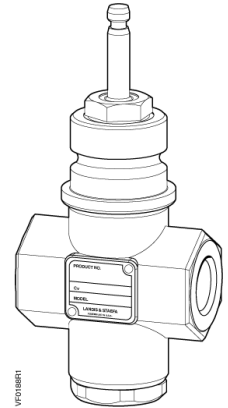


Flowrite™ 599 Series

Two-Way Valves, 1/2 to 2-inch Bronze Body, ANSI 250



Description	The Flowrite 599 Series two-way valves are designed to work with either a pneumatic or electronic actuator with a 3/4-inch (20 mm) stroke. They are available in ANSI Class 250 for normally open or normally closed action.
Features	<ul style="list-style-type: none"> • ANSI Leakage Class IV (0.01% of Cv) • Cartridge type packing • Choice of brass or stainless steel trim • Direct-coupled universal bonnet • Choice to two flow characteristics
Application	Flowrite valves are generally recommended for water, steam, and 50% water-glycol solutions.
Product Numbers	See Table 1 and Table 2.
Ordering a Valve Plus Actuator Assembly	<p>To order a complete valve plus actuator assembly from the factory, combine the actuator prefix code with the suffix of the valve assembly product number. See <i>Flowrite Technical Bulletins</i> (155-772 and 155-776) for complete selection procedure and ordering codes.</p> <p>Valve assemblies can be ordered using the valve part numbers in Table 1 and Table 2 and the actuator prefix codes in Table 10.</p>

Specifications	Line size	1/2 to 2-inches (15 to 50 mm)		
	Capacity	See Table 3 through Table 6 and Figure 2		
Material	Body style	IT × IT Globe style		
	Seat style	Single seat, metal-to-metal		
	Action	Normally Open (NO) Normally Closed (NC)		
	Stem travel (stroke)	3/4-inch (20 mm)		
	Valve body rating	ANSI Class 250; see Table 7		
	Body	UNS CA 844 bronze		
	Body trim	See Table 1 and Table 2.		
	Stem	Stainless steel ASTM A582 Type 303		
	Packing			
	Normal duty packing	EPDM O-rings		
	Steam packing	Teflon® V-ring/EPDM O-ring		
	Operating	Controlled medium	Saturated steam, water, 50% water-glycol solutions	
		Medium temperature range		
Normal duty packing		20°F to 250°F (−7°C to 120°C)		
Steam packing		337°F (170°C) maximum		
Maximum inlet pressure				
Water		See Table 7.		
Steam		100 psig (690 kPa)		
Maximum recommended differential pressure for modulating service				
		Brass trim	Stainless steel trim	
Liquid		25 psi (173 kPa)	50 psi (345 kPa)	
Steam		--	50 psi (345 kPa)	
Rangeability		>100:1		
Close-off pressures		See Table 8, Table 9, and Figure 3.		
Close-off ratings	According to ANSI/FCI 70-2			
Leakage rate	Class IV (0.01% of Cv)			
Flow characteristics	See Table 1 and Table 2.			
Mounting location	NEMA 1 (interior only)			
Miscellaneous	Canadian Registration Numbers	0C24303.5		
	Dimensions	See Table 10, Table 11, and Figure 5.		
	Valve Weight	See Table 13.		

Accessories

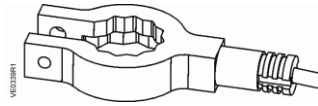


Figure 1. Stem Heating Element.

ASZ6.6 The stem heating element prevents the formation of ice on the stem when the medium temperature drops below 32°F (0°C). It is suited for universal use with valves having a stem or spindle diameter of 10 or 14 mm.

Operating Voltage 24 Vac/dc ± 20%
 Power consumption ≤ 40 VA/30W

Service Kits

Valve packing kit	
Normal duty packing	599-03390
Steam packing	599-03391
Rebuild/repack kits	See Table 14 and Table 15.

Product Numbers

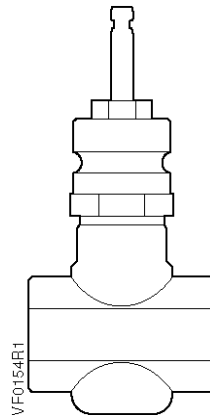


Table 1. Internal Thread NPT x Internal Thread NPT (ITxIT) Normally Open Valves.

