47.50	35.81	11.18
2	ins.	4.00	3.04	1.97	1.02	2.02	1.69	1.87	1.45	-
	mm	101.60	77.22	50.04	25.91	51.31	42.93	47.50	36.83	-
3	ins.	4.00	3.04	1.97	0.57	1.07	2.00	1.87	2.05	-
	mm	101.60	77.22	50.04	14.48	27.18	50.80	47.50	52.07	-
4	ins.	4.00	3.04	1.97	1.00	2.03	1.31	1.87	3.12	1.00
	mm	101.60	77.22	50.04	25.40	51.56	33.27	47.50	79.25	25.40
5	ins.	4.00	3.04	1.97	2.12	3.77	2.76	1.87	4.29	-
	mm	101.60	77.22	50.04	53.85	95.76	70.10	47.50	108.97	-
6	ins.	4.00	3.04	1.97	2.50	4.19	-	1.87	3.38	-
	mm	101.60	77.22	50.04	63.50	106.43	-	47.50	85.85	-

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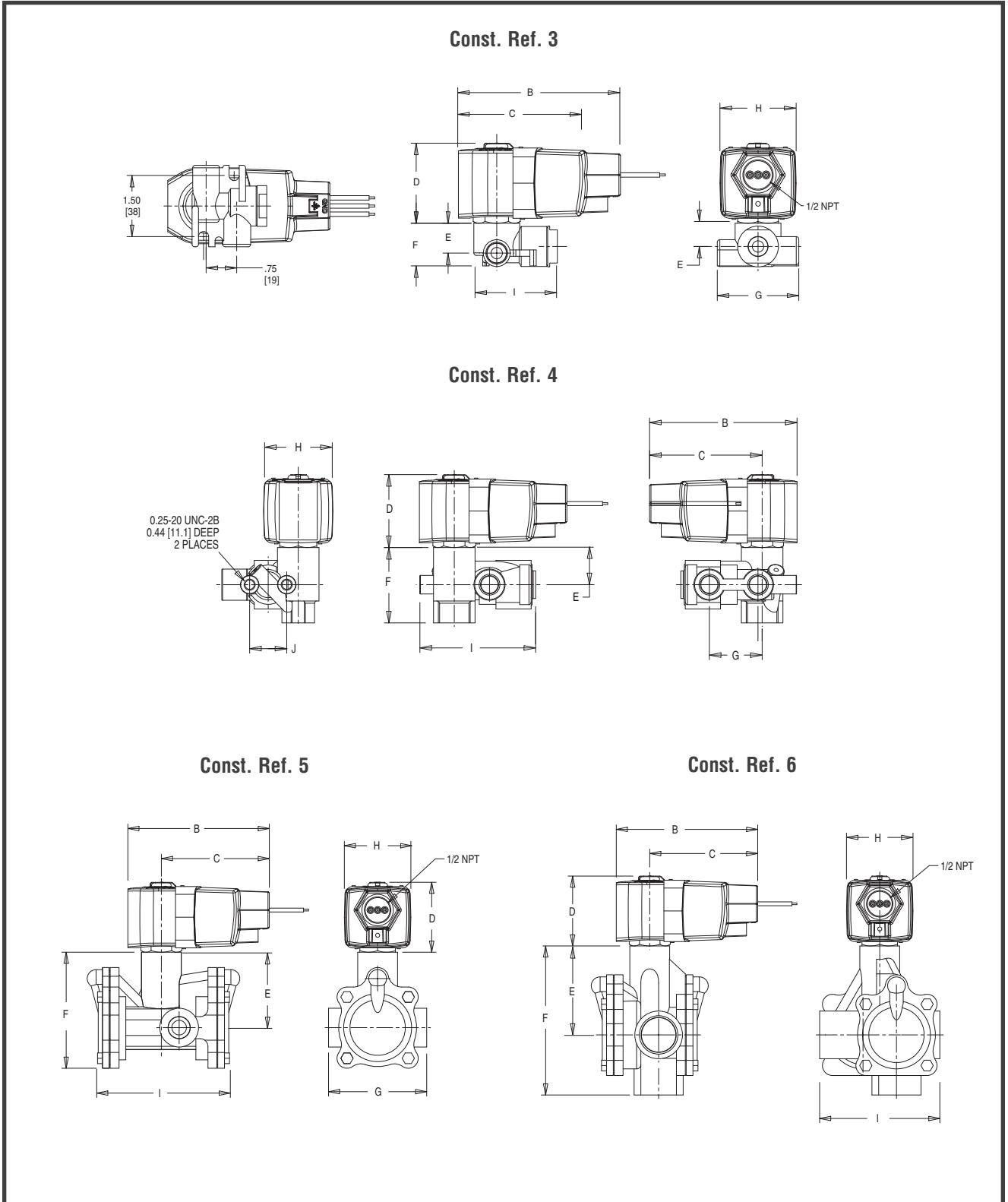
Const. Ref. 1



Const. Ref. 2



Dimensions: inches (mm)



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4-Way Features

- Four-way, four port (4/2) and five port (5/2) Next Generation solenoid valves have one pressure port, 2 cylinder ports, and either 1 or 2 exhaust ports
- Control of air, water, light oil, and non-corrosive media
- Single solenoid operation (pressure and exhaust ports and cylinder ports alternate connection based on solenoid operation)
- Pipe sizes – 1/4 to 1 inch

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4-Way Specifications (English units)

Pipe Size (ins.)	Orifice Dia. (ins.)	Cv Flow		Operating Pressure Differential (psi)				Brass	Max. Fluid Temp. °F	Const. Ref.	Agency UL	Wattage AC/DC	Approx. Shipping Weight (lbs.)
				Min.	Max. AC/DC								
		Pressure	Exhaust		Air-Inert Gas	Water	Light Oil @ 300 SSU						
General Service - Single Solenoid													
1/4	1/16 ②	0.09	0.09	10	150	150	150*	8345P001	180	2	●	2	4.8
1/4	1/4	0.8	1.0	10 ①	250	250	250	8344P070	180	1	●	2	5.2
3/8	3/8	1.4	2.2	10 ①	250	250	250	8344P072	180	3	●	2	9.6
1/2	3/8	1.4	2.2	10 ①	250	250	250	8344P074	180	3	●	2	9.6
3/4	3/4	5.2	5.6	10 ①	250	250	250	8344P076	180	4	●	2	18.6
1	3/4	5.2	5.6	10 ①	250	250	250	8344P078	180	4	●	2	18.6

● = General Purpose Valve. ① 25 psi minimum for light oils; ② 3/32" exhaust orifice. * 50 SSU.

4-Way Specifications (Metric units)

Pipe Size (ins.)	Orifice Dia. (mm)	Kv Flow		Operating Pressure Differential (bar)				Brass	Max. Fluid Temp. °C	Const. Ref.	Agency UL	Wattage AC/DC	Approx. Shipping Weight (kgs.)
				Min.	Max. AC/DC								
		Pressure	Exhaust		Air-Inert Gas	Water	Light Oil @ 300 SSU						
General Service - Single Solenoid													
1/4	1.5 ②	0.07	0.07	0.7	10	10	10*	8345P001	82	2	●	2	2.2
1/4	6.3	0.7	0.86	0.7 ①	17	17	17	8344P070	82	1	●	2	2.4
3/8	9.5	1.2	2	0.7 ①	17	17	17	8344P072	82	3	●	2	4.4
1/2	9.5	1.2	2	0.7 ①	17	17	17	8344P074	82	3	●	2	4.4
3/4	19	4.5	4.8	0.7 ①	17	17	17	8344P076	82	4	●	2	8.5
1	19	4.5	4.8	0.7 ①	17	17	17	8344P078	82	4	●	2	8.5

● = General Purpose Valve. ① 1.7 bar minimum for light oils; ② 2.4mm exhaust orifice. * 50 SSU.

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.

Refer to Engineering Section for details.

4-Way Optional Features Chart

Pipe Size (ins.)	Orifice Dia. (ins.)	Base Catalog Number	Resilient Materials								Other		Standard Rebuild Kit
		Brass	NBR	FKM	EPDM	Neoprene	Oxygen Service	PTFE	Urethane	Vacuum	Manual Operator	Mounting Bracket	Brass AC/DC
1/4	1/16	8345P001	●	V	-	-	-	-	-	-	MO	-	322925
1/4	1/4	8344P070	●	V	-	-	-	-	-	-	MO	-	322696
3/8	3/8	8344P072	●	V	-	-	-	-	-	-	MO	-	322697
1/2	3/8	8344P074	●	V	-	-	-	-	-	-	MO	-	322697
3/4	3/4	8344P076	●	V	-	-	-	-	-	-	MO	-	322698
1	3/4	8344P078	●	V	-	-	-	-	-	-	MO	-	322698

● = Standard.

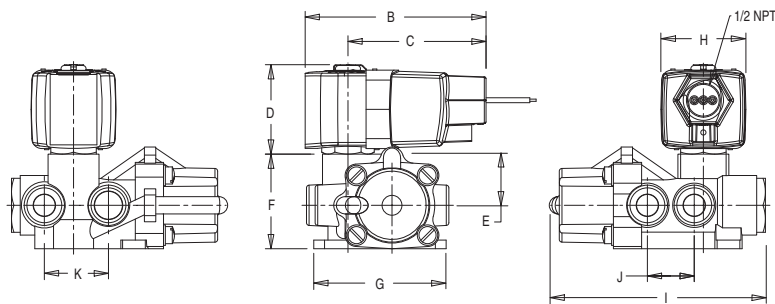
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Dimensions: inches (mm)

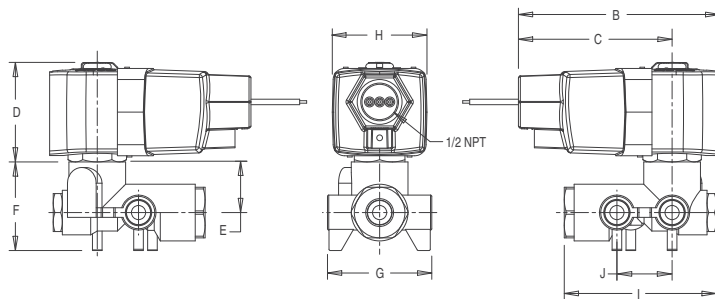
Const. Ref.		B	C	D	E	F	G	H	I	J	K	Exhaust Pipe Size
1	ins.	4.00	3.04	1.97	1.12	2.08	2.94	1.87	4.82	1.03	1.41	3/8
	mm	101.60	77.22	50.04	28.45	52.83	74.68	47.50	122.43	26.16	112.01	
2	ins.	4.00	3.04	2.09	1.00	1.75	2.06	1.87	3.00	1.09	-	1/4
	mm	101.60	77.22	53.09	25.40	44.45	52.32	35.23	76.20	27.69	-	
3	ins.	4.00	3.04	1.97	0.94	2.06	3.18	1.87	6.05	1.50	1.86	1/2
	mm	101.60	77.22	50.04	23.88	52.32	80.77	47.50	153.67	38.10	47.24	
4	ins.	4.00	3.04	1.97	1.31	2.86	4.12	1.87	8.25	2.10	2.12	1
	mm	101.60	77.22	50.04	33.27	72.64	104.65	47.50	209.55	53.34	53.85	

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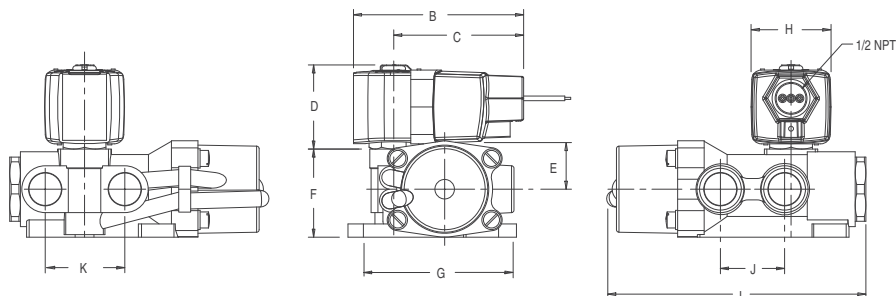
Const. Ref. 1



Const. Ref. 2



Const. Ref. 3, 4





Special Service Pilot Valves

ASCO has a complete line of 3 and 4-way pilot valves to meet these stringent demands. From harsh offshore platforms to the clean corridors of biotech manufacturing, ASCO has the pilot valve for your application. In this section, you will find the most complete line of low power, intrinsically safe, and non-incendive pilot valves in the world.

If you cannot find the pilot valve you are looking for, please try our website at www.ascovalve.com and click on process control pilot valves.

Index

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 - Reduced battery drain
 - Reduced heat rise
 - Reduced wiring cost
- Wide selection includes 2/2 normally closed, 3/2 normally closed (including Quick Exhaust), 3/2 universal, 4/2, 5/2, and 5/3
- Air or inert gas only
- Lower-cost alternative to intrinsically safe valves in critical applications not requiring a safety barrier

Construction

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

Electrical (Normal Ambient Version, +60°C)

Coil: Continuous duty Class F. **IMPORTANT:** Leakage current existing in your system above 7 mA will cause improper operation.

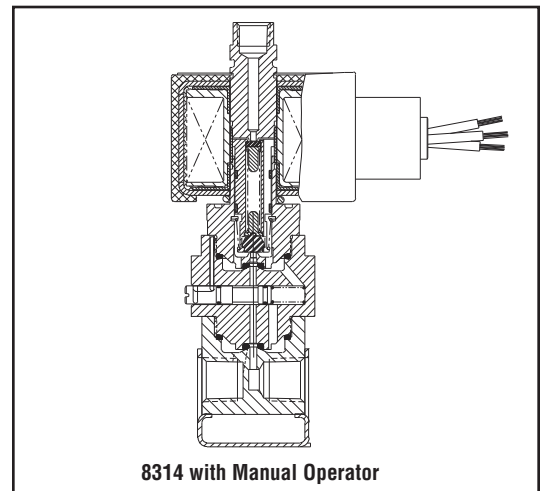
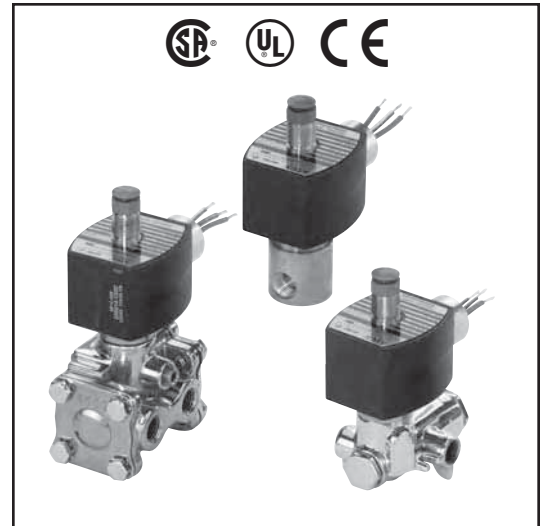
DC Watt Rating and Power Consumption	24 DC Spare Coil Part No.		Maximum Line Resistance vs. Length of Wire		
	General Purpose	Explosionproof	Power Source	Max. Loop Resistance	Max. Wire Run 18AWG 7x26 Stranded (ft)
1.4 at 68°F (20°C)	238710-902-D	238714-902-D	Volts	Ohms	
Low Power Solenoid: Standard voltages 12 and 24 DC Nominal Operating Range +10%, -15% Must be specified when ordering Typical 24 Volts DC System: Min. pull-in: 0.042 amps Min. dropout: 0.007 amps Coil resistance: 410 ohms at 68°F (20°C) ±10% Max. ambient temp: 140°F (60°C)			21	16.5	1120
			22	40.5	2750
			23	64.0	4350
			24	88.0	5980

Electrical (High Ambient Version, +80°C)

Coil: Continuous duty Class F. **IMPORTANT:** Leakage current existing in your system above 8 mA will cause improper operation.

DC Watt Rating and Power Consumption	24 DC Spare Coil Part No.		Maximum Line Resistance vs. Length of Wire		
	General Purpose	Explosionproof	Power Source	Max. Loop Resistance	Max. Wire Run 18 AWG 7x26 Stranded (ft)
1.8 at 68°F (20°C)	238710-908-D	238714-905-D	Volts	Ohms	
Low Power Solenoid: Standard voltages: 12, 24 and 48 VDC Nominal Operating Range: +10%, -15% Must be specified when ordering Typical 24 Volts DC System: Min. pull-in: 0.051 amps Min. dropout: 0.008 amps Coil resistance: 320 ohms at 68°F (20°C) ±10% Max. ambient temp: 175°F (80°C)			21	3.8	260
			22	23.4	1590
			23	43	2920
			24	62.6	4260

Note: The applicable T code for the 1.8 watt construction is T5 (100°C)



SPECIAL SERVICE PILOT

Ordering

Normal Ambient Version

EV8551G322 24VDC

High Ambient Version (always add TPL #23033)

EFX8316G301-23033 24VDC

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

(To order, add prefix "EF" to catalog number. For explosionproof with 316 Stainless Steel hub and trim, specify prefix "EV".) Surge suppression coils also available "MF" prefix.

See *Optional Features Section* for other available options.

Approvals

UL listed General Purpose Valves (Hazardous Location Classified). EV8345G381 solenoid only UL listed. CSA certified; nonincendive for Class I, Division 2 UL E25549. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Nominal Ambient Temp. Ranges

Series	Body Material	Normal Temperature Range	High Ambient Version
8551/8553	Aluminum	5°F to 140°F (-15°C to 60°C)	Not Available
8262	Brass	-40°F to 140°F (-40°C to 60°C)	Low Limit is Same, High Limit = 175°F (80°C)
8314			
8317			
8551			
8551	316L Stainless Steel		
8316 Suffix V	Misc.	32°F to 140°F (0°C to 60°C)	
All Other		-4°F to 140°F (-20°C to 60°C)	

Important

These solenoids are intended for use on clean, dry air or inert gas filtered to 50 microns 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.

Specifications (English units)

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	Const. Ref.	Catalog Number	Const. Ref.
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.					
2/2 VALVES, NORMALLY CLOSED, with NBR Disc										
1/4	1/16	.08		0	150	140	8262G320	18	8262G386 ⑥	18
3/8	5/16	1.5		10	150	140	8223G323	19	-	-
1/2	3/8	3.2		25	150	140	8223G303	20	8223G310 ⑥	20
3/2 VALVES, UNIVERSAL OPERATION (Pressure at any port) with NBR Disc										
1/4	1/16	.08	.08	0	150	140	8314G300	1	8314G301 ⑥	2
3/2 VALVES, NORMALLY CLOSED (Closed when de-energized) with NBR Disc or FPM, as Listed										
1/4	5/16	1.5	1.5	⑤	150	140	8316G301 ③	3	EV8316G381V ④⑥	3
3/8	5/16	1.8	1.8	⑤	150	140	8316G302 ③	3	EV8316G382V ④⑥	3
3/8	5/8	4	4	⑤	150	140	8316G303 ③	3A	-	-
1/2	5/8	4	4	⑤	150	140	8316G304 ③	3A	EV8316G384V ④⑥	3A
3/4	11/16	5.5	5.5	10	150	140	8316H374 ③	4	-	-
1	1	13	13	10	150	140	8316G334 ③	5	-	-
3/2 VALVES, UNIVERSAL (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	②	.08	.73	5	150	140	8317G307 ①	6	8317G308 ①⑥	7
4/2 VALVES, with NBR Disc and Seals										
1/4	1/16	.08	.08	10	150	140	8345G301 ①③	6	EV8345G381 ①③⑥	8
4/2 VALVES, Brass Body with NBR Disc										
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F	Single Solenoid		Dual Solenoid	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.					
1/4	1/4	.80	1	10	150	140	8344G370 ①③	9	8344G344 ③	12
3/8	3/8	1.4	2.2	10	150	140	8344G372 ①③	11	8344G380 ③	10
1/2	3/8	1.4	2.2	10	150	140	8344G374 ①③	11	8344G382 ③	10
3/4	3/4	5.2	5.6	10	150	140	8344G376 ①③	13	8344G354 ③	14
1	3/4	5.2	5.6	10	150	140	8344G378 ①③	13	8344G356 ③	14

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 Diaphragm and main disc FKM only (pilot is low-temperature NBR).
 ⑤ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. Minimum 15 psi Operating Pressure Differential when selection gasket is in the internal position.
 ⑥ Can be used for *dry* natural gas service with the EF or EV prefix.

Specifications (English units)

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.				Min.	Max.			
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals													
Aluminum 3/2	1/4	1/4	.86	30	150	140	8551G305	21	30	150	140	8551G306	21
Aluminum 5/2							8551G317	22				8551G318	22
Aluminum 5/3 Center Closed							-	22				8551G367	22
Aluminum 5/3 Center Open							-	22				8551G368	22
Brass 3/2							EF8551G307 ②	21				EF8551G308 ②	21
Brass 5/2							EF8551G319 ②	22				EF8551G320 ②	22
316L Stainless Steel 3/2							EV8551G313 ③⑥	21				EV8551G314 ③⑥	21
316L Stainless Steel 5/2							EV8551G321 ③⑥	22				EV8551G322 ③⑥	22
Aluminum 3/2	1/2	1/2	3.7	30	150	140	8553G305	21	30	150	140	8553G306	21
Aluminum 5/2							8553G317	22				8553G318	22

② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.				Min.	Max.			
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount													
Aluminum 3/2, 5/2	1/4	1/4	.86	30	150	140	8551G301 ①	23	30	150	140	8551G302 ①	23
Aluminum 5/3 Center Closed							-	-				8551G365	24
Aluminum 5/3 Center Open							-	-				8551G366	24
Brass 3/2, 5/2							EF8551G303 ②①	23				EF8551G304 ②①	23
316L Stainless Steel 3/2, 5/2							EV8551G309 ③⑥	24				EV8551G310 ③⑥	24
Aluminum 3/2, 5/2	1/2	1/2	3.7	30	150	140	8553G301	24	30	150	140	8553G302	24

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.
⑥ Can be used for **dry** natural gas service with the EF or EV prefix.

SPECIAL SERVICE PILOT

Specifications (Metric units)

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	Const. Ref.	Catalog Number	Const. Ref.
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.					
2/2 VALVES, NORMALLY CLOSED, with NBR Disc										
1/4	2	.07		0	10	60	8262G320	18	8262G386 ⑥	18
3/8	8	1.29		0.7	10	60	8223G323	19	-	-
1/2	10	2.74		1.7	10	60	8223G303	20	8223G310 ⑥	20
3/2 VALVES, UNIVERSAL OPERATION (Pressure at any port) with NBR Disc										
1/4	2	.07	.07	0	10	60	8314G300	1	8314G301 ⑥	2
3/2 VALVES, NORMALLY CLOSED (Closed when de-energized) with NBR Disc or FPM, as Listed										
1/4	8	1.29	1.29	⑤	10	60	8316G301 ③	3	EV8316G381V ④⑥	3
3/8	8	1.37	1.37	⑤	10	60	8316G302 ③	3	EV8316G382V ④⑥	3
3/8	16	2.57	2.57	⑤	10	60	8316G303 ③	3A	-	-
1/2	16	3.43	3.43	⑤	10	60	8316G304 ③	3A	EV8316G384V ④⑥	3A
3/4	17	4.71	4.71	0.7	10	60	8316H374 ③	4	-	-
1	25	11.14	11.14	0.7	10	60	8316G334 ③	5	-	-
3/2 VALVES, UNIVERSAL (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	②	.07	.63	0.3	10	60	8317G307 ①	6	8317G308 ①⑥	7
4/2 VALVES, with NBR Disc and Seals										
1/4	2	.07	.07	0.7	10	60	8345G301 ①③	6	EV8345G381 ①③⑥	8
4/2 VALVES, Brass Body 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	Single Solenoid		Dual Solenoid	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.					
1/4	6	0.69	0.86	0.7	10	60	8344G370 ①③	9	8344G344 ③	12
3/8	10	1.20	1.89	0.7	10	60	8344G372 ①③	11	8344G380 ③	10
1/2	10	1.20	1.89	0.7	10	60	8344G374 ①③	11	8344G382 ③	10
3/4	19	4.46	4.80	0.7	10	60	8344G376 ①③	13	8344G354 ③	14
1	19	4.46	4.80	0.7	10	60	8344G378 ①③	13	8344G356 ③	14

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 Diaphragm and main disc FKM only (pilot is low-temperature NBR).
 ⑤ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. Minimum 1.0 bar Operating Pressure Differential when selection gasket is in the internal position.
 ⑥ Can be used for **dry** natural gas service with the EF or EV prefix.

SPECIAL SERVICE
PILOT

Specifications (Metric units)

Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.				Min.	Max.			
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals													
Aluminum 3/2	1/4	6	.7	2	10	60	8551G305	21	2	10	60	8551G306	21
Aluminum 5/2							8551G317	22				8551G318	22
Aluminum 5/3 Center Closed							-	22				8551G367	22
Aluminum 5/3 Center Open							-	22				8551G368	22
Brass 3/2							EF8551G307 ②	21				EF8551G308 ②	21
Brass 5/2							EF8551G319 ②	22				EF8551G320 ②	22
316L Stainless Steel 3/2							EV8551G313 ③⑥	21				EV8551G314 ③⑥	21
316L Stainless Steel 5/2							EV8551G321 ③⑥	22				EV8551G322 ③⑥	22
Aluminum 3/2	1/2	13	3.15				8553G305	21				8553G306	21
Aluminum 5/2							8553G317	22				8553G318	22

② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.

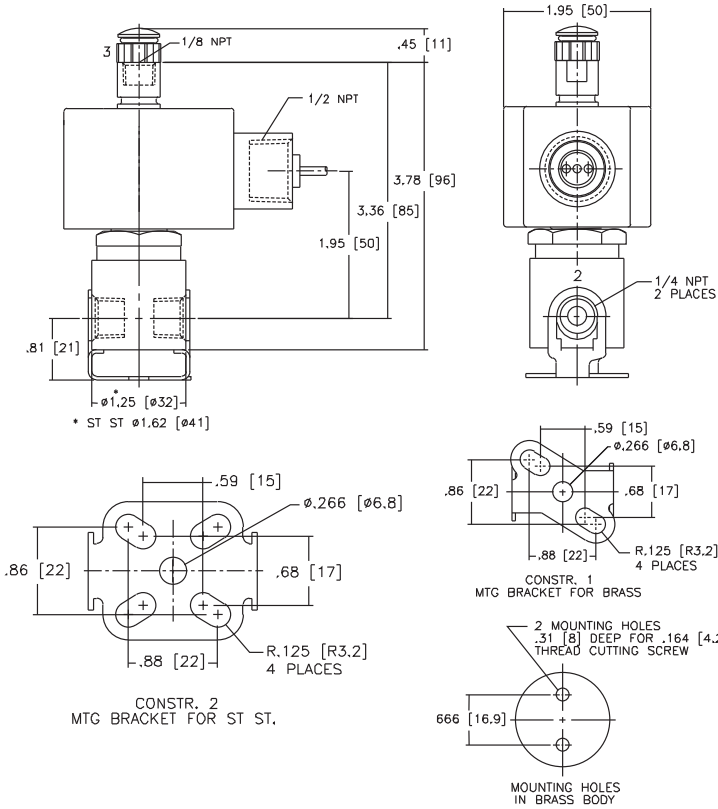
Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.				Min.	Max.			
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount													
Aluminum 3/2, 5/2	1/4 ①	6	.7	2	10	60	8551G301 ①	23	2	10	60	8551G302 ①	23
Aluminum 5/3 Center Closed							-	-				8551G365	24
Aluminum 5/3 Center Open							-	-				8551G366	24
Brass 3/2, 5/2							EF8551G303 ②①	23				EF8551G304 ②①	23
316L Stainless Steel 3/2, 5/2							EV8551G309 ③⑥	24				EV8551G310 ③⑥	24
Aluminum 3/2, 5/2	1/2	13	3.15				8553G301	24				8553G302	24

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.
⑥ Can be used for **dry** natural gas service with the EF or EV prefix.

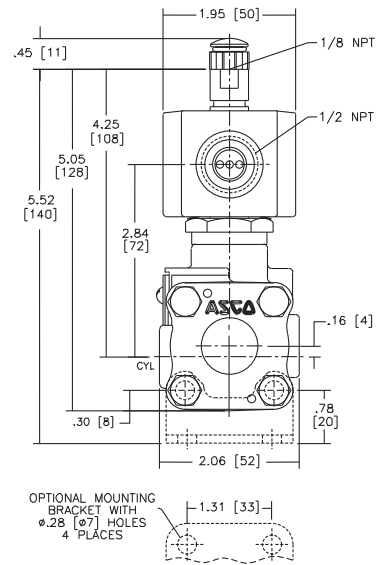
SPECIAL SERVICE PILOT

Dimensions: inches (mm)

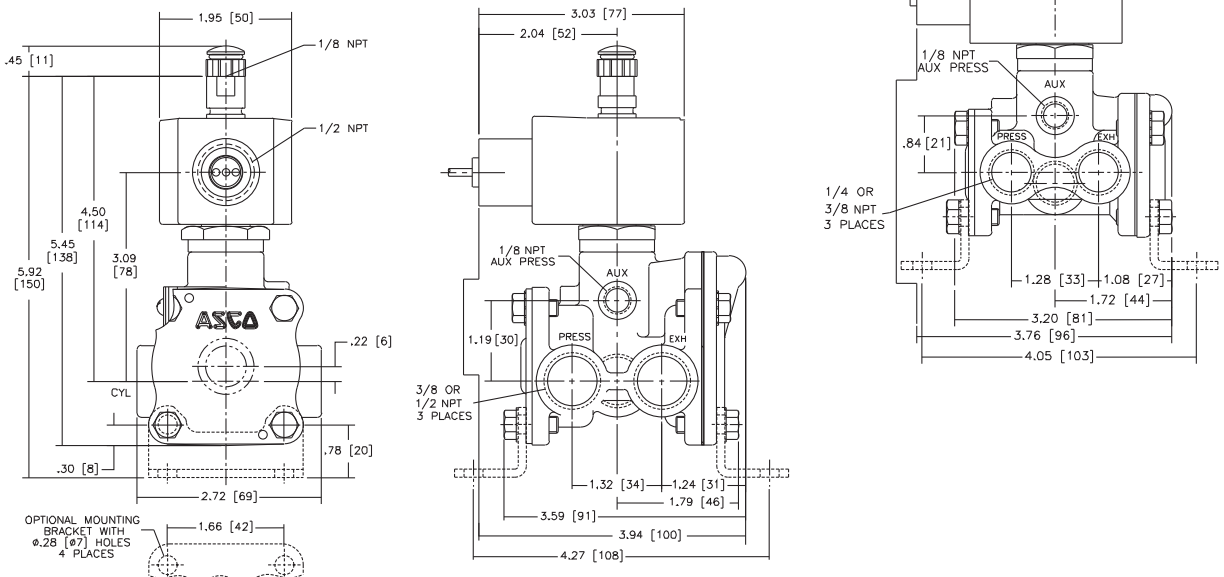
Const. Ref. 1, 2



Const. Ref. 3



Const. Ref. 3A

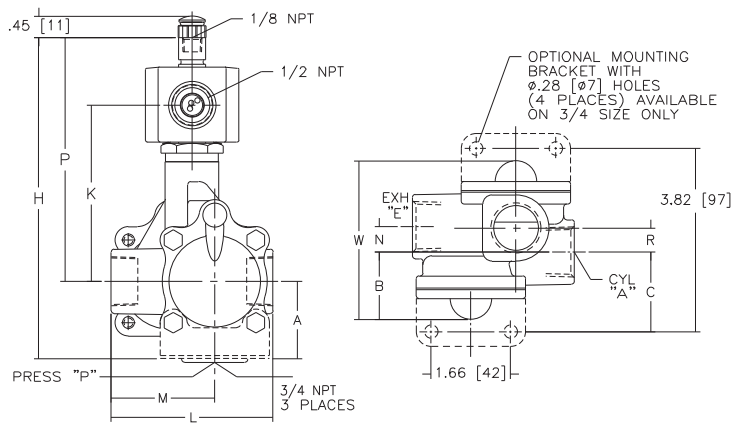


SPECIAL SERVICE
PILOT

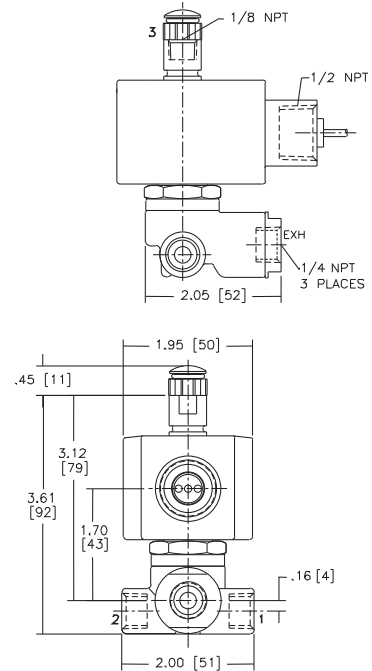
Dimensions: inches (mm)

Const. Ref.		A	B	C	H	K	L	M	N	P	R	W
4	ins.	1.61	1.41	1.66	6.78	3.68	3.38	2.16	.53	5.09	.50	3.31
	mm	41	36	42	172	93	86	55	13	129	13	84
5	ins.	X	1.78	X	7.40	3.93	4.44	2.81	.87	5.34	1.74	5.31
	mm	X	45	X	188	100	113	71	22	136	44	135

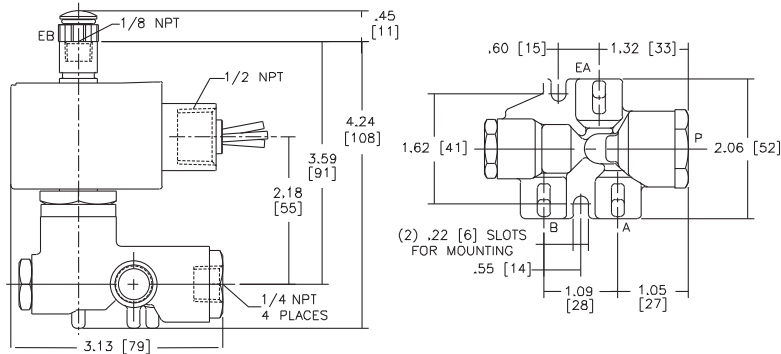
Const. Ref. 4, 5



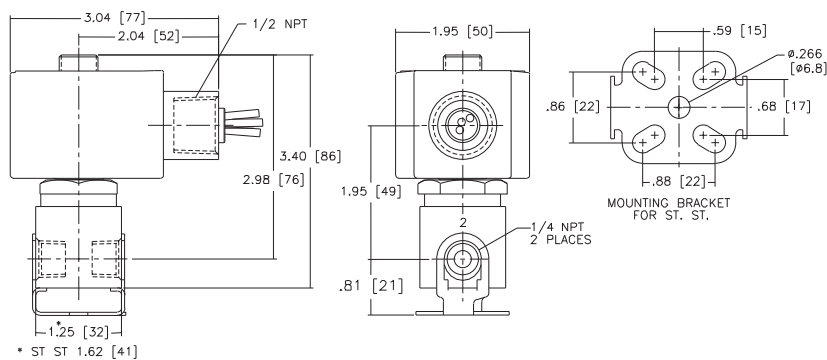
Const. Ref. 6, 7



Const. Ref. 8



Const. Ref. 18

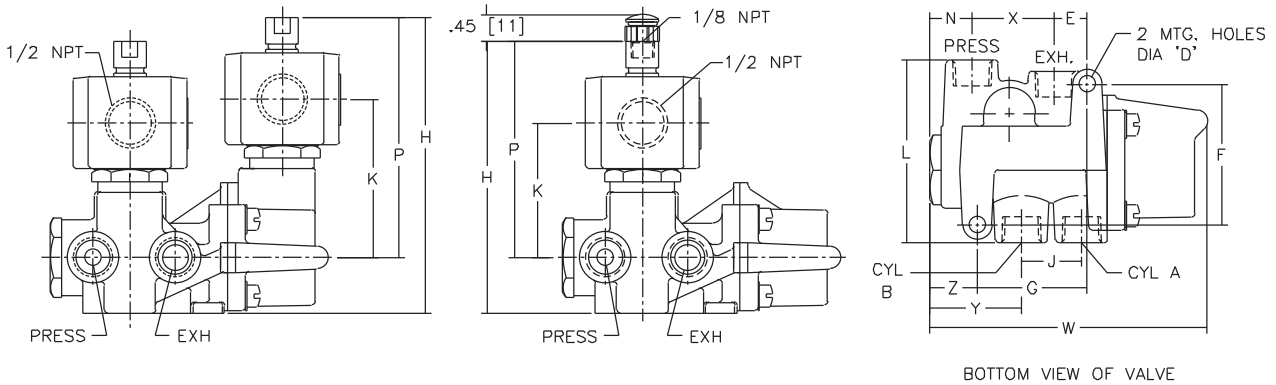


SPECIAL SERVICE PILOT

Dimensions: inches (mm)

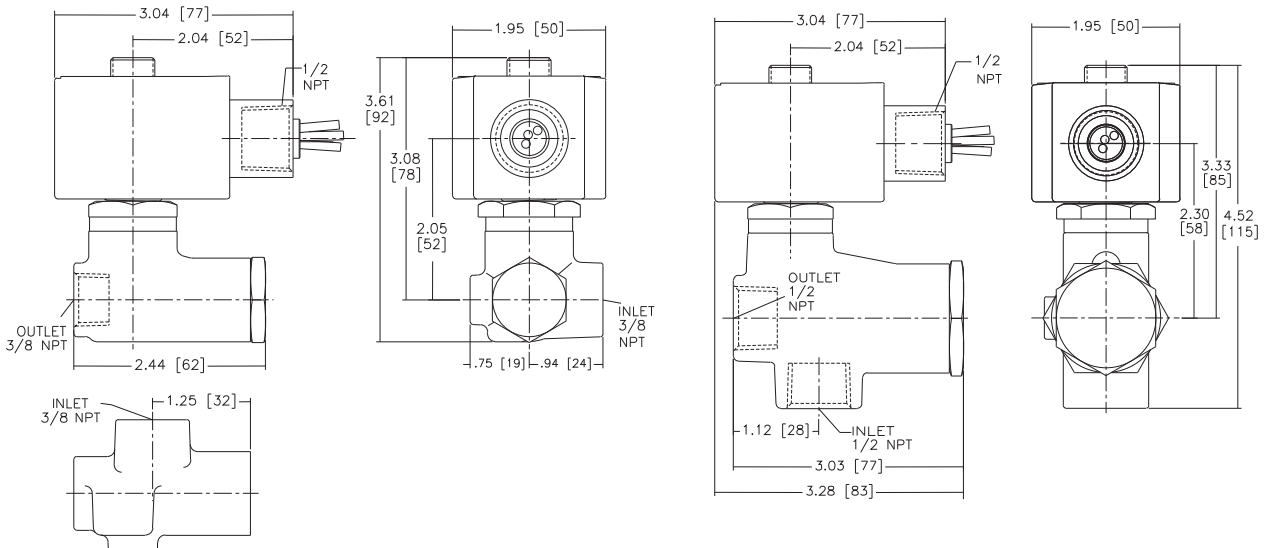
Const. Ref.		Dia "D"	E	F	G	H	J	K	L	N	P	W	X	Y	Z	Exhaust Pipe Size
9	ins.	Ø .28	.56	2.41	1.88	4.67	1.03	2.30	3.12	.72	3.72	4.75	1.41	1.56	.81	3/8
	mm	7	14	61	48	119	26	58	79	18	95	121	36	40	21	
10	ins.	Ø .34	.76	3.12	2.62	4.89	1.50	2.11	3.18	.83	3.77	6.06	1.86	1.89	.83	1/2
	mm	9	16	79	67	118	38	70	81	21	90	154	48	49	21	
11	ins.	Ø .34	.76	3.12	2.62	4.65	1.50	2.11	3.18	.83	3.53	6.06	1.86	1.89	.83	1/2
	mm	9	35	97	99	138	53	54	116	40	99	210	54	67	30	
12	ins.	Ø .28	.56	2.41	1.88	5.06	1.03	2.71	3.12	.72	4.12	4.81	1.41	1.56	.81	3/8
	mm	7	14	61	48	129	26	69	79	18	105	122	36	40	21	
13	ins.	Ø .34	.78	3.12	2.62	5.27	1.50	2.49	3.19	.84	4.16	6.06	1.88	1.91	.84	1
	mm	9	16	79	67	134	38	63	81	21	106	154	48	49	21	
14	ins.	Ø .34	1.38	3.81	3.88	6.09	2.09	3.18	4.56	1.56	4.59	8.25	2.12	2.62	1.16	1
	mm	9	35	97	99	155	53	81	116	40	117	210	54	67	30	

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



Const. Ref. 19





Const. Ref. 20



Dimensions: inches (mm)





Series	8551	8553
NPT	1/4	1/2
L1 ①	5.12 (132)	6.00 (153)
L2 ①	6.73 (171)	7.80 (198)
H2	4.38 (111)	4.77 (121)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

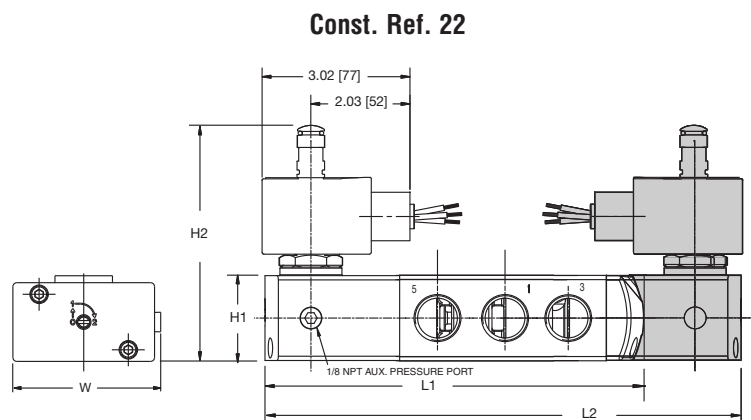
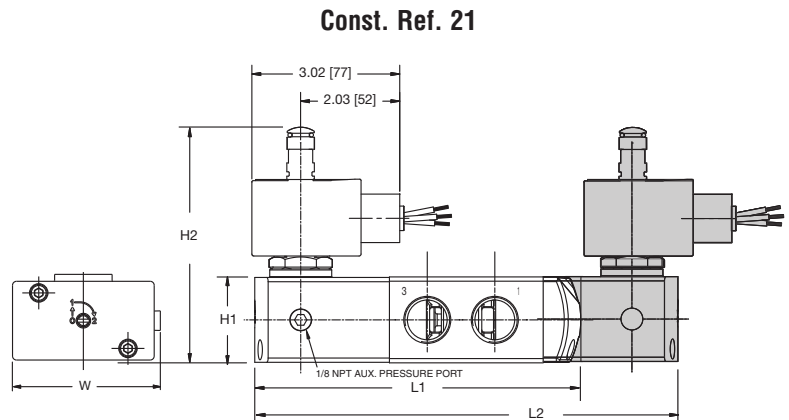
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Series	8551	8553
NPT	1/4	1/2
L1 ①	5.63 (144)	7.06 (180)
L2 ①	7.20 (183)	8.86 (225)
H2	4.38 (111)	4.77 (121)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand



Dimensions: inches (mm)

Series	8551 (Aluminum, Brass)
NPT	1/4
L1 ①	4.96 (126)
L2 ①	6.49 (165)
H2	4.38 (111)
H1	1.57 (40)
W	1.77 (45)

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

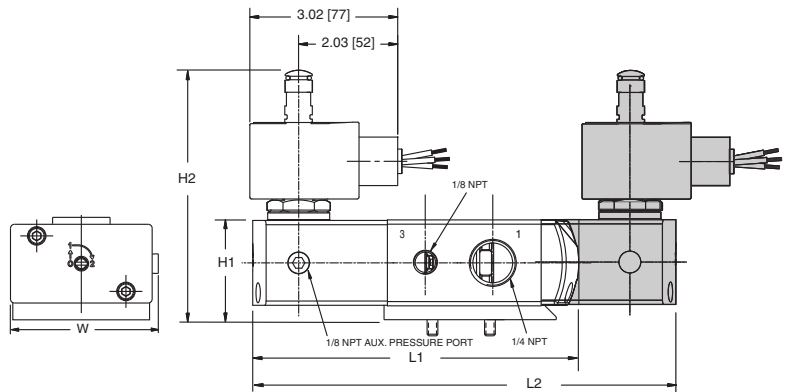
Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Series	8551 (316L SS)	8551 (5/3)	8553
NPT	1/4	1/4	1/2
L1 ①	5.20 (132)	-	7.08 (180)
L2 ①	6.73 (171)	7.44 (189)	8.85 (225)
H2	4.38 (111)	4.38 (111)	4.77 (121)
H1	1.57 (40)	1.57 (40)	2.08 (53)
W	1.77 (45)	1.77 (45)	2.87 (73)

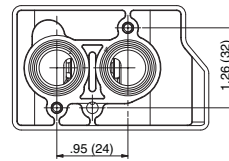
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

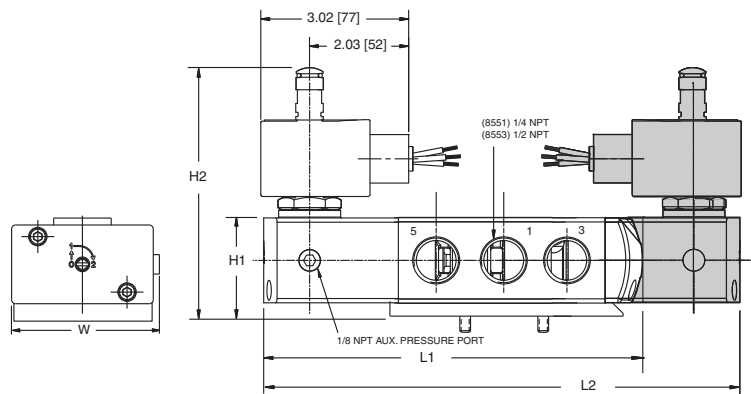
Const. Ref. 23



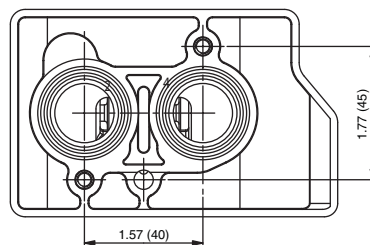
8551 NAMUR Footprint



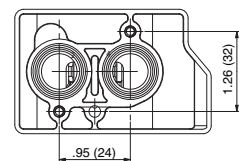
Const. Ref. 24



8553 NAMUR Footprint



8551 NAMUR Footprint



Features

- Designed to meet vibration and/or shock per ISA specification S71.03C2. High shock construction
- Handles aggressive atmosphere per salt resistance testing (ASTM B117)
- Most hardware is stainless steel, and all aluminum components are hard anodized and Nituff[®] coated for corrosion resistance
- Manual reset housing is sealed with closed-cell CR sponge rubber, and equipped with a sintered bronze breather to prevent condensation
- Last chance filter installed in auxiliary air port of the pilot valve
- Intrinsically Safe and General Service constructions available

Nituff is a registered trademark of Nimet Industries, Inc.

Construction

Valve Parts in Contact with Fluids	
Main Valve	
Body	Brass
Disc	303 Stainless Steel
Seats	Phosphor Bronze
Springs	17-7 PH Stainless Steel
Seals	FKM
Air Operator Diaphragm	FMQ
Bearing Screw	430 Stainless Steel
Lever	302 Stainless Steel
Low Power Pilot Valve (1.4 watts)	
Body	Brass
Seals	Low Temperature NBR
Rider Rings	PTFE
Spring Retainer	CA
Core and Plugnut	430F Stainless Steel
Sieve	304L Stainless Steel
Core Springs	302 Stainless Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number DC	
	DC Watts	AC			General Purpose	Explosionproof
		Watts	VA Holding	VA Inrush		
F	1.4	-	-	-	238710-902-D	238714-902-D

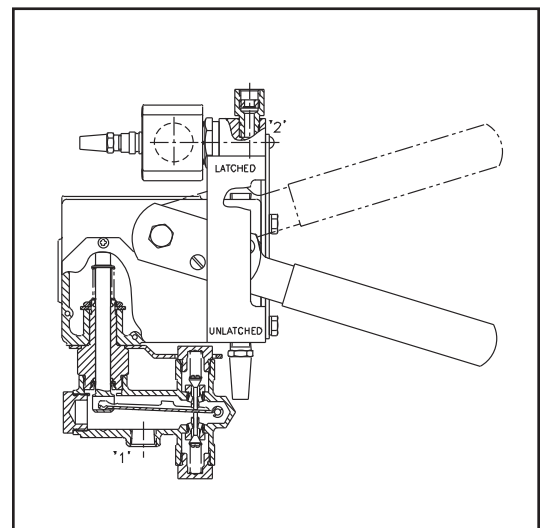
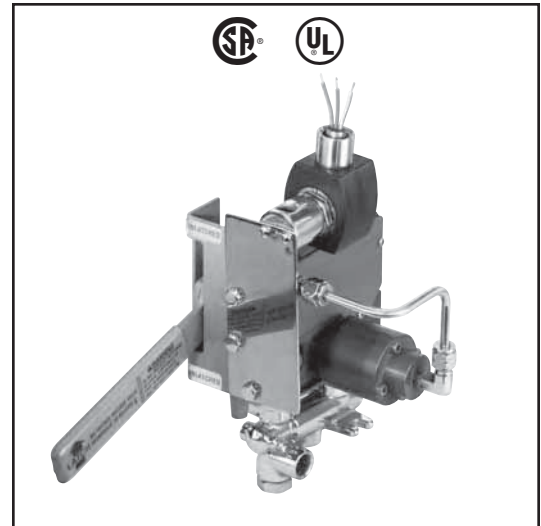
Standard Voltages: 12 and 24 volts DC, +10% -15%.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6D, 7, and 9.

Approvals

CSA certified and UL listed General Purpose Valve (pilot).



SPECIAL SERVICE PILOT

Options

Stainless steel body; 1/8" to 1/2" NPT pipe sizes; position indicator switch; main valve resilient seats; 4-way construction with metering; pneumatic time delay; redundant pilot valves.

Contact factory for ordering information.

Operation Alternatives

Electrically Tripped – Manually move the lever to the latched position with the solenoid de-energized. Trips when solenoid is energized. Once tripped, the lever may be cycled causing the valve discs to open and close.

No Voltage Release – Manually move the lever to the latched position with the solenoid energized. Trips when solenoid is de-energized. Once tripped, the lever may be cycled causing the valve discs to open and close.

Specifications (English units)

MAIN VALVE - AC or DC Constructions					
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F
			Min.	Max.	
3/8	1/4	.45	0	125	200

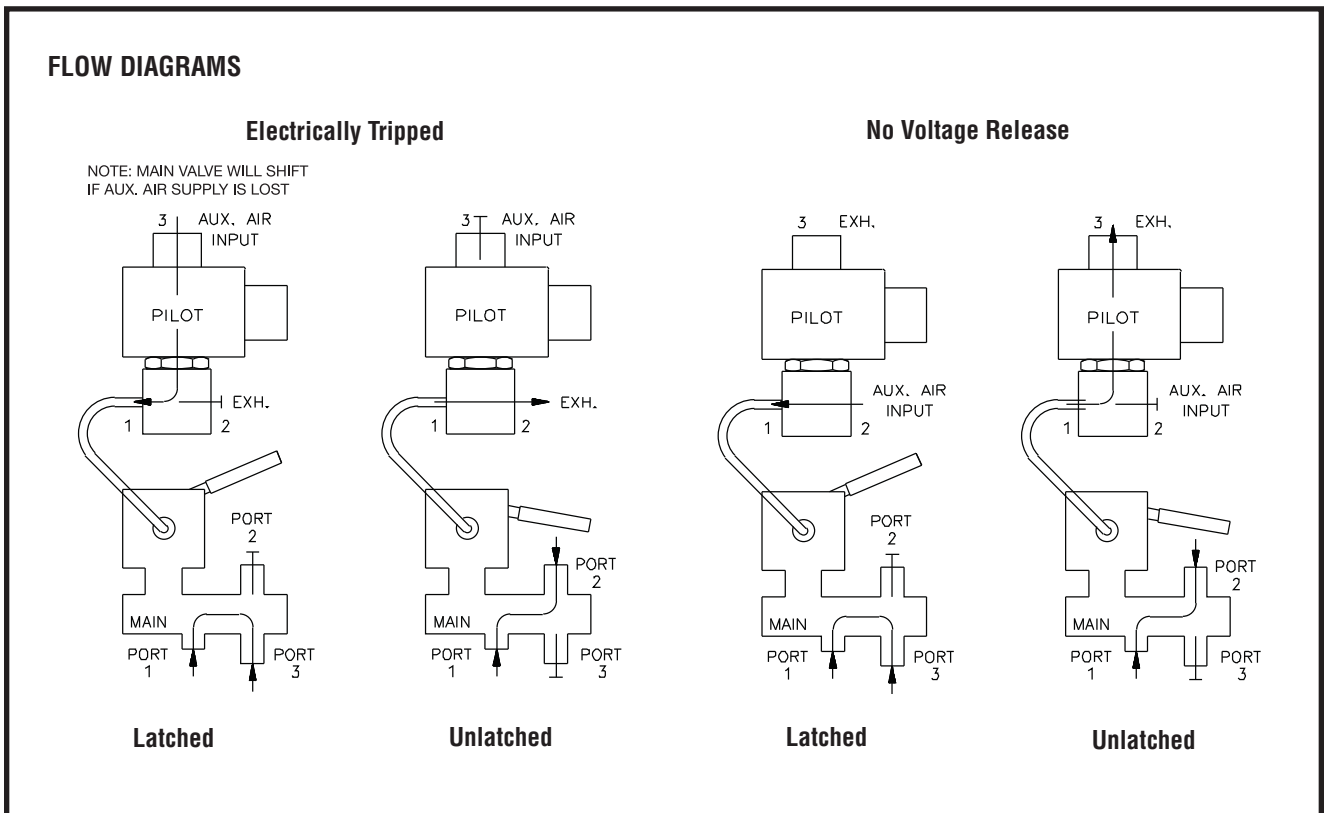
Catalog Number	Construction Type	Pilot Pressure (psi)		Fluid Temp. °F		Ambient Temp. °F		Watt Rating/ Class of Coil Insulation	Pilot Valve (For reference only)
		Min.	Max.	Min.	Max.	Min.	Max.		
HV264153-13	No Voltage Release	25	125	-40	140	-40	140	1.4/F	EF8314G300
HV264153-14	Electrically Tripped	25	125	-40	140	-40	140	1.4/F	EF8314G300

Specifications (Metric units)

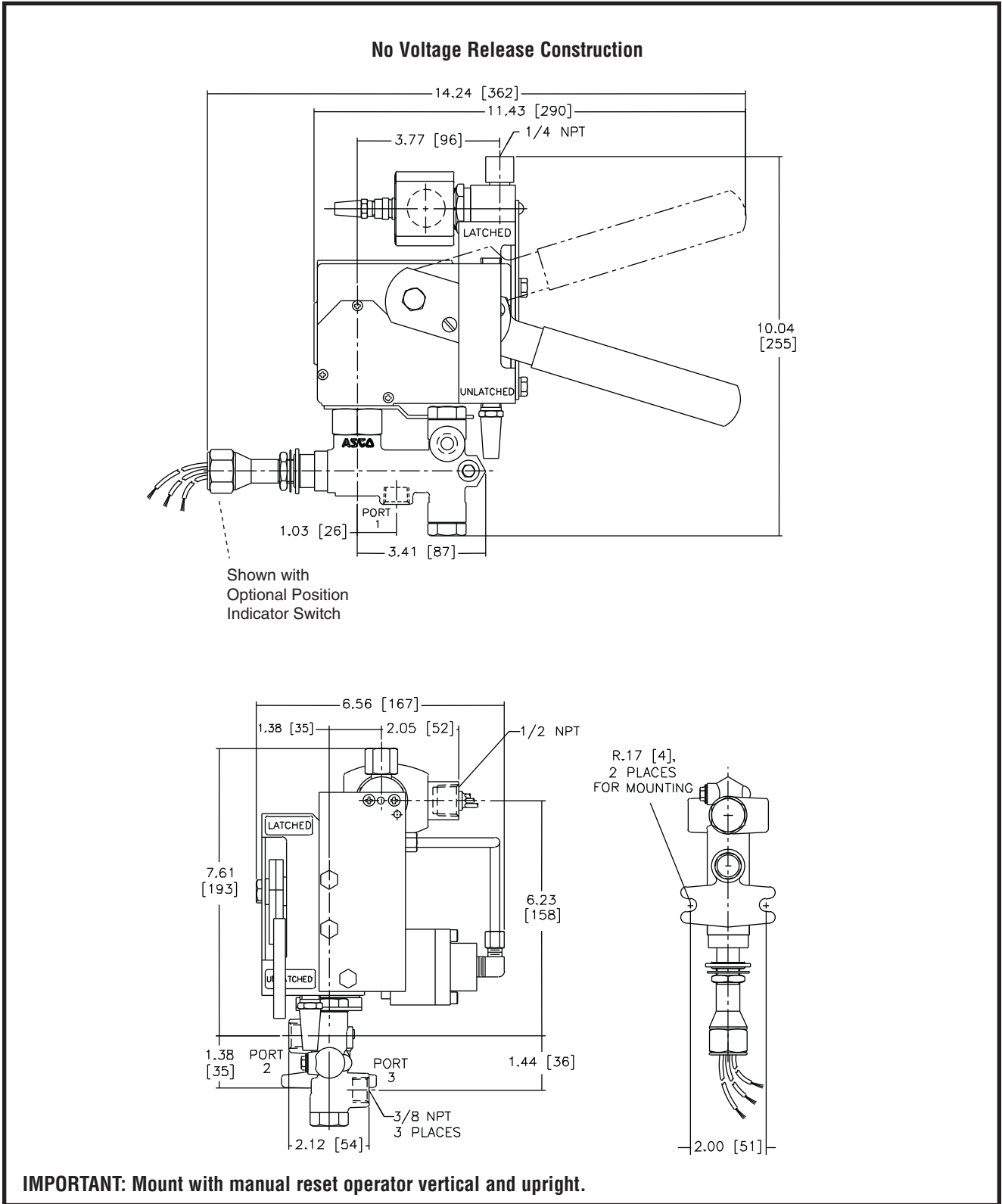
MAIN VALVE - AC or DC Constructions					
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C
			Min.	Max.	
3/8	6	0.39	0	9	93

Catalog Number	Construction Type	Pilot Pressure (bar)		Fluid Temp. °C		Ambient Temp. °C		Watt Rating/ Class of Coil Insulation	Pilot Valve (For reference only)
		Min.	Max.	Min.	Max.	Min.	Max.		
HV264153-13	No Voltage Release	2	9	-40	60	-40	60	1.4/F	EF8314G300
HV264153-14	Electrically Tripped	2	9	-40	60	-40	60	1.4/F	EF8314G300

Dimensions: inches (mm)



Dimensions: inches (mm)



**SPECIAL SERVICE
PILOT**



Air and Inert Gas Non-Incendive Field Wiring Valves

Brass, Aluminum, or Stainless Steel Bodies
1/4" to 1" NPT

2/2•3/2
4/2•5/2•5/3
SERIES
NIFW

Features

- NIFW solenoid enclosures to provide corrosion resistance in harsh environments
- Designed solely for installation in non-incendive field wiring 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 2, including Groups A through G
- Electronically enhanced solenoids have efficient cartridge operators and nonpolarized coils
- Triple redundant diodes prevent electrical pulse from flowing back into the hazardous area
- Mountable in any position

Solenoid Operators

WBEE: Watertight, Type 3, 3S, 4, 4X, IP-67. Liquid Crystal Polymer (LCP) overmolded with 1/2" NPT conduit connection and screw terminals for simple wiring. The terminal block will accommodate 18 gage (AWG) wire, and grounding screw is located inside the enclosure.

Solenoid Construction

Gasket Cover	NBR
Cover Screw	18-8 Stainless Steel
Cover Screw Gasket	NBR
Sleeve	430F Stainless Steel
Nameplate	Stainless Steel
Burp Cap Assembly	PA/CR

Valve Construction

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

Electrical

Nominal Wattage is 0.35 @ 24 VDC
Maximum Allowable "Off" State Current to the valves must be less than 1 mA.

Electronically Enhanced 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.



Ordering Information

The LCP NIFW solenoid enclosure is designated by the prefix "WBEE". **Example: WBEE8314A300**
Spare Coil P/Ns: WBEE: 290209-001*

Nominal Ambient Temp. Ranges

Series	Body Material	Temperature Range
8551	Aluminum	5°F to 140°F (-15°C to 60°C)
8262	Brass	-40°F to 140°F (-40°C to 60°C)
8314		
8317		
8551		
8551	316L Stainless Steel	
8316 Suffix V	Misc.	32°F to 140°F (0°C to 60°C)
All Other		-4°F to 140°F (-20°C to 60°C)

Approvals (pending)

FM approved under J.I.3W8A8. AX (3610).
NIFW/I, II, III/2/ABCDEFG/T6 Ta = 60°C;
-V9536;ENTITY;Type 4X;
CSA certified under File LR-13976-116C.
NIFW/I/2/ABCD/T6 Ta = 60°C;
-V9536;ENTITY;Type 4X;
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.

Maximum Entity Parameters

Entity	Groups A-D	Groups A-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

Standard Voltage: 24 VDC only (±10%)

Minimum Operating Current: 0.028 amps

SPECIAL SERVICE PILOT



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	Const. Ref.	Catalog Number	Const. Ref.	
			Min.	Max.						
1/4	1/16	.08	0	150	140	WBEE8262A320	1	WBEE8262A386	1A	
3/8	5/16	1.5	10	150	140	WBEE8223A323	2	-	-	
1/2	3/8	3.2	25	150	140	WBEE8223A303	3	WBEE8223A310	3	
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	
		Pressure to Cylinder	Cylinder to Exhaust	Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
				Min.	Max.					
UNIVERSAL OPERATION (Pressure at any port) with NBR Disc										
1/4	1/16	.08	.08	0	150	140	WBEE8314A300	4	WBEE8314A301	4A
NORMALLY CLOSED (Closed when de-energized)										
1/4	5/16	1.5	1.5	ⓐ	150	140	WBEE8316A301 ③	5	WBEE8316A381V ⑤	8
3/8	5/16	1.8	1.8	ⓐ	150	140	WBEE8316A302 ③	5	WBEE8316A382V ⑤	8
3/8	5/8	4	4	ⓐ	150	140	WBEE8316A303 ③	6	-	-
1/2	5/8	4	4	ⓐ	150	140	WBEE8316A304 ③	6	WBEE8316A384V ⑤	9
3/4	11/16	5.5	5.5	10	150	140	WBEE8316A374 ③	7	-	-
1	1	13	13	10	150	140	WBEE8316A334 ③	7A	-	-
UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	②	.08	.73	5	150	140	WBEE8317A307 ①	10	WBEE8317A308 ①	11
4/2 VALVES, with NBR Disc and Seal										
1/4	1/16	.08	.08	10	150	140	WBEE8345A301 ①③	12	WBEE8345A381 ①③	12
4/2 VALVES, Brass Body with NBR Disc										
							Single Solenoid	Const. Ref.	Dual Solenoid	Const. Ref.
1/4	1/4	.80	1	10	150	140	WBEE8344A370 ①③	13	WBEE8344A344 ③	16
3/8	3/8	1.4	2.2	10	150	140	WBEE8344A372 ①③	14	WBEE8344A380 ③	17
1/2	3/8	1.4	2.2	10	150	140	WBEE8344A374 ①③	14	WBEE8344A382 ③	17
3/4	3/4	5.2	5.6	10	150	140	WBEE8344A376 ①③	15	WBEE8344A354 ③	18
1	3/4	5.2	5.6	10	150	140	WBEE8344A378 ①③	15	WBEE8344A356 ③	18
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 can not be exhausted to the atmosphere.						⑤ Diaphragm and main disc FKM only (pilot is low-temperature NBR).				
② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".						⑥ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See chart on page 136 for auxiliary pressure vs. mainline pressure. Minimum 15 psi Operating Pressure Differential when selection gasket is in the internal position.				
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.										

SPECIAL SERVICE PILOT

Specifications (English units)

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.				Min.	Max.			
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals													
Aluminum 3/2	1/4	1/4	.86	30	150	140	WBEE8551A305	19	30	150	140	WBEE8551A306	19
Aluminum 5/2							WBEE8551A317	20				WBEE8551A318	20
Aluminum 5/3 Center Closed							-	-				WBEE8551A367	20
Aluminum 5/3 Center Open							-	-				WBEE8551A368	20
Brass 3/2							WBEE8551A307	19				WBEE8551A308	19
Brass 5/2							WBEE8551A319	20				WBEE8551A320	20
316L Stainless Steel 3/2							WBEE8551A313 ②	19				WBEE8551A314 ②	19
316L Stainless Steel 5/2							WBEE8551A321 ②	20				WBEE8551A322 ②	20
Aluminum 3/2	1/2	1/2	3.7				WBEE8553A305	19				WBEE8553A306	19
Aluminum 5/2							WBEE8553A317	20				WBEE8553A318	20

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.				Min.	Max.			
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount													
Aluminum 3/2, 5/2	1/4	1/4	.86	30	150	140	WBEE8551A301 ①	21	30	150	140	WBEE8551A302 ①	21
Aluminum 5/3 Center Closed							-	-				WBEE8551A365	22
Aluminum 5/3 Center Open							-	-				WBEE8551A366	22
Brass 3/2, 5/2							WBEE8551A303 ①	21				WBEE8551A304 ①	21
316L Stainless Steel 3/2, 5/2							WBEE8551A309 ②	22				WBEE8551A310 ②	22
Aluminum 3/2, 5/2	1/2	1/2	3.7				WBEE8553A301	22				WBEE8553A302	22

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Can be used for *dry* natural gas service.

SPECIAL SERVICE
PILOT

Specifications (Metric units)

2/2 VALVES, NORMALLY CLOSED, with NBR Disc										
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
				Min.	Max.					
1/4	1	.07		0	10.3	60	WBEE8262A320	1	WBEE8262A386	1A
3/8	8	1.29		0.7	10.3	60	WBEE8223A323	2	-	-
1/2	10	2.74		1.7	10.3	60	WBEE8223A303	3	WBEE8223A310	3
3/2 VALVES										
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
				Pressure to Cylinder	Cylinder to Exhaust					
UNIVERSAL OPERATION (Pressure at any port) with NBR Disc										
1/4	2	.08	.08	0	10.3	60	WBEE8314A300	4	WBEE8314A301	4A
NORMALLY CLOSED (Closed when de-energized)										
1/4	8	1.29	1.29	ⓐ	10.3	60	WBEE8316A301 ⓐ	5	WBEE8316A381V ⓐ	8
3/8	8	1.37	1.37	ⓐ	10.3	60	WBEE8316A302 ⓐ	5	WBEE8316A382V ⓐ	8
3/8	16	3.43	3.43	ⓐ	10.3	60	WBEE8316A303 ⓐ	6	-	-
1/2	16	3.43	3.43	ⓐ	10.3	60	WBEE8316A304 ⓐ	6	WBEE8316A384V ⓐ	9
3/4	17	4.7	4.7	0.7	10.3	60	WBEE8316A374 ⓐ	7	-	-
1	25	11.14	11.14	0.7	10.3	60	WBEE8316A334 ⓐ	7A	-	-
UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	ⓑ	.07	.63	0.3	10.3	60	WBEE8317A307 ⓑ	10	WBEE8317A308 ⓑ	11
4/2 VALVES, with NBR Disc and Seal										
1/4	2	.07	.07	0.7	10.3	60	WBEE8345A301 ⓑⓓ	12	WBEE8345A381 ⓑⓓ	12
4/2 VALVES, Brass Body with NBR Disc										
							Single Solenoid	Const. Ref.	Dual Solenoid	Const. Ref.
1/4	6	.69	.86	0.7	10.3	60	WBEE8344A370 ⓑⓓ	13	WBEE8344A344 ⓑ	16
3/8	10	1.89	2.2	0.7	10.3	60	WBEE8344A372 ⓑⓓ	14	WBEE8344A380 ⓑ	17
1/2	10	1.89	2.2	0.7	10.3	60	WBEE8344A374 ⓑⓓ	14	WBEE8344A382 ⓑ	17
3/4	19	4.80	5.6	0.7	10.3	60	WBEE8344A376 ⓑⓓ	15	WBEE8344A354 ⓑ	18
1	19	4.80	5.6	0.7	10.3	60	WBEE8344A378 ⓑⓓ	15	WBEE8344A356 ⓑ	18
ⓑ 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 can not be exhausted to the atmosphere.						ⓐ Diaphragm and main disc FKM only (pilot is low-temperature NBR).				
ⓑ For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".						ⓐ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See chart on page 136 for auxiliary pressure vs. mainline pressure. Minimum 1 bar Operating Pressure Differential when selection gasket is in the internal position.				
ⓑ 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.										

SPECIAL SERVICE PILOT

Specifications (Metric units)

Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.	Min.	Max.	Min.	Max.				
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals													
Aluminum 3/2	1/4	6	.7	2	10	60	WBEE8551A305	19	2	10	60	WBEE8551A306	19
Aluminum 5/2							WBEE8551A317	20				WBEE8551A318	20
Aluminum 5/3 Center Closed							-	-				WBEE8551A367	20
Aluminum 5/3 Center Open							-	-				WBEE8551A368	20
Brass 3/2							WBEE8551A307	19				WBEE8551A308	19
Brass 5/2							WBEE8551A319	20				WBEE8551A320	20
316L Stainless Steel 3/2							WBEE8551A313 ②	19				WBEE8551A314 ②	19
316L Stainless Steel 5/2							WBEE8551A321 ②	20				WBEE8551A322 ②	20
Aluminum 3/2	1/2	13	3.7				WBEE8553A305	19				WBEE8553A306	19
Aluminum 5/2							WBEE8553A317	20				WBEE8553A318	20

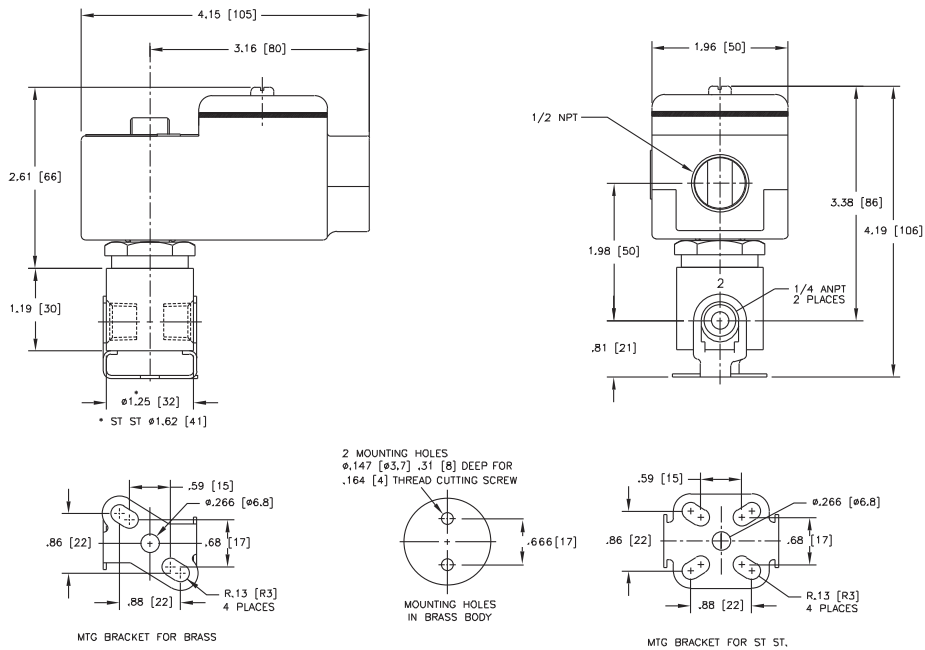
Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.	Min.	Max.						
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount													
Aluminum 3/2, 5/2	1/4	6	.7	2	10	60	WBEE8551A301 ①	21	2	10	60	WBEE8551A302 ①	21
Aluminum 5/3 Center Closed							-	-				WBEE8551A365	22
Aluminum 5/3 Center Open							-	-				WBEE8551A366	22
Brass 3/2, 5/2							WBEE8551A303 ①	21				WBEE8551A304 ①	21
316L Stainless Steel 3/2, 5/2							WBEE8551A309 ②	22				WBEE8551A310 ②	22
Aluminum 3/2, 5/2	1/2	13	3.7				WBEE8553A301	22				WBEE8553A302	22

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Can be used for *dry* natural gas service.

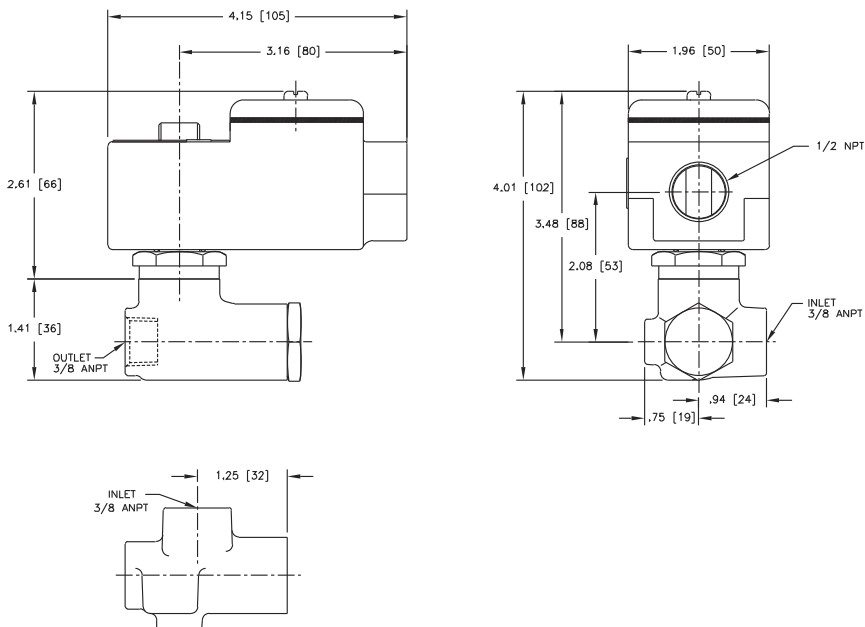
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 1, 1A

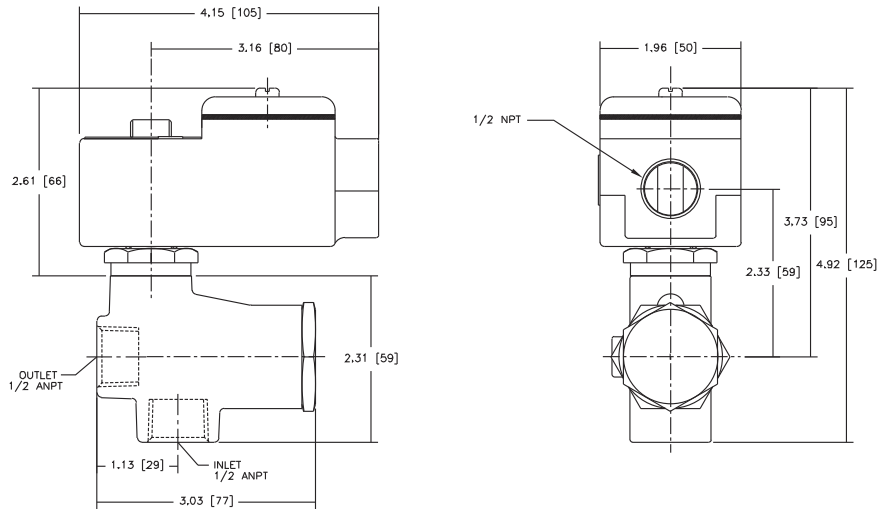


Const. Ref. 2

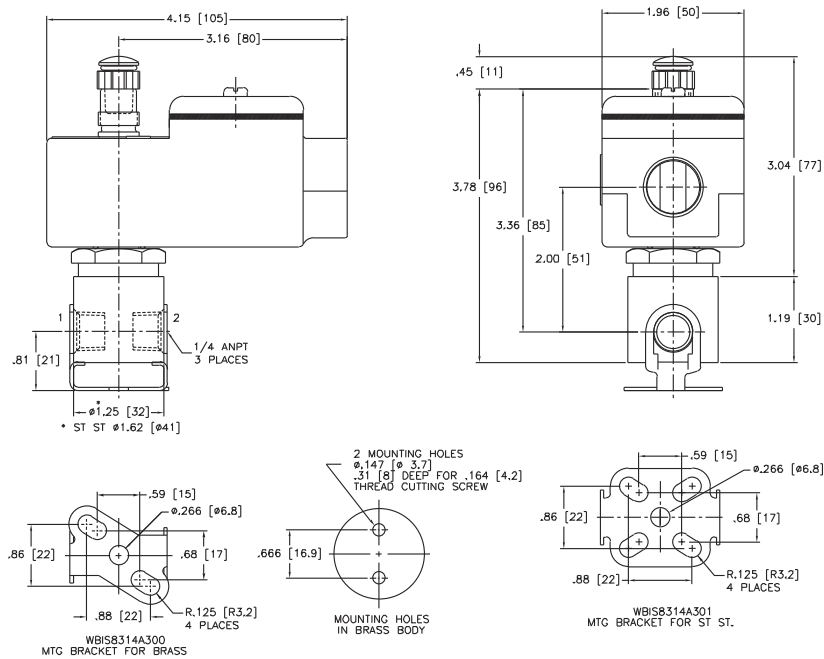


Dimensions: inches (mm)

Const. Ref. 3



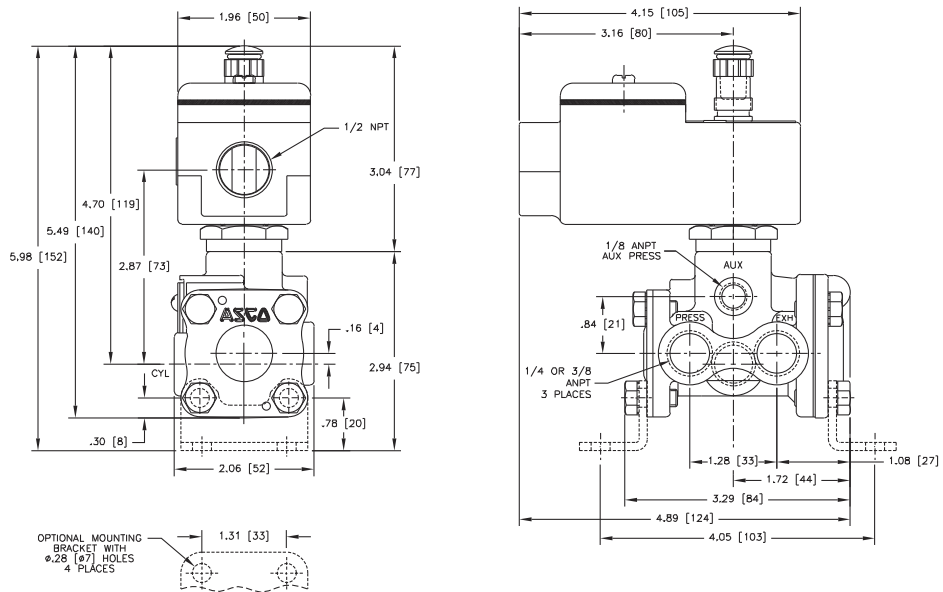
Const. Ref. 4, 4A



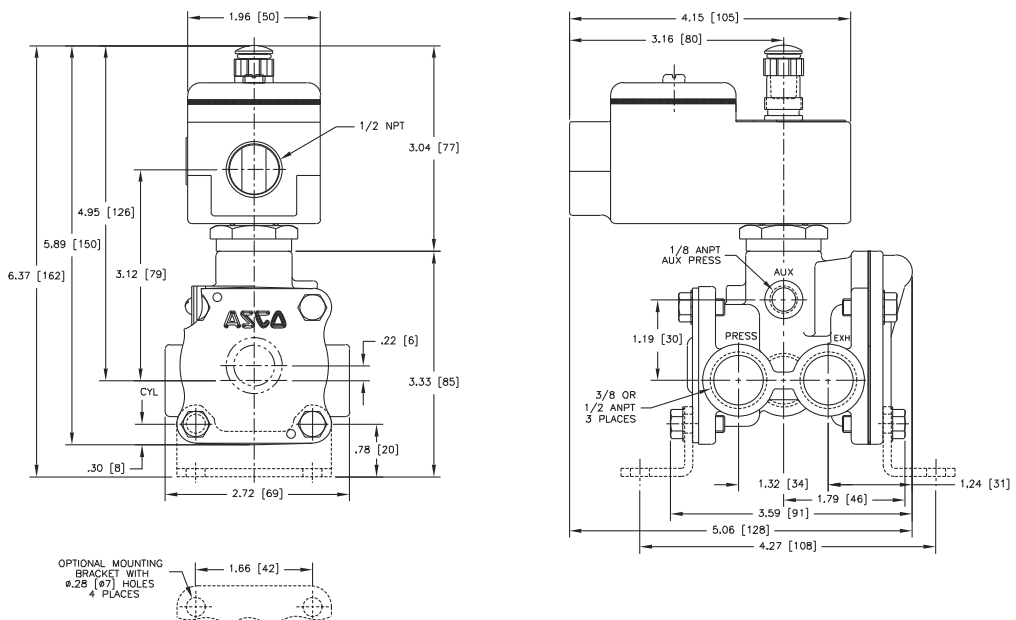
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 5

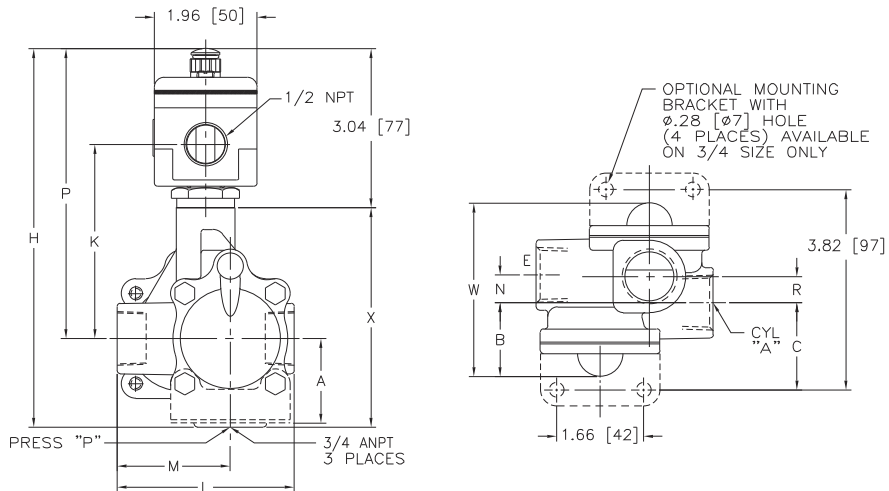


Const. Ref. 6



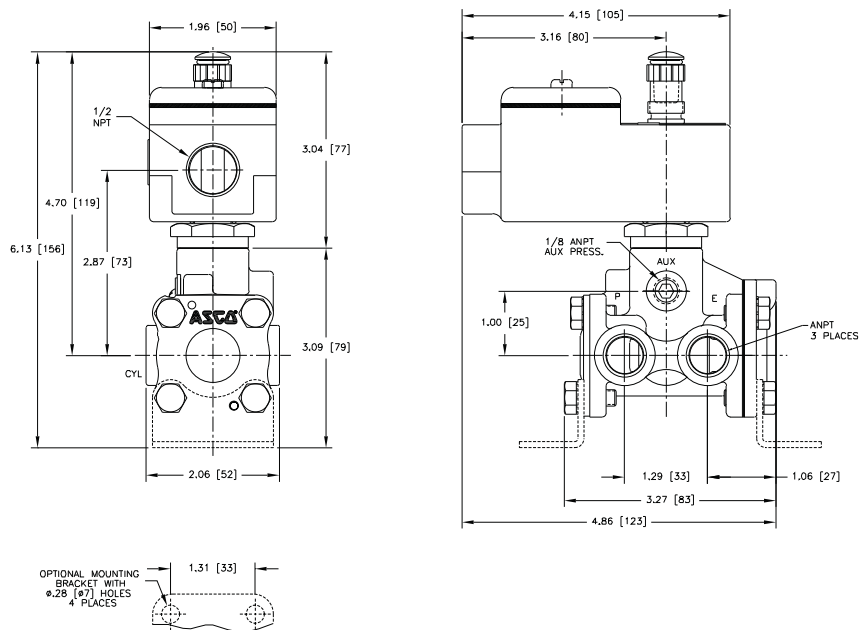
Dimensions: inches (mm)

Const. Ref. 7, 7A



Catalog No.		A	B	C	H	K	L	M	N	P	R	W	X
WBEE8316A374	ins.	1.61	1.41	1.66	7.23	3.71	3.38	2.16	.53	5.54	.50	3.31	4.19
	mm	41	36	42	184	94	86	55	13	141	13	84	106
WBEE8316A334	ins.	-	1.78	-	7.85	3.96	4.44	2.81	.87	5.79	1.74	5.32	4.81
	mm	-	45	-	199	100	113	71	22	147	44	135	122

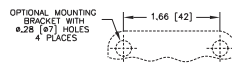
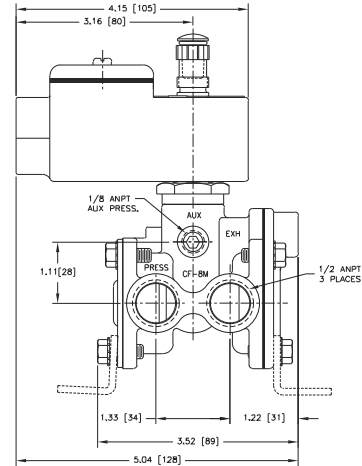
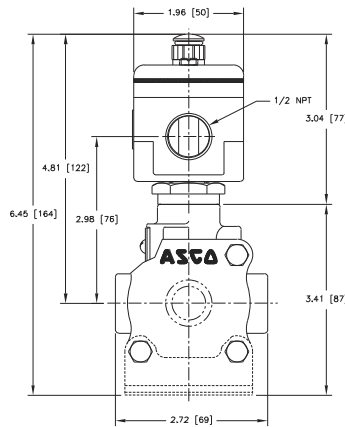
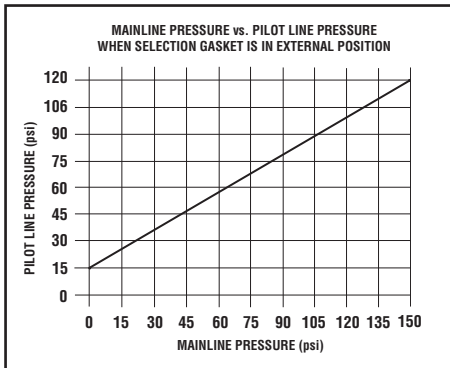
Const. Ref. 8



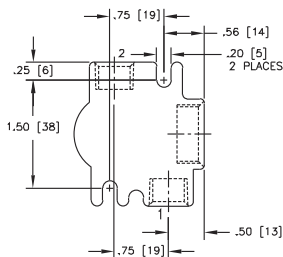
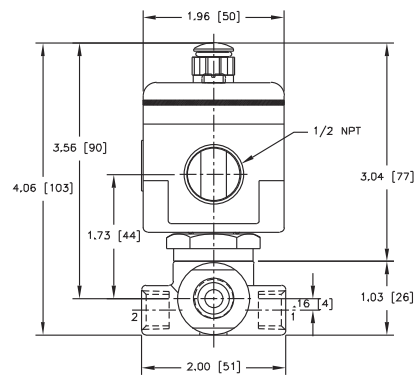
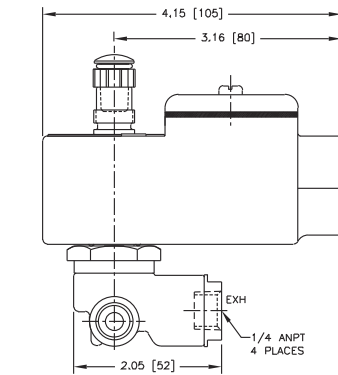
Dimensions: inches (mm)

Const. Ref. 9

Refer to note ⑥.
For all 8316 "0" Minimum Series only.



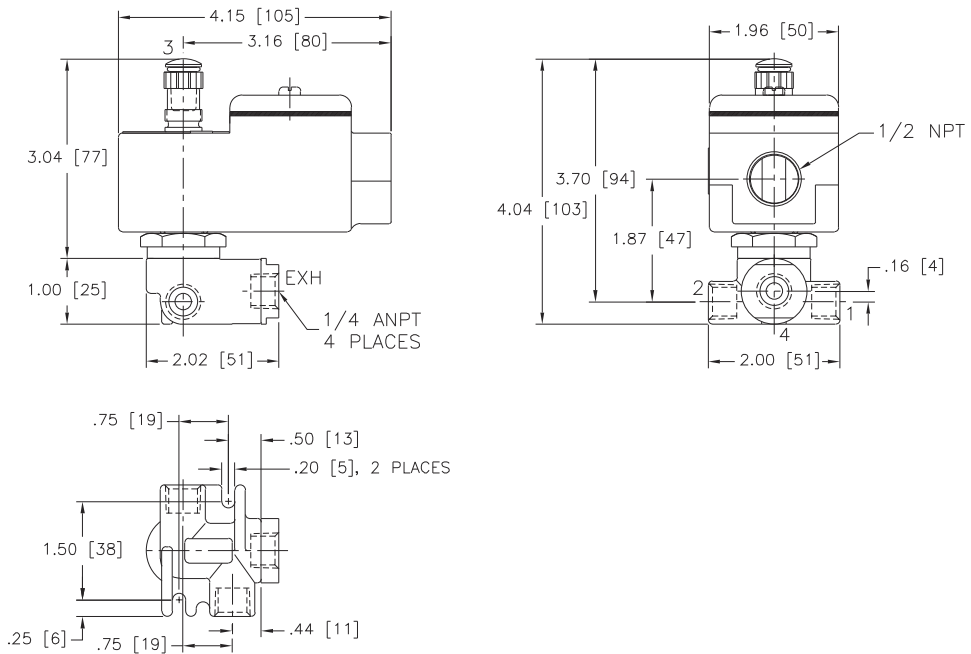
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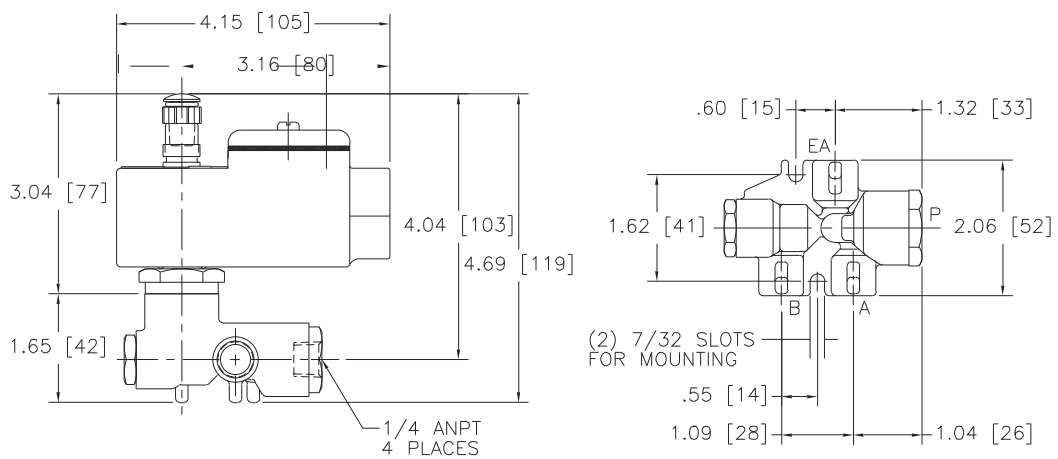
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 11



Const. Ref. 12

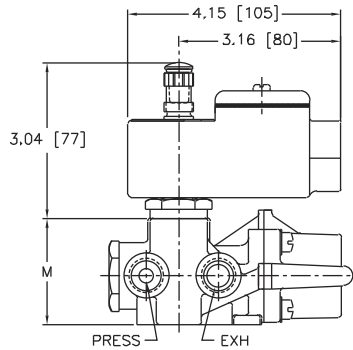


SPECIAL SERVICE
PILOT

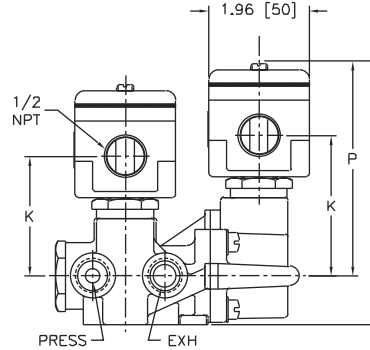
Dimensions: inches (mm)

Const. Ref. 13-18

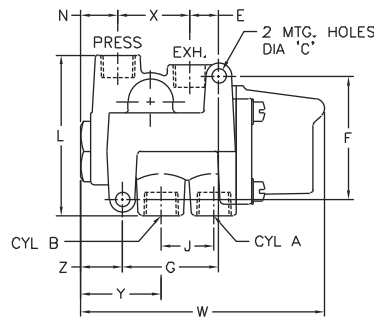
13-15



16-18



All







Catalog No.		ØC	E	F	G	H	J	K	L	M	N	P	W	X	Y	Z	Exhaust Pipe Size
WBEE8344A370	ins.	.28	.56	2.41	1.88	5.12	1.03	2.33	3.13	2.08	.72	4.16	4.75	1.41	1.56	.81	3/8"
	mm	7.1	14	61	48	130	26	59	80	53	18	106	121	36	40	21	
WBEE8344A380, 382	ins.	.34	.77	3.12	2.62	5.72	1.50	2.77	3.18	2.06	.83	4.60	6.06	1.86	1.90	.84	1/2"
	mm	8.6	20	79	67	145	38	70	81	52	21	117	154	47	48	21	
WBEE8344A372, 374	ins.	.34	.77	3.12	2.62	5.10	1.50	2.14	3.18	2.06	.83	3.98	6.06	1.86	1.90	.84	1/2"
	mm	8.6	20	79	67	120	38	54	81	52	21	101	154	47	48	21	
WBEE8344A344	ins.	.28	.56	2.41	1.88	5.12	1.03	2.74	3.13	2.08	.72	4.16	4.75	1.41	1.56	.81	3/8"
	mm	7.1	14	61	48	130	26	70	80	53	18	106	121	36	40	21	
WBEE8344A376, 378	ins.	.34	1.37	3.81	3.88	5.90	2.09	2.52	4.56	2.86	1.55	4.35	8.25	2.12	2.63	1.16	1"
	mm	8.6	35	97	99	150	53	64	116	73	39	110	210	54	67	30	
WBEE8344A354, 356	ins.	.34	1.37	3.81	3.88	6.54	2.09	3.21	4.56	2.81	1.55	4.35	8.25	2.12	2.63	1.16	1"
	mm	8.6	35	97	99	168	53	81	116	71	39	110	210	54	67	30	

IMPORTANT: Valves can be mounted in any position.

Dimensions: inches (mm)





Series	8551	8553
NPT	1/4	1/2
L1 ①	5.12 (132)	6.00 (153)
L2 ①	6.73 (171)	7.80 (198)
H2	4.38 (111)	4.77 (121)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

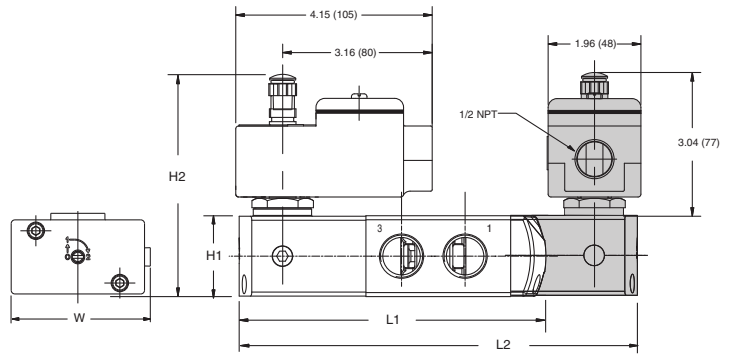
Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Series	8551	8553
NPT	1/4	1/2
L1 ①	5.63 (144)	7.06 (180)
L2 ①	7.20 (183)	8.86 (225)
H2	4.38 (111)	4.77 (121)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

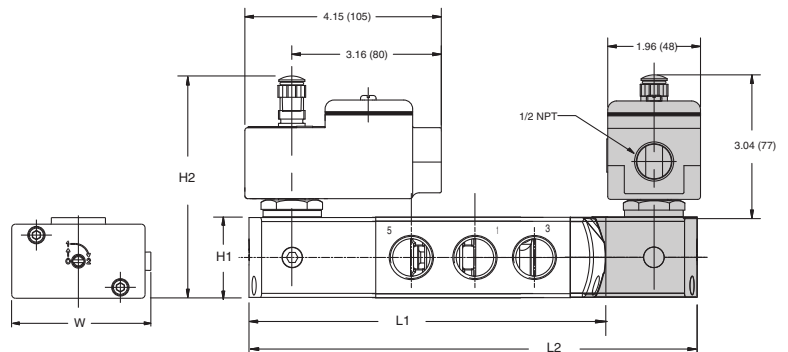
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Const. Ref. 19



Const. Ref. 20



Dimensions: inches (mm)

Series	8551 (Aluminum, Brass)
NPT	1/4
L1 ①	4.96 (126)
L2 ①	6.49 (165)
H2	4.38 (111)
H1	1.57 (40)
W	1.77 (45)

① Manual override option MH adds .250" (6.4), MS option adds .468" (11.9) to each solenoid endcap.

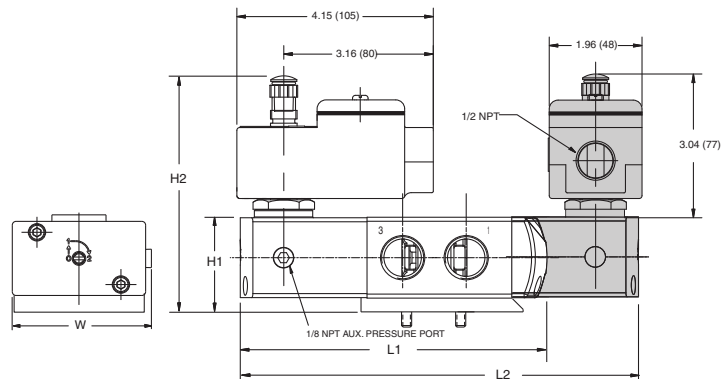
Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Series	8551 (316L SS)	8551 (5/3)	8553
NPT	1/4	1/4	1/2
L1 ①	5.20 (132)	-	7.08 (180)
L2 ①	6.73 (171)	7.44 (189)	8.85 (225)
H2	4.38 (111)	4.38 (111)	4.77 (121)
H1	1.57 (40)	1.57 (40)	2.08 (53)
W	1.77 (45)	1.77 (45)	2.87 (73)

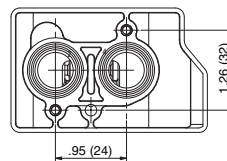
① Manual override option MH adds .250" (6.4), MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

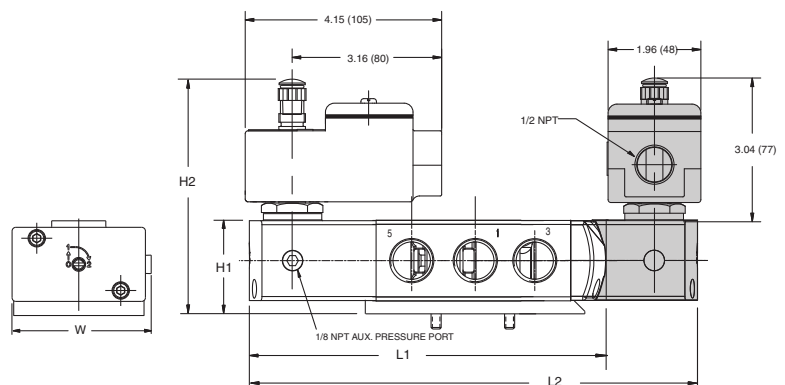
Const. Ref. 21



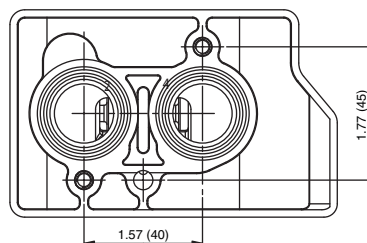
8551 NAMUR Footprint



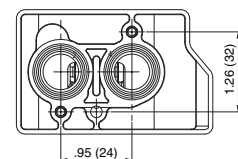
Const. Ref. 22



8553 NAMUR Footprint



8551 NAMUR Footprint





Air and Inert Gas
Intrinsically Safe Valves
 Brass, Aluminum, or Stainless Steel Bodies
 1/4" to 1" NPT

2/2•3/2
4/2•5/2•5/3
SERIES
IS

Features

- Intrinsically safe solenoid enclosures to provide corrosion resistance in harsh environments
- 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
- Triple redundant diodes prevent electrical pulse from flowing back into the hazardous area
- Mountable in any position

Solenoid Operators

WBIS: Watertight, Type 3, 3S, 4, 4X, IP-67. Liquid Crystal Polymer (LCP) overmolded with 1/2" NPT conduit connection and screw terminals for simple wiring. The terminal block will accommodate 18 gage (AWG) wire, and grounding screw is located inside the enclosure.

ISSC: DIN 43650/ISO 4400, IP-65 Epoxy overmolded with Din Connector supplied, suitable to accept wiring cable diameters of 0.310 to 0.400 inches.

Solenoid Construction

Gasket Cover	NBR
Cover Screw	18-8 Stainless Steel
Cover Screw Gasket	NBR
Sleeve	430F Stainless Steel
Nameplate	Stainless Steel
Burp Cap Assembly	PA/CR

Valve Construction

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

Electrical

Nominal Wattage is 0.35 @ 24 VDC
 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. IS_ValvesR1



Ordering Information

The LCP Intrinsically Safe solenoid enclosure is designated by the prefix "WBIS". The Epoxy Din Connector is ordered by prefix "ISSC".

Example: WBIS8314A300 Spare Coil P/Ns
 ISSC8314A300 WBIS: 274445-001*
 ISSC: 268976-001*

Nominal Ambient Temp. Ranges

Series	Body Material	Temperature Range
8551	Aluminum	5°F to 140°F (-15°C to 60°C)
8262	Brass	-40°F to 140°F (-40°C to 60°C)
8314		
8317		
8551		
8551	316L Stainless Steel	
8316 Suffix V	Misc.	32°F to 140°F (0°C to 60°C)
All Other		-4°F to 140°F (-20°C to 60°C)

Approvals

FM approved under J.I.3W8A8. AX (3610).
 CSA certified under File LR-13976.
 ATEX EEx ia IIC T6 approved - pending
 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.

Maximum Entity Parameters

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

Standard Voltage: 24 VDC only (±10%)

Minimum Operating Current: 0.028 amps

SPECIAL SERVICE PILOT



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	Const. Ref.	Catalog Number	Const. Ref.
				Min.	Max.					
1/4	1/16	.08		0	150	140	WBIS8262A320	1	WBIS8262A386	1A
3/8	5/16	1.5		10	150	140	WBIS8223A323	2	-	-
1/2	3/8	3.2		25	150	140	WBIS8223A303	3	WBIS8223A310	3
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	Const. Ref.	Catalog Number	Const. Ref.
				Pressure to Cylinder	Cylinder to Exhaust					
UNIVERSAL OPERATION (Pressure at any port) with NBR Disc										
1/4	1/16	.08	.08	0	150	140	WBIS8314A300	4	WBIS8314A301	4A
NORMALLY CLOSED (Closed when de-energized)										
1/4	5/16	1.5	1.5	⑥	150	140	WBIS8316A301 ③	5	WBIS8316A381V ⑤	8
3/8	5/16	1.8	1.8	⑥	150	140	WBIS8316A302 ③	5	WBIS8316A382V ⑤	8
3/8	5/8	4	4	⑥	150	140	WBIS8316A303 ③	6	-	-
1/2	5/8	4	4	⑥	150	140	WBIS8316A304 ③	6	WBIS8316A384V ⑤	9
3/4	11/16	5.5	5.5	10	150	140	WBIS8316A374 ③	7	-	-
1	1	13	13	10	150	140	WBIS8316A334 ③	7A	-	-
UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	②	.08	.73	5	150	140	WBIS8317A307 ①	10	WBIS8317A308 ①	11
4/2 VALVES, with NBR Disc and Seal										
1/4	1/16	.08	.08	10	150	140	WBIS8345A301 ①③	12	WBIS8345A381 ①③	12
4/2 VALVES, Brass Body with NBR Disc										
							Single Solenoid	Const. Ref.	Dual Solenoid	Const. Ref.
1/4	1/4	.80	1	10	150	140	WBIS8344A370 ①③	13	WBIS8344A344 ③	16
3/8	3/8	1.4	2.2	10	150	140	WBIS8344A372 ①③	14	WBIS8344A380 ③	17
1/2	3/8	1.4	2.2	10	150	140	WBIS8344A374 ①③	14	WBIS8344A382 ③	17
3/4	3/4	5.2	5.6	10	150	140	WBIS8344A376 ①③	15	WBIS8344A354 ③	18
1	3/4	5.2	5.6	10	150	140	WBIS8344A378 ①③	15	WBIS8344A356 ③	18
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 can not be exhausted to the atmosphere.						⑤ Diaphragm and main disc FKM only (pilot is low-temperature NBR).				
② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".						⑥ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See chart on page 150 for auxiliary pressure vs. mainline pressure. Minimum 15 psi Operating Pressure Differential when selection gasket is in the internal position.				
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.										

SPECIAL SERVICE PILOT

Specifications (English units)

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.	Min.	Max.						
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals													
Aluminum 3/2	1/4	1/4	.86	30	150	140	WBIS8551A305	19	30	150	140	WBIS8551A306	19
Aluminum 5/2							WBIS8551A317	20				WBIS8551A318	20
Aluminum 5/3 Center Closed							-	-				WBIS8551A367	20
Aluminum 5/3 Center Open							-	-				WBIS8551A368	20
Brass 3/2							WBIS8551A307	19				WBIS8551A308	19
Brass 5/2							WBIS8551A319	20				WBIS8551A320	20
316L Stainless Steel 3/2							WBIS8551A313 ②	19				WBIS8551A314 ②	19
316L Stainless Steel 5/2							WBIS8551A321 ②	20				WBIS8551A322 ②	20
Aluminum 3/2	1/2	1/2	3.7	30	150	140	WBIS8553A305	19	30	150	140	WBIS8553A306	19
Aluminum 5/2							WBIS8553A317	20				WBIS8553A318	20

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.	Min.	Max.						
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount													
Aluminum 3/2, 5/2	1/4	1/4	.86	30	150	140	WBIS8551A301 ①	21	30	150	140	WBIS8551A302 ①	21
Aluminum 5/3 Center Closed							-	-				WBIS8551A365	22
Aluminum 5/3 Center Open							-	-				WBIS8551A366	22
Brass 3/2, 5/2							WBIS8551A303 ①	21				WBIS8551A304 ①	21
316L Stainless Steel 3/2, 5/2							WBIS8551A309 ②	22				WBIS8551A310 ②	22
Aluminum 3/2, 5/2	1/2	1/2	3.7	30	150	140	WBIS8553A301	22	30	150	140	WBIS8553A302	22

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Can be used for *dry* natural gas service.

SPECIAL SERVICE
PILOT

Specifications (Metric units)

2/2 VALVES, NORMALLY CLOSED, with NBR Disc										
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
				Min.	Max.					
1/4	1	.07		0	10.3	60	WBIS8262A320	1	WBIS8262A386	1A
3/8	8	1.29		0.7	10.3	60	WBIS8223A323	2	-	-
1/2	10	2.74		1.7	10.3	60	WBIS8223A303	3	WBIS8223A310	3
3/2 VALVES										
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
				Pressure to Cylinder	Cylinder to Exhaust					
UNIVERSAL OPERATION (Pressure at any port) with NBR Disc										
1/4	2	.07	.07	0	10.3	60	WBIS8314A300	4	WBIS8314A301	4A
NORMALLY CLOSED (Closed when de-energized)										
1/4	8	1.29	1.29	ⓐ	10.3	60	WBIS8316A301 ⓐ	5	WBIS8316A381V ⓐ	8
3/8	8	1.37	1.37	ⓐ	10.3	60	WBIS8316A302 ⓐ	5	WBIS8316A382V ⓐ	8
3/8	16	3.43	3.43	ⓐ	10.3	60	WBIS8316A303 ⓐ	6	-	-
1/2	16	3.43	3.43	ⓐ	10.3	60	WBIS8316A304 ⓐ	6	WBIS8316A384V ⓐ	9
3/4	17	4.71	4.71	0.7	10.3	60	WBIS8316A374 ⓐ	7	-	-
1	25	11.14	11.14	0.7	10.3	60	WBIS8316A334 ⓐ	7A	-	-
UNIVERSAL OPERATION (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	ⓑ	.07	.63	0.3	10.3	60	WBIS8317A307 ⓑ	10	WBIS8317A308 ⓑ	11
4/2 VALVES, with NBR Disc and Seal										
1/4	2	.07	.07	0.7	10.3	60	WBIS8345A301 ⓑⓓ	12	WBIS8345A381 ⓑⓓ	12
4/2 VALVES, Brass Body with NBR Disc										
							Single Solenoid	Const. Ref.	Dual Solenoid	Const. Ref.
1/4	6	.69	.86	0.7	10.3	60	WBIS8344A370 ⓑⓓ	13	WBIS8344A344 ⓑ	16
3/8	10	1.20	1.89	0.7	10.3	60	WBIS8344A372 ⓑⓓ	14	WBIS8344A380 ⓑ	17
1/2	10	1.20	1.89	0.7	10.3	60	WBIS8344A374 ⓑⓓ	14	WBIS8344A382 ⓑ	17
3/4	19	4.46	4.80	0.7	10.3	60	WBIS8344A376 ⓑⓓ	15	WBIS8344A354 ⓑ	18
1	19	4.46	4.80	0.7	10.3	60	WBIS8344A378 ⓑⓓ	15	WBIS8344A356 ⓑ	18
ⓐ 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 can not be exhausted to the atmosphere.						ⓐ Diaphragm and main disc FKM only (pilot is low-temperature NBR).				
ⓑ For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".						ⓑ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See chart on page 150 for auxiliary pressure vs. mainline pressure. Minimum 1 bar Operating Pressure Differential when selection gasket is in the internal position.				
ⓓ 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.										

SPECIAL SERVICE PILOT

Specifications (Metric units)

Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.	Min.	Max.						
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals													
Aluminum 3/2	1/4	6	.7	2	10	60	WBIS8551A305	19	2	10	60	WBIS8551A306	19
Aluminum 5/2							WBIS8551A317	20				WBIS8551A318	20
Aluminum 5/3 Center Closed							-	-				WBIS8551A367	20
Aluminum 5/3 Center Open							-	-				WBIS8551A368	20
Brass 3/2							WBIS8551A307	19				WBIS8551A308	19
Brass 5/2							WBIS8551A319	20				WBIS8551A320	20
316L Stainless Steel 3/2							WBIS8551A313 ②	19				WBIS8551A314 ②	19
316L Stainless Steel 5/2							WBIS8551A321 ②	20				WBIS8551A322 ②	20
Aluminum 3/2	1/2	13	3.7				WBIS8553A305	19				WBIS8553A306	19
Aluminum 5/2							WBIS8553A317	20				WBIS8553A318	20

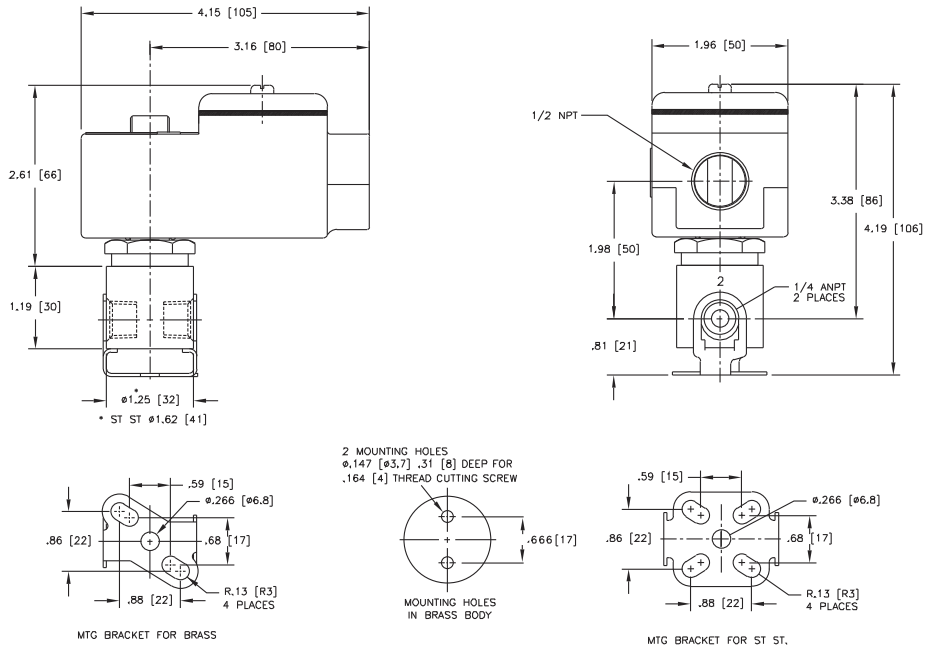
Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor	Single Solenoid					Dual Solenoid				
				Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.
				Air-Inert Gas					Air-Inert Gas				
				Min.	Max.	Min.	Max.						
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount													
Aluminum 3/2, 5/2	1/4	6	.7	2	10	60	WBIS8551A301 ①	21	2	10	60	WBIS8551A302 ①	21
Aluminum 5/3 Center Closed							-	-				WBIS8551A365	22
Aluminum 5/3 Center Open							-	-				WBIS8551A366	22
Brass 3/2, 5/2							WBIS8551A303 ①	21				WBIS8551A304 ①	21
316L Stainless Steel 3/2, 5/2							WBIS8551A309 ②	22				WBIS8551A310 ②	22
Aluminum 3/2, 5/2	1/2	13	3.7				WBIS8553A301	22				WBIS8553A302	22

① 1/8" NPT exhaust for 1/4" aluminum and brass. ② Can be used for *dry* natural gas service.

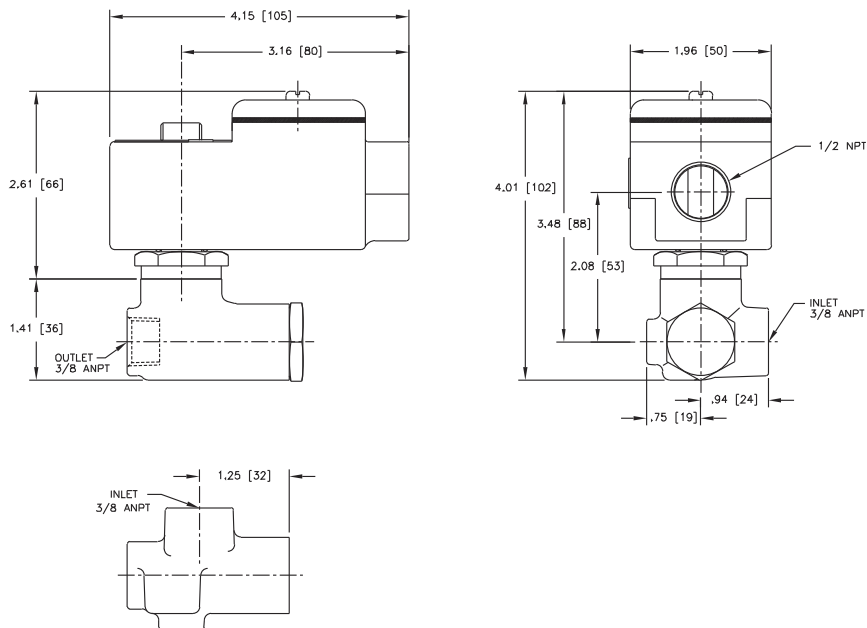
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 1, 1A



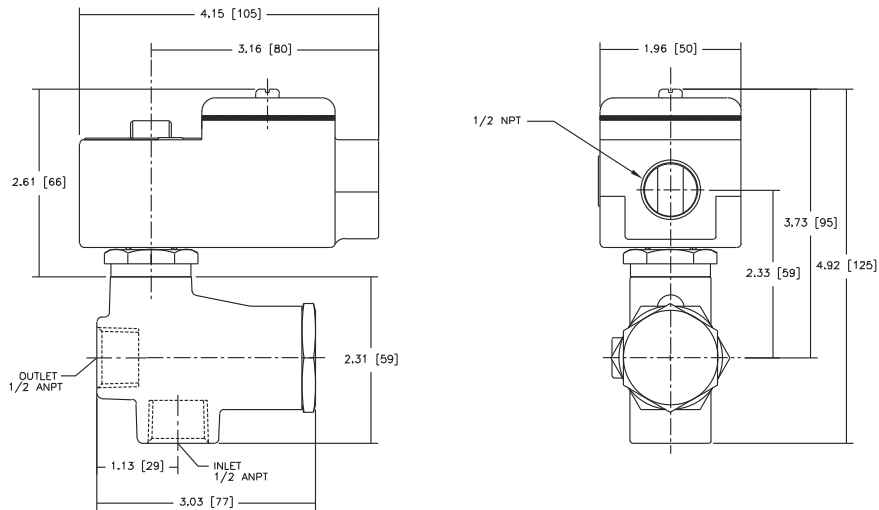
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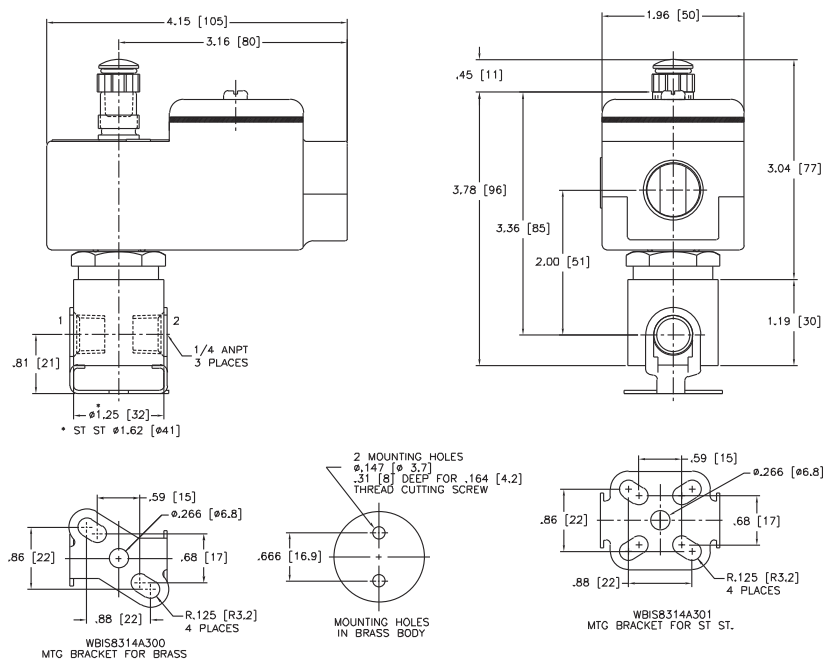
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 3



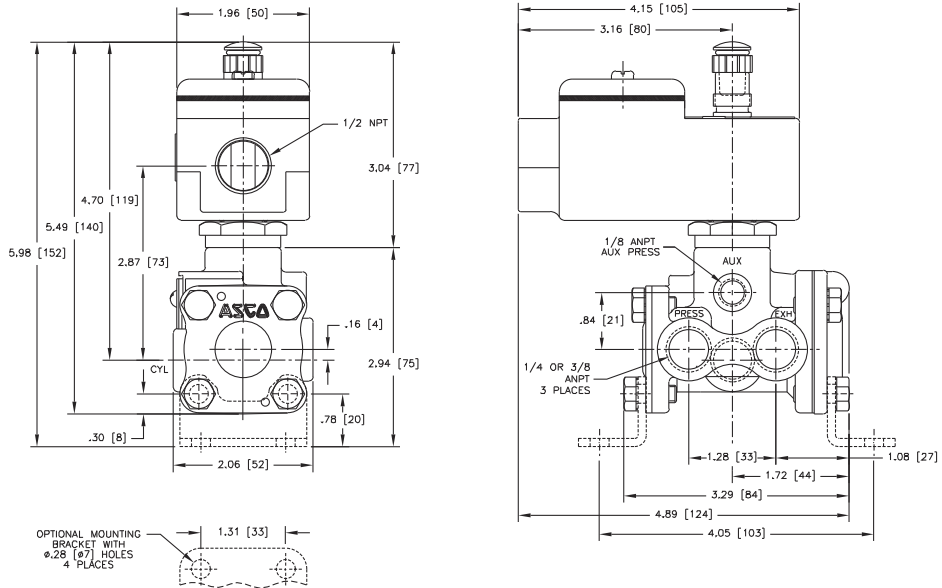
Const. Ref. 4, 4A



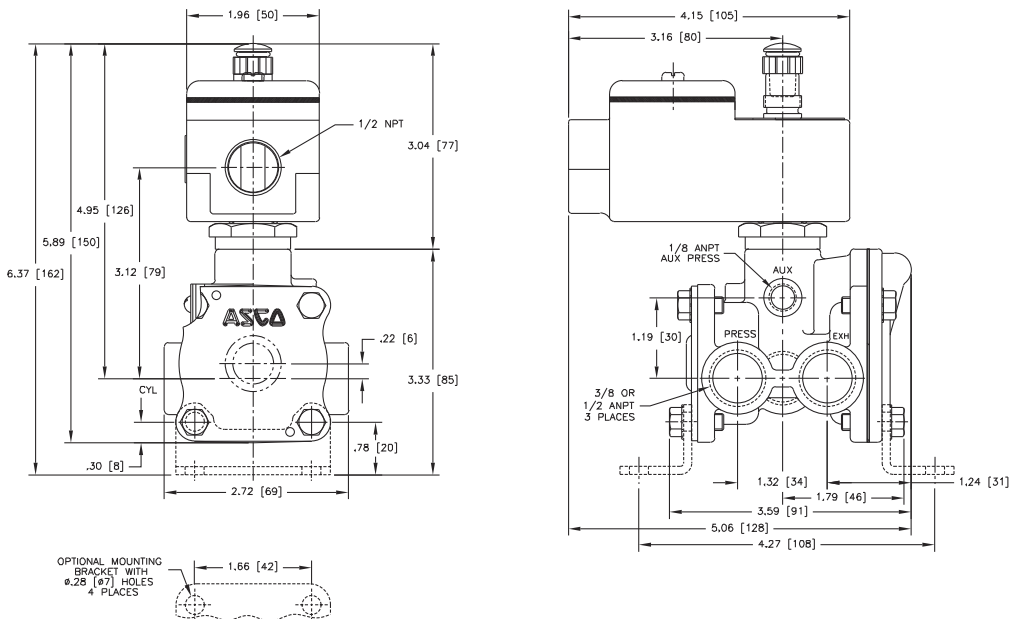
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 5

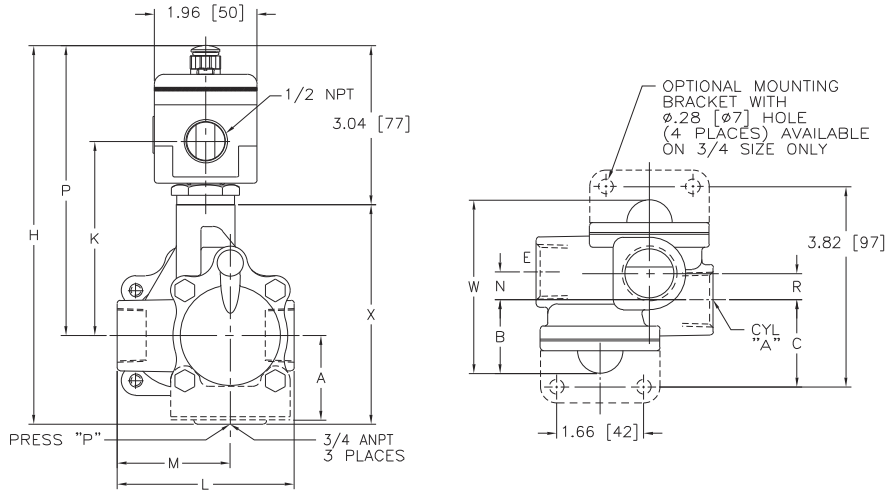


Const. Ref. 6



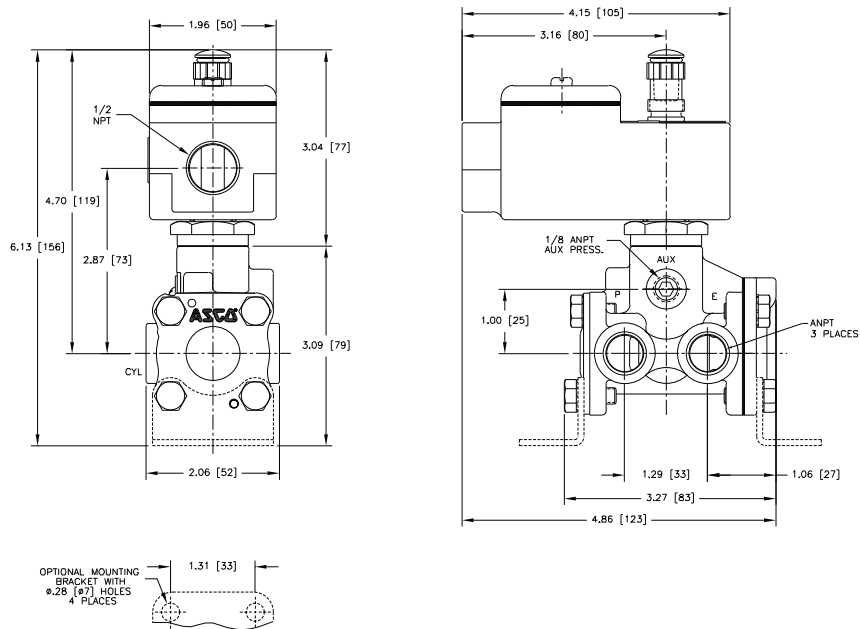
Dimensions: inches (mm)

Const. Ref. 7, 7A



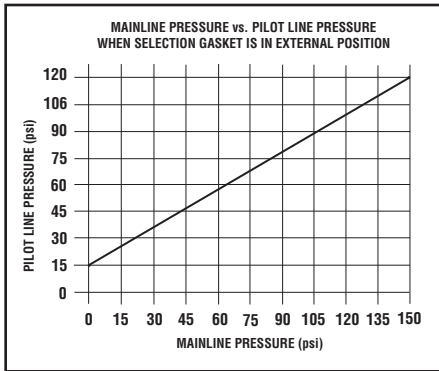
Catalog No.		A	B	C	H	K	L	M	N	P	R	W	X
WBIS8316A374	ins.	1.61	1.41	1.66	7.23	3.71	3.38	2.16	.53	5.54	.50	3.31	4.19
	mm	41	36	42	184	94	86	55	13	141	13	84	106
WBIS8316A334	ins.	-	1.78	-	7.85	3.96	4.44	2.81	.87	5.79	1.74	5.32	4.81
	mm	-	45	-	199	100	113	71	22	147	44	135	122

Const. Ref. 8

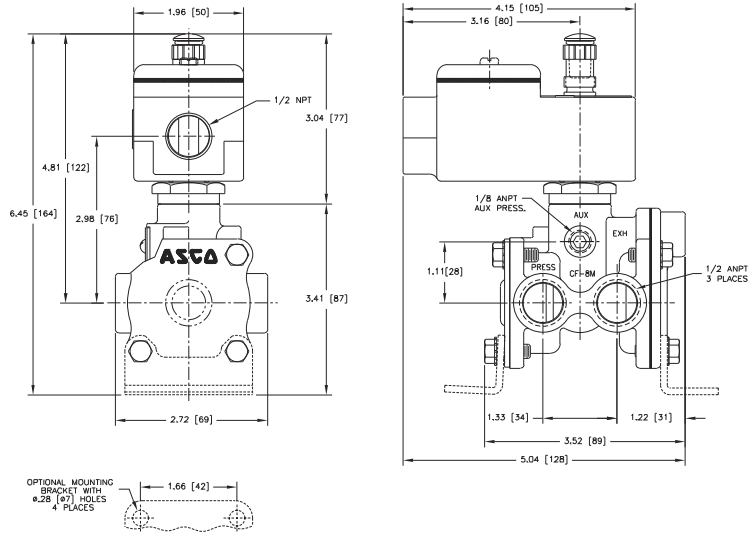


Dimensions: inches (mm)

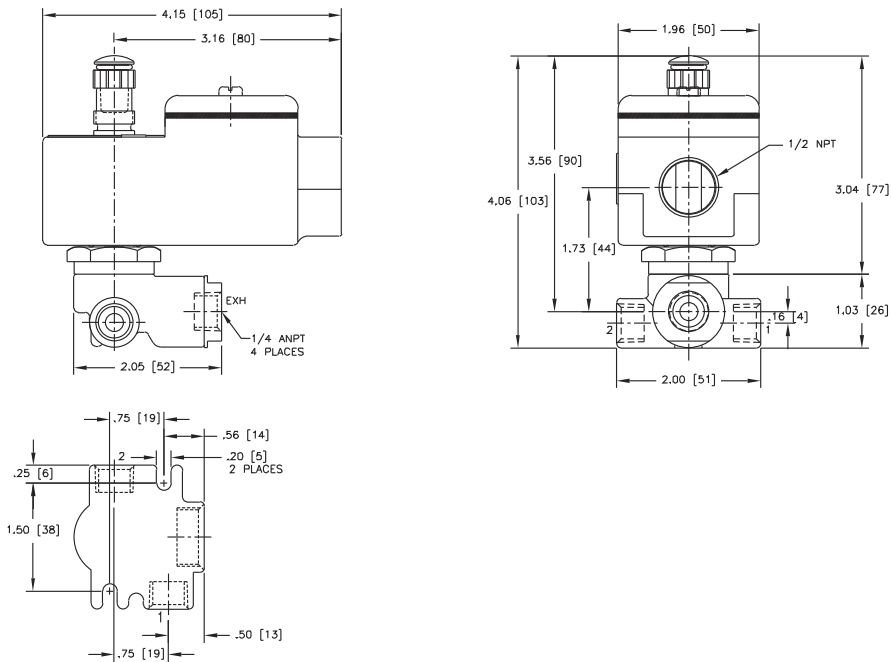
Refer to note ⑥.
For all 8316 "0" Minimum Series only.



Const. Ref. 9



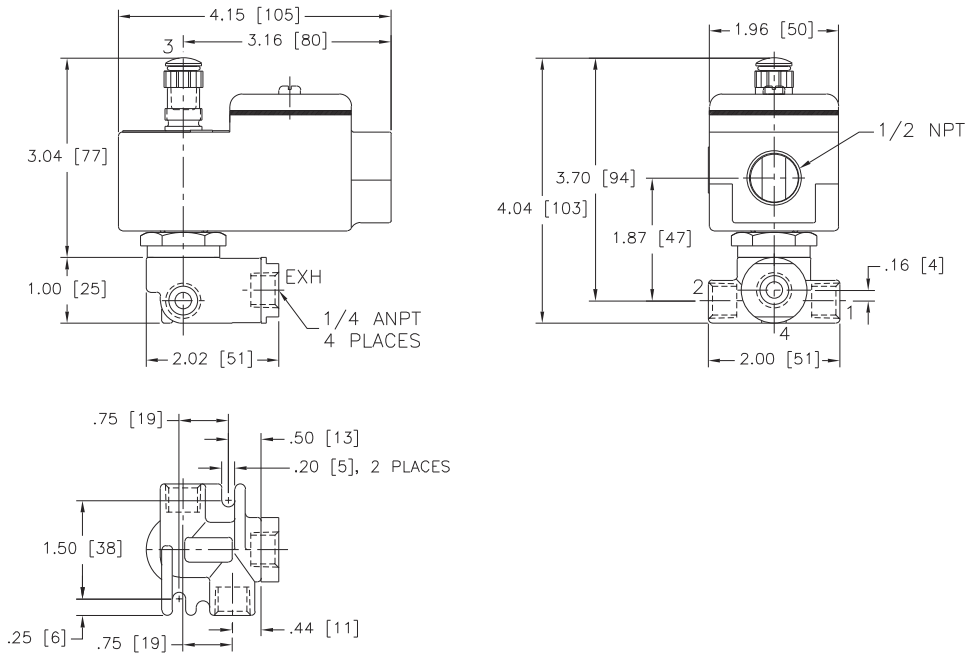
Const. Ref. 10



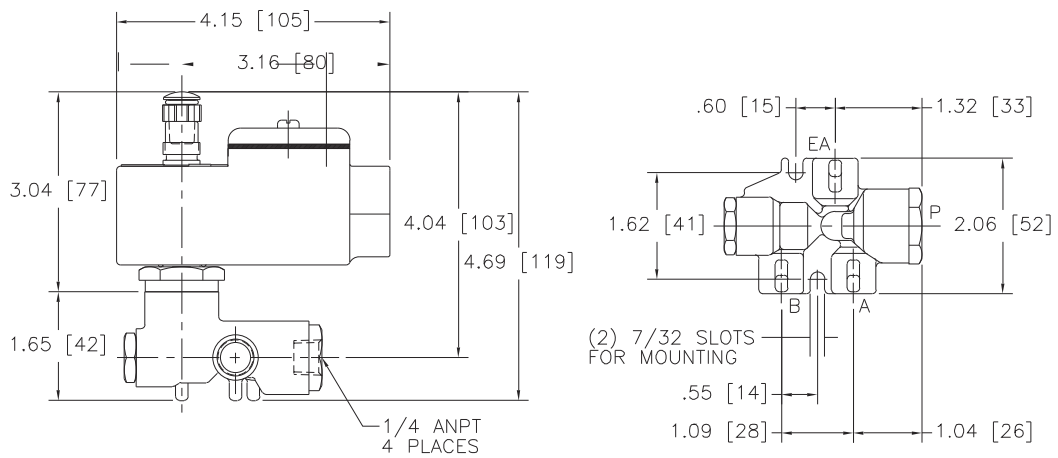
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 11



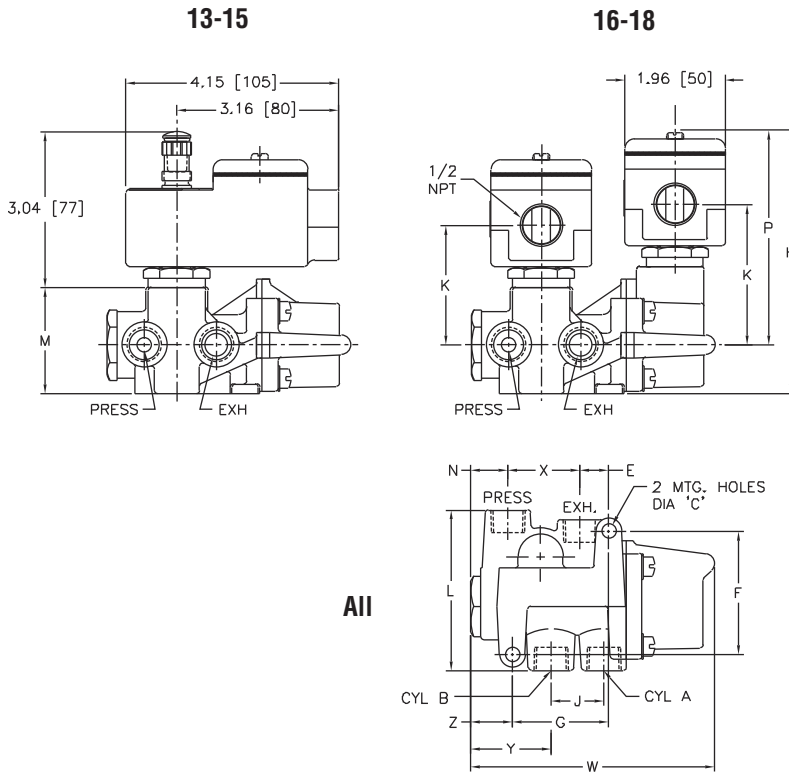
Const. Ref. 12



SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 13-18







Catalog No.		ØC	E	F	G	H	J	K	L	M	N	P	W	X	Y	Z	Exhaust Pipe Size
WBIS8344A370	ins.	.28	.56	2.41	1.88	5.12	1.03	2.33	3.13	2.08	.72	4.16	4.75	1.41	1.56	.81	3/8"
	mm	7.1	14	61	48	130	26	59	80	53	18	106	121	36	40	21	
WBIS8344A380, 382	ins.	.34	.77	3.12	2.62	5.72	1.50	2.77	3.18	2.06	.83	4.60	6.06	1.86	1.90	.84	1/2"
	mm	8.6	20	79	67	145	38	70	81	52	21	117	154	47	48	21	
WBIS8344A372, 374	ins.	.34	.77	3.12	2.62	5.10	1.50	2.14	3.18	2.06	.83	3.98	6.06	1.86	1.90	.84	1/2"
	mm	8.6	20	79	67	120	38	54	81	52	21	101	154	47	48	21	
WBIS8344A344	ins.	.28	.56	2.41	1.88	5.12	1.03	2.74	3.13	2.08	.72	4.16	4.75	1.41	1.56	.81	3/8"
	mm	7.1	14	61	48	130	26	70	80	53	18	106	121	36	40	21	
WBIS8344A376, 378	ins.	.34	1.37	3.81	3.88	5.90	2.09	2.52	4.56	2.86	1.55	4.35	8.25	2.12	2.63	1.16	1"
	mm	8.6	35	97	99	150	53	64	116	73	39	110	210	54	67	30	
WBIS8344A354, 356	ins.	.34	1.37	3.81	3.88	6.54	2.09	3.21	4.56	2.81	1.55	4.35	8.25	2.12	2.63	1.16	1"
	mm	8.6	35	97	99	168	53	81	116	71	39	110	210	54	67	30	

IMPORTANT: Valves can be mounted in any position.

Dimensions: inches (mm)





Series	8551	8553
NPT	1/4	1/2
L1 ①	5.12 (132)	6.00 (153)
L2 ①	6.73 (171)	7.80 (198)
H2	4.38 (111)	4.77 (121)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

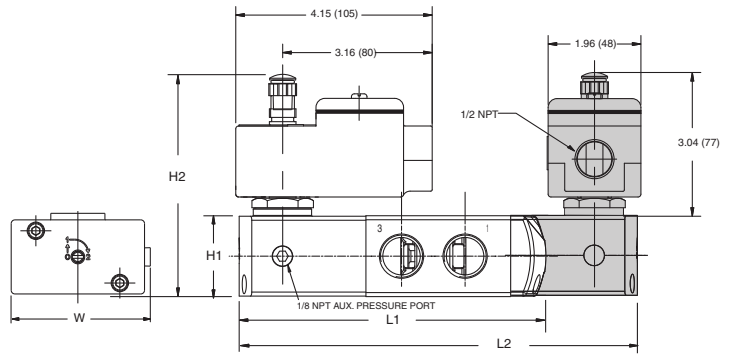
Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Series	8551	8553
NPT	1/4	1/2
L1 ①	5.63 (144)	7.06 (180)
L2 ①	7.20 (183)	8.86 (225)
H2	4.38 (111)	4.77 (121)
H1	1.10 (28)	1.58 (40)
W	1.77 (45)	2.85 (72)

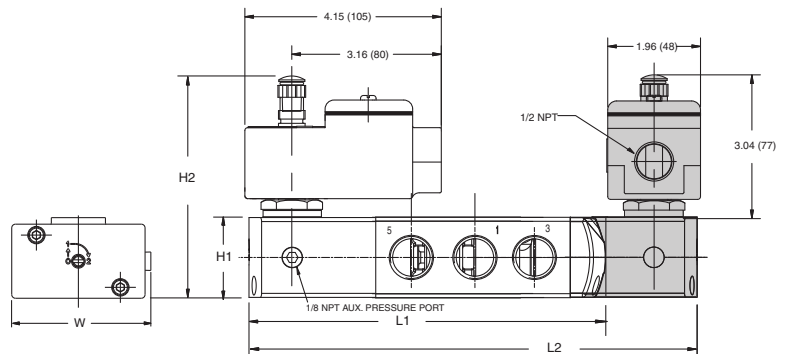
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Const. Ref. 19







Const. Ref. 20

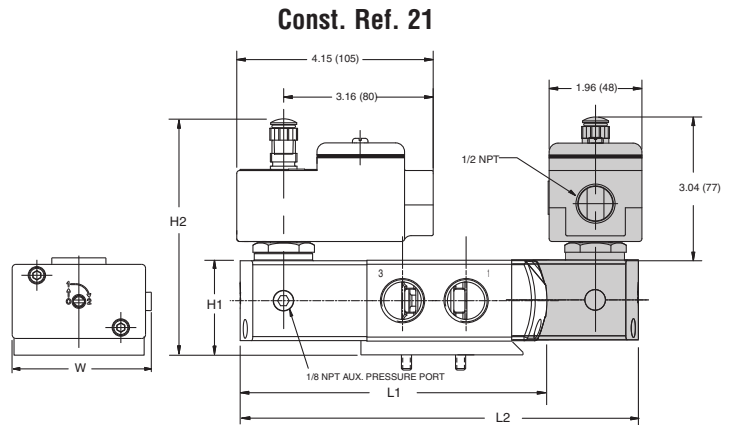


Dimensions: inches (mm)

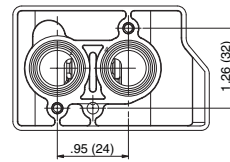
Series	8551 (Aluminum, Brass)
NPT	1/4
L1 ①	4.96 (126)
L2 ①	6.49 (165)
H2	4.38 (111)
H1	1.57 (40)
W	1.77 (45)

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand







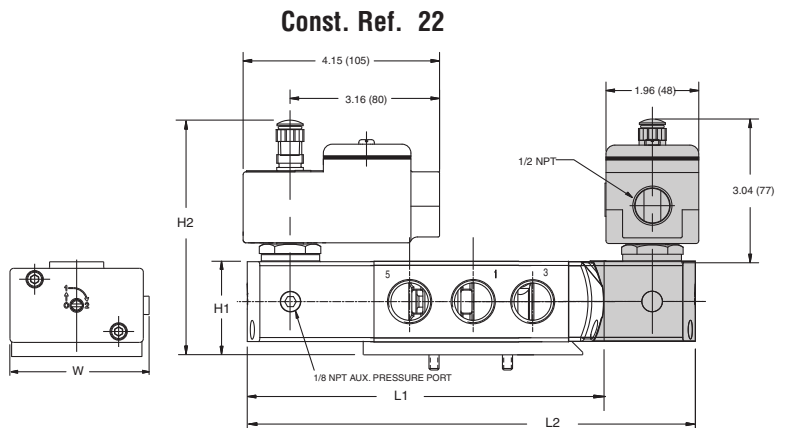
8551 NAMUR Footprint



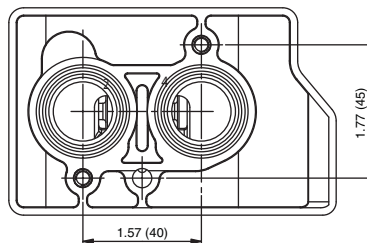
Series	8551 (316L SS)	8551 (5/3)	8553
NPT	1/4	1/4	1/2
L1 ①	5.20 (132)	-	7.08 (180)
L2 ①	6.73 (171)	7.44 (189)	8.85 (225)
H2	4.38 (111)	4.38 (111)	4.77 (121)
H1	1.57 (40)	1.57 (40)	2.08 (53)
W	1.77 (45)	1.77 (45)	2.87 (73)

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

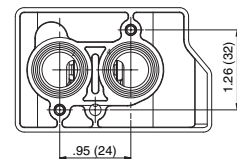
Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand



8553 NAMUR Footprint



8551 NAMUR Footprint





Intrinsically Safe Manual Reset Valves

No Voltage Release
Air and Inert Gas • Brass or Stainless
Steel Bodies • 1/4" to 3/4" NPT

3/2 • 4/2
SERIES
ISMR

Features

- Intrinsically safe solenoid. When energized, holds the manual reset mechanism in the latched position
- Normally closed, normally open, or universal constructions
- Valve operates when the solenoid has been energized and the lever latched while holding in the yellow button
- Valve trips when power is interrupted. Valve can be manually cycled, but must be manually reset for automatic operation
- 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

Construction

Valve Parts in Contact with Fluids		
Body	Brass	Stainless Steel
Seals and Disc	NBR	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel	
Core Tube	305 Stainless Steel	
Pilot Seat Cartridge	CA (Series WPIS8308A041, -2, -3)	
Rider Rings	PTFE	
Spring Retainer	CA	

Electrical

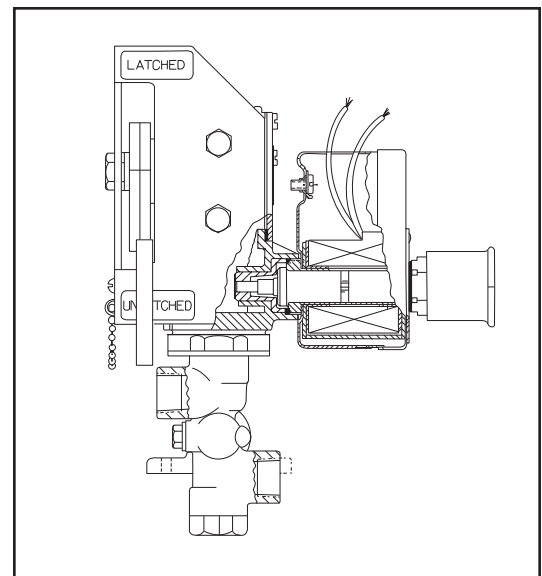
Standard Voltages: 24 volts DC		
Coil: Continuous duty molded Class A.		
Minimum Operating Current: 0.024 amps		
Parameters	Groups A-D	Groups C-D
Entity	V max - 28 VDC	V max - 34 VDC
	I max - 92 mA	I max - 125 mA
	Capacitance = 0	Capacitance = 0
	Inductance = 0	Inductance = 0
IMPORTANT: Electrical parameters are unique to the manual reset line and will differ from other Intrinsically Safe valve's electrical data.		

Enclosure

Standard: RedHat Type 4, Watertight Splice Box enclosure.

Optional: No standard options are available.

Consult local sales office for your needs.



SPECIAL SERVICE PILOT

Nominal Ambient Temp. Ranges

-4°F to 200°F (-20°C to 93°C), as indicated.

Refer to Engineering Section for details.

Approvals

FM approved under J. I. 3W2A7.AX (3610).

CSA certified under File LR-13976.

FM Nonincendive approved for Class 1, Division 2.

Refer to Engineering Section for details.



Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F	Catalog Number	Const. Ref.
			Air-Inert Gas				
			Min.	Max.			
3/2 UNIVERSAL OPERATION, Brass Body with NBR Disc or Stainless Steel Seats and Discs ②							
1/4	11/64	.38	0	125	180	WPIS8308B040	4
1/4	1/4	.45	0	125	180	WPIS8308044 ②	1
3/8	1/4	.45	0	125	180	WPIS8308045 ②	1
1/2	5/16	.75	0	125	180	WPIS8308046 ②	2
3/2 NORMALLY CLOSED OR NORMALLY OPEN, Brass Body with NBR Disc							
3/8	5/8	3	10	250	180	WPIS8308C041 ①	5
1/2	5/8	4	10	250	180	WPIS8308C042 ①	5
3/4	11/16	5.5	10	250	180	WPIS8308C043 ①	6
3/2 UNIVERSAL OPERATION, Stainless Steel Body with Stainless Steel Seats and Discs							
1/2	5/16	.75	0	125	200	WPIS8308047	3
4/2 OPERATION, Brass Body with PTFE and FPM Seats and Discs							
1/4	3/16	.80	0	250	160	WPIS8408B006	7
3/8	3/16	.80	0	250	160	WPIS8408B007	7

① For Normally Closed operation, add suffix "F" to catalog number; for Normally Open operation, add suffix "G" to catalog number.
② Supplied with stainless steel seats and discs.

SPECIAL SERVICE
PILOT

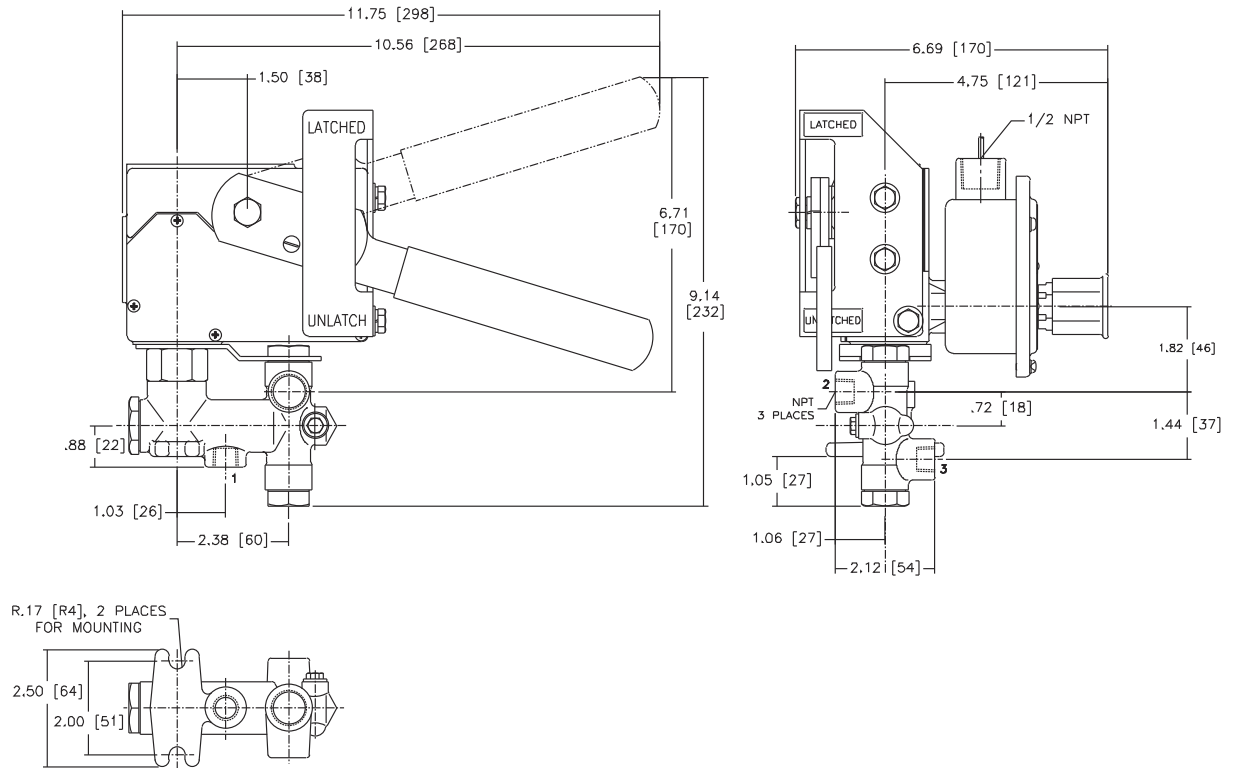
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Catalog Number	Const. Ref.
			Air-Inert Gas				
			Min.	Max.			
3/2 UNIVERSAL OPERATION, Brass Body with NBR Disc or Stainless Steel Seats and Discs ②							
1/4	4	.33	0	8.6	81	WPIS8308B040	4
1/4	6	.39	0	8.6	81	WPIS8308044 ②	1
3/8	6	.39	0	8.6	81	WPIS8308045 ②	1
1/2	8	.64	0	8.6	81	WPIS8308046 ②	2
3/2 NORMALLY CLOSED OR NORMALLY OPEN, Brass Body with NBR Disc							
3/8	16	2.57	0.7	17.2	81	WPIS8308C041 ①	5
1/2	16	3.43	0.7	17.2	81	WPIS8308C042 ①	5
3/4	17	4.71	0.7	17.2	81	WPIS8308C043 ①	6
3/2 UNIVERSAL OPERATION, Stainless Steel Body with Stainless Steel Seats and Discs							
1/2	8	.64	0	8.6	92	WPIS8308047	3
4/2 OPERATION, Brass Body with PTFE and FPM Seats and Discs							
1/4	5	.69	0	17.2	70	WPIS8408B006	7
3/8	5	.69	0	17.2	70	WPIS8408B007	7

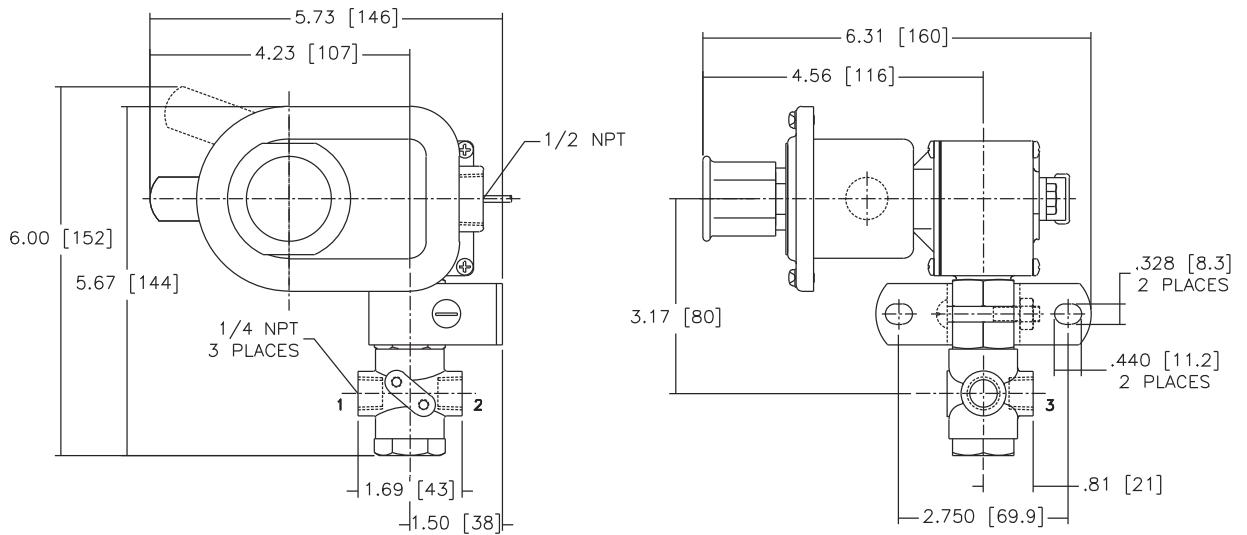
① For Normally Closed operation, add suffix "F" to catalog number; for Normally Open operation, add suffix "G" to catalog number.
② Supplied with stainless steel seats and discs.

