Greater Force and Flexibility

Globe Valves

5

5-year warran

BELIMO

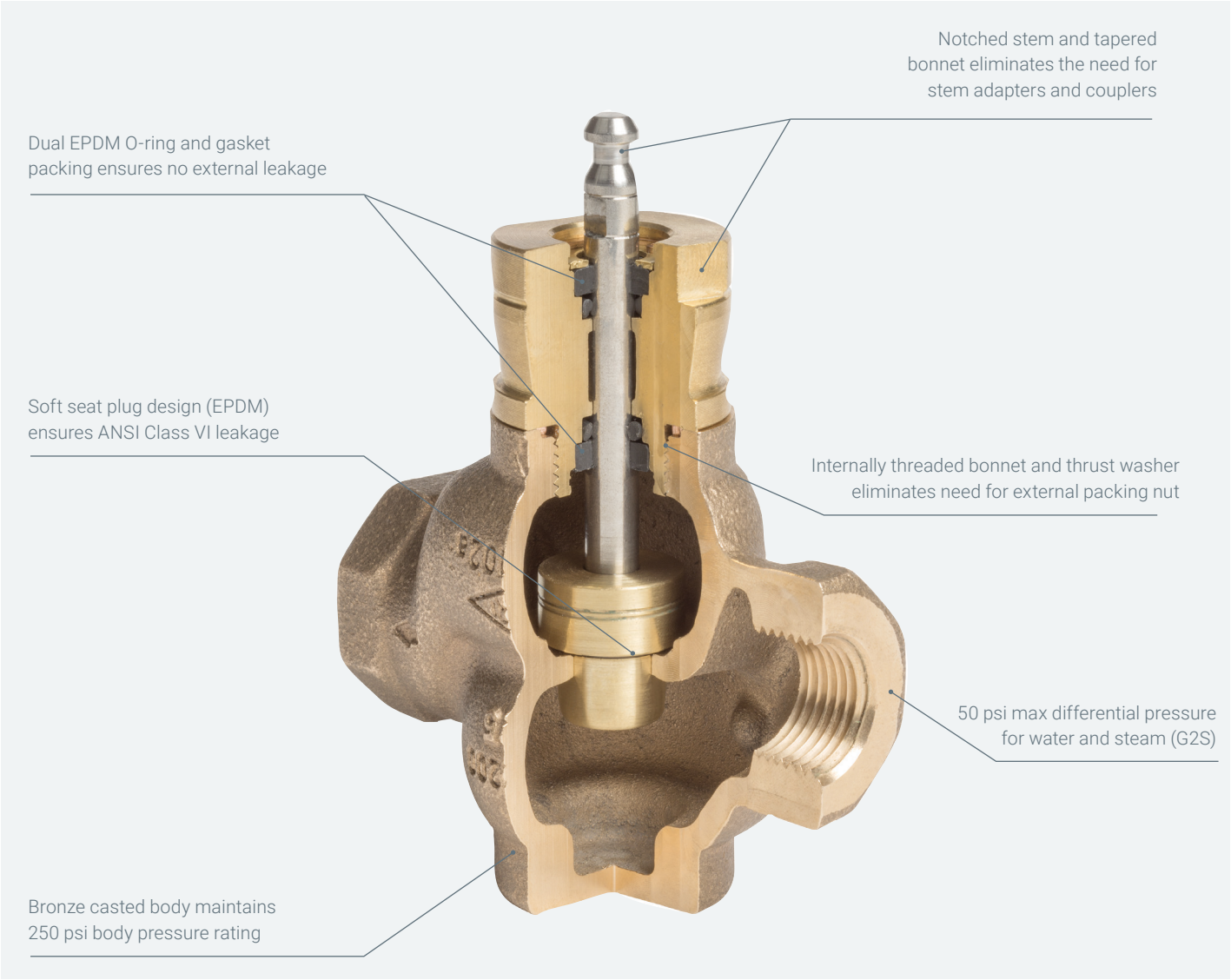
Globe Valve

Globe Valve

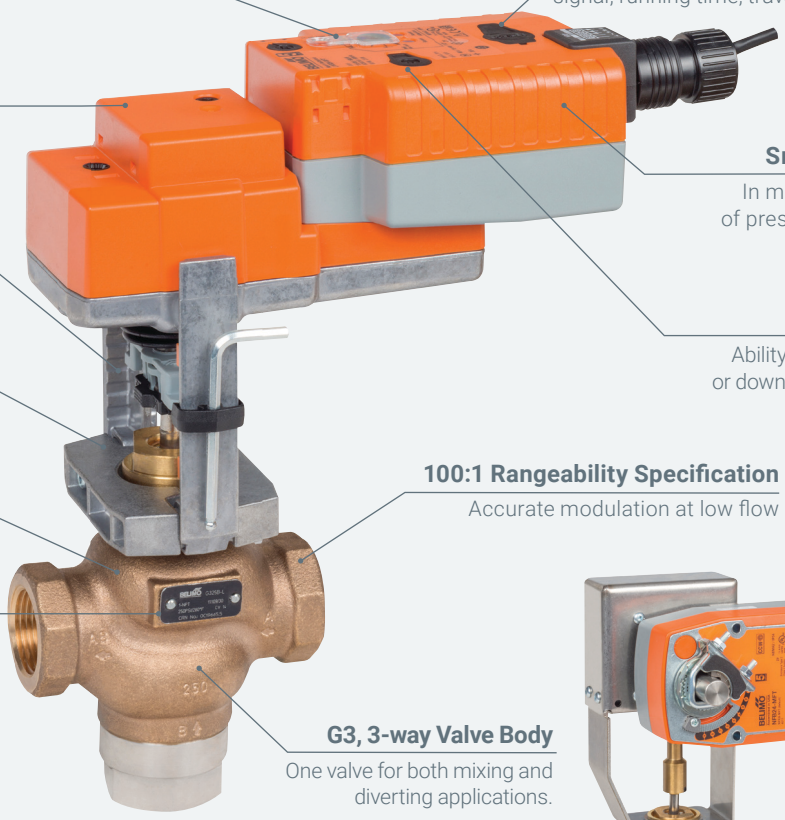
The Belimo globe valve assemblies provide high close-off pressure, precise positioning, easy installation, field adjustability, and reliable operation. The G2B, G2S and G3B series NPT threaded globe valves are easy to identify with the Belimo metal name plate stating the rating and certification details. They feature ANSI Class VI leakage to ensure tight close-off, accurate modulation at low flow with rangeability rating of 100:1, and pressure compensated valve design for 2-way valve bodies to achieve specified close-off with low actuator torque. G2S series with maximum 50 psi differential pressure specification accommodates 100 psi inlet steam applications.

The Belimo globe valve actuators are designed to withstand the rigorous demands of many HVAC applications. With its innovative quick connect coupler, the globe valve actuator can be retrofitted and installed and adapted in no time. The Belimo globe valve actuators incorporate not only strength but are highly adaptable making selection, installation and service hassle-free.

G2/G3 Valve Body Construction



Globe Valve Assembly Components



LED Button
Adapts to stroke of the valve

Fail-Safe Switch ("K" models only)
Selectable position to drive stem up or stem down

Coupler
Locking feature to prevent slipping
Doubles as position indicator

Cast Aluminum Linkage
Rugged design with zero deflection

ANSI Class VI Leakage
G2 and G3 Valve Bodies

Corrosion Resistant Metal Name Plate
Easy identification of model, temperature and pressure rating, Cv, and Canada Registration Number

5
5-year warranty

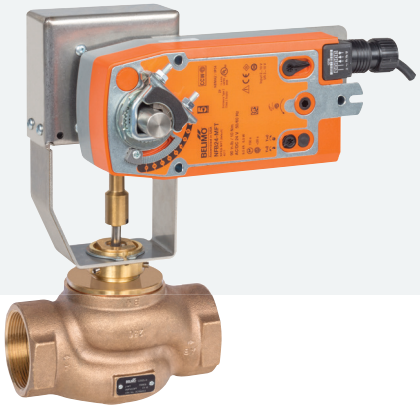
Multi-Function Technology
Field selectable control signal, feedback signal, running time, travel limit and trending

Smaller Actuators
In many cases because of pressure compensated valve design

Manual Override
Ability to drive the valve up or down during power failure

100:1 Rangeability Specification
Accurate modulation at low flow

G3, 3-way Valve Body
One valve for both mixing and diverting applications.



