

599 Series 2-Way Ball Valves



Description

The 599 Series two-way Ball Valves are coupled with an OpenAir™ actuator to provide equal percentage flow control. The ball valves are 1/4-turn rotary control valves and are available in 1/2-inch to 2-inch line sizes.

Features

- 200 psi close-off with ANSI Class IV leakage for all line sizes and actuators.
- Available with chrome-plated brass ball and brass stem or stainless steel ball and stem.
- Blow-out proof stem withstands high pressure.
- Universal mounting plate.
- Actuator and plate can be rotated (90 degree increments).
- Standoffs provide a thermal barrier between the actuator and the mounting plate.
- Operating handle for manual operation.

Application

Ball valves can control hot or chilled water and up to 50% water-glycol solution in convectors, fan coil units, unit conditioners, radiators, and reheat coils.

WARNING:		Personal injury/loss of life may occur if you do not perform a procedure as specified.
CAUTION:		Equipment damage may occur if you do not perform a procedure as specified.

Product Numbers

See Tables 2 through Table 7

Specifications	Pressure rating	600 WOG
	Media temperature	35°F to 250°F (2°C to 121°C)
	Controlled medium	Water, glycol solutions to 50%
	Body	Brass: ASTM B283, C37700
	Ball	Chrome-plated brass or Stainless steel
	Ball seals	Glass filled PTFE with EPDM O-rings
	Flow characterizer	Glass filled PTFE
	End connections	Female NPT
	Stem	Brass or stainless steel
	Stem seals	EPDM O-rings
	Angle of rotation	0 to 90°
	Close-off rating	200 psi (ANSI Class IV)
	Dimensions and service envelope	See Figure 5

Ordering a Valve Plus Actuator Assembly

To order a complete valve plus actuator assembly from the factory, combine an actuator prefix code (Table 1) with the suffix of the valve assembly product number.

Table 1. Actuator Prefix Codes.

Actuator Prefix Code	OpenAir Actuator *	Control
171A	GDE131.1P	Floating, fail-in-place
171B	GLB131.1P	Floating, fail-in-place
171C	GDE161.1P	0 to 10 Vdc, fail-in-place
171D	GLB161.1P	0 to 10 Vdc, fail-in-place
171E	GMA121.1P	2-position, fail-safe, normally open
171F	GMA131.1P	Floating, fail-safe, normally open
171G	GMA161.1P	0 to 10 Vdc, fail-safe, normally open
171H	GQD121.1P	2-position, fail safe, normally open
171J	GQD131.1P	Floating, fail safe, normally open
171K	GQD151.1P	2 to 10 Vdc fail safe, normally open
172E	GMA121.1P	2-position, fail-safe, normally closed
172F	GMA131.1P	Floating, fail-safe, normally closed
172G	GMA161.1P	0 to 10 Vdc, fail-safe, normally closed
172H	GQD121.1P	2-position, fail safe, normally closed
172J	GQD131.1P	Floating, fail safe, normally closed
172K	GQD151.1P	2 to 10 Vdc fail safe, normally closed
173A	GDE131.1Q**	Floating, fail-in-place
173B	GLB131.1Q**	Floating, fail-in-place
173C	GDE161.1Q**	0 to 10 Vdc, fail-in-place
173D	GLB161.1Q**	0 to 10 Vdc, fail-in-place

*When ordered as an assembly, the actuator is provided with 3-foot (.9m) wires.

**When ordered as an assembly, the actuator is provided with conduit adapter and 6-foot (1.8m) wires.

See TB253 599 Series Ball Valve and Actuator Assemblies Selection Technical Bulletin (155-704P25) for complete selection procedures and ordering numbers for both two-way and three-way ball valve assemblies.

Individual two-way ball valves can be ordered using the product numbers in Table 2 for valves with a chrome-plated ball and brass stem or Table 5 for valves with stainless steel ball and stem.