Dimensions: inches (mm)

Const. Ref. 1, 2, 3



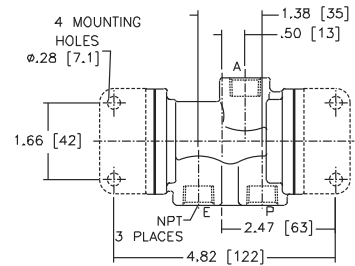
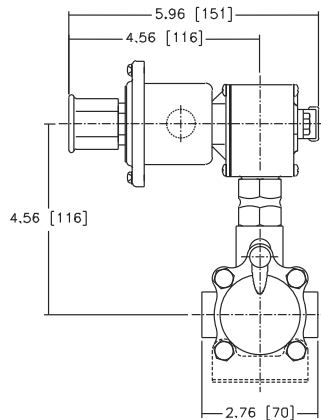
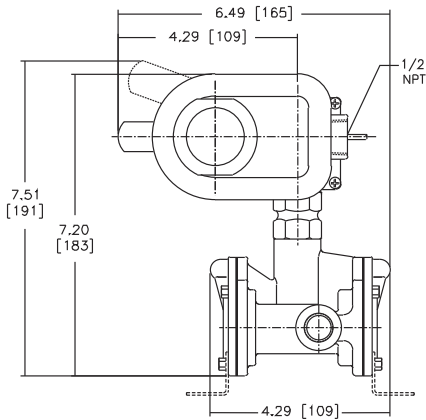
Const. Ref. 4



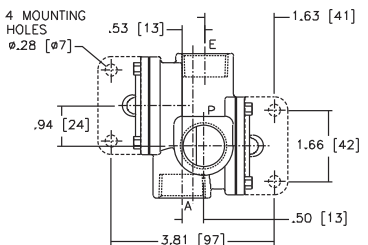
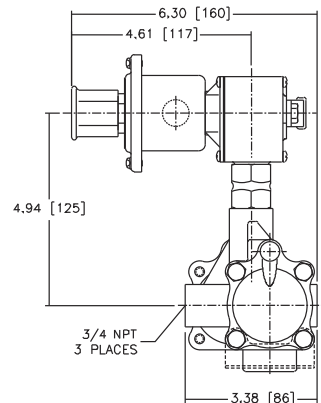
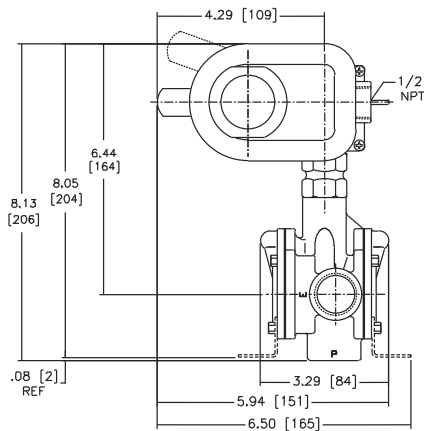
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

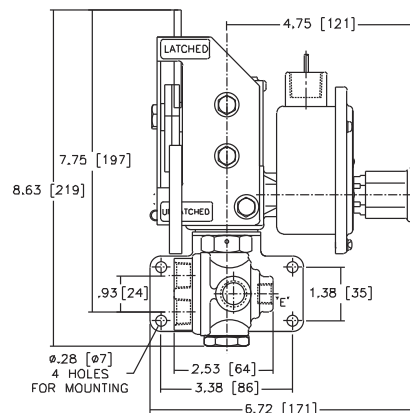
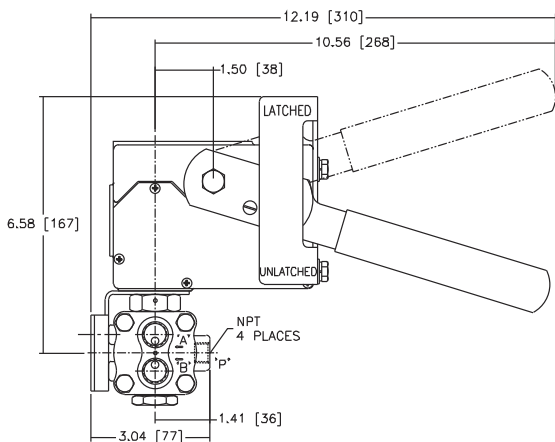
Const. Ref. 5



Const. Ref. 6



Const. Ref. 7



SPECIAL SERVICE
PILOT

Features

- Designed for harsh, hazardous environments, including offshore applications
- Provides quick shutdown of valves and actuators
- Low power DC for solar panels and PLC control
- Factory-sealed leads
- Explosionproof Types 4 and 7, Class I, Division 1, Groups C and D protection, or ATEX EEx d IIB T6 with EC or ED prefix
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	316 Stainless Steel
Seals and Disc	FKM
Core and Plugnut	430F Stainless Steel
Core Spring	302 Stainless Steel
Rider Rings	PTFE
Disc-Holder and Core Guide	CA

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption
	DC Watts
F	1.44
F	2.88

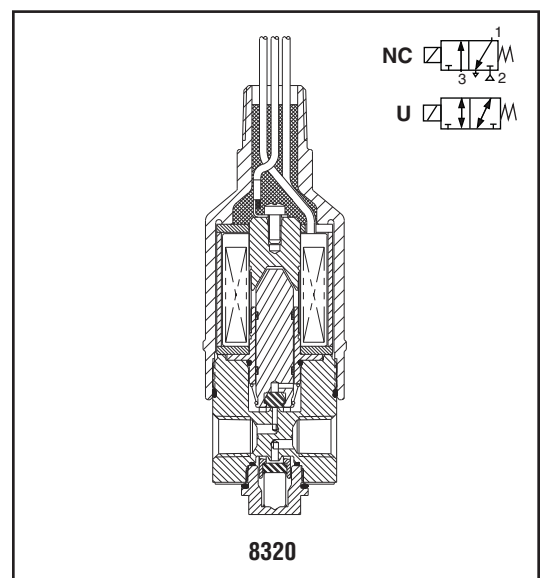
Standard Voltages: 12 and 24 volts DC.

Solenoid Enclosures

Standard: 316 Stainless Steel, Explosionproof and Watertight with 72" leads. Types 1, 2, 3, 4, 4X, 6, 6P, 7, and 9, Class I, Division 1, Groups C & D.

Optional: For ATEX approved valves with 20mm conduit connection use prefix "EC" instead of "EF". Use prefix "ED" for 1/2" NPT conduits.

See Engineering Section under "Enclosures" for details.



SPECIAL SERVICE PILOT

Nominal Ambient Temp. Ranges

-4°F to 120°F (-20°C to 49°C)

Refer to Engineering Section for details.

Approvals

UL listed, CSA certified General Purpose valve, hazardous location classified.

Meets applicable CE directives.

Electric Solenoid Operator

ATEX category 2G

II 2G Ex d IIB T6; Ta = -20°C to 49°C

DEMCO 03 ATEX 0238269

Refer to Engineering Section for details.

Specifications (English units)

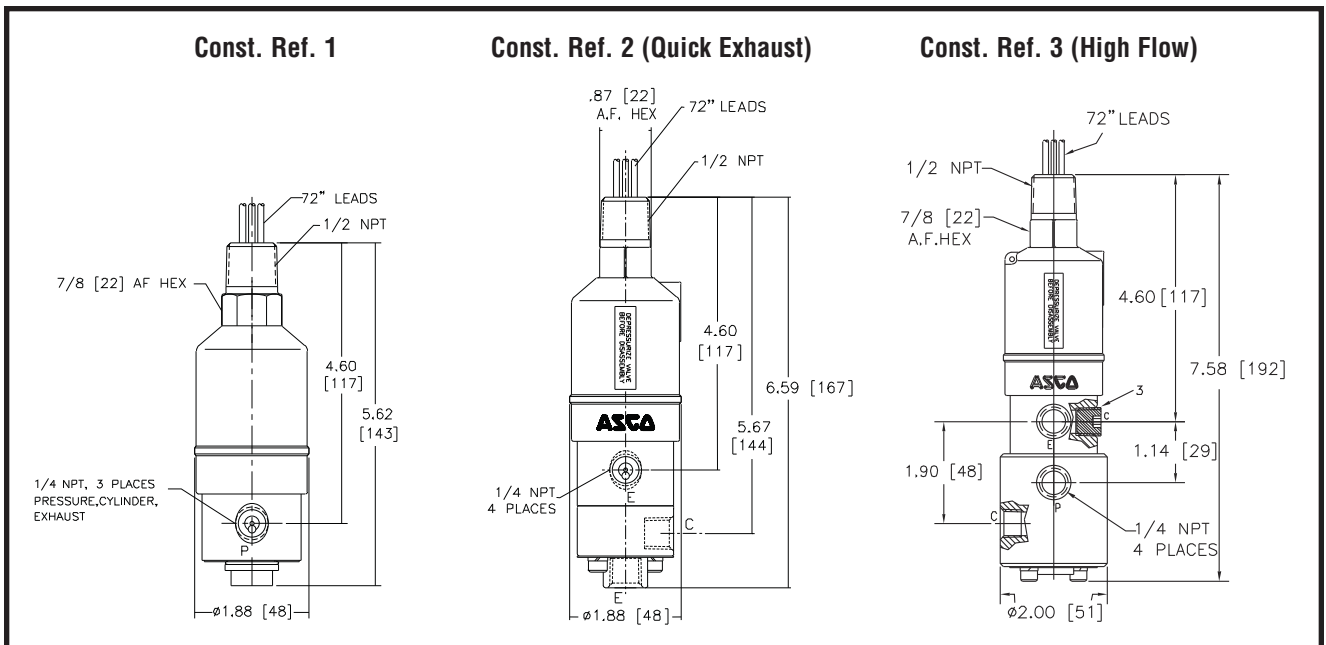
Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)			Const. Ref.	Watt Rating/ Class of Coil Insulation 12 or 24 VDC
					Air/Natural Gas		Catalog Number		
	Pressure	Exhaust	Min.	Max.					
NORMALLY CLOSED (Closed when de-energized)									
1/4	1/16	3/32	.08	.16	0	150 ①	EF8320511	1	2.88/F
1/4	1/16	3/32	.08	.16	0	55	EF8320512	1	1.44/F
1/4	1/16	1/4	.08	1.4	15	150	EF8317511 ③	2	2.88/F
1/4	1/16	1/4	.08	1.4	15	55	EF8317512 ③	2	1.44/F
1/4	3/8	3/8	1.12	1.23	20	150	EF8321511 ②	3	2.88/F
1/4	3/8	3/8	1.12	1.23	20	55	EF8321512 ②	3	1.44/F
UNIVERSAL FLOW (Pressure at any port)									
1/4	1/16	3/32	.08	.16	0	65	EF8320515	1	2.88/F

① Light Oil Max Pressure 100 psi (7 bar). ② Main disc is NBR ③ This valve has a Hytrel diaphragm..

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)		Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)			Const. Ref.	Watt Rating/ Class of Coil Insulation 12 or 24 VDC
					Air/Natural Gas		Catalog Number		
	Pressure	Exhaust	Min.	Max.					
NORMALLY CLOSED (Closed when de-energized)									
1/4	1.6	2.4	.07	.14	0	10 ①	EF8320511	1	2.88/F
1/4	1.6	2.4	.07	.14	0	4	EF8320512	1	1.44/F
1/4	1.6	6.4	.07	1.20	1	10	EF8317511 ③	2	2.88/F
1/4	1.6	6.4	.07	1.20	1	4	EF8317512 ③	2	1.44/F
1/4	9.5	9.5	0.96	1.05	1.4	10.3	EF8321511 ②	3	2.88/F
1/4	9.5	9.5	0.96	1.05	1.4	3.8	EF8321512 ②	3	1.44/F
UNIVERSAL FLOW (Pressure at any port)									
1/4	1.6	2.4	.07	.14	0	4	EF8320515	1	2.88/F

Dimensions: inches (mm)



Features

- Designed to prevent inadvertent valve start-up
- Once tripped, requires electrical power restoration and manual operation to reset
- Electrically Tripped (trips when energized) or No Voltage Release (trips when de-energized) constructions
- Available for Latched Open or Latched Closed operation.
- Ideal for controlling critical processes
- Handles air, inert gas, water, light oil, steam, and corrosive fluids

Construction

Valve Parts in Contact with Fluids		
Body	Brass	Stainless Steel
Stem	303 Stainless Steel	
Springs	302 Stainless Steel	
Disc, Diaphragm, Seat, & Seal Material	FKM, NBR, PTFE, or EPDM, as listed	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number	
	DC Watts	AC			AC	DC
		Watts	VA Holding	VA Inrush		
F	-	20	45	96	99257	-
H	36.2	-	-	-	-	222184

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.
Notes: 125 and 250 volts DC are battery voltages applied in power plants. Special valves are available to pilot control valves in power plants.
 Consult your local ASCO sales office for a listing.

Solenoid Enclosures

Standard: RedHat metal solenoid enclosure. Type 1 General Purpose Junction Box.

Optional: Explosionproof and Watertight, Types 3, 7(C and D), and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.

Nominal Ambient Temp. Ranges

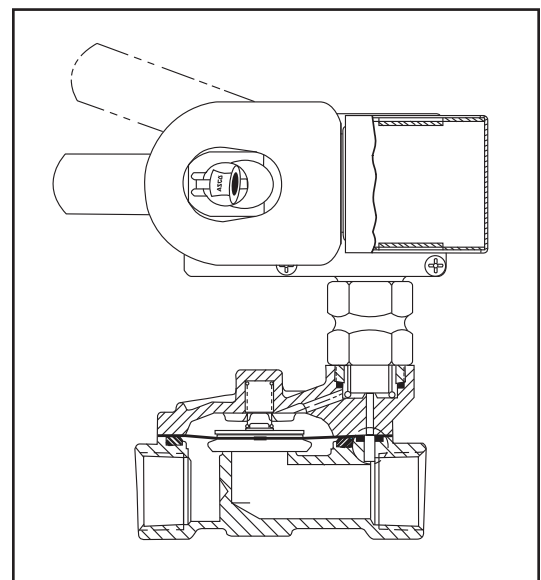
-20°F to 104°F (-29°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets shock and vibration ISA S71.03C2.

Refer to *Engineering Section* for details.



SPECIAL SERVICE PILOT

Operation Alternatives

Electrically Tripped – Valves move to latched position when the solenoid is de-energized, trips when they receive a continuous or momentary (at least 0.3 sec.) electrical signal. When tripped, they can be manually cycled open/closed, but must be reset when the solenoid has once again been de-energized.

No Voltage Release – Valves move to latched position when the solenoid is energized, trips when de-energized. When tripped, they can be manually cycled open/ closed, but must be reset when the solenoid has once again been energized.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		Latched Open		Latched Closed		Watt Rating/ Class of Coil Insulation	
								No Voltage Release	Electrically Tripped	No Voltage Release	Electrically Tripped		
			Min.		Max. AC	Max. DC	AC	DC	(closes when coil is de-energized)	(closes when coil is energized)	(opens when coil is de-energized)	(opens when coil is energized)	
			Catalog Number	Catalog Number	Catalog Number	Catalog Number	AC	DC					
BRASS BODY with NBR Diaphragm for Air, Inert Gas, Water, and Light Oil													
3/4	3/4	6.5	5	250	250	180	180	8025B201	8015B201	8025B214	8015B214	20/F	36.2/H
1	1	13	5	125	125	180	180	8025B202	8015B202	8025B215	8015B215	20/F	36.2/H
1 1/4	1 1/8	15	5	125	125	180	180	8025B203	8015B203	8025B216	8015B216	20/F	36.2/H
1 1/2	1 1/4	22.5	5	125	125	180	180	8025B204	8015B204	8025B217	8015B217	20/F	36.2/H
2	1 3/4	43	5	125	125	180	180	8025B205	8015B205	8025B218	8015B218	20/F	36.2/H
2 1/2	1 3/4	45	5	125	125	180	180	8025B206	8015B206	8025B219	8015B219	20/F	36.2/H
BRASS BODY with PTFE Disc (EPDM, FPM and PTFE Seals) for Steam Service													
3/4	3/4	7.8	5	125	125	353	353	8025B207	8015B207	8025B220	8015B220	20/F	36.2/H
1	1	13.5	5	125	125	353	353	8025B208	8015B208	8025B221	8015B221	20/F	36.2/H
1 1/4	1 1/8	15	5	125	125	353	353	8025B209	8015B209	8025B222	8015B222	20/F	36.2/H
1 1/2	1 1/4	22.5	5	125	125	353	353	8025B210	8015B210	8025B223	8015B223	20/F	36.2/H
STAINLESS STEEL BODY with PTFE Disc (FPM Seals) for Corrosive Service													
1/2	3/8	3.2	5	250	250	350	350	8025B211	8015B211	8025B224	8015B224	20/F	36.2/H
3/4	3/4	7.8	5	250	250	350	350	8025B212	8015B212	8025B225	8015B225	20/F	36.2/H
1	1	11.2	5	125	125	350	350	8025B213	8015B213	8025B226	8015B226	20/F	36.2/H

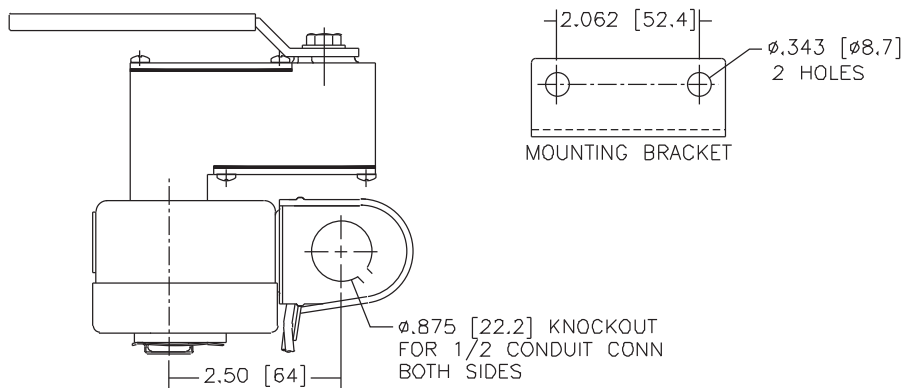
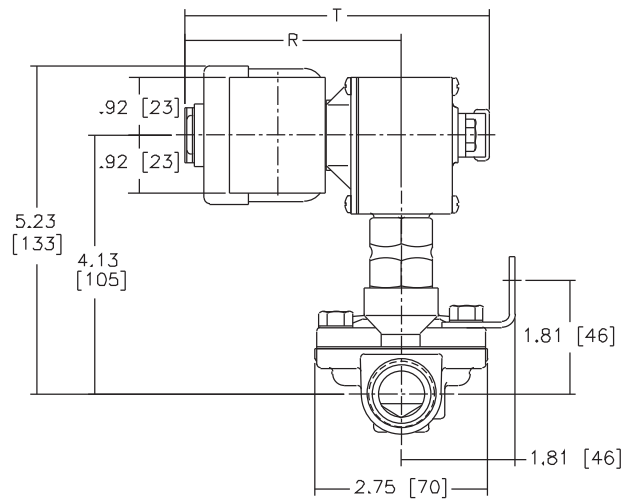
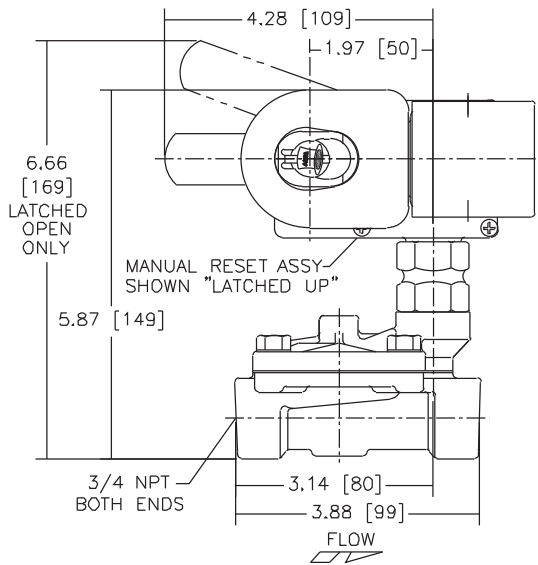
SPECIAL SERVICE PILOT

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		Latched Open		Latched Closed		Watt Rating/ Class of Coil Insulation	
								No Voltage Release	Electrically Tripped	No Voltage Release	Electrically Tripped		
			Min.		Max. AC	Max. DC	AC	DC	(closes when coil is de-energized)	(closes when coil is energized)	(opens when coil is de-energized)	(opens when coil is energized)	
			Catalog Number	Catalog Number	Catalog Number	Catalog Number	AC	DC					
BRASS BODY with NBR Diaphragm for Air, Inert Gas, Water, and Light Oil													
3/4	19	5.57	0.3	17	17	82	82	8025B201	8015B201	8025B214	8015B214	20/F	36.2/H
1	25	11.14	0.3	9	9	82	82	8025B202	8015B202	8025B215	8015B215	20/F	36.2/H
1 1/4	29	12.86	0.3	9	9	82	82	8025B203	8015B203	8025B216	8015B216	20/F	36.2/H
1 1/2	32	19.29	0.3	9	9	82	82	8025B204	8015B204	8025B217	8015B217	20/F	36.2/H
2	44	36.86	0.3	9	9	82	82	8025B205	8015B205	8025B218	8015B218	20/F	36.2/H
2 1/2	44	38.57	0.3	9	9	82	82	8025B206	8015B206	8025B219	8015B219	20/F	36.2/H
BRASS BODY with PTFE Disc (EPDM, FPM and PTFE Seals) for Steam Service													
3/4	19	6.69	0.3	9	9	177	177	8025B207	8015B207	8025B220	8015B220	20/F	36.2/H
1	25	11.57	0.3	9	9	177	177	8025B208	8015B208	8025B221	8015B221	20/F	36.2/H
1 1/4	29	12.86	0.3	9	9	177	177	8025B209	8015B209	8025B222	8015B222	20/F	36.2/H
1 1/2	32	19.29	0.3	9	9	177	177	8025B210	8015B210	8025B223	8015B223	20/F	36.2/H
STAINLESS STEEL BODY with PTFE Disc (FPM Seals) for Corrosive Service													
1/2	10	2.74	0.3	17	17	175	175	8025B211	8015B211	8025B224	8015B224	20/F	36.2/H
3/4	19	6.69	0.3	17	17	175	175	8025B212	8015B212	8025B225	8015B225	20/F	36.2/H
1	25	9.60	0.3	9	9	175	175	8025B213	8015B213	8025B226	8015B226	20/F	36.2/H

Dimensions: inches (mm)

Catalog Number		R	T
8025B201	ins.	3.44	4.84
8025B214	mm	87	123
8015B201	ins.	3.22	4.62
8015B214	mm	82	117

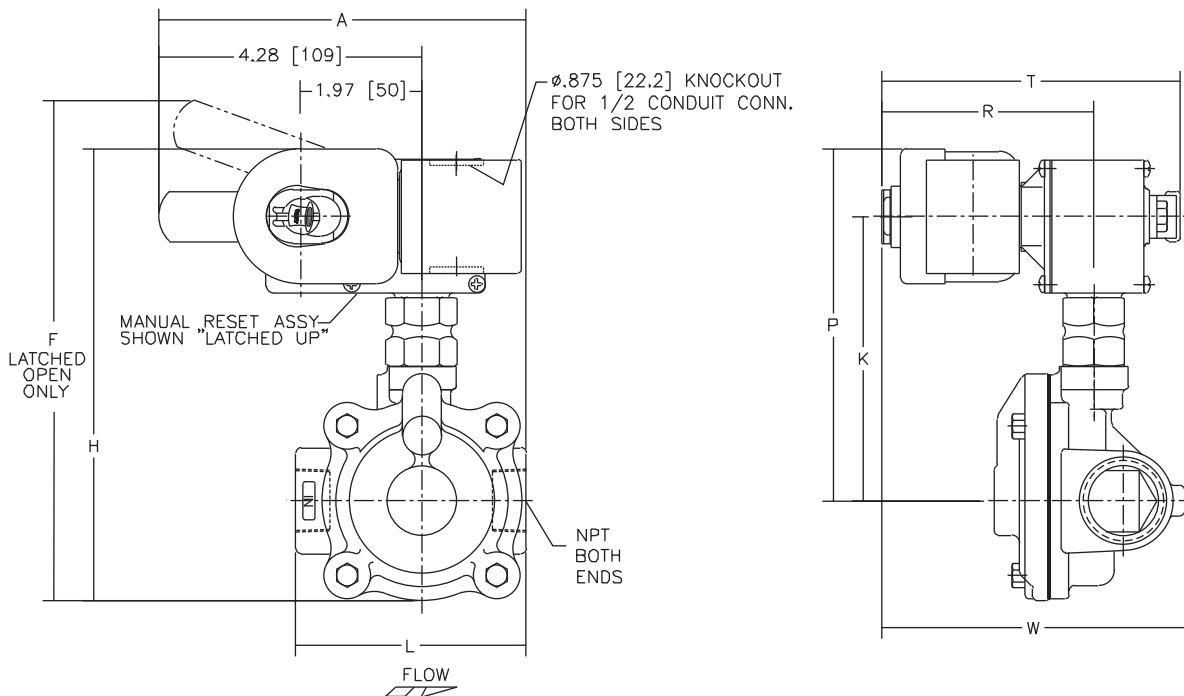


Dimensions: inches (mm)

Catalog Number		A	F	H	K	L	P	R	T	W
8025B215	ins.	5.98	8.13	7.36	4.63	3.75	5.74	3.44	4.84	4.91
	mm	152	207	187	118	95	146	87	123	125
8025B202	ins.	5.98	8.13	7.63	4.63	3.75	5.74	3.44	4.84	4.91
	mm	152	207	187	118	95	146	87	123	125
8015B215	ins.	5.98	8.13	7.36	4.63	3.75	5.74	3.22	4.62	4.69
	mm	152	207	187	118	95	146	82	117	119
8015B202	ins.	5.98	8.13	7.36	4.63	3.75	5.74	3.22	4.62	4.69
	mm	152	207	187	118	95	146	82	117	119
8025B216	ins.	5.91	8.13	7.36	4.63	3.66	5.74	3.44	4.84	5.11
	mm	150	207	187	118	93	146	87	123	130
8025B203	ins.	5.91	8.13	7.36	4.63	3.66	5.74	3.44	4.84	5.11
	mm	150	207	187	118	93	146	87	123	130
8015B216	ins.	5.91	8.13	7.36	4.63	3.66	5.74	3.22	4.62	4.89
	mm	150	207	187	118	93	146	82	117	124
8015B203	ins.	5.91	8.13	7.36	4.63	3.66	5.74	3.22	4.62	4.89
	mm	150	207	187	118	93	146	82	117	124
8025B217	ins.	6.47	8.60	7.84	4.78	4.38	5.89	3.44	4.84	5.47
	mm	164	219	199	121	111	150	87	123	139
8025B204	ins.	6.47	8.60	7.84	4.78	4.38	5.89	3.44	4.84	5.47
	mm	164	219	199	121	111	150	87	123	139
8015B217	ins.	6.47	8.60	7.84	4.78	4.38	5.89	3.22	4.62	5.25
	mm	164	219	199	121	111	150	82	117	133
8015B204	ins.	6.47	8.60	7.84	4.78	4.38	5.89	3.22	4.62	5.25
	mm	164	219	199	121	111	150	82	117	133
8025B221	ins.	5.75	8.13	7.63	4.63	3.75	5.74	3.44	4.84	5.48
	mm	146	207	194	118	95	146	87	123	139

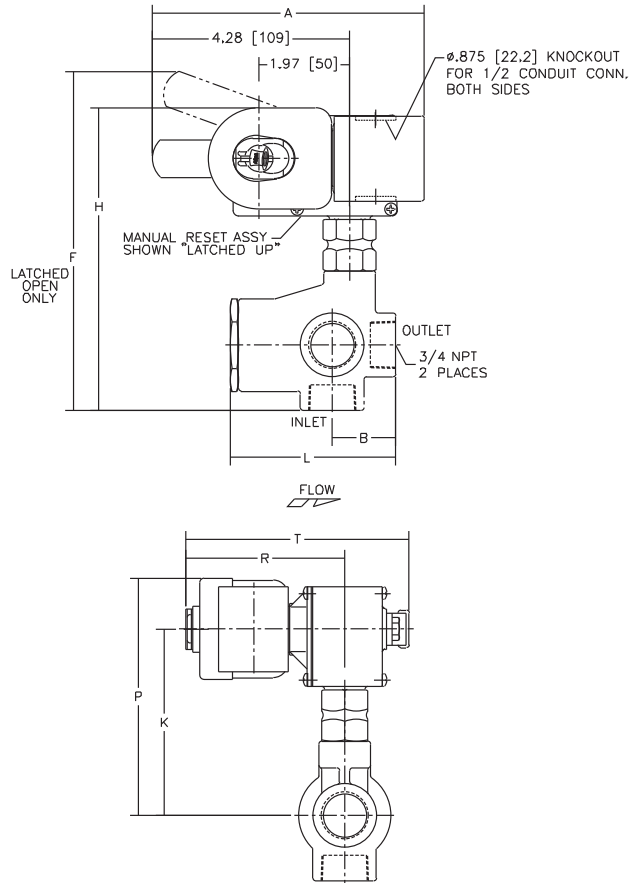
Catalog Number		A	F	H	K	L	P	R	T	W
8025B208	ins.	5.75	8.13	7.63	4.63	3.75	5.74	3.44	4.84	5.48
	mm	146	207	194	118	95	146	87	123	139
8015B221	ins.	5.75	8.13	7.63	4.63	3.75	5.74	3.22	4.62	5.27
	mm	146	207	194	118	95	146	82	117	134
8015B208	ins.	5.75	8.13	7.63	4.63	3.75	5.74	3.22	4.62	5.27
	mm	146	207	194	118	95	146	82	117	134
8025B222	ins.	5.95	8.13	7.63	4.63	3.66	5.74	3.44	4.84	5.47
	mm	151	207	194	118	93	146	87	123	139
8025B209	ins.	5.95	8.13	7.63	4.63	3.66	5.74	3.44	4.84	5.47
	mm	151	207	194	118	93	146	87	123	139
8015B222	ins.	5.95	8.13	7.63	4.63	3.66	5.74	3.22	4.62	5.25
	mm	151	207	194	118	93	146	82	117	133
8015B209	ins.	5.95	8.13	7.63	4.63	3.66	5.74	3.22	4.62	5.63
	mm	151	207	194	118	93	146	82	117	143
8025B223	ins.	6.31	8.60	8.10	4.78	4.38	5.89	3.44	4.84	5.25
	mm	160	219	206	121	111	150	87	123	133
8025B210	ins.	6.31	8.60	8.10	4.78	4.38	5.89	3.44	4.84	5.63
	mm	160	219	206	121	111	150	87	123	143
8015B223	ins.	6.31	8.60	8.10	4.78	4.38	5.89	3.22	4.62	5.41
	mm	160	219	206	121	111	150	82	117	137
8015B210	ins.	6.31	8.60	8.10	4.78	4.38	5.89	3.22	4.62	5.41
	mm	160	219	206	121	111	150	82	117	137

**SPECIAL SERVICE
PILOT**

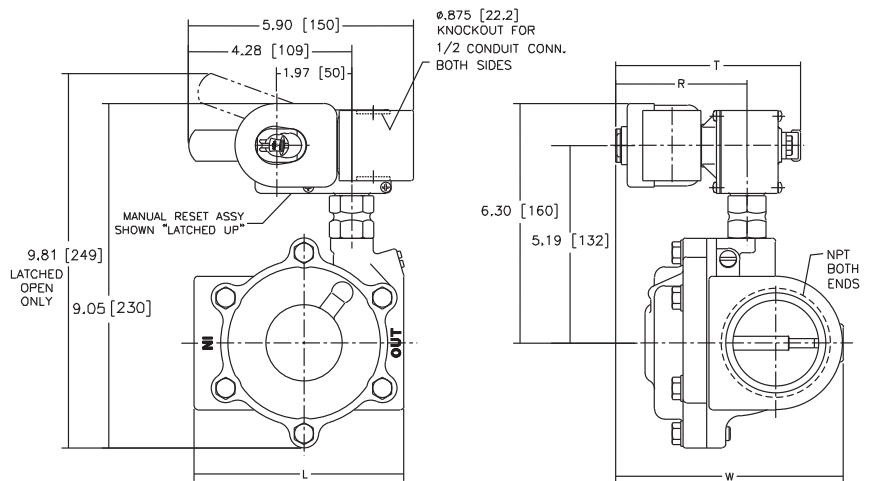


Dimensions: inches (mm)

Catalog Number		A	B	F	H	K	L	P	R	T
8015B207	ins.	5.31	1.38	7.34	6.58	4.05	3.59	5.16	3.22	4.62
	mm	135	35	186	167	103	91	131	82	117
8015B220	ins.	5.31	1.38	7.34	6.58	4.05	3.59	5.16	3.22	4.62
	mm	135	35	186	167	103	91	131	82	117
8025B207	ins.	5.31	1.38	7.34	6.58	4.05	3.59	5.16	3.44	4.84
	mm	135	35	186	167	103	91	131	87	123
8025B220	ins.	5.31	1.38	7.34	6.58	4.05	3.59	5.16	3.44	4.84
	mm	135	35	186	167	103	91	131	87	123
8015B211	ins.	5.90	1.19	6.66	5.89	3.56	3.13	4.67	3.22	4.62
	mm	150	30	169	150	90	80	119	82	117
8015B224	ins.	5.90	1.19	6.66	5.89	3.56	3.13	4.67	3.22	4.62
	mm	150	30	169	150	90	80	119	82	117
8025B211	ins.	5.90	1.19	6.66	5.89	3.56	3.13	4.67	3.44	4.84
	mm	150	30	169	150	90	80	119	87	123
8025B224	ins.	5.90	1.19	6.66	5.89	3.56	3.13	4.67	3.44	4.84
	mm	150	30	169	150	90	80	119	87	123



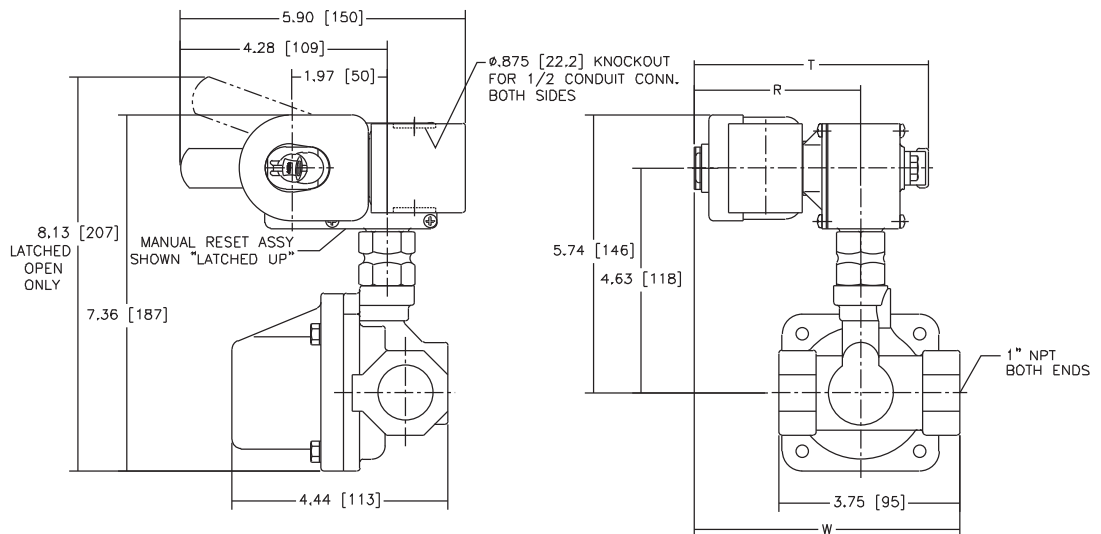
Catalog Number		L	R	T	W
8025B218	ins.	5.06	3.44	4.84	5.47
	mm	129	87	123	139
8025B205	ins.	5.06	3.44	4.84	5.47
	mm	129	87	123	139
8015B218	ins.	5.06	3.22	4.62	5.25
	mm	129	82	117	113
8015B205	ins.	5.06	3.22	4.62	5.25
	mm	129	82	117	113
8025B219	ins.	5.50	3.44	4.84	5.94
	mm	140	87	123	151
8025B206	ins.	5.50	3.44	4.84	5.94
	mm	140	87	123	151
8015B219	ins.	5.50	3.22	4.62	5.72
	mm	140	82	117	145
8015B206	ins.	5.50	3.22	4.62	5.72
	mm	140	82	117	145



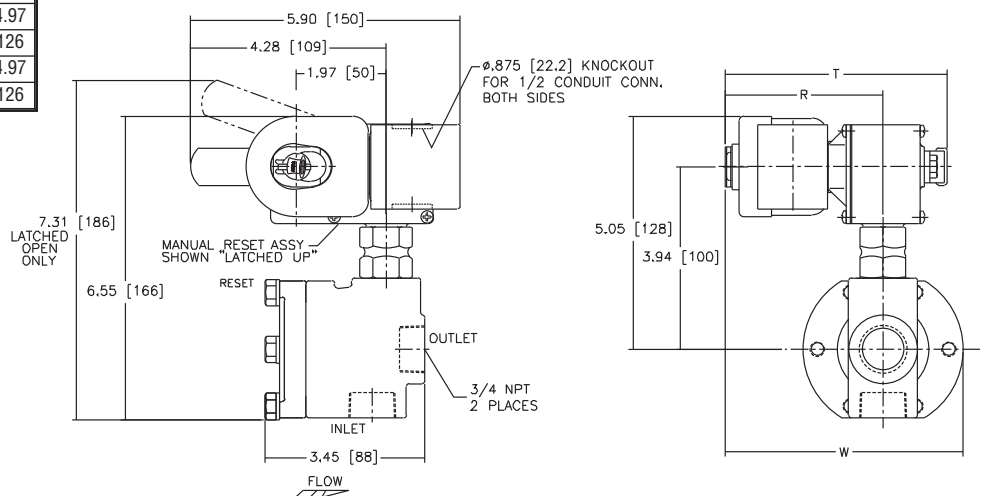
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Catalog Number		R	T	W
8025B213	ins.	3.44	4.84	5.48
	mm	87	123	139
8025B226	ins.	3.44	4.84	5.48
	mm	87	123	139
8015B213	ins.	3.22	4.62	5.27
	mm	82	117	134
8015B226	ins.	3.22	4.62	5.27
	mm	82	117	134



Catalog Number		R	T	W
8025B212	ins.	3.44	4.84	5.19
	mm	87	123	132
8025B225	ins.	3.44	4.84	5.19
	mm	87	123	132
8015B212	ins.	3.22	4.62	4.97
	mm	82	117	126
8015B225	ins.	3.22	4.62	4.97
	mm	82	117	126



SPECIAL SERVICE
PILOT

Features

- High flow/high-pressure bodies with manual reset to prevent inadvertent valve start-up
- Once tripped, can only be manually reset
- Electrically Tripped (trips when energized), No Voltage Release (trips when de-energized), or Free Handle constructions
- Available for Latched Open or Latched Closed operation
- Ideal for controlling critical processes
- Some constructions can control aggressive fluids, including steam
- Intrinsically Safe constructions are available
See Pilot Valve Section for details

Construction

Valve Parts in Contact with Fluids		
Body	Brass	Stainless Steel
Stem	303 Stainless Steel	
Springs	302 Stainless Steel	
Pilot Seat Cartridge	CA (when listed)	
Disc, Diaphragm, Seat	NBR, PA, PTFE, or Stainless Steel, as listed	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number	
	DC Watts	AC			AC	DC
		Watts	VA Holding	VA Inrush		
F	-	20	45	96	99257	-
H	36.2	-	-	-	-	222184

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Notes: 125 and 250 volts DC are battery voltages applied in power plants. Special valves are available to pilot control valves in power plants.

Consult your local ASCO sales office for a listing.

Solenoid Enclosures

Standard: RedHat metal solenoid enclosure.
 Type 1 General Purpose Junction Box.

Optional: Explosionproof and Watertight, Types 3, 7 (C and D), and 9.
 (To order, add prefix "EF" to catalog number.)

See Optional Features Section for other available options.

Nominal Ambient Temp. Ranges

AC: -20°F to 104°F (-29°C to 40°C)

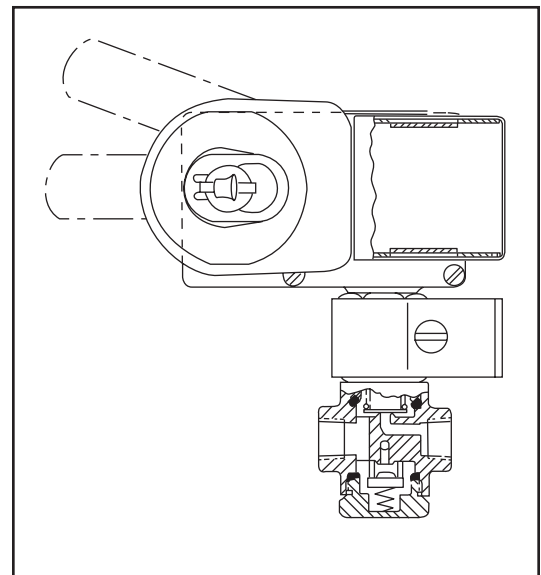
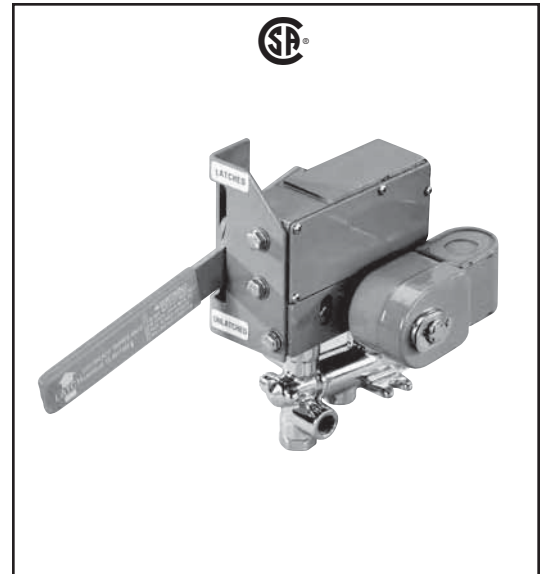
DC: -20°F to 77°F (-29°C to 25°C)

Refer to Engineering Section for details.

Approvals

CSA certified. Some constructions meet shock and vibration ISA S71.03C2.

Refer to Engineering Section for details.



SPECIAL SERVICE PILOT

Operation Alternatives

Electrically Tripped – Manually move the lever to the latched position with the solenoid de-energized. Trips when solenoid is energized. Once tripped, the lever may be cycled causing the valve discs to open and close.

No Voltage Release – Manually move the lever to the latched position with the solenoid energized. Trips when solenoid is de-energized. Once tripped, the lever may be cycled causing the valve discs to open and close.

Free Handle – Solenoid must be energized before the lever can engage and be manually moved to the latched position. While engaged, lever may be cycled causing the valve discs to open and close. Will trip instantly when solenoid is de-energized.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		No Voltage Release Catalog Number	Electrically Tripped Catalog Number	Const. Ref.	Flow Diagram	Watt Rating/ Class of Coil Insulation	
			Min.	Max. AC	Max. DC	AC	DC					AC	DC
UNIVERSAL OPERATION (Except as Noted ①), Brass Body with NBR Disc/Diaphragm (CA Pilot Cartridge) for Air-Inert Gas and Water. This group of valves meets shock and vibration ISA S71.03C2.													
1/4	11/64	.38	0	125	125	180	180	8308B040	8310B040	1	B	20/F	36.2/H
3/8	5/8	3	10	250	250	180	180	8308C041 ① ②	8310C041 ① ②	2	C	20/F	36.2/H
1/2	5/8	4	10	250	250	180	180	8308C042 ① ②	8310C042 ① ②	2	C	20/F	36.2/H
3/4	11/16	5.5	10	250	250	180	180	8308C043 ① ②	8310C043 ① ②	3	C	20/F	36.2/H
1	1	13	10	125	125	180	180	8308A050 ① ②	8310A050 ① ②	8	C	20/F	36.2/H
UNIVERSAL OPERATION, Brass Body with Stainless Steel Seats and Discs for Air-Inert Gas, Water and Light Oil													
1/4	1/4	.45	0	125	125	200	200	8308044	8310044	4	A	20/F	36.2/H
3/8	1/4	.45	0	125	125	200	200	8308045	8310045	4	A	20/F	36.2/H
1/2	5/16	.75	0	125	125	200	200	8308046	8310046	5	A	20/F	36.2/H
UNIVERSAL OPERATION, Brass Body with NBR Seats and PA Discs for Air-Inert Gas, Water and Light Oil													
1/4	1/4	.39	0	125	125	180	180	8308044R	8310044R	4	A	20/F	36.2/H
3/8	1/4	.39	0	125	125	180	180	8308045R	8310045R	4	A	20/F	36.2/H
1/2	5/16	.53	0	125	125	180	180	8308046R	8310046R	5	A	20/F	36.2/H
UNIVERSAL OPERATION, Stainless Steel Body with FKM Discs for Air-Inert Gas and Water													
1/4	1/8	.21	0	125	125	180	180	8308A011	8310A011	1	B	20/F	36.2/H
UNIVERSAL OPERATION, Stainless Steel Body with Stainless Steel Seats and Discs for Corrosive Service													
1/2	5/16	.75	0	125	125	200	200	8308047	8310047	5	A	20/F	36.2/H
Free Handle Construction													
UNIVERSAL OPERATION, Brass Body with NBR Discs for Air-Inert Gas and Water													
1/4	11/64	.38	0	125	125	180	180	8037014		6	D	20/F	36.2/H
UNIVERSAL OPERATION, Brass Body with PTFE Seats and FKM Discs for Air-Inert Gas, Water and Light Oil													
1/4	3/16	.70	0	125	125	160	160	8037A008 ①		7	E	20/F	36.2/H
3/8	3/16	.70	0	125	125	160	160	8037A010 ①		7	E	20/F	36.2/H
UNIVERSAL OPERATION, Stainless Steel Body with FKM Discs for Air-Inert Gas and Water													
1/4	1/8	.21	0	125	125	180	180	8037012		6	D	20/F	36.2/H

① When ordering, specify suffix "F" for Normally Closed construction or Suffix "G" for Normally Open construction. ② Supplied with CA pilot cartridge.

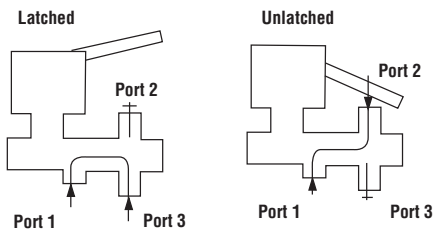
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		No Voltage Release Catalog Number	Electrically Tripped Catalog Number	Const. Ref.	Flow Diagram	Watt Rating/ Class of Coil Insulation	
			Min.	Max. AC	Max. DC	AC	DC					AC	DC
UNIVERSAL OPERATION (Except as Noted ①), Brass Body with NBR Disc/Diaphragm (CA Pilot Cartridge) for Air-Inert Gas and Water. This group of valves meets shock and vibration ISA S71.03C2.													
1/4	4	.33	0.0	9	9	82	82	8308B040	8310B040	1	B	20/F	36.2/H
3/8	16	2.57	0.7	17	17	82	82	8308C041 ① ②	8310C041 ① ②	2	C	20/F	36.2/H
1/2	16	3.43	0.7	17	17	82	82	8308C042 ① ②	8310C042 ① ②	2	C	20/F	36.2/H
3/4	17	4.71	0.7	17	17	82	82	8308C043 ① ②	8310C043 ① ②	3	C	20/F	36.2/H
1	25	11.14	0.7	9	9	82	82	8308A050 ① ②	8310A050 ① ②	8	C	20/F	36.2/H
UNIVERSAL OPERATION, Brass Body with Stainless Steel Seats and Discs for Air-Inert Gas, Water and Light Oil													
1/4	6	.39	0	9	9	93	93	8308044	8310044	4	A	20/F	36.2/H
3/8	6	.39	0	9	9	93	93	8308045	8310045	4	A	20/F	36.2/H
1/2	8	.64	0	9	9	93	93	8308046	8310046	5	A	20/F	36.2/H
UNIVERSAL OPERATION, Brass Body with NBR Seats and PA Discs for Air-Inert Gas, Water and Light Oil													
1/4	6	.33	0	9	9	82	82	8308044R	8310044R	4	A	20/F	36.2/H
3/8	6	.33	0	9	9	82	82	8308045R	8310045R	4	A	20/F	36.2/H
1/2	8	.45	0	9	9	82	82	8308046R	8310046R	5	A	20/F	36.2/H
UNIVERSAL OPERATION, Stainless Steel Body with FKM Discs for Air-Inert Gas and Water													
1/4	8	.18	0	9	9	82	82	8308A011	8310A011	1	B	20/F	36.2/H
UNIVERSAL OPERATION, Stainless Steel Body with Stainless Steel Seats and Discs for Corrosive Service													
1/2	8	.64	0	9	9	93	93	8308047	8310047	5	A	20/F	36.2/H
Free Handle Construction													
UNIVERSAL OPERATION, Brass Body with NBR Discs for Air-Inert Gas and Water													
1/4	4	.33	0	9	9	82	82	803714		6	D	20/F	36.2/H
UNIVERSAL OPERATION, Brass Body with PTFE Seats and FKM Discs for Air-Inert Gas, Water and Light Oil													
1/4	5	.60	0	9	9	71	71	8037A008 ①		7	E	20/F	36.2/H
3/8	5	.60	0	9	9	71	71	8037A010 ①		7	E	20/F	36.2/H
UNIVERSAL OPERATION, Stainless Steel Body with FKM Discs for Air-Inert Gas and Water													
1/4	3	.18	0	9	9	82	82	8037012		6	D	20/F	36.2/H

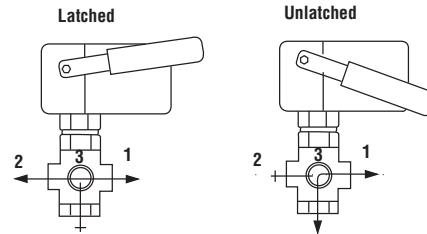
Flow Diagrams

Electrically Tripped and No Voltage Release Constructions

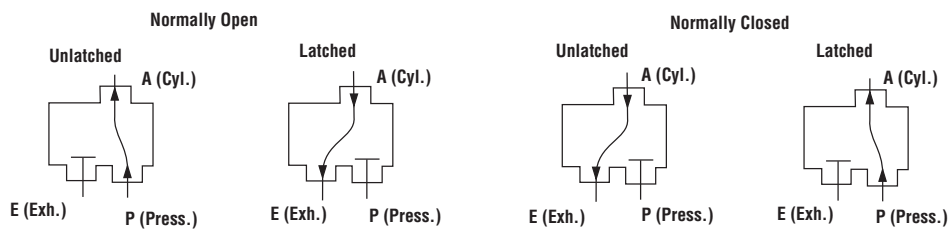
Flow Diagram A



Flow Diagram B

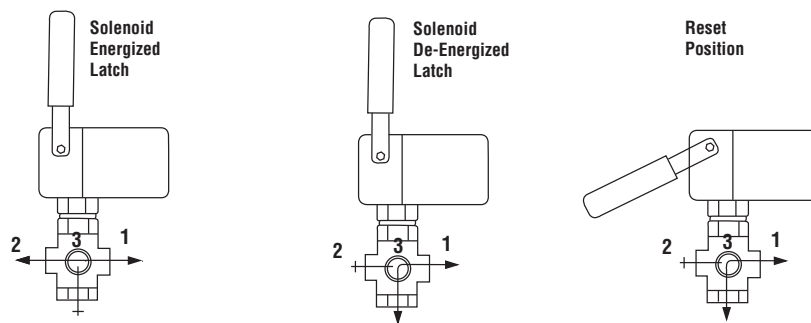


Flow Diagram C

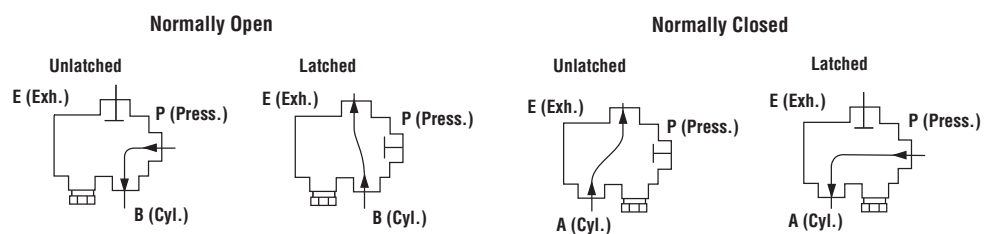


Free Handle Construction

Flow Diagram D

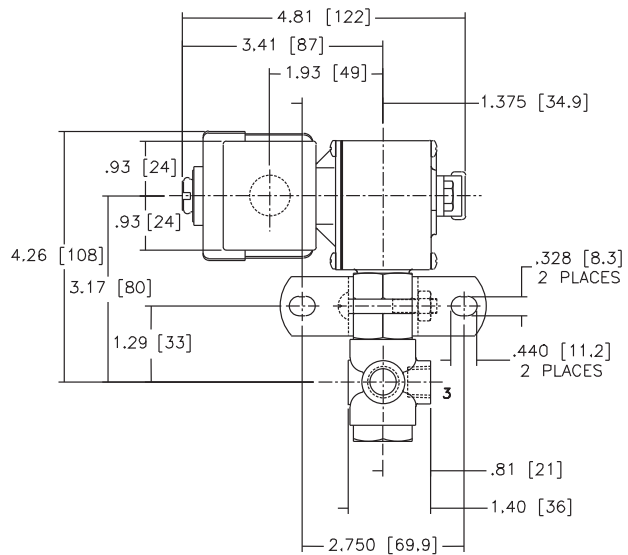
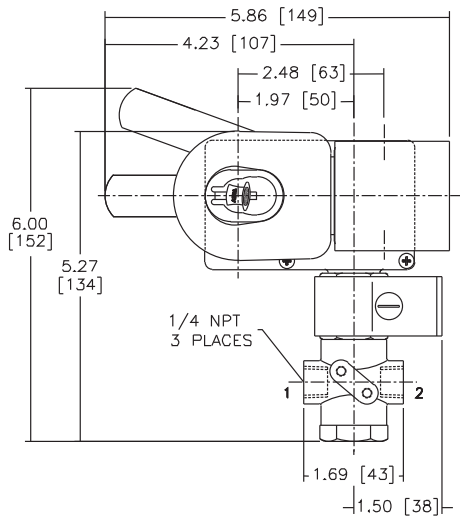


Flow Diagram E

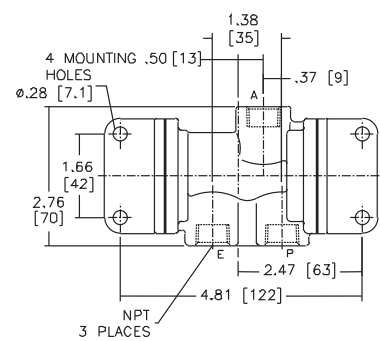
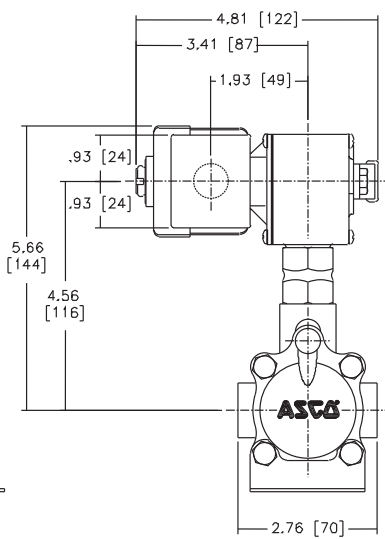
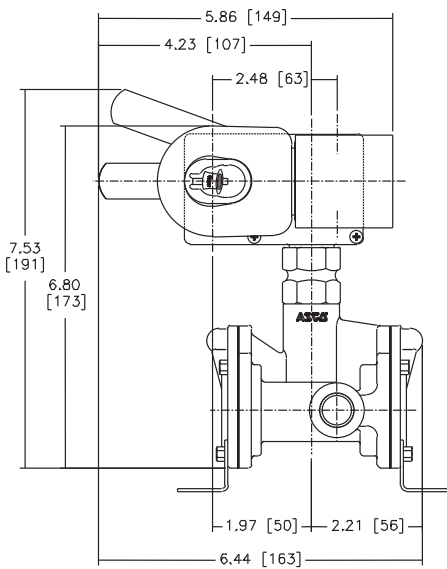


Dimensions: inches (mm)

Const. Ref. 1



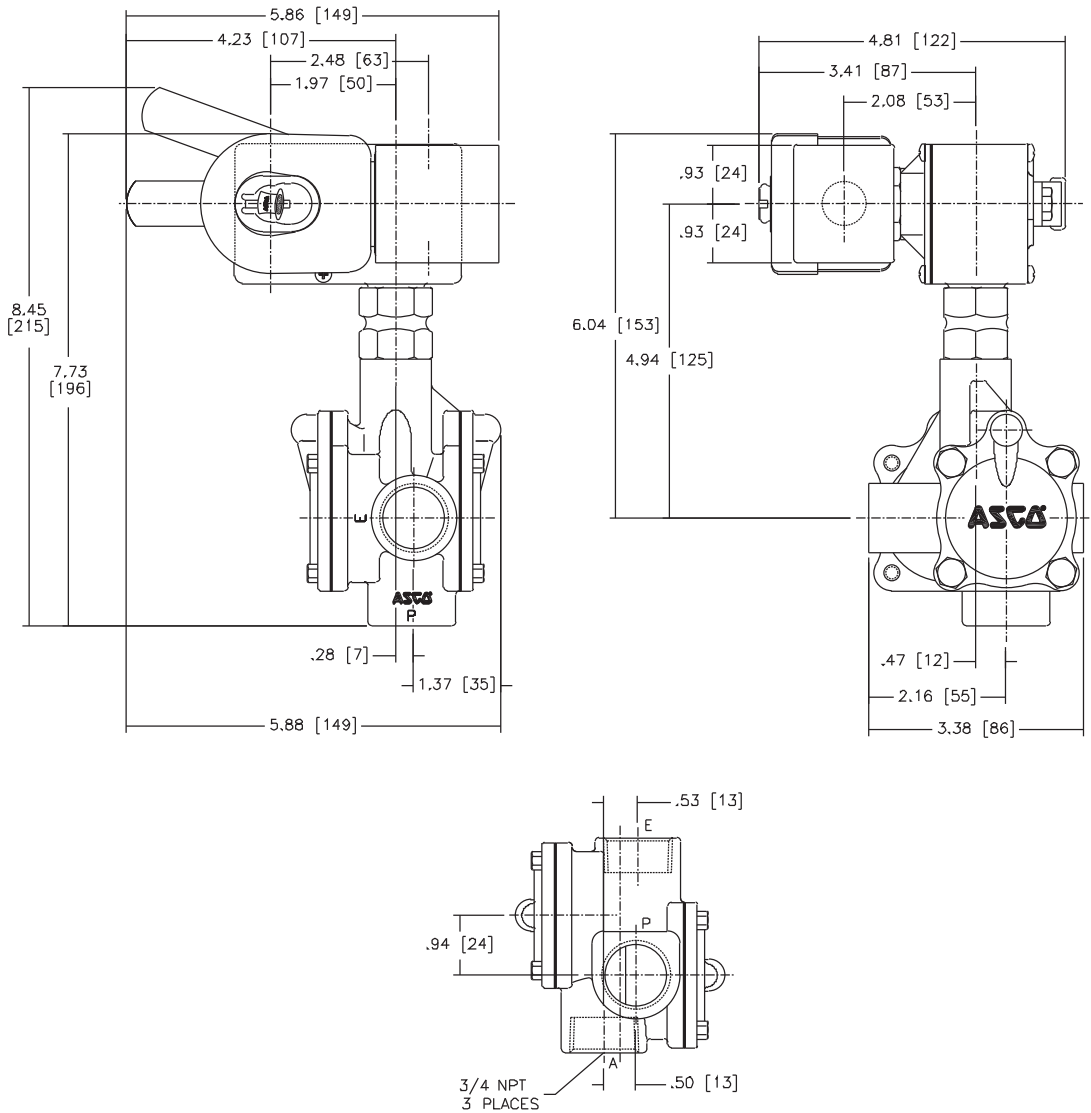
Const. Ref. 2



SPECIAL SERVICE
 PILOT

Dimensions: inches (mm)

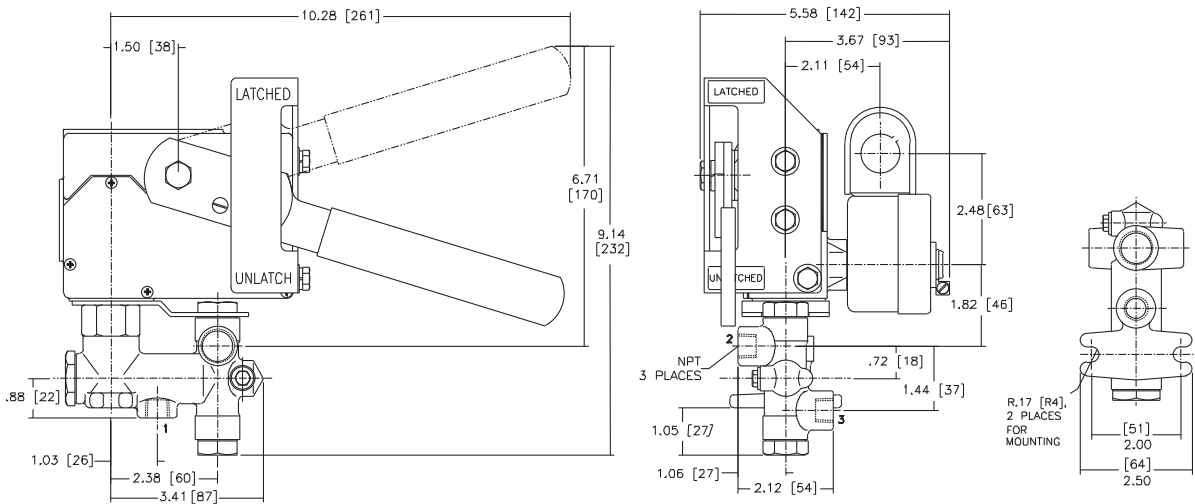
Const. Ref. 3



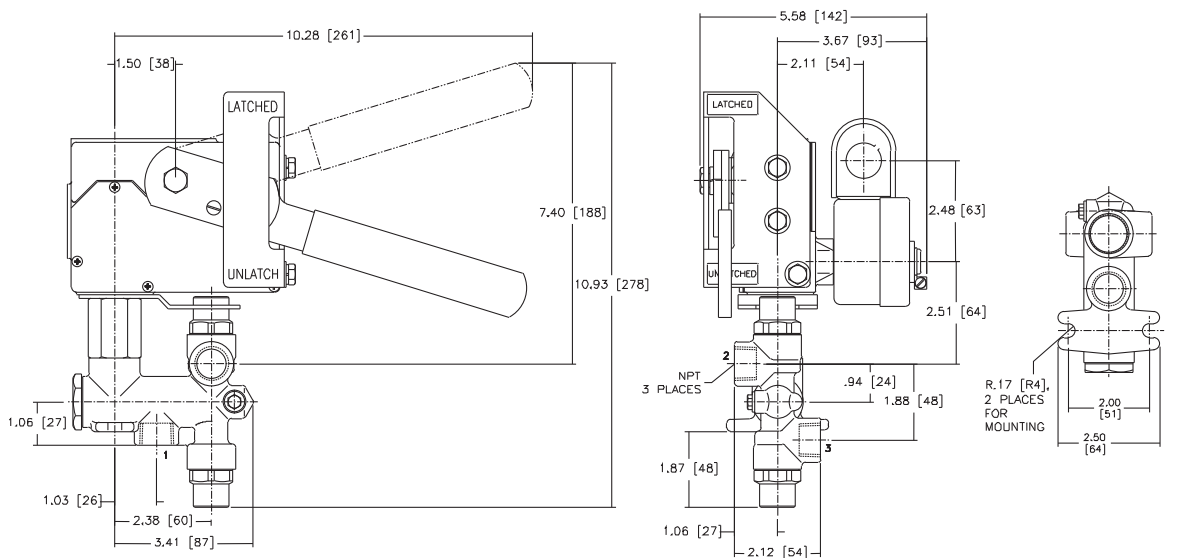
SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 4 ①



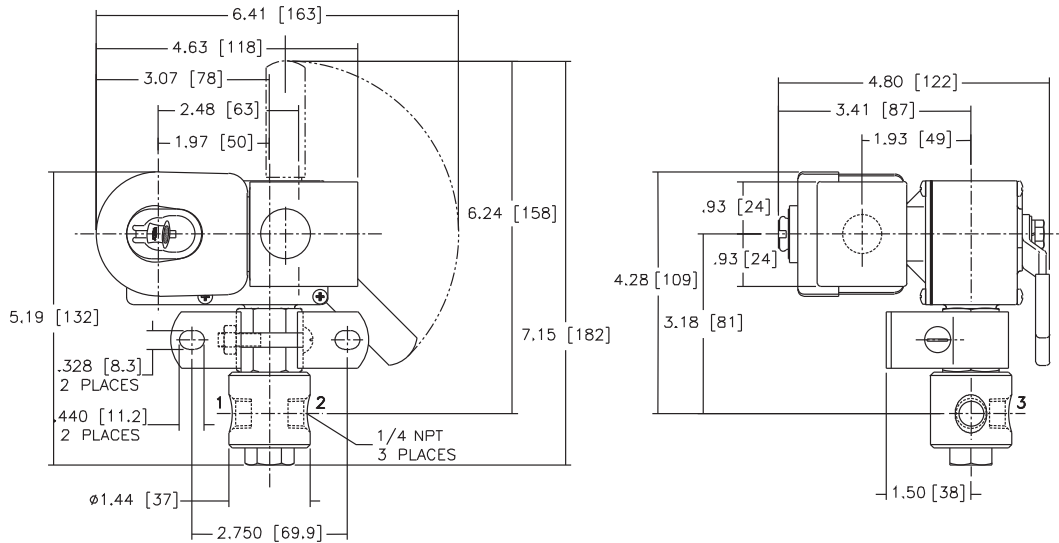
Const. Ref. 5 ①



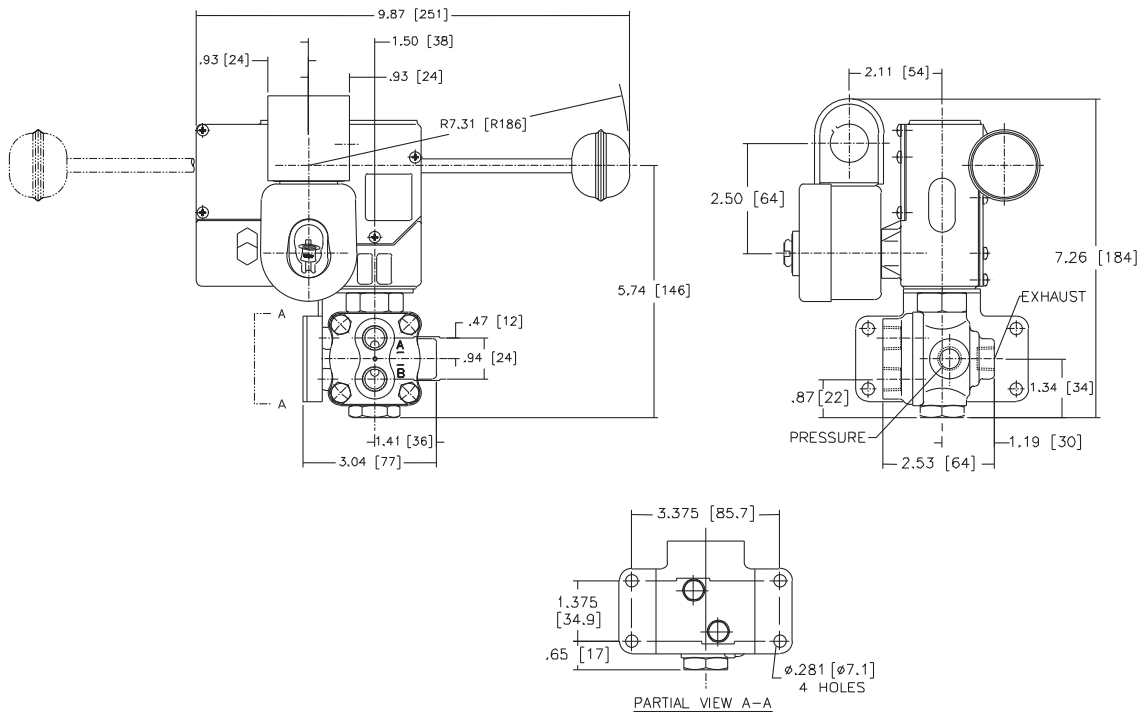
① **IMPORTANT: Valves must be mounted with manual reset operator vertical and upright.**

Dimensions: inches (mm)

Const. Ref. 6 ①



Const. Ref. 7 ①

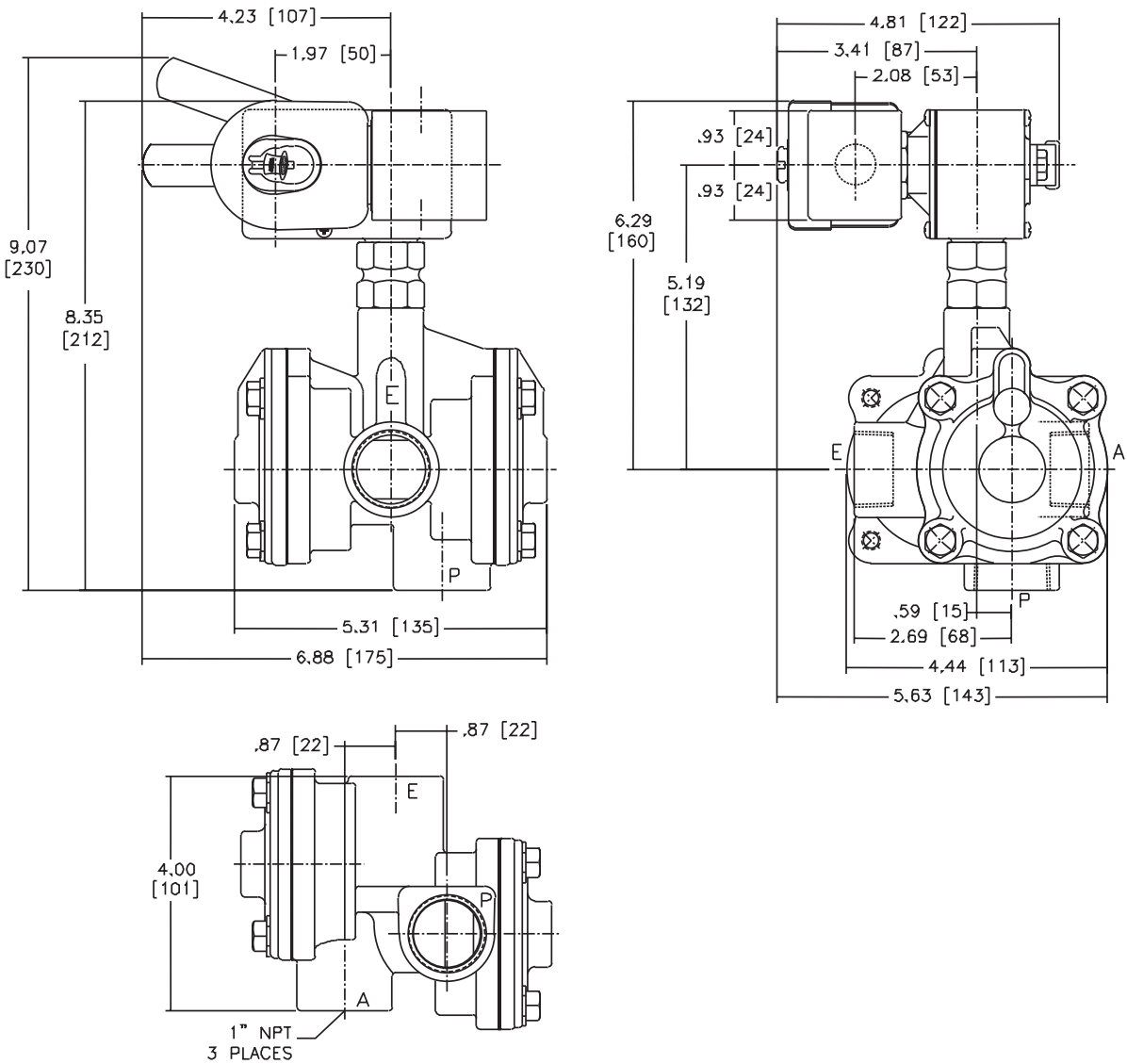


① **IMPORTANT: Valves must be mounted with manual reset operator vertical and upright.**

SPECIAL SERVICE
PILOT

Dimensions: inches (mm)

Const. Ref. 8



SPECIAL SERVICE
 PILOT

Features

- Manual reset versions of sturdy ASCO 8342 Series (1/4" and 3/8" NPT) and Series 8344 (1/2" to 1" NPT)
- 1/4" and 3/8" NPT are direct acting to provide maximum flow for their size
- 1/2" to 1" NPT have Poppet construction for high flows and tight shutoff
- Once tripped, can only be manually reset to automatic operation
- Electrically Tripped (trips when energized), No Voltage Release (trips when de-energized), or Free Handle constructions
- Intrinsically Safe constructions are available
See Pilot Valve Section for details

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Stem	303 Stainless Steel
Springs	302 Stainless Steel
Pilot Seat Cartridge	CA (when listed)
Disc, Diaphragm, Seat	PTFE, FKM, or NBR (as listed)

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number	
	DC Watts	AC				
		Watts	VA Holding	VA Inrush	AC	DC
F	-	20	45	96	99257	-
H	36.2	-	-	-	-	222184

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Note: 125 and 250 volts DC are battery voltages applied in power plants. Special valves are available to pilot control valves in power plants.
Consult your local ASCO sales office for a listing.

Solenoid Enclosures

Standard: RedHat metal solenoid enclosure. Type 1 General Purpose Junction Box.

Optional: Explosionproof and Watertight, Types 3, 7 (C and D), and 9. (To order, add prefix "EF" to catalog number.)

See Optional Features Section for other available options.

Nominal Ambient Temp. Ranges

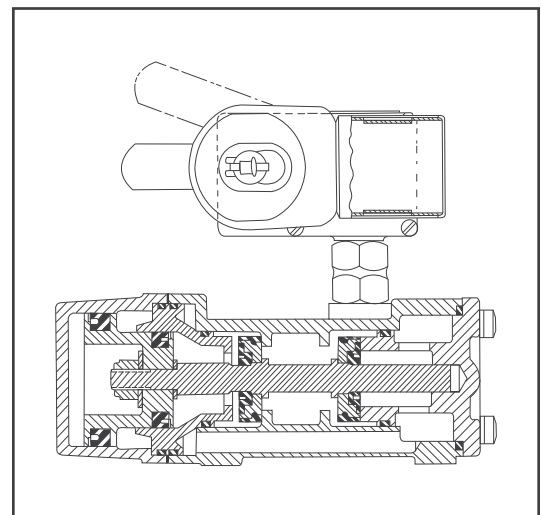
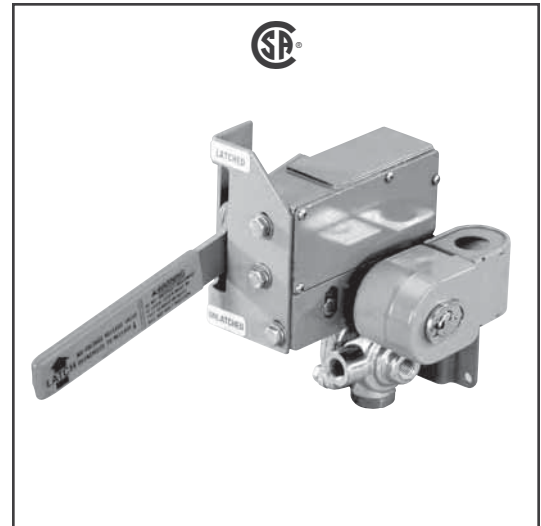
AC: -20°F to 104°F (-29°C to 40°C)

Refer to Engineering Section for details.

Approvals

CSA certified. Some constructions meet shock and vibration ISA S71.03C2

Refer to Engineering Section for details.



SPECIAL SERVICE PILOT

Operation Alternatives

Electrically Tripped – Valves move to latched position when the solenoid is de-energized, trips when they receive a continuous or momentary (at least 0.3 seconds) electrical signal. When tripped, they can be manually cycled open/closed, but must be reset when the solenoid has once again been de-energized.

No Voltage Release – Valves move to latched position when the solenoid is energized, trips when de-energized. When tripped, they can be manually cycled open/closed, but must be reset when the solenoid has once again been energized.

Free Handle – Valves move to latched position when the solenoid is energized, trips when de-energized. They cannot be manually cycled open/closed when de-energized. They can be manually cycled open/closed or reset only when energized.

Specifications (English units)

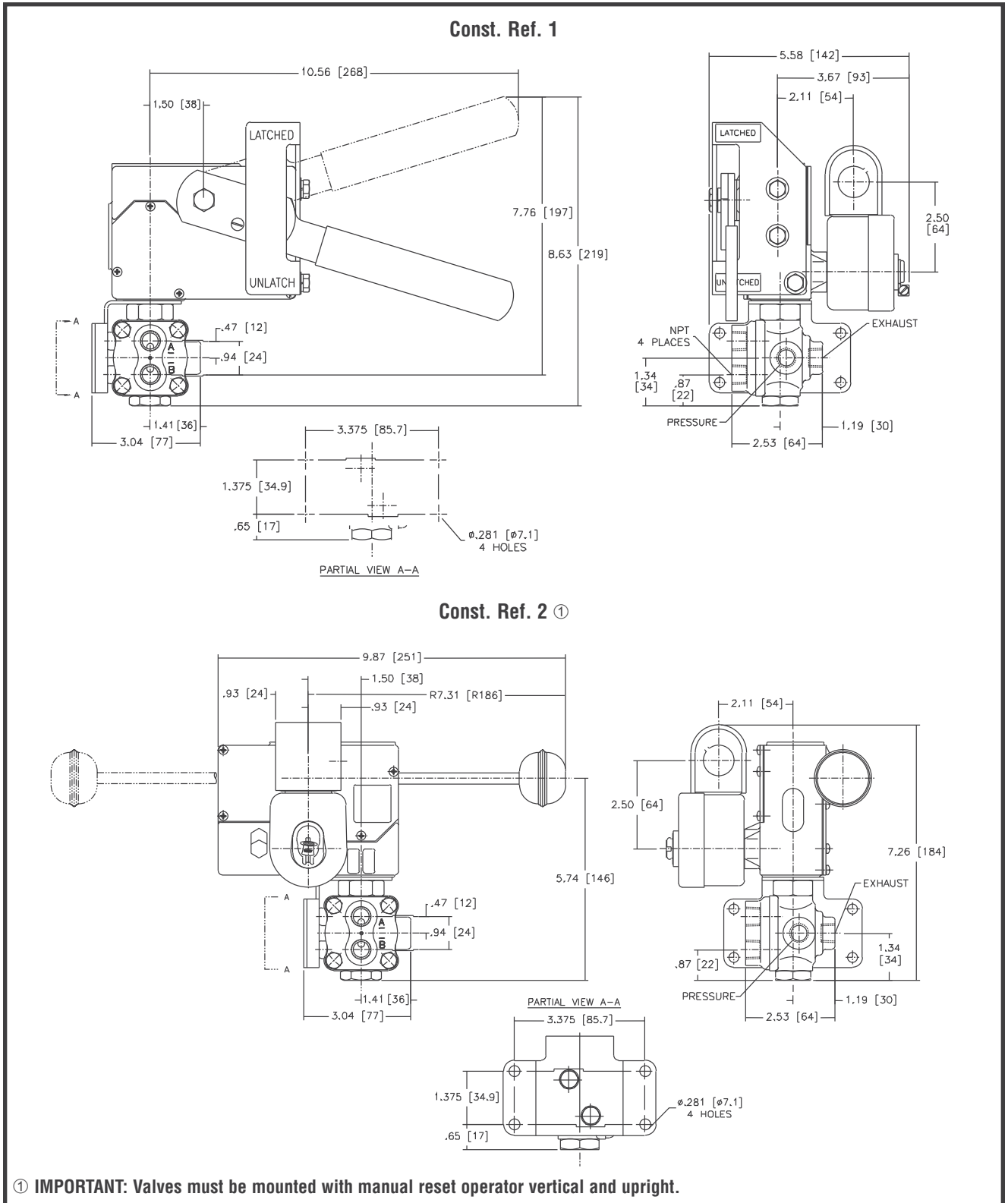
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		No Voltage Release	Electrically Tripped	Const. Ref.	Watt Rating/ Class of Coil Insulation	
			Min.	Max. AC	Max. DC	AC	DC				AC	DC
BRASS BODY with PTFE + FKM Seats and Discs for Air and Inert Gas												
1/4	3/16	.70	0	250	250	160	160	8408B006	8410B006	1	20/F	36.2/H
3/8	3/16	.70	0	250	250	160	160	8408B007	8410B007	1	20/F	36.2/H
BRASS BODY with NBR Seats and Discs (CA Pilot Cartridge) for Air, Inert Gas, Water, and Light Oil. This group of valves meets shock and vibration ISA S71.03C2.												
1/2	3/4	2.2	10	250	250	200	200	8408A008 ①	8410A008 ①	4	20/F	36.2/H
3/4	3/4	5.6	10	250	250	200	200	8408A009 ①	8410A009 ①	3	20/F	36.2/H
1	3/4	5.6	10	250	250	200	200	8408A010 ①	8410A010 ①	3	20/F	36.2/H
BRASS BODY with PTFE + FKM Seats and Discs for Air									Free Handle Construction			
1/4	3/16	.70	0	125	125	160	160	8047A001		2	20/F	36.2/H
3/8	3/16	.70	0	125	125	160	160	8047A002		2	20/F	36.2/H
① 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.												

SPECIAL SERVICE PILOT

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		No Voltage Release	Electrically Tripped	Const. Ref.	Watt Rating/ Class of Coil Insulation	
			Min.	Max. AC	Max. DC	AC	DC				AC	DC
BRASS BODY with PTFE + FKM Seats and Discs for Air and Inert Gas												
1/4	5	.60	0	17	17	71	71	8408B006	8410B006	1	20/F	36.2/H
3/8	5	.60	0	17	17	71	71	8408B007	8410B007	1	20/F	36.2/H
BRASS BODY with NBR Seats and Discs (CA Pilot Cartridge) for Air, Inert Gas, Water, and Light Oil. This group of valves meets shock and vibration ISA S71.03C2.												
1/2	10	1.89	0.7	17	17	93	93	8408A008 ①	8410A008 ①	4	20/F	36.2/H
3/4	19	4.80	0.7	17	17	93	93	8408A009 ①	8410A009 ①	3	20/F	36.2/H
1	19	4.80	0.7	17	17	93	93	8408A010 ①	8410A010 ①	3	20/F	36.2/H
BRASS BODY with PTFE + FKM Seats and Discs for Air									Free Handle Construction			
1/4	5	.60	0	9	9	71	71	8047A001		2	20/F	36.2/H
3/8	5	.60	0	9	9	71	71	8047A002		2	20/F	36.2/H
① 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.												

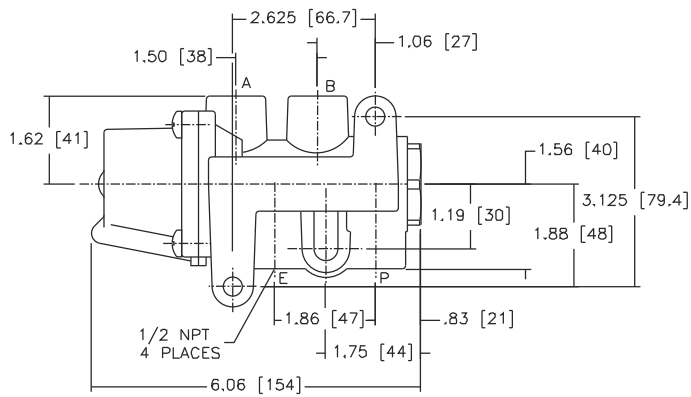
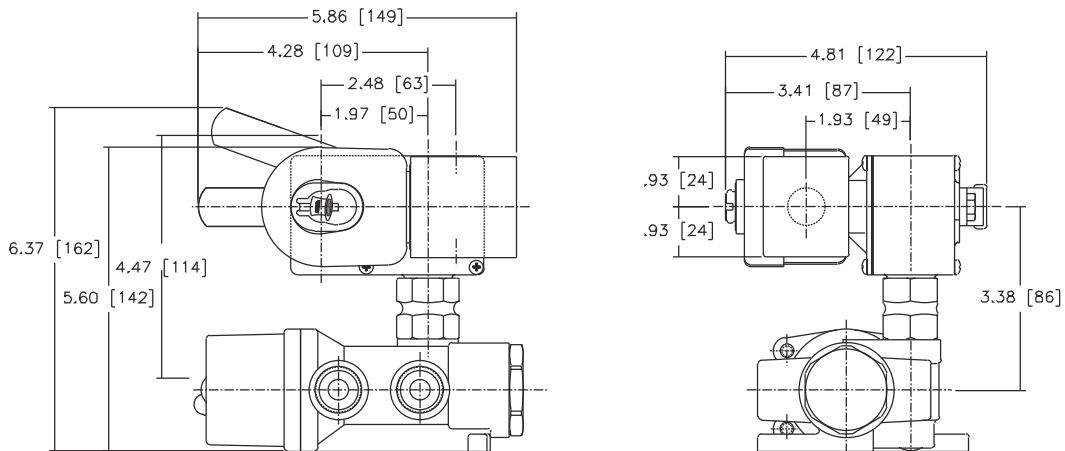
Dimensions inches (mm)



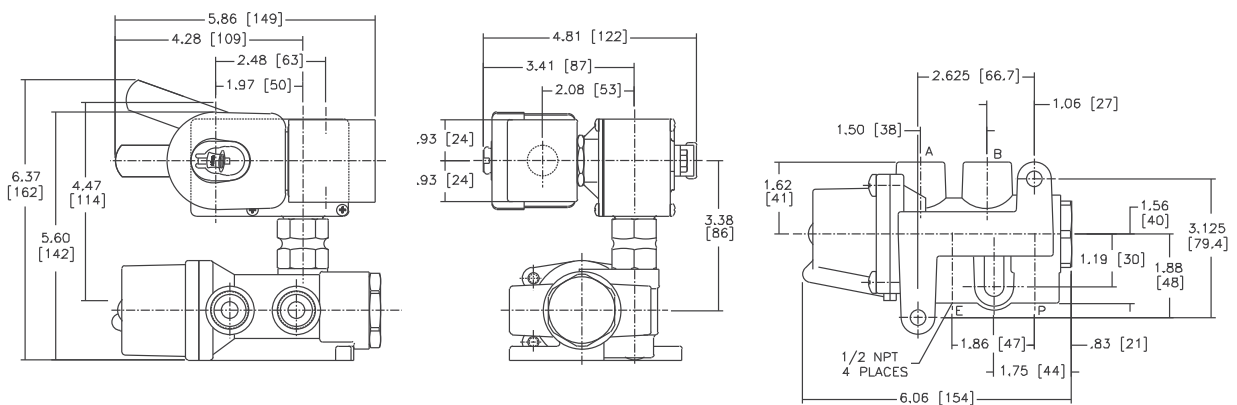
SPECIAL SERVICE PILOT

Dimensions inches (mm)

Const. Ref. 3
 No Voltage Release



Const. Ref. 4
 Electrically Tripped



SPECIAL SERVICE
 PILOT

Features

- Designed for high-flow piloting with no minimum operating pressure required; e.g. power plants, refineries, chemical processing
- Balanced poppet construction for high flow at minimum power levels
- PTFE rider rings and graphite-filled seals reduce friction and eliminate sticking to provide exceptional service life
- 316 Stainless Steel construction for highly corrosive atmospheres

Construction

Valve Parts in Contact with Fluids		
Body	Brass	316Stainless Steel
Core Tube	305 Stainless Steel	
Stem and Insert	303 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
O-Ring Holder	430F Stainless Steel	
Springs	302 Stainless Steel	
Seals and Discs	NBR	FKM
Rider Ring	PTFE	

Electrical

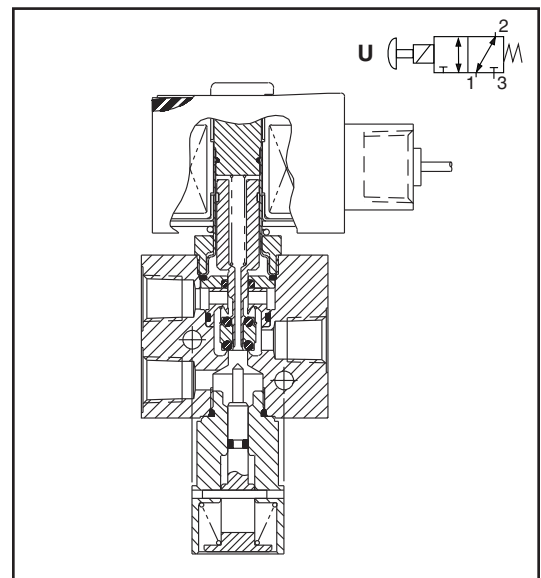
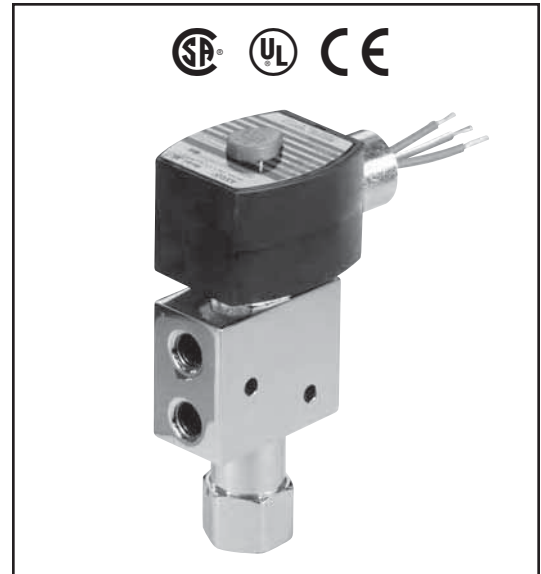
Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	12.0	12	12	276000	238710	276002	238714

Standard Voltages: 24/50-60, 120/50-60, 240/50-60, and 480/50-60 volts AC, or 6, 12, 24, 120 and 240 volts DC.

Solenoid Enclosures

Standard: Brass valves: Types, 1, 2, 3, 3S, 4, and 4X.
 316 Stainless Steel valves: Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, and 6P.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF", or for explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)
 See *Optional Features Section* for other available options.



SPECIAL SERVICE PILOT

Nominal Ambient Temp. Ranges

-4°F to 131°F (-20°C to 55°C)
 Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.
 Refer to *Engineering Section* for details.

Operation Alternatives

No Voltage Release - valves must be manually moved to the "open" latched position with the solenoid energized.
 Tamperproof No Voltage Release - valves operate as above, but cannot be held open manually.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Maximum Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Brass Body	316 Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3	Air-Inert Gas	Water	Light Oil @ 300 SSU		Catalog Number	Catalog Number		AC	DC
UNIVERSAL MANUAL RESET- No Voltage Release												
1/4	1/4	.60	.73	150	150	150	176	8327G021	-	1	12.0/F	11.6/F
1/4	1/4	.60	.73	150	150	150	248	-	EV8327G022	1	12.0/F	11.6/F
UNIVERSAL MANUAL RESET- Tamperproof No Voltage Release												
1/4	1/4	.60	.73	150	150	150	176	8327G031	-	1	12.0/F	11.6/F
1/4	1/4	.60	.73	150	150	150	248	-	EV8327G032	1	12.0/F	11.6/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Maximum Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Brass Body	316 Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3	Air-Inert Gas	Water	Light Oil @ 300 SSU		Catalog Number	Catalog Number		AC	DC
UNIVERSAL MANUAL RESET- No Voltage Release												
1/4	6	.51	.63	10	10	10	80	8327G021	-	1	12.0/F	11.6/F
1/4	6	.51	.63	10	10	10	120	-	EV8327G022	1	12.0/F	11.6/F
UNIVERSAL MANUAL RESET- Tamperproof No Voltage Release												
1/4	6	.51	.63	10	10	10	80	8327G031	-	1	12.0/F	11.6/F
1/4	6	.51	.63	10	10	10	120	-	EV8327G032	1	12.0/F	11.6/F

Dimensions: inches (mm)

FLOW DIAGRAMS

OPERATION	DE-ENERGIZED	ENERGIZED
NORMALLY CLOSED PRESSURE AT 3		
NORMALLY OPEN PRESSURE AT 1		
UNIVERSAL PRESSURE AT ANY PORT		

Const. Ref. 1

IMPORTANT: Valves may be mounted in any position.

Features

- NAMUR direct mount construction
- Balanced Poppet construction provides high flow with low power consumption
- PTFE rider rings and graphite-filled PTFE seals reduce friction and eliminate sticking for long life
- No minimum pressure required
- Tamperproof no-voltage release manual reset provides added safety

Construction

Valve Parts in Contact with Fluids		
Body	Aluminum	316 Stainless Steel
Seals and Discs	NBR	FKM
Core Tube	305 Stainless Steel	
Stem and Insert	303 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Rider Rings	PTFE	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	12	12	12	276000	238710	276002	238714

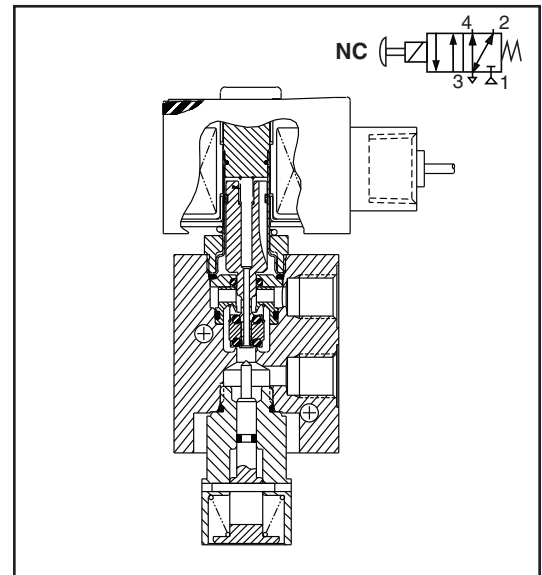
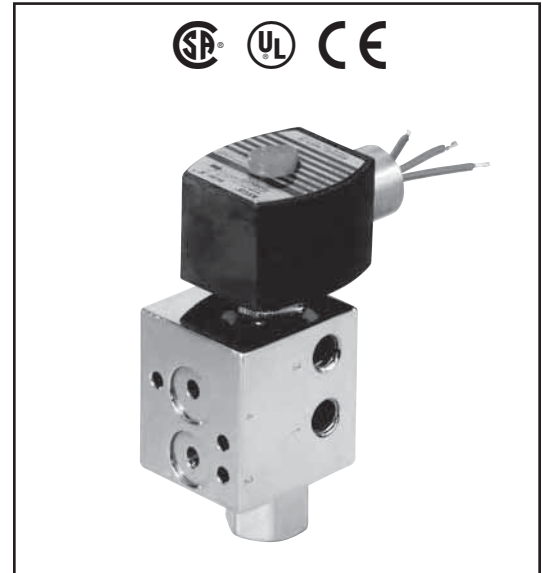
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC.
 Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Aluminum-Bodied valves, add "EV" to catalog number.)

See *Optional Features Section* for other available options.



SPECIAL SERVICE PILOT

Nominal Ambient Temp. Ranges

-4°F to +131°F (-20°C to +55°C)

Refer to *Engineering Section* for details.

Approvals

General Purpose Solenoid:

UL recognized component,
 CSA certified (8327G033 pending).

Explosionproof Solenoid: (Prefix EF and EV)

UL listed solenoid.

CSA certified for use in hazardous locations.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

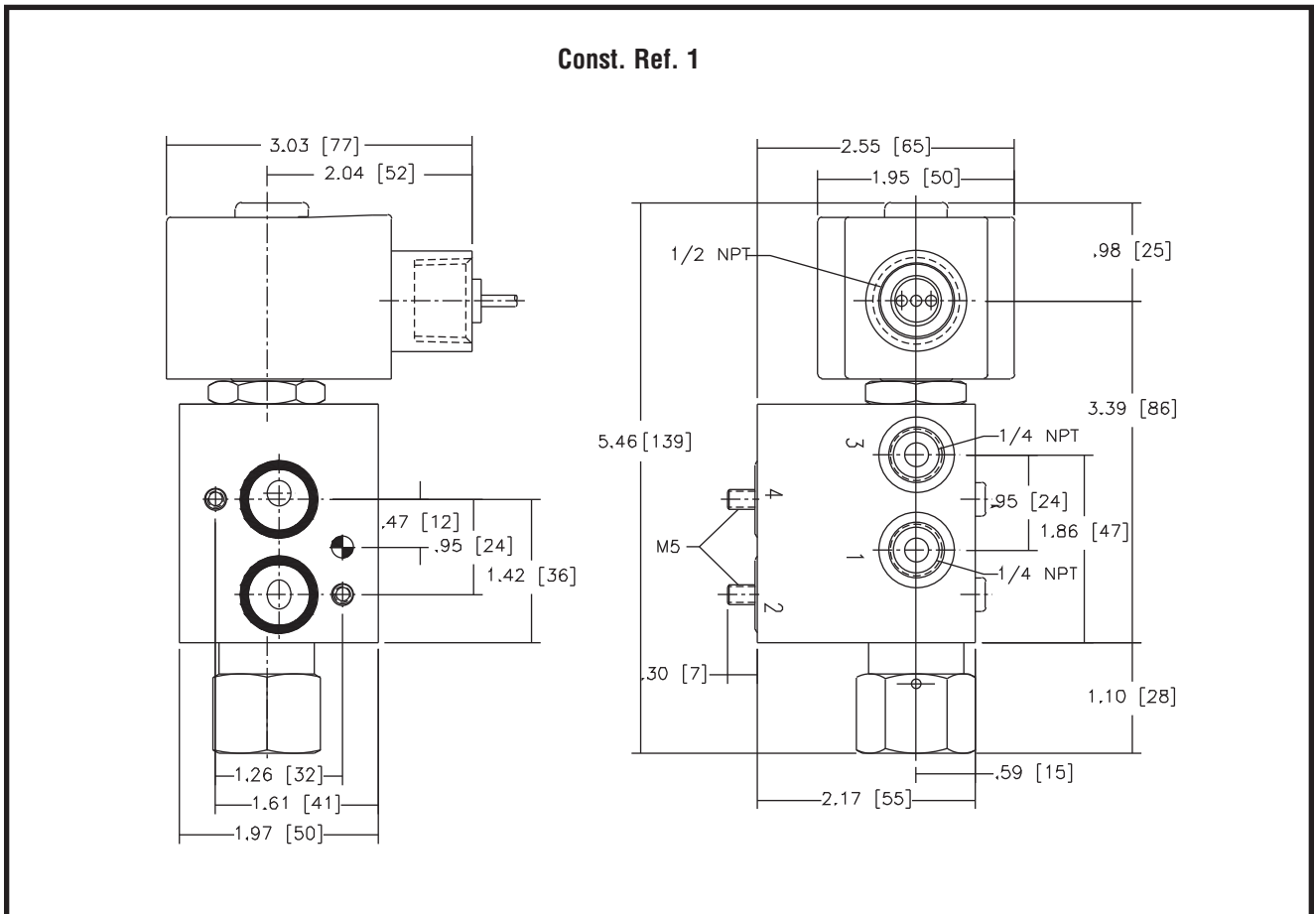
Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Maximum Operating Pressure Diff. (psi)		Fluid Temp. Range °F	Aluminum Body	Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3	Air-Inert Gas	Catalog Number		Catalog Number	AC		DC	
NORMALLY CLOSED MANUAL RESET - Tamperproof No-Voltage Release											
1/4	1/4	.62	.43	150	-4 to 176	8327G033	-	1	12.0/F	11.6/H	
1/4	1/4	.62	.43	150	-4 to 248	-	EV8327G035	1	12.0/F	11.6/H	

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Maximum Operating Pressure Diff. (bar)		Fluid Temp. Range °C	Aluminum Body	Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3	Air-Inert Gas	Catalog Number		Catalog Number	AC		DC	
NORMALLY CLOSED MANUAL RESET - Tamperproof No-Voltage Release											
1/4	6.4	.53	.37	10	-20 to 80	8327G033	-	1	12.0/F	11.6/H	
1/4	6.4	.53	.37	10	-20 to 120	-	EV8327G035	1	12.0/F	11.6/H	

Dimensions: inches (mm)



Features

- Designed to meet vibration and/or shock per ISA specification S71.03C2
- Handles aggressive atmosphere per salt resistance testing (ASTM B117)
- Most hardware is stainless steel, and all aluminum components are hard anodized and Nituff® coated
- Manual reset housing is sealed with closed-cell CR sponge rubber and equipped with sintered bronze breather to prevent condensation
- Last chance filter installed in auxiliary air port of the pilot valve
- Intrinsically Safe and Low Power constructions available

Nituff is a registered trademark of Nimet Industries, Inc.

Construction

Valve Parts in Contact with Fluids	
Main Valve	
Body	Brass
Disc	303 Stainless Steel
Seats	Phosphor Bronze
Springs	17-7 PH Stainless Steel
Seals	FKM
Air Operator Diaphragm	FMQ
Bearing Screw	430 Stainless Steel
Lever	302 Stainless Steel
Pilot Valve	
Body	Brass
Shading Coil	Copper (AC only)
Seals	NBR and PA (AC), NBR (DC)
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Guide	CA
Core Springs	302 and 17-7PH Stainless Steel

Electrical

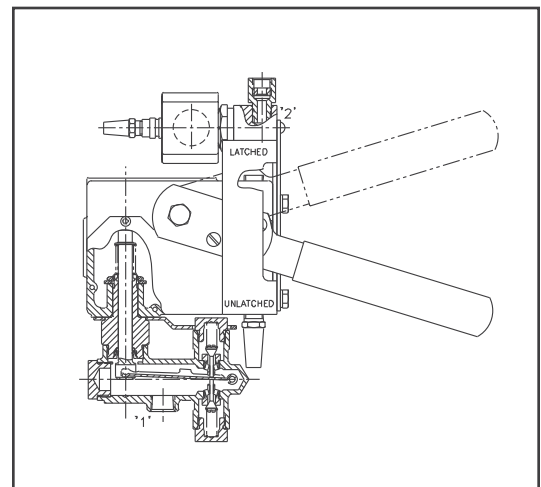
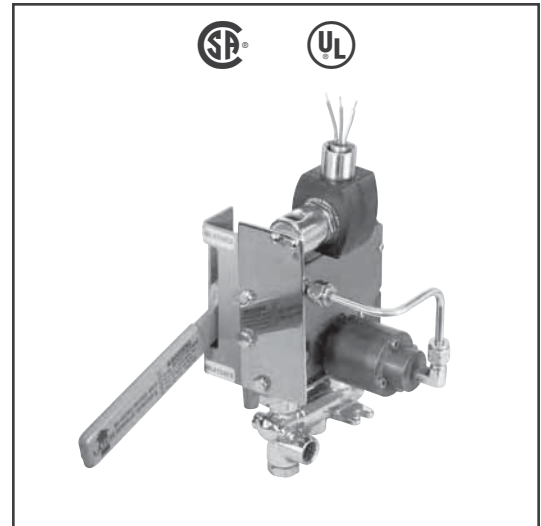
Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	10.1	25	76	238610	238710	238614	238714
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.								

Solenoid Enclosures

Standard: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6D, 7, and 9.

Approvals

CSA certified and UL listed General Purpose Valve (pilot).



SPECIAL SERVICE PILOT

Options

Stainless Steel body; 1/8" to 1/2" NPT pipe sizes; Position indicator Switch; Main Valve Resilient Seats; 4-way construction with metering; Pneumatic Time Delay; redundant pilot valves.

Contact factory for ordering information.

Operation Alternatives

Electrically Tripped – Manually move the lever to the latched position with the solenoid de-energized. Trips when solenoid is energized. Once tripped, the lever may be cycled causing the valve discs to open and close. If auxiliary air supply to the pilot valve is lost, the main valve will shift position.

No Voltage Release – Manually move the lever to the latched position with the solenoid energized. Trips when solenoid is de-energized. Once tripped, the lever may be cycled causing the valve discs to open and close. If the auxiliary air supply to the pilot valve is lost, the main valve will shift position.

Specifications (English units)

MAIN VALVE - AC or DC Constructions					
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Press. Diff. (psi)		Max. Fluid and Ambient Temp. °F
			Min.	Max.	
3/8	1/4	.45	0	125	200

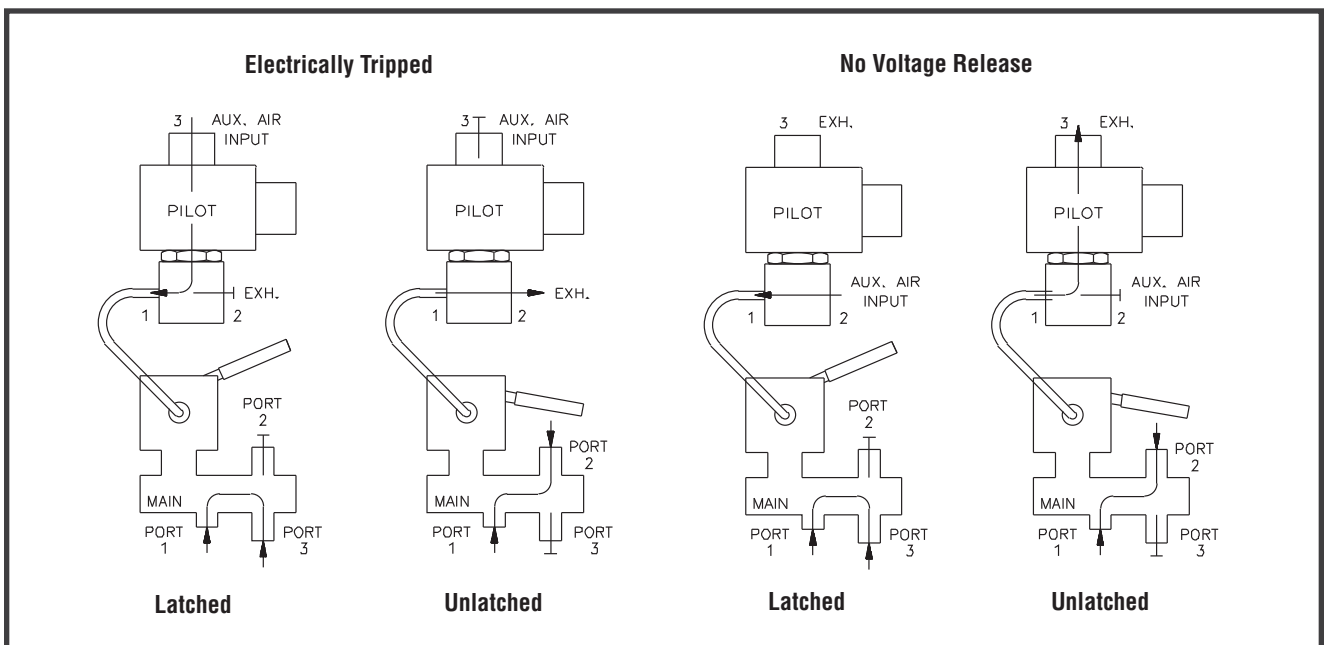
Catalog Number	Construction Type	Pilot Pressure (psi)		Fluid Temperature °F		Ambient Temperature °F		Watt Rating/ Class of Coil Insulation	Pilot Valve (For reference only)
		Min.	Max.	Min.	Max.	Min.	Max.		
AC CONSTRUCTION									
HV264153-15	No Voltage Release	25	125	-20	200	-20	125	10.1/F	EF8314G034
HV264153-16	Electrically Tripped	25	125	-20	200	-20	125	10.1/F	EF8314G052
DC CONSTRUCTION									
HV264153-11	No Voltage Release	25	125	-20	104	-20	104	11.6/F	EF8314G034
HV264153-12	Electrically Tripped	25	125	-20	104	-20	104	11.6/F	EF8314G052

Specifications (Metric units)

MAIN VALVE - AC or DC Constructions					
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Press. Diff. (bar)		Max. Fluid and Ambient Temp. °C
			Min.	Max.	
3/8	6	0.39	0	9	93

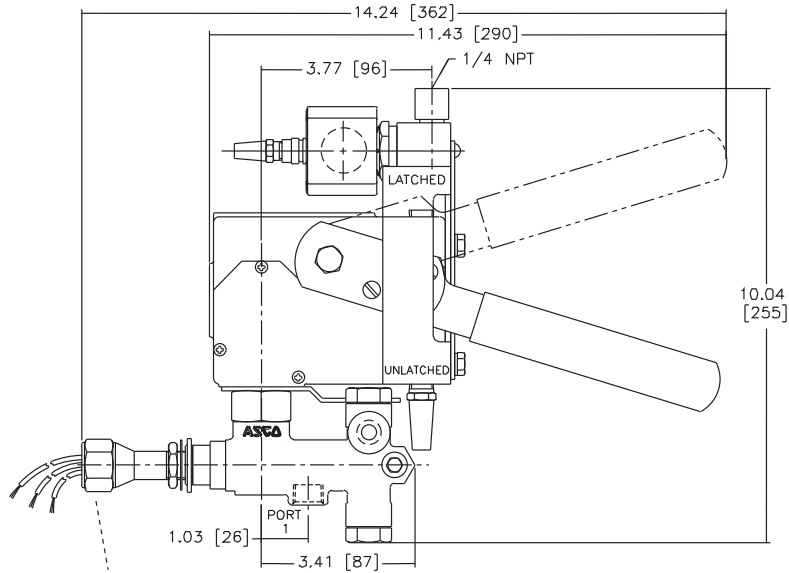
Catalog Number	Construction Type	Pilot Pressure (bar)		Fluid Temperature °C		Ambient Temperature °C		Watt Rating/ Class of Coil Insulation	Pilot Valve (For reference only)
		Min.	Max.	Min.	Max.	Min.	Max.		
AC CONSTRUCTION									
HV264153-15	No Voltage Release	2	9	-29	93	-29	52	10.1/F	EF8314G034
HV264153-16	Electrically Tripped	2	9	-29	93	-29	52	10.1/F	EF8314G052
DC CONSTRUCTION									
HV264153-11	No Voltage Release	2	9	-29	40	-29	40	11.6/F	EF8314G034
HV264153-12	Electrically Tripped	2	9	-29	40	-29	40	11.6/F	EF8314G052

Flow Diagrams

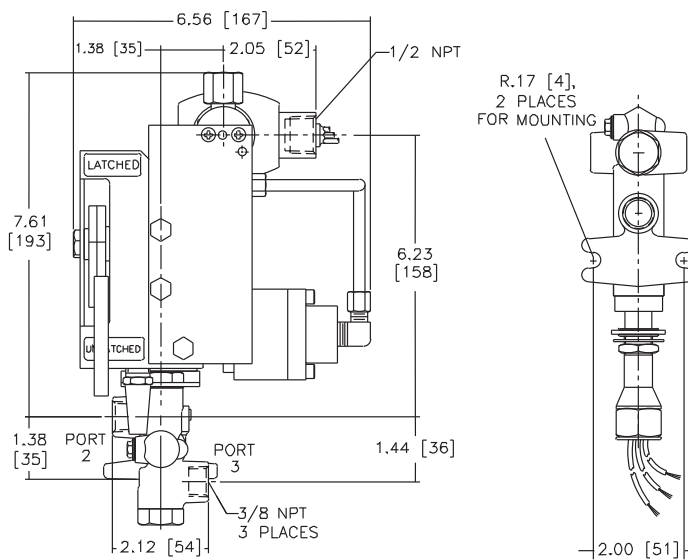


Dimensions inches (mm)

No Voltage Release Construction



Shown with
Optional Position
Indicator Switch



IMPORTANT: Mount with manual reset assembly vertical and upright.



Valve Automation Products

The valve automation market has demanding product requirements and specifications. ASCO is uniquely qualified to meet these needs. With our offering of direct mount NAMUR valves and valve position indicators ASCO can offer one source of supply for your valve automation solutions.

ASCO offers a complete range of 3 and 4-way valves which mount directly onto single acting and double acting actuators, including 3/2 - 5/2 combination valves that can be converted from 3-way operation to 4-way operation by simply flipping a gasket or changing a plate. These direct mount pilot valves eliminate the need for piping the valve to the actuator, and allow for fast, easy installation on the actuator. These valves are offered with RedHat II molded epoxy solenoids, along with optional features such as high temperature Class H molded coils and manual operators. Additional coil types are available.

Index

Valve Automation Description	Page
Direct Mount (NAMUR)	
8320	185
8327	187
8380/8401	189
8342	193
8551/8553 Inline Spool Valve	195
8551/8553 RedHat II Spool Valve	199
8320 Dribble Control	203

VALVE
AUTOMATION



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VALVE
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5 DAY

As part of our continued drive for customer service, we expanded the ASCO Today program with over 15,000 products that can be shipped within five business days.

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For more information on how you can have the ASCO products you want when you want them, visit us online to see our complete listing of ASCO Today products or call 1-800-972-2726.

www.ascovalve.com



Features

- Mount directly to spring return actuators with NAMUR interface
- Same poppet valve performance as in standard 8320 valves
- Integral breather block prevents ingestion of contaminants or corrosives
- Variety of flow and pressure ratings
- Mountable in any position

Construction

Valve Parts in Contact with Fluids		
Body	Brass	303 Stainless Steel
Seals and Discs	NBR	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel	
Shading Coil	Copper	Silver
Disc-Holder	CA	
Core Guide	CA (10.1 and 17.1 watts only)	

Electrical

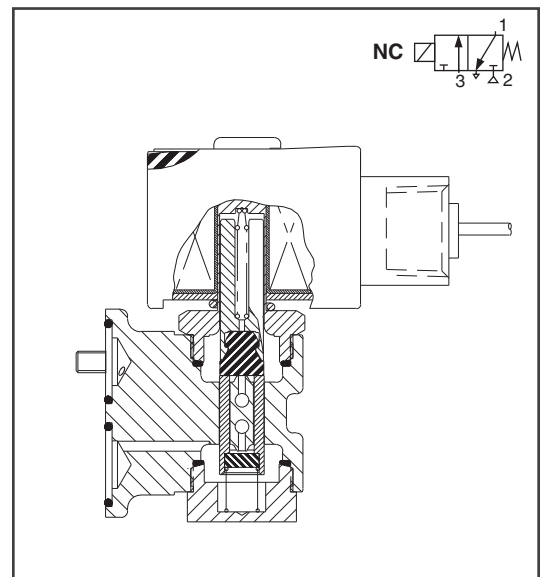
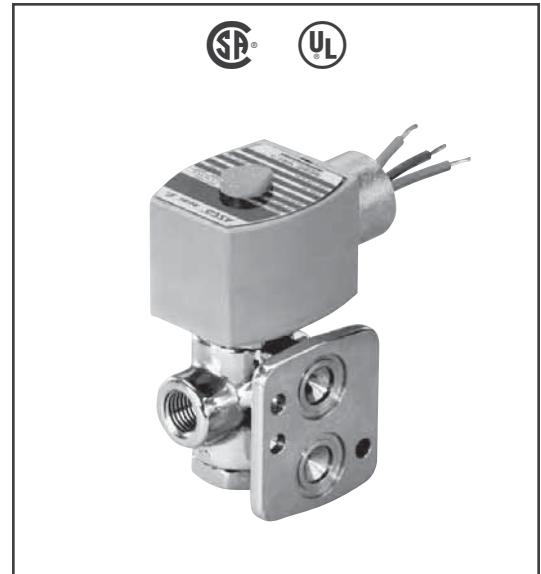
Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	11.6	10.1	25	50	238610	238710	238614	238714
F	22.6	17.1	40	70	238610	238710	238614	238714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Special Construction: Dual solenoid construction for redundant controls and dribble control available. Consult your local ASCO sales office for details.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" to catalog number.)
 See *Optional Features Section* for other available options.



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

AC: 0°F to 125°F (-18°C to 52°C)
 DC: 0°F to 104°F (-18°C to 40°C)
 When used at temperatures below 32°F (0°C), media must be moisture free. Also available: -40° construction.
 Please contact ASCO sales office for details.

Approvals

UL component and CSA certified.
 Refer to *Engineering Section* for details.

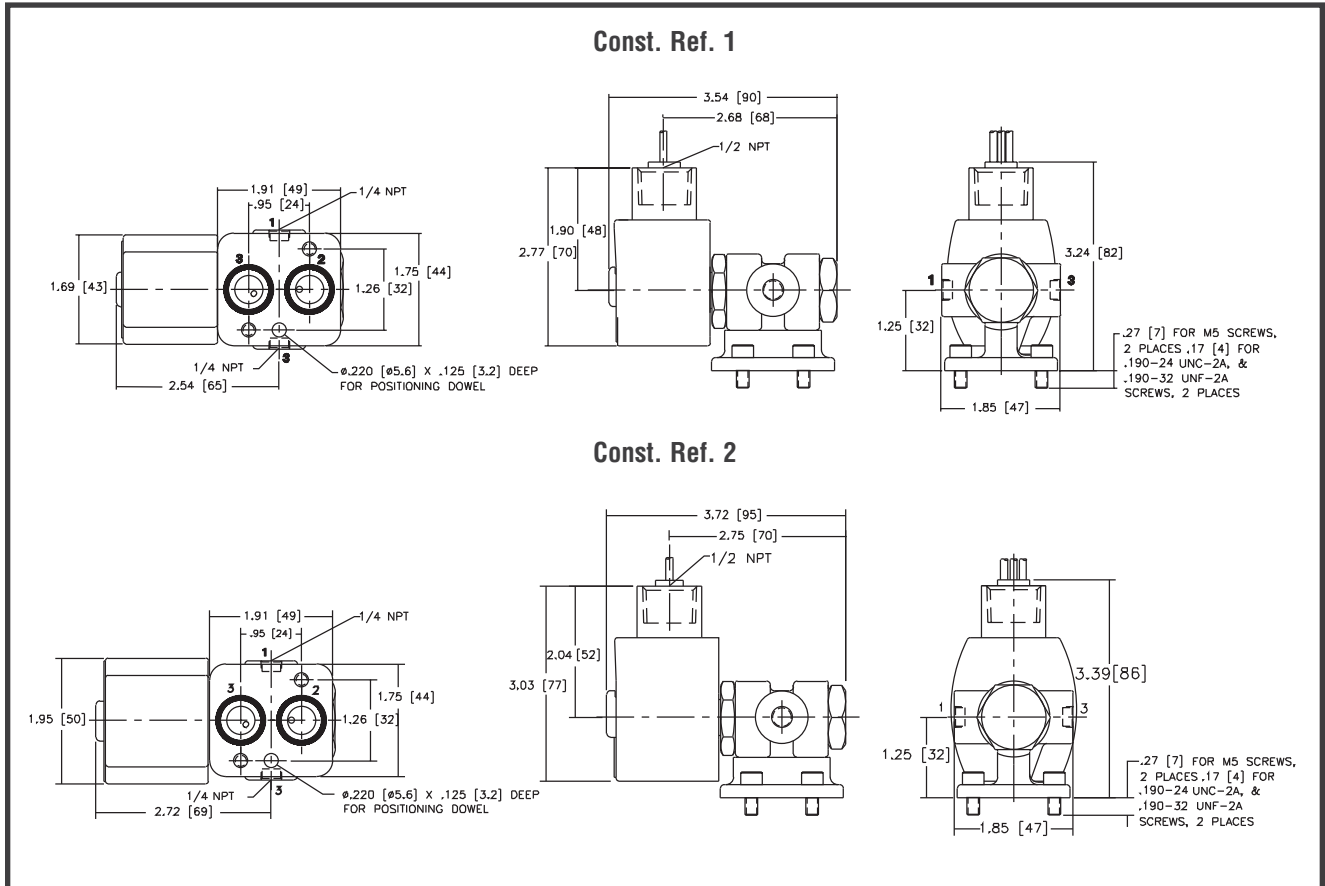
Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid Temp. °F		Brass Body Catalog Number	Stainless Steel Body Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation	
			Air-Inert Gas		AC	DC				AC	DC
			Max. AC	Max. DC	AC	DC	AC	DC			
NORMALLY CLOSED (Closed when de-energized)											
1/4	1/16	.09	150	125	180	120	8320G701	8320G711	1	6.1/F	10.6/F
1/4	3/32	.12	100	100	180	120	8320G702	8320G712	1	6.1/F	10.6/F
1/4	1/16	.09	210	160	200	150	8320G703	8320G713	2	17.1/F	11.6/F
1/4	3/32	.12	150	150	200	150	8320G704	8320G714	2	10.1/F	22.6/F
1/4	1/8	.21	100	-	200	-	8320G705	8320G715	2	17.1/F	-

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bars)		Max. Fluid Temp. °C		Brass Body Catalog Number	Stainless Steel Body Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation	
			Air-Inert Gas		AC	DC				AC	DC
			Max. AC	Max. DC	AC	DC	AC	DC			
NORMALLY CLOSED (Closed when de-energized)											
1/4	2	.08	10	9	81	48	8320G701	8320G711	1	6.1/F	10.6/F
1/4	2	.10	7	7	81	48	8320G702	8320G712	1	6.1/F	10.6/F
1/4	2	.08	14	11	92	65	8320G703	8320G713	2	17.1/F	11.6/F
1/4	2	.10	10	10	92	65	8320G704	8320G714	2	10.1/F	22.6/F
1/4	3	.18	7	-	92	-	8320G705	8320G715	2	17.1/F	-

Dimensions inches (mm)



Features

- NAMUR direct mount construction
- Balanced Poppet construction provides high flow with low power consumption
- PTFE rider rings and graphite-filled PTFE seals reduce friction and eliminate sticking for long life
- No minimum pressure required
- Tamperproof no-voltage release manual reset provides added safety

Construction

Valve Parts in Contact with Fluids		
Body	Aluminum	316 Stainless Steel
Seals and Discs	VMQ	
	NBR	FKM
Core Tube	305 Stainless Steel	
Stem and Insert	303 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Rider Rings	PTFE	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	12	24	24	276000	238710	276002	238714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC.
 Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

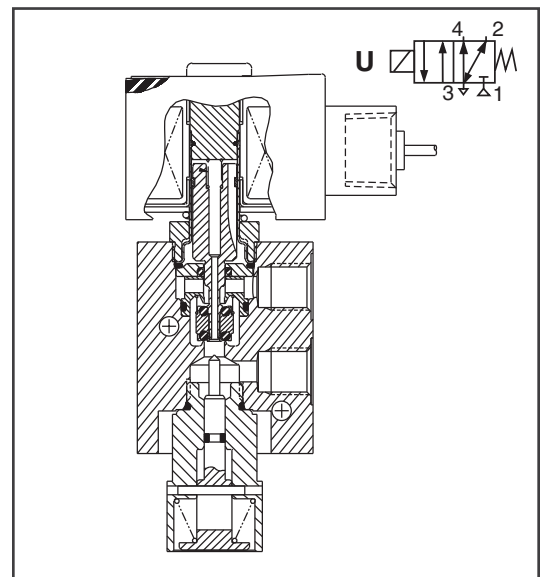
Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Aluminum-Bodied valves, add "EV" to catalog number.)

See *Optional Features Section* for other available options.

SIL (Safety Integrity Level) Information:

- PFD (Probability of Failure on Demand) < 4 x 10⁻⁷ at a confidence factor of 95%.
- SFF (Safe Failure Fraction) according to IEC 61508-2 Table A1 is ≥ 0.99.
- Only constructions without manual operators apply to the above criteria.



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

8327G033 and 35: -4°F to 131°F (-20°C to 55°C)
 8327G053 and 55: -40°F to 131°F (-40°C to 55°C)
 Refer to *Engineering Section* for details.

Approvals

General Purpose Solenoid:

UL recognized component, CSA certified.

Explosionproof Solenoid: (Prefix EF and EV)

UL listed solenoid.

CSA certified for use in hazardous Locations.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

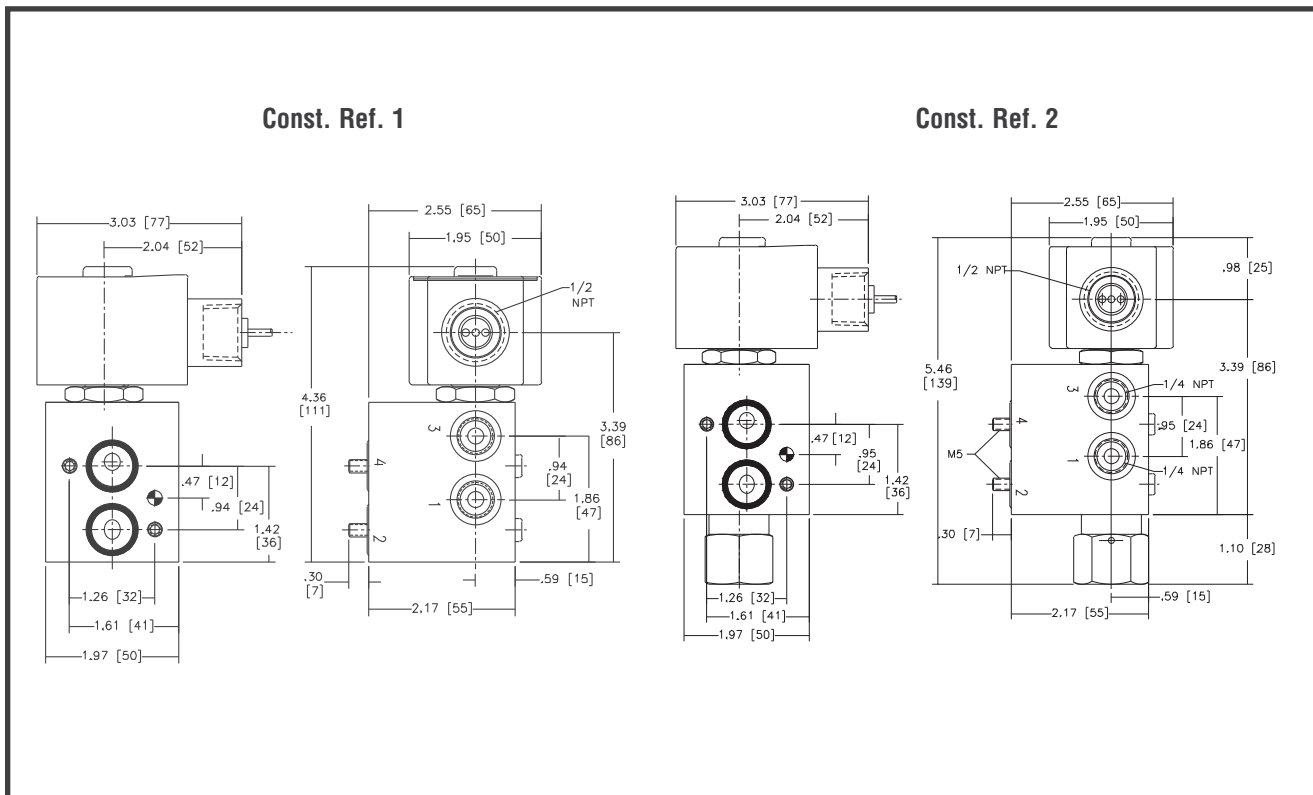
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Maximum Operating Pressure Diff. (psi) Air-Inert Gas	Fluid Temp. Range °F	Aluminum Body	Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3			Catalog Number	Catalog Number		AC	DC
UNIVERSAL - Low-Temperature Operation										
1/4	1/4	.52	.53	150	-40 to 131	8327G053	EV8327G055	1	12.0/F	11.6/F
UNIVERSAL MANUAL RESET - Tamperproof No-Voltage Release										
1/4	1/4	.62	.43	150	-4 to 176	8327G033	-	2	12.0/F	11.6/F
1/4	1/4	.62	.43	150	-4 to 248	-	EV8327G035	2	12.0/F	11.6/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Maximum Operating Pressure Diff. (bar) Air-Inert Gas	Fluid Temp. Range °C	Aluminum Body	Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3			Catalog Number	Catalog Number		AC	DC
UNIVERSAL - Low-Temperature Operation										
1/4	6.4	.45	.45	10	-40 to 55	8327G053	EV8327G055	1	12.0/F	11.6/F
UNIVERSAL MANUAL RESET - Tamperproof No-Voltage Release										
1/4	6.4	.53	.37	10	-20 to 80	8327G033	-	2	12.0/F	11.6/F
1/4	6.4	.53	.37	10	-20 to 120	-	EV8327G035	2	12.0/F	11.6/F

VALVE
AUTOMATION

Dimensions inches (mm)



Features

- Mount directly to actuators with NAMUR, Keystone, or Worcester interfaces
- Easy conversion from AC to DC by simply changing coil
- Standard momentary/maintained manual operator
- 3/2 is normally closed poppet design for spring return actuators
- 3/2 normally closed or 4/2 operation can be selected by rotating sub-base gasket
- 3/2 normally closed or 4/2 valves have built-in linear flow device capable of controlling Cv from 0.10 to 0.50
- Breather block exhausts to spring side of actuator to prevent corrosion of the actuator
- Unique CA slide and ceramic flow plate for extra-long life

Construction

Valve Parts in Contact with Fluids	
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Seals	Low-Friction, Low-Wear NBR
Interface Plate	Molded PA
8401 Series Only	
Pressure Port	303 Stainless Steel
Main and Pilot Body	Molded PA
Spool	CA
Slide	Graphite-filled PTFE
Flow Plate	Ceramic (Alumina)
Worcester Version	
Main Body and Sub-Base	Anodized Aluminum

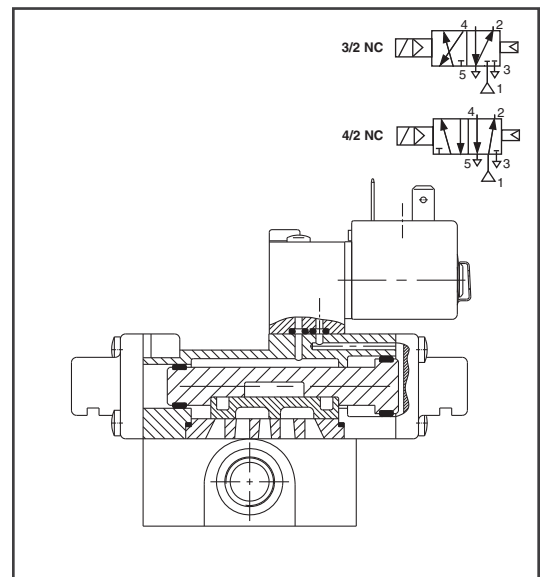
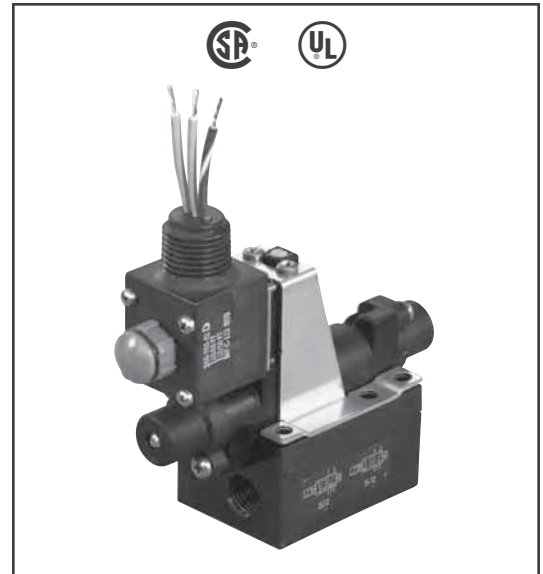
Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number	
	DC Watts	AC			AC	AC
		Watts	VA Holding	VA Inrush		
F	6.9	6.3	8.8	12.1	266763	270008

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available upon request.

Solenoid Enclosures

- Standard:** Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, change "WT" catalog number prefix to "EF".)
 Molded epoxy coil per 3 x DIN 46244. (To order, change "WT" catalog number prefix to "SC".)
 Molded epoxy open frame Class F coil with 18" leads. (To order, change "WT" catalog number prefix to "U".)
 See *Optional Features Section* for other available options.



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

AC: 0°F to 104°F (-18°C to 40°C),
 except prefixes "U" and "SC" to 135°F (57°C)
 DC: 0°F to 77°F (-18°C to 25°C)

Approvals

- "WT" - UL recognized component General Purpose Valve, CSA certified.
 "EF" - UL listed solenoid, CSA certified.
 "U" and "SC" - UL recognized component, CSA certified.
 Refer to *Engineering Section* for details.

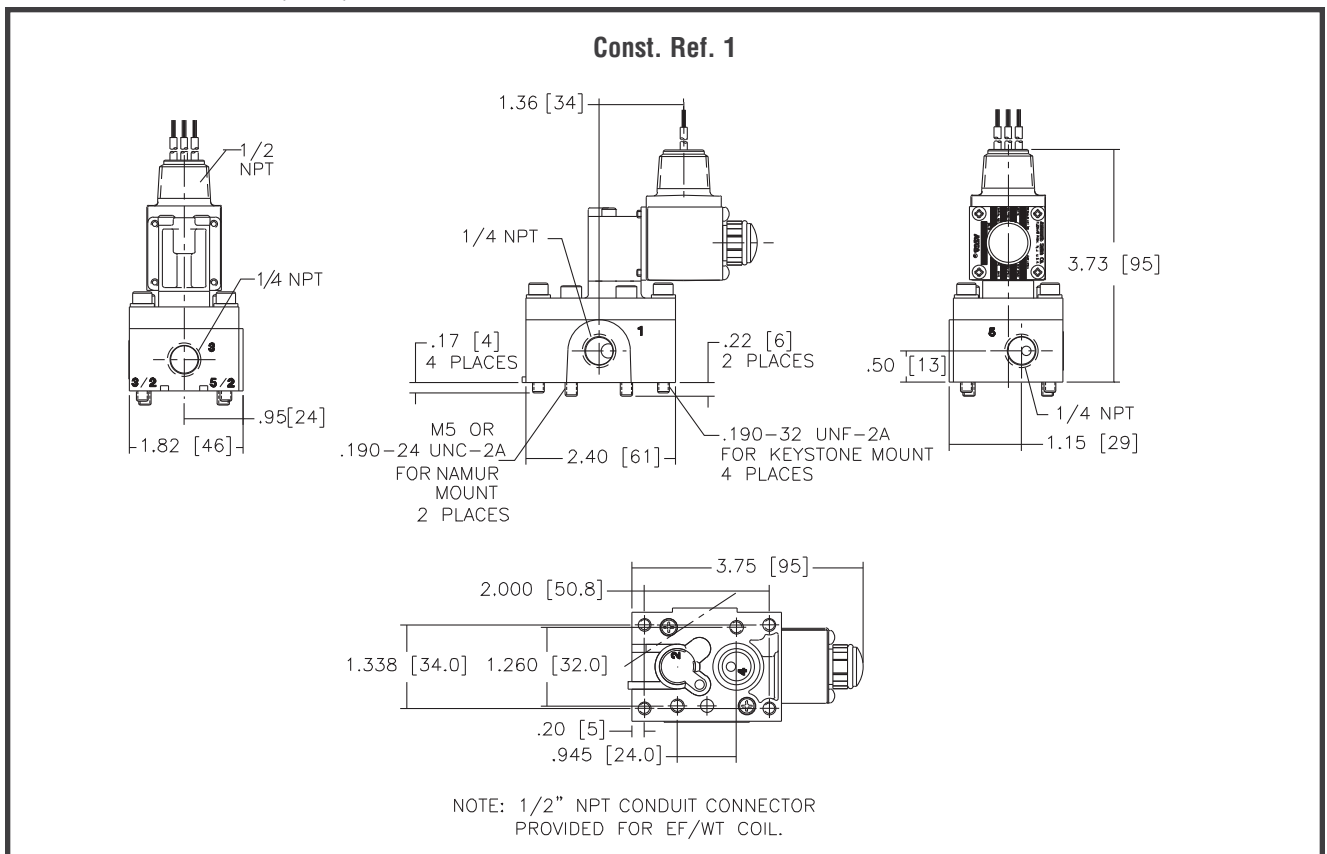
Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Main Line Supply Pressure (psi) AC and DC				Catalog Number	Const. Ref.	Interface Type	Watt Rating/ Class of Coil Insulation	
			Air-Inert Gas		Max. Fluid Temp. °F					AC	DC
			Min.	Max.	AC	DC					
3-WAY NORMALLY CLOSED (Closed when de-energized)											
1/4	3/64	.05	0	150	104	77	WT8380B202	1	NAMUR	6.3/F	6.9/F
3-WAY NORMALLY CLOSED OR 4-WAY											
1/4	1/4	.50	20	150	104	77	WT8401B202M	2	NAMUR	6.3/F	6.9/F
1/4	1/4	.50	20	150	104	77	WT8401B204M	2	Keystone	6.3/F	6.9/F
1/8	1/4	.40	20	135	104	77	WT8401B200M	3	Worcester	6.3/F	6.9/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Main Line Supply Pressure (bar) AC and DC				Catalog Number	Const. Ref.	Interface Type	Watt Rating/ Class of Coil Insulation	
			Air-Inert Gas		Max. Fluid Temp. °C					AC	DC
			Min.	Max.	AC	DC					
3-WAY NORMALLY CLOSED (Closed when de-energized)											
1/4	1	.04	0	10	40	25	WT8380B202	1	NAMUR	6.3/F	6.9/F
3-WAY NORMALLY CLOSED OR 4-WAY											
1/4	6	.43	1	10	40	25	WT8401B202M	2	NAMUR	6.3/F	6.9/F
1/4	6	.43	1	10	40	25	WT8401B204M	2	Keystone	6.3/F	6.9/F
1/8	6	.34	1	9	40	25	WT8401B200M	3	Worcester	6.3/F	6.9/F

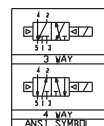
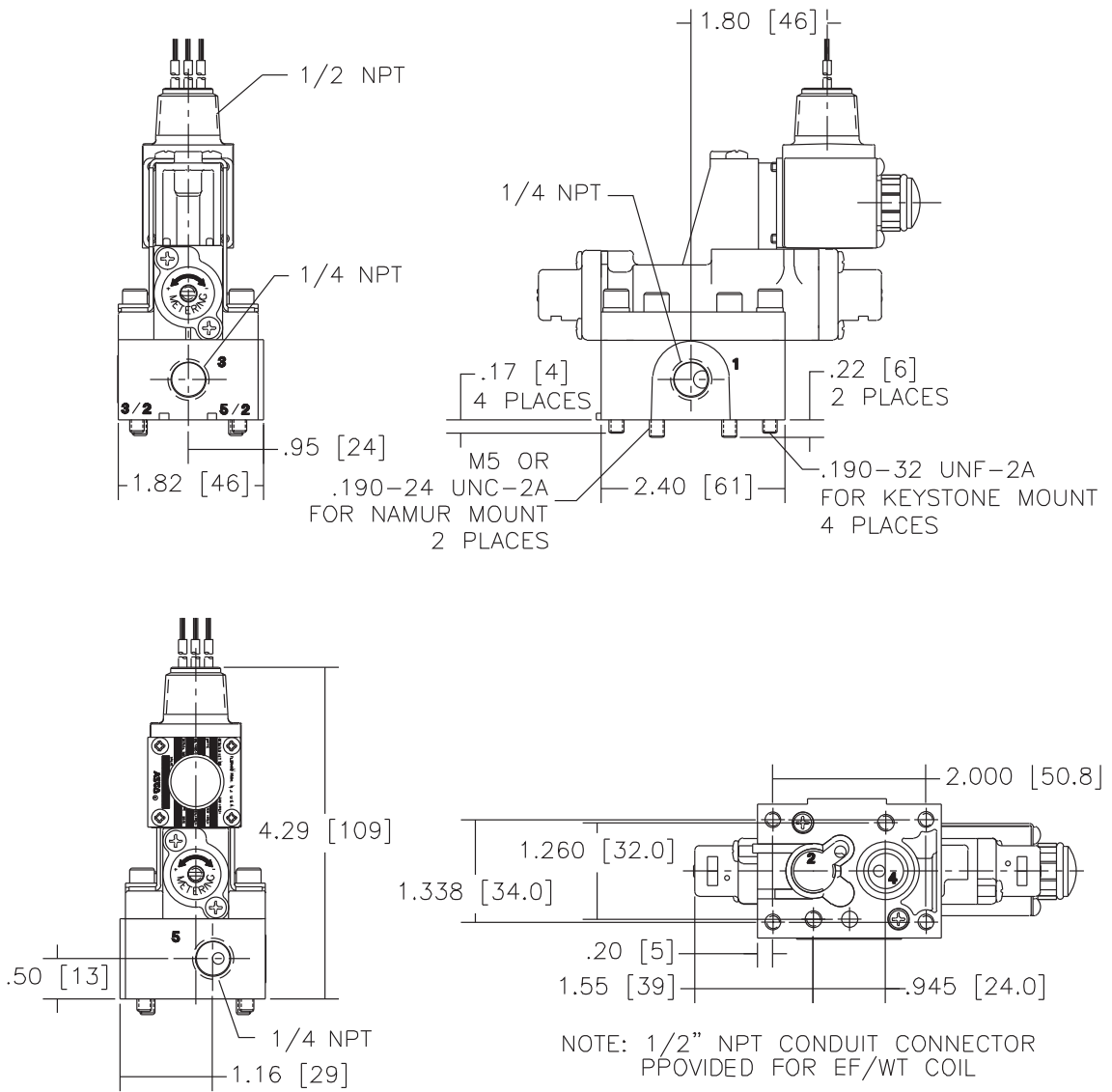
Dimensions inches (mm)



VALVE AUTOMATION

Dimensions inches (mm)

Const. Ref. 2

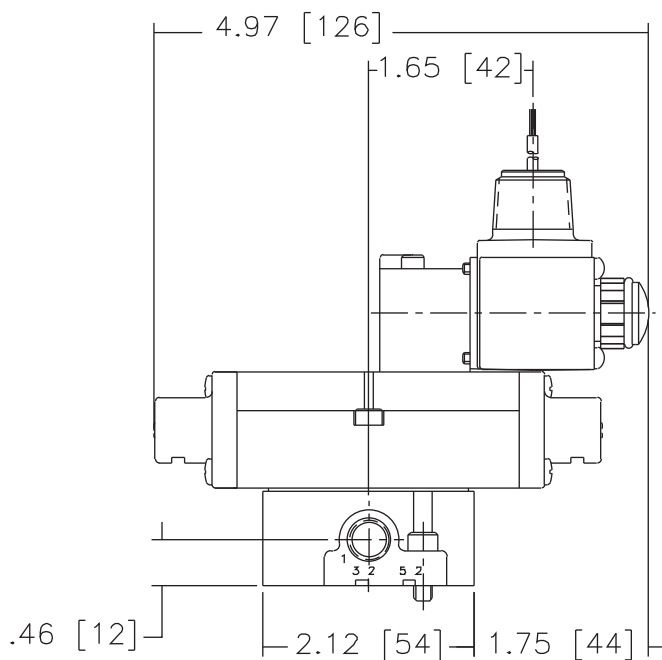
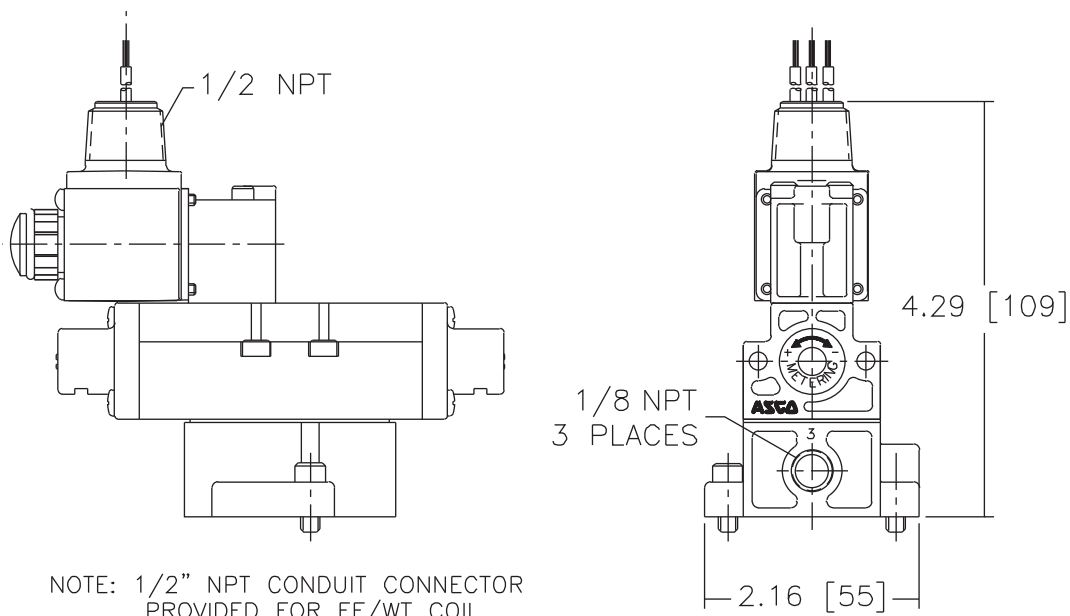


WT8401B202M-27280601

VALVE
AUTOMATION

Dimensions inches (mm)

Const. Ref. 3



VALVE
 AUTOMATION

Features

- NAMUR direct mount version of the rugged, dependable 8342 Series valves
- Direct acting, high flow slide-style valve
- No Minimum Operating Pressure Differential required to shift valve
- Available with single or dual solenoid operation
- Mechanical detent on dual solenoids holds last position, even after loss of electric power, pneumatics, or pressure

Construction

Valve Parts in Contact with Fluids		
Body	Brass	303 Stainless Steel
Seals and Discs	NBR and FKM	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Shading Coil	Copper	
Sleeve	PA	
Seats	PTFE	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Spare Coil Part Number	
	AC			General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush	AC	AC
F	20.1	35	115	272610	272614
F	16.1	45	140	272610	272614

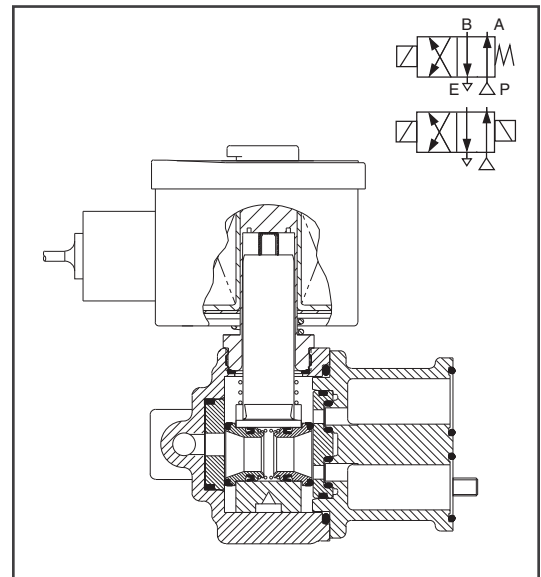
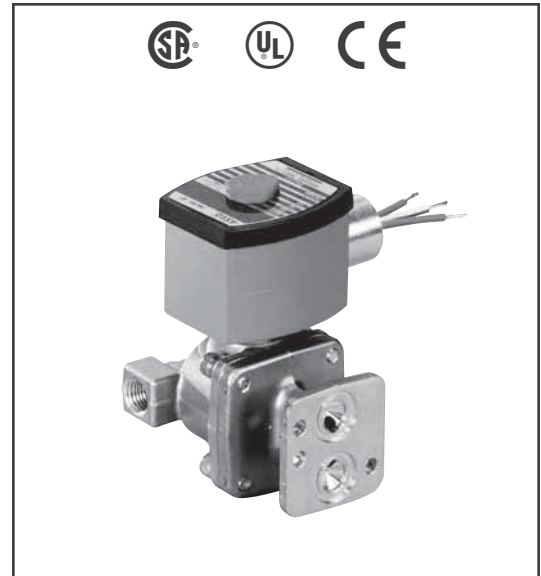
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 Must be specified when ordering. Other voltages, except combinations 120/60 and 110/50, are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to *Engineering Section* for details.

Approvals

General Purpose Solenoid:

UL recognized component, CSA certified.

Explosionproof Solenoid: (EF Brass, EV S.S)

UL listed solenoid.