G2	15	B	-C	+LVX	24	-MFT
Valve Type G2 = 2-way NPT G3 = 3-way NPT G6 = 2-way Flanged G7 = 3-way Flanged	**Valve Size** **NPT** 15 = ½" 20 = ¾" 25 = 1" 32 = 1¼" 40 = 1½" 50 = 2" **Flanged** 65 = 2½" 80 = 3" 100 = 4" 125 = 5" 150 = 6"	**Trim Material** B = Bronze Trim S = Stainless Trim -250 = ANSI 250 Bronze Trim S-250 = ANSI 250 Stainless Trim C = Bronze Trim Pressure Compensated CS = Stainless Trim Pressure Compensated LCS = Linear Stainless Trim Pressure Compensated D = Diverting Bronze Trim DS = Diverting Stainless Trim	**Cv** -C = 0.4 -F = 1.3 -G = 2.2 -J = 4.4 (½") -J = 5.5 (¾") -K = 7.5 (¾") -K = 10 (1") -L = 14 -M = 20 -N = 28 (1½") -N = 40 (2")	**Actuator Type** **Non Fail-Safe** LVB, LVX SVB, SVX EVB, EVX RVB, RVX **Fail-Safe Spring Return** LF NFB, NFX AFB, AFX **Electronic** GKB, GKX LVKB, LVKX SVKB, SVKX AVKB, AVKX "X" models are customizable. Refer to page 11 for programming options.	**Power Supply** 24 = AC/DC 24 V 120 = AC 120 V UP = AC 24...240 V or DC 24...125 V	**Control** Blank = On/Off -3 = On/Off, Floating Point -SR = 2...10 V -MFT or -MFT-X1= Multi-Function Technology -MFT95-X1= 0...135 Ω

Ordering Example

1 Choose the valve actuator combination.

G215B-C+LVX24-MFT

2 Specify preference or configuration.

NO

3 **For MFT orders only - select programming code**

Tagging (if needed)

4 Does order require tagging?

Set-Up

Non Fail-Safe Models
NO = Normally Open
NC = Normally Closed

Fail-Safe Models
NO/FO = Normally Open/Fail Open
NO/FC = Normally Open/Fail Closed

NC/FO = Normally Closed/Fail Open
NC/FC = Normally Closed/Fail Closed

Refers to valve ports A to AB.

G43

G43	2...10 V
G53	0.5...10 V
W3M	0.02...5 seconds PWM
G13	Floating Point
G03	On/Off

Tagging:
Valves may be tagged per customer specification. ($12.00 per tag)

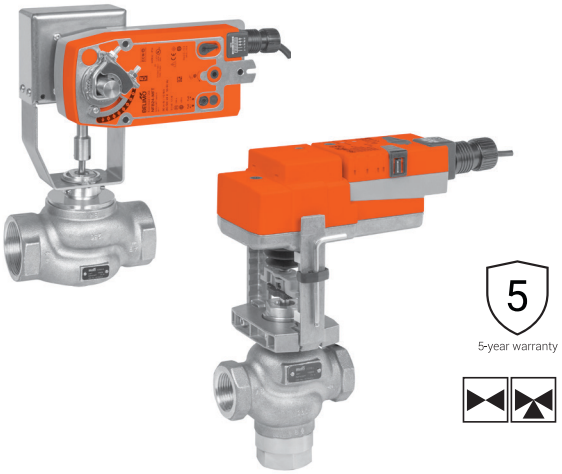
Example:
AHU-1
FCU-2

Part number for tagging:
99981-00101

5 Complete Ordering Example: G215B-C+LVX24-MFT
Configuration: +NO
Programming: +G43

Globe Valve Threaded Body

	Valve Nominal Size		Type		Suitable Actuators		
						Fail-Safe	
C_V	Inches	DN [mm]	2-way NPT	3-way NPT	Non Fail-Safe	Spring Return	Electronic
0.4	½	15	G215B-C		LV Series	LF Series	LVK Series
0.4	½	15	G215S-C				
1.3	½	15	G215B-F				
1.3	½	15	G215S-F				
2.2	½	15	G215B-G				
2.2	½	15	G215S-G				
4.4	½	15	G215B-J				
4.4	½	15	G215S-J				
5.5	¾	20	G220B-J				
5.5	¾	20	G220S-J				
7.5	¾	20	G220B-K				
7.5	¾	20	G220S-K				
10	1	25	G225B-K				
10	1	25	G225S-K				
14	1	25	G225B-L				
14	1	25	G225S-L				
20	1¼	32	G232B-M				
20	1¼	32	G232S-M				
28	1½	40	G240B-N			NF Series	
28	1½	40	G240S-N				
40	2	50	G250B-N				
40	2	50	G250S-N				
2.2	½	15		G315B-G	SV Series		SVK Series
4.4	½	15		G315B-J			
6.75	¾	20		G320B-K			
14	1	25		G325B-L			
20	1¼	32		G332B-M			
28	1½	40		G340B-N		AF Series	
40	2	50		G350B-N			



Mode of Operation
The control valve is operated by an electronic actuator that responds to a standard voltage for on/off control, by a modulating 2...10 V/ 4...20 mA, floating point control system. The actuator will then move the plug of the valve to the position dictated by the control signal thus changing the flow.

Product Features
New G2 and G3 globe valves offer a modified equal percentage flow characteristic for a wide variety of HVAC applications. Capable of being used for heating, cooling, and steam service. Repack kits are available to extend the life of the valve without full replacement.

Actuator Specifications

Control type	on/off, floating point, 2...10 V, multi-function technology (MFT)
Manual override	all models except LF
Electrical connection	3 ft [1 m] cable with ½" conduit fitting

Valve Specifications

Fluid	chilled or hot water, 60% glycol, steam
Flow characteristic	modified equal percentage G3: linear flow from B to AB
Sizes	½", ¾", 1", 1¼", 1½", 2"
End fitting	NPT female
Materials	
Body	bronze
Stem	stainless steel
Plug	G2B, G3B: brass G2S: stainless steel
Seat	G2B, G3B: bronze G2S: stainless steel
Stem packing	EPDM O-ring
Fluid temp. range	G2B, G3B: 20...280°F [-7...+138°C] G2S: 20...338°F [-7...+170°C]
Body pressure rating	ANSI Class 250
Maximum inlet pressure	
Steam	G2B: 35 psi [241 kPa] G2S: 100 psi [690 kPa]
Maximum differential pressure (ΔP)	G2B: 35 psid [241 kPa] G2S: 50 psid [345 kPa]
Leakage	ANSI Class VI
Rangeability	100:1

Globe Valve Flanged Body

	Valve Nominal Size		Type	Suitable Actuators		
					Fail-Safe	
C_V	Inches	DN [mm]	2-way Flanged	Non Fail-Safe	Spring Return	Electronic
65	2½	65	G665C	EV Series	AFX Series	AVK Series
65	2½	65	G665CS			
65	2½	65	G665C-250			
65	2½	65	G665CS-250			
65	2½	65	G665LCS			
90	3	80	G680C			
90	3	80	G680CS			
90	3	80	G680C-250			
90	3	80	G680CS-250			
90	3	80	G680LCS			
170	4	100	G6100C			
170	4	100	G6100CS			
170	4	100	G6100C-250			
170	4	100	G6100CS-250			
170	4	100	G6100LCS			
263	5	125	G6125C			
263	5	125	G6125CS			
263	5	125	G6125C-250			
263	5	125	G6125CS-250			
263	5	125	G6125LCS			
344	6	150	G6150C			
344	6	150	G6150CS			
344	6	150	G6150C-250			
344	6	150	G6150CS-250			
344	6	150	G6150LCS			

The G...(C)(CS)(LCS) Series valve is a pressure compensated valve that allows high close-off ratings while utilizing standard actuation.

5-year warranty

Mode of Operation

The control valve is operated by an electronic actuator that responds to a standard voltage for on/off control, a modulating 2...10 V/4...20 mA, or floating point control system. The actuator will then move the plug of the valve to the position dictated by the control signal thus changing the flow.

Product Features

Equal percentage and linear flow curve options available for a wide variety of HVAC applications. Capable of being used for heating, cooling, and steam service. Repack and rebuild kits are available to extend the life of the valve without full replacement.

Actuator Specifications

Control type	on/off, floating point, 2...10 V multi-function technology (MFT)
Manual override	all models
Electrical connection	3 ft [1 m] cable with ½" conduit fitting

Valve Specifications

Fluid	chilled or hot water, 60% glycol, steam
Flow characteristic	
G6	A-port equal percentage
G6LCS	linear
Sizes	2½", 3", 4", 5", 6"
End fitting	ANSI flanged
Materials	
Body	cast iron
Stem	stainless steel
Plug	bronze
Seat	
G6	stainless steel
G6..S	stainless steel
Stem packing	
G6	bronze trimmed: NLP (EPDM)
G6S	stainless trimmed: NLP (EPDM)
Fluid temp. range	refer to valve specification pages in this section
Body pressure rating	
G6, 125# ANSI flange	125 psi
G6, 250# ANSI flange	250 psi
Maximum inlet pressure	
Water	150 psi [1034 kPa] G6C, G6CS 250 psi [1724 kPa] G6C..250, G6CS..250
Steam	35 psi [241 kPa] G6C, G6C..250 100 psi [690 kPa] G6CS, G6CS..250
Maximum differential pressure (ΔP)	
Water	25 psid [172 kPa] G6C, G6C..250 50 psid [345 kPa] G6CS, G6CS..250
Steam	15 psid [103 kPa] G6C, G6C..250
Rangeability	85:1 (G665..), 91:1 (G680..) 98:1 (G6100..), 100:1 (G6125..) 98:1 (G6150..)

