

GV-Flanged

Series 56

Globe Valve, Cast Iron Body, ANSI 125# Flanged

Pneumatic Low Pressure

Description

The GV Series 56 low pressure pneumatic assemblies are available in spring return two-way and three-way configurations 2½" - 6". Two-way assemblies are complete with cast iron bodies, brass plug, EPDM O-ring, and mounted with a spring return pneumatic actuator. Three-way mixing assemblies are complete with cast iron bodies, brass plug, and mounted with a spring return pneumatic actuator. Three-way diverting assemblies are complete with cast iron bodies, stainless plug, and mounted with a spring return pneumatic actuator.

Operation

Valve assemblies with pneumatic actuators are powered by low pressure air. Each actuator is controlled by either on/off or modulating commands. All pneumatic assemblies fail with the valve stem up. Two-way valves are available stem up, either in normally open or normally closed configurations. Three-way mixing and diverting valves also fail stem up and must be piped according to the coil application. All valve assemblies are factory mounted, tested, and calibrated.

Actuator Performance

Compact sizes available in 50" and 100" effective area
Rugged die cast aluminum housing
Replaceable bead molded neoprene diaphragm
NEMA 1, type for indoor locations only
Retracts actuator shaft and raises valve stem on loss of pressure
Minimum air pressure is 20 psi, maximum is 30 psi
Temperature limitations: operating -40° to +220° F
Air connections 1/8" NPT
On/Off or modulating controls available (3-15 psi input)
1 year warranty

Standard Valve Specifications

2-Way Specifications

Service: Chilled or Hot Water, 50% Glycol, Steam 35 psi max.
Flow Type: Equal Percentage
Stem Up Open Port A to AB N.O., Stem Up Closed A to AB N.C.
ANSI Class: 125 (200 psi below 150°F)
Leakage ANSI Class IV
Media Temp. Range: 40°F to 281°F (-4°C to 138°C)
Maximum Differential: Water 35 psi, Steam 20 psi

3-Way Mixing Specifications

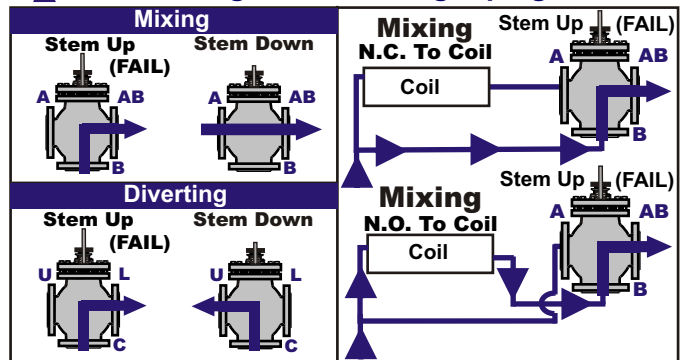
Service: Chilled or Hot Water, 50% Glycol
Flow Characteristic: Linear
Stem Up Open Port B to AB
ANSI Class: 125 (200 psi below 150°F)
Leakage ANSI Class III
Media Temp. Range: 40°F to 300°F (4°C to 149°C)
Maximum Differential: Water 35 psi

3-Way Diverting Specifications

Service: Chilled or Hot Water, 50% Glycol
Flow Type: Diverting
Stem Up Open Port C to L
ANSI Class: 125 (200 psi below 150°F)
Leakage ANSI Class III
Media Temp. Range: 40°F to 300°F (-7°C to 149°C)
Maximum Differential: Water 35 psi



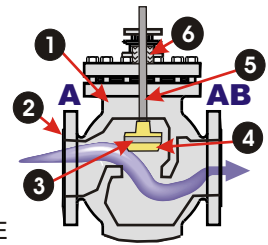
Stem Arrangement / Mixing Piping



Standard Valve Construction

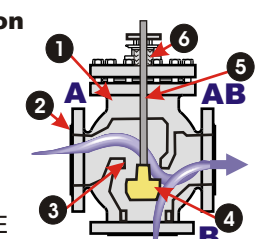
2-Way Construction

- 1 Body: Cast Iron
- 2 Connection: Flanged 125#
- 3 Seat: EPDM O-Ring
- 4 Plug: Brass
- 5 Stem: Stainless Steel
- 6 Packing: Spring Loaded PTFE



