

## CG/DG Series Threaded Globe Valves 2-Way and 3-Way — 1/2" - 2"

### Application

Bray Commercial's CG/DG Series threaded globe valves provide stable and accurate control of both water and steam heat exchangers on a wide range of HVAC applications. These brass bodied valves are available in both brass and Stainless-Steel trim in 2-Way and 3-Way configurations for cost effective solutions to your applications.

Constant plug guiding and precision-machined metal to metal seating assures ANSI Class IV shutoff (.01%) which provides low leakage and energy conservation up to 283 GPM. These high close-off globe valves feature a rangeability greater than 100:1 for precise control. Available with floating or modulating control in both spring and non-spring return versions.



### System Types

Baseboard Heating, Fan Coil Units, Terminal Units, VAV  
Reheat Coils, and Unit Ventilators

### Features and Benefits

- **ANSI Class IV leakage**

*Less than 0.01% of Cv at rated Close-Off pressure – for maximum energy efficiency*

- **Superior Control**


*High rangeability and equal percentage flow characteristic*

- **Versatile**

*Available with Stainless Steel Trim for steam applications up to 15 PSI (103 kPa) on CG valves, 100 PSI (689 kPa) on DG valves*

- **5-Year Warranty**

*Industry leading 5-year warranty from the industry's premier valve automation supplier*

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LOOKING FOR MORE	Steam Charts
	
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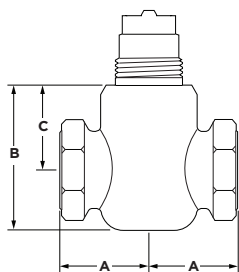
## CG/DG Series Globe Valves - Valve Body Specifications

Technical Specifications - Threaded Globe Valve Body			
Service		CG Series	DG Series
		Chilled/Hot Water, 50/50 Glycol Solutions & Saturated Steam	
Size Range		1/2" - 1", 2-Way Normally Open**, 3-Way Mixing	1-1/4" - 2"****, 2-Way Normally Open**, 3-Way Universal Mixing or Diverting****
Available Cv's		0.4 to 10 (See page CG/DG 6)	16 to 40 (See page CG/DG 6)
Media Temperature Range		<b>Water/Steam</b> — 35° to 250°F (2° to 120°C)	<b>Water</b> — 20°F to 250°F (-7°C to 120°C) <b>Steam</b> — 337°F (170°C) Maximum Stainless Steel Trim Only
Max Inlet Temperature/Pressure		<b>Water</b> — 20°F (-7°C) @ 400 psi (2758 kPa) to 250°F (120°C) @ 365 psi (2517 kPa)	
		<b>Steam</b> — 15 psi (103 kPa) Stainless Steel Trim Only	<b>Steam</b> — 100 psi (689 kPa) Stainless Steel Trim Only
Maximum Differential Pressure		<b>Water</b> — 25 psid (173 kPa) Brass Trim/50 psid (345 kPa) Stainless Steel Trim	
		<b>Steam</b> — 15 psid (103 kPa) Stainless Steel Trim Only	<b>Steam</b> — 50 psid (345 kPa) Stainless Steel Trim Only
Valve Body Pressure Rating		ANSI Class 250	
Maximum Close-Off Pressure		Refer to Close-Off Charts (See page CG/DG 6)	
Close-Off Ratings		According to ANSI/FCI 70-2	
Flow Characteristic		2-Way Valves - Equal Percentage* 3-Way Valves - A (Coil) = Equal Percentage, B (Bypass) = Linear	
Stem Lift		7/32" Stroke	3/4" Stroke
Leakage Rate		Class IV (0.01% of Cv)	
Rangeability		Cv < 1 — > 50:1 Cv > 1 — > 100:1	> 100:1
End Connections		Female NPT	
Materials	Body	1/2" & 3/4" C37700 Forged Brass 1" UNS CA 844 Bronze	UNS CA 844 Bronze
	Stem	Stainless Steel (ASTM A582 Type 303)	
	Globe	<b>Water</b> — Brass <b>Steam</b> — Stainless Steel	
	Packing	Ethylene propylene (EPDM) O-Ring	Brass Trim = EPDM Stainless Steel Trim = Teflon V-Ring/ EPDM -O-Ring
Certifications		CE, CRN - OC24303.5	
Warranty		5 Years limited from time of shipment.	