Flow Rate		Nominal Line Size		Equal Percentage		Linear	
				Stainless Steel Trim	Brass Trim	Stainless Steel Trim	
C _v	(K _{vs})	inch	(mm)	Normal Duty Packing		Normal Duty Packing	Steam Packing
1	(0.85)	1/2	(15)	599-03108	599-03162	599-03000	599-03054
1.6	(1.37)	1/2	(15)	599-03109	599-03163	599-03001	599-03055
2.5	(2.15)	1/2	(15)	599-03110	599-03164	599-03002	599-03056
4	(3.44)	1/2	(15)	599-03111	599-03165	599-03003	599-03057
6.3	(5.43)	3/4	(20)	599-03112	599-03166	599-03004	599-03058
10	(8.6)	1	(25)	599-03113	599-03167	599-03005	599-03059
16	(13.8)	1-1/4	(32)	599-03114	599-03168	599-03006	599-03060
25	(21.5)	1-1/2	(40)	599-03115	599-03169	599-03007	599-03061
40	(34.4)	2	(50)	599-03116	599-03170	599-03008	599-03062

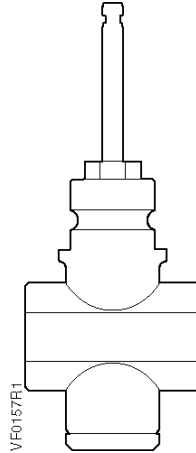


Table 2. Internal Thread NPT x Internal Thread NPT (ITxIT) Normally Closed Valves.

Flow Rate		Nominal Line Size		Equal Percentage		Linear	
				Stl. Steel Trim	Brass Trim	Stainless Steel Trim	
Cv	(Kvs)	Inch	(mm)	Normal Duty Packing		Normal Duty Packing	Steam Packing
1	(0.85)	1/2	(15)	599-03126	599-03180	599-03018	599-03072
1.6	(1.37)	1/2	(15)	599-03127	599-03181	599-03019	599-03073
2.5	(2.15)	1/2	(15)	599-03128	599-03182	599-03020	599-03074
4	(3.44)	1/2	(15)	599-03129	599-03183	599-03021	599-03075
6.3	(5.43)	3/4	(20)	599-03130	599-03184	599-03022	599-03076
10	(8.6)	1	(25)	599-03131	599-03185	599-03023	599-03077
16	(13.8)	1-1/4	(32)	599-03132	599-03186	599-03024	599-03078
25	(21.5)	1-1/2	(40)	599-03133	599-03187	599-03025	599-03079
40	(34.4)	2	(50)	599-03134	599-03188	599-03026	599-03080

Table 3. Maximum Water Capacity - U.S. Gallons per Minute.

Valve Size in inches	Pressure Differential - psi															
	Cv/1	2	3	4	5	6	8	10	15	20	25	30	40	50	60	75
1/2	1.0	1.4	1.7	2.0	2.2	2.5	2.8	3.2	3.9	4.5	5.0	5.5	6.3	7.1	7.8	8.7
	1.6	2.3	2.8	3.2	3.6	3.9	4.5	5.1	6.2	7.2	8.0	8.8	10.1	11.3	12.4	13.9
	2.5	3.5	4.3	5.0	5.6	6.1	7.1	7.9	9.7	11.2	12.5	13.7	15.8	17.7	19.4	22
	4	5.7	7	8.0	8.9	10	11.3	12.6	15.5	17.9	20.0	21.9	25	28	31	35
3/4	6	8.9	10.9	12.6	14.1	15.4	17.8	20	24	28	32	35	40	45	49	55
1	10	14.1	17.3	20	22	24	28	32	39	45	50	55	63	71	77	87
1-1/4	16	23	28	32	36	39	45	51	62	72	80	88	101	113	124	139
1-1/2	25	35	43	50	56	61	71	79	97	112	125	137	158	177	194	217
2	40	57	69	80	89	98	113	126	155	179	200	219	253	283	310	346

Table 4. Maximum Water Capacity - Cubic Meters per Hour (m³/hr).

Valve Size mm	Pressure Differential - kPa														
	1	10	20	30	40	50	60	80	Kvs/100	150	200	300	400	500	
15	0.09	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.5	1.7	1.9	
	0.14	0.4	0.6	0.8	0.9	1.0	1.1	1.2	1.4	1.7	1.9	2.4	2.7	3.1	
	0.2	0.7	1.0	1.2	1.4	1.5	1.7	1.9	2.2	2.6	3.0	3.7	4.3	4.8	
	0.3	1.1	1.5	1.9	2.2	2.4	2.7	3.1	3.4	4.2	4.9	6.0	6.9	7.7	
20	0.5	1.7	2.4	3.0	3.4	3.8	4.2	4.9	5.4	6.7	7.7	9.4	10.9	12.1	
25	0.9	2.7	3.8	4.7	5.4	6.1	6.7	7.7	8.6	10.5	12.2	14.9	17.2	19.2	
32	1.4	4.4	6.2	7.6	8.7	9.8	10.7	12.3	13.8	16.9	19.5	23.9	27.6	30.9	
40	2.2	6.8	9.6	11.8	13.6	15.2	16.7	19.2	22	26	30	37	43	48	
50	3.4	10.9	15.4	18.8	22	24	27	31	34	42	49	60	69	77	

Table 5. Steam Capacity - Pounds per Hour.