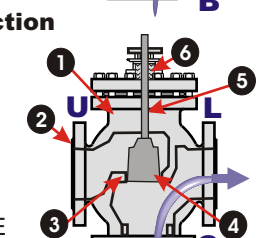
3-Way Mixing Construction

- 1 Body: Cast Iron
- 2 Connection: Flanged 125#
- 3 Seat: Bronze
- 4 Plug: Brass
- 5 Stem: Stainless Steel
- 6 Packing: Spring Loaded PTFE



3-Way Diverting Construction

- 1 Body: Cast Iron
- 2 Connection: Flanged 125#
- 3 Seat: Bronze
- 4 Plug: Stainless Steel
- 5 Stem: Stainless Steel
- 6 Packing: Spring Loaded PTFE



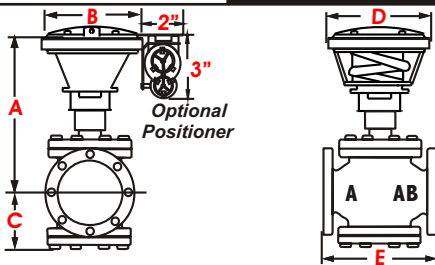
GV - Flanged Series 56



2-Way Normally Open

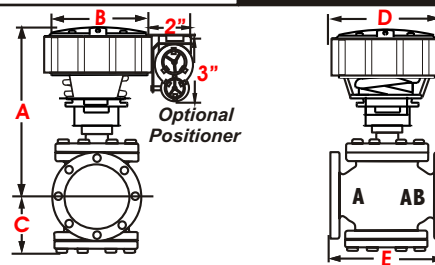
Dimensional Data

A1 Drawing Number 50" Area Actuator



Size	Wt.	A	B	C	D	E
2 1/2"	90	16-1/4	10-15/16	3-1/2	10-15/16	8-1/2
3"	110	16-5/8	10-15/16	3-3/4	10-15/16	9-1/2
4"	160	17-7/8	10-15/16	4-1/2	10-15/16	11-1/2

A2 Drawing Number 100" Area Actuator



Size	Wt.	A	B	C	D	E
2 1/2"	150	20-3/4	10-15/16	3-1/2	10-15/16	8-1/2
3"	167	21-1/2	10-15/16	3-3/4	10-15/16	9-1/2
4"	215	22-3/8	10-15/16	4-1/2	10-15/16	11-1/2
5"	230	25-7/8	10-15/16	5.0	10-15/16	13.0
6"	299	26-1/2	10-15/16	5-1/2	10-15/16	14.0

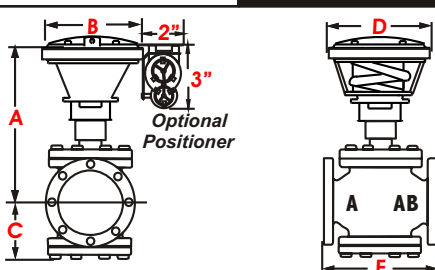
Standard Assembly, Cast Iron Body, Brass Plug, EPDM O-Ring, On/Off. Valve Fails Stem Up Normally Open A to AB.
Modulating Service: Change Last O to P in Model Number. Assemblies Available With Positioners are Marked Below With Mod.

Size (inch)	C _v	Temperature Control Assembly	50" Area Diaphragm Mod.				100" Area Diaphragm Mod.				100" Area Diaphragm Mod.						
			Drawing Number	Spring Range	3-8	5-10	8-13	Drawing Number	Spring Range	3-8	5-10	8-13	Drawing Number	Spring Range	3-8	5-10	8-13
				Part Number	1AO	1BO	1CO		Part Number	3AO	3BO	3CO		Part Number	5AO	5BO	5CO
2 1/2"	56	GV225FX56	A1	Close	110	80	50	A2	Close	125	125	125		Close			
3"	85	GV203FX56	A1	Close	70	60	40	A2	Close	125	125	90		Close			
4"	145	GV204FX56	A1	Close	40	30	20	A2	Close	89	73	48		Close			
5"	235	GV205FX56		Close				A2	Close				A2	Close	50	40	30
6"	350	GV206FX56		Close				A2	Close				A2	Close	35	30	20