**Note -** \* Linear flow characteristic available upon request. (DG Series only, with modulating actuators)  
 \*\* Normally closed available upon request  
 \*\*\* DG available in 1/2" to 1" for steam applications up to 100 (689 kPa) psi or 3-Way Diverting applications..  
 \*\*\*\* When the valve is used for diverting applications, the max DP is restricted to 90% of the max DP that is specified for the valve when it is used in a mixing application

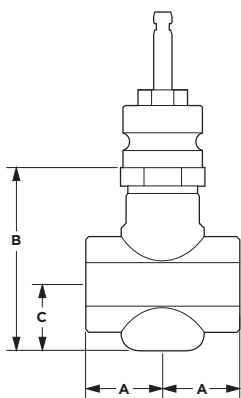
**Disclaimer -** The performance specifications are nominal and conform to acceptable industry standards.  
 For application at conditions beyond these specifications, consult the local Bray office.  
 Bray, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

## 2-Way - Valve Dimensions



### CG Series Dimensions

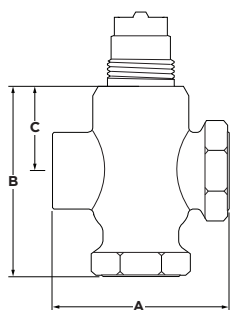
Valve Model Number	Size		A	B	C	Weight	
	in.	mm				lb.	kg.
CG05-2-xxx	1/2	15	1-3/8 (35)	2-1/4 (57)	1-5/16 (33)	1.3	0.6
CG75-2-xxx	3/4	20	1-5/8 (41)	2-3/8 (59)	1-5/16 (33)	1.8	0.8
CG1-2-xxx	1	25	1-15/16 (49)	2-3/4 (69)	1-9/16 (39)	2.6	1.2



### DG Series Dimensions

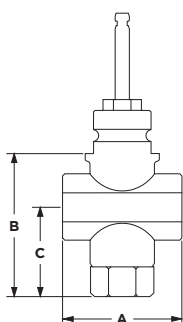
Valve Model Number	Size		A	B	C	Weight	
	in.	mm				lb.	kg.
DG125-2-16	1-1/4	32	2-1/2 (62)	4-1/8 (104)	1-5/8 (40)	7	3.2
DG150-2-25	1-1/2	40	2-9/16 (65)	4-1/4 (109)	1-3/4 (44)	9	4.1
DG2-2-40	2	50	3-1/8 (79)	4-9/16 (116)	2 (51)	13	5.9

## 3-Way - Valve Dimensions



### CG Series Dimensions

Valve Model Number	Size		A	B	C	Weight	
	in.	mm				lb.	kg.
CG05-3-xxx	1/2	15	2-3/4 (70)	2-15/16 (74)	1-5/16 (33)	1.5	0.7
CG75-3-xxx	3/4	20	3-1/4 (83)	2-3/8 (59)	1-5/16 (33)	2.3	1.05
CG1-3-xxx	1	25	3-7/8 (98)	3-15/16 (99)	1-9/16 (39)	3.3	1.5