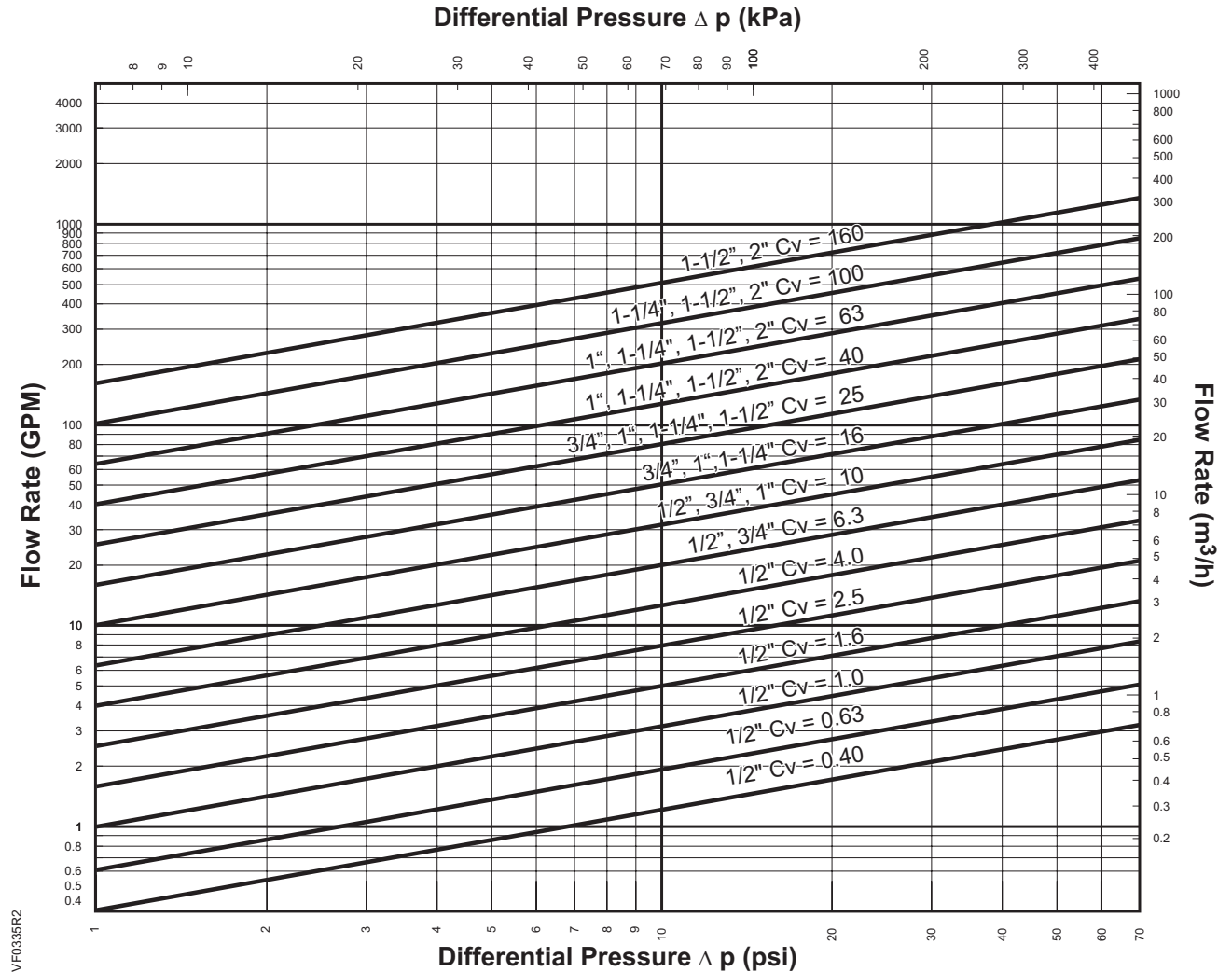




Figure 1.

Table 2. Fail-In-Place Assemblies: Chrome-Plated Ball with Brass Stem.

Valve Body Product Number *	Cv (Kvs)	Close-Off Δ P PSI	Line Size Inches (mm)	Fail-in-Place							
											
