

**CLARK SOLUTIONS****Two-Way & Three-Way Electronic Globe Valves***1/2" to 6", Two-State, Tri-State, Modulating***DESCRIPTION**

Clark Globe Valves 1/2" through 2" are bronze body, NPT screw type, and are rated for ANSI Class 250 working pressure. The operating temperature range (of the controlled medium) limits are 20° to 250°F. Valve stems are stainless steel and valve plugs are brass for water service and brass or stainless steel for steam service, depending on temperature and pressure requirements. Stem packing is EPDM O-ring or Teflon/EPDM, depending on temperature. 1/2" through 2" two-way valves are rated for 25 PSI differential for water applications and 15 PSI inlet for steam applications. 1/2" through 2" three-way valves are rated for 25 PSI differential. Optional trim materials are available for higher temperature/pressure applications. Flow type for two-way valves is equal percentage or modified equal percentage for water or steam applications. Flow type for three-way valves is linear and all screwed valves meet ANSI class IV leakage standards (not to exceed 0.01% of Cv).

Globe Valves 2-1/2" through 6" are cast iron body, flanged, and rated for ANSI Class 125 working pressure. The operating temperature range (of the controlled medium) is 20° to 250°F for water and/or low pressure steam applications (up to 15 PSI inlet pressure) with normal duty packing and up to 337°F maximum temperature with optional Teflon/EPDM V-ring packing for higher pressure steam and hot water. Valve stems are stainless steel and valve plugs are brass or stainless steel. Stem packing is EPDM O-rings or optional Teflon/V-ring/EPDM O-ring. Two-way standard valves are rated for 25 PSI differential pressure for water applications and 15 PSI differential pressure for steam applications (50 PSI differential with optional stem packing and stainless steel trim). Three-way valves are rated for 25 PSI differential (optional trim for 50 PSI differential). Flow type for two-way valves are equal percentage or modified equal percentage for water applications. Flow type for three-way valves are modified equal percentage or linear. All flanged valves meet ANSI Class IV leakage standards (not to exceed 0.01% of Cv).

Available actuators are modulating, floating (tri-state), or two-position type with or without spring return as required for the application. Each valve actuator has current limiting or stall detection circuitry incorporated into its design to prevent damage to the actuator. A gear release or manual override crank is provided on the motor to allow for manual override. The actuators are powered by a 24 VAC, 120 VAC or 24 VDC power source. Actuators are UL listed.

**Table A**

Specifications	1/2 to 2", Two and Three-way			Flanged 2 1/2 to 6", Two and Three-way		
Flow Characteristics	Two-way: Equal Percentage, Three-way: Linear			Two-Way: Equal Percentage, Three-Way: Mod. Equal Percentage or Linear		
Valve Body Rating	ANSI Class 250, ANSI Leakage Class IV			ANSI Class 125, ANSI Leakage Class IV (ANSI 250 available)		
Max. Recommended Inlet Pressure	Two-Way: Water 365 PSI@250°F, Steam 15 PSI Three-Way: Mixing 365 PSI@250°F, Diverting 335 PSI@300°F			Two-Way: Water 150 PSI @ 250°F, Steam: 15 PSI, 100 PSI for "-ST" only Three-Way: Mixing 150 PSI @ 250°F, Diverting (2-1/2" to 5") 140 PSI @ 300°F (6" to 8") 140 PSI @ 150°F		
Max. Recommended Diff. Pressure	Two-Way: Water 25 PSI, Steam: 15 PSI, 50 PSI for "-ST" only Three-Way: Mixing 25 PSI, Diverting 50 PSI			Two-Way: Water 25 PSI, Steam: 15 PSI, 50 PSI for "-ST" only Three-Way: Mixing 25 PSI, Diverting 50 PSI		
Maximum Close-off Pressure	See Tables B & C					
Operating Temperature Range	Two and Three-Way Mixing: 20°F to 250°F (-7°C to 121°C) Three-Way Diverting: 32°F to 300°F (0°C to 149°C)			Two and Three-Way Mixing: 20°F to 250°F (-7°C to 121°C) Three-Way Diverting: (2-1/2" to 5") 32°F to 300°F (0°C to 149°C), (6" to 8") 32°F to 150°F (0°C to 66°C)		
Materials	Standard	"-SS"	"-ST"	Standard	"-SS"	"-ST"
Body	Bronze	Bronze	Bronze	Cast Iron	Cast Iron	Cast Iron
Stem	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Packing (Two and Three-Way)	EPDM O-Ring	EPDM O-Ring	Teflon / EPDM V-Ring	EPDM O-Ring	EPDM O-Ring	Teflon / EPDM V-Ring
Packing (Three-Way Diverting)	TFE V-Ring	-	-	TFE V-Ring	-	-
Trim	Bronze	Stainless Steel	Stainless Steel	Bronze	Stainless Steel	Stainless Steel
Seat	Single, metal to metal					
Connections	Female NPT			Flanged Ends		