CSA certified for use in hazardous Locations.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

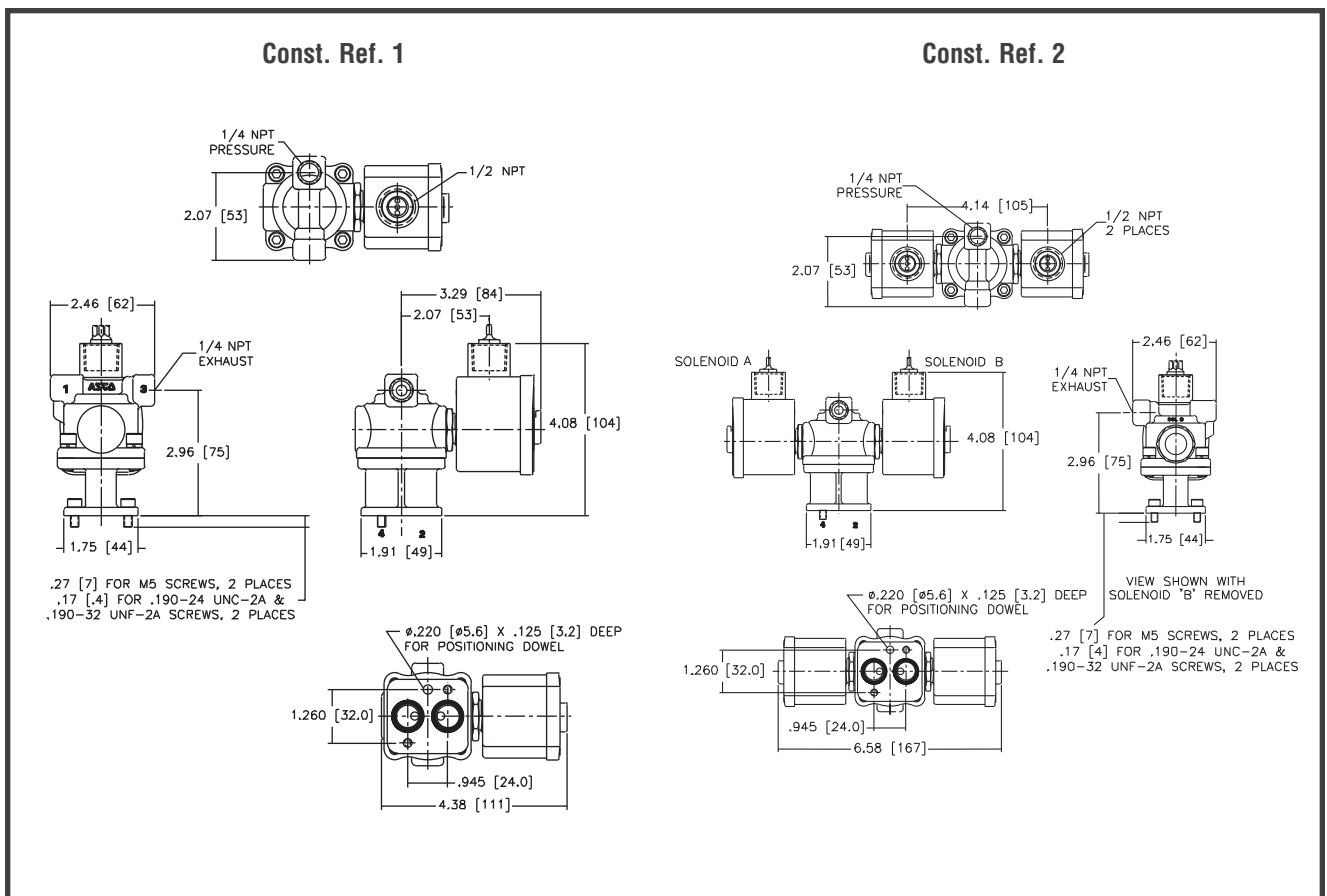
Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor Ports 1-2	Cv Flow Factor Ports 2-3	Maximum Operating Pressure Differential (psi)	Maximum Fluid Temperature Range °F	Brass Body	Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation
						Catalog Number	Catalog Number		AC
SINGLE SOLENOID									
1/4	3/16	.7	.5	125	160	8342G501	8342G511	1	20.1/F
DUAL SOLENOID									
1/4	3/16	.7	.5	125	160	8342G502	8342G512	2	16.1/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor Ports 1-2 (m3/h)	Kv Flow Factor Ports 2-3 (m3/h)	Maximum Operating Pressure Differential (bar)	Maximum Fluid Temperature Range °C	Brass Body	Stainless Steel Body	Const. Ref.	Watt Rating/ Class of Coil Insulation
						Catalog Number	Catalog Number		AC
SINGLE SOLENOID									
1/4	5	.60	.43	9	71	8342G501	8342G511	1	20.1/F
DUAL SOLENOID									
1/4	5	.60	.43	9	71	8342G502	8342G512	2	16.1/F

Dimensions inches (mm)



Features

- Compact spool valve convertible from 3/2 to 5/2
- NAMUR mount construction
- Standard manual operator
- DIN, Watertight and Explosionproof solenoids available
- Single and dual solenoid constructions
- Mountable in any position
- Vents air from spring side of actuator to prevent corrosion of actuator

Construction

Valve Parts in Contact with Fluids	
Body	Black Anodized Aluminum
Spring	Phosphate treated black steel
Shading Coil	Copper
Seals	NBR + PUR
Core and Core Tube	Stainless Steel / Brass
End Covers and Plate	6/6 glass filled PA/FV
Spool	Aluminum
Internal Parts	Zamak, Steel, CA

Electrical

Standard Coil and Class of Insulation	Enclosure Type	Watt Rating and Power Consumption				Spare Coil Part Number	
		DC Watts	AC Watts	VA Holding	VA Inrush	AC	DC
F	SC	3	2.5	3.5	6	400125	400125
F	SC	6.9	5	7	15	43004649	43004647
F	EF	6.9	6.3	7	10.1	266762	270007
F	WT	6.9	6.3	7	10.1	266763	270008

Standard Voltages: SC: 24, 120, 240 Volts AC, 50-60 Hz; 12, 24, 120 Volts DC.
 WT and EF: 24/50-60HZ, (120/60, 110-120/50)①, (240/60, 220-240/50)② Volts AC;
 6, 12, 24, 120 Volts DC.
 ① Order as 120/60, 110/50
 ② Order as 240/60, 220/50

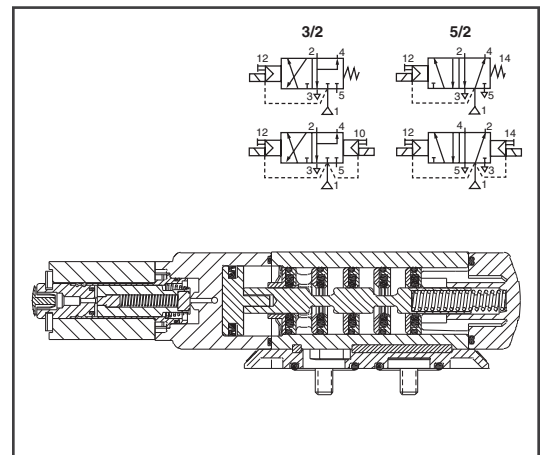
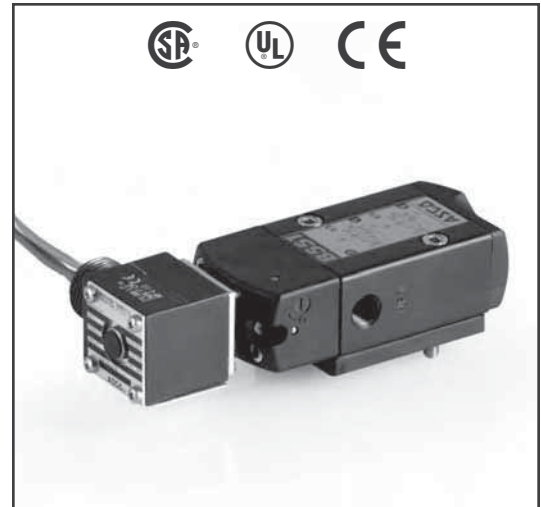
Solenoid Enclosures

Standard: - Prefix

SC = IP65 type DIN (open frame) per 46244

WT = Combination General Purpose and Watertight Types 1, 2, 3, 3S, 4, and 4X

EF = Combination Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, 5P, 7, 9 Class I, Div. 1 (Groups A - D) and Class II, Div. 1 Type 9 (Groups E-G)



VALVE AUTOMATION

Nominal Ambient Temp. Ranges

SC: AC/DC: 5°F to +140°F (-15°C to 60°C)

EF: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

WT: AC: 5°F to +140°F (-15°C to 60°C)
 DC: 5°F to +77°F (-15°C to 25°C)

Note: For temperatures below 32°F (0°C) moisture-free air must be used.

Refer to Engineering Section for details.

Approvals

SC (2.5W and 3W only) UL recognized component, CSA certified.

WT: UL recognized component, CSA certified.

EF: UL and CSA solenoid approval.
 Meets applicable CE directives.

Refer to Engineering Section for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Fluid Temperature °F (for single and dual solenoid)			Single Solenoid	Dual Solenoid	Const. Ref.	Watt Rating/ Class of Coil Insulation	
			Min.	Max.	Min.	Max. AC	Max. DC	Catalog Number	Catalog Number		AC	DC
OPEN FRAME DIN COIL												
1/4 ①	1/4	.86	30	150	5	140	140	SC8551A001MS	SC8551A002MS	1	2.5	3
1/2	1/2	3.7	30	150	-15	140	140	SC8553A001MS	SC8553A002MS	2	5	6.9
WATERTIGHT ENCLOSURE												
1/4 ①	1/4	.86	30	150	5	104	77	WT8551A001MS	WT8551A002MS	1	6.3	6.9
1/2	1/2	3.7	30	150	-15	140	140	WT8553A001MS	WT8553A002MS	2	6.3	6.9
EXPLOSIONPROOF ENCLOSURE												
1/4 ①	1/4	.86	30	150	5	104	77	EF8551A001MS	EF8551A002MS	1	6.3	6.9
1/2	1/2	3.7	30	150	-15	140	140	EF8553A001MS	EF8553A002MS	2	6.3	6.9

① 1/8 inch NPT exhausts.

Specifications (Metric units)

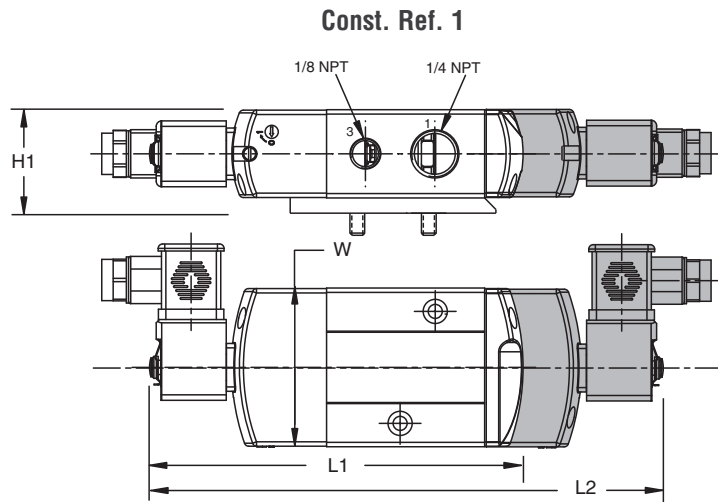
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Fluid Temperature °C (for single and dual solenoid)			Single Solenoid	Dual Solenoid	Const. Ref.	Watt Rating/ Class of Coil Insulation	
			Min.	Max.	Min.	Max. AC	Max. DC	Catalog Number	Catalog Number		AC	DC
OPEN FRAME DIN COIL												
1/4 ①	6.4	.7	2	10	-15	60	60	SC8551A001MS	SC8551A002MS	1	2.5	3
1/2	13	3.15	2	10	-25	60	60	SC8553A001MS	SC8553A002MS	2	5	6.9
WATERTIGHT ENCLOSURE												
1/4 ①	6.4	.7	2	10	-15	40	25	WT8551A001MS	WT8551A002MS	1	6.3	6.9
1/2	13	3.15	2	10	-25	60	60	WT8553A001MS	WT8553A002MS	2	6.3	6.9
EXPLOSIONPROOF ENCLOSURE												
1/4 ①	6.4	.7	2	10	-15	40	25	EF8551A001MS	EF8551A002MS	1	6.3	6.9
1/2	13	3.15	2	10	-25	60	60	EF8553A001MS	EF8553A002MS	2	6.3	6.9

① 1/8 inch NPT exhausts.

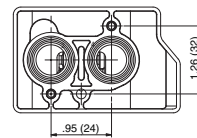
Dimensions inches (mm)

Series	8551
NPT	1/4
L1	5.47 (139)
L2	7.56 (192)
H1	1.30 (33)
W	1.77 (45)

NOTE: Valve shown with CM22
DIN terminal coil and connector.
Connector sold separately.

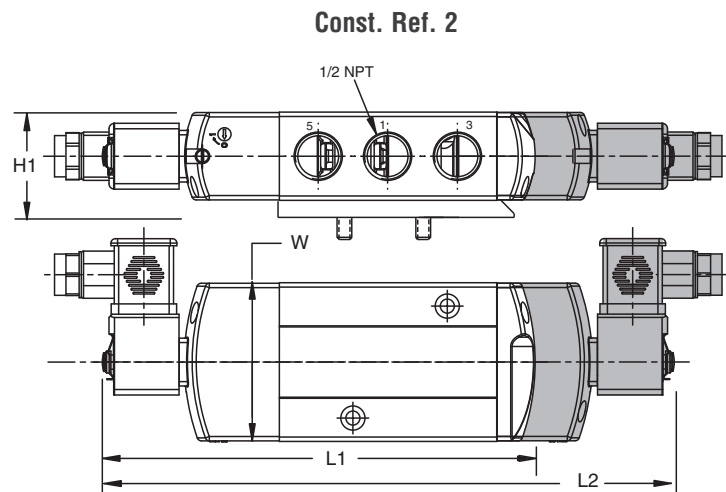


8551 NAMUR Footprint

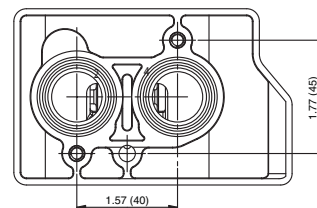


Series	8553
NPT	1/2
L1	7.76 (197)
L2	10.25 (260)
H1	1.94 (49)
W	2.85 (72)

NOTE: Valve shown with CM22
DIN terminal coil and connector.
Connector sold separately.



8553 NAMUR Footprint



VALVE
AUTOMATION



Pilot Operated • High Flow
Direct Mount RedHat II Spool Valves
 Anodized Aluminum, Brass and Stainless Steel Bodies
 1/4" and 1/2" NPT

**3/2•5/2•5/3
 SERIES
 8551, 8553
 Direct
 Mount**

Features

- Compact Spool Valve convertible from 3/2 to 5/2 with flow plates
- Mount directly to actuators with NAMUR interface per VDI/VDE 3845
- Single and dual solenoid constructions available
- Integral Breather Block vents to spring side of actuator to exhaust, preventing corrosion of the actuator
- Unique design combines hard T-seals and flexible o-rings, provides bubble-tight shutoff, resistance to dirt and multimillion cycle life controlling air or inert gas
- Low Power and Intrinsically Safe construction available
See Special Service Pilot Valve Section for details

Construction

Valve Parts in Contact with Fluids			
Body	Aluminum, Black Anodized	Brass	316L Stainless Steel
End Cover (Spring end)	Glass-filled Polyamide	Brass	316L Stainless Steel
Spool Valve Internals	Zamak, Stainless Steel, Acetal (POM), Aluminum	Brass, Acetal (POM), Delrin	
Pilot End Covers	Aluminum, Black Anodized	Brass	316L Stainless Steel
Core Tube	Stainless Steel		
Core and Plugnut	Stainless Steel		
Springs	Stainless Steel		
Seals and Discs	NBR		
Top Disc	Nylon (PA)		
Core Guide	Acetal		
Seat and Seat Insert	Brass, Acetal		
Shading Coil	Copper		
Rider Ring (low power)	PTFE		

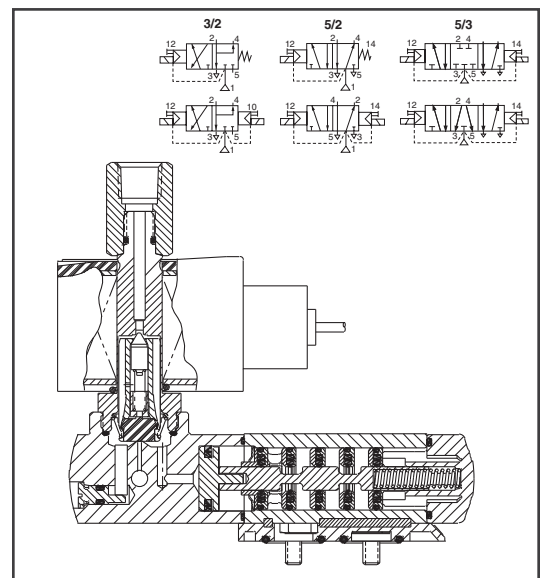
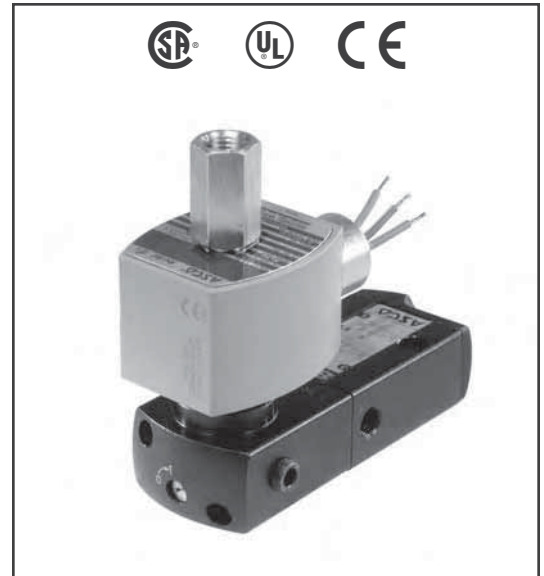
Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" or "EV" for stainless steel) to catalog number.)
See Optional Features Section for other available options.



Nominal Ambient Temp. Ranges

Body Material	Description
Aluminum	AC: 5°F to 125°F (-15°C to 52°C) DC: 5°F to 104°F (-15°C to 40°C)
Brass	AC: -40°F to 125°F (-40°C to 52°C)
Stainless Steel	DC: -40°F to 104°F (-40°C to 40°C)

Approvals

UL/CSA approvals for aluminum constructions pending. EF and EV are UL listed solenoids. CSA certified. Meet applicable CE directives.
Refer to Engineering Section for details.

VALVE AUTOMATION



Specifications (English units)

Body Material	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid						Dual Solenoid											
				Operating Pressure Differential (psi)			Max. Fluid Temp. °F			Catalog Number	Const. Ref.	Operating Pressure Differential (psi)			Max. Fluid Temp. °F			Catalog Number	Const. Ref.	Watt Rating/Class of Coil Insulation	
				Air-Inert Gas			Air-Inert Gas					Air-Inert Gas			Air-Inert Gas					AC	DC
				Min.	Max. AC	Max. DC	AC	DC	DC	Min.	Max. AC	Max. DC	AC	DC	DC	AC	DC				
Aluminum 3/2, 5/2	1/4 ①	1/4	.86	30	150	120	140	120	8551G401	1	30	150	120	140	120	8551G402	1	10.1/F	11.6/F		
Aluminum 5/3 Center Closed									-	2						8551G465	2				
Aluminum 5/3 Center Open									-	2						8551G466	2				
Brass 3/2, 5/2									EF8551G403 ②	1						EF8551G404 ②	1				
316L Stainless Steel 3/2, 5/2									EV8551G409 ③	2						EV8551G410 ③	2				
Aluminum 3/2, 5/2									8553G401	2						8553G402	2				

① 1/8 inch NPT exhaust for aluminum and brass. ② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.

Specifications (Metric units)

Body Material	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Single Solenoid						Dual Solenoid											
				Operating Pressure Differential (bar)			Max. Fluid Temp. °C			Catalog Number	Const. Ref.	Operating Pressure Differential (bar)			Max. Fluid Temp. °C			Catalog Number	Const. Ref.	Watt Rating/Class of Coil Insulation	
				Air-Inert Gas			Air-Inert Gas					Air-Inert Gas			Air-Inert Gas					AC	DC
				Min.	Max. AC	Max. DC	AC	DC	DC	Min.	Max. AC	Max. DC	AC	DC	DC	Min.	Max. AC	Max. DC	AC		
Aluminum 3/2, 5/2	1/4 ①	6.4	.7	2	10	8.2	60	48	8551G401	1	2	10	8.2	60	48	8551G402	1	10.1/F	11.6/F		
Aluminum 5/3 Center Closed									-	2						8551G465	2				
Aluminum 5/3 Center Open									-	2						8551G466	2				
Brass 3/2, 5/2									EF8551G403 ②	1						EF8551G404 ②	1				
316L Stainless Steel 3/2, 5/2									EV8551G409 ③	2						EV8551G410 ③	2				
Aluminum 3/2, 5/2									8553G401	2						8553G402	2				

① 1/8 inch NPT exhaust for aluminum and brass. ② Brass construction supplied standard with EF solenoid. ③ Stainless steel construction supplied standard with EV solenoid.

VALVE AUTOMATION

Dimensions inches (mm)

Series	8551
NPT	1/4
L1 ①	4.96 (126)
L2 ①	6.50 (165)
H2	4.38 (111)
H1	1.57 (40)
W	1.77 (45)

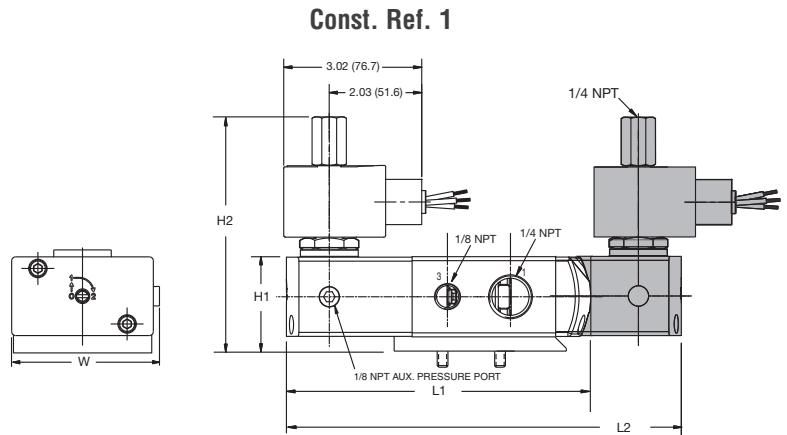
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

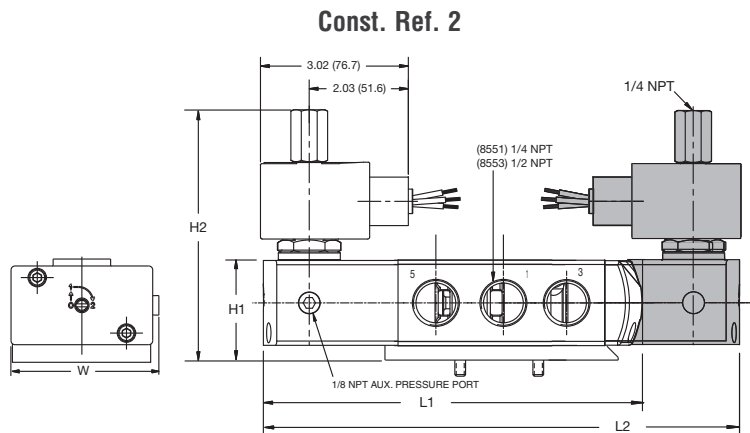
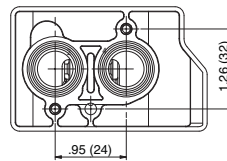
Series	8551 (5/3)	8553
NPT	1/4	1/2
L1 ①	-	7.09 (180)
L2 ①	7.44 (189)	8.85 (225)
H2	4.38 (111)	4.77 (121)
H1	1.57 (40)	2.08 (53)
W	1.77 (45)	2.87 (73)

① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

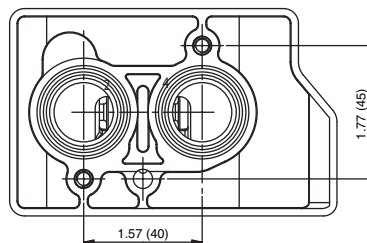
Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand



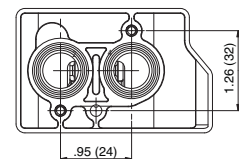
8551 NAMUR Footprint



8553 NAMUR Footprint



8551 NAMUR Footprint



Features

- Unique 3-way design for locking quarter turn actuators in multiple positions for applications which require modulated flow
- Solenoids can be pulsed independently to bleed air into or out of actuator for fine positioning
- Direct acting on/off construction
- NAMUR mount construction reduces complex piping arrangements
- 10X32, 10X24, M5 hardware supplied

Construction

Valve Parts in Contact with Fluids		
Body	Brass	303 Stainless Steel
Seals and Discs	NBR	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel	
Shading Coil	Copper	Silver
Disc-Holder	CA	
Core Guide	CA	

Electrical

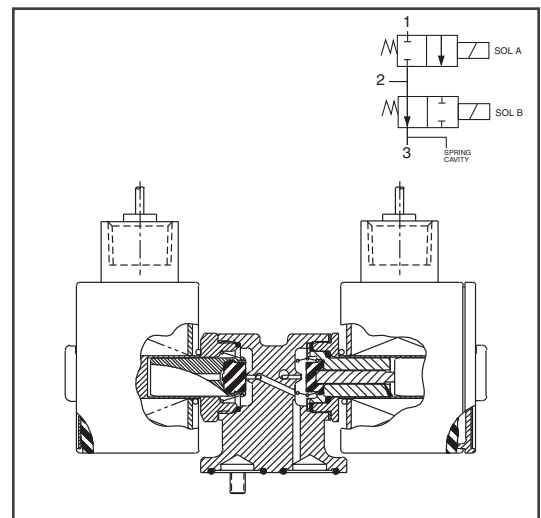
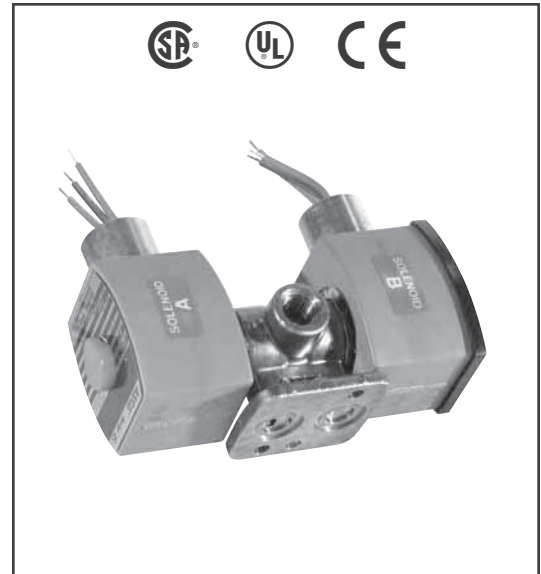
Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714

Standard Voltages: 24, 120, 240, 480 volts AC, (or 100, 200 volts AC, 50 Hz)
6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.



Options

Explosionproof solenoids are available.

Prefix EF - Brass

Prefix EV - Stainless Steel

All other RedHat Solenoid options are available.

Optional elastomer contact ASCO.

Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to Engineering Section for details.

Approvals

UL recognized component. CSA certified.

Meets applicable CE directives.

Refer to Engineering Section for details.

VALVE
AUTOMATION

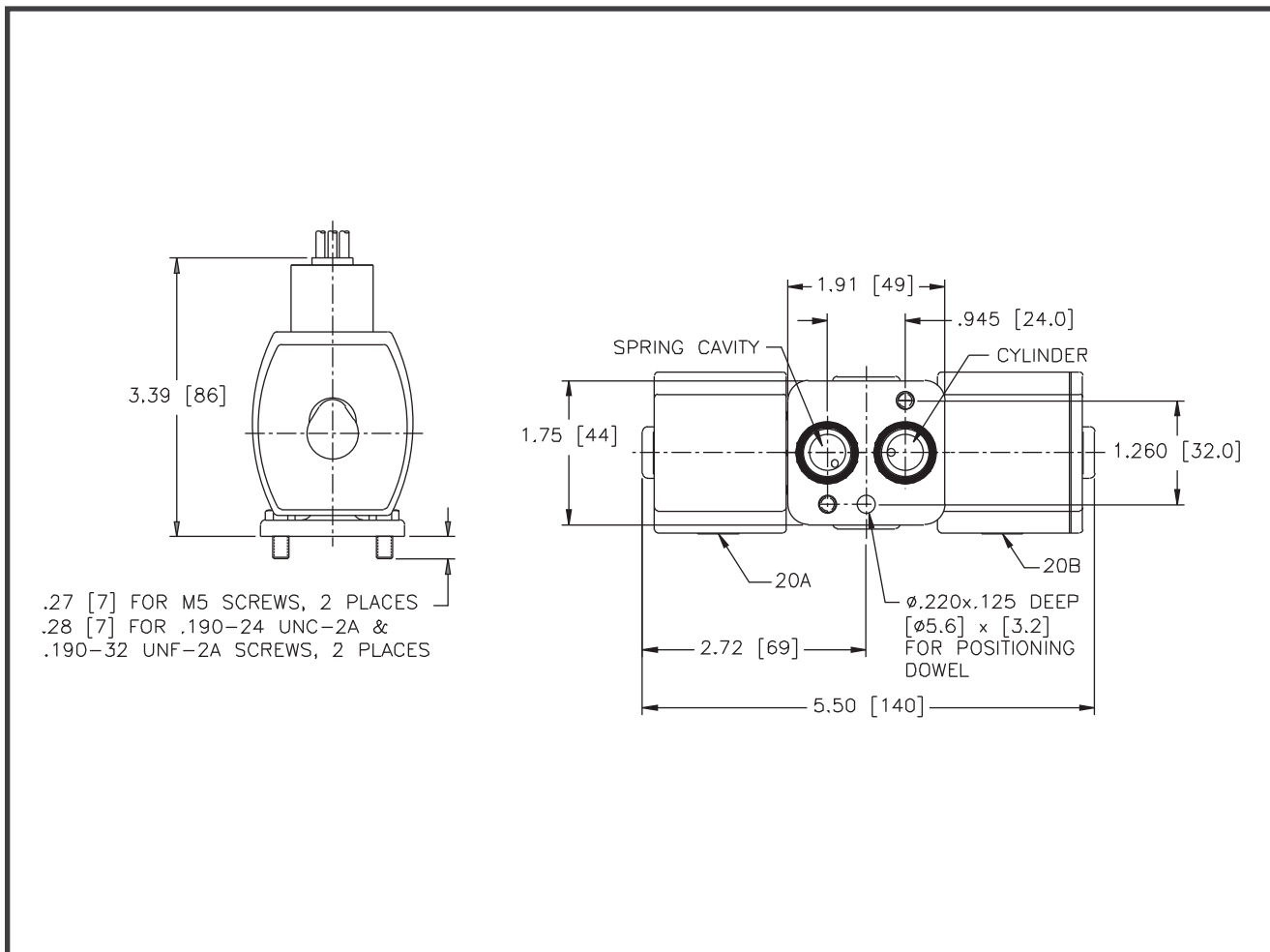
Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid Temp. °F		Brass Body	Stainless Steel Body	Watt Rating/ Class of Coil Insulation	
			Max. AC	Max. DC	AC	DC			AC	DC
1/4	1/16	.09	150	125	140	120	8320G706	8320G716	10.1/F	11.6/F
1/4	3/32	.12	120	100	140	120	8320G707	8320G717	10.1/F	11.6/F
1/4	1/8	.25	100	65	140	120	8320G708	8320G718	10.1/F	11.6/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Max. Fluid Temp. °C		Brass Body	Stainless Steel Body	Watt Rating/ Class of Coil Insulation	
			Max. AC	Max. DC	AC	DC			AC	DC
1/4	1.6	.07	10	9	60	50	8320G706	8320G716	10.1/F	11.6/F
1/4	2.4	.10	8	6.9	60	50	8320G707	8320G717	10.1/F	11.6/F
1/4	3.2	.16	6.9	4	60	50	8320G708	8320G718	10.1/F	11.6/F

Dimensions inches (mm)



One of ASCO's many strengths is the breadth of our product line and our ability to provide customers with the best valve for the application. Our Special Service valves are key to meeting these varied requirements. As listed in the index below ASCO has focused product lines which meet special application parameters from steam to vacuum. These Special Service valves are capable of meeting typically harsh applications where more standard solenoid valves are not able to meet the specifications or lifetime requirements.

They also can relate to the media which is being handled, the operating conditions, the application specifications or environment. The valves in this section consist of 2-way valves, 3-way valves, 4-way valves, and air-operated valves.

If you cannot find the valves you need in this section, ASCO has the industry's largest staff of design engineers to possibly create the special valve you might need for your unique application.

Contact the ASCO office nearest you for details.

Index

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www.ascovalve.com



The 8290 Series consists of 2-way direct acting valves available in normally closed or normally open constructions. Built for demanding applications, these valves come in a straight-through body design made of bronze or stainless steel. There are many optional features including visual/ electrical position indicator or a stroke limiter. The 8290 Series is suitable for the following applications:

- General Service (air, inert gas, water, oil, light slurries)
- Steam and Hot Water

Construction

Valve Parts in Contact with Fluids			
Part	32mm	50mm-125mm	50mm-125mm ①
Body	316L Stainless Steel	Bronze	316L Stainless Steel
Stem	316L Stainless Steel	431 Stainless Steel	431 Stainless Steel
Stuffing Box	316L Stainless Steel	Brass	303 Stainless Steel
Stuffing Box Seal	PTFE	PTFE Chevron	PTFE Chevron
Wiper Seal	FKM	FKM	FKM
Disc	316L Stainless Steel	Brass	304L Stainless Steel
Disc Seal	PTFE	PTFE	PTFE
Screw	316L Stainless Steel	-	-

① For all optional AISI 316L Stainless Steel constructions, contact ASCO

Specifications

Ambient Temperature Range: 15°F to 140°F (32°F to 122°F for proportional)

Pilot Fluid Temperature Range: 15°F to 140°F

Maximum Viscosity: 2,700 SSU

For higher viscosity applications, please consult ASCO.

Alternate Valve constructions

- Oxygen service, add suffix "N"
- Medium vacuum service up to 7×10^{-3} Torr, add suffix "VM"
- Visual Position Indicator for normally closed valve with 32mm or 50mm operator, add suffix "VI" (note: position indicator standard on 63mm through 125mm operators).
- NET-INOX treatment (stainless steel valve body pickled in nitric/hydrofluoric acid bath), add suffix "NI"
- All 316L Stainless Steel versions (available on request).

See page 214 for the following constructions:

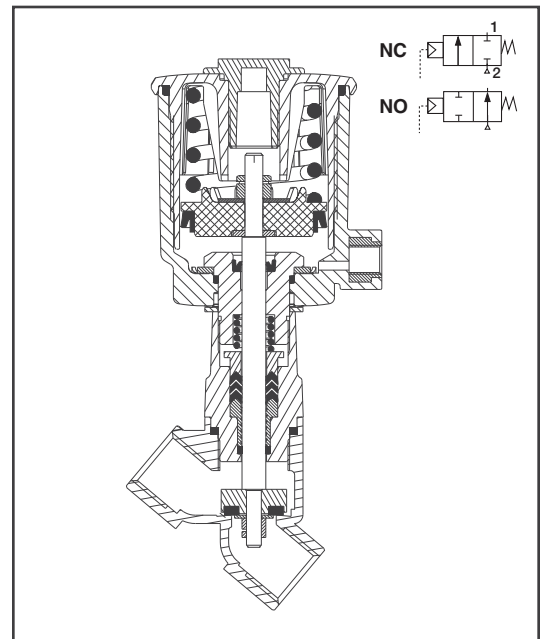
Compact Positioner for proportional control

Compact Signaling Unit

Signaling Box

Linear Position Indicator

Stroke Limiter



SPECIAL SERVICE VALVES

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow		Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Bronze	Stainless Steel ①	Air or Water Pilot Pressure (psi)		Approx. Shipping Weight (lbs.)
				Min.	Max. Fluids	Max. Steam				Min.	Max.	
		On-Off	Prop.									
32 mm Operator												
Normally Closed - Entry Under the Disc ③												
3/8	3/8	2.3	-	0	240	150	366	-	8290A791	60	150	1.3
1/2	1/2	4.1	-	0	180	150	366	-	8290A792	60	150	1.4
3/4	3/4	7.6	-	0	90	90	366	-	8290A793	60	150	1.6
Normally Open - Entry Under the Disc												
3/8	3/8	2.3	-	0	240	150	366	-	8290A794	I ②	150	1.3
1/2	1/2	4.1	-	0	240	150	366	-	8290A795	I ②	150	1.4
3/4	3/4	7.6	-	0	200	150	366	-	8290A796	I ②	150	1.6
Normally Closed - Entry Above the Disc for Rapid Cycling Steam Applications												
3/8	3/8	2.3	-	0	-	150	366	-	8290A797	II ②	150	1.6
1/2	1/2	4.1	-	0	-	150	366	-	8290A798	II ②	150	1.4
3/4	3/4	7.6	-	0	-	150	366	-	8290A799	II ②	150	1.6
50 mm Operator												
Normally Closed - Entry Under the Disc ③												
1/2	1/2	5.7	5.3	0	240	150	366	8290A384	8290A393	60	150	2.7
3/4	3/4	11	8.3	0	150	150	366	8290A385	8290A394	60	150	2.9
1	1	15	-	0	90	90	366	8290A386	8290A395	60	150	3.7
Normally Open - Entry Under the Disc												
1/2	1/2	5.7	-	0	240	150	366	8290A387	8290A396	III ②	150	2.7
3/4	3/4	11	-	0	240	150	366	8290A388	8290A397	III ②	150	2.9
1	1	15	-	0	240	150	366	8290A389	8290A398	III ②	150	3.7
Normally Closed - Entry Above the Disc for Rapid Cycling Steam Applications ③												
1/2	1/2	5.7	-	0	-	150	366	8290A390	8290A399	IV ②	150	2.7
3/4	3/4	11	-	0	-	150	366	8290A391	8290A400	IV ②	150	2.9
1	1	15	-	0	-	150	366	8290A392	8290A401	IV ②	150	3.7
63 mm Operator												
Normally Closed - Entry Under the Disc												
1/2	1/2	5.7	-	0	240	150	366	8290B002	8290B045	38	150	3.6
3/4	3/4	11	8.3	0	240	150	366	8290B005	8290B048	60	150	3.9
1	1	19	17	0	150	150	366	8290B010	8290B053	60	150	4.7
1 1/4	1 1/4	32	24	0	90	90	366	8290A016	8290A059	60	150	6.0
1 1/2	1 1/2	52	33	0	60	60	366	8290A020	8290A063	60	150	8.0
2	2	68	46	0	40	40	366	8290A024	8290A067	60	150	10.0
Normally Open - Entry Under the Disc												
1/2	1/2	5.7	-	0	240	150	366	8290B026	8290B069	V ②	150	3.6
3/4	3/4	11	-	0	240	150	366	8290B027	8290B070	V ②	150	3.9
1	1	19	-	0	240	150	366	8290B028	8290B071	V ②	150	4.7
1 1/4	1 1/4	32	-	0	240	150	366	8290A030	8290A073	V ②	150	6.0
1 1/2	1 1/2	52	-	0	160	150	366	8290A032	8290A075	V ②	150	8.0
2	2	68	-	0	105	105	366	8290A034	8290A077	V ②	150	10.0
Normally Closed - Entry Above the Disc for Rapid Cycling Steam Applications												
1/2	1/2	5.7	-	0	-	150	366	8290B036	8290B079	VI ②	150	3.6
3/4	3/4	11	-	0	-	150	366	8290B037	8290B080	VI ②	150	3.9
1	1	19	-	0	-	150	366	8290B038	8290B081	VI ②	150	4.7
1 1/4	1 1/4	32	-	0	-	150	366	8290A039	8290A082	VI ②	150	6.0
1 1/2	1 1/2	52	-	0	-	150	366	8290A040	8290A083	VI ②	150	8.0
2	2	68	-	0	-	135	366	8290A042	8290A085	VI ②	150	10.0

① Available with NET-INOX treatment, add suffix "NI"; ② Minimum pilot pressure varies, see identified graph for appropriate values; ③ For Visual Position Indicator add suffix "VI".

SPECIAL SERVICE VALVES



Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow		Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Bronze	Stainless Steel ①	Air or Water Pilot Pressure (psi) ②		Approx. Shipping Weight (lbs.)
				On-Off	Prop.	Min.				Max.		
		Fluids	Steam									
90 mm Operator												
Normally Closed - Entry Under the Disc												
1	1	19	17	0	240	150	366	8290B011	8290B054	60	150	6.5
1 1/4	1 1/4	32	24	0	180	150	366	8290A017	8290A060	60	150	7.7
1 1/2	1 1/2	52	33	0	120	120	366	8290A021	8290A064	60	150	9.5
2	2	68	46	0	90	90	366	8290A025	8290A068	60	150	16.0
Normally Open - Entry Under the Disc												
1	1	19	-	0	240	150	366	8290B029	8290B072	VII ②	150	6.5
1 1/4	1 1/4	32	-	0	240	150	366	8290A031	8290A074	VII ②	150	7.7
1 1/2	1 1/2	52	-	0	240	150	366	8290A033	8290A076	VII ②	150	9.5
2	2	68	-	0	200	150	366	8290A035	8290A078	VII ②	150	16.0
Normally Closed - Entry Above the Disc for Rapid Cycling Steam Applications												
1 1/4	1 1/4	32	-	0	-	150	366	8290A136	8290A137	VIII ②	150	7.7
1 1/2	1 1/2	52	-	0	-	150	366	8290A041	8290A084	VIII ②	150	9.5
2	2	68	-	0	-	150	366	8290A043	8290A086	VIII ②	150	16.0
125 mm Operator												
Normally Closed - Entry Under the Disc												
1 1/4	1 1/4	34	34	0	240	150	366	8290A642	8290A646	60	150	13.5
1 1/2	1 1/2	56	56	0	240	150	366	8290A482	8290A495	60	150	15.0
2	2	77	77	0	150	150	366	8290A485	8290A498	60	150	17.0
2 1/2	2 1/2	130	86	0	90	90	366	8290A488	8290A501	60	150	21.5
Normally Open - Entry Under the Disc												
1 1/4	1 1/4	34	-	0	240	150	366	8290A643	8290A647	IX ②	150	13.5
1 1/2	1 1/2	56	-	0	240	150	366	8290A489	8290A502	IX ②	150	15.0
2	2	77	-	0	240	150	366	8290A490	8290A503	IX ②	150	17.0
2 1/2	2 1/2	130	-	0	240	150	366	8290A492	8290A505	IX ②	150	21.5

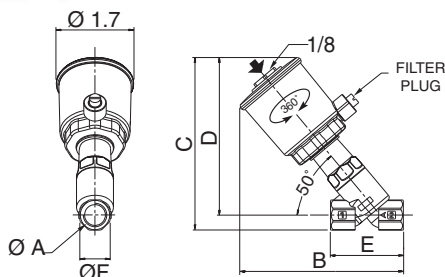
① Available with NET-INOX treatment, add suffix "NI"; ② Minimum pilot pressure varies, see identified graph for appropriate values.

Dimensions inches (mm)

32 mm Operator						
	ØA	B	C	D	E	ØF
Ins.	3/8	3.62	3.66	3.21	2.17	0.93
Ins.	1/2	3.90	3.82	3.29	2.56	1.10
Ins.	3/4	4.21	4.11	3.46	2.95	1.26

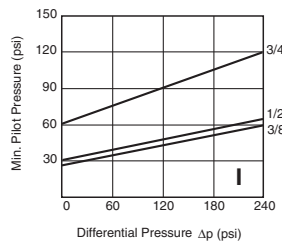


Normally Open

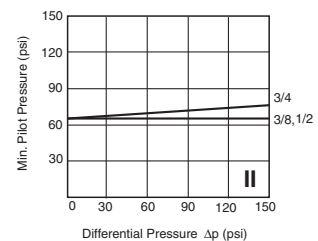


32 mm Operator Graphs for Steam and Fluids

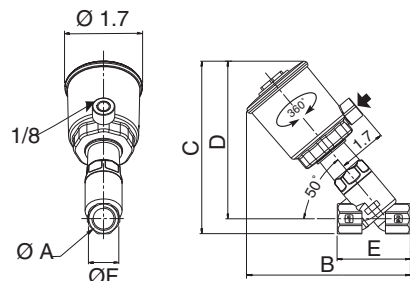
Normally Open Valve - Entry under Disc



Normally Closed Valve - Entry above Disc



Normally Closed

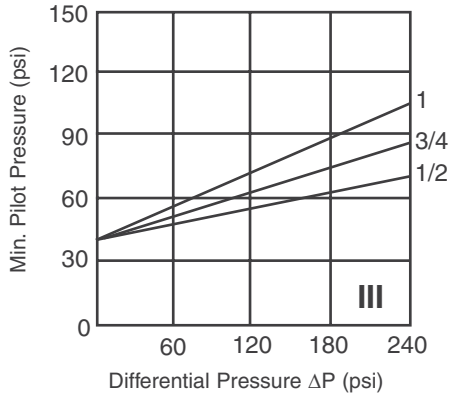


SPECIAL SERVICE VALVES

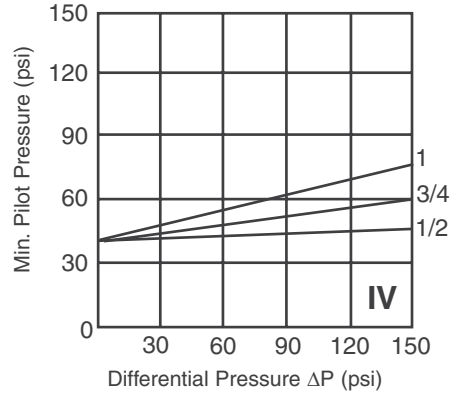
Dimensions inches (mm)

50 mm Operator Graphs for Steam and Fluids

Normally Open Valve - Entry Under Disc



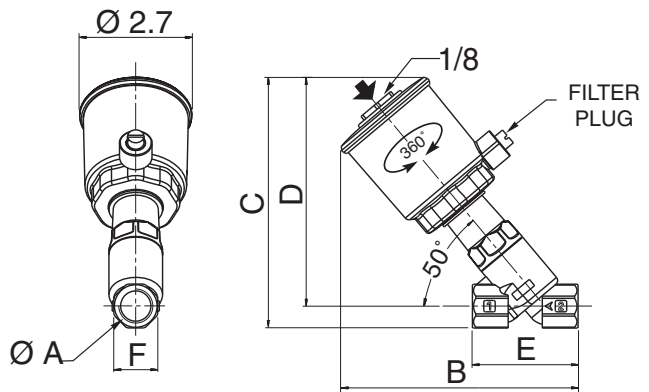
Normally Closed Valve - Entry Above Disc



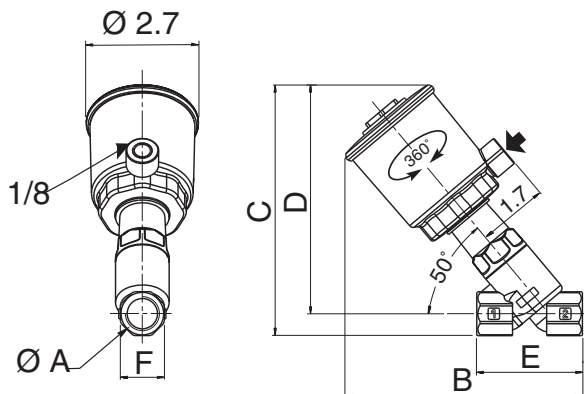
50 mm Operator						
	ØA	B	C	D	E	F
Ins.	1/2	5.59	6.08	5.55	2.56	1.06
Ins.	3/4	5.92	6.26	5.63	2.95	1.26
Ins.	1	6.10	6.50	5.71	3.54	1.61



Normally Open



Normally Closed

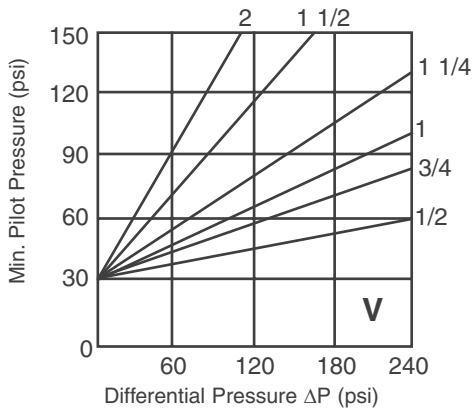


SPECIAL SERVICE VALVES

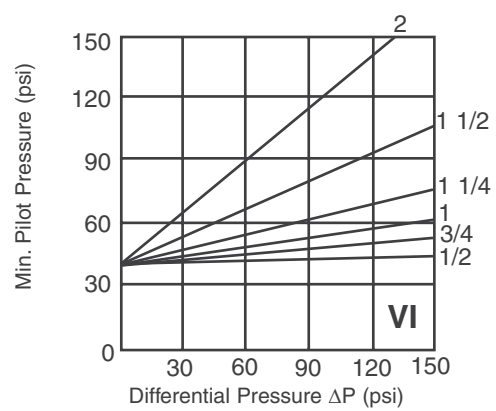
Dimensions inches (mm)

63 mm Operator Graphs for Steam and Fluids

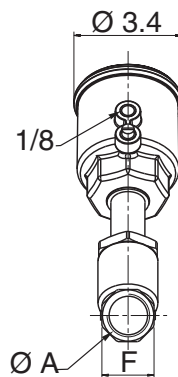
Normally Open Valve - Entry Under Disc



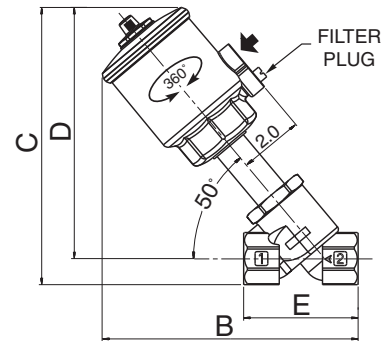
Normally Closed Valve - Entry Above Disc



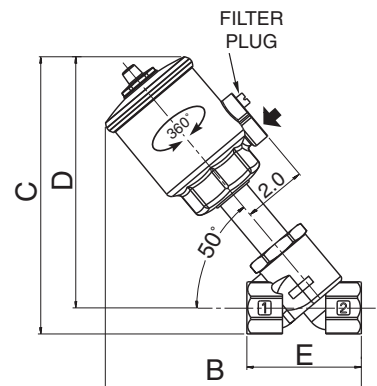
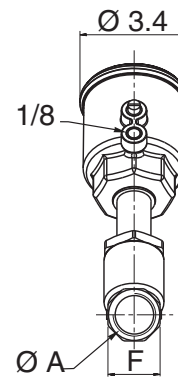
63 mm Operator						
	ØA	B	C	D	E	F
Ins.	1/2	6.70	7.20	6.60	2.56	1.06
Ins.	3/4	6.80	7.30	6.70	2.95	1.26
Ins.	1	7.20	7.70	6.90	3.54	1.61
Ins.	1 1/4	8.54	9.01	8.03	4.33	1.97
Ins.	1 1/2	8.82	9.64	8.46	4.72	2.36
Ins.	2	9.80	10.20	8.82	5.90	2.76



Normally Open



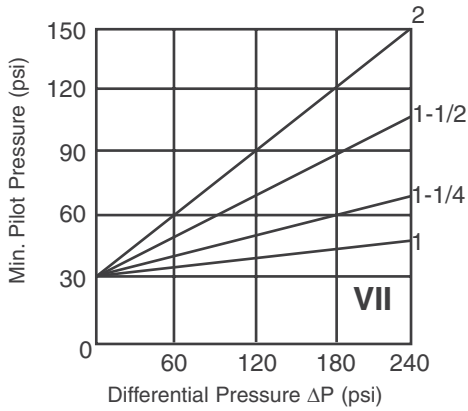
Normally Closed



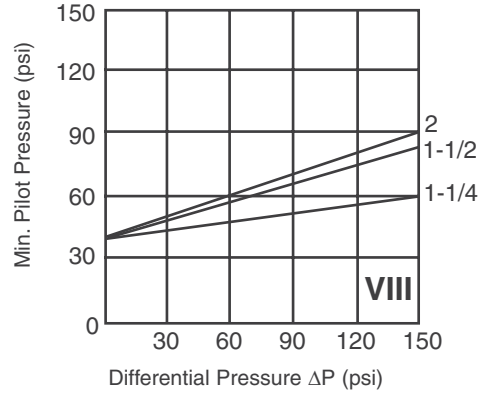
Dimensions inches (mm)

90 mm Operator Graphs for Steam and Fluids

Normally Open Valve - Entry Under Disc

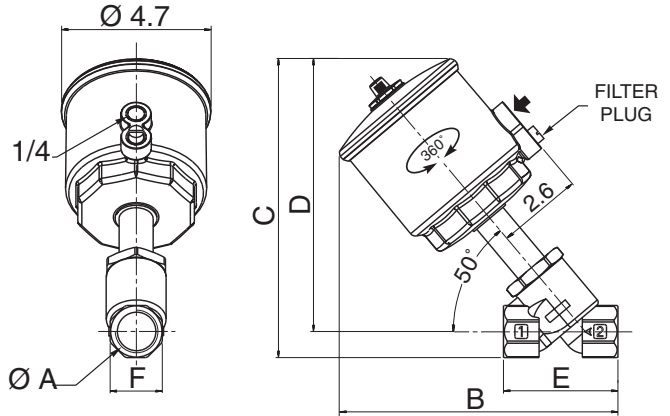


Normally Closed Valve - Entry Above Disc

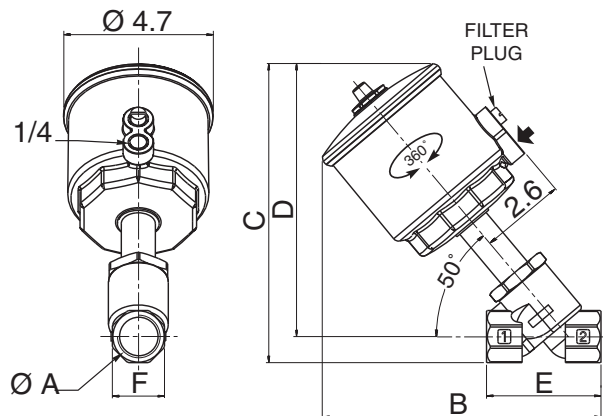


90 mm Operator						
	ØA	B	C	D	E	F
Ins.	1	8.00	8.50	7.70	3.54	1.61
Ins.	1 1/4	9.29	9.69	8.70	4.33	1.97
Ins.	1 1/2	9.57	10.31	9.13	4.72	2.36
Ins.	2	10.51	10.87	9.49	5.91	2.76

Normally Open



Normally Closed

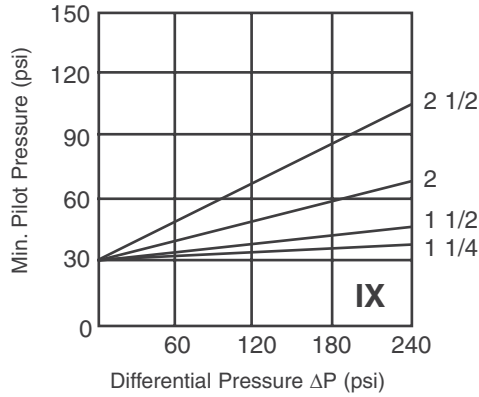


SPECIAL
SERVICE VALVES

Dimensions inches (mm)

125 mm Operator Graphs for Steam and Fluids

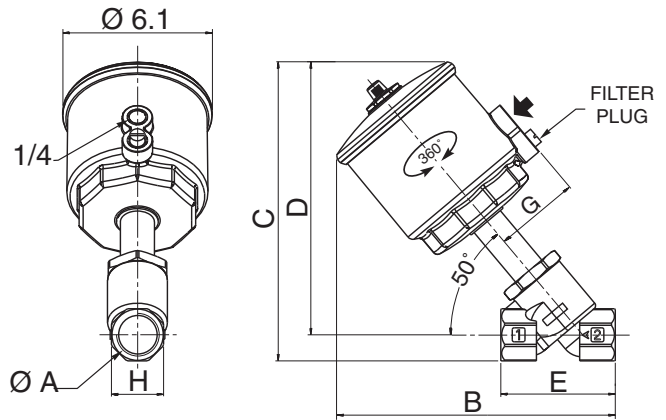
Normally Open Valve - Entry Under Disc



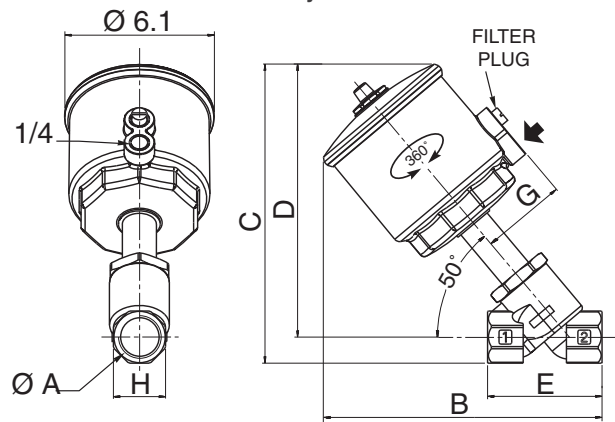
125 mm Operator							
	ØA	B	C	D	E	G	H
Ins.	1 1/4	11.10	11.70	10.70	4.30	3.10	2.00
Ins.	1 1/2	11.50	12.30	11.20	4.70	3.10	2.40
Ins.	2	12.40	12.90	11.50	6.00	3.10	2.80
Ins.	2 1/2	13.70	13.90	12.10	7.50	3.10	3.10



Normally Open



Normally Closed



SPECIAL SERVICE VALVES

Compact Positioners for Proportional control

Varies flow proportional to a 0-10 VDC, 0-20 mA or 4-20 mA control signal. Feedback of valve stem position via a linear potentiometer. Uses a profiled disc for flow characterization. Assembly available on 50mm through 125mm operators, normally closed with fluid entry under disc. Positioner not suitable for water piloting. (e.g., 8290A384PDB04)

Control Signal	Add Suffix
0-10 VDC	PDB04
0-20 mA	PDB05
4-20 mA	PDB06

Compact Signaling Unit

This unit has an extension rod in place of the standard visual indicator, which contains the permanent magnet and field adjustable mini-detectors. Valve stem position is sensed by one or two mini-reed switch detectors with either an integral M8 3-pin connector or a 2 meter cable with leads. Order "Support & Rod" and "Reed Switches". (e.g., 855 29 032 & 881 00 140)

Support & Rod		Reed Switch (Each)	
50mm NC	63, 90, 125 NC/NO	W/Connector	W/Leads
885 29 032	885 29 027	881 00 140	881 00 142

Signaling Box

Supplied with two mechanical or inductive switches with LEDs, and mounts on top of the valve operator in place of the standard visual indicator. As the valve cycles, cams on the signaling box lengthening stem operate the switches to provide electrical signaling of the valve position. The signaling box can rotate 360°.

Switches	Add Suffix
Two Mechanical	SM2
Two Inductive	SI2
Two Intrinsically Safe	SH2

Assembly available on 50mm normally closed and 63mm through 125mm normally open and normally closed. (e.g., 8290A384SM2)

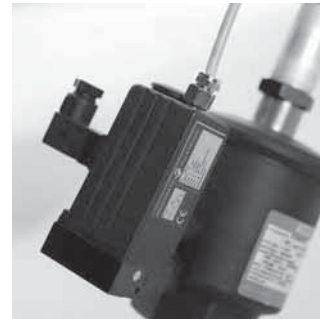
Linear Position Indicator (HS Series)

Supplied with two mechanical or REED switches and mounts on top of the valve operator in place of the standard visual indicator. Provides a wiring box with conduit connections. HS1,2,3 indicators are suitable for hazardous locations while the HS4 indicator is suitable for non-hazardous locations. Optional AS-interface® and DeviceNet® communications available. Consult ASCO for details and ordering.

AS-interface is a registered trademark of ATO. DeviceNet is a registered trademark of ODVA.

Stroke limiter

The stroke limiter allows Cv flow to be adjusted from 0% to 100%, and mounts on top of the 8290 Series valve in place of the position indicator. Assembly available onto 50mm (normally closed) and 63mm through 125mm normally closed valves with fluid entry under the disc. Add suffix M: (e.g., 8290B002M)



SPECIAL SERVICE VALVES

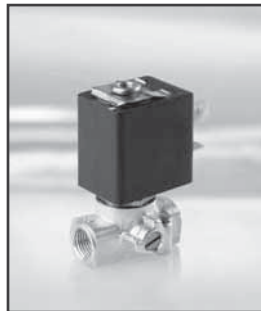
Pilot Valves

ASCO offers a variety of 3-way direct acting normally closed pilot valves to pilot 32mm through 125mm 8290 valves. Available in direct, in-line, and remote mounting. To order, specify catalog number and voltage (24, 120, 240 AC/60Hz or 110, 220 AC/50Hz or 6, 12, 24, 120/DC).



Series 189

- Direct Mount
- Swivel "Banjo" fittings, 1/8" NPT male
- Inlet for 4mm plastic tube
- DIN plug connection



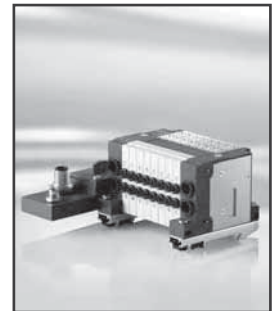
Series 8356

- In-line mount
- 1/8" NPT
- Brass or 316 stainless steel
- DIN plug connection



Series 8320

- In-line mount
- 1/8" or 1/4" NPT
- Brass or stainless steel
- (Explosion Proof optional, add prefix EF)



Compact 8

- Remote mount
- 4 to 16 valves
- Compatible with AS-interface, DeviceNet, Profibus, and others
- Air service only

Specifications (for use on 8290 Series)

Catalog Number	Pipe Size (ins.)	Orifice Dia. (ins.)	Cv Flow ③		Operating Pressure Differential (psi)		Max. Fluid Temp. °F		Watt Rating/Class of Coil Insulation		Body Material	Speed Control on Exhaust Port
			P-C	C-E	AC	DC	AC	DC	AC	DC		
SERIES 189												
18900049 ①④	1/8	1/16	.04	.06	150	150	140	140	2.2/F	2.5/F	Polyamide	Yes
18900036 ①④	1/8	1/16	.04	.06	150	150	140	140	2.2/F	2.5/F	Polyamide	-
SERIES 8356												
SC8356A001V ①	1/8	3/64	.06	.06	230	230	180	180	6.3/F	6.9/F	Brass	-
SC8356A013V ①	1/8	3/64	.06	.06	230	230	180	180	6.3/F	6.9/F	Stainless Steel	-
SERIES 8320												
8320G130 ①	1/8	3/64	.06	.06	175	125	140	120	9.1/F	10.6/F	Brass	-
8320G140 ①	1/8	3/64	.06	.06	175	125	140	120	9.1/F	10.6/F	Stainless Steel	-
8320G174 ②	1/4	3/32	.12	.12	100	60	200	150	17.1/F	11.6/F	Brass	-
8320G200 ②	1/4	3/32	.12	.12	100	60	200	150	17.1/F	11.6/F	Stainless Steel	-

① Use with 32mm, 50mm, and 63mm operators; ② Use with 90mm and 125mm operators; ③ P = Pressure, C = Cylinder, E = Exhaust.
④ Air service only.

SPECIAL SERVICE VALVES

Features

- Unique sealing member isolates pilot air pressure from mainline fluid
- Variations in pilot air pressure do not affect valve operation
- Design provides long life handling of lubricated air
- Handle fluids up to 200°F (92°C)
- Some constructions handle steam up to 353°F (177°C)
- Mountable in any position

Construction

Valve Parts in Contact with Fluids		
Body	Brass	Stainless Steel
Seat	NBR or PTFE (for steam service)	

Air Operators

Connection Size: 1/8" NPT.

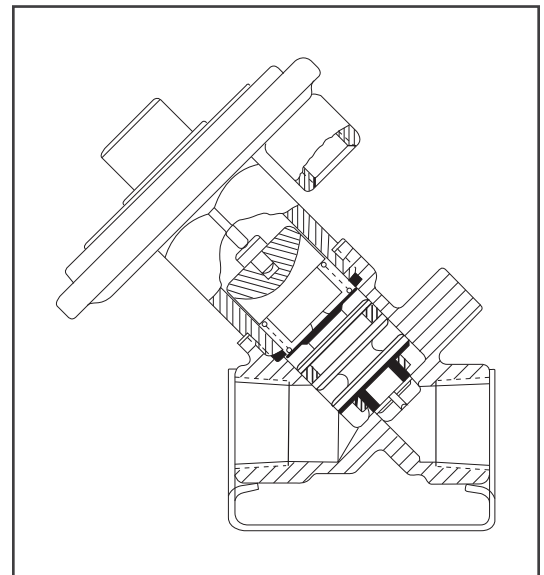
Actuated Displacement Volume: 0.60 cu. ins. for 3-30 psi operators;
 0.25 cu. ins. for 30-125 psi operator.

Media: Air

(For vacuum or other media, consult your local ASCO sales office for details. Refer to Optional Features Section for other available manual operators.)

Important

On 3-way and 4-way valves, except for those with zero minimum operating pressure, 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 similar components must be installed in the cylinder lines only.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to Engineering Section for details.

Ordering Information

We must have catalog number, operating pressure, and fluid to be handled. Use strainers with air operated valves.

Refer to Engineering Section for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Main Line Operating Pressure (psi)					Max. Fluid Temp. °F	Instrument Air Operator 3-30 psi Range ①		Pneumatic Operator 30-125 psi Range ①	
			Min.	Maximum			Catalog Number		Const. Ref.	Catalog Number	Const. Ref.	
				Air-Inert Gas	Water	Lt. Oil @ 300 SSU						Steam
2/2 VALVES												
NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seating												
1/4	5/32	.50	0	125	125	125	-	200	F262B202K	1	P262B202	1
1/4	9/32	.96	0	40	40	40	-	200	F262C090K	1	P262C090 ②	1
3/8	5/8	2.8	0	125	125	125	-	180	F210C093K	6	P210C093	6
3/8	3/8	1.5	1 ⑥	125	125	125	-	200	F210C073K	3	P210C073	3
1/2	7/16	2.2	1 ⑥	125	125	125	-	200	F210A015K	4	P210A015	4
1/2	5/8	3.6	0	125	125	125	-	180	F210C094K	6	P210C094	6
3/4	3/4	5.5	0	125	125	125	-	180	F210D095K	7	P210D095	7
3/4	3/4	5.5	5	125	125	125	-	180	F210D009K	8	P210D009	8
1	1	13	5	125	125	125	-	180	F210D004K	10	P210D004	10
1 1/4	1 1/8	15	5	125	125	125	-	180	F210D008K	12	P210D008	12
1 1/2	1 1/4	22.5	5	125	125	125	-	180	F210D022K	14	P210D022	14
2	1 3/4	43	5	125	125	125	-	180	F210 100K	15	P210 100	15
NORMALLY OPEN (Open when operator exhausted), Brass Body with NBR Seating												
1/4	5/32	.50	0	125	125	125	-	200	F262B106K	2	P262B106	2
3/8	5/8	2.8	0	125	125	125	-	180	F210C033K	16	P210C033	16
1/2	5/8	3.5	0	125	125	125	-	180	F210C034K	16	P210C034	16
3/4	3/4	5.5	0	125	125	125	-	180	F210C035K	17	P210C035	17
1	1	13	5	125	125	125	-	180	F210D014K	18	P210D014	18
NORMALLY CLOSED (Closed when operator exhausted), Stainless Steel Body with NBR Seating												
1/4	5/32	.50	0	125	125	125	-	200	F262B220K	22	-	-
NORMALLY CLOSED (Closed when operator exhausted), Brass Body with PTFE Seating												
1/4	3/8	1.2	1	-	-	-	125	353	F222A070K	4	P222A070	4
3/8	3/8	2.5	1	-	-	-	125	353	F222A074K	4	P222A074	4
1/2	3/8	2.5	1	-	-	-	125	353	F222A076K	4	P222A076	4
3/2 VALVES												
NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seats												
1/4	9/32	③	10	125	125	125	-	200	F321A001K	5	P321A001	5
3/8	9/32	③	10	125	125	125	-	200	F321A002K	5	P321A002	5
3/8	5/8	3	10	125	125	-	-	200	F316D014K	2	P316D014	2
1/2	5/8	4	10	125	125	-	-	200	F316D024K	2	P316D024	2
3/4	11/16	5.5	10	125	125	-	-	200	F316E044K	3	P316E044	3
1	1	13	10	125	125	-	-	200	F316E034K	4	P316E034	4
UNIVERSAL (Pressure at any port), Brass Body with NBR Seats												
1/4	1/8	.31	0	125	125	125	-	200	F320A009K	1	P320A009	1
4/2 VALVES												
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Main Line Operating Pressure (psi)				Max. Fluid Temp. °F	Instrument Air Operator 3-30 psi Range		Pneumatic Operator 30-125 psi Range	
				Min.	Maximum				Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
					Air-Inert Gas	Water	Lt. Oil @ 300 SSU					
		Press. to Cyl.	Exh. to Cyl.									
2-Position Brass Body with Soft Seating ④												
1/4	3/16	.70	.70	0	125	125	125	160	-	-	P442C001	1
1/4	1/4	.80	1	10 ⑤	125	125	125	200	F444B000K	2	P444B000	2
3/8	3/16	.70	.70	0	125	125	125	160	-	-	P442C003	1
3/8	3/8	1.4	2.2	10 ⑤	125	125	125	200	F444C025K	3	P444C025	3

① 3-40 psi (.2 - 2.8 bar) and 50-125 psi (3.4 - 8.6 bar) range for steam valves only.
 ② Refers to operator minimum pressure: Catalog Number P262C090 requires 50 psi (3.4 bar) minimum pressure.
 ③ Cv pressure to cylinder = 0.8 (.7 Kv); Cv cylinder to exhaust = 1.2 (1.0 Kv).
 ④ Const. Ref. 1 has soft seating; Const. Ref. 2 and 3 have soft to metal seating.
 ⑤ 25 psi (1.7 bar) required on light oil service.
 ⑥ 5 psi (0.35 bar) required for air service.

SPECIAL SERVICE VALVES

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Main Line Operating Pressure (bar)					Max. Fluid Temp. °C	Instrument Air Operator 0.2-2 bar Range ①		Pneumatic Operator 2-8.6 bar Range ①	
			Min.	Maximum					Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
				Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Steam					
2/2 VALVES												
NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seating												
1/4	4	.43	0.0	9	9	9	-	93	F262B202K	1	P262B202	1
1/4	7	.82	0.0	3	3	3	-	93	F262C090K	1	P262C090 ②	1
3/8	16	2.40	0.0	9	9	9	-	82	F210C093K	6	P210C093	6
3/8	10	1.29	0.07 ⑥	9	9	9	-	93	F210C073K	3	P210C073	3
1/2	11	1.89	0.07 ⑥	9	9	9	-	93	F210A015K	4	P210A015	4
1/2	16	3.09	0.0	9	9	9	-	82	F210C094K	6	P210C094	6
3/4	19	4.71	0.0	9	9	9	-	82	F210D095K	7	P210D095	7
3/4	19	4.71	0.3	9	9	9	-	82	F210D009K	8	P210D009	8
1	25	11.14	0.3	9	9	9	-	82	F210D004K	10	P210D004	10
1 1/4	29	12.86	0.3	9	9	9	-	82	F210D008K	12	P210D008	12
1 1/2	32	19.29	0.3	9	9	9	-	82	F210D022K	14	P210D022	14
2	45	36.86	0.3	9	9	9	-	82	F210 100K	15	P210 100	15
NORMALLY OPEN (Open when operator exhausted), Brass Body with NBR Seating												
1/4	4	.43	0.0	9	9	9	-	93	F262B106K	2	P262B106	2
3/8	16	2.40	0.0	9	9	9	-	82	F210C033K	16	P210C033	16
1/2	16	3.00	0.0	9	9	9	-	82	F210C034K	16	P210C034	16
3/4	19	4.71	0.0	9	9	9	-	82	F210C035K	17	P210C035	17
1	25	11.14	0.3	9	9	9	-	82	F210D014K	18	P210D014	18
NORMALLY CLOSED (Closed when operator exhausted), Stainless Steel Body with NBR Seating												
1/4	4	.43	0.0	9	9	9	-	93	F262B220K	22	-	-
NORMALLY CLOSED (Closed when operator exhausted), Brass Body with PTFE Seating												
1/4	10	1.03	0.1	-	-	-	24	178	F222A70K	4	P222A70	4
3/8	10	2.14	0.1	-	-	-	24	178	F222A74K	4	P222A74	4
1/2	10	2.14	0.1	-	-	-	24	178	F222A76K	4	P222A76	4
3/2 VALVES												
NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seats												
1/4	7	③	0.6895	9	9	9	-	93	F321A001K	5	P321A001	5
3/8	7	③	0.6895	9	9	9	-	93	F321A002K	5	P321A002	5
3/8	16	2.57	0.6895	9	9	-	-	93	F316D014K	2	P316D014	2
1/2	16	3.43	0.6895	9	9	-	-	93	F316D024K	2	P316D024	2
3/4	17	4.71	0.6895	9	9	-	-	93	F316E044K	3	P316E044	3
1	25	11.14	0.6895	9	9	-	-	93	F316E034K	4	P316E034	4
UNIVERSAL (Pressure at any port), Brass Body with NBR Seats												
1/4	3	.27	0	9	9	9	-	93	F320A009K	1	P320A009	1
4/2 VALVES												
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Main Line Operating Pressure (bar)				Max. Fluid Temp. °C	Instrument Air Operator 0.2-2 bar Range		Pneumatic Operator 2-8.6 bar Range	
		Press. to Cyl.	Exh. to Cyl.	Min.	Maximum				Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
					Air-Inert Gas	Water	Lt. Oil @ 300 SSU					
2-Position Brass Body with Soft Seating ④												
1/4	5	.60	.60	0	9	9	9	71	-	-	P442C001	1
1/4	6	.69	.86	0.7 ⑤	9	9	9	93	F444B000K	2	P444B000	2
3/8	5	.60	.60	0	9	9	9	71	-	-	P442C003	1
3/8	10	1.20	1.89	0.7 ⑤	9	9	9	93	F444C025K	3	P444C025	3

① 3-40 psi (.2 - 2.8 bar) and 50-125 psi (3.4 - 8.6 bar) range for steam valves only.
 ② Refers to operator minimum pressure: Catalog Number P262C090 requires 50 psi (3.4 bar) minimum pressure.
 ③ Cv pressure to cylinder = 0.8 (.7 Kv); Cv cylinder to exhaust = 1.2 (1.0 Kv).
 ④ Const. Ref. 1 has soft seating; Const. Ref. 2 and 3 have soft to metal seating.
 ⑤ 25 psi (1.7 bar) required on light oil service.
 ⑥ 5 psi (0.35 bar) required for air service.

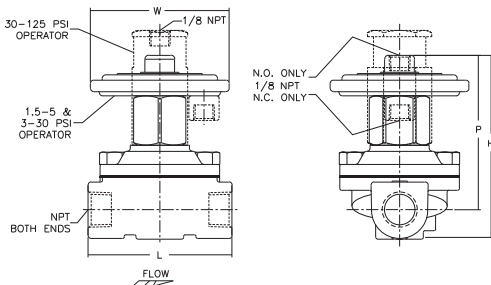
SPECIAL SERVICE VALVES

Dimensions inches (mm)

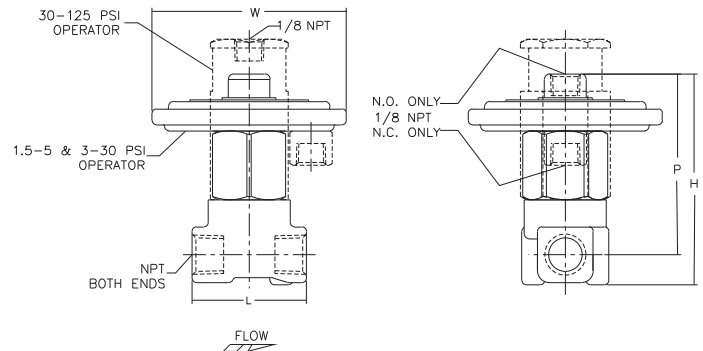
Const. Ref.		Instrument Air Operator 2/2 Valves with 3-30 PSI Operator ①				Pneumatic Operator 2/2 Valves with 30-125 PSI Operator ①			
		H	L	P	W	H	L	P	W ②
1	ins.	2.88	1.57	2.47	Ø 2.66	3.34	1.56	2.94	1.18
	mm	73	40	63	Ø 67	85	40	75	30
2	ins.	2.97	1.56	2.56	Ø 2.66	2.78	1.56	2.38	1.18
	mm	75	40	65	Ø 67	71	40	60	30
3	ins.	3.34	1.91	2.91	Ø 2.66	3.69	1.91	3.25	1.12
	mm	85	49	74	Ø 67	94	49	83	28
4	ins.	3.62	2.28	3.09	Ø 2.66	4.22	2.28	3.66	1.12
	mm	92	58	79	Ø 67	107	58	93	28
6	ins.	3.59	2.75	3.03	Ø 2.66	4.00	2.75	3.44	2.28
	mm	91	70	77	Ø 67	102	70	87	58
7	ins.	3.81	2.81	3.19	Ø 2.66	4.22	2.81	3.59	2.28
	mm	97	71	81	Ø 67	107	71	91	58
8	ins.	3.88	2.81	3.22	Ø 2.66	4.28	2.81	3.62	2.31
	mm	99	71	82	Ø 67	109	71	92	59
10	ins.	5.53	3.75	3.91	Ø 2.66	6.00	3.75	4.38	2.94
	mm	141	95	99	Ø 67	152	95	111	75
12	ins.	5.53	2.66	3.91	Ø 2.66	6.00	3.66	4.38	3.38
	mm	141	68	99	Ø 67	152	93	111	86
14	ins.	6.00	4.38	4.06	4.38	6.50	4.38	4.53	3.75
	mm	152	111	103	111	165	111	115	95
15	ins.	7.22	5.06	4.47	4.68	7.69	5.06	4.94	4.68
	mm	183	129	114	119	195	129	126	119
16	ins.	3.69	2.75	3.12	Ø 2.66	3.44	2.75	2.88	2.28
	mm	94	70	79	Ø 67	87	70	73	58
17	ins.	3.91	2.81	3.28	Ø 2.66	3.69	2.81	3.03	2.28
	mm	99	71	83	Ø 67	94	71	77	58
18	ins.	5.63	3.75	4.00	2.94	5.43	3.75	3.81	2.94
	mm	143	95	102	75	138	95	97	75
22	ins.	2.84	Ø1.62	2.47	Ø 2.66	X	X	X	X
	mm	72	Ø 41	63	Ø 67	X	X	X	X

① When barbed tubing adapter is used, add 1.19 ins. (30 mm) to "H" and/or "P" (or overall) dimensions.
② Represents overall width of valve.

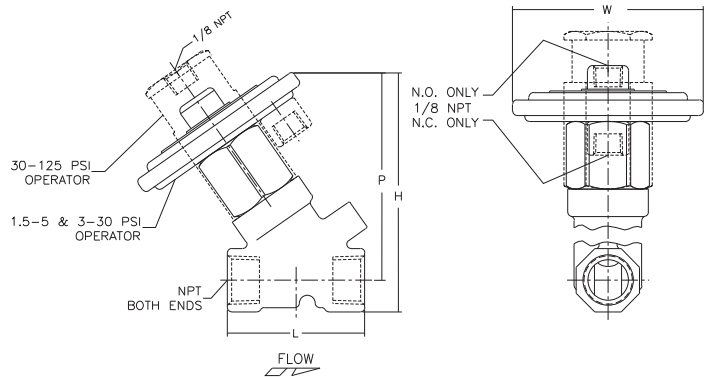
2/2 Valves - Const. Ref. 6 - 18



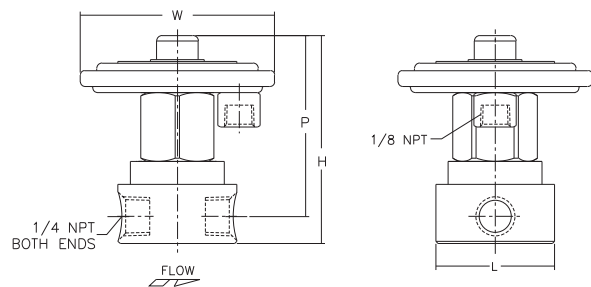
2/2 Valves - Const. Ref. 1, 2



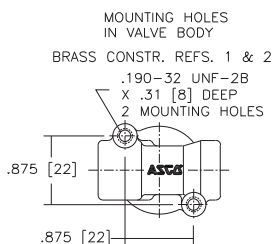
2/2 Valves - Const. Ref. 3, 4



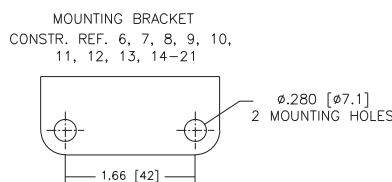
2/2 Valves - Const. Ref. 22



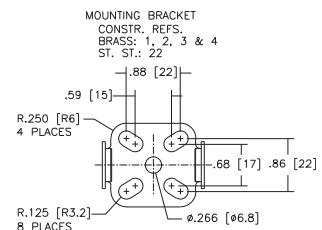
Mounting Bracket Const. Ref. 1, 2



Mounting Bracket Const. Ref. 6 - 18



Mounting Bracket Const. Ref. 1, 2, 3, 4, 22

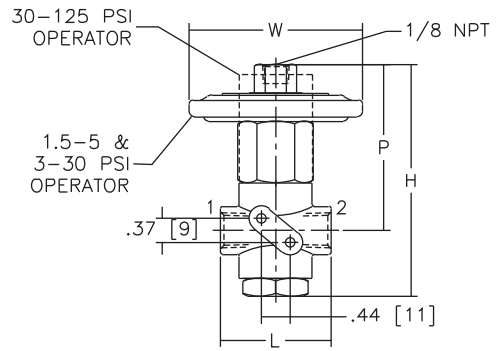


Dimensions inches (mm)

Const. Ref.	Instrument Air Operator 3/2 Valves with 3-30 psi Operator ①			Pneumatic Operator 3/2 Valves with 30-125 psi Operator ①							
	H	P	W ②	H	P	W ②	L	N	M	R	
1	ins.	3.56	2.56	Ø 2.66	3.38	2.38	1.12	1.69	X	X	X
	mm	90	65	Ø 67	86	61	28	43	X	X	X
2	ins.	5.07	3.93	4.30	4.89	3.75	4.30	2.76	X	X	X
	mm	129	100	109	124	95	109	70	X	X	X
3	ins.	6.00	4.31	3.31	5.82	4.13	3.31	3.38	.53	2.16	.50
	mm	152	109	84	148	105	84	86	13	55	13
4	ins.	6.62	4.56	5.34	6.44	4.38	5.34	4.44	.88	2.68	.88
	mm	168	116	136	164	111	136	113	22	68	22
5	ins.	3.84	2.81	3.39	3.66	2.62	2.62	3.12	X	X	X
	mm	98	71	86	93	67	67	79	X	X	X

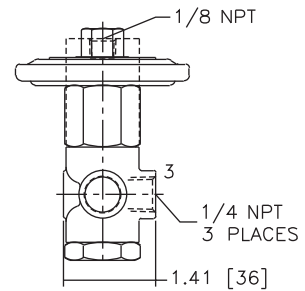
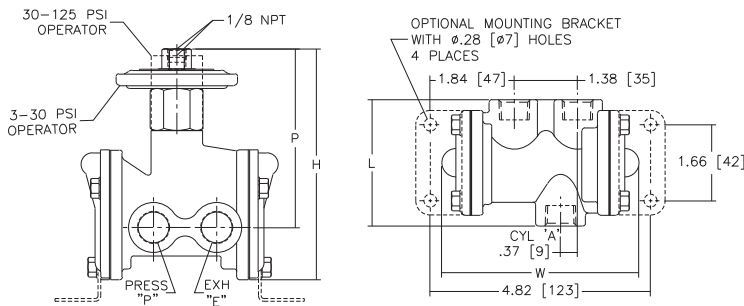
① When barbed tubing adapter is used, add 1.19 ins. (30 mm) to "H" and/or "P" (or overall) dimensions.
② Represents overall width of valve.

3/4 Valves Const. Ref. 1

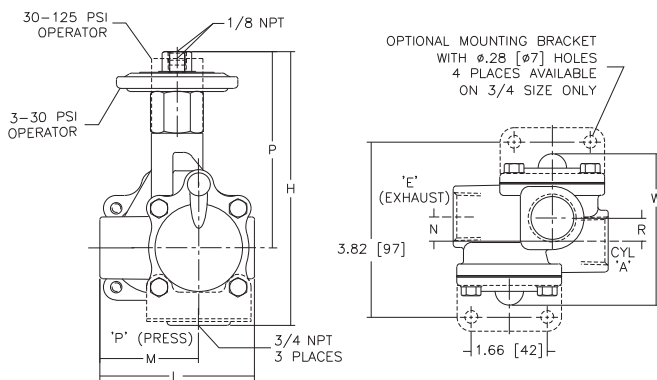


2 Mounting holes 0.28 (0.07 mm) deep for No. 8 thread cutting screw

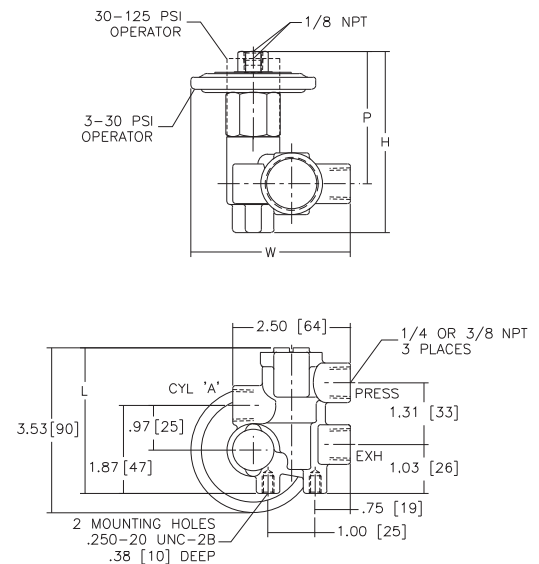
3/4 Valves Const. Ref. 2



3/4 Valves Const. Ref. 3, 4



3/4 Valves Const. Ref. 5

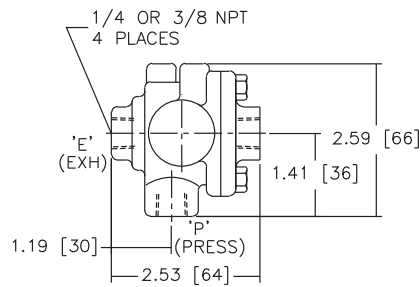
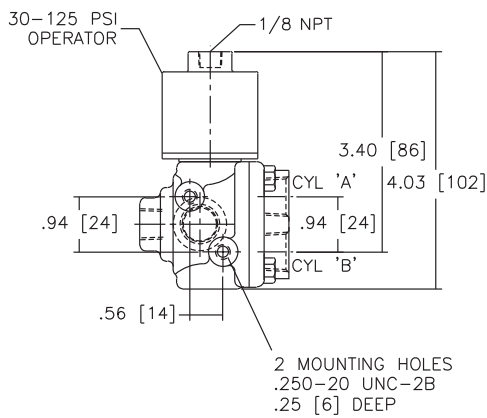


Dimensions inches (mm)

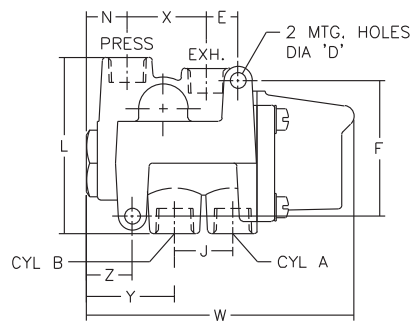
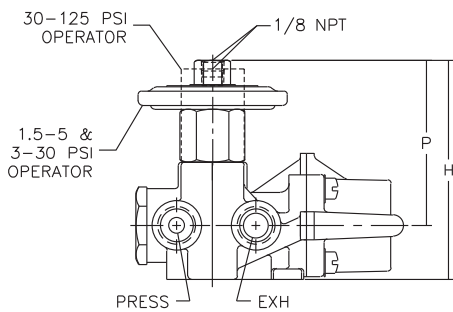
Const. Ref.	Instrument Air Operator 4/2 Valves with 3-30 psi (.2-2 bar) Operator ①			Pneumatic Operator 4/2 Valves with 30-125 psi (2-8.6 bar) Operator ①												
	H	P	W	H	P	W	E	F	J	L	N	X	Y	Z	DIA D	
2	ins.	3.91	2.94	4.75	3.72	2.75	4.75	.56	2.41	1.03	3.12	.72	1.41	1.56	.81	Ø .28
	mm	99	75	121	94	70	121	14	61	26	79	18	36	40	21	Ø 7
3	ins.	3.88	2.75	6.06	3.69	2.56	6.06	.75	3.12	1.50	3.19	.84	1.88	1.90	.84	Ø .34
	mm	98	70	154	94	65	154	19	79	38	81	21	48	48	21	Ø 9

① When barbed tubing adapter is used, add 1.19 (30 mm) to "H" and/or "P" (or overall) dimensions.
IMPORTANT: Valves can be mounted in any position.

4/2 Valves - Const. Ref. 1

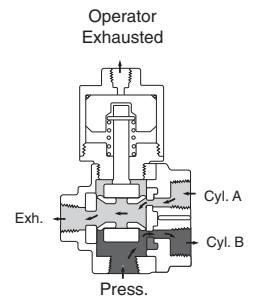


4/2 Valves - Const. Ref. 2, 3

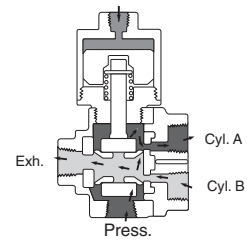


Flow Diagrams

Const. Ref. 1

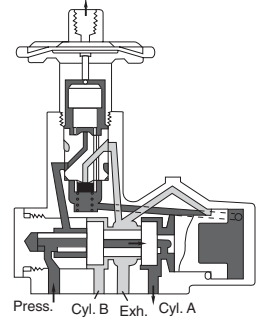


Operator Pressurized

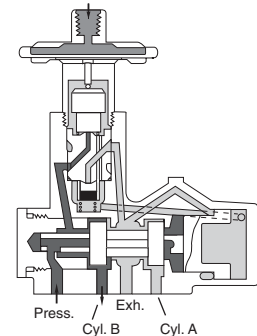


Const. Ref. 2, 3, 4

Operator Exhausted



Operator Pressurized



SPECIAL SERVICE VALVES

Features

- Designed to automatically drain condensate in compressed air systems
- Piloted piston assemblies feature ASCO's 8290 Series with an 8356 Series pilot valve
- Solid state, adjustable timer with LED indicators and Type 4 rating (see *Accessories Section for specs*)
- Brass body, hand turn strainer prevents debris from clogging the valve
- Wide range of voltages with reduced power consumption
- Assemblies can be easily designed using the online configurator (www.ascovalve.com/CDVConfigurator)

Construction

Valve Parts in Contact with Fluids			
Part	Solenoid Drain Valve	Piston Valve Solenoid Pilot	Piston Drain Valve
Body	Brass		316L Stainless Steel
Stem	-	-	316L Stainless Steel ①
Core Tube	Stainless Steel		-
Bonnet	Stainless Steel	Plated Steel	-
Core and Plugnut	Stainless Steel		-
Springs	Stainless Steel		-
Disc	NBR	FKM	316L Stainless Steel ②
Disc Seals	NBR	FKM	PTFE
Shading Coil	Copper		-
Stuffing Box	-	-	316L Stainless Steel
Stuffing Box Seal	-	-	PTFE
Wiper Seal	-	-	FKM
Screw	-	-	316L Stainless Steel ③

① 431 Stainless Steel for 50mm. ② Brass for 50mm. ③ No screw for 50mm.

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Ambient Temp. °F	DIN Spare Coil Family AC/DC
	DC Watts	AC				
		Watts	VA Holding	VA Inrush		
F	6.9	6.3	8.8	12.1	15 to 140	400125
F	9.2	9.2	14	23	15 to 140	ZA34A
F	6	6	10	16	15 to 140	Z614A
F	13	13	24	44	15 to 140	Z134A



Nominal Ambient Temp. Ranges

14°F to 122°F (-10°C to 50°C)

Refer to Engineering Section for details.

Approvals

Solenoid: UL recognized coil. Meets applicable CE directives.

Timer: CSA certified. UL recognized component. Meets applicable CE directives.

Pilot Valve: UL recognized coil. CSA recognized coil. Meets applicable CE directives.

Power Cord: UL recognized component.

Refer to Engineering Section for details.

SPECIAL SERVICE VALVES

Specifications (Assembly) (English units)

Inlet Pipe Size (ins.)	Valve Outlet Pipe Size (ins.)	Valve Orifice Dia. (ins.)	Cv Flow Factor	Condensate Drained (oz/sec.) ①	Operating Pressure Differential (psi)		Pilot Pressure (psi)		Assembly Number ②	Featured Assembly Components	
					Min.	Water Max.	Air or Water Range	Electrical Connections		Mechanical / Maintenance	
Solenoid Assembly - Normally Closed - With Timer											
1/4 F	1/4 F	1/8	0.35	10	0	175	-		CDVA0JPJW5XCMLL	-	-
									CDVA0JPK1QZBSVN	DIN to 6' cord w/N.A. plug	-
1/2 M	1/4 F	1/8	0.35	10	0	175	-		CDVA0JPL6ND5VR2	-	Manual Shut off / Filter
									CDVA0JPLC7F5104	DIN to 6' cord w/N.A. plug	Manual Shut off / Filter
3/8 F	3/8 F	7/16	1.99	56	5	175	-		CDVA138122AKBA8	-	-
									CDVA13817MCJGKA	DIN to 6' cord w/N.A. plug	-
1/2 M	3/8 F	7/16	1.99	56	5	175	-		CDVA1382CJSCKEQ	-	Manual Shut off / Filter
									CDVA1382J3UBQPS	DIN to 6' cord w/N.A. plug	Manual Shut off / Filter
1/2 F	1/2 F	9/16	4.45	144	5	230	-		CDVA1MSH84LMV4U	-	-
									CDVA1MSHDPNMODW	DIN to 6' cord w/N.A. plug	-
1/2 M	1/2 F	9/16	4.45	144	5	230	-		CDVA1MSJIM2F39A	-	Manual Shut off / Filter
									CDVA1MSJQ64E8JC	DIN to 6' cord w/N.A. plug	Manual Shut off / Filter
Pilot Operated Assembly - Normally Closed - With Pilot Valve and Timer											
3/8 F	3/8 F	3/8	2.3	76	0	240	60 to 150		CDVA5G5JCP39FN	-	N/A
									CDVA5G5JJ3R2EQQ	DIN to 6' cord w/N.A. plug	
1/2 F	1/2 F	1/2	4.1	117	0	180	60 to 150		CDVA60Q0JLZ5L7A	-	
									CDVA60Q0Q614RGC	DIN to 6' cord w/N.A. plug	
3/4 F	3/4 F	3/4	7.6	154	0	90	60 to 150		CDVA6K8GQP97PW0	-	
									CDVA6K8GW8B6V52	DIN to 6' cord w/N.A. plug	
1 F	1	1	15	304	0	90	60 to 150		CDVA73790TM3NV6 ③	-	
									CDVA73796CP2U48 ③	DIN to 6' cord w/N.A. plug	

① Volume of condensate drained per second at max operating pressure. ② Additional assemblies available through configurator. ③ Also available in bronze.

Specifications (Assembly) (Metric units)

Inlet Pipe Size (ins.)	Valve Outlet Pipe Size (ins.)	Valve Orifice Dia. (mm)	Kv Flow Factor (m3/h)	Condensate Drained (oz/sec.) ①	Operating Pressure Differential (bar)		Pilot Pressure (bar)		Assembly Number ②	Featured Assembly Components	
					Min.	Water Max.	Air or Water Range	Electrical Connections		Mechanical / Maintenance	
Solenoid Assembly - Normally Closed - With Timer											
1/4 F	1/4 F	3.2	0.3	10	0	12	-		CDVA0JPJW5XCMLL	-	-
									CDVA0JPK1QZBSVN	DIN to 6' cord w/N.A. plug	-
1/2 M	1/4 F	3.2	0.3	10	0	12	-		CDVA0JPL6ND5VR2	-	Manual Shut off / Filter
									CDVA0JPLC7F5104	DIN to 6' cord w/N.A. plug	Manual Shut off / Filter
3/8 F	3/8 F	11.1	1.72	56	0.34	12	-		CDVA138122AKBA8	-	-
									CDVA13817MCJGKA	DIN to 6' cord w/N.A. plug	-
1/2 M	3/8 F	11.1	1.72	56	0.34	12	-		CDVA1382CJSCKEQ	-	Manual Shut off / Filter
									CDVA1382J3UBQPS	DIN to 6' cord w/N.A. plug	Manual Shut off / Filter
1/2 F	1/2 F	14.3	3.8	144	0.34	15.8	-		CDVA1MSH84LMV4U	-	-
									CDVA1MSHDPNMODW	DIN to 6' cord w/N.A. plug	-
1/2 M	1/2 F	14.3	3.8	144	0.34	15.8	-		CDVA1MSJIM2F39A	-	Manual Shut off / Filter
									CDVA1MSJQ64E8JC	DIN to 6' cord w/N.A. plug	Manual Shut off / Filter
Pilot Operated Assembly - Normally Closed - With Pilot Valve and Timer											
3/8 F	3/8 F	9.5	2	76	0	16.5	60 to 150		CDVA5G5JCP39FN	-	N/A
									CDVA5G5JJ3R2EQQ	DIN to 6' cord w/N.A. plug	
1/2 F	1/2 F	12.7	3.5	117	0	12.4	60 to 150		CDVA60Q0JLZ5L7A	-	
									CDVA60Q0Q614RGC	DIN to 6' cord w/N.A. plug	
3/4 F	3/4 F	19	6.5	154	0	6.2	60 to 150		CDVA6K8GQP97PW0	-	
									CDVA6K8GW8B6V52	DIN to 6' cord w/N.A. plug	
1 F	1	25.4	13	304	0	6.2	60 to 150		CDVA73790TM3NV6 ③	-	
									CDVA73796CP2U48 ③	DIN to 6' cord w/N.A. plug	

① Volume of condensate drained per second at max operating pressure. ② Additional assemblies available through configurator. ③ Also available in bronze.

Specifications (Solenoid Valve) (English units)

Pipe Size (ins.)	Orifice Dia. (ins.)	Cv Flow Factor	Volume Drained per Second (oz/sec.) ①	Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Brass	Wattage	
				Min.	Max. AC	Max. DC			AC	DC
					Water	Water				
Solenoid Drain Valve - Normally Closed										
1/4"	1/16"	0.11	5	0	435	435	195	SC8261S405	9.2	9.2
1/4"	3/32"	0.18	7	0	290	230	195	SC8261S406	9.2	9.2
1/4"	1/8"	0.35	10	0	175	60	195	SC8261S408	9.2	9.2
1/4"	5/16"	0.93	24	0	145	145	195	SC8261S413	9.2	9.2
3/8"	25/64"	1.75	45	0	145	44	195	SC8238S401	9.2	9.2
3/8"	7/16"	2.89	56	5	175	175	195	SC8238T402	6	6
1/2"	1/2"	2.46	63	0	145	43	195	SC8238S404	13	13
1/2"	9/16"	4.45	144	5	230	230	195	SC8238T405	6	6

① Volume of condensate drained per second at max operating pressure (AC).

Specifications (Solenoid Valve) (Metric units)

Pipe Size (ins.)	Orifice Dia. (mm)	Kv Flow Factor (m3/h)	Volume Drained per Second (oz/sec.) ①	Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Brass	Wattage	
				Min.	Max. AC	Max. DC			AC	DC
					Water	Water				
Solenoid Drain Valve - Normally Closed										
1/4"	1.6	0.09	5	0	30	30	91	SC8261S405	9.2	9.2
1/4"	2.4	0.15	7	0	20	15.8	91	SC8261S406	9.2	9.2
1/4"	3.2	0.3	10	0	12	4.1	91	SC8261S408	9.2	9.2
1/4"	7.9	0.8	24	0	10	10	91	SC8261S413	9.2	9.2
3/8"	9.5	1.5	45	0	10	3.1	91	SC8238S401	9.2	9.2
3/8"	12	2.5	56	0.34	12	12	91	SC8238T402	6	6
1/2"	12.7	2.1	63	0	10	3.1	91	SC8238S404	13	13
1/2"	14.3	3.8	144	0.34	15.8	15.8	91	SC8238T405	6	6

① Volume of condensate drained per second at max operating pressure (AC).

Specifications (Piston Valve) (English units)

Pipe Size (ins.)	Orifice Dia. (ins.)	Cv Flow Factor	Volume Drained per Second (oz/sec.) ①	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	316 Stainless Steel	Air or Water Pilot Pressure (psi)	
				Min.	Max.			Min.	Max.
					Water				
Pilot Operated Piston Valve - Normally Closed									
3/8"	3/8"	2.3	76	0	240	366	8290A791	60	150
1/2"	1/2"	4.1	117	0	180	366	8290A792	60	150
3/4"	3/4"	7.6	154	0	90	366	8290A793	60	150
1"	1"	15	304	0	90	366	8290A395	60	150
1"	1"	15	304	0	90	366	8290A386*	60	150

① Volume of condensate drained per second at max operating pressure. * Bronze Body.

Specifications (Piston Valve) (Metric units)

Pipe Size (ins.)	Orifice Dia. (mm)	Kv Flow Factor (m3/h)	Volume Drained per Second (oz/sec.) ①	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	316 Stainless Steel	Air or Water Pilot Pressure (bar)	
				Min.	Max.			Min.	Max.
					Water				
Pilot Operated Piston Valve - Normally Closed									
3/8"	9.5	1.4	76	0	16.5	185	8290A791	4.1	10.3
1/2"	12.7	3.5	117	0	12.4	185	8290A792	4.1	10.3
3/4"	19	6.5	154	0	6.2	185	8290A793	4.1	10.3
1"	25	13	304	0	6.2	185	8290A395	4.1	10.3
1"	25	13	304	0	6.2	185	8290A386*	4.1	10.3

① Volume of condensate drained per second at max operating pressure. * Bronze Body.

CDVR1

Specifications (Pilot Valve) (English units)

Pipe Size (ins.)	Orifice Dia. (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Brass	Wattage	
			Min.	Max. AC	Max. DC			AC	DC
				Air or Water	Air or Water				
3-Way Solenoid Pilot Valves - Normally Closed									
1/8"	1/16"	0.09	0	140	140	180	SC8356A002V	6.3	6.9

Specifications (Pilot Valve) (Metric units)

Pipe Size (ins.)	Orifice Dia. (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Brass	Wattage	
			Min.	Max. AC	Max. DC			AC	DC
				Air or Water	Air or Water				
3-Way Solenoid Pilot Valves - Normally Closed									
1/8"	1.6	0.07	0	11.3	11.3	82	SC8356A002V	6.3	6.9

Assembly Components

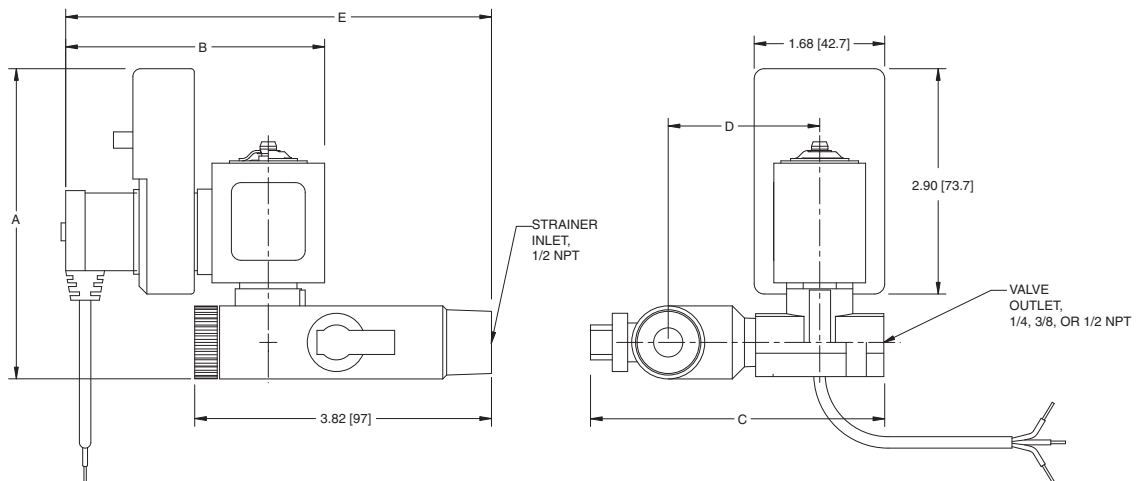
Assembly Part Numbers	Size	Drain Valve	Pilot Valve	Timer	Power Cord	Ball/Strainer
CDVA0JPJW5XCMLL	1/4"	SC8261S408 120/60	-	272839-001	-	-
CDVA0JPK1QZBSVN	1/4"	SC8261S408 120/60	-	272839-001	272852	-
CDVA0JPL6ND5VR2	1/4"	SC8261S408 120/60	-	272839-001	-	272851
CDVA0JPLC7F5104	1/4"	SC8261S408 120/60	-	272839-001	272852	272851
CDVA138122AKBA8	3/8"	SC8238S402 120/60	-	272839-009	-	-
CDVA13817MCJGKA	3/8"	SC8238S402 120/60	-	272839-009	272852	-
CDVA1382CJSCKEQ	3/8"	SC8238S402 120/60	-	272839-009	-	272851-002
CDVA1382J3UBQPS	3/8"	SC8238S402 120/60	-	272839-009	272852	272851-002
CDVA1MSH84LMV4U	1/2"	SC8238S405 120/60	-	272839-009	-	-
CDVA1MSHDPNM0DW	1/2"	SC8238S405 120/60	-	272839-009	272852	-
CDVA1MSJJM2F39A	1/2"	SC8238S405 120/60	-	272839-009	-	272851-003
CDVA1MSJQ64E8JC	1/2"	SC8238S405 120/60	-	272839-009	272852	272851-003
CDVA5G5JJP39FN	3/8"	8290A791	SC8356A002V 120/60	272839-009	-	N/R
CDVA5G5JJ3R2EQQ	3/8"	8290A791	SC8356A002V 120/60	272839-009	272852	N/R
CDVA60Q0JLZ5L7A	1/2"	8290A792	SC8356A002V 120/60	272839-009	-	N/R
CDVA60Q0Q614RGC	1/2"	8290A792	SC8356A002V 120/60	272839-009	272852	N/R
CDVA6K8GQP97PW0	3/4"	8290A793	SC8356A002V 120/60	272839-009	-	N/R
CDVA6K8GW8B6V52	3/4"	8290A793	SC8356A002V 120/60	272839-009	272852	N/R
CDVA73790TM3NV6	1"	8290A386	SC8356A002V 120/60	272839-009	-	N/R
CDVA73796CP2U48	1"	8290A386	SC8356A002V 120/60	272839-009	272852	N/R

SPECIAL SERVICE VALVES

Dimensions: inches (mm)

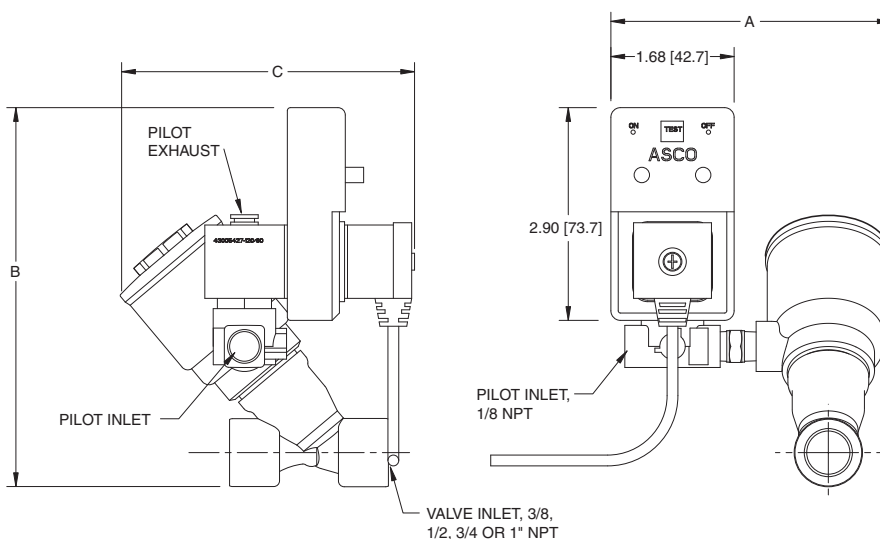
Solenoid Series

Assembly Number	A	B	C	D	E
CDVA0JPLC7F5104	3.99 (101)	3.33 (85)	3.79 (96)	1.95 (50)	5.48 (139)
CDVA1382J3UBQPS	4.93 (125)	3.29 (84)	5.39 (137)	3.35 (85)	5.40 (137)
CDVA1MSJQ64E8JC	4.93 (125)	3.29 (84)	5.39 (137)	3.35 (85)	5.40 (137)



Piloted Piston Series

Assembly Number	A	B	C
CDVA5G5JJ3R2EQQ	3.82 (97)	5.16 (131)	3.99 (101)
CDVA60Q0Q614RGC	3.82 (97)	5.16 (131)	3.99 (101)
CDVA6K8GW8B6V52	3.82 (97)	5.16 (131)	3.99 (101)
CDVA73796CP2U48	4.70 (119)	6.56 (167)	5.43 (138)



CDVR1

SPECIAL SERVICE VALVES

Features

- "LT" suffix valves are built to control cryogenic fluids, including liquid oxygen (-297°F/-181°C), liquid argon (-303°F/-184°C), and liquid nitrogen (-320°F/-194°C)
- All suffix "LT" valves are degreased, cleaned, tested free of moisture, and black light tested for hydrocarbons
- Liquid CO₂ valves are suitable for remote mounting or for direct mounting to the refrigerated component by using four-hole bracket, provided

Construction

Valve Parts in Contact with Fluids	
Body: Cryogenic Valves	Brass
Body: LCO ₂ Valves	Nickel-Plated Brass
Seats	PTFE and/or Clad Copper/UR
Disc	PTFE/UR (8264 only)
Core and Plugnut	430F Stainless Steel or 49 FM Alloy
Core Spring	302 Stainless Steel
Shading Coil	Copper
Seats	Stainless Steel (8264 Series)

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	12.1	23	47	238610	238710	238614	238714
F	18.6	13.8	27	43	238210	238310	238214	238314
F	-	17.1	34	64	238610	-	238614	-
H	40.6	17.1	34	64	238810	238910	238814	238914

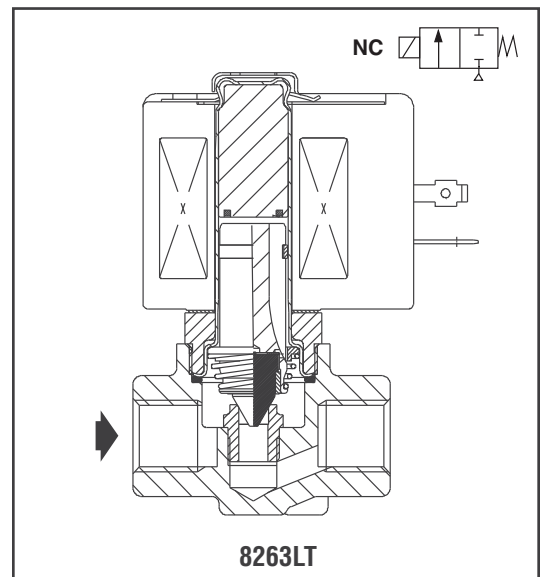
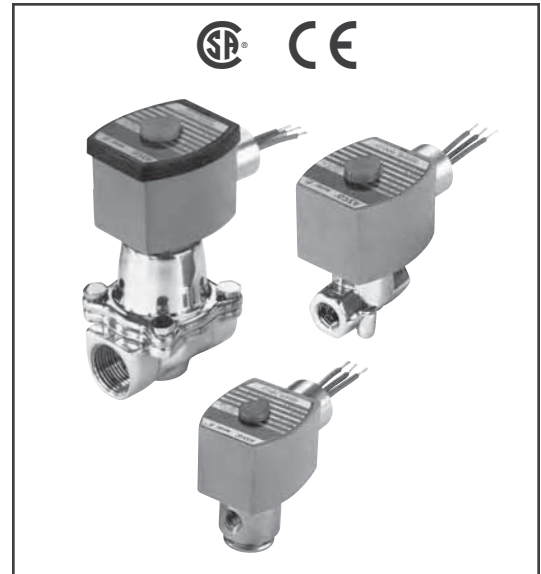
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC.
 Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
 (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



SPECIAL SERVICE VALVES

Nominal Fluid Temp. Ranges

AC Cryogenic Valves: -320°F to 150°F (-196°C to 66°C)

DC Cryogenic Valves: -320°F to 120°F (-196°C to 49°C)

All Liquid CO₂ Valves: -75°F to 120°F (-59°C to 49°C)

Refer to *Engineering Section* for details.

Nominal Ambient Temp. Ranges

AC Construction: 32°F to 125°F (0°C to 52°C)

DC Construction: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation	
			Min.	Max.				AC	DC
				AC	DC				
CRYOGENIC SERVICE - NORMALLY CLOSED (Closed when de-energized)									
1/8	1/8	.35	0	130	75	8263G240LT	2	12.1/F	11.6/F
1/4	1/8	.35	0	130	-	8262G022LT	1	12.1/F	-
1/4	7/32	.56	0	100	30	8263G205LT	2	17.1/F	11.6/F
1/4	9/32	.70	0	40	18	8263G209LT	2	12.1/F	11.6/F
3/8	1/8	.35	0	130	75	8263G232LT	2	12.1/F	11.6/F
3/8	7/32	.56	0	100	30	8263G206LT	3	17.1/F	11.6/F
3/8	9/32	.70	0	40	18	8263G210LT	3	12.1/F	11.6/F
1/2	5/8	3.8	0	90	50	8222G002LT	4	17.1/H	40.6/H
3/4	3/4	5.8	0	90	50	8222G003LT	4	17.1/H	40.6/H
1	1	13.5	5	200	100	8210G078LT	5	17.1/F	40.6/H
1 1/4	1 1/8	15	5	200	100	8210G080LT	6	17.1/F	40.6/H
1 1/2	1 1/4	22.5	5	200	100	8210G082LT	7	17.1/F	40.6/H
LIQUID CO₂ SERVICE - NORMALLY CLOSED (Closed when de-energized)									
1/8	3/64	.06	0	1000	1000	8264G009 ①	8	13.8/F	18.6/F
1/8	3/32	.20	0	300	300	8264G010 ①	8	13.8/F	18.6/F

① Must use tubing with an I.D. no larger than the outlet port orifice to locate the refrigeration point downstream and to prevent freezing of the CO₂ inside the valve.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation	
			Min.	Max.				AC	DC
				AC	DC				
CRYOGENIC SERVICE - NORMALLY CLOSED (Closed when de-energized)									
1/8	3	.3	0	9	5	8263G240LT	2	12.1/F	11.6/F
1/4	3	.3	0	9	-	8262G022LT	1	12.1/F	-
1/4	6	.5	0	7	2	8263G205LT	2	17.1/F	11.6/F
1/4	7	.6	0	3	1	8263G209LT	2	12.1/F	11.6/F
3/8	3	.3	0	9	5	8263G232LT	2	12.1/F	11.6/F
3/8	6	.5	0	7	2	8263G206LT	3	17.1/F	11.6/F
3/8	7	.6	0	3	1	8263G210LT	3	12.1/F	11.6/F
1/2	16	3.2	0	6	3	8222G002LT	4	17.1/H	40.6/H
3/4	19	5	0	6	3	8222G003LT	4	17.1/H	40.6/H
1	25	11.6	5	14	7	8210G078LT	5	17.1/F	40.6/H
1 1/4	29	13	5	14	7	8210G080LT	6	17.1/F	40.6/H
1 1/2	32	19	5	14	7	8210G082LT	7	17.1/F	40.6/H
LIQUID CO₂ SERVICE - NORMALLY CLOSED (Closed when de-energized)									
1/8	1	.05	0	69	69	8264G009 ①	8	13.8/F	18.6/F
1/8	2	.17	0	21	21	8264G010 ①	8	13.8/F	18.6/F

① Must use tubing with an I.D. no larger than the outlet port orifice to locate the refrigeration point downstream and to prevent freezing of the CO₂ inside the valve.

SPECIAL SERVICE VALVES

Dimensions inches (mm)

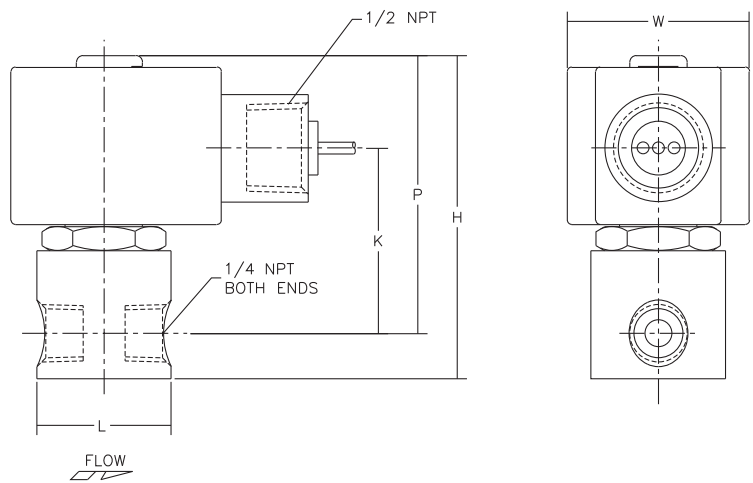
Const. Ref.		H	K	L	P	W
1	ins.	3.19	1.80	Ø1.25	2.77	1.95
	mm	81	46	Ø32	70	50
2	ins.	3.25	1.70	1.88	2.67	1.95
	mm	83	43	48	68	50
3	ins.	3.25	1.70	2.00	2.67	1.95
	mm	83	43	51	68	50
4	ins.	4.67	3.15	2.75	4.11	1.95
	mm	119	80	70	104	50
5	ins.	5.82	3.22	3.75	4.19	4.44
	mm	148	82	95	106	113
6	ins.	5.82	3.22	3.66	4.19	4.86
	mm	148	82	93	106	123
7	ins.	6.29	3.37	4.38	4.34	5.81
	mm	160	86	111	110	148
8	ins.	2.82	1.27	Ø1.12	2.13	1.69
	mm	72	32	Ø28	54	43

IMPORTANT: Valves may be mounted in any position.

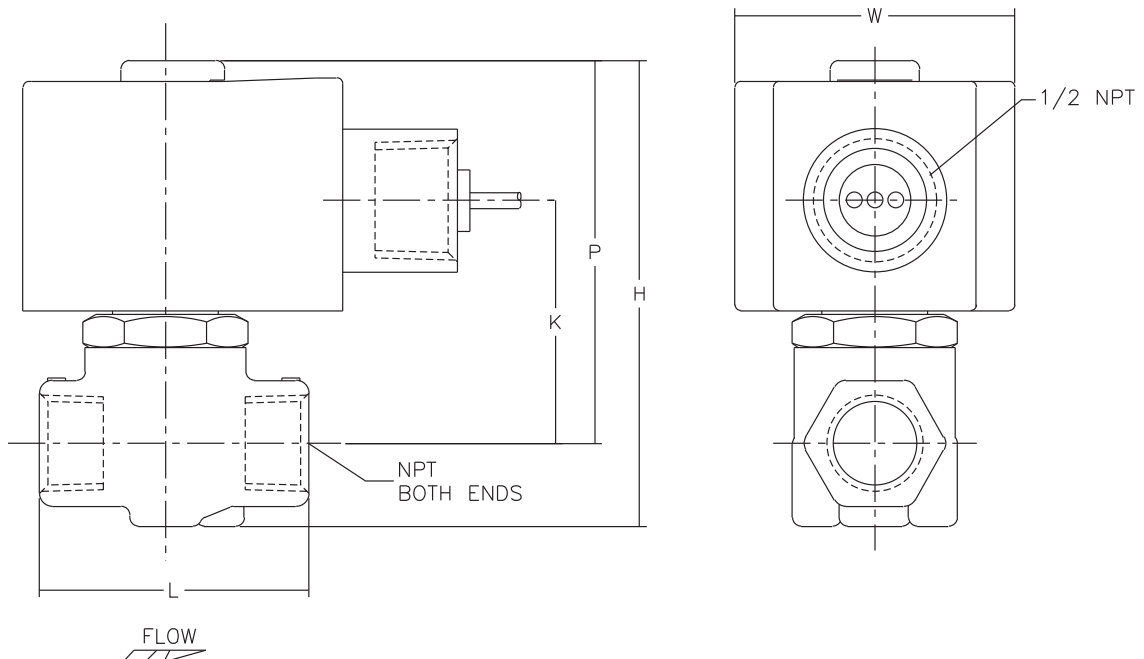
8222G002LT
8222G003LT

Mount vertical and upright.

Const. Ref. 1

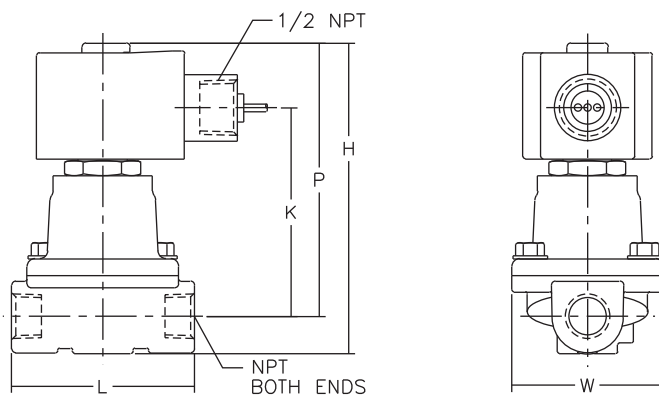


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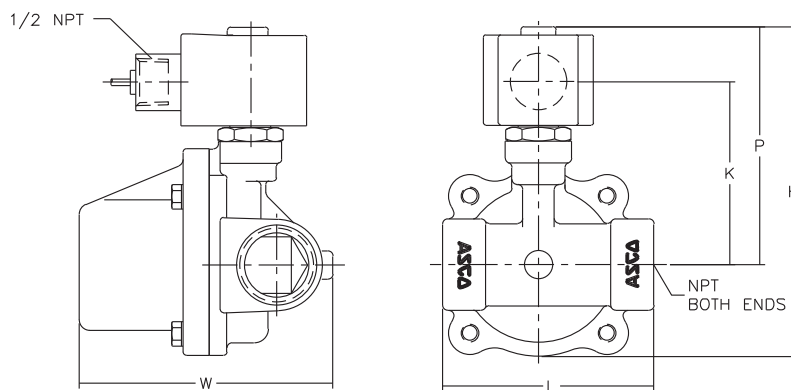


Dimensions inches (mm)

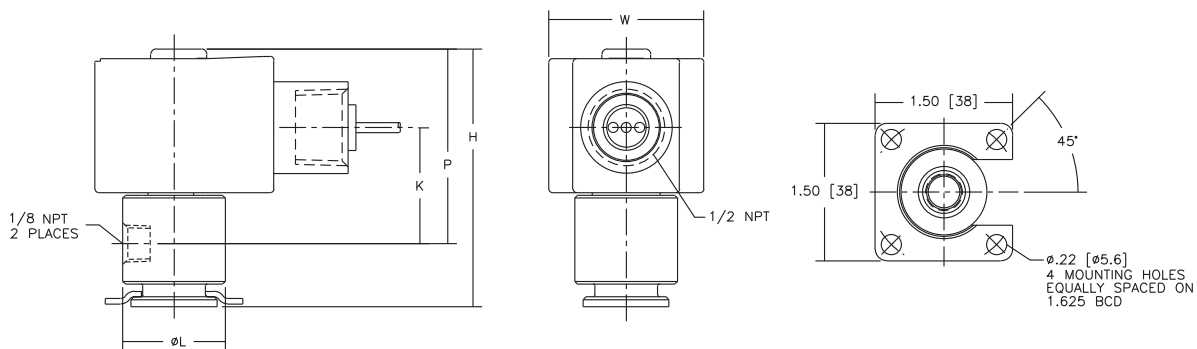
Const. Ref. 4



Const. Ref. 5, 6, 7



Const. Ref. 8



SPECIAL
SERVICE VALVES

Features

- Specially designed for reverse jet-type dust collector systems
- High flow Cv(s) to 140 for effective bag cleaning
- High cycle life
- Fast opening/closing

Construction

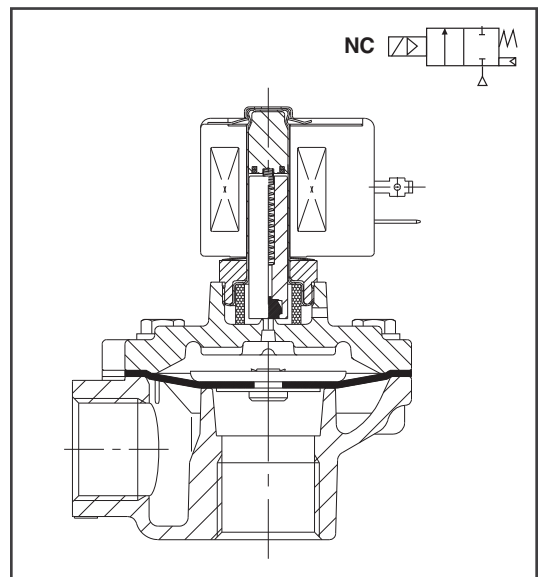
Valve Parts in Contact with Fluids	
Body	Aluminum
Seals	NBR
Diaphragm	NBR, HYT or CR as noted
Discs	NBR or PA, as noted



Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Spare Coil Part Number	
	AC			General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush	AC	AC
F	6.1	16	30	238210	238214
F	10.1	25	50	238610	238614
F	17.1	40	70	238610	238614

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz), Consult factory for DC voltage. Other voltages available when required.



Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options. Consult your local ASCO office for details on accessories.

Nominal Temp. Ranges

Ambient: AC constructions: 0°F to 185°F (-18°C to 85°C); 150°F (66°C) for valves with HYT diaphragms. Consult local sales office for DC constructions.

Fluids: 0°F to 185°F (-18°C to 85°C), except as noted. For temperatures to 300°F (149°C), specify FPM, suffix "V" (except where noted).

Refer to *Engineering Section* for details.

SPECIAL SERVICE VALVES

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Min. Operating Pressure Differential (psi) ③	Max. Operating Pressure Differential (psi) ③	Remote Pilot Construction (Minimum Pilot Valve Orifice Size = 1/8")		Const. Ref.	Watt Rating/ Class of Coil Insulation	Rebuild Kit AC Valves	Diaphragm Only 10 Pack "Zip" Kit
					Integral Pilot Catalog Number	Catalog Number				
3/4	3/4	10.5	5	125	-	8353C033 ③	1	-	96875	238864
3/4 ①	3/4	10.5	5	125	-	8353C030 ③	1	-	96875	238864
3/4 ②	3/4	10.5	5	125	-	8353C004 ③	1	-	96875	238864
1	1 1/8	20	5	125	-	8353C035 ④	1	-	200262	238866
1	1 1/8	20	5	125	8353G041 ④	-	4	6.1/F	316563	238866
1	1 5/8	18	15	125	8353G006 ⑤⑥	-	3	17.1/F	300144	-
1 1/4	1 5/8	20	15	125	8353G005 ⑤⑥	-	3	17.1/F	300144	-
1 1/2	1 1/2	35	15	125	8353G001 ⑤⑥	-	3	17.1/F	300144	-
1 1/2	2	53	10	125	-	8353H038 ④	2	-	276886	238870
1 1/2	2	53	5	125	8353J039 ④	-	5	10.1/F	322108	238870
1 1/2	2	48	5	125	8353G061 ⑨	-	5	10.1/F	316297	-
1 1/2	2	48	10	125	-	8353A062 ⑨	2	-	276884	-
2	2	60	15	125	8353G002 ⑤⑥	-	3	17.1/F	300145	-
2	2	76	5	125	-	8353 048 ⑥⑦	2	-	256802	256797
2	2	76	5	125	8353G050 ⑥	-	5	10.1/F	316029	256797
2 1/2	2 1/2	82	5	125	-	8353 049 ⑥⑦	2	-	256802	256797
2 1/2	2 1/2	82	5	125	8353G051 ⑥	-	5	10.1/F	316029	256797
2 1/2	3	82	15	125	8353G007 ⑤	-	6	10.1/F	176878	-
3	3	140	15	125	8353G008 ⑤	-	6	10.1/F	176878	-

① Supplied with internal slip fit connection on outlet.
 ② Extended ends for Dresser connections.
 ③ NBR diaphragm.
 ④ HYT diaphragm max. fluid temp. 150°F.
 For higher temperature, consult factory.
 ⑤ CR diaphragm/PA disc.
 ⑥ CR diaphragm.
 ⑦ Minimum pilot orifice size 7/32".
 ⑧ Consult factory for remote piloted construction.
 ⑨ NBR diaphragm, PA disc, long-life construction. Maximum fluid temp. 185°F.
 ⑩ Contact local sales office for DC pressure requirements.

Specifications (Metric units)

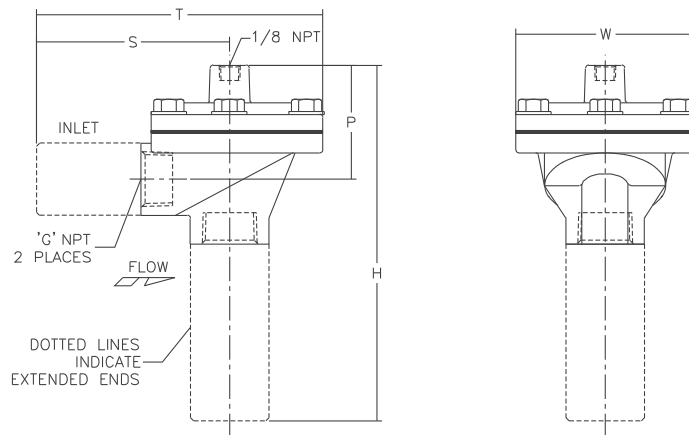
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Min. Operating Pressure Differential (bar) ③	Max. Operating Pressure Differential (bar) ③	Remote Pilot Construction (Minimum Pilot Valve Orifice Size = 1/8")		Const. Ref.	Watt Rating/ Class of Coil Insulation	Rebuild Kit AC Valves	Diaphragm Only 10 Pack "Zip" Kit
					Integral Pilot Catalog Number	Catalog Number				
3/4	19	9.0	0.3	8.6	-	8353C033 ③	1	-	96875	238864
3/4 ①	19	9.0	0.3	8.6	-	8353C030 ③	1	-	96875	238864
3/4 ②	19	9.0	0.3	8.6	-	8353C004 ③	1	-	96875	238864
1	29	17.1	0.3	8.6	-	8353C035 ④	1	-	200262	238866
1	29	17.1	0.3	8.6	8353G041 ④	-	4	6.1/F	316563	238866
1	41	15.4	1.0	8.6	8353G006 ⑤⑥	-	3	17.1/F	300144	-
1 1/4	41	17.1	1.0	8.6	8353G005 ⑤⑥	-	3	17.1/F	300144	-
1 1/2	38	30.0	1.0	8.6	8353G001 ⑤⑥	-	3	17.1/F	300144	-
1 1/2	51	45.4	0.7	8.6	-	8353H038 ④	2	-	276886	238870
1 1/2	51	45.4	0.3	8.6	8353J039 ④	-	5	10.1/F	322108	238870
1 1/2	51	41.1	0.3	8.6	8353G061 ⑨	-	5	10.1/F	316297	-
1 1/2	51	41.1	0.7	8.6	-	8353A062 ⑨	2	-	276884	-
2	51	51.4	1.0	8.6	8353G002 ⑤⑥	-	3	17.1/F	300145	-
2	51	65.1	0.3	8.6	-	8353 048 ⑥⑦	2	-	256802	256797
2	51	65.1	0.3	8.6	8353G050 ⑥	-	5	10.1/F	316029	256797
2 1/2	64	70.3	0.3	8.6	-	8353 049 ⑥⑦	2	-	256802	256797
2 1/2	64	70.3	0.3	8.6	8353G051 ⑥	-	5	10.1/F	316029	256797
2 1/2	76	70.3	1.0	8.6	8353G007 ⑤	-	6	10.1/F	176878	-
3	76	120.0	1.0	8.6	8353G008 ⑤	-	6	10.1/F	176878	-

SPECIAL SERVICE VALVES

Dimensions inches (mm)

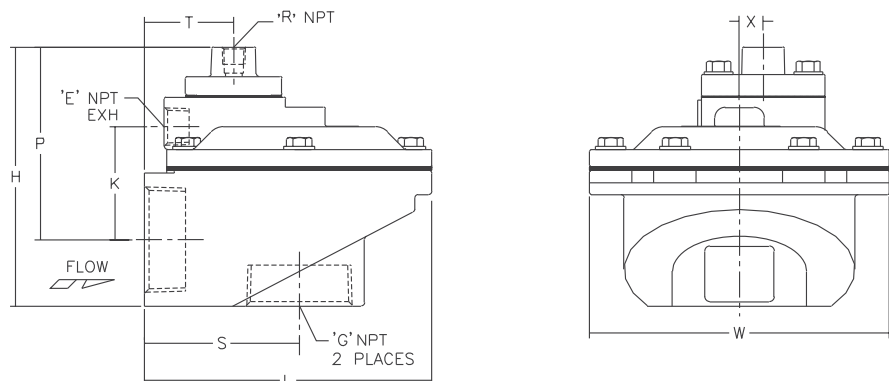
Cat. No.	"G"		H	L	P	Bonnet Bolts	T	W
8353C004	Extended End	ins.	7.94	3.69	2.16	5.00	5.16	3.44
		mm	201.6	93.7	54.8	127.0	131.0	87.3
8353C030	3/4 NPT (Inlet)	ins.	3.44	1.69	2.19	5.00	3.47	3.44
		mm	87.3	42.9	55.6	127.0	88.1	87.3
	3/4 Socket (Outlet)	ins.	3.44	1.69	2.19	5.00	3.47	3.44
		mm	87.3	42.9	55.6	127.0	88.1	87.3
8353C033	3/4 NPT	ins.	3.44	1.69	2.19	5.00	3.47	3.44
		mm	87.3	42.9	55.6	127.0	88.1	87.3
8353C035	1 NPT	ins.	2.53	2.03	1.69	4.00	3.50	2.94
		mm	64.3	51.6	42.9	101.6	88.9	74.6

Const. Ref. 1



Cat. No.	"E" NPT	"G" NPT		H	L	P	"R" NPT	S	T	W	X
8353H038	3/8	1 1/2	ins.	4.63	5.16	3.44	1/8	2.78	1.61	5.38	0.44
			mm	117.5	131.0	87.3		70.6	40.9	136.5	11.1
8353A062	3/8	1 1/2	ins.	5.16	5.16	3.44	1/8	2.78	1.61	5.38	0.44
			mm	131.0	131.0	87.3		70.6	40.9	136.5	11.1
8353 048	3/4	2	ins.	6.47	6.63	4.69	1/4	3.75	2.56	6.50	-
			mm	164.3	168.3	119.1		95.3	65.1	165.1	-
8353 049	3/4	2 1/2	ins.	6.47	6.63	4.69	1/4	3.75	2.56	6.50	-
			mm	164.3	168.3	119.1		95.3	65.1	165.1	-

Const. Ref. 2

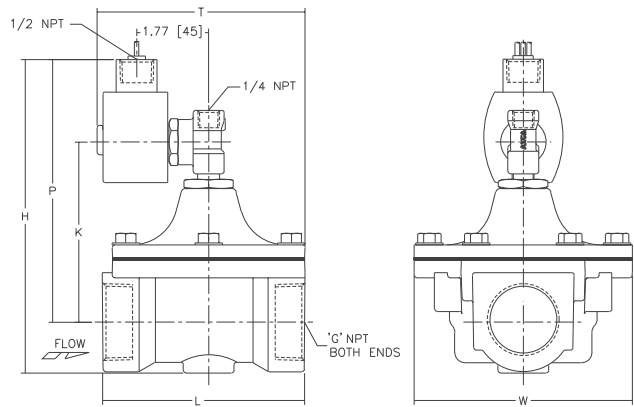


SPECIAL SERVICE VALVES

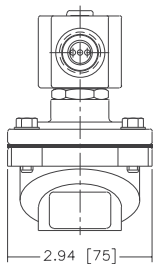
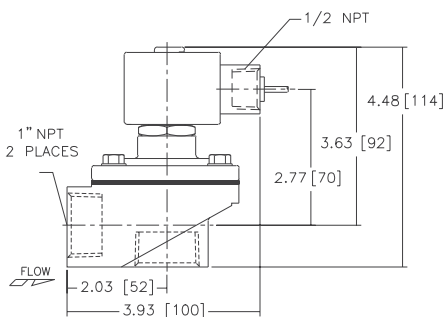
Dimensions inches (mm)

Const. Ref. 3

Cat. No.	"G" NPT		H	L	P	S	T	W
8353G001	1 1/2	ins.	7.72	5.00	6.47	1.78	5.13	5.38
		mm	196.1	127.0	164.3	45.2	130.2	136.5
8353G002	2	ins.	8.34	6.09	6.84	1.78	5.56	6.34
		mm	211.9	154.8	173.8	45.2	141.3	161.1
8353G005	1 1/4	ins.	7.72	5.00	6.47	1.78	5.13	5.38
		mm	196.1	127.0	164.3	45.2	130.2	136.5
8353G006	1	ins.	7.72	5.00	6.41	1.78	5.13	5.38
		mm	196.1	127.0	162.7	45.2	130.2	136.5

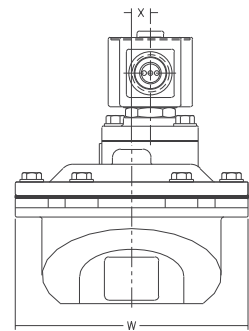
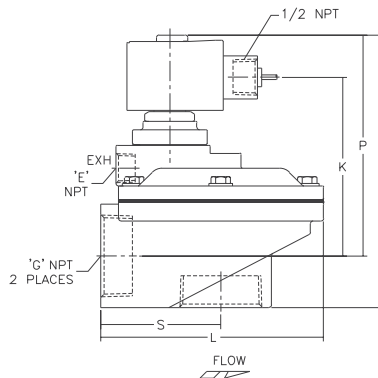


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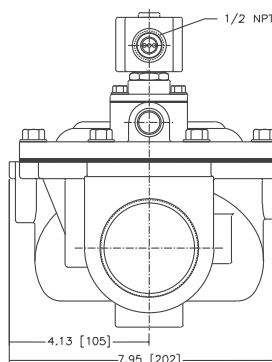
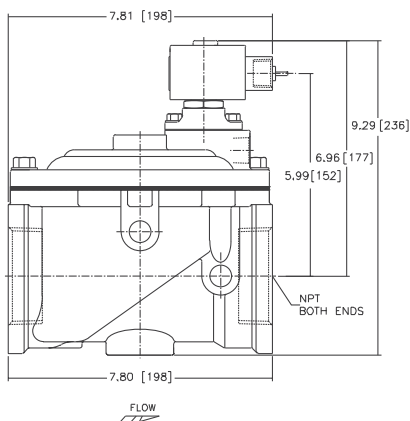


Const. Ref. 5

Cat. No.	"E" NPT	"G" NPT		H	L	P	S	T	W	X
8353J039	3/8	1 1/2	ins.	6.28	5.16	5.08	2.78	1.61	5.38	0.44
			mm	159.5	131.0	129.0	70.6	40.9	136.5	11.1
8353G061	3/8	1 1/2	ins.	6.28	5.16	5.08	2.78	1.61	5.38	0.44
			mm	159.5	131.0	129.0	70.6	40.9	136.5	11.1
8353G050	3/4	2	ins.	8.25	6.63	6.47	3.75	2.56	6.50	-
			mm	209.6	168.3	164.3	95.3	65.1	165.1	-
8353G051	3/4	2 1/2	ins.	8.25	6.63	6.47	3.75	2.56	6.50	-
			mm	209.6	168.3	164.3	95.3	65.1	165.1	-



Const. Ref. 6



SPECIAL
SERVICE VALVES

Features

- Die-cast aluminum bodies and diaphragm operation
- Integral compression fittings for fast, easy, secure installation

Construction

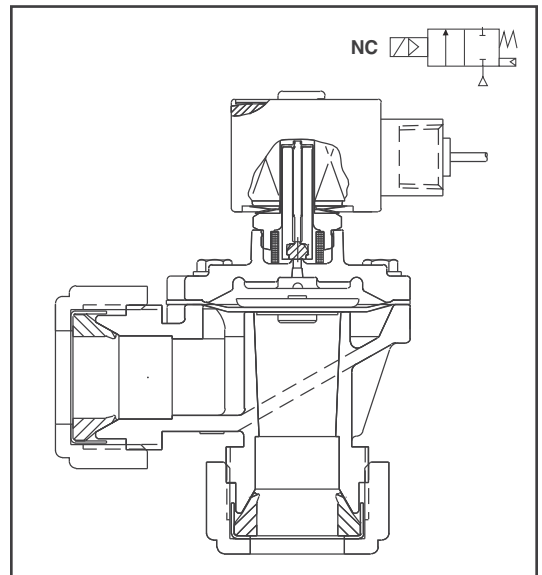
Valve Parts in Contact with Fluids	
Body	Aluminum
Seals & Gasket	NBR
Diaphragms	NBR or HYT, as noted
Discs	PA
Retainer	Carbon Steel



Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Spare Coil Part Number	
	AC			General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush	AC	AC
F	6.1	16	30	238210	238214
F	10.1	25	50	238610	238614

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). Consult factory for DC voltage. Other voltages are available when required.



Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

Also available Open Frame Solenoids, Junction Box, DIN connections.

See *Optional Features Section* for other available options.

Nominal Temp. Ranges

Ambient: AC constructions: 0°F to 185°F (-18°C to 85°C); 150°F (66°C) for valves with HYT diaphragms

Fluids: 0°F to 185°F (-18°C to 85°C), except as noted. For temperatures to 300°F (149°C), specify FPM, suffix "V" (except where noted).

Pressure Ranges

AC minimum 5 psi (0.3 bar).

AC maximum 125 psi (8.6 bar).

Consult ASCO for DC pressure ratings.

SPECIAL SERVICE VALVES

Specifications (English, Metric units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Kv Flow Factor (m3/h)	Min. & Max. Operating Pressure Differential (psi)	Min. & Max. Operating Pressure Differential (bar)	Integral Pilot Catalog Number	Remote Pilot Construction (Minimum Pilot Valve Orifice Size = 1/8")	Watt Rating/Class of Coil Insulation AC	Rebuild Kit AC Valves Kit No.	Diaphragm Only 10 Pack "Zip" Kit Kit No.
3/4	1 1/8	15	12.9	5 & 125	0.3 & 8.6	8353G052 ①	-	6.1/F	K316563	K238866
3/4	1 1/8	15	12.9	5 & 125	0.3 & 8.6	-	8353 055 ①	-	K200262	K238866
1	1 1/8	20	17.1	5 & 125	0.3 & 8.6	8353G053 ①	-	6.1/F	K316563	K238866
1	1 1/8	20	17.1	5 & 125	0.3 & 8.6	-	8353 056 ①	-	K200262	K238866
1 1/2	2	48	41.1	5 & 125	0.3 & 8.6	8353G059 ②	-	10.1/F	K316297	-
1 1/2	2	48	41.1	10 & 125	0.7 & 8.6	-	8353A064 ②	-	K276884	-
1 1/2	2	50	42.9	5 & 125	0.3 & 8.6	8353H054 ①	-	10.1/F	K322108	K238870
1 1/2	2	50	42.9	10 & 125	0.7 & 8.6	-	8353A057 ①	-	K276886	K238870

① HYT diaphragm. Maximum fluid temperature 150°F (66°C). For higher temperature, consult factory.

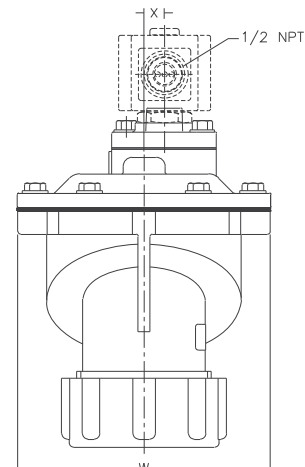
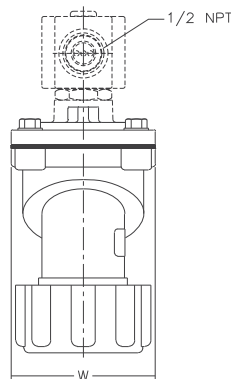
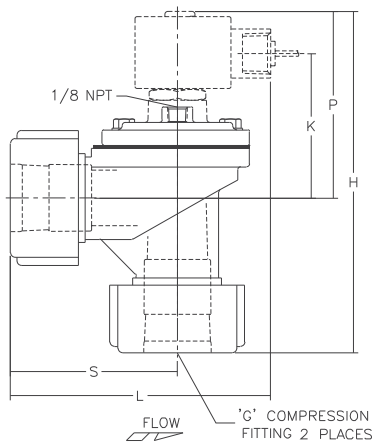
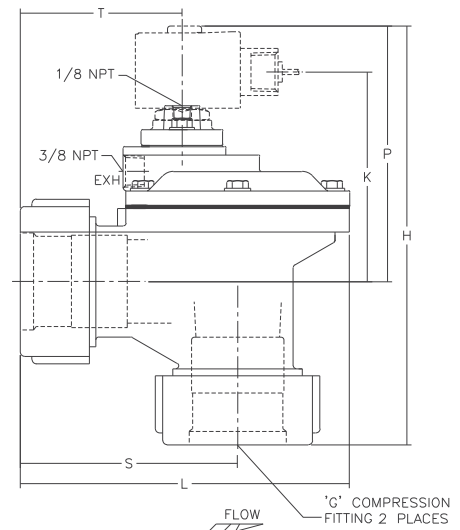
② NBR diaphragm, PA disc, Long-life construction. Maximum fluid temperature 185°F (85°C).

The rubber seal, retainer, and nut provide pressure sealing around the pipes. Inlet and blow pipes must be secured to prevent movement.

Dimensions inches (mm)

Cat. No.	"G" Compression Fitting		H	I	P	S	T	W	X
8353G052	3/4	ins.	6.03	5.06	3.75	3.16	-	2.94	-
		mm	153.19	128.59	95.25	80.17	-	74.61	-
8353 055	3/4	ins.	4.09	4.63	1.78	3.16	-	2.94	-
		mm	103.98	117.48	45.24	80.17	-	74.61	-
8353G053	1	ins.	7.03	5.34	3.81	3.47	-	2.94	-
		mm	178.59	135.73	96.84	88.11	-	74.61	-
8353 056	1	ins.	5.06	4.94	1.88	3.47	-	2.94	-
		mm	128.59	125.41	47.63	88.11	-	74.61	-
8353H054	1 1/2	ins.	8.84	6.97	5.38	4.63	3.44	5.38	0.44
		mm	224.63	177.01	136.53	117.48	87.31	136.53	11.11
8353A057	1 1/2	ins.	7.19	6.97	3.75	4.63	3.44	5.38	0.44
		mm	182.56	177.01	95.25	117.48	87.31	136.53	11.11
8353G059	1 1/2	ins.	8.84	6.97	5.38	4.63	3.44	5.38	0.44
		mm	224.63	177.01	136.53	117.48	87.31	136.53	11.11
8353A064	1 1/2	ins.	7.19	6.97	3.75	4.63	3.44	5.38	0.44
		mm	182.56	177.01	95.25	117.48	87.31	136.53	11.11

Note: Integral Pilot shown dotted in.



1 1/2" pipe gasket kit for compression, 10 pack - K278426.

Features

- The high quality polyacetal (POM) piston cartridge provides a long operating life and a large temperature range
- Quick mount connection eliminates thread cutting and sealing
- Integral operators have molded epoxy coils, with available options
- Valves may be mounted in any position

Construction

Body	Aluminum
Piston/Cartridge	POM (Polyacetal)
Clamps/Bolts	Plated Steel
Integral Solenoid	
Core Tube/Core & Plugnut/Core Spring	Stainless Steel
Seals and Disc	NBR
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.
 Other voltages available when required.

Solenoid Enclosures

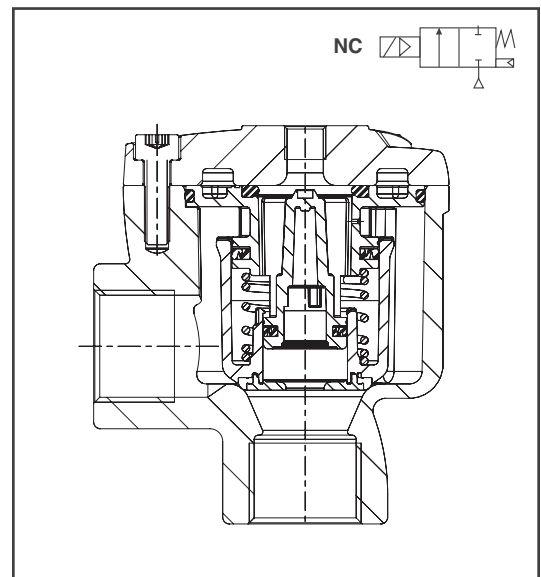
Standard: RedHat II Types 1, 2, 3, 4, and 4X combinatin. General Purpose and Watertight.

Optional: RedHat II Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. Explosionproof and Watertight. (To order, add prefix "EF" to catalog number.) Other electrical and construction options are also available.

Consult your local ASCO office for details on accessories.

Rebuild Kits

Remote Pilot		Integral Pilot		
Catalog Number	Rebuild Kit	Catalog Number	Rebuild Kit	
			AC	DC
S353A713	C117-279	S353G711	C133-453	C133-454
S353A823	C117-280	S353G721	C133-455	C133-456
8353A813	C117-271	8353G811	C133-451	C133-452
8353A823	C117-271	8353G821	C133-451	C133-452



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

Remote: -4°F to 185°F (-20°C to 85°C)

Integral: AC -4°F to 125°F (-20°C to 50°C)
 DC -4°F to 104°F (-20°C to 40°C)

Refer to Engineering Section for details.