				Floating				0 to 10 Vdc			
				GDE 131.1P	GLB 131.1P	GDE 131.1Q	GLB 131.1Q	GDE 161.1P	GLB 161.1P	GDE 161.1Q	GLB 161.1Q
				3 foot (.9m) Wires		Conduit Adapter & 6-foot (1.8m) Wires		3 foot (.9m) Wires		Conduit Adapter & 6-foot (1.8m) Wires	
				Actuator Prefix Code							
171A	171B	173A	173B	171C	171D	173C	173D				
599-10300	0.4 (0.34)	200 PSI	1/2 (15)	171A-10300	173A-10300	171C-10300	173C-10300				
599-10301	0.63 (0.54)			171A-10301	173A-10301	171C-10301	173C-10301				
599-10302	1.0 (0.9)			171A-10302	173A-10302	171C-10302	173C-10302				
599-10303	1.6 (1.4)			171A-10303	173A-10303	171C-10303	173C-10303				
599-10304	2.5 (2.2)			171A-10304	173A-10304	171C-10304	173C-10304				
599-10305	4.0 (3.4)			171A-10305	173A-10305	171C-10305	173C-10305				
599-10306	6.3 (5.4)			171A-10306	173A-10306	171C-10306	173C-10306				
599-10307*	10 (8.6)			171A-10307*	173A-10307*	171C-10307*	173C-10307*				
599-10308	6.3 (5.4)		3/4 (20)	171A-10308	173A-10308	171C-10308	173C-10308				
599-10309	10 (8.6)			171A-10309	173A-10309	171C-10309	173C-10309				
599-10310	16 (14)			171A-10310	173A-10310	171C-10310	173C-10310				
599-10311*	25 (22)			171A-10311*	173A-10311*	171C-10311*	173C-10311*				
599-10312	10 (9.0)		1 (25)	171A-10312	173A-10312	171C-10312	173C-10312				
599-10313	16 (14)			171A-10313	173A-10313	171C-10313	173C-10313				
599-10314	25 (22)			171A-10314	173A-10314	171C-10314	173C-10314				
599-10315	40 (34)			171A-10315	173A-10315	171C-10315	173C-10315				
599-10316*	63 (54)			171A-10316*	173A-10316*	171C-10316*	173C-10316*				
599-10317	16 (14)		1 1/4 (30)	171A-10317	173A-10317	171C-10317	173C-10317				
599-10318	25 (22)			171A-10318	173A-10318	171C-10318	173C-10318				
599-10319	40 (34)			171A-10319	173A-10319	171C-10319	173C-10319				
599-10320	63 (54)			171A-10320	173A-10320	171C-10320	173C-10320				
599-10321*	100 (90)		1 1/2 (40)	171A-10321*	173A-10321*	171C-10321*	173C-10321*				
599-10322	25 (22)			171B-10322	173B-10322	171D-10322	173D-10322				
599-10323	40 (34)			171B-10323	173B-10323	171D-10323	173D-10323				
599-10324*	63 (54)			171B-10324	173B-10324	171D-10324	173D-10324				
599-10325	100 (90)			171B-10325	173B-10325	171D-10325	173D-10325				
599-10326*	160 (140)			171B-10326*	173B-10326*	171D-10326*	173D-10326*				
599-10327	40 (34)		2 (50)	171B-10327	173B-10327	171D-10327	173D-10327				
599-10328	63 (54)			171B-10328	173B-10328	171D-10328	173D-10328				
599-10329*	100 (90)			171B-10329*	173B-10329*	171D-10329*	173D-10329*				
599-10330	160 (140)			171B-10330	173B-10330	171D-10330	173D-10330				


*Denotes a full-port valve with no flow characterizer insert.

Table 3. Fail-In-Place Assemblies: Chrome-Plated Ball with Brass Stem.

Valve Body Product Number*	Cv (Kvs)	Close-off ΔP PSI	Line Size Inches (mm)	Fail-Safe							
											
				2-Position		Floating		2 to 10 Vdc			
				GQD121.1P		GQD131.1P		GQD151.1P			
				N.O.	N.C.	N.O.	N.C.	N.O.	N.C.		
				Actuator Prefix Code							
171H		172H		171J		172J		171K		172K	
599-10300	0.4 (0.34)	200 psi	1/2 (15)	171H-10300	172H-10300	171J-10300	172J-10300	171K-10300	172K-10300		
599-10301	0.63 (0.54)			171H-10301	172H-10301	171J-10301	172J-10301	171K-10301	172K-10301		
599-10302	1.0 (0.9)			171H-10302	172H-10302	171J-10302	172J-10302	171K-10302	172K-10302		
599-10303	1.6 (1.4)			171H-10303	172H-10303	171J-10303	172J-10303	171K-10303	172K-10303		
599-10304	2.5 (2.2)			171H-10304	172H-10304	171J-10304	172J-10304	171K-10304	172K-10304		
599-10305	4.0 (3.4)			171H-10305	172H-10305	171J-10305	172J-10305	171K-10305	172K-10305		
599-10306	6.3 (5.4)			171H-10306	172H-10306	171J-10306	172J-10306	171K-10306	172K-10306		
599-10307*	10 (8.6)			171H-10307*	172H-10307*	171J-10307*	172J-10307*	171K-10307*	172K-10307*		
599-10308	6.3 (5.4)			171H-10308	172H-10308	171J-10308	172J-10308	171K-10308	172K-10308		
599-10309	10 (8.6)			171H-10309	172H-10309	171J-10309	172J-10309	171K-10309	172K-10309		
599-10310	16 (14)		171H-10310	172H-10310	171J-10310	172J-10310	171K-10310	172K-10310			
599-10311*	25 (22)		171H-10311*	172H-10311*	171J-10311*	172J-10311*	171K-10311*	172K-10311*			


*Denotes a full-port valve with no flow characterizer insert.

Table 4. Fail-In-Place Assemblies: Chrome-Plated Ball with Brass Stem.

