

Flowrite™ 599 Series Valves, 2-1/2 to 6-Inch, Flanged, ANSI Class 125, Iron Body



Description

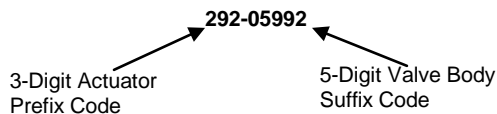
The Flowrite 599 Series two-way and three-way flanged iron bodies are designed to work with a Flowrite series actuator with a 3/4-inch (20 mm) or 1-1/2 inch (40 mm) stroke. They are available in ANSI Class 125 for normally open, normally closed or three-way action. Typical applications include control of hot or chilled water, 50% water-glycol solutions or steam.

Features

- ANSI Class IV leakage ($\leq 0.01\%$ of Cv).
- Two-way normally open and normally closed configurations.
- Cartridge-type packing.
- Two-way equal-percentage flow characteristic valves with either bronze or stainless steel trim.
- Two-way linear flow characteristic valves with stainless steel trim.
- Three-way valves with either bronze or stainless steel trim.
- High temperature packing available on two-way linear valves.

Product Numbers

Use the product numbers in the tables to order the valve and the actuator assembled together. The product number consists of a 3-digit prefix code, a hyphen, and a 5-digit suffix code. The prefix specifies an actuator. The suffix specifies the valve body.



Typical Specifications

Automatic control valves shall have flanged connections, 2-1/2 inch through 6-inch (65 through 150 mm) sizes, and shall be ANSI 125 rated to withstand the pressures and temperatures encountered.

Valves shall have metal-to-metal seats, stainless steel stems, and double (EPDM) O-rings or Teflon® V-rings with single O-ring packing.

Valve shall be ANSI Leakage Class IV (0.01% of Cv).
Valves shall have a 100:1 rangeability or better.

Technical Data

Valve Size	2-1/2 to 6-inch (65 to 150 mm)
Body	Flanged style, cast iron ASTM A126 Class B, ANSI Class 125
Trim	Bronze or stainless steel
Stem	Stainless steel ASTM A582 Type 303
Stem Travel:	
2-1/2- and 3-inch	3/4-inch (20 mm) stroke
4-, 5-, and 6-inch	1-1/2 inch (40 mm) stroke
Seat	Metal-to-metal
Packing:	
Normal duty	Double EPDM O-rings
Steam packing	Teflon V-rings/EPDM O-ring
Close-off Ratings	According to ANSI/FCI 70-2 See Tables 2 and 4.
Controlled Medium	Water, steam, 50% water-glycol solutions
Medium Temperature:	
Normal Duty	20°F to 250°F (-7°C to 120°C)
Steam Packing	337°F (170°C) maximum

Maximum Recommended Differential Pressure for Modulating Service

Media	Bronze Trim	SS Trim
Liquid	25 psi (173 kPa)	50 psi (345 kPa)
Steam	15 psi (103 kPa)	50 psi (345 kPa)

Rangeability	>100:1
Leakage Rate	Class IV (0.01% of Cv)
Flow Characteristics	Equal percentage or linear
Mounting	NEMA 1 (interior only)

NOTE: To keep this document short, only 2-way equal percentage, bronze trim and all 3-way with bronze trim are shown.

For complete selection tables, see *Flowrite™ 599 Series 2-1/2 to 6-Inch Valve, Two-Way & Three-Way, and Actuator Assembly Selection* (155-776).

Table 1. Flowrite ANSI 125 Valve and Electronic Actuator Assemblies with Bronze Trim and Normal Duty Packing.







Action		Valve Size, Inch (mm)	Cv (Kvs)	Stroke	Electro-Hydraulic- 24 Vac											
					Non-spring Return					Spring Return						
																