Globe Valve Flanged Body

Valve Nominal Size			Suitable Actuators		
C_V	Inches	DN [mm]	3-Way Flanged	Non Fail-Safe	Fail-Safe: Spring Return	Fail-Safe: Electronic
68	2½	65	G765	EV / RV Series	AFX Series	AVK Series
68	2½	65	G765S			
68	2½	65	G765-250			
68	2½	65	G765S-250			
90	3	80	G780			
90	3	80	G780S			
90	3	80	G780-250			
90	3	80	G780S-250			
190	4	100	G7100			GK Series
190	4	100	G7100S			
190	4	100	G7100-250			
190	4	100	G7100S-250			
280	5	125	G7125	RV Series		
280	5	125	G7125S			
280	5	125	G7125-250			
280	5	125	G7125S-250			
340	6	150	G7150			
340	6	150	G7150S			
340	6	150	G7150-250			
340	6	150	G7150S-250			
68	2½	65	G765D	EV Series	AFX Series	AVK Series
68	2½	65	G765DS			
68	2½	65	G765DS-250			
90	3	80	G780D			
90	3	80	G780DS			
90	3	80	G780DS-250			
154	4	100	G7100D			
154	4	100	G7100DS			
154	4	100	G7100DS-250			
195	5	125	G7125D			
195	5	125	G7125DS			
195	5	125	G7125DS-250			
248	6	150	G7150D			
248	6	150	G7150DS			
248	6	150	G7150DS-250			

Mode of Operation
The control valve is operated by an electronic actuator that responds to a standard voltage for on/off control, a modulating 2...10 V/4...20 mA, or floating point control system. The actuator will then move the plug of the valve to the position dictated by the control signal thus changing the flow.

Product Features
Equal percentage (G6) and linear (G7) flow curve options available for a wide variety of HVAC applications. Capable of being used for heating, cooling, and steam service. Repack and rebuild kits are available to extend the life of the valve without full replacement.

Actuator Specifications

Control type	on/off, floating point, 2...10 V multi-function technology (MFT)
Manual override	all models
Electrical connection	3 ft [1 m] cable with ½" conduit fitting

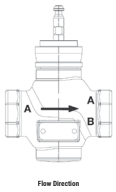
Valve Specifications

Fluid	chilled or hot water, 60% glycol
Flow characteristic	linear
Sizes	2½", 3", 4", 5", 6"
End fitting	ANSI flanged
Materials	
Body	cast iron
Stem	stainless steel
Plug	bronze
Seat	
G7	stainless steel
G7..S	stainless steel
Stem packing	
G7	bronze trimmed: NLP (EPDM)
G7..S	stainless trimmed: NLP (EPDM)
Fluid temp. range	Refer to valve specification pages in this section
Body pressure rating	
G7, 125# ANSI flange	125 psi
G7, 250# ANSI flange	250 psi
Maximum inlet pressure	
Water	150 psi [1034 kPa] G7, G7S 250 psi [1724 kPa] G7..250, G7S..250
Maximum differential pressure (ΔP)	
Water	25 psid [172 kPa] G7, G7..250 50 psid [345 kPa] G7S,G7S..250
Rangeability	50:1

FLOW PATTERN AND VALVE ASSEMBLY SET-UP - Specify Upon Ordering

All valves shown stem down

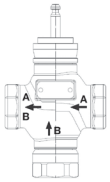
2-WAY VALVE (STEM UP OPEN A TO AB)



G2 2-way Valve

NON FAIL-SAFE	**LV Series**	**NC:** Normally closed A to AB, valve will open upon increase in min. signal/power.	**NO:** Normally open A to AB, valve will close upon increase in min. signal/power.		
ELECTRONIC FAIL-SAFE AND SPRING RETURN	**LVK Series**	**NC/FO:** Normally closed A to AB with power and min. signal applied. When loss of power will fail open A to AB. If desired both normal position and fail position can be reversed in field with direction switch.	**NO/FO:** Normally open A to AB with power and min. signal applied. When loss of power will fail open A to AB. If desired both normal position and fail position can be reversed in field with direction switch.	**NC/FC:** Normally closed A to AB with power and min. signal applied. When loss of power will fail closed A to AB. If desired both normal position and fail position can be reversed in field with direction switch.	**NO/FC:** Normally open A to AB with power and min. signal applied. When loss of power will fail closed A to AB. If desired both normal position and fail position can be reversed in field with direction switch.
	LVK, LF, NF Series (on/off)	**NC/FC:** Normally closed A to AB, valve will drive open with power. Fail Action: Will fail closed A to AB upon power loss. Can be reversed with direction switch or actuator remounting.	**NO/FO:** Normally open A to AB, valve will drive open with power. Fail Action: Will fail open A to AB upon power loss. Can be reversed with direction switch or actuator remounting.		
	LF, NF, Series	**NC/FO:** Normally closed A to AB with power and min. signal applied. When loss of power will fail open A to AB. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NO/FO:** Normally open A to AB with power and min. signal applied. When loss of power will fail open A to AB. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NC/FC:** Normally closed A to AB with power and min. signal applied. When loss of power will fail closed A to AB. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NO/FC:** Normally open A to AB with power and min. signal applied. When loss of power will fail closed A to AB. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.

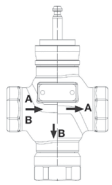
3-WAY MIXING VALVE (STEM UP OPEN B TO AB)



G3 3-way Mixing Valve

NON FAIL-SAFE	**SV Series**	**NC:** Normally closed A to AB, valve will open upon increase in min. signal/power.	**NO:** Normally open A to AB, valve will close upon increase in min. signal/power.		
ELECTRONIC FAIL-SAFE AND SPRING RETURN	**SVK Series**	**NC/FO:** Normally closed A to AB with power and min. signal applied. When loss of power will fail open A to AB. If desired both normal position and fail position can be reversed in field with direction switch.	**NO/FO:** Normally open A to AB with power and min. signal applied. When loss of power will fail open A to AB. If desired both normal position and fail position can be reversed in field with direction switch.	**NC/FC:** Normally closed A to AB with power and min. signal applied. When loss of power will fail closed A to AB. If desired both normal position and fail position can be reversed in field with direction switch.	**NO/FC:** Normally open A to AB with power and min. signal applied. When loss of power will fail closed A to AB. If desired both normal position and fail position can be reversed in field with direction switch.
	SVK, NF, AF Series (on/off)	**NC/FC:** Normally closed A to AB, valve will drive open with power. Fail Action: Will fail closed A to AB upon power loss. Can be reversed with direction switch or actuator remounting.	**NO/FO:** Normally open A to AB, valve will drive open with power. Fail Action: Will fail open A to AB upon power loss. Can be reversed with direction switch or actuator remounting.		
	NF, AF Series	**NC/FO:** Normally closed A to AB with power and min. signal applied. When loss of power will fail open A to AB. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NO/FO:** Normally open A to AB with power and min. signal applied. When loss of power will fail open A to AB. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NC/FC:** Normally closed A to AB with power and min. signal applied. When loss of power will fail closed A to AB. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NO/FC:** Normally open A to AB with power and min. signal applied. When loss of power will fail closed A to AB. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.

3-WAY DIVERTING VALVE (STEM UP OPEN AB TO B)



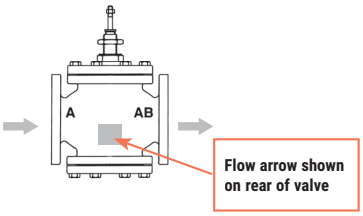
G3 3-way Diverting Valve

NON FAIL-SAFE	**SV Series**	**NC:** Normally closed AB to A, valve will open upon increase in min. signal/power.	**NO:** Normally open AB to A, valve will close upon increase in min. signal/power.		
ELECTRONIC FAIL-SAFE AND SPRING RETURN	**SVK Series**	**NC/FO:** Normally closed AB to A with power and min. signal applied. When loss of power will fail open AB to A. If desired both normal position and fail position can be reversed in field with direction switch.	**NO/FO:** Normally open AB to A with power and min. signal applied. When loss of power will fail open AB to A. If desired both normal position and fail position can be reversed in field with direction switch.	**NC/FC:** Normally closed AB to A with power and min. signal applied. When loss of power will fail closed AB to A. If desired both normal position and fail position can be reversed in field with direction switch.	**NO/FC:** Normally open AB to A with power and min. signal applied. When loss of power will fail closed AB to A. If desired both normal position and fail position can be reversed in field with direction switch.
	SVK, NF, AF Series (on/off)	**NC/FC:** Normally closed AB to A, valve will drive open with power. Fail Action: Will fail closed AB to A upon power loss. Can be reversed with direction switch or actuator remounting.	**NO/FO:** Normally open AB to A, valve will drive open with power. Fail Action: Will fail open AB to A upon power loss. Can be reversed with direction switch or actuator remounting.		
	NF, AF Series	**NC/FO:** Normally closed AB to A with power and min. signal applied. When loss of power will fail open AB to A. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NO/FO:** Normally open AB to A with power and min. signal applied. When loss of power will fail open AB to A. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NC/FC:** Normally closed AB to A with power and min. signal applied. When loss of power will fail closed AB to A. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.	**NO/FC:** Normally open AB to A with power and min. signal applied. When loss of power will fail closed AB to A. If desired both normal position and fail position can be reversed in field with direction switch and actuator remounting.