Line Size inches	Cv	Inlet Pressure - psig																								
		2		5		10		15		25		50		75		100										
		Pressure Differential - psi																								
		1	2	3	4	5	6	8	10	9	12	15	5	15	20	15	30	32.5	20	30	40	45	30	40	50	57.5
1/2	1	12.0	16.6	22	25	28	34	38	42	45	50	54	41	65	72	87	115	118	119	141	157	163	162	183	199	209
	1.6	19.1	27	35	40	44	54	61	67	72	80	86	65	104	116	139	183	188	109	225	251	261	260	292	318	334
	2.5	30	42	55	62	69	85	96	104	112	125	135	101	163	181	217	287	294	296	351	392	408	406	457	497	522
	4	48	67	88	100	110	136	153	167	179	200	216	162	261	289	348	459	471	474	562	627	653	650	731	796	835
3/4	6.3	75	105	138	157	174	213	241	263	282	316	341	255	411	455	548	722	742	747	886	988	1029	1023	1152	1253	1315
1	10	120	166	219	250	275	339	382	417	447	501	541	405	653	723	870	1147	1178	1186	1406	1568	1633	1624	1828	1989	2088
1-1/4	16	191	266	351	400	441	542	611	667	716	801	865	648	1044	1156	1392	1835	1884	1897	2249	2509	2612	2599	2925	3182	3340
1-1/2	25	299	416	549	625	689	847	955	1042	1118	1252	1351	1013	1632	1806	2175	2867	2944	2964	3515	3920	4081	4061	4570	4972	5219
2	40	478	666	878	1000	1102	1356	1529	1667	1789	2003	2162	1620	2611	2890	3480	4587	4710	4743	5624	6272	6530	6497	7311	7956	8350

Table 6. Steam Capacity - Kilograms per Hour.

Line Size mm	Cv	Inlet Pressure - kPa											
		100			150			200			500		
		Pressure Differential - kPa											
		10	20	50	15	30	75	20	40	100	50	100	250
15	1	6.04	8.54	13.50	9.07	12.8	20.2	12.11	17.13	27.08	30.3	42.9	67.8
	1.6	9.66	13.6	21.61	14.5	20.5	32.4	19.37	27.40	43.32	48.51	68.60	108.47
	2.5	15	21	34	23	32	51	30	43	68	76	107	169
	4	24	34	54	36	51	81	48	69	108	121	172	271
20	6.3	38	54	85	57	81	128	76	108	171	191	270	427
25	10	60	85	135	91	128	203	121	171	271	303	429	678
32	16	97	137	216	145	205	325	194	274	433	485	686	1085
40	25	151	214	338	227	321	507	303	428	677	758	1072	1695
50	40	242	342	540	363	513	812	484	685	1083	1213	1715	2712

Table 7. ANSI 250 Valve Body Temperature-Pressure Rating.

Valve Body	Temperature		Pressure	
	°F	°C	psig	(kPa)
Bronze	-20 to +150	(-30 to 66)	400	(2758)
	+200	(93)	385	(2655)
	+250	(121)	365	(2586)
	+300	(149)	335	(2300)
	+350	(177)	300	(2068)