2-Way Normally Closed

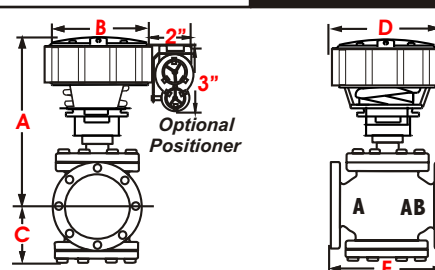
Dimensional Data

A1 Drawing Number 50" Area Actuator



Size	Wt.	A	B	C	D	E
2 1/2"	90	15-7/8	10-15/16	4-1/8	10-15/16	8-1/2
3"	110	16-1/4	10-15/16	4-1/8	10-15/16	9-1/2
4"	160	16-7/8	10-15/16	5-1/16	10-15/16	11-1/2

A2 Drawing Number 100" Area Actuator



Size	Wt.	A	B	C	D	E
2 1/2"	150	20-3/4	10-15/16	4-1/8	10-15/16	8-1/2
3"	167	21.0	10-15/16	4-1/8	10-15/16	9-1/2
4"	215	21-5/8	10-15/16	5-1/16	10-15/16	11-1/2
5"	230	24-1/2	10-15/16	6-3/4	10-15/16	13.0
6"	299	25-1/2	10-15/16	7-3/8	10-15/16	14.0

Standard Assembly, cast Iron Body, Brass Plug, EPDM O-Ring, On/Off. Valve Fails Stem Up Normally Closed A to AB.
Modulating Service: Change Last O to P in Model Number. Assemblies Available With Positioners are Marked Below With Mod.

Size (inch)	C _v	Temperature Control Assembly	50" Area Diaphragm Mod.				100" Area Diaphragm Mod.				100" Area Diaphragm Mod.						
			Drawing Number	Spring Range	3-8	5-10	8-13	Drawing Number	Spring Range	3-8	5-10	8-13	Drawing Number	Spring Range	3-8	5-10	8-13
				Part Number	2AO	2BO	2CO		Part Number	4AO	4BO	4CO		Part Number	6AO	6BO	6CO
2 1/2"	56	GV225FX56	A1	Close	12	33	60	A2	Close	30	60	120		Close			
3"	85	GV203FX56	A1	Close	7	22	40	A2	Close	20	40	90		Close			
4"	145	GV204FX56	A1	Close		11	20	A2	Close	10	25	49		Close			
5"	235	GV205FX56		Close				A2	Close				A2	Close	4	17	30
6"	350	GV206FX56		Close				A2	Close				A2	Close	2	11	20

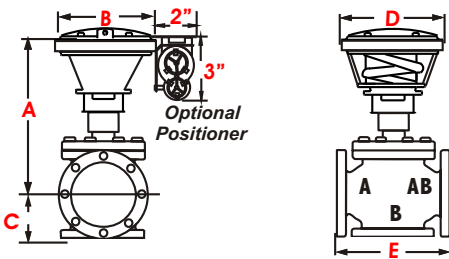
GV - Flanged Series 56



Dimensional Data

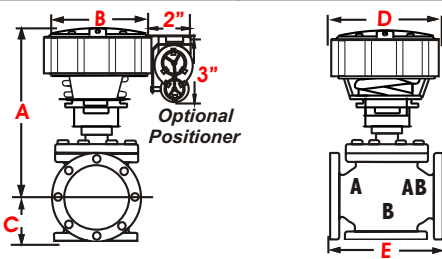
3-Way Mixing

A1 Drawing Number 50" Area Actuator



Size	Wt.	A	B	C	D	E
2 1/2"	100	15-5/8	10-15/16	5-3/8	10-15/16	8-1/2
3"	118	16-1/4	10-15/16	6-3/8	10-15/16	9-1/2
4"	175	16-7/8	10-15/16	8-1/2	10-15/16	11-1/2

A2 Drawing Number 100" Area Actuator



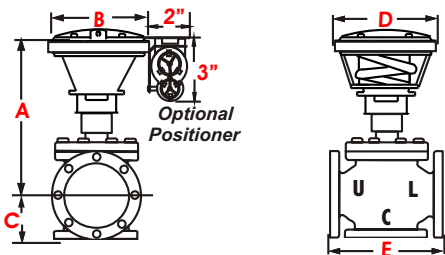
Size	Wt.	A	B	C	D	E
2 1/2"	158	20-3/4	10-15/16	5-3/8	10-15/16	8-1/2
3"	177	21.0	10-15/16	6-3/8	10-15/16	9-1/2
4"	234	21-5/8	10-15/16	8-1/2	10-15/16	11-1/2
5"	255	24-1/2	10-15/16	8-3/4	10-15/16	13.0
6"	311	25-1/2	10-15/16	9-3/4	10-15/16	14.0

Standard Assembly, Cast Iron Body, Brass Plug, Bronze Seat, On/Off. Valve Fails Stem Up Normally Open B to AB.
 Modulating Service: Change Last O to P in Model Number. Assemblies Available With Positioners are Marked Below With Mod.

