

## DG Series – Submittal/Technical Data

09/18/19

### Application

DG Series Globe Valves provide stable and accurate control of both water, 50/50 water Glycol solutions and steam heat exchangers on fan coil units, VAV reheat coils, and air handling units up to 900 GPM. These globe valves feature rangability of greater than 100:1 to provide precise control.

Two way standard trim valves provide an equal percentage flow characteristic for use on hot water and chilled water.

Two way stainless trim valves - recommended for steam applications, and 3-way mixing valves provide a linear flow characteristic.

All DG series globe valves feature a cartridge style packing, which is easily replaceable while the valve is in line. Constant plug guiding and precision-machined metal to metal seating assures ANSI Class IV shutoff (.01%) which provides low leakage and energy conservation.

## DG Series Flanged Globe Valves 2 Way and 3 Way • 2-1/2" - 6"

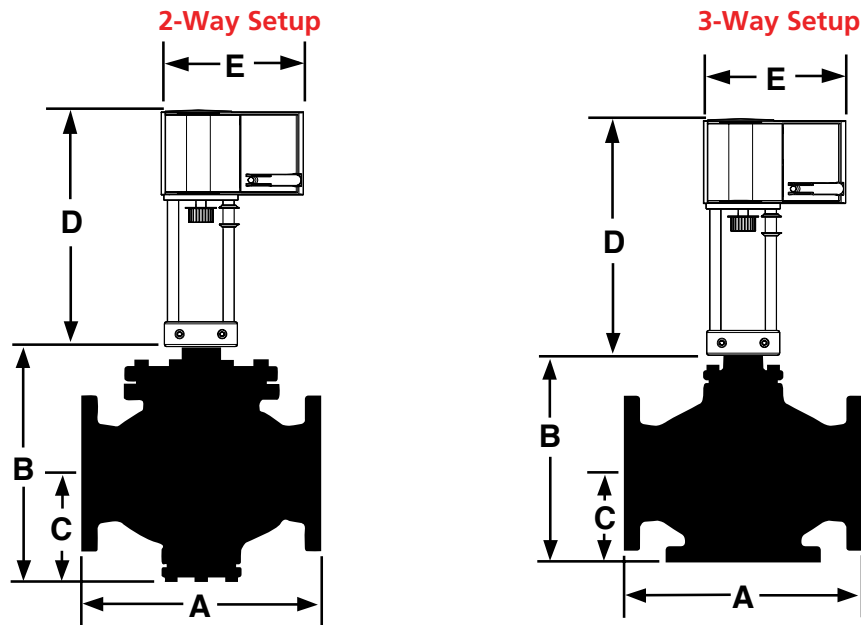


## DG - Specifications

### Technical Specifications - Flanged Globe Valves, 2-1/2" - 6" – 2-Way & 3-Way

For Chilled/Hot Water, 50/50 Glycol Solutions and Steam Service:	Chilled / Hot Water		Steam (0 to 100 PSI Max Inlet Pressure)	
Sizes	2-1/2" to 6" Flanged Valves, 2 & 3-Way		2-1/2" to 6" Flanged Valves, 2-Way	
Valve Body - ANSI Class 125	Cast Iron Flanged		Cast Iron Flanged	
Valve Trim Required	Bronze		Stainless Steel (noted by SS in the valve P/N)	
Maximum Fluid Temperature and Inlet Pressure	°F	PSI	°F	PSI
	-20° to 150°	200	337°	100
	200°	190		Saturated Steam
	250°	175		
Stem Material	Stainless Steel (ASTM A582 Type 303)		Stainless Steel (ASTM A582 Type 303)	
Packing	EPDM O-Ring		Teflon V-Ring/EPDM O-Ring	
Stem Lift	(3/4" stroke for 2-1/2" & 3" valves)		(3/4" stroke for 2-1/2" & 3" valves)	
	(1-1/2" stroke for 4" - 6" valves)		(1-1/2" stroke for 4" - 6" valves)	
Maximum Recommended Differential	25 PSI Water		50 PSIG Water or Steam	
Flow Characteristic	Equal Percentage for 2-Way valves with standard trim.			
	Linear for 2-Way valves with Stainless Steel trim.			
	3-Way is equal percentage NC port, and linear for NO port.			
Maximum Close-Off Pressure	Refer to Close-Off Charts		Refer to Close-Off Charts	
Leakage Rate	Class IV (0.01% of Cv)		Class IV (0.01% of Cv)	
Rangability	>100:1		>100:1	