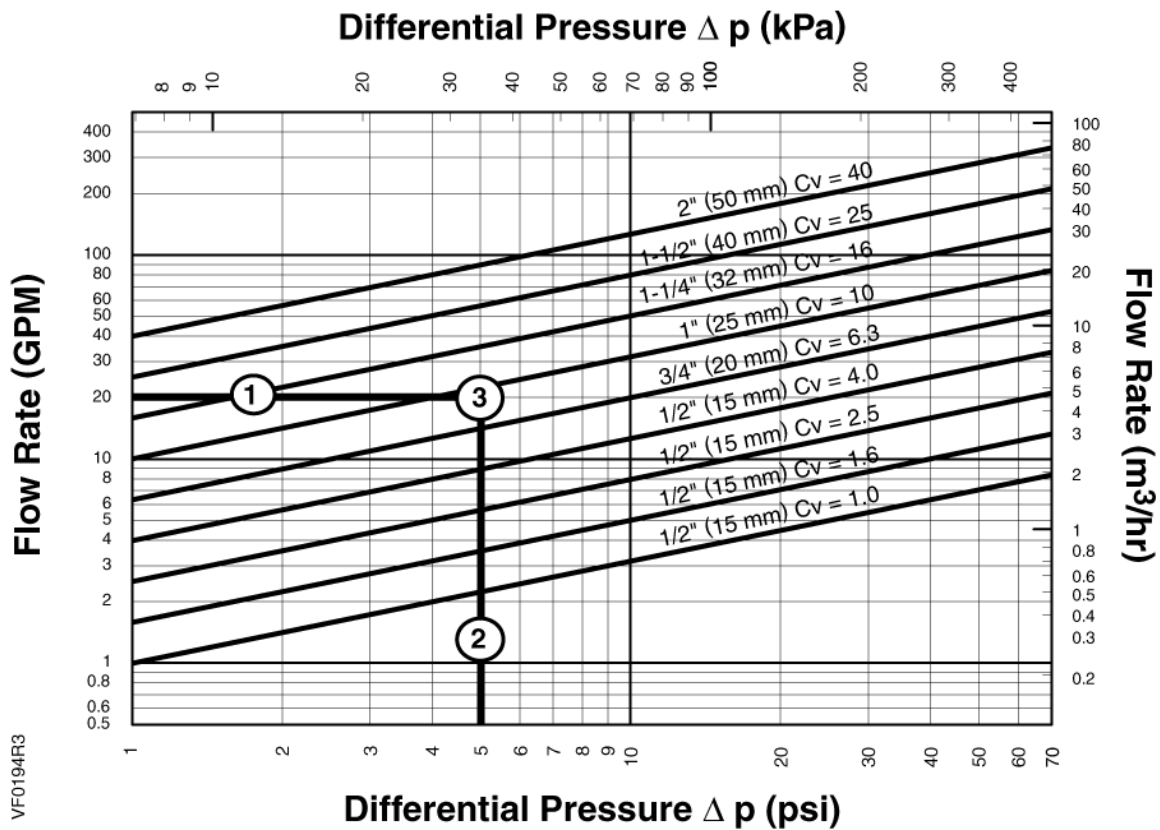


Figure 2. Water Capacity Graph.

Selection Example

Select a valve given:

1. Required flow = 20 gpm.
2. Desired pressure drop = 5 psi.
3. Select a 1-inch (25 mm) valve, Cv 10.

Table 8. Maximum Available Close-off Pressures for Pneumatic Actuators, with Normally Open Valves.

Action	Valve Size Inch (mm)	Spring Range					10 to 15 psi (69 to 103 kPa)		
		3 to 8 psi (21 to 55 kPa)					4-Inch Actuator	8-Inch Actuator	12-Inch Actuator
		4-Inch Actuator	8-Inch Actuator		12-Inch Actuator		4-Inch Actuator	8-Inch Actuator	12-Inch Actuator
		15 psi (103 kPa)	15 psi (103 kPa)	30 psi (207 kPa)	15 psi (103 kPa)	30 psi (207 kPa)	0 psi (0 kPa)	0 psi (0 kPa)	0 psi (0 kPa)
Normally Open	1/2 (15)	142 (979)	250 (1724)	250 (1724)	—	—	—	—	—
	3/4 (20)	80 (552)	231 (1593)	250 (1724)	—	—	—	—	—
	1 (25)	52 (359)	150 (1034)	250 (1724)	250 (1724)	250 (1724)	—	—	—
	1-1/4 (32)	32 (221)	93 (641)	250 (1724)	250 (1724)	250 (1724)	—	—	—
	1-1/2 (40)	20 (138)	60 (414)	198 (1365)	205(1413)	250 (1724)	—	—	—
	2 (50)	12 (83)	37 (255)	123 (848)	130 (896)	250 (1724)	—	—	—
Normally Closed	1/2 (15)	—	—	—	—	—	236 (1627)	250 (1724)	—
	3/4 (20)	—	—	—	—	—	155 (1069)	250 (1724)	—
	1 (25)	—	—	—	—	—	91 (627)	250 (1724)	250 (1724)
	1-1/4 (32)	—	—	—	—	—	52 (359)	148 (1020)	250 (1724)
	1-1/2 (40)	—	—	—	—	—	32 (331)	92 (634)	250 (1724)
	2 (50)	—	—	—	—	—	20 (138)	55 (379)	185 (1776)

Table 9. Close-off Pressures for Electronic Actuators.

Action	Valve Size Inches (mm)	SAX psi (kPa)	Rack & Pinion psi (kPa) (GMA)	Rack & Pinion psi (kPa) (GCA)	SKD psi (kPa)	SKB psi (kPa)
Normally Open	1/2 (15)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	250 (1724)
	3/4 (20)	211 (1456)	174 (1200)	231 (1593)	250 (1724)	250 (1724)
	1 (25)	137 (945)	136 (938)	149 (1028)	201 (1386)	250 (1724)
	1-1/4 (32)	85 (586)	84 (580)	92 (634)	124 (855)	250 (1724)
	1-1/2(40)	55 (379)	55 (380)	59 (407)	80 (552)	250 (1724)
	2 (50)	34 (235)	30 (207)	36 (248)	49 (338)	201 (1386)
Normally Closed	1/2 (15)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	250 (1724)
	3/4 (20)	250 (1724)	174 (1200)	250 (1724)	250 (1724)	250 (1724)
	1 (25)	159 (1097)	136 (938)	173 (1193)	203 (1400)	250 (1724)
	1-1/4 (32)	92 (634)	84 (580)	100 (690)	117 (807)	250 (1724)
	1-1/2(40)	57 (393)	55 (380)	61 (421)	73 (503)	208 (1334)
	2 (50)	35 (241)	30 (207)	37 (255)	44 (303)	126 (869)