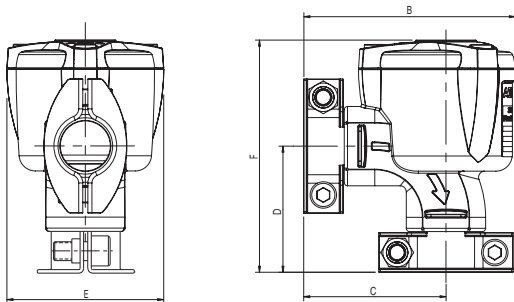
Specifications (English, Metric units)

Pipe Size (ins.)	Orifice Size (ins. (mm))	Remote Pilot Connection ins.	Cv Flow Factor	Kv Flow Factor (m3/h)	Operating Pressure Differential psi (bar)		Quick Mount Catalog Number	Const. Ref.	NPT Connections Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation	
					Air						AC	DC
					Min.	Max.						
REMOTE PILOT CONSTRUCTIONS												
3/4	1.1 (28)	1/8	16	14	5 (0.3)	125 (8.6)	S353A713	1	8353A813	2	-	-
1	1.1 (28)	1/8	27	23	5 (0.3)	125 (8.6)	S353A723	1	8353A823	2	-	-
INTEGRAL PILOT CONSTRUCTIONS												
3/4	1.1 (28)	-	16	14	5 (0.3)	125 (8.6)	S353G711	3	8353G811	4	6.1/F	10.6/F
1	1.1 (28)	-	27	23	5 (0.3)	125 (8.6)	S353G721	3	8353G821	4	6.1/F	10.6/F

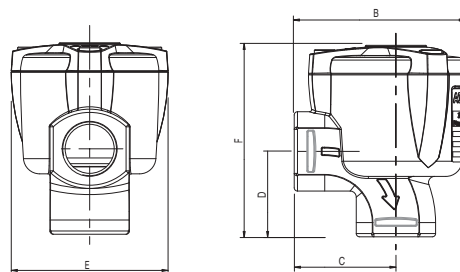
Dimensions inches (mm)

Remote Pilot Constructions

Const. Ref. 1 (Quick Mount)



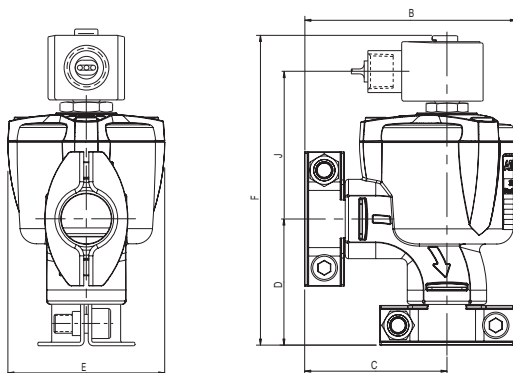
Const. Ref. 2 (NPT)



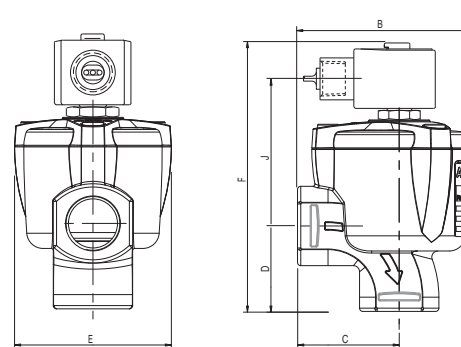
Pipe Connections	B	C	D	E	F
3/4" Quick Mount	4.1 (105)	2.8 (71)	2.4 (62)	3.0 (77)	4.5 (114)
1" Quick Mount	4.5 (117)	3.3 (85)	2.8 (71)	3.0 (77)	4.8 (121)
3/4" NPT	3.3 (85)	2.0 (51)	1.7 (42)	3.0 (77)	3.7 (94)
1" NPT	3.8 (96)	2.4 (62)	2.0 (51)	3.0 (77)	4.0 (100)

Integral Pilot Constructions

Const. Ref. 3 (Quick Mount)



Const. Ref. 4 (NPT)



Pipe Connections	B	C	D	E	F	J
3/4" Quick Mount	4.1 (105)	2.8 (71)	2.4 (62)	3.0 (77)	6.5 (166)	3.2 (81)
1" Quick Mount	4.5 (114)	3.3 (85)	2.8 (71)	3.0 (77)	6.8 (173)	3.1 (79)
3/4" NPT	3.3 (85)	2.0 (51)	1.7 (42)	3.0 (77)	5.7 (146)	3.1 (79)
1" NPT	3.8 (96)	2.4 (62)	2.0 (51)	3.0 (77)	6.0 (152)	3.1 (79)

SPECIAL SERVICE VALVES

Features

- Designed to pilot large dust collector pulse valves
- For individual installation or mounting in panel enclosure
- Brass bodied valve has threaded exhaust port for optional muffler installation, and screw or leaded terminals
- Plastic body valve designed for plastic or metallic tubing, has spade terminals
- All with bubble-tight seals
- Zero minimum pressure

Construction

Valve Parts in Contact with Fluids	
Body	Brass or PA, as listed
Seals and Discs	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Shading Coil	Copper
Springs	302 Stainless Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption AC			Spare Coil Part No. AC	
	Watts	VA Holding	VA Inrush	General Purpose	Explosionproof
F	6	15.6	27.5	99216 (spade)	-
F	6	15.6	27.5	125472 (screw)	-
F	6.1	16	30	238210	238214
B	24.9	34.8	43.2	174879 ①	-

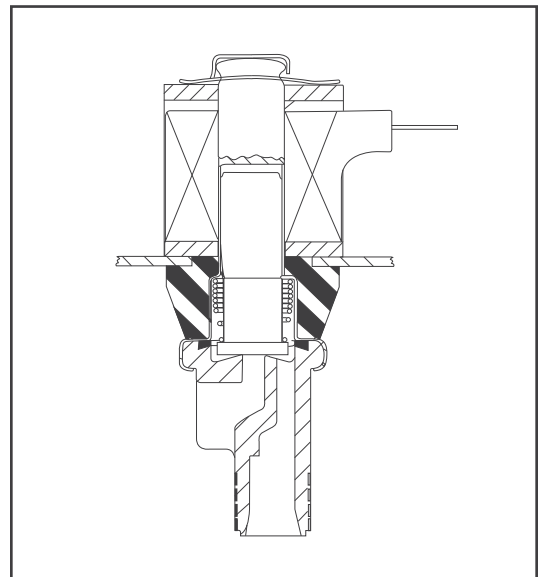
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). Consult factory for DC voltage. Other voltages are available when required.
Note: ① Maximum voltage 120/60. Higher voltages use Class F Coil, 186548.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X;
RedHat - Open Frame.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

Ambient: AC constructions: 32°F to 125°F (0°C to 52°C)

Fluids: 32°F to 180°F (0°C to 82°C)

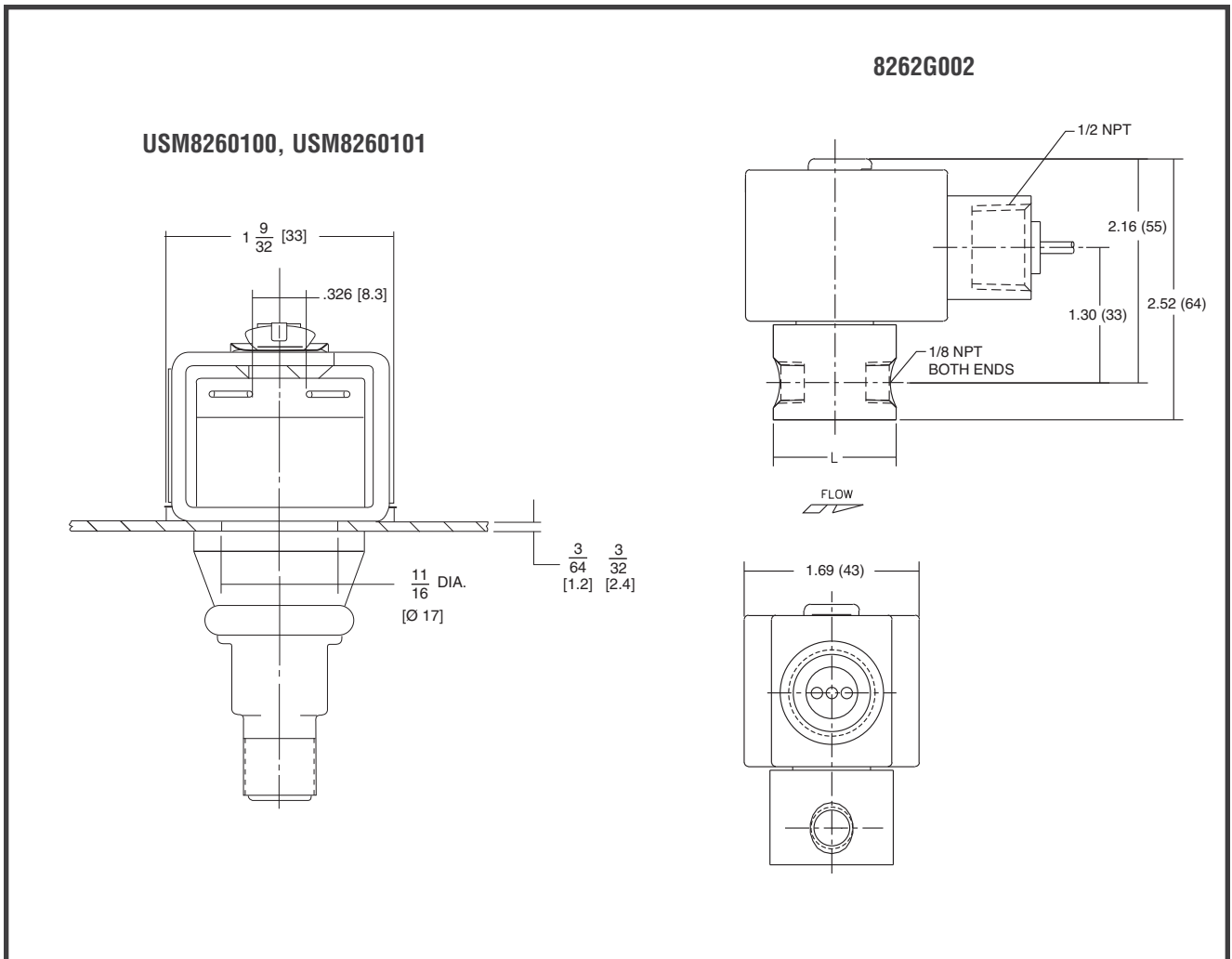
SPECIAL SERVICE VALVES

Specifications (English, Metric units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Kv Flow Factor (m3/h)	Max. Operating Pressure Differential (psi)	Max. Operating Pressure Differential (bar)	RedHat II Catalog Number	RedHat Panel Mount Solenoids with Spade Terminal Coils Standard	RedHat Panel Mount Solenoids with Screw Terminal Coils Standard	Watt Rating/Class of Coil Insulation
							Catalog Number	Catalog Number	
NORMALLY CLOSED (Closed when de-energized), Brass Body - AC Only									
1/8	1/8	.34	.29	125	8.6	8262G002	-	-	6.1/F
1/8	1/8	.34	.29	125	8.6	-	PSF8262C002 ④	-	6/F
1/8	1/8	.34	.29	125	8.6	-	-	PSFX8262C002-17523 ③④	6/F
NORMALLY CLOSED (Closed when de-energized), PA Body - AC Only									
1/4 O.D. Comp. ②	1/8	.30	.26	125	8.6	-	USM8260100 ①	-	24.9/B
1/8 External NPT	1/8	.30	.26	125	8.6	-	USM8260101 ①	-	24.9/B

① Spade terminal coils are standard; leaded coils are optional. Solenoid will withstand a total energized time of 12 seconds within any 60 second period.
 ② Fittings not supplied with valve. To order, refer to List Price Schedule.
 ③ Gasketed panel mount pilot valve used in pilot valve enclosure HV125468, -69, and -70.
 ④ For dimensional drawing contact local sales office.

Dimensions inches (mm)



SPECIAL SERVICE VALVES

Features

- Eliminates welding in through-the-wall installations
- Normally used with ASCO pulse valves having integral Dresser® fittings
- Top loading-type dust collectors require installation and removal of collector bags or cartridges from the top of the housing, above the blow tubes
- Bottom loading types require installation and removal of bags or cartridges for the bottom from the housing, below the blow tubes

Installation

Fittings are installed through the dust collector wall, gasketed in place, and secured with a retaining ring. Compression nut, retainer, and pipe seal are then installed on the pipe, making certain the beveled edge of the seal faces the connector body. The pipe assembly then slides into the connector body and the nut is firmly hand tightened.



Nominal Ambient Temp. Ranges

0°F to 185°F (-18°C to 85°C)

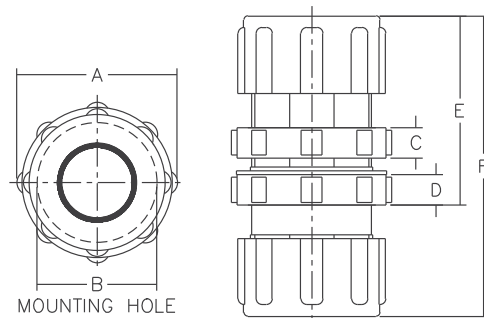
For higher temperatures, specify suffix "V"

Note: The rubber seal, retainer, and nut provide pressure sealing around the pipes. Inlet and blow pipes must be secured to prevent movement.

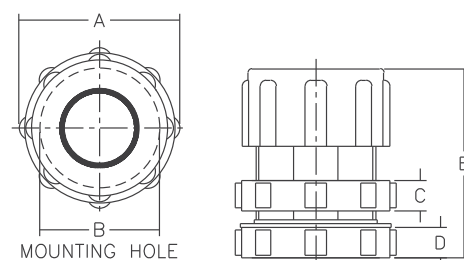
Dimensions inches (mm)

Connector Size		3/4"	1"	1-1/2"
A	ins.	2.52	3.04	3.92
	mm	64.01	77.22	99.57
B	ins.	1.92	2.20	2.92
	mm	48.77	55.88	74.17
C	ins.	0.48	0.48	0.60
	mm	12.19	12.19	15.24
D	ins.	0.48	0.48	0.60
	mm	12.19	12.19	15.24
E	ins.	2.92	2.88	3.68
	mm	74.17	73.15	93.47
F	ins.	4.64	4.72	5.76
	mm	117.86	119.89	146.30
Top Loading Kit Number	Pipe Size (ins.)	Bottom Loading Kit Number		
266015	3/4	266014		
266017	1	266016		
266019	1-1/2	266018		

TOP LOADING



BOTTOM LOADING



SPECIAL SERVICE VALVES

Features

- Protection for pre-wired ASCO remote pilot valves
- Corrosion resistant, cast aluminum enclosures available with Type 4 Watertight or Types 7 and 9 Explosionproof protection
- Installer-friendly valve layout
- For Explosionproof enclosure, manual operation possible through exhaust port in base
- Enclosures may be mounted in any position

Pilot Valve Enclosures

Standard: Watertight enclosure: Types 1, 2, 3, 3S, and 4.
 Explosionproof enclosure: Types 4, 4X, 6, 7 and 9. Class I, Div 1, Groups C and D. Class II, Div 1, Groups E, F, and G.

Optional: For corrosion resistance, Type 4X on Watertight enclosures, add suffix "A" to catalog number. Type 4X is standard on Explosionproof enclosure.

See *Optional Features Section* for other available options.



Optional Heater Kit

Not available on explosionproof enclosure.
 3-5 valve configuration, Kit #125675-001.
 6-8 valve configuration, Kit #125675-002.
 Not available for 9-12 valve configuration.

Approvals

CSA certified.

Ordering instructions for Pilot Valve Enclosure - 3 to 12 Pilot Valves

Number of Valves	Catalog Number			Catalog Number		
	Watertight/Dusttight	Suffix		Explosionproof	Suffix	
		120/60 V	240/60 V		120/60 V	240/60 V
3	125468-003-	-01	-02	125847-003-	-01	-02
4	125468-004-	-01	-02	125847-004-	-01	-02
5	125468-005-	-01	-02	125847-005-	-01	-02
6	125469-006-	-01	-02	125847-006-	-01	-02
7	125469-007-	-01	-02			
8	125469-008-	-01	-02			
9	125470-009-	-01	-02			
10	125470-010-	-01	-02			
11	125470-011-	-01	-02			
12	125470-012-	-01	-02			

To order for different voltages, add suffix to catalog numbers, as shown above: -01" for 120 volt, 60 Hz valves; -02" for 240 volt, 60 Hz valves.
 Example: Specify Catalog Number 125470-009-02 for a Type 4 box, which includes nine 240 volt, 60 Hz PSFX8262C002-17523 pilot valve with screw terminal coils.

SPECIAL SERVICE VALVES

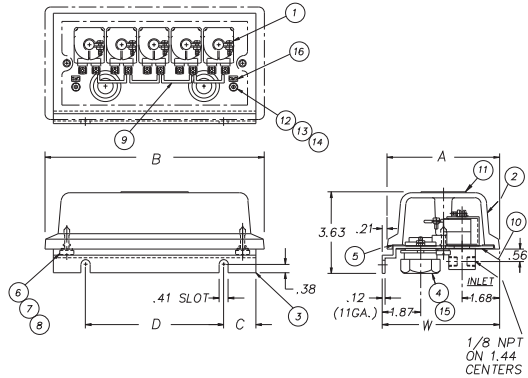
Pilot Valve Specifications (English, Metric units)

Pipe Size (ins.)	Orifice Size (ins. (mm))	Cv Flow Factor (Kv Flow Factor m3/h)	Max. Pressure (psi (bar))	Catalog Number	Watt Rating/ Class of Coil Insulation	Spare Coil
Watertight Enclosure includes these built-in pilot valves:						
1/8	1/8 (3.2)	0.34 (0.29)	150 (10)	PSFX8262C002-17523	6/F	125472
Explosionproof Enclosure includes these built-in pilot valves:						
1/8	1/8 (3.2)	0.34 (0.29)	150 (10)	X8200 001-17579	6/F	125472

Dimensions inches (mm)

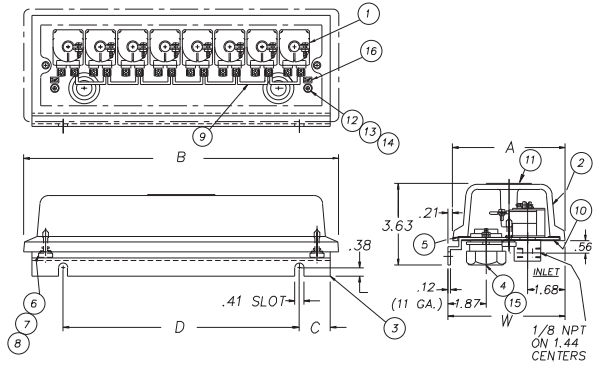
Type 4 Watertight Enclosures

5 Valve Maximum



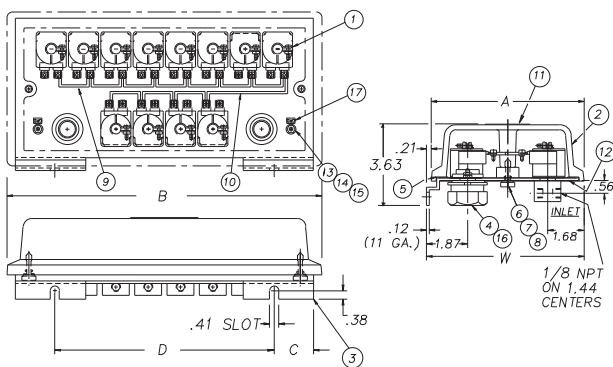
Catalog No.		A	B	C	D	W
125-468	ins.	5.00	9.75	1.43	6.14	5.21
	mm	127	248	36	156	132

8 Valve Maximum



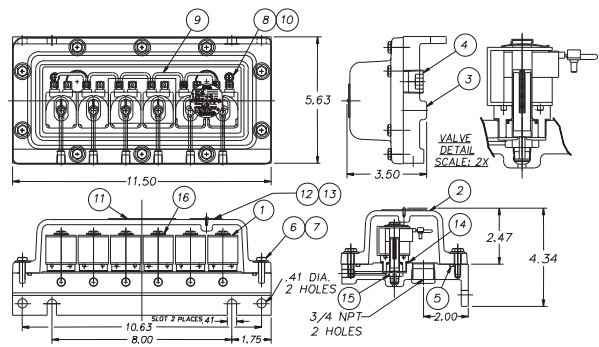
Catalog No.		A	B	C	D	W
125-469	ins.	5.00	14.00	1.38	10.50	5.21
	mm	127	356	35	267	132

**Type 4 Watertight Enclosure
12 Valve Maximum**



Catalog No.		A	B	C	D	W
125-470	ins.	6.81	14.00	1.75	9.75	7.02
	mm	173	356	44	248	178

**Type 7 and 9 Explosionproof Enclosure
Explosionproof Assembly - 6 Valve Maximum**



SPECIAL SERVICE VALVES

Features

- Handle the challenges of high-temperature fluids
- PTFE and EPDM discs, stainless steel seats, plus high-temperature coils, help provide long, reliable service life
- Wide range of valve constructions, including straight-through and slow-closing, with normally closed and normally open operation
- Specify these valves for the high-temperature applications found in laundries, molding, steam atomization, sterilizers, autoclaves, and many others
 - Series 8263: direct acting miniature valves
 - Series 8267: direct acting straight-through, self-cleaning design
 - Series 8210/8220: pilot operated diaphragm valves
 - Series 8220: heavy-duty, pilot operated piston valves have stainless steel pistons
 - Series 8221: slow-closing, anti-water hammer design
 - Series 8222: pilot operated diaphragm and piston valves. Y-body floating piston design

Construction

Valve Parts in Contact with Fluids		
Common Parts		
Body	Brass	Stainless Steel
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Shading Coil	Copper	Silver
8210HW Series		
Seals, Discs, and Diaphragms	EPDM	
8263 Series		
Seals	PTFE	
Disc	EPDM or PTFE	
8220/8221 Series		
Piston	Stainless Steel	
Discs	EPDM or PTFE	
Seals	EPDM, PTFE	
8222 Series		
Seals, Discs, and Diaphragms	EPDM and/or PTFE	
Piston	Brass or PTFE	
8267 Series		
Seals	FKM, PTFE	
Disc	Stainless Steel	
Seat	Glass-Filled PTFE	

Electrical

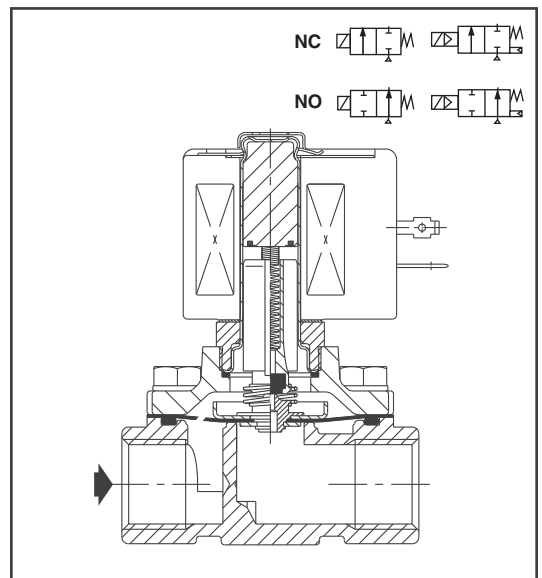
See individual valve series in General Service Section for details.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; Red-Hat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Raintight, Types 3, 7, and 9.
 (To order, add prefix "EF" to catalog number.)

See Optional Features Section for other available options.



Nominal Ambient Temp. Ranges

- RedHat II/
- RedHat AC: 32°F to 125°F (0°C to 52°C)
- RedHat II DC: 32°F to 104°F (0°C to 40°C)
- RedHat DC: 32°F to 77°F (0°C to 25°C)
 (104°F/40°C occasionally)

Refer to Engineering Section for details.

Approvals

Most are UL listed, CSA certified, and meet applicable CE directives. Contact ASCO for details.

Important: Explosionproof Catalog Numbers EF8210HW, EF8220, EF8221, and EF8263 are not UL listed. They are suitable for Types 4, 7 (C and D), and 9 (E and F) only, and have a temperature range code of T3A.

SPECIAL SERVICE VALVES

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		Brass Body		AC Watt Rating/ Class of Coil Insulation	
			Hot Water			Hot Water		Catalog Number	Const. Ref.	AC	DC
			Min. ④	Max. AC	Max. DC	AC	DC				
HOT WATER SERVICE ONLY - NORMALLY CLOSED (Closed when de-energized), EPDM Diaphragm											
3/8	5/8	3	0 ③	100	40	210	150	8210G093HW	32	10.1/F	11.6/F
3/8	5/8	3	5	125	100	210	150	8210G001HW	33	6.1/F	11.6/F
1/2	5/8	4	0 ③	100	40	210	150	8210G094HW	32	10.1/F	11.6/F
1/2	5/8	4	5	125	100	210	150	8210G002HW	33	6.1/F	11.6/F
3/4	3/4	5	0 ③	100	40	210	150	8210G095HW	34	10.1/F	11.6/F
3/4	3/4	5	5	125	100	210	150	8210G009HW	35	6.1/F	11.6/F
SLOW CLOSING - NORMALLY CLOSED (Closed when de-energized), EPDM Disc											
3/8	9/16	3	5 ②	150	-	210	-	8221G001HW	36	6.1/F	-
1/2	9/16	3.5	5 ②	150	-	210	-	8221G003HW	36	6.1/F	-
3/4	3/4	5.5	5 ②	150	-	210	-	8221G005HW	36	6.1/F	-
1	1	11.5	5 ②	150	-	210	-	8221G007HW	38	6.1/F	-
1 1/4	1 1/8	13	5 ②	150	-	210	-	8221G009HW	39	6.1/F	-
1 1/2	1 1/4	24	5 ②	150	-	210	-	8221G011HW	40	6.1/F	-
2	1 3/4	36	5 ②	150	-	210	-	8221G013HW	41	6.1/F	-
2 1/2	1 3/4	38	5 ②	150	-	210	-	8221G015HW	42	6.1/F	-
SLOW CLOSING - NORMALLY OPEN (Open when de-energized), EPDM Disc											
3/8	9/16	3	5 ②	150	-	210	-	8221G021HW	43	16.1/F	-
1/2	9/16	3.5	5 ②	150	-	210	-	8221G023HW	43	16.1/F	-
3/4	3/4	5.5	5 ②	150	-	210	-	8221G025HW	44	16.1/F	-
1	1	11.5	5 ②	150	-	210	-	8221G027HW	45	16.1/F	-
1 1/4	1 1/8	13	5 ②	150	-	210	-	8221G029HW	46	16.1/F	-
1 1/2	1 1/4	24	5 ②	150	-	210	-	8221G031HW	47	16.1/F	-
2	1 3/4	36	5 ②	150	-	210	-	8221G033HW	48	16.1/F	-
2 1/2	1 3/4	38	5 ②	150	-	210	-	8221G035HW	49	16.1/F	-

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		Brass Body		Stainless Steel Body		AC Watt Rating/ Class of Coil Insulation
			Min. ④	Max.		Steam	Hot Water	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	
				Steam	Hot Water							
DIRECT ACTING - NORMALLY CLOSED (Closed when de-energized), Stainless Steel Seat, EPDM ⑤, or PTFE Disc												
1/8	1/8	.34	0	50	-	298	-	8263G052 ⑤	1	-	-	6.1/F
1/8	1/8	.34	0	90	-	331	-	8263G058	1	-	-	6.1/F
1/4	1/8	.34	0	50	-	298	-	8263G053 ⑤	2	-	-	6.1/F
1/4	1/8	.34	0	90	-	331	-	8263G059	2	-	-	6.1/F
1/4	5/32	.52	0	110	110	344	210	8263G300	3	-	-	10.1/H
1/4	7/32	.72	0	70	-	316	-	8263G301	3	-	-	10.1/H
1/4	9/32	.85	0	60	-	307	-	8263G303	3	-	-	17.1/H
3/8	1/8	.36	0	125	125	353	210	8263G304	3	8263G318	31	10.1/H
3/8	5/32	.52	0	110	110	344	210	8263G305	3	8263G319	31	10.1/H
3/8	7/32	.72	0	70	-	316	-	8263G306	3	8263G320	31	10.1/H
3/8	9/32	.85	0	60	-	307	-	8263G308	3	8263G321	31	17.1/H
PILOT OPERATED - NORMALLY CLOSED (Closed when de-energized)												
1/4	3/8	1.2	1	80	-	324	-	8222G068	4	-	-	6.1/F
1/4	3/8	1.2	1	125	-	353	-	8222G070	4	-	-	6.1/H
3/8	3/8	2.5	1	80	-	324	-	8222G064	4	-	-	6.1/F
3/8	3/8	2.5	1	125	-	353	-	8222G074	4	-	-	6.1/H
3/8	5/8	3.0	5 ①	50	150	300	210	8220G001	5	-	-	10.1/F
3/8	5/8	3.0	5 ①	125	150	353	210	8220G019	5	-	-	10.1/H
3/8	5/8	3.0	0	125	-	353	-	8222G001	6	-	-	17.1/H
3/8	5/8	3.0	0	50	-	300	-	8222G093	7	-	-	10.1/F
1/2	3/8	2.5	1	80	-	324	-	8222G066	4	-	-	6.1/F
1/2	3/8	2.5	1	125	-	353	-	8222G076	4	-	-	6.1/H
1/2	1/2	3.6	2	125	-	353	-	8222G047	9	-	-	10.1/H
1/2	5/8	4.0	0	50	-	300	-	8222G094	7	8222G060	28	10.1/F
1/2	5/8	4.0	0	125	-	353	-	8222G002	6	8222G087	29	17.1/H
1/2	5/8	4.0	5 ①	50	150	300	210	8220G003	5	-	-	10.1/F
1/2	5/8	4.0	5 ①	125	150	353	210	8220G021	5	-	-	10.1/H

SPECIAL SERVICE VALVES

Specifications (English units continued)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F		Brass Body		Stainless Steel Body		AC Watt Rating/ Class of Coil Insulation
			Min. ④	Max.		Steam	Hot Water	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	
				Steam	Hot Water							
PILOT OPERATED - NORMALLY CLOSED (Closed when de-energized)												
3/4	5/8	4.5	0	50	-	300	-	-	-	8222G062	28	10.1/F
3/4	5/8	4.5	0	125	-	353	-	-	-	8222G088	29	17.1/H
3/4	3/4	5.0	0	50	-	300	-	8222G095	10	-	-	10.1/F
3/4	3/4	5.0	5 ①	50	150	300	210	8222G005	8	-	-	10.1/F
3/4	3/4	5.0	5 ①	125	150	353	210	8222G023	8	-	-	10.1/H
3/4	3/4	5.0	0	125	-	353	-	8222G003	11	-	-	17.1/H
3/4	1/2	4.6	2	125	-	353	-	8222G049	9	-	-	10.1/H
3/4	1/2	4.6	5	200	-	388	-	8222G005	12	-	-	10.1/H
1	1	11.2	5	125	-	353	-	-	-	8222G089	30	10.1/F
1	1	13.5	5 ②	50	150	300	210	8220G007	14	-	-	10.1/F
1	1	13.5	5 ②	125	150	353	210	8220G025	14	-	-	10.1/H
1	1	13.5	5	125	-	353	-	8222G004	13	-	-	10.1/H
1	1	13.0	0	200	-	388	-	8222 099	13	-	-	28.2/H
1 1/4	1 1/8	15	5 ②	50	150	300	210	8220G009	15	-	-	10.1/F
1 1/4	1 1/8	15	5 ②	125	150	353	210	8220G027	15	-	-	10.1/H
1 1/2	1 1/4	22.5	5 ②	50	150	300	210	8220G011	16	-	-	10.1/F
1 1/2	1 1/4	22.5	5 ②	125	150	353	210	8220G029	16	-	-	10.1/H
2	1 3/4	43	5 ②	50	150	300	210	8220G013	17	-	-	10.1/F
2	1 3/4	43	5 ②	125	150	353	210	8220G031	17	-	-	10.1/H
2 1/2	1 3/4	45	5 ②	50	150	300	210	8220G015	18	-	-	10.1/F
2 1/2	1 3/4	45	5 ②	125	150	353	210	8220G033	18	-	-	10.1/H
DIRECT ACTING, STRAIGHT-THROUGH DESIGN - NORMALLY CLOSED (Closed when de-energized)												
3/8	1/4	1.5	0	75	-	320	-	8267G001	19	-	-	16.1/H
3/8	3/8	5.1	0	30	-	280	-	8267G003	19	-	-	16.1/H
1/2	1/4	1.4	0	75	-	320	-	8267G005	19	-	-	16.1/H
1/2	3/8	4.5	0	15	-	250	-	8267G007	19	-	-	16.1/H
3/4	3/8	5.4	0	30	-	280	-	8267G017	20	-	-	16.1/H
3/4	1/2	9.7	0	15	-	250	-	8267G019	20	-	-	16.1/H
DIRECT ACTING, STRAIGHT-THROUGH DESIGN - NORMALLY OPEN (Open when de-energized)												
3/8	1/4	1.5	0	75	-	320	-	8267G009	19	-	-	16.1/H
3/8	3/8	5.1	0	30	-	280	-	8267G011	19	-	-	16.1/H
1/2	1/4	1.4	0	75	-	320	-	8267G013	19	-	-	16.1/H
1/2	3/8	4.5	0	15	-	250	-	8267G015	19	-	-	16.1/H
3/4	3/8	5.4	0	25	-	267	-	8267G021	20	-	-	16.1/H
3/4	1/2	9.7	0	15	-	250	-	8267G023	20	-	-	16.1/H
PILOT OPERATED - NORMALLY OPEN (Open when de-energized)												
3/8	9/16	3	5	50	150	300	210	8220G071	21	-	-	16.1/F
3/8	9/16	3	5	125	150	353	210	8220G091	21	-	-	16.1/H
1/2	9/16	4	5	50	150	300	210	8220G073	21	-	-	16.1/F
1/2	9/16	4	5	125	150	353	210	8220G093	21	-	-	16.1/H
3/4	3/4	5	5	50	150	300	210	8220G075	22	-	-	16.1/F
3/4	3/4	5	5	125	150	353	210	8220G095	22	-	-	16.1/H
1	1	13.5	5	50	150	300	210	8220G077	23	-	-	16.1/F
1	1	13.5	5	125	150	353	210	8220G097	23	-	-	16.1/H
1 1/4	1 1/8	15	5	50	150	300	210	8220G079	24	-	-	16.1/F
1 1/4	1 1/8	15	5	125	150	353	210	8220G099	24	-	-	16.1/H
1 1/2	1 1/4	22.5	5	50	150	300	210	8220G081	25	-	-	16.1/F
1 1/2	1 1/4	22.5	5	125	150	353	210	8220G101	25	-	-	16.1/H
2	1 3/4	43	5	50	150	300	210	8220G083	26	-	-	16.1/F
2	1 3/4	43	5	125	150	353	210	8220G103	26	-	-	16.1/H
2 1/2	1 3/4	45	5	50	150	300	210	8220G085	27	-	-	16.1/F
2 1/2	1 3/4	45	5	125	150	353	210	8220G105	27	-	-	16.1/F

① Once opened at higher pressure, valve will remain open to 0 psi at inlet.
 ② Once opened at higher pressure, valve will remain open to 3 psi at inlet.
 ③ 0 psi on AC construction, 1/4 psi on DC construction.
 ④ Series 8220 Normally Closed valves through 3/4" will remain open to 0 psi while energized.
 Once opened at 5 psi, larger sizes will remain open to 3 psi, as will all Series 8220 Normally Open valves.
 ⑤ EPDM disc.

SPECIAL SERVICE VALVES



Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		Brass Body		AC Watt Rating/ Class of Coil Insulation	
			Hot Water			Hot Water		Catalog Number	Const. Ref.	AC	DC
			Min. ④	Max. AC	Max. DC	AC	DC				
HOT WATER SERVICE ONLY - NORMALLY CLOSED (Closed when de-energized), EPDM Diaphragm											
3/8	16	2.57	0 ③	6.9	2.8	98	65	8210G093HW	32	10.1/F	11.6/F
3/8	16	2.57	0.3	8.6	6.9	98	65	8210G001HW	33	6.1/F	11.6/F
1/2	16	3.43	0 ③	6.9	2.8	98	65	8210G094HW	32	10.1/F	11.6/F
1/2	16	3.43	0.3	8.6	6.9	98	65	8210G002HW	33	6.1/F	11.6/F
3/4	19	4.29	0 ③	6.9	2.8	98	65	8210G095HW	34	10.1/F	11.6/F
3/4	19	4.29	0.03	8.6	6.9	98	65	8210G009HW	35	6.1/F	11.6/F
SLOW CLOSING - NORMALLY CLOSED (Closed when de-energized), EPDM Disc											
3/8	14	2.57	0.3 ②	10.3	-	98	-	8221G001HW	36	6.1/F	-
1/2	14	3.00	0.3 ②	10.3	-	98	-	8221G003HW	36	6.1/F	-
3/4	19	4.71	0.3 ②	10.3	-	98	-	8221G005HW	36	6.1/F	-
1	25	9.86	0.3 ②	10.3	-	98	-	8221G007HW	38	6.1/F	-
1 1/4	29	11.14	0.3 ②	10.3	-	98	-	8221G009HW	39	6.1/F	-
1 1/2	32	20.57	0.3 ②	10.3	-	98	-	8221G011HW	40	6.1/F	-
2	44	30.86	0.3 ②	10.3	-	98	-	8221G013HW	41	6.1/F	-
2 1/2	44	32.57	0.3 ②	10.3	-	98	-	8221G015HW	42	6.1/F	-
SLOW CLOSING - NORMALLY OPEN (Open when de-energized), EPDM Disc											
3/8	14	2.57	0.3 ②	10.3	-	98	-	8221G021HW	43	16.1/F	-
1/2	14	3.00	0.3 ②	10.3	-	98	-	8221G023HW	43	16.1/F	-
3/4	19	4.71	0.3 ②	10.3	-	98	-	8221G025HW	44	16.1/F	-
1	25	9.86	0.3 ②	10.3	-	98	-	8221G027HW	45	16.1/F	-
1 1/4	29	11.14	0.3 ②	10.3	-	98	-	8221G029HW	46	16.1/F	-
1 1/2	32	20.57	0.3 ②	10.3	-	98	-	8221G031HW	47	16.1/F	-
2	44	30.86	0.3 ②	10.3	-	98	-	8221G033HW	48	16.1/F	-
2 1/2	44	32.57	0.3 ②	10.3	-	98	-	8221G035HW	49	16.1/F	-

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		Brass Body		Stainless Steel Body		AC Watt Rating/ Class of Coil Insulation
			Min. ④	Max.		Steam	Hot Water	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	
				Steam	Hot Water							
DIRECT ACTING - NORMALLY CLOSED (Closed when de-energized), Stainless Steel Seat, EPDM ⑤, or PTFE Disc												
1/8	3	.29	0	3	-	146	-	8263G052 ⑤	1	-	-	6.1/F
1/8	3	.29	0	6	-	164	-	8263G058	1	-	-	6.1/F
1/4	3	.29	0	3	-	146	-	8263G053 ⑤	2	-	-	6.1/F
1/4	3	.29	0	6	-	164	-	8263G059	2	-	-	6.1/F
1/4	4	.45	0	8	8	172	98	8263G300	3	-	-	10.1/H
1/4	6	.62	0	5	-	156	-	8263G301	3	-	-	10.1/H
1/4	7	.73	0	4	-	151	-	8263G303	3	-	-	17.1/H
3/8	3	.31	0	9	9	177	98	8263G304	3	8263G318	31	10.1/H
3/8	4	.45	0	8	8	172	98	8263G305	3	8263G319	31	10.1/H
3/8	6	.62	0	5	-	156	-	8263G306	3	8263G320	31	10.1/H
3/8	7	.73	0	4	-	151	-	8263G308	3	8263G321	31	17.1/H
PILOT OPERATED - NORMALLY CLOSED (Closed when de-energized)												
1/4	10	1.03	0.07	6	-	161	-	8222G068	4	-	-	6.1/F
1/4	10	1.03	0.07	9	-	177	-	8222G070	4	-	-	6.1/H
3/8	10	2.14	0.07	6	-	161	-	8222G064	4	-	-	6.1/F
3/8	10	2.14	0.07	9	-	177	-	8222G074	4	-	-	6.1/H
3/8	16	2.57	.3 ①	3	10	147	98	8220G001	5	-	-	10.1/F
3/8	16	2.57	.3 ①	9	10	177	98	8220G019	5	-	-	10.1/H
3/8	16	2.57	0	9	-	177	-	8222G001	6	-	-	17.1/H
3/8	16	2.57	0	3	-	147	-	8222G093	7	-	-	10.1/F
1/2	10	2.14	0.07	6	-	161	-	8222G066	4	-	-	6.1/F
1/2	10	2.14	0.07	9	-	177	-	8222G076	4	-	-	6.1/H
1/2	13	3.09	0.1379	9	-	177	-	8222G047	9	-	-	10.1/H
1/2	16	3.43	0	3	-	147	-	8222G094	7	8222G060	28	10.1/F
1/2	16	3.43	0	9	-	177	-	8222G002	6	8222G087	29	17.1/H
1/2	16	3.43	.3 ①	3	10	147	98	8220G003	5	-	-	10.1/F
1/2	16	3.43	.3 ①	9	10	177	98	8220G021	5	-	-	10.1/H

SPECIAL SERVICE VALVES

Specifications (Metric units continued)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C		Brass Body		Stainless Steel Body		AC Watt Rating/ Class of Coil Insulation
			Min. ④	Max.		Steam	Hot Water	Steam	Hot Water	Catalog Number	Const. Ref.	
PILOT OPERATED - NORMALLY CLOSED (Closed when de-energized)												
3/4	16	3.86	0	3	-	147	-	-	-	8222G062	28	10.1/F
3/4	16	3.86	0	9	-	177	-	-	-	8222G088	29	17.1/H
3/4	19	4.29	0	3	-	147	-	8222G095	10	-	-	10.1/F
3/4	19	4.29	.3 ①	3	10	147	98	8220G005	8	-	-	10.1/F
3/4	19	4.29	.3 ①	9	10	177	98	8220G023	8	-	-	10.1/H
3/4	19	4.29	0	9	-	177	-	8222G003	11	-	-	17.1/H
3/4	13	3.94	0.14	9	-	177	-	8222G049	9	-	-	10.1/H
3/4	13	3.94	0.3	14	-	196	-	8222G005	12	-	-	10.1/H
1	25	9.60	0.3	9	-	177	-	-	-	8222G089	30	10.1/F
1	25	11.57	.3 ②	3	10	147	98	8220G007	14	-	-	10.1/F
1	25	11.57	.3 ②	9	10	177	98	8220G025	14	-	-	10.1/H
1	25	11.57	0.3	9	-	177	-	8222G004	13	-	-	10.1/H
1	25	11.14	0	14	-	196	-	8222 099	13	-	-	28.2/H
1 1/4	29	12.86	.3 ②	3	10	147	98	8220G009	15	-	-	10.1/F
1 1/4	29	12.86	.3 ②	9	10	177	98	8220G027	15	-	-	10.1/H
1 1/2	32	19.29	.3 ②	3	10	147	98	8220G011	16	-	-	10.1/F
1 1/2	32	19.29	.3 ②	9	10	177	98	8220G029	16	-	-	10.1/H
2	44	36.86	.3 ②	3	10	147	98	8220G013	17	-	-	10.1/F
2	44	36.86	.3 ②	9	10	177	98	8220G031	17	-	-	10.1/H
2 1/2	44	38.57	.3 ②	3	10	147	98	8220G015	18	-	-	10.1/F
2 1/2	44	38.57	.3 ②	9	10	177	98	8220G033	18	-	-	10.1/H
DIRECT ACTING, STRAIGHT-THROUGH DESIGN - NORMALLY CLOSED (Closed when de-energized)												
3/8	6	1.29	0	5	-	158	-	8267G001	19	-	-	16.1/H
3/8	10	4.37	0	2	-	136	-	8267G003	19	-	-	16.1/H
1/2	6	1.20	0	5	-	158	-	8267G005	19	-	-	16.1/H
1/2	10	3.86	0	1	-	120	-	8267G007	19	-	-	16.1/H
3/4	10	4.63	0	2	-	136	-	8267G017	20	-	-	16.1/H
3/4	13	8.31	0	1	-	120	-	8267G019	20	-	-	16.1/H
DIRECT ACTING, STRAIGHT-THROUGH DESIGN - NORMALLY OPEN (Open when de-energized)												
3/8	6	1.29	0	5	-	158	-	8267G009	19	-	-	16.1/H
3/8	10	4.37	0	2	-	136	-	8267G011	19	-	-	16.1/H
1/2	6	1.20	0	5	-	158	-	8267G013	19	-	-	16.1/H
1/2	10	3.86	0	1	-	120	-	8267G015	19	-	-	16.1/H
3/4	10	4.63	0	2	-	129	-	8267G021	20	-	-	16.1/H
3/4	13	8.31	0	1	-	120	-	8267G023	20	-	-	16.1/H
PILOT OPERATED - NORMALLY OPEN (Open when de-energized)												
3/8	14	2.57	0.3	3	10	147	98	8220G071	21	-	-	16.1/F
3/8	14	2.57	0.3	9	10	177	98	8220G091	21	-	-	16.1/H
1/2	14	3.43	0.3	3	10	147	98	8220G073	21	-	-	16.1/F
1/2	14	3.43	0.3	9	10	177	98	8220G093	21	-	-	16.1/H
3/4	19	4.29	0.3	3	10	147	98	8220G075	22	-	-	16.1/F
3/4	19	4.29	0.3	9	10	177	98	8220G095	22	-	-	16.1/H
1	25	11.57	0.3	3	10	147	98	8220G077	23	-	-	16.1/F
1	25	11.57	0.3	9	10	177	98	8220G097	23	-	-	16.1/H
1 1/4	29	12.86	0.3	3	10	147	98	8220G079	24	-	-	16.1/F
1 1/4	29	12.86	0.3	9	10	177	98	8220G099	24	-	-	16.1/H
1 1/2	32	19.29	0.3	3	10	147	98	8220G081	25	-	-	16.1/F
1 1/2	32	19.29	0.3	9	10	177	98	8220G101	25	-	-	16.1/H
2	44	36.86	0.3	3	10	147	98	8220G083	26	-	-	16.1/F
2	44	36.86	0.3	9	10	177	98	8220G103	26	-	-	16.1/H
2 1/2	44	38.57	0.3	3	10	147	98	8220G085	27	-	-	16.1/F
2 1/2	44	38.57	0.3	9	10	177	98	8220G105	27	-	-	16.1/F

① Once opened at higher pressure, valve will remain open to 0 bar at inlet.
 ② Once opened at higher pressure, valve will remain open to 0.2 bar at inlet.
 ③ 0 bar on AC construction, 0.02 bar on DC construction.
 ④ Series 8220 Normally Closed valves through 3/4" will remain open to 0 bar while energized.
 Once opened at 0.3 bar, larger sizes will remain open to 0.2 bar, as will all Series 8220 Normally Open valves.
 ⑤ EPDM disc.

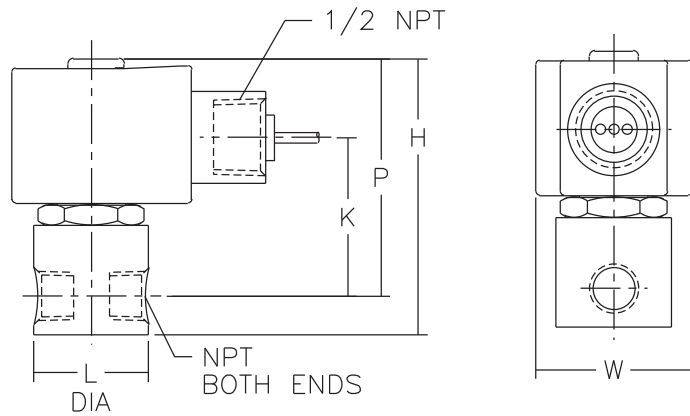
SPECIAL SERVICE VALVES



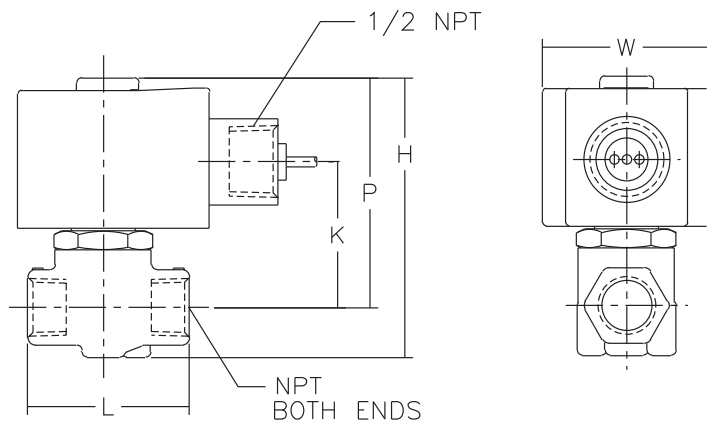
Dimensions inches (mm)

Const. Ref.		H	K	L	P	W
1	ins.	2.52	1.30	Ø 1.19	2.16	1.69
	mm	64	33	Ø 30	55	43
2	ins.	3.01	1.73	Ø 1.25	2.59	1.69
	mm	76	44	Ø 32	66	43
3	ins.	3.25	1.70	1.88	2.67	1.95
	mm	83	43	48	68	50
4	ins.	4.17	3.25	2.28	3.63	1.69
	mm	106	83	58	92	43
5	ins.	4.05	2.52	2.75	3.48	2.28
	mm	103	64	70	88	58
7	ins.	3.84	2.31	2.75	3.28	2.29
	mm	98	59	70	83	58
8	ins.	4.34	2.68	2.81	3.65	2.28
	mm	110	68	71	93	58
9	ins.	4.81	3.62	2.75	4.01	1.95
	mm	122	92	70	102	50
10	ins.	4.14	2.47	2.81	3.44	2.29
	mm	105	63	71	87	58
12	ins.	4.81	3.63	2.75	4.01	1.95
	mm	122	92	70	102	50
32	ins.	3.84	2.31	2.75	3.28	2.29
	mm	98	59	70	83	58
33	ins.	3.36	1.94	2.75	2.80	2.28
	mm	85	49	70	71	58
34	ins.	4.13	2.47	2.81	3.44	2.29
	mm	105	63	71	87	58
35	ins.	3.66	2.10	2.81	2.96	2.28
	mm	93	53	71	75	58

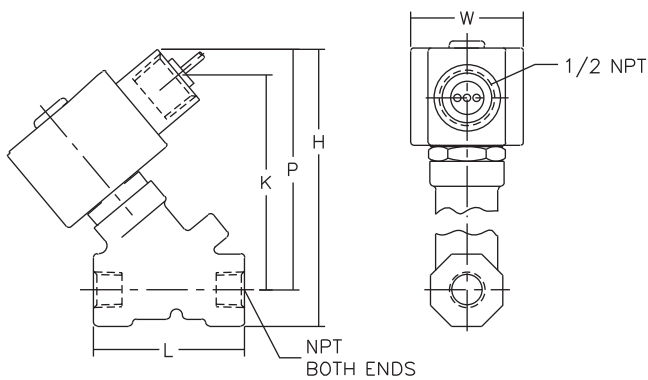
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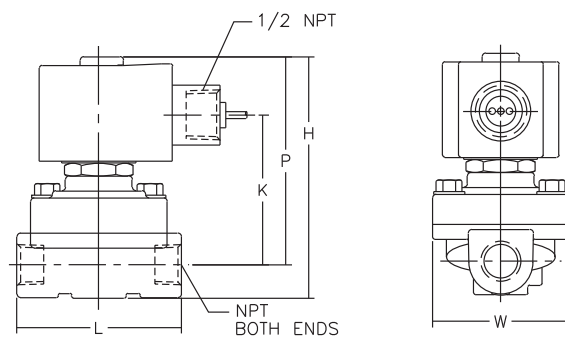
Const. Ref. 3



Const. Ref. 4, 9, 12



Const. Ref. 5, 7, 8, 10, 32-35



SPECIAL SERVICE VALVES

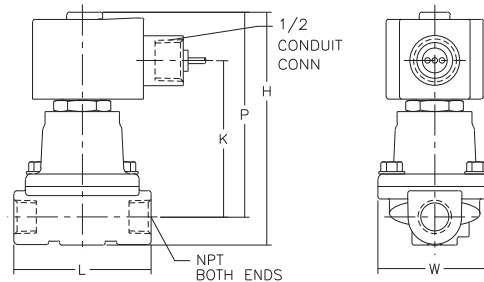
Dimensions inches (mm)

Const. Ref.		H	K	L	P	W
6	ins.	4.68	3.15	2.75	4.12	2.28
	mm	119	80	70	105	58
11	ins.	4.97	3.45	2.81	4.28	2.28
	mm	126	88	71	109	58
13	ins.	5.82	3.22	3.75	4.19	3.31
	mm	148	82	95	106	84
14	ins.	5.81	3.22	3.75	4.19	3.14
	mm	148	82	95	106	80
15	ins.	5.81	3.22	3.66	4.19	3.56
	mm	148	82	93	106	90
16	ins.	6.29	3.37	4.38	4.34	4.10
	mm	160	86	111	110	104
17	ins.	7.51	3.78	5.06	4.75	4.71
	mm	191	96	129	121	120
18	ins.	7.51	3.78	5.50	4.75	5.18
	mm	191	96	140	121	132
23	ins.	6.46	3.36	3.75	4.86	3.14
	mm	164	85	95	123	80
24	ins.	6.39	3.36	3.66	4.86	3.56
	mm	162	85	93	123	90
25	ins.	6.97	3.51	4.38	5.01	4.10
	mm	177	89	111	127	104
26	ins.	8.18	3.92	5.06	5.42	4.71
	mm	208	100	129	138	120
27	ins.	8.18	3.92	5.50	5.42	5.18
	mm	208	100	140	138	132
29	ins.	5.04	3.34	2.81	4.31	2.28
	mm	128	85	71	109	58
38	ins.	5.64	3.15	3.75	4.01	3.14
	mm	143	80	95	102	80
39	ins.	5.64	3.15	3.66	4.01	3.56
	mm	143	80	93	102	90
40	ins.	6.11	3.30	4.38	4.16	4.10
	mm	155	84	111	106	104
41	ins.	7.35	3.63	5.06	4.58	4.71
	mm	187	92	129	116	120
42	ins.	7.35	3.63	5.50	4.58	5.18
	mm	187	92	140	116	132
45	ins.	6.53	3.36	3.75	4.91	3.14
	mm	166	85	95	125	80
46	ins.	6.46	3.36	3.66	4.91	3.56
	mm	164	85	93	125	90
47	ins.	7.03	3.51	4.38	5.06	4.10
	mm	179	89	111	129	104
48	ins.	8.22	3.97	5.06	5.47	4.71
	mm	209	101	129	139	120
49	ins.	8.22	3.97	5.50	5.47	5.18
	mm	209	101	140	139	132

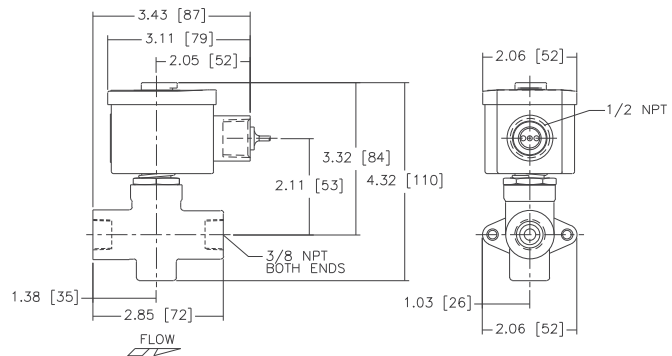
* Valves must be mounted with solenoid vertical and upright.

Const. Ref. 6, 11, 13, 29

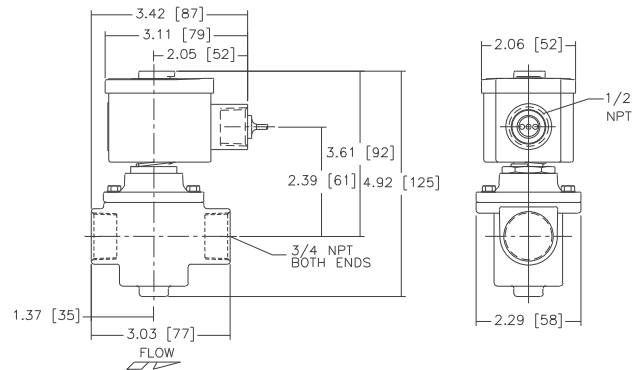
1/2 NPT OR 7/8 DIA HOLE FOR



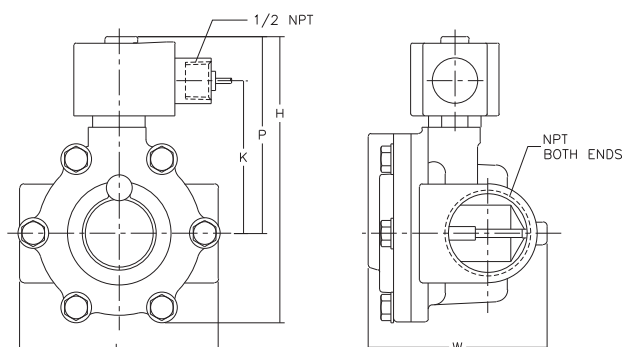
Const. Ref. 19*



Const. Ref. 20*



Const. Ref. 14-16, 23-25, 45-49

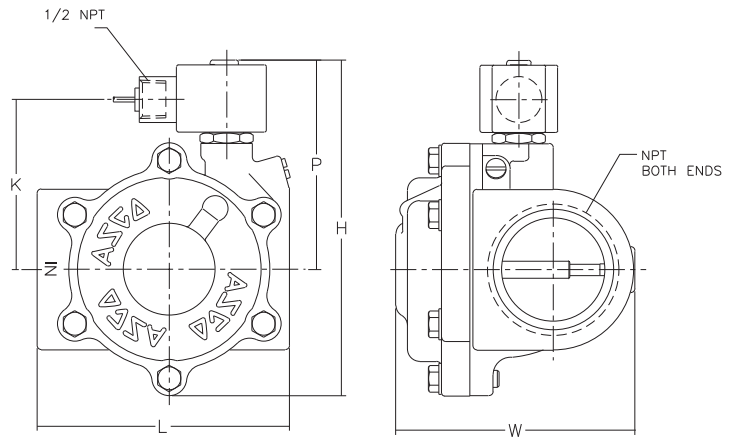


SPECIAL
SERVICE VALVES

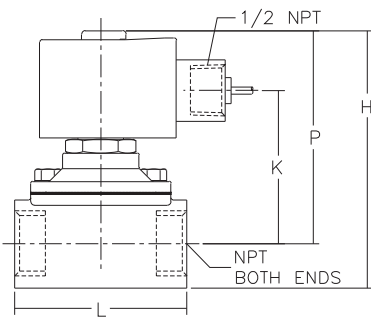
Dimensions inches (mm)

Const. Ref.		H	K	L	P	W
21	ins.	5.11	3.13	2.71	4.35	3.58
	mm	130	80	69	111	91
22	ins.	5.30	3.29	2.78	4.51	3.58
	mm	135	84	71	115	91
28	ins.	4.17	2.47	2.81	3.44	2.28
	mm	106	63	71	87	58
30	ins.	5.82	3.22	3.75	4.19	4.44
	mm	148	82	95	106	113
31	ins.	3.25	1.70	2.00	2.67	1.95
	mm	83	43	51	68	50
36	ins.	4.32	2.69	2.71	3.56	3.45
	mm	110	68	69	90	88
43	ins.	5.12	3.14	2.71	4.35	3.65
	mm	130	80	69	111	93
44	ins.	5.30	3.30	2.78	4.51	3.65
	mm	135	84	71	115	93

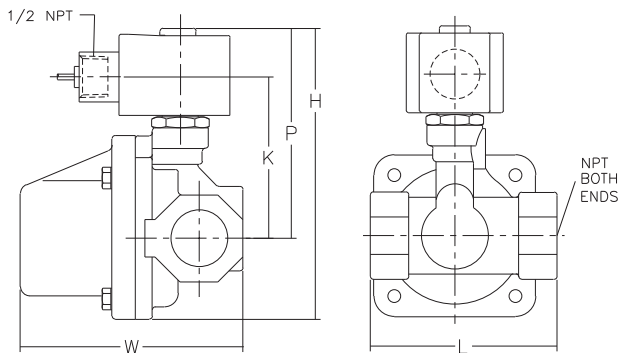
Const. Ref. 17, 18, 26, 27, 38-42



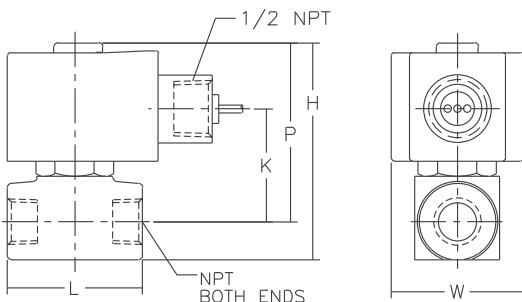
Const. Ref. 28



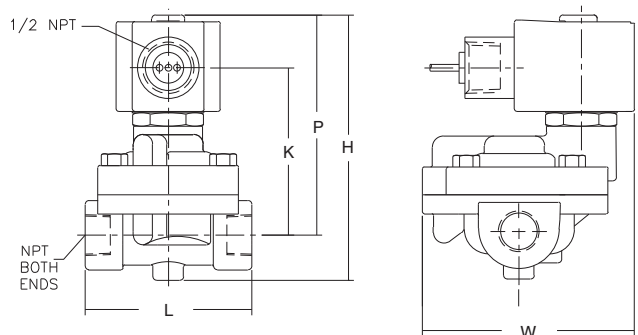
Const. Ref. 30



Const. Ref. 31



Const. Ref. 21, 22, 36, 43, 44



SPECIAL SERVICE VALVES

Features

- Designed for high flow and high pressure service
- Direct acting, requires no minimum operating pressure
- Ideal for power plants and similar applications

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Disc	303 Stainless Steel (Metal)
Seats	Phosphor Bronze
Core Tube	305 Stainless Steel
Core and Plugnut	430 F Stainless Steel
Springs	302 Stainless Steel, 17-7PH or Inconel
Shading Coil	Copper
Gaskets	NBR

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Spare Coil Part Number	
	AC			General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush	AC	AC
H	16.1	35	180	272810	272814
H	28.2	50	385	224195	224195

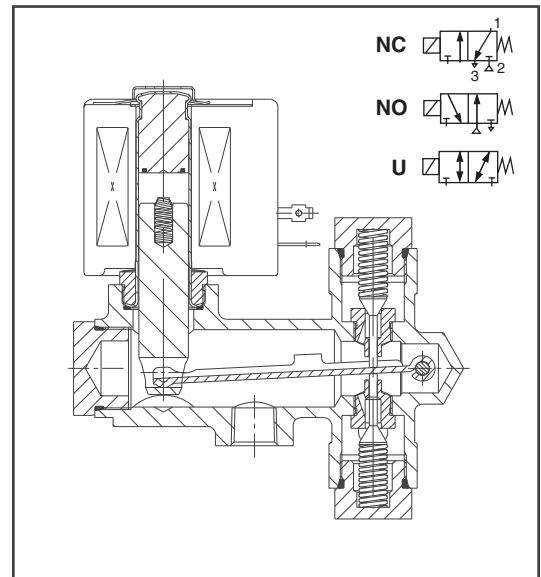
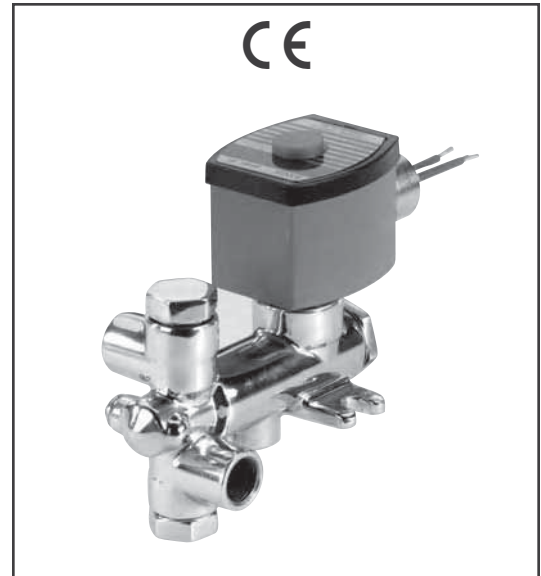
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
 Must be specified when ordering.

Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X;
 RedHat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9;
 (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

Class H Coils AC: 32°F to 140°F (0°C to 60°C)
 Refer to *Engineering Section* for details.

Approvals

Meets applicable CE directives.
 Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Brass Body		Watt Rating/ Class of Coil Insulation
			Max. AC			① Add Suffix "F" for NC, "G" for NO, "U" for Univ.		
			NC/NO	Univ.	AC	Catalog Number	Const. Ref.	AC
PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY								
1/4	1/4	.45	100	55	344	8315G002	1	16.1/H
3/8	1/4	.45	100	50	344	8315G003	1	16.1/H
3/8	5/16	.75	105	50	344	8315 034	4	28.2/H
1/2	5/16	.75	100	50	344	8315 035	4	28.2/H

① NC = Normally Closed: Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port. Refer to Engineering Section for details.

Specifications (Metric units)

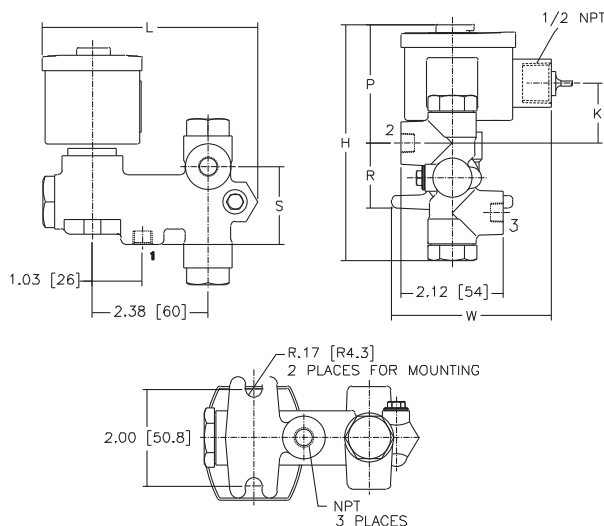
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Brass Body		Watt Rating/ Class of Coil Insulation
			Max. AC			① Add Suffix "F" for NC, "G" for NO, "U" for Univ.		
			NC/NO	Univ.	AC	Catalog Number	Const. Ref.	AC
PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY								
1/4	.5	.39	7	3.8	173	8315G002	1	16.1/H
3/8	.5	.39	7	3.4	173	8315G003	1	16.1/H
3/8	.6	.64	7.2	3.4	173	8315 034	4	28.2/H
1/2	.6	.64	7	3.4	173	8315 035	4	28.2/H

Dimensions inches (mm)

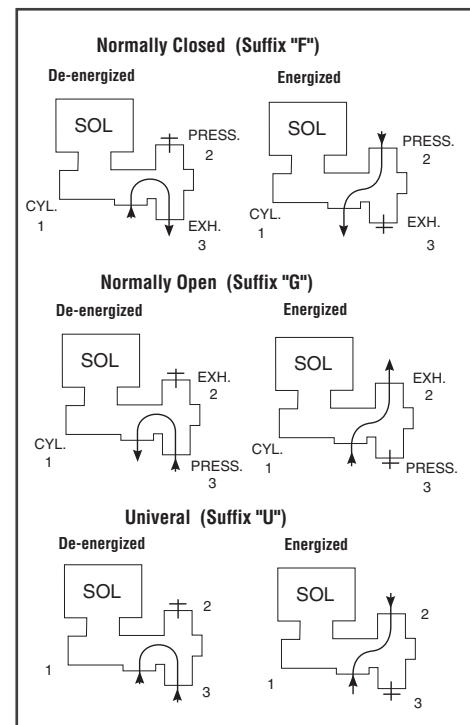
Const. Ref.		H	K	L	P	R	S	W
1	ins.	4.89	1.44	4.44	2.46	1.34	1.60	3.30
	mm	124	37	113	62	34	40	84
4	ins.	4.89	1.44	4.44	2.46	1.34	1.60	3.30
	mm	124	37	113	62	34	40	84

IMPORTANT: Valves must be mounted vertical and upright.

Const. Ref. 1, 4



Flow Diagrams



Features

- Design eliminates metal-to-metal contact to extend life up to 20 million cycles in dry air or gas applications
- Internal AC hum and metallic click at energization are eliminated. Quiet operating
- Easily handles applications involving rapid cycling or continuous energization

Construction

Valve Parts in Contact with Fluids	
Core Bumpers	UR
Rider Rings	PTFE

For more information, see individual Series in General Service Valve Section.

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number	
	DC Watts	AC			General Purpose	Explosionproof
		Watts	VA Holding	VA Inrush	AC	AC
F	①	15.1	22	22	270110	270114

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
Must be specified when ordering.

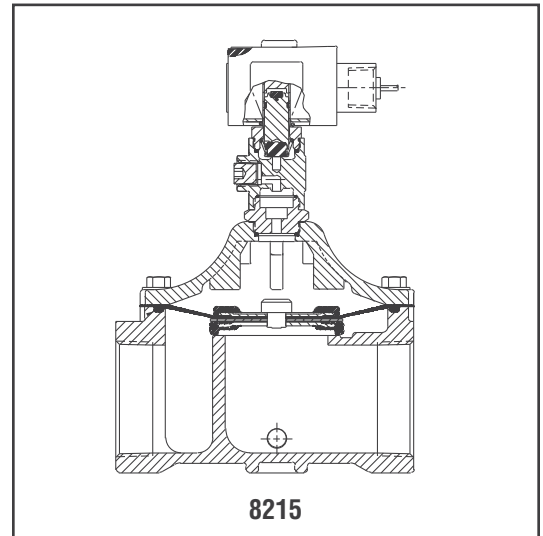
Note: ① Consult your local ASCO sales office for DC voltages.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
(To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed General Purpose Valves.
Meets applicable CE directives.

Installation

For optimum life, the valve should be installed with the solenoid positioned upright and vertical.

Refer to *Engineering Section* for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Brass Body Catalog Number	Aluminum Body Catalog Number	Watt Rating/Class of Coil Insulation AC
			Min.	Max. AC Air-Inert Gas				
2/2 VALVES (5 MILLION CYCLE CAPABILITY)								
NORMALLY CLOSED (Closed when de-energized)								
3/8	5/8	3	5	125	140	8210G001Q	-	15.1/F
1/2	5/8	4	5	125	140	8210G002Q	-	15.1/F
3/4	3/4	4.5	5	125	140	8210G009Q	-	15.1/F
1	1 5/8	13	1	20	140	-	8215G095Q	15.1/F
1 1/4	1 5/8	15	1	20	140	-	8215G096Q	15.1/F
1 1/2	1 5/8	20	1	20	140	-	8215G097Q	15.1/F
2	2 3/32	34	1	20	140	-	8215G098Q	15.1/F
NORMALLY OPEN (Open when de-energized)								
3/8	5/8	3	5	125	140	8210G011Q	-	15.1/F
1/2	5/8	4	5	125	140	8210G012Q	-	15.1/F
3/4	3/4	4.5	5	125	140	8210G013Q	-	15.1/F
1	1 5/8	13	1	20	140	-	8215G099Q	15.1/F
1 1/4	1 5/8	15	1	20	140	-	8215G100Q	15.1/F
1 1/2	1 5/8	20	1	20	140	-	8215G101Q	15.1/F
2	2 3/32	34	1	20	140	-	8215G102Q	15.1/F
2/2 VALVES (20 MILLION CYCLE CAPABILITY)								
NORMALLY CLOSED (Closed when de-energized)								
1/8	1/8	.35	0	125	140	8262G077Q	-	15.1/F
1/4	1/8	.35	0	125	140	8262G232Q	-	15.1/F
1/4	7/32	.85	0	50	140	8262G208Q	-	15.1/F
NORMALLY OPEN (Open when de-energized)								
1/8	1/16	.09	0	125	140	8262G091Q	-	15.1/F
1/4	1/16	.09	0	125	140	8262G032Q	-	15.1/F
3/2 VALVES (5 MILLION CYCLE CAPABILITY)								
NORMALLY CLOSED (Closed when de-energized)								
3/8	5/8	3	10	125	140	8316G014Q ②	-	15.1/F
1/2	5/8	4	10	125	140	8316G024Q ②	-	15.1/F
NORMALLY OPEN (Open when de-energized)								
3/8	5/8	3	10	125	140	8316G016Q ②	-	15.1/F
1/2	5/8	4	10	125	140	8316G026Q ②	-	15.1/F
3/2 VALVES (20 MILLION CYCLE CAPABILITY)								
UNIVERSAL OPERATION (Pressure at any port)								
1/8	1/16	.09	0	70	140	8320G001Q	-	15.1/F
1/4	1/16	.09	0	70	140	8320G172Q	-	15.1/F
1/4	3/32	.15	0	40	140	8320G174Q	-	15.1/F
NORMALLY CLOSED (Closed when de-energized)								
1/8	1/16	.09	0	125	140	8320G013Q	-	15.1/F
1/4	1/16	.09	0	125	140	8320G182Q	-	15.1/F
1/4	1/8	.31	0	35	140	8320G186Q	-	15.1/F
NORMALLY OPEN (Open when de-energized)								
1/8	1/16	.09	0	125	140	8320G027Q	-	15.1/F
1/4	1/16	.09	0	125	140	8320G192Q	-	15.1/F
1/4	1/8	.31	0	35	140	8320G196Q	-	15.1/F
4/2 VALVES (5 MILLION CYCLE CAPABILITY)								
SINGLE SOLENOID								
1/4	1/4	.53	10	125	140	8344G070Q ②	-	15.1/F
3/8	1/4	.53	10	125	140	8344G001Q ②	-	15.1/F
1/2	3/8	1.3	10	125	140	8344G074Q ②	-	15.1/F
4/2 VALVES (20 MILLION CYCLE CAPABILITY)								
SINGLE SOLENOID								
1/4	1/16	①	10	100	140	8345G002Q ②	-	15.1/F

① Inlet Cv is 0.036; exhaust Cv is 0.092.

② **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.

SPECIAL SERVICE VALVES

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m ³ /h)	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Brass Body Catalog Number	Aluminum Body Catalog Number	Watt Rating/Class of Coil Insulation AC
			Min.	Max. AC Air-Inert Gas				
2/2 VALVES (5 MILLION CYCLE CAPABILITY)								
NORMALLY CLOSED (Closed when de-energized)								
3/8	16	2.57	0.3	8.6	60	8210G001Q	-	15.1/F
1/2	16	3.43	0.3	8.6	60	8210G002Q	-	15.1/F
3/4	19	3.86	0.3	8.6	60	8210G009Q	-	15.1/F
1	41	11.14	0.1	1.4	60	-	8215G095Q	15.1/F
1 1/4	41	12.86	0.1	1.4	60	-	8215G096Q	15.1/F
1 1/2	41	17.14	0.1	1.4	60	-	8215G097Q	15.1/F
2	53	29.14	0.1	1.4	60	-	8215G098Q	15.1/F
NORMALLY OPEN (Open when de-energized)								
3/8	16	2.57	0.3	8.6	60	8210G011Q	-	15.1/F
1/2	16	3.43	0.3	8.6	60	8210G012Q	-	15.1/F
3/4	19	3.86	0.3	8.6	60	8210G013Q	-	15.1/F
1	41	11.14	0.1	1.4	60	-	8215G099Q	15.1/F
1 1/4	41	12.86	0.1	1.4	60	-	8215G100Q	15.1/F
1 1/2	41	17.14	0.1	1.4	60	-	8215G101Q	15.1/F
2	53	29.14	0.1	1.4	60	-	8215G102Q	15.1/F
2/2 VALVES (20 MILLION CYCLE CAPABILITY)								
NORMALLY CLOSED (Closed when de-energized)								
1/8	3	.30	0.0	8.6	60	8262G077Q	-	15.1/F
1/4	3	.30	0.0	8.6	60	8262G232Q	-	15.1/F
1/4	6	.72	0.0	3.4	60	8262G208Q	-	15.1/F
NORMALLY OPEN (Open when de-energized)								
1/8	2	.08	0.0	8.6	60	8262G091Q	-	15.1/F
1/4	2	.08	0.0	8.6	60	8262G032Q	-	15.1/F
3/2 VALVES (5 MILLION CYCLE CAPABILITY)								
NORMALLY CLOSED (Closed when de-energized)								
3/8	16	2.57	0.7	8.6	60	8316G014Q ②	-	15.1/F
1/2	16	3.43	0.7	8.6	60	8316G024Q ②	-	15.1/F
NORMALLY OPEN (Open when de-energized)								
3/8	16	2.57	0.7	8.6	60	8316G016Q ②	-	15.1/F
1/2	16	3.43	0.7	8.6	60	8316G026Q ②	-	15.1/F
3/2 VALVES (20 MILLION CYCLE CAPABILITY)								
UNIVERSAL OPERATION (Pressure at any port)								
1/8	2	.08	0.0	4.8	60	8320G001Q	-	15.1/F
1/4	2	.08	0.0	4.8	60	8320G172Q	-	15.1/F
1/4	2	.13	0.0	2.8	60	8320G174Q	-	15.1/F
NORMALLY CLOSED (Closed when de-energized)								
1/8	2	.08	0.0	8.6	60	8320G013Q	-	15.1/F
1/4	2	.08	0.0	8.6	60	8320G182Q	-	15.1/F
1/4	3	.27	0.0	2.4	60	8320G186Q	-	15.1/F
NORMALLY OPEN (Open when de-energized)								
1/8	2	.08	0.0	8.6	60	8320G027Q	-	15.1/F
1/4	2	.08	0.0	8.6	60	8320G192Q	-	15.1/F
1/4	3	.27	0.0	2.4	60	8320G196Q	-	15.1/F
4/2 VALVES (5 MILLION CYCLE CAPABILITY)								
SINGLE SOLENOID								
1/4	6	.45	0.7	8.6	60	8344G070Q ②	-	15.1/F
3/8	6	.45	0.7	8.6	60	8344G001Q ②	-	15.1/F
1/2	10	1.11	0.7	8.6	60	8344G074Q ②	-	15.1/F
4/2 VALVES (20 MILLION CYCLE CAPABILITY)								
SINGLE SOLENOID								
1/4	2	①	0.7	6.9	60	8345G002Q ②	-	15.1/F

① Inlet Kv is 0.031; exhaust Kv is 0.079.

② **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.

SPECIAL SERVICE VALVES

Dimensions inches (mm)

Note: Please see General Service Section for applicable 2-way, 3-way, and 4-way valve dimensions.

Features

- Flow rates adjustable between 0% and 100% of rating
- Control achieved by applying straight voltage between 0 and 24 VDC via potentiometer or other variable power supply
- Flow rate can also be regulated by a range of electrical inputs (sensors, transmitters, PLC, etc.) via an ASCO Electronic Control Unit or similar circuit
- Suitable for use in air/gas, low vacuum service, as well as to precisely control flow of water

Construction

Valve Parts in Contact with Fluids			
	8202		8203
Body	Brass	303 Stainless Steel	Brass
Seals and Disc/Diaphragm*	FKM		NBR
Core Tube	305 Stainless Steel		
Core and Plugnut	430F Stainless Steel		
Springs	302 Stainless Steel		
Rider Rings	PTFE		
Breaker Piece	Brass	303 Stainless Steel	Brass

Electrical

Standard voltage: 24 VDC

Coil: Molded Class F

Coil resistance: 25 Ohm at 68°F (20°C)

Operating current: 100 - 500 mA

Electrical coil input: 0 - 24 VDC

Recommended PWM frequency: 300 Hz Air/Gas; 200 Hz Water/Light Oil

Hysteresis: <5% (<7.5% for 8203 Valves) ①

Repeatability: <3% (<1% for 1/8" NPT Valves) ①

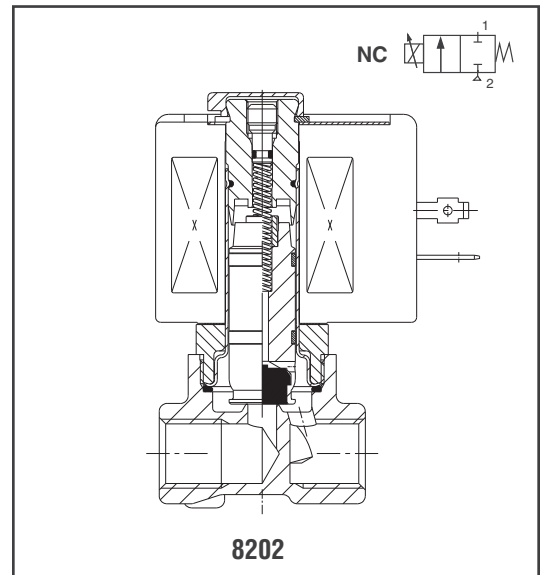
Sensitivity: <2% (<1% for 1/8" NPT Valves) ①

① Percentage of max. value with 24 VDC, PWM, 300 Hz voltage supply at constant differential pressure.

Solenoid Enclosures

Standard: RedHat II Class F coil with DIN connection (meets ISO 4400/DIN 43650A standards). For 22.6 watt solenoids. 8.6 watt "SC" solenoid uses electrical connector per DIN 46244.

Optional: For Class H coil, use prefix "SV" (for use with customer supplied electronics): General Purpose and Watertight, Types 1, 2, 3, 3S, and 4X on 22.6 watt solenoids.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

14°F to 104°F (-10°C to 40°C) for 22.6 watt solenoid.
32°F to 104°F (0°C to 40°C) for 8.6 watt solenoid.

Approvals (8202 1/4" to 3/8" only)

UL Recognized Component with DIN solenoid (prefix SD or SV).

UL Listed with threaded conduit (no prefix)

CSA certified.

Note: The Electronic Control Unit (sold separately) is only compatible with DIN connectors

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Catalog Number		UL ② Listing	Const. Ref.	Watt Rating/ Class of Coil Insulation ④
			Min.	Max.			Brass Body	Stainless Steel Body			
				Air/Gas/Low Vacuum	Liquid						
1/8	3/64	.04	0	115	75	180	SC8202A201V	SC8202A205V	-	5	8.6/F
1/8	1/16	.06	0	90	60	180	SC8202A202V	SC8202A206V	-	5	8.6/F
1/8	3/32	.14	0	60	45	180	SC8202A203V	SC8202A207V	-	5	8.6/F
1/8	1/8	.20	0	35	35	180	SC8202A204V	SC8202A208V	-	5	8.6/F

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Catalog Number		UL ② Listing	Const. Ref.	Watt Rating/ Class of Coil Insulation ③
			Min.	Max.			Air-Inert Gas	Water/Light Oil			
				Low Vacuum (Hg) ①	Air/Gas/Water/Oil						
Brass Body											
1/4	3/64	.06	0	29	230	150	SD8202G001V	SD8202G051V	●	1	22.6/F
1/4	3/62	.14	0	29	115	150	SD8202G002V	SD8202G052V	●	1	22.6/F
1/4	1/8	.28	0	29	60	150	SD8202G003V	SD8202G053V	●	1	22.6/F
1/4	5/32	.50	0	29	35	150	SD8202G004V	SD8202G054V	●	1	22.6/F
1/4	7/32	.85	0	29	20	150	SD8202G006V	SD8202G056V	●	1	22.6/F
1/4	9/32	1.06	0	29	15	150	SD8202G007V	SD8202G057V	●	1	22.6/F
3/8	1/8	.28	0	29	60	150	SD8202G023V	SD8202G073V	●	2	22.6/F
3/8	5/32	.50	0	29	35	150	SD8202G024V	SD8202G074V	●	2	22.6/F
3/8	7/32	.85	0	29	20	150	SD8202G026V	SD8202G076V	●	2	22.6/F
3/8	9/32	1.06	0	29	15	150	SD8202G027V	SD8202G077V	●	2	22.6/F
Stainless Steel Body											
1/4	3/64	.06	0	29	230	150	SD8202G011V	SD8202G061V	●	3	22.6/F
1/4	3/62	.14	0	29	115	150	SD8202G012V	SD8202G062V	●	3	22.6/F
1/4	1/8	.28	0	29	60	150	SD8202G013V	SD8202G063V	●	3	22.6/F
1/4	5/32	.50	0	29	35	150	SD8202G014V	SD8202G064V	●	3	22.6/F
1/4	7/32	.85	0	29	20	150	SD8202G016V	SD8202G066V	●	3	22.6/F
1/4	9/32	1.06	0	29	15	150	SD8202G017V	SD8202G067V	●	3	22.6/F
3/8	1/8	.28	0	29	60	150	SD8202G033V	SD8202G083V	●	4	22.6/F
3/8	5/32	.50	0	29	35	150	SD8202G034V	SD8202G084V	●	4	22.6/F
3/8	7/32	.85	0	29	20	150	SD8202G036V	SD8202G086V	●	4	22.6/F
3/8	9/32	1.06	0	29	15	150	SD8202G037V	SD8202G087V	●	4	22.6/F

① Applicable to air-Inert gas valves only.
 ② ● General Purpose valve. Refer to Engineering Section (Approvals) for more details.
 ③ Will vary with duty cycle (8.5 watts at 500 mA with ambient temp. = 104°F (40°C)).
 ④ Will vary with duty cycle (Cold = 6.8 watts, hot 9.1 watts at 450 mA with ambient temp. = 69°F (20°C)). (Cold = 6.3 watts, hot 8.6 watts at 450 mA with ambient temp. = 104°F (40°C)).

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Catalog Number	UL ② Listing	Const. Ref.	Watt Rating/ Class of Coil Insulation ③
			Min.	Max.						
				Water/Light Oil						
Brass Body										
3/8	1/2	2.43	5	150	150	SD8203G001	-	6	22.6/F	
1/2	1/2	2.43	5	150	150	SD8203G002	-	6	22.6/F	

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Catalog Number		UL ② Listing	Const. Ref.	Watt Rating/ Class of Coil Insulation ④
			Min.	Max.			Brass Body	Stainless Steel Body			
				Air/Gas/Low Vacuum	Liquid						
1/8	1.2	.03	0	8	5	82	SC8202A201V	SC8202A205V	-	5	8.6/F
1/8	1.6	.05	0	6	4	82	SC8202A202V	SC8202A206V	-	5	8.6/F
1/8	2.4	.12	0	4	3	82	SC8202A203V	SC8202A207V	-	5	8.6/F
1/8	3.2	.17	0	2.5	2.5	82	SC8202A204V	SC8202A208V	-	5	8.6/F

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Catalog Number		UL ② Listing	Const. Ref.	Watt Rating/ Class of Coil Insulation ③
			Min.	Max.			Air-Inert Gas	Water/Light Oil			
				Low Vacuum (Hg) ①	Air/Gas/Water/Oil						
Brass Body											
1/4	1.2	.05	0	2	16	65	SD8202G001V	SD8202G051V	●	1	22.6/F
1/4	2.4	.12	0	2	8	65	SD8202G002V	SD8202G052V	●	1	22.6/F
1/4	3.2	.24	0	2	4	65	SD8202G003V	SD8202G053V	●	1	22.6/F
1/4	4.0	.42	0	2	2	65	SD8202G004V	SD8202G054V	●	1	22.6/F
1/4	5.6	.72	0	2	1	65	SD8202G006V	SD8202G056V	●	1	22.6/F
1/4	7.1	.90	0	2	1	65	SD8202G007V	SD8202G057V	●	1	22.6/F
3/8	3.2	.24	0	2	4	65	SD8202G023V	SD8202G073V	●	2	22.6/F
3/8	4.0	.42	0	2	2	65	SD8202G024V	SD8202G074V	●	2	22.6/F
3/8	5.6	.72	0	2	1	65	SD8202G026V	SD8202G076V	●	2	22.6/F
3/8	7.1	.90	0	2	1	65	SD8202G027V	SD8202G077V	●	2	22.6/F
Stainless Steel Body											
1/4	1.2	.05	0	2	16	65	SD8202G011V	SD8202G061V	●	3	22.6/F
1/4	2.4	.12	0	2	8	65	SD8202G012V	SD8202G062V	●	3	22.6/F
1/4	3.2	.24	0	2	4	65	SD8202G013V	SD8202G063V	●	3	22.6/F
1/4	4.0	.42	0	2	2	65	SD8202G014V	SD8202G064V	●	3	22.6/F
1/4	5.6	.72	0	2	1	65	SD8202G016V	SD8202G066V	●	3	22.6/F
1/4	7.1	.90	0	2	1	65	SD8202G017V	SD8202G067V	●	3	22.6/F
3/8	3.2	.24	0	2	4	65	SD8202G033V	SD8202G083V	●	4	22.6/F
3/8	4.0	.42	0	2	2	65	SD8202G034V	SD8202G084V	●	4	22.6/F
3/8	5.6	.72	0	2	1	65	SD8202G036V	SD8202G086V	●	4	22.6/F
3/8	7.1	.90	0	2	1	65	SD8202G037V	SD8202G087V	●	4	22.6/F

① Applicable to air-Inert gas valves only.

② ● General Purpose valve. Refer to Engineering Section (Approvals) for more details.

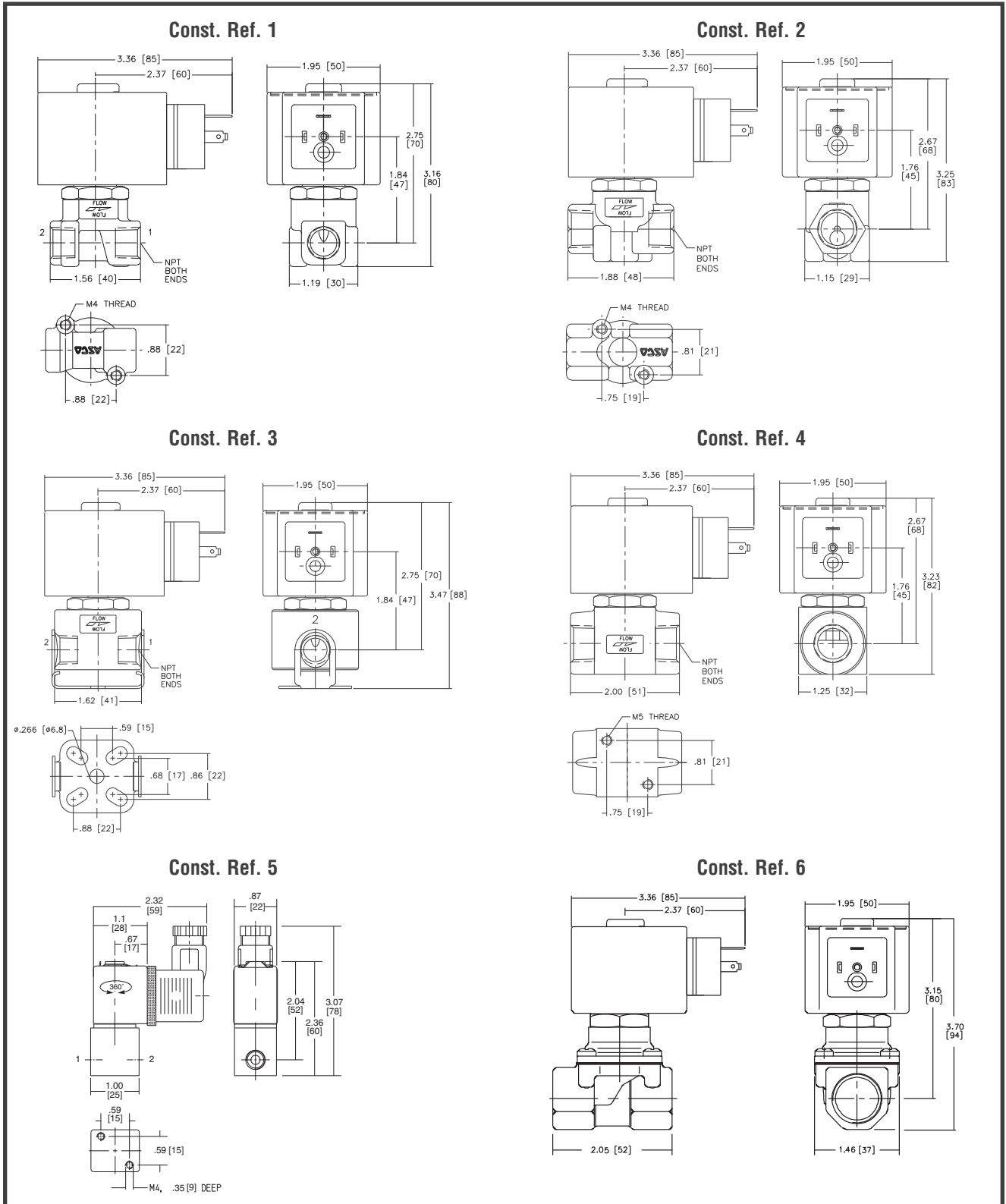
③ Will vary with duty cycle (8.5 watts at 500 mA with ambient temp. = 104°F (40°C)).

④ Will vary with duty cycle (Cold = 6.8 watts, hot 9.1 watts at 450 mA with ambient temp. = 69°F (20°C). (Cold = 6.3 watts, hot 8.6 watts at 450 mA with ambient temp. = 104°F (40°C)).

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Catalog Number		UL ② Listing	Const. Ref.	Watt Rating/ Class of Coil Insulation ③
			Min.	Max.			Water/Light Oil				
				Water/Light Oil							
Brass Body											
3/8	12.7	2.1	.3	10	65	SD8203G001	-	6	22.6/F		
1/2	12.7	2.1	.3	10	65	SD8203G002	-	6	22.6/F		

SPECIAL SERVICE VALVES

Dimensions inches (mm)



**SPECIAL
SERVICE VALVES**

Description

One unit, Catalog Number 8908A001, can be used for all 1/4" to 1/2" Posiflow valves with DIN solenoids. Another unit, Catalog Number 8908A003, can be used for all 1/8" Posiflow valves with DIN solenoids.

To maintain a specific flow rate, current through the coil must be kept constant and substantially independent from changes in the coil winding resistance (caused by temperature variation). The Electronic Control Unit will accomplish this quite efficiently via pulse width modulation. Voltage to the coil is cut into rectangular pulses by rapidly switching it on and off. By varying the "on" time (pulse width) percentage to compensate for temperature variations, current through the coil is kept constant.

Construction

Housing Assembly	PA + FV
Cover	PA + FV
Screw	Zinc plated steel
Gasket	NBR
Connector Specification	ISO 4400/DIN 43650
Protection	IP 65 (Dust-tight Protection against water jets from any direction)

Electrical Characteristics

- Nominal supply voltage:**
24 VDC \pm 10%, maximum ripple 10%
- Maximum full-load current:**
1100 mA (factory set at 500 mA)
- Input control signal (selectable):**
0-10 VDC or 0-20 mA or 4-20 mA
- Switch-off current:**
<2% of max. input control signal
- Adjustable off-set:**
15-50% of pulse width modulation voltage
- Adjustable full-load:**
30-100% of pulse width modulation voltage
- Ramp time:**
Manually activated via on/off switch;
adjustable 0.1-3 seconds
- Adjustable PWM frequency:**
40-700 Hz
- Power consumption:**
0.8 watts

Dimensions inches (mm)

Catalog No.	A	B	C	D	E	F	G	H
8908A001	2.76 (70)	1.89 (48)	1.18 (30)	1.61 (41)	1.18 (30)	0.16 (4)	1.26 (32)	2.03 (51.5)
8908A003	2.76 (70)	1.89 (48)	1.26 (32)	1.61 (41)	0.91 (23)	0.16 (4)	2.40 (61)	3.15 (80)

SPECIAL SERVICE VALVES

Features

- Variable flow proportional to the control signal
- Closed loop control via linear potentiometer
- Fail-close construction: Valve returns to closed position upon loss of power
- Supplied factory-assembled

General

Maximum allowable pressure: 240 psi
Fluid Temperature Ranges: See chart on following page
Ambient Temperature Ranges: 32 to 122°F
Response Time: See chart on following page
Linearity: ± 5%
Hysteresis: < 1%

Compact Positioner

Pilot Fluids: Air or inert gas, filtered 50µm lubricated or not
Pilot Pressure: 60 to 150 psi
Pilot Fluid Temperature: 32 to 140°F
Pilot Connection: 1/8"
Maximum Current: 150mA
Nominal Supply Voltage: 24VDC ± 10%, Max. ripple 10%
Maximum Power: 3.6 W
Connector Size 15: Spade plug CM6, 4 pins
Coil Insulation Class: F
Positioner Body/Enclosure: Aluminum, PA/IP65

Control Signal

Control Signal	Suffix ①
0 - 10 VDC	PDB04
0 - 20 mA	PDB05
4 - 20 mA	PDB06

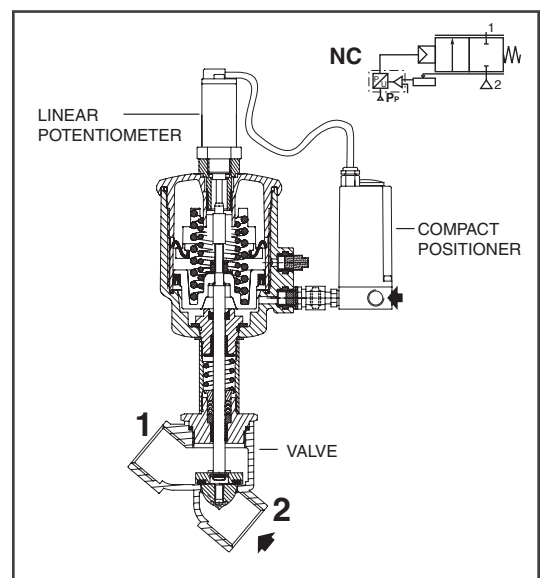
① Add suffix to 8290 catalog number (EG: 8290A384PDB04), see following page for complete product range. Supplied installed on valve and pre-adjusted at the factory. Positioner configured for one, customer-specified, control signal.

Linear Potentiometer

Resistance: 500Ω
Body/Enclosure: Aluminum/IP65

Valve Construction

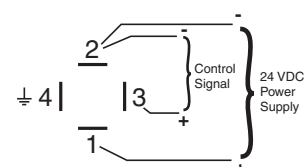
Valve Parts in Contact with Fluids		
Part	50mm - 125mm	50mm - 125mm
Body	Bronze	316L Stainless Steel
Stem	431 Stainless Steel	431 Stainless Steel
Stuffing Box	Brass	303 Stainless Steel
Stuffing Box Seal	PTFE Chevron	PTFE Chevron
Wiper Seal	FKM	FKM
Profile Disc	Brass	304L Stainless Steel
Disc Seal	PTFE	PTFE



Electrical Connection

Compact Positioner

- 1: + 24 VDC (power)
- 2: 0 VDC (power)
- 3: Control Signal (0-10 VDC, 0-20mA, 4-20mA)
- 4: (0-10V) Sensor Feedback for calibration (Factory use only, is not an earth ground)



SPECIAL SERVICE VALVES

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	OPD Min (psi.)	OPD Max. Fluids (psi.)	OPD Max. Steam (psi.)	Max. Fluid Temp. °F	Bronze	Stainless Steel	Pilot Pressure Min (psi)	Pilot Pressure Max (psi)	Approx. Shipping Weight (lbs.)	Suffix ① (0 -10 VDC) Fail closed	Suffix ① (0 -20 mA) Fail closed	Suffix ① (4 -20 mA) Fail closed	
50mm Operator															
1/2	1/2	5.3	0	240	150	366	8290A384	8290A393	60	150	4.1	PDB04	PDB05	PDB06	
3/4	3/4	8.3	0	150	150	366	8290A385	8290A394	60	150	4.3				
63mm Operator															
3/4	3/4	8.3	0	240	150	366	8290B005	8290B048	60	150	5.3				
1	1	17	0	150	150	366	8290B010	8290B053	60	150	6.3				
1-1/4	1-1/4	24	0	90	90	366	8290A016	8290A059	60	150	7.5				
1-1/2	1-1/2	33	0	60	60	366	8290A020	8290A063	60	150	9.8				
2	2	46	0	40	40	366	8290A024	8290A067	60	150	12.2				
90mm Operator															
1	1	17	0	240	150	366	8290B011	8290B054	60	150	7.9				
1-1/4	1-1/4	24	0	180	150	366	8290A017	8290A060	60	150	9.3				
1-1/2	1-1/2	33	0	120	120	366	8290A021	8290A064	60	150	11.1				
2	2	46	0	90	90	366	8290A025	8290A068	60	150	17.8				
125mm Operator															
1-1/4	1-1/4	34	0	240	150	366	8290A642	8290A646	60	150	15.1				
1-1/2	1-1/2	56	0	240	150	366	8290A482	8290A495	60	150	16.6				
2	2	77	0	150	120	366	8290A485	8290A498	60	150	18.8				
2-1/2	2-1/2	86	0	90	90	366	8290A488	8290A501	60	150	23.7				

① Add suffix to 8290 catalog number (EG: 8290A384PDB04). Fail closed construction: Valve returns to closed position upon loss of power.
Compact Positioner not available on 32mm Operator.

Response time (seconds)

for NC valves - 90 psi air controlled @ max. pilot pressure (150 psi)

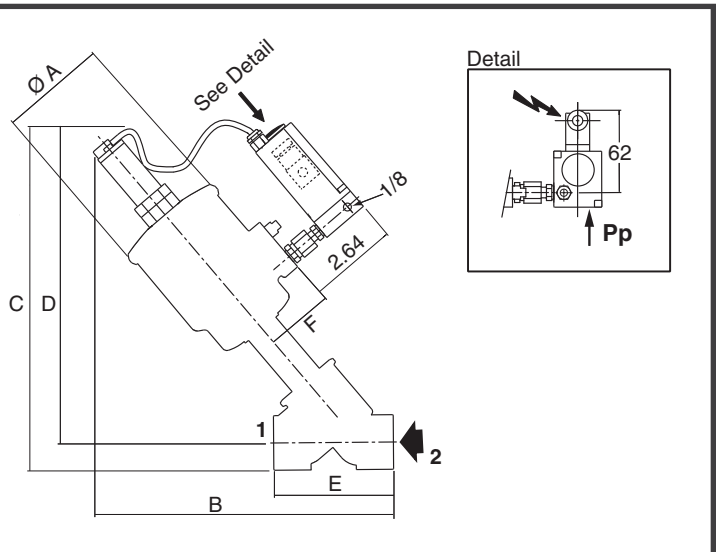
Pipe Size (ins.)	Operator (mm)							
	50		63		90		125	
	Open	Close	Open	Close	Open	Close	Open	Close
1/2	1.26	0.92	-	-	-	-	-	-
3/4	1.30	0.93	1.7	2.25	-	-	-	-
1	-	-	2.7	3.18	5.23	7.26	-	-
1 1/4	-	-	2.7	3.18	5.23	7.26	9.34	17.8
1 1/2	-	-	2.7	3.18	5.23	7.26	13.7	18.3
2	-	-	2.7	3.18	5.23	7.26	13.7	18.3
2 1/2	-	-	-	-	-	-	14.0	19.5

Installation

- Valves can be mounted in any position
- Installation and maintenance instructions are included with each valve

Dimensions inches (mm)

Pipe Size	Ø A	B	C	D	E	F
50mm Operator						
1/2	2.7	6.93	8.21	7.68	2.56	1.7
3/4	2.7	7.26	8.39	7.76	2.95	1.7
63mm Operator						
3/4	3.4	7.78	9.11	8.51	2.95	2.0
1	3.4	8.18	9.51	8.71	3.54	2.0
1-1/4	3.4	9.52	10.82	9.84	4.33	2.0
1-1/2	3.4	9.80	11.45	10.27	4.72	2.0
2	3.4	10.78	12.01	10.63	5.90	2.0
90mm Operator						
1	4.7	8.59	9.92	9.12	3.54	2.6
1-1/4	4.7	9.88	11.11	10.12	4.33	2.6
1-1/2	4.7	10.16	11.73	10.55	4.72	2.6
2	4.7	11.10	12.29	10.91	5.91	2.6
125mm Operator						
1-1/4	6.1	11.10	13.63	12.63	4.30	3.1
1-1/2	6.1	11.50	14.23	13.13	4.70	3.1
2	6.1	12.40	14.83	13.43	6.00	3.1
2-1/2	6.1	13.70	15.83	14.03	7.50	3.1



Features

- Designed to isolate corrosive fluids from solenoid parts
- Only the isolating part, seals, and body are in contact with fluids
- No minimum operating pressure required
- Variety of body materials and process connections
- Many other constructions (not shown here) are available in a wide range of sizes

Construction

Valve Parts in Contact with Fluids		
	8260	8030
Body	CA, PP	Brass/Stainless Steel
Diaphragm/Disc	EPDM, FKM	PTFE
Seals	-	FKM

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption AC				Spare Coil Part No	
	DC Watts	AC			General Purpose	
		Watts	VA Holding	VA Inrush	AC	DC
F	10.6	6.1	16	30	238210	238310
H	-	20	43	135	222345	-

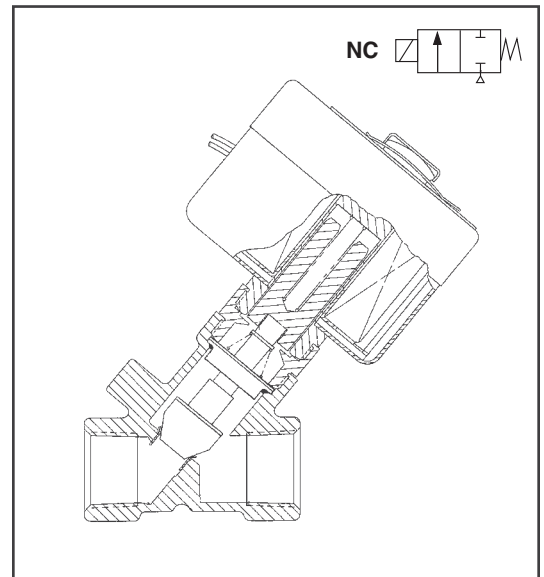
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

Solenoid Enclosures

Standard: RedHat II Watertight, Types 1, 2, 3, 3S, 4, and 4X; RedHat Type 1.

Optional: Open Frame Solenoid, Junction Box enclosure, and Panel Mount Constructions.

See *Optional Features Section* for descriptions on these and other available options.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

RedHat II: AC: 32°F to 125°F (0°C to 52°C)
 DC: 32°F to 104°F (0°C to 40°C)

RedHat: AC: 32°F to 77°F (0°C to 25°C)
 (104°F/40°C occasionally)

Refer to *Engineering Section* for details.

Approvals

CSA certified. UL listed as indicated.

Meets applicable CE directives.

Refer to *Engineering Section* for details.

Specifications (English units)

Body Material	Diaphragm/Disc	Seals	Typical Applications	Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Max. Operating Pressure (psi)		Max. Fluid Temp. °F		Catalog Number	Const. Ref.	UL Listing	Watt Rating/Class of Coil Insulation ④	
							AC	DC	AC	DC				AC	DC
CA	EPDM	-	Deminerlized and Distilled Water, Sea Water	Bib for 1/4" I.D. Flexible Tubing or Hose	9/64	.35	6	6	130	120	D8260G054E	4	-	6.1/F	10.6/F
				1/4" O.D. Compression ①	9/64	.35	6	6	130	120	D8260G071E	3	-	6.1/F	10.6/F
PP	EPDM	-	Photo Solution, 20% Max. Concentration Hydrochloric Acid	Bib for 1/4" I.D. Flexible Tubing or Hose	9/64	.35	6	6	130	120	D8260G053E	4	-	6.1/F	10.6/F
					3/16	.53	6	6	130	120	D8260G056E	4	②	6.1/F	10.6/F
PP	FKM	-	95% Max. Concentration Phosphoric Acid 60% Max. Concentration Sulphuric Acid	Bib for 1/4" I.D. Flexible Tubing or Hose	9/64	.35	6	6	130	120	D8260G053V	4	-	6.1/F	10.6/F
					3/16	.53	6	6	130	120	D8260G056V	4	-	6.1/F	10.6/F
Brass (w/S.S. Seat)	PTFE	FKM	Hot Water, Steam Boiler Blowdown, Steam Cookers, Hot Cooking Oil, Deep Fat Cookers	3/8	3/8	1.8	15 ③	-	250	-	D8030 084	1	⑤	20/H	-
				1/2	3/8	2.2	15 ③	-	250	-	D8030 085	1	⑤	20/H	-
				3/4	3/8	2.2	15 ③	-	250	-	D8030 086	2	⑤	20/H	-
18-8 S.S.	PTFE	FKM	Hot Water, Steam Boiler Blowdown, Steam Cookers, Hot Cooking Oil, Deep Fat Cookers	1/2	3/8	2.2	15 ③	-	250	-	D8030 095	1	⑤	20/H	-

① Fittings not supplied with valve; refer to List Price Schedule. ② On 50 hz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ② UL recognized component – AC only. ③ General Purpose Valves.
 ③ Valves are suitable for closing at zero pressure differential.

Specifications (Metric units)

Body Material	Diaphragm/Disc	Seals	Typical Applications	Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Max. Operating Pressure (bar)		Max. Fluid Temp. °C		Catalog Number	Const. Ref.	UL Listing	Watt Rating/Class of Coil Insulation ④	
							AC	DC	AC	DC				AC	DC
CA	EPDM	-	Deminerlized and Distilled Water, Sea Water	Bib for 1/4" I.D. Flexible Tubing or Hose	4	.30	0.4	0.4	54	48.8	D8260G054E	4	-	6.1/F	10.6/F
				1/4" O.D. Compression ①	4	.30	0.4	0.4	54	48.8	D8260G071E	3	-	6.1/F	10.6/F
PP	EPDM	-	Photo Solution, 20% Max. Concentration Hydrochloric Acid	Bib for 1/4" I.D. Flexible Tubing or Hose	4	.30	0.4	0.4	54	48.8	D8260G053E	4	-	6.1/F	10.6/F
					5	.45	0.4	0.4	54	48.8	D8260G056E	4	②	6.1/F	10.6/F
PP	FKM	-	95% Max. Concentration Phosphoric Acid 60% Max. Concentration Sulphuric Acid	Bib for 1/4" I.D. Flexible Tubing or Hose	4	.30	0.4	0.4	54	48.8	D8260G053V	4	-	6.1/F	10.6/F
					5	.45	0.4	0.4	54	48.8	D8260G056V	4	-	6.1/F	10.6/F
Brass (w/S.S. Seat)	PTFE	FKM	Hot Water, Steam Boiler Blowdown, Steam Cookers, Hot Cooking Oil, Deep Fat Cookers	3/8	10	1.54	1 ③	-	120	-	D8030 084	1	⑤	20/H	-
				1/2	10	1.89	1 ③	-	120	-	D8030 085	1	⑤	20/H	-
				3/4	10	1.89	1 ③	-	120	-	D8030 086	2	⑤	20/H	-
18-8 S.S.	PTFE	FKM	Hot Water, Steam Boiler Blowdown, Steam Cookers, Hot Cooking Oil, Deep Fat Cookers	1/2	10	1.89	1 ③	-	120	-	D8030 095	1	⑤	20/H	-

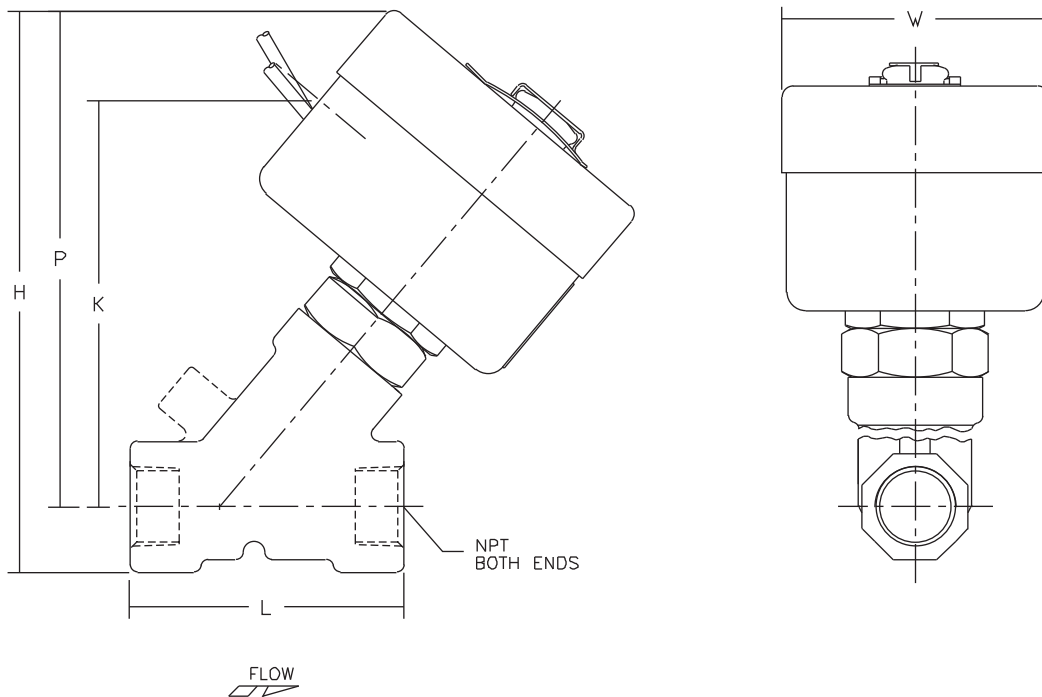
① Fittings not supplied with valve; refer to List Price Schedule. ② On 50 hz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ② UL recognized component – AC only. ③ General Purpose Valves.
 ③ Valves are suitable for closing at zero pressure differential.

SPECIAL SERVICE VALVES

Dimensions inches (mm)

Const. Ref.		H	K	L	P	W
1	ins.	4.68	3.25	2.28	4.13	2.22
	mm	119	83	58	105	56
2	ins.	4.81	3.25	2.75	4.13	2.22
	mm	122	83	70	105	56
3	ins.	3.05	1.63	2.44	2.49	1.94
	mm	77	41	62	63	49
4	ins.	3.05	1.63	2.19	2.49	1.94
	mm	77	41	56	63	49

Const. Ref. 1, 2

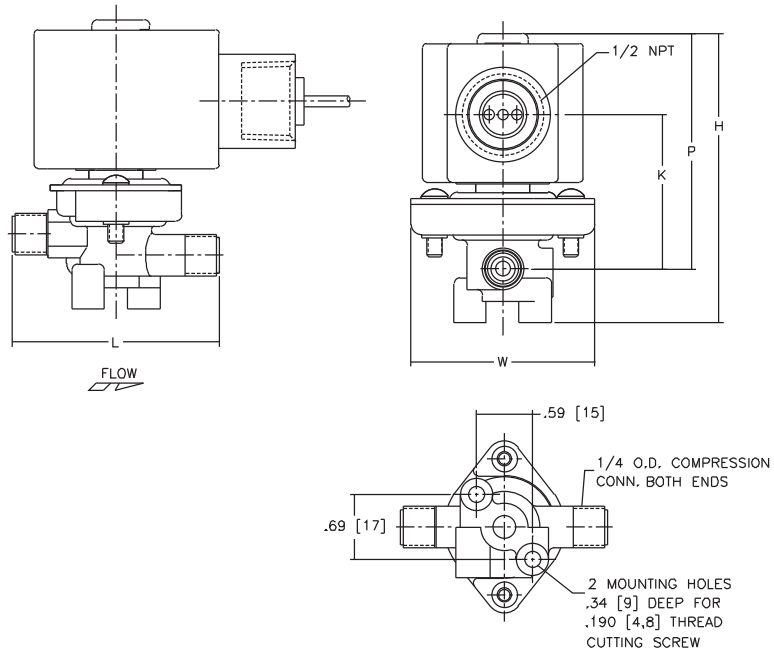


Const. Ref. 1 & 2 must be mounted with solenoid vertical and upright.

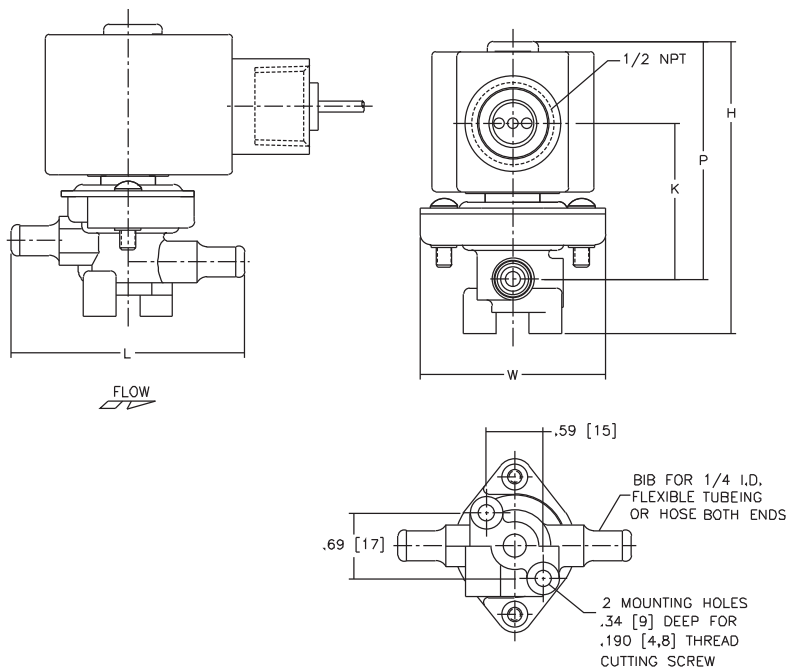
SPECIAL
SERVICE VALVES

Dimensions inches (mm)

Const. Ref. 3



Const. Ref. 4



SPECIAL SERVICE VALVES

Features

- Range of products for vacuum service applications on vacuum breaking and roughing pumps
- Zero Minimum Operating Pressure Differential
- Elastomers de-gassed and cleaned ("VH" suffix)
- Mountable in any position, except as noted

Application

Conditions	Pressure
Low (and Rough)	760 to 25 Torr (or 29" Hg)
Medium (and Fine)	25 to 10 ⁻³ Torr
High	10 ⁻³ to 10 ⁻⁶ Torr
Very High	10 ⁻⁶ to 10 ⁻⁹ Torr
Ultra High	10 ⁻⁹ Torr and Below

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Spare Coil Part No.	
	AC			General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush	AC	AC
F	6.1	16	30	238210	238214
F	10.1	25	70	238610	238614
F	16.1	35	180	272610	272614
F	17.1	40	93	238610	238614

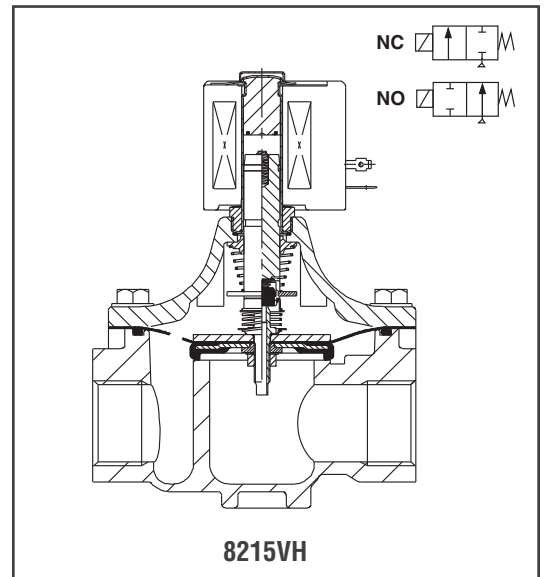
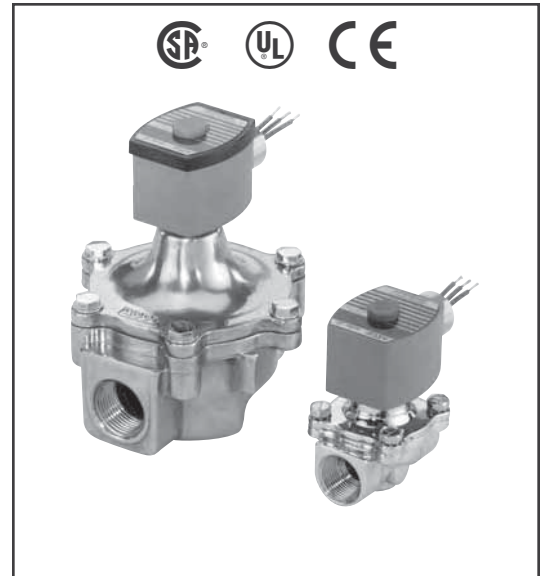
Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).
Must be specified when ordering. Other voltages, including DC, available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
(To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for other available options.



Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified. Meets applicable CE directives.

Refer to *Engineering Section* for details.

SPECIAL SERVICE VALVES

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Body Material	Application Guide					Max. Fluid Temp. °F	Medium Vacuum to 10 ⁻³ Torr ③	High Vacuum to 10 ⁻⁶ Torr ③	Const. Ref.	Watt Rating/ Class of Coil Insulation ②
			Min.	Max.		Electrical Check	Breaker	Roughing	Foreline or High Vacuum	Suction or Release					
			AC	Catalog Number		Catalog Number	AC								
NORMALLY CLOSED (Closed when de-energized)															
1/4	9/32	0.96	0	15	Brass	●	●	●	●	●	180	8262G090VM	8262G090VH	1	6.1/F
3/8	3/8	1.8	0	15	Brass	●	●	●	●	●	180	8030G013VM	8030G013VH	2	10.1/F
1/2	7/16	2.8	0	15	Brass	●	●	●	●	●	180	8030G017VM	8030G017VH	3	16.1/F
3/4	3/4	5	0	4	Brass	●	-	-	-	-	180	8030G043VM	8030G043VH	4	17.1/F
3/4	3/4	5	0	15	Brass	-	●	-	-	●	180	8210G095VM	8210G095VH	5	10.1/F
1	1 5/8	20.5	0	15	Alum.	-	●	-	-	●	125	8215G050VM ①	8215G050VH ①	8	16.1/F
1 1/4	1 5/8	31.7	0	15	Alum.	-	●	-	-	●	125	8215G060VM ①	8215G060VH ①	8	16.1/F
1 1/2	1 5/8	32.7	0	15	Alum.	-	●	-	-	●	125	8215G070VM ①	8215G070VH ①	9	16.1/F
2	2 3/32	55	0	15	Alum.	-	●	-	-	●	125	8215G080VM ①	8215G080VH ①	10	16.1/F
NORMALLY OPEN (Open when de-energized)															
3/8	5/8	3	0	15	Brass	-	●	-	-	●	180	8210G033VM	8210G033VH	6	10.1/F
1/2	5/8	4	0	15	Brass	-	●	-	-	●	180	8210G034VM	8210G034VH	6	10.1/F
3/4	3/4	5.5	0	15	Brass	-	●	-	-	●	180	8210G035VM	8210G035VH	7	10.1/F
1	1 5/8	20.5	0	15	Alum.	-	●	-	-	●	125	8215G053VM ①	8215G053VH ①	11	16.1/F
1 1/4	1 5/8	31.7	0	15	Alum.	-	●	-	-	●	125	8215G063VM ①	8215G063VH ①	11	16.1/F
1 1/2	1 5/8	32.7	0	15	Alum.	-	●	-	-	●	125	8215G073VM ①	8215G073VH ①	12	16.1/F
2	2 3/32	55	0	15	Alum.	-	●	-	-	●	125	8215G083VM ①	8215G083VH ①	13	16.1/F

① Valves must be mounted with solenoid vertical and upright.
 ② On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ③ For low vacuum applications to 29" Hg, use standard catalog valves with 0 psi minimum, 15+ psi maximum OPD (except 2" NPT).

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)		Body Material	Application Guide					Max. Fluid Temp. °C	Medium Vacuum to 10 ⁻³ Torr ③	High Vacuum to 10 ⁻⁶ Torr ③	Const. Ref.	Watt Rating/ Class of Coil Insulation ②
			Min.	Max.		Electrical Check	Breaker	Roughing	Foreline or High Vacuum	Suction or Release					
			AC	Catalog Number		Catalog Number	AC								
NORMALLY CLOSED (Closed when de-energized)															
1/4	7	0.82	0	1	Brass	●	●	●	●	●	82	8262G090VM	8262G090VH	1	6.1/F
3/8	10	1.54	0	1	Brass	●	●	●	●	●	82	8030G013VM	8030G013VH	2	10.1/F
1/2	11	2.40	0	1	Brass	●	●	●	●	●	82	8030G017VM	8030G017VH	3	16.1/F
3/4	19	4.29	0	0.3	Brass	●	-	-	-	-	82	8030G043VM	8030G043VH	4	17.1/F
3/4	19	4.29	0	1	Brass	-	●	-	-	●	82	8210G095VM	8210G095VH	5	10.1/F
1	41	17.57	0	1	Alum.	-	●	-	-	●	52	8215G050VM ①	8215G050VH ①	8	16.1/F
1 1/4	41	27.17	0	1	Alum.	-	●	-	-	●	52	8215G060VM ①	8215G060VH ①	8	16.1/F
1 1/2	41	28.03	0	1	Alum.	-	●	-	-	●	52	8215G070VM ①	8215G070VH ①	9	16.1/F
2	53	47.14	0	1	Alum.	-	●	-	-	●	52	8215G080VM ①	8215G080VH ①	10	16.1/F
NORMALLY OPEN (Open when de-energized)															
3/8	16	2.57	0	1	Brass	-	●	-	-	●	82	8210G033VM	8210G033VH	6	10.1/F
1/2	16	3.43	0	1	Brass	-	●	-	-	●	82	8210G034VM	8210G034VH	6	10.1/F
3/4	19	4.71	0	1	Brass	-	●	-	-	●	82	8210G035VM	8210G035VH	7	10.1/F
1	41	17.57	0	1	Alum.	-	●	-	-	●	82	8215G053VM ①	8215G053VH ①	11	16.1/F
1 1/4	41	27.17	0	1	Alum.	-	●	-	-	●	52	8215G063VM ①	8215G063VH ①	11	16.1/F
1 1/2	41	28.03	0	1	Alum.	-	●	-	-	●	52	8215G073VM ①	8215G073VH ①	12	16.1/F
2	53	47.14	0	1	Alum.	-	●	-	-	●	52	8215G083VM ①	8215G083VH ①	13	16.1/F

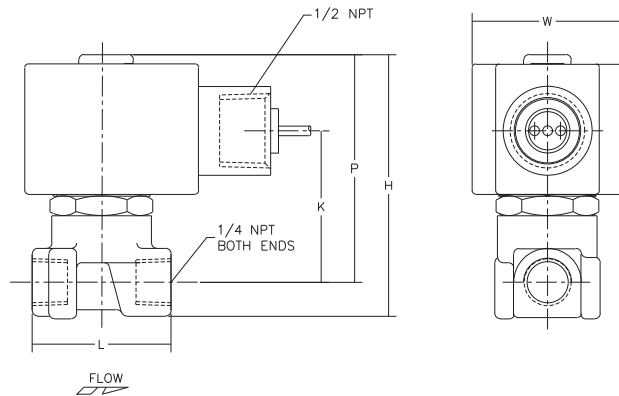
① Valves must be mounted with solenoid vertical and upright.
 ② On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.
 ③ For low vacuum applications to 29" Hg, use standard catalog valves with 0 bar minimum, 1+ bar maximum OPD (except 2" NPT).

SPECIAL SERVICE VALVES

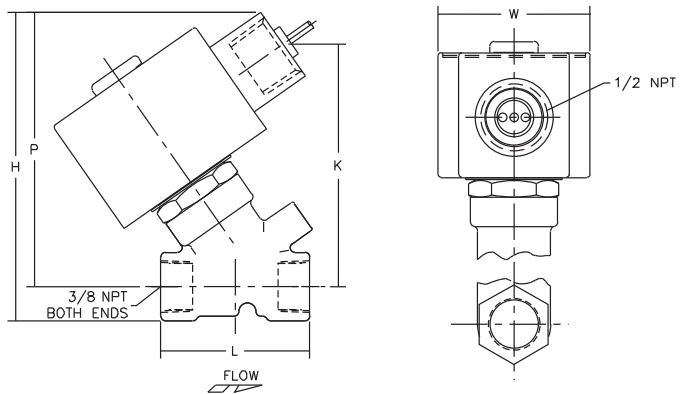
Dimensions inches (mm)

Const. Ref.		H	K	L	P	W
1	ins.	2.98	1.71	1.56	2.57	1.69
	mm	76	43	40	65	43
2	ins.	4.00	3.14	1.91	3.55	1.95
	mm	102	80	49	90	50
3	ins.	4.13	2.84	2.28	3.56	2.22
	mm	105	72	58	90	56
4	ins.	4.10	2.44	2.81	3.41	2.28
	mm	104	62	71	87	58
5	ins.	4.13	2.47	2.81	3.44	2.28
	mm	105	63	71	87	58
6	ins.	4.35	2.65	2.75	3.79	2.28
	mm	110	67	70	96	58
7	ins.	4.64	2.81	2.81	3.94	2.28
	mm	118	71	71	100	58
8	ins.	6.79	4.26	5.00	5.48	5.38
	mm	174	108	127	139	137
9	ins.	6.79	4.32	5.00	5.54	5.38
	mm	174	110	127	141	137
10	ins.	7.42	4.66	6.09	5.89	6.31
	mm	188	118	155	150	160
11	ins.	6.79	2.35	5.00	3.13	5.38
	mm	172	60	127	79	137
12	ins.	6.79	2.29	5.00	3.06	5.38
	mm	172	58	127	78	137
13	ins.	6.94	2.54	6.09	3.31	6.31
	mm	176	65	155	84	160

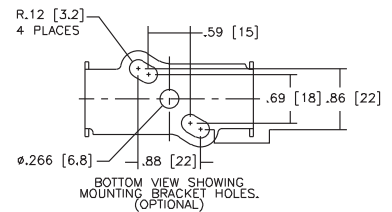
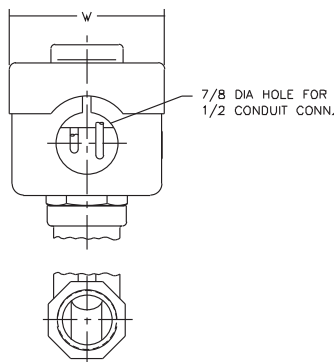
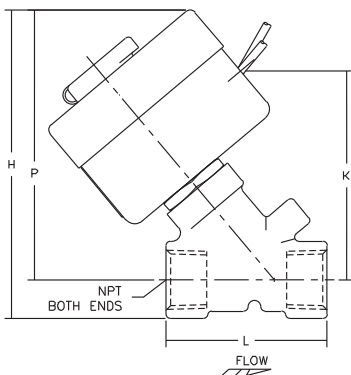
Const. Ref. 1



Const. Ref. 2

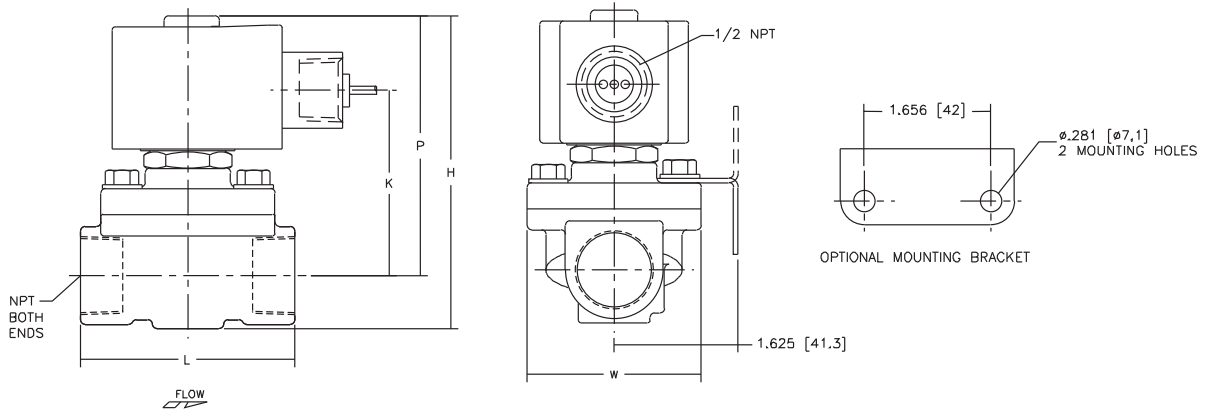


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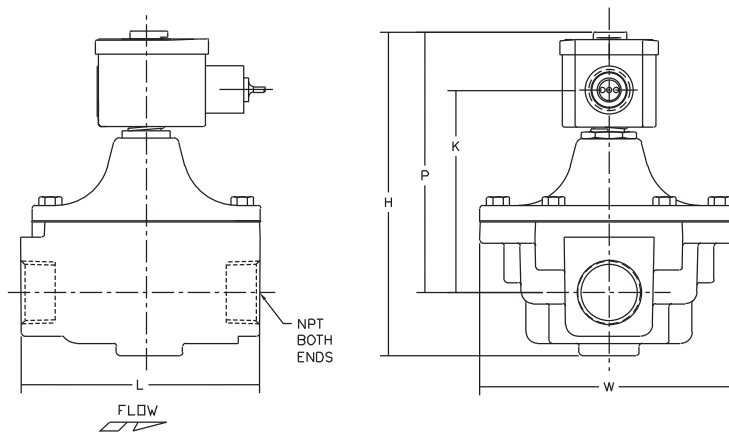


Dimensions inches (mm)

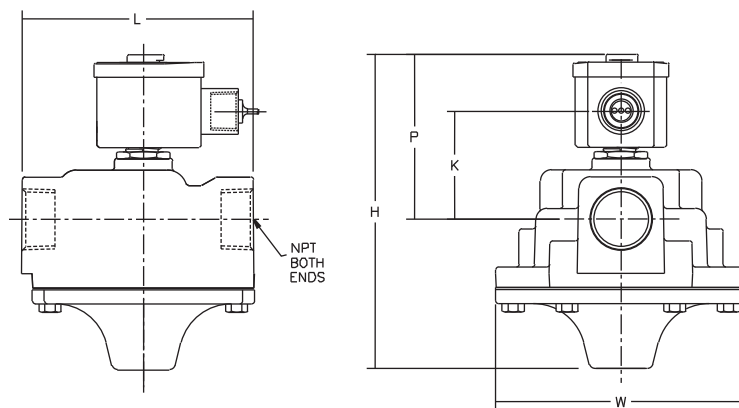
Const. Ref. 4, 5, 6, 7



Const. Ref. 8, 9, 10



Const. Ref. 11, 12, 13



SPECIAL
 SERVICE VALVES

The application of valves and accessories for use on combustible media requires careful consideration of the application and use to assure proper and optimal operation. Consideration in valve selection must be given to the function of the valve. This section includes 2-way and 3-way valves for the control of combustible media. Generally a combustion train includes 2 shutoff valves on both the pilot and main media feed lines. The Agency approvals for each product range in this section are included on the individual catalog pages.

Combustible media includes natural gas and oil, and this section is organized into sections for each media.

Additionally special constructions developed for use on combustible media are shown.

Index

Series	General Description	Size (NPT)	Solenoid	Additional	Page
Natural Gas					
8030	Normally Closed/Blocking Valves	3/8" - 3/4"	Watertight	Direct Acting	279
8030	Normally Open/Vent Valves	3/8" - 3/4"	Watertight	Direct Acting	283
8040	Normally Closed/Blocking Valves	1/8" - 3/8"	Watertight	Direct Acting	287
8040	Normally Closed/Blocking Valves	3/8" - 1 1/4"	GP and Watertight	Direct Acting	291
8042	Normally Closed/Blocking Valves	3/4" - 3"	General Purpose	5 lb closing spring	295
8043	Normally Closed/Blocking Valves	3/4" - 3"	GP and Watertight	5 lb cl. spring, Visual Position. Ind. & Proof of cl.	299
8210	Normally Closed/Blocking Valves	3/8" - 3/4"	Watertight	-	303
8210	Normally Open/Vent Valves	3/8" - 3/4"	Watertight	-	307
8214	Normally Closed/Blocking Valves	3/8" - 2"	Watertight	-	311
8214	Normally Closed/Blocking Valves	3/4" - 2"	Watertight	Visual Indication	315
8214	Normally Closed/Blocking Valves	3/4" - 2"	Watertight	Visual Indication and Proof of Closure	319
8214	Normally Closed/Blocking Valves	3/4" - 3"	General Purpose	-	323
8214	Normally Closed/Blocking Valves	3/4" - 3"	General Purpose	Visual Indication	327
8214	Normally Closed/Blocking Valves	3/4" - 3"	General Purpose	Visual Indication and Proof of Closure	331
8214	Normally Open/Vent Valves	3/8" - 2"	Watertight	-	335
8214	Normally Open/Vent Valves	3/4" - 2"	Watertight	Visual Indication and Proof of Closure	339
8214	Normally Open/Vent Valves	3/4" - 2 1/2"	General Purpose	-	343
8214	Normally Open/Vent Valves	3/4" - 2"	General Purpose	Visual Indication and Proof of Closure	347
8256	Normally Closed/Blocking Valves	1/8"	Open Frame & Watertight	Direct Acting	351
8262	Normally Closed/Blocking Valves	1/8" - 1/4"	Watertight	Direct Acting	353
AH2D	On/Off Actuator	-	Hydramotor	Use with V710	357
AH4D	Low/High/Off Actuator	-	Hydramotor	Use with V710	359
AH8D	Modulating Actuator	-	Hydramotor	Use with V710	361
V710	Normally Closed/Blocking Valves	3/4" - 4"	-	Use with AH2D, AH4D, AH8D	363
H117	Normally Closed/Blocking Valves	2" - 4"	Hydramotor	Cast Iron Body	367
H118	Normally Closed/Blocking Valves	1" - 4"	Hydramotor	Cast Iron Body	371
H137	Normally Closed/Blocking Valves	2" - 6"	Hydramotor	Cast Iron Body	375
HV266	Normally Closed/Blocking Valves	1/2" - 1"	GP and Watertight	Stainless Steel Body	379
K3A4	Normally Closed/Blocking Valves	3/8" - 1"	General Purpose	Direct Acting	383
K3A5	Normally Closed/Blocking Valves	3/8" - 1"	General Purpose	Direct Acting	387
K3A6	Normally Closed/Blocking Valves	3/4" - 1 1/2"	General Purpose	-	391
K3A7	Normally Closed/Blocking Valves	1 1/4" - 1 1/2"	General Purpose	Direct Acting	395
S261	Normally Closed/Blocking Valves	3/8" - 3"	General Purpose	-	399
S262	Normally Open/Vent Valves	3/8" - 3"	General Purpose	-	403
SV311	Normally Closed/Blocking Valves	1/8" - 3/8"	General Purpose	Direct Acting	407
SV311	Normally Closed/Blocking Valves	3/8" - 3/4"	General Purpose	Direct Acting	411
Fuel Oil (No. 2, 4, 5, & Heated No. 6)					
8256	Normally Closed/Blocking Valves	1/8"	Open Frame & Watertight	Direct Acting	415
8262/8263	Normally Closed/Blocking Valves	1/8" - 3/8"	Watertight	Direct Acting	417
8266	Normally Closed/Blocking Valves	3/8" - 3/4"	General Purpose	-	421
HOV1	Normally Closed/Blocking Valves	1/2" - 1"	Hydramotor	Pressures to 300 psi	425
SV401	Normally Closed/Blocking Valves	1/4" - 3/8"	Watertight	Pressures to 300 psi	429
8377	3-Way	3/8" - 1/2"	General Purpose	Pressures to 100 psi	431
HOV13	3-Way	1/2" - 3/4"	Hydramotor	Pressures to 300 psi	435
Specialty Valves - Accessories					
8044	Normally Closed/Blocking Valves	3/4" - 3"	General Purpose	Manual Reset	439
AH2D	Manual Reset Actuator	-	Hydramotor	Manual Reset, Use with V710	443
HV216, JV216	Normally Closed/Blocking Valves	1/2" - 3"	None	Cable Release or Fusible Link	445
Control Panels	Control Panel for Gas Service	-	-	Key Switch Control Panel	449
LP Gas Systems	Normally Closed/Blocking Valves	1/4" - 3/4"	Watertight	Liquid Petroleum Gases	451

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Features

- 2-way normally closed operation
- For control of commercial and industrial gas burners
- Ideal for low pressure applications
- Brass body construction
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Rings	PTFE
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	10.1	25	70	32 to 125	238610	238614

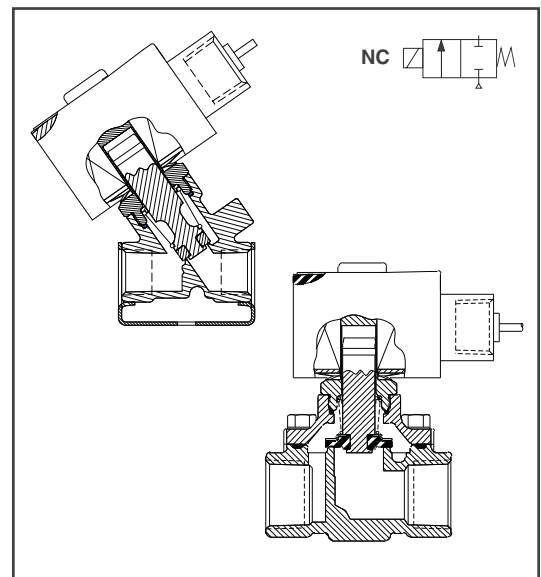
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, Safety Valves.

FM approved to Class No. 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/8	3/8	1.8	97,000	0	15	125	8030G068	1	○	○	○	10.1	2.3
1/2	7/16	2.8	151,000	0	8	125	8030G069	2	○	○	○	10.1	2.7
3/4	3/4	5.0	269,000	0	2	125	8030G079	3	○	○	○	10.1	3.4

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/8	10	1.5	97,000	0	1.0	52	8030G068	1	○	○	○	10.1	1.0
1/2	11	2.4	151,000	0	0.6	52	8030G069	2	○	○	○	10.1	1.2
3/4	19	4.3	269,000	0	0.1	52	8030G079	3	○	○	○	10.1	1.5

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

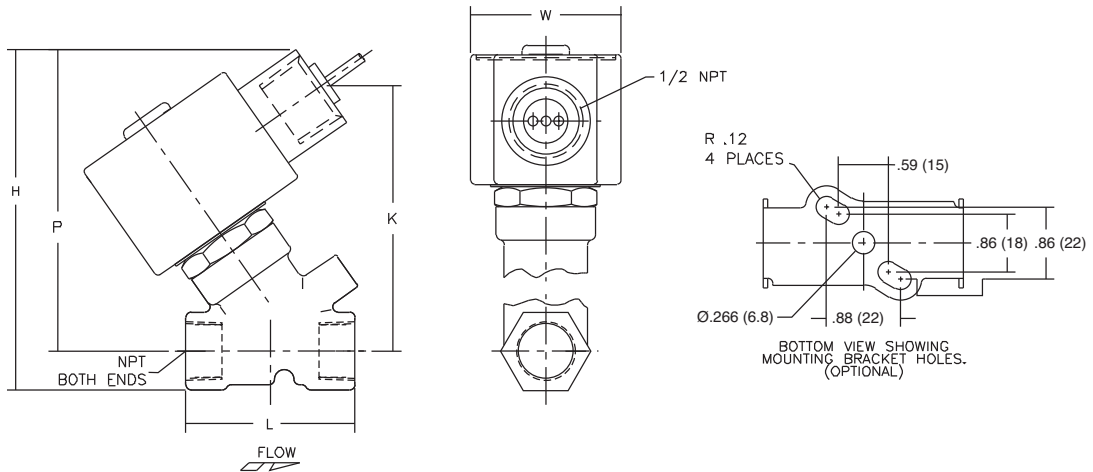
Solenoid Options				Base Catalog Number	Resilient Materials	Standard Rebuild Kit
NEMA Type 3-9	High Temp.	Junction Box	Wiring Box Screw Terminal	Brass	NBR	AC
EF	HT	JB	JKF	8030G068	●	306628
EF	HT	JB	JKF	8030G069	●	306629
EF	HT	JB	JKF	8030G079	●	306630

● = Standard. Other options may be available. All option combinations may not be available.

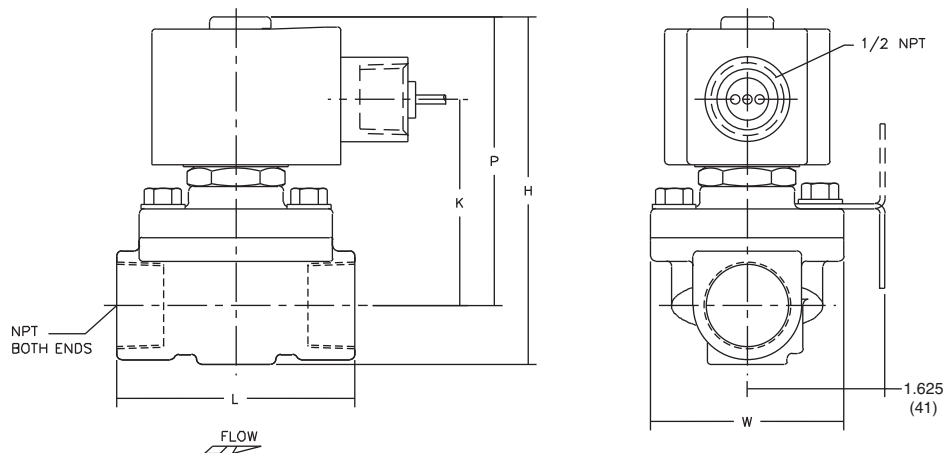
Dimensions inches (mm)

Const. Ref.		H	K	L	P	W
1	ins.	4.00	3.14	1.91	3.55	1.95
	mm	102	80	49	90	50
2	ins.	4.32	3.39	2.28	3.77	1.95
	mm	110	86	58	96	50
3	ins.	4.21	2.54	2.81	3.52	2.28
	mm	107	65	71	89	58

Const. Ref. 1, 2



Const. Ref. 3



Features

- 2-way normally open operation
- For control of commercial and industrial gas burners
- Ideal for low pressure applications
- Brass body construction
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Stem	PA
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	10.1	25	70	32 to 125	238610	238614
F	16.1	27	160	32 to 125	272610	272614

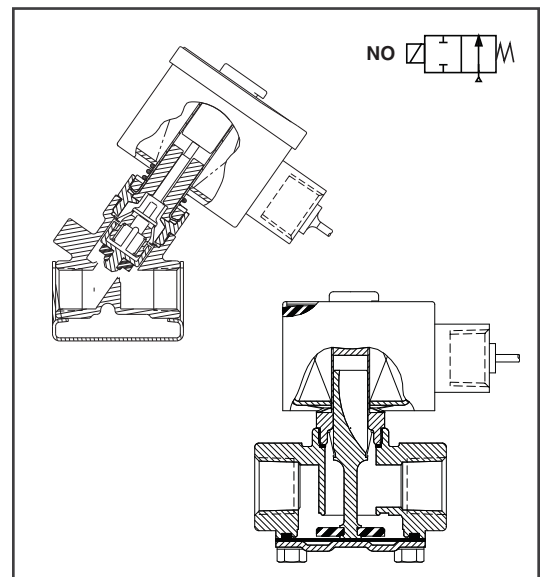
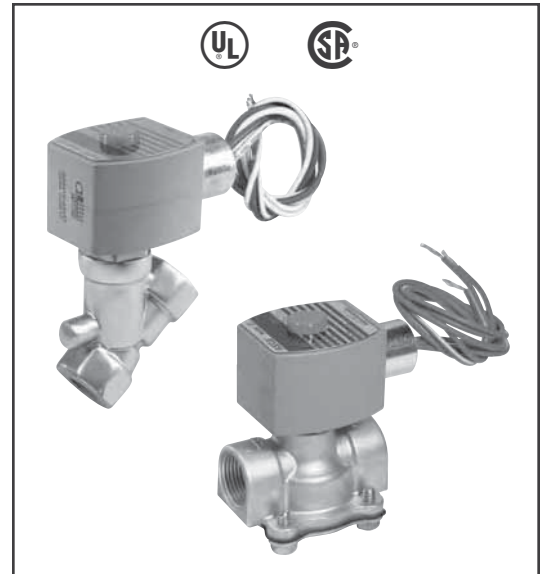
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, General Purpose Valves.

CSA Certified to:
 Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.

COMBUSTION

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/8	3/8	1.6	86,000	0	15	200	8030G070	1	●	-	●	16.1	3.4
1/2	3/4	5.0	269,000	0	2	180	8030G082	2	●	-	●	10.1	3.4
3/4	3/4	5.5	295,000	0	2	180	8030G083	3	●	-	●	10.1	3.4

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/Cu.Ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/8	10	1.4	86,000	0	1.0	93	8030G070	1	●	-	●	16.1	1.5
1/2	19	4.3	269,000	0	0.1	82	8030G082	2	●	-	●	10.1	1.5
3/4	19	4.7	295,000	0	0.1	82	8030G083	3	●	-	●	10.1	1.5

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/Cu.Ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options				Base Catalog Number	Resilient Materials	Standard Rebuild Kit
NEMA Type 3-9	High Temp.	Junction Box	Wiring Box Screw Terminal	Brass	NBR	AC
EF	HT	JB	JKF	8030G070	●	302797
EF	HT	JB	JKF	8030G082	●	302799
EF	HT	JB	JKF	8030G083	●	302799

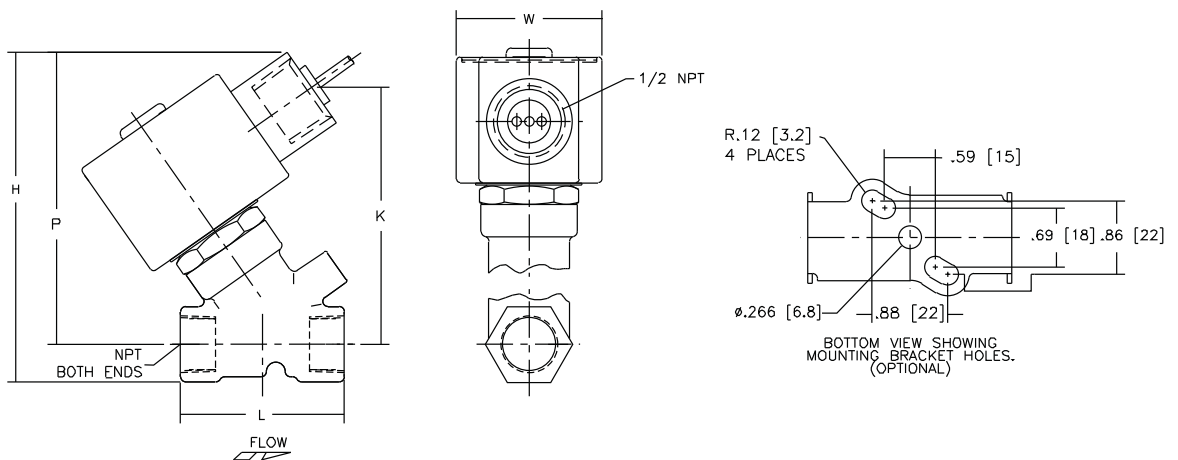
● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

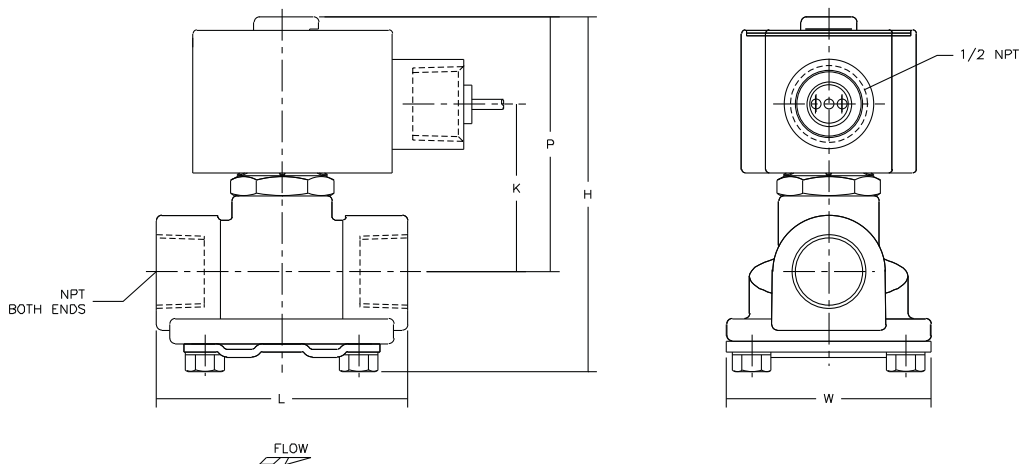
Const. Ref.		H	K	L	P	W
1	ins.	4.16	1.10	1.91	3.72	2.06
	mm	106	28	49	94	52
2	ins.	3.97	1.88	2.81	2.85	2.29
	mm	101	48	71	72	58
3	ins.	3.97	1.88	2.81	2.85	2.29
	mm	101	48	71	72	58

Vent Valve Requirements	
Manifold Line	Vent Valve
3/8" through 1 1/2"	3/4
2"	1
2 1/2" through 3"	1 1/4
3 1/2"	1 1/2
4" through 5"	2
5 1/2" through 6"	2 1/2
6 1/2" through 7 1/2"	3

Const. Ref. 1



Const. Ref. 2, 3



Features

- 2-way normally closed operation
- For gas pilot control of commercial and industrial gas burners
- Direct lift with resilient soft seating for tight shut-off
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	17-7 PH
Shading Coil	Copper
Pipe Plug	Zinc Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	6.1	16	40	-40 to 125	238210	238214

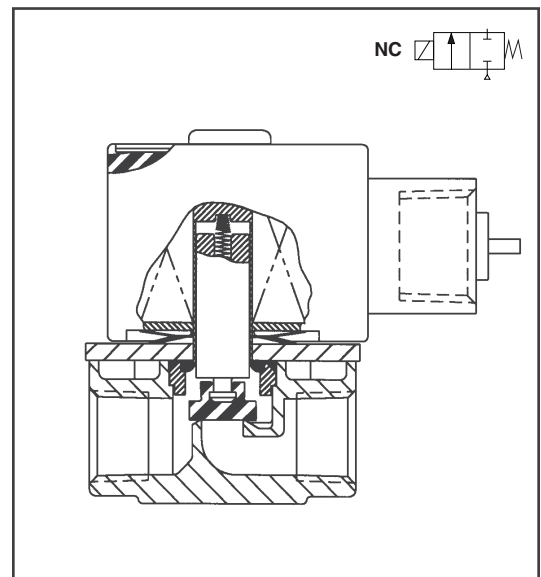
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage ②	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas)- NORMALLY CLOSED													
1/8	5/16	1	53,700	0	15	125	8040H006	1	○	○	○	6.1	1.8
1/4	5/16	1.1	59,000	0	15	125	8040H007	1	○	○	○	6.1	1.8
3/8	5/16	1.2	64,400	0	15	125	8040H008	1	○	○	○	6.1	1.8

○ = Safety Shutoff Valve; ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.
② On 50 Hz service watt rating is 8.1; EF option approved to UL and CSA only.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage ②	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas)- NORMALLY CLOSED													
1/8	8.000	0.9	53,700	0	1	52	8040H006	1	○	○	○	6.1	0.8
1/4	8.000	0.9	59,000	0	1	52	8040H007	1	○	○	○	6.1	0.8
3/8	8.000	1.0	64,400	0	1	52	8040H008	1	○	○	○	6.1	0.8

○ = Safety Shutoff Valve; ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.
② On 50 Hz service watt rating is 8.1; EF option approved to UL and CSA only.