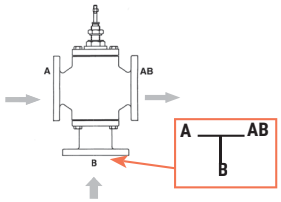
Globe Valve Flanged Body

FLOW PATTERN – Flow Pattern is Marked on Valve

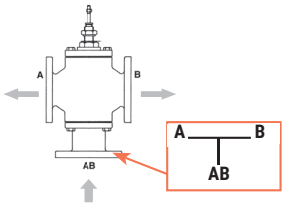
G6 2-way Valve
Stem Up = Open A to AB



G7 3-way Mixing Valve
Stem Up = Open B to AB



G7…D 3-way Diverting Valve
Stem Up = Open AB to B



VALVE ASSEMBLY SET-UP - Specify Upon Ordering

2-WAY VALVE

NON FAIL-SAFE	**EV, RV Series**	**NC:** Normally closed A to AB, valve will open upon increase in signal/power. Note: To change valve to A to AB open, reverse the directional switch in actuator.	**NO:** Normally open A to AB, valve will close upon increase in signal/power. Note: To change valve to A to AB closed, reverse the directional switch in actuator.
SPRING RETURN	**AFB, AFX Series** On/Off	**NO/FO:** Normally open A to AB valve will drive closed. Spring Action: Will fail open A to AB upon power loss.	**NC/FC:** Normally closed A to AB valve will drive open. Spring Action: Will fail closed A to AB upon power loss.
SPRING RETURN	**AFB, AFX MFT Series**	**NC/FO:** Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Spring Action: Will fail open A to AB upon power loss.	**NO/FC or NC/FC:** Normally Open/Normally Closed: valve can be open or closed, will drive closed or open A to AB (can be chosen with CW/CCW switch). Spring Action: Closed A to AB upon power loss.
SPRING RETURN	**AFB, AFX MFT Series**	**NC/FO:** Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Spring Action: Will fail open A to AB upon power loss.	**NO/FO:** Normally open A to AB. Spring Action: Will fail open A to AB upon power loss. (NO or NC action can be chosen with CW/CCW switch).
ELECTRONIC FAIL-SAFE	**AVK, GK Series**	**NC/FO:** Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch.Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0...100%, in 10% increments.	**NO/FC or NC/FC:** Valve: Can be open or closed, will drive closed or open A to AB (can be chosen with CW/CCW switch). Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0...100%, in 10% increments.
ELECTRONIC FAIL-SAFE	**AVK, GK Series**	**NC/FO:** Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0...100%, in 10% increments.	**NO/FO:** Normally open A to AB. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0...100%, in 10% increments.

3-WAY MIXING VALVE

NON FAIL-SAFE	**EV, RV Series**	**NC:** Normally closed A to AB, will open upon increase in signal/power. Note: To change valve to A to AB open, reverse the directional switch in actuator.	**NO:** Normally open A to AB, will close upon increase in signal/power. Note: To change valve to A to AB closed, reverse the directional switch in actuator.
SPRING RETURN	**AFB, AFX Series** On/Off	**NO/FO** Normally open A to AB, valve will drive closed. Spring Action: Will fail open A to AB upon power loss.	**NC/FC** Normally closed A to AB, valve will drive open. Spring Action: Will fail closed A to AB upon power loss.
SPRING RETURN	**AFB, AFX MFT Series**	**NC/FO** Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Spring Action: Will fail open A to AB upon power loss.	**NO/FC or NC/FC** Normally Open/Normally Closed: valve be open or closed, will drive closed or open A to AB (can be chosen with CW/CCW switch). Spring Action: Closed A to AB upon power loss.
SPRING RETURN	**AFB, AFX MFT Series**	**NC/FO** Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Spring Action: Will fail open A to AB upon power loss.	**NO/FO** Normally open A to AB. Spring Action: Will fail open A to AB upon power loss. (NO or NC action can be chosen with CW/CCW switch).
ELECTRONIC FAIL-SAFE	**AVK, GK Series**	**NC/FO** Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0...100%, in 10% increments.	**NO/FC or NC/FC** Valve: Can be open or closed, will drive closed or open A to AB (can be chosen with CW/CCW switch). Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0...100%, in 10% increments.
ELECTRONIC FAIL-SAFE	**AVK, GK Series**	**NC/FO** Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0...100%, in 10% increments.	**NO/FO** Normally open A to AB. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0...100%, in 10% increments.

3-WAY DIVERTING VALVE

NON FAIL-SAFE	**EV, RV Series**	**NC:** Normally closed AB to B, will open upon increase in signal/power. Note: To change valve to AB to B open, reverse the directional switch in actuator.	**NO:** Normally open AB to B, will close upon increase in signal/power. Note: To change valve to AB to B closed, reverse the directional switch in actuator.
SPRING RETURN	**AFB, AFX Series** On/Off	**NO/FO** Normally open AB to B, valve will drive closed. Spring Action: Will fail open AB to B upon power loss.	**NC/FC** Normally closed AB to B, valve will drive open. Spring Action: Will fail closed AB to B upon power loss.
SPRING RETURN	**AFB, AFX MFT Series**	**NC/FO** Normally closed AB to B, valve will open upon increase in signal. Note: To change valve to AB to B open, reverse CW/CCW switch. Spring Action: Will fail open AB to B upon power loss.	**NO/FC or NC/FC** Normally Open/Normally Closed: valve be open or closed, will drive closed or open AB to B (can be chosen with CW/CCW switch). Spring Action: Closed AB to B upon power loss.
SPRING RETURN	**AFB, AFX MFT Series**	**NC/FO** Normally closed AB to B, valve will open upon increase in signal. Note: To change valve to AB to B open, reverse CW/CCW switch. Spring Action: Will fail open AB to B upon power loss.	**NO/FO** Normally open AB to B. Spring Action: Will fail open AB to B upon power loss. (NO or NC action can be chosen with CW/CCW switch).
ELECTRONIC FAIL-SAFE	**AVK, GK Series**	**NC/FO** Normally closed AB to B, valve will open upon increase in signal. Note: To change valve to AB to B open, reverse CW/CCW switch. Fail Position: Will default fail AB to B open, from the factory. Fail position can be set from 0...100%, in 10% increments.	**NO/FC or NC/FC** Valve: Can be open or closed, will drive closed or open AB to B (can be chosen with CW/CCW switch). Fail Position: Will default fail AB to B open, from the factory. Fail position can be set from 0...100%, in 10% increments.
ELECTRONIC FAIL-SAFE	**AVK, GK Series**	**NC/FO** Normally closed AB to B, valve will open upon increase in signal. Note: To change valve to AB to B open, reverse CW/CCW switch. Fail Position: Will default fail AB to B open, from the factory. Fail position can be set from 0...100%, in 10% increments.	**NO/FO** Normally open AB to B. Fail Position: Will default fail AB to B open, from the factory. Fail position can be set from 0...100%, in 10% increments.

*P-10001 is the default configuration for MFT.
**Not available on RV models.