**Globe Valve with actuator in Weatherproof Enclosure and Globe Valve with Flange mounting**



Size (NPT)	Two-Way		Three-Way		Actuator Model Number/Minimum Close-Off Pressure (PSI)						
	Cv	Valve Model	Cv	Valve Model	EN44-NP	EN44	EN88	EN62	ES75	EN132	ES142
1/2"	1.0	GS2A-1.0	1.0	GS3A-1.0	143	143	>250	201	244	>250	>250
1/2"	1.6	GS2A-1.6	1.6	GS3A-1.6	143	143	>250	201	244	>250	>250
1/2"	2.5	GS2A-2.5	2.5	GS3A-2.5	143	143	>250	201	244	>250	>250
1/2"	4.0	GS2A-4.0	4.0	GS3A-4.0	143	143	>250	201	244	>250	>250
3/4"	6.3	GS2A-6.3	6.3	GS3A-6.3	83	83	167	117	142	250	>250
1"	10	GS2A-10	10	GS3A-10	59	59	118	83	100	177	190
1 1/4"	16	GS2A-16	16	GS3A-16	39	39	78	55	67	117	127
1 1/2"	25	GS2A-25	25	GS3A-25	27	27	53	38	45	79	86
2"	40	GS2A-40	40	GS3A-40	-	-	33	23	28	49	54

Size (NPT)	Two-Way		Three-Way Mixing		Three-Way Diverting		Actuator Model Number/Minimum Close-Off Pressure (PSI)				
	Cv	Valve Model	Cv	Valve Model	Cv	Valve Model	ES142	EN177	EN310	Dual ES142	Dual EN310
2 1/2"	63	GF2A-63	63	GF3A-63	68	GFD3A-68	41	51	89	81	178
3"	100	GF2A-100	100	GF3A-100	85	GFD3A-85	26	33	58	52	115
4"	160	GF2A-160	160	GF3A-160	160	GFD3A-160	10	12	21	19	42
5"	250	GF2A-250	250	GF3A-250	195	GFD3A-195	-	-	14	12	27
6"	400	GF2A-400	400	GF3A-400	270	GFD3A-270	-	-	9	9	19

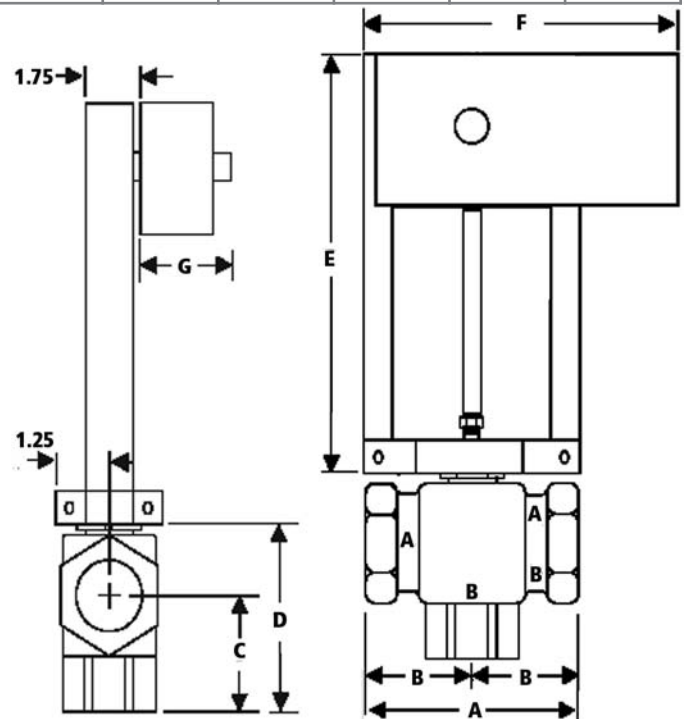
## DIMENSIONS (INCHES)