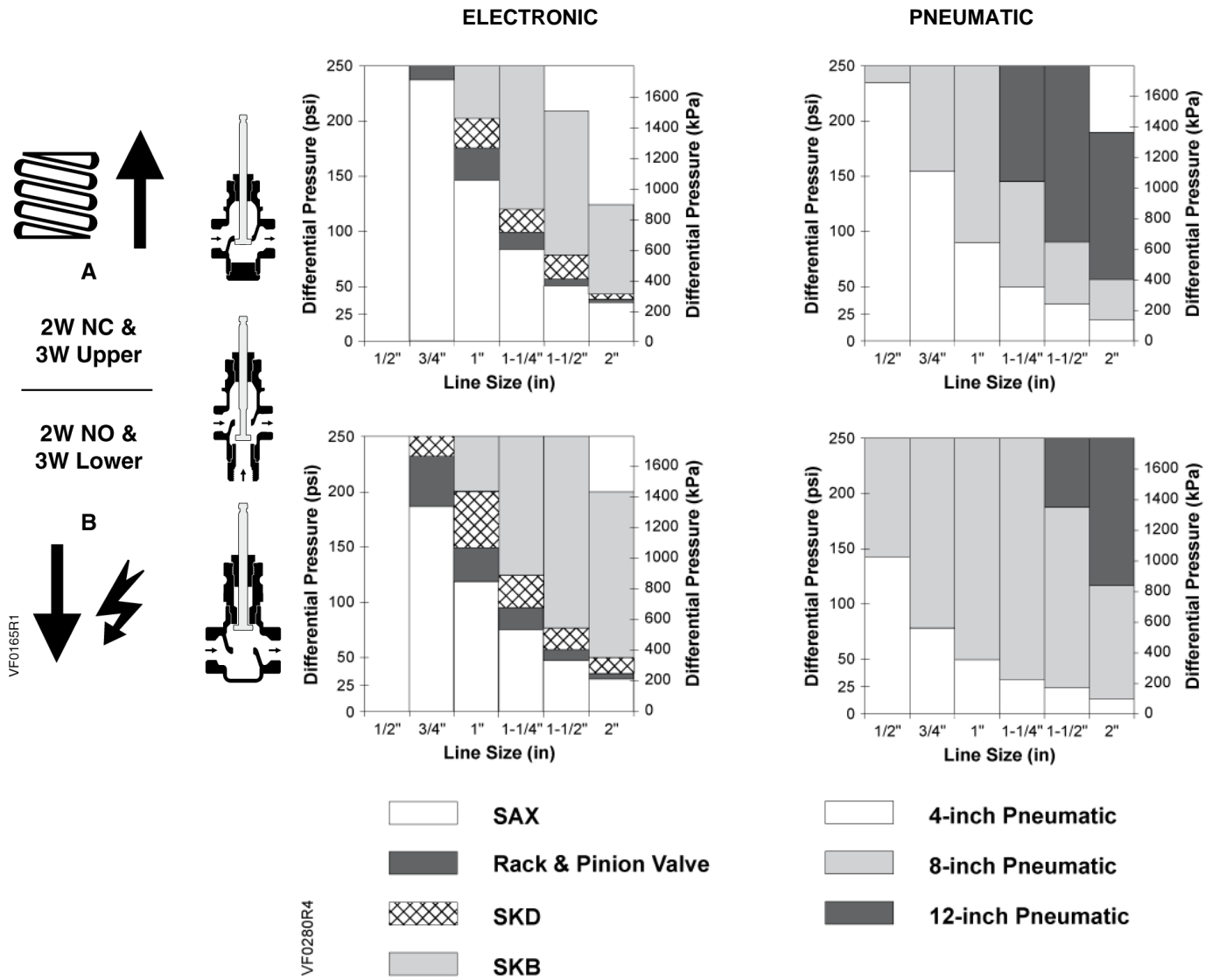


Figure 3. Close-off Pressures.

Operation

Figure 4 shows the normally open valve in the open position and the normally closed valve in the closed or zero flow position.

In the event of power failure, a spring return actuator returns the valve to its normal position. Non-spring return actuators will hold the last commanded position. See the *Technical Instructions* of the various actuators for additional information.

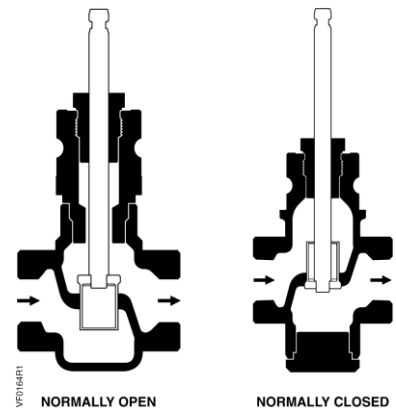


Figure 4.

Sizing

The sizing of a valve is important for correct system operation. An undersized valve will not have sufficient capacity at maximum load. An oversized valve can initiate cycling and the seat and throttling plug can be damaged because of the restricted opening. Correct sizing of the control valve for *actual expected conditions* is considered essential for good control.