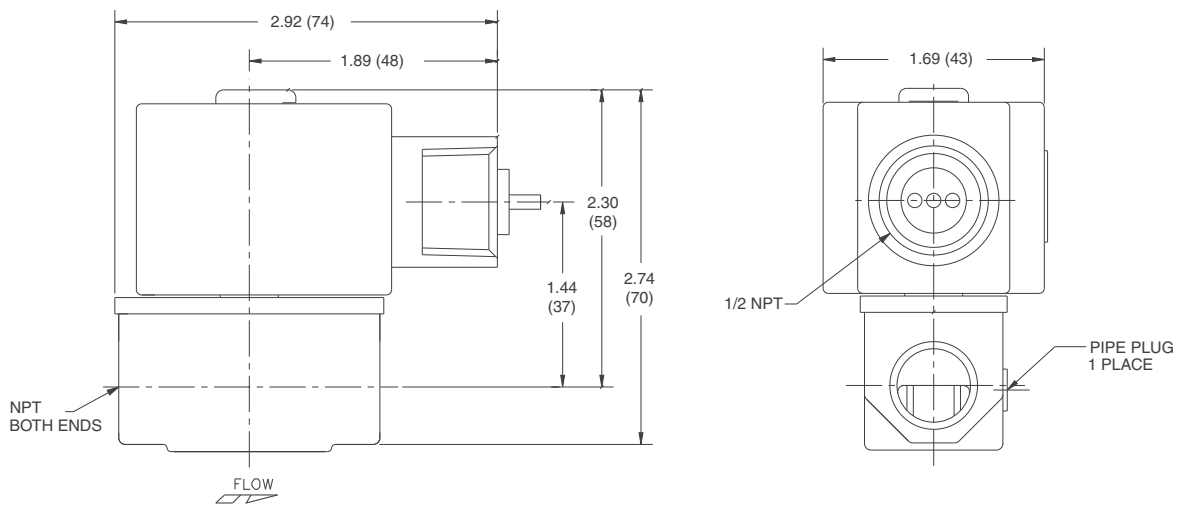
Capabilities Chart

Solenoid Options				Base Catalog Number	Resilient Materials	Standard Rebuild Kit
NEMA Type 3-9	High Temp.	Junction Box	Wiring Box Screw Terminal	Aluminum	NBR	AC
EF	HT	-	JKF	8040H006	●	318247
EF	HT	JB	JKF	8040H007	●	318247
EF	HT	JB	JKF	8040H008	●	318247

● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

Const. Ref. 1



COMBUSTION

Features

- 2-way normally closed operation
- For gas pilot or main control of commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Ring	PTFE
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	10.1	25	70	-40 to 125	238610	238614
F	15.4	27	160	-40 to 125	099257	-

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

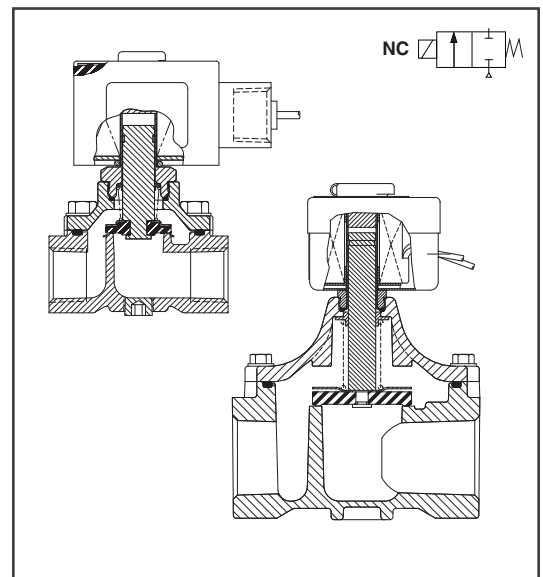
Solenoid Enclosures

Valves with the letter "G" in their catalog numbers, e.g. 8040G021, have RedHat II molded epoxy Types 1, 2, 3, 3S, 4, and 4X combinations General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.

Valves with the letter "C" in their catalog numbers, e.g. 8040C004, have RedHat metal Type 1 General Purpose enclosures with 7/8" hole for 1/2" conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/8" thru 3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/8	3/4	3.9	210,000	0	2	125	8040G021	1	○	○	○	10.1	2.8
1/2	3/4	5.4	291,000	0	2	125	8040G022	1	○	○	○	10.1	2.8
3/4	3/4	9.5	512,000	0	2	125	8040G023	2	○	○	○	10.1	2.8
1	1 5/8	16.8	900,000	0	0.5	125	8040C004	3	○	-	○	15.4	4.3
1 1/4	1 5/8	19.6	1,100,000	0	0.5	125	8040C005	3	○	-	○	15.4	4.3

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/8	19	3.3	210,000	0	0.1	52	8040G021	1	○	○	○	10.1	1.3
1/2	19	4.6	291,000	0	0.1	52	8040G022	1	○	○	○	10.1	1.3
3/4	19	8.1	512,000	0	0.1	52	8040G023	2	○	○	○	10.1	1.3
1	41	14.3	900,000	0	0.03	52	8040C004	3	○	-	○	15.4	2.0
1 1/4	41	16.7	1,100,000	0	0.03	52	8040C005	3	○	-	○	15.4	2.0

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options				Base Catalog Number	Resilient Materials	Standard Rebuild Kit
NEMA Type 3-9	High Temp.	Junction Box	Wiring Box Screw Terminal	Aluminum	NBR	AC
EF	HT	-	JKF	8040G021	●	306633
EF	HT	JB	JKF	8040G022	●	306633
EF	HT	JB	JKF	8040G023	●	306633
-	HT	JB	JKF	8040C004	●	304079
-	HT	JB	JKF	8040C005	●	304079

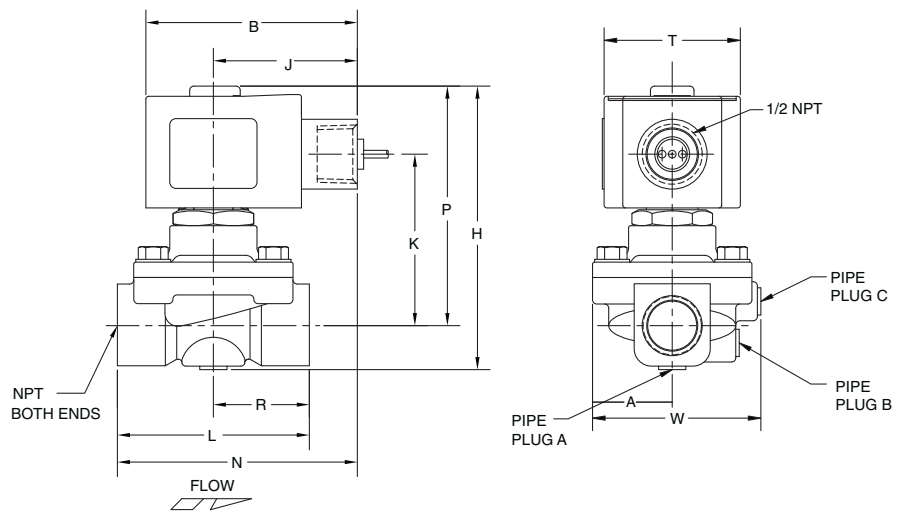
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

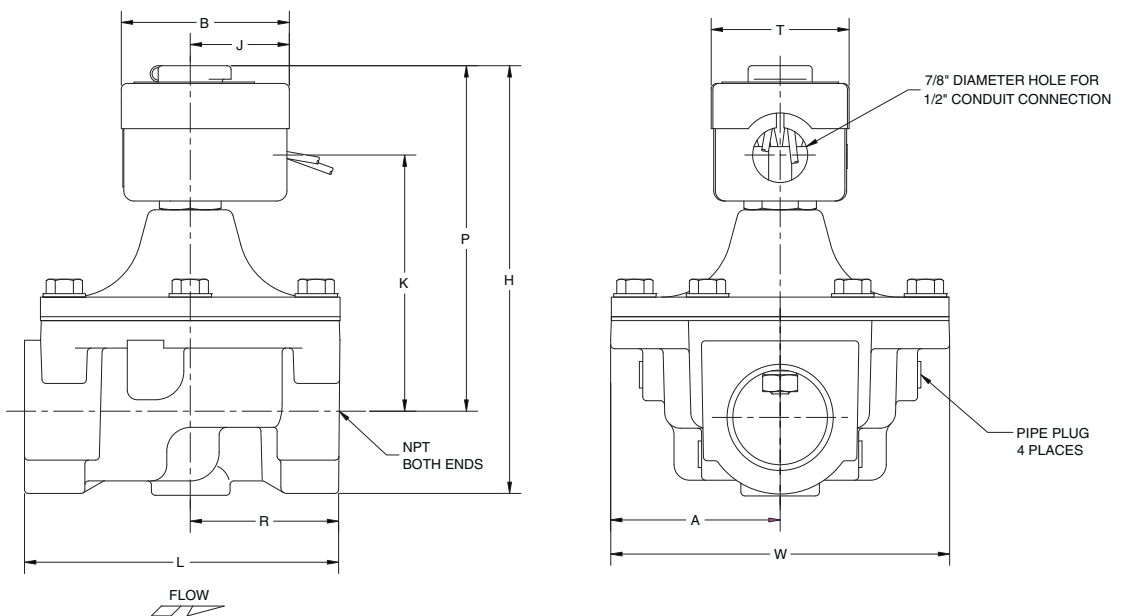
Dimensions inches (mm)

Const. Ref.		1	2	3
A	ins.	1.66	1.66	2.69
	mm	42	42	68
B	ins.	3.03	3.03	2.69
	mm	77	77	68
H	ins.	4.05	4.49	6.81
	mm	103	11405	173
J	ins.	2.04	2.04	1.59
	mm	52	52	40
K	ins.	2.46	2.65	4.09
	mm	62	67	104
L	ins.	2.75	3.31	5.00
	mm	70	84	127
N	ins.	3.42	3.70	-
	mm	87	94	-
R	ins.	1.38	1.66	2.38
	mm	35	42	60
P	ins.	3.44	3.63	5.50
	mm	87	92	140
T	ins.	1.95	1.95	2.22
	mm	50	50	56
W	ins.	2.42	2.39	5.38
	mm	61	61	137
Pipe Plug		B & C	A & C	-

Const. Ref. 1, 2



Const. Ref. 3



Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing
- 5 lb. closing spring for high force shut-off

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302F Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
H	59.5	122	600	32 to 104	224195	-
H	66	128	128	32 to 104	224195	-

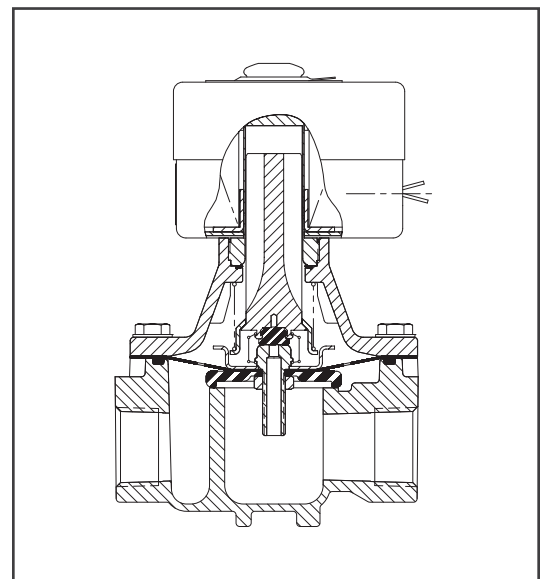
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

RedHat metal Type 1 General Purpose housing with 7/8" knock-out for 1/2" conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932, Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves"(3/4" only).

CSA Certified to:

- 1) Standard C22.2 No 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage
			Btu/hr.	Min.	Max.				UL	FM	CSA	
COMBUSTION (Fuel Gas) - NORMALLY CLOSED												
3/4	1 5/8	12.2	650,000	0	20	104	8042D035	1	○	○	○	59.5
1	1 5/8	24	1,290,000	0	20	104	8042C045	2	○	-	○	59.5
1 1/4	1 5/8	35	1,900,000	0	20	104	8042C055	2	○	-	○	59.5
1 1/2	1 5/8	40	2,145,000	0	20	104	8042C065	2	○	-	○	59.5
2	2 3/32	60	3,241,000	0	20	104	8042C075	3	○	-	○	59.5
2 1/2	3	120	6,467,500	0	5	104	8042C085	4	○	-	○	66.0
3	3	130	7,002,500	0	5	104	8042C095	4	○	-	○	66.0

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage
			Btu/hr.	Min.	Max.				UL	FM	CSA	
COMBUSTION (Fuel Gas) - NORMALLY CLOSED												
3/4	41	10.4	650,000	0	1.4	40	8042D035	1	○	○	○	59.5
1	41	20.4	1,290,000	0	1.4	40	8042C045	2	○	-	○	59.5
1 1/4	41	29.8	1,900,000	0	1.4	40	8042C055	2	○	-	○	59.5
1 1/2	41	34.0	2,145,000	0	1.4	40	8042C065	2	○	-	○	59.5
2	53	51.0	3,241,000	0	1.4	40	8042C075	3	○	-	○	59.5
2 1/2	76	102.0	6,467,500	0	0.3	40	8042C085	4	○	-	○	66.0
3	76	110.5	7,002,500	0	0.3	40	8042C095	4	○	-	○	66.0

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

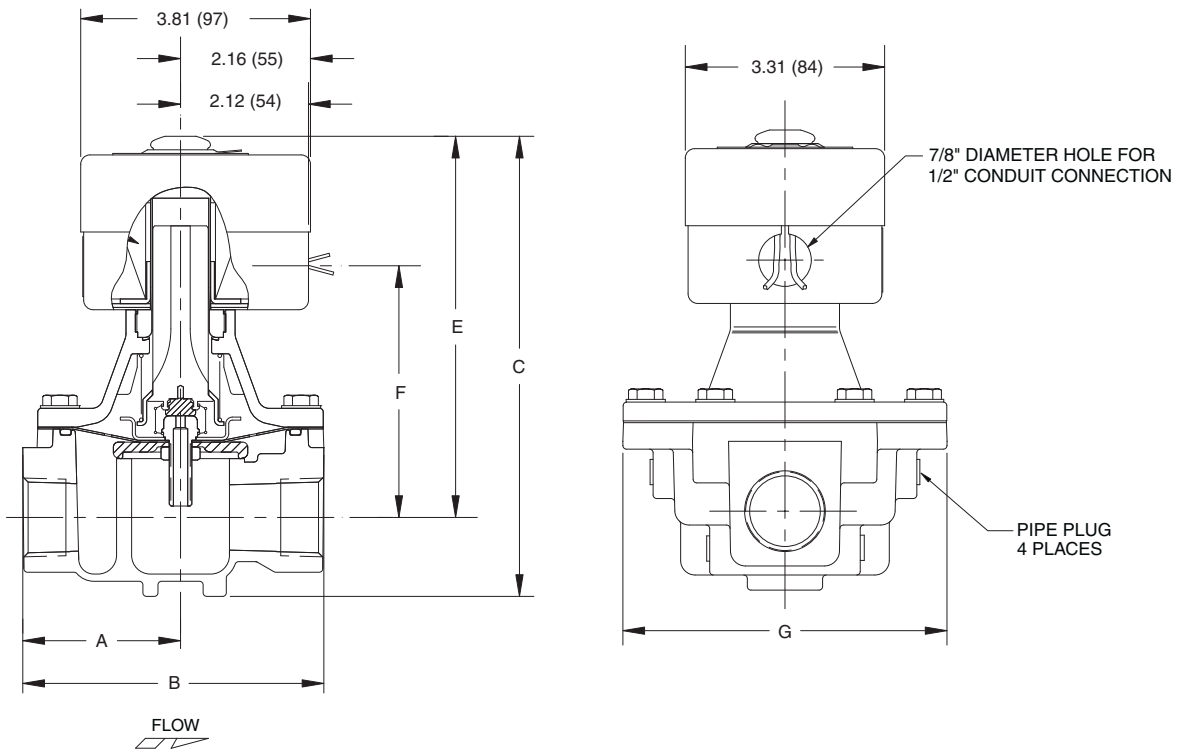
Solenoid Options		Resilient Materials	Base Catalog Number	Standard Rebuild Kit
Rainproof	Junction Box	NBR	Aluminum	AC
R	JB	●	8042D035	304081
R	JB	●	8042C045	304081
R	JB	●	8042C055	304081
R	JB	●	8042C065	304081
R	JB	●	8042C075	304082
R	JB	●	8042C085	304083
R	JB	●	8042C095	304083

● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

Dimensions inches (mm)

Const. Ref.		A	B	C	E	F	G
1	ins.	2.62	5.00	7.66	6.34	4.19	5.38
	mm	67	127	195	161	106	137
2	ins.	2.62	5.00	7.66	6.39	4.25	5.38
	mm	67	127	195	162	108	137
3	ins.	3.28	6.09	8.36	6.86	4.72	6.32
	mm	83	155	212	174	120	161
4	ins.	3.89	7.80	10.22	7.89	5.75	7.99
	mm	99	198	260	200	146	203



Must be mounted with solenoid vertical and upright.

Features

- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open and shut position
- Proof of closure switch 1 amp
- 2-way normally closed operation
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing
- 5 lb. closing spring for high force shut-off

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Washer	302 Stainless Steel
Core Tube	304L Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302F Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
H	59.5	122	600	32 to 104	224195	-
H	66	128	936	32 to 104	224195	-

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: Two SPST

(1st switch closed when valve is in closed position.)

(2nd switch closed when valve is in open position.)

Max. Electricity: 1 amp, 120 volts

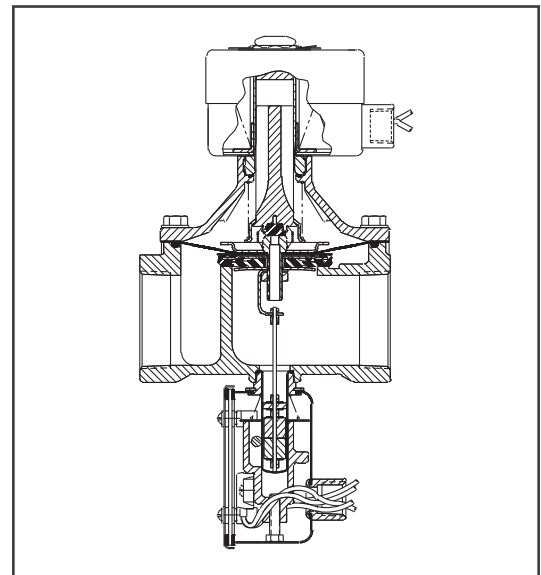
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type 1 General Purpose (std), Type 4 Watertight (opt)

Solenoid Enclosures

RedHat metal Type 1 General Purpose housing with 7/8" knock-out for 1/2" conduit connection. Type 4 Watertight housing optional.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932, Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No 139 "Electrically Operated Valves," File 010381.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Standard Solenoid Enclosure RedHat - Type 1		Optional Solenoid Enclosure RedHat - Type 4		Agency			Wattage
			Btu/hr.	Min.	Max.		Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	UL	FM	CSA	
COMBUSTION (Fuel Gas) - NORMALLY CLOSED														
3/4	1 5/8	12.2	650,000	0	20	104	8043B037	1	8043B038	5	○	○	○	59.5
1	1 5/8	22	1,170,000	0	20	104	8043A047	1	8043A048	5	○	○	○	59.5
1 1/4	1 5/8	31	1,657,000	0	20	104	8043A057	2	8043A058	6	○	○	○	59.5
1 1/2	1 5/8	35	1,867,500	0	20	104	8043A067	2	8043A068	6	○	○	○	59.5
2	2 3/32	60	3,247,500	0	20	104	8043A077	3	8043A078	7	○	○	○	59.5
2 1/2	3	105	5,659,500	0	5	104	8043A087	4	8043A088 ②	8	○	○	○	66.0
3	3	125	6,737,500	0	5	104	8043A097	4	8043A098 ②	8	○	○	○	66.0

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. ② Are not UL or CSA approved.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Standard Solenoid Enclosure RedHat - Type 1		Optional Solenoid Enclosure RedHat - Type 4		Agency			Wattage
			Btu/hr.	Min.	Max.		Catalog Number	Const. Ref.	Catalog Number	Const. Ref.	UL	FM	CSA	
COMBUSTION (Fuel Gas) - NORMALLY CLOSED														
3/4	41	10.4	650,000	0	1.4	40	8043B037	1	8043B038	5	○	○	○	59.5
1	41	18.7	1,170,000	0	1.4	40	8043A047	1	8043A048	5	○	○	○	59.5
1 1/4	41	26.4	1,657,000	0	1.4	40	8043A057	2	8043A058	6	○	○	○	59.5
1 1/2	41	29.8	1,867,500	0	1.4	40	8043A067	2	8043A068	6	○	○	○	59.5
2	53	51.0	3,247,500	0	1.4	40	8043A077	3	8043A078	7	○	○	○	59.5
2 1/2	76	89.3	5,659,500	0	0.3	40	8043A087	4	8043A088 ②	8	○	○	○	66.0
3	76	106.3	6,737,500	0	0.3	40	8043A097	4	8043A098 ②	8	○	○	○	66.0

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. ② Are not UL or CSA approved.

Capabilities Chart

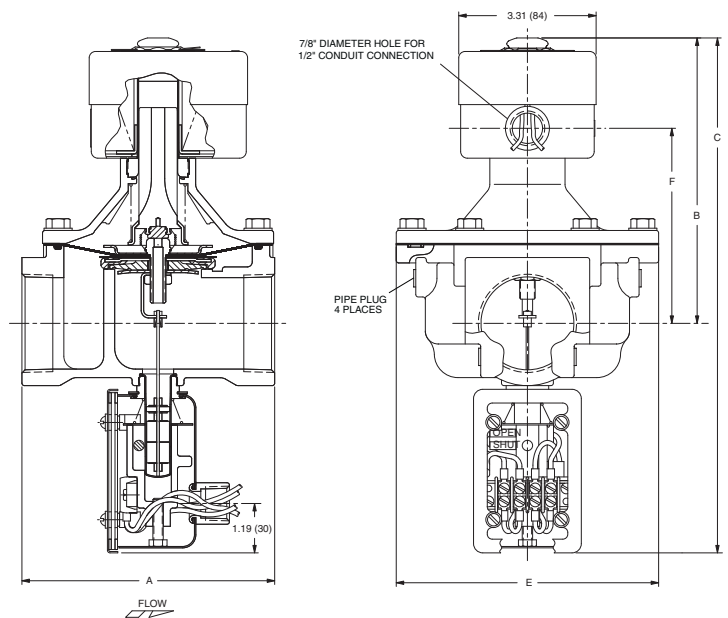
Solenoid Options		Resilient Materials	Base Catalog Number Type 1	Standard Rebuild Kit Type 1	Base Catalog Number Type 4	Standard Rebuild Kit Type 4
Rainproof	Junction Box	NBR	Aluminum	AC	Aluminum	AC
R	JB	●	8043B037	Not Available	8043B038	Not Available
R	JB	●	8043A047	Not Available	8043A048	Not Available
R	JB	●	8043A057	Not Available	8043A058	Not Available
R	JB	●	8043A067	Not Available	8043A068	Not Available
R	JB	●	8043A077	Not Available	8043A078	Not Available
R	JB	●	8043A087	Not Available	8043A088	Not Available
R	JB	●	8043A097	Not Available	8043A098	Not Available

● = Standard. Other options may be available. All option combinations may not be available.

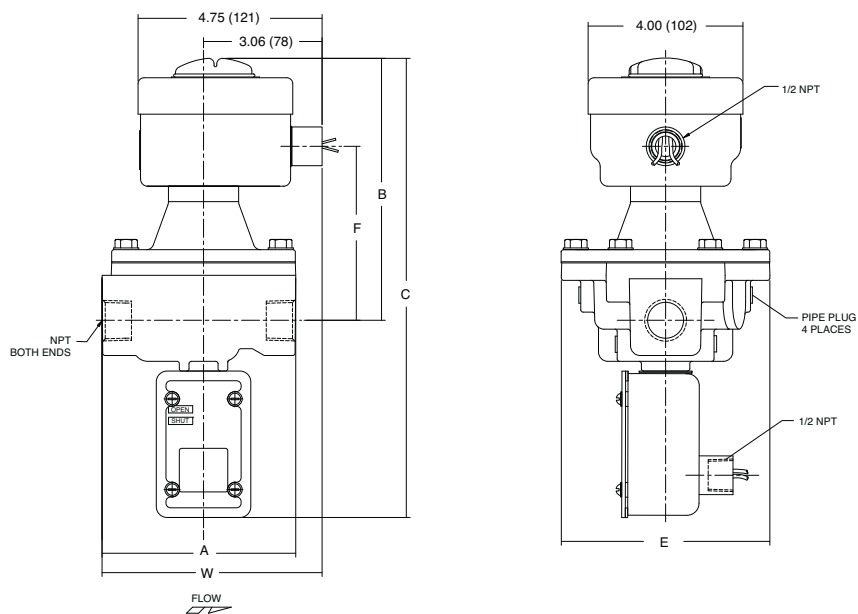
Dimensions inches (mm)

Const. Ref.		A	B	C	E	F	W
1	ins.	5.00	6.34	11.69	5.38	4.19	-
	mm	127	161	297	137	106	-
2	ins.	5.00	6.39	11.69	5.38	4.25	-
	mm	127	162	297	137	108	-
3	ins.	6.09	6.86	12.39	6.32	4.72	-
	mm	155	174	315	161	120	-
4	ins.	7.80	7.89	14.47	7.95	5.75	-
	mm	198	200	368	202	146	-
5	ins.	5.00	6.78	12.13	5.38	4.50	6.69
	mm	127	172	308	137	114	170
6	ins.	5.00	6.84	12.13	5.38	4.56	6.69
	mm	127	174	308	137	116	170
7	ins.	6.09	7.31	12.84	6.32	5.03	7.35
	mm	155	186	326	161	128	187
8	ins.	7.80	8.34	14.89	7.95	6.06	7.96
	mm	198	212	378	202	154	202

Const. Ref. 1, 2, 3, 4



Const. Ref. 5, 6, 7, 8



Features

- 2-way normally closed operation
- For control of commercial and industrial gas burners
- Ideal for high pressure applications
- Brass body construction
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	10.1	25	70	32 to 125	238610	238614

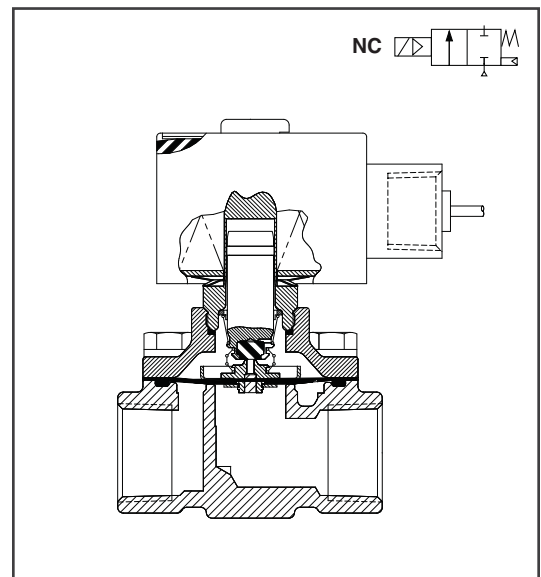
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①		Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
			Btu/hr.	Min.	Max.	UL				FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED														
3/8	5/8	2.8	150,000	0	50	125	8210G074	1	○	○	○	10.1	3.2	
1/2	5/8	3.6	193,000	0	50	125	8210G075	1	○	○	○	10.1	3.2	
3/4	5/8	5.0	295,000	0	50	125	8210G076	2	○	○	○	10.1	3.4	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①		Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
			Btu/hr.	Min.	Max.	UL				FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED														
3/8	16	2.4	150,000	0	3.4	52	8210G074	1	○	○	○	10.1	1.5	
1/2	16	3.1	193,000	0	3.4	52	8210G075	1	○	○	○	10.1	1.5	
3/4	16	4.3	295,000	0	3.4	52	8210G076	2	○	○	○	10.1	1.5	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

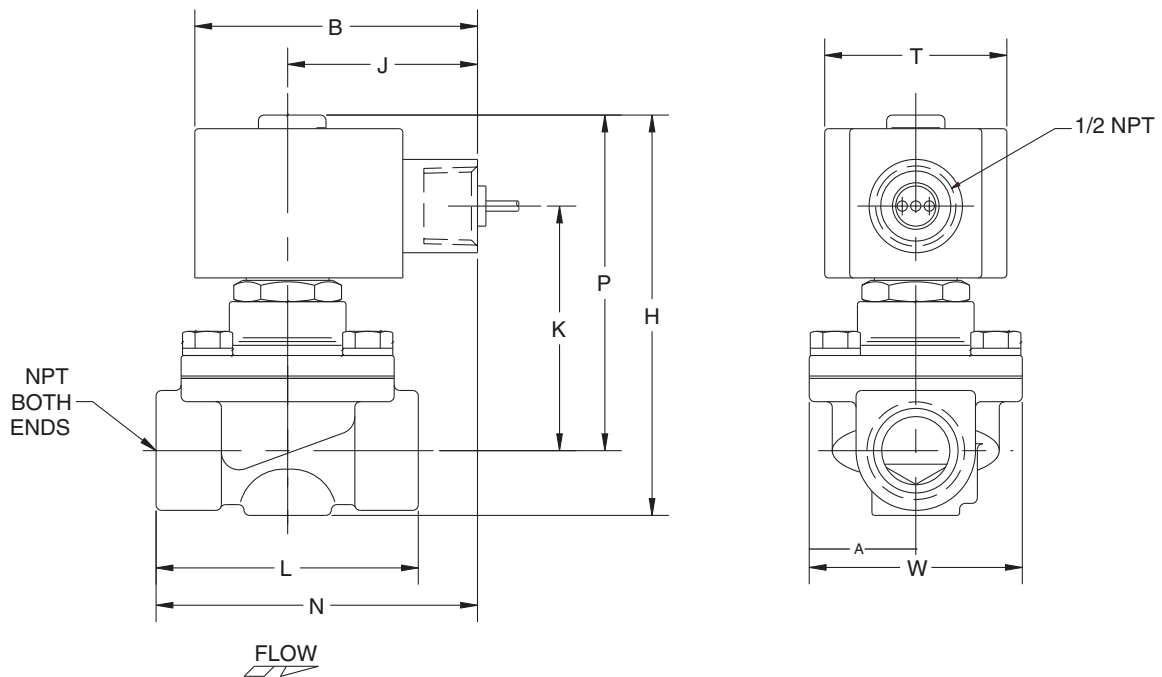
Solenoid Options				Base Catalog Number	Resilient Materials	Standard Rebuild Kit
NEMA Type 3-9	High Temp.	Junction Box	Wiring Box Screw Terminal	Brass	NBR	AC
EF	HT	JB	JKF	8210G074	●	304076
EF	HT	JB	JKF	8210G075	●	304076
EF	HT	JB	JKF	8210G076	●	304076

● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

Const. Ref.		A	B	H	J	K	L	N	P	T	W
1	ins.	1.66	3.03	3.95	2.04	2.42	2.75	3.42	3.39	1.95	2.28
	mm	42	77	100	52	61	70	87	86	50	58
2	ins.	1.66	3.03	4.20	2.04	2.58	2.81	3.45	3.55	1.95	2.28
	mm	42	77	107	52	66	71	88	90	50	58

Const. Ref. 1, 2



Mountable in any position.

Features

- 2-way normally open operation
- For control of commercial and industrial gas burners
- Ideal for high pressure applications
- Brass body construction
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	10.1	25	70	32 to 125	238610	238614

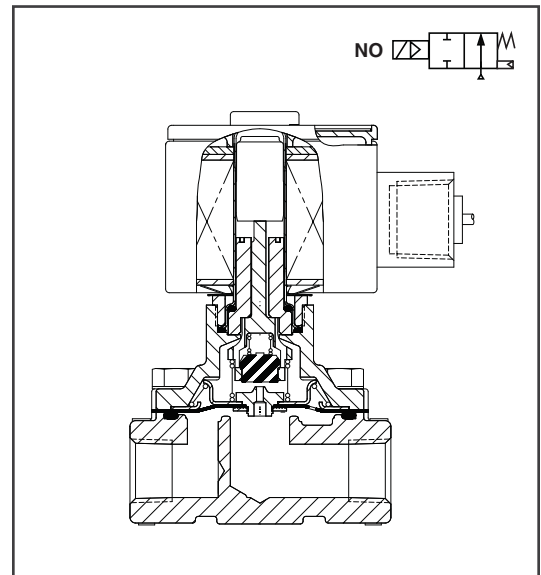
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, General Purpose Valves.

CSA Certified to:

Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/8	5/8	2.8	150,000	0	125	180	8210G033	1	●	-	●	10.1	3.4
1/2	5/8	3.5	188,000	0	125	180	8210G034	1	●	-	●	10.1	3.4
3/4	3/4	5.5	295,000	0	125	180	8210G035	2	●	-	●	10.1	3.6

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/8	16	2.4	150,000	0	8.6	82	8210G033	1	●	-	●	10.1	1.5
1/2	16	3.0	188,000	0	8.6	82	8210G034	1	●	-	●	10.1	1.5
3/4	19	4.7	295,000	0	8.6	82	8210G035	2	●	-	●	10.1	1.6

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

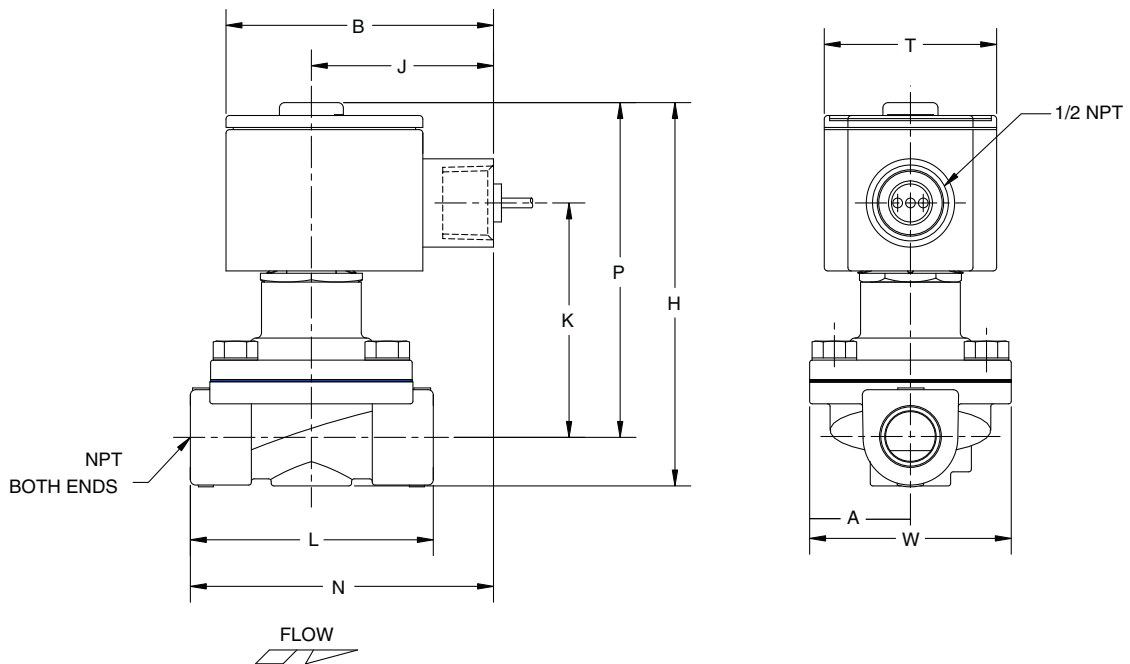
Solenoid Options				Base Catalog Number	Resilient Materials	Standard Rebuild Kit
NEMA Type 3-9	High Temp.	Junction Box	Wiring Box Screw Terminal	Brass	NBR	AC
EF	HT	JB	JKF	8210G033	●	302334
EF	HT	JB	JKF	8210G034	●	302334
EF	HT	JB	JKF	8210G035	●	302335

● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

Const. Ref.		A	B	H	J	K	L	N	P	T	W
1	ins.	1.66	3.03	4.35	2.04	2.65	2.75	3.42	3.79	1.95	2.28
	mm	42	77	110	52	67	70	87	96	50	58
2	ins.	1.66	3.03	4.64	2.04	2.81	2.81	3.45	3.94	1.95	2.28
	mm	42	77	118	52	71	71	88	100	50	58

Const. Ref. 1, 2



Mountable in any position.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal (20.1 watt only)
Rider Ring	PTFE (20.1 watt only)
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Ambient Temp. °F	Spare Coil Family			
	DC Watts	AC				General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush		AC	DC	AC	DC
F	-	17.1	40	93	-40 to 125	238610	-	-	-
F	-	20.1	48	240	-40 to 125	272610	-	-	-
F	22.6	-	-	-	-40 to 104	-	238710	-	-

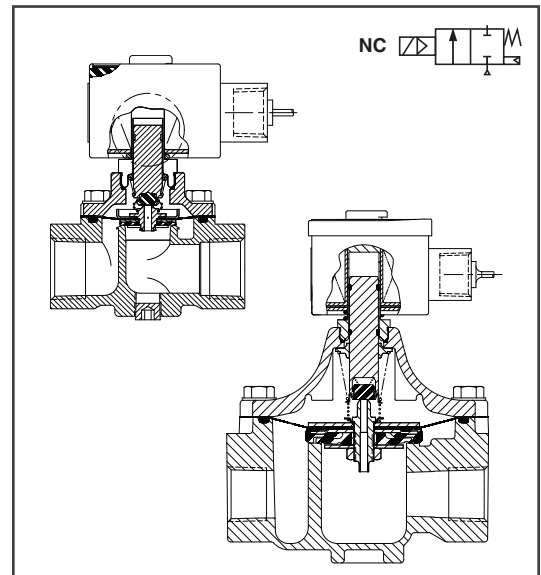
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (238610); 120, 240 volts AC, 60 Hz (272610); 12, 24 volts DC.

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

COMBUSTION

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①	Operating Pressure Differential (psi)		Max. Fluid Temp. °F		Catalog Number	Const. Ref.	Agency			Wattage		Approx. Shipping Weight (lbs)
				Btu/hr.	Min.	Max.	AC			DC	UL	FM	CSA	AC	
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
3/8	3/4	3.4	183,000	0	5	125	104	8214G010	1	○	○	○	17.1	22.6	2
1/2	3/4	4.4	238,500	0	5	125	104	8214G020	1	○	○	○	17.1	22.6	2
3/4	3/4	5.1	247,500	0	5	125	104	8214G030	2	○	○	○	17.1	22.6	2
3/4	1 5/8	11	580,000	0	5	125	-	8214G036	3	○	○	○	20.1	-	4.3
1	1 5/8	21	1,119,000	0	5	125	-	8214G051	3	○	○	○	20.1	-	4.3
1 1/4	1 5/8	32	1,730,000	0	5	125	-	8214G061	4	○	○	○	20.1	-	4.3
1 1/2	1 5/8	35	1,900,000	0	5	125	-	8214G071	4	○	○	○	20.1	-	4.3
2	2 3/32	60	2,800,000	0	5	125	-	8214G081	5	○	○	○	20.1	-	6.3

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①	Operating Pressure Differential (bar)		Max. Fluid Temp. °C		Catalog Number	Const. Ref.	Agency			Wattage		Approx. Shipping Weight (kgs)
				Btu/hr.	Min.	Max.	AC			DC	UL	FM	CSA	AC	
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
3/8	19	2.9	183,000	0	0.3	52	40	8214G010	1	○	○	○	17.1	22.6	0.9
1/2	19	3.7	238,500	0	0.3	52	40	8214G020	1	○	○	○	17.1	22.6	0.9
3/4	19	4.3	247,500	0	0.3	52	40	8214G030	2	○	○	○	17.1	22.6	0.9
3/4	41	9.4	580,000	0	0.3	52	-	8214G036	3	○	○	○	20.1	-	2.0
1	41	17.9	1,119,000	0	0.3	52	-	8214G051	3	○	○	○	20.1	-	2.0
1 1/4	41	27.2	1,730,000	0	0.3	52	-	8214G061	4	○	○	○	20.1	-	2.0
1 1/2	41	29.8	1,900,000	0	0.3	52	-	8214G071	4	○	○	○	20.1	-	2.0
2	53	51.0	2,800,000	0	0.3	52	-	8214G081	5	○	○	○	20.1	-	2.9

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

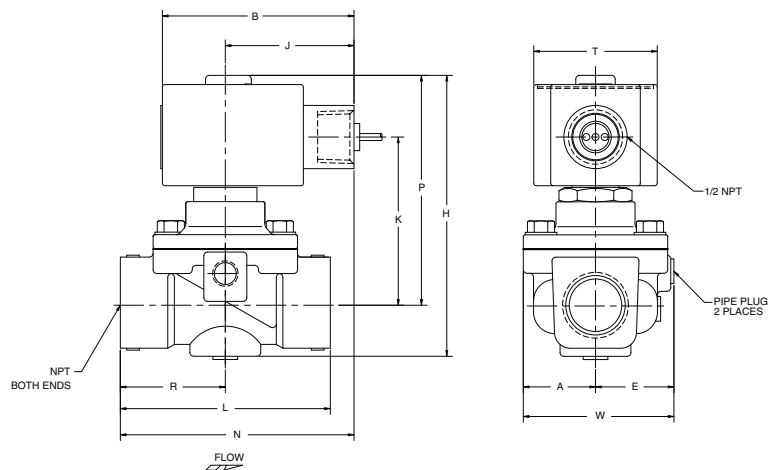
COMBUSTION	Solenoid Options		Base Catalog Number		Resilient Materials		Standard Rebuild Kit	
	High Temp.	Junction Box	Aluminum		NBR		AC	DC
	HB	JB	8214G010		●		316233	316790
	HB	JB	8214G020		●		316233	316790
	HB	JB	8214G030		●		316233	316790
	HB	JB	8214G036		●		322374	-
	HB	JB	8214G051		●		322374	-
	HB	JB	8214G061		●		322374	-
	HB	JB	8214G071		●		322374	-
	HB	JB	8214G081		●		322376	-

● = Standard. Other options may be available. All option combinations may not be available. Solenoid options are for AC only.

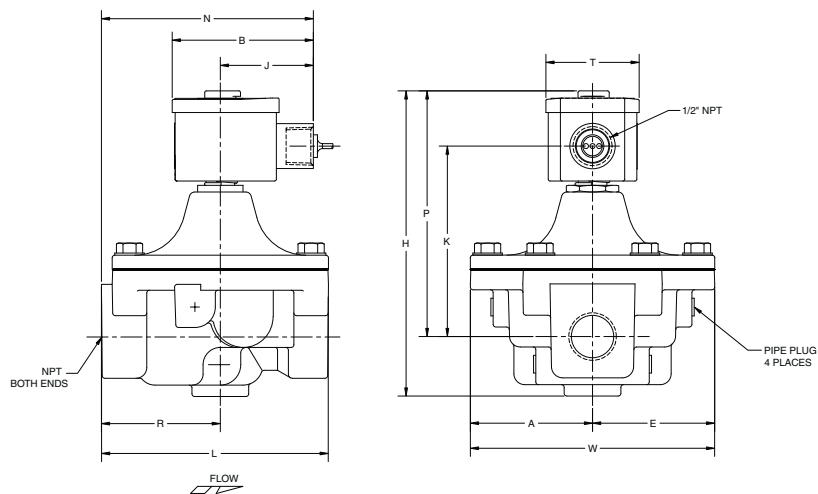
Dimensions inches (mm)

Const. Ref.		A	B	E	H	J	K	L	N	P	R	T	W
1	ins.	1.14	3.03	1.36	4.08	2.04	2.47	2.75	3.42	3.46	1.38	1.95	2.50
	mm	29	77	35	104	52	63	70	87	88	35	50	64
2	ins.	1.14	3.03	1.25	4.52	2.04	2.66	3.31	3.70	3.64	1.66	1.95	2.39
	mm	29	77	32	115	52	68	84	94	92	42	50	61
3	ins.	2.69	3.11	2.69	6.73	2.05	4.20	5.00	4.67	5.41	2.62	2.06	5.39
	mm	68	79	68	171	52	107	127	119	137	67	52	137
4	ins.	2.69	3.11	2.69	6.73	2.05	4.27	5.00	4.67	5.48	2.62	2.06	5.39
	mm	68	79	68	171	52	108	127	119	139	37	52	137
5	ins.	3.16	3.11	3.16	7.34	2.05	4.63	6.09	5.33	5.48	3.28	2.06	6.32
	mm	80	79	80	186	52	118	155	135	139	83	52	161

Const. Ref. 1, 2,



Const. Ref. 3, 4, 5



Must be mounted with solenoid vertical and upright with 20.1 watt coil.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open & shut position
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Ring	PTFE
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	20.1	48	240	-40 to 125	272610	-

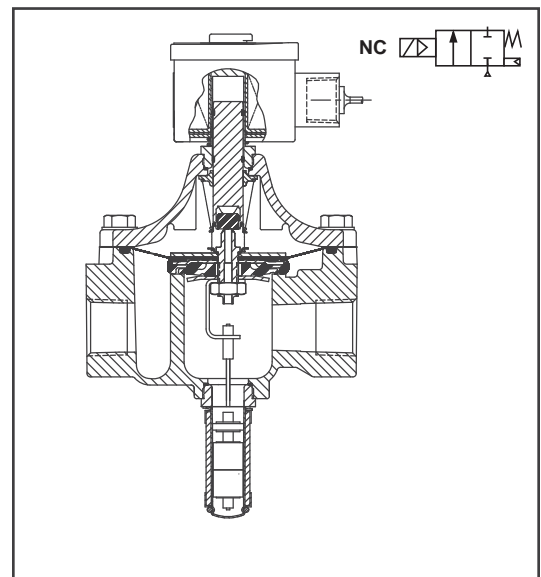
Standard Voltages: 120, 240 volts AC, 60 Hz

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and watertight solenoid enclosures with 1/2" conduit hub as standard.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves".

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/4	1 5/8	11	580,000	0	5	125	8214G036VI	1	○	○	○	20.1	4.5
1	1 5/8	21	1,119,000	0	5	125	8214G051VI	1	○	○	○	20.1	4.5
1 1/4	1 5/8	32	1,730,000	0	5	125	8214G061VI	2	○	○	○	20.1	4.5
1 1/2	1 5/8	35	1,900,000	0	5	125	8214G071VI	2	○	○	○	20.1	4.5
2	2 3/32	60	2,800,000	0	5	125	8214G081VI	3	○	○	○	20.1	6.5

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/4	41	9.4	580,000	0	0.3	52	8214G036VI	1	○	○	○	20.1	2
1	41	17.9	1,119,000	0	0.3	52	8214G051VI	1	○	○	○	20.1	2
1 1/4	41	27.2	1,730,000	0	0.3	52	8214G061VI	2	○	○	○	20.1	2
1 1/2	41	29.8	1,900,000	0	0.3	52	8214G071VI	2	○	○	○	20.1	2
2	53	51.0	2,800,000	0	0.3	52	8214G081VI	3	○	○	○	20.1	3

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options		Base Catalog Number	Resilient Materials	Standard Rebuild Kit
High Temp.	Junction Box	Aluminum	NBR	AC
HB	JB	8214G036VI	●	322375
HB	JB	8214G051VI	●	322375
HB	JB	8214G061VI	●	322375
HB	JB	8214G071VI	●	322375
HB	JB	8214G081VI	●	322377

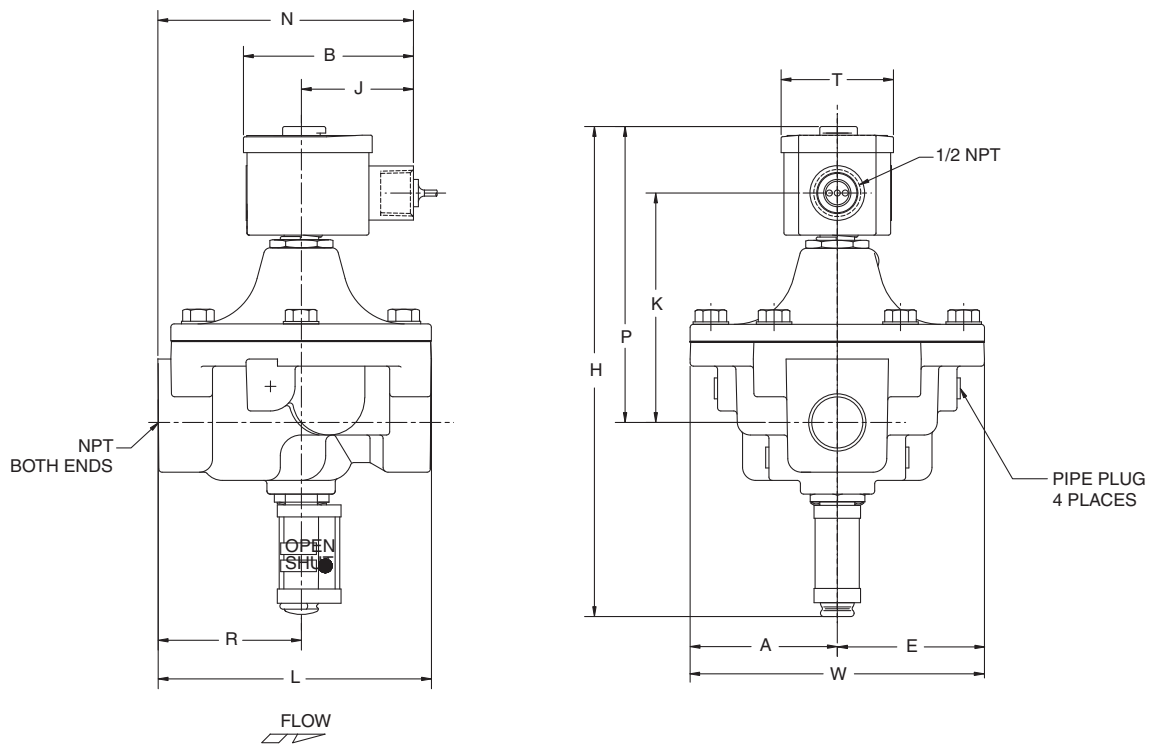
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

Dimensions inches (mm)

Const. Ref.		A	B	E	H	J	K	L	N	P	R	T	W
1	ins.	2.69	3.11	2.69	8.93	2.05	4.20	5.00	4.67	5.41	2.62	2.06	5.39
	mm	68	79	68	227	52	107	127	119	137	67	52	137
2	ins.	2.69	3.11	2.69	8.93	2.05	4.27	5.00	4.67	5.48	2.62	2.06	5.39
	mm	68	79	68	227	52	108	127	119	139	67	52	137
3	ins.	3.16	3.11	3.16	9.53	2.05	4.63	6.09	5.33	5.84	3.28	2.06	6.32
	mm	80	79	80	242	52	118	155	135	148	83	52	161

Const. Ref. 1, 2, 3



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open & shut position
- Proof of closure switch 1 amp
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Ring	PTFE
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	20.1	48	240	-40 to 125	272610	-
Standard Voltages: 120, 240 volts AC, 60 Hz						

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: SPST (closed when valve is in closed position.)

Max. Electricity: 1 amp, 120 volts

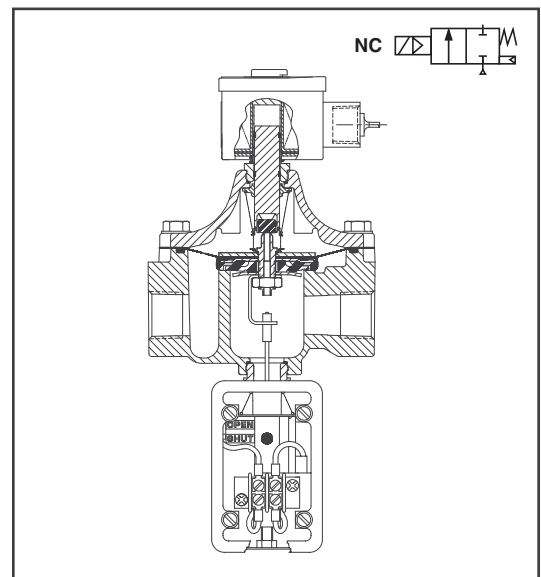
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type 4 watertight

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/4	1 5/8	11	580,000	0	5	125	8214G036C	1	○	○	○	20.1	4.8
1	1 5/8	21	1,119,000	0	5	125	8214G051C	1	○	○	○	20.1	4.8
1 1/4	1 5/8	32	1,730,000	0	5	125	8214G061C	2	○	○	○	20.1	4.8
1 1/2	1 5/8	35	1,900,000	0	5	125	8214G071C	2	○	○	○	20.1	4.8
2	2 3/32	60	2,800,000	0	5	125	8214G081C	3	○	○	○	20.1	6.8

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/4	41	9.4	580,000	0	0.3	52	8214G036C	1	○	○	○	20.1	2.2
1	41	17.9	1,119,000	0	0.3	52	8214G051C	1	○	○	○	20.1	2.2
1 1/4	41	27.2	1,730,000	0	0.3	52	8214G061C	2	○	○	○	20.1	2.2
1 1/2	41	29.8	1,900,000	0	0.3	52	8214G071C	2	○	○	○	20.1	2.2
2	53	51.0	2,800,000	0	0.3	52	8214G081C	3	○	○	○	20.1	3.1

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options		Base Catalog Number	Resilient Materials	Standard Rebuild Kit
High Temp.	Junction Box	Aluminum	NBR	AC
HB	JB	8214G036C	●	Not Available
HB	JB	8214G051C	●	Not Available
HB	JB	8214G061C	●	Not Available
HB	JB	8214G071C	●	Not Available
HB	JB	8214G081C	●	Not Available

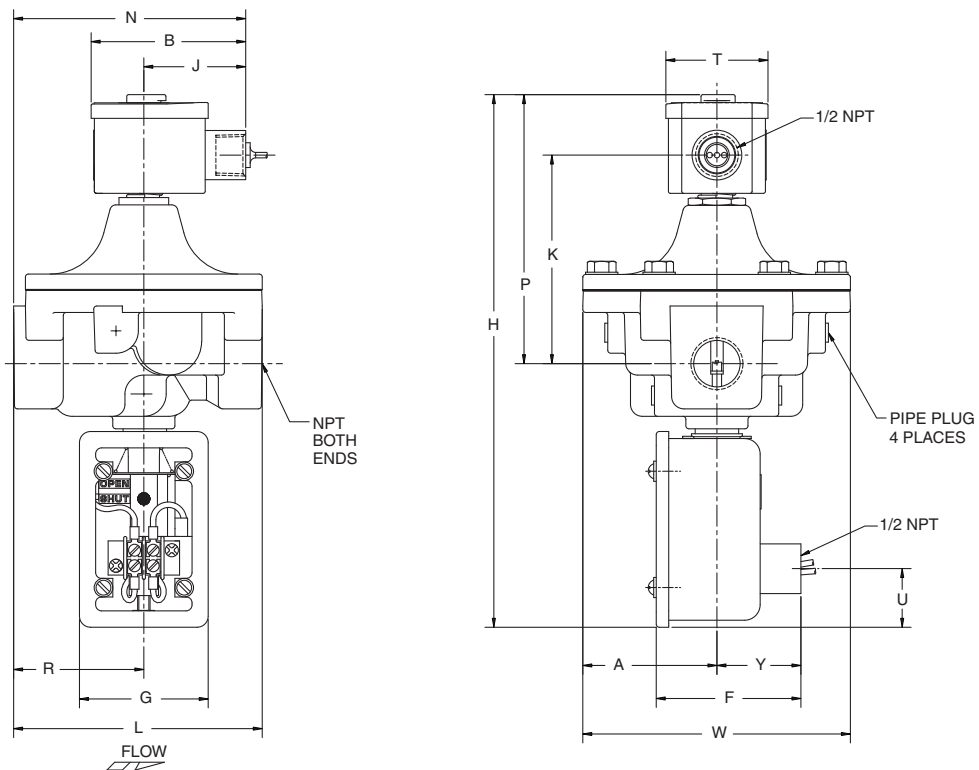
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

Dimensions inches (mm)

Const. Ref.		A	B	F	G	H	J	K	L	N	P	R	T	U	W	Y
1	ins.	2.69	3.11	2.91	2.44	10.72	2.05	4.20	5.00	4.67	5.41	2.62	2.06	1.18	5.39	1.69
	mm	68	79	74	62	272	52	107	127	119	137	67	52	30	137	43
2	ins.	2.69	3.11	2.91	2.44	10.72	2.05	4.27	5.00	4.67	5.48	2.62	2.06	1.18	5.39	1.69
	mm	68	79	74	62	272	52	108	127	119	139	67	52	30	137	43
3	ins.	3.16	3.11	2.91	2.44	11.33	2.05	4.63	6.09	5.33	5.84	3.28	2.06	1.18	6.32	1.69
	mm	80	79	74	62	288	52	118	155	135	148	83	52	30	161	43

Const. Ref. 1, 2, 3



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal (20 watt only)
Rider Ring	PTFE (20 watt only)
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				*Ambient Temp. °F	Spare Coil Family			
	DC Watts	AC				General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush		AC	DC	AC	DC
F	-	20	43	240	-40 to 125	099257	-	-	-
F	-	28.2	50	385	-40 to 125	206409	-	-	-
B	14.9	-	-	-	-40 to 77	-	062691	-	-

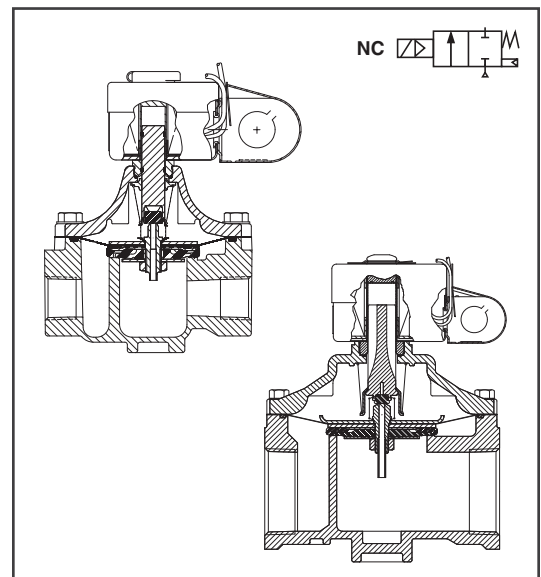
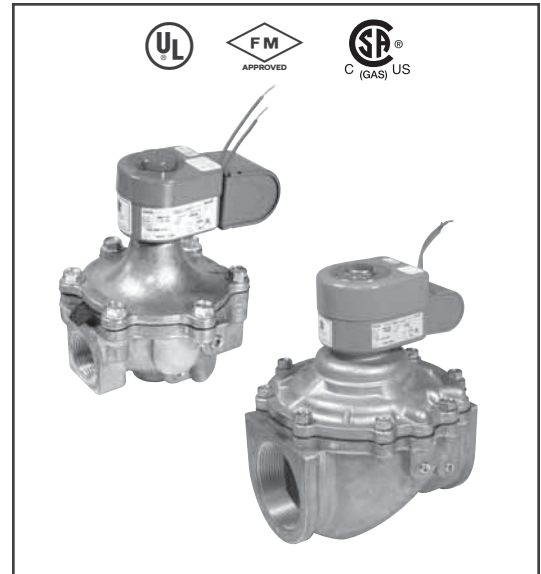
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz)
 12, 24 volts DC.

Solenoid Enclosures

RedHat metal Type 1 General Purpose Junction Box housing with two 7/8" knock-outs for 1/2" conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved "Process Control Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

COMBUSTION

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①		Operating Pressure Differential (psi)		Max. Fluid Temp. °F		Catalog Number	Const. Ref.	Agency			Wattage		Approx. Shipping Weight (lbs)
			Btu/hr.	Min.	Max.	AC	DC	UL			FM	CSA	AC	DC		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED																
3/4	1 5/8	11	580,000	0	5	125	77	8214 035	1	○	②	○	20	14.9	4.3	
1	1 5/8	21	1,119,000	0	5	125	77	8214 050	1	○	②	○	20	14.9	4.3	
1 1/4	1 5/8	32	1,730,000	0	5	125	77	8214 060	2	○	②	○	20	14.9	4.3	
1 1/2	1 5/8	35	1,900,000	0	5	125	77	8214 070	2	○	②	○	20	14.9	4.3	
2	2 3/32	60	2,800,000	0	5	125	77	8214 080	3	○	②	○	20	14.9	6.3	
2 1/2	3	104	5,765,500	0	5	125	-	8214 090	4	○	②	○	28.2	-	13.0	
3	3	105	5,796,000	0	5	125	-	8214 040	4	○	②	○	28.2	-	14.0	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. ② FM approved "Process Control Valves".

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①		Operating Pressure Differential (bar)		Max. Fluid Temp. °C		Catalog Number	Const. Ref.	Agency			Wattage		Approx. Shipping Weight (kgs)
			Btu/hr.	Min.	Max.	AC	DC	UL			FM	CSA	AC	DC		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED																
3/4	41	9.4	580,000	0	0.3	52	25	8214 035	1	○	②	○	20	14.9	2.0	
1	41	17.9	1,119,000	0	0.3	52	25	8214 050	1	○	②	○	20	14.9	2.0	
1 1/4	41	27.2	1,730,000	0	0.3	52	25	8214 060	2	○	②	○	20	14.9	2.0	
1 1/2	41	29.8	1,900,000	0	0.3	52	25	8214 070	2	○	②	○	20	14.9	2.0	
2	53	51.0	2,800,000	0	0.3	52	25	8214 080	3	○	②	○	20	14.9	2.9	
2 1/2	76	88.4	5,765,500	0	0.3	52	-	8214 090	4	○	②	○	28.2	-	5.9	
3	76	89.3	5,796,000	0	0.3	52	-	8214 040	4	○	②	○	28.2	-	6.4	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas. ② FM approved "Process Control Valves".

Capabilities Chart

Solenoid Options		Base Catalog Number	Resilient Materials	Standard Rebuild Kit	
High Temp.	Junction Box	Aluminum	NBR	AC	DC
HB	JB	8214 035	●	316429	316777
HB	JB	8214 050	●	316429	316777
HB	JB	8214 060	●	316429	316777
HB	JB	8214 070	●	316429	316777
HB	JB	8214 080	●	316430	316778
HT	JB	8214 090	●	316828	-
HT	JB	8214 040	●	316828	-

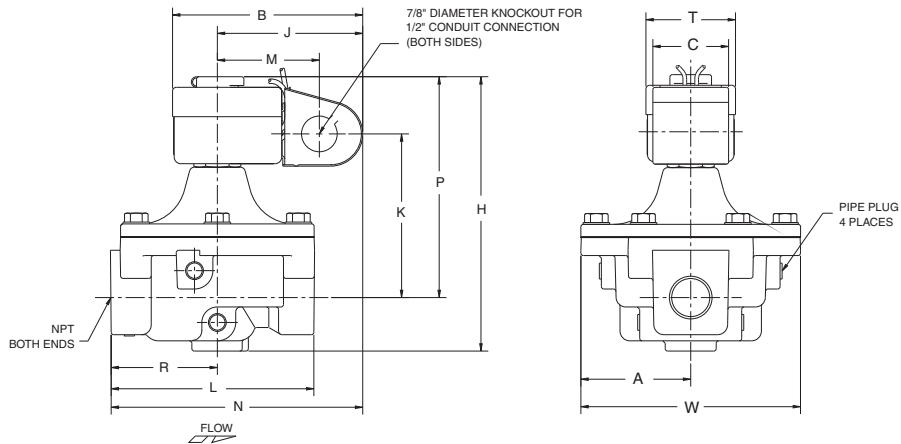
● = Standard. Other options may be available. All option combinations may not be available. Solenoid options are for AC only.

COMBUSTION

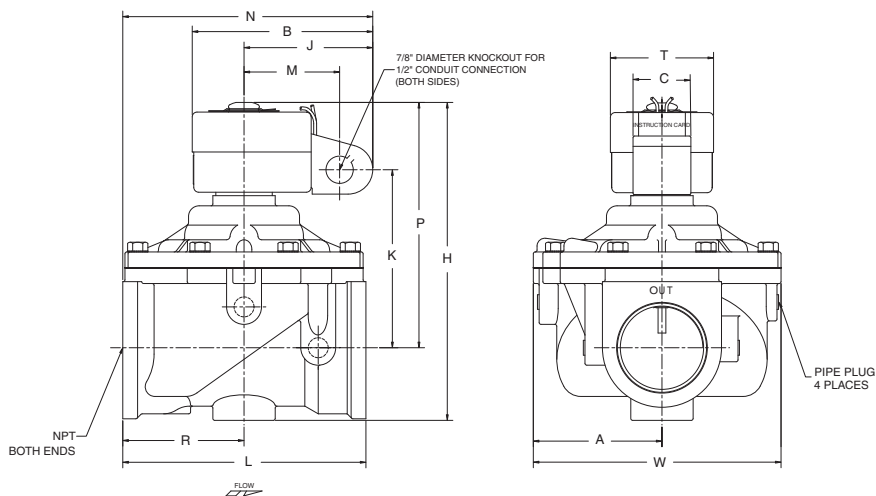
Dimensions inches (mm) Shown with Optional Junction Box

Const. Ref.		A	B	C	H	J	K	L	M	N	P	R	T	W
1	ins.	2.69	4.59	1.88	6.78	3.53	4.06	5.00	2.50	6.15	5.46	2.62	2.20	5.39
	mm	68	117	48	1620	90	103	127	64	156	139	67	56	137
2	ins.	2.69	4.59	1.88	6.78	3.53	4.13	5.00	2.50	6.15	5.53	2.62	2.20	5.39
	mm	68	117	48	172	90	105	127	64	156	140	67	56	137
3	ins.	3.16	4.59	1.88	7.39	3.53	4.49	6.09	2.50	6.81	5.89	3.28	2.20	6.32
	mm	80	117	48	188	90	114	155	64	173	150	83	56	161
4	ins.	4.13	5.72	1.88	10.20	4.07	5.71	7.80	3.07	7.96	7.87	3.89	3.31	7.95
	mm	105	145	48	259	103	145	198	78	202	200	99	84	202

Const. Ref. 1, 2, 3



Const. Ref. 4



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open & shut position
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal (20 watt only)
Rider Ring	PTFE (20 watt only)
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	20	43	240	-40 to 125	99257	-
F	28.2	50	385	-40 to 125	206409	-

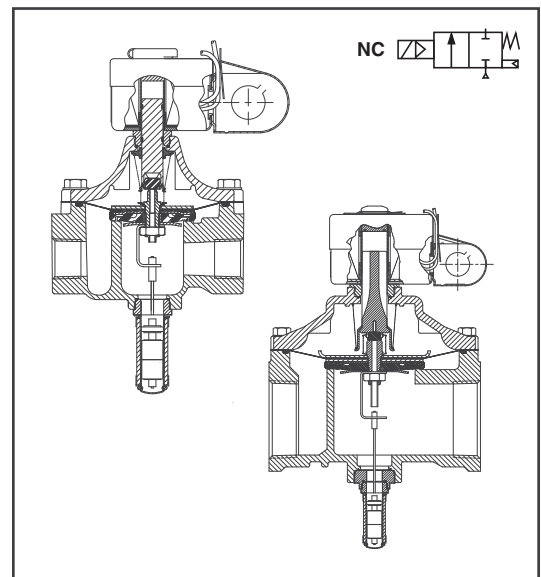
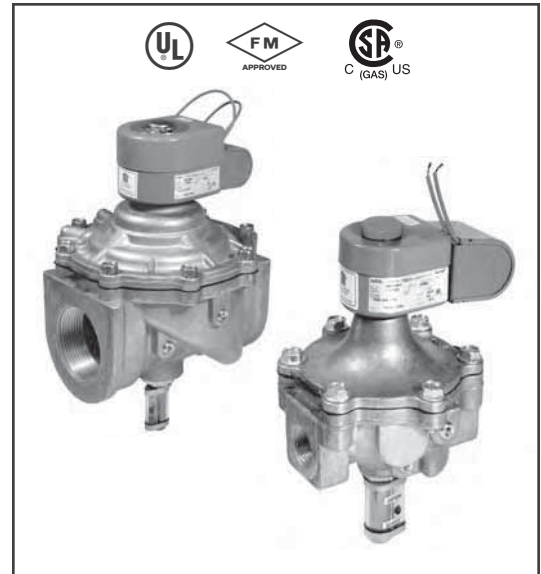
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (99257); 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (206409).

Solenoid Enclosures

RedHat metal Type 1 General Purpose Junction Box housing with two 7/8" knock-outs for 1/2" conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves."

CSA Certified to:

- 1) Standard G22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

COMBUSTION

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/4	1 5/8	11	580,000	0	5	125	8214 035VI	1	○	○	○	20	4.5
1	1 5/8	21	1,119,000	0	5	125	8214 050VI	1	○	○	○	20	4.5
1 1/4	1 5/8	32	1,730,000	0	5	125	8214 060VI	2	○	○	○	20	4.5
1 1/2	1 5/8	35	1,900,000	0	5	125	8214 070VI	2	○	○	○	20	4.5
2	2 3/32	60	2,800,000	0	5	125	8214 080VI	3	○	○	○	20	6.5
2 1/2	3	104	5,765,500	0	5	125	8214 090VI	4	○	○	○	28.2	13.2
3	3	105	5,796,000	0	5	125	8214 040VI	4	○	○	○	28.2	14.2

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/4	41	9.4	580,000	0	0.3	52	8214 035VI	1	○	○	○	20	2.0
1	41	17.9	1,119,000	0	0.3	52	8214 050VI	1	○	○	○	20	2.0
1 1/4	41	27.2	1,730,000	0	0.3	52	8214 060VI	2	○	○	○	20	2.0
1 1/2	41	29.8	1,900,000	0	0.3	52	8214 070VI	2	○	○	○	20	2.0
2	53	51.0	2,800,000	0	0.3	52	8214 080VI	3	○	○	○	20	3.0
2 1/2	76	88.4	5,765,500	0	0.3	52	8214 090VI	4	○	○	○	28.2	6.0
3	76	89.3	5,796,000	0	0.3	52	8214 040VI	4	○	○	○	28.2	6.5

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options		Base Catalog Number		Resilient Materials		Standard Rebuild Kit	
High Temp.	Junction Box	Aluminum		NBR		AC	
HB	JB	8214 035VI		●		318303	
HB	JB	8214 050VI		●		318303	
HB	JB	8214 060VI		●		318303	
HB	JB	8214 070VI		●		318303	
HB	JB	8214 080VI		●		318328	
HT	JB	8214 090VI		●		318331	
HT	JB	8214 040VI		●		318331	

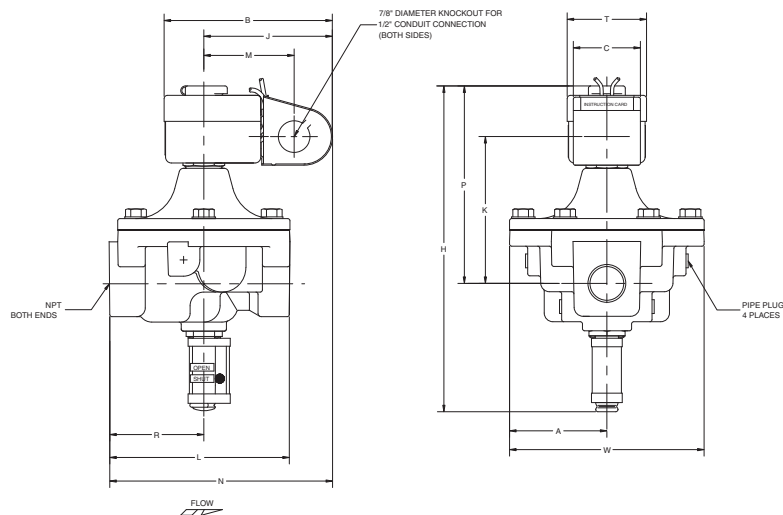
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

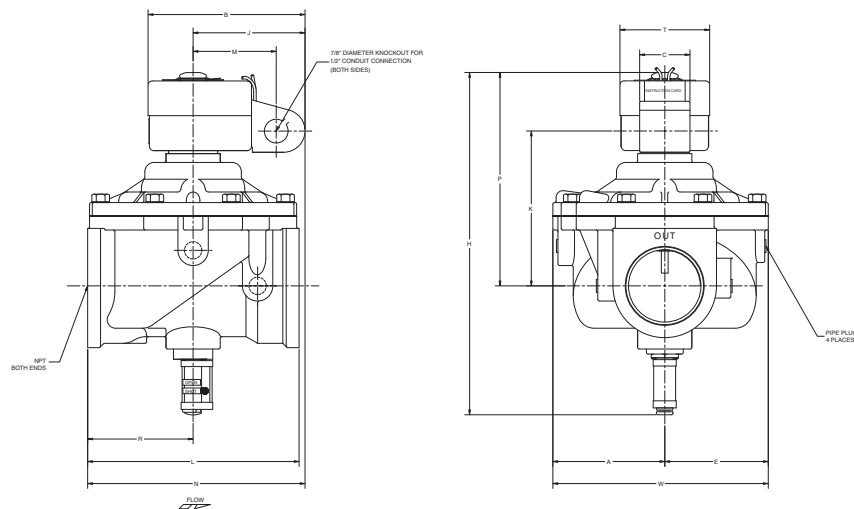
Dimensions inches (mm)

Const. Ref.		A	B	C	H	J	K	L	M	N	P	R	T	W
1	ins.	2.69	4.59	1.88	8.97	3.53	4.06	5.24	2.50	6.15	5.46	2.62	2.20	5.39
	mm	68	117	48	228	90	103	133	64	156	139	67	56	137
2	ins.	2.69	4.59	1.88	8.97	3.53	4.13	5.24	2.50	6.15	5.53	2.62	2.20	5.39
	mm	68	117	48	228	90	105	133	64	156	140	67	56	137
3	ins.	3.16	4.59	1.88	9.57	3.53	4.49	6.56	2.50	6.81	5.89	3.28	2.20	6.32
	mm	80	117	48	243	90	114	167	64	173	150	83	56	161
4	ins.	4.13	5.72	1.88	12.59	4.07	5.71	7.80	3.07	7.96	7.87	3.89	3.31	7.95
	mm	105	145	48	320	103	145	200	78	202	200	99	84	202

Const. Ref. 1, 2, 3



Const. Ref. 4



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- Visual indication of open & shut position
- Proof of closure switch 1 amp
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe taps with plugs for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal (20 watt only)
Rider Ring	PTFE (20 watt only)
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	20	43	240	-40 to 125	99257	-
F	28.2	50	385	-40 to 125	206409	-

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (99257); 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (206409).

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: SPST (closed when valve is in closed position.)

Max. Electricity: 1 amp, 120 volts

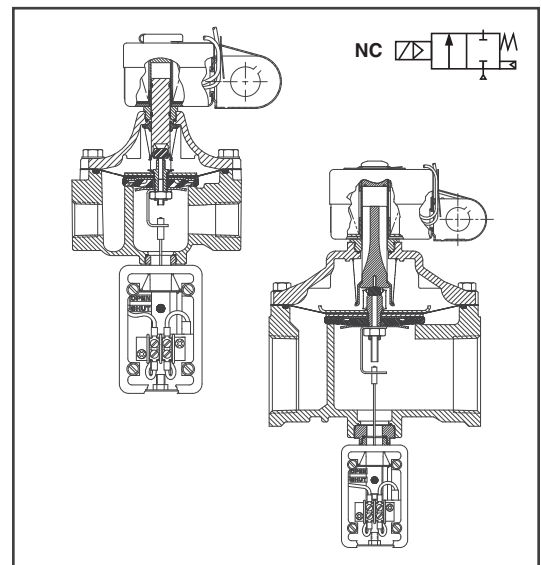
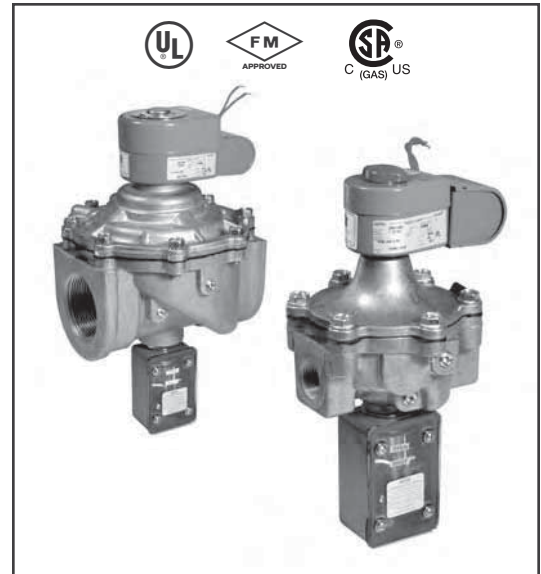
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type I General Purpose

Solenoid Enclosures

RedHat metal Type 1 General Purpose Junction Box housing with two 7/8" knock-outs for 1/2" conduit connection.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "liquid and gas safety shutoff valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/4	1 5/8	11	580,000	0	5	125	8214 035C	1	○	○	○	20	4.8
1	1 5/8	21	1,119,000	0	5	125	8214 050C	1	○	○	○	20	4.8
1 1/4	1 5/8	32	1,730,000	0	5	125	8214 060C	2	○	○	○	20	4.8
1 1/2	1 5/8	35	1,900,000	0	5	125	8214 070C	2	○	○	○	20	4.8
2	2 3/32	60	2,800,000	0	5	125	8214 080C	3	○	○	○	20	6.8
2 1/2	3	104	5,765,500	0	5	125	8214 090C	4	○	○	○	28.2	13.5
3	3	105	5,796,000	0	5	125	8214 040C	4	○	○	○	28.2	14.5

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED													
3/4	41	9.4	580,000	0	0.3	52	8214 035C	1	○	○	○	20	2.2
1	41	17.9	1,119,000	0	0.3	52	8214 050C	1	○	○	○	20	2.2
1 1/4	41	27.2	1,730,000	0	0.3	52	8214 060C	2	○	○	○	20	2.2
1 1/2	41	29.8	1,900,000	0	0.3	52	8214 070C	2	○	○	○	20	2.2
2	53	51.0	2,800,000	0	0.3	52	8214 080C	3	○	○	○	20	3.1
2 1/2	76	88.4	5,765,500	0	0.3	52	8214 090C	4	○	○	○	28.2	6.1
3	76	89.3	5,796,000	0	0.3	52	8214 040C	4	○	○	○	28.2	6.6

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options		Base Catalog Number	Resilient Materials	Standard Rebuild Kit
High Temp.	Junction Box	Aluminum	NBR	AC
HB	JB	8214 035C	●	Not Available
HB	JB	8214 050C	●	Not Available
HB	JB	8214 060C	●	Not Available
HB	JB	8214 070C	●	Not Available
HB	JB	8214 080C	●	Not Available
HT	JB	8214 090C	●	Not Available
HT	JB	8214 040C	●	Not Available

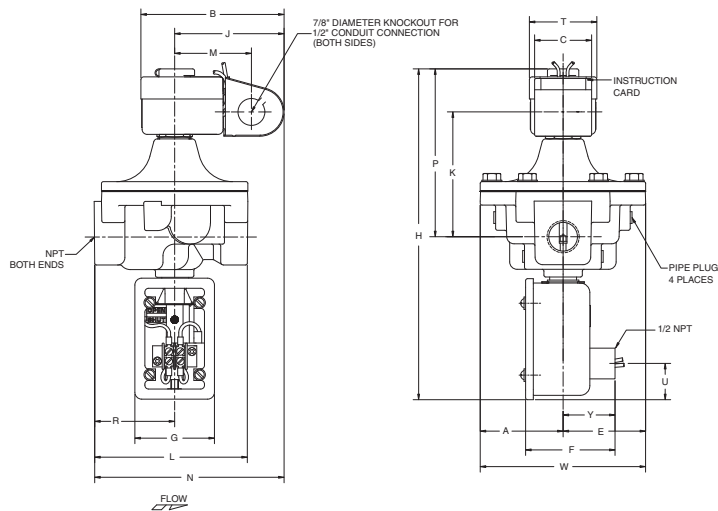
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

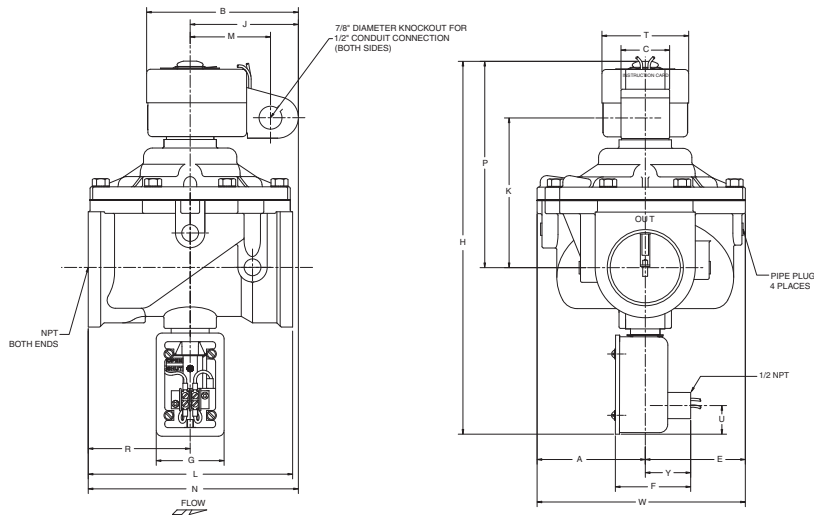
Dimensions inches (mm) Shown with Optional Junction Box

Const. Ref.		A	B	C	E	F	G	H	J	K	L	M	N	P	R	T	U	W	Y
1	ins.	2.69	4.59	1.88	2.69	2.75	2.44	10.54	3.53	4.06	5.00	2.50	6.15	5.46	2.62	2.20	1.12	5.39	1.63
	mm	68	117	48	68	70	62	268	90	103	127	64	156	139	67	56	28	137	41
2	ins.	2.69	4.59	1.88	2.69	2.75	2.44	10.54	3.53	4.13	5.00	2.50	6.15	5.53	2.62	2.20	1.12	5.39	1.63
	mm	68	117	48	68	70	62	268	90	105	127	64	156	140	67	56	28	137	41
3	ins.	3.16	4.59	1.88	3.16	2.75	2.44	11.15	3.53	4.49	6.09	2.50	6.81	5.89	3.28	2.20	1.12	6.32	1.63
	mm	80	117	48	80	70	62	283	90	114	155	64	173	150	83	56	28	161	41
4	ins.	4.13	5.72	1.88	3.82	2.75	2.44	14.25	4.07	5.71	7.80	3.07	7.96	7.87	3.89	3.31	1.12	7.95	1.63
	mm	105	145	48	97	70	62	362	103	145	198	78	202	200	99	84	28	202	41

Const. Ref. 1, 2, 3



Const. Ref. 4



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally open operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff in the normally closed (energized) position
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal (20.1 watt only)
Rider Ring	PTFE (20.1 watt only)
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	Watts	VA Holding	VA Inrush		General Purpose	Explosionproof
					AC	AC
F	17.1	40	93	-40 to 125	238610	-
F	20.1	43	240	-40 to 125	272610	-

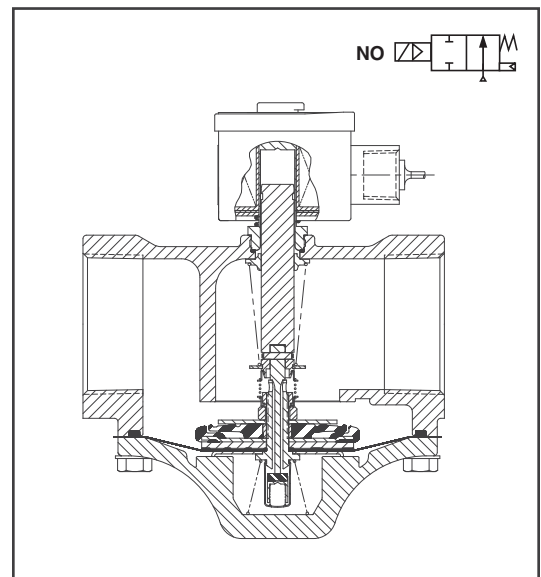
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (238610); 120, 240 volts AC, 60 Hz (272610).

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

COMBUSTION

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/8	3/4	3.4	172,500	0	5	125	8214G013	1	●	-	●	17.1	2.3
1/2	3/4	4.4	206,250	0	5	125	8214G023	1	●	-	●	17.1	2.3
3/4	3/4	5.1	247,500	0	5	125	8214G033	2	●	-	●	17.1	2.5
3/4	1 5/8	11	659,000	0	5	125	8214G038	3	●	-	●	20.1	4.3
1	1 5/8	21	1,179,000	0	5	125	8214G054	3	●	-	●	20.1	4.3
1 1/4	1 5/8	32	1,538,750	0	5	125	8214G064	4	●	-	●	20.1	4.3
1 1/2	1 5/8	35	1,615,250	0	5	125	8214G074	4	●	-	●	20.1	4.3
2	2 3/32	60	2,924,500	0	5	125	8214G084	5	●	-	●	20.1	6.3

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/8	19	2.9	172,500	0	0.3	52	8214G013	1	●	-	●	17.1	1.0
1/2	19	3.7	206,250	0	0.3	52	8214G023	1	●	-	●	17.1	1.0
3/4	19	4.3	247,500	0	0.3	52	8214G033	2	●	-	●	17.1	1.1
3/4	41	9.4	659,000	0	0.3	52	8214G038	3	●	-	●	20.1	2.0
1	41	17.9	1,179,000	0	0.3	52	8214G054	3	●	-	●	20.1	2.0
1 1/4	41	27.2	1,538,750	0	0.3	52	8214G064	4	●	-	●	20.1	2.0
1 1/2	41	29.8	1,615,250	0	0.3	52	8214G074	4	●	-	●	20.1	2.0
2	53	51.0	2,924,500	0	0.3	52	8214G084	5	●	-	●	20.1	2.9

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options		Base Catalog Number	Resilient Materials	Standard Rebuild Kit
High Temp.	Junction Box	Aluminum	NBR	AC
HB	JB	8214G013	●	316234
HB	JB	8214G023	●	316234
HB	JB	8214G033	●	316234
HB	JB	8214G038	●	322467
HB	JB	8214G054	●	322467
HB	JB	8214G064	●	322467
HB	JB	8214G074	●	322467
HB	JB	8214G084	●	322468

● = Standard. Other options may be available. All option combinations may not be available.

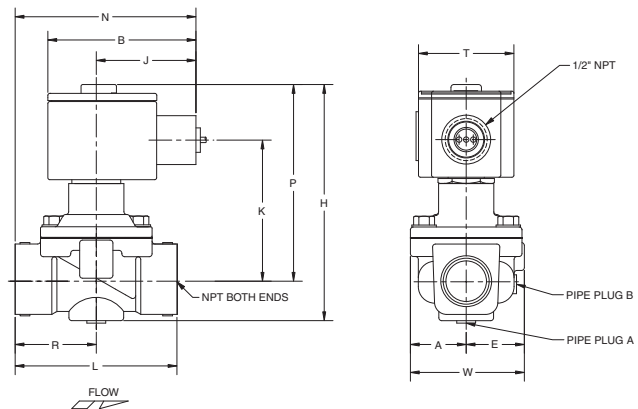
COMBUSTION

Dimensions inches (mm)

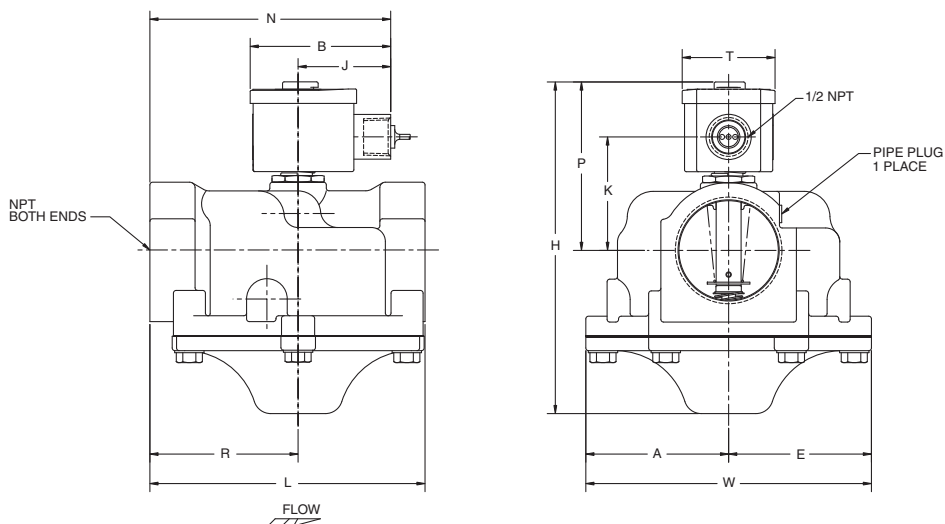
Const. Ref.		A	B	E	H	J	K	L	N	P	R	T	W	Pipe Plug
1	ins.	1.14	3.03	1.36	4.48	2.04	2.72	2.75	3.42	3.86	1.38	1.95	2.50	B
	mm	29	77	35	114	52	69	70	87	98	35	50	64	B
2	ins.	1.14	3.03	1.25	5.92	2.04	2.90	3.31	3.70	4.04	1.66	1.95	2.39	A
	mm	29	77	32	150	52	74	84	94	103	42	50	61	A
3	ins.	2.69	3.11	2.69	6.74	2.05	2.33	5.00	4.67	3.54	2.62	2.06	5.39	-
	mm	68	79	68	171	52	59	127	119	90	67	52	137	-
4	ins.	2.69	3.11	2.69	6.74	2.05	2.27	5.00	4.67	3.48	2.62	2.06	5.39	-
	mm	68	79	68	171	52	58	127	119	88	67	52	137	-
5	ins.	3.16	3.11	3.16	7.34	2.05	2.52	6.09	4.67	3.73	3.28	2.06	6.32	-
	mm	80	79	80	186	52	64	155	119	95	83	52	161	-

Vent Valve Requirements	
Manifold Line	Vent Valve
3/8" through 1 1/2"	3/4
2"	1
2 1/2" through 3"	1 1/4
3 1/2"	1 1/2
4" through 5"	2
5 1/2" through 6"	2 1/2
6 1/2" through 7 1/2"	3

Const. Ref. 1, 2
Can be mounted in any position.



Const. Ref. 3, 4, 5
Must be mounted with solenoid vertical and upright.



Features

- 2-way normally open operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff in the normally closed (energized) position
- Visual indication of open & shut position
- Proof of Closure Switch 1 amp
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Ring	PTFE
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	Watts	VA Holding	VA Inrush		General Purpose	Explosionproof
					AC	AC
F	20.1	43	240	-40 to 125	272610	-

Standard Voltages: 120, 240 volts AC, 60 Hz

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: SPST (closed when valve is in closed position.)

Max. Electricity: 1 amp, 120 volts

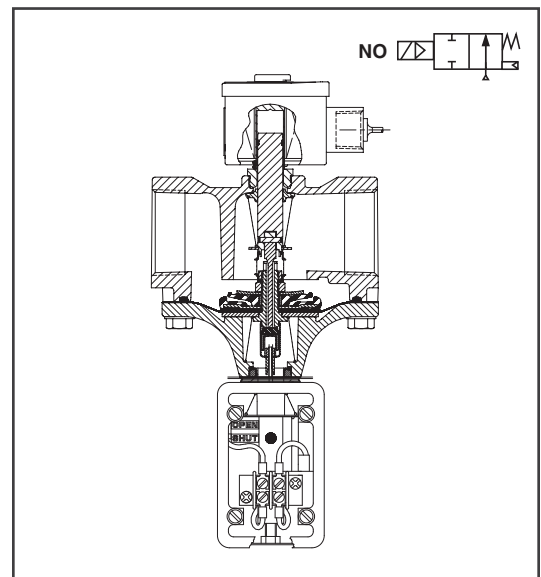
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type 4 Watertight

Solenoid Enclosures

RedHat II molded epoxy Type 1, 2, 3, 3S, 4 and 4X combination. General Purpose and Watertight solenoid enclosures with 1/2" conduit hub as standard.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

COMBUSTION

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/4	1 5/8	11	659,000	0	5	125	8214G038C	1	●	-	●	20.1	4.8
1	1 5/8	21	1,179,000	0	5	125	8214G054C	1	●	-	●	20.1	4.8
1 1/4	1 5/8	32	1,538,750	0	5	125	8214G064C	2	●	-	●	20.1	4.8
1 1/2	1 5/8	35	1,615,250	0	5	125	8214G074C	2	●	-	●	20.1	4.8
2	2 3/32	60	2,924,500	0	5	125	8214G084C	3	●	-	●	20.1	6.8

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/4	41	9.4	659,000	0	0.3	52	8214G038C	1	●	-	●	20.1	4.8
1	41	17.9	1,179,000	0	0.3	52	8214G054C	1	●	-	●	20.1	4.8
1 1/4	41	27.2	1,538,750	0	0.3	52	8214G064C	2	●	-	●	20.1	4.8
1 1/2	41	29.8	1,615,250	0	0.3	52	8214G074C	2	●	-	●	20.1	4.8
2	53	51.0	2,924,500	0	0.3	52	8214G084C	3	●	-	●	20.1	6.8

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options		Base Catalog Number	Resilient Materials	Standard Rebuild Kit
High Temp.	Junction Box	Aluminum	NBR	AC
HB	JB	8214G038C	●	Not Available
HB	JB	8214G054C	●	Not Available
HB	JB	8214G064C	●	Not Available
HB	JB	8214G074C	●	Not Available
HB	JB	8214G084C	●	Not Available

● = Standard. Other options may be available. All option combinations may not be available.

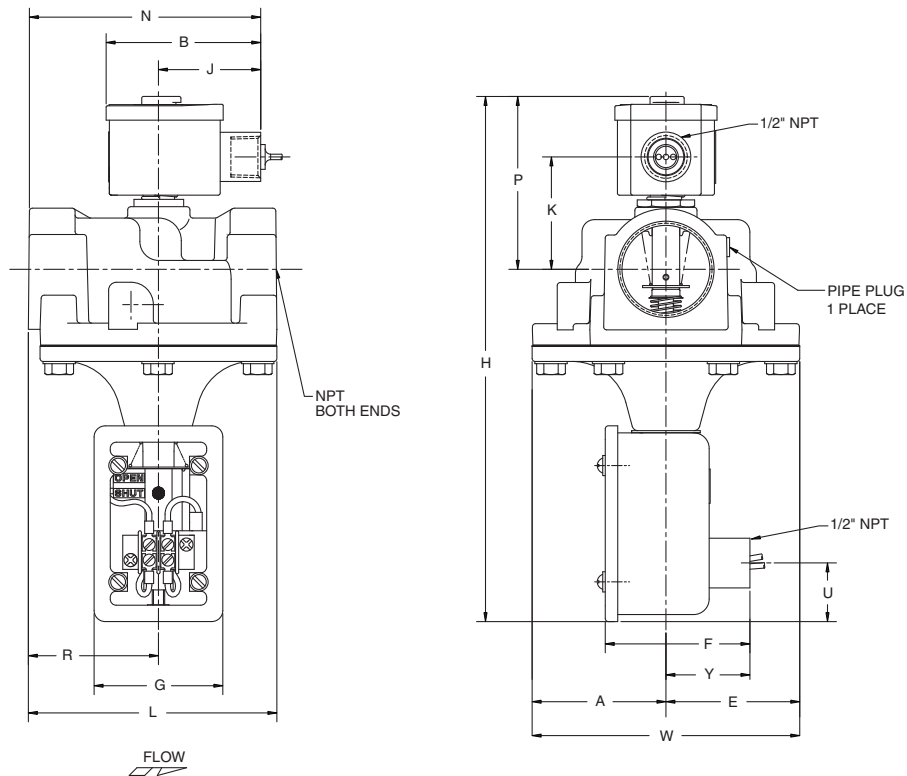
COMBUSTION

Dimensions inches (mm)

Const. Ref.		A	B	F	G	H	J	K	L	N	P	R	U	W	Y
1	ins.	2.69	3.11	3.07	2.32	10.54	2.05	4.06	5.00	4.67	5.46	2.62	1.18	5.39	1.69
	mm	68	79	78	59	268	52	103	127	119	139	67	30	137	43
2	ins.	2.69	3.11	3.07	2.32	10.54	2.05	4.13	5.00	4.67	5.53	2.62	1.18	5.39	1.69
	mm	68	79	78	59	268	52	105	127	119	140	67	30	137	43
3	ins.	3.16	3.11	3.07	2.32	11.33	2.05	4.62	6.09	5.33	5.84	3.28	1.18	6.32	1.69
	mm	80	79	78	59	288	52	117	155	135	148	83	30	161	43

Vent Valve Requirements	
Manifold Line	Vent Valve
3/8" through 1 1/2"	3/4
2"	1
2 1/2" through 3"	1 1/4
3 1/2"	1 1/2
4" through 5"	2
5 1/2" through 6"	2 1/2
6 1/2" through 7 1/2"	3

Const. Ref. 1, 2, 3



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally open operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff in the normally closed (energized) position
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal (20 watt only)
Rider Ring	PTFE (20 watt only)
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	20	43	240	-40 to 125	99257	-
F	28.2	50	385	-40 to 125	206409	-

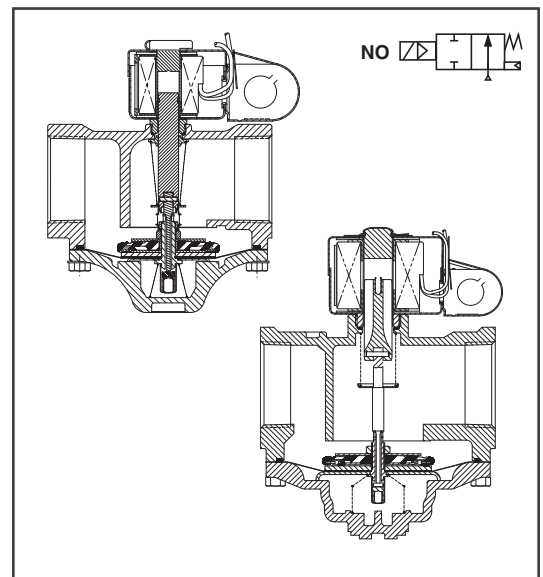
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (99257); 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (206409).

Solenoid Enclosures

RedHat Metal Type 1 General Purpose Junction Box housing with two 7/8" knockouts for conduit connection.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/4	1 5/8	11	659,000	0	5	125	8214 037	1	●	-	●	20	4.3
1	1 5/8	21	1,179,000	0	5	125	8214 053	1	●	-	●	20	4.3
1 1/4	1 5/8	32	1,538,750	0	5	125	8214 063	2	●	-	●	20	4.3
1 1/2	1 5/8	35	1,615,250	0	5	125	8214 073	2	●	-	●	20	4.3
2	2 3/32	60	2,924,500	0	5	125	8214 083	3	●	-	●	20	6.3
2 1/2	3	109	6,022,750	0	5	125	8214 093	4	●	-	●	28.2	13.0

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/4	41	9.4	659,000	0	0.3	52	8214 037	1	●	-	●	20	2.0
1	41	17.9	1,179,000	0	0.3	52	8214 053	1	●	-	●	20	2.0
1 1/4	41	27.2	1,538,750	0	0.3	52	8214 063	2	●	-	●	20	2.0
1 1/2	41	29.8	1,615,250	0	0.3	52	8214 073	2	●	-	●	20	2.0
2	53	51.0	2,924,500	0	0.3	52	8214 083	3	●	-	●	20	2.9
2 1/2	76	92.7	6,022,750	0	0.3	52	8214 093	4	●	-	●	28.2	5.9

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options		Base Catalog Number	Resilient Materials	Standard Rebuild Kit
High Temp.	Junction Box	Aluminum	NBR	AC
HB	JB	8214 037	●	316728
HB	JB	8214 053	●	316728
HB	JB	8214 063	●	316728
HB	JB	8214 073	●	316728
HB	JB	8214 083	●	316727
HT	JB	8214 093	●	316776

● = Standard. Other options may be available. All option combinations may not be available.

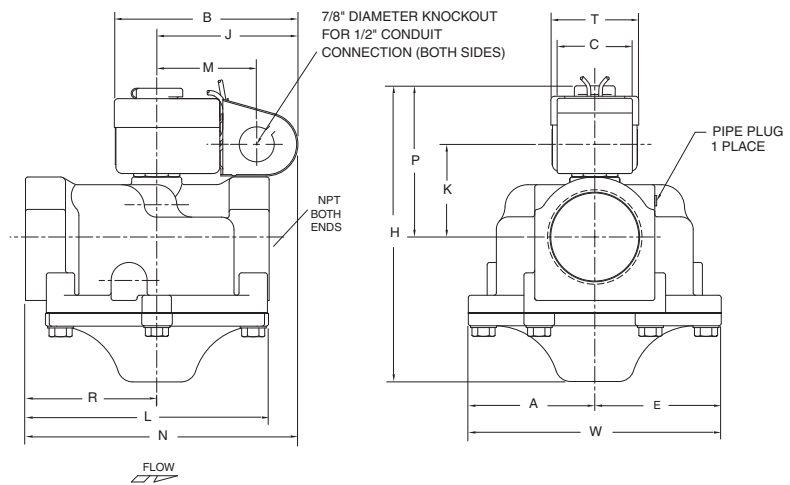
COMBUSTION

Dimensions inches (mm) Shown with Optional Junction Box

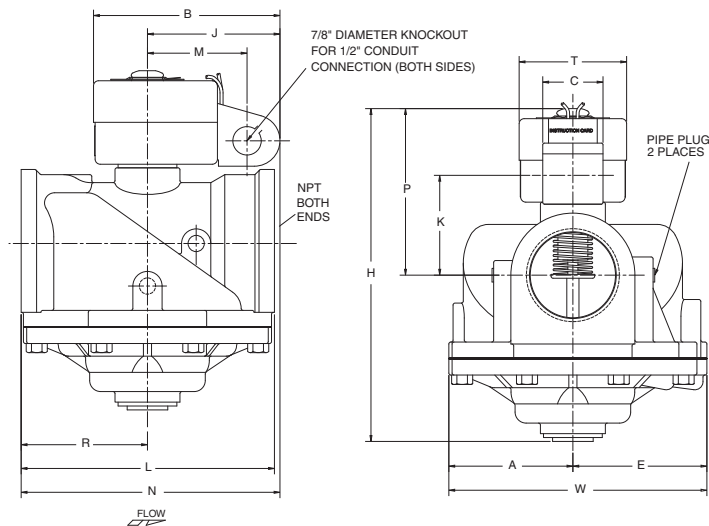
Const. Ref.		A	B	C	E	H	J	K	L	M	N	P	R	T	W
1	ins.	2.69	4.59	1.88	2.69	6.79	3.53	2.19	5.00	2.50	6.16	3.59	2.62	2.20	5.39
	mm	68	117	48	68	172	90	56	127	64	156	91	67	56	137
2	ins.	2.69	4.59	1.88	2.69	6.79	3.53	2.13	5.00	2.50	6.16	3.53	2.62	2.20	5.39
	mm	68	117	48	68	172	90	54	127	64	156	90	67	56	137
3	ins.	3.16	4.59	1.88	3.16	7.39	3.53	2.38	6.09	2.50	6.34	3.78	2.81	2.20	6.32
	mm	80	117	48	80	188	90	60	155	64	161	96	71	56	161
4	ins.	3.82	5.72	1.88	4.13	10.33	4.07	3.07	7.80	3.07	7.97	5.13	3.89	3.31	3.95
	mm	97	145	48	105	262	103	78	198	78	202	130	99	84	100

Vent Valve Requirements	
Manifold Line	Vent Valve
3/8" through 1 1/2"	3/4
2"	1
2 1/2" through 3"	1 1/4
3 1/2"	1 1/2
4" through 5"	2
5 1/2" through 6"	2 1/2
6 1/2" through 7 1/2"	3

Const. Ref. 1, 2



Const. Ref. 3, 4



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally open operation
- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff in the normally closed (energized) position
- Visual indication of open & shut position
- Proof of Closure Switch 1 amp
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Ring	PTFE
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	Watts	VA Holding	VA Inrush		General Purpose	Explosionproof
					AC	AC
F	20	43	240	-40 to 125	99257	-

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz) (99257).

Proof of Closure Switch

Switch is factory set and not to be field adjusted.

Reed Switch: SPST (closed when valve is in closed position.)

Max. Electricity: 1 amp, 120 volts

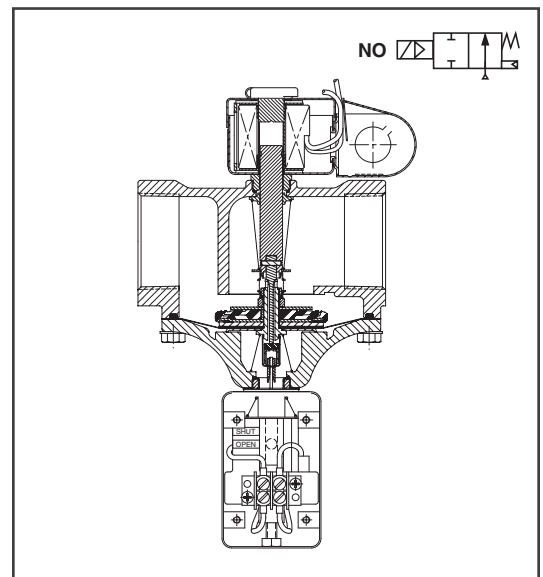
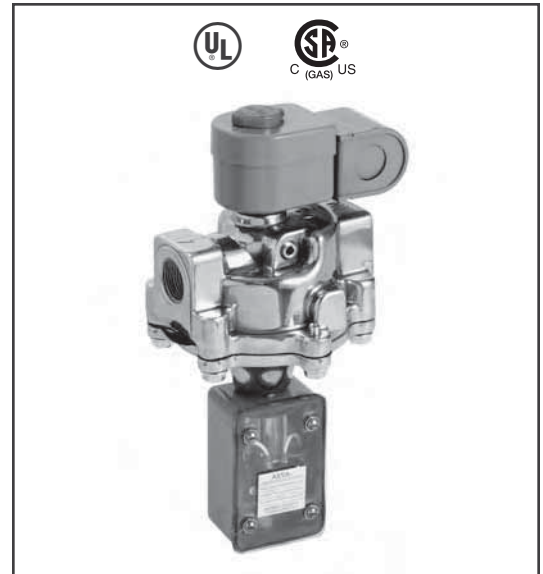
Load: 60 Hz, 15 watt (resistive)

Leads: 18" long

Enclosure: Type 1 General Purpose

Solenoid Enclosures

RedHat metal Type 1 General Purpose Junction Box housing with two 7/8" knock-outs for 1/2" conduit connection.



Valve Response Time

Opening Time: Less than 1 second

Closing Time: Less than 1 second

Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/4	1 5/8	11	659,000	0	5	125	8214 037C	1	●	-	●	20	4.8
1	1 5/8	21	1,179,000	0	5	125	8214 053C	1	●	-	●	20	4.8
1 1/4	1 5/8	32	1,538,750	0	5	125	8214 063C	2	●	-	●	20	4.8
1 1/2	1 5/8	35	1,615,250	0	5	125	8214 073C	2	●	-	●	20	4.8
2	2 3/32	60	2,924,500	0	5	125	8214 083C	3	●	-	●	20	6.8

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN													
3/4	41	9.4	659,000	0	0.3	52	8214 037C	1	●	-	●	20	2.2
1	41	17.9	1,179,000	0	0.3	52	8214 053C	1	●	-	●	20	2.2
1 1/4	41	27.2	1,538,750	0	0.3	52	8214 063C	2	●	-	●	20	2.2
1 1/2	41	29.8	1,615,250	0	0.3	52	8214 073C	2	●	-	●	20	2.2
2	53	51.0	2,924,500	0	0.3	52	8214 083C	3	●	-	●	20	3.1

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Capabilities Chart

Solenoid Options		Base Catalog Number	Resilient Materials	Standard Rebuild Kit
High Temp.	Junction Box	Aluminum	NBR	AC
HB	JB	8214 037C	●	Not Available
HB	JB	8214 053C	●	Not Available
HB	JB	8214 063C	●	Not Available
HB	JB	8214 073C	●	Not Available
HB	JB	8214 083C	●	Not Available

● = Standard. Other options may be available. All option combinations may not be available.

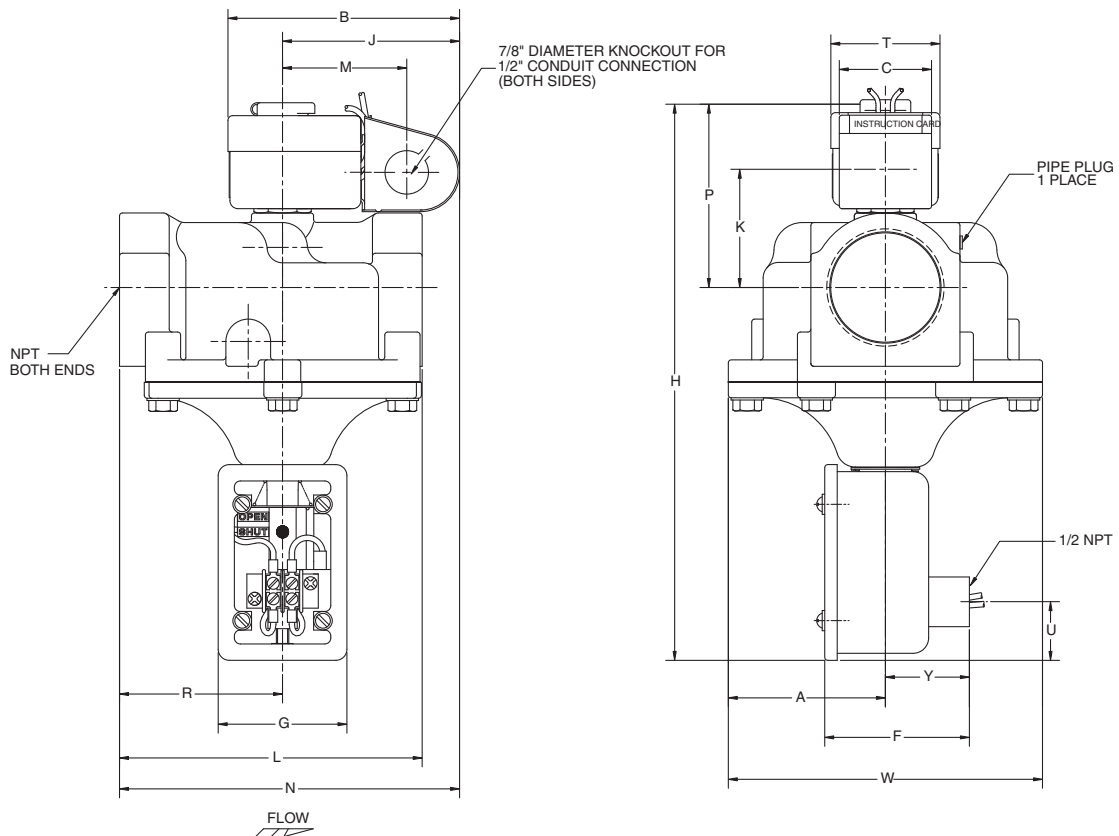
COMBUSTION

Dimensions inches (mm) Shown with Optional Junction Box

Const. Ref.		A	B	C	F	G	H	J	K	L	M	N	P	R	T	U	W	Y
1	ins.	2.69	4.59	1.88	2.82	2.44	10.57	3.53	2.19	5.00	2.50	6.16	3.59	2.62	2.20	1.10	5.39	1.69
	mm	68	117	48	72	62	268	90	56	127	64	156	91	67	56	28	137	43
2	ins.	2.69	4.59	1.88	2.82	2.44	10.57	3.53	2.13	5.00	2.50	6.16	3.53	2.62	2.20	1.10	5.39	1.69
	mm	68	117	48	72	62	268	90	54	127	64	156	90	67	56	28	137	43
3	ins.	3.16	4.59	1.88	2.82	2.44	11.33	3.53	2.38	6.09	2.50	6.82	3.78	3.28	2.20	1.10	6.32	1.69
	mm	80	117	48	72	62	288	90	60	155	64	173	96	83	56	28	161	43

Vent Valve Requirements	
Manifold Line	Vent Valve
3/8" through 1 1/2"	3/4
2"	1
2 1/2" through 3"	1 1/4
3 1/2"	1 1/2
4" through 5"	2
5 1/2" through 6"	2 1/2
6 1/2" through 7 1/2"	3

Const. Ref. 1, 2, 3



Must be mounted with solenoid vertical and upright.

Features

- 2-way normally closed operation
- For control of commercial and industrial gas pilot controls
- Brass body construction
- Mountable in any position
- Direct lift with resilient soft sealing for tight shutoff

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Core Tube/ Bonnet	Stainless Steel / Plated Steel
Core and Plugnut	Stainless Steel
Springs	Stainless Steel
Seals and Disc	NBR / FKM
Shading Coil	Copper

Fluid

Fuel Gas - natural or propane

Electrical

Prefix	Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Ambient Temp. °F	Spare Coil Family	
		DC Watts	AC		AC		DC	
			Watts	VA Holding				VA Inrush
U	F	6.9	6.3	8.8	12.1	-22 to 140	400115	400115
SC	F	6.9	6.3	8.8	12.1	-22 to 140	400125	400125

Standard voltages: 24, 120, 240 volts AC, 50-60 Hz. 12, 24, 120 volts DC
 Must be specified when ordering.

Solenoid Enclosures

Standard: Open frame (Prefix U) 18" leads

Optional: DIN (size 11mm, form B) (Prefix SC). Watertight/IP-65 when used with DIN connector kit for SC coils (see kits below).

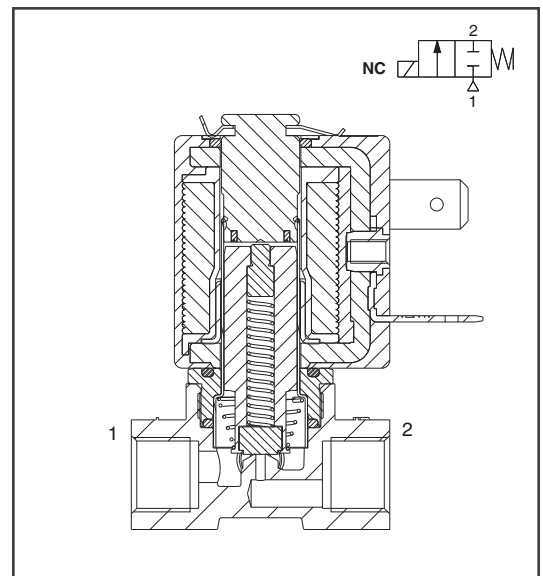
Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second

Kits

1/2" NPT conduit hub kit for leaded coils 224735-001-*
 (Kit contains 10 pcs. of each: threaded hub, gasket and attaching screw.)

DIN connector kit for SC coils 226061-001-*
 (Kit contains 10 pcs of each: connector, gasket, and attaching screw.)



COMBUSTION

Approvals

UL recognized component to standard 429 "Electrically Operated Valves," Guide Y10Z2, File MP618 Safety Shutoff Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 235078.
- 2) Automatic Gas Valves Z21.21 (6.5), File 235078.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 235078.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity Btu/hr.	Operating Pressure Differential (psi)			Min. Fluid Temp. °F	Max. Fluid Temp. °F		Brass	Wattage		Approx. Shipping Weight (lbs.)
				Min.	Max. AC	Max. DC		AC	DC		AC	DC	
					Fuel Gas	Fuel Gas							
Fuel Gas Shutoff - Normally Closed													
1/8	7/64	0.16	54,150	0	200	65	-22	180	180	U8256A091V	6.3	6.9	0.5

Specifications (Metric units)

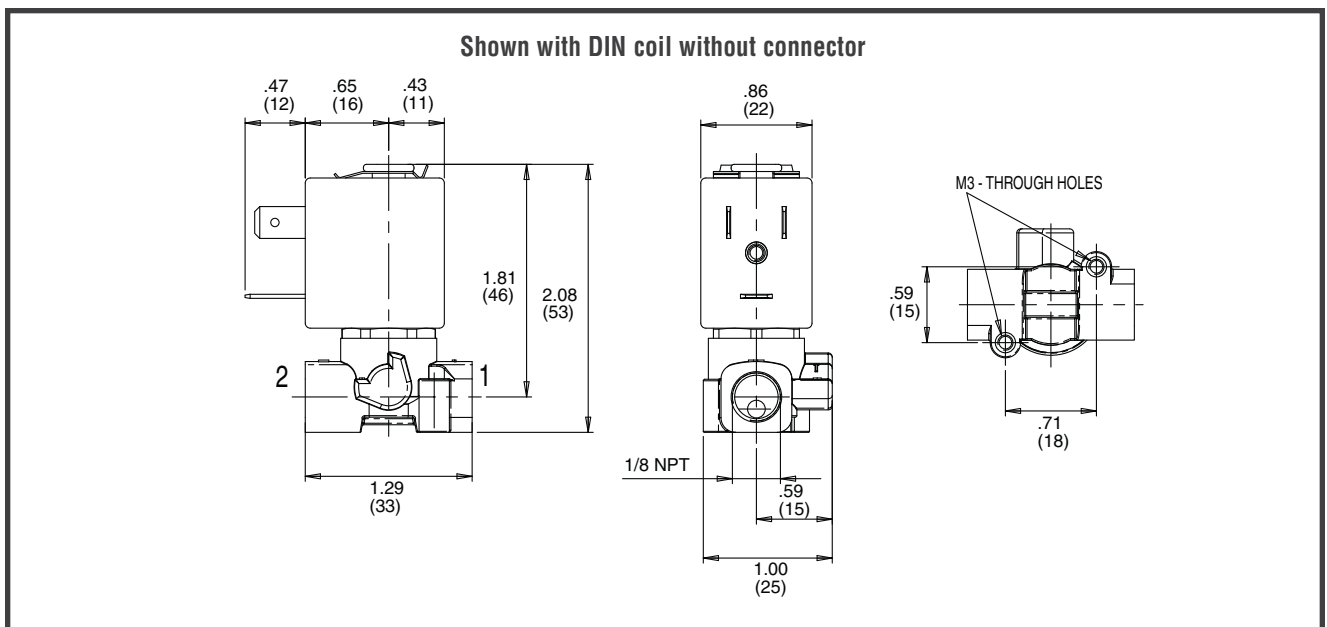
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m³/hr)	Gas Capacity Btu/hr.	Operating Pressure Differential (bar)			Min. Fluid Temp. °C	Max. Fluid Temp. °C		Brass	Wattage		Approx. Shipping Weight (kgs.)
				Min.	Max. AC	Max. DC		AC	DC		AC	DC	
					Fuel Gas	Fuel Gas							
Fuel Gas Shutoff - Normally Closed													
1/8	2.8	0.14	54,150	0	21300	4	-30	82	82	U8256A091V	6.3	6.9	0.22

Capabilities Chart

Solenoid Options ①							Base Catalog Number	Resilient Materials							Other	Standard Rebuild Kit		
NEMA Type 3-9	High Temp. DIN	Wiring Box Screw Terminal	Multipin	DIN	Spade	Open Frame with Leads	Brass	NBR	FKM	EPDM	RUBY	Oxygen Service	PTFE	Urethane	Vacuum	Manual Operator	Mounting Bracket	Brass AC/DC
-	-	-	-	SC	-	●		U8256A091V	-	●	-	-	-	-	-	-	-	

● = Standard. ① Replace U prefix with SC prefix.

Dimensions: inches (mm)



COMBUSTION

Features

- 2-way normally closed operation
- For gas pilot control of commercial and industrial gas burners
- Direct lift with resilient soft seating for tight shutoff
- Brass body construction
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Ring	PTFE
Core and Plugnut	430F Stainless Steel
Springs	Inconel 600
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	10.1	25	70	-20 to 125	238610	238614

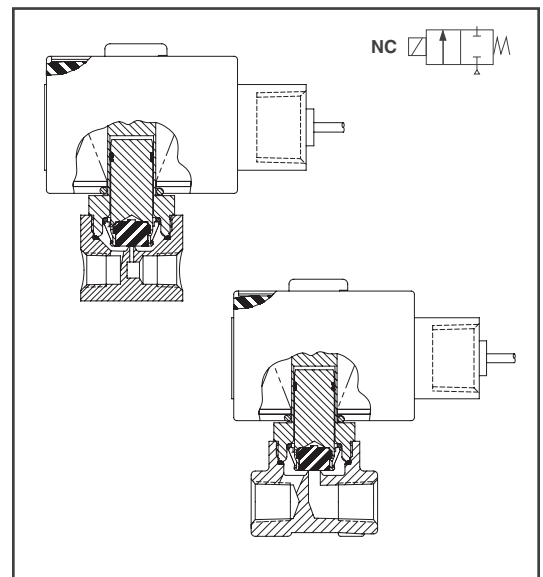
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight; Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; Closing Time: Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED (Closed when de-energized)													
1/8	1/8	.35	15,000	0	190	125	8262G077	1	○	○	○	10.1	2.3
1/4	9/32	.96	51,700	0	40	125	8262G078	2	○	○	○	10.1	2.4

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED (Closed when de-energized)													
1/8	3	0.3	15,000	0	13.1	52	8262G077	1	○	○	○	10.1	2.3
1/4	7	0.8	51,700	0	2.8	52	8262G078	2	○	○	○	10.1	2.4

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

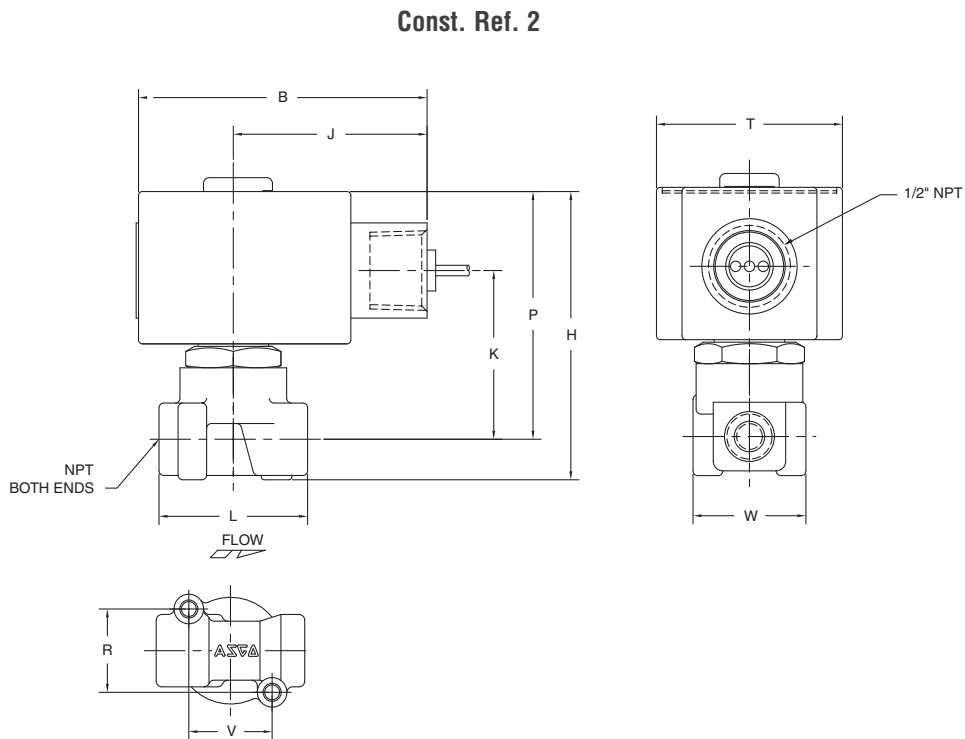
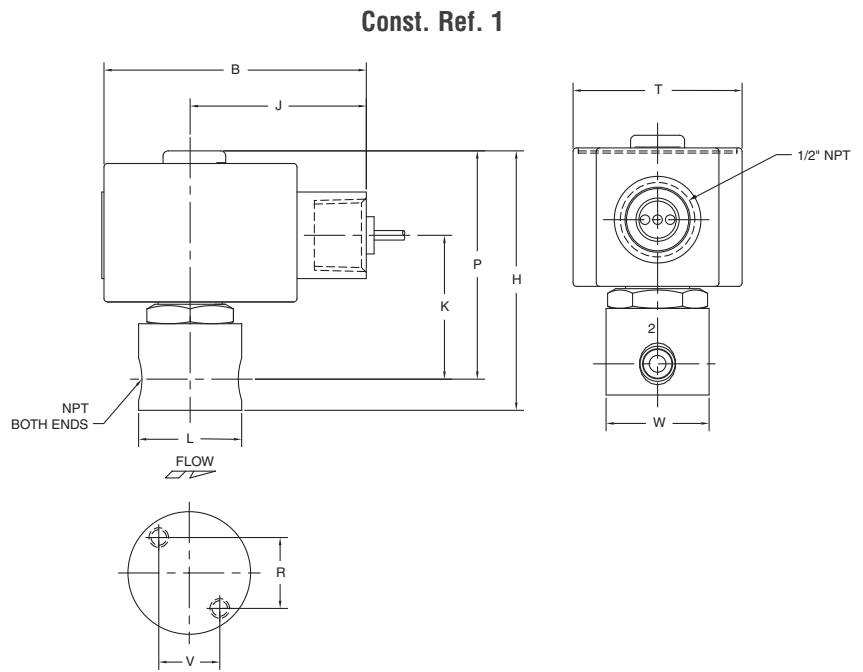
Capabilities Chart

Solenoid Options			Base Catalog Number	Resilient Materials	Standard Rebuild Kit
NEMA Type 3-9	High Temp.	Wiring Box Screw Terminal	Brass	NBR	AC
EF	HT	JKF	8262G077	●	306631
EF	HT	JKF	8262G078	●	306631

● = Standard. Other options may be available. All option combinations may not be available.

Dimensions inches (mm)

Const. Ref.	1		2	
	ins.	mm	ins.	mm
B	3.03	77	3.03	77
H	3.00	76	3.16	80
J	2.04	52	2.04	52
K	1.67	42	1.78	45
L	1.19	30	1.56	40
P	2.64	67	2.75	70
R	0.69	18	0.87	22
T	1.95	50	1.95	50
V	0.59	15	0.87	22
W	1.19	30	1.18	30



General Description

The AH2 Hydramotors are push-type, self-contained, electrohydraulic linear actuators which extend when powered and retract by spring force upon power interruption.

AH2 Hydramotors provide a fast spring return shutoff time of one second or less. When the actuator is mounted to a V710 gas valve, position indicators on both sides of the actuator show the open or closed position of the valve.

The AH2 Hydramotor/V710 gas valve combination provides reliable main line gas control for a wide range of applications, including boilers, furnaces, ovens and all types of industrial and commercial burners. It is available in either a slow or fast opening construction.

Specifications

Power Requirement: 220 VA max.

Closing Time: One second max.

Opening Time:

Fast Opening: 14 seconds max.

Slow Opening: 26 seconds max.

Note: Opening time is double between -30°F and -40°F ambient. Opening time increased 20% when operating on 50Hz.

Enclosure

Type 1, 2, 3, 3S, 4, 12, and 13 Combination General Purpose, Watertight, Dusttight and Driptight.

Ambient Temperature

-40°F to 150°F (-40°C to 66°C)

Electrical

Actuator:

Standard voltages:

24, 120, 240 volts, AC, 60 Hz

Proof of Closure Switch: (optional)

A factory set, non-field adjustable SPDT switch. 1800VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

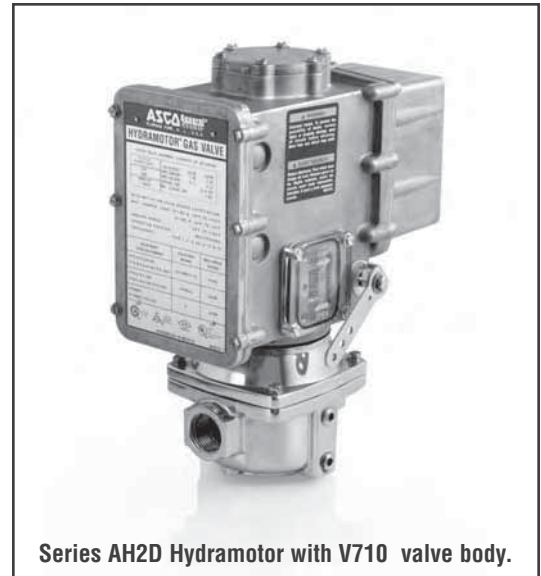
Auxiliary Switches: (optional)

One or two integral SPDT switches; field adjustable to actuate at any position of stroke. 1800 VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Electrical Characteristics

Voltage	Amperes		
	Inrush	Opening	Holding
24V	28	8.00	0.73
120V	5.6	1.85	0.11
240V	2.8	0.92	0.05

AH2DR1



Series AH2D Hydramotor with V710 valve body.

Installation

AH2 Hydramotor mounts in any position directly to a V710 valve with 4 set screws.



Damper Arm Rating

Drives damper in one direction only. 20 lb. max. at 2.85" radius at 20°F to 150°F and 10 lb. max. at -40°F to 20°F.

Approvals

AH2 Hydramotor with V710 valve.

 File # MP932, Vol. 17, Sec. 3, Safety Valves

 CSA Certified to:

1) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.

2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

 JI 3000606 Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number and add suffix number for desired optional feature. e.g. AH2D112A5

Specifications

Applications	Catalog Number		
	24 V	120 V	240 V
On-Off Slow Opening (14 to 26 seconds)			
Standard on-off	AH2D101A	AH2D102A	AH2D104A
Proof of closure	AH2D101S	AH2D102S	AH2D104S
On-Off Fast Opening (6 to 14 seconds)			
Standard on-off	AH2D111A	AH2D112A	AH2D114A
Proof of closure	AH2D111S	AH2D112S	AH2D114S

Optional Features

(add appropriate suffix number to catalog number)

One Auxiliary Switch (add suffix 2)

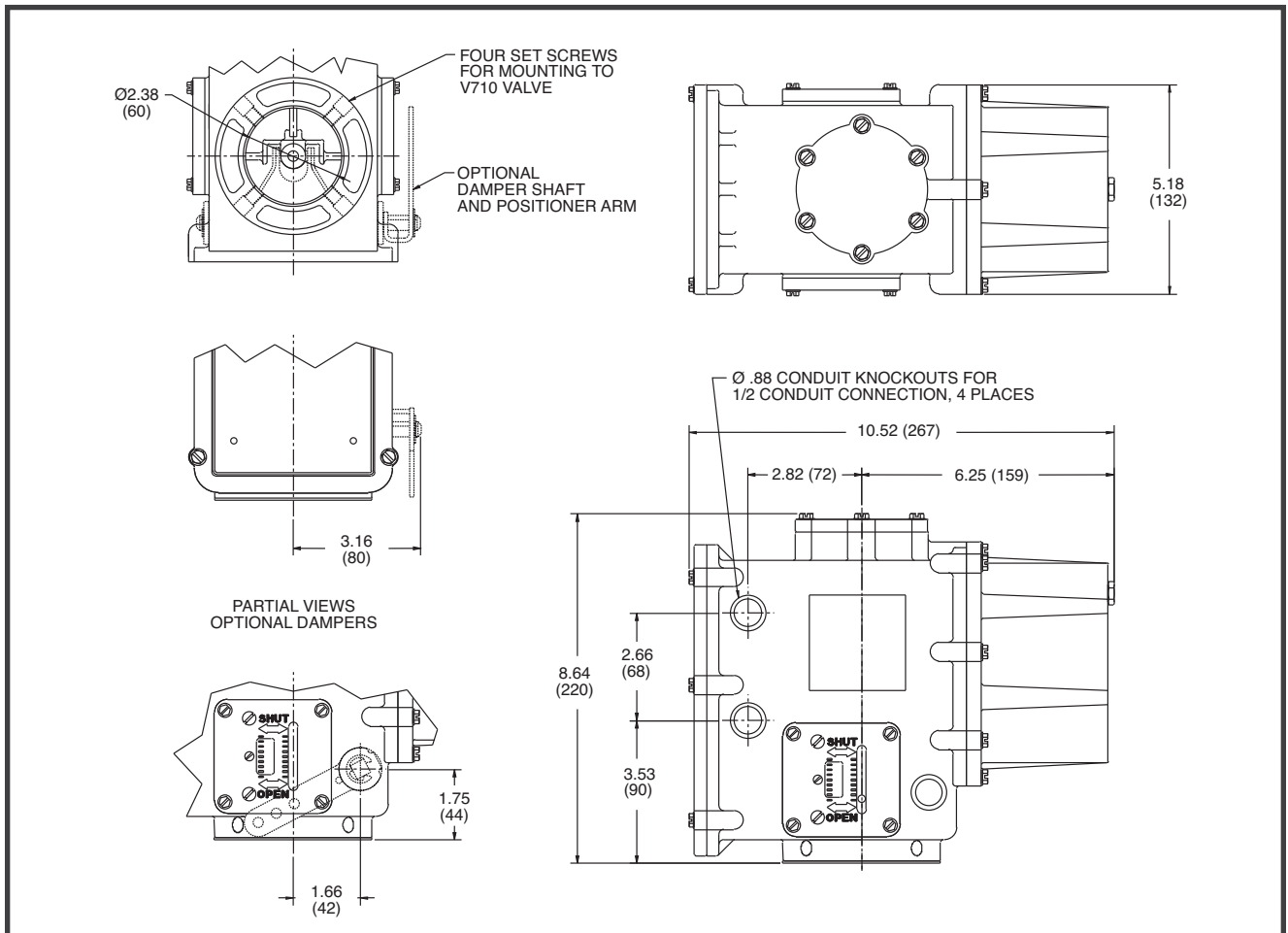
Spring Return Damper Arm (add suffix 3)

Damper Shaft & Arm (add suffix 4)

Damper Shaft, Arm & one Auxiliary Switch, (add suffix 5)

Manual Reset (add suffix R)

Dimensions inches (mm)



COMBUSTION

General Description

The AH4 Hydramotors are three-position push-type, self-contained, electrohydraulic linear actuators featuring an electronic controller for accurate positioning. The low-fire position is factory set at the stroke midpoint, but can be field adjustable to any position up to 100% of stroke.

When power is applied, the actuator shaft travels to the low-fire position. After an external switch completes the low-fire controller circuit, the shaft continues on to the high-fire setting. Opening the external switch returns the shaft to the low-fire setting, and power interruption fully closes the valve in one second or less from any position.

The AH4 Hydramotor/V710 gas valve combination provides reliable main line gas control for a wide range of applications, including boilers, furnaces, ovens and all types of industrial and commercial burners.

Specifications

Power Requirement: 220 VA max.

Closing Time: One second max.

Opening Time:

Fast Opening: 14 seconds max.

Slow Opening: 26 seconds max.

Note: Opening time is double between -30°F and -40°F ambient. Opening time increased 20% when operating on 50Hz.

Enclosure

Type 1, 2, 3, 3S, 4, 12, and 13 Combination General Purpose, Watertight, Dusttight and Driptight.

Ambient Temperature

-40°F to 150°F (-40°C to 66°C)

Electrical

Actuator:

Standard voltages:

120, 240 volts, AC, 60 Hz

Proof of Closure Switch: (optional)

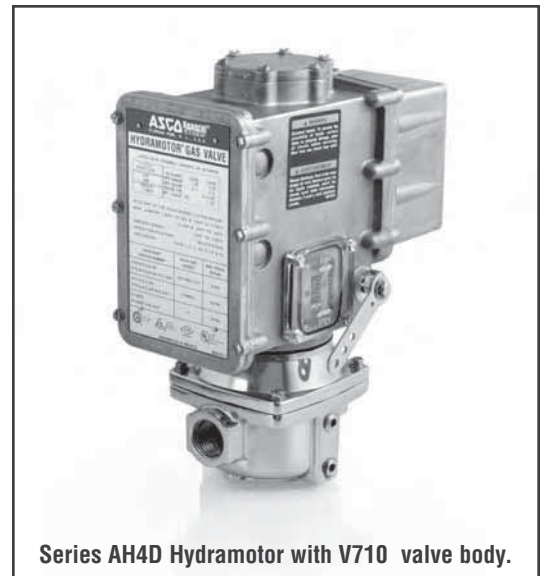
A factory set, non-field adjustable SPDT switch. 1800VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Auxiliary Switches: (optional)

One integral SPDT switches; field adjustable to actuate at any position of stroke. 1800 VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Relay Contacts:

One SPST relay; field adjustable to actuate at any position of stroke is standard. Max. load is 2.5A@120V or 1.25A@240V is standard.



Series AH4D Hydramotor with V710 valve body.

Electrical Characteristics

Voltage	Amperes		
	Inrush	Opening	Holding
120V	5.6	1.85	0.11
240V	2.8	0.92	0.05

Installation

AH4 Hydramotor mounts in any position directly to a V710 valve with 4 set screws.




Damper Arm Rating

Drives damper in one direction only. 20 lb. max. at 2.85" radius at 20°F to 150°F and 10 lb. max. at -40°F to 20°F.

Approvals

AH4 Hydramotor with V710 valve.

 File # MP932, Vol. 17, Sec. 3, Safety Valves

 CSA Certified to:

1) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.

2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

 JI 3000606 Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number and add suffix number for desired optional feature. e.g. AH4D112A5

Specifications

Applications	Catalog Number	
	120 V	240V
Low-High-Off Slow Opening (14 to 26 seconds)		
Standard	AH4D102A	AH4D104A
Proof of closure	AH4D102S	AH4D104S
Low-High-Off Fast Opening (6 to 14 seconds)		
Standard	AH4D112A	AH4D114A
Proof of closure	AH4D112S	AH4D114S

Optional Features

(add appropriate suffix number to catalog number)

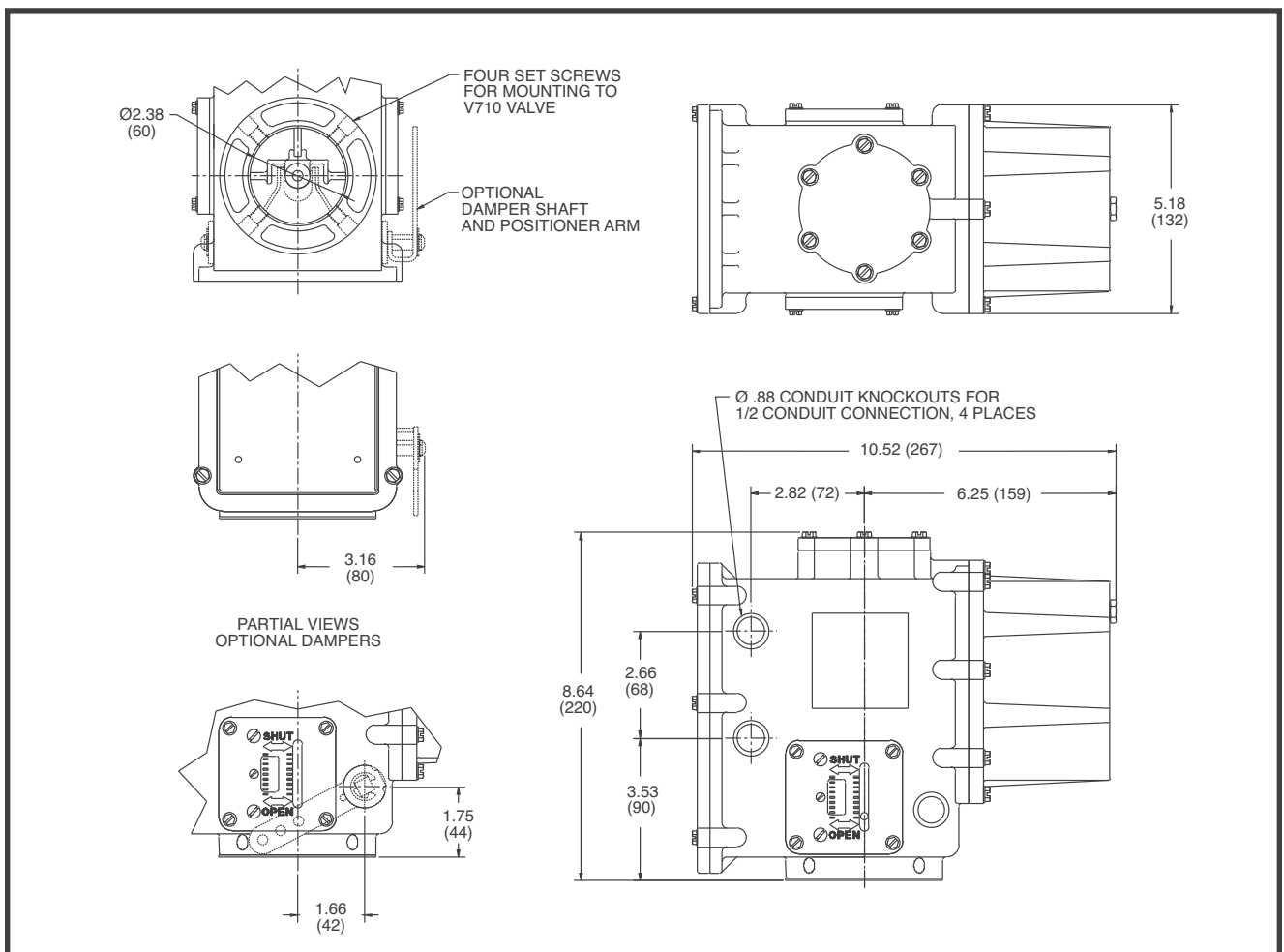
One Auxiliary Switch (add suffix 2)

Spring Return Damper Arm (add suffix 3)

Damper Shaft & Arm (add suffix 4)

Damper Shaft, Arm & one Auxiliary Switch, (add suffix 5)

Dimensions inches (mm)



COMBUSTION

General Description

The AH8 Hydramotors are modulating, push-type, self-contained, electrohydraulic linear actuators featuring an electronic controller for accurate positioning. The AH8 Hydramotor has a low-fire adjustment and responds to remote control signals from either a 135 ohm potentiometer, a 4-20 mA, 1-5 VDC or a 1-10 VDC signal to provide accurate shaft position between low-fire and high-fire (full open) positions. The low-fire position is factory set at the stroke midpoint, but can be field adjustable to any position up to 100% of stroke.

When power with no control signal is applied, the actuator shaft travels to the low-fire position. An external signal then controls the shaft position to any point between low-fire and high-fire positions. Power interruption fully closes the valve in one second or less from any position.

The AH8 Hydramotor/V710 gas valve combination provides reliable main line gas control for a wide range of applications, including boilers, furnaces, ovens and all types of industrial and commercial burners.

Specifications

Power Requirement: 220 VA max.

Closing Time: One second max.

Opening Time:

Fast Opening: 14 seconds max.

Slow Opening: 26 seconds max.

Note: Opening time is double between -30°F and -40°F ambient. Opening time increased 20% when operating on 50Hz.

Enclosure

Type 1, 2, 3, 3S, 4, 12, and 13 Combination General Purpose, Watertight, Dusttight and Driptight.

Ambient Temperature

-40°F to 150°F (-40°C to 66°C)

Electrical

Actuator:

Standard voltages:

120, 240 volts AC, 60 Hz

Input Signal:

Actuator accepts a 4-20mA, 1-5VDC, 1-10VDC or 135 ohm potentiometer signal to provide proportional control of actuator stem position between low fire & high fire mode.

Proof of Closure Switch: (optional)

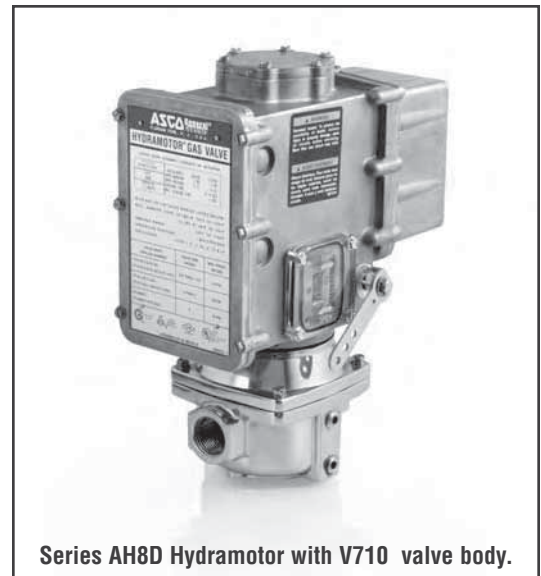
A factory set, non-field adjustable SPDT switch. 1800VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Auxiliary Switches: (optional)

One integral SPDT switches; field adjustable to actuate at any position of stroke. 1800 VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Relay Contacts:

One SPST relay; field adjustable to actuate at any position of stroke is standard. Max. load is 2.5A@120V or 1.25A@240V is standard.



Series AH8D Hydramotor with V710 valve body.

Electrical Characteristics

Voltage	Amperes		
	Inrush	Opening	Holding
120V	5.6	1.85	0.11
240V	2.8	0.92	0.05

Installation

AH8 Hydramotor mounts in any position directly to a V710 valve with 4 set screws.




Damper Arm Rating

Drives damper in one direction only. 20 lb. max. at 2.85" radius at 20°F to 150°F and 10 lb. max. at -40°F to 20°F.

Approvals

AH8 Hydramotor with V710 valve.

 File # MP932, Vol. 17, Sec. 3, Safety Valves

 CSA Certified to:

- 1) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

 JI 3000606
Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number and add suffix number for desired optional feature. e.g. AH8D112A2

AH8DR1

Specifications

Applications	Catalog Number	
	120 V	240V
Modulating Slow Opening (14 to 26 seconds)		
Standard	AH8D102A	AH8D104A
Proof of closure	AH8D102S	AH8D104S
Modulating Fast Opening (6 to 14 seconds)		
Standard	AH8D112A	AH8D114A
Proof of closure	AH8D112S	AH8D114S

Optional Features

(add appropriate suffix number to catalog number)

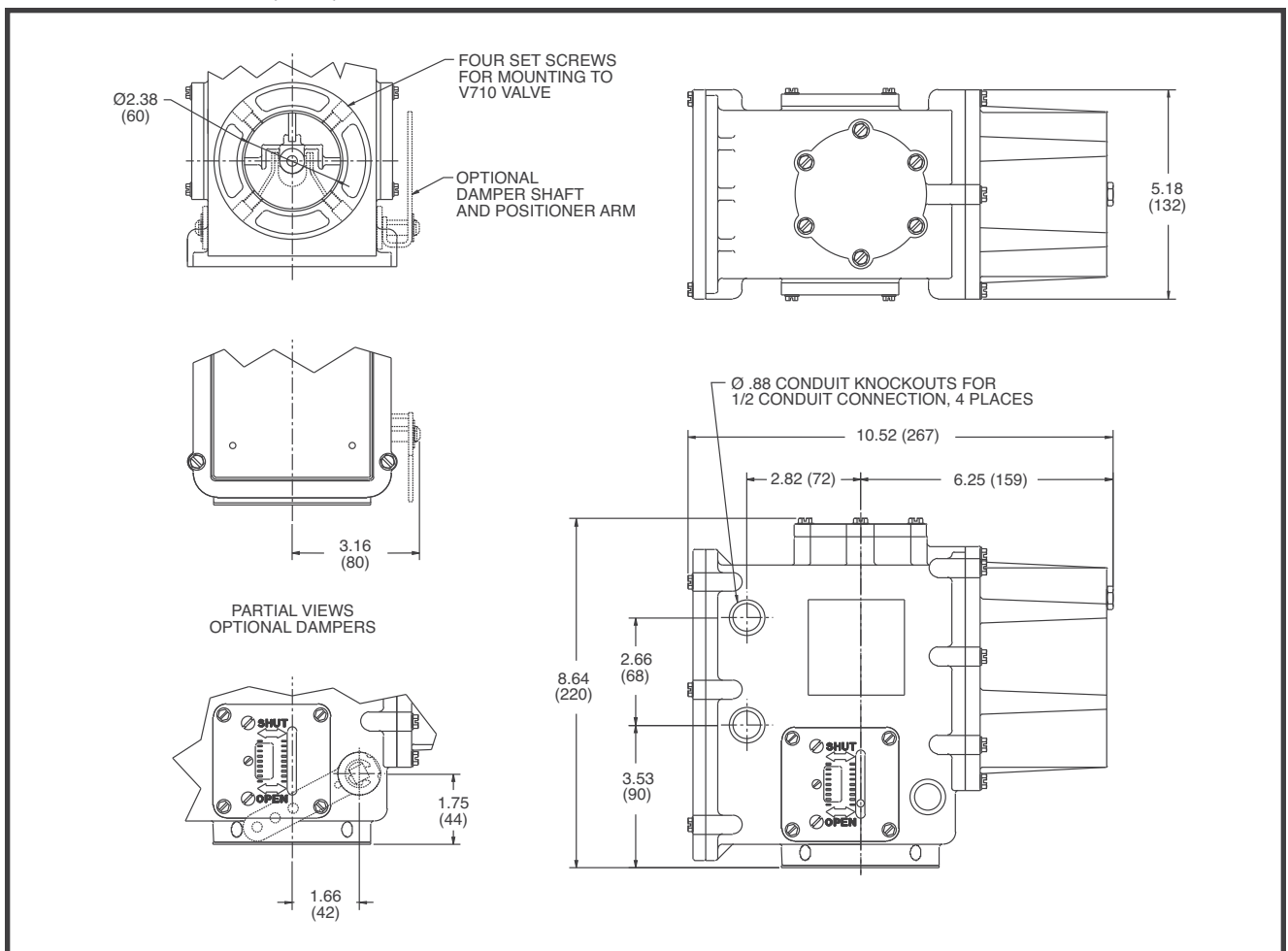
One Auxiliary Switch (add suffix 2)

Spring Return Damper Arm (add suffix 3)

Damper Shaft & Arm (add suffix 4)

Damper Shaft, Arm & one Auxiliary Switch, (add suffix 5)

Dimensions inches (mm)



COMBUSTION

General Description

These 2-way normally closed globe type valve bodies are designed for on/off or proportional control of commercial or industrial gas burners. The V710 is designed exclusively for use with the AH Hydramotor actuator. The AH Hydramotor valve consists of two assemblies; the valve body and the AH Hydramotor actuator.