Size	Model	Dimensions (inches)			
		A	B	C	D
1/2"	GS2A-Cv	2.75	1.38	1.13	2.94
3/4"	GS2A-6.3	3.25	1.63	1.00	3.94
1"	GS2A-10	3.75	1.88	1.50	3.75
1 1/4"	GS2A-16	5.00	2.50	1.63	4.13
1 1/2"	GS2A-25	5.06	2.53	2.00	4.28
2"	GS2A-40	6.13	3.06	2.44	4.56

Three-Way Valve (Mixing)					
Size	Model	A	B	C	D
1/2"	GS3A-Cv	2.88	1.44	2.13	4.31
3/4"	GS3A-6.3	3.25	1.63	2.19	4.31
1"	GS3A-10	3.88	1.94	2.38	4.50
1 1/4"	GS3A-16	4.88	2.44	2.36	4.63
1 1/2"	GS3A-25	5.19	2.59	2.88	4.63
2"	GS3A-40	6.25	3.13	3.31	4.75

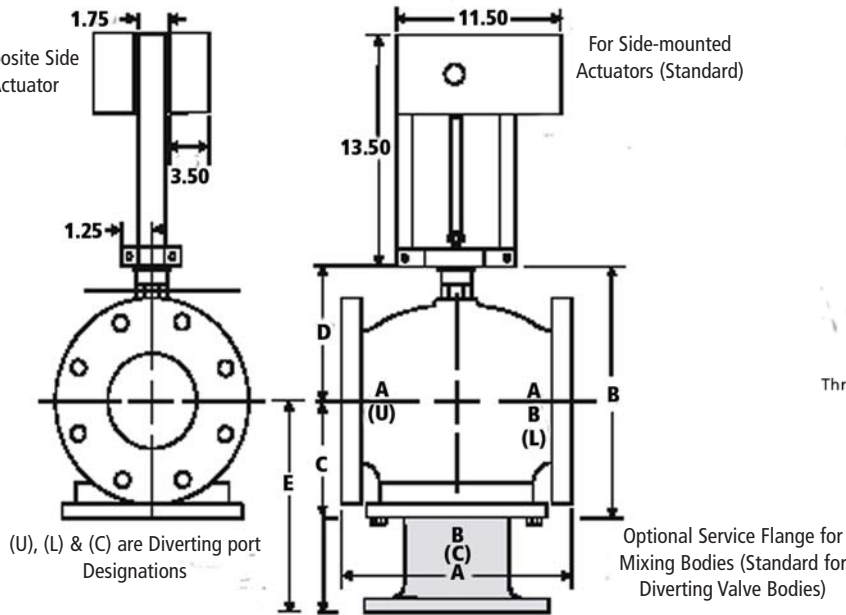
Actuator	Linkage Type*	Dimensions (inches)		
		E	F	G
Spring Return				
ES62	Low	11.3	11.5	3.5
ES75	Low	11.3	11.5	3.5
ES142	Low	11.3	11.5	3.5
Non-Spring Return				
EN44/88	Zone	9.5	7.5	3.5
EN132	Low	11.3	11.5	3.5
EN177	Low	11.3	11.5	3.5
EN310	Med	13.5	11.5	3.5



\*The linkage is constructed of high strength extruded aluminum alloy, torque tested to over 1200 in-lbs. Dual units are rated for continuous use at 800 in-lbs. The linkage connects valve and actuator and converts the rotary action of the actuator to linear motion. "Zone" covers torque requirements to 90 in-lb, "Low" to 200 in-lb and

"Med" to 800 in-lb. Extra long (XL) legs are available for high temperature applications and shorter legs for applications where space is limited. Call for application assistance.