The following variables must be determined:

- The medium to be controlled, such as steam, water, and so on.
- The maximum inlet temperature and pressure of the medium at the valve.
- The pressure differential that will exist across the valve under maximum load demand.
- The maximum capacity the valve must deliver.
- The maximum line pressure differential the valve actuator must close against.
- See the *Control Valve Selection and Sizing (AB-1) section of HVAC Systems/Controls Reference Data (125-1853)* for further recommendations.
- See Table 3 through Table 6 for valve capacities.

Mounting and Installation

- Install the valve so that the flow follows the direction of the arrow indicated on the valve body.
- For best performance, install the valve assembly with the actuator above the valve body. The valve and actuator can be installed in any position between vertical and horizontal. Siemens Industry, Inc. does not recommend installing the valve assembly so that the actuator is below horizontal or upside down.
- Allow sufficient space for servicing the valve and actuator. See Table 11 for valve body dimensions. See Figure 5 and Table 10 for dimensions of the service envelope recommended around the actuator.

NOTE: Instructions for field mounting an actuator, wiring diagrams, and start-up are covered in the *Technical Instructions* and *Installation Instructions* for each actuator.

Dimensions

The letters in Figure 5 refer to actuator and service envelope dimensions in Table 10. See Table 11 for valve body dimensions.

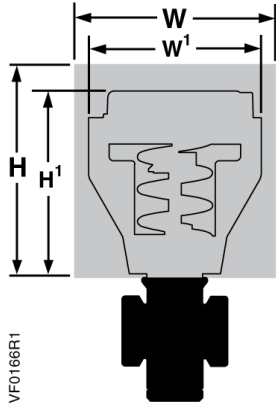


Figure 5.

Table 10. Dimensions of the Actuator and Recommended Service Envelope. Dimensions in Inches (Millimeters).

Actuator	Actuator Prefix Code	Actual Height of Actuator H1	Service Height H	Actual Width or Diameter of Actuator W1	Service Width W
4-inch Pneumatic	268, 269 270	5-3/4 (146)	14 (350)	5-1/2 (137) diameter	18 (450)
8-inch Pneumatic	277, 278 283, 284	14-1/8 (359)	26 (660)	8-3/4 (222) diameter	21 (533)
12-inch Pneumatic	279, 285	17-7/8 (454)	30 (762)	15-1/8 (384) diameter	27 (686)
SAX	371, 373	9-9/16 (242)	17-1/4 (442)	4-7/8 (124) Width 5-7/8 (150) Depth	17-3/4 (450)
Rack and Pinion	298, 299	14-1/2 (368)	24-1/2 (622)	5 (127) Width* 5-1/8 (131) Depth	13 (331)
SKD	267, 274 275, 276	11-13/16 (300)	19-3/4 (500)	5 (127) Width 6-5/8 (169) Depth	14-1/2 (360)
SKB	289, 291, 290	14-3/4 (375)	22-3/4 (578)	7 (178) Width x 8-15/16 (226) Depth	25 (635)

**Dimensions,
 Continued**

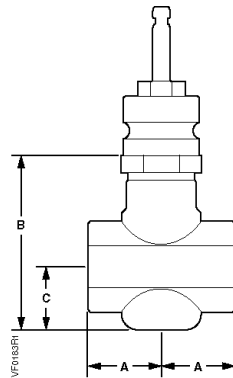
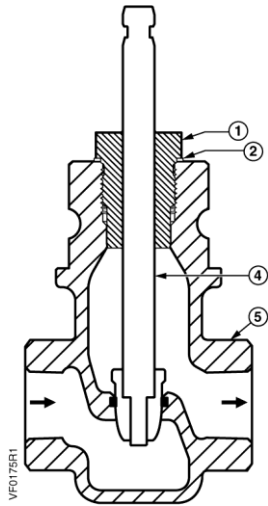
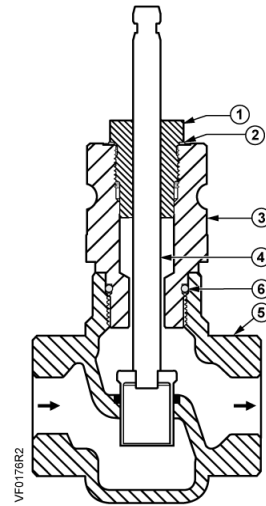


Table 11. 2-Way Internal Thread NPT x Internal Thread NPT (ITxIT) Valve Dimensions in Inches (Millimeters).