Valve Body Product Number *	Cv (Kvs)	Close-off ΔP PSI	Line Size Inches (mm)	Fail-Safe							
											
				2-Position		Floating		0 to 10 Vdc			
				GMA121.1P		GMA131.1P		GMA161.1P			
				N.O.	N.C.	N.O.	N.C.	N.O.	N.C.		
				Actuator Prefix Code							
171E		172E		171F		172F		171G		172G	
599-10312	10 (9.0)	200 psi	1 (25)	171E-10312	172E-10312	171F-10312	172F-10312	171G-10312	172G-10312		
599-10313	16 (14)			171E-10313	172E-10313	171F-10313	172F-10313	171G-10313	172G-10313		
599-10314	25 (22)			171E-10314	172E-10314	171F-10314	172F-10314	171G-10314	172G-10314		
599-10315	40 (34)			171E-10315	172E-10315	171F-10315	172F-10315	171G-10315	172G-10315		
599-10316*	63 (54)			171E-10316*	172E-10316*	171F-10316*	172F-10316*	171G-10316*	172G-10316*		
599-10317	16 (14)			171E-10317	172E-10317	171F-10317	172F-10317	171G-10317	172G-10317		
599-10318	25 (22)		171E-10318	172E-10318	171F-10318	172F-10318	171G-10318	172G-10318			
599-10319	40 (34)		171E-10319	172E-10319	171F-10319	172F-10319	171G-10319	172G-10319			
599-10320	63 (54)		171E-10320	172E-10320	171F-10320	172F-10320	171G-10320	172G-10320			
599-10321*	100 (90)		171E-10321*	172E-10321*	171F-10321*	172F-10321*	171G-10321*	172G-10321*			
599-10322	25 (22)		171E-10322	172E-10322	171F-10322	172F-10322	171G-10322	172G-10322			
599-10323	40 (34)		171E-10323	172E-10323	171F-10323	172F-10323	171G-10323	172G-10323			
599-10324*	63 (54)		171E-10324*	172E-10324*	171F-10324*	172F-10324*	171G-10324*	172G-10324*			
599-10325	100 (90)		171E-10325	172E-10325	171F-10325	172F-10325	171G-10325	172G-10325			
599-10326*	160 (140)		171E-10326*	172E-10326*	171F-10326*	172F-10326*	171G-10326*	172G-10326*			
599-10327	40 (34)		171E-10327	172E-10327	171F-10327	172F-10327	171G-10327	172G-10327			
599-10328	63 (54)		171E-10328	172E-10328	171F-10328	172F-10328	171G-10328	172G-10328			
599-10329*	100 (90)		171E-10329*	172E-10329*	171F-10329*	172F-10329*	171G-10329*	172G-10329*			
599-10330*	160 (140)		171E-10330*	172E-10330*	171F-10330*	172F-10330*	171G-10330*	172G-10330*			


*Denotes a full-port valve with no flow characterizer insert.

Table 5. Fail-In-Place Assemblies: Stainless Steel Ball and Stem.

Valve Body Product Number *	Cv (Kvs)	Close-off ΔP PSI	Line Size Inches (mm)	Fail-in-Place							
											