# DG - 2 & 3-Way - GA Series Actuator Dimensions



## 2-Way DG Dimensions - For GA Series Actuator

Valve Models	Size in.(mm)	Flow Coefficient		Stroke in.(mm)	A	B	C	D Actuator Height	E Actuator Width	Weight <sup>1</sup>	
		Cv	Kv							lbs.	kg.
DG250-2-63	2-1/2 (65)	63	54	3/4 (20)	10-7/8 (276)	9-3/8 (239)	3-3/4 (95)	11-3/8 (289)	9-1/16 (230)	60	27
DG3-2-100	3 (80)	100	85	3/4 (20)	11-3/4 (299)	10-3/4 (272)	4-3/8 (111)			76	34
DG4-2-160	4 (100)	160	137	1-1/2 (40)	13-7/8 (352)	12-1/2 (318)	5-1/8 (132)	124		56	
DG5-2-250	5 (125)	250	214	1-1/2 (40)	15-3/4 (400)	13-3/4 (349)	5-3/4 (146)	155		70	
DG6-2-400	6 (150)	400	340	1-1/2 (40)	17-3/4 (451)	15-1/2 (393)	6-5/8 (167)	212		96	

<sup>1</sup>- Weights are for Valve Only.

Add 3.94 in. for optional High Media Temperature Height Extender

- Non-Spring Return Actuator Weight 9.1 lb. (4.1 kg)

- Spring Return Actuator Weight 12.3 lb. (5.6 kg)

## 3-Way DG Dimensions - For GA Series Actuator

Valve Models	Size in.(mm)	Flow Coefficient		Stroke in.(mm)	A	B	C	D Actuator Height	E Actuator Width	Weight <sup>1</sup>	
		Cv	Kv							lbs.	kg.
DG250-3-63	2-1/2 (65)	63	54	3/4 (20)	10-7/8 (276)	9-3/8 (239)	3-3/4 (95)	11-3/8 (289)	9-1/16 (230)	50	23
DG3-3-100	3 (80)	100	85	3/4 (20)	11-3/4 (299)	10-3/4 (272)	4-3/8 (111)			65	30
DG4-3-160	4 (100)	160	137	1-1/2 (40)	13-7/8 (352)	12-1/2 (318)	5-1/8 (132)	110		50	
DG5-3-250	5 (125)	250	214	1-1/2 (40)	15-3/4 (400)	13-3/4 (349)	5-3/4 (146)	136		62	
DG6-3-400	6 (150)	400	340	1-1/2 (40)	17-3/4 (451)	15-1/2 (393)	6-5/8 (167)	141		64	

<sup>1</sup>- Weights are for Valve Only.