The V710 is a push-to-open valve which opens when the valve stem is depressed by an AH Hydramotor actuator. An internal return spring closes the valve when the Hydramotor actuator is de-energized.

Model Types

Quick Opening Trim: (Standard)

For applications where metered flow control is not required.

Quick Opening w/Valve Seal Overtravel Trim: (Suffix V22)

For any "on-off" application where the user, code or approval agency requires a valve seal overtravel arrangement.

Liner Trim: (Suffix V15)

For applications that require flow control, such as slow opening, low fire turn down, or proportional control.

Liner w/Valve Seal Overtravel Trim: (Suffix V25)

For applications where both valve seal overtravel and flow control are required. (Not available in 4" flange size).

Specifications

Pressure Taps: Two 1/4" NPT downstream, two 1/4" NPT upstream.

Fluid: Fuel Gas

Valve Parts in Contact with Fluid:

Body: 3/4" to 3" NPT, Die-cast aluminum, 4" Flange - cast iron

Bonnet: Die-Cast aluminum

Seals: Nitrile

Springs: Zinc-plated music wire

Stem Bushing: Delrin

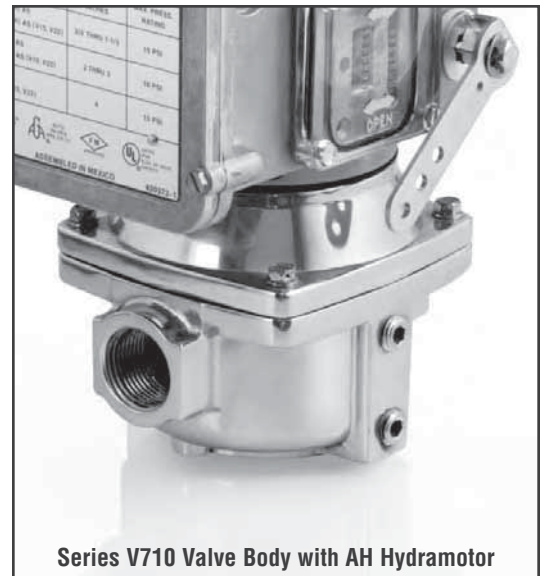
Valve Stem: 303 s.s.

Retaining Ring: 17-7 s.s.

Pipe Plugs: Zinc-plated steel

Seal Ring: Teflon (models with overtravel)

Closeoff Pressure: 25 psi (1.7 bar) maximum



Series V710 Valve Body with AH Hydramotor


Installation

V710 valve body mounts in any position directly to AH2, AH4, AH8 Hydramotor Actuator.



Approvals

V710 valve with AH Hydramotor.

 File # MP932, Vol. 17, Sec. 3, Safety Valves

 CSA Certified to:

1) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.

2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

 JI 3000606 Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number. e.g. V710EASV22

Specifications (English units)

Pipe Size (ins.)	Cv Flow Factor	Gas Capacity ①			Operating Pressure Differential (psi)		Fluid & Ambient Temp. °F		Catalog Numbers				Const. Ref.	Approx. Shipping Weight (lbs)
		Btu/hr.	Min.	Max.	Min.	Max.	Quick Opening Trim	Quick Opening w/Valve Seal Overtravel Trim	Linear Trim	Linear w/Valve Seal Overtravel Trim				
COMBUSTION (Fuel Gas) - Normally Closed														
3/4	12	665,000	0	15	-40	150	V710EAS	V710EASV22	V710EASV15	V710EASV25	1	4.0		
1	17	960,000	0	15	-40	150	V710FAS	V710FASV22	V710FASV15	V710FASV25	1	4.0		
1 1/4	25	1,406,000	0	15	-40	150	V710GAS	V710GASV22	V710GASV15	V710GASV25	2	4.2		
1 1/2	30	1,717,000	0	15	-40	150	V710HAS	V710HASV22	V710HASV15	V710HASV25	2	4.2		
2	64	3,620,000	0	10	-40	150	V710JAS	V710JASV22	V710JASV15	V710JASV25	3	9.5		
2 1/2	75	4,250,000	0	10	-40	150	V710KAS	V710KASV22	V710KASV15	V710KASV25	4	13.0		
3	92	5,230,000	0	10	-40	150	V710LAS	V710LASV22	V710LASV15	V710LASV25	4	12.0		
4 (Flange)	180	10,200,000	0	15	-40	150	V710NCF	V710NCFV22	V710NCFV15	-	5	100.0		

* 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

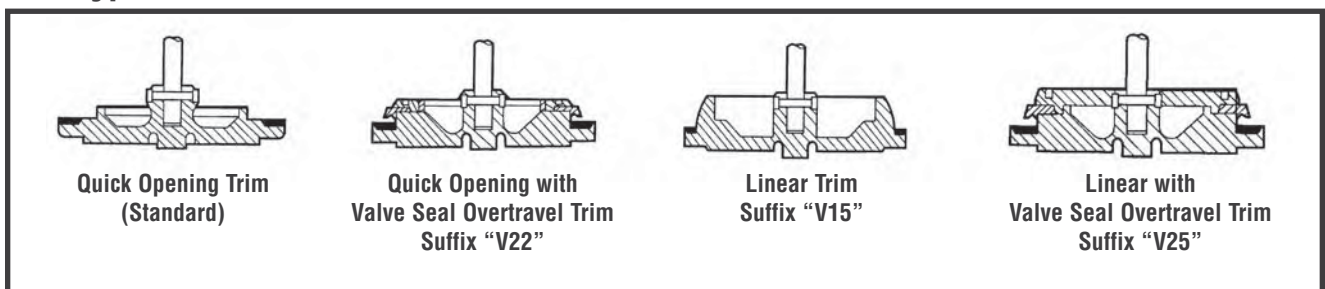
Specifications (Metric units)

Pipe Size (ins.)	Kv Flow (m³/hr)	Gas Capacity ①			Operating Pressure Differential (bar)		Fluid & Ambient Temp. °C		Catalog Numbers				Const. Ref.	Approx. Shipping Weight (kgs)
		Btu/hr.	Min.	Max.	Min.	Max.	Quick Opening Trim	Quick Opening w/Valve Seal Overtravel Trim	Linear Trim	Linear w/Valve Seal Overtravel Trim				
COMBUSTION (Fuel Gas) - Normally Closed														
3/4	10.2	665,000	0	1	-40	66	V710EAS	V710EASV22	V710EASV15	V710EASV25	1	1.8		
1	14.5	960,000	0	1	-40	66	V710FAS	V710FASV22	V710FASV15	V710FASV25	1	1.8		
1 1/4	21.3	1,406,000	0	1	-40	66	V710GAS	V710GASV22	V710GASV15	V710GASV25	2	1.9		
1 1/2	25.5	1,717,000	0	1	-40	66	V710HAS	V710HASV22	V710HASV15	V710HASV25	2	1.9		
2	54.4	3,620,000	0	0.7	-40	66	V710JAS	V710JASV22	V710JASV15	V710JASV25	3	4.3		
2 1/2	63.8	4,250,000	0	0.7	-40	66	V710KAS	V710KASV22	V710KASV15	V710KASV25	4	5.9		
3	78.2	5,230,000	0	0.7	-40	66	V710LAS	V710LASV22	V710LASV15	V710LASV25	4	5.5		
4 (Flange)	153	10,200,000	0	1	-40	66	V710NCF	V710NCFV22	V710NCFV15	-	5	45.5		

* 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

COMBUSTION

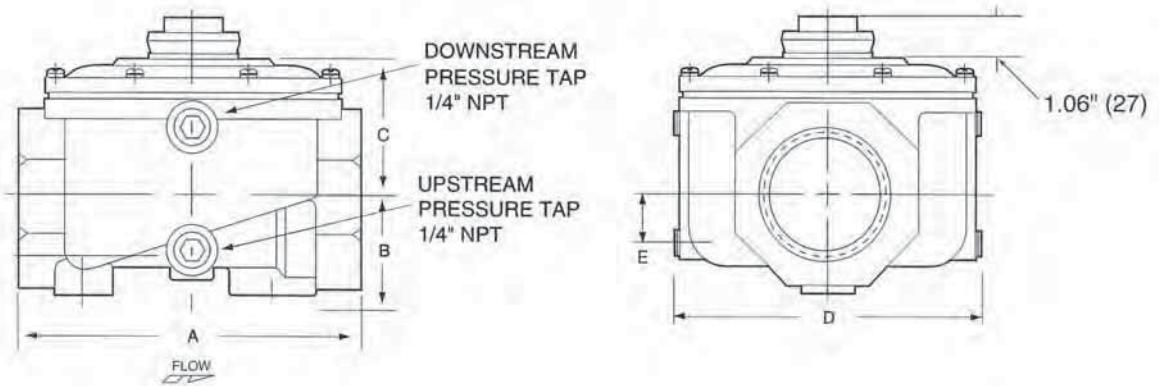
Trim Types



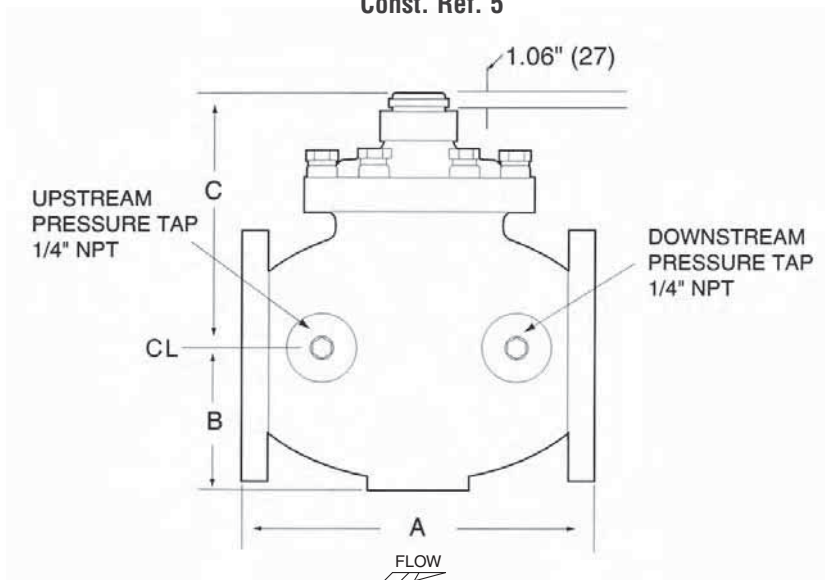
Dimensions inches (mm)

Const. Ref.		A	B	C	D	E
1	ins.	5.78	1.95	2.64	5.19	1.16
	mm	147	50	67	132	29
2	ins.	5.78	2.01	2.94	5.19	0.70
	mm	147	51	75	132	18
3	ins.	8.12	2.66	3.05	8.01	0.96
	mm	206	68	77	203	24
4	ins.	9.00	2.96	3.87	8.01	0.70
	mm	229	75	98	203	18
5	ins.	13.88	5.00	7.40	9.00	0.00
	mm	353	127	188	229	0

Const. Ref. 1 - 4



Const. Ref. 5



General Description

The normally closed H117 is a combination Hydramotor actuator and safety shutoff/control gas valve. It is used for commercial and industrial burners in applications such as furnaces, dryers, dehydrators, conversion burners and heaters.

The cast iron valve body provides high flow and self cleaning operation. Its soft synthetic seat and integral, heavy-duty return spring closes the valve tightly upon current interruption, in one second or less.

The self-contained, hermetically sealed, pull-type electrohydraulic actuator consists of a motor/pump unit immersed in oil, reducing wear and providing highly reliable operation.

Specifications

Fluid: Fuel gas

Opening Time: 20 second max.

Closing Time: 1 second max.

Note: Opening time increased 20% with 50Hz.

Enclosure: Type 1 General Purpose standard
 Type 4/7 Watertight/Explosion proof optional

Ambient Temperature: -40°F to 150°F (-40°C to 66°C)

Body Class: Cast Iron, 1" to 3" - 250# screw, 4" - 125# flange

Pipe Taps: 1/4" upstream & downstream taps for routine leak testing

Electrical

Power Requirement: 158 VA max

Standard Voltage: 120V/60Hz
 240V/60Hz (Optional)

Operating Voltage	Amperes		
	Inrush	Opening	Holding
120V/60Hz	13.2	1.32	0.14
240V/60Hz	6.6	0.66	0.07

Auxiliary Switches:

One integral SPDT switch, 15A@120V, 7.5A@240V, (1800VA max). Actuates at full open position of actuator stroke (not adjustable). Up to 6 adjustable yoke mounted switches may be added.

Proof of Closure Switch:

Optional factory set non-field adjustable SPDT switch, 15A@120V, 7.5A@240V (1800VA max.).



Installation

Multi-poise, may be mounted in any position.

Approvals

UL listed

FM Approved

CSA Certified to:

1) Automatic Gas Safety Shutoff Valves C/I (3.9),
 File 113070.

Specifications (English units)

Pipe Size (ins.)	Cv Flow Factor	Gas Capacity ① Cu. Ft/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number ② ③	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (lbs)
			Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed												
Standard Trim												
2	151	8,000	0	20	150	H117AJ112F1	1	○	○	○	12-18	75
2 1/2	244	12,900	0	8	150	H117AK112F1	2	○	○	○	12-18	105
3	320	17,000	0	8	150	H117AL112F1	3	○	○	○	12-18	105
4 (Flange)	510	27,000	0	4	150	H117AN112F1	4	○	○	○	12-20	140
Valve Seal Overtravel Trim (Proof of Closure)												
2	124	6,600	0	20	150	H117AJ112F1F26V16	1	○	○	○	12-18	80
2 1/2	171	9,100	0	8	150	H117AK112F1F26V16	2	○	○	○	12-18	110
3	320	17,000	0	8	150	H117AL112F1F26V16	3	○	○	○	12-18	110
4 (Flange)	444	24,000	0	4	150	H117AN112F1F26V16	4	○	○	○	12-20	145

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
 ② Type 4/7 Watertight/Explosionproof change 5th digit to "B" (EX: H117BJ112F1). ③ 240V/60Hz change 9th digit to "4" (EX: H117AJ114F1).

Specifications (Metric units)

Pipe Size (ins.)	Kv Flow (m³/hr)	Gas Capacity ① Cu. Ft/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number ② ③	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (kgs)
			Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed												
Standard Trim												
2	128	8,000	0	1.4	66	H117AJ112F1	1	○	○	○	12-18	34.1
2 1/2	207	12,900	0	0.6	66	H117AK112F1	2	○	○	○	12-18	47.7
3	272	17,000	0	0.6	66	H117AL112F1	3	○	○	○	12-18	47.7
4 (Flange)	434	27,000	0	0.3	66	H117AN112F1	4	○	○	○	12-20	63.6
Valve Seal Overtravel Trim (Proof of Closure)												
2	105	6,600	0	1.4	66	H117AJ112F1F26V16	1	○	○	○	12-18	36.4
2 1/2	145	9,100	0	0.6	66	H117AK112F1F26V16	2	○	○	○	12-18	50
3	272	17,000	0	0.6	66	H117AL112F1F26V16	3	○	○	○	12-18	50
4 (Flange)	377	24,000	0	0.3	66	H117AN112F1F26V16	4	○	○	○	12-20	65.9

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
 ② Type 4/7 Watertight/Explosionproof change 5th digit to "B" (EX: H117BJ112F1). ③ 240V/60Hz change 9th digit to "4" (EX: H117AJ114F1).

COMBUSTION

Replacement Switches:

Kits	Switches*	Type
S104772EA1	1	Auxiliary (Adjustable)
S104772EA2	2	
S104772EA3	3	
S104772EAX1	1	Proof of Closure

* Yoke Mounted

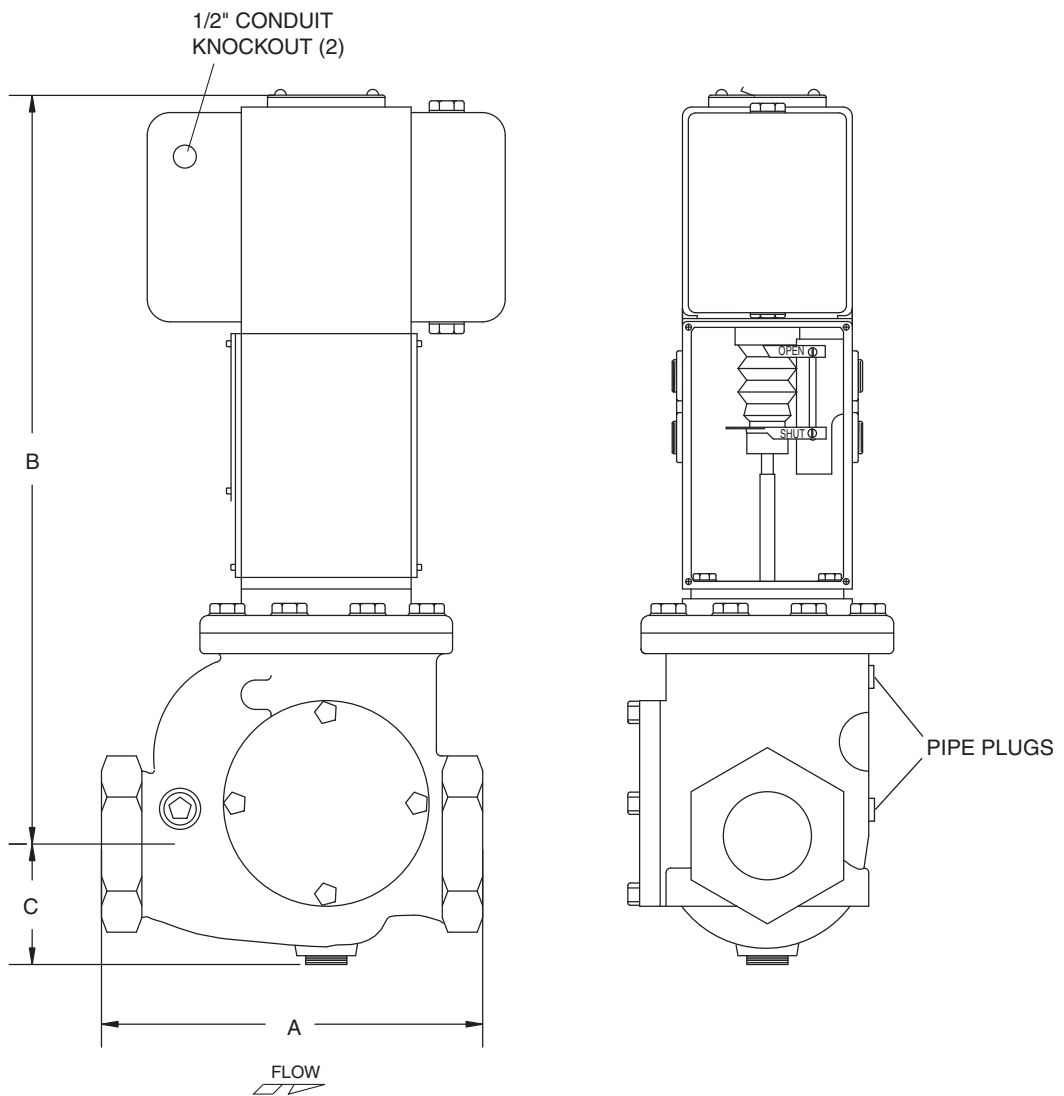
Replacement Actuators:

Catalog Number	Voltage
H10A620B5F1	120V/60Hz
H10A640B5F1	240V/60Hz

For FM Proof of Closure add F26 to Cat. No.

Dimensions inches (mm)

Const Ref.		A	B	C
1	ins.	8.13	18.13	2.50
	mm	207	461	64
2	ins.	10.88	18.63	2.88
	mm	276	473	73
3	ins.	10.88	18.63	3.88
	mm	276	473	99
4	ins.	13.88	20.00	4.06
	mm	353	508	103



COMBUSTION

General Description

The normally closed H118 is a combination Hydramotor actuator and safety shutoff/control gas valve. It is used for commercial and industrial burners in applications such as furnaces, dryers, dehydrators, conversion burners and heaters.

The cast iron, globe-type valve body features a soft synthetic seat and integral heavy-duty return spring for tight and certain closure in one second or less upon current interruption.

The self contained, hermetically sealed, pull-type electro-hydraulic actuator consists of a motor/pump unit immersed in oil, reducing wear and provides highly reliable operation.

Specifications

Fluid: Fuel gas

Opening Time: 28 second max.

Closing Time: 1 second max.

Enclosure: Type 1 General Purpose standard
 Type 4/7 Watertight/Explosion proof optional

Ambient Temperature: -40°F to 150°F (-40°C to 66°C)

Body Class: Cast Iron, 1" to 3" - 250# screw, 4" - 125# flange

Pipe Taps: 1/4" upstream & downstream taps for routine leak testing

Electrical

Power Requirement: 158 VA max (1-3"), 288 VA max. (4")

Standard Voltage: 120V/60Hz
 240V/60Hz (Optional)

Operating Voltage	Amperes		
	Inrush	Opening	Holding
1" Through 3"			
120V/60Hz	13.2	1.32	0.14
240V/60Hz	6.6	0.66	0.07
4" Only			
120V/60Hz	24.0	2.40	0.18

Auxiliary Switch:

One integral SPDT switch, 15A@120V, 7.5A@240V, (1800VA max). Actuates at full open position of actuator stroke (not adjustable). Up to 6 adjustable yoke mounted switches may be added.

Proof of Closure Switch:

Optional factory set non-field adjustable SPDT switch, 15A@120V, 7.5A@240V (1800VA max.).



Installation

Multi-poise, may be mounted in any position.

Approvals

UL listed

FM Approved

CSA Certified to:

- 1) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

Specifications (English units)

Pipe Size (ins.)	Cv Flow Factor	Gas Capacity ①		Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number ② ③	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (lbs)
		Cu. Ft/hr.	Min.	Max.	UL				FM	CSA			
COMBUSTION (Fuel Gas) - Normally Closed													
Standard Trim													
1	17	915	0	35	150	H118AF122F1	1	○	○	○	7-18	22	
1 1/4	25	1,155	0	35	150	H118AG122F1	1	○	○	○	7-18	23	
1 1/2	35	1,525	0	25	150	H118AH122F1	2	○	○	○	8-20	28	
2	67	3,300	0	15	150	H118AJ122F1	3	○	○	○	10-24	32	
2 1/2	86	3,730	0	15	150	H118AK122F1	4	○	○	○	11-28	52	
3	125	6,095	0	15	150	H118AL122F1	5	○	○	○	12-18	54	
4 (Flange)	168	9,710	0	15	150	H118AN132F1	6	○	○	○	15-24	148	
Valve Seal Overtravel Trim (Proof of Closure)													
2	67	3,300	0	15	150	H118AJ122F1F26V16	3	○	○	○	9-17	37	
2 1/2	86	3,730	0	15	150	H118AK122F1F26V16	4	○	○	○	11-20	57	
3	125	6,095	0	15	150	H118AL122F1F26V16	5	○	○	○	13-23	59	
4 (Flange)	168	9,710	0	15	150	H118AN132F1F26V16	6	○	○	○	15-24	153	

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
 ② Type 4/7 Watertight/Explosionproof chage 5th digit to "B" (EX: H118BF112F1). ③ 240V/60Hz change 9th digit to "4" (EX: H118AF124F1) - 1" through 3" only.

Specifications (Metric units)

Pipe Size (ins.)	Kv Flow (m³/hr)	Gas Capacity ①		Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number ② ③	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (kgs)
		Cu. Ft/hr.	Min.	Max.	UL				FM	CSA			
COMBUSTION (Fuel Gas) - Normally Closed													
Standard Trim													
1	14	915	0	2.4	66	H118AF122F1	1	○	○	○	7-18	10	
1 1/4	21	1,155	0	2.4	66	H118AG122F1	1	○	○	○	7-18	10.5	
1 1/2	30	1,525	0	1.7	66	H118AH122F1	2	○	○	○	8-20	12.7	
2	57	3,300	0	1	66	H118AJ122F1	3	○	○	○	10-24	14.5	
2 1/2	73	3,730	0	1	66	H118AK122F1	4	○	○	○	11-28	23.6	
3	106	6,095	0	1	66	H118AL122F1	5	○	○	○	12-18	24.5	
4 (Flange)	143	9,710	0	1	66	H118AN132F1	6	○	○	○	15-24	67.3	
Valve Seal Overtravel Trim (Proof of Closure)													
2	57	3,300	0	1	66	H118AJ122F1F26V16	3	○	○	○	9-17	16.8	
2 1/2	73	3,730	0	1	66	H118AK122F1F26V16	4	○	○	○	11-20	25.9	
3	106	6,095	0	1	66	H118AL122F1F26V16	5	○	○	○	13-23	26.8	
4 (Flange)	143	9,710	0	1	66	H118AN132F1F26V16	6	○	○	○	15-24	69.5	

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
 ② Type 4/7 Watertight/Explosionproof chage 5th digit to "B" (EX: H118BF112F1). ③ 240V/60Hz change 9th digit to "4" (EX: H118AF124F1) - 1" through 3" only.

COMBUSTION

Replacement Actuators:

Catalog Number ①	Voltage
H10A620B5F1	120V/60Hz
H10A640B5F1	240V/60Hz
H30A2220B20F1 ②	120V/60Hz

① For FM Proof of Closure ad F26 to Cat. No.
 ② 4" size only

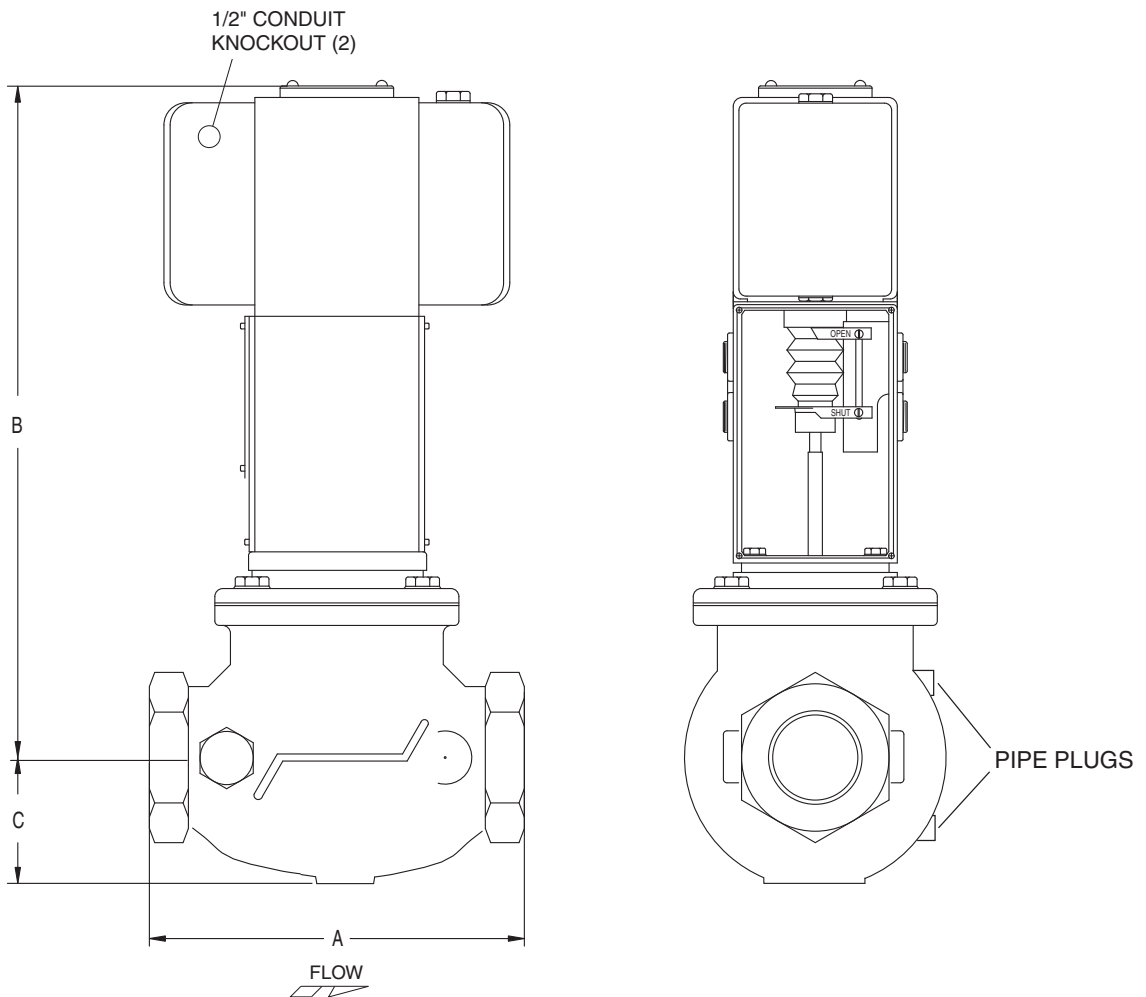
Replacement Switches:

Kits	Switches*	Type
1" Through 3"		
S104772EA1	1	Auxiliary (Adjustable)
S104772EA2	2	
S104772EA3	3	
S104772EAX1	1	Proof of Closure
4" Only		
S104772FA1	1	Auxiliary (Adjustable)
S104772FA2	2	
S104772FA3	3	
S104772FAX1	1	Proof of Closure

* Yoke Mounted

Dimensions inches (mm)

Const Ref.		A	B	C
1	ins.	5.13	14.65	1.93
	mm	130	372	49
2	ins.	6.50	15.15	2.56
	mm	165	385	65
3	ins.	8.13	15.00	2.70
	mm	207	381	69
4	ins.	9.50	15.38	3.28
	mm	241	391	83
5	ins.	10.88	15.81	3.75
	mm	276	402	95
6	ins.	13.88	23.88	5.00
	mm	353	607	127



H118R2

373

COMBUSTION

General Description

The H137 is a 2-way, normally closed, safety shutoff valve providing trouble free, electrohydraulic on-off control of combustion gas for boilers, industrial furnaces, dryers, dehydrators, large conversion burners, air heaters and similar applications.

The self-contained Hydramotor actuator is a powerful, pull-type hydraulic ram providing output force of 1,400 pounds to fully open the valve. Upon current interruption, dual redundant relief valves dump hydraulic pressure, closing the valve in one second. The Hydramotor consists of a motor/pump unit immersed in oil, reducing wear and provides highly reliable operation.

The H137 is a cast iron-bodied valve with Nitrile seat and aluminum trim. Pulling force from the Hydramotor actuator moves a lever (providing mechanical advantage) against spring and gas pressure to open the soft-seated flap, allowing straight-through gas flow.

A simple, two-wire circuit controls the motorized valve. Each H137 is equipped with one standard SPDT switch which actuates at the fully-open (energized) position. Each is equipped with a valve seal overtravel interlock switch which can be wired into the startup or pre-ignition interlock circuit to permit supervision of the valve's closed position (FM proof of closure).

Specifications

Fluid: Fuel gas

Opening Time: 27 second max.

Closing Time: 1 second max.

Enclosure: Type 4 Watertight standard
 Type 7 Explosion proof optional

Ambient Temperature: -40°F to 150°F (-40°C to 66°C)

Body Class: Cast Iron, 2" to 3": 250# screw, 4" - 6": 125# flanges

Pipe Taps: 1/4" upstream & downstream taps for routine leak testing

Electrical

Power Requirement: 324 VA

Standard Voltage: 120V/60Hz

Operating Voltage	Amperes		
	Inrush	Opening	Holding
120V/60Hz	270	2.7	0.18

Auxiliary Switch: Integral SPDT switch, 15A@120V Actuates at full open position of actuator stroke (not adjustable). Up to 2 adjustable yoke mounted switches may be added.

Proof of Closure Switch: Integral factory set, non-field adjustable SPDT switch, 1/4 HP@120V.



Installation

Multi-poise, may be mounted in any position.

Approvals

UL listed

FM Approved

CSA Certified to:

- 1) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

Specifications (English units)

Pipe Size (ins.)	Cv Flow Factor	Gas Capacity ①	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number ②	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (lbs)
		Cu. Ft./hr.	Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed												
Valve Seal Overtravel Trim (Proof of Closure)												
2	151	8,000	0	60	150	H137CJ12F1F26V16	1	○	○	○	22	130
2 1/2	244	12,900	0	50	150	H137CK12F1F26V16	2	○	○	○	22	135
3	320	17,000	0	50	150	H137CL12F1F26V16	2	○	○	○	22	135
4 (Flange)	510	27,000	0	30	150	H137CN32F1F26V16	3	○	○	○	27	143
6 (Flange)	1020	50,000	0	20	150	H137CQ32F1F26V16	4	○	○	○	27	150

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
② Type 7 Explosionproof change 5th digit to "B" (EX: H137BJ12F1F26V16)

Specifications (Metric units)

Pipe Size (ins.)	Kv Flow (m³/hr)	Gas Capacity ①	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number ②	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (kgs)
		Cu. Ft./hr.	Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed												
Valve Seal Overtravel Trim (Proof of Closure)												
2	128	8,000	0	4.1	66	H137CJ12F1F26V16	1	○	○	○	22	59
2 1/2	207	12,900	0	3.4	66	H137CK12F1F26V16	2	○	○	○	22	61
3	272	17,000	0	3.4	66	H137CL12F1F26V16	2	○	○	○	22	61
4 (Flange)	434	27,000	0	2.1	66	H137CN32F1F26V16	3	○	○	○	27	65
6 (Flange)	867	50,000	0	1.4	66	H137CQ32F1F26V16	4	○	○	○	27	68

○ = Safety Shutoff Valve. ① One cu. ft/hr = 1,000 Btu/hr, 0.64 Specific Gravity Gas @ 1" W.C.P.D.
② Type 7 Explosionproof change 5th digit to "B" (EX: H137BJ12F1F26V16)

Replacement Actuators:

Catalog Number	Voltage
H30A4820B20C1F1F26	120V/60Hz

Replacement Switches:

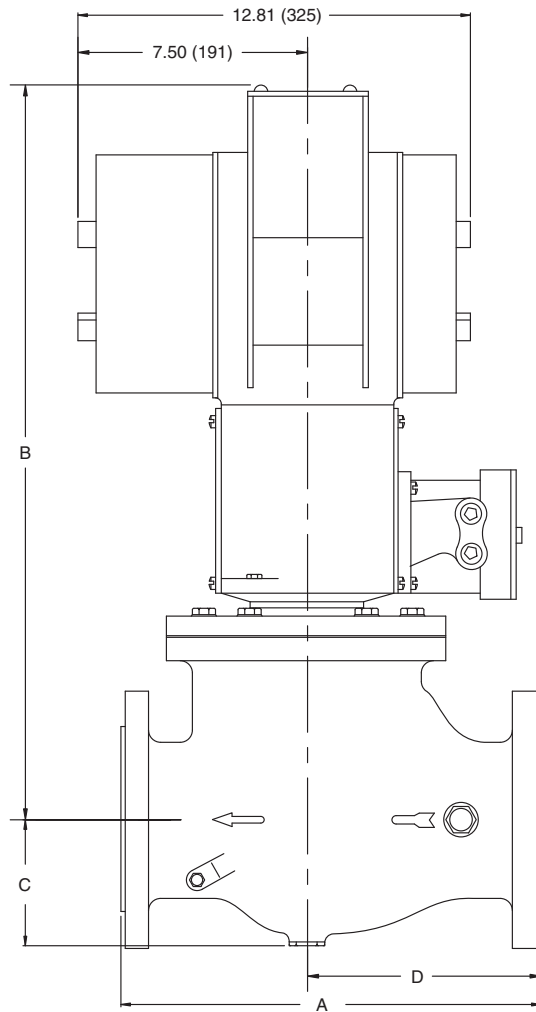
Kits	Switches*	Type
S104772FAX1	1	Proof of Closure
S104772FAX2	2	1 Proof of Closure and 1 Auxiliary
S104772FAX3	3	1 Proof of Closure and 2 Auxiliary

* Yoke Mounted

COMBUSTION

Dimensions inches (mm)

Const Ref.		A	B	C	D
1	ins.	8.12	25.25	2.50	4.95
	mm	206	641	64	126
2	ins.	11.00	26.09	2.88	6.50
	mm	279	663	73	165
3	ins.	13.87	28.69	4.06	7.75
	mm	352	729	103	197
4	ins.	17.81	29.75	5.13	10.35
	mm	452	756	130	263



COMBUSTION

Features

- 2-way normally closed operation
- For control of commercial and industrial gas burners
- Ideal for high pressure applications
- Stainless steel body construction
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Body	Stainless Steel (300 Series)
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Silver

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	17.1	40	90	32 to 125	238610	238614
F	15.4	27	160	32 to 125	99257	-
F	16.1	35	180	32 to 125	272610	272614

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

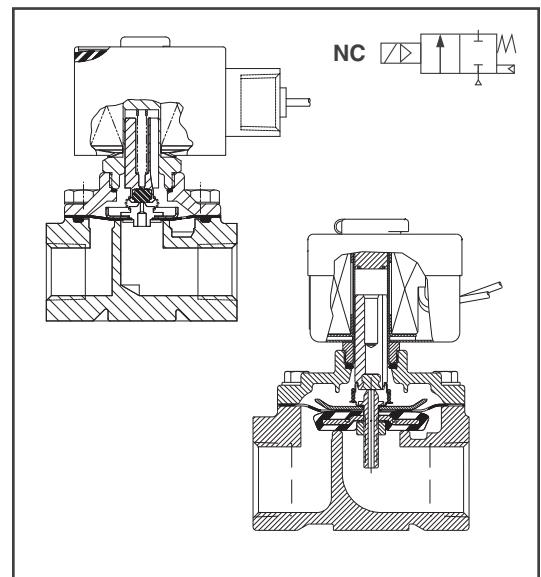
General Purpose, Type 1 metal enclosure with 7/8" hole for 1/2" conduit connector (HV266343-1).

Watertight, Types 1, 2, 3, 3S, 4 & 4X molded epoxy enclosure with 1/2" conduit hub (HV266342-1, HV266342-2, HV266343-2).

Explosion & Watertight, Types 1, 2, 3, 3S, 4X, 7 & 9 molded epoxy enclosure with 1/2" conduit hub (HV266342-3, HV266342-4, HV266343-3).

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to:

- 1) Standard 429 "Electrically Operated Valves," Guide YIOZ, File MP618 Safety Valves.
- 2) Standard 429 "Electrically Operated Valves for use in Hazardous Locations" Guide YTSX, File E25549 Safety Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381. (HV266342-1, HV266342-2, HV266343-2)
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9) File 112872. (HV266342-3, HV266342-4, HV266343-3)

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①		Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
			Btu/hr.	Min.	Max.	UL				FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED														
1/2	5/8	4.0	203,000	0	150	175	HV266342-1	1	○	-	○	17.1	3.5	
1/2	5/8	4.0	203,000	0	150	175	HV266342-3	1	○	-	○	17.1	3.5	
3/4	5/8	4.5	203,000	0	150	175	HV266342-2	1	○	-	○	17.1	3.5	
3/4	5/8	4.5	203,000	0	150	175	HV266342-4	1	○	-	○	17.1	3.5	
1	1	11.2	505,000	0	150	175	HV266343-1	2	○	-	○	15.4	8.8	
1	1	11.2	505,000	0	150	175	HV266343-2	3	○	-	○	16.1	8.8	
1	1	11.2	505,000	0	150	175	HV266343-3	3	○	-	○	16.1	8.8	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

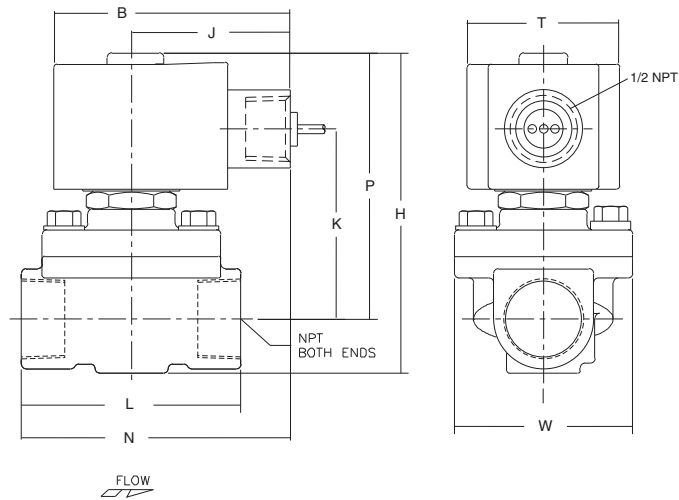
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①		Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
			Btu/hr.	Min.	Max.	UL				FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED														
1/2	16	3.4	203,000	0	10.3	79	HV266342-1	1	○	-	○	17.1	1.6	
1/2	16	3.4	203,000	0	10.3	79	HV266342-3	1	○	-	○	17.1	1.6	
3/4	16	3.4	203,000	0	10.3	79	HV266342-2	1	○	-	○	17.1	1.6	
3/4	16	3.4	203,000	0	10.3	79	HV266342-4	1	○	-	○	17.1	1.6	
1	25	9.5	505,000	0	10.3	79	HV266343-1	2	○	-	○	15.4	4.0	
1	25	9.5	505,000	0	10.3	79	HV266343-2	3	○	-	○	16.1	4.0	
1	25	9.5	505,000	0	10.3	79	HV266343-3	3	○	-	○	16.1	4.0	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

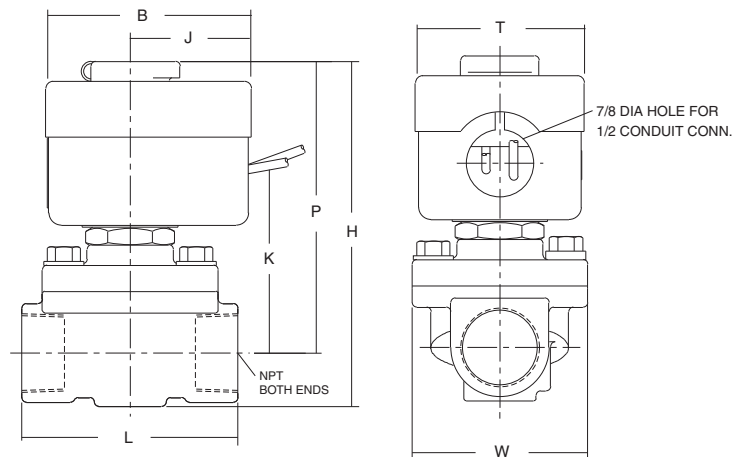
Dimensions inches (mm)

Const. Ref.		B	H	J	K	L	N	P	T	W
1	ins.	3.03	4.19	2.05	2.50	2.81	3.45	3.47	1.95	2.39
	mm	77	106	52	64	71	88	88	50	61
2	ins.	2.67	5.31	1.58	3.03	3.75	-	4.43	2.20	3.84
	mm	68	135	40	77	95	-	113	56	98
3	ins.	3.11	5.26	2.05	3.17	3.75	4.10	4.38	2.06	3.84
	mm	79	134	52	81	95	104	111	52	98

Const. Ref. 1, 3



Const. Ref. 2



Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- For positive shutoff on pilot or main gas lines of commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Washer	302 Stainless Steel
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Guide	CA
Springs	302F Stainless Steel
Shading Coil	Copper
Body Gasket	Cork
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	10.5	23	55	-40 to 175	064982	-

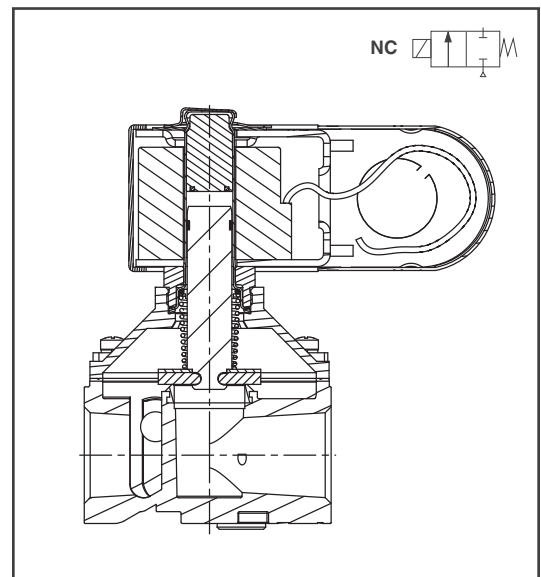
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). K3A catalog number includes codification for voltage. However, voltage must be specified when ordering spare coil.

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box Housing with two 7/8" knock-outs.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/8" thru 3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.
- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
			Btu/hr.	Min.	Max.		24V 60 Hz	110-120V 50-60 Hz	220-240V 50-60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
3/8	0.456	4	215,000	0	0.5	77	K3A431U	K3A432U	K3A434U	1	○	○	○	10.5	1.4
1/2	0.687	6	350,000	0	0.5	77	K3A441U	K3A442U	K3A444U	1	○	○	○	10.5	1.4
3/4	0.812	9	520,000	0	0.5	77	K3A451U	K3A452U	K3A454U	2	○	○	○	10.5	1.5
1	1.000	14	755,000	0	0.5	77	K3A461U	K3A462U	K3A464U	3	○	-	○	10.5	1.7

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

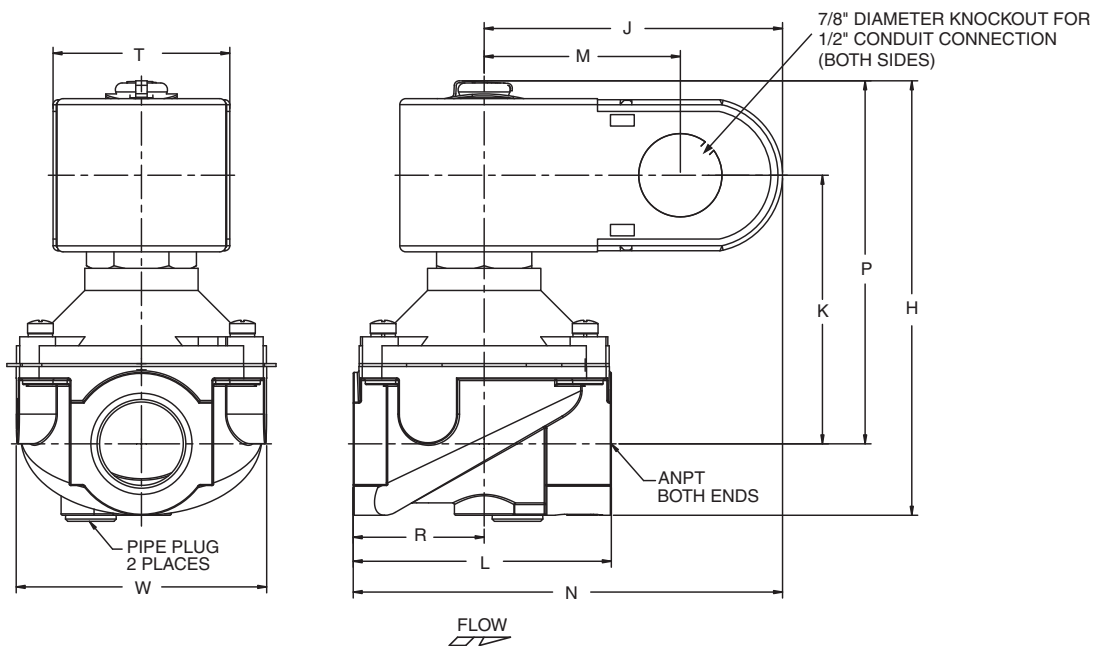
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
			Btu/hr.	Min.	Max.		24V 60 Hz	110-120V 50-60 Hz	220-240V 50-60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
3/8	12	3.4	215,000	0	0.03	25	K3A431U	K3A432U	K3A434U	1	○	○	○	10.5	0.6
1/2	17	5.1	350,000	0	0.03	25	K3A441U	K3A442U	K3A444U	1	○	○	○	10.5	0.6
3/4	21	7.7	520,000	0	0.03	25	K3A451U	K3A452U	K3A454U	2	○	○	○	10.5	0.7
1	25	11.9	755,000	0	0.03	25	K3A461U	K3A462U	K3A464U	3	○	-	○	10.5	0.8

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

Const. Ref.		H	J	K	L	M	N	P	R	T	W
1	ins.	4.25	3.11	2.70	2.75	2.04	4.52	3.69	1.41	1.86	2.63
	mm	108	79	69	70	52	115	94	36	47	67
2	ins.	4.56	3.11	2.82	2.75	2.04	4.49	3.81	1.37	1.86	2.63
	mm	116	79	72	70	52	114	97	35	47	67
3	ins.	4.88	3.11	3.01	4.00	2.04	5.11	4.00	2.00	1.86	3.25
	mm	124	79	76	102	52	130	102	51	47	83

Const. Ref. 1, 2, 3



Must be mounted with solenoid upright or horizontal.

Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- For positive shutoff on pilot or main gas lines of commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Washer	302 Stainless Steel
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Guide	CA
Springs	302F Stainless Steel
Shading Coil	Copper
Body Gasket	Cork
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
N	16.7	35	78	-40 to 175	216758	-

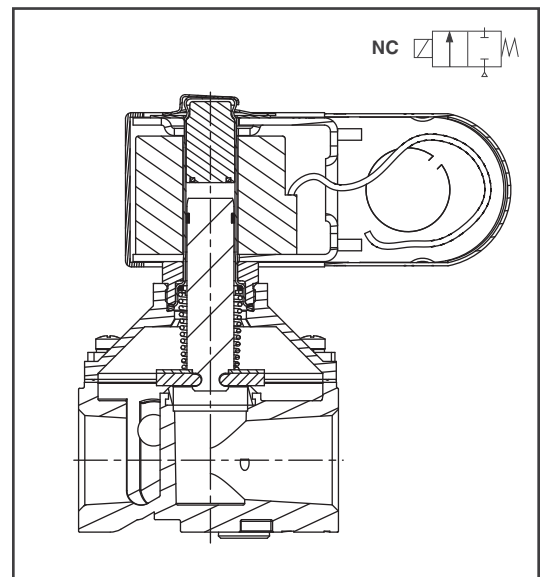
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). K3A catalog number includes codification for voltage. However, voltage must be specified when ordering spare coil.

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/8" thru 3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.
- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①		Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
			Btu/hr.	Min.	Max.	24V 60 Hz		110-120V 50-60 Hz	220-240V 50-60 Hz	UL		FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED																
3/8	0.456	4	215,000	0	10	77	K3A531U	K3A532U	K3A534U	1	○	○	○	16.7	1.4	
1/2	0.687	6	350,000	0	6	77	K3A541U	K3A542U	K3A544U	1	○	○	○	16.7	1.4	
3/4	0.812	9	520,000	0	3	77	K3A551U	K3A552U	K3A554U	2	○	○	○	16.7	1.5	
1	1.000	14	755,000	0	1.5	77	K3A561U	K3A562U	K3A564U	3	○	-	○	16.7	1.7	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

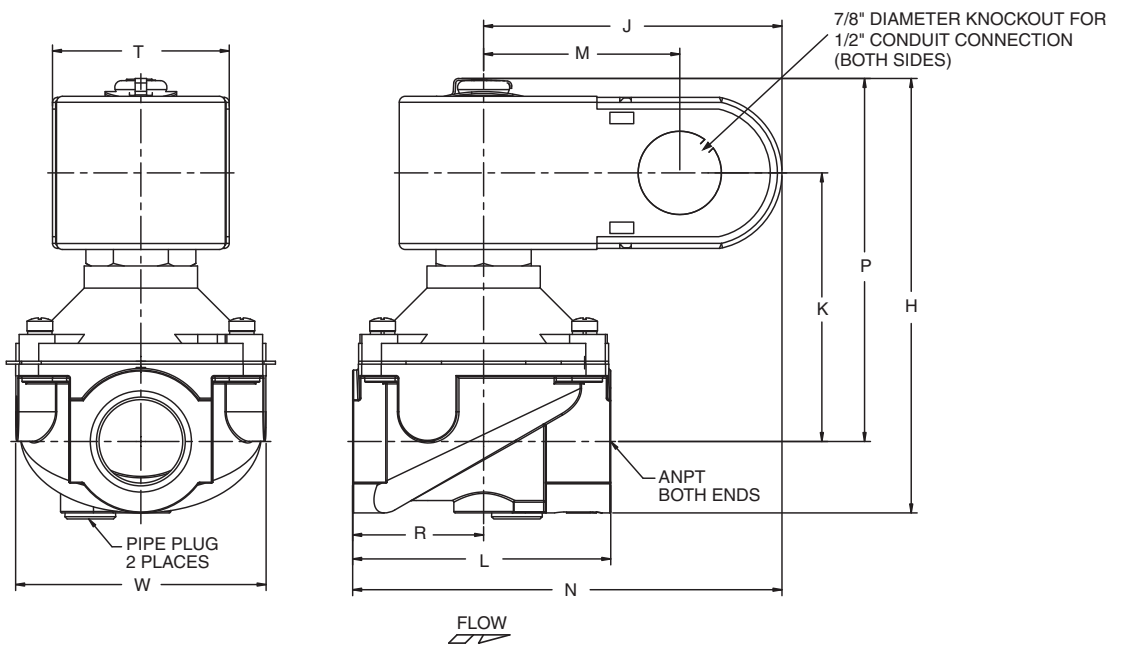
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①		Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
			Btu/hr.	Min.	Max.	24V 60 Hz		110-120V 50-60 Hz	220-240V 50-60 Hz	UL		FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED																
3/8	12	3.4	215,000	0	0.7	25	K3A531U	K3A532U	K3A534U	1	○	○	○	16.7	0.6	
1/2	17	5.1	350,000	0	0.4	25	K3A541U	K3A542U	K3A544U	1	○	○	○	16.7	0.6	
3/4	21	7.7	520,000	0	0.2	25	K3A551U	K3A552U	K3A554U	2	○	○	○	16.7	0.7	
1	25	11.9	755,000	0	0.1	25	K3A561U	K3A562U	K3A564U	3	○	-	○	16.7	0.8	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

Const. Ref.		H	J	K	L	M	N	P	R	T	W
1	ins.	4.25	3.11	2.70	2.75	2.04	4.52	3.69	1.41	1.86	2.63
	mm	108	79	69	70	52	115	94	36	47	67
2	ins.	4.56	3.11	2.82	2.75	2.04	4.49	3.81	1.37	1.86	2.63
	mm	116	79	72	70	52	114	97	35	47	67
3	ins.	4.88	3.11	3.01	4.00	2.04	5.11	4.00	2.00	1.86	3.25
	mm	124	79	76	102	52	130	102	51	47	83

Const. Ref. 1, 2, 3



Must be mounted with solenoid upright or horizontal.

Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- For positive shutoff on pilot or main gas lines of commercial and industrial gas burners.
- Valves provided with 1/8" NPT upstream and downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Washer	302 Stainless Steel
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Guide	CA
Springs	302F Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	20	43	240	-40 to 175	222345	-

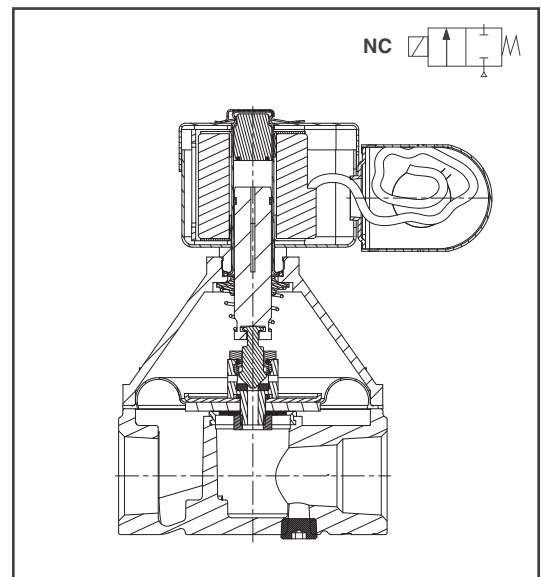
Standard Voltages: 24, 120, 240 volts AC, 60 Hz.
 K3A catalog number includes codification for voltage. However, voltage must be specified when ordering spare coil.

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves" (3/4" only).

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.
- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.		24V 60 Hz	120V 60 Hz	240V 60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
3/4	1.25	12	667,000	0	5	77	K3A651U	K3A652U	K3A654U	1	○	○	○	20	4.5
1	1.25	17	960,000	0	5	77	K3A661U	K3A662U	K3A664U	1	○	-	○	20	4.7
1 1/4	1.75	23	1,290,000	0	5	77	K3A671U	K3A672U	K3A674U	2	○	-	○	20	4.5
1 1/2	1.75	27	1,509,000	0	5	77	K3A681U	K3A682U	K3A684U	2	○	-	○	20	4.7

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

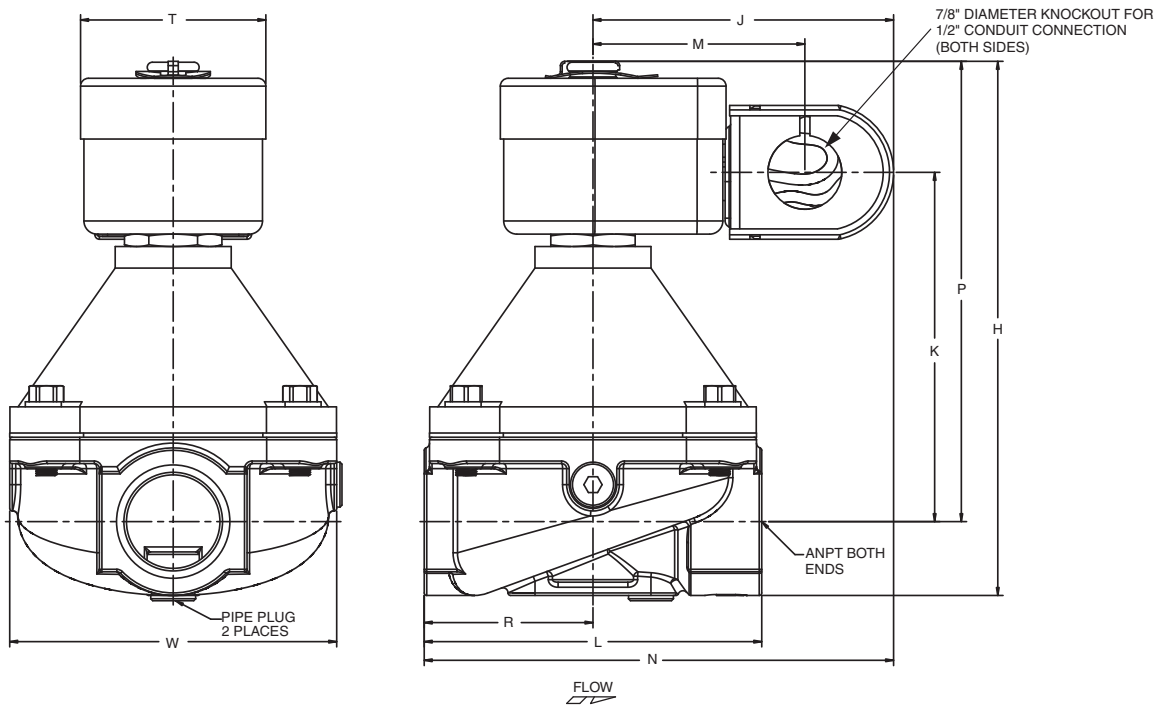
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.		24V 60 Hz	120V 60 Hz	240V 60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
3/4	32	12	667,000	0	0.3	25	K3A651U	K3A652U	K3A654U	1	○	○	○	20	2.0
1	32	17	960,000	0	0.3	25	K3A661U	K3A662U	K3A664U	1	○	-	○	20	2.1
1 1/4	44	23	1,290,000	0	0.3	25	K3A671U	K3A672U	K3A674U	2	○	-	○	20	2.0
1 1/2	44	27	1,509,000	0	0.3	25	K3A681U	K3A682U	K3A684U	2	○	-	○	20	2.1

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

Const. Ref.		H	J	K	L	M	N	P	R	T	W
1	ins.	6.33	3.53	4.14	4.00	2.50	5.53	5.46	2.00	2.19	3.87
	mm	161	90	105	102	64	140	139	51	56	98
2	ins.	7.03	3.53	4.47	5.19	2.50	6.15	5.78	2.62	2.19	3.87
	mm	179	90	114	132	64	156	147	67	56	98

Const. Ref. 1, 2



Must be mounted with solenoid upright or horizontal.

Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with 1/8" NPT upstream and downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Washer	302 Stainless Steel
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Guide	CA
Springs	302F Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	20	43	240	-40 to 175	222345	-

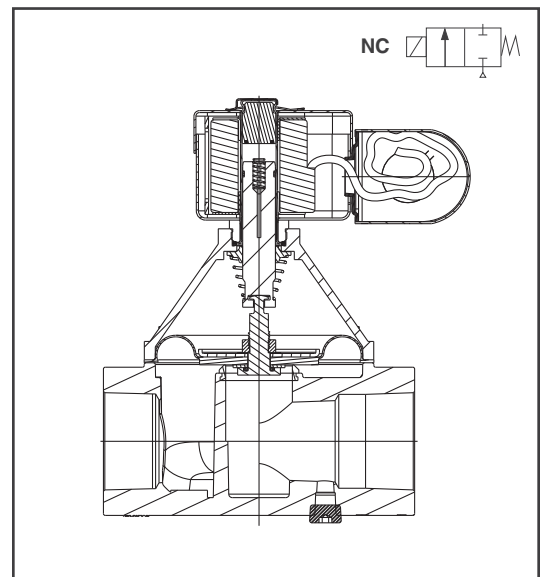
Standard Voltages: 24, 120, 240 volts AC, 60 Hz.
 K3A catalog number includes codification for voltage. However, voltage must be specified when ordering spare coil.

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 Safety Valves.

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- 2) Automatic Gas Valves Z21.21 (6.5), File 109157 and 113070.
- 3) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①		Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
			Btu/hr.	Min.	Max.	24V 60 Hz		120V 60 Hz	240V 60 Hz	UL		FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED																
1 1/4	1.25	18	1,028,000	0	1.5	77	K3A771U	K3A772U	K3A774U	1	○	-	○	20	4.5	
1 1/2	1.25	20	1,159,000	0	1.5	77	K3A781U	K3A782U	K3A784U	1	○	-	○	20	4.5	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

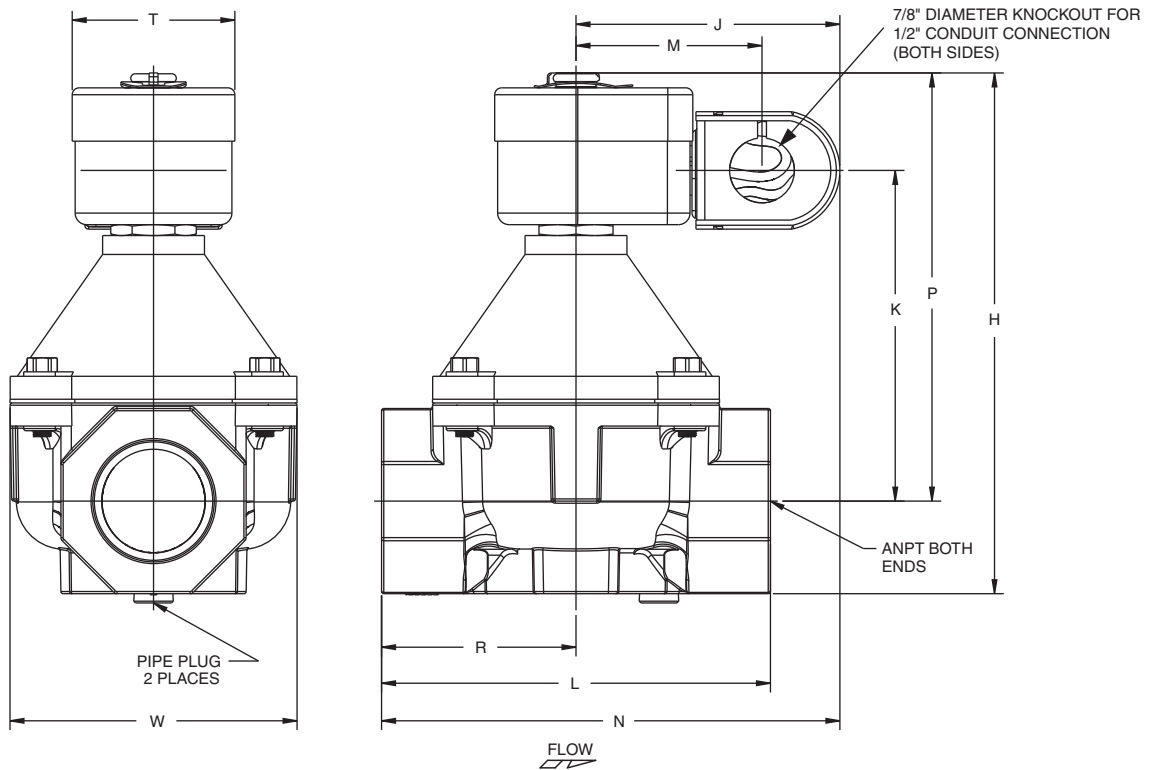
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①		Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
			Btu/hr.	Min.	Max.	24V 60 Hz		120V 60 Hz	240V 60 Hz	UL		FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED																
1 1/4	32	15.3	1,028,000	0	0.1	25	K3A771U	K3A772U	K3A774U	1	○	-	○	20	2	
1 1/2	32	17.0	1,159,000	0	0.1	25	K3A781U	K3A782U	K3A784U	1	○	-	○	20	2	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

Const. Ref.		H	J	K	L	M	N	P	R	T	W
1	ins.	7.03	3.53	4.47	5.25	2.50	6.15	5.78	2.62	2.19	3.87
	mm	179	90	114	133	64	156	147	67	56	98

Const. Ref. 1



Must be mounted with solenoid upright or horizontal.

Features

- 2-way normally closed operation
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- For on-off control of fuel gas in commercial and industrial gas burners
- Valves provided with pipe tap(s) with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Washer	302 Stainless Steel
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Guide	CA
Springs	302F Stainless Steel
Shading Coil	Copper
Body Gasket	Cork
Pipe Plug	Zinc-Plated Steel

Electrical

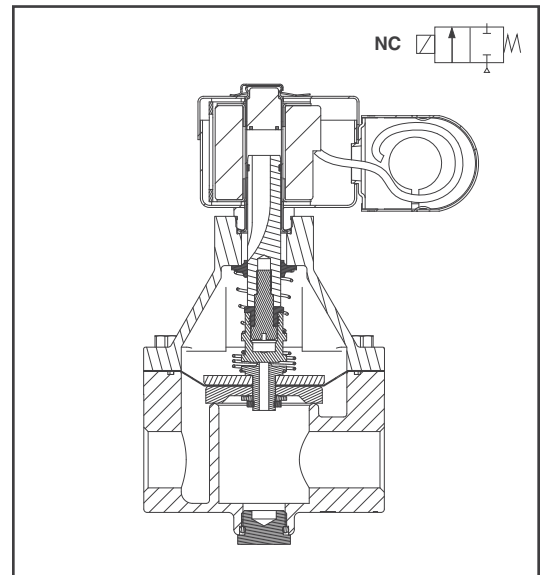
Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
N	20	43	240	-20 to 175	222345	-

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

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- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 113070.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① (Btu/hr.)	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.		24V 60 Hz	120V 60 Hz	240V 60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
3/8	3/4	5.3	217,000	0	30	77	S261SG01N3CG5	S261SG02N3CG5	S261SG04N3CG5	1	○	○	○	20	3.0
1/2	3/4	6.2	322,000	0	30	77	S261SG01N3DG5	S261SG02N3DG5	S261SG04N3DG5	1	○	○	○	20	3.2
3/4	3/4	8	370,000	0	30	77	S261SG01N3EG5	S261SG02N3EG5	S261SG04N3EG5	1	○	○	○	20	3.3
1	1 1/2	18	1,120,000	0	25	77	S261SG01N3FJ5	S261SG02N3FJ5	S261SG04N3FJ5	2	○	-	○	20	4.4
1 1/4	2	34	1,710,000	0	25	77	S261SG01N3GJ7	S261SG02N3GJ7	S261SG04N3GJ7	3	○	-	○	20	4.4
1 1/2	2	37	1,790,000	0	25	77	S261SG01N3HJ7	S261SG02N3HJ7	S261SG04N3HJ7	3	○	-	○	20	12.5
2	4 1/2	80	4,180,000	0	25	77	S261SG01N3JK4	S261SG02N3JK4	S261SG04N3JK4	4	○	-	○	20	12.5
2 1/2	4 1/2	110	5,700,000	0	25	77	S261SG01N3KK4	S261SG02N3KK4	S261SG04N3KK4	5	○	-	○	20	14.2
3	4 1/2	135	7,100,000	0	25	77	S261SG01N3LK4	S261SG02N3LK4	S261SG04N3LK4	5	○	-	○	20	14.2

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① (Btu/hr.)	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.		24V 60 Hz	120V 60 Hz	240V 60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
3/8	19	4.5	217,000	0	2.1	25	S261SG01N3CG5	S261SG02N3CG5	S261SG04N3CG5	1	○	○	○	20	1.4
1/2	19	5.3	322,000	0	2.1	25	S261SG01N3DG5	S261SG02N3DG5	S261SG04N3DG5	1	○	○	○	20	1.5
3/4	19	6.8	370,000	0	2.1	25	S261SG01N3EG5	S261SG02N3EG5	S261SG04N3EG5	1	○	○	○	20	1.5
1	38	15.3	1,120,000	0	1.7	25	S261SG01N3FJ5	S261SG02N3FJ5	S261SG04N3FJ5	2	○	-	○	20	2.0
1 1/4	51	28.9	1,710,000	0	1.7	25	S261SG01N3GJ7	S261SG02N3GJ7	S261SG04N3GJ7	3	○	-	○	20	2.0
1 1/2	51	31.5	1,790,000	0	1.7	25	S261SG01N3HJ7	S261SG02N3HJ7	S261SG04N3HJ7	3	○	-	○	20	5.7
2	114	68.0	4,180,000	0	1.7	25	S261SG01N3JK4	S261SG02N3JK4	S261SG04N3JK4	4	○	-	○	20	5.7
2 1/2	114	93.5	5,700,000	0	1.7	25	S261SG01N3KK4	S261SG02N3KK4	S261SG04N3KK4	5	○	-	○	20	6.5
3	114	114.5	7,100,000	0	1.7	25	S261SG01N3LK4	S261SG02N3LK4	S261SG04N3LK4	5	○	-	○	20	6.5

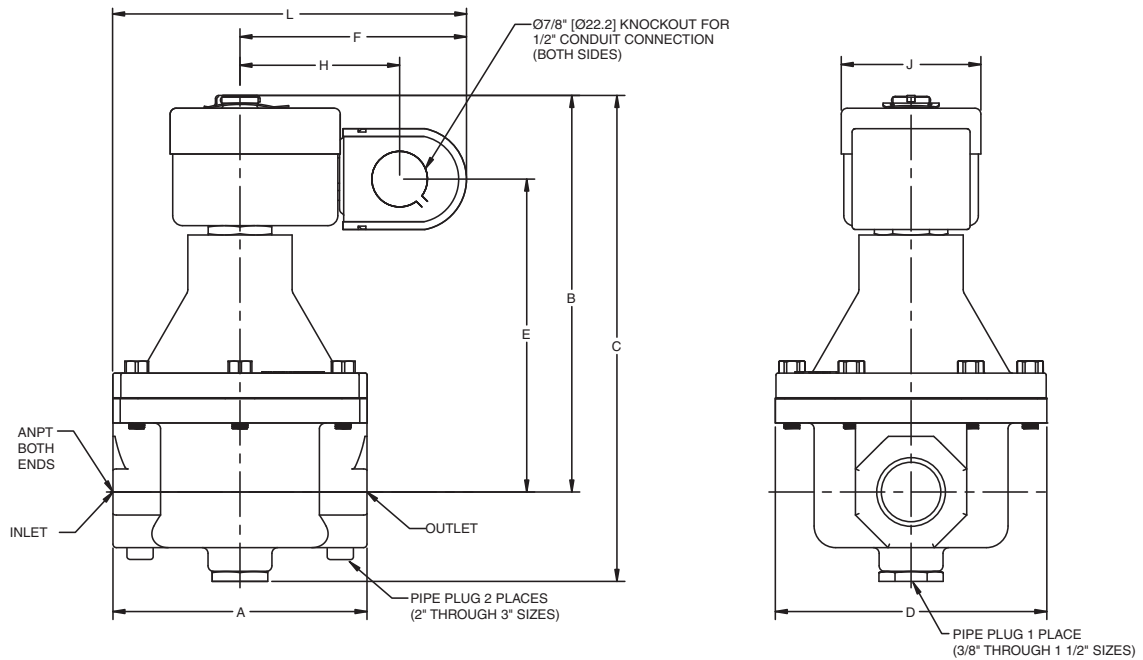
○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

COMBUSTION

Dimensions inches (mm)

Const. Ref.		A	B	C	D	E	F	H	J	L
1	ins.	2.75	5.48	6.54	2.31	4.07	3.53	2.50	2.19	4.90
	mm	70	139	166	59	103	90	64	56	124
2	ins.	4.00	6.35	7.60	4.27	4.94	3.53	2.50	2.19	5.53
	mm	102	161	193	108	125	90	64	56	140
3	ins.	4.76	6.73	8.35	4.77	5.32	3.53	2.50	2.19	5.91
	mm	121	171	212	121	135	90	64	56	150
4	ins.	8.12	7.20	9.57	7.69	5.85	3.53	2.50	2.19	7.59
	mm	206	183	243	195	149	90	64	56	193
5	ins.	9.00	8.06	10.62	7.69	6.65	3.53	2.50	2.19	8.03
	mm	229	205	270	195	169	90	64	56	204

Const. Ref. 1 - 5



Must be mounted with solenoid upright or horizontal on 3/8" to 1 1/2" pipe sizes.
For 2" to 3", must be mounted with solenoid vertical only.

Features

- 2-way normally open operation
- Die-cast aluminum bodies
- Zero differential piloted diaphragm
- Valves provided with pipe tap(s) with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Washer	302 Stainless Steel
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Guide	CA
Springs	302F Stainless Steel
Shading Coil	Copper
Body Gasket	Cork
Sleeve and Pin	416 Stainless Steel
Pipe Plug	Zinc-Plated Steel

Electrical

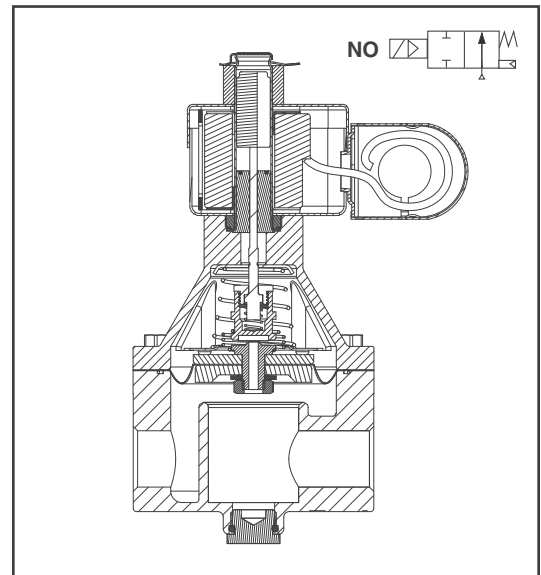
Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
N	20	43	240	-20 to 175	222345	-

Solenoid Enclosures

Standard: Type 1 General Purpose Junction Box housing with two 7/8" knockouts.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP932 General Purpose Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 113070.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.		24V 60 Hz	120V 60 Hz	240V 60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN															
3/8	3/4	5.3	217,000	0	30	77	S262SG01N3CG5	S262SG02N3CG5	S262SG04N3CG5	1	●	-	●	20	3.0
1/2	3/4	6.2	322,000	0	30	77	S262SG01N3DG5	S262SG02N3DG5	S262SG04N3DG5	1	●	-	●	20	3.2
3/4	3/4	8	370,000	0	30	77	S262SG01N3EG5	S262SG02N3EG5	S262SG04N3EG5	1	●	-	●	20	3.3
1	1 1/2	18	1,120,000	0	25	77	S262SG01N3FJ5	S262SG02N3FJ5	S262SG04N3FJ5	2	●	-	●	20	4.4
1 1/4	2	34	1,710,000	0	25	77	S262SG01N3GJ7	S262SG02N3GJ7	S262SG04N3GJ7	3	●	-	●	20	4.4
1 1/2	2	37	1,790,000	0	25	77	S262SG01N3HJ7	S262SG02N3HJ7	S262SG04N3HJ7	3	●	-	●	20	12.5
2	4 1/2	75	3,840,000	0	15	77	S262SG01N3JK4	S262SG02N3JK4	S262SG04N3JK4	4	●	-	●	20	12.5
2 1/2	4 1/2	90	4,750,000	0	15	77	S262SG01N3KK4	S262SG02N3KK4	S262SG04N3KK4	5	●	-	●	20	14.2
3	4 1/2	110	5,440,000	0	15	77	S262SG01N3LK4	S262SG02N3LK4	S262SG04N3LK4	5	●	-	●	20	14.2

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.		24V 60 Hz	120V 60 Hz	240V 60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY OPEN															
3/8	19	4.5	217,000	0	2.1	25	S262SG01N3CG5	S262SG02N3CG5	S262SG04N3CG5	1	●	-	●	20	1.4
1/2	19	5.3	322,000	0	2.1	25	S262SG01N3DG5	S262SG02N3DG5	S262SG04N3DG5	1	●	-	●	20	1.5
3/4	19	6.8	370,000	0	2.1	25	S262SG01N3EG5	S262SG02N3EG5	S262SG04N3EG5	1	●	-	●	20	1.5
1	38	15.3	1,120,000	0	1.7	25	S262SG01N3FJ5	S262SG02N3FJ5	S262SG04N3FJ5	2	●	-	●	20	2.0
1 1/4	51	28.9	1,710,000	0	1.7	25	S262SG01N3GJ7	S262SG02N3GJ7	S262SG04N3GJ7	3	●	-	●	20	2.0
1 1/2	51	31.5	1,790,000	0	1.7	25	S262SG01N3HJ7	S262SG02N3HJ7	S262SG04N3HJ7	3	●	-	●	20	5.7
2	114	63.8	3,840,000	0	1.0	25	S262SG01N3JK4	S262SG02N3JK4	S262SG04N3JK4	4	●	-	●	20	5.7
2 1/2	114	76.5	4,750,000	0	1.0	25	S262SG01N3KK4	S262SG02N3KK4	S262SG04N3KK4	5	●	-	●	20	6.5
3	114	93.5	5,440,000	0	1.0	25	S262SG01N3LK4	S262SG02N3LK4	S262SG04N3LK4	5	●	-	●	20	6.5

● = General Purpose Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

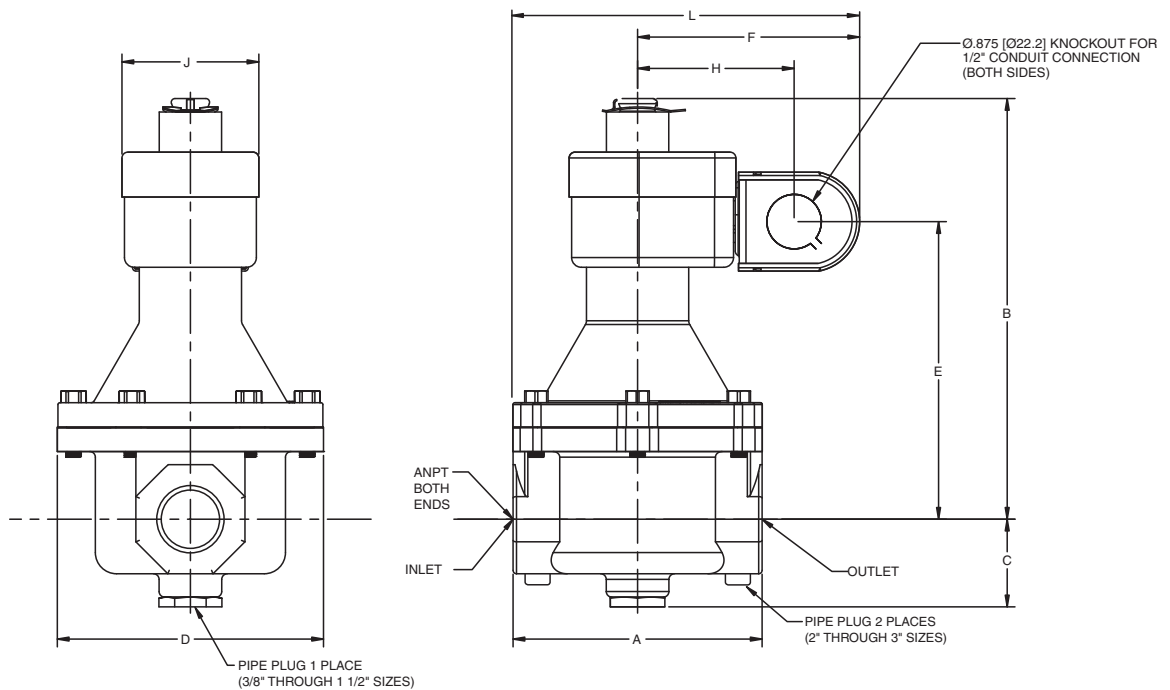
COMBUSTION

Dimensions inches (mm)

Const. Ref.		A	B	C	D	E	F	H	J	L
1	ins.	2.75	5.48	1.06	2.31	3.90	3.53	2.50	2.19	4.90
	mm	70	138	27	59	99	90	64	56	124
2	ins.	4.00	6.33	1.41	4.27	4.78	3.53	2.50	2.19	5.53
	mm	102	161	36	108	121	90	64	56	140
3	ins.	4.76	6.70	1.79	4.77	5.15	3.53	2.50	2.19	5.91
	mm	121	170	45	121	131	90	64	56	150
4	ins.	8.12	7.23	2.16	7.69	5.68	3.53	2.50	2.19	7.59
	mm	206	184	55	195	144	90	64	56	193
5	ins.	9.00	8.04	2.27	7.69	6.49	3.53	2.50	2.19	8.03
	mm	229	204	58	195	165	90	64	56	204

Vent Valve Requirements	
Manifold Line	Vent Valve
3/8" through 1 1/2"	3/4
2"	1
2 1/2" through 3"	1 1/4
3 1/2"	1 1/2
4" through 5"	2
5 1/2" through 6"	2 1/2
6 1/2" through 7 1/2"	3

Const. Ref. 1 - 5



Must be mounted with solenoid upright or horizontal (3/8" through 1 1/2").
Must be mounted with solenoid vertical and upright (2" through 3").

Features

- 2-way normally closed operation
- For gas pilot control of commercial and industrial gas burners
- Direct lift with resilient soft seating for tight shutoff
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	17-7PH
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	DC
	F	6.1	16		40	-40 to 175

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

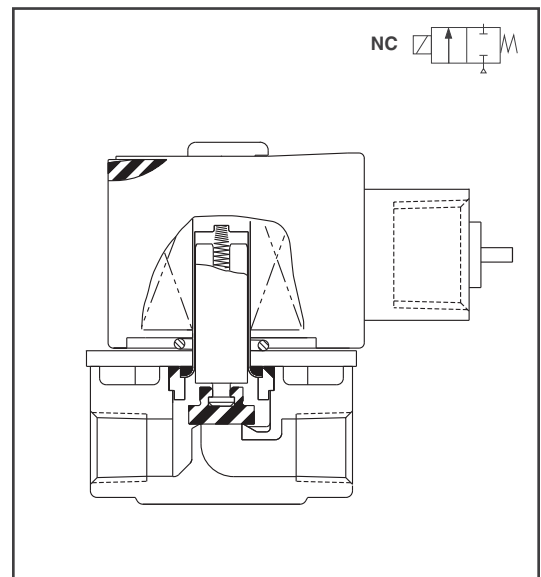
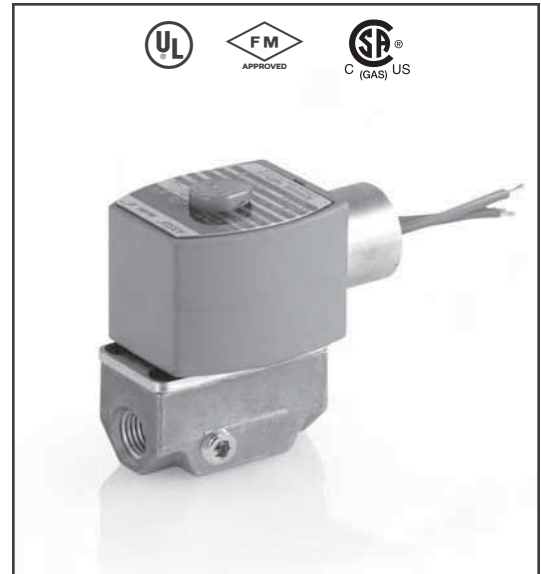
Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second

Options

Extended lead length (Suffix "K");

Provides 72" lead length vs. 18" lead length (EX: SV311A02N6AF5K).



Approvals

UL listed to standard 429 "Electrically Operated Valves."

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872

COMBUSTION

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage ②	Approx. Shipping Weight (lbs)
				Min.	Max.		24V 60 Hz	110-120V 50-60 Hz	220-240V 50-60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
1/8	5/16	1.0	53,700	0	15	125	SV311A01N6AF5	SV311A02N6AF5	SV311A04N6AF5	1	○	○	○	6.1	1.8
1/4	5/16	1.1	59,000	0	15	125	SV311A01N6BF5	SV311A02N6BF5	SV311A04N6BF5	1	○	○	○	6.1	1.8
3/8	5/16	1.2	64,000	0	15	125	SV311A01N6CF5	SV311A02N6CF5	SV311A04N6CF5	1	○	○	○	6.1	1.8

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas; ② On 50 Hz service watt rating is 8.1.

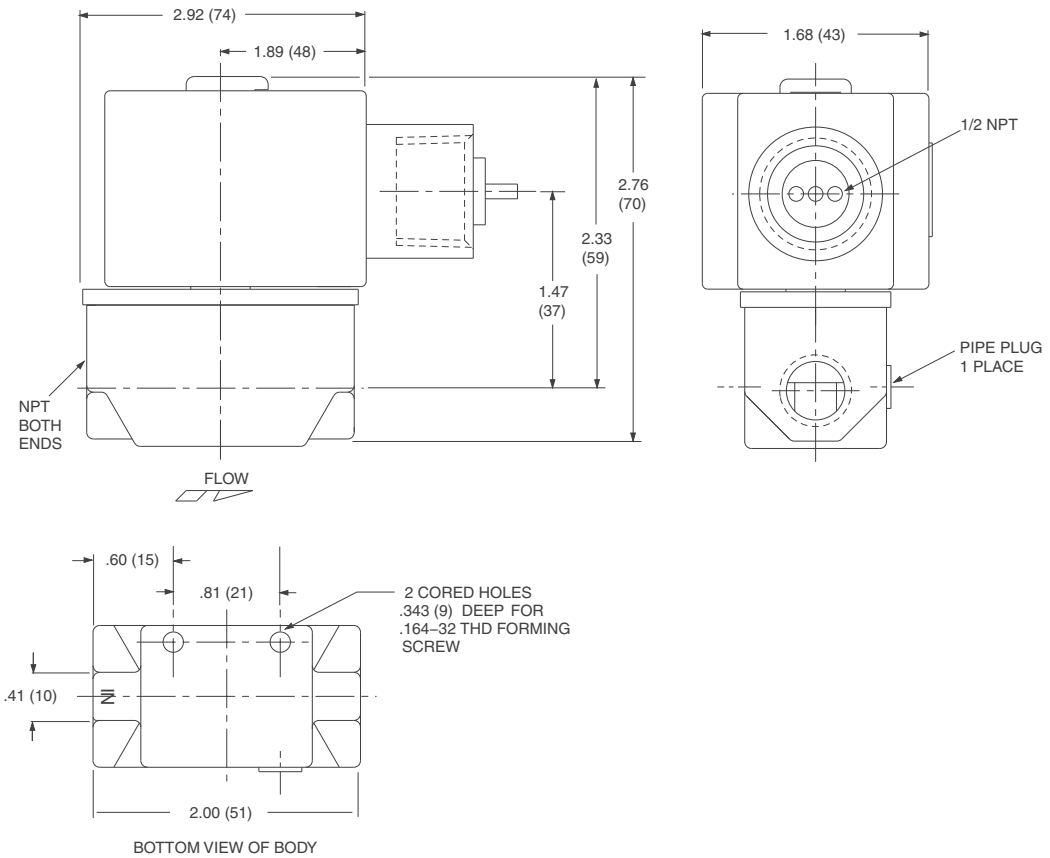
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage ②	Approx. Shipping Weight (kgs)
				Min.	Max.		24V 60 Hz	110-120V 50-60 Hz	220-240V 50-60 Hz		UL	FM	CSA		
COMBUSTION (Fuel Gas) - NORMALLY CLOSED															
1/8	8	0.9	53,700	0	1	52	SV311A01N6AF5	SV311A02N6AF5	SV311A04N6AF5	1	○	○	○	6.1	0.8
1/4	8	0.9	59,000	0	1	52	SV311A01N6BF5	SV311A02N6BF5	SV311A04N6BF5	1	○	○	○	6.1	0.8
3/8	8	1.0	64,000	0	1	52	SV311A01N6CF5	SV311A02N6CF5	SV311A04N6CF5	1	○	○	○	6.1	0.8

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas; ② On 50 Hz service watt rating is 8.1.

Dimensions inches (mm)

Const. Ref. 1



Mountable in any position.

COMBUSTION

Features

- 2-way normally closed operation
- For gas pilot control of commercial and industrial gas burners
- Valves provided with 1/8" NPT downstream pipe tap with plug for routine testing
- Suitable for ambient temperatures up to 175°F
- Visual position indicator option for 3/8" and 1/2" sizes

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Ring	PTFE
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	DC
F	10.1	25	70	-40 to 175	238610	238614

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X, with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second

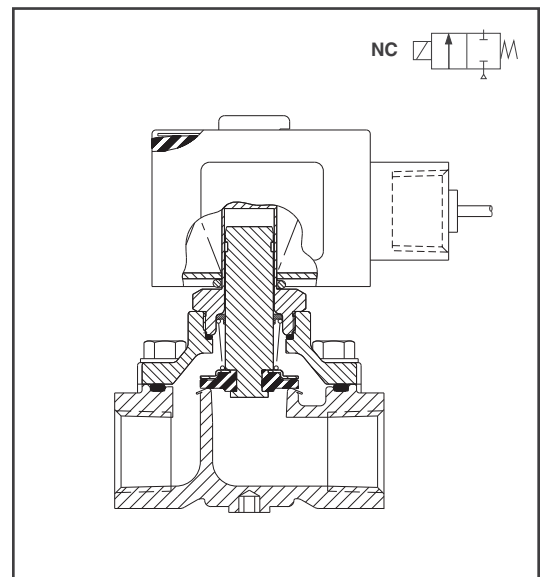
Options

Visual Indicator (Suffix "V"):

Provides visual indication of the valve's open and shut position. Meets NFPA requirements. Available on 3/8" and 1/2" sizes.

Extended lead length (Suffix "K"):

Provides 72" lead length vs. 18" lead length (EX: SV311A02N6CG5K).



Approvals

UL listed to standard 429 "Electrically Operated Valves."

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Valves Z21.21 (6.5), File 112872
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ①		Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
			Btu/hr.	Min.	Max.	24V 60 Hz		110-120V 50-60 Hz	220-240V 50-60 Hz	UL		FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED																
3/8	3/4	3.9	210,000	0	2	125	SV311A01N6CG5	SV311A02N6CG5	SV311A04N6CG5	1	○	○	○	10.1	2.8	
1/2	3/4	5.4	291,000	0	2	125	SV311A01N6DG5	SV311A02N6DG5	SV311A04N6DG5	1	○	○	○	10.1	2.8	
3/4	3/4	9.5	512,000	0	2	125	SV311A01N6EG5	SV311A02N6EG5	SV311A04N6EG5	2	○	○	○	10.1	2.8	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

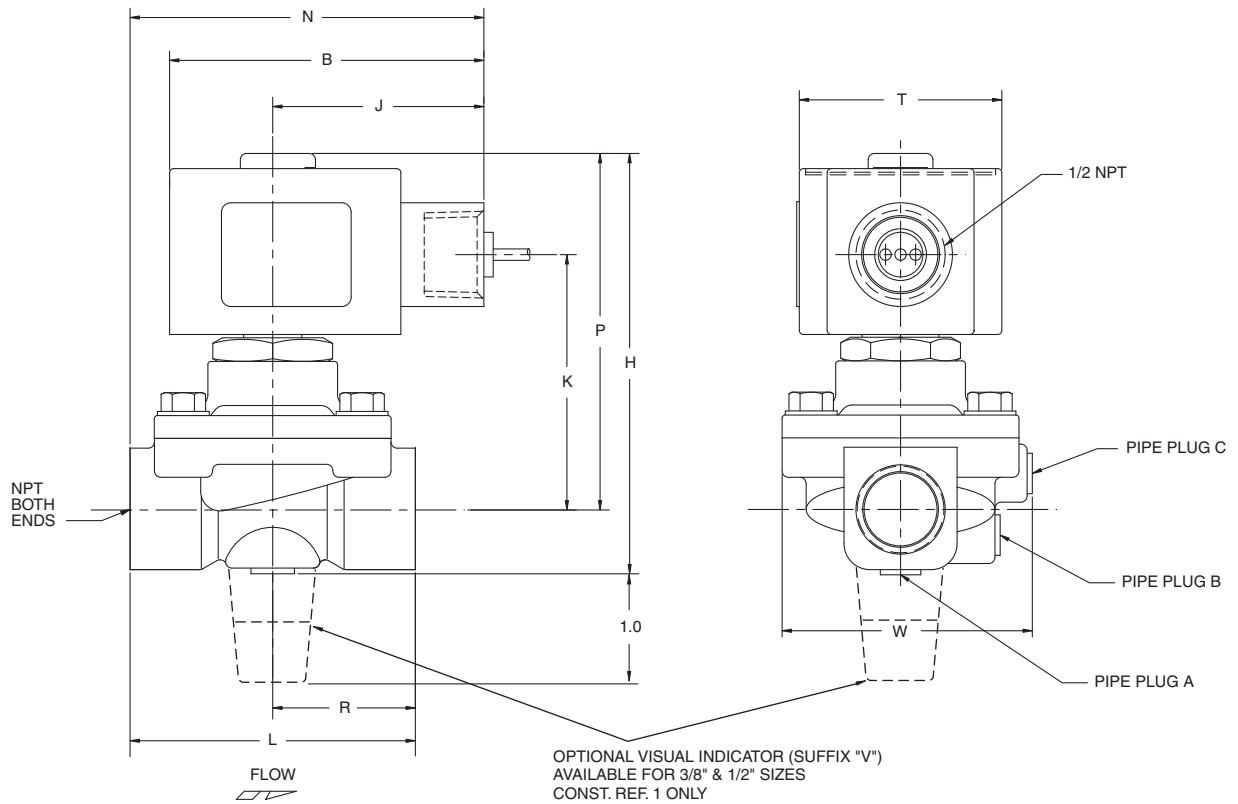
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ①		Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
			Btu/hr.	Min.	Max.	24V 60 Hz		110-120V 50-60 Hz	220-240V 50-60 Hz	UL		FM	CSA			
COMBUSTION (Fuel Gas) - NORMALLY CLOSED																
3/8	19	3.3	210,000	0	0.1	52	SV311A01N6CG5	SV311A02N6CG5	SV311A04N6CG5	1	○	○	○	10.1	1.3	
1/2	19	4.6	291,000	0	0.1	52	SV311A01N6DG5	SV311A02N6DG5	SV311A04N6DG5	1	○	○	○	10.1	1.3	
3/4	19	8.1	512,000	0	0.1	52	SV311A01N6EG5	SV311A02N6EG5	SV311A04N6EG5	2	○	○	○	10.1	1.3	

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

Const. Ref.		B	H	J	K	L	N	P	R	T	W	Pipe Plug
1	ins.	3.03	4.05	2.04	2.346	2.75	3.31	3.44	1.37	1.37	2.42	B & C
	mm	77	103	52	60	70	84	87	35	35	61	
2	ins.	3.03	4.49	2.04	2.65	3.31	3.70	3.63	1.65	1.65	2.39	A & C
	mm	77	114	52	67	84	94	92	42	42	61	

Const. Ref. 1, 2



Mountable in any position.

Features

- 2-way normally closed operation
- For control of commercial and industrial oil burners
- Brass body construction
- Mountable in any position
- Direct lift with resilient soft sealing for tight shutoff

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Core Tube/ Bonnet	Stainless Steel / Plated Steel
Core and Plugnut	Stainless Steel
Springs	Stainless Steel
Seals and Disc	NBR / FKM
Shading Coil	Copper

Fluid

- No. 2 Fuel Oil at 60 SSU
 No. 4 Fuel Oil at 300 SSU

Electrical

Prefix	Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Ambient Temp. °F	Spare Coil Family	
		DC Watts	AC				AC	DC
			Watts	VA Holding	VA Inrush			
U	F	6.9	6.3	8.8	12.1	-22 to 140	400115	400115
SC	F	6.9	6.3	8.8	12.1	-22 to 140	400125	400125

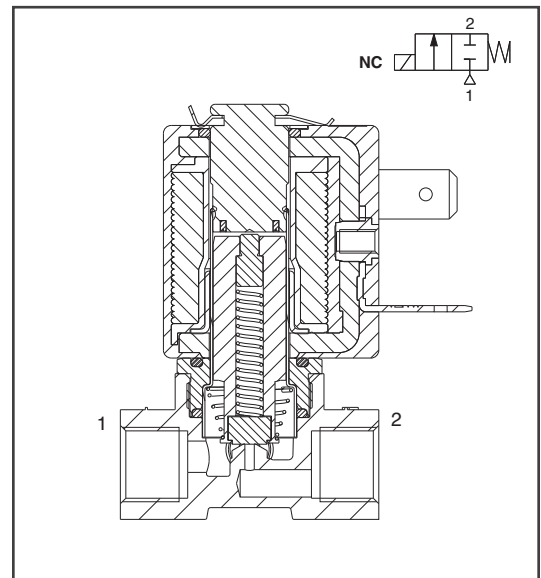
Standard voltages: 24, 120, 240 volts AC, 50-60 Hz. 12, 24, 120 volts DC
 Must be specified when ordering.

Solenoid Enclosures

- Standard:** Open frame (Prefix U) 18" leads
Optional: DIN (size 11mm, form B) (Prefix SC). Watertight/IP-65 when used with DIN connector kit for SC coils (see kits below).

Kits

- 1/2" NPT conduit hub kit for leaded coils 224735-001-*
 (Kit contains 10 pcs. of each: threaded hub, gasket and attaching screw.)
 DIN connector kit for SC coils 226061-001-*
 (Kit contains 10 pcs of each: connector, gasket, and attaching screw.)



COMBUSTION

Approvals

UL recognized component to standard 429 "Electrically Operated Valves," Guide Y10Z2, File MP618 Safety Shutoff Valves.

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 235078.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)				Min. Fluid Temp. °F	Max. Fluid Temp. °F		Brass	Wattage		Approx. Shipping Weight (lbs.)	
			Max. AC		Max. DC			AC	DC		AC	DC		
			#2 Fuel Oil at 60 SSU	#4 Fuel Oil at 300 SSU	#2 Fuel Oil at 60 SSU	#4 Fuel Oil at 300 SSU								
General Service - Normally Closed														
1/8	3/64	0.06	0	500	500	330	330	5	180	180	U8256A089V	6.3	6.9	0.5
1/8	1/16	0.09	0	430	430	250	250	5	180	180	U8256A090V	6.3	6.9	0.5

Specifications (Metric units)

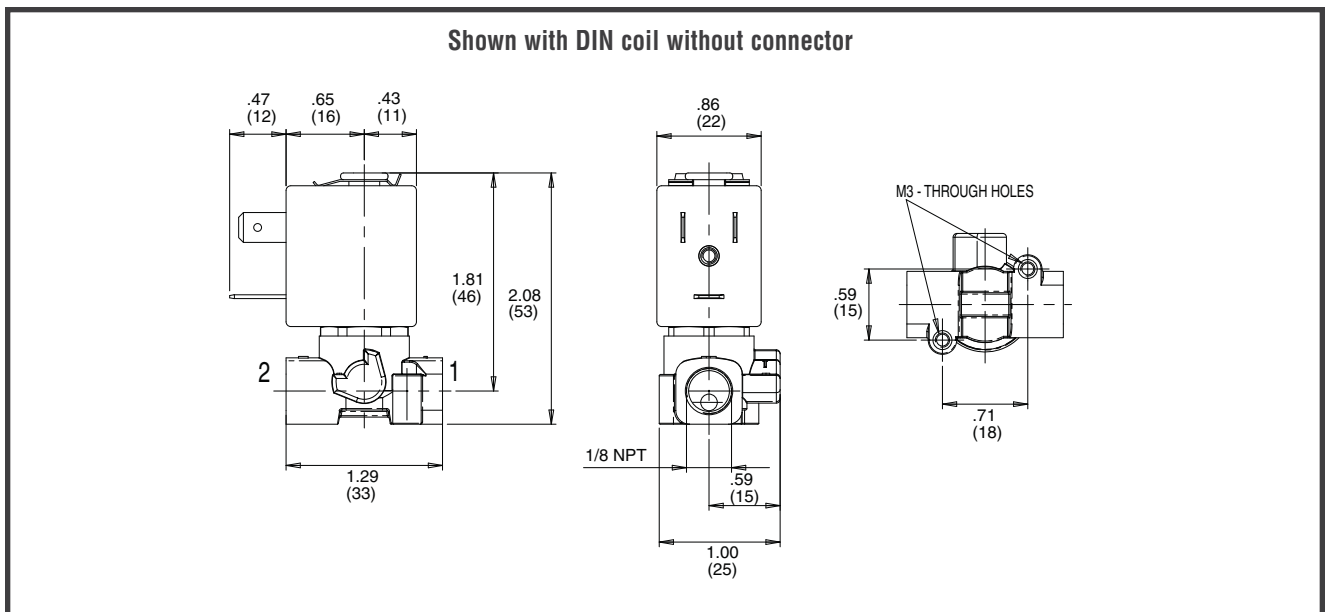
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m³/hr)	Operating Pressure Differential (bar)				Min. Fluid Temp. °C	Max. Fluid Temp. °C		Brass	Wattage		Approx. Shipping Weight (kgs.)	
			Max. AC		Max. DC			AC	DC		AC	DC		
			#2 Fuel Oil at 60 SSU	#4 Fuel Oil at 300 SSU	#2 Fuel Oil at 60 SSU	#4 Fuel Oil at 300 SSU								
General Service - Normally Closed														
1/8	1.2	0.05	0	34	34	22	22	-15	82	82	U8256A089V	6.3	6.9	0.22
1/8	1.6	0.08	0	29	29	17	17	-15	82	82	U8256A090V	6.3	6.9	0.22

Capabilities Chart

Solenoid Options ①							Base Catalog Number	Resilient Materials							Other	Standard Rebuild Kit				
NEMA Type 3-9	High Temp. DIN	Wiring Box Screw Terminal	Multipin	DIN	Spade	Open Frame with Leads	Brass	NBR	FKM	EPDM	RUBY	Oxygen Service	PTFE	Urethane	Vacuum	Manual Operator	Mounting Bracket	Brass AC/DC		
-	-	-	-	SC	-	●		U8256A089V	-	●	-	-	-	-	-	-	-		-	-
-	-	-	-	SC	-	●		U8256A090V	-	●	-	-	-	-	-	-	-		-	-

● = Standard. ① Replace U prefix with SC prefix.

Dimensions: inches (mm)



Features

- 2-way normally closed operation
- For control of commercial and industrial oil burners
- Direct lift with resilient soft seating for tight shutoff
- Brass body construction
- Mountable in any position

Fluid

No. 2 Fuel Oil at 60 SSU
 No. 4 Fuel Oil at 300 SSU

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	FKM
Core Tube	305 Stainless Steel
Core Guide	Acetal
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	6.1	16	30	32 to 125	238210	238214
F	9.1	25	40	32 to 125	238210	238214
F	10.1	25	50	32 to 125	238610	238614
F	17.1	40	70	32 to 125	238610	238614

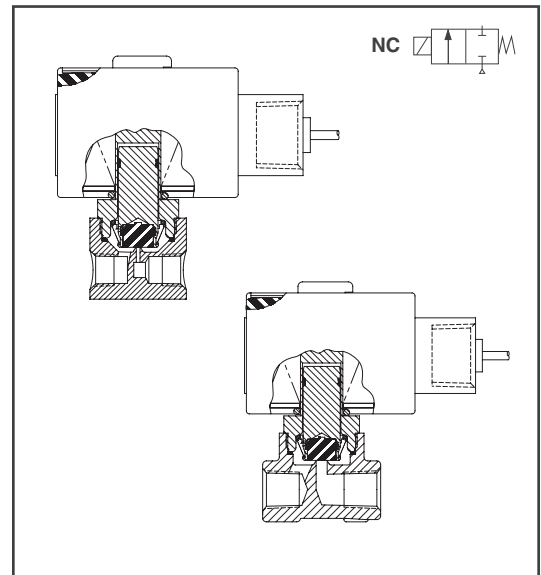
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; Closing Time: Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves." Guide Y10Z, File MP618 Safety Shutoff Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves," & "Oil Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Minimum Operating Pressure Differential (psi)	Maximum Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				#2 Fuel Oil at 60 SSU	#6 Fuel Oil at 300 SSU				UL	FM	CSA		
COMBUSTION (Fuel Oil) - NORMALLY CLOSED													
1/8	3/64	0.06	0	750	530	180	8262G001V	1	○	○	○	6.1	2.3
1/8	3/32	0.20	0	360	300	180	8262G011V	1	○	○	○	9.1	2.3
1/8	1/8	0.34	0	190	140	180	8262G002V	1	○	○	○	6.1	2.3
1/4	3/32	0.17	0	450	280	180	8262G021V	2	○	○	○	9.1	2.4
1/4	1/8	0.35	0	205	160	180	8262G023V	2	○	○	○	10.1	2.4
1/4	7/32	0.85	0	100	100	200	8262G208V	3	○	○	○	9.1	2.4
3/8	1/8	0.35	0	200	150	180	8263G003V	4	○	○	○	10.1	2.5
3/8	7/32	0.72	0	100	100	200	8263G206V	5	○	○	○	17.1	2.5

○ = Safety Shutoff Valve.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Minimum Operating Pressure Differential (bar)	Maximum Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				#2 Fuel Oil at 60 SSU	#6 Fuel Oil at 300 SSU				UL	FM	CSA		
COMBUSTION (Fuel Oil) - NORMALLY CLOSED													
1/8	1	0.1	0	51.7	36.6	82	8262G001V	1	○	○	○	6.1	1.0
1/8	2	0.2	0	24.8	20.7	82	8262G011V	1	○	○	○	9.1	1.0
1/8	3	0.3	0	13.1	9.7	82	8262G002V	1	○	○	○	6.1	1.0
1/4	2	0.1	0	31.0	19.3	82	8262G021V	2	○	○	○	9.1	1.1
1/4	3	0.3	0	14.1	11.0	82	8262G023V	2	○	○	○	10.1	1.1
1/4	6	0.7	0	6.9	6.9	93	8262G208V	3	○	○	○	9.1	1.1
3/8	3	0.3	0	13.8	10.3	82	8263G003V	4	○	○	○	10.1	1.1
3/8	6	0.6	0	6.9	6.9	93	8263G206V	5	○	○	○	17.1	1.1

○ = Safety Shutoff Valve.

Capabilities Chart

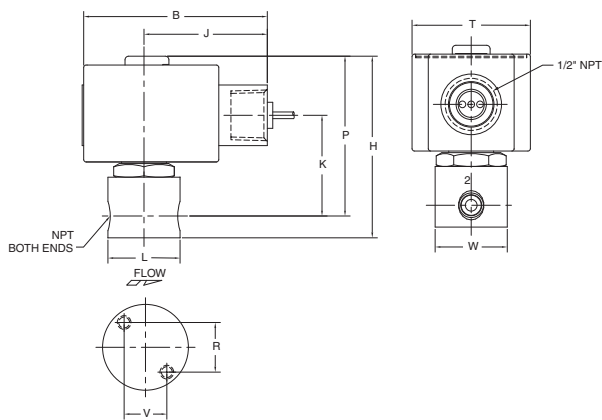
COMBUSTION	Solenoid Options			Base Catalog Number	Resilient Materials	Standard Rebuild Kit
	NEMA Type 3-9	High Temp.	Wiring Box Screw Terminal	Brass	FKM	AC
	EF	HT	JKF	8262G001V	●	302006-V
EF	HB	JKP	8262G011V	●	302014-V	
EF	HT	JKF	8262G002V	●	302014-V	
EF	HB	JKP	8262G021V	●	302018-V	
EF	HB	JKP	8262G023V	●	302018-V	
EF	HT	JKF	8262G208V	●	304354-V	
EF	HB	JKP	8263G003V	●	302018-V	
EF	HB	JKP	8263G206V	●	302001-V	

● = Standard. Other options may be available. All option combinations may not be available.

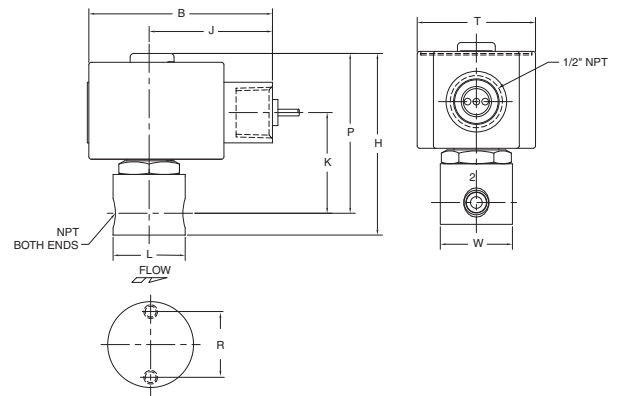
Dimensions inches (mm)

Const. Ref.	1		2		3		4		5	
	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm
B	2.76	70	2.76	70	3.03	77	2.76	70	3.03	77
H	2.52	64	3.01	76	3.16	80	3.07	78	3.25	83
J	1.89	48	1.89	48	2.04	52	1.89	48	2.04	52
K	1.30	33	1.73	44	1.78	45	1.63	41	1.70	43
L	1.18	30	1.25	32	1.56	40	1.88	48	1.88	48
P	2.16	55	2.59	66	2.75	70	2.49	63	2.67	68
R	0.69	18	0.67	17	0.88	22	0.81	21	0.81	21
T	1.69	43	1.69	43	1.95	50	1.69	43	1.95	50
V	0.59	15	-	-	0.88	22	0.75	19	0.75	19
W	1.88	48	1.25	32	1.19	30	1.15	29	1.15	29

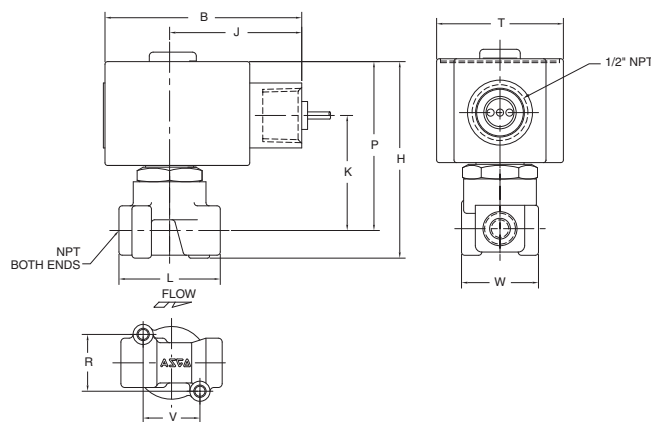
Const. Ref. 1



Const. Ref. 2



Const. Ref. 3, 4, 5



Features

- General Purpose Enclosure
- 2-way normally closed or normally open operation
- Zero differential lever actuated
- For on-off control of fuel oil in commercial and industrial oil burners
- Suitable for light and heavy fuel oils

Fluid

- No. 2 Fuel Oil at 60 SSU
- No. 4 Fuel Oil at 300 SSU
- No. 5 Fuel Oil at 5000 SSU
- No. 6 Fuel Oil at 5000 SSU (Heated)

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	FKM (Suffix V), SS (Suffix L)
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Spare Coil Family		
	AC			General Purpose		
	Watts	VA Holding	VA Inrush	24/60	120/60 110/50	240/60 220/50
F	15.4	27	160	099257	099257	099257
F	20	43	240	099257	099257	099257

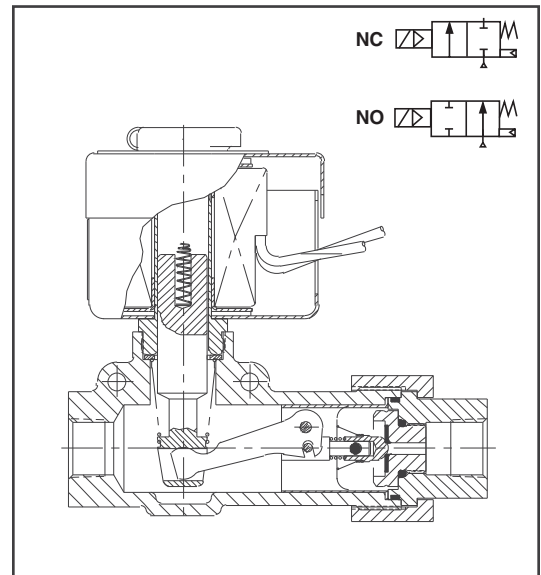
Standard lead length 18" (72" leads optional - change suffix "D" to "K").

Solenoid Enclosures

- Standard:** RedHat Type 1 General Purpose.
- Optional:** RedHat Type 3R Rainproof (prefix "R").

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

(Normally Closed Valves)

- UL listed Shutoff Valves.
- FM Approved Oil Safety Shutoff Valves
- CSA Safety Valves

(Normally Open Valves)

- UL listed General Purpose Valves.
- CSA Electrically Operated Valves

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Minimum Operating Pressure Differential (psi)	Maximum Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number		Const. Ref.	Agency			Wattage
				#2 Fuel Oil at 60 SSU, #4 Fuel Oil @ 300 SSU	#5 or Heated #6 Oil up to 5000 SSU		FKM Seating	Stainless Steel Seating		UL	FM	CSA	
COMBUSTION (Fuel Oil) - Normally Closed without Bypass													
3/8	1/8	0.34	0	400	350	See Table Below	8266D001V	8266D001L	1	○	○	○	15.4/F
3/8	3/16	0.68	0	200	175		8266D007V	8266D007L	1	○	○	○	15.4/F
3/8	3/16	0.68	0	300	250		8266D011V	8266D011L	1	○	○	○	15.4/F
3/8	1/4	1.20	0	110	100		8266D023V	8266D023L	1	○	○	○	15.4/F
1/2	1/8	0.34	0	400	350		8266D047V	8266D047L	1	○	○	○	15.4/F
1/2	3/16	0.68	0	200	175		8266D053V	8266D053L	1	○	○	○	15.4/F
1/2	3/16	0.68	0	300	250		8266D057V	8266D057L	1	○	○	○	20/F
1/2	13/64	0.78	0	170	140		8266D061V	8266D061L	1	○	○	○	15.4/F
1/2	1/4	1.20	0	110	100		8266D069V	8266D069L	1	○	○	○	15.4/F
1/2	5/16	1.80	0	70	70		8266D077V	8266D077L	1	○	○	○	15.4/F
1/2	3/8	2.50	0	40	35		8266D085V	8266D085L	1	○	○	○	15.4/F
COMBUSTION (Fuel Oil) - Normally Closed with 1/2" NPT Bypass													
1/2	1/8	0.34	0	650	600	See Table Below	8266C203V	8266C203L	1	○	○	○	20/F
1/2	1/4	1.20	0	180	160		8266C215V	8266C215L	1	○	○	○	20/F
1/2	5/16	1.80	0	110	100		8266C219V	8266C219L	1	○	○	○	20/F
1/2	3/8	2.50	0	75	70		8266C223V	8266C223L	1	○	○	○	20/F
3/4	1/4	1.20	0	180	160		8266C239V	8266C239L	1	○	○	○	20/F
3/4	5/16	1.80	0	110	100		8266C243V	8266C243L	1	○	○	○	20/F
3/4	3/8	2.50	0	75	70		8266C247V	8266C247L	1	○	○	○	20/F
COMBUSTION (Fuel Oil) - Normally Open without Bypass													
3/8	1/8	0.34	0	425	400	See Table Below	8266D101V	8266D101L	1	○	-	○	15.4/F
3/8	3/16	0.68	0	160	150		8266D107V	8266D107L	1	○	-	○	15.4/F
3/8	1/4	1.20	0	90	75		8266D123V	8266D123L	1	○	-	○	15.4/F
1/2	3/16	0.68	0	160	150		8266D153V	8266D153L	1	○	-	○	15.4/F
1/2	13/64	0.78	0	130	125		8266D161V	8266D161L	1	○	-	○	15.4/F
1/2	1/4	1.20	0	90	75		8266D169V	8266D169L	1	○	-	○	15.4/F

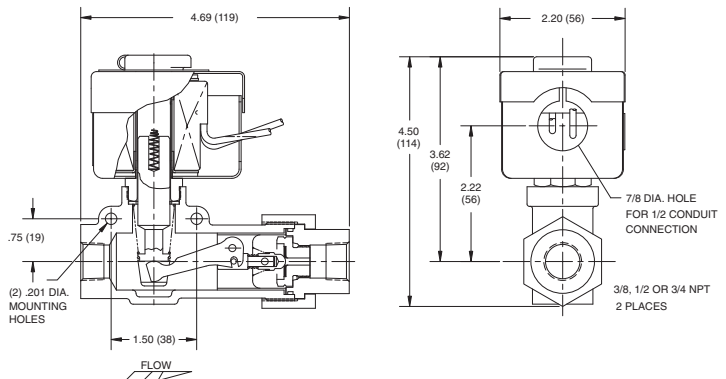
○ = Safety Shutoff Valve.

Dimensions inches (mm)

COMBUSTION

Coil	Watt Rating	Class of Coil Insulation	Fluid Temp. °F	Ambient Temp. °F	Catalog No. Prefix
Standard	15.4	F	250	95	None Required
		F	225	104	
	20	F	225	77	
		F	200	95	
For Higher Fluid and/or Ambient Temp. Use	15.4	H	250	122	HT
	20	H	250	122	HB

Const. Ref. 1



Must be mounted with solenoid vertical and upright.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Minimum Operating Pressure Differential (bar)	Maximum Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number		Const. Ref.	Agency			Wattage	
				#2 Fuel Oil at 60 SSU, #4 Fuel Oil @ 300 SSU	#5 or Heated #6 Oil up to 5000 SSU		FKM Seating	Stainless Steel Seating		UL	FM	CSA		
COMBUSTION (Fuel Oil) - Normally Closed without Bypass														
3/8	3	0.3	0	27.6	24.1	See Table Below	8266D001V	8266D001L	1	○	○	○	15.4/F	
3/8	5	0.6	0	13.8	12.1		8266D007V	8266D007L	1	○	○	○	15.4/F	
3/8	5	0.6	0	20.7	17.2		8266D011V	8266D011L	1	○	○	○	15.4/F	
3/8	6	1.0	0	7.6	6.9		8266D023V	8266D023L	1	○	○	○	15.4/F	
1/2	3	0.3	0	27.6	24.1		8266D047V	8266D047L	1	○	○	○	15.4/F	
1/2	5	0.6	0	13.8	12.1		8266D053V	8266D053L	1	○	○	○	15.4/F	
1/2	5	0.6	0	20.7	17.2		8266D057V	8266D057L	1	○	○	○	20/F	
1/2	5	0.7	0	11.7	9.7		8266D061V	8266D061L	1	○	○	○	15.4/F	
1/2	6	1.0	0	7.6	6.9		8266D069V	8266D069L	1	○	○	○	15.4/F	
1/2	8	1.5	0	4.8	4.8		8266D077V	8266D077L	1	○	○	○	15.4/F	
1/2	10	2.1	0	2.8	2.4		8266D085V	8266D085L	1	○	○	○	15.4/F	
COMBUSTION (Fuel Oil) - Normally Closed with 1/2" NPT Bypass														
1/2	3	0.3	0	44.8	41.4		See Table Below	8266C203V	8266C203L	1	○	○	○	20/F
1/2	6	1.0	0	12.4	11.0			8266C215V	8266C215L	1	○	○	○	20/F
1/2	8	1.5	0	7.6	6.9	8266C219V		8266C219L	1	○	○	○	20/F	
1/2	10	2.1	0	5.2	4.8	8266C223V		8266C223L	1	○	○	○	20/F	
3/4	6	1.0	0	12.4	11.0	8266C239V		8266C239L	1	○	○	○	20/F	
3/4	8	1.5	0	7.6	6.9	8266C243V		8266C243L	1	○	○	○	20/F	
3/4	10	2.1	0	5.2	4.8	8266C247V		8266C247L	1	○	○	○	20/F	
COMBUSTION (Fuel Oil) - Normally Open without Bypass														
3/8	3	0.3	0	29.3	27.6	See Table Below	8266D101V	8266D101L	1	○	-	○	15.4/F	
3/8	5	0.6	0	11.0	10.3		8266D107V	8266D107L	1	○	-	○	15.4/F	
3/8	6	1.0	0	6.2	5.2		8266D123V	8266D123L	1	○	-	○	15.4/F	
1/2	5	0.6	0	11.0	10.3		8266D153V	8266D153L	1	○	-	○	15.4/F	
1/2	5	0.7	0	9.0	8.6		8266D161V	8266D161L	1	○	-	○	15.4/F	
1/2	6	1.0	0	6.2	5.2		8266D169V	8266D169L	1	○	-	○	15.4/F	

○ = Safety Shutoff Valve.

Coil	Watt Rating	Class of Coil Insulation	Fluid Temp. °F (°C)	Ambient Temp. °F (°C)	Catalog No. Prefix
Standard	15.4	F	250 (121)	95 (35)	None Required
		F	225 (107)	104 (40)	
	20	F	225 (107)	77 (25)	
		F	200 (93)	95 (35)	
For Higher Fluid and/or Ambient Temp. Use	15.4	H	250 (121)	122 (50)	HT
	20	H	250 (121)	122 (50)	HB

General Description

The HOV1 is an underported, globe-type, fuel oil valve with a single, quick-opening, stem-guided seat. This 2-way normally closed, bronze safety shutoff valve features a spring-loaded stem which, upon power interruption, drives the teflon seat firmly closed within one second. The HOV1 is available with or without valve seal overtravel interlock (FM proof of closure).

The electrohydraulic actuator consists of a pump applying pressure to a diaphragm attached to the valve stem. Its power unit is immersed in oil and hermetically sealed. The HOV requires no adjustment or service. Stroke is controlled by a travel limit switch and electromagnetic relief valve. The unit rotates 360° for ease of installation. Two-wire connection via 1/2 inch threaded conduit terminal box is standard, and all units are equipped with an auxiliary switch and dust shields.

Specifications

Fluid: Fuel Oil

- No. 2 Fuel Oil at 60 SSU
- No. 4 Fuel Oil at 300 SSU
- No. 5 Fuel Oil at 5000 SSU
- No. 6 Fuel Oil at 5000 SSU (Heated)

Opening Time: 7-9 seconds

Closing Time: 1 second max.

Note: Opening time increased 20% with 50Hz.

Enclosure: Type 1 General Purpose

Ambient Temperature: -10°F to 125°F (-23°C to 52°C)

Fluid Temperature: 267° max.

Body/Trim: Bronze, 300# screw

Seal Material: PTFE

Port Size: 9/16"

Electrical

Power Requirement: 158 VA

Standard Voltage: 120V/60Hz

Operating Voltage	Amperes		
	Inrush	Opening	Holding
120V/60Hz	12.5	1.25	0.09

Auxiliary Switch: One integral SPDT switch, 7.5A@120V, 3.75A@240V, (900VA max). Switch actuates at energized end of stroke (not adjustable).

Proof of Closure Switch: (Valve Seal Overtravel Interlock): Optional factory set non-field adjustable SPDT switch, 15A@120V, 7.5A@240V (1800VA max.).



Installation

May be mounted with actuator upright or horizontal with switches uppermost.

Approvals

UL listed

FM Approved

CSA Certified to:

- 1) Standard G22.2 No. 139 "Electrically Operated Valves, File 113070.

Specifications (English units)

Pipe Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (lbs)
		Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Oil) - Normally Closed											
Standard Trim											
1/2	4	0	300	267	HOV1A302T15	1	○	○	○	7-9	12
3/4	5	0	300	267	HOV1A307T15	1	○	○	○	7-9	12
1	6	0	300	267	HOV1A312T15	2	○	○	○	7-9	13
Valve Seal Overtravel Trim (Proof of Closure)											
1/2	4	0	300	267	HOV1A302T171	1	○	○	○	7-9	12
3/4	5	0	300	267	HOV1A307T171	1	○	○	○	7-9	12
1	6	0	300	267	HOV1A312T171	2	○	○	○	7-9	13

Specifications (Metric units)

Pipe Size (ins.)	Kv Flow (m³/hr)	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (kgs)
		Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Oil) - Normally Closed											
Standard Trim											
1/2	3.4	0	20.7	131	HOV1A302T15	1	○	○	○	7-9	5.5
3/4	4.3	0	20.7	131	HOV1A307T15	1	○	○	○	7-9	5.5
1	5.1	0	20.7	131	HOV1A312T15	2	○	○	○	7-9	5.9
Valve Seal Overtravel Trim (Proof of Closure)											
1/2	3.4	0	20.7	131	HOV1A302T171	1	○	○	○	7-9	5.5
3/4	4.3	0	20.7	131	HOV1A307T171	1	○	○	○	7-9	5.5
1	5.1	0	20.7	131	HOV1A312T171	2	○	○	○	7-9	5.9

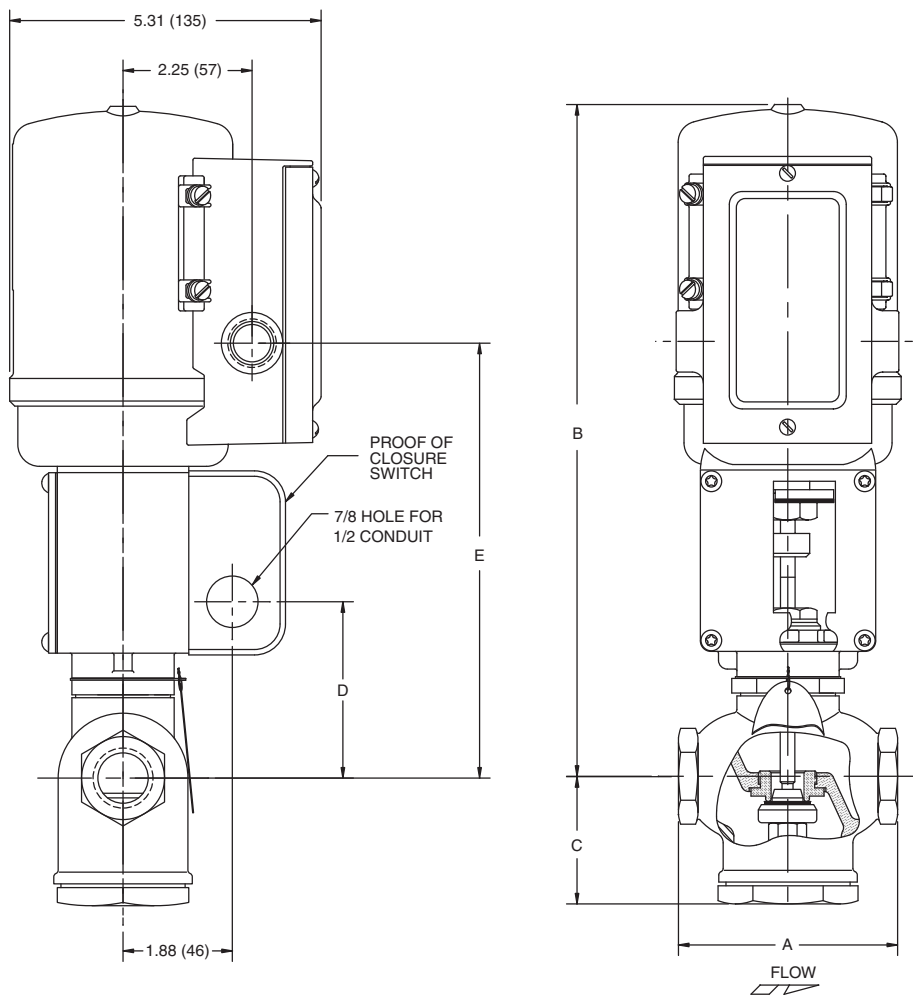
Dimensions inches (mm)

Const. Ref.		A	B	C	D	E
1	ins.	3.75	11.56	2.21	3.11	7.55
	mm	95	294	56	79	192
2	ins.	4.25	11.87	2.37	3.42	7.86
	mm	108	301	60	87	200

Replacement Actuators:

Standard
H01A252A15

Models with FM Proof of Closure Valve Seal Overtravel Switch
H01A252A171



Features

- 2-way normally closed operation
- Zero minimum
- For control of commercial and industrial oil burners
- Ideal for high pressure applications
- Brass body construction
- Mountable with solenoid upright and vertical

Fluid

- No. 2 Fuel Oil at 60 SSU
- No. 4 Fuel Oil at 300 SSU
- No. 5 Fuel Oil at 5000 SSU
- No. 6 Fuel Oil at 5000 SSU (Heated)

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	FKM
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Piston	Brass

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family
	AC				General Purpose
	Watts	VA Holding	VA Inrush		AC
H	17.1	40	93	32 to 150	238810

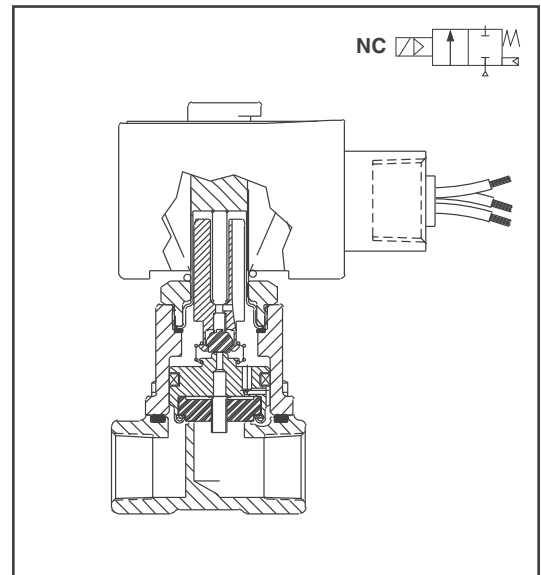
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X with 1/2" conduit hub.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed File M0-932 Safety Valves.

FM Approved "Oil Safety Shutoff Valves."

File JIOD9A5.AF

CSA Certified to:

1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.

2) Safety Valves File LR702258.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow	Operating Pressure Differential (psi)		Nominal Fluid Temp. °F	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
			Min.	Max.		24V 60Hz	110-120V 50-60Hz	220-240V 50-60Hz		UL	FM	CSA		
COMBUSTION (Fuel Oil) - NORMALLY CLOSED														
1/4	1/2	1.1	0	300	250	SV401A01V9BF7	SV401A02V9BF7	SV401A04V9BF7	1	○	○	○	17.1	3.2
3/8	1/2	1.5	0	300	250	SV401A01V9CF7	SV401A02V9CF7	SV401A04V9CF7	1	○	○	○	17.1	3.2

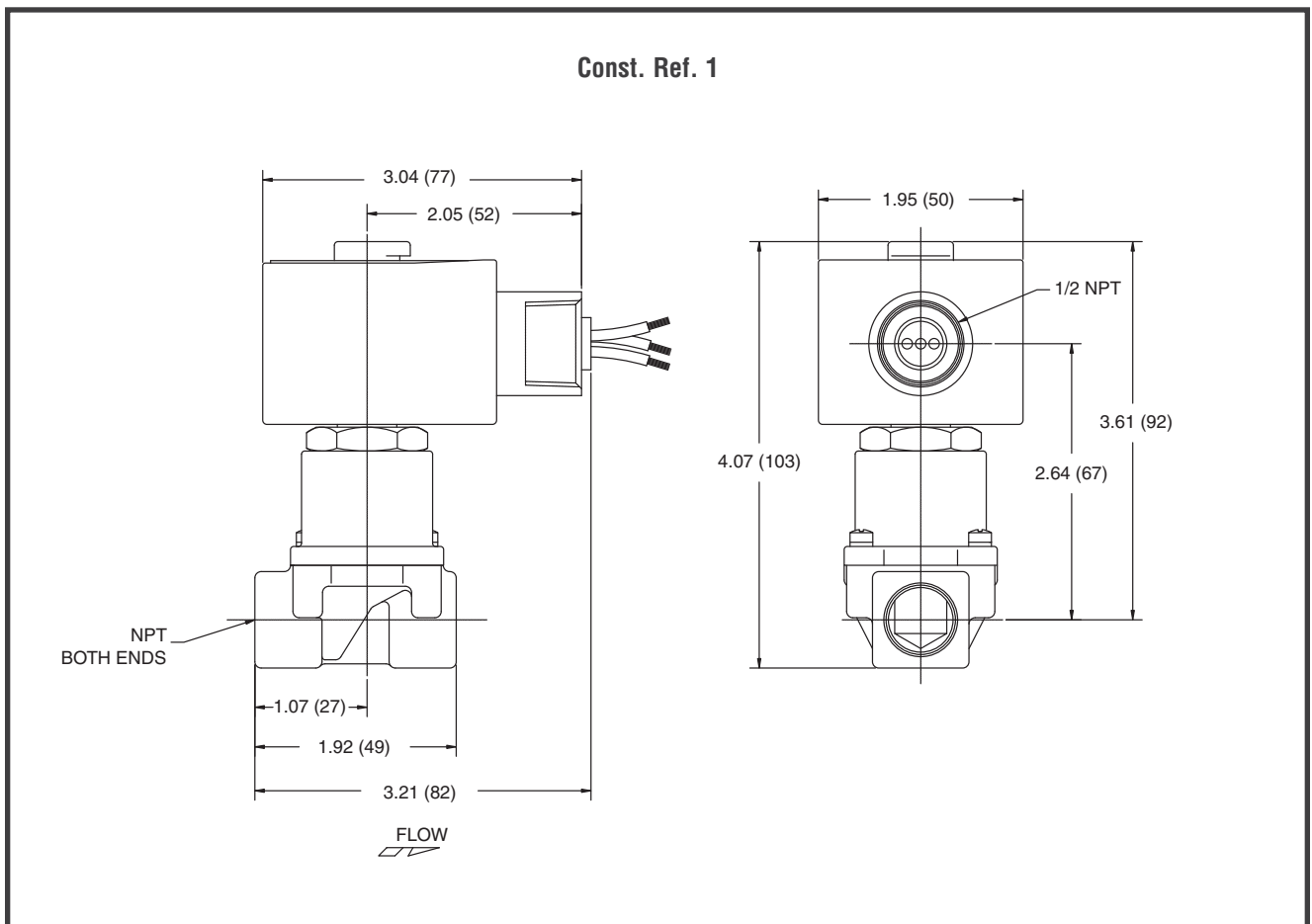
○ = Safety Shutoff Valve.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Operating Pressure Differential (bar)		Nominal Fluid Temp. °C	Catalog Number			Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
			Min.	Max.		24V 60Hz	110-120V 50-60Hz	220-240V 50-60Hz		UL	FM	CSA		
COMBUSTION (Fuel Oil) - NORMALLY CLOSED														
1/4	13	0.9	0	20.7	121	SV401A01V9BF7	SV401A02V9BF7	SV401A04V9BF7	1	○	○	○	17.1	1.5
3/8	13	1.3	0	20.7	121	SV401A01V9CF7	SV401A02V9CF7	SV401A04V9CF7	1	○	○	○	17.1	1.5

○ = Safety Shutoff Valve.

Dimensions inches (mm)



Features

- General Purpose Enclosure
- 3-way operation allows diversion of flow from commercial/industrial oil burners to recirculatory system
- Zero differential

Fluid Handled

Fuel Oil up to 1500 SSU

Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	FKM
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	15.4	27	160	32 to 115	099257	-
Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).						

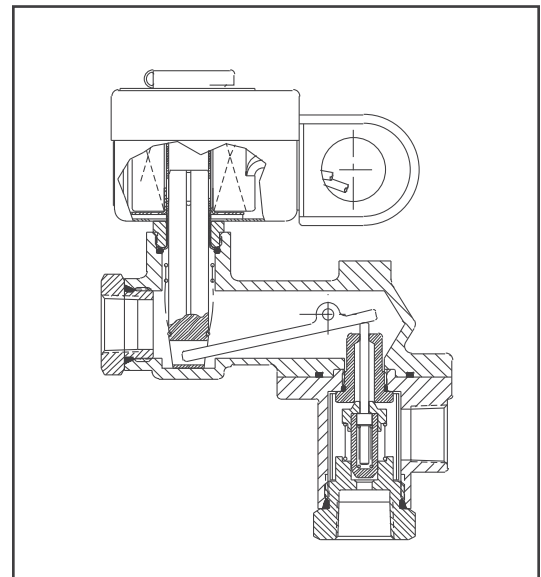
Solenoid Enclosures

Standard: RedHat Type 1 General Purpose.

Optional: RedHat Type 3R Rainproof (prefix "R").

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed Shutoff Valve.

FM Approved Oil Safety Shutoff Valves

CSA Electrically Operated Valves

COMBUSTION

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi) Fuel Oil up to 1500 SSU ②		Max. Fluid Temp. °F		Inlet Position ①	Catalog Number	Const. Ref.	Agency			Wattage AC
			Min.	Max.	Fluid	Ambient				UL	FM	CSA	
COMBUSTION (Fuel Oil) - NORMALLY CLOSED													
3/8	1/4	1.0	0	100	265	115	A	8377 001	1	○	○	○	15.4
3/8	1/4	1.0	0	100	265	115	B	8377 003	1	○	○	○	15.4
3/8	1/4	1.0	0	100	265	115	C	8377 005	1	○	○	○	15.4
3/8	1/4	1.0	0	100	265	115	D	8377 013	1	○	○	○	15.4
1/2	1/4	1.0	0	100	265	115	A	8377 007	1	○	○	○	15.4
1/2	1/4	1.0	0	100	265	115	B	8377 009	1	○	○	○	15.4
1/2	1/4	1.0	0	100	265	115	C	8377 011	1	○	○	○	15.4
1/2	1/4	1.0	0	100	265	115	D	8377 015	1	○	○	○	15.4

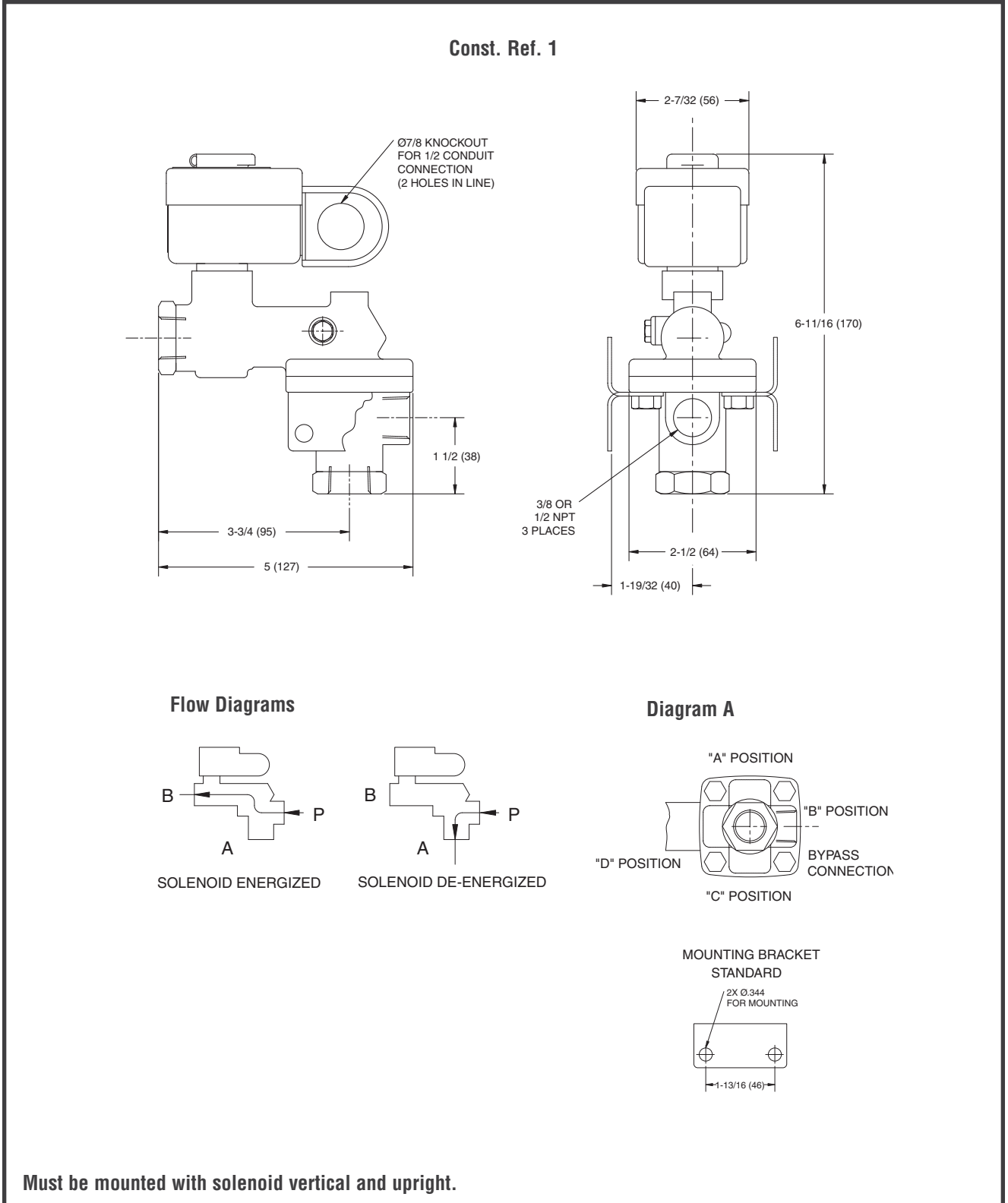
○ = Safety Shutoff Valve. ① Before ordering, refer to Diagram A below for description of inlet positions.
 ② Valve intended for burner control with low pressure drop when energized. For other applications, be sure pressure drop when energized does not exceed 65 psi.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Operating Pressure Differential (bar) Fuel Oil up to 1500 SSU ②		Max. Fluid Temp. °C		Inlet Position ①	Catalog Number	Const. Ref.	Agency			Wattage AC
			Min.	Max.	Fluid	Ambient				UL	FM	CSA	
COMBUSTION (Fuel Oil) - NORMALLY CLOSED													
3/8	6	0.9	0	6.9	129	46	A	8377 001	1	○	○	○	15.4
3/8	6	0.9	0	6.9	129	46	B	8377 003	1	○	○	○	15.4
3/8	6	0.9	0	6.9	129	46	C	8377 005	1	○	○	○	15.4
3/8	6	0.9	0	6.9	129	46	D	8377 013	1	○	○	○	15.4
1/2	6	0.9	0	6.9	129	46	A	8377 007	1	○	○	○	15.4
1/2	6	0.9	0	6.9	129	46	B	8377 009	1	○	○	○	15.4
1/2	6	0.9	0	6.9	129	46	C	8377 011	1	○	○	○	15.4
1/2	6	0.9	0	6.9	129	46	D	8377 015	1	○	○	○	15.4

○ = Safety Shutoff Valve. ① Before ordering, refer to Diagram A below for description of inlet positions.
 ② Valve intended for burner control with low pressure drop when energized. For other applications, be sure pressure drop when energized does not exceed 4.5 bar.

Dimensions inches (mm)



8377R1

General Description

The HOV13 is an underported, poppet-type, bronze-bodied safety valve, electrohydraulically operated to provide reliable ON-OFF control of fuel oil. The spring-loaded stem-guided teflon seat opens within seven seconds of power application and firmly closes within one second of power interruption.

The valve is agency approved for fuel oil safety shutoff service on the N.C. port. The N.O. port typically provides return to the oil preheater during the off cycle. The HOV13 is available with or without valve seal overtravel interlock (FM Proof of Closure). All valves are furnished with dust shields.

The electrohydraulic actuator consists of a pump applying pressure to a diaphragm attached to the valve stem. Its power unit is immersed in oil and hermetically sealed, requiring no adjustment or service. Stroke is controlled by a travel limit switch and electromagnetic relief valve. The unit rotates for ease of installation. Two-wire connection via 1/2" threaded conduit terminal box is standard, and all units are equipped with an auxiliary switch.

Specifications

Fluid: Fuel Oil

- No. 2 Fuel Oil at 60 SSU
- No. 4 Fuel Oil at 300 SSU
- No. 5 Fuel Oil at 5000 SSU
- No. 6 Fuel Oil at 5000 SSU (Heated)

Opening Time: 7-9 seconds

Closing Time: 1 second max.

Note: Opening time increased 20% with 50Hz.

Enclosure: Type 1 General Purpose

Ambient Temperature: -10°F to 125°F (-23°C to 52°C)

Fluid Temperature: 267° max.

Body/Trim: Bronze, 300# screw

Seal Material: PTFE

Port Size: 13/32"

Electrical

Power Requirement: 150 VA

Standard Voltage: 120V/60Hz

Operating Voltage	Amperes		
	Inrush	Opening	Holding
120V/60Hz	12.5	1.25	0.09

Auxiliary Switch: One integral SPDT switch, 7.5A@120V, 3.75A@240V, (900VA max). Switch actuates at energized end of stroke (not adjustable).

Proof of Closure Switch: (Valve Seal Overtravel Interlock): Optional factory set non-field adjustable SPDT switch, 15A@120V, 7.5A@240V (1800VA max.).



Installation

May be mounted with actuator upright or horizontal with switches uppermost.

Approvals

UL listed

FM Approved

CSA Certified to:

- 1) Standard G22.2 No. 139 "Electrically Operated Valves", File 113070.

Specifications (English units)

Pipe Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (lbs)
		Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed											
Standard Trim											
1/2	2.5	0	300	267	HOV13A162T15	1	○	○	○	7-9	13
3/4	3	0	300	267	HOV13A167T15	1	○	○	○	7-9	13
Valve Seal Overtravel Trim (Proof of Closure)											
1/2	2.5	0	300	267	HOV13A162T171	1	○	○	○	7-9	13
3/4	3	0	300	267	HOV13A167T171	1	○	○	○	7-9	13

Specifications (Metric units)

Pipe Size (ins.)	Kv Flow (m³/hr)	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Opening Time (Sec.)	Approx. Shipping Weight (kgs)
		Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed											
Standard Trim											
1/2	2.1	0	20.7	131	HOV13A162T15	1	○	○	○	7-9	5.9
3/4	2.6	0	20.7	131	HOV13A167T171	1	○	○	○	7-9	5.9
Valve Seal Overtravel Trim (Proof of Closure)											
1/2	2.1	0	20.7	131	HOV13A162T15	1	○	○	○	7-9	5.9
3/4	2.6	0	20.7	131	HOV13A167T171	1	○	○	○	7-9	5.9

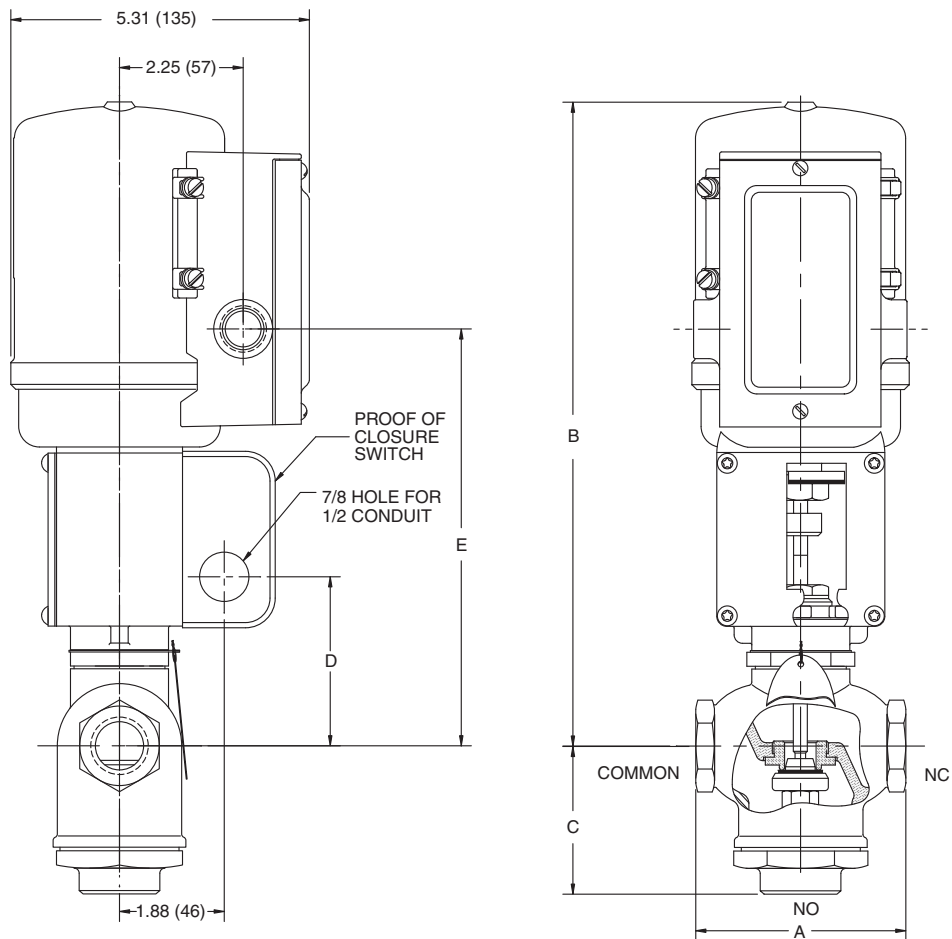
Dimensions inches (mm)

Const. Ref.		A	B	C	D	E
1	ins.	3.75	11.56	3.00	3.11	7.55
	mm	95	294	76	79	192

Replacement Actuators:

Standard
H01A552A15

Models with FM Proof of Closure Valve Seal Overtravel Switch
H01A552A171



COMBUSTION

Features

- Free handle will not open valve until solenoid is energized
- Valve trips closed instantly when solenoid is de-energized
- Highly visible position indicator
- Aluminum body construction

Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	20	43	96	-20 to 125	99257	99257

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

Solenoid Enclosures

Standard: RedHat metal Type 1 General Purpose enclosures with 7/8" conduit hole for 1/2" conduit connection.