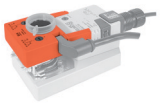
ACTUATOR TYPE		CONFIGURATION DESCRIPTION	P-CODE	CONTROL		
				CONTROL INPUT	FEEDBACK POSITION	RUNNING TIME
ROTARY ACTUATOR	-3 and -SR	N/A	0	2...10 V (for -3)	2...10 V (for -3)	150 seconds
		N/A	2	2...10 V (for -SR)	2...10 V (for -SR)	90 seconds
	-MFT and -PC	P-10001	A01	2...10 V	2...10 V	150 seconds
		P-10002	A02	0.5...10 V	0.5...10 V	150 seconds
		P-10003	A03	2...10 V	0.5...5 V	150 seconds
		P-10004	A04	4...7 V	2...10 V	150 seconds
		P-10005	A05	6...9 V	2...10 V	150 seconds
		P-10006	A06	10.5...13.5 V	2...10 V	150 seconds
		P-10007	A07	0.5...5 V	2...10 V	150 seconds
		P-10009	A09	5...10 V	2...10 V	150 seconds
		P-10010	A10	5...10 V	0.5...10 V	150 seconds
		P-10013	A13	0.5...10 V	2...10 V	150 seconds
		P-10015	A15	2...5 V	2...10 V	150 seconds
		P-10016	A16	2...6 V	2...10 V	150 seconds
		P-10017	A17	6...10 V	2...10 V	150 seconds
		P-10018	A18	14...17 V	2...10 V	150 seconds
		P-10019	A19	2...10 V	2...10 V	100 seconds
		P-10020	A20	9...12 V	2...10 V	150 seconds
		P-10028	A28	0.5...10 V	0.5...10 V	100 seconds
		P-10031	A31	0.5...4 V	2...10 V	150 seconds
		P-10063	A63	0.5...4.5 V	0.5...4.5 V	150 seconds
		P-10032	A32	6...14 V	2...10 V	150 seconds
		P-10064	A64	5.5...10 V	5.5...10 V	150 seconds
		N/A	AAT	2...10 V	2...10 V	20 seconds
		P-20001	W01	0.59...2.93 seconds	2...10 V	150 seconds
		P-20002	W02	0.02...5.00 seconds	2...10 V	150 seconds
		P-20003	W03	0.10...25.50 seconds	2...10 V	150 seconds
		P-20004	W04	0.10...25.60 seconds	2...10 V	150 seconds
		P-20005	W05	0.10...5.20 seconds	0.5...5 V	150 seconds
		P-30001	F01	Floating Point	2...10 V	150 seconds
		P-30002	F02	Floating Point	0.5...10 V	150 seconds
		P-40002	J02	On/Off	2...10 V	150 seconds
		N/A	S01 (for -PC only)	Phasecut	2...10 V	150 seconds
		P-16001	R01 (for -MFT95 only)	0...135 Ω	2...10 V	150 seconds
LINEAR ACTUATOR	-3 and -MFT	G01		On/Off	2...10 V MFT only	35 seconds
		G02		On/Off	2...10 V MFT only	60 seconds
		G03		On/Off	2...10 V MFT only	90 seconds
		G04		On/Off	2...10 V MFT only	150 seconds
		G11		Floating Point	2...10 V MFT only	35 seconds
		G12		Floating Point	2...10 V MFT only	60 seconds
		G13		Floating Point	2...10 V MFT only	90 seconds
		G14		Floating Point	2...10 V MFT only	150 seconds
	-SR and -MFT	G41 (G21 for -SR)		2...10 V	2...10 V	35 seconds
		G42 (G22 for -SR)		2...10 V	2...10 V	60 seconds
		G43 (G23 for -SR)		2...10 V	2...10 V	90 seconds
		G44 (G24 for -SR)		2...10 V	2...10 V	150 seconds
	-MFT	G51		0.5...10 V	0.5...10 V	35 seconds
		G52		0.5...10 V	0.5...10 V	60 seconds
		G53		0.5...10 V	0.5...10 V	90 seconds
		G54		0.5...10 V	0.5...10 V	150 seconds
		G2A		5.5...10 V	5.5...10 V	150 seconds
		G2B		0.5...4.5 V	0.5...4.5 V	150 seconds
		G2C		2...10 V	0.5...5 V	150 seconds
		G2D		6...9 V	2...10 V	150 seconds
		G2E		10.5...13.5 V	2...10 V	150 seconds
		W3M**		0.02...5.00 seconds PWM	2...10 V	90 seconds
		W3P**		0.2...5.00 seconds PWM	2...10 V	90 seconds

Globe Valve Threaded Body

	Non-Spring Return		Spring Return			Electronic Fail-Safe	
	LV	SV	LF	NF	AFB	LVK	SVK
2-way							
G215B(S)-C	250		160			250	
G215B(S)-F	250		160			250	
G215B(S)-G	250		160			250	
G215B(S)-J	250		160			250	
G220B(S)-J	250		155			250	
G220B(S)-K	250		155			250	
G225B(S)-K	250		147			250	
G225B(S)-L	250		147			250	
G232B(S)-M	250		141			250	
G240B(S)-N	250			250	210	250	
G250B(S)-N	250			250	120	250	
3-way Mixing							
G315B-G		250		250			250
G315B-J		250		250			250
G320B-K		250		250			250
G325B-L		250		179			250
G332B-M		246		133			246
G340B-N		137			167		137
G350B-N		86			105		86
3-way Diverting							
G315B-G		250		166			250
G315B-J		250		166			250
G320B-K		182		101			182
G325B-L		109		60			109
G332B-M		82		44			82
G340B-N		46			56		46
G350B-N		29			35		29

	Non-Spring Return		Spring Return		Electronic Fail-Safe	
	EV	**RV**	**AF**	**2*AF**	**AVK**	**2*GK**
2-way Pressure Comp ANSI 125						
G665C	140		140		140	
G680C	140		140		140	
G6100C	140			140	140	
G6125C	140			140	140	
G6150C	140			110	140	
2-way Pressure Comp ANSI 125						
G665CS, G665LCS	125		125		125	
G680CS, G680LCS	125		125		125	
G6100CS, G6100LCS	125			125	125	
G6125CS, G6125LCS	125			125	125	
G6150C, G6150LCS	125			125	125	
2-way Pressure Comp ANSI 250						
G665C-250	310		232		310	
G680C-250	310		181	310	310	
G6100C-250	310			310	310	
G6125C-250	310			241	300	
G6150C-250	310			182	232	
2-way Pressure Comp ANSI 250						
G665CS-250, G665LCS-250	280		232		280	
G680CS-250, G680LCS-250	280		181		280	
G6100CS-250, G6100LCS-250	280				280	
G6125CS-250, G6125LCS-250	280				280	
G6150CS-250, G6150LCS-250	280				280	280
3-way ANSI 125 Mixing						
G765, G765S	106	125	31	70	84	125
G780, G780S	73	125	21	48	57	102
G7100, G7100S	40	75		26		56
G7125, G7125S		47				35
G7150, G7150S		32				24
3-way ANSI 250 Mixing						
G765-250, G765S-250	106	198	31	70	84	149
G780-250, G780S-250	73	136	21	48	57	102
G7100-250, G7100S-250	40	75		26		56
G7125-250, G7125S-250		47				
G7150-250, G7150S-250		32				
3-way ANSI 125/250 Diverting						
G765D, G765DS	140		140		140	
G780D, G780DS	140		140		140	
G7100D, G7100DS	140		140		140	
G7125D, G7125DS	140			140	140	
G7150D, G7150DS	140			140		
3-way ANSI 125/250 Diverting						
G765DS-250	310		310		310	
G780DS-250	310		310		310	
G100DS-250	310		310		310	
G7125DS-250	310			310		
G7150DS-250	310			310		

WEATHER SHIELDS		GM	2* GM	LF	NF	AF	2* AF	GK	2* GK	LV/ SV	EV/ RV	LVK/ SVK	AVK
	**ZS-SPGV-60** For LF actuators on G2/G3 series			•									
	ZS-SPGV-10 For dual AF series actuators on flanged series						•						
	**ZS-SPGV-20** For single NF, AF actuator series				•	•							
	ZS-SPGV-40 For GM, GK series on flanged series	•						•					
	ZS-SPGV-50 For dual GM, GK series on flanged series		•						•				
	**ZS-GV-001** For LV, SV actuators on NPT threaded series									•		•	
	ZS-GV-002 For EV, RV, AVK actuator on flanged series										•		•

AUXILIARY SWITCHES & POTENTIOMETERS		LR/LM	NR/NM	AR/AM	GR/GM	AK	GK/GKR	DR
	S1A Auxiliary switch 1x SPDT, 3A (0.5A inductive) @ 250 VAC	•	•	•	•	•	•	•
	**S2A** Auxiliary switch 2x SPDT, 3A (0.5A inductive) @ 250 VAC	•	•	•	•	•	•	•
	P140A GR Feedback potentiometer 140 Ω	•	•	•	•	•	•	•
	P500A GR Feedback potentiometer 500 Ω	•	•	•	•	•	•	•
	P500A GR Feedback potentiometer 500 Ω	•	•	•	•	•	•	•
	P1000A GR Feedback potentiometer 1000 Ω	•	•	•	•	•	•	•
	**P2800A GR** Feedback potentiometer 2800 Ω	•	•	•	•	•	•	•
	P5000A GR Feedback potentiometer 5000 Ω	•	•	•	•	•	•	•
	P10000A GR Feedback potentiometer 10000 Ω	•	•	•	•	•	•	•

	LV/SV	EV	RV	LVK/SVK	AVK	SY
 **S2A-GV** Auxiliary switch 2x SPDT, 3A (0.5A inductive) @ 250 VAC for LV, SV, EV, and AVK series actuators	•	•	•	•	•	
SY-1000-FB01 Feedback potentiometer 1000 Ω, 2 position, factory installed option only						•
						•
SY-1000-FB02 Feedback potentiometer 1000 Ω, modulating (models SYx...-MFT), factory installed option only						•
						•

ZTH REPLACEMENT CABLES		VALVES	AM	GM	AR	GR	DR	GK	DK	SY
	**ZK2-GEN** Cable for use with ZTH US to connect to actuators not equipped with diagnostic/programming socket	*Available for all MFT Actuators Only*								

PROGRAMMING TOOLS		
	**MFT-P** Belimo MFT configuration software (V3.X), includes PC-Tool software (interface cables [ZTH US] not included) Free download also available at www.belimo.us under “Document Downloads”	*Available for all MFT Actuators Only*
	**ZTH US** Handheld interface module that allows field programming. Includes ZK1-GEN, ZK2-GEN, and ZK6-GEN cables	*Available for all MFT Actuators Only*

Globe Valve

Repacking Kits

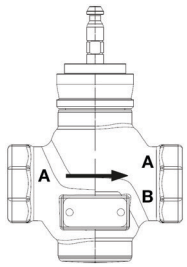
Kit Part Number	Description
ZG-GV60	Repacking kit for all G2B(S) and G3B glove valves ½" to 2"
ZG-GV03	Packing removal wrench for G2, G2S, G3 and G3D globe valves ½" to 2"
ZG-GV15	Repacking kit for all G6, G6C, G6CS, G6LCS, G7, G7D, G7S, and G7DS (and all -250 globe valves 2½" to 6").