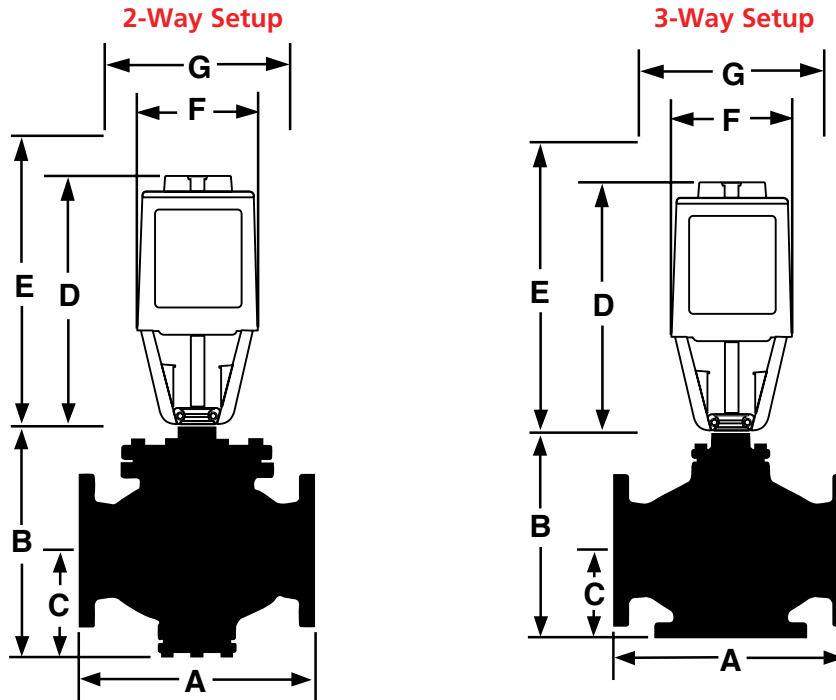
Add 3.94 in. for optional High Media Temperature Height Extender

- Non-Spring Return Actuator Weight 9.1 lb. (4.1 kg)

- Spring Return Actuator Weight 12.3 lb. (5.6 kg)



## DG - 2 & 3-Way - VAL Series Actuator Dimensions



### 2-Way DG Dimensions - For VAL Series Actuator

Valve Models	Size in.(mm)	Flow Coefficient		Stroke in.(mm)	A	B	C	D Actuator Height	E Service Height	F Actuator Width	G Service Width	Weight <sup>1</sup>	
		Cv	Kv									lbs.	kg.
DG250-2-63	2-1/2 (65)	63	54	3/4 (20)	10-7/8 (276)	11 (281)	4-7/8 (123)	14-3/4 (375)	22-3/4 (578)	7 (178)	25 (635)	60	27
DG3-2-100	3 (80)	100	85	3/4 (20)	11-3/4 (299)	12-1/4 (312)	5-5/16 (135)					76	34
DG4-2-160	4 (100)	160	137	1-1/2 (40)	13-7/8 (352)	13-9/16 (345)	6-5/16 (160)					124	56
DG5-2-250	5 (125)	250	214	1-1/2 (40)	15-3/4 (400)	15-3/16 (385)	7 (177)					155	70
DG6-2-400	6 (150)	400	340	1-1/2 (40)	17-3/4 (451)	16-3/4 (426)	7-7/8 (200)					212	96

<sup>1</sup> - Weights are for Valve Only.

- VAL-SRS07P Actuator Weight 18.9 lb. (8.6 kg)

- VAL-SRS15P Actuator Weight 22.0 lb. (10.0 kg)

### 3-Way DG Dimensions - For VAL Series Actuator

Valve Models	Size in.(mm)	Flow Coefficient		Stroke in.(mm)	A	B	C	D Actuator Height	E Service Height	F Actuator Width	G Service Width	Weight <sup>1</sup>	
		Cv	Kv									lbs.	kg.
DG250-3-63	2-1/2 (65)	63	54	3/4 (20)	10-7/8 (276)	9-3/8 (239)	3-3/4 (95)	14-3/4 (375)	22-3/4 (578)	7 (178)	25 (635)	50	23
DG3-3-100	3 (80)	100	85	3/4 (20)	11-3/4 (299)	10-3/4 (272)	4-3/8 (111)					65	30
DG4-3-160	4 (100)	160	137	1-1/2 (40)	13-7/8 (352)	12-1/2 (318)	5-1/8 (132)					110	50
DG5-3-250	5 (125)	250	214	1-1/2 (40)	15-3/4 (400)	13-3/4 (349)	5-3/4 (146)					136	62
DG6-3-400	6 (150)	400	340	1-1/2 (40)	17-3/4 (451)	15-1/2 (393)	6-5/8 (167)					141	64

<sup>1</sup> - Weights are for Valve Only.