Options

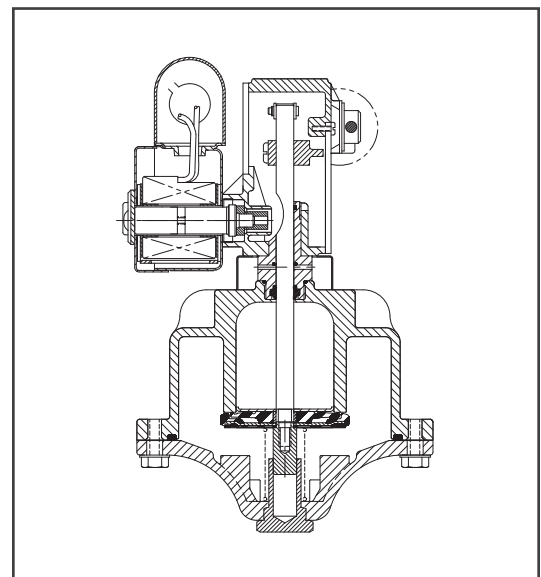
Electrical Position Indicator: Suffix "SW"

Indicator is furnished with two reed switches (1amp, 120V AC/DC, 15 watts max. resistive load).

One switch closes when the valve is in the "open" position and one switch closes when the valve is in the "closed" position.

Valve Response Time

Opening Time: Less than 1 second; **Closing Time:** Less than 1 second



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618 Safety Valves. FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves", File 010381.
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed													
3/4	1 5/8	13	717,000	0	25	125	8044B001	1	○	○	○	20	8.3
1	1 5/8	22	1,170,000	0	25	125	8044A002	2	○	○	○	20	8.3
1 1/4	1 5/8	30	1,580,000	0	25	125	8044A003	2	○	○	○	20	8.3
1 1/2	1 5/8	33	1,760,000	0	25	125	8044A004	3	○	○	○	20	8.3
2	2 3/32	55	2,960,000	0	20	125	8044A005	4	○	○	○	20	10.3
2 1/2	3	108	5,810,000	0	10	125	8044A006	5	○	○	○	20	17
3	3	135	7,260,000	0	10	125	8044A007	5	○	○	○	20	18

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed													
3/4	41	11.1	717,000	0	1.7	52	8044B001	1	○	○	○	20	3.8
1	41	18.7	1,170,000	0	1.7	52	8044A002	2	○	○	○	20	3.8
1 1/4	41	25.5	1,580,000	0	1.7	52	8044A003	2	○	○	○	20	3.8
1 1/2	41	28.1	1,760,000	0	1.7	52	8044A004	3	○	○	○	20	3.8
2	53	46.8	2,960,000	0	1.4	52	8044A005	4	○	○	○	20	4.7
2 1/2	76	91.8	5,810,000	0	0.7	52	8044A006	5	○	○	○	20	7.7
3	76	114.8	7,260,000	0	0.7	52	8044A007	5	○	○	○	20	8.2

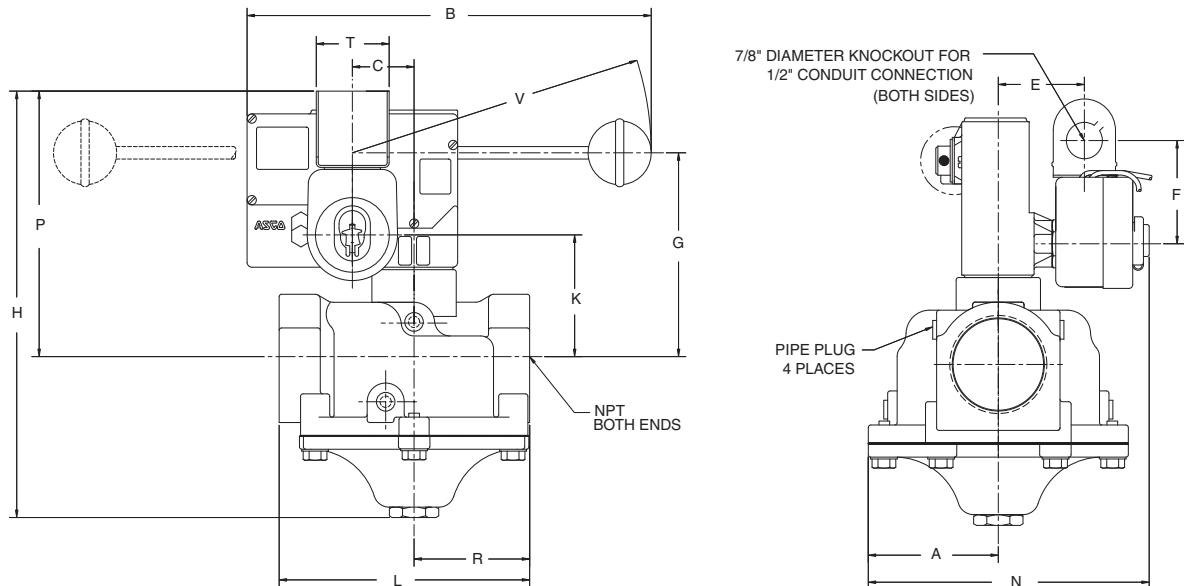
○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1,000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

Dimensions inches (mm)

Const. Ref.	1		2		3		4		5	
	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm
A	2.28	58	2.69	68	2.69	68	3.16	80	4.12	105
B	9.88	251	9.88	251	9.88	251	9.88	251	9.88	251
C	1.50	38	1.50	38	1.50	38	1.50	38	1.50	38
E	2.16	55	2.16	55	2.16	55	2.16	55	2.16	55
F	2.50	64	2.50	64	2.50	64	2.50	64	2.50	64
G	4.22	107	4.66	118	4.59	117	4.84	123	5.69	145
H	8.94	227	9.62	244	9.62	244	10.25	260	12.44	316
K	2.22	56	2.66	68	2.59	66	2.84	72	3.69	94
L	4.50	114	5.00	127	5.00	127	6.09	155	7.81	198
N	5.91	150	6.31	160	6.31	160	6.78	172	7.75	197
P	5.75	146	6.19	157	6.12	155	6.37	162	7.22	183
R	2.25	57	2.37	60	2.37	60	2.81	71	3.91	99
T	1.81	46	1.81	46	1.81	46	1.81	46	1.81	46
Radius	5.31	135	5.31	135	5.31	135	5.31	135	5.31	135

Standard Rebuild Kit	
8044B001	304093
8044A002	304093
8044A003	304093
8044A004	304093
8044A005	304094
8044A006	304095
8044A007	304095

Const. Ref. 1 - 5



Must be mounted with operator vertical and upright.

General Description

The AH2 Hydramotors are self-contained linear, push-type actuators which are mounted to V710 Series Gas Valve assemblies and used to control gas fired heating equipment. The AH2D (Suffix R) Manual Reset Hydramotor provides a watertight enclosure, manual reset switch and **Ready to Open** indicator light. With electrical power applied to the actuator, the **Ready to Open** indicator light will be **ON**. To operate the actuator (open the valve), the reset switch must be turned clockwise to the **Open Valve** position and held. The light will remain **ON** until the V710 Series Gas Valve is fully open, then it will go **OFF**. The reset switch may now be released to the center maintained position. It should be noted that if the reset switch is released before the valve is fully open and before the light is **OFF**, the actuator will trip immediately closing the valve. The actuator will trip, closing the V710 Series Gas Valve immediately upon power failure or by turning the reset switch counterclockwise to the **Close Valve** position. Closing time is one second or less. Valve cannot be opened until electrical power is restored to the actuator (**Ready to Open** indicator light **On**) and reset switch is turned clockwise to the **Open Valve** position and held until light goes **OFF**. Visual indication of actual valve stem location is provided by position indicators on both sides of the actuator.

Specifications

Power Requirement: 220 VA max.

Closing Time: One second max.

Opening Time:

Manual Reset Fast Opening: 14 seconds max.

Manual Reset Slow Opening: 26 seconds max.

Note: Opening time is double between -30°F and -40°F ambient. Opening time increased 20% when operating on 50Hz.

Enclosure

Type 1, 2, 3, 3S, 4, 12, and 13 Combination General Purpose, Watertight, Dusttight and Driptight.

Ambient Temperature

-40°F to 150°F (-40°C to 66°C)

Electrical

Actuator:

Standard voltages: 120 volts, 60 Hz

Proof of Closure Switch: (optional)

A factory set, non-field adjustable SPDT switch. 1800VA max. connected load (e.g. one 15A load @ 120V or two 3.75A loads @ 240V).

Auxiliary Switches: (optional)

One or two integral SPDT switches; field adjustable to actuate at any position of stroke. 1800 VA max. connected load (e.g. one 15A load @ 120V).



Series AH2D Suffix R Manual Reset Hydramotor with V710 valve body.

Electrical Characteristics

Voltage	Amperes		
	Inrush	Opening	Holding
120V	5.6	1.85	0.11

Installation

AH2 Hydramotor mounts in any position directly to a V710 valve with 4 set screws.




Damper Arm Rating

Drives damper in one direction only. 20 lb. max. at 2.85" radius at 20°F to 150°F and 10 lb. max. at -40°F to 20°F.

Approvals

AH2 Hydramotor with V710 valve.

 File # MP19318 Safety Valves

 CSA Certified to:
 1) Automatic Gas Valves Z21.21 (6.5),
 File 109157.

 Gas Safety Shut-off Valves.

Ordering Information

Important: Order by Catalog Number and add suffix number for desired optional feature. e.g. AH2D112A5R

Specifications (English units)

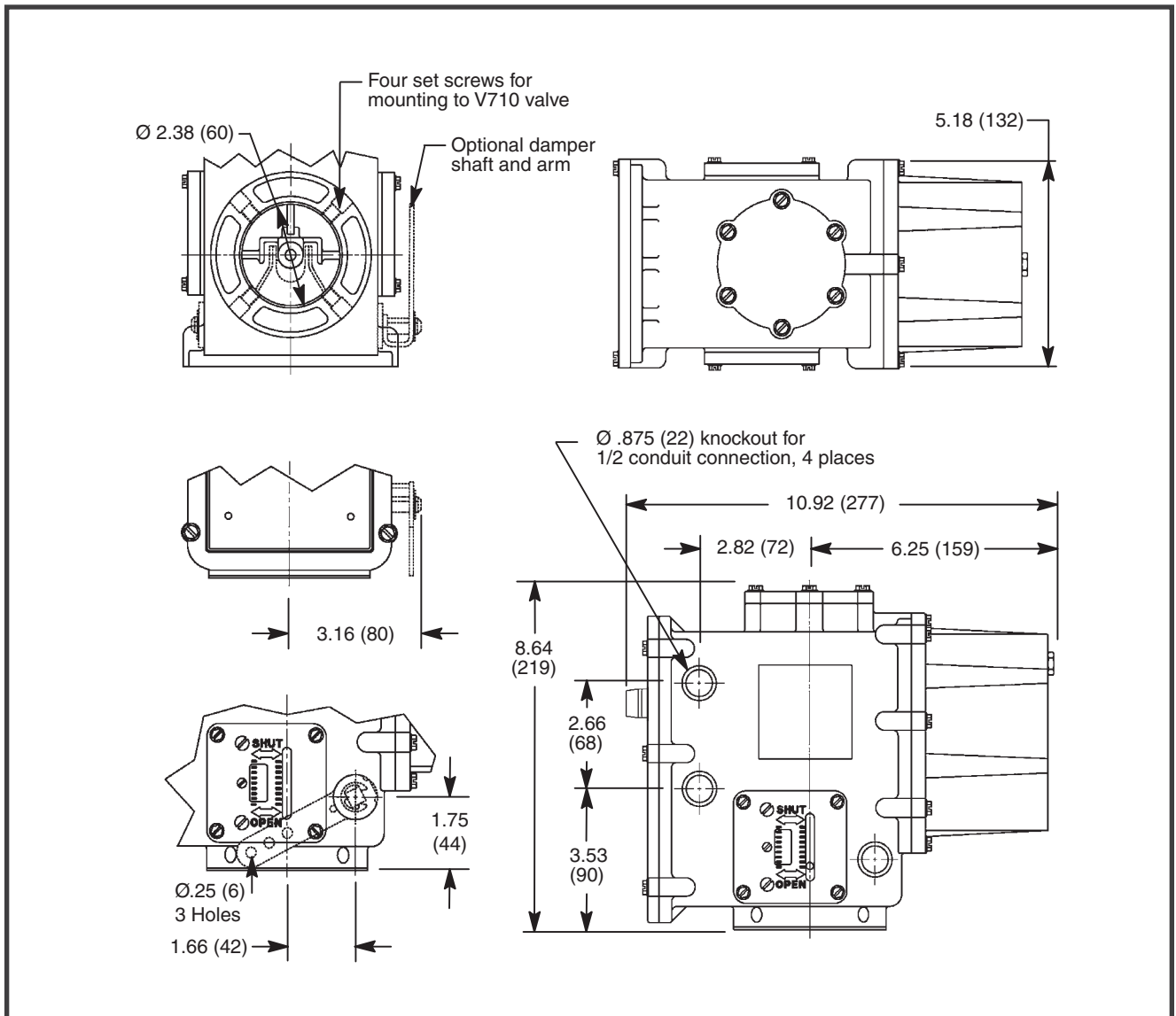
Applications	Catalog Number
	120 V
Manual Reset Slow Opening (14 to 26 seconds)	
Standard on-off	AH2D102AR
Proof of closure	AH2D102SR
Manual Reset Fast Opening (6 to 14 seconds)	
Standard on-off	AH2D112AR
Proof of closure	AH2D112SR

Optional Features

(add appropriate suffix number to catalog number)

- One Auxiliary Switch (add suffix 2)
- Spring Return Damper Arm (add suffix 3)
- Damper Shaft & Arm (add suffix 4)
- Damper Shaft, Arm & one Auxiliary Switch, (add Suffix 5)
- Manual Reset (add suffix R) shown in catalog number)

Dimensions inches (mm)



COMBUSTION

General Description

These 2-way aluminum body valves meet the safety standards for commercial industrial and institutional kitchens set by the National Fire protection Association.

Paragraph 1023 in booklet NFPA #96 - "Ventilation of Cooking Equipment" states, "The operation of an extinguishing system shall automatically shut off all sources of fuel and heat to gas pilots. A manual operation shall be required to reestablish the fuel supply or heat supply."

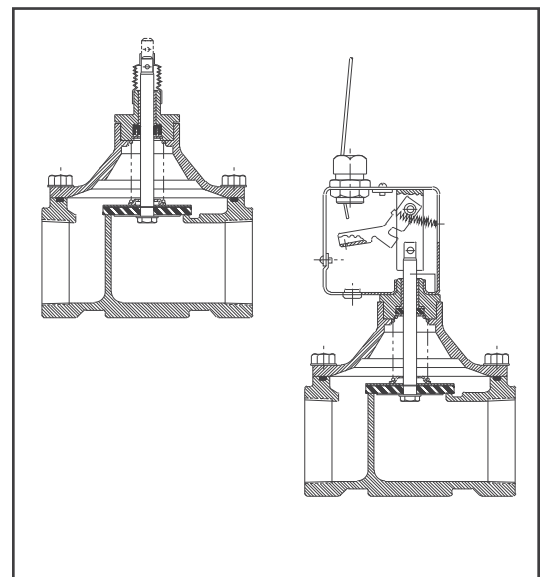
Construction

Valve Parts in Contact with Fluids	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel

Types of Operation

Series HV216-585 closes to shut off gas flow when the cable holding it in the open position is released. Catalog No. HV216-585 replaces HV160-265.

Series JV216-587 closes to shut off gas flow when the cable is pulled. Catalog No. JV216-587 replaces JV182-648



Approvals

UL Component listed, File No. MH-8849, Guide No. YRPV2; UL of Canada, File MH27283, Guide No. 167E49.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Fluid & Ambient Temp. °F		Operating Pressure Differential (psi)		Catalog Numbers Cable Operation		Agency UL
			Min	Max.	Min	Max.	Release to Close	Pull to Close	
COMBUSTION (Fuel Gas) - Normally Closed									
1/2	3/4	5.2	32	132	0	5	HV216-585-8	JV216-587-1	○
3/4	3/4	6.5	32	132	0	5	HV216-585-1	JV216-587-2	○
1	1 5/8	23	32	132	0	5	HV216-585-2	JV216-587-3	○
1 1/4	1 5/8	34	32	132	0	5	HV216-585-3	JV216-587-4	○
1 1/2	1 5/8	38	32	132	0	5	HV216-585-4	JV216-587-5	○
2	2 3/32	54	32	132	0	5	HV216-585-5	JV216-587-6	○
2 1/2	3	110	32	132	0	5	HV216-585-6	JV216-587-7	○
3	3	138	32	132	0	5	HV216-585-7	JV216-587-8	○

○ = Safety Shutoff Valve. Safe working pressure 50 psi.

Specifications (Metric units)

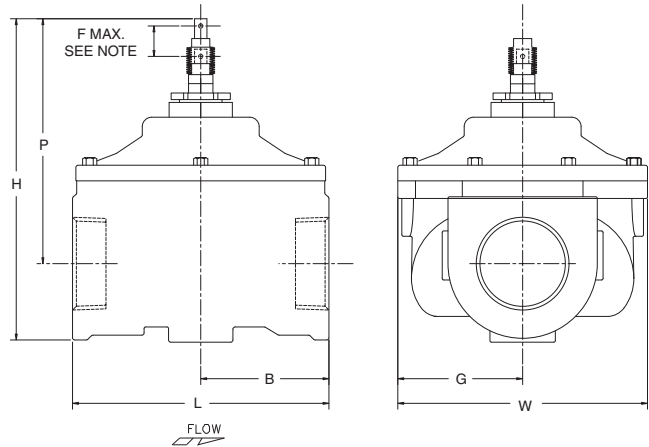
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Fluid & Ambient Temp. °C		Operating Pressure Differential (bar)		Catalog Numbers Cable Operation		Agency UL
			Min	Max.	Min	Max.	Release to Close	Pull to Close	
COMBUSTION (Fuel Gas) - Normally Closed									
1/2	19	4.5	0	56	0	0.3	HV216-585-8	JV216-587-1	○
3/4	19	5.6	0	56	0	0.3	HV216-585-1	JV216-587-2	○
1	41	21	0	56	0	0.3	HV216-585-2	JV216-587-3	○
1 1/4	41	29	0	56	0	0.3	HV216-585-3	JV216-587-4	○
1 1/2	41	33	0	56	0	0.3	HV216-585-4	JV216-587-5	○
2	53	46	0	56	0	0.3	HV216-585-5	JV216-587-6	○
2 1/2	76	96	0	56	0	0.3	HV216-585-6	JV216-587-7	○
3	76	119	0	56	0	0.3	HV216-585-7	JV216-587-8	○

○ = Safety Shutoff Valve. Safe working pressure 3.4 bar.

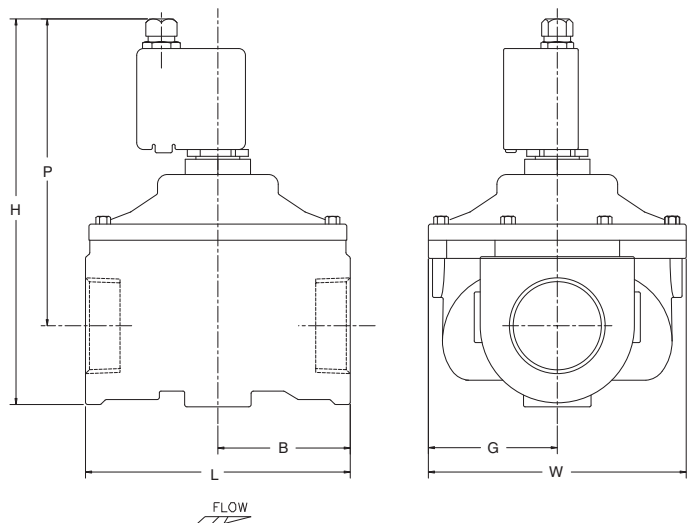
Dimensions inches (mm)

Catalog No.		B	F	G	H	L	P	W
HV216-585-8	ins.	1.37	0.19	1.14	4.37	2.75	3.81	2.45
	mm	35	5	29	111	70	97	62
HV216-585-1	ins.	1.66	0.19	1.14	4.81	3.31	4	2.45
	mm	42	5	29	122	84	102	62
HV216-585-2	ins.	2.37	0.53	2.69	7.16	5	5.84	5.38
	mm	60	13	68	182	127	148	137
HV216-585-3	ins.	2.37	0.53	2.69	7.16	5	5.84	5.38
	mm	60	13	68	182	127	148	137
HV216-585-4	ins.	2.37	0.53	2.69	7.16	5	5.8	5.38
	mm	60	13	68	182	127	147	137
HV216-585-5	ins.	2.81	0.61	3.16	7.75	6.1	6.25	6.31
	mm	71	15	80	197	155	159	160
HV216-585-6	ins.	3.9	0.9	4.12	9.95	7.8	7.62	7.95
	mm	99	23	105	253	198	194	202
HV216-585-7	ins.	3.89	0.9	4.12	9.95	7.78	7.62	7.95
	mm	99	23	105	253	198	194	202

Note: Max. is the full open position. Do not exceed as distortion of internal parts may result.



Catalog No.		B	G	H	L	P	W
JV216-587-1	ins.	1.37	1.14	6.56	2.75	6	2.36
	mm	35	29	167	70	152	60
JV216-587-2	ins.	1.66	1.16	7	3.31	6.19	2.34
	mm	42	29	178	84	157	59
JV216-587-3	ins.	2.38	2.69	8.81	5	7.5	5.38
	mm	60	68	224	127	191	137
JV216-587-4	ins.	2.38	2.69	8.81	5	7.5	5.38
	mm	60	68	224	127	191	137
JV216-587-5	ins.	2.38	2.69	8.81	5	7.56	5.38
	mm	60	68	224	127	192	137
JV216-587-6	ins.	2.81	3.16	9.53	6.1	8.03	6.31
	mm	72	80	242	155	204	160
JV216-587-7	ins.	3.9	4.13	11.4	7.8	9.06	7.9
	mm	99	105	290	198	230	201
JV216-587-8	ins.	3.9	4.13	11.4	7.8	9.06	7.9
	mm	99	105	290	198	230	201



Panel Applications

ASCO relay control panels were originally designed to New York City Board of Education specifications to operate ASCO DC solenoid valves controlling gas flow to school kitchens, domestic cooking classes, ceramic and metal shops. Because of its many features and silent operation, the ASCO relay panel has also been used in many other similar institutions and schools outside New York City. Vandalism and malicious mischief have caused some city governments to make it mandatory that the gas supply be locked off during closed hours. Other governmental bodies and consulting engineers have recognized the need and specifying the ASCO relay panel although not mandated by code.

ASCO relay panels are also used in industrial and commercial installations to control various gases and fluids.

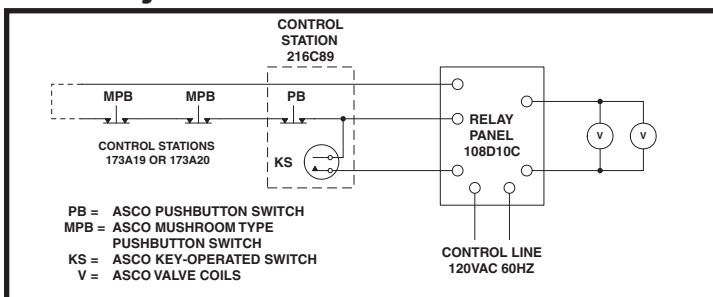
Operations

Operating the key switch on the control station energizes the relay to open a normally closed ASCO DC solenoid valve which turns on the gas flow.

Panel Features

- ASCO's reputation and long experience in control are assurances of highly dependable systems with complete ASCO coordination.
- If the control voltage is lost completely, or reduces to approximately 50% of normal value, the relay de-energizes the normally closed valve to shut off gas flow.
- The valve will not open at restoration of voltage until an authorized person operates the key switch on the control station. This eliminates the danger of gas unknowingly escaping. The gas may also be shut off by depressing the normally closed pushbutton switch located on the control station.
- For convenience, auxiliary push-buttons, such as the ASCO Catalog numbers 173A19 and 173A20 may be located at various accessible points throughout the building.
- Utilization of DC control provided by the relay panel eliminates annoying AC hum.
- Shallow-depth NEMA Type 1 flush-mounted enclosure permits installation directly into the wall for convenience and elimination of obstructions in corridors or high traffic areas.
- ASCO dust-tight industrial relay and solid-state rectifier are designed to provide long life.
- Clearly marked terminals and installation drawings are located on inside of door.
- Approved by New York City Board of Education for use in public schools.

Control System Schematic



ASCO RELAY PANEL

Catalog Number: 108D10C

Input Voltage: 120 volts, 60 Hz

Output Voltage: 80 volts DC

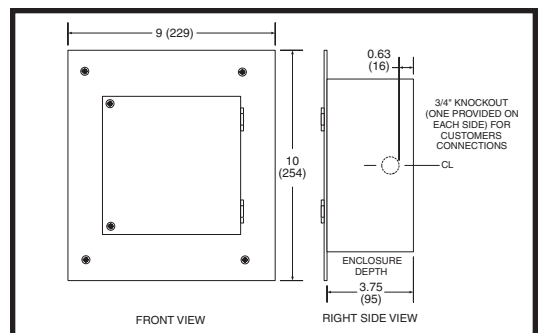
Output Current: 0.8 amp maximum

AC Relay Control Panel

Catalog No. 108D90C (replaces AEP 7200) provides the same features as the DC panels described above except for its 120/60 AC voltage output. Features a key-operated switch with manual "on" and "off" buttons on the cover.

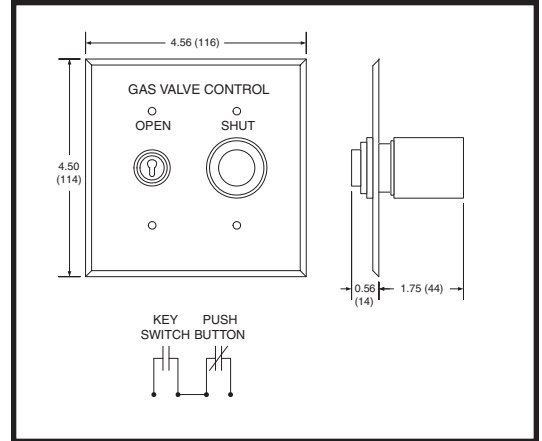
(Has not been submitted for N.Y.C. Board of Education approvals.)

Panel 108D10C Dimensions



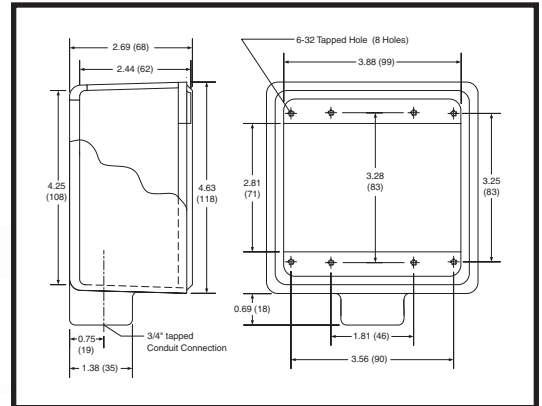
MASTER CONTROL STATION

Catalog No. 216C89 consists of a key-operated, normally open switch and a normally closed pushbutton mounted in a stainless steel faceplate for flush installation. "Gas Valve Control" is inscribed on the faceplate, and the switches are labeled "Open" over the key switch and "Shut" over the pushbutton. Four inch square wall box is not included.



CONTROL STATIONS

Catalog No. 173A19 (flush mounted) and Catalog No. 173A20 (surface mounted) consist of a momentary mushroom pushbutton labeled "Emergency Stop." When button is hit, power to valves is shut off and they close in 0.1 second.



SOLENOID VALVES

Series 8215 Solenoid Valves feature 2-way normally closed operation for gas service. They are explosionproof and designed to handle low pressure city gas. Control voltage is 80 to 90 volts DC or 120/60 volts AC.



DC Valves for use with Panel 108D10C

Pipe Size (ins.)	Catalog Number	Max. Pressure psi (bar)	Cv (Kv) Flow Factor	Holding Watts
1/2	EF8215G020	25 (1.7)	4.4 (3.8)	11.6
3/4	EF8215G030	25 (1.7)	5.1 (4.4)	11.6
1	EF8215B050	25 (1.7)	21 (18.2)	14.9
1 1/4	EF8215B060	25 (1.7)	32 (27.7)	14.9
1 1/2	EF8215B070	25 (1.7)	35 (30.3)	14.9
2	EF8215B080	15 (1)	60 (51.9)	14.9

AC Valves for use with Panel 108D90C (replaces AEP7200)

Pipe Size (ins.)	Catalog Number	Max. Pressure psi (bar)	Cv (Kv) Flow Factor	Holding Watts
1/2	EF8215G020	50 (3.4)	4.4 (3.8)	10.1
3/4	EF8215G030	50 (3.4)	5.1 (4.4)	10.1
1	EF8215B050	25 (1.7)	21 (18.2)	15.4
1 1/4	EF8215B060	25 (1.7)	32 (27.7)	15.4
1 1/2	EF8215B070	25 (1.7)	35 (30.3)	15.4
2	EF8215B080	25 (1.7)	60 (51.9)	15.4

Solenoid Valves

Order by Catalog Number and Voltage (Ex. EF8215G020 80-90VDC)

Contact ASCO Valve, Inc. at 800-972-2726 www.ascovalve.com

Gas Panels, Master Stations, and Control Stations

Order by Catalog Number (Ex. 108D10C)

Contact ASCO Power Technologies at 800-800-2726 www.ascopower.com

Features

- 2-way normally closed operation
- For liquid petroleum gases (propane) in both liquified and gaseous states
- Applications such as grain dryers, incinerators, space heaters, etc
- Mountable in any position

Construction

Valve Parts in Contact with Fluids				
Series	8262	8210	8214	HV226787-1
Body	Brass	Brass	Aluminum	Brass
Seals and Disc	NBR			
Core Tube	305 SS	305 SS	305 SS	305 SS
Core Guide	Brass			
Core and Plugnut	430F SS	430F SS	430F SS	430F SS
Springs	302 SS	17-7PH SS	17-7PH SS	302 SS
Shading Coil	Copper			
Pipe Plug	-	-	Zinc Plated Steel	-

Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption			Ambient Temp. °F	Spare Coil Family	
	AC				General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush		AC	AC
F	10.1	25	70	-20 to 125	238610	238614
F	17.1	40	93	-20 to 125	238610	238614
F	15.05	28	55	32 to 125	-	064982

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).

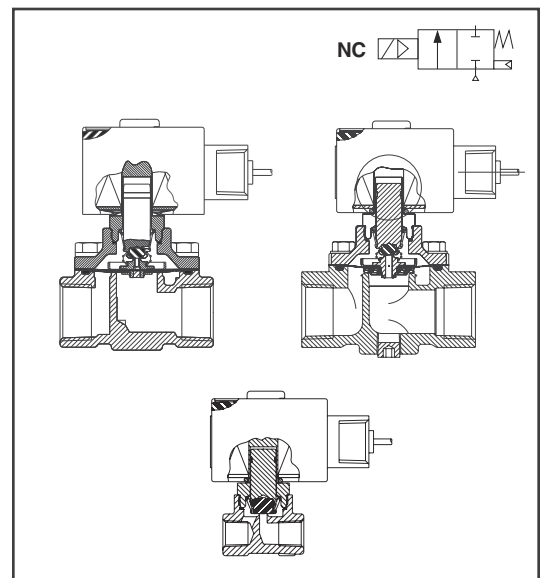
Solenoid Enclosures

(8210, 8214, 8262)

RedHat II Molded Epoxy, Watertight, Types 1, 2, 3, 3S, 4 and 4X with 1/2" conduit hub.

(HV226787-1)

RedHat Metal, Explosion Proof, Types 3, 7C, 7D, 9E, F&G with 1/2" conduit hub.



Approvals

UL listed to standard 429 "Electrically Operated Valves," Guide Y10Z, File MP618, Safety Valves.

FM Approved to Class 7400 "Liquid and Gas Safety Shutoff Valves."

CSA Certified to:

- 1) Standard C22.2 No. 139 "Electrically Operated Valves," File 010381.
- 2) Automatic Gas Safety Shutoff Valves C/I (3.9), File 112872. (8210 & 8214)
- 3) Valves for Hazardous Locations, File 013976. (HV226787-1)

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow	Gas Capacity ① Btu/hr.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (lbs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed													
1/4	1/8	0.35	27,250	0	250	125	8262G232B	1	○	-	○	17.1	2.3
1/4	9/32	0.96	74,700	0	45	125	8262G210B	1	○	○	○	10.1	2.4
3/8	5/8	2.8	218,000	5	250	125	8210H105B	2	○	○	○	17.1	3.2
3/8	3/4	3.4	226,000	0	50	125	8214G010B	3	○	○	○	17.1	2.0
1/2	5/8	3.6	280,000	5	250	125	8210G106B	2	○	○	○	17.1	3.2
1/2	3/4	4.4	374,000	0	50	125	8214G020B	3	○	○	○	17.1	2.0
3/4	3/4	5.1	397,000	0	50	125	8214G030B	4	○	○	○	17.1	2.0
3/4	3/4	6.5	506,000	5	250	125	HV226787-1	5	○	-	○	15.05	3.5

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 2,300 Btu/cu.ft. or more, 1.6 Specific Gravity Gas.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow (m³/hr)	Gas Capacity ① Btu/hr.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Agency			Wattage	Approx. Shipping Weight (kgs)
				Min.	Max.				UL	FM	CSA		
COMBUSTION (Fuel Gas) - Normally Closed													
1/4	3	0.3	27,250	0	17.2	52	8262G232B	1	○	-	○	17.1	1.0
1/4	7	0.8	74,700	0	3.1	52	8262G210B	1	○	○	○	10.1	1.1
3/8	16	2.4	218,000	5	17.2	52	8210H105B	2	○	○	○	17.1	1.5
3/8	19	2.9	226,000	0	3.4	52	8214G010B	3	○	○	○	17.1	0.9
1/2	16	3.1	280,000	5	17.2	52	8210G106B	2	○	○	○	17.1	1.5
1/2	19	3.7	374,000	0	3.4	52	8214G020B	3	○	○	○	17.1	0.9
3/4	19	4.3	397,000	0	3.4	52	8214G030B	4	○	○	○	17.1	0.9
3/4	19	5.5	506,000	5	17.2	52	HV226787-1	5	○	-	○	15.05	1.6

○ = Safety Shutoff Valve. ① 1" W.C. Drop @ 2" W.C. Inlet Pressure, 2,300 Btu/cu.ft. or more, 1.6 Specific Gravity Gas.

Capabilities Chart

NEMA Type 3-9	Solenoid Options			Base Catalog Number		Resilient Materials	Standard Rebuild Kit
	72" Leads	High Temp.	Wiring Box Screw Terminal	Brass	Aluminum	NBR	AC
EF	L	HB	JKP	8262G232B	-	●	304088
EF	L	HT	JKF	8262G210B	-	●	304088
EF	L	HB	JKP	8210H105B	-	●	316669
-	L	HB	JKP	-	8214G010B	●	316667
EF	L	HB	JKP	8210H106B	-	●	316669
-	L	HB	JKP	-	8214G020B	●	316667
-	L	HB	JKP	-	8214G030B	●	316667
-	L	-	-	HV226787-1	-	●	310038

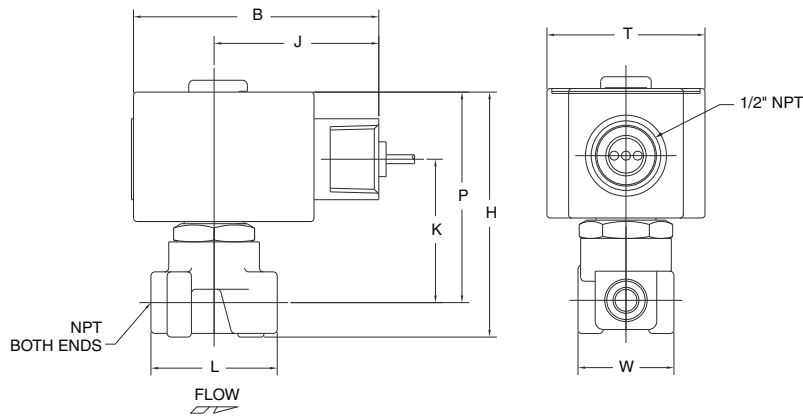
● = Standard. Other options may be available. All option combinations may not be available.

COMBUSTION

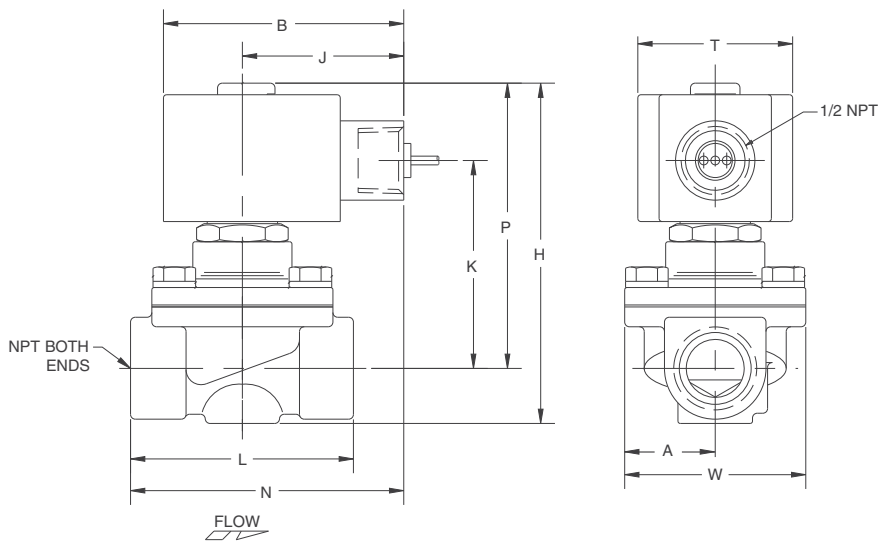
Dimensions inches (mm)

Const. Ref.		A	B	E	H	J	K	L	N	P	R	T	W
1	ins.	-	3.03	-	3.16	2.04	1.78	1.56	-	2.75	-	1.95	1.18
	mm	-	77	-	80	52	45	40	-	70	-	50	30
2	ins.	1.66	3.03	-	3.95	2.04	2.42	2.75	3.42	3.39	-	1.95	2.28
	mm	42	77	-	100	52	61	70	87	86	-	50	58
3	ins.	1.14	3.03	1.36	4.08	2.04	2.47	2.75	3.42	3.46	1.36	1.95	2.50
	mm	29	77	35	104	52	63	70	87	88	35	50	64
4	ins.	1.14	3.03	1.25	4.52	2.04	2.66	3.31	3.70	3.64	1.66	1.95	2.39
	mm	29	77	32	115	52	68	84	94	92	42	50	61
5	ins.	-	3.25	-	4.63	2.76	2.44	3.78	4.38	4.00	1.62	2.50	2.75
	mm	-	83	-	118	70	62	96	111	102	41	64	70

Const. Ref. 1

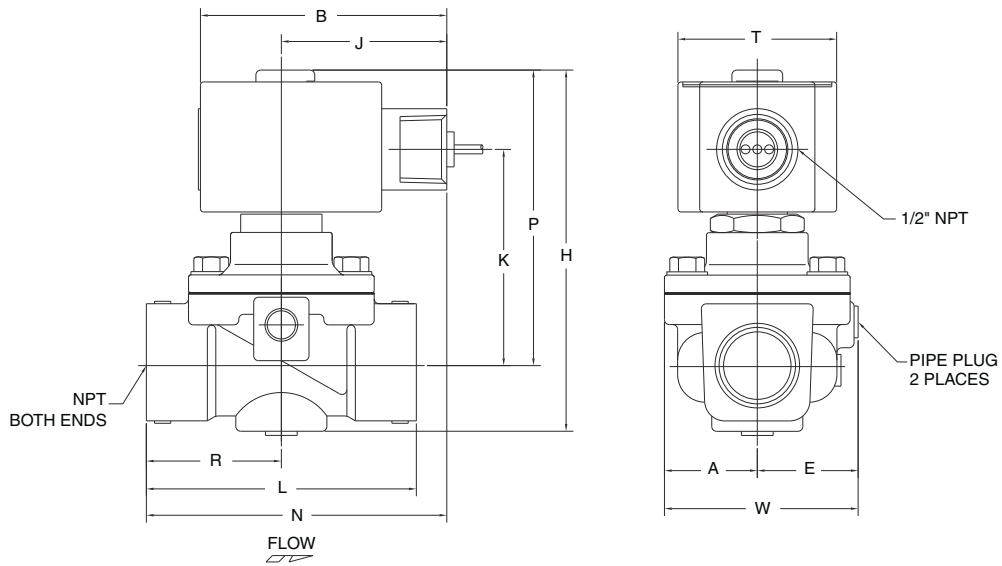


Const. Ref. 2

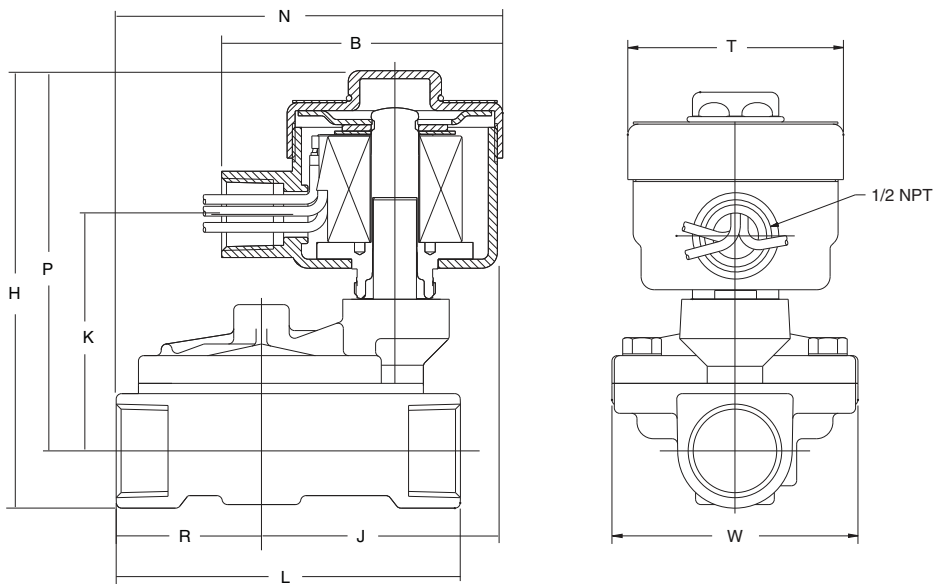


Dimensions inches (mm)

Const. Ref. 3, 4



Const. Ref. 5



ASCO offers a wide variety of accessories and optional features to meet your specific application requirements.

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www.ascovalve.com



Features

- Same RedHat II molded epoxy solenoid operators used on General Purpose ASCO valves
- Available in 4 standard wattages, AC or DC
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Seal	NBR
Shading Coil	Copper (AC only)
Additional Parts	
Disc	NBR and PA (3-way upper disc)
Spring	302 Stainless Steel

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush ①	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	-	9.1	25	40	238210	-	238214	-
F	11.6	10.1	25	50	238610	238710	238614	238714
F	-	17.1	40	70	238610	-	238614	-
F	-	15.4	27	70	99257	-	99257	-
F	-	20	43	90	99257	-	99257	-

Standard Voltages: 24, 120, 240, 480 volts AC 60 Hz (or 110, 220 volts AC 50 Hz).
6, 12, 24, 120, 240 volts, DC. Must be specified when ordering.
Other voltages available when required.

Note: ① Core Stroke 1/16".

Specifications (English units)

Orifice Size (ins.)	Cv Flow Factor ④	Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Catalog Number	Const. Ref.	Watt Rating/Class of Coil Insulation ⑥		Optional Inserted Seat Part Number
		Maximum AC			Maximum DC							AC	DC	
		Air-Inert Gas	Water	Lt. Oil @ 300 SSU ⑤	Air-Inert Gas	Water	Lt. Oil @ 300 SSU ⑤	AC	DC					
2-WAY SOLENOID OPERATORS, ① NORMALLY CLOSED (Closed when de-energized)														
3/64	.06	750	600	400	325	225	300	180	120	8200G001	4	6.1/F	10.6/F	096-429-4 ②
3/32	.17	275	200	130	110	100	100	180	120	8200G001	4	6.1/F	10.6/F	180-222-5D ③
1/8	.35	135	115	90	50	50	50	180	120	8200G001	4	6.1/F	10.6/F	180-222-1D ③
3-WAY SOLENOID OPERATORS, ① NORMALLY CLOSED (Closed when de-energized)														
3/64	.04	230	230	230	120	140	125	200	150	8329G001	5	10.1/F	11.6/F	096-429-4 ②
3/32	.15	125	100	100	60	70	30	200	150	8329G002	5	10.1/F	11.6/F	096-429-3 ②
1/8	.25	75	60	60	30	40	25	200	150	8329G003	5	10.1/F	11.6/F	180-222-1D ③
3-WAY SOLENOID OPERATORS, ① NORMALLY OPEN (Open when de-energized)														
3/64	.04	300	300	300	200	300	120	200	150	8329G007	5	10.1/F	11.6/F	096-429-4 ②
3/32	.15	175	175	175	70	90	45	200	150	8329G008	5	10.1/F	11.6/F	096-429-3 ②
1/8	.25	90	90	90	40	40	25	200	150	8329G009	5	10.1/F	11.6/F	180-222-1D ③

① Larger operators, orifice sizes, and higher pressure ratings are available. Consult your local ASCO sales office.
② Inserted seat has 1/4-32 thread for threading.
③ Inserted seat has 3/8-32 thread for threading.
④ Cv will depend upon size and location of connecting passages.
⑤ Maximum viscosity for 3-way solenoid operator is 45 SSU.
⑥ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.



Solenoid Enclosures

Standard: RedHat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X. RedHat - Type 1.

Optional: RedHat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; RedHat - Explosionproof and Raintight, Types 3, 7, and 9. (To order, add prefix "EF" to catalog number.)

See *Optional Features Section* for further details on *Open Frame Solenoids, Junction Box Enclosures, and Panel Mount Constructions.*

Nominal Ambient Temp. Ranges

AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

Refer to *Engineering Section* for details.

Approvals

CSA certified.

Refer to *Engineering Section* for details.

Specifications (Metric units)

Orifice Size (mm)	Kv Flow Factor (m3/h) ④	Operating Pressure Differential (bar)						Max. Fluid Temp. °C		Catalog Number	Const. Ref.	Watt Rating/ Class of Coil Insulation ⑥		Optional Inserted Seat Part Number
		Maximum AC			Maximum DC							AC	DC	
		Air-Inert Gas	Water	Lt. Oil @ 300 SSU ⑤	Air-Inert Gas	Water	Lt. Oil @ 300 SSU ⑤							
2-WAY SOLENOID OPERATORS, ① NORMALLY CLOSED (Closed when de-energized)														
1.2	.05	52	41.4	34.5	22.4	15.5	20.7	82	49	8200G001	4	6.1/F	10.6/F	096-429-4 ②
2.4	.15	19	13.8	9.0	7.6	6.9	6.9	82	49	8200G001	4	6.1/F	10.6/F	180-222-5D ③
3.2	.30	9	7.9	6.2	3.4	3.4	3.4	82	49	8200G001	4	6.1/F	10.6/F	180-222-1D ③
3-WAY SOLENOID OPERATORS, ① NORMALLY CLOSED (Closed when de-energized)														
1.2	.03	16	15.9	15.9	8.3	9.7	8.6	93	66	8329G001	5	10.1/F	11.6/F	096-429-4 ②
2.4	.13	9	6.9	6.9	4.1	4.8	2.1	93	66	8329G002	5	10.1/F	11.6/F	096-429-3 ②
3.2	.21	5	4.1	4.1	2.1	2.8	1.7	93	66	8329G003	5	10.1/F	11.6/F	180-222-1D ③
3-WAY SOLENOID OPERATORS, ① NORMALLY OPEN (Open when de-energized)														
1.2	.03	21	20.7	20.7	13.8	20.7	8.3	93	66	8329G007	5	10.1/F	11.6/F	096-429-4 ②
2.4	.13	12	12.1	12.1	4.8	6.2	3.1	93	66	8329G008	5	10.1/F	11.6/F	096-429-3 ②
3.2	.21	6	6.2	6.2	2.8	2.8	1.7	93	66	8329G009	5	10.1/F	11.6/F	180-222-1D ③

① Larger operators, orifice sizes, and higher pressure ratings are available. Consult your local ASCO sales office.
 ② Inserted seat has 1/4-32 thread for threading.
 ③ Inserted seat has 3/8-32 thread for threading.
 ④ Kv will depend upon size and location of connecting passages.
 ⑤ Maximum viscosity for 3-way solenoid operator is 45 SSU.
 ⑥ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

Specifications (Solenoids)

Catalog Number	8016G001	8016G002	8003G001	8003G002	8017 001	8017 002
Const. Ref. and Fig. No.	1A	1B	2A	2B	3A	3B
Watt Rating/ ③ Class of Coil Insulation	6.1/F	9.1/F	10.1/F	17.1/F	15.4/F	20/F
VA Holding	16	25	25	40	27	43
VA Inrush ①	30	40	50	70	70	90
Min. Return Spring Force or Load Value ②	11 oz.	11 oz.	1.3 lb.	1.3 lb.	1.75 lb.	1.75 lb.

① Core Stroke 1/16". ② Customer to supply return spring, required in solenoid sealed position for proper operation, in accordance with value given.
 ③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.

Dimensions inches (mm)

Const. Ref.	A	B	C
1A & 1B	ins. 2.76	1.82	0.30
	mm 70	46	8
2A & 2B	ins. 3.03	2.00	1.13
	mm 77	51	29
3A & 3B	ins. 2.67	2.28	0.23
	mm 68	58	6
4	ins. 2.76	1.82	0.32
	mm 70	46	8
5	ins. 3.03	3.03	0.30
	mm 77	77	8

Figs 1 (A and B)

Figs 2 (A and B)

Figs 3 (A and B)

Const. Ref. 1A, 1B, 2A, 2B

Const. Ref. 3A, 3B

Const. Ref. 4

Const. Ref. 5

ACCESSORIES

Features

- Adjustable flow control design provides greater capacity than most constructions
- Spring-loaded disc allows free flow in one direction and an adjustable flow in the other
- Tapered brass stem controls flow through the cross-hole in the disc
- Unique locking device in adjusting knob
- Scribed graduations provide position indication for the stem
- Mountable in any position



Construction

Valve Parts in Contact with Fluids	
Body and Stem	Brass
Seals	NBR
Disc	CA
Spring	302 Stainless Steel
Retainer	17-7PH Stainless Steel

Nominal Ambient Temp. Ranges

125°F (52°C) maximum.

Refer to Engineering Section for details.

Operation

When the pawl is in the up position, it creates a friction lock on the knurled bonnet and the knob cannot rotate. When the pawl is at 90° to the knob, the knob can be rotated.

Refer to Engineering Section for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor ①		Opening Pressure (psi)	Maximum Operating Pressure Differential (psi)	Max. Fluid Temp. °F	Catalog Number
		Meter Flow	Free Flow		Air-Inert Gas, Water, and Light Oil		
NORMALLY CLOSED (Closed when de-energized)							
1/4	3/8	.22	1.2	1	300	180	V022A001
3/8	3/8	.90	1.4	1	300	180	V022 002
1/2	7/16	1.2	2.6	1	300	180	V022 003
3/4	17/32	1.6	4.0	2.5	300	180	V022 004

① Refer to Chart A for Cv vs. Metering Stem Turns.

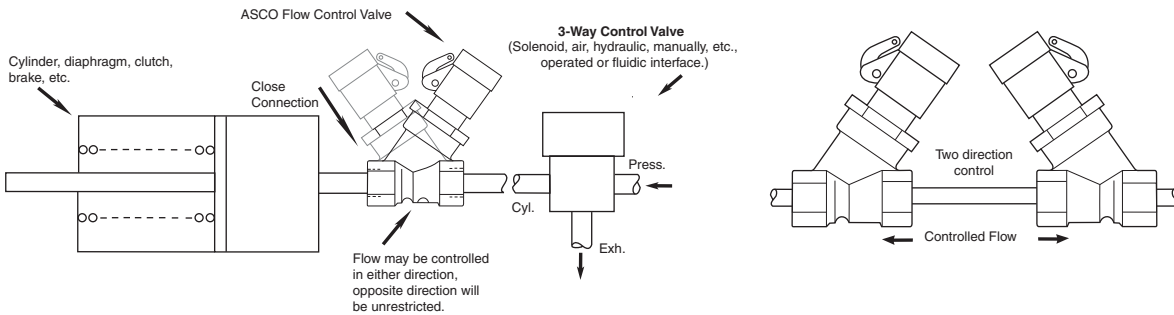
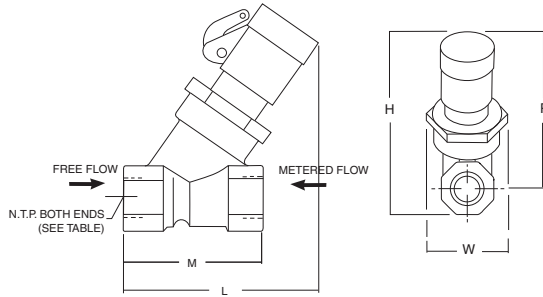
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h) ①		Opening Pressure (bar)	Maximum Operating Pressure Differential (bar)	Max. Fluid Temp. °C	Catalog Number
		Meter Flow	Free Flow		Air-Inert Gas, Water, and Light Oil		
NORMALLY CLOSED (Closed when de-energized)							
1/4	10	.2	1.0	0.07	21	82	V022A001
3/8	10	.8	1.2	0.07	21	82	V022 002
1/2	11	1.0	2.2	0.07	21	82	V022 003
3/4	13	1.4	3.4	0.17	21	82	V022 004

① Refer to Chart A for Cv vs. Metering Stem Turns.

Dimensions inches (mm)

Catalog Number		H	L	M	P	W
V022A001	ins.	3.12	2.69	1.91	2.62	1.31
	mm	79	68	49	67	33
V022 002	ins.	3.12	2.69	1.91	2.69	1.31
	mm	79	68	49	68	33
V022 003	ins.	3.34	3.22	2.28	2.81	1.31
	mm	85	82	58	71	33
V022 004	ins.	3.75	3.69	2.75	3.09	1.47
	mm	95	94	70	79	37



Flow Diagrams

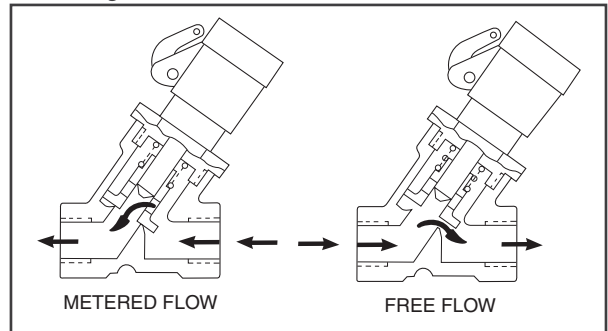


Chart A

Example I: A 1/2" N.P.T. flow control valve is required to pass 3 GPM of water at a Δp of 16 psi. Determine the position of the metering stem.

$$Cv = \frac{GPM}{\sqrt{\Delta p}} \quad Cv = \frac{3}{\sqrt{16}} = 0.75$$

From the graph for the 1/2" N.P.T. flow control valve with a Cv of .75, the stem should be positioned three turns out from fully closed.

Example II: To determine the flow using the same data of 16 psi, Δp and METERED Cv of .75, the solution will be:

$$GPM = Cv \sqrt{\Delta p} = .75 \sqrt{16} = 3$$

Example III: The flow through this valve in the FREE FLOW position is:

$$GPM = Cv \sqrt{\Delta p} = 2.6 \sqrt{16} = 10.4$$

*Cv is obtained from free flow data table.

- P₁ - Inlet Pressure (PSIA)
- P₂ - Outlet Pressure (PSIA)
- Δp - Pressure Drop (P₁ - P₂) psi
- G - Specific Gravity of Gas @ 14.7 PSIA and 60°F.
- T - Absolute Temperature of Flowing Medium (°F + 460)

SIZING EQUATIONS

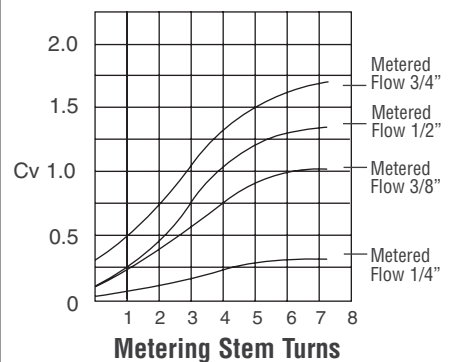
$$\text{WATER } Cv = \frac{GPM}{\sqrt{\Delta p}} \quad GPM = Cv \sqrt{\Delta p}$$

$$\text{AIR } Cv = \frac{SCFH}{960 \sqrt{\Delta p(P_1 + P_2)}} \quad GT$$

$$SCFH = Cv \cdot 960 \sqrt{\Delta p(P_1 + P_2)} \quad GT$$

Free Flow Data	
Pipe Size	Cv
1/4	1.2
3/8	1.4
1/2	2.6
3/4	4.0

Flow Characteristics for ASCO Flow Control Valves



Features

- Should be used whenever it is essential that fluid be free of foreign solid matter
- Assure proper flow and prevent damage to valves, controls, and other equipment

Construction

Forged Brass, Bronze, Cast Iron, and Stainless Steel Body

Rugged, self-cleaning "Y body" strainers have easily removed strainer of perforated stainless steel or wire mesh. Free hole area shown in table is total of all openings. Suitable for air, water, oil, and steam.

Acetal Body

Straight-through flow with large area orifice. Strainers can be easily removed and back flushed. Suitable for air and water.

Installation

May be mounted in any position, but should be located on the inlet side of the valve, as close to it as possible.



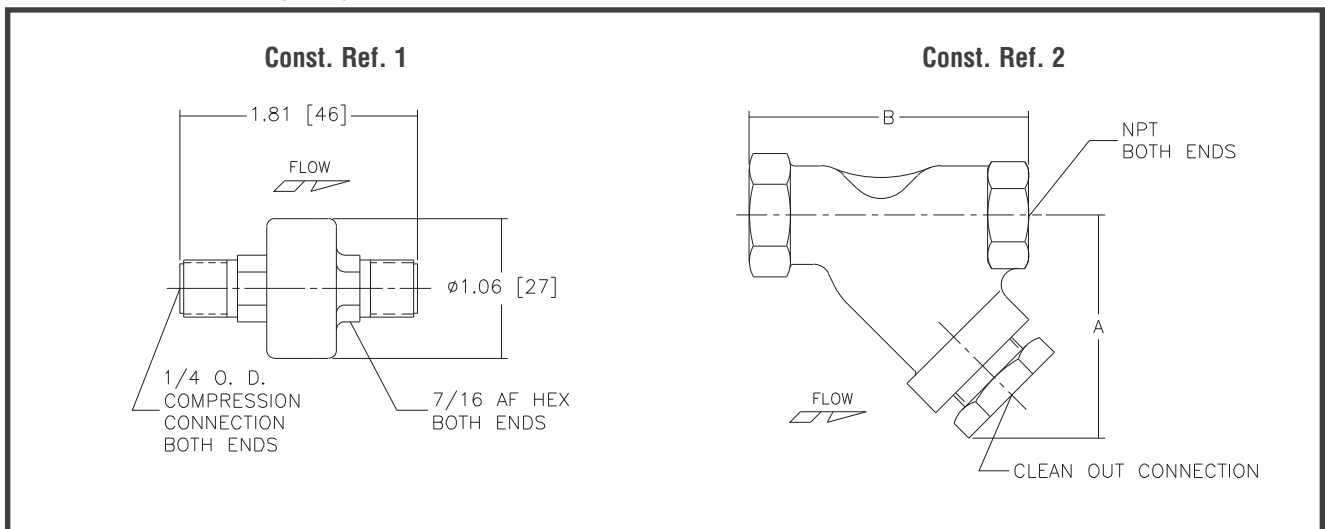
Specifications (English units)

Pipe Size (ins.)	Cv Flow Factor	Screen Mesh Size ③	Total Free Hole Area (in. ²)	Particle Retention Size ③		Blow-Off Pipe Size (ins.)	Max. Fluid Temp. °F ⑤	Safe Working Pressure (psi) ⑤	Catalog Number	Const. Ref.	Dimensions (ins.)	
				Microns	Inches						A	B
CA BODY with Stainless Steel Strainer Element and NBR Seals												
①	.50	80x80	.116	178	.007	--	130	50	8604 004	1	②	②
① ④	.50	80x80	.116	178	.007	--	130	175	8604 002	1	②	②
FORGED BRASS BODY with Stainless Steel Strainer Element and PTFE or FPM Seals ⑧												
1/8	1	60x60	.325	155	.0061	--	400	750	8600A001 ⑥ ⑦	2	1 11/32	2
1/4	1.7	60x60	.325	155	.0061	--	400	750	8600A002 ⑥ ⑦	2	1 11/32	2
3/8	1.9	100x100	.35	140	.0055	--	400	750	8600A013 ⑥	2	1 5/8	1 29/32
1/2	2.6	100x100	.50	140	.0055	--	400	750	8600A014 ⑥	2	1 13/16	2 9/32
3/4	4.7	100x100	.75	140	.0055	--	400	750	8600A015 ⑥	2	2 3/32	2 3/4
BRONZE BODY with Stainless Steel Strainer Element												
1	18	60x60	3.52	155	.0061	3/4	150	500	8600B006	2	3 1/2	4 7/8
1 1/4	24	60x60	4.48	155	.0061	3/4	150	500	8600B007	2	4 3/16	5 3/8
1 1/2	36	60x60	6.39	155	.0061	3/4	150	500	8600B008	2	4 3/4	6 3/8
2	63	60x60	6.49	155	.0061	1	150	500	8600B009	2	5 11/16	7 1/2
CAST IRON BODY with Stainless Steel Strainer Element												
1/4	1.8	60x60	0.93	155	.0061	1/4	150	300	8602B012	2	2 3/16	2 7/8
3/8	3.2	60x60	0.93	155	.0061	1/4	150	300	8602B013	2	2 3/16	2 7/8
1/2	5.9	60x60	1.49	155	.0061	3/8	150	300	8602B014	2	2 11/16	3 7/16
3/4	11	60x60	2.70	155	.0061	1/2	150	300	8602B015	2	3/38	4 3/8
1	18	60x60	3.52	155	.0061	3/4	150	300	8602B016	2	3 1/2	4 7/8
1 1/4	24	60x60	4.58	155	.0061	1	150	300	8602B017	2	4 1/8	5 3/8
1 1/2	36	60x60	6.39	155	.0061	1-1/4	150	300	8602B018	2	4 11/16	6 3/8
2	68	60x60	6.49	155	.0061	1-1/2	150	300	8602B019	2	5 7/16	7 1/2
2 1/2	81	60x60	10.01	155	.0061	1-1/4	150	300	8602B020	2	6 7/16	9
STAINLESS STEEL BODY with Stainless Steel Strainer Element and PTFE Seals												
3/8	2.1	60x60	.23	250	.0098	1/4	450	1500	8601 004	2	1 27/32	1 29/32
1/2	3	60x60	.35	250	.0098	1/4	450	1500	8601 005	2	2	2 9/32
① 1/4" O.D. compression connection. Fittings are not supplied. To order, refer to List Price Schedule.							⑤ Metal body strainers are rated for steam at 250 psi maximum pressure and 406°F maximum temperature.					
② See dimensions.							⑥ UL recognized component.					
③ Other mesh sizes may be available; consult ASCO.							⑦ Strainer supplied with FKM seal.					
④ Where pressure exceeds 50 psi, it is advisable to use hose or tubing clamps.												

Specifications (Metric units)

Pipe Size (ins.)	Kv Flow Factor (m3/h)	Screen Mesh Size ③	Total Free Hole Area (mm ²)	Particle Retention Size ③		Blow-Off Pipe Size (ins.)	Max. Fluid Temp. °C ⑤	Safe Working Pressure (bar) ⑤	Catalog Number	Const. Ref.	Dimensions (mm)	
				Microns	Inches						A	B
CA BODY with Stainless Steel Strainer Element and NBR Seals												
①	.43	80x80	75	178	.007	-	54	3	8604 004	1	②	②
① ④	.43	80x80	75	178	.007	-	54	12	8604 002	1	②	②
FORGED BRASS BODY with Stainless Steel Strainer Element and PTFE or FPM Seals ⑥												
1/8	.86	60x60	210	155	.0061	-	204	52	8600A001 ⑦	2	34	51
1/4	1.46	60x60	210	155	.0061	-	204	52	8600A002 ⑦	2	34	51
3/8	1.63	100x100	226	140	.0055	-	204	52	8600A013 ⑥	2	41	48
1/2	2.23	100x100	323	140	.0055	-	204	52	8600A014 ⑥	2	46	58
3/4	4.03	100x100	484	140	.0055	-	204	52	8600A015 ⑥	2	53	70
BRONZE BODY with Stainless Steel Strainer Element												
1	15.43	60x60	2270	155	.0061	3/4	66	34	8600B006	2	89	124
1 1/4	20.57	60x60	2890	155	.0061	3/4	66	34	8600B007	2	106	137
1 1/2	30.86	60x60	4122	155	.0061	3/4	66	34	8600B008	2	121	162
2	54.00	60x60	4186	155	.0061	1	66	34	8600B009	2	144	191
CAST IRON BODY with Stainless Steel Strainer Element												
1/4	1.54	60x60	600	155	.0061	1/4	66	21	8602B012	2	56	73
3/8	2.74	60x60	600	155	.0061	1/4	66	21	8602B013	2	56	73
1/2	5.06	60x60	961	155	.0061	3/8	150	21	8602B014	2	68	87
3/4	9.43	60x60	1742	155	.0061	1/2	151	21	8602B015	2	2	111
1	101.14	60x60	2270	155	.0061	3/4	152	21	8602B016	2	89	124
1 1/4	20.57	60x60	2954	155	.0061	1	153	21	8602B017	2	105	137
1 1/2	30.86	60x60	4122	155	.0061	1-1/4	154	21	8602B018	2	119	162
2	58.28	60x60	4186	155	.0061	1-1/2	155	21	8602B019	2	138	191
2 1/2	69.43	60x60	6456	155	.0061	1-1/4	156	21	8602B020	2	164	229
STAINLESS STEEL BODY with Stainless Steel Strainer Element and PTFE Seals												
3/8	1.80	60x60	148	250	.0098	1/4	232	103	8601 004	2	47	48
1/2	2.57	60x60	226	250	.0098	1/4	232	103	8601 005	2	51	58
① 1/4" O.D. compression connection. Fittings are not supplied. To order, refer to List Price Schedule. ② See dimensions. ③ Other mesh sizes may be available; <i>consult ASCO</i> . ④ Where pressure exceeds 3.4 bar, it is advisable to use hose or tubing clamps.						⑤ Metal body strainers are rated for steam at 17 bar maximum pressure and 208°C maximum temperature. ⑥ UL recognized component. ⑦ Strainer supplied with FKM seal.						

Dimensions inches (mm)

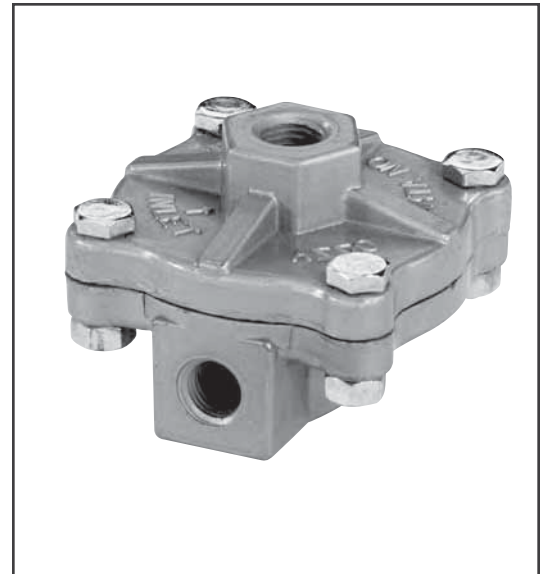


Features

- Compact, 3-ported valves have oversized orifice for quick exhaust of cylinders, brakes, actuators, clutches, etc.
- Allow use of smaller pipe lines and control components
- When used as a shuttle valve, high pressure from the two inlets exits through the common outlet
- Mountable in any position

Construction

Valve Parts in Contact with Fluids	
V043 051	
Body and Bonnet	316 Stainless Steel
Seat	HYT
All Others	
Body and Bonnet	Die-Cast Zinc
Seat	NBR



Nominal Ambient Temp. Ranges

V043 051: -40°F to 125°F (-40°C to 52°C)

All Others: -4°F to 125°F (-20°C to 52°C)

Refer to Engineering Section for details.

Specifications (English units)

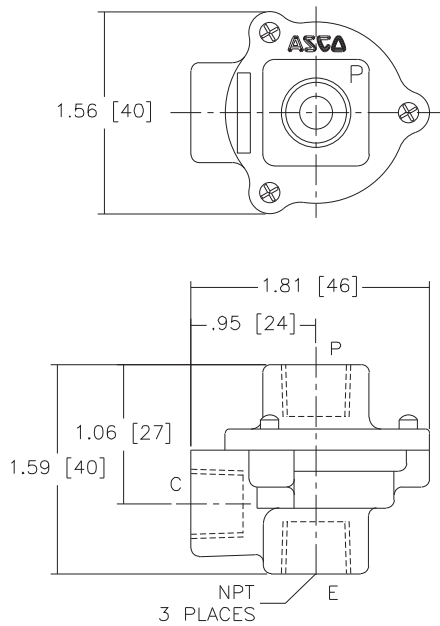
Pipe Size (ins.)	Cv Flow Factor		Opening Pressure (psi)	Maximum Operating Pressure Differential (psi)	Max. Air Temp. °F	Quick Exhaust/ Shuttle Valve	Shutoff Valve	Body Material	Const. Ref.
	Pressure to Cylinder	Cylinder to Exhaust				Catalog Number	Catalog Number		
1/8	.7	.8	5	125	125	V043 005	-	Zinc	1
1/4	.8	1.0	5	125	125	V043 006	-	Zinc	1
1/4	.8	1.4	15	150	125	V043 051	-	S.S.	3
1/4	2.0	2.0	5	125	125	V043 001	V043 011	Zinc	2
3/8	3.5	4.5	5	125	125	V043 002	V043 021	Zinc	2

Specifications (Metric units)

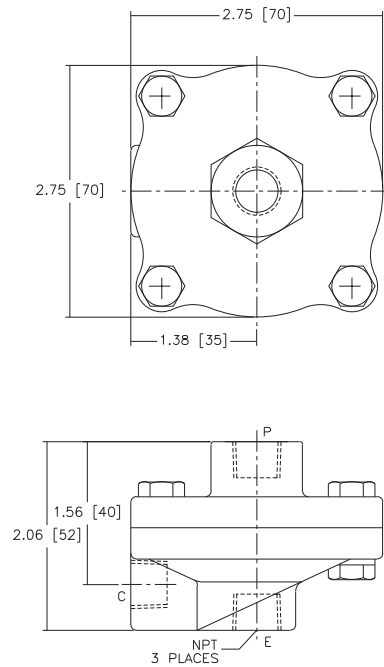
Pipe Size (ins.)	Kv Flow Factor (m3/h)		Opening Pressure (bar)	Maximum Operating Pressure Differential (bar)	Max. Air Temp. °C	Quick Exhaust/ Shuttle Valve	Shutoff Valve	Body Material	Const. Ref.
	Pressure to Cylinder	Cylinder to Exhaust				Catalog Number	Catalog Number		
1/8	.60	.69	0.3	8.6	52	V043 005	-	Zinc	1
1/4	.69	.86	0.3	8.6	52	V043 006	-	Zinc	1
1/4	.69	1.20	1.0	10.3	52	V043 051	-	S.S.	3
1/4	1.71	1.71	0.3	8.6	52	V043 001	V043 011	Zinc	2
3/8	3.00	3.86	0.3	8.6	52	V043 002	V043 021	Zinc	2

Dimensions inches (mm)

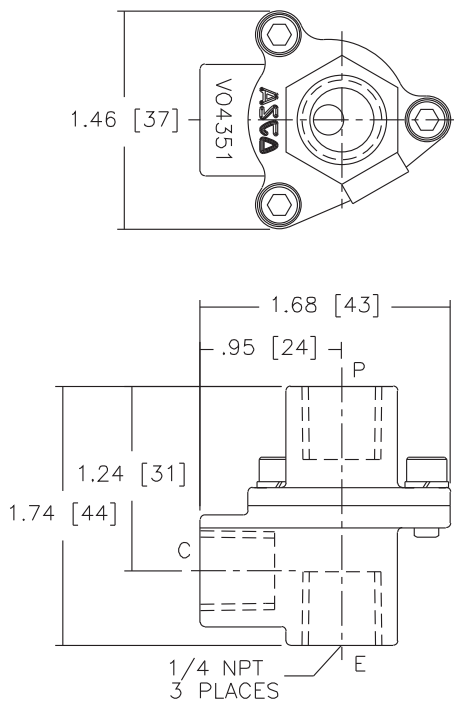
Const. Ref. 1



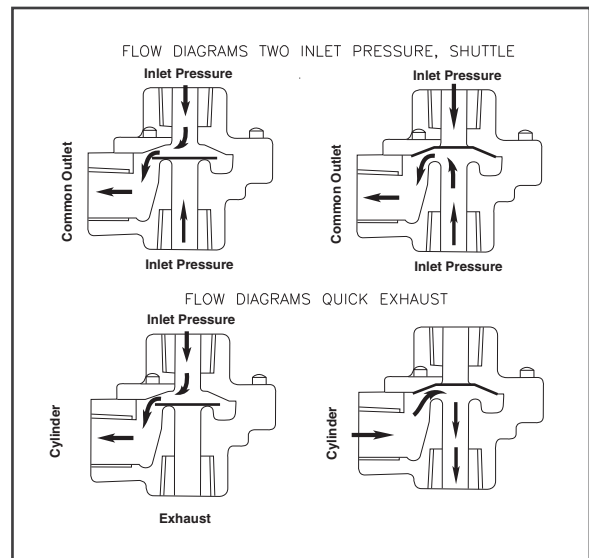
Const. Ref. 2



Const. Ref. 3



Flow Diagrams



Features

- Compact design
- In-line mounted
- Quiet operation
- Instantaneous shutoff against reverse flow, low forward pressure opening
- Disc seats before reverse flow to avoid fluid shock on reverse pressure differential

Construction

Valve Parts in Contact with Fluids		
Body	Brass	300 Stainless Steel
Valve Seat	NBR and EPDM seat at zero pressure in spring-loaded valves.	
	Metal seated - leakage on air up to 65 SCFH.	



Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to Engineering Section for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure (psi)	Maximum Operating Pressure Differential (psi) Air-Inert Gas, Water, and Light Oil	Max. Fluid Temp. °F	Catalog Number	Const. Ref.
FORGED BRASS BODY with NBR Disc							
1/4	9/32	.70	1	150	200	V012 001	1
3/8	3/8	1.2	1	150	200	V012 002	2B
1/2	7/16	2.5	1	150	200	V012 003	2C
3/4	1/2	3.6	1	150	200	V012 004	2D
STAINLESS STEEL BODY with NBR Disc							
1/4	9/32	.70	1	150	200	V012 005	3
3/8	3/8	1.2	1	150	200	V012 006	2B
1/2	7/16	2.5	1	150	200	V012 007	2C
FORGED BRASS BODY with EPDM Disc for Low-Pressure Steam							
1/4	3/8	1.2	1	50	300	V012 010	2A
3/8	3/8	1.2	1	50	300	V012 011	2B
1/2	7/16	2.5	1	50	300	V012 012	2C
3/4	1/2	3.6	1	50	300	V012 013	2D
FORGED BRASS BODY with Metal Seating for High-Pressure Steam							
1/4	3/8	.70	8	200	388	V012 014	2E
3/8	3/8	.70	8	200	388	V012 015	2E
1/2	1/2	3.4	4	200	388	V012 016	2F
3/4	1/2	5.1	4	200	388	V012 017	2F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm.)	Kv Flow Factor (m3/h)	Operating Pressure (bar)	Maximum Operating Pressure Differential (bar) Air-Inert Gas, Water, and Light Oil	Max. Fluid Temp. °C	Catalog Number	Const. Ref.
FORGED BRASS BODY with NBR Disc							
1/4	7	.60	0.07	10	92	V012 001	1
3/8	10	1.03	0.07	10	92	V012 002	2B
1/2	11	2.14	0.07	10	92	V012 003	2C
3/4	13	3.09	0.07	10	92	V012 004	2D
STAINLESS STEEL BODY with NBR Disc							
1/4	7	.60	0.07	10	92	V012 005	3
3/8	10	1.03	0.07	10	92	V012 006	2B
1/2	11	2.14	0.07	10	92	V012 007	2C
FORGED BRASS BODY with EPDM Disc for Low-Pressure Steam							
1/4	10	1.03	0.07	3	147	V012 010	2A
3/8	10	1.03	0.07	3	147	V012 011	2B
1/2	11	2.14	0.07	3	147	V012 012	2C
3/4	13	3.09	0.07	3	147	V012 013	2D
FORGED BRASS BODY with Metal Seating for High-Pressure Steam							
1/4	10	.60	0.55	14	196	V012 014	2E
3/8	10	.60	0.55	14	196	V012 015	2E
1/2	13	2.91	0.28	14	196	V012 016	2F
3/4	13	4.37	0.28	14	196	V012 017	2F

Dimensions inches (mm)

Const. Ref. 1

Const. Ref. 2

Const. Ref. 3

Flow Diagrams

Const. Ref.		E	H	L	P	W
2A	ins.	1.16	2.03	1.91	1.56	0.88
	mm	30	52	49	40	22
2B	ins.	1.16	2.09	1.91	1.66	0.88
	mm	30	53	49	42	22
2C	ins.	1.16	2.38	2.28	1.84	1.09
	mm	30	61	58	47	28
2D	ins.	1.31	2.62	2.75	1.84	1.31
	mm	33	67	70	47	33
2E	ins.	1.16	2.38	2.28	1.84	1.09
	mm	30	61	58	47	28
2F	ins.	1.38	2.94	2.75	2.16	1.31
	mm	35	75	70	55	33

ACCESSORIES

Features

- Solid state electronic timer used to automatically control ASCO solenoid valves
- Typically used with ASCO Solenoid Valves for automatic draining of condensate in compressed air systems (See *Special Service Section for CDV assemblies*)
- Selectable timing ranges (2-40 seconds "on"; 30 seconds to 45 minutes "off")
- Manual override for test/reset
- LED lights to indicate timing phase

Technical Specifications

Supply Voltage	24 - 240V AC/DC 50/60 Hz
Current Consumption	4 mA max.
Operating Temperature	14°F - 122°F
Environmental Protection	Type 4
Switch Capacity	1 Amp
Inrush Current Capacity	10 Amps for 10 mSec
Duty Cycle	100%
Repeat Accuracy	± 0.1%
Scale Accuracy	± 10%
Reset/Test	Manual Touch Switch
Printed Circuit Board	UL 94V0
Connection	DIN 43650 ISO-4400/6952
Indicators	LEDs to indicate phases
On Time	Adjustable from 2 to 40 sec.
Off Time	Adjustable from 30 sec to 45 min.



Timer and Accessories Kit Numbers

Timer Catalog Number:	272839-001 272839-009**
Power Cord* Kit Number:	272852
DIN Connector Kit Number:	272873

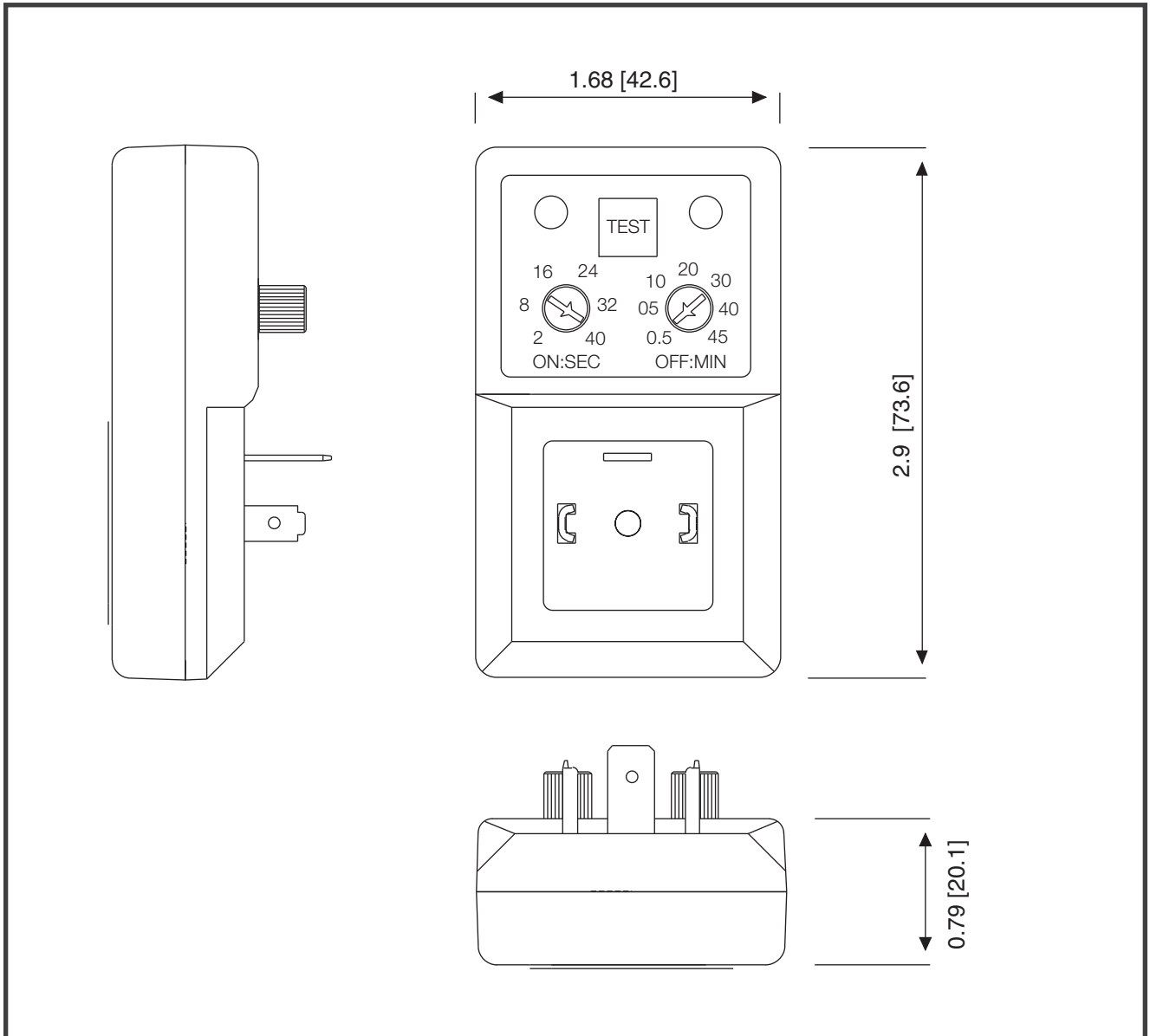
* 6' power cord has DIN connector and 3-prong plug for wall outlet.
** For use with DIN 11 CDV Assemblies.

Approvals

CSA certified. UL recognized components. Meets applicable CE directives.

Refer to Engineering Section for details.

Dimensions inches (mm)



Air Preparation Equipment

ASCO's Modulair 100 Series offers all the control, flexibility and performance you need from your air preparation equipment. Components of the Modulair Series consist of filters, regulators and lubricators (FRLs). These components can be installed separately or can be assembled into a complete unit, as you require.

What are FRLs and why should they be used?

Pneumatic actuators and controls perform more reliably and efficiently, and have a longer life, when the air is prepared for your specific application. These easy-to-use FRLs are specifically engineered to give you increased airflow from a modular system.

Filters

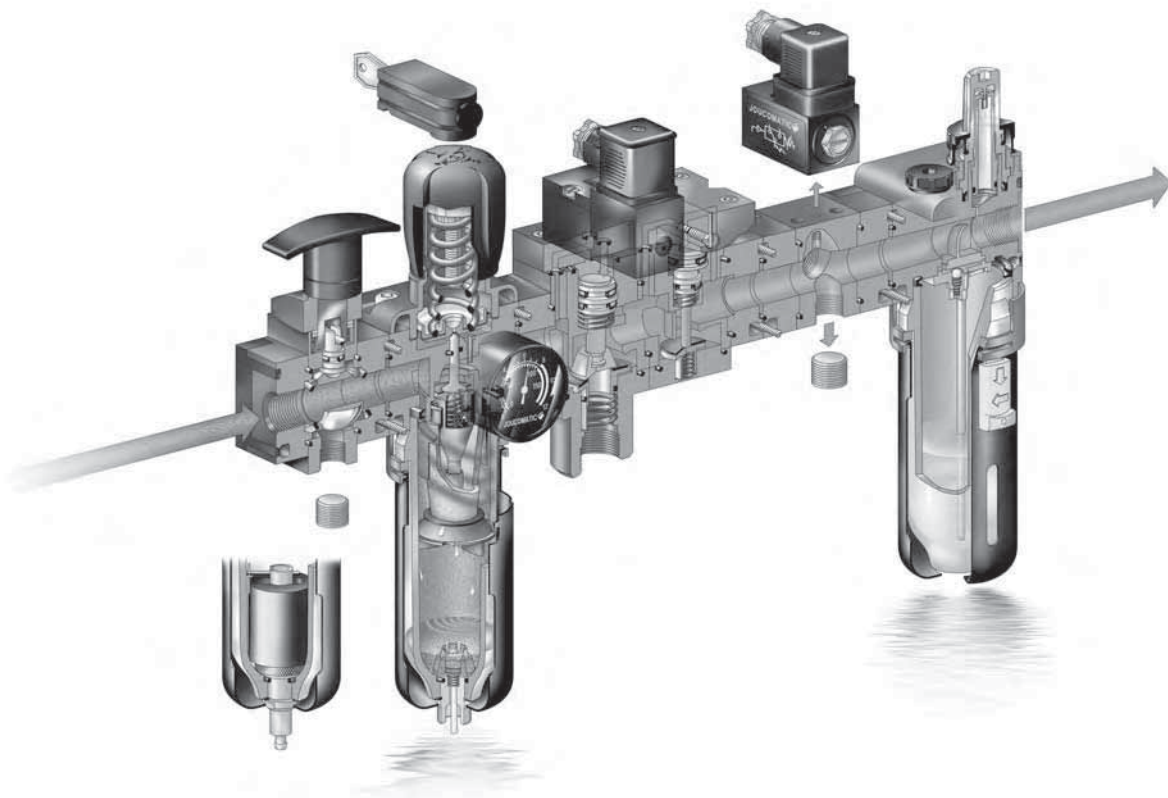
Condensation during the compression of air and water vapor can cause particles of pipe scale and other contaminants in the pipes. These particles need to be removed before they reach the pneumatic equipment, such as valves and cylinders. Particles can damage and clog small orifices in the equipment unless they are filtered out. Filters separate the water droplets and particles from the air before they reach your pneumatic equipment.

Regulators

Compressed air must be kept at a constant pressure regardless of network fluctuations, variations in air consumption, or distance from the compressor. The regulator is used to maintain consistent downstream pressure.

Lubricators

All moving parts must be kept lubricated for a longer life. The lubricator stores droplets of oil in the bowl, releasing the oil into the high velocity air stream and spreading the oil throughout the piping system to the components.



FRLs

Filters, Regulators, and Lubricators

Tamper Proof Knob, Bayonette Type Release
1/8" to 1" NPT



ASCO offers a complete line of air handling equipment. Filters, regulators, and lubricators are essential whenever pneumatic equipment is used. Filters come in a variety of micron ratings to clean the air of moisture and particulate coming out of your compressor. Regulators are located at specific locations to isolate areas of a pipe train that require unique pressures. Lubricators are used on pneumatic air components to give them the required lubrication for extended life. These components can be ordered separately for individual locations, or assembled for a central location.



Construction

Modular Series	Pipe Size	Filters	Regulators	Water Reg.	Joinable Reg.	Lubricators	Monobloc F/L
105	1/8", 1/4"	25um, 5um					
Body		Polyamide (PA)	Polyamide	Polyamide	N/A	N/A	Polyamide (PA)
Bowl		Polycarbonate (PC)	-	-	N/A	N/A	Polycarbonate (PC)
Bowl Protector		Polyamide (PA)	-	-	N/A	N/A	Polyamide (PA)
Filter Element		Polyethylene (PE)	-	-	N/A	N/A	Polyethylene (PE)
Seals		Nitrile (NBR)	Nitrile (NBR)	NBR	N/A	N/A	Nitrile (NBR)
107	1/8", 1/4"	25um, 5um					
Body		Painted Zinc Alloy	Painted Zinc Alloy	N/A	N/A	Painted Zinc Alloy	N/A
Bowl		PC or PA	-	N/A	N/A	PC or PA	N/A
Bowl Protector		Painted Steel	-	N/A	N/A	Painted Steel	N/A
Internal Parts		-	-	N/A	N/A	-	N/A
Filter Element		Polyethylene (PE)	-	N/A	N/A	-	N/A
Seals		Nitrile (NBR)	Nitrile (NBR)	N/A	N/A	Nitrile (NBR)	N/A
112	1/4", 3/8", 1/2"	25um, 5um					
Body		Painted Zinc Alloy	Painted Zinc Alloy	N/A	Painted Zinc Alloy	Painted Zinc Alloy	N/A
Bowl		Metal or PC	-	N/A	-	Metal or PC	N/A
Bowl Protector		Painted Steel	-	N/A	-	Painted Steel	N/A
Internal Parts		-	-	N/A	-	-	N/A
Filter Element		Polyethylene (PE)	-	N/A	-	-	N/A
Seals		Nitrile (NBR)	Nitrile (NBR)	N/A	Nitrile (NBR)	Nitrile (NBR)	N/A
160	3/4", 1"	30um, 5um					
Body		Aluminum	Aluminum	N/A	N/A	Aluminum	N/A
Bowl		Metal with Polypropylene View Window	-	N/A	N/A	Metal with Polypropylene View Window	N/A
Bowl Protector		-	-	N/A	N/A	-	N/A
Internal Parts		-	-	N/A	N/A	-	N/A
Filter Element		Sintered Plastic	-	N/A	N/A	-	N/A
Seals		Nitrile (NBR)	Nitrile (NBR)	N/A	N/A	Nitrile (NBR)	N/A
Page Number		472, 473	474, 475	474, 475	474, 475	476, 477	476, 477

ACCESSORIES



F/R	FRL	Coalescing Filters	Combination Coalescing Filters	Shut-Off Valves	Soft-Start Devices	3/2 Isolation Valves	Bypass Modules
Polyamide (PA)	Polyamide (PA)	N/A	N/A	N/A	N/A	N/A	N/A
Polycarbonate (PC)	Polycarbonate (PC)	N/A	N/A	N/A	N/A	N/A	N/A
Polyamide (PA)	Polyamide (PA)	N/A	N/A	N/A	N/A	N/A	N/A
Polyethylene (PE)	Polyethylene (PE)	N/A	N/A	N/A	N/A	N/A	N/A
Nitrile (NBR)	Nitrile (NBR)	N/A	N/A	N/A	N/A	N/A	N/A
		.01um	5um pre filter -.01um				
Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy
PC or PA	PC or PA	PC or PA	PC or PA	-	-	-	-
Painted Steel	Painted Steel	Painted Steel	Painted Steel	-	-	-	-
-	-	-	-	Brass, Acetal Resin	Brass, Acetal Resin	-	-
Polyethylene (PE)	Polyethylene (PE)	Polyethylene (PE)	Polyethylene (PE)	-	-	-	-
Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)
		.01um	5um pre filter -.01um				
Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy	Painted Zinc Alloy
PC	PC	PC	PC	-	-	-	-
Painted Steel	Painted Steel	Painted Steel	Painted Steel	-	-	-	-
-	-	-	-	Brass, Acetal Resin	Brass, Acetal Resin	-	-
Polyethylene (PE)	Polyethylene (PE)	Polyethylene (PE)	Polyethylene (PE)	-	-	-	-
Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)
		.01um	5um pre filter -.01um				
Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Metal with Polypropylene View Window	Metal with Polypropylene View Window	Metal with Polypropylene View Window	Metal with Polypropylene View Window	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	Aluminum, Brass	Aluminum, Brass	-	-
Sintered Plastic	Sintered Plastic	Sintered Plastic	Sintered Plastic	-	-	-	-
Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)
478, 479	480, 481	482	482	484	484	483	483

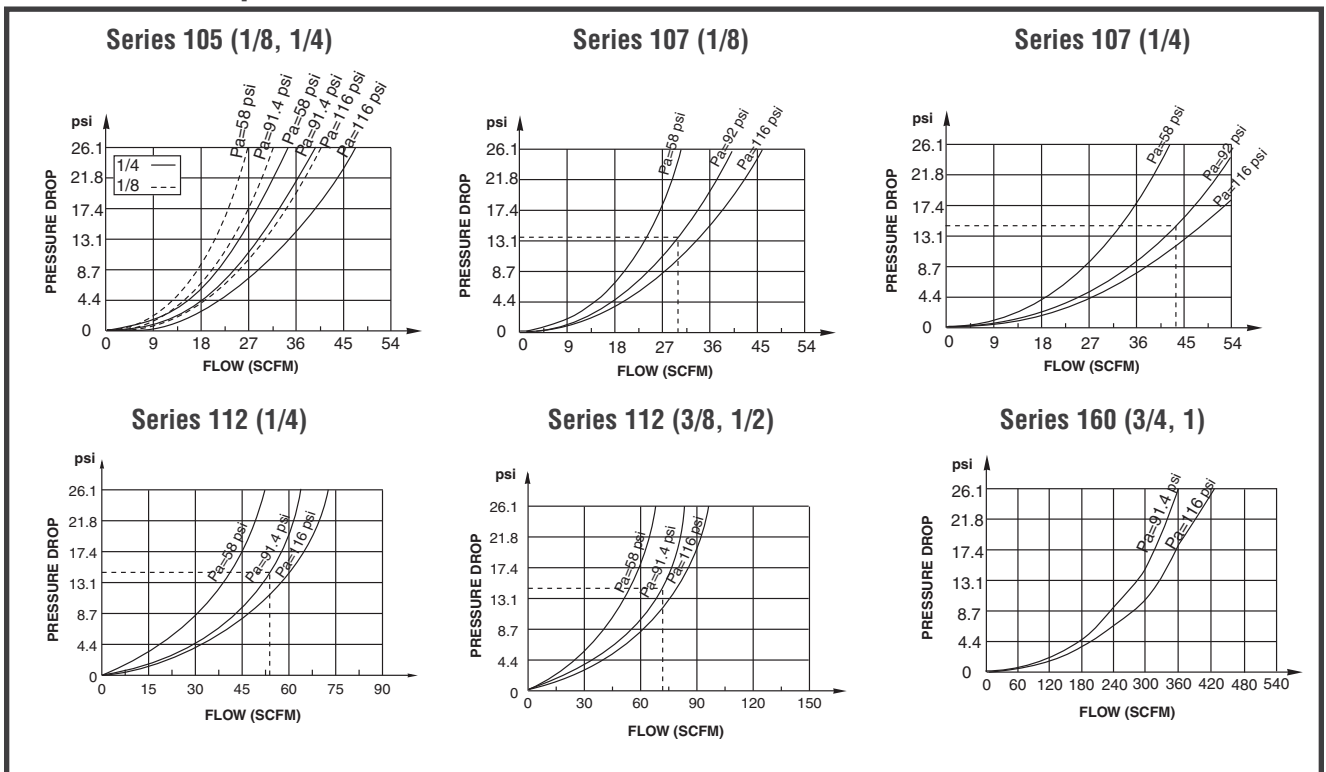
ACCESSORIES

Filter - Specifications

Series	Pipe Size (ins.)	Bowl Capacity (oz.)		Max. Flow @ 90 psi and 1 psi Drop (SCFM)	Max. Inlet Pressure (psi) @ 125°F	Filter Capacity (microns)	Min. Ambient Temp. °F	Max. Ambient Temp. °F	Semi Automatic Drain		Automatic Drain	
		Total	Useful						With Bowl Protection	Without Bowl Protection	With Bowl Protection	Without Bowl Protection
Filter - 5 Micron Polycarbonate (PC) Bowl												
105	1/8	0.90	0.32	26.7	150 ①	5	32	125	342 25 255	342 25 175	-	-
107	1/8	1.61	0.39	30.9	150 ②	5	32	125	342 04 017	342 04 029	-	-
105	1/4	0.90	0.32	31.5	150 ①	5	32	125	342 25 256	342 25 176	-	-
107	1/4	1.61	0.39	43.5	150 ②	5	32	125	342 04 018	342 04 030	-	-
112	1/4	3.65	1.28	54.0	150 ②	5	32	125	342 03 010	-	342 03 022	-
112	3/8	3.65	1.28	72.0	150 ②	5	32	125	342 03 011	-	342 03 023	-
112	1/2	3.65	1.28	72.0	150 ②	5	32	125	342 03 012	-	342 03 024	-
160	3/4	16	4.16	270	254	5	15	125	342 07 390 ④	-	342 07 396 ④	-
160	1	16	4.16	294	254	5	15	125	342 07 391 ④	-	342 07 397 ④	-
Filter - 25 Micron Polycarbonate (PC) Bowl												
105	1/8	0.90	0.32	31.4	150 ①	25	32	125	342 25 215	342 25 135	-	-
107	1/8	1.61	0.39	36.4	150 ②	25	32	125	342 04 013	342 04 025	-	-
105	1/4	0.90	0.32	37.1	150 ①	25	32	125	342 25 216	342 25 136	-	-
107	1/4	1.61	0.39	51.2	150 ②	25	32	125	342 04 014	342 04 026	-	-
112	1/4	3.65	1.28	63.5	150 ②	25	32	125	342 03 004	342 03 041	342 03 016	342 03 453
112	3/8	3.65	1.28	84.7	150 ②	25	32	125	342 03 005	342 03 042	342 03 017	342 03 454
112	1/2	3.65	1.28	84.7	150 ②	25	32	125	342 03 006	342 03 043	342 03 018	342 03 455
160	3/4	16	4.16	317.5	254	30	15	125	342 07 381 ③④	-	342 07 387 ③④	-
160	1	16	4.16	346	254	30	15	125	342 07 382 ③④	-	342 07 388 ③④	-

① 175 psi @ 75°F Max. Ambient & Fluid Temperature. ② 230 psi @ 75°F Max. Ambient & Fluid Temperature. ③ 30 micron filter. ④ Metal bowl with Polypropylene viewing window. Consult ASCO for manual drains on 160 Series.

Filter - Flow Graphs

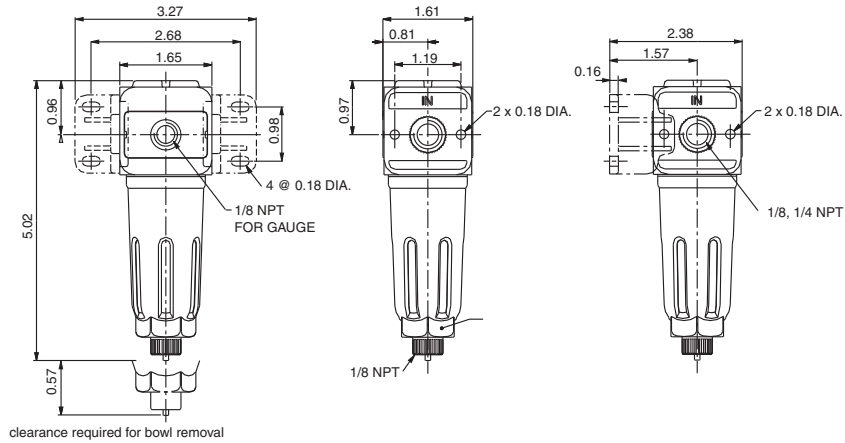


ACCESSORIES

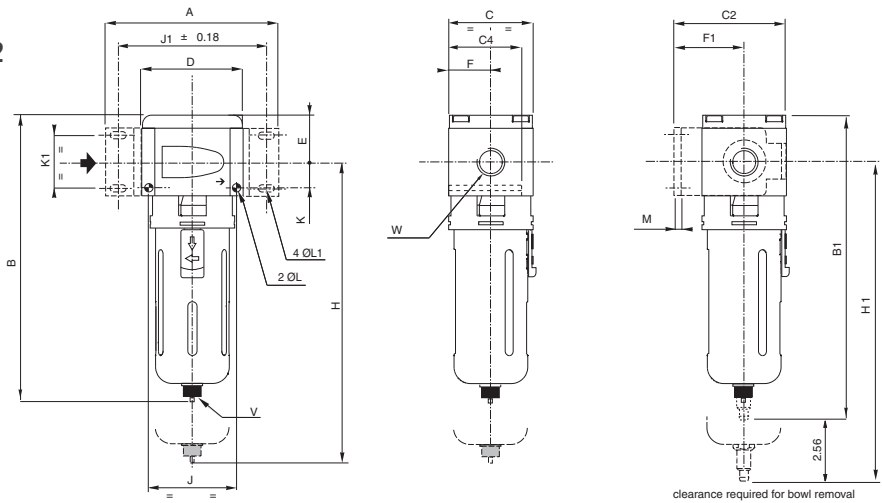
Filter - Dimensions inches

Series	A	B	B1	C	C2	C4	D	E	F	F1	H	H1	J	J1	K	K1	L (Dia.)	L1 (Dia.)	M	V	W
107	3.27	6.28	-	1.65	2.40	1.50	1.65	1.00	0.83	1.57	7.48	-	1.26	2.70	0.39	1.10	0.16	0.18	0.12	1/8	1/8", 1/4" NPT
112	4.41	7.36	7.80	2.17	2.89	1.87	2.60	1.20	1.08	1.81	8.72	9.15	2.24	3.78	0.67	1.32	0.22	0.22	0.16	1/8	1/4", 3/8", 1/2" NPT

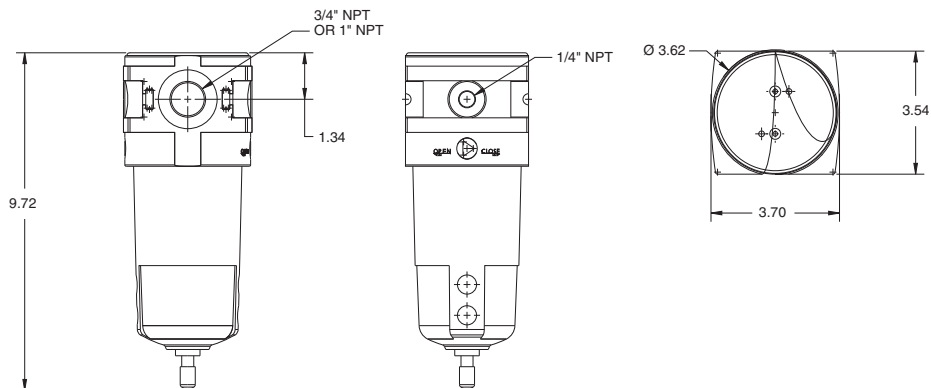
Series 105



Series 107, 112



Series 160

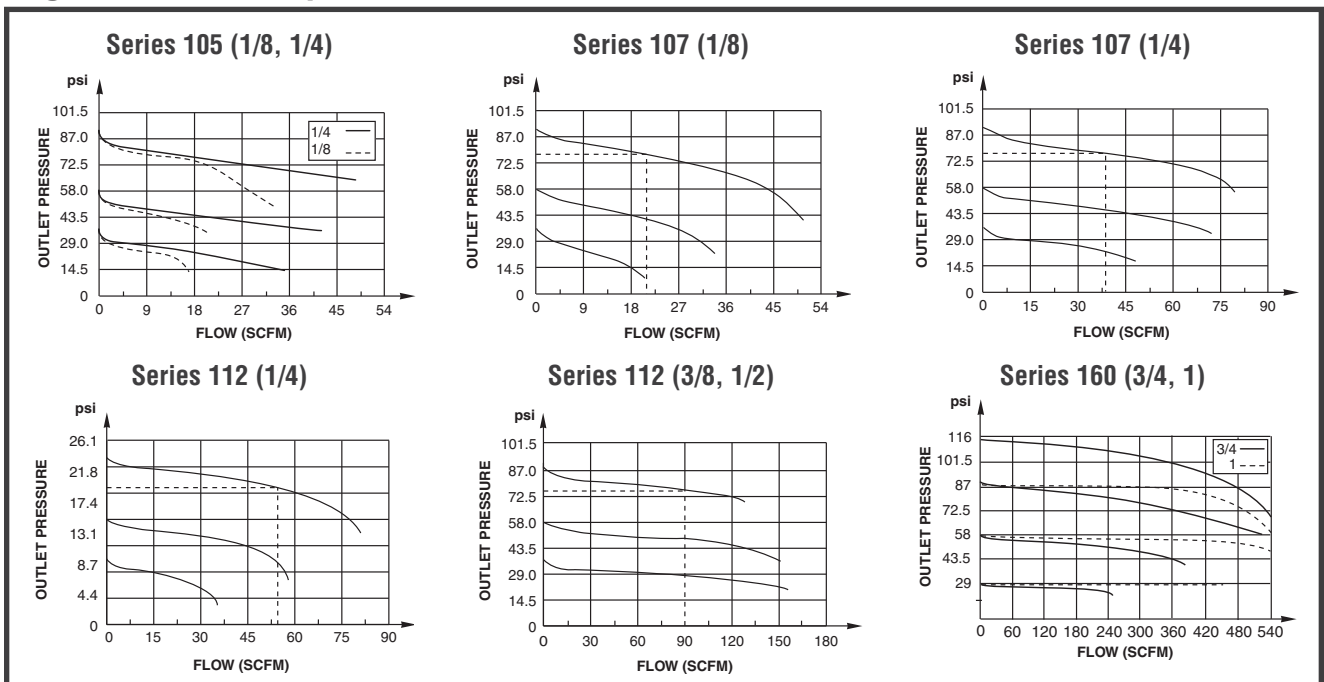


Regulator - Specifications

Series	Pipe Size (ins.)	Max. Flow @ 90 psi (SCFM)	Max. Inlet Pressure (psi)	Pressure Control Range (psi)	Min. Ambient Temp. °F	Max. Ambient Temp. °F	With Pressure Gauge	Without Pressure Gauge
Regulator - Self-Relieving Air Service								
105	1/8	19.4	175	7 - 120	32	125	342 25 027	342 25 019
105	1/8	19.4	175	3 - 44	32	125	342 25 265	342 25 263
107	1/8	24.7	230	7 - 145	15	140	342 04 200	342 04 035
107	1/8	24.7	230	3 - 44	15	140	342 04 198	342 04 041
105	1/4	22.9	175	7 - 120	32	125	342 25 028	342 25 020
105	1/4	22.9	175	3 - 44	32	125	342 25 266	342 25 264
107	1/4	45.9	230	7 - 145	15	140	342 04 201	342 04 036
107	1/4	45.9	230	3 - 44	15	140	342 04 199	342 04 042
112	1/4	63.5	230	7 - 145	15	140	342 03 061	342 03 055
112	1/4	63.5	230	3 - 44	15	140	342 03 073	342 03 067
112	3/8	105.9	230	7 - 145	15	140	342 03 062	342 03 056
112	3/8	105.9	230	3 - 44	15	140	342 03 074	342 03 068
112	1/2	105.9	230	7 - 145	15	140	342 03 063	342 03 057
112	1/2	105.9	230	3 - 44	15	140	342 03 075	342 03 069
160	3/4	423.3	254	7 - 175	15	140	342 07 438	342 07 435
160	1	582.1	254	7 - 175	15	140	342 07 439	342 07 436
Regulator - Non Self-Relieving Water Service (max. flow in GPM)								
105	1/8	2.6	175	3 - 44	40	125	342 25 277	342 25 275
105	1/8	2.6	175	7 - 87	40	125	342 25 281	342 25 279
105	1/4	4.0	175	3 - 44	40	125	342 25 278	342 25 276
105	1/4	4.0	175	7 - 87	40	125	342 25 282	342 25 280
Joinable Regulator - Self-Relieving Air Service (Common inlet size 1/2" NPT) ①								
112	3/8	105.9	230	3 - 44	15	140	342 03 770	342 03 768
112	3/8	105.9	230	7 - 145	15	140	342 03 774	342 03 772
112	1/2	105.9	230	3 - 44	15	140	342 03 771	342 03 769
112	1/2	105.9	230	7 - 145	15	140	342 03 775	342 03 773

① To supply different circuits with different pressures from a common supply.

Regulator - Flow Graphs

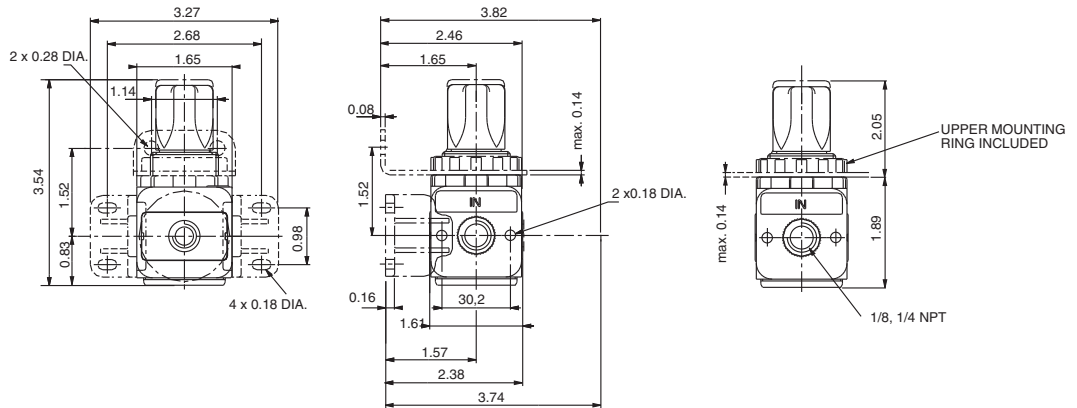


ACCESSORIES

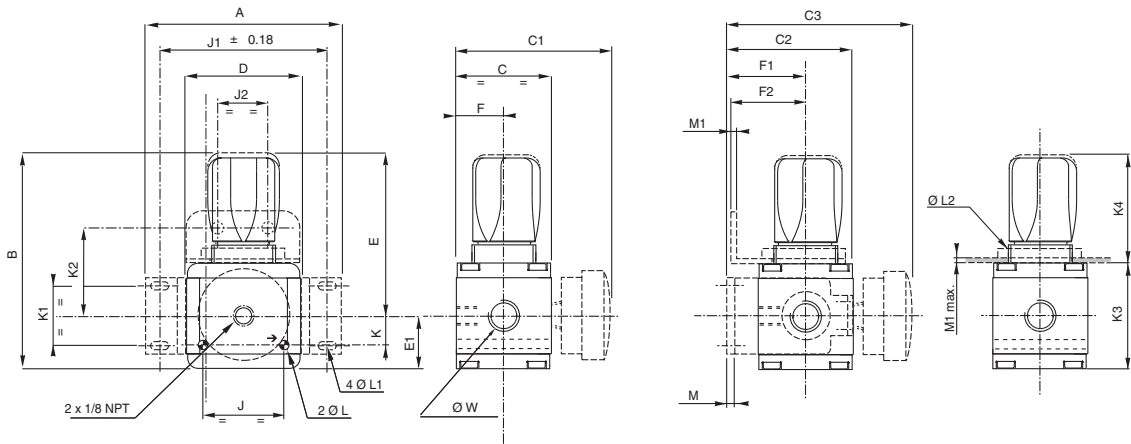
Regulator - Dimensions inches

Series	A	B	C	C1	C2	C3	D	E	E1	F	F1	F2	J	J1	J2	K	K1	K2	K3	K4	L (Dia.)	L1 (Dia.)	L2 (Dia.)	M	M1	W
107	3.27	4.09	1.65	2.99	2.40	3.74	1.65	3.09	1.00	0.83	1.57	1.65	1.26	2.70	1.14	0.39	1.10	1.48	2.01	2.09	0.16	0.18	M30 x 2	0.12	0.08	1/8", 1/4" NPT
112	4.41	4.92	2.17	3.43	2.89	4.13	2.60	3.72	1.20	1.08	1.81	1.65	1.77	3.78	1.14	0.67	1.32	1.67	2.40	2.52	0.22	0.22	M37 x 2	0.16	0.08	1/4", 3/8", 1/2" NPT

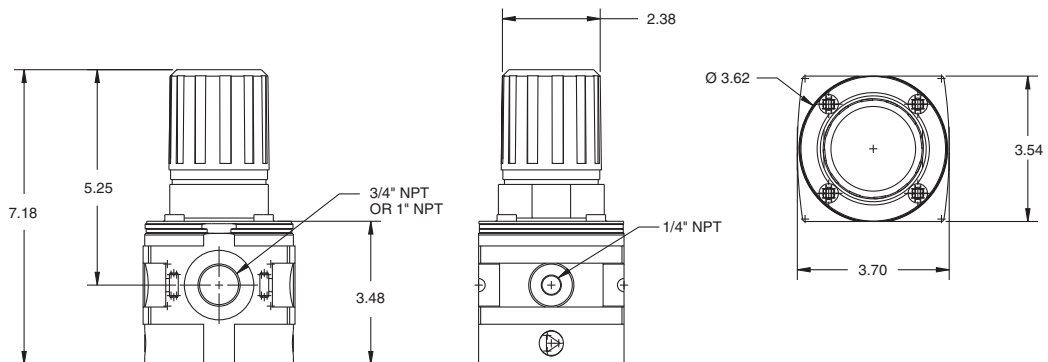
Series 105



Series 107, 112



Series 160



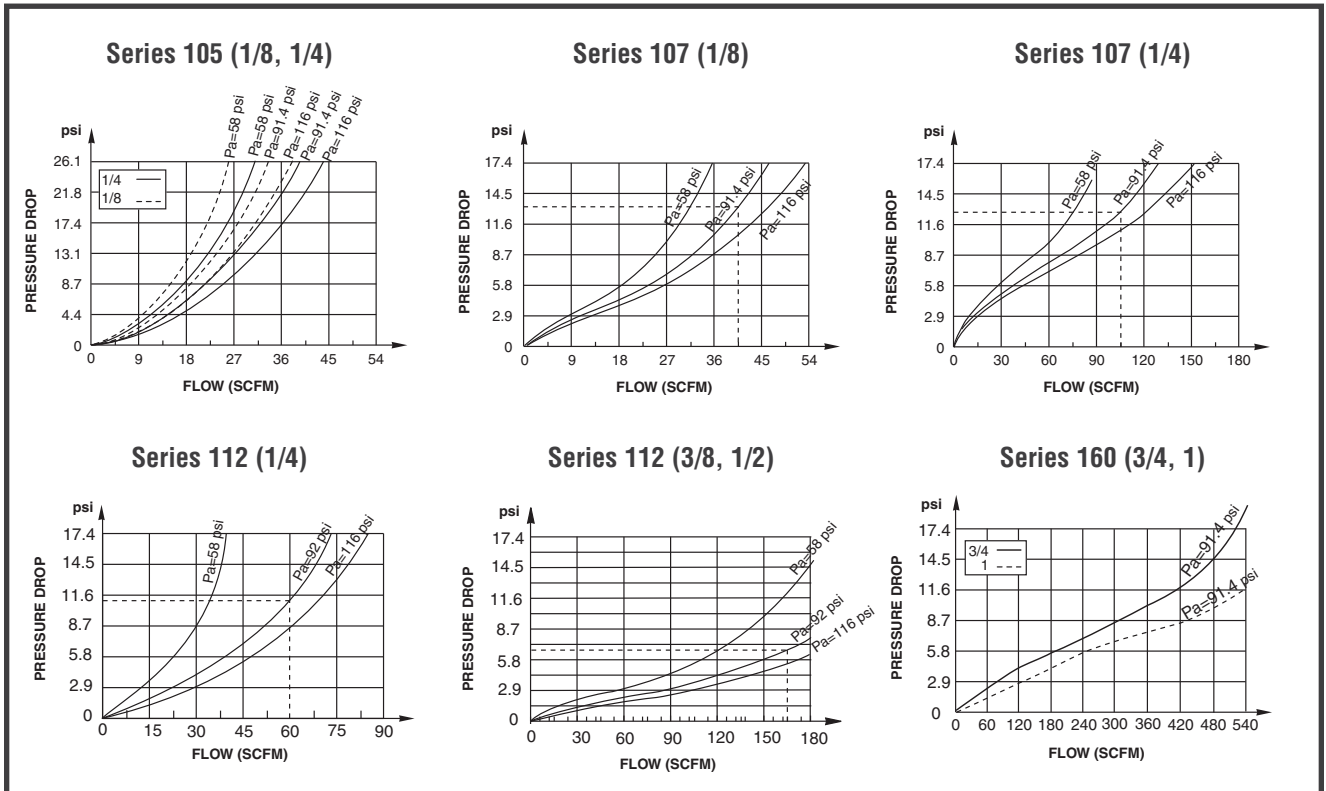
ACCESSORIES

Lubricator - Specifications

Series	Pipe Size (ins.)	Bowl Capacity (oz.)	Max. Oil Capacity (oz.)	Min. Flow @ 90 psi (SCFM)	Max. Flow @ 90 psi (SCFM)	Max. Inlet Pressure (psi) @ 125°F	Min. Ambient Temp. °F	Max. Ambient Temp. °F	With Bowl Guard	Without Bowl Guard
Lubricator - Selective Oil Fog										
105	1/8	0.9	0.74	0.71	29.3	150	32	125	342 25 195 ②③	342 25 115 ②③
107	1/8	1.6	0.96	0.71	47.7	150 ①	32	125	342 04 003	342 04 007
105	1/4	0.9	0.74	0.71	33.5	150	32	125	342 25 196 ②③	342 25 116 ②③
107	1/4	1.6	0.96	0.71	123.6	150 ①	32	125	342 04 004	342 04 008
112	1/4	3.6	2.3	0.71	70.6	150 ①	32	125	342 03 273	342 03 279
112	3/8	3.6	2.3	0.71	194.2	150 ①	32	125	342 03 274	342 03 280
112	1/2	3.6	2.3	0.71	194.2	150 ①	32	125	342 03 275	342 03 281
160	3/4	16.6	16.0	3.17	564.5	254	15	125	342 07 555	-
160	1	16.6	16.0	3.17	624.5	254	15	125	342 07 556	-

① 175 psi @ 75°F Max. Ambient & Fluid Temperature. ② Includes 25 micron filter (see filter section for specifications). ③ Combination Filter-Lubricator only.

Lubricator - Flow Graphs

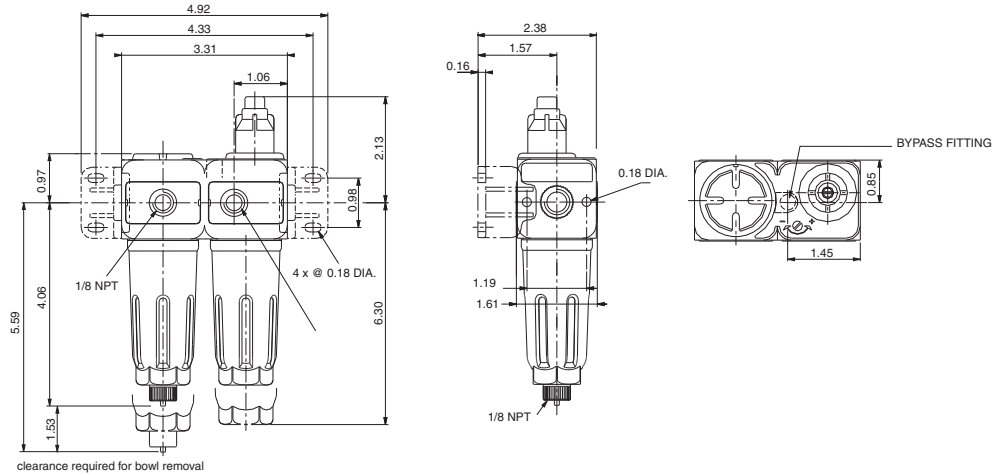


ACCESSORIES

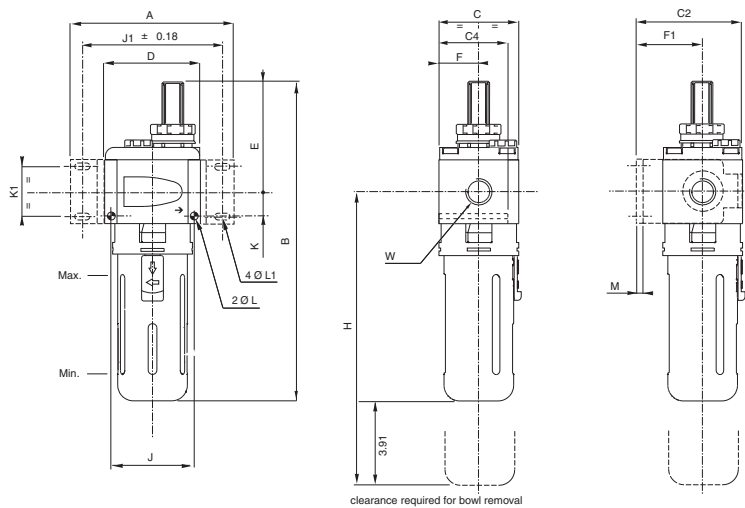
Lubricator - Dimensions inches

Series	A	B	C	C2	C4	D	E	F	F1	H	J	J1	K	K1	L (Dia.)	L1 (Dia.)	M	W
107	3.27	7.36	1.65	2.40	1.50	1.65	2.56	0.83	1.57	8.46	1.26	2.70	0.39	1.10	0.16	0.18	0.16	1/8", 1/4" NPT
112	4.41	8.46	2.17	2.89	1.87	2.60	2.80	1.08	1.81	9.57	2.24	3.78	0.67	1.32	0.22	0.22	0.16	1/4", 3/8", 1/2" NPT

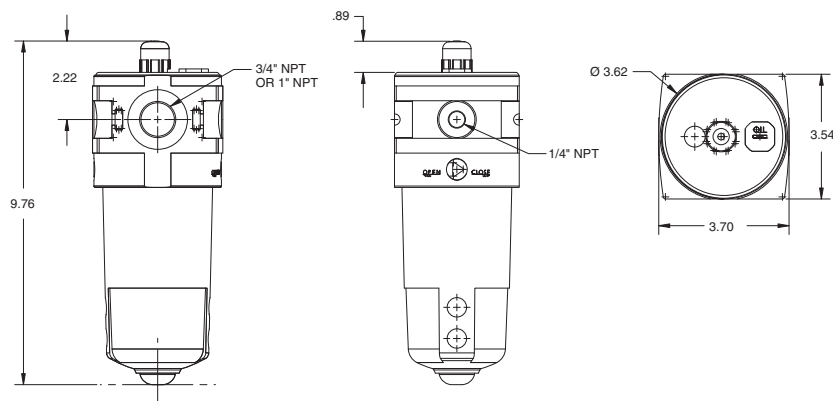
Series 105



Series 107, 112



Series 160

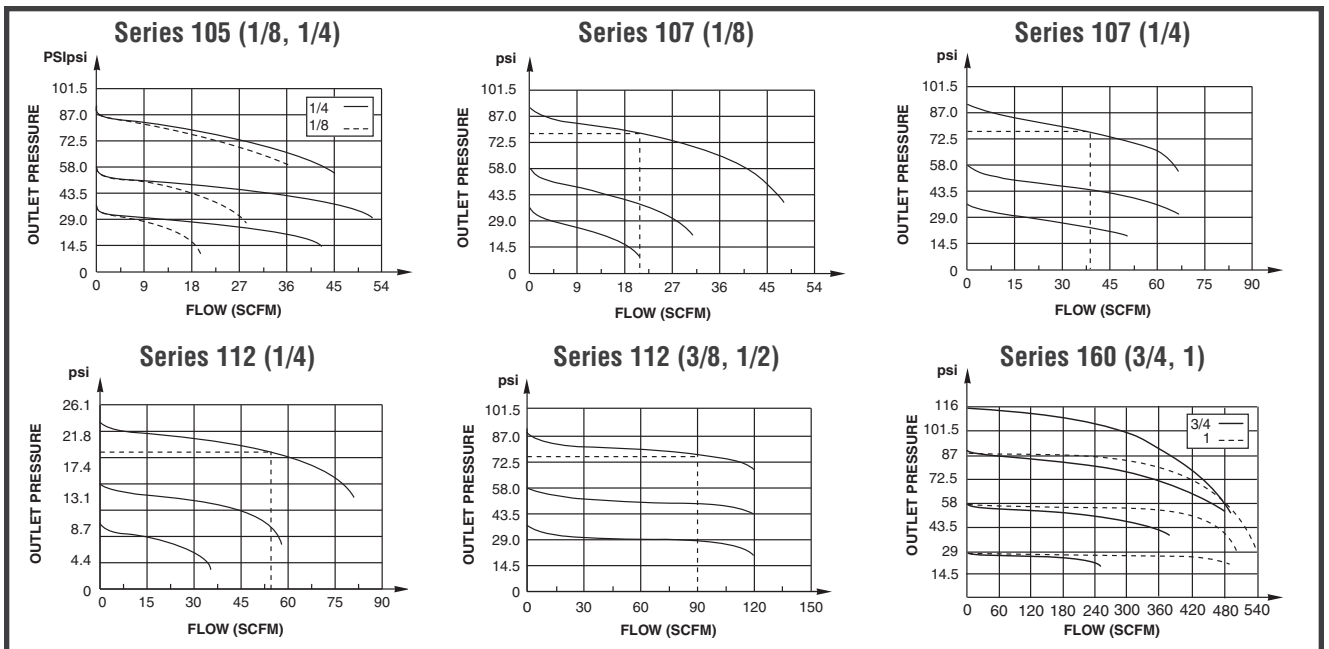


Filter/Regulator - Specifications

Series	Pipe Size (ins.)	Bowl Capacity (oz.)		Max. Flow @ 90 psi (SCFM)	Max. Inlet Pressure (psi) @ 125°F	Pressure Control Range (psi)	Min. Ambient Temp. °F	Max. Ambient Temp. °F	Semi Automatic Drain		Automatic Drain	
		Total	Useful						With Pressure Gauge	Without Pressure Gauge	With Pressure Gauge	Without Pressure Gauge
Filter/Regulator Combined - 5 Micron Filtration with Bowl Protector												
105	1/8	.90	0.32	15.9	150 ②	7 - 120	32	125	342 25 251	342 25 249	-	-
107	1/8	1.61	0.39	21.2	150 ①	7 - 145	32	125	342 04 170	342 04 053	-	-
105	1/4	.90	0.32	15.8	150 ②	7 - 120	32	125	342 25 252	342 25 250	-	-
107	1/4	1.61	0.39	38.8	150 ①	7 - 145	32	125	342 04 171	342 04 054	-	-
112	1/4	3.65	1.28	53.0	150 ①	7 - 145	32	125	342 03 101	342 03 095	342 03 150	342 03 144
112	3/8	3.65	1.28	88.3	150 ①	7 - 145	32	125	342 03 102	342 03 096	342 03 151	342 03 145
112	1/2	3.65	1.28	88.3	150 ①	7 - 145	32	125	342 03 103	342 03 097	342 03 152	342 03 146
160	3/4	16	4.16	328	254	7 - 175	15	125	342 07 468 ④	342 07 465 ④	342 07 480 ④	342 07 477 ④
160	1	16	4.16	469.2	254	7 - 175	15	125	342 07 469 ④	342 07 466 ④	342 07 481 ④	342 07 478 ④
Filter/Regulator Combined - 25 Micron Filtration with Bowl Protector												
105	1/8	0.90	0.32	19.4	150 ②	7 - 120	32	125	342 25 211	342 25 209	-	-
107	1/8	1.61	0.39	24.7	150 ①	7 - 145	32	125	342 04 178	342 04 047	-	-
105	1/4	0.90	0.32	22.9	150 ②	7 - 120	32	125	342 25 212	342 25 210	-	-
107	1/4	1.61	0.39	45.9	150 ①	7 - 145	32	125	342 04 179	342 04 048	-	-
112	1/4	3.65	1.28	63.5	150 ①	7 - 145	32	125	342 03 089	342 03 083	342 03 138	342 03 132
112	3/8	3.65	1.28	105.9	150 ①	7 - 145	32	125	342 03 090	342 03 084	342 03 139	342 03 133
112	1/2	3.65	1.28	105.9	150 ①	7 - 145	32	125	342 03 091	342 03 085	342 03 140	342 03 134
160	3/4	16	4.16	388	254	7 - 175	15	125	342 07 450 ③④	342 07 447 ③④	342 07 462 ③④	342 07 459 ③④
160	1	16	4.16	554	254	7 - 175	15	125	342 07 451 ③④	342 07 448 ③④	342 07 463 ③④	342 07 460 ③④
Filter/Regulator Combined - 25 Micron Filtration without Bowl Protector												
105	1/8	0.90	0.32	19.4	150 ②	7 - 120	32	125	342 25 131	342 25 129	-	-
107	1/8	1.61	0.39	24.7	150 ①	7 - 145	32	125	342 04 182	342 04 071	-	-
105	1/4	0.90	0.32	22.9	150 ②	7 - 120	32	125	342 25 132	342 25 130	-	-
107	1/4	1.61	0.39	45.9	150 ①	7 - 145	32	125	342 04 183	342 04 072	-	-
112	1/4	3.65	1.28	63.5	150 ①	7 - 145	32	125	342 03 465	342 03 343	342 03 462	342 03 459
112	3/8	3.65	1.28	105.9	150 ①	7 - 145	32	125	342 03 466	342 03 344	342 03 463	342 03 460
112	1/2	3.65	1.28	105.9	150 ①	7 - 145	32	125	342 03 467	342 03 345	342 03 464	342 03 461

① 230 psi @ 75°F Max. Ambient & Fluid Temperature. ② 175 psi @ 75°F Max. Ambient & Fluid Temperature. ③ 30 micron filtration. ④ Metal bowl with Polypropylene viewing window. Consult ASCO for metal bowls or Polyamide bowls on 112 Series, and manual drains for 160 Series.

Filter/Regulator - Flow Graphs

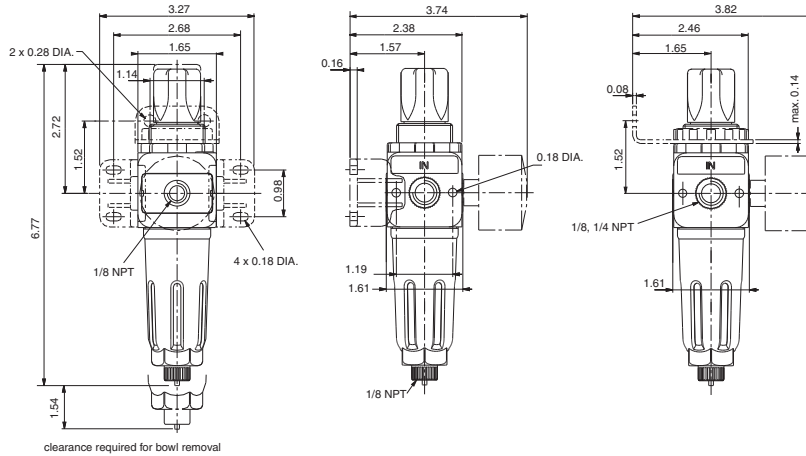


ACCESSORIES

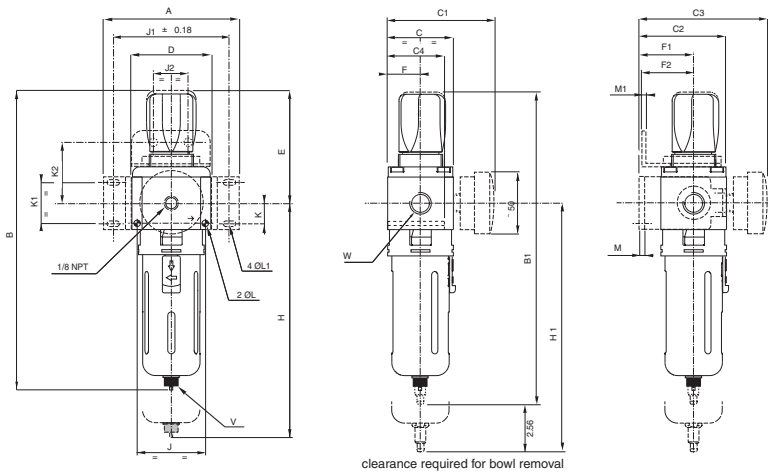
Filter/Regulator - Dimensions inches

Series	A	B	B1	C	C1	C2	C3	C4	D	E	F	F1	F2	H	H1	J	J1	J2	K	K1	K2	L (Dia.)	L1 (Dia.)	M	M1	V	W
107	3.27	8.38	-	1.65	2.99	2.40	3.74	1.50	1.65	3.11	0.83	1.57	1.65	7.48	-	1.26	2.70	1.14	0.39	1.10	1.48	0.16	0.18	0.12	0.08	1/8	1/8", 1/4" NPT
112	4.41	9.88	10.31	2.17	3.42	2.89	4.13	1.87	2.60	3.72	1.08	1.81	1.65	8.72	9.15	2.24	3.78	1.14	0.67	1.32	1.67	0.22	0.22	0.16	0.08	1/8	1/4", 3/8", 1/2" NPT

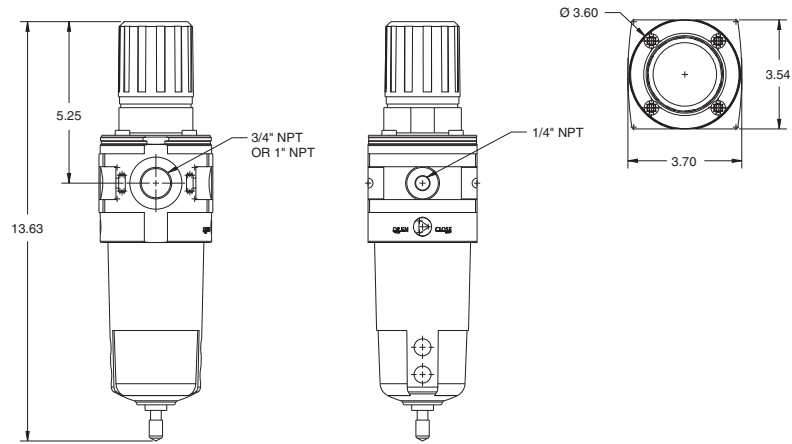
Series 105



Series 107, 112



Series 160



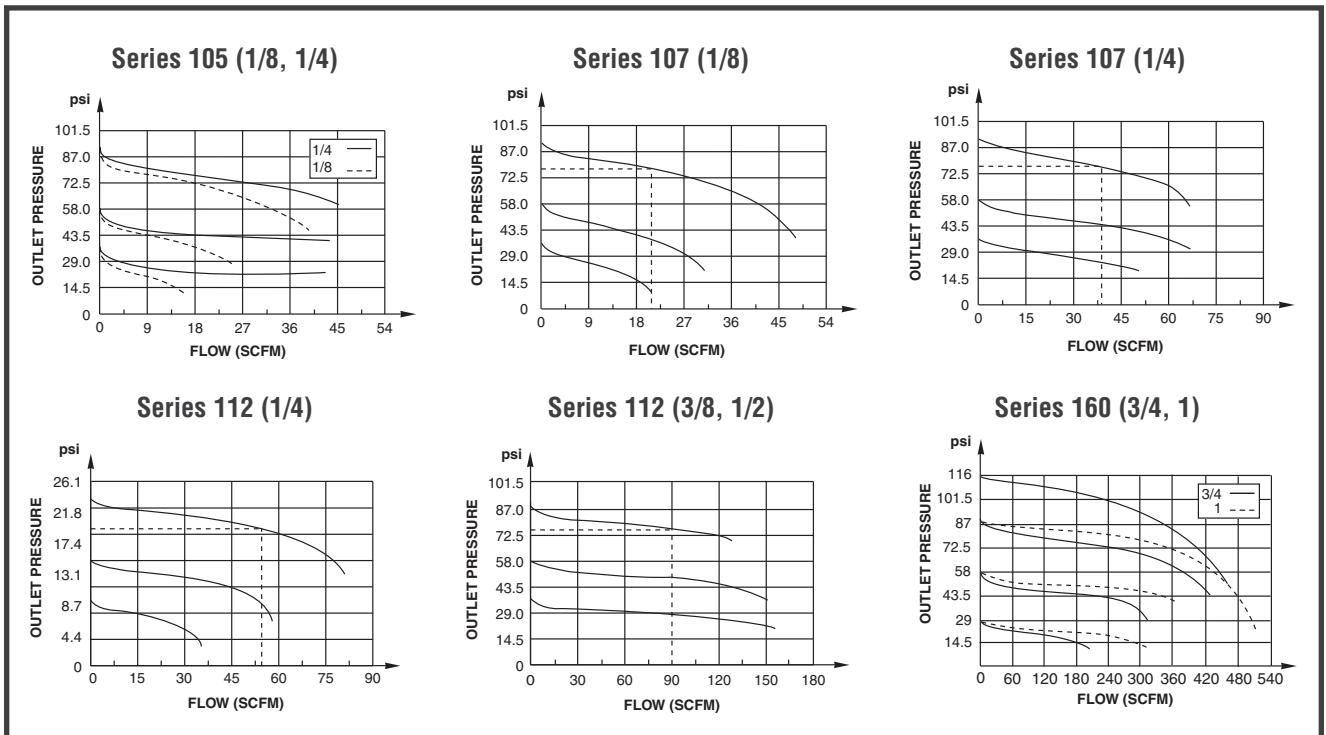
ACCESSORIES

Filter/Regulator/Lubricator - Specifications

Series	Pipe Size (ins.)	Bowl Capacity (oz.)		Max. Oil Capacity (oz.)	Min. Flow @ 90 psi (SCFM)	Max. Flow @ 90 psi (SCFM)	Max. Inlet Pressure (psi)	Pressure Control Range (psi)	Min. Ambient Temp. °F	Max. Ambient Temp. °F	Semi Automatic Drain		Automatic Drain	
		Total	Useful								With Pressure Gauge	Without Pressure Gauge	With Pressure Gauge	Without Pressure Gauge
Filter/Regulator/Lubricator Combined - 25 Micron Filtration with Bowl Protector														
105	1/8	0.90	0.32	0.74	1.1	14.1	150 ②	7 - 120	32	125	342 25 191	342 25 189	-	-
107	1/8	1.61	0.39	0.96	1.1	24.7	150 ①	7 - 145	32	125	342 04 204	342 04 129	-	-
105	1/4	0.90	0.32	0.74	1.1	19.4	150 ②	7 - 120	32	125	342 25 192	342 25 190	-	-
107	1/4	1.61	0.39	0.96	1.1	45.9	150 ①	7 - 145	32	125	342 04 205	342 04 130	-	-
112	1/4	3.65	1.28	2.34	1.1	63.5	150 ①	7 - 145	32	125	342 03 293	342 03 305	342 03 441	342 03 438
112	3/8	3.65	1.28	2.34	1.1	105.9	150 ①	7 - 145	32	125	342 03 294	342 03 306	342 03 442	342 03 439
112	1/2	3.65	1.28	2.34	1.1	105.9	150 ①	7 - 145	32	125	342 03 295	342 03 307	342 03 443	342 03 440
160	3/4	16	4.16	16	3.2	388	254	7 - 175	15	125	342 07 561 ③	342 07 558 ③	342 07 573 ③	342 07 570 ③
160	1	17.6	4.16	16	3.2	476	254	7 - 175	15	125	342 07 562 ③	342 07 559 ③	342 07 574 ③	342 07 571 ③
Filter/Regulator/Lubricator Combined - 25 Micron Filtration without Bowl Protector														
105	1/8	0.90	0.32	0.74	1.1	14.1	150 ②	7 - 120	32	125	342 25 111	342 25 109	-	-
107	1/8	1.61	0.39	0.96	1.1	24.7	150 ①	7 - 145	32	125	342 04 206	342 04 135	-	-
105	1/4	0.90	0.32	0.74	1.1	19.4	150 ②	7 - 120	32	125	342 25 112	342 25 110	-	-
107	1/4	1.61	0.39	0.96	1.1	45.9	150 ①	7 - 145	32	125	342 04 207	342 04 136	-	-
112	1/4	3.65	1.28	2.34	1.1	63.5	150 ①	7 - 145	32	125	342 03 317	342 03 329	342 03 447	342 03 444
112	3/8	3.65	1.28	2.34	1.1	105.9	150 ①	7 - 145	32	125	342 03 318	342 03 330	342 03 448	342 03 445
112	1/2	3.65	1.28	2.34	1.1	105.9	150 ①	7 - 145	32	125	342 03 319	342 03 331	342 03 449	342 03 446
Filter/Regulator/Lubricator Combined - 5 Micron Filtration with Bowl Protector ④														
105	1/8	0.90	0.32	0.74	.94	12	150 ②	7 - 120	32	125	342 25 231	342 25 229	-	-
105	1/4	0.90	0.32	0.74	.94	16.5	150 ②	7 - 120	32	125	342 25 232	342 25 230	-	-
160	3/4	16	4.16	16	3.2	363.4	254	7 - 175	15	125	342 07 579 ⑤	342 07 576 ⑤	342 07 591 ⑤	342 07 588 ⑤
160	1	16	4.16	16	3.2	388	254	7 - 175	15	125	342 07 580 ⑤	342 07 577 ⑤	342 07 592 ⑤	342 07 589 ⑤

① 230 psi @ 75°F Max. Ambient & Fluid Temperature. ② 175 psi @ 75°F Max. Ambient & Fluid Temperature. ③ 30 micron filtration and metal bowl.
 ④ Approx. 15% flow reduction with 5 micron filter element. ⑤ Metal bowl with polypropylene viewing window. Consult ASCO for manual drain on 160 Series.

Filter/Regulator/Lubricator - Flow Graphs

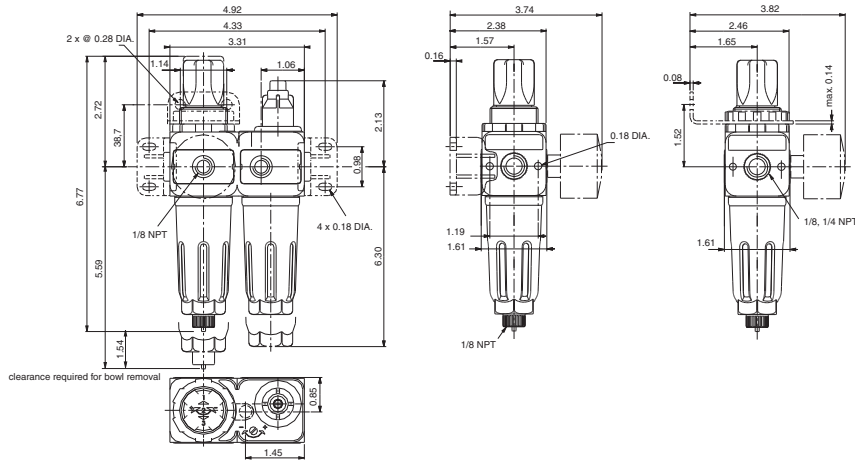


ACCESSORIES

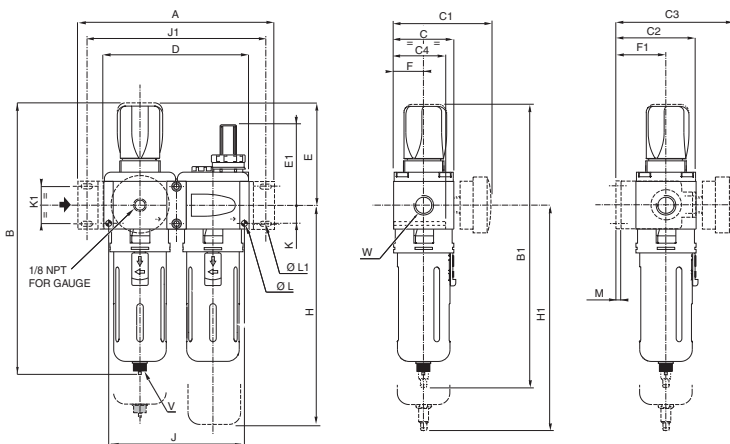
Filter/Regulator/Lubricator - Dimensions inches

Series	A	B	B1	C	C1	C2	C3	C4	D	D1	E	E1	F	F1	H	H1	J	J1	K	K1	L (Dia.)	L1 (Dia.)	M	V	W
107	4.92	8.38	-	1.65	3.00	2.40	3.74	1.50	3.30	1.65	3.11	2.55	0.83	1.57	8.46	-	2.91	4.35	0.39	1.10	0.16	0.18	0.12	1/8	1/8", 1/4" NPT
112	7.01	9.84	10.33	2.17	3.43	2.89	4.13	1.87	5.20	2.60	3.72	2.80	1.08	1.81	9.57	9.15	4.48	6.38	0.67	1.32	0.22	0.22	0.16	1/8	1/4", 3/8", 1/2" NPT

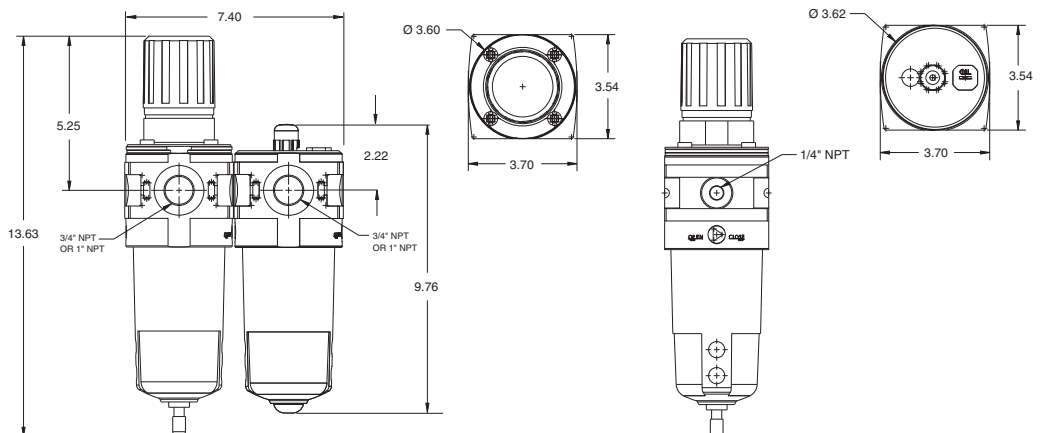
Series 105



Series 107, 112



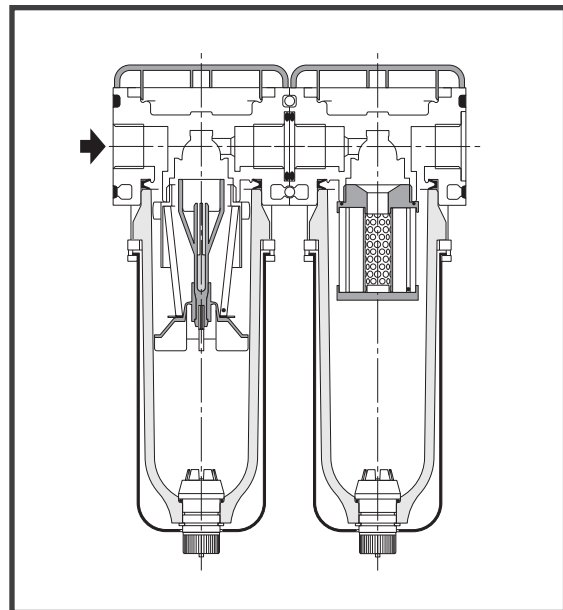
Series 160



Coalescing Filters - Specifications

Series	Pipe Size (ins.)	Bowl Capacity (oz.)		Max. Flow @ 90 psi and 1 psi Drop (SCFM)	Max. Inlet Pressure (psi) @ 125°F	Min. Ambient Temp. °F	Max. Ambient Temp. °F	Semi Automatic Drain		Automatic Drain	
		Total	Useful					With Bowl Protection	Without Bowl Protection	With Bowl Protection	Without Bowl Protection
Coalescing Filter - .01 Micron Polycarbonate (PC) Bowl ①											
107	1/8	2.4	0.39	25	150	35	125	342 04 141	-	-	-
107	1/4	2.4	0.39	25	150	35	125	342 04 142	-	-	-
112	1/4	4.0	1.28	37	150	35	125	342 03 468	-	342 03 477	-
112	3/8	4.0	1.28	37	150	35	125	342 03 469	-	342 03 478	-
112	1/2	4.0	1.28	37	150	35	125	342 03 470	-	342 03 479	-
160	3/4	16	4.16	115.5	254	15	125	342 07 399	-	342 07 405	-
160	1	16	4.16	115.5	254	15	125	342 07 400	-	342 07 406	-
Pre-Filter (5 Micron) and Coalescing Filter (.01 Micron) Polycarbonate (PC) Bowl ①											
107	1/8	2.4	0.39	25	150	35	125	342 04 145	-	-	-
107	1/4	2.4	0.39	25	150	35	125	342 04 146	-	-	-
112	1/4	4.0	1.28	37	150	35	125	342 03 489	-	342 03 501	-
112	3/8	4.0	1.28	37	150	35	125	342 03 490	-	342 03 502	-
112	1/2	4.0	1.28	37	150	35	125	342 03 491	-	342 03 503	-
160	3/4	16	4.16	115.5	254	15	125	342 07 669	-	342 07 675	-
160	1	16	4.16	115.5	254	15	125	342 07 670	-	342 07 676	-
Pre-Filter/Regulator (5 Micron) and Coalescing Filter (.01 Micron) Polycarbonate (PC) Bowl without gauge ① ②											
107	1/8	2.4	0.39	25	150 ③	35	125	342 04 153	-	-	-
107	1/4	2.4	0.39	25	150 ③	35	125	342 04 154	-	-	-
112	1/4	4.0	1.28	37	150 ③	35	125	342 03 513	-	342 03 525	-
112	3/8	4.0	1.28	37	150 ③	35	125	342 03 514	-	342 03 526	-
112	1/2	4.0	1.28	37	150 ③	35	125	342 03 515	-	342 03 527	-

① See Filter section for dimensions. ② See filter/regulator section for dimensions. ③ 7-145 psi pressure control range.



ACCESSORIES

ADDITIONAL COMPONENTS

Bypass Module

Installed between two components in the air preparation set and allows the user to tap off for high pressure filtered air or non-lubricated air, depending on where it is located in the air preparation assembly.

Series	1/4"	3/8"	1/2"	3/4"	1"
112	343 03 026	343 03 027	343 03 028	-	-
160	-	-	-	343 07 032	343 07 032

A pressure switch can be fitted to some bypass modules to monitor and control the pressure at the end of the air preparation assembly.

Adjustable Pressure Switch

Series	1/4"
112, 160	349 00 030
112, 160	349 00 031 (Led + protection)



Manually Operated Isolation Valve

An isolation valve allows the user to safely turn off the air flow through the air preparation assembly for maintenance or service of the air preparation assembly, or the downstream equipment and machinery.

Series		1/8"	1/4"	3/8"	1/2"	3/4"	1"
107	Standard	-	-				
	Padlockable	343 04 019	343 04 020				
112	Standard		343 03 035	343 03 036	343 03 037		
	Padlockable		343 03 055	343 03 056	343 03 057		
160	Standard					-	-
	Padlockable					343 07 023	343 07 024

Key Lock for Regulator Adjustment Knob

This accessory is used to lock the adjusting knob to prevent inadvertent adjustment or tampering with the operating pressure settings. Can be fitted to stand alone regulators or when regulators are combined with other components.