Size (inch)	CV	Temperature Control Assembly	6" Area Diaphragm						6" Area Diaphragm						6" Area Diaphragm													
			Mod.		Mod.		Mod.		Mod.		Mod.		Mod.		Mod.		Mod.											
			Spring Range	3-7	5-10	8-13	Spring Range	3-7	5-10	8-13	Spring Range	3-7	5-10	8-13														
2 1/2"	74	GVM25FX56	A1	Close	10	110	30	91	60	60	A2	Close	30	150	60	125	120	150										
3"	101	GVM03FX56	A1	Close	5	75	20	62	40	40	A2	Close	30	150	40	125	90	90										
4"	170	GVM04FX56	A1	Close			10	33	20	22	A2	Close	10	89	25	73	49	48										
5"	290	GVM05FX56		Close								Close							A2	Close	5	56	15	45	30	30		
6"	390	GVM06FX56		Close								Close							A2	Close	3	38	10	30	20	20		

3-Way Diverting

A1 Drawing Number 50" Area Actuator



Size	Wt.	A	B	C	D	E
2 1/2"	100	17-1/8	10-15/16	7.0	10-15/16	9.0
3"	118	18.0	10-15/16	8.0	10-15/16	10.0
4"	175	21-1/8	10-15/16	10.0	10-15/16	12.0
5"	190	21-3/4	10-15/16	10-1/2	10-15/16	13.0
6"	298	22-3/8	10-15/16	11-1/8	10-15/16	14-1/8

Dimensional Data

Standard Assembly, Cast Iron Body, Stainless Plug, Bronze Seat, On/Off. Valve Fails Stem Up Normally Open C to L.
 Modulating Service: Change Last O to P in Model Number. Assemblies Available With Positioners are Marked Below With Mod.

Size (inch)	CV	Temperature Control Assembly	50" Area Diaphragm											
			Mod.		Mod.		Mod.							
			Spring Range	5-10	8-13	Spring Range	5-10	8-13						
2 1/2"	68	GVD25FX56	A1	Close	100	100	100	100						
3"	85	GVD03FX56	A1	Close	100	100	100	100						
4"	160	GVD04FX56	A1	Close			125	125						
5"	195	GVD05FX56		Close			125	125						
6"	250	GVD06FX56		Close			125	125						

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 Memphis, Tn. 38118

VALVES ★ ACTUATORS ★ ACCESSORIES

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GV-Flanged Series 56



Engineering / Order Code

Water Capacity Sizing Table in Gallons Per Minute, GPM

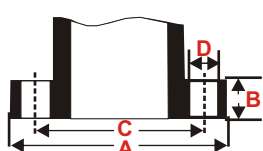
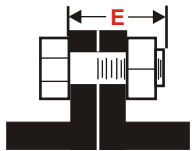
C _v	Size		Pressure Drop Across Valve									
	In	Config.	1 psi	2 psi	3 psi	4 psi	5 psi	6 psi	7 psi	8 psi	9 psi	10 psi
56	2-1/2"	2-way	56	79	97	112	125	137	148	158	168	177
85	3"	2-way	85	120	147	170	190	208	225	240	255	269
145	4"	2-way	145	205	251	290	324	355	384	410	435	459
235	5"	2-way	235	332	407	470	525	576	622	665	705	743
350	6"	2-way	350	495	606	700	783	857	926	990	1050	1107
74	2-1/2"	Mixing	74	105	128	148	165	181	196	209	222	234
101	3"	Mixing	101	143	175	202	226	247	267	286	303	319
170	4"	Mixing	170	240	294	340	380	416	450	481	510	538
290	5"	Mixing	290	410	502	580	648	710	767	820	870	917
390	6"	Mixing	390	552	675	780	872	955	1032	1103	1170	1233
68	2-1/2"	Diverfing	68	96	118	136	152	167	180	192	204	215
85	3"	Diverfing	85	120	147	170	190	208	225	240	255	269
160	4"	Diverfing	160	226	277	320	358	392	423	453	480	506
195	5"	Diverfing	195	276	338	390	436	478	516	552	585	617
250	6"	Diverfing	250	354	433	500	559	612	661	707	750	791