				Floating				0 to 10 Vdc			
				GDE 131.1P	GLB 131.1P	GDE 131.1Q	GLB 131.1Q	GDE 161.1P	GLB 161.1P	GDE 161.1Q	GLB 161.1Q
				3 foot (.9m) Wires		Conduit Adapter & 6-foot (1.8m) Wires		3 foot (.9m) Wires		Conduit Adapter & 6-foot (1.8m) Wires	
				Actuator Prefix Code							
171A	171B	173A	173B	171C	171D	173C	173D				
599-10300S	0.4 (0.34)	200 PSI	1/2 (15)	171A-10300S	173A-10300S	171C-10300S	173C-10300S				
599-10301S	0.63 (0.54)			171A-10301S	173A-10301S	171C-10301S	173C-10301S				
599-10302S	1.0 (0.9)			171A-10302S	173A-10302S	171C-10302S	173C-10302S				
599-10303S	1.6 (1.4)			171A-10303S	173A-10303S	171C-10303S	173C-10303S				
599-10304S	2.5 (2.2)			171A-10304S	173A-10304S	171C-10304S	173C-10304S				
599-10305S	4.0 (3.4)			171A-10305S	173A-10305S	171C-10305S	173C-10305S				
599-10306S	6.3 (5.4)			171A-10306S	173A-10306S	171C-10306S	173C-10306S				
599-10307S*	10 (8.6)			171A-10307S*	173A-10307S*	171C-10307S*	173C-10307S*				
599-10308S	6.3 (5.4)		171A-10308S	173A-10308S	171C-10308S	173C-10308S					
599-10309S	10 (8.6)		171A-10309S	173A-10309S	171C-10309S	173C-10309S					
599-10310S	16 (14)		171A-10310S	173A-10310S	171C-10310S	173C-10310S					
599-10311S*	25 (22)		171A-10311S*	173A-10311S*	171C-10311S*	173C-10311S*					
599-10312S	10 (9.0)		171A-10312S	173A-10312S	171C-10312S	173C-10312S					
599-10313S	16 (14)		171A-10313S	173A-10313S	171C-10313S	173C-10313S					
599-10314S	25 (22)		171A-10314S	173A-10314S	171C-10314S	173C-10314S					
599-10315S	40 (34)		171A-10315S	173A-10315S	171C-10315S	173C-10315S					
599-10316S*	63 (54)		171A-10316S*	173A-10316S*	171C-10316S*	173C-10316S*					
599-10317S	16 (14)		171A-10317S	173A-10317S	171C-10317S	173C-10317S					
599-10318S	25 (22)		171A-10318S	173A-10318S	171C-10318S	173C-10318S					
599-10319S	40 (34)		171A-10319S	173A-10319S	171C-10319S	173C-10319S					
599-10320S	63 (54)		171A-10320S	173A-10320S	171C-10320S	173C-10320S					
599-10321S*	100 (90)		171A-10321S*	173A-10321S*	171C-10321S*	173C-10321S*					
599-10322S	25 (22)		171B-10322S	173B-10322S	171D-10322S	173D-10322S					
599-10323S	40 (34)		171B-10323S	173B-10323S	171D-10323S	173D-10323S					
599-10324S*	63 (54)		171B-10324S	173B-10324S	171D-10324S	173D-10324S					
599-10325S	100 (90)		171B-10325S	173B-10325S	171D-10325S	173D-10325S					
599-10326S*	160 (140)		171B-10326S*	173B-10326S*	171D-10326S*	173D-10326S*					
599-10327S	40 (34)		171B-10327S	173B-10327S	171D-10327S	173D-10327S					
599-10328S	63 (54)		171B-10328S	173B-10328S	171D-10328S	173D-10328S					
599-10329S*	100 (90)		171B-10329S*	173B-10329S*	171D-10329S*	173D-10329S*					
599-10330S	160 (140)		171B-10330S	173B-10330S	171D-10330S	173D-10330S					


*Denotes a full-port valve with no flow characterizer insert.

Table 6. Fail-Safe Assemblies: Stainless Steel Ball and Stem (1/2 inch and 3/4 inch).

Valve Body Product Number*	Cv (Kvs)	Close-off ΔP PSI	Line Size Inches (mm)	Fail-Safe					
									
				2-Position GQD121.1P		Floating GQD131.1P		2 to 10 Vdc GQD151.1P	
				N.O.	N.C.	N.O.	N.C.	N.O.	N.C.
				Actuator Prefix Code					
				171H	172H	171J	172J	171K	172K
599-10300S	0.4 (0.34)	200 psi	1/2 (15)	171H-10300S	172H-10300S	171J-10300S	172J-10300S	171K-10300S	172K-10300S
599-10301S	0.63 (0.54)			171H-10301S	172H-10301S	171J-10301S	172J-10301S	171K-10301S	172K-10301S
599-10302S	1.0 (0.9)			171H-10302S	172H-10302S	171J-10302S	172J-10302S	171K-10302S	172K-10302S
599-10303S	1.6 (1.4)			171H-10303S	172H-10303S	171J-10303S	172J-10303S	171K-10303S	172K-10303S
599-10304S	2.5 (2.2)			171H-10304S	172H-10304S	171J-10304S	172J-10304S	171K-10304S	172K-10304S
599-10305S	4.0 (3.4)			171H-10305S	172H-10305S	171J-10305S	172J-10305S	171K-10305S	172K-10305S
599-10306S	6.3 (5.4)			171H-10306S	172H-10306S	171J-10306S	172J-10306S	171K-10306S	172K-10306S
599-10307S*	10 (8.6)		171H-10307S*	172H-10307S*	171J-10307S*	172J-10307S*	171K-10307S*	172K-10307S*	
599-10308S	6.3 (5.4)		3/4 (20)	171H-10308S	172H-10308S	171J-10308S	172J-10308S	171K-10308S	172K-10308S
599-10309S	10 (8.6)			171H-10309S	172H-10309S	171J-10309S	172J-10309S	171K-10309S	172K-10309S
599-10310S	16 (14)			171H-10310S	172H-10310S	171J-10310S	172J-10310S	171K-10310S	172K-10310S
599-10311S*	25 (22)			171H-10311S*	172H-10311S*	171J-10311S*	172J-10311S*	171K-10311S*	172K-10311S*

*Denotes a full-port valve with no flow characterizer insert.

Table 7. Product Numbers Fail-Safe Assemblies: Stainless Steel Ball and Stem (1-inch to 2-inch).