					Floating			0-10 Vdc 4-20 mA	Floating			0 to 10 Vdc, 4 to 20 mA				
					SKD82.50U	SKB82.50U	SKC82.60U	SKD60U	SKD82.51U	SKB82.51U	SKC82.61U	SKD62U	SKB62U	SKC62U		
					Actuator Prefix Codes											
					275	290	293	267	276	289	292	274	291	294		
Normally Open	599-05980	2-1/2 (65)	63 (54)	3/4 (20)	275-05980	290-05980	—	267-05980	276-05980	289-05980	—	274-05980	291-05980	—		
	599-05981	3 (80)	100 (86)	3/4 (20)	275-05981	290-05981	—	267-05981	276-05981	289-05981	—	274-05981	291-05981	—		
	599-05982	4 (100)	160 (140)	1-1/2 (40)	—	—	293-05982	—	—	—	292-05982	—	—	294-05982		
	599-05983	5 (125)	250 (215)	1-1/2 (40)	—	—	293-05983	—	—	—	292-05983	—	—	294-05983		
	599-05984	6 (150)	400 (340)	1-1/2 (40)	—	—	293-05984	—	—	—	292-05984	—	—	294-05984		
Normally Closed	599-05990	2-1/2 (65)	63 (54)	3/4 (20)	275-05990	290-05990	—	267-05990	276-05990	289-05990	—	274-05990	291-05990	—		
	599-05991	3 (80)	100 (86)	3/4 (20)	275-05991	290-05991	—	267-05991	276-05991	289-05991	—	274-05991	291-05991	—		
	599-05992	4 (100)	160 (140)	1-1/2 (40)	—	—	293-05992	—	—	—	292-05992	—	—	294-05992		
	599-05993	5 (125)	250 (215)	1-1/2 (40)	—	—	293-05993	—	—	—	292-05993	—	—	294-05993		
	599-05994	6 (150)	400 (340)	1-1/2 (40)	—	—	293-05994	—	—	—	292-05994	—	—	294-05994		
3-Way	599-06160	2-1/2 (65)	63 (54)	3/4 (20)	275-06160	290-06160	—	267-06160	276-06160	289-06160	—	274-06160	291-06160	—		
	599-06161	3 (80)	100 (86)	3/4 (20)	275-06161	290-06161	—	267-06161	276-06161	289-06161	—	274-06161	291-06161	—		
	599-06162	4 (100)	160 (140)	1-1/2 (40)	—	—	293-06162	—	—	—	292-06162	—	—	294-06162		
	599-06163	5 (125)	250 (215)	1-1/2 (40)	—	—	293-06163	—	—	—	292-06163	—	—	294-06163		
	599-06164	6 (150)	400 (340)	1-1/2 (40)	—	—	293-06164	—	—	—	292-06164	—	—	294-06164		

Table 2. Flowrite ANSI 125 Valve and Pneumatic Actuator Assemblies with Bronze Trim and Normal Duty Packing.






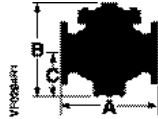
Action		Valve Size, Inch (mm)	Cv (Kvs)	Stroke	20mm		40 mm	20 mm	40 mm					
					Without Positioner				With Positioners					
														
					8-Inch		12-Inch		8-Inch		12-Inch			
					599-01050		599-01010		599-01000		599-01050+ 599-00426		599-01010+ 599-00423	
					Actuator Prefix Codes						281	283	285	287
					277		279		281		283		285	
Normally Open	599-05980	2-1/2 (65)	63 (54)	3/4 (20)	277-05980	279-05980	—	283-05980	285-05980	—				
	599-05981	3 (80)	100 (86)	3/4 (20)	277-05981	279-05981	—	283-05981	285-05981	—				
	599-05982	4 (100)	160 (140)	1-1/2 (40)	—	—	281-05982	—	—	287-05982				
	599-05983	5 (125)	250 (215)	1-1/2 (40)	—	—	281-05983	—	—	287-05983				
	599-05984	6 (150)	400 (340)	1-1/2 (40)	—	—	281-05984	—	—	287-05984				
Normally Closed	599-05990	2-1/2 (65)	63 (54)	3/4 (20)	277-05990	279-05990	—	283-05990	285-05990	—				
	599-05991	3 (80)	100 (86)	3/4 (20)	277-05991	279-05991	—	283-05991	285-05991	—				
	599-05992	4 (100)	160 (140)	1-1/2 (40)	—	—	281-05992	—	—	287-05992				
	599-05993	5 (125)	250 (215)	1-1/2 (40)	—	—	281-05993	—	—	287-05993				
	599-05994	6 (150)	400 (340)	1-1/2 (40)	—	—	281-05994	—	—	287-05994				
3-way	599-06160	2-1/2 (65)	63 (54)	3/4 (20)	277-06160	279-06160	—	283-06160	285-06160	—				
	599-06161	3 (80)	100 (86)	3/4 (20)	277-06161	279-06161	—	283-06161	285-06161	—				
	599-06162	4 (100)	160 (140)	1-1/2 (40)	—	—	281-06162	—	—	287-06162				
	599-06163	5 (125)	250 (215)	1-1/2 (40)	—	—	281-06163	—	—	287-06163				
	599-06164	6 (150)	400 (340)	1-1/2 (40)	—	—	281-06164	—	—	287-06164				

Table 3. Close-Off Ratings in PSI (kPa).