Rebuild Kits

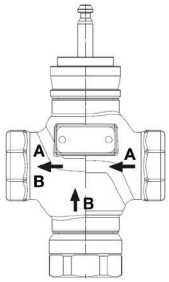
Size	Valve Part Number	Kit Part Number	Valve Part Number	Kit Part Number
2½"	G665	ZG-GV05	G665S	ZG-GV29
3"	G680	ZG-GV06	G680S	ZG-GV30
4"	G6100	ZG-GV07	G6100S	ZG-GV31
5"	G6125	ZG-GV08	G6125S	ZG-GV32
6"	G6150	ZG-GV09	G6150S	ZG-GV33
2½"	G665-250	ZG-GV05	G665S-250	ZG-GV29
3"	G680-250	ZG-GV06	G680S-250	ZG-GV30
4"	G6100-250	ZG-GV07	G6100S-250	ZG-GV31
5"	G6125-250	ZG-GV08	G6125S-250	ZG-GV32
6"	G6150-250	ZG-GV27	G6150S-250	ZG-GV34
2½"	G665C	ZG-GV16	G665CS	ZG-GV35
3"	G680C	ZG-GV17	G680CS	ZG-GV36
4"	G6100C	ZG-GV18	G6100CS	ZG-GV37
5"	G6125C	ZG-GV19	G6125CS	ZG-GV38
6"	G6150C	ZG-GV20	G6150CS	ZG-GV39
2½"	G665C-250	ZG-GV16	G665CS-250	ZG-GV35
3"	G680C-250	ZG-GV17	G680CS-250	ZG-GV36
4"	G6100C-250	ZG-GV18	G6100CS-250	ZG-GV37
5"	G6125C-250	ZG-GV19	G6125CS-250	ZG-GV38
6"	G6150C-250	ZG-GV21	G6150CS-250	ZG-GV40
2½"	G765	ZG-GV10	G765S	ZG-GV41
3"	G780	ZG-GV11	G780S	ZG-GV42
4"	G7100	ZG-GV12	G7100S	ZG-GV43
5"	G7125	ZG-GV13	G7125S	ZG-GV44
6"	G7150	ZG-GV14	G7150S	ZG-GV45
2½"	G765-250	ZG-GV10	G765S-250	ZG-GV41
3"	G780-250	ZG-GV11	G780S-250	ZG-GV42
4"	G7100-250	ZG-GV12	G7100S-250	ZG-GV43
5"	G7125-250	ZG-GV13	G7125S-250	ZG-GV44
6"	G7150-250	ZG-GV28	G7150S-250	ZG-GV46
2½"	G765D	ZG-GV22	G765DS	ZG-GV47
3"	G780D	ZG-GV23	G780DS	ZG-GV48
4"	G7100D	ZG-GV24	G7100DS	ZG-GV49
5"	G7125D	ZG-GV25	G7125DS	ZG-GV50
6"	G7150D	ZG-GV26	G7150DS	ZG-GV51
2½"	G765D-250	ZG-GV22	G765DS-250	ZG-GV47
3"	G780D-250	ZG-GV23	G780DS-250	ZG-GV48
4"	G710D-250	ZG-GV24	G710DS-250	ZG-GV49
5"	G7125D-250	ZG-GV25	G7125DS-250	ZG-GV50
6"	G7150D-250	ZG-GV26	G7150DS-250	ZG-GV51

Flow Pattern

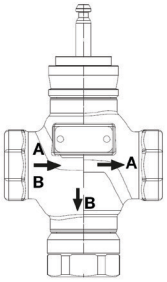
Two-way



Three-way Mixing

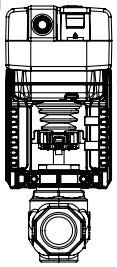


Three-way Diverting

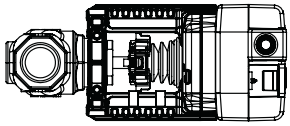


Mounting

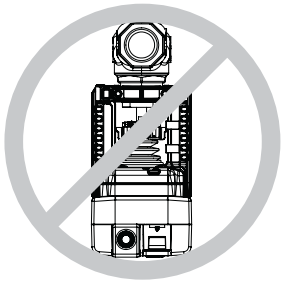
Preferred Mounting



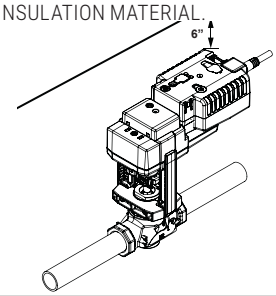
Optional Mounting



DO NOT INSTALL WITH ACTUATOR BELOW PIPE

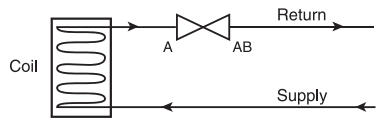


Allow 6" for actuator/adaptor bracket removal. NOTE: DO NOT COVER ADAPTOR BRACKET WITH INSULATION MATERIAL.

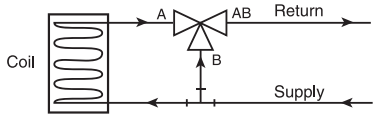


Operation

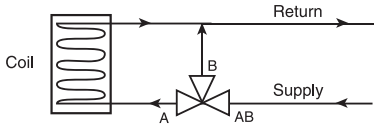
2-way Valve Piping Diagram
(1 Input, 1 Output)



3-way Mixing Valve Piping Diagram
(2 Inputs, 1 Output)



3-way Diverting Valve Piping Diagram
(1 Input, 2 Outputs)



Installation

1. Inspect shipping package, valve, linkage, and actuator for physical damage. If shipping damage has occurred notify appropriate carrier. Do not install.
2. If a replacement, remove existing valve, linkage and actuator from the piping system.
3. If actuator and linkage are removed, they must be reinstalled correctly. The actuator must be rotated so that the valve sits properly for close off.
4. Install valve with the proper ports as inlets and outlets. Check that inlet and outlet of 2-way valves are correct; check that the "A","B", and "AB" ports of 3-way valves are piped correctly for mixing or diverting. See supplied drawings on previous page.
5. Blow out all piping and thoroughly clean before valve installation.
6. Clean male pipe threads with wire brush and rag. If threads have been damaged or exposed to weather, running a tap or die over the threads may straighten them. Clean pipes, threads, and valve threads before installation; check for any foreign material that can become lodged in trim components. Strainers should be cleaned after initial startup.
7. Pipe sealing compound should be applied sparingly after cleaning and may not be applied to the two lead threads of a screwed pipe, which are innermost inside the valve. Sealing compound is to be placed on male threads only. The purpose is to lubricate the pipes when tightening.
8. Valve must be installed per the mounting drawings shown.
9. Start the connection by turning the valve or pipe by hand as far as possible. Be certain the threads mate by the "feel" of the connection.
10. Use wrenches to tighten the valve to the pipe. Do not over tighten or strip the threads. Two wrenches are necessary to avoid damaging the valve.
11. Two-way valve Normally Open or Closed configurations must be verified by examining both the mechanical drawings and the valve and actuator. See details below.
12. Three-way valve Normally Open or Closed configurations for the Control Port and the Bypass Port must be verified by examining both the mechanical drawings and the valve and actuator.

In the piping diagrams the A and B ports may need to be reversed or the actuator set up spring open or fail safe open differently than shown. The specific application determines what fail safe mode is required for freeze or moisture control if applicable.

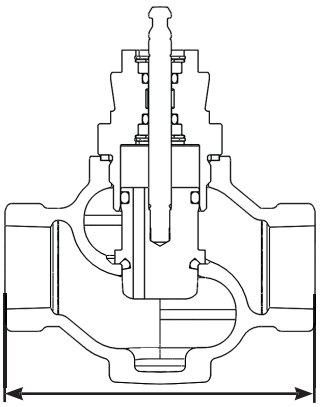
Warning!

Valve should not be used for combustible gas applications. Gas leaks and explosions may result. Do not install in systems which exceed the ratings of the valve.

- Avoid installations where valve may be exposed to excessive moisture, corrosive fumes, vibration, high ambient temperatures, elements, or high traffic areas with potential for mechanical damage.
- Valve assembly location must be within ambient ratings of actuator.
- The valve assembly will require heat shielding, thermal isolation, or cooling if combined effect of medium and ambient temperatures – conduction, convection, and radiation – is above 122°F for prolonged time periods at the actuator.
- Strainers should be installed before coil and valve.
- Visual access must be provided. Assembly must be accessible for routine scheduled service. Contractor should provide unions for removal from line and isolation valves.
- Avoid excessive stresses. Mechanical support must be provided where reducers have been used and the piping system may have less structural integrity than full pipe sizes.
- Sufficient upstream and downstream piping runs must be provided to ensure proper valve capacity and flow response. Five diameters in each direction are recommended.
- Life span of valve stems and packing is dependent on maintaining non-damaging conditions. Poor water treatment or filtration, corrosion, scale, other particulate can result in damage to trim components. A water treatment specialist should be consulted.
- Normal thread engagement between male pipe thread and valve body should be observed. Pipe run that is in too far will damage the valve.