Valve Body Product Number *	Cv (Kvs)	Close-off ΔP PSI	Line Size Inches (mm)	Fail-Safe					
									
				2-Position GMA121.1P		Floating GMA131.1P		0 to 10 Vdc GMA161.1P	
				N.O.	N.C.	N.O.	N.C.	N.O.	N.C.
				Actuator Prefix Code					
				171E	172E	171F	172F	171G	172G
599-10312S	10 (9.0)	200 psi	1 (25)	171E-10312S	172E-10312S	171F-10312S	172F-10312S	171G-10312S	172G-10312S
599-10313S	16 (14)			171E-10313S	172E-10313S	171F-10313S	172F-10313S	171G-10313S	172G-10313S
599-10314S	25 (22)			171E-10314S	172E-10314S	171F-10314S	172F-10314S	171G-10314S	172G-10314S
599-10315S	40 (34)			171E-10315S	172E-10315S	171F-10315S	172F-10315S	171G-10315S	172G-10315S
599-10316S*	63 (54)			171E-10316S*	172E-10316S*	171F-10316S*	172F-10316S*	171G-10316S*	172G-10316S*
599-10317S	16 (14)		1 1/4 (30)	171E-10317S	172E-10317S	171F-10317S	172F-10317S	171G-10317S	172G-10317S
599-10318S	25 (22)			171E-10318S	172E-10318S	171F-10318S	172F-10318S	171G-10318S	172G-10318S
599-10319S	40 (34)			171E-10319S	172E-10319S	171F-10319S	172F-10319S	171G-10319S	172G-10319S
599-10320S	63 (54)			171E-10320S	172E-10320S	171F-10320S	172F-10320S	171G-10320S	172G-10320S
599-10321S*	100 (90)			171E-10321S*	172E-10321S*	171F-10321S*	172F-10321S*	171G-10321S*	172G-10321S*
599-10322S	25 (22)		1 1/2 (40)	171E-10322S	172E-10322S	171F-10322S	172F-10322S	171G-10322S	172G-10322S
599-10323S	40 (34)			171E-10323S	172E-10323S	171F-10323S	172F-10323S	171G-10323S	172G-10323S
599-10324S*	63 (54)			171E-10324S*	172E-10324S*	171F-10324S*	172F-10324S*	171G-10324S*	172G-10324S*
599-10325S	100 (90)			171E-10325S	172E-10325S	171F-10325S	172F-10325S	171G-10325S	172G-10325S
599-10326S*	160 (140)			171E-10326S*	172E-10326S*	171F-10326S*	172F-10326S*	171G-10326S*	172G-10326S*
599-10327S	40 (34)		2 (50)	171E-10327S	172E-10327S	171F-10327S	172F-10327S	171G-10327S	172G-10327S
599-10328S	63 (54)			171E-10328S	172E-10328S	171F-10328S	172F-10328S	171G-10328S	172G-10328S
599-10329S*	100 (90)			171E-10329S*	172E-10329S*	171F-10329S*	172F-10329S*	171G-10329S*	172G-10329S*
599-10330S	160 (140)			171E-10330S	172E-10330S	171F-10330S	172F-10330S	171G-10330S	172G-10330S

* Denotes a full-port valve with no flow characterizer insert.

NOTE: Use Table 8 to determine the effective Cv when using a full-port ball valve where the ball size and the lines size differ.

Table 8. Full-Port (no Flow Characterizer) Ball Valve Product Numbers and Flow Coefficients.

Valve Line Size in Inches (mm)	Valve Product Number	Effective (Installed) Cv (Kvs)										
		Supply Line Size in Inches (mm)										
		1/2 (13)	3/4 (20)	1 (25)	1-1/4 (32)	1-1/2 (38)	2 (51)	2-1/2 (63)	3 (76)	4 (102)	5 (127)	6 (152)
1/2 (15)	599-10307 or 599-10307S	10.00 (8.62)	6.94 (5.93)	6.19 (5.29)	—	—	—	—	—	—	—	—
3/4 (20)	599-10311 or 599-10311S	—	25.00 (21.55)	18.66 (15.95)	15.35 (13.12)	—	—	—	—	—	—	—
1 (25)	599-10316 or 599-10316S	—	—	63.00 (54.31)	39.78 (34.00)	33.56 (28.69)	—	—	—	—	—	—
1-1/4 (30)	599-10321 or 599-10321S	—	—	—	100.00 (86.21)	69.19 (59.13)	51.45 (43.98)	—	—	—	—	—
1-1/2 (40)	599-10324 or 599-10324S	—	—	—	—	63.00 (54.31)	55.34 (47.30)	51.00 (43.59)	—	—	—	—
	599-10326 or 599-10326S	—	—	—	—	160.00 (137.93)	93.80 (80.17)	76.34 (65.25)	—	—	—	—
2 (50)	599-10329 or 599-10329S	—	—	—	—	—	100.00 (86.21)	94.30 (80.60)	86.12 (73.61)	—	—	—

 = Valve may be oversized.
  = Optimal valve size.
  = Valve may be undersized.