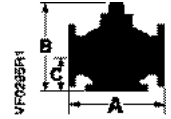
Action	Valve Size Inch (mm)	Electro Hydraulic Actuator		Pneumatic Actuator, Spring Range					
		SKB/C	SKD	3 to 8 psi				10 to 15 psi	
				8-Inch		12-Inch		8-Inch	12-Inch
				15 psi	30 psi	15 psi	30 psi	0 psi	15 psi
NO, Lower Port	2-1/2 (65)	153 (518)	38 (262)	31 (213)	100 (689)	95 (655)	250 (1724)	—	—
	3 (80)	101 (342)	25 (172)	20 (138)	66 (444)	63 (434)	200 (1378)	—	—
	4 (100)	65 (448)	—	—	—	40 (275)	129 (889)	—	—
	5 (125)	42 (289)	—	—	—	26 (179)	82 (565)	—	—
	6 (150)	29 (199)	—	—	—	18 (124)	57 (393)	—	—
NC, Upper Port	2-1/2 (65)	97 (668)	34 (234)	—	—	—	—	36 (248)	114 (786)
	3 (80)	63 (434)	22 (152)	—	—	—	—	23 (158)	74 (610)
	4 (100)	39 (268)	—	—	—	—	—	—	46 (317)
	5 (125)	25 (172)	—	—	—	—	—	—	29 (199)
	6 (150)	17 (117)	—	—	—	—	—	—	20 (137)

Table 4. Flanged 2-Way Valve Dimensions.



Action	Valve Size In (mm)	A	B	C	Weight lbs (kg)
Normally Open	2-1/2 (65)	10-7/8 (276)	11 (281)	4-7/8 (123)	60 (27)
	3 (80)	11-3/4 (299)	12-1/4 (312)	5-5/16 (135)	76 (34)
	4 (100)	13-7/8 (352)	13-9/16 (345)	6-5/16 (160)	124 (56)
	5 (125)	15-3/4 (400)	15-3/16 (385)	7 (177)	155 (70)
	6 (150)	17-3/4 (451)	16-3/4 (426)	7-7/8 (200)	212 (96)
Normally Closed	2-1/2 (65)	10-7/8 (276)	10-5/8 (269)	4-7/8 (125)	58 (26)
	3 (80)	11-3/4 (299)	11-15/16 (303)	5-5/8 (142)	75 (34)
	4 (100)	13-7/8 (352)	13-15/16 (354)	6-5/8 (168)	123 (56)
	5 (125)	15-3/4 (400)	15-1/4 (388)	7-1/2 (185)	153 (69)
	6 (150)	17-3/4 (451)	17-1/16 (433)	8-3/16 (207)	209 (95)

Table 5. Flanged 3-Way Valve Dimensions.



Valve Size In (mm)	A	B	C	Weight lbs (kg)
2-1/2 (65)	—	—	—	—
3 (80)	—	—	—	—
4 (100)	—	—	—	—
5 (125)	—	—	—	—
6 (150)	—	—	—	—
2-1/2 (65)	10-7/8 (276)	9-3/8 (239)	3-3/4 (95)	50 (23)
3 (80)	11-3/4 (299)	10-3/4 (272)	4-3/8 (111)	65 (30)
4 (100)	13-7/8 (352)	12-1/2 (318)	5-1/8 (132)	110 (50)
5 (125)	15-3/4 (400)	13-3/4 (349)	5-3/4 (146)	136 (62)
6 (150)	17-3/4 (451)	15-1/2 (393)	6-5/8 (167)	141 (64)

For complete technical details on valves with a linear characteristic and stainless steel trim, see Technical Instructions *Flowrite™ VF 599 Series Two-way Valves*, (155-159P25) or Technical Instructions *Flowrite™ VF 599 Series Three-way Valves* (155-160P25).

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