Series	Unit Supplied with Key Lock Installed	Key Lock Supplied Separately
107, 112, 160	Specify S05 Suffix	343 03 050
Example: 342 03 071S05		



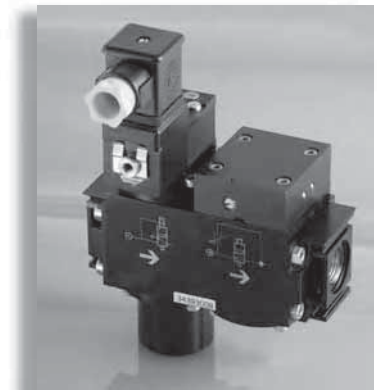
ADDITIONAL COMPONENTS

Emergency Shut-Off Valve and Soft-Start Devices

A 3/2 shut-off valve is controlled by a CNOMO pad-mounted solenoid valve, and vents the air system by de-energizing the solenoid valve when an unsafe condition is sensed.

	Series	1/8" NPT	1/4" NPT	3/8" NPT	1/2" NPT
Size 30 Shut-off Valve	107	343 94 003	343 94 004	-	-
Size 30 Shut-off Valve	112	-	343 93 126	343 93 127	343 93 128

A soft-start device allows for gradual pressurization of the downstream equipment. An adjustable air flow causes the actuators to move slowly, and prevents damage from machinery being started at full speed. It can also return machinery to a safe, end-of-cycle position before re-starting.



There are two types of control for this system to switch to the normal speed mode:

Automatic Soft-Start will switch to full flow and normal operating speed when the downstream pressure reaches 60-70% of the supply (upstream) pressure. As long as supply pressure is maintained, it is in the full flow position. When the air supply is cut off, the soft-start returns to the low flow position.

	Series	1/8" NPT	1/4" NPT	3/8" NPT	1/2" NPT
Automatic Soft-Start Valve	107	343 04 023	343 04 024	-	-
Automatic Soft-Start Valve	112	-	343 03 044	343 03 045	343 03 046

Solenoid/Air Controlled Soft-Start allows the user to specify when the device switches to the full flow position. Position sensors on the machinery trigger the energization of the solenoid pilot valve. The solenoid pilot valve is energized under normal operating conditions, and upon de-energization the device switches to the low flow position.

	Series	1/8" NPT	1/4" NPT	3/8" NPT	1/2" NPT
Sol/Air Controlled Soft-Start	112	-	343 93 017	343 93 018	343 93 019

The shut-off and soft-start units must be installed after the filter and before the lubricator.

Emergency Shut-Off Valve and Soft-Start Devices as a System

	Series	1/8" NPT	1/4" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT	Valves Required
Emergency Shut-off/Automatic Soft-Start	107	343 94 007	343 94 008	-	-	-	-	1X
Emergency Shut-off/Automatic Soft-Start	112	-	343 93 120	343 93 121	343 93 122	-	-	1X
Emergency Shut-off/Sol/Air Soft-Start	112	-	343 93 123	343 93 124	343 93 125	-	-	2X
Emergency Shut-off/Air-Op/Automatic Soft-Start	160	-	-	-	-	343 07 027	343 07 028	-
Emergency Shut-off/Sol/Air Soft-Start	160	-	-	-	-	343 97 027	343 97 028	1X

Solenoid Valves

①	Without Manual Operator	Impulse (Non-Locking) Manual Operator
Size 30 Solenoid Valves	189 00 007	-
Size 30 Solenoid Valves	190 00 005	190 00 017
Size 30 Solenoid Valves	192 00 007	192 00 009

① Solenoids must be ordered with voltage. (ex. 189 00 007 - 120/60)

Shut-Off Valve Silencers

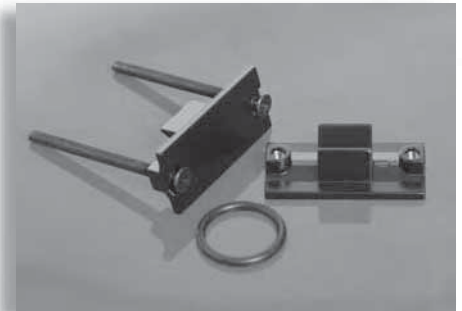
Shut-off Valve Silencers	Sintered Bronze	Porous Plastic
107 (G 1/4)	346 00 002	346 00 407
112 (G 1/2)	346 00 004	346 00 409

ACCESSORIES

Two Part Assembly Kit

This kit enables assembly of two components of the same series

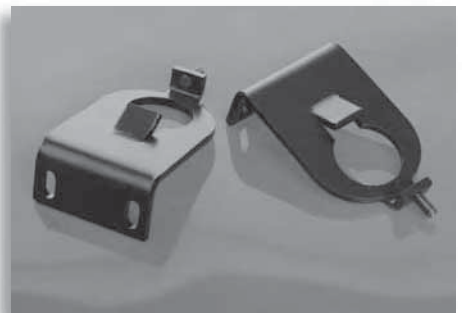
	Series	Kit Number
2 assembly screws/nuts 1 component joining seal (not shown)	105	343 05 001
1 each front and rear assembly yokes, 2 screws 1 component joining seal	107	343 04 001
	112	343 03 001
2 assembly yokes, screws/nuts 1 component joining seal (not shown)	160	343 07 005



Side Mounting Brackets

For surface mounting of any component in the series.
1 set of 2 mounting brackets.

	Series	Kit Number
2 brackets of glass-fiber reinforced polyamide 6/6	105	343 25 005
2 black painted steel brackets with steel retaining screws	107	343 04 003
	112	343 03 003
	160	343 07 017



Top Mounting Ring And Brackets

For top mounting regulators and filter/regulator combinations.
The mounting ring can also be used for panel mounting the regulator.

Mounting Ring	Material	Series	Kit Number
1 mounting ring	Glass-fiber reinforced polyamide	105	343 00 011
		107	343 00 011
		112	343 00 004
	Aluminum alloy	160	343 07 015
Mounting Bracket			
1 top mounting bracket	Black zinc plating or epoxy coated steel	105	343 00 016
		107	343 00 016
		112	343 00 017
	Aluminum alloy	160	343 07 016



Guages For Regulators/Assemblies

	NPT	All Series
1 1/2" dia. 0-60 psi	1/8"	343 00 015
1 1/2" dia. 0-160 psi	1/8"	343 00 014
2" dia. 0-60 psi	1/8"	343 00 064
2" dia. 0-200 psi	1/8"	343 00 062
2" dia. 0-235 psi	1/4"	287093-001



ASCO's electrical connection devices are designed using the DIN 43650/ISO 4400 or DIN 46244 (Pg 9P) form standards consistent with our solenoid valve coil designs and permitting industry interchangeability. Each size is available for user wiring or factory prewired installations. Other options include 1/2" conduits, and LED/VDR models.

Features

- Glass fiber reinforced polyamide housing and lid
- IP65 protection against moisture entry and washdown when properly installed with gaskets
- **LED:** Light Emitting Diode. A solid-state diode that emits light to indicate power to the connector
- **VDR:** Varistor absorbing the self-inductance of the coil. The VDR is there to protect the coil or controller against supply over-voltage or peak
- Maximum voltage 240 Volts



Size 11 mm, Form B

Part Number	Description	Orientation	Rotatable	Figure
290413-001	1/2" conduit	Ground Down	180°	A
289281-001	1/2" conduit with LED/VDR	Ground Down	180°	A
290414-001*	PG 9 cable gland	Ground Down	180°	B
290415-120	PG 9 cable gland with LED/VDR 120/AC-DC	Ground Down	180°	B
290415-240	PG 9 cable gland with LED/VDR 240/AC-DC	Ground Down	180°	B
290415-024	PG 9 cable gland with LED/VDR 24/AC-DC	Ground Down	180°	B
285483-015**	4.5' leads with LED 120/AC-DC PVC	Ground Up	No	B
285482-015**	4.5' leads with LED 24/AC-DC PVC	Ground Up	No	B
285481-018**	6' leads with stripped ends	Ground Down	180°	B

Available in 10 pack; part number 226061-001-

**Also available in 9', 16', and 33' lengths. Consult factory.

Figure A

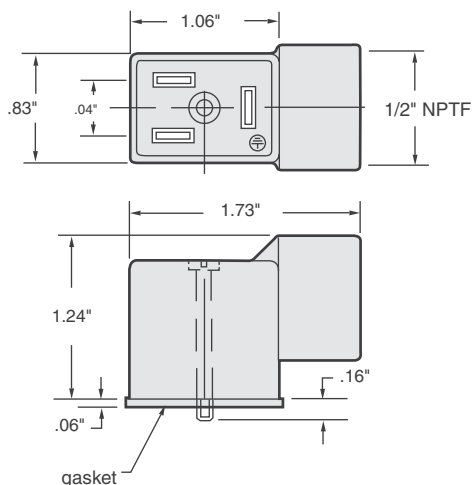
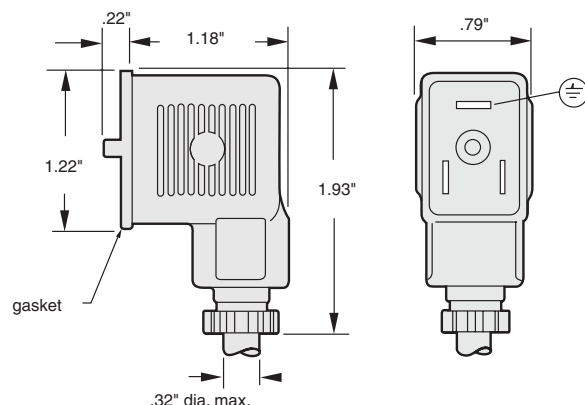


Figure B



Size 18 mm, Form A

Part Number	Description	Orientation	Rotatable	Figure
290410-001	1/2" conduit	Ground Up	90°	C
289280-001	1/2" conduit with LED	Ground Up	90°	C
290411-001*	PG 9 cable gland	Ground Up	90°	D
290412-120	PG 11 cable gland with LED/VDR 120/AC-DC	Ground Up	90°	D
290412-240	PG 11 cable gland with LED/VDR 240/AC-DC	Ground Up	90°	D
290412-024	PG 11 cable gland with LED/VDR 24/AC-DC	Ground Up	90°	D
290412-048	PG 11 cable gland with LED/VDR 48/AC-DC	Ground Up	90°	D
285480-015**	4.5' leads with LED 120/AC-DC PVC	Ground Up	No	D
290409-015**	4.5' leads with LED 240/AC-DC PVC	Ground Up	No	D
285479-015**	4.5' leads with LED 24/AC-DC PVC	Ground Up	No	D
272852	6' leads with North American outlet plug	Ground Up	No	D
272852-003	6' leads with North American outlet plug (rotated 90 degrees)	Ground Up	No	D
285478-015**	4.5' leads with stripped ends	Ground Up	No	D

*Available in 50 pack; part number 266615.
 **Also available in 9', 16', and 33' lengths. Consult factory.

Figure C

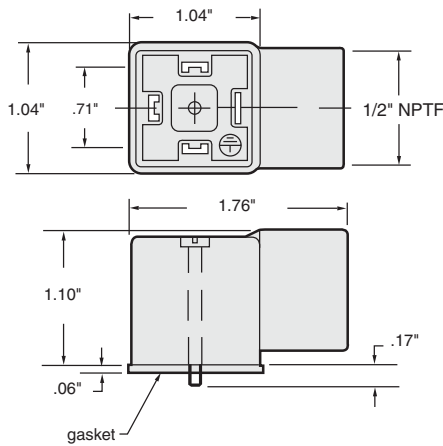
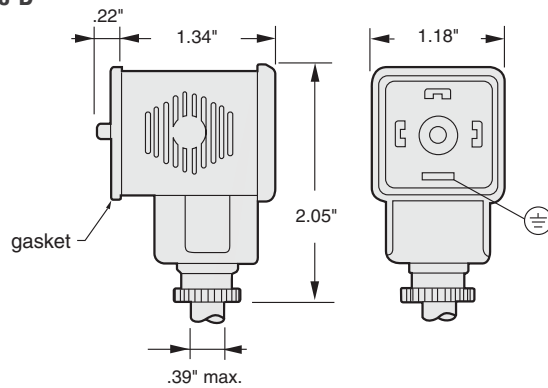


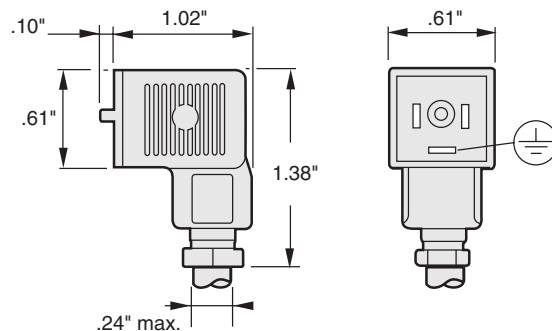
Figure D



Size 9.4 mm, Form C

Part Number	Description	Orientation	Rotatable
290417-001	PG 7 cable gland	Ground Up	180°
290418-001	PG 7 cable gland LED/VDR 120-240/AC 50/60	Ground Up	180°
289278-001	PG 7 cable gland LED/VDR 48-120/AC 50/60	Ground Up	180°
289282-001	PG 7 cable gland LED/VDR 48-120/DC	Ground Up	180°
289277-001	PG 7 cable gland LED/VDR 6-48/AC-DC	Ground Up	180°
290416-013**	4.5' leads with LED 120/AC-DC PVC	Ground Up	No
285485-015**	4.5' leads with LED 24/AC-DC PVC	Ground Up	No
272852-004**	6' leads	Ground Up	No

**Also available in 9', 16', and 33' lengths. Consult factory.



ACCESSORIES

Standard ASCO solenoid valves will meet the needs of most applications. However, there are times when fluids must be handled at higher temperatures, in less than ideal ambient locations, when the fluids themselves are hostile, etc.

For this reason, ASCO offers a wide range of options which can help tailor new valves to your precise applications. Specifying these options when you order is easy. Simply attach the proper prefix (electrical options) or suffix (construction options) to the basic catalog number.

Optional Electrical Features

- Coils for high-temperature applications
- Spade and screw terminations in place of leads
- Battery service coils
- Open frame solenoids
- Variety of solenoid enclosures, from Rainproof to Explosionproof, for hydrogen atmospheres

Optional Construction Features

- Special materials for handling a wide variety of fluids
- Manual operators
- Metering devices
- Special cleaning procedures

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How to Select and Specify

Not all optional features are appropriate or available for all valves.

Table 1 lists the optional electrical feature prefixes available for each RedHat II solenoid and coil. Specify these features by adding the indicated prefixes to the valve catalog number.

For those prefixes marked with a “●” or for optional RedHat electrical features not covered here, contact your local ASCO sales office.

Table 2 lists the suffixes for optional construction features available for each valve Series. Specify these features by adding the indicated suffixes to the valve catalog number.

Table 1: Optional RedHat II Electrical Feature Prefixes (For RedHat optional electrical features, contact your local sales office.)

Code	Solenoid
EF	Class I, Division 1 Explosionproof
EV	Class I, Division 1 Explosionproof with 316 Stainless Steel Hub and Stainless Steel Base Plate
EE	Class I, Division 2 General Purpose
GP	Panel Mount Type 1 General Purpose Solenoid
J	Junction Box
JP	Panel Mount Junction Box
OF	Open Frame Spade and Screw Terminal Solenoids
OP	Panel Mount Spade, Screw and DIN Terminal Solenoids
Code	Coil
HB	Class H - Intermediate Power
● HC	Class H - Battery Charging Coil
HT	Class H - High Temperature
KB	Class H - Intermediate Power - Screw Terminals
● KC	Class H - Battery Charging Circuit - Screw Terminals
KF	Class F - High Temperature - Screw Terminals
KH	Class H - High Temperature - Screw Terminals
KP	Class F - Intermediate Power - Screw Terminals
SC	Class F - High Temperature - DIN Connection
SD	Class F - Intermediate Power - DIN Connection
SF	Class F - High Temperature - Spade Terminals
SP	Class F - Intermediate Power - Spade Terminals
SS	Class H - Intermediate Power - Spade Terminals
ST	Class H - High Temperature - Spade Terminals
SU	Class H - High Temperature - DIN Connection
SV	Class H - Intermediate Power - DIN Connection
● SW	Class H - Battery Charging Circuit - Spade Terminals
Code	Feature
● L	72" continuous leads
● X	Other special constructions

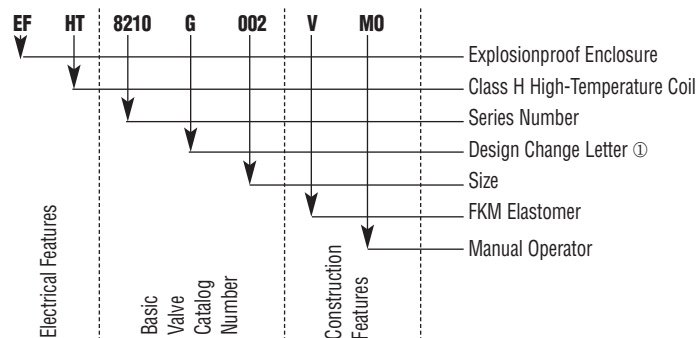
Note: See chart on next page for specific power and temperature ratings.

Table 2: Suffixes for Optional Construction Features

SUFFIX I		SUFFIX II		SUFFIX III	
Code	Seat/Disc/Etc. Material	Code	Form of Flow	Code	Feature
E	EPDM (Ethylene Propylene)	F ①	Normally Closed	HW ①	Hot Water Construction
J	CR (Neoprene)	G ①	Normally Open	LT ①	Low Temperature
K ①	Air Operated, 3-30 psi	U ①	Universal	M	Metering Device
N	Oxygen			MB ①	Mounting Bracket
Q ①	Long-Life Construction			MO	Manual Operator
R ①	Resilient			MS	Screw Type Manual Operator
T	PTFE (Teflon®)			VH ①	High Vacuum
V	FPM (Viton®)			VM ①	Medium Vacuum

① Covered on the pages of the Series in which it is used.
Teflon and Viton are registered Trademarks of Dupont Co.

An example of an ASCO valve catalog number with prefixes and suffixes:



① The Design Change Letter indicates a major design change affecting spare parts kits, rebuild kits, and coils. The correct replacement parts for each change letter are shown in ASCO's Rebuild Kits and Coils Catalog.

Optional Features

Electrical



Optional Electrical Features

Most optional electrical features shown here can be included on ASCO valves approved by UL, FM, and CSA.

Identify the options you want by adding the appropriate prefix to the catalog number of the valve you are specifying.

To determine the proper prefix, use the Valve Series Specification Table for the valve you are ordering to determine its watt rating/class of coil insulation.

RedHat II Solenoid Options

Using Table 3, find the desired solenoid option in the left column and the watt rating/class of coil insulation in the next column. The choice of prefixes is shown in the next two columns on that line. The first column indicates the prefix if Class F temperature protection is sufficient for your requirements. The second column provides the desired solenoid option, plus the higher temperature protection of a Class H coil.

For example, to select an 8262G002 valve with a Class H Open Frame Spade Terminal Solenoid, assuming the voltage to be 120 volts AC, 60 Hz:

- In the Specification Table for Series 8262, the Watt Rating/Class of Coil Insulation is 6.1/F for Catalog Number 8262G002.
- Using Table 3, find the listing for "Open Frame Solenoid with Spade Terminal Coil" in the left column. Then, find 6.1/F under AC coils in the next column. Reading across the column headed "Class H Coil," you'll find the prefix "OFST." To order, specify Catalog Number OFST8262G002, 120/60.

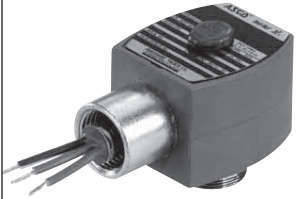
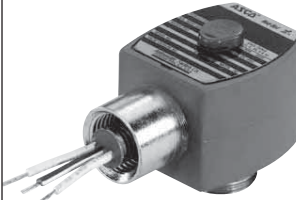

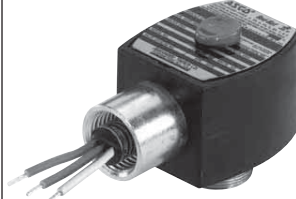
(Note: Always include the voltage and frequency.)

Table 3: Solenoid Options for RedHat II Valves

Solenoid Option Required	Watt Rating/Class of Insulation		Class F Coil Prefix	Class H Coil Prefix
	AC	DC		
General Purpose Solenoid (Standard Valve Construction)	6.1/F	1.4/F	-	-
	10.1/F	10.6/F		HT
	16.1/F	11.6/F		HT
Panel Mount Type 1 General Purpose Solenoid	9.1/F	22.6/F	-	HB
	17.1/F			
	20.1/F			
Type 7 Explosionproof Solenoid	6.1/F	10.6/F	EF	EFHT
	10.1/F	11.6/F		
	16.1/F			
Open Frame Solenoid with Spade Terminal Coil	6.1/F	10.6/F	OFSP	OFST
	10.1/F	11.6/F		
	17.1/F	22.6/F		OFSS
Panel Mount Solenoid with Spade Terminal Coil	6.1/F	10.6/F	OPSP	OPST
	10.1/F	11.6/F		
	16.1/F	22.6/F		OPSS
Open Frame Solenoid with Screw Terminal Coil	6.1/F	10.6/F	OFKP	OFKH
	10.1/F	11.6/F		
	17.1/F	22.6/F		OFKB
Panel Mount Solenoid with Screw Terminal Coil	6.1/F	10.6/F	OPKF	OPKH
	10.1/F	11.6/F		
	17.1/F	22.6/F		OPKH
Junction Box with Spade Terminal Coil	6.1/F	10.6/F	JSF	JST
	10.1/F	11.6/F		
	17.1/F	22.6/F		JSS
Panel Mount Junction Box with Spade Terminal Coil	6.1/F	10.6/F	JPSF	JPST
	10.1/F	11.6/F		
	17.1/F	22.6/F		JPSS
Junction Box with Screw Terminal Coil	6.1/F	10.6/F	JKF	JKH
	10.1/F	11.6/F		
	16.1/F	22.6/F		JKB
Panel Mount Junction Box with Screw Terminal Coil	6.1/F	10.6/F	JPKF	JPKH
	10.1/F	11.6/F		
	17.1/F	22.6/F		JPKB
DIN Connection Solenoid	6.1/F	10.6/F	SC	SU
	10.1/F	11.6/F		
	16.1/F	22.6/F		SV
Panel Mount DIN Connection Solenoid	6.1/F	10.6/F	OPSC	OPSU
	10.1/F	11.6/F		
	17.1/F	22.6/F		OPSV



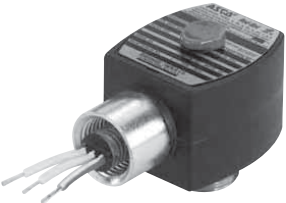
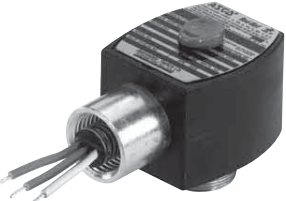
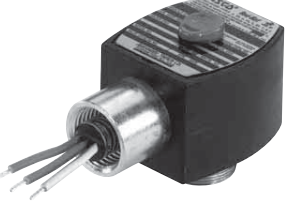


Important Note: One-piece molded epoxy RedHat II solenoids are a unique combination of coil and enclosure. When ordering some RedHat II options, it may be necessary to specify the appropriate catalog number prefixes for both the enclosure and the coil.

<p>Type 1 General Purpose Solenoids with Class F High-Temperature Coils</p>	<p>Enclosures:</p> <ul style="list-style-type: none"> Also meet Type 2 Dripproof, Types 3 and 3S Raintight, and Types 4 and 4X Watertight requirements. Supplied standard with 1/2" threaded conduit hub and built-in strain relief for leads. <p>Coils:</p> <ul style="list-style-type: none"> Insulation system for coil temperatures up to 311°F (155°C). ① For ambient temperature requirement, refer to specific Series and charts in Engineering Information Section. Suitable for 50 and 60 Hz. ② 	<p>Ordering Information: Supplied standard on all RedHat II valves.</p>	
<p>Type 1 General Purpose Solenoids with Class H High-Temperature Coils</p>	<p>Enclosures:</p> <ul style="list-style-type: none"> Same as Class F. <p>Coils:</p> <ul style="list-style-type: none"> Insulation system suitable for coil temperatures up to 356°F (180°C).① For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section. Suitable for 50 and 60 Hz. ② 	<p>Ordering Information: Depending on wattage, use catalog number prefix "HT" or "HB" (e.g., HT8210G002).</p>	
<p>Panel Mount Type 1 General Purpose Solenoids with Class F or H High-Temperature Coils</p>	<p>Enclosures:</p> <ul style="list-style-type: none"> Same as above, but with provision for mounting on a panel (panel not included). <p>Coils:</p> <ul style="list-style-type: none"> Same as Class F or H above. 	<p>Ordering Information: For Class F coil, use catalog number prefix "GP" (e.g., GP8210G2) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "GPHT" or "GPHB" (e.g., GPHT8210G002) and specify voltage.</p>	
<p>Type 7 (A, B, C, and D) Explosionproof Solenoids with Class F High-Temperature Coils</p>	<p>Enclosures:</p> <ul style="list-style-type: none"> Also meets Types 3 and 3S Raintight, Types 4 and 4X Watertight, Types 6 and 6P Submersible, and Type 9 (E, F, and G) Dust Ignitionproof requirements. Refer to Engineering Information Section. <p>Coils:</p> <ul style="list-style-type: none"> Insulation systems suitable for coil temperatures up to 311°F (155°C). ① For ambient temperature requirements, refer to specific Series charts in Engineering Information Section. Suitable for 50 and 60 Hz. ② 	<p>Approvals: UL listed; CSA certified.</p> <p>Ordering Information: Use catalog number prefix "EF" (e.g., EF8210G002) and specify voltage.</p>	
<p>① UL limitations are 284°F (140°C) for Class F insulation systems and 320°F (160°C) for Class H insulation systems. ② Can be supplied for 50 Hz at a reduced voltage, which is standard throughout the world; i.e., 120/60, 110/50.</p>			

Optional Features

Electrical







<p>Type 7 (A, B, C, and D) Explosionproof Solenoids with Class H High-Temperature Coils</p>	<p>Enclosure:</p> <ul style="list-style-type: none"> • Same as Class F Explosionproof Coil: Insulation system suitable for coil temperatures up to 356°F (180°C). ① • For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section. • Suitable for 50 and 60 Hz. ② 	<p>Approvals: UL listed; CSA certified. Ordering</p> <p>Information: Depending on wattage, use catalog number prefix "EFHT" or "EFHB" (e.g., EFHT8210G002) and specify voltage.</p>	
<p>Type 7 (A, B, C, and D) Explosionproof Solenoids with Class F or H High-Temperature Coils</p>	<p>Enclosure:</p> <ul style="list-style-type: none"> • Same as above, but with 316 stainless steel conduit hub and stainless steel base plate. <p>Coils:</p> <ul style="list-style-type: none"> • Same as Class F or H Coil. 	<p>Ordering Information: For Class F Coil, use catalog number prefix "EV" (e.g., EV8262G220) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "EVHT" or "EVHB" (e.g., EVHT8327G002) and specify voltage.</p>	
<p>Type 7 (A, B, C, and D) Low Power Solenoids with Class F DC Surge Suppression Coils</p>	<p>Enclosure:</p> <ul style="list-style-type: none"> • Same as Class F Explosionproof coil. <p>Coils:</p> <ul style="list-style-type: none"> • Built-in surge suppression diodes. • Low power – 1.7 Watts. • Class F insulation only. 	<p>Ordering Information: For Surge Suppression coils, use catalog number prefix "EFMF" or "EVMF" (e.g., EFMF8314G300), and specify voltage.</p> <p>Note: Surge Suppression coils are only available for Explosionproof Low Power coils.</p>	
<p>Open Frame Solenoids with Class F or H High-Temperature Spade Terminal Coils</p>	<ul style="list-style-type: none"> • Valves with Open Frame solenoid construction are intended for use when a solenoid enclosure is not needed; e.g., mounting in a control cabinet. • Same as Class F or H above, but with 1/4" spade terminals. • Suitable for 50 and 60 Hz. ② 	<p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "OFSP" or "OFSP" (e.g., OFSF8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "OFSS" or "OFST" (e.g., OFST8210G002) and specify voltage.</p> <p>Note: Spade Terminal Coils are not available above 250 volts AC or DC.</p>	
<p>Panel Mount Solenoids with Class F or H High-Temperature Spade Terminal Coils</p>	<p>Same as above, but with provision for mounting on a panel (panel not included).</p>	<p>Ordering Information: For Class F coil, use catalog number prefix "OPSF" or "OPSP" (e.g., OPSF8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "OPSS" or "OPST" (e.g., OPST8210G002) and specify voltage.</p> <p>Note: Spade Terminal Coils are not available above 250 volts AC or DC.</p>	

① UL limitations are 284°F (140°C) for Class F insulation systems and 320°F (160°C) for Class H insulation systems.

② Can be supplied for 50 Hz at a reduced voltage, which is standard throughout the world; i.e., 120/60, 110/50.

OPTIONAL FEATURES




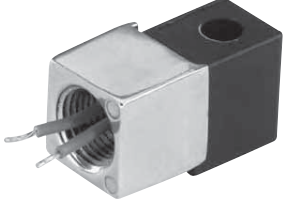


<p>Open Frame Solenoids with Class F or H High-Temperature Screw Terminal Coils</p>	<ul style="list-style-type: none"> Valves with Open Frame solenoid construction are intended for use when a solenoid enclosure is not needed; e.g., mounting in a control cabinet. ① Same as Class F or H above, but with #8 screws terminals. Suitable for 50 and 60 Hz. ② 	<p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "OFKF" or "OFKP" (e.g., OFKF8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "OFKH" or "OFKB" (e.g., OFKH8210G002) and specify voltage. Note: Screw Terminal Coils are not available above 250 volts AC or DC.</p>	
<p>Panel Mount Solenoids with Class F or H High-Temperature Screw Terminal Coils</p>	<p>Coils:</p> <ul style="list-style-type: none"> Same as above, but with provision for mounting on a panel (panel not included). 	<p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "OPKF" or "OPKP" (e.g., OPKP8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "OPKH" or "OPKB" (e.g., OPKH8210G002) and specify voltage. Note: Screw Terminal Coils are not available above 250 volts AC or DC. For replacement coil, order coil and kit number 276982.</p>	
<p>Junction Box Solenoids with Class F or H High-Temperature Spade or Screw Terminal Coils</p>	<ul style="list-style-type: none"> Enclosures meet Type 1 General Purpose, Type 2 Dripproof, Types 3 and 3S Raintight, and Types 4 and 4X Watertight requirements. Supplied standard with 1/2" threaded conduit hub and grounding provision. Must be ordered with spade or screw terminals. 	<p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "JSF," "JSP," "JKF," or "JKP" (e.g., JSF8210G2) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "JSS," "JST," "JKH," or "JKB" (e.g., JKH8210G002) and specify voltage. Note: Junction Box Options are not available above 250 volts AC or DC.</p>	
<p>Class F General Purpose Only with Quick Disconnect Pin Connectors</p>	<ul style="list-style-type: none"> Available for wattages 10.1, 17.1, 11.6, and 22.6. Materials: aluminum, 3 & 4 pin in popular sizes. Electrical Connection Size: 1/2 - 20 unf. ZT 3 pin epoxy coated zinc electrical termination. VT 4 pin - anodized aluminum electrical termination. 	<p>Ordering Information: For Class F coil, depending on wattage, use catalog number prefix "VT" or "VB" and specify voltage.</p>	
<p>① UL limitations are 284°F (140°C) for Class F insulation systems and 320°F (160°C) for Class H insulation systems. ② Can be supplied for 50 Hz at a reduced voltage, which is standard throughout the world; i.e., 120/60, 110/50.</p>			

Optional Features

Electrical



<p>Class F or H High-Temperature Coils with DIN Connections</p>	<ul style="list-style-type: none"> • Meets ISO 4400/DIN 43650 requirements. • Class F insulation system suitable for coil temperatures up to 311°F (155°C). ① <i>For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section.</i> • Class H insulation system suitable for coil temperatures up to 356°F (180°C). ① <i>For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section.</i> • Enclosure protection with DIN connector equivalent to Types 1 and 4. • Suitable for 50 and 60 Hz. ② 	<p>Ordering Information: For Class F Coil, depending on wattage, use catalog number prefix "SC" or "SD" (e.g., SC8210G002) and specify voltage. For Class H coil, depending on wattage, use catalog number prefix "SU" or "SV" (e.g., SU8210G002) and specify voltage.</p> <p>Note: Optional DIN-type strain-relief connector kit includes a gasket and mounting screw. Outlet accommodates cable with O.D. of 0.310" to 0.400".</p> <p>Note: DIN Connection Coils are not available above 250 volts AC or DC. Must be ordered separately as Kit No. K236034. For replacement coil, order coil and Kit No. 258631.</p>	
<p>Junction Box for Class F or H Coils</p>	<p>Junction box (shown installed on RedHat II solenoid) is a zinc coated steel housing with two 7/8" knock-outs for through wiring. UL listed when ordered factory assembled. Also available, without UL listing, as a kit with grounding screw for field installation.</p>	<p>Ordering Information: For factory assembly, add prefix "JB" to Valve Catalog Number. For kit, use number 272140-001*.</p>	
<p>Sub-Miniature Coils for Series 8256, 8356, 8380, 8401, and 8551 Class F High-Temperature Molded Coils with DIN Connection</p>	<p>These sub-miniature coils meet 3 x DIN 46244 requirements.</p> <ul style="list-style-type: none"> • Insulation system suitable for coil temperatures up to 311°F (155°C). ① <i>For ambient temperature requirements, refer to specific Series and charts in Engineering Information Section.</i> • Suitable for 50 and 60 Hz. ② • "Enclosure Protection" with DIN connector equivalent to Types 1 and 4. 	<p>Ordering Information: Use catalog prefix "SC" (e.g., SC8256A001V) and specify voltage.</p> <p>Note: Optional DIN-type strain-relief connector kit includes a gasket and mounting screw. Outlet accommodates cables with O.D. of 0.310" to 0.400". Must be ordered separately as Kit No. 226061-001*.</p>	
<p>1/2" Threaded Conduit Hubs for Series 8256, 8356, 8380, 8401, and 8551</p>	<p>These conventional threaded hubs allow connection with 1/2" BX cable. Can be supplied with leaded coil only. Kit includes gasket and attaching screw.</p>	<p>Ordering Information: Order separate Kit No. 224735-001*.</p>	
<p>① UL limitations are 284°F (140°C) for Class F insulation systems and 320°F (160°C) for Class H insulation systems. ② Can be supplied for 50 Hz at a reduced voltage, which is standard throughout the world; i.e., 120/60, 110/50.</p>			



Features

- Junction Box Enclosures for the wiring of ASCO solenoids are Raintight Type 3 and 3S, Watertight Type 4 and 4X, Submersible Type 6 and 6P, Explosion-proof Type 7, Class I, Groups B, C, and D Dust-Ignition proof Type 9, Class II, Div. 1, Groups E, F and G, Nonincendive Class I, Div. 2 (1.4 watts only)
- Approvals: UL, CSA
- Electrostatic powder paint, stainless steel screws, and molded epoxy coils provide excellent protection in corrosion environments
- Factory pre-wired and assembled to any explosionproof ASCO RedHat II solenoid valve
- Reduces installation costs by eliminating the need to use a separate explosionproof splice box to terminate the solenoid valve's wiring

Materials of Construction

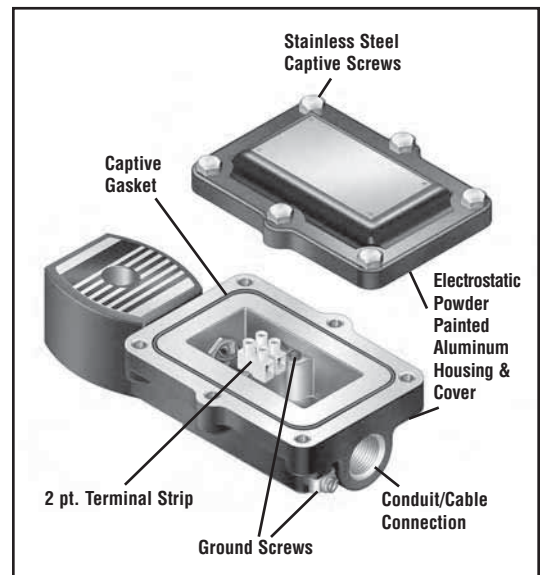
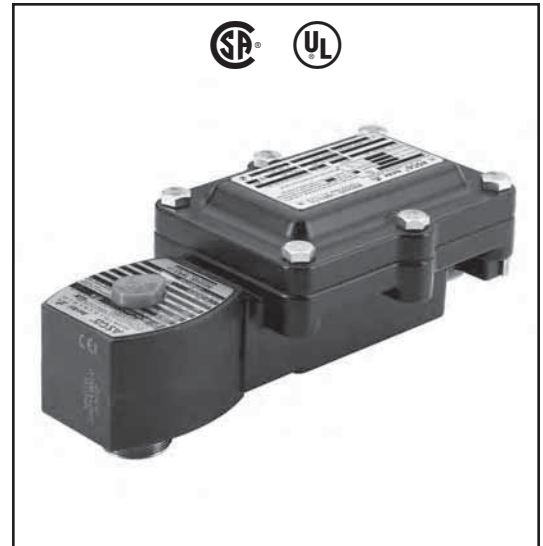
Housing and Cover	Epoxy painted die-cast aluminum
Gasket	NBR
Cover Screws	Stainless Steel
Coil	Epoxy Molded
Ground Screws	Steel
Terminal Block	Plastic
Lock Nut	Zinc

Electrical

Standard AC: 24, 120, 240, 480 volts, 60 Hz
Volts or (110, 220 volts, 50 Hz)
DC: 6, 12, 24, 120, 240

Note: Valves with JBEF housing maintain wattage and current ratings as shown on individual catalog sheets.

Conduit Sizes 1/2" NPT JBEF Prefix (Standard)
 3/4" NPT JCEF Prefix (Optional)
 M20 JDEF Prefix (Optional)



Ordering Information

Add prefix corresponding to specific conduit size required to any RedHat II valve catalog numbers & specify the voltage.
 Example: JBEF8210G095, 120/60.

Approvals

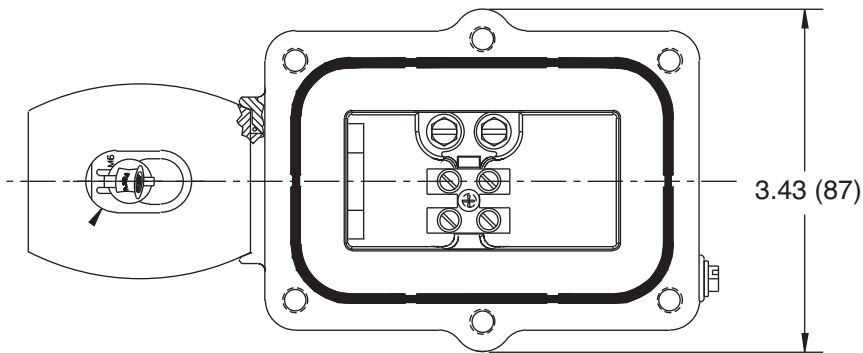
UL & CSA

Optional Features

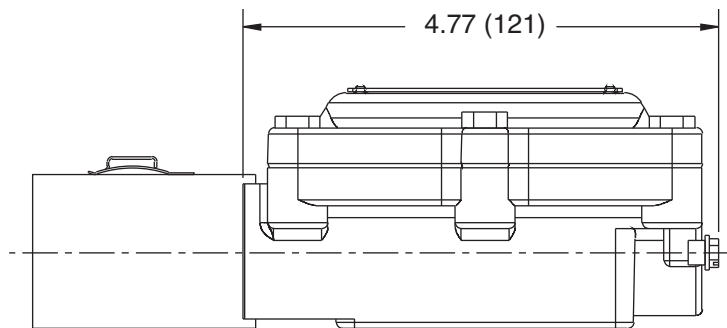
Explosionproof Junction Box for Hazardous Locations



Dimensions: inches (mm)

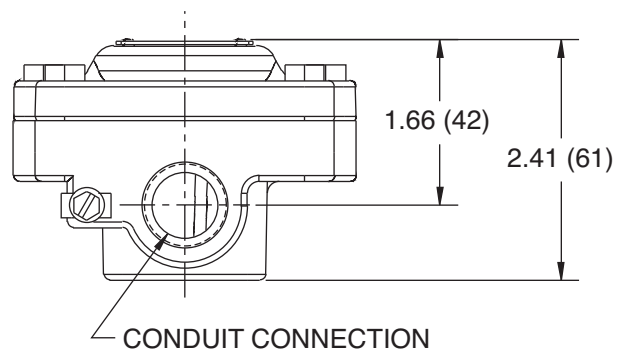


SHOWN WITH SCREWS AND COVER REMOVED



Replacement Coil Kits

Kit Number	Size (watts)	Voltage	Prefix
278000-032	6.1	120/60	JBEF
278000-132	9.1	120/60	
278001-006	10.6	24DC	
278012-032	10.1	120/60	
278012-132	17.1	120/60	
278013-006	11.6	24DC	
278024-032	16.1	120/60	
278024-132	20.1	120/60	
278013-903	1.4	12DC	
278013-902	1.4	24DC	
292106-058	12.0	240/50-60	JDEF



Optional Construction Features

Standard valve construction materials for standard valves are shown on the Series pages. If handling fluids other than those listed in the Specifications section, you may require special constructions, however. The most frequently used elastomers are listed in Table 4 along with the Valve Series in which they are available. Other considerations for a variety of liquids and gases are included in the Valve Material Selection Guide located in the Engineering Section. A solenoid valve must use certain construction material for proper electrical function. *If you cannot find the specific fluid in the guide, please consult your local ASCO office.*

Certain fluids may also require that we change the solenoid shading coil. The standard valves use a copper shading coil. Aluminum and silver are also available and, due to their different magnetic properties, additional electrical changes may be necessary. *When a change in shading coil material is indicated in the guide, please consult your local ASCO office.*

Table 4: Optional Construction Features for ASCO Solenoid Valves Handling Liquids and Gases other than Air, Inert Gas, Water, and Light Oil. Orders entered using this table MUST state actual fluid and pressure of application.

Pipe Size (ins.)	Series Number or Valve Type	Valve Construction Number	Special Construction Features ③ ELASTOMERS				
			EPDM	Oxygen Service	PTFE	FKM	CR
			Use Suffix "E"	Use Suffix "N" ①	Use Suffix "T" ②	Use Suffix "V"	Use Suffix "J"
Solenoid Operated Valves							
3/8 - 3/4	8030, 8040	1-10, 13	Available on all constructions	Available on all constructions	Not Available	Available	Available on all constructions
3/8 - 1 1/2	8210	1, 2, 5, 6, 7, 8, 9, 11, 12, 16, 18, 23, 24, 25, 26, 28, 29, 31-51			Not Available	Available	
3/4 - 2 1/2	8210	10, 20, 21, 27, 30			Available	Available	
3/8 - 3	8215	All			Not Available	Available	
All	8260	1, 2, 3			Not Available	Available	
All	8260	4, 5, 6			Not Available	Not Available	
1/8 - 3/8	8262, 8263	1 - 7, 11, 12, 13, 16, 17			Available	Available	
1/8 & 1/4	8262	8, 9, 14			Available	Available	
3/8 & 1/2	8316	1, 2			Not Available	Available	
3/4 & 1	8316	3, 4, 5			Not Available	Available	
All	8320, 8360	All			Available	Available	
Air Operated Valves							
1/4	2 Ports	1, 2, 22	Available on all constructions	Available on all constructions	Available	Available on all constructions	Available on all constructions
3/8 - 3/4	2 Ports	8			Not Available		
3/8 - 3/4	2 Ports	3, 4			Not Available		
3/8 - 3/4	2 Ports	6, 7, 16, 17			Not Available		
1 & 1 1/4	2 Ports	10, 12, 18, 19			Not Available		
1 1/2	2 Ports	14, 20			Not Available		
1/4	3 Ports	1			Available		
3/8 & 1/2	3 Ports	2			Not Available		
3/4 & 1	3 Ports	3, 4			Not Available		

① For valves requiring special cleaning and/or testing procedures, such as for oxygen, freon, & sanitary service, refer to Table 6.
 ② Pressure ratings must be reduced by 25%.
 ③ Unless otherwise indicated in the Series Specification Tables, all soft seating valves are supplied with NBR discs, diaphragms, or gaskets.

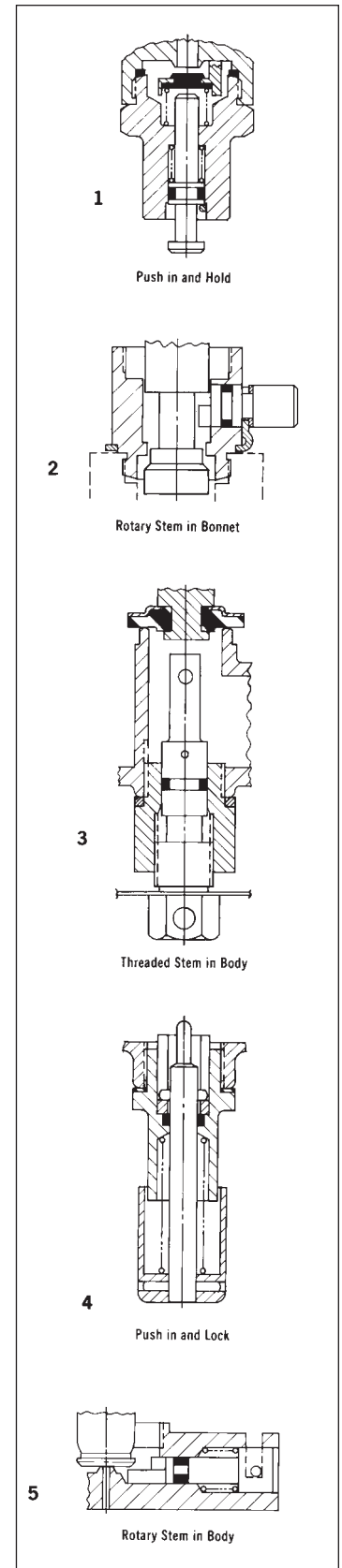
Manual Operators

Manual operators are provided to operate the valve manually when electric power is off. There are basically two types of manual operators: momentary and maintained. Series 8320, 8321, and 8342 can be fitted with either type.

To determine which type is available for your valves, check the Construction Reference Numbers in their Series Specification Tables against the Table below. Schematics of the manual operators and how they are fitted to the valves are shown on the right. *If no manual operator is listed or a different type is required, consult your local ASCO office. Add suffix "MO" or "MS" to the catalog number.*

Table 5: Manual Operators

MANUAL OPERATORS ④ FOR 2-WAY SOLENOID VALVES						
Series Number	Pipe Size (ins.)	Valve Construction Reference Number	Valve Body Materials	Manual Operator Suffix	Type of Manual Operator	Illustration Number
8030	3/8, 1/2	1, 2, 3, 11	Brass	MO	Maintained	5
8030	3/4	9	Brass	MO	Maintained	3
8030	3/8, 1/2	1, 2, 3, 11	Stainless Steel	MO	Maintained	5
8030	3/4	10	Stainless Steel	MO	Maintained	3
8210	3/8, 1/2	1, 2	Stainless Steel	MO	Maintained	5
8210	3/8, 1/2	1, 2	Brass	MO	Maintained	5
8210	3/8 to 2 1/2	3, 5, 6, 8, 9, 11, 12, 16, 18, 20, 21	Brass	MO	Maintained	2
8210	3/4 to 1 1/2	10, 31, 32, 33	Brass	MO	Maintained	3
8210	1	42	Brass	MO	Maintained	4
8210	3/4	7	Stainless Steel	MO	Maintained	2
8221	3/8 to 2 1/2	1, 2, 5, 6, 7, 11, 12	Brass	MO	Maintained	2
8262	1/8	1	Brass	MO	Maintained	3
8262	1/8	1	Stainless Steel	MO	Maintained	3
8262	1/8	8	Brass	MS MO	Maintained Momentary	3 1
8262	1/8	8	Stainless Steel	MS MO	Maintained Momentary	3 1
8262	1/4	2, 4, 6, 16, 17	Brass	MO	Maintained	2
8262	1/4	11, 12, 13	Stainless Steel	MO ⑥	Maintained	2
8263	3/8	3, 5, 7	Brass	MO	Maintained	2
MANUAL OPERATORS ④ FOR 3-WAY SOLENOID VALVES						
8300	All	All	Brass	MO	Maintained	4
8300	All	All	Stainless Steel	MO	Maintained	4
8316	All	All	Brass	MO	Maintained	2
8320	1/8, 1/4	All	Brass/SS	MS ⑤ MO ①	Maintained Momentary	3 1
8321	All	All	Brass	MS MO	Maintained Momentary	3 1
MANUAL OPERATORS ④ FOR 4-WAY SOLENOID VALVES						
8340	1/4	8340A001, A003, A004	Aluminum	MO	Momentary	1
8342	1/4, 3/8	Single Solenoid Only	Brass/SS	MS MO	Maintained Momentary	4 1
8344 ③	All	All	Brass	MO	Maintained	2
8345	1/4	1	Brass	MO	Maintained	5
8401	1/8, 1/4	All	Aluminum	②	Momentary Maintained	- -
MANUAL OPERATORS ARE ALSO AVAILABLE FOR ALL LOW POWER AND INTRINSICALLY SAFE VALVES (MANUAL OR MOMENTARY). USE SUFFIX "MO."						
① Limited to 100 psi (7 bar) maximum on Normally Open and Universal operation.						
② Supplied as standard, no suffix required.						
③ Two manual operators required for Dual Solenoid construction.						
④ Limited to 250 psi (17 bar) pressure, except where noted otherwise.						
⑤ Valves with MS suffix maintain full catalog ratings.						
⑥ Manual operator not available for this series with steam application.						



OPTIONAL FEATURES

Metering Devices

Metering Devices are used for obtaining an exact flow from solenoid valves for dispensing or for moving an air operator in a given time period. Valves which can be fitted with metering devices are Series 8262 (1/8" NPT size only), 8260, 8401, 8402, and 8342. Add suffix "M" to catalog numbers.

Special Cleaning and Testing Procedures:

If special cleaning and testing procedures are required, they must be specified when ordered. *These procedures cannot be done after the valve is built.*

Table 6: ASCO Special Cleaning and Testing Procedures

Fluid	Description of Cleaning or Testing Procedure	Order by Specifying
Freon	All valve parts inspected for oil, grease, metal dust, and other foreign matter and degreased, if necessary. Assembled in clean, dry area and helium mass spectrometer tested for external leakage. Pipe connections sealed with plugs.	Clean and test per ASCO AP-1-005 Procedure.
Oxygen	All valve parts degreased and blacklight inspected for cleanliness. Assembled and tested in clean area using oil-free air or nitrogen. Helium mass spectrometer tested for external leakage. Pipe connections sealed with plugs. Each valve tagged covering certification of tests and put in a sealed bag.	Clean and test per ASCO AP-1-004 Procedure. Add Suffix "N" to catalog Number.
Sanitary distilled water and other clean systems	All valve parts inspected for oil, grease, metal dust, and other foreign matter and degreased, if necessary. Valves assembled in clean area and tested with clean, dry air or nitrogen. Pipe connections sealed with plugs.	Clean and test per ASCO AP-1-008 Procedure.

ASCO Engineering has always been a significant contributor to the growth and success of our company. Today, we are better equipped than ever before to meet the challenges of our customers. Whether your specific product needs are routine or exotic, we have the best tools, talent, and experience to design and produce the exact product you need to control, move, and monitor your fluid.

Our engineering teams have the most advanced computers and computer programs at their disposal to aid in new product design. These include the latest 2D and 3D computer modeling programs to assist in development of a design concept, specialized magnetic and flow analysis programs to help optimize the magnetic efficiency of our solenoids and fluid flow-through in our valves. Other computer programs assist us in structural analysis, motion analysis, and the design of molds for thermoplastic parts.

Our Engineering Department has the latest rapid prototyping and computer controlled machining equipment. This allows us to quickly turn our computer designs into functional models. We also have a modern Valve Laboratory to development test and verify the performance of our new products and a Pilot Plant to simulate the production environment and to ensure a smooth transition from Engineering to Manufacturing.

However, the most important elements of our Engineering Department are the many highly educated, creative, experienced, and talented people who comprise it. They not only know how to make the best new products, but they also are there, whenever needed, to help make sure all of our products continue to perform to the standards that have made ASCO the world leader in fluid control.

This section provides additional information which may be necessary to determine the exact ASCO solenoid or air operated valve for your requirements.

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Solenoid Valves

Principles of Operation

A solenoid valve is a combination of two basic functional units:

- A solenoid (electromagnet) with its core
- A valve body containing one or more orifices

Flow through an orifice is shut off or allowed by the movement of the core when the solenoid is energized or de-energized. ASCO valves have a solenoid mounted directly on the valve body. The core is enclosed in a sealed tube, providing a compact, leaktight assembly.

Direct Acting Valves (Figures 1A, 1B)

When the solenoid is energized in a direct acting valve, the core directly opens the orifice of a Normally Closed valve or closes the orifice of a Normally Open valve. When de-energized, a spring returns the valve to its original position. The valve will operate at pressures from 0 psi to its rated maximum.

The force needed to open the valve is proportional to the orifice size and fluid pressure. As the orifice size increases, so does the force required. To open large orifices while keeping solenoid size small, a Pilot Operated construction is used.

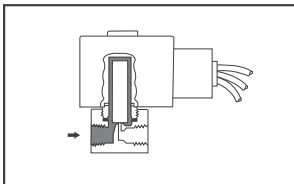


Figure 1A:
Direct Acting,
Normally Closed Valve,
De-Energized

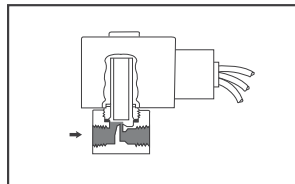


Figure 1B:
Direct Acting,
Normally Closed Valve,
Energized

Internal Pilot Operated Valves (Figures 2A, 2B)

Normally, these valves have a pilot and bleed orifice which enable them to use line pressure for operation.

When the solenoid is de-energized, the pilot orifice is closed and full line pressure is applied to the top of the piston or diaphragm through the bleed orifice, providing seating force for tight closure.

When the solenoid is energized, the core opens the pilot orifice, relieving pressure from the top of the piston or diaphragm via the outlet side of the valve. The line pressure then opens the valve by lifting the diaphragm or piston off the main orifice.

Two constructions are available for 2-way valves:

- Floating diaphragm or piston which requires a minimum pressure drop across the valve to remain in the open position (Figures 2A, 2B).
- Hung-type diaphragm or piston held open mechanically by the solenoid core. The valve opens and remains open with zero pressure drop (Figures 3A, 3B).

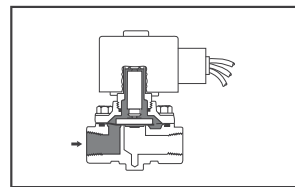


Figure 2A:
Pilot Operated, Normally
Closed Valve,
De-Energized

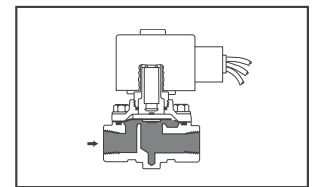


Figure 2B:
Pilot Operated,
Normally Closed Valve,
Energized

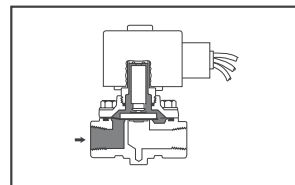


Figure 3A:
Pilot Operated, Normally
Closed Valve,
De-Energized

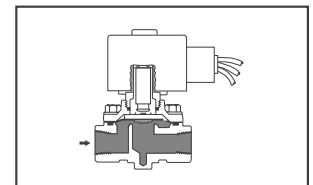


Figure 3B:
Pilot Operated,
Normally Closed Valve,
Energized

Manual Reset Valves (Figures 4A, 4B)

Manual reset valves must be manually latched into position and will return to their original position only when the solenoid has been energized or de-energized, depending on construction

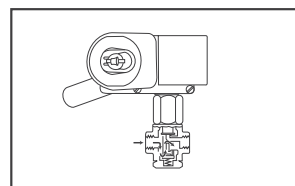


Figure 4A:
No Voltage Release
Manual Reset Valve,
Un-Latched, De-Energized

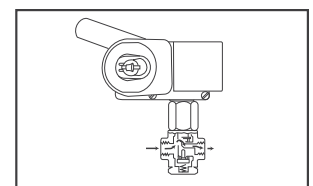


Figure 4B:
No Voltage Release
Manual Reset Valve,
Latched, Energized

Types of Solenoid Valves

2-Way Valves (Figures 1A, 1B, 2A, 2B, 3A, 3B)

Two-way valves have one inlet and one outlet pipe connection. They are used to allow or shut off fluid flow, and are available in either:

Normally Closed – closed when de-energized and open when energized.

Normally Open – open when de-energized and closed when energized.

3-Way Valves (Figures 5A, 5B)

Three-way valves have three pipe connections and two orifices (when one is open, the other is closed, and vice versa). They are commonly used to alternately apply pressure to and exhaust pressure from the diaphragm operator of a control valve, single-acting cylinder, or rotary actuator.

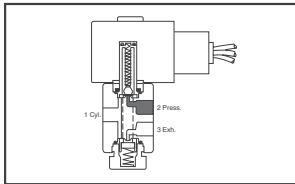


Figure 5A:
Three-Way
Normally Closed Valve,
De-Energized

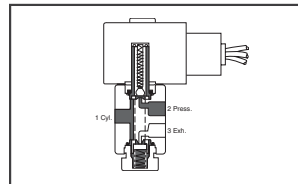


Figure 5B:
Three-Way
Normally Closed Valve,
Energized

Three modes of operation are available:

Normally Closed – when the valve is de-energized, the pressure port is closed and the cylinder port is connected to the exhaust port. When the valve is energized, the pressure port is connected to the cylinder port and the exhaust port is closed.

Normally Open – when the valve is de-energized, the pressure port is connected to the cylinder port and the exhaust port is closed. When the valve is energized, the pressure port is closed and the cylinder port is connected to the exhaust port.

Universal – allows the valve to be connected in either the Normally Closed or Normally Open position to select one of two fluids or to divert flow from one port to another.

4-Way Valves (Figures 6A, 6B)

Four-way valves are generally used to operate double-acting cylinders or actuators. They have four or five pipe connections: one pressure, two cylinder, and one or two exhausts. In Position A, pressure is connected to one cylinder port, the other is connected to exhaust. In Position B, pressure and exhaust are reversed at the cylinder ports.

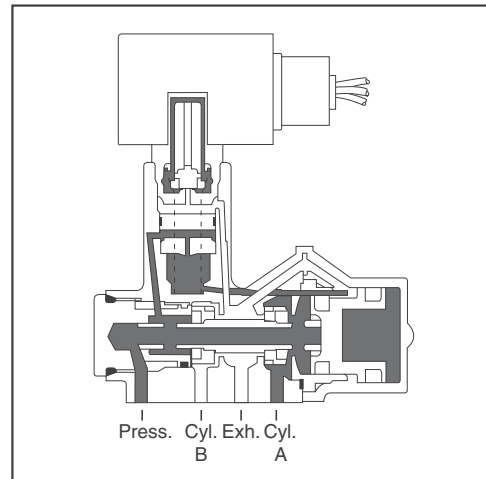


Figure 6A:
Four-Way Valve, De-Energized

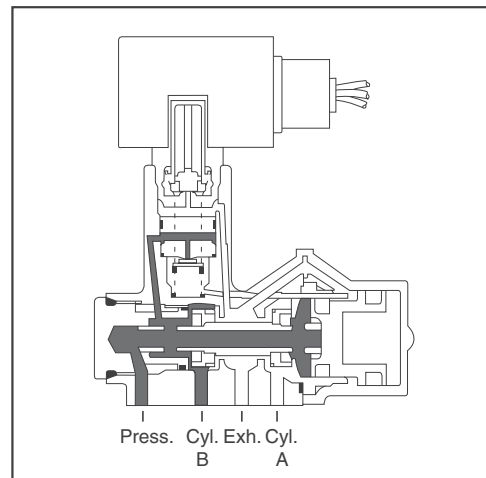


Figure 6B:
Four-Way Valve, Energized

Solenoid

Solenoid Coils (Non-Electronic*)

Except where noted, all ASCO valves are equipped with coils which can be energized continuously without danger of overheating or failure. Standard coils have 18" leads which can be connected to any controlling device. Spade, screw terminal, and DIN-type spade connector coils are also available. For three phase power systems, the two leads can be connected to any two of the three phases.

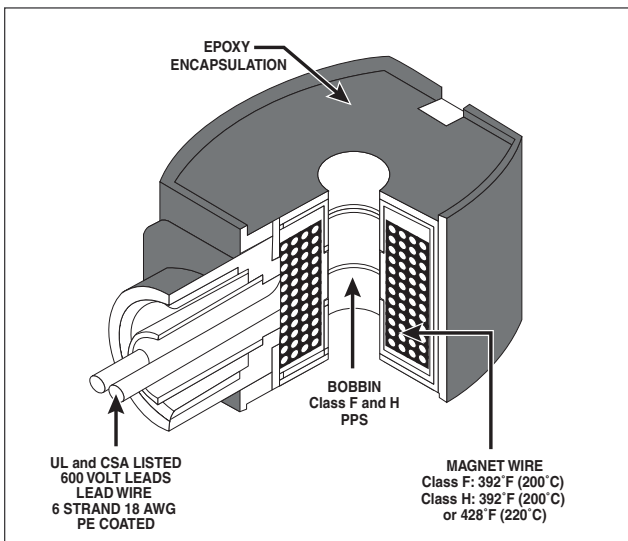
All coils are constructed in accordance with Underwriters Laboratories Inc., NEMA, IEEE, and other industrial standards ASCO Class B, F, and H insulation systems are UL listed in the Recognized Component Index (yellow book) under Guide No. OBJ2.

For AC ambient capabilities, see chart to the right. DC ambient capabilities are 104°F (40°C) for RedHat II. These ambients are based on a minimum available voltage of 85% of nominal. If minimum available voltage is greater, a higher ambient limitation may be possible. Consult factory for details.

* See Pages 527-530 for RedHat Next Generation Electronic coils.

Coil Insulation Systems and Temperature Limitations

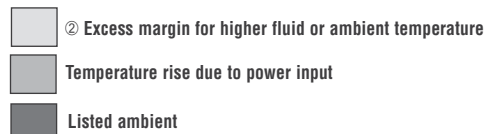
RedHat II Solenoid Class F 311°F (155°C) and Class H 356°F (180°C)



AC Ambient Capabilities

Industrial Temperature Limitations ① ⑤ and Thermal Characteristics of ASCO RedHat II Solenoids and Coils

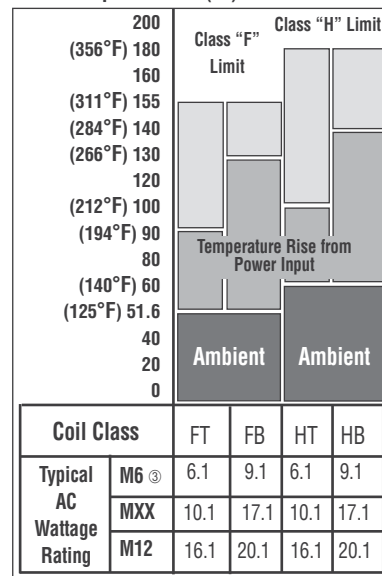
The typical watt ratings given show the relationship between different classes of coil insulation and the watt ratings to achieve higher temperature capabilities. The information contained in these tables applies only to Non-Explosionproof, AC constructions.④



Notes:

- ① As measured by the "Resistance Method."
- ② Ambient temperatures are directly additive to coil rise — fluid temperature is not.
- ③ For M-6, 50 Hz wattage values, add 2 watts to the indicated values.
- ④ Because of explosionproof codes and surface temperature limitations, the maximum listed ambients for specific valves should not be exceeded. Consult factory concerning explosionproof applications where higher-than-listed ambients are encountered.
- ⑤ Maximum temperatures shown are industrial limits. For UL limits, subtract 27°F (15°C) for Class F coils and 36°F (20°C) for Class H coils.

Final Temperature °C (°F)



Coil Operating Voltage Ranges

All coils are designed for industrial operating voltages and can be used on the following voltage ranges:

AC		DC	
Nominal Voltage Rating	Normal Operating Range	Nominal Voltage Rating	Normal Operating Range
24	20-24	6	5.1-6.3
120	102-120	12	10.2-12.6
—	—	24	20-25
240	204-240	120	102-126
480	408-480	240	204-252

Note: Special coils are required for battery charging circuits where wider voltage ranges are typically encountered. For these applications, special continuous duty Class H coils are available that will accommodate a voltage range equivalent to 12% over nominal, 28% under nominal, and a 140°F (60°C) ambient. Standard nominal voltages are 125 and 250 DC, which translate to a voltage range of 90-140 and 180-280, respectively. Add prefix "HC" to the catalog number. "HC" prefix is only applicable to valves with coil classes FT and HT. *Consult factory or other constructions.*

Most ASCO valves, depending upon construction, will operate at 15% under nominal voltage and maximum operating pressure differential, and are capable of operating for short periods at 10% over nominal voltage. For coil classes other than FT and HT, over voltage is not recommended. *For wider voltage ranges than shown here or for operating voltage ranges for specific catalog numbers, please consult your local ASCO sales office.*

Power Consumption

Power consumption can be determined from the ratings shown on individual Series pages. For AC valves, the watts, volt-ampere "inrush" (the high momentary surge occurring at coil energization), and volt-ampere "holding" (the continuous draw following inrush) are given.

The current rating for inrush and holding may be determined by dividing the voltage into the volt-amp rating:

$$\text{Inrush Amps} = \frac{\text{volt-amp inrush}}{\text{voltage}}$$

$$\text{Holding Amps} = \frac{\text{volt-amp holding}}{\text{voltage}}$$

DC valves have no inrush current. The amp rating can be determined by dividing the voltage into the DC watt rating:

$$\text{Amps} = \frac{\text{watts (DC)}}{\text{voltage}}$$

Notes:

1. When a valve has been energized for a long period, the solenoid becomes hot and can be touched by hand for only an instant. This is a perfectly safe operating temperature. Any excessive heating will be indicated by smoke and the odor of burning coil insulation.
2. Valves for AC service can be converted to other AC voltages simply by changing the coil. Similarly, DC valves can be converted to other DC voltages. *When converting from AC to DC, or vice versa, consult your local ASCO sales office for instructions.*

Solenoid Constructions

Internal parts in contact with fluids are of non-magnetic 300 and magnetic 400 series stainless steel. In AC constructions, the shading coil is normally copper, except that silver is mostly used in valves with stainless steel bodies. Other materials are available, when required. In DC constructions, no shading coil is required. Typically, the core tubes are of 300 series stainless steel and are formed by deep drawings, eliminating the need for silver brazed or welded joints.

Solenoid Enclosures

ASCO offers two types of enclosures, each for a variety of applications: a one-piece molded epoxy construction called the RedHat II solenoid and a conventional RedHat metallic construction. Both meet ICS-6 ANSI/NEMA, and UL Standards 429, 508, and/or 1002. These standards define enclosure protection levels and the tests passed to earn each Type designation. (See Page 527 for RedHat Next Generation Solenoid Enclosures).

RedHat II

RedHat II solenoid enclosures are of one-piece molded epoxy construction, with an integral 1/2" NPT conduit hub. This epoxy encapsulation serves as the enclosure. The magnetic frame is molded into the coil.

RedHat II solenoids are offered as Type 1 General Purpose or Type 7 (A, B, C, and D) Explosionproof.

Type 1 – Solenoids are green and come equipped with three 18" long leads (the green lead is a ground wire). Also available as options are 1/4" spade connectors, screw terminals, and DIN-type terminals meeting ISO 4400 and DIN Standard 43650.

An optional junction box/terminal coil construction is also available for use with spade and screw terminal constructions. Refer to the "Optional Features" Section for details.

Type 7 – Solenoids are black and are available only in the leaded construction.

All RedHat II solenoids also meet the requirements for Types 2 Dripproof, 3 and 3S Raintight, and 4 and 4X Watertight-Corrosion Resistant.

The Following wattages carry Type 7 and Type 9 approvals as shown; for

Wattage	Type 7 Class I, Div. 1 & 2 Gas Groups	Type 9 Class II, Div. 1 Dust Groups
6.1, 10.1, 17.1	A, B, C, D	E, F, G
16.1, 20.1	A, B, C, D	E, F
10.6, 11.6	A, B, C, D	E, F, G

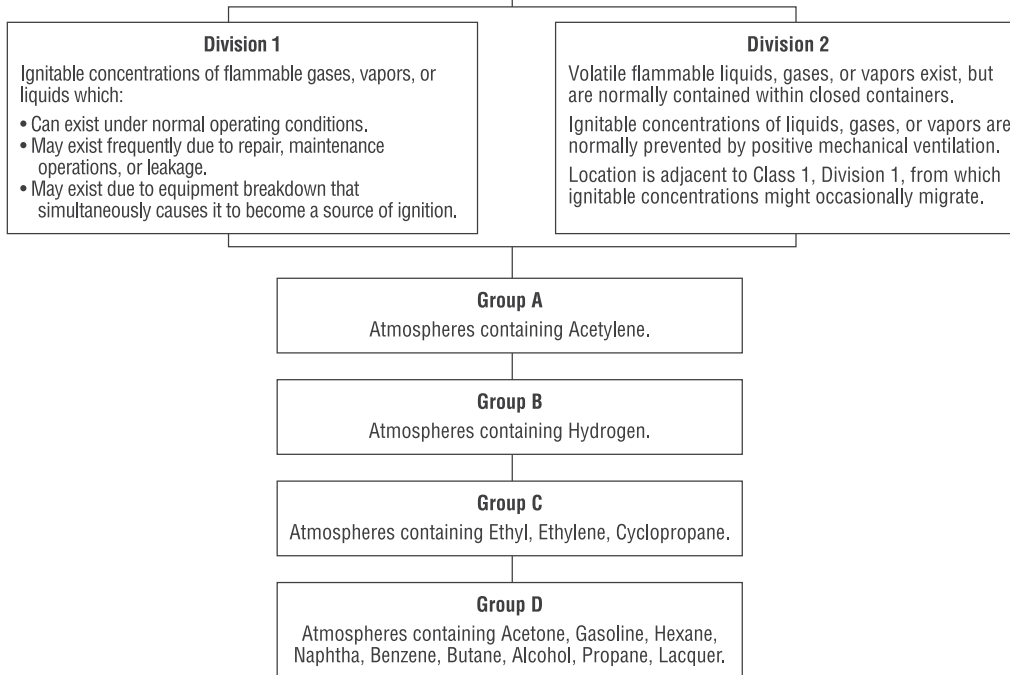
Enclosure Classifications and Types

Type 1	General Purpose	Intended for indoor use, primarily to provide protection for enclosed parts in locations without unusual service conditions.
Type 2	Dripproof	Intended for indoor use, primarily to provide protection against limited amounts of falling water or dirt.
Type 3	Raintight, Dusttight, and Sleet (Ice) Resistant	Intended for outdoor use, primarily to provide protection against wind-blown dust, rain, and sleet; undamaged by the formation of ice on the enclosure.
Type 3S	Raintight, Dusttight, and Sleet (Ice) Resistant	Intended for outdoor use, primarily to provide protection against wind-blown dust, rain, and sleet; external mechanism remains operable when ice laden.
Type 3R	Rainproof, Sleet (Ice) Resistant	Intended for outdoor use, primarily to provide protection against falling rain and sleet; undamaged by the formation of ice on the enclosure.
Type 4	Watertight and Dusttight	Intended for indoor or outdoor use to provide protection against splashing water, water seepage, falling or hose-directed water, and severe external condensation; undamaged by the formation of ice on the enclosure.
Type 4X	Watertight, Dusttight, and Corrosion Resistant	Same as Type 4, but provides additional protection to resist corrosion.
Type 6	Submersible	Intended for indoor or outdoor use to provide protection against entry of water during submersion at a limited depth. (Tested to 6' for 30 minutes.)
Type 6P	Submersible	Same as Type 6 Enclosure, but provides prolonged submersion protection at a limited depth. (Tested to 6' for 24 hours.)
Type 7 & Type 9	Refer to charts on next page.	

Type 7 (A, B, C, and D)

Explosionproof enclosures are designed to contain an internal explosion, without causing an external hazard, when installed in the following atmospheres or locations:

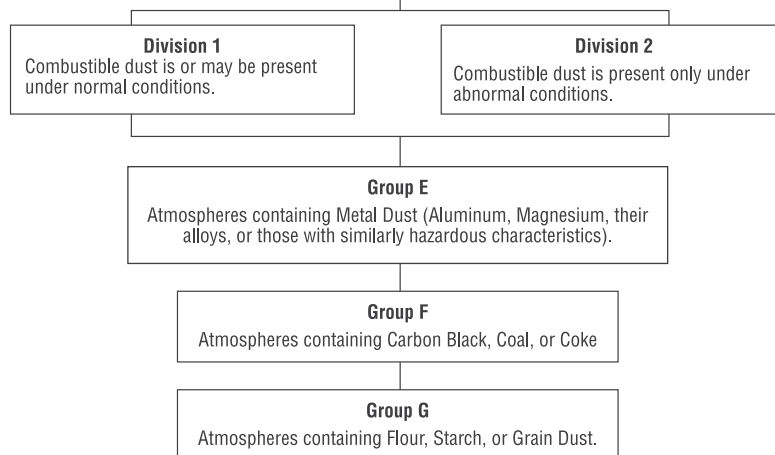
**Class 1
Gasses or Vapors**



Type 9 (E, F, and G)

Dust-ignitionproof enclosures are designed to prevent the entrance of dust, and the enclosed devices do not produce sufficient heat to cause external surface temperatures capable of igniting dust on the enclosure or in the surrounding atmosphere.

**Class II
Dust**



RedHat Metallic Enclosures

Conventional metallic enclosures are offered to meet Type I General Purpose enclosure applications and Type 7 (C and D) Explosionproof enclosure applications.

Type 1 — General Purpose metallic enclosures are epoxy-painted, zinc-coated steel with a 7/8" diameter hole to accept standard conduit hubs or connectors.

Type 7 (C and D) — Explosionproof metallic enclosures are epoxy-painted, zinc-plated steel or die-cast aluminum with a 1/2" threaded conduit hub.

Type 7 enclosures also meet Type 3 (Raintight) requirements as well as some also meet Type 7 (C and D) Explosionproof and Type 9 (E, F, and G) Dust-Ignitionproof requirements for Class I, Division 1, Groups C and D; Class I, Division 2, Groups C and D; and Class II, Division 1, Groups E, F, and G. *Please contact your local ASCO sales office for details.*

Also available as options are: Type 3R (Rainproof), Type 4 and 4X (Watertight), Type 6 (Submersible), Type 7B (Explosionproof for Hydrogen Atmospheres, Class I, Division 1, Group B), as well as Splice Box enclosures. *Please contact your local ASCO sales office for details on these options.*

Note: Metallic solenoid enclosures provide part of the magnetic circuit for the solenoid. Removal will affect valve operation.

Hazardous Location Solenoid Temperature Range Codes

Hazardous location solenoids are marked to indicate the maximum exposed surface temperature or temperature indicating code. This temperature is based on the maximum obtained in the temperature or burnout (blocked core) tests, whichever is higher, at a minimum ambient of 104°F (40°C) or at the rated maximum ambient temperature.

To prevent ignition of hazardous atmospheres, do not install in areas where vapors or gases having ignition temperatures lower than the marked temperatures are present.

The operating temperatures for each indicating code are shown in the following chart:

Operating Temp. Range Indicating Code No.

Maximum Temperature		Code Number
Degrees in C	Degrees in F	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

Note: Except where otherwise noted in specific Series, all RedHat metallic enclosure solenoids have temperature range Code T3C.

Most RedHat II solenoids and/or solenoid valves are marked:

"To prevent fire or explosion, do not install where ignition temperature of hazardous atmosphere is less than 329°F (165°C). Open circuit before disassembly."
This corresponds to code number T3B.

Valves with Class H solenoids and valves used on steam service are marked:

"To prevent fire or explosion, do not install where ignition temperature of hazardous atmosphere is less than 356°F (180°C). Open circuit before disassembly."
This corresponds to code number T3A.

The Class II, Group F, Dust Location designation is not applicable for solenoids and/or solenoid valves used for steam service, or when a Class H solenoid is used.

RedHat II Explosionproof solenoids include an internal, non-resettable thermal fuse to limit solenoid temperature in the event that extraordinary conditions occur which could cause excessive temperatures. These conditions include high input voltage, a jammed valve, excessive ambient temperature, shorted coil, etc. This unique feature is standard only in RedHat II solenoids.

When used on valves having fluid temperature ratings exceeding 248°F (120°C), consult ASCO for applicable enclosure class, groups and temperature range codes. For temperature range codes of optional solenoids and features, or if a better temperature range code is desired, consult your local ASCO sales office.

Operating Pressures

Maximum Operating Pressure Differential (M.O.P.D.)

The maximum operating pressure differential refers to the maximum difference in pressure between the inlet and outlet, against which the solenoid can safely operate the valve. If the pressure at the valve outlet is not known, it is safest to regard supply pressure as the M.O.P.D.

Minimum Operating Pressure Differential

The minimum operating pressure differential is that which is required to open the valve and keep it open. For 2-way valves with a floating piston or diaphragm, the valve will start to close below the minimum operating differential pressure. For 3 and 4-way pilot valves, the minimum operating pressure is measured between the pressure and exhaust ports, and must be maintained throughout the operating cycle to ensure complete transfer from one position to the other.

Note: Direct acting, hung diaphragm or hung piston valves do not require a minimum pressure, but may not yield maximum flow on low pressure differentials.

Safe Working Pressure

Safe working pressure is the line or system pressure to which the valve may be subjected without being damaged.

Proof Pressure

Proof pressure is five times the safe working pressure. *Contact the factory or your local ASCO sales office if you require this value.*

Ambient Temperatures*

Minimum Ambient Temperature

The nominal limitation of 32°F (0°C) is advisable for any valve that might contain moisture (water vapor). Where freezing water is not a factor, minimum ambience as low as 0°F (-18°C) can be tolerated. In addition, special constructions are available for ambient temperatures down to -40°F (-40°C). *Consult your local sales office with your specific needs.*

Maximum Ambient Temperature

The nominal maximum ambient temperatures listed are based primarily on test conditions used by Underwriters Laboratories, Inc. for setting safe limits for coil insulation. They are determined under continuously energized conditions and with maximum fluid temperatures in the valves. Actual conditions, in many applications, will permit use at considerably higher ambient temperatures. In addition, modifications to standard constructions are available to extend maximum ambient temperature limitations. *Consult your local ASCO sales office with your specific needs.*

Response Times*

Response time from fully closed to fully open or vice versa depends on the valve size and operating mode, electrical service, fluids, temperature, inlet pressure, and pressure drop. The response time for AC valves on air service, under average conditions, can be generalized as follows:

- Small direct acting valves: 5 to 10 milliseconds.
- Large direct acting valves: 20 to 40 milliseconds.
- Internal pilot operated valves:
 1. Small diaphragm types: 15 to 50 milliseconds.
 2. Large diaphragm types: 50 to 75 milliseconds.
 3. Small piston types: 75 to 100 milliseconds.
 4. Large piston types: 100 to 150 milliseconds

Generally speaking, operation on liquids has relatively little effect on small direct acting valves; however, response time of large direct acting and internally piloted valves will slow by 50% to 100%.

Response time of DC valves will be 50% slower than equivalent AC valves. For specific response time on any critical-timing applications, response time can be reduced to meet specific requirements.

**See Page 529 for RedHat Next Generation Solenoid Valves).*

Air Operated Valves

Principles of Operation

An air operated valve has two basic functional units:

- An operator with a diaphragm or piston assembly which, when pressurized, develops a force to operate
- A valve containing an orifice in which a disc or plug is positioned via air pressure to stop or allow flow

Operators

Two operators are offered in this catalog, each having a pressure range to suit various industrial requirements: instrument air range 3 to 30 psi (0.2 to 2.1 bar) and pneumatic range 30 to 125 psi (2.1 to 8.6 bar).

Control air for the operator is completely isolated from the main line fluid by a unique seal arrangement (see Figure 7). This permits a wide range of main line fluids to be handled.

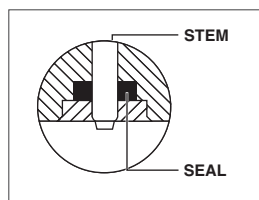


Figure 7

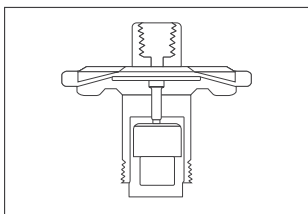


Figure 8A: Instrument Air Pressure Range Operator

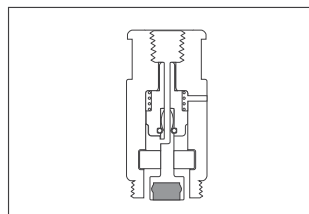


Figure 8B: Pneumatic Range Operator

When a particular valve is selected, any pressure within its pressure range will operate the valve, regardless of variations in the main line pressure.

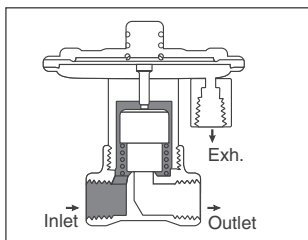


Figure 9A: Normally Closed, Direct Acting, Air Operated Valve with Operator Exhausted

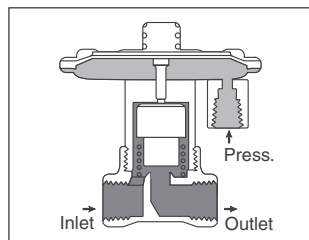


Figure 9B: Normally Closed, Direct Acting, Air Operated Valve with Operator Pressurized

The instrument air pressure range operator utilizes a diaphragm (see Figure 8A) for operation, while the pneumatic range operator has a piston (see Figure 8B). By applying pressure to and exhausting pressure from the operator, the main valve will open or close.

Direct Acting Valves (Figures 9A, 9B)

In a direct acting valve, the operator stem is moved by the diaphragm or piston and directly opens or closes the orifice, depending on whether the operator is pressurized or exhausted. The valve will operate from zero psi to its maximum rated pressure.

Internal Pilot Operated Valves (Figure 10A, 10B)

This valve is equipped with a pilot and bleed orifice and uses the line pressure for operation. When the operator is pressurized, it opens the pilot orifice and releases pressure from the top of the valve piston or diaphragm to the outlet side of the valve. This results in unbalanced pressure, which causes the line pressure to lift the piston or diaphragm off the main orifice, thereby opening the valve. When the operator is exhausted, the pilot orifice is closed and full line pressure is applied to the top of the valve piston or diaphragm through the bleed orifice, providing a seating force for tight closure.

Two types of construction are available:

- Floating diaphragm or piston, which requires a minimum pressure drop to hold it in the open position.
- Hung type diaphragm or piston, which is mechanically held open and operates from zero to the maximum pressure rating.

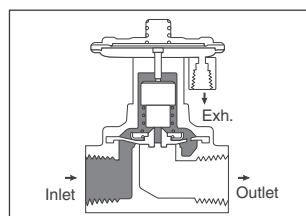


Figure 10A: Normally Closed, Internal, Pilot Operated Valve with Operator Exhausted

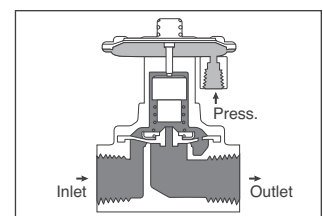


Figure 10B: Normally Closed, Internal, Pilot Operated Valve with Operator Pressurized

Types of Air Operated Valves

2-Way Valves:

Normally closed and normally open operation. Figures 9A, 9B, 10A, 10B, 11A, 11B.

3-Way Valves:

Normally closed, normally open and universal operation. Figures 12A-D, 13A-D.

4-Way Valves:

Figures 14A-D

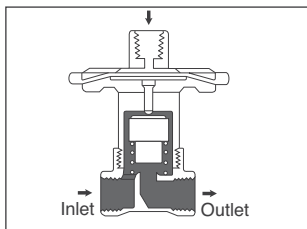


Figure 11A: Normally Open, Operator Exhausted

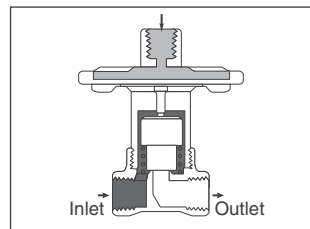


Figure 11B: Normally Open, Operator Pressurized

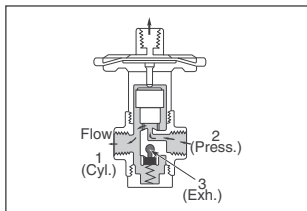


Figure 12A: Normally Open, Operator Exhausted

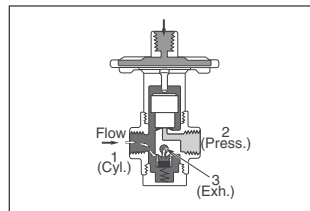


Figure 12B: Normally Open, Operator Pressurized

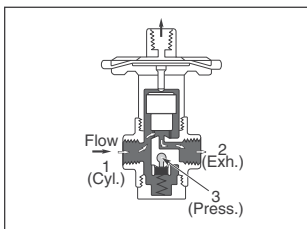


Figure 12C: Normally Closed, Operator Exhausted

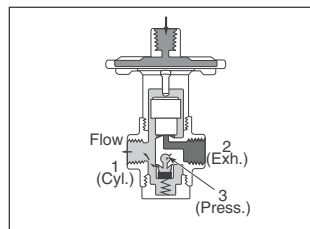


Figure 12D: Normally Closed, Operator Pressurized

Operating Pressures

Minimum Operating Pressure Differential

The minimum operating pressure differential is that which is required to open the valve and to keep it open. Two way valves with floating piston or diaphragm will start to close below the minimum differential pressure. Three and four way pilot valves must maintain the minimum operating pressure throughout the operating cycle to ensure complete transfer from one position to the other.

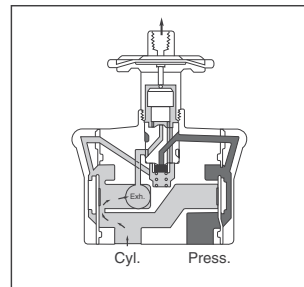


Figure 13A: Normally Closed, Operator Exhausted

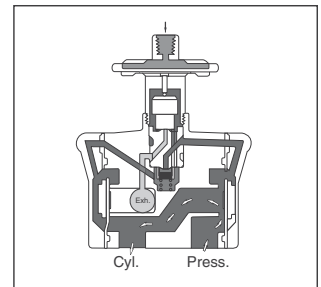


Figure 13B: Normally Closed, Operator Pressurized

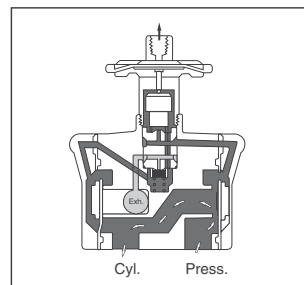


Figure 13C: Normally Open, Operator Exhausted

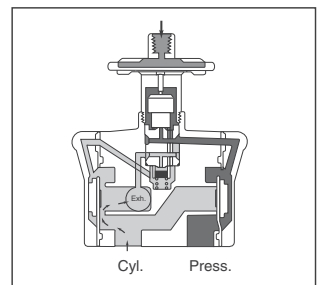


Figure 13D: Normally Open, Operator Pressurized

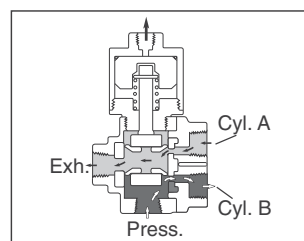


Figure 14A: Operator Exhausted

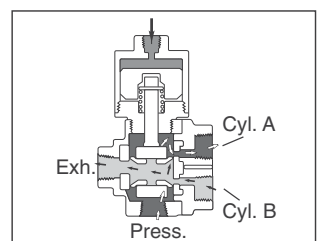


Figure 14B: Operator Pressurized

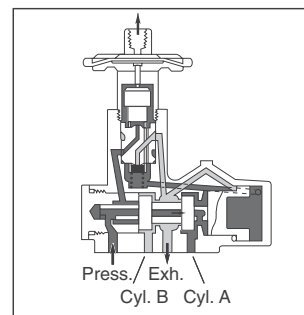


Figure 14C: Operator Exhausted

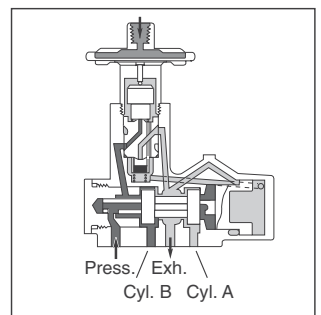


Figure 14D: Operator Pressurized

Maximum Operating Pressure

Maximum operating pressure is the highest pressure at the inlet side of the valve, against which the operator can operate the valve. This pressure may be much less than the maximum safety rating of the valve body.

Note: Direct acting valves do not require a minimum pressure.

Approvals

Approval Listing Code and Information

UL, FM, CSA listings and compliance to applicable CE directives have been indicated for each Series in this catalog. Listing codes and other information follow in this section.

In addition to approvals with the standard features and for the standard voltages listed in each Series, many valves with optional features and other voltages have also been approved. *Consult your local ASCO sales office for details.*

Agency Valve Classifications and Code Reference

General Purpose Valve – a Normally Open or Normally Closed valve intended to control the fluid flow, but not to be depended upon to act as a safety valve. This is a UL and CSA classification, and is not intended to indicate valve service or application.

Safety Shutoff Valve – a Normally Closed valve of the “on” and “off” type, intended to be actuated by a safety control or emergency device, to prevent unsafe fluid delivery. It may also be used as a General Purpose valve. A multiple port valve may be designated as a Safety Shutoff valve only with respect to its Normally Closed port. This is a UL, FM, and CSA valve classification. Safety shutoff valves are listed in UL index under Guide YIOZ or YIOZ2 for ordinary locations and YTSX or YTSX2 for hazardous locations.

Process Control Valve – an FM approved valve to control flammable gases, not to be relied upon as a Safety Shutoff valve. Refer to note under individual valve listing. Unless otherwise stated under the individual Series numbers, valves are listed as General Purpose valves.

Underwriters Laboratories, Inc.

UL standards governing solenoid valves are:

UL429, “Electrically Operated Valves,”

UL1002, “Electrically Operated Valves for Use in Hazardous Locations.”

UL1604, “Electrical Equipment for use in Class I and II, Division 2 and Class III Hazardous Classified Locations.”

UL provides two “Listing” categories for solenoid valves:

General Use. Valves authorized for general use are complete in their requirements; therefore, they may be installed in the field. They are identified by the UL symbol, followed by the word “Listed” and the valve

classification. UL Listings for ASCO “General Use” valves and solenoids can be found in the “UL Gas and Oil Equipment Directory” (gray book) under Electrically Operated Valves, Guide No. YIOZ or YIOZ2 (File MP-618), and in the “UL Hazardous Location Equipment List” (red book) under Electric Valves, Guide No. YTSX or YTSX2 (File E25549) or under Solenoids, Guide No. VAPT (File E12264).

Component. Valves in this category are intended for use as factory-installed components of equipment where final acceptability must be determined by UL. They are not intended for installation in the field.

Component valves are termed “UL Recognized” and use UL’s special Recognized Component mark. UL Listings of ASCO Component Valves can be found in the “UL Recognized Component Index” (yellow book) under Electrically Operated Valves, Guide No. YIOZ2 and YSY12 (File MP-618).

Canadian Standards Association

Standard C22.2 No. 139, “Electrically Operated Valves,” covers the standards governing solenoid valves.

Standard C22.2 No. 213, “Electrical equipment for use in Class I, Division 2 hazardous locations.”

CSA certified valves and solenoids are listed in the “CSA Certified Electrical Equipment Book” under Valves, Guide No. 440-A-0 (File 10381) and Guide No. 440-A-0.8 (File 13976).

CSA valves require special handling, testing, and marking. They are supplied only when specified on an order.

Factory Mutual Research Corporation

FM “approves” and lists in the “Factory Mutual Approval Guide” fuel oil and fuel gas safety shutoff valves, process control valves, explosionproof/dust-ignitionproof, and intrinsically safe valves for hazardous locations. Valves designated for other fluids and operational characteristics, although not subject to FM approval, are usually “accepted” by FM on specific equipment installations.



Industrial Risk Insurers (Formerly FIA)

Industrial Risk Insurers does not approve equipment. It established "recommended good practices" in such areas as combustion safeguards on single-burner boiler-furnaces, and safeguarding Class B and Class C furnaces and ovens. Conforming to these practices results in either insurability for fire protection or in more advantageous rates for their protection.

To meet the standards of good practice, safety controls must be either listed by Underwriters Laboratories, accepted by Industrial Risk Insurers or other nationally recognized testing laboratories (NRTL). The National Fire Protection Association (NFPA) maintains similar requirements and recommendations for safety shutoff and vent valves in oil and gas burner boiler systems.

European Directives – CE



The Council of the European Communities, under the treaty establishing the European Economic Community (EEC), adopted into law a series of directives to harmonize technical standards. Solenoid valves are controlled by:

Machinery 89/392/EEC Annex II B

EMC 89/336/EEC Art 10.2
(Electromagnetic Capability)

Low Voltage 72/23/EEC

PED 97/23/EC
(Pressure Equipment Directive)

ASCO valves complying to these directives, through third-party or self-certification, display the CE mark on the nameplate or coil and on the Instruction and Maintenance sheet packaged with each valve. On request, ASCO will issue a Declaration of Incorporation and/or Declaration of Conformity for the valve supplied.

Agency Approvals – Worldwide

ASCO's Quality Assurance Program meets all the requirements of ISO-9001-94. We are also certified to IQ Net, providing customers with the products from 17 ISO-certified facilities around the world. The US, Canada, UK, France, the Netherlands, Germany, and Japan are included.

When desired, ASCO solenoid valves can be supplied to meet the additional requirements of a variety of approval agencies around the world. The following can be requested. *Consult your local ASCO sales office for details.*

United States of America

AGA	American Gas Association
ANSI	American National Standards Institute, Inc.
EIA	Electronic Industries Association
ETL	Electronic Testing Laboratory
FM	Factory Mutual Research Corporation
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IRI	Industrial Risk Insurers (formerly Factory Insurance Association)
JIC	Joint Industrial Council
MIL	Military Standards
MSHA	Mine Safety and Health Administration
NACE	National Association of Corrosion Engineers
NAVSEA	Naval Sea Systems Command
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NFPA	National Fluid Power Association, Inc.
NSF	National Sanitation Foundation
UL	Underwriters Laboratories, Inc.
USCG	United States Coast Guard

European Economic Community

CE	European Directives
CEE	International Commission on Rules for the Approval of Electrical Equipment
ATEX	Directive 94/9/EC Apparatus for Potentially Explosive Atmospheres (ATmospheres EXplosibles)
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization

Austria

TÜV-A	Technischer Überwachungs-Verein Österreich
BVFA	Bunderversuchs-und Forschungsanstalt Arsenal
ETI	Elektrotechnisches Institut

Australia

AGA	Australian Gas Association
SAA	Standards Association of Australia

Belgium

CEB	Comite Electrotechnique Belge
IBN	Institut Belge de Normalisation
ISSEP	Institut Scientifique de Service Public (anciennement INIEX)
K.V.B.G.	Koninklijke Vereniging der Belgische Gasvakiieden
VERGAS	Technische Vereniging van de Gasindustrie in Belgie V.Z.W.D.

Brazil

INMETRO	Instituto Nacional de Metrologia
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Canada

CGA	Canadian Gas Association
CSA	Canadian Standards Association
EEMAC	Electrical and Electronic Manufacturers Association of Canada
ULC	Underwriters Laboratories of Canada

China

NEPSI	National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation
CCC	China Compulsory Certification

Denmark

DEMKO	Danmarks Elektriske Materielkontrol
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Finland

SL	Sähkötarkastuslaitos Laboratoria
VTT	Technical Research Centre of Finland

France

AFNOR	Association Française de Normalisation
INERIS	Institut National de l'Environnement Industriel et des Risques (anciennement CERCHAR)
Bureau Veritas	
LCIE	Laboratoire Central des Industries Electriques
MDIS	Ministère du Développement Industriel et Scientifique

Germany

BVS	Bergbau-Versuchsstrecke
DIN	Deutsches Institut für Normung
DVGW	Deutscher Verein des Gas – Und Wasserfaches e.V.
Germanischer Lloyd	
PTB	Physikalisch – Technische Bundesanstalt
VDE	Verband Deutscher Electrotechniker

Italy

CEI	Comitato Elettrotecnico Italiano
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Japan

JEM	Japan Electrical Manufacturers Association
JIS	Japanese Industrial Standards
MIL	Ministry of Labor
NK	Japan Maritime Association
RIIS	Research Institute of Industrial Safety, Department of Labor

Korea

KISCO	Korea Industrial Safety Corp.
KGSG	Korea Gas Safety Corp.

Luxembourg

Service de l'énergie de l'état	
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Northern Ireland

Industrial Science Centre, Department of Economic Development	
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Norway

Det Norske Veritas	
NEMKO	Norges Elektriske Materieilkontroll

Russia

USSR	Register of Shipping
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South Africa

SABS	South African Bureau of Standards
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Spain

CESI	Centro Elettrotecnico Sperimentale Italiano
LOM	Laboratorio Oficial José Maria Madariaga

Sweden

SEMKO	Svenska Elektriska Material Kontrollanstalen
SP	Swedish National Testing and Research Institute

Switzerland

ASE	Association Suisse des Electriciens
SEV	Schweizerischer Electrotechnischer Verein

The Netherlands

DGA	Direktoraat – Generaal van de Arbeid
KEMA	Koninklijk Instituut voor het Testen van Elektrische Materialen N.V.
NEC	Nederlands Elektrotechnisch Comité
NNI	Nederlands Normalisatie – Instituut
REGO	Richtlijnen Voor de Samenstelling van Elektrisch Material In Verband Met Gasontploffingsgevaar
VEG	VEG-Gasstituut N.V.
VGN	Vereniging van Gasfabrikanten In Nederland

United Kingdom

BASEEFA	British Approvals Service for Electrical Equipment in Flammable Atmospheres
BGC	British Gas Corporation
BSI	British Standard Institution
EECS	Electrical Equipment Certification Service (BASEEFA)
Lloyds	Register of Shipping
MRS	Midlands Research Station
NWC	National Water Council
SCS	Sira Certification Service
SFA	Special Flammable Atmospheres
WH	Watson House

Flow Data

Importance of Valve Sizing

Improper sizing of a solenoid valve results in below-standard performance and can involve unnecessary cost.

The basic factors in valve sizing include:

- Maximum and minimum flows to be controlled
- Maximum and minimum pressure differential across the valve
- Specific gravity, temperature, and viscosity of fluids being controlled

The Cv method of valve sizing reduces all variables to a common denominator called the Flow Coefficient. After existing or projected conditions have been converted to this coefficient (the Cv), the proper valve size can be found in the catalog pages.

This section provides the complete procedure and reference data for accurate sizing of ASCO solenoid valves in liquid, gas services, and steam. The graphs provide the simplest means of finding the required Cv factor, and are based on the formula:

$$Cv = \frac{\text{Flow Required}}{\text{Graph Factor}}$$

The graph factor can be determined by aligning known pressure conditions on the graphs.

Estimating Cv or Orifice Size:

The table below can be used to estimate a Cv if the orifice size is known or, conversely, to relate the approximate orifice size if the Cv is known. The chart is based on the ASCO designs of inline globe type valves.

The flow charts must be used for precise sizing and converting Cv factors to actual flow terms, and the catalog must be consulted for the actual Cv of a particular valve.

Approximate Orifice Size (ins.)	Approximate Cv	Approximate Orifice Size (ins.)	Approximate Cv
1/32	.02	1/2	3.5
3/64	.06	5/8	4.5
1/16	.09	11/16	5
3/32	.20	3/4	7.5
1/8	.30	1	13
9/64	.36	1 1/4	17
3/16	.53	1 1/2	25
1/4	.70	2	48
5/16	1.7	2 1/2	60
3/8	2	3	100

Sample Problems

Liquids: ①

To find Cv: What Cv is required to pass 20 GPM of oil, with a specific gravity of 0.9 and a pressure drop of 25 psi? The viscosity is less than 300 SSUs.②

Solution: Formula is:

$$Cv = \frac{GPM}{Fg \times Fsg}$$

To find Fg (Graph Factor), use Liquid Flow Graph on page 11.16. The Fg factor is that corresponding to 25 psi pressure drop and equals 5. The Fsg factor (Specific Gravity Factor) can be obtained from the Fsg Chart, and is that corresponding to .9 specific gravity and equals 1.05.

Therefore:

$$Cv = \frac{20}{5 \times 1.05} = 3.81$$

Air and Gases:

To find Cv: A valve is required to pass 500 SCFH at an inlet pressure of 60 psig and a Δp③ of 10 psi. Find Cv if the fluid is carbon dioxide at room temperature.

Solution: Refer to 10-100 psig graph on page 11.17. The formula to be used is:

$$Cv = \frac{SCFH}{Fg \times Fsg \times Ft}$$

Locate Fg at the intersection of 60 psig inlet pressure and 10 psi Δp③ (curved lines). Read down to Fg. Fg=1560.

Locate Fsg corresponding to specific gravity of carbon dioxide (S.G.=1.5). Fsg=0.81. (Refer to next page.) Since the gas is at room temperature, the Ft factor can be ignored.

Insert values into formula:

Steam:

To find Cv: A valve is required to pass 25 lb/hr of saturated steam at an inlet pressure of 7 psig and a Δp③ of 3 psi. What is the Cv?

Solution: Refer to the Steam Graph on page 11.18. Use formula:

$$Cv = \frac{lb/hr}{Fg}$$

Locate Fg on graph corresponding to 7 psig inlet pressure and 3 psi Δp③ (curved lines). Fg = 23.5.

Insert values into formula:

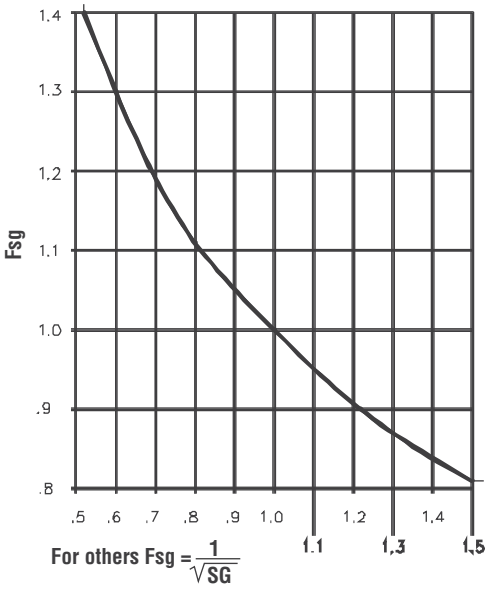
$$Cv = \frac{25}{23.5} = 1.06$$

For further information, consult your local ASCO sales office.

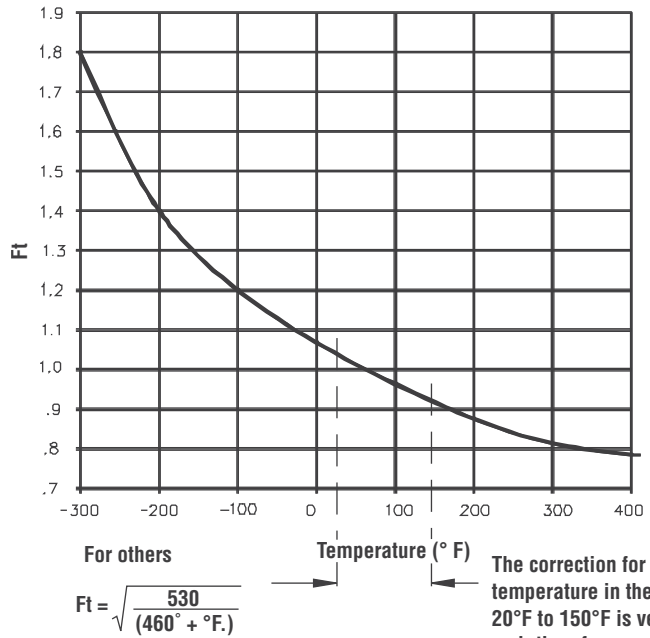
Notes:

- ① Liquid formulas and flow graphs are based on US gallons.
- ② If viscosity is less than 300 SSU, correction factors are not necessary.
- ③ Δp stands for pressure drop.

Fsg Chart

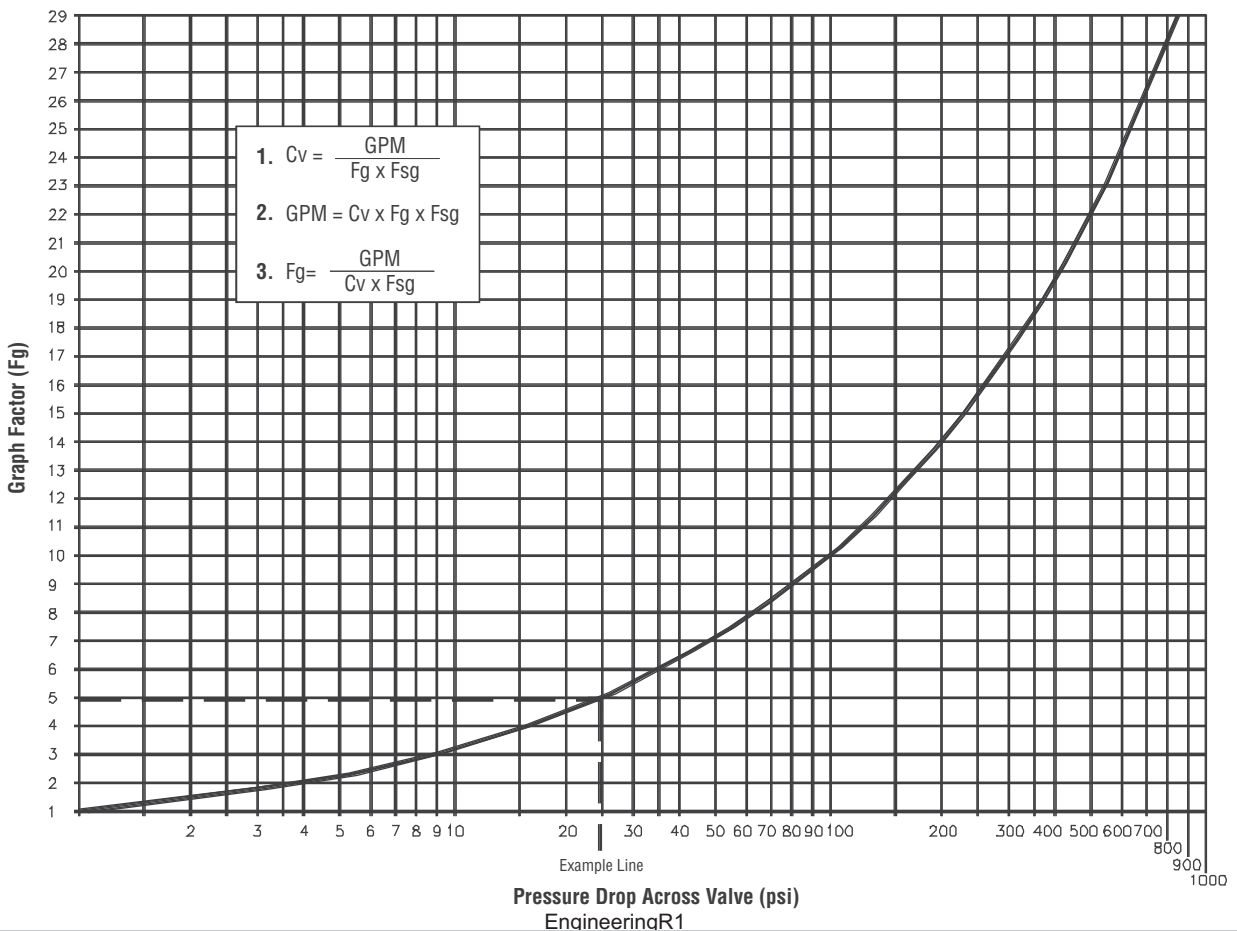


Ft Chart

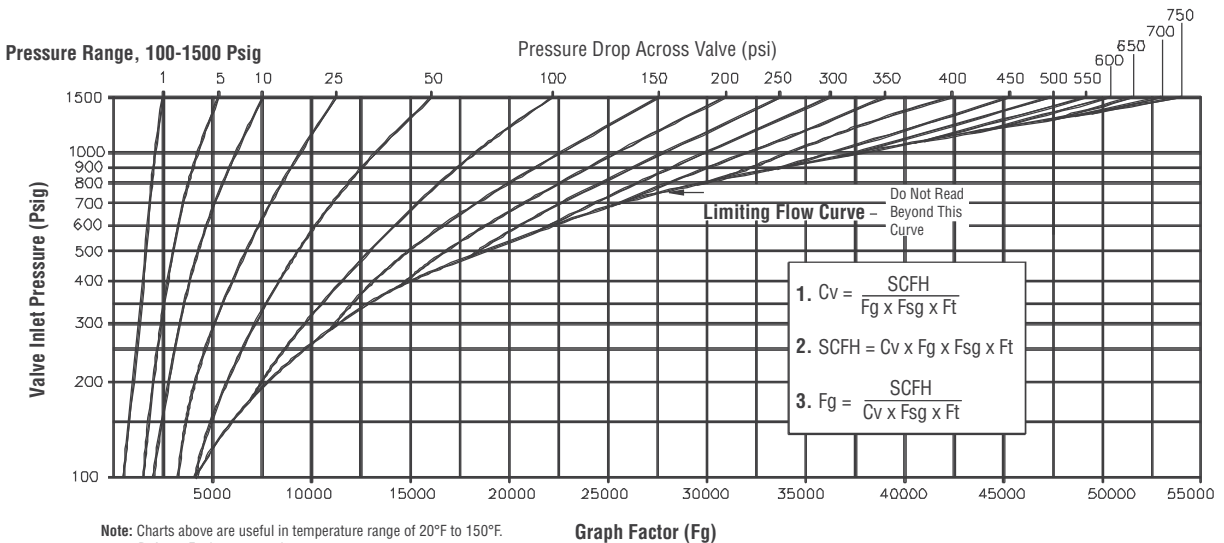
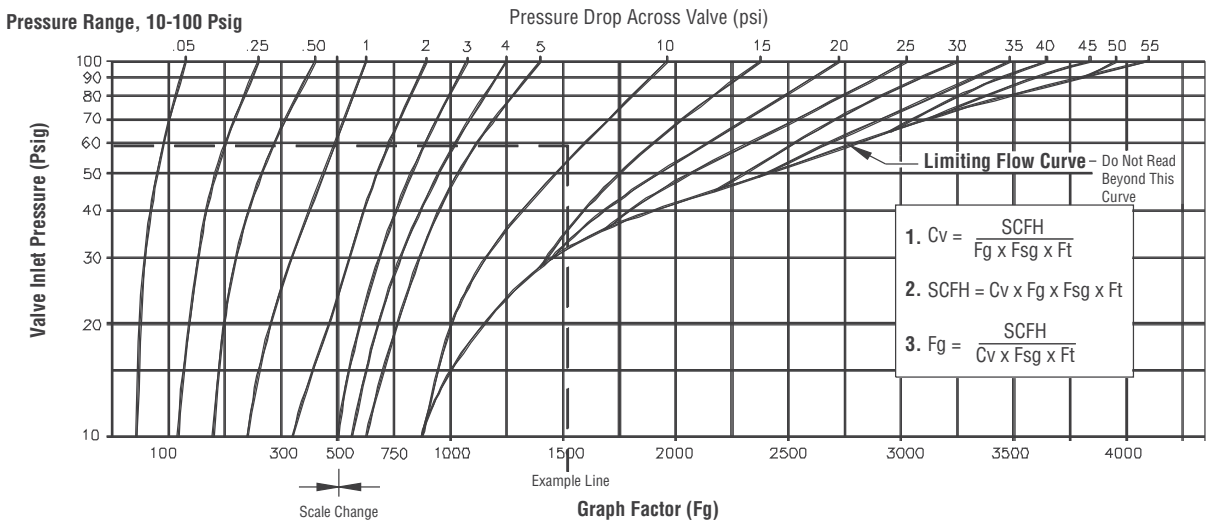
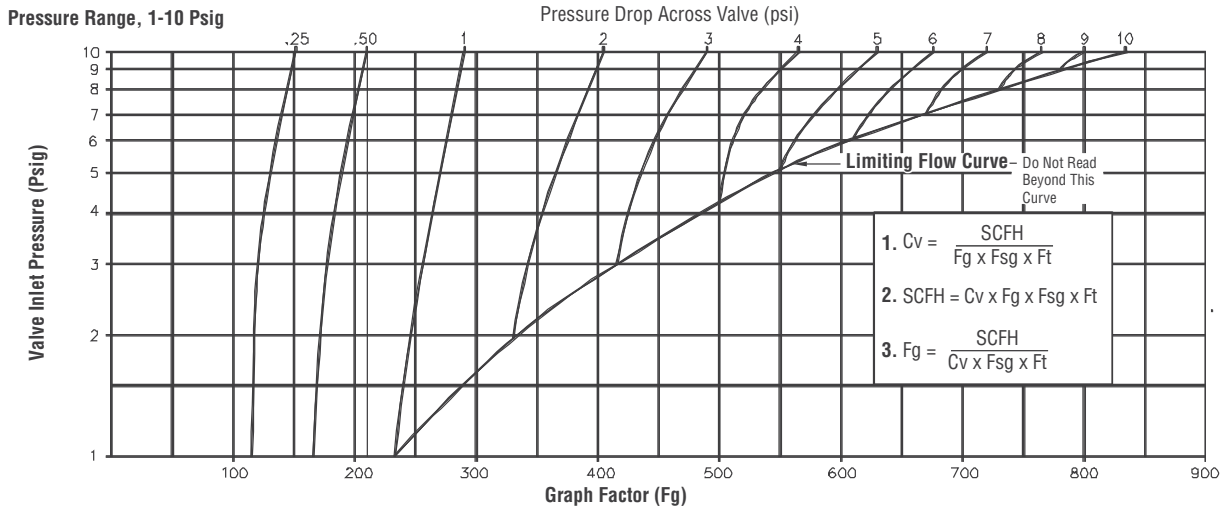


The correction for temperature in the range of 20°F to 150°F is very small and, therefore, can be ignored in ordinary applications.

Liquid Flow Graph



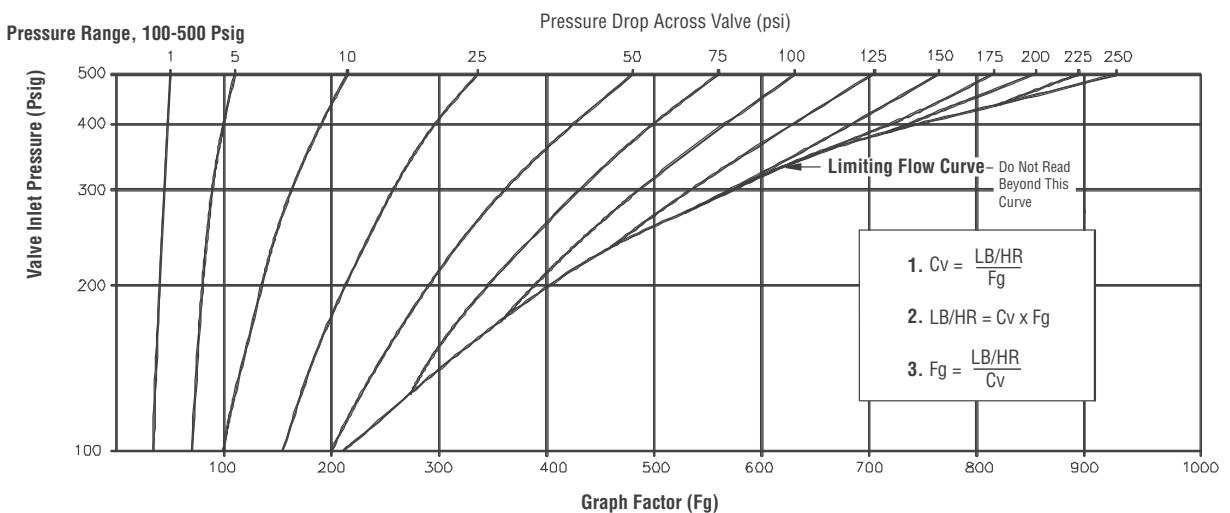
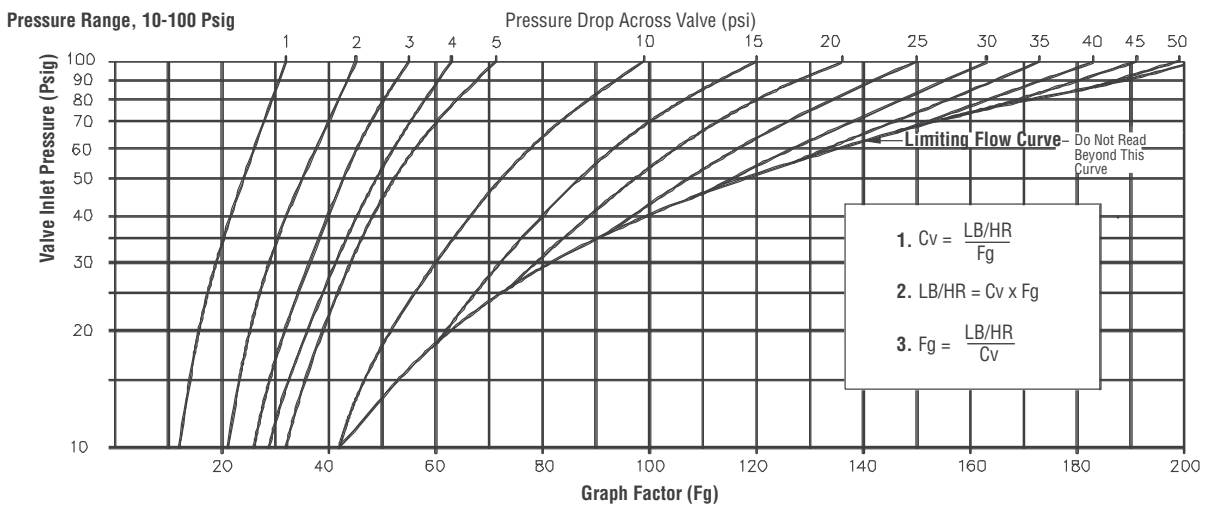
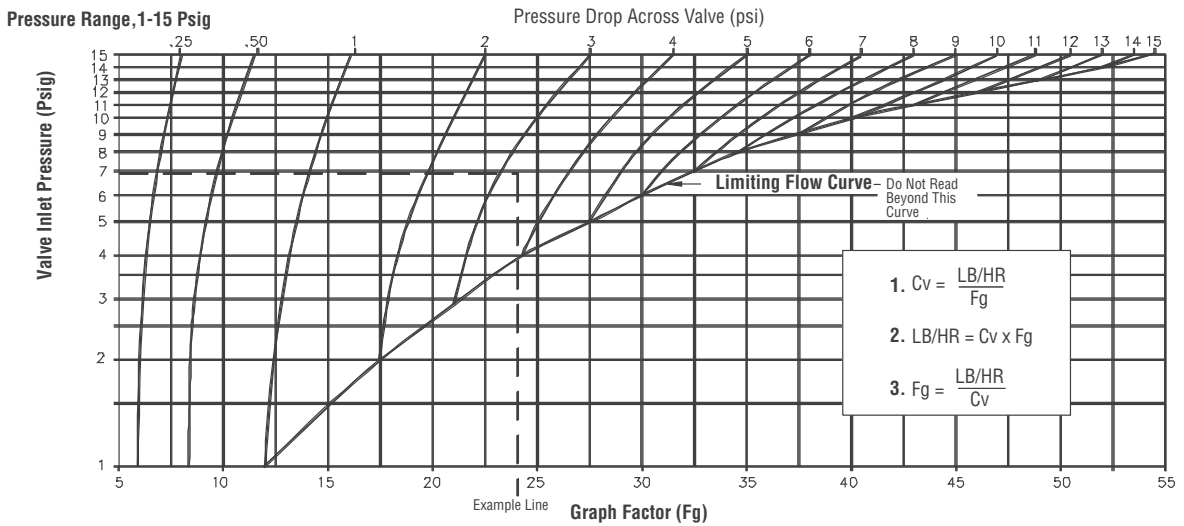
Air and Gas Flow Graphs



Note: Charts above are useful in temperature range of 20°F to 150°F. Refer to Ft chart on previous page.

EngineeringR1

Steam Flow Graphs



Material Selection Guide for Commonly Used Fluids

All orders entered using this guide must state actual fluid, fluid pressure, fluid concentration, and fluid temperature of the application. Actual fluid is extremely important when elastomer options are specified because other substitutions may be required.

ASCO valves are available to control many acids, alcohols, bases, solvents, and corrosive gases and liquids. Modified or special designs are sometimes required, depending upon the application.

Corrosion occurs either as a chemical or electro-chemical reaction. Therefore, consideration must be given to both the galvanic and electromotive force series, as well as to pressure, temperature, and other factors that might be involved in the application.

This guide provides information on types of valves that are available for most common corrosive and non-corrosive gases and liquids. *For applications in which abnormal conditions exist and for other fluids, consult your local ASCO office, giving full details on operating conditions.*

This guide is not intended as a specific recommendation; factors beyond our control could affect valve operation or materials.

General Information on Elastomer Materials Frequently Used in ASCO Valves

NBR (Buna 'N', Nitrile)

NBR is commonly referred to as a nitrile rubber and is the standard synthetic elastomer for accomplishing resilient-type seating or sealing in ASCO valves. It has excellent compatibility for most air, water, and light oil applications. It has a useful temperature range of 0°F to 180°F (-18°C to 82°C).

CR (Neoprene)

CR is principally used as an external seal in refrigeration applications. It is also utilized for oxygen service. It has a useful temperature range of 0°F to 180°F (-18°C to 82°C).

EPDM (Ethylene Propylene)

EPDM is selected for applications above the NBR temperature range, such as handling hot water and steam. Ethylene propylene has an extremely wide range of fluid compatibility, but has the distinct disadvantage that it cannot be used with petroleum-based fluids or contaminated fluids (such as lubricated air). It has a useful temperature range of -10°F to 300°F (-23°C to 149°C).

FKM (Viton®/Fluorel®, etc.)

FKM is a fluorocarbon elastomer primarily developed for handling such hydrocarbons as jet fuels, gasolines, solvents, etc., which normally cause detrimental swelling to NBR. FKM has a high temperature range similar to EPDM, but with the advantage of being

somewhat more resistant to "dry heat." FKM has a wide range of chemical compatibility. It has a useful temperature range of 0°F to 350°F (-18°C to 177°C).

PTFE (Teflon®, Rulon)

PTFE and PTFE with fillers are considered more a plastic than a resilient-type material. They are virtually unattacked by any fluid. Their temperature usage has ranged from discs for cryogenic valves to discs for steam valves. They are not easily fabricated and are known to have "cold flow" characteristics which may contribute to objectionable leakage, particularly on gases.

Other materials referred to in this catalog

CA	(Acetal, Celcon, Delrin)
FFKM	(Perfluoroelastomers)
FMQ	(Fluorosilicone)
HYT	(Hytrel)
MTBE	(Methyl tertiary-butyl ether)
PA	(Nylon, Zytel)
PA + FV	(Polyamide)
PE	(Polyethylene)
PP	(Polypropylene)
PPS	(Polyphenylene Sulfide, Ryton)
PUR	(Polyurethane)
UR	(Urethane)
VMQ	(Silicone)

Viton and Teflon are registered Trademarks of DuPont Co. Fluorel is a registered Trademark of 3M.

Material Selection Guide for Commonly Used Fluids

Fluids	Qualifying Service Information	Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features)
Acetic Acid	Standard strengths of water solution are: 28, 56, 70, 80, 85, 98%.	For solutions of 40% or less, use stainless steel Type 316 Normally Closed valve with EPDM elastomers. Add suffix "E" to catalog number.
Acetic Acid, Glacial	99.9% solid.	Use appropriate ball valve with ASCO 3 or 4-way auxiliary air pilot valve.
Acetone	Colorless, flammable liquid with mint-like odor. Soluble in water and ether.	Standard catalog valves with EPDM elastomers. Add suffix "E" to catalog number. PTFE or metal seated valves also used.
Acetylene	A colorless, highly flammable gas used for welding and flame cutting of metals, and for producing other chemicals. If moisture is present, copper, silver, and alloys containing more than 66% copper are not suitable.	Standard catalog aluminum, brass, or stainless steel valves. Specify aluminum shading coil. Do not use bar stock brass valves.
Air, Lubricated (Shop Air)	Most sources of air carry lubrication from pumps and other equipment. Others are directly lubricated in lines.	Standard resilient seated catalog valves. For synthetic diester lubricating oils, FKM seals may be required. <i>Consult local ASCO office.</i>
Air (or Gas), Dry, Unlubricated	Used in instrument air applications and telephone lines where moisture and oil cannot be tolerated.	Special constructions required. Refer to Long-Life Solenoid Valve Constructions.
Alcohol, Ethyl (Denatured Alcohol)	A grain alcohol commonly used as solvent. Also used as a radiator antifreeze and rocket fuel.	Standard resilient seated catalog valves
Alcohol, Methyl (Methanol)	A flammable wood alcohol used in automotive antifreeze, general solvent, aviation, and rocket fuel.	Standard catalog constructions; however, where high purity of liquid is essential, use stainless steel designs.
Ammonia (Anhydrous or Dissociated)	Used in refrigeration. Other uses include: for cleaning and bleaching, for etching aluminum, and in chemical processing. Presence of slight trace of water moisture can be harmful to brass.	Stainless Steel construction with aluminum shading coil and CR elastomers are required. Specify aluminum shading coil. Add prefix "X" and suffix "J" to catalog number.
Argon	The valves must be free of contaminants when filling incandescent lamps, luminescent tubes, gas thermometers, etc. Also used as an inert shielding gas in welding equipment.	Standard catalog aluminum and brass valves used in connection with welding equipment. Most other applications require stainless steel valves, specially cleaned to avoid contamination. Specify AP-1-005.
Benzene, (Benzol)	Solvent used for waxes, resins, rubber, and other organic materials. Also employed as a fuel or for blending with gasoline or other fuels.	Standard catalog valves with FKM, or PTFE disc and gasket.
Butane	One of the principal LP gases. Used as fuel for household and other industrial purposes. Also a refrigerant and a propellant in aerosol cans.	Special construction required. Refer to Combustion Section.

Fluids	Qualifying Service Information	Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features)
Carbon Dioxide (Gas or Liquid) (CO ₂)	Also known as carbonic anhydride. Used in industrial refrigeration and refrigeration of foods and carbonated beverages. Also, as a fire extinguisher and inert atmosphere in welding equipment.	For gas pressures below 100 psi, use standard valves with NBR discs. Above 100 psi, use Series 8264, especially designed for this service.
Carbon Tetrachloride ("Carbona")	Also known as tetrachloromethane. Mainly used as a metal degreasing agent. Also used in fire extinguishers. It is a general solvent and dry-cleaning medium. Its fumes are highly toxic and should be handled in well-ventilated areas.	Standard catalog brass valves with PTFE or FKM discs. Add suffix "T" or "V" to catalog number. Diaphragm valves must be equipped with FKM parts. Add suffix "V" to catalog number. Metal seated valves also used.
Caustic Soda	See "Sodium Hydroxide."	
Cellulube	One of the phosphate ester lubricating fluids which are fire resistant.	Standard catalog designs with EPDM elastomers. Add suffix "E" to catalog number. PTFE or metal seated valves also used.
Chlorine	Chlorine has a powerful suffocating odor and is strongly corrosive to organic tissues and to metals. Uses include: for bleaching textiles and paper pulp, but it is also used for the manufacture of many chemicals.	Use appropriate ball valve with ASCO 3 or 4 way auxiliary air pilot valve.
City Gas	See "Natural" and "Manufactured Gas."	
Coffee	Automatic or semiautomatic dispensing equipment.	Stainless steel or plastic valves. For FDA approved elastomers, consult your local ASCO office.
Coke Oven Gas (Bench Gas; Coal Gas)	Flammable gas used in domestic and industrial heating.	Standard steel or stainless steel valves with FKM elastomers.
Coolant Oil	Oil used in automatic screw machines and related equipment as cutting oils or coolants. Usually contain suspended solids.	Consult your local ASCO office.
Diesel Fuel	Petroleum oil used as fuel for diesel engines.	Standard resilient seated catalog valves with FKM seating.
Ethylene Glycol (Ethylene Alcohol) "Prestone"	Also known as glycol. Used in permanent antifreeze solutions, brake fluids, and as a dye solvent.	Standard resilient seated catalog valves.
"Freon [®] " Solvents "MF," "TF," and "BF"	Trademark for a solvent which is commonly used in ultrasonic degreasers for removing oil, common grease, and dirt on metal or plastic parts.	Standard catalog items with metal-to-metal seating, or NBR elastomers only.

Fluids	Qualifying Service Information	Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features)
Fuel Oil (Light) Nos. 1, 2, 3	"Distillate" petroleum oil used in combustion applications without preheating.	Refer to Combustion Section.
Fuel Oil (Heavy) Nos. 4, 5, 6	Heavy "Bunker" fuel oil. Usually preheated to 135°F or more for combustion.	Refer to Combustion Section.
Gasoline	Special or high-test gasolines have additives or aromatics that affect synthetic rubber by excessive swell, or extraction of plasticizers.	Standard catalog valve constructions with FKM elastomers. Add suffix "V" to catalog number. If MTBE additive is present in gasoline, then use FFKM elastomers. Metal seated valves also used.
Helium	An inert gas used in heat treating, purging, and welding.	Standard resilient seated catalog valves.
Hydraulic Oil	Petroleum base only — viscosity usually 50 SSU or 300 SSU. For fire-resistant hydraulic oils, see "Cellulube," "Pydraul," and "Skydrol."	Standard resilient seated catalog valves.
Hydrochloric Acid	Also known as muriatic acid. Corrosive chemical.	Use an appropriate ball valve with ASCO 3 or 4 way auxiliary air pilot valve. For low pressure, small flow, and a maximum concentration of 20%, refer to Shielded Core valves.
Hydrogen	A highly flammable gas when exposed to air.	Standard resilient seated catalog valves with soft seats.
Jet Fuels (JP1 through 8). For others, consult your local ASCO office.	These fuels are used in jet engines and are petroleum products, similar to kerosene. Some jet fuels contain substantial quantities of aromatics which affect most synthetic rubbers.	Standard catalog valves with FKM elastomers. Add suffix "V" to catalog number. PTFE and metal seated valves also used.
Kerosene	Generally used as a solvent for cleaning purpose and as a heating fuel.	Standard catalog valve with FKM elastomers. Add suffix "V" to catalog number.
LP Gas	See "Propane."	Refer to Combustion Section.
Liquid Natural Gas, Nitrogen, and Oxygen		Refer to Cryogenic Valves.
Manufactured Gas	Refine coke oven gas used in city applications.	Refer to Combustion Section.
Mercury	Uses: mercury cells and other electrical apparatus; mercury vapor boilers, lamps, barometers, thermometers, etc.	Use stainless steel body. Valve must be mounted upside down. Special construction required. Consult your local ASCO office with application details.
Methyl Ethyl Ketone (MEK)	Used in lacquers, paint removers, cements and adhesives. It is a flammable liquid.	Standard catalog valves with EPDM elastomers. Add suffix "E" to catalog number. PTFE or metal seated valves also used.
Naphtha	A coal-tar solvent.	Use NBR or FKM elastomers. For FKM elastomer, add suffix "V" to catalog number.
Natural Gas	Common heating fuel.	Refer to Combustion Section.

Fluids	Qualifying Service Information	Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features)
Nitric Acid (aqua fortis or azotic acid)	Normally, concentrations are 60% nitric and 40% water.	Stainless steel valves with aluminum shading coil and PTFE disc. Add suffix "T" to catalog number. Metal seated valves also used. Maximum temperature at which we can offer valve is 100°F.
Nitric Acid-Red Fuming	Red fuming is more than 86% nitric acid. These can be handled with all stainless steel valves.	
Nitric Acid-White Fuming	White fuming, which is pure to 97.5% acid, and nitric acid vapors are very difficult to handle.	For white fuming acid, use appropriate ball valve with ASCO pilot.
Nitrogen	An inert gas used in heat treating, purging, and welding.	Standard resilient seated catalog valves.
Oils, Lubricating or Motor	Common motor oils known as SAE oils and synthetic lube oils, etc.	Standard catalog valves for 300 SSU maximum. For higher SSU, consult your local ASCO office. For compressor service involving refrigerants, consult your local ASCO office for elastomer selection.
Oxygen, Gas	Used in conjunction with various fuels in furnaces, ovens, cutting torches, welding, and heat treating. A nonflammable gas. Contact with hydrocarbons will result in spontaneous combustion.	Metal body valves with FKM or CR elastomers, specially cleaned to avoid contamination with hydrocarbons. Add suffix "N" to catalog number.
Perchloroethylene (Tetrachloroethylene) "Perk"	Used as a dry-cleaning solvent and in vapor degreasing equipment.	Standard catalog items with FKM elastomers. Add suffix "V" to catalog number. Special piston valves available. Do not use diaphragm valves. Consult your local ASCO office.
Phosphoric Acid	Also known as orthophosphoric acid. Used in pickling and rust-proofing metals, soft drinks and flavoring syrups, as well as pharmaceuticals.	For concentration of up to 20% and temperatures of 100°F, use 300 series stainless steel with ethylene propylene, FKM, or NBR elastomers.
Photographic Solutions	Also known as sodium thiosulfate or hypo. Most metals corrode sufficiently to cause solution contamination.	For low pressure, small flow, and low concentrations (20% max.), refer to Shielded Core Valves.
Potassium Sulfate	Used in fertilizers. Also in aluminum and glass manufacturing.	Standard stainless steel catalog valves.
Propane Gas	One of the principal LP gases commonly used in grain dryer applications, and a bottled gas for heating and cooking.	Special construction required. Refer to Combustion Section.

Fluids	Qualifying Service Information	Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features)
"Pydraul" (Monsanto)	A trademark for a series of fire-resistant hydraulic fluids. Used in automatic welding machines, hydraulic presses, and air compressors. Also used in die-casting machines, forging, and extrusion presses.	Standard catalog items with FKM elastomers. Add suffix "V" to catalog number. PTFE or metal seated valves also used.
Refrigerants, CFC (chlorofluorocarbon) "Freon®"	CFCs are used as refrigerants; as blowing agents in the manufacture of insulation, packaging, and cushioning foams; as cleaning agents for metal and electronic components; and in many other applications. CFCs contain chlorine and have been targeted by the EPA to be phased out.	Refrigerants require special selection of elastomers. Consult your local ASCO office.
Refrigerants, HFC (hydrofluorocarbon) "Suva®"	Environmentally acceptable alternative to CFC. Contains no chlorine.	Refrigerants require special selection of elastomers. Consult your local ASCO office.
"Skydrol"	Trademark for fire-resistant jet aircraft hydraulic fluid.	Standard catalog items with EPDM elastomer. Add suffix "E" to catalog number. PTFE or metal seated valves also used.
Sodium Hydroxide (Caustic Soda)	Used in pulp and paper industry. Included in detergents and soap, also in textile processing. Solutions range between 50% and 73% commercial.	Stainless steel valves with EPDM elastomers. Add suffix "E" to catalog number. Stainless steel or PTFE seated valves also used.
Sour Gas	See "Coke Oven Gas."	
Steam Condensate	This is return condensate from steam boilers, which has various degrees of dissolved carbon dioxide or oxygen. Temperature is normally high to boiling point.	Brass valves suitable with EPDM elastomers. See Series 8210 and 8222 Hot Water Service Listings. Use suffix "E" on all others.
Stoddard Solvent	This is a dry-cleaning solvent of usually high-purity naphtha, clear and free of undissolved water. A coal-tar solvent.	Standard catalog items.
Sulfuric Acid	An oily, highly corrosive liquid oxidizing organic materials and most metals. It is used for pickling and cleaning metals in electric batteries and in plating baths, for making explosives and fertilizers.	Use an appropriate ball valves with ASCO 3 or 4 way auxiliary air pilot valve. For low pressure, small flow, and a concentration of up to 60%, refer to Shielded Core Valves.
Toluene (Toluol)	Also called methyl benzene or methyl benzol. One of the coal-tar solvents. Used in aviation and high octane gasolines. Also a solvent for paints, coatings, resins, etc. It is a flammable liquid.	Standard catalog valves with FKM disc and gasket. Add suffix "V" to catalog number.

Fluids	Qualifying Service Information	Materials of Construction and Ordering Information (Refer to List Price Schedule for availability and prices of Special Features)
Trichloroethylene ("Carbona" or "TRIAD")	Common degreasing solvent, noncombustible, but very toxic. Adequate ventilation required.	Standard brass catalog valves, if dry, use FKM elastomers (add suffix "V" to catalog number). If moisture is present, use stainless steel. Metal and PTFE seated valves also used.
Turpentine	Solvent or thinner for paints, varnishes, and lacquers. Also, a rubber solvent and reclaiming agent. The liquid is volatile.	Standard catalog valves with FKM elastomers. Add suffix "V" to catalog number.
Vacuum		Refer to Vacuum Valves.
Vegetable Oils	Edible oils extracted from seeds, fruits, or plants, such as peanut oils, cottonseed oils, etc.	Standard resilient seated catalog valves. For FDA approved elastomers, consult your local ASCO office.
Vinegar	A diluted impure solution of acetic acid.	Stainless steel valves with EPDM elastomers (FKM elastomers may also be used). Add suffix "E" to catalog number. For FDA approved elastomers, consult your local ASCO office.
Water, Boiler Feed	Commonly treated water with inhibitors to avoid corrosion of boiler tubes.	Standard stainless steel catalog valves with FKM elastomers. Add suffix "V" to catalog number.
Water, Distilled or Deionized	A purified water, sometimes called deionized water, neutral and free from contaminants.	Stainless steel valves with EPDM elastomers. Add suffix "E" to catalog number. Stainless steel or PTFE seated valves also used.
Water, Fresh		Standard resilient seated catalog valves. Aerated water, which is slightly acidic, will cause seat erosion by process known as dezincification. Stainless steel or plastic valves should then be selected.
Water, High Pressure	When handling water above 500 psi, erosion and water hammer must be considered.	Special designs for car wash applications, etc. Consult your local ASCO office.
Water, Hot	Water above 200°F: Often flashes to steam due to regulators or other line restrictions. Below 200°F, this change of state is unlikely.	Standard catalog designs suitable to temperatures listed in catalog. Also see Series 8210 and 8222 Hot Water Service listings. For temperatures exceeding those listed, consult your local ASCO office.
Water, Sea, Brine, Brackish	Difficult to handle due to galvanic corrosion.	Use appropriate ball valve with ASCO air pilot valve.

Electronically Enhanced Solenoids (Next Generation)

All RedHat Next Generation solenoid valves are rated for continuous duty under the operating conditions outlined within this section.

Coil Operating Voltage Ranges

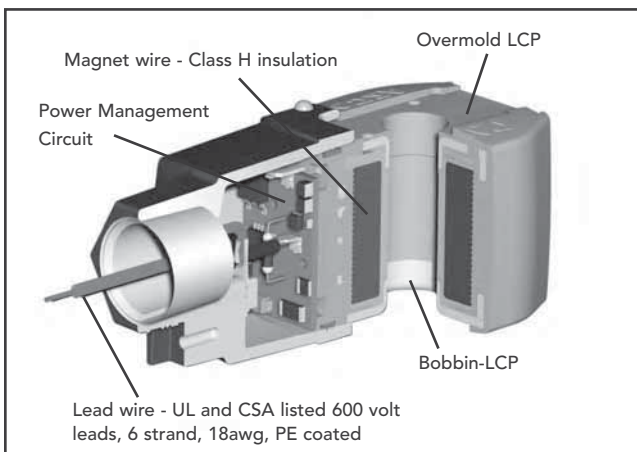
All coils are designed for industrial operating voltages and can be used on the following voltage ranges:

Voltage Range	Minimum Voltage	Maximum Voltage
100-240V/50 or 60Hz/DC	85	264
24-99V/50 or 60Hz/DC	20.4	109
12-24/DC only	10.4	26.4

The coils with voltage ranges of 100-240 and 24-99 have three lead wires, 24 inches long (2 red for power input, and one green lead for grounding where necessary). These two versions are not polarity sensitive.

The coil with a voltage range of 12-24/DC has 3 lead wires, one red, one black, and one green. This coil is polarity sensitive. The red lead is the positive, black is the negative, and green is the ground wire. This solenoid is also polarity protected. Reversing the polarity will not damage the coil, but the coil will not function until the correct polarity is applied.

Note: The 100-240 voltage range is also suitable for battery charging circuits designed around a 125/DC nominal voltage range.



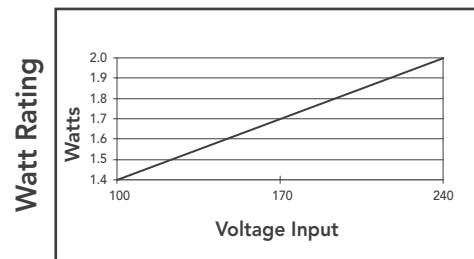
Electrical Specifications

2 Watt Electronic Coils	Type
Maximum Ambient Temperature	140°F
Maximum Cycle Rate	1 Operation/ Second
Standard Coil Class of Insulation	H

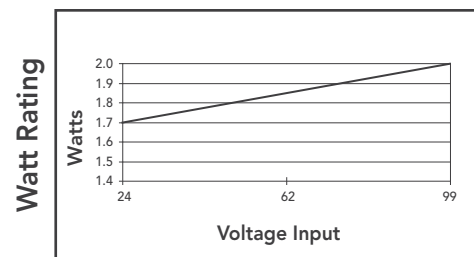
Power Consumption

The Next Generation solenoid nominal power rating is 2 watts. Depending on the input voltage applied, the actual power rating may vary. Please use the charts below to determine your actual power rating.

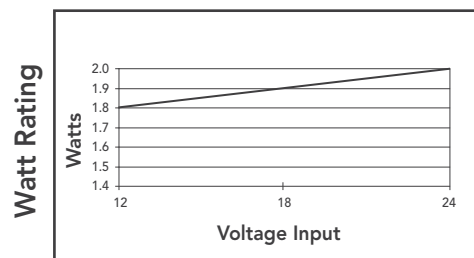
Version
100-240/50-60Hz



Version
24-99/50-60Hz



Version
12-24/DC



The advanced technology used in the Next Generation coil includes electronic circuitry which may limit the compatibility with certain control system components. The following issues need to be considered when specifying an output card or device to operate the Next Generation coil. An initial inrush current spike is drawn by the Next Generation coil. This inrush spike is 72 msec in duration, which is sufficient time for the core to reach the plugnut. The electrical requirement then drops to the holding value.

Inrush Current: The power source, wiring, and output device used need to have surge ratings equal to or greater than the inrush current value (appropriate to the voltage range) specified in the table below.

Inrush Current Rating	
Coil Version	Peak Inrush Current (Amps)
12-24/DC	3.2
24-99/50-60Hz/DC	1.4
100-240/50-60Hz/DC	0.32
Maximum Duration = 72 ms	

Holding Current: The power source, wiring, and output device used need to have continuous current ratings equal to or greater than the holding current value (appropriate to the voltage range) specified in the table below.

Holding Current Rating			
Coil Version	Input Voltage	Average Holding Current (Amps)	Average Holding Volt-Amps (VA)
12-24/DC	12	0.340	4.0
	24	0.250	6.0
24-99/50-60Hz/DC	24	0.170	4.0
	99	0.100	10.0
100-240/50-60Hz/DC	100	0.040	4.0
	240	0.032	7.5

Leakage Currents: The leakage current is defined as a current that is supplied from an output device when the device is in its off or de-activated state. Operation of Next Generation coil in a system that utilizes supervisory currents is not recommended.

Maximum Leakage Current	3 mA
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Solenoid Enclosures

The Next Generation solenoid coil is fully encapsulated using Dupont™ Zenite® Liquid Crystal Polymer resin (LCP). Zenite (LCP) is a thermoplastic polyester resin which exhibits several advantages over other thermoplastics. The advantages include excellent resistance to a wide range of organic solvents and automotive fluids*, resistance to impact, and long term retention of properties at continuous-use temperatures.

*Chemical resistance of Zenite LCP may not be suitable for all applications. Zenite LCP is not suitable for caustic solution. *Please consult ASCO for appropriate product solutions.*

Zenite is a registered Trademark of Dupont Co.



RedHat Next Generation Solenoids are available as:

General Purpose/Watertight – Intended for indoor and outdoor use and provides protection classifications from NEMA Types 1 through 4X.

Class I, Division 2 for Hazardous Locations/Watertight – Meets Types 1 through 4X and is UL listed and CSA certified for Class I, Division 2, Groups A, B, C, and D and Class II, Division 2, Groups F and G. Operating temperature code T4A (120°C).

Valve Specifications

Maximum Ambient Temperature

The maximum ambient temperature is 140°F (60°C). This limit is based on continuous energization with the maximum fluid temperatures as shown on each catalog page.

Response Time

Response time from fully closed to fully open or vice versa depends on valve size, operating mode, fluids, temperature, inlet pressure, and pressure drop. The response times for Next Generation are defined as:

- Small direct acting valves – 10 to 60 msec
- Large direct acting valves – 25 to 90 msec

Internally pilot operated valves:

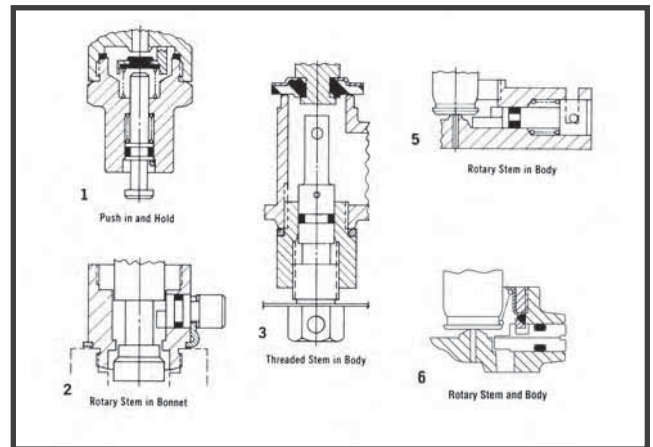
- Small diaphragm types – 20 to 100 msec
- Large diaphragm types – 80 to 150 msec
- Small piston types – 80 to 150 msec
- Large piston types – 105 to 200 msec

Operation on liquids has relatively little effect on small direct acting valves, however, response times of large direct acting and internally piloted valves may be lengthened by 50% to 100%.

Manual Operators

Manual operators are provided to operate the valves manually when electric actuation is not provided. There are two basic types of manual operators, momentary and maintained. To determine which type of manual operator is available for your valves, please see the Optional Features Chart on the relevant valve catalog page. Once it is determined that the subject valve can accommodate a manual operator, the chart below will tell you the type of manual operator. The chart also references the relevant cutaway illustration.

Series Number	Const. Ref.	Manual Operator Suffix	Manual Operator Type	Illustration Number
8030	8	MO	Maintained	3
8210	4, 7, 10, 11, 12	MO	Maintained	2
8262	1	MS	Maintained	6
8314	1	MS	Maintained	6
8316	5, 6	MO	Maintained	2
8320	2	MO	Momentary	1
8320	2	MS	Maintained	6
8321	4	MO	Momentary	1
8321	4	MS	Maintained	3
8344	1, 3, 4	MO	Maintained	2
8345	2	MO	Maintained	5



Valve Parts in Contact with Fluids							
Catalog Number	Body	Seals and Discs	Disc Holder	Core Guide	Springs	Shading Coil	Stem
8030P003	Brass	NBR	-	-	302 Stainless Steel	-	-
8030P083	Brass	NBR	-	-	302 Stainless Steel	-	-
8210P004	Brass	NBR	-	-	302 Stainless Steel	-	-
8210P007	Brass	NBR	-	-	302 Stainless Steel	-	-
8210P008	Brass	NBR	-	-	302 Stainless Steel	-	-
8210P022	Brass	NBR	PA	-	302 Stainless Steel	-	-
8210P033	Brass	NBR	PA	-	302 Stainless Steel	-	-
8210P034	Brass	NBR	PA	-	302 Stainless Steel	-	-
8210P035	Brass	NBR	PA	-	302 Stainless Steel	-	-
8210P087	304 Stainless Steel	NBR	-	-	302 Stainless Steel	-	-
8210P088	304 Stainless Steel	NBR	-	-	302 Stainless Steel	-	-
8210P093	Brass	NBR	-	-	302 Stainless Steel	-	-
8210P094	Brass	NBR	-	-	302 Stainless Steel	-	-
8210P095	Brass	NBR	-	-	302 Stainless Steel	-	-
8210P100	Brass	NBR	-	-	302 Stainless Steel	-	-
8223P003	Brass	NBR, PA, PTFE	-	-	302 Stainless Steel	Copper	-
8223P005	Brass	NBR, PA, PTFE	-	-	302 Stainless Steel	Copper	-
8223P010	304 Stainless Steel	PTFE, NBR	-	-	302 Stainless Steel	Silver	-
8223P025	Brass	NBR, PA, PTFE	-	-	302 Stainless Steel	Copper	-
8223P027	Brass	NBR, PA, PTFE	-	-	302 Stainless Steel	Copper	-
8262P202	Brass	NBR	-	-	302 Stainless Steel	Copper	-
8262P208	Brass	NBR	-	-	302 Stainless Steel	Copper	-
8262P212	Brass	NBR	-	-	302 Stainless Steel	Copper	-
8262P220	304 Stainless Steel	NBR	-	-	302 Stainless Steel	Silver	-
8262P226	304 Stainless Steel	NBR	-	-	302 Stainless Steel	Silver	-
8262P230	304 Stainless Steel	NBR	-	-	302 Stainless Steel	Silver	-
8262P232	Brass	NBR	-	-	302 Stainless Steel	Copper	-
8262P261	Brass	UR	-	-	302 Stainless Steel	Copper	PA
8262P262	Brass	NBR	-	-	302 Stainless Steel	Copper	PA
8262P263	Brass	NBR	-	-	302 Stainless Steel	Copper	PA
8262P265	Brass	NBR	-	-	302 Stainless Steel	Copper	PA
8314P035	Brass	NBR, FKM	-	CA	302 Stainless Steel	Copper	-
8314P036	Brass	NBR, FKM	-	CA	302 Stainless Steel	Copper	-
8314P121	303 Stainless Steel	NBR, FKM	-	CA	302 Stainless Steel	Silver	-
8316P054	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8316P064	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8316P074	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8317P035	Brass	NBR, FKM, CR	-	CA	302, 17-7PH Stainless Steels	Copper	-
8320P172	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8320P174	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8320P176	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8320P182	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8320P184	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8320P186	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8320P192	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8320P194	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8321P001	Brass	NBR	CA	CA	302 Stainless Steel	Copper	-
8321P002	Brass	NBR	CA	CA	302 Stainless Steel	Copper	-
8344P070	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8344P072	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8344P074	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8344P076	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8344P078	Brass	NBR	CA	CA	302, 17-7PH Stainless Steels	Copper	-
8345P001	Brass	NBR, FKM	-	CA	302, 17-7PH Stainless Steels	Copper	-

Note: All core tubes are 305 Stainless Steel and all cores and plugnuts are 430F Stainless Steel.



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06/07 - V7653