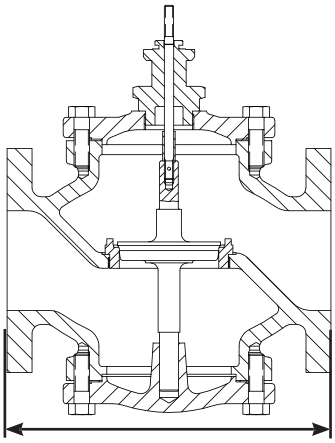
Globe Valve Threaded and Flanged Body

Face-to-Face Dimensions



G2 & G3

Valve Nominal Size	Inches	mm
½"	3.3	85.0
¾"	3.3	85.0
1"	4.3	110.0
1¼"	4.6	118.0
1½"	5.3	135.0
2"	6.1	155.0

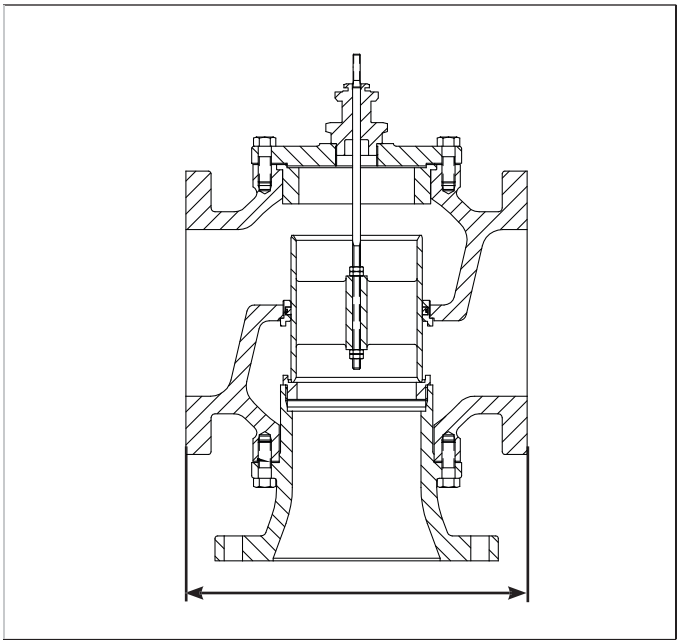


G6 & G7, ANSI 125

Valve Nominal Size	Inches	mm
2½"	9	229
3"	10	254
4"	13	331
5"	15.8	401
6"	17.8	451

G6 & G7, ANSI 250

Valve Nominal Size	Inches	mm
2½"	9.6	245
3"	10.8	274
4"	13.6	347
5"	16.6	423
6"	18.6	474



G7D, ANSI 125

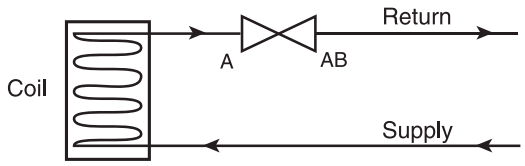
Valve Nominal Size	Inches	mm
2½"	9	229
3"	10	254
4"	13	331
5"	12	305
6"	14.1	359

G7D, ANSI 250

Valve Nominal Size	Inches	mm
2½"	9.6	245
3"	10.8	274
4"	13.6	347
5"	12.9	328
6"	14.5	369

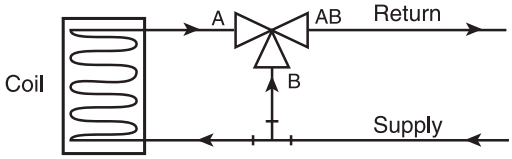
2-WAY

2-way Valve Piping Diagram
(1 Input, 1 Output)

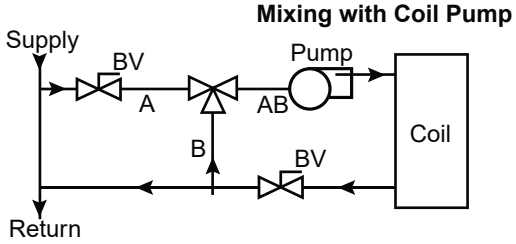


3-WAY MIXING

3-way Mixing Valve Piping Diagram
(2 Inputs, 1 Output)

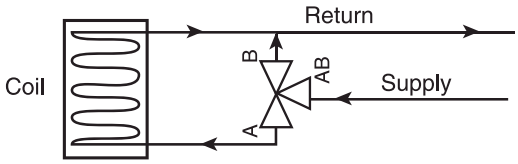


Mixing with Coil Pump



3-WAY DIVERTING

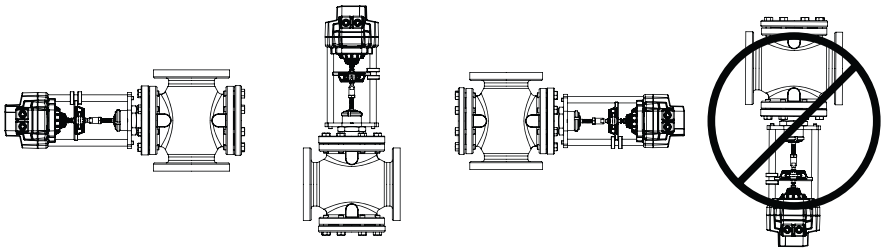
3-way Diverting Valve Piping Diagram
(1 Input, 2 Outputs)



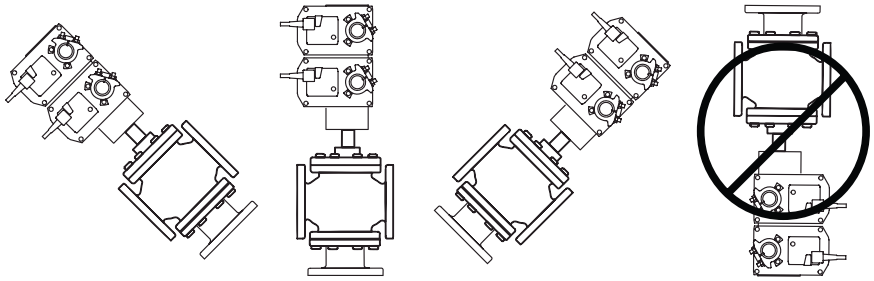
INSTALLATION

Valve must be installed in these orientations only.

Linear Actuators

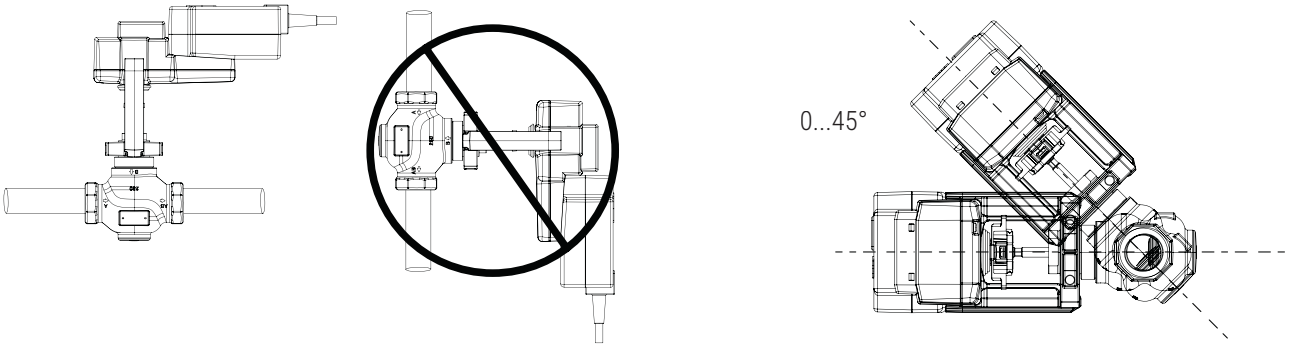


UGLK Linkage



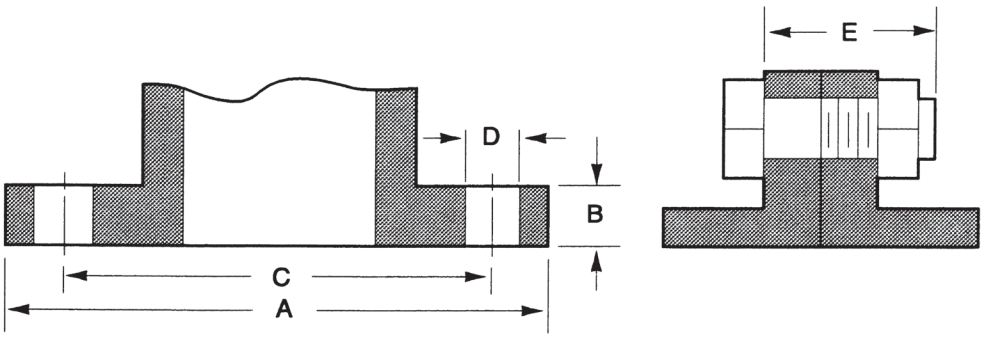
Steam Applications

Assembly can be mounted horizontally or vertically for water applications. For steam applications, the valve cannot be mounted on a vertical section of pipe and should always be mounted at between 0° to 45° relative to the pipe. Never install with actuator below pipe.