Valve Action	Valve Size	A	B	C
Normally Open	1/2 (15)	1-7/16 (36)	2-15/16 (74)	1-1/4 (31)
	3/4 (20)	1-11/16 (43)	3-15/16 (99)	1-7/16 (36)
	1 (25)	2 (50)	3-3/4 (96)	1-1/4 (32)
	1-1/4 (32)	2-1/2 (62)	4-1/4 (108)	2 (51)
	1-1/2 (40)	2-9/16 (65)	4-1/4 (108)	2 (51)
	2 (50)	3-1/8 (79)	4-9/16 (116)	2-1/4 (57)
Normally Closed	1/2 (15)	1-7/16 (36)	3-13/16 (97)	2-3/16 (55)
	3/4 (20)	1-11/16 (43)	3-13/16 (97)	2-3/16 (55)
	1 (25)	2 (50)	3-13/16 (97)	2-3/16 (55)
	1-1/4 (32)	2-1/2 (62)	3-13/16 (97)	2-3/16 (55)
	1-1/2 (40)	2-9/16 (65)	3-7/8 (99)	2-1/4 (58)
	2 (50)	3-1/8 (79)	4-1/2 (114)	2-9/16 (65)



1/2-inch (15 mm) Valve Size.



3/4-inch to 2-inch (20 to 50 mm) Valve Size

Figure 6. Normally Open Valves.

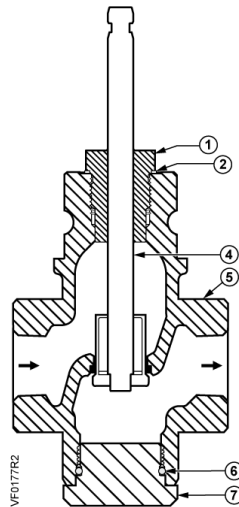


Figure 7. Normally Closed Valves
1/2-inch to 2-inch (15 to 50 mm) Valve Size.

Parts List

Table 12. Parts List for 2-Way Bronze Valves.

See Figure 6 and Figure 7.

Item	Part Name	Part Number	Quantity	Material
1	Packing Cartridge Assembly	—	1	—
2	Gasket	—	1	Copper
3	Normally Open 3/4-inch to 2-inch Bonnet	—	1	Brass
4	Stem and Plug Assembly	—	1	Bronze or Stainless Steel
5	Valve Body	—	1	Bronze
6	O-ring	—	1	EPDM
7	Normally closed Cap	—	1	Brass
—	Packing Kit Normal Duty Service Steam Service	599-03390 599-03391	—	Items 1 and 2
—	Rebuild/Repack Kit Normally Closed	See Table 14 and Table 15	—	Items 1, 2, 4, and 6
—	Rebuild/Repack Kit Normally Open	See Table 14 and Table 15	—	Items 1, 2, 4, and 6

Valve Assembly Weight

Table 13. Weight in Pounds (Kilograms).

Valve Size	Normally Closed	Normally Open
.50 (15)	3 (1.4)	3 (1.4)
.75 (20)	4 (1.8)	4 (1.8)
1.0 (25)	5 (2.3)	5 (2.3)
1.25 (32)	7 (3.2)	7 (3.2)
1.50 (40)	8 (3.6)	9 (4.1)
2.0 (50)	16 (7.3)	13 (5.9)

Service Kit NOTE: To select the service kit, know your valve body part number and model number. Read down the *Part Number* column until you find the valve body part number and then read to the far right to identify the correct kit. The valve body part number and model number are stamped on the metal tag on the valve body.

Table 14. Rebuild/Repack Service Kits Part Numbers.
 See Table 12 for Items in Kit.