Operation

The parabolic shape of the flow characterizer orifice (Figure 2) provides a slowly opening valve. Equal movements of the valve stem, at any point of the flow range, change the existing flow an equal percentage regardless of the existing flow. The ball valve equal percentage flow characteristic (Figure 3) mirrors the flow characteristic of a coil, resulting in linear heat transfer.

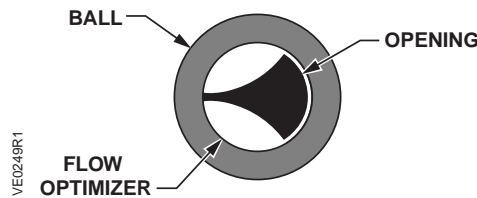


Figure 2. Ball Valve Flow Characterizer.

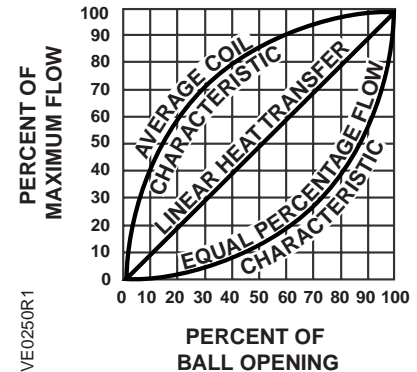


Figure 3. Ball Valve Equal Percentage Flow Control.

Mounting and Installation

Install the valve so that the flow follows the direction of the arrow cast on the valve body.

For added flexibility, the actuator mounting plate can be installed in any of the four (4) rotation angles relative to the valve body.

For best performance, install the valve assembly with the actuator above the valve body.

The valve and actuator assembly can be installed in a horizontal pipe in any position between vertical and 90°.

The ball valve also can be installed vertically.



CAUTION:

Do not install the valve assembly so that the actuator is below horizontal or upside-down.

See *Ball Valve Bracket Kit Installation Instructions* 129-496 for complete and proper installation and mounting instructions.

Allow sufficient space for servicing the valve and actuator. See Figure 5 and Table 9 for valve body dimensions and service envelope.

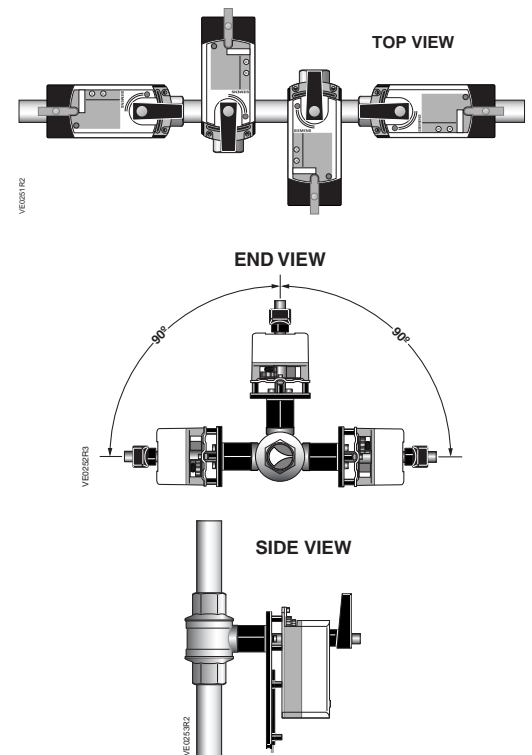


Figure 4. Mounting Positions.

Service

Replace the valve if inoperable.