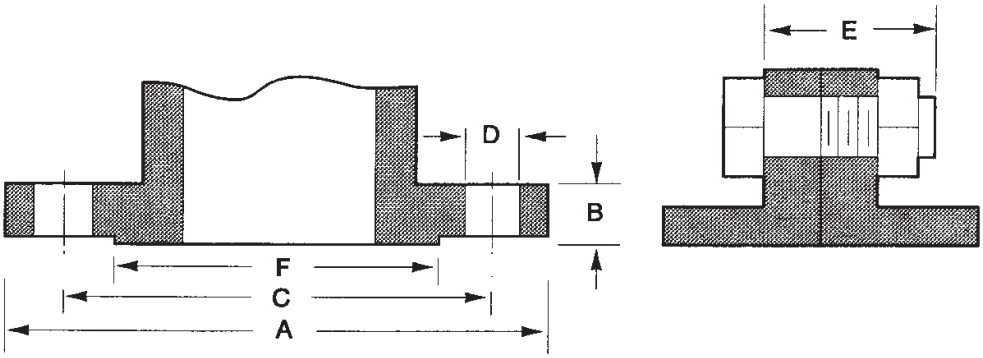
Flange Detail for American Standard 125 lb. Cast Iron Pipe Flanges

	FLANGES			DRILLING		BOLTING		
Nominal Pipe Size	A Flange Diameter	B Flange Thickness	C Diameter of Bolt Circle	D Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	E Length of Machine Bolts
2½"	7	11/16"	5½"	¾"	4	5/8"	2½"
3"	7½"	¾"	6"	¾"	4	5/8"	2½"
4"	9"	15/16"	7½"	¾"	8	5/8"	3"
5"	10"	15/16"	8½"	7/8"	8	¾"	3"
6"	11"	1"	9½"	7/8"	8	¾"	3¼"



Flange Detail for American Standard 250 lb. Cast Iron Pipe Flanges

	FLANGES			DRILLING		BOLTING		
Nominal Pipe Size	A Flange Diameter	B Flange Thickness	F Diameter of Raised Face	C Diameter of Bolt Circle	D Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	E Length of Machine Bolts
2½"	7½"	1"	4 15/16"	5 7/8"	7/8"	8	¾"	3¼"
3"	8¼"	1/8"	5 11/16"	6 5/8"	7/8"	8	¾"	3¼"
4"	10"	1¼"	6 15/16"	7 7/8"	7/8"	8	¾"	3¾
5"	11"	1 1/8"	8 5/16"	9 ¼"	7/8"	8	¾"	4"
6"	12½"	7/16"	9 11/16"	10 5/8"	7/8"	12	¾"	4"



Warning!

Valve should not be used for combustible gas applications. Gas leaks and explosions may result. Do not install in systems which exceed the ratings of the valve.

- Avoid installations where the valve may be exposed to excessive moisture, corrosive fumes, vibration, high ambient temperatures, elements, or high traffic areas with the potential for mechanical damage.
- Valve assembly location must be within ambient ratings of the actuator. If the temperature is below -22°F, a heater is required.
- The valve assembly will require heat shielding, thermal isolation, or cooling at the actuator if the combined effect of medium and ambient temperatures (conduction, convection, and radiation) is above 122°F for prolonged time periods.
- Strainers should be installed before coil and valve.
- Visual access must be provided. Assembly must be accessible for routine service. Contractor should provide unions for removal from line and isolation valves.
- Avoid excessive stresses. Mechanical support must be provided where reducers have been used and the piping systems may have less structural integrity than full pipe sizes.
- Vertical pipes with valves and dual actuators may require linkage support.
- Sufficient upstream and downstream piping runs must be provided to ensure proper valve capacity and flow response. Five diameters in each direction are recommended.
- The lifespan of the valve stems and packing is dependent on maintaining non-damaging conditions. Poor water treatment or filtration, corrosion, scale or particulate deposits can result in damage to trim components. A water treatment specialist should be consulted.

1. Inspect shipping package, valve, linkage, and actuator for physical damage. If shipping damage has occurred, notify appropriate carrier. Do not install.
2. If this is a replacement, remove the existing valve, linkage, and actuator from the piping system.
3. If actuator and linkage are removed, the replacements must be installed correctly to ensure close-off is achieved when commanded closed, and fail-safe actuator moves the stem to the proper fail-safe position with a loss of power.
4. Install valve with the proper ports as inlets and outlets. See piping charts on page 18. Check that inlet and outlet of the 2-way valves are correct; check that the "A", "B", and "AB" ports of 3-way valves are piped correctly. Flow direction arrows must be correct.
5. Blow out all piping and thoroughly clean before valve installation.
6. Clean male pipe threads with wire brush and rag. If threads have been damaged or exposed to weather, running a tap or die over the threads may straighten them. Clean pipes, threads, and valve threads before installation. Check for any foreign material that can become lodged in trim components. Strainers should be cleaned after initial startup.
7. Pipe sealing compound may not be applied to either flange or gasket. Flanged bodies must be used with flanges which are rated for the service. 125 lb flanges have flat faces and may not be bolted to raised face flanges. Gasket ratings must comply with application specifications for: medium, temperature, and pressure.
8. Valve must be installed with the stem above horizontal to avoid water damage to the actuator.
9. Tighten bolts alternatively and evenly around the flange.
10. 2-way valve Normally Open (NO) or Normally Closed (NC) configurations must be verified by examining both the mechanical drawings and the valve and actuator.
11. 3-way valve Normally Open (NO) or Normally Closed (NC) configurations for the control port and the bypass port must be verified by examining both the mechanical drawings and the valve and actuator.

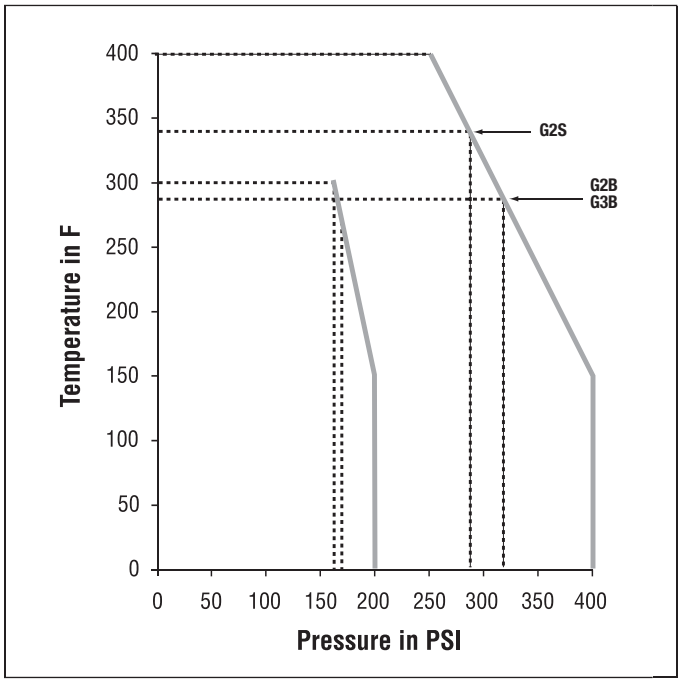
Check specifications for every application to be sure of ports and designations.

U, L, and C designations

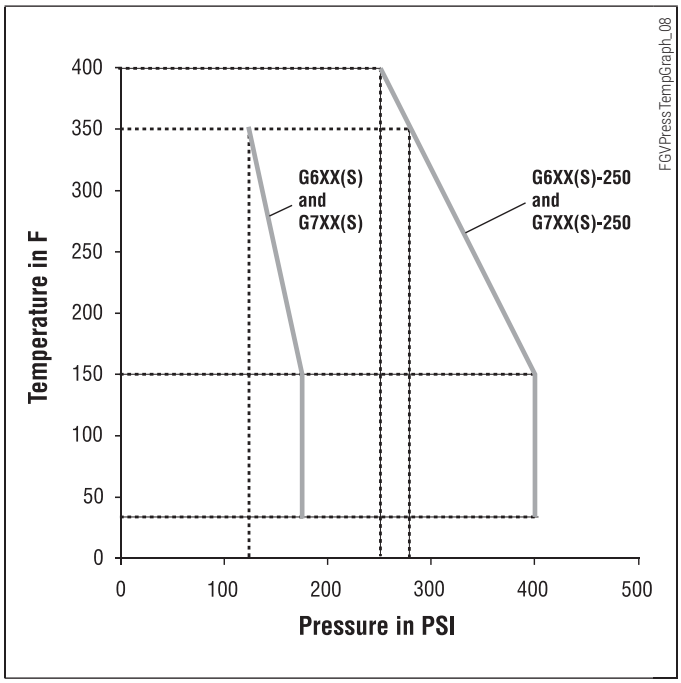
U is for Upper, the control port. L is for Lower, the bypass port. C is for Common.

Viewed with the bonnet upwards; the U port is on the left, the L port is on the bottom, and the C port is on the right. With the stem up the L port is open to Common; and with the stem down the U port is open to Common.

Maximum Temperature and Pressure Ratings for Threaded Globe Valve Bodies



Maximum Temperature and Pressure Ratings for Flanged Globe Valve Bodies



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