- VAL-SRS07P Actuator Weight 18.9 lb. (8.6 kg)

- VAL-SRS15P Actuator Weight 22.0 lb. (10.0 kg)

## Application

The **GA(S) Series** is a direct mount line of linear motor actuators to be used primarily on globe valves. The patented drive-valve coupling allows the drive to be connected to the valve automatically as soon as the power is applied to the actuator. An external crank handle enables the desired position to be set manually as well. Microprocessor technology enables the actuator to identify the functions required and to adapt itself automatically to the control valve properties.

These actuators operate on 24V AC or DC, and all input signals- 0-10V or 4-20mA modulating output, or On/Off (2-point) or Floating (3-point) control. The actuator automatically detects the control signal applied via a 2 LED display.

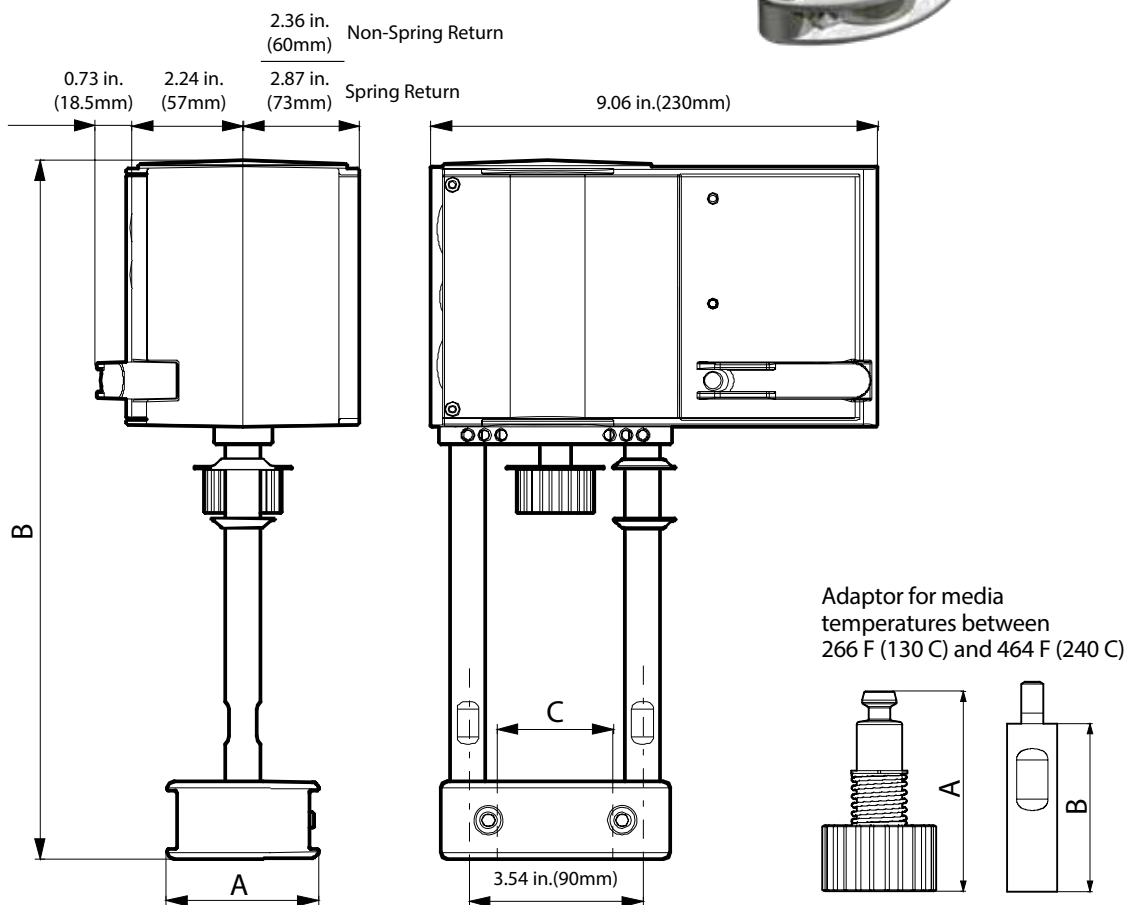
These actuators operate both 2 and 3-way valves and are available in non-spring return and spring return versions. The GA(S) series is bi-directional, selectable via screw terminals.