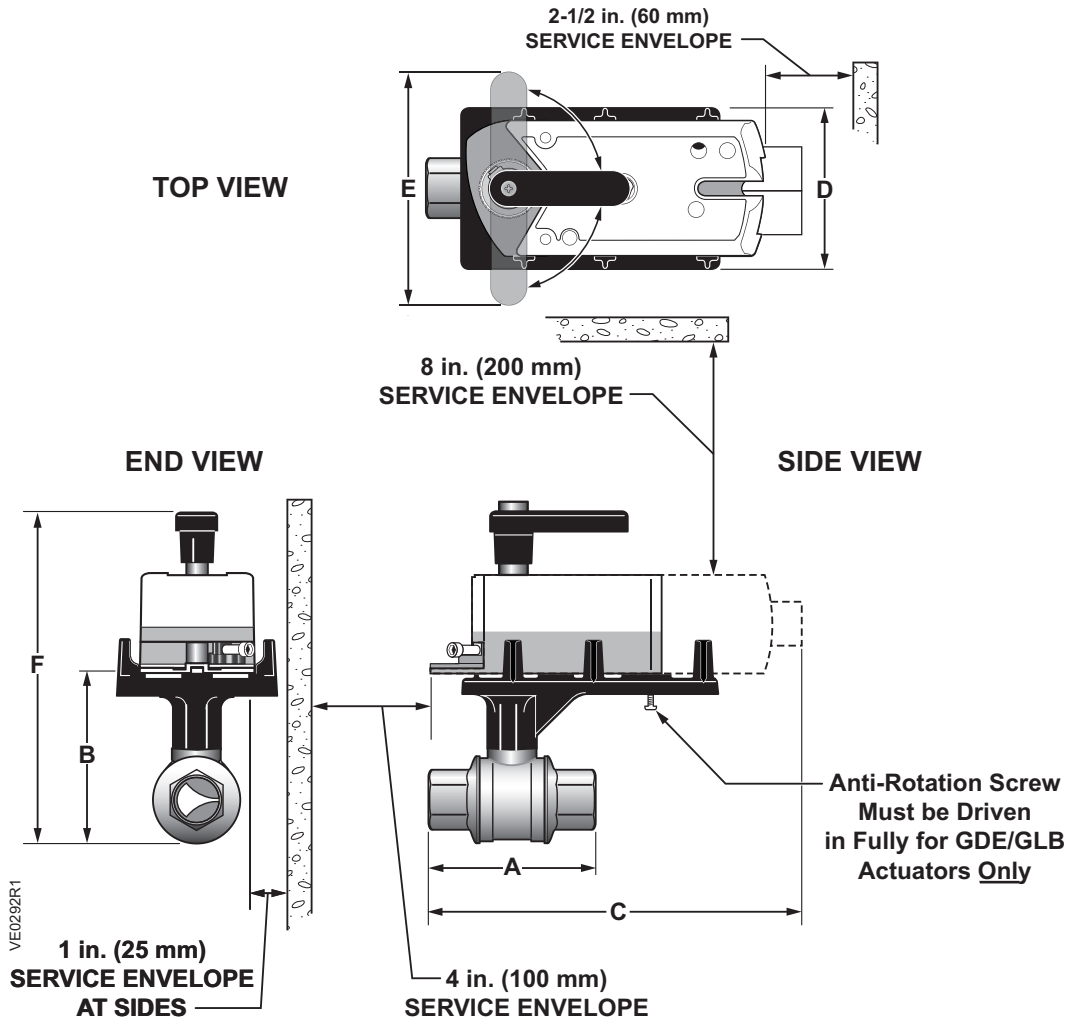


Figure 5. Dimensions with Actuator Mounted on Bracket.

NOTES:

- All dimensions are in inches (mm) and weights are in pounds (kg).
- Dimension D, Depth, is 3.7 inches (94.5mm).
- Dimension E, Handle, is 5.3 inches (135.9 mm).

Table 9. Dimensions in Inches (Millimeters) and Weights in lbs (Kg).

Line Size Inch (mm)	Cv Range	A Length	C Length * Actuator Codes 171A-D, 173A-D GDE/GLB	C Length * Actuator Codes 171H,J,K GQD	C Length* Actuator Codes 171E,F 172E,F Fail Safe GMA	F Height	Weight (kg)
1/2 (15)	0.4 to 10.0	2-7/16 (61)	6-11/16 (170)	6 (153)	-	7-5/8 (193)	.50 (.23)
3/4 (20)	6.3 to 25	2-3/4 (70)		6 (153)	-	8 (204)	.78 (.35)
1 (25)	10	3 (77)		-	8-3/8 (213)	8 (204)	.97 (.44)
	16	3-1/4 (82)	-	8-3/8 (213)	8-5/15 (212)	1.75 (79)	
	40, 63		1.19 (54)				
	25	3-7/8 (98)	7 (178)	-	8-11/16 (221)	8-13/16 (223)	1.19 (.54)
1-1/4 (30)	16	3-3/8(86)	6-11/16 (170)	-	8-7/16 (214)	8-3/8 (213)	1.41 (.64)
	25 to 100	3-11/16 (94)	6-15/16 (176)	-	8-11/16 (221)	8-13/16 (223)	1.81 (.82)
1-1/2 (40)	25, 63	3-5/8 (92)		-	8-7/16 (214)	8-13/16 (223)	1.19 (.54)
		40, 100, 160	3-15/16 (100)	-	8-3/4 (223)	9-1/4 (235)	2.50 (1.13)
2 (50)	40, 100	4 (102)	7-1/16 (180)	-		9-3/8 (238)	2.53 (1.14)
	63	4-5/8 (118)	7-1/2 (190)	-	9-1/8 (223)	10-1/16 (255)	4.66 (2.11)
	160			-			4.69 (2.13)

* Dimension "C" is maximum length, measured from the actuator, end fitting, or mounting plate, whichever extends the furthest.

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