Flow	Action	Valve Size	Part Number	Valve Description	Model 1 Kit No.	Model 2 Kit No.
Linear	Normally Open	1/2-Inch	599-03000	Stainless steel 1.0 Cv O-ring	599-03300	—
			599-03001	Stainless steel 1.6 Cv O-ring	599-03301	—
			599-03002	Stainless steel 2.5 Cv O-ring	599-03302	—
			599-03003	Stainless steel 4.0 Cv O-ring	599-03303	—
		3/4-Inch	599-03004	Stainless steel O-ring	599-03304	—
		1-Inch	599-03005	Stainless steel O-ring	599-03305	—
		1-1/4 Inch	599-03006	Stainless steel O-ring	599-03306	599-09201
		1-1/2-Inch	599-03007	Stainless steel O-ring	599-03307	599-09202
	2-Inch	599-03008	Stainless steel O-ring	599-03308	599-09203	
	Normally Closed	1/2-Inch	599-03018	Stainless steel 1.0 Cv O-ring	599-03309	—
			599-03019	Stainless steel 1.6 Cv O-ring	599-03310	—
			599-03020	Stainless steel 2.5 Cv O-ring	599-03311	—
			599-03021	Stainless steel 4.0 Cv O-ring	599-03312	—
		3/4-Inch	599-03022	Stainless steel O-ring	599-03313	—
		1-Inch	599-03023	Stainless steel O-ring	599-03314	—
		1-1/4 Inch	599-03024	Stainless steel O-ring	599-03315	599-09213
		1-1/2-Inch	599-03025	Stainless steel O-ring	599-03316	599-09214
	2-Inch	599-03026	Stainless steel O-ring	599-03317	599-09215	
	Normally Open	1/2-Inch	599-03054	Stainless steel 1.0 Cv Steam	599-03318	—
			599-03055	Stainless steel 1.6 Cv Steam	599-03319	—
			599-03056	Stainless steel 2.5 Cv Steam	599-03320	—
			599-03057	Stainless steel 4.0 Cv Steam	599-03321	—
		3/4-Inch	599-03058	Stainless steel Steam	599-03322	—
		1-Inch	599-03059	Stainless steel Steam	599-03323	—
		1-1/4 Inch	599-03060	Stainless steel Steam	599-03324	599-09204
		1-1/2-Inch	599-03061	Stainless steel Steam	599-03325	599-09205
	2-Inch	599-03062	Stainless steel Steam	599-03326	599-09206	
	Normally Closed	1/2-Inch	599-03072	Stainless steel 1.0 Cv Steam	599-03327	—
			599-03073	Stainless steel 1.6 Cv Steam	599-03328	—
			599-03074	Stainless steel 2.5 Cv Steam	599-03329	—
			599-03075	Stainless steel 4.0 Cv Steam	599-03330	—
		3/4-Inch	599-03076	Stainless steel Steam	599-03331	—
1-Inch		599-03077	Stainless steel Steam	599-03332	—	
1-1/4 Inch		599-03078	Stainless steel Steam	599-03333	599-09216	
1-1/2-Inch		599-03079	Stainless steel Steam	599-03334	599-09217	
2-Inch	599-03080	Stainless steel Steam	599-03335	599-09218		

Service Kits, Continued

Table 15. Rebuild/Repack Service Kits Part Numbers Continued. See Table 12 for Items in Kit.

Flow	Action	Size	Part Number	Description	Model 1 Kit No.	Model 2 Kit No.
Equal Percentage	Normally Open	1/2 Inch	599-03108	Stainless steel 1.0 Cv O-ring	599-03336	—
			599-03109	Stainless steel 1.6 Cv O-ring	599-03337	—
			599-03110	Stainless steel 2.5 Cv O-ring	599-03338	—
			599-03111	Stainless steel 4.0 Cv O-ring	599-03339	—
		3/4-Inch	599-03112	Stainless steel O-ring	599-03340	—
		1-Inch	599-03113	Stainless steel O-ring	599-03341	—
		1-1/4-Inch	599-03114	Stainless steel O-ring	599-03342	599-09207
		1-1/2-Inch	599-03115	Stainless steel O-ring	599-03343	599-09208
	2-Inch	599-03116	Stainless steel O-ring	599-03344	599-09209	
	Normally Closed	1/2-Inch	599-03126	Stainless steel 1.0 Cv O-ring	599-03345	—
			599-03127	Stainless steel 1.6 Cv O-ring	599-03346	—
			599-03128	Stainless steel 2.5 Cv O-ring	599-03347	—
			599-03129	Stainless steel 4.0 Cv O-ring	599-03348	—
		3/4-Inch	599-03130	Stainless steel O-ring	599-03349	—
		1-inch	599-03131	Stainless steel O-ring	599-03350	—
		1-1/4 Inch	599-03132	Stainless steel O-ring	599-03351	599-09219
		1-1/2-Inch	599-03133	Stainless steel O-ring	599-03352	599-09220
	2-Inch	599-03134	Stainless steel O-ring	599-03353	599-09221	
	Normally Open	1/2-Inch	599-03162	Bronze 1.0 Cv O-ring	599-03354	—
			599-03163	Bronze 1.6 Cv O-ring	599-03355	—
			599-03164	Bronze 2.5 Cv O-ring	599-03356	—
			599-03165	Bronze 4.0 Cv O-ring	599-03357	—
		3/4-Inch	599-03166	Bronze O-ring	599-03358	—
		1-Inch	599-03167	Bronze O-ring	599-03359	—
		1-1/4-Inch	599-03168	Bronze O-ring	599-03360	599-09210
		1-1/2-Inch	599-03169	Bronze O-ring	599-03361	599-09211
	2-Inch	599-03170	Bronze O-ring	599-03362	599-09212	
	Normally Closed	1/2-Inch	599-03180	Bronze 1.0 Cv O-ring	599-03363	—
			599-03181	Bronze 1.6 Cv O-ring	599-03364	—
			599-03182	Bronze 2.5 Cv O-ring	599-03365	—
			599-03183	Bronze 4.0 Cv O-ring	599-03366	—
		3/4-Inch	599-03184	Bronze O-ring	599-03367	—
		1-Inch	599-03185	Bronze O-ring	599-03368	—
		1-1/4-Inch	599-03186	Bronze O-ring	599-03369	599-09222
		1-1/2-Inch	599-03187	Bronze O-ring	599-03370	599-09223
	2-Inch	599-03188	Bronze O-ring	599-03371	599-09224	

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