Saturated Steam Capacity Sizing Table in Pounds Per Hour (2-Way valves only)

Inlet pressure	2#		5#		10#		15#		20#		25#		30#		35#	
	On/Off 10% of P1 ΔP=0.2	Mod. 80% of P1 ΔP=1.6	On/Off 10% of P1 ΔP=0.5	Mod. 80% of P1 ΔP=0.4	On/Off 10% of P1 ΔP=0.1	Mod. 80% of P1 ΔP=0.8	On/Off 10% of P1 ΔP=1.5	Mod. 80% of P1 ΔP=1.2	On/Off 10% of P1 ΔP=2.0	Mod. 42% of P1 ΔP=1.4	On/Off 10% of P1 ΔP=2.5	Mod. 42% of P1 ΔP=1.6	On/Off 10% of P1 ΔP=3.0	Mod. 42% of P1 ΔP=1.8	On/Off 10% of P1 ΔP=3.5	Mod. 42% of P1 ΔP=2.0
56	305	826	521	1331	818	1942	1093	2448	1359	2877	1620	3292	1879	3706	2136	4121
85	463	1253	790	2021	1241	2947	1658	3716	2062	4367	2459	4997	2852	5626	3243	6255
145	790	2138	1348	3447	2118	5028	2829	6340	3518	7450	4195	8524	4865	9597	5532	10670
235	1281	3465	2184	5587	3432	8149	4585	10275	5701	12074	6799	13814	7885	15554	8965	17294
350	1907	5161	3253	8321	5112	12136	6829	15303	8491	17983	10126	20574	11744	23165	13352	25756

When sizing steam valves, different pressure drops are used depending on if the control valve is on/off or modulating. All inlet pressure columns have two sub columns. The left sub column is for on/off control and the right sub column is for modulating control. For on/off control, always use a minimum of 10% of inlet pressure (psig). The modulating control pressure drop takes into account the compressibility of high or low pressure steam for precision control. For modulating with less than 15 psig steam, it is best to use 80% of gauge inlet pressure. For higher pressure steam greater than 15 psig, it is best to use 42% of the absolute inlet pressure. To size the steam valve, determine the inlet steam pressure. If it falls between two numbers select the larger of the two. Follow either the on/off or modulating sub columns down until you see the closest number to the required #/hr of steam. Again, if it falls between two numbers pick the larger of the two. Follow the row to the far left to obtain the C_v of the valve that will pass the desired #/hr of steam.

Flange Dimensions ANSI 125#



Size	Flange Diameter A	Flange Thickness B	Diameter of Bolt circle C	Diameter of Bolt Holes D	Number of Bolts	Diameter of Bolts	Length of Bolt E
2 1/2"	7"	11/16"	5 1/2"	3/4"	4	5/8"	2 1/2"
3"	7 1/2"	3/4"	6"	3/4"	4	5/8"	2 1/2"
4"	9"	15/16"	7 1/2"	3/4"	8	5/8"	3"
5"	10"	15/16"	8 1/2"	7/8"	8	3/4"	3"
6"	11"	1"	9 1/2"	7/8"	8	3/4"	3 1/4"

Assembly Number

Standard Construction



Globe Valve Assembly, 2-Way, 4" C_v = 145, 125# Flanged Ends, Cast Iron Body, Brass Plug, Spring Return Low Pressure Pneumatic Actuator, Spring Range 3-8, Pilot Positioner 3-15 psi input.

#	ITEM	CODE	DESCRIPTION	#	ITEM	CODE	DESCRIPTION
1 & 2	Series	GV	Globe Valve	6	Valve Type	F	125# Flanged
3	Assembly	2	2-Way Configuration	7	Construction	X	Cast Iron Body-Bronze Plug
		M	3-Way Mixing	Y		Cast Iron Body-Stainless Plug	
		D	3-Way Diverfing	8 & 9	Actuator	56	Spring Return 20 psi min.
		4 & 5	Size	25	2 1/2"	10	Actuator Size
03	3"	11		Spring Range	A	3-7, 3-6	
04	4"				B	5-10	
05	5"				C	8-13, 10-13	
		06	6"	12	Controls	O	On/Off
						P	Pilot Positioner (3-15 input)

3-way Stem Arrangements Are Located On Front Of Brochure

4575 Damascus Rd.
Memphis, Tn. 38118

VALVES ★ ACTUATORS ★ ACCESSORIES

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