Add 3.85" Width to Opposite Side of Assembly for Dual Actuator Assemblies



Two-Way Valve, 2 1/2 to 6"												
Size	Cv	Model No.	A	B	C	Flanges		Drilling		Machine Bolts		
						Dia.	Thick.	DBC**	Dia.	Qty.	Dia.	Lgth.
2 1/2"	63	GF2A-63	10 7/8	11	4 7/8	7	3/4	5.5	3/4	4	5/8	2.50
3"	100	GF2A-100	11 3/4	12 1/4	5 5/16	7 1/2	7/8	6.0	3/4	4	5/8	2.50
4"	160	GF2A-160	13 7/8	13 9/16	6 5/16	9	1	7.5	3/4	8	5/8	3.00
5"	250	GF2A-250	15 3/4	15 3/16	7	10	1	8.5	7/8	8	3/4	3.00
6"	400	GF2A-400	17 3/4	16 3/4	7 7/8	11	1	9.5	7/8	8	3/4	3.25

Three-Way Mixing Valve, 2 1/2 to 6"												
Size	Cv	Model No.	A	B	C	Flanges		Drilling		Machine Bolts		
						Dia.	Thick.	DBC**	Dia.	Qty.	Dia.	Lgth.
2 1/2"	63	GF3A-63	10 7/8	9 3/8	3 3/4	7	11/16	5.5	3/4	4	5/8	2.50
3"	100	GF3A-100	11 3/4	10 3/4	4 3/8	7 1/2	3/4	6.0	3/4	4	5/8	2.50
4"	160	GF3A-160	13 7/8	12 1/2	5 1/8	9	15/16	7.5	3/4	8	5/8	3.00
5"	250	GF3A-250	15 3/4	13 3/4	5 3/4	10	15/16	8.5	7/8	8	3/4	3.00
6"	400	GF3A-400	17 3/4	15 1/2	6 5/8	11	1	9.5	7/8	8	3/4	3.25

Three-Way Diverting Valve, 2 1/2 to 6"												
Size	Cv	Model No.	A	D*	E	Flanges		Drilling		Machine Bolts		
						Dia.	Thick.	DBC**	Dia.	Qty.	Dia.	Lgth.
2 1/2"	68	GFD3A-68	9	5 1/2	7 1/8	7	11/16	5.5	3/4	4	5/8	2.50
3"	85	GFD3A-85	10	6 1/8	8	7 1/2	3/4	6.0	3/4	4	5/8	2.50
4"	160	GFD3A-160	13	7 1/8	9 7/8	9	15/16	7.5	3/4	8	5/8	3.00
5"	195	GFD3A-195	12	7 1/2	10 1/2	10	15/16	8.5	7/8	8	3/4	3.00
6"	270	GFD3A-270	14 1/8	7 7/8	11 1/8	11	1	9.5	7/8	8	3/4	3.25

\* "D" dimension applies to three-way diverting bodies only

\*\* DBC=Diameter of Bolt Circle

## ORDERING INFORMATION

1) REVIEW OUR MOTOR ACTUATED CONTROL VALVE APPLICATION GUIDE (PAGESXXX)

2) SPECIFY ACTUATOR MODEL NUMBER (FIRST SELECT BASE ACTUATOR FROM TABLES B & C, THEN SEE SPECIFIC ACTUATOR SPECIFICATION SHEETS TO DETERMINE COMPLETE MODEL NUMBER)

Non-Spring Return Actuators

EN44 & EN88: \*Pages xx-xx

EN132, EN177 & EN310: \*Pages xx-xx

Spring Return Actuators

ES62, ES75 & ES142: \*Pages xx-xx

\* From [www.clarksol.com](http://www.clarksol.com) use hyperlinks

3) SPECIFY VALVE MODEL NUMBER (SEE TABLES BELOW)

A-B-C

Example: EN88C2 - GS2A-16-WP

(Actuator) (Valve)

A Valve Base Model Number	B Optional Materials See Table A	C Other Options
See Tables B & C Standard Materials are : Body: Cast Iron Trim: Bronze Stem: Stainless Steel Packing: EPDM Seat: Single, Metal to Metal	- = Standard SS = "SS" materials ST = "ST" materials	WP=NEMA 4/4x Actuator Enclosure WS=Weather Shield