## GA(S) Series Globe Valve Actuators

- Non-Spring Return - GA24-562
- Spring Return - GASRE24-450
- Spring Return - GASEX24-450



## GA(S) Series - Dimensions



Description	A	B	C
GA(S) Series	2.52 in. (64mm)	11.38 in. (289mm)	1.73 in. (44mm)

Part Number	A	B
0372336 240	4.31 in. (109.4mm)	3.94 in. (100mm)

# GA(S) Series - Actuator Specifications



## Technical Specifications

<b>Non-Spring Return</b>	<b>GA24-562</b>	On/Off, Floating and Modulating
<b>Spring Return</b>	<b>GASRE24-450</b>	On/Off, Floating and Modulating, Shaft Normally Retracted
	<b>GASEX24-450</b>	On/Off, Floating and Modulating, Shaft Normally Extended
<b>Power Requirements</b>	<b>On/Off, Floating and Modulating</b>	24 VAC ( $\pm 20\%$ ) at 50/60 Hz or 24 VDC ( $\pm 15\%$ )
<b>Positioner<sup>1</sup></b>	<b>Control Signal 1</b>	0 to 10 V, $R_i > 100 \text{ k}\Omega$
	<b>Control Signal 2</b>	4 to 20 mA, $R_i = 50 \Omega$
	<b>Position Feedback Signal</b>	0 to 10 V, Load $> 2.5 \text{ k}\Omega$
<b>Action</b>		Direct or Reverse Acting
<b>Switching Range</b>		300 mv
<b>Power Consumption<sup>2</sup></b>	<b>Non-Spring Return</b>	10W, 18VA
	<b>Spring Return</b>	7.5W, 20VA
<b>Force</b>	<b>Non-Spring Return</b>	562 lbs. (2,500 N)
	<b>Spring Return</b>	450 lbs. (2,000 N) Power stroke and spring stroke
<b>Stroke</b>		0" to 1.93" (0-49mm)
<b>Max. Temperature of Medium<sup>3</sup></b>		266°F (130°C)
<b>Ambient Conditions</b>	<b>Temperature</b>	14°F to 131°F (-10° to 55°C)
	<b>Humidity</b>	0 to 95% RH without condensation
<b>Level of Protection</b>		IP 66. Not intended for outdoor use without additional protection.
<b>Enclosure</b>		Self-extinguishing plastic
<b>Gear Materials</b>	<b>Gears &amp; Gearbox Mounting Column Mounting Bracket</b>	Steel Stainless Steel Cast Light Alloy
<b>Electrical Connection</b>		13 AWG (2.5 mm <sup>2</sup> ) with screw terminals. Three knock-out cable entries for M20×1.5 (2×) and M16×1.5
<b>Motor Run Time sec. per in. (mm)</b>		51 (2), 102 (4), 153 (6), Dip Switch Adjustable
<b>Spring Run Time<sup>4</sup></b>		15... 30 seconds
<b>Number of Spring Returns</b>		> 40,000
<b>Response Time - 3-Point</b>		200 ms
<b>Weight</b>	<b>Spring Return</b>	12.3 lbs. (5.6 kg)
	<b>Non-Spring Return</b>	9.1 lbs. (4.1 kg)
<b>UL Listed</b>		Temperature-Indicating and Regulating Equipment, XAPX, XAPX7. File E366456

<sup>1</sup> Also for On/Off (2-point) or Floating (3 point) depending on the connection for 24V~

<sup>2</sup> Design the transformers for this value, otherwise functional faults may occur.

<sup>3</sup> An intermediate piece is required for medium temperatures between 266°F (130°C) and 464°F (240°C)

<sup>4</sup> The return time corresponds to a stroke of 0.55 in. (14 mm) to 1.58 in. (40 mm) and does not depend on the set run time.

*Disclaimer - The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Bray office. Bray, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.*