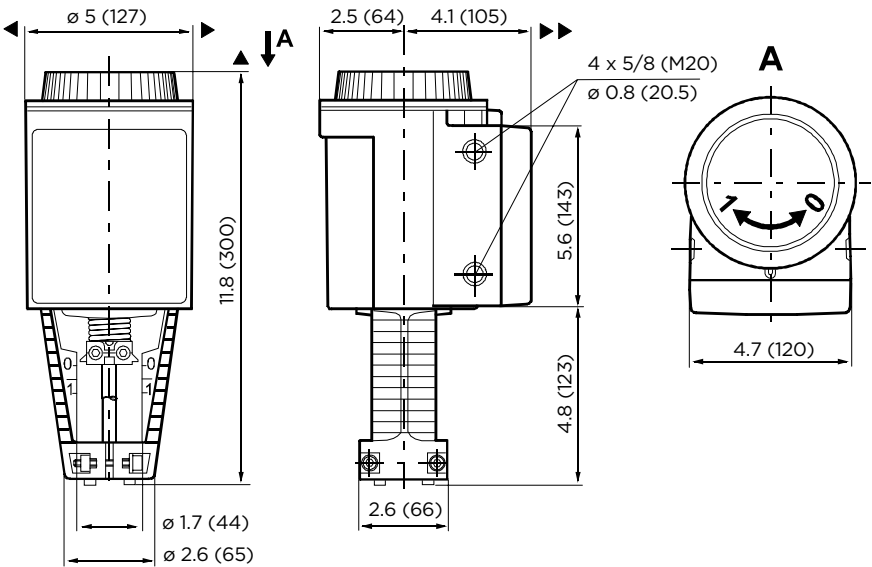


### DG Series Dimensions

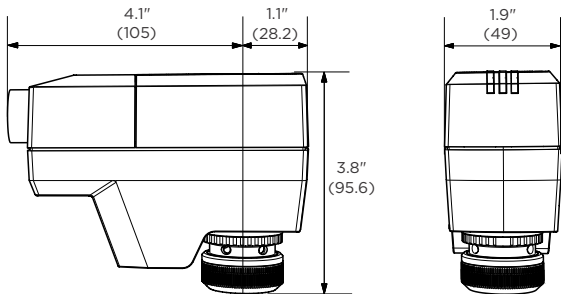
Valve Model Number	Size		A	B	C	Weight	
	in.	mm				lb.	kg.
DG125-3-16	1-1/4	32	4-15/16 (125)	4-5/8 (116)	2-15/16 (74)	7	3.2
DG150-3-25	1-1/2	40	5-1/8 (130)	4-5/8 (117)	3 (76)	9	4.1
DG2-3-40	2	50	6-1/4 (158)	4-3/4 (121)	3-3/16 (81)	13	5.9

# CG/DG Series Globe Valves - Actuator Dimensions

## GA(M)(S)24-225 Series



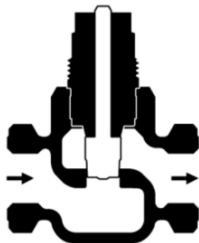
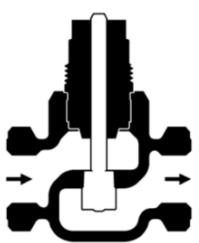
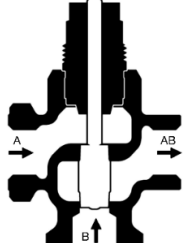
## GA(M)24-67 Series



# CG/DG Series Globe Valves - Part Number Matrix

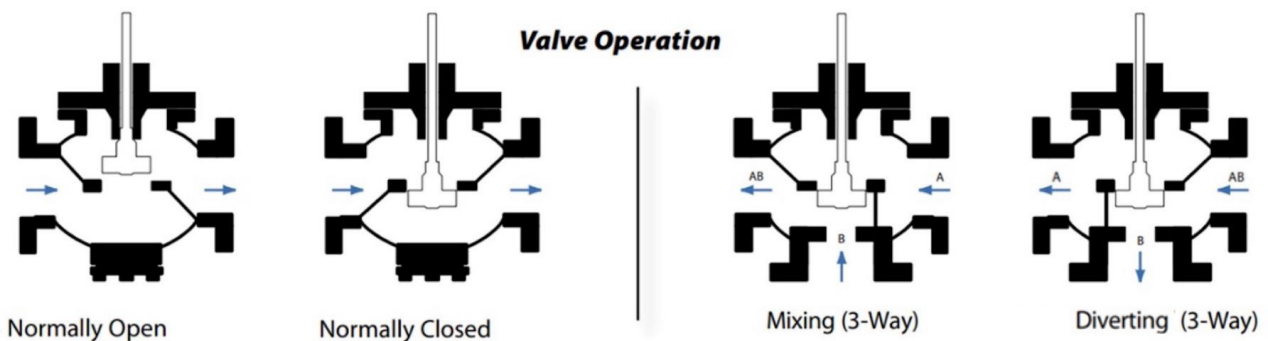
CG	Prefix: CG Series Globe Valves - (1/2" to 1") DG Series Globe Valves - (1-1/4" to 2")						Valve Series
	05	Valve Size (1/2" to 2")					Valve Size
	-						-
	2	Configuration - 2-Way or 3-Way					Configuration
	-						-
	004	CV					Cv
	SS	SS = Stainless Steel					SS
	C	C = Normally Closed					C
	/						/

## CG Series Globe Valves - Piping Diagrams

	Normally Open Valve	Normally Closed Valve	Three-Way Valve
<i>Example PN</i>	<i>CGxx-2-xx</i>	<i>CGxx-2-xxC</i>	<i>CGxx-3-xx</i>
Actuator <b>Extends</b>	Valve Closes	Valve Opens	Valve opens between Port A and AB
Actuator <b>Retracts</b>	Valve Opens	Valve Closes	Valve opens between Port B and Port AB
Valve Diagram			

## DG Series Globe Valves - Piping Diagrams

	Normally Open Valve	Normally Closed Valve	Three-Way Valve Universal Mixing/Diverting
<i>Example PN</i>	<i>DGxx-2-xx</i>	<i>DGxx-2-xxC</i>	<i>DGxx-3-xx</i>
Actuator <b>Extends</b> (0 to 1)	Valve Closes	Valve Opens	Valve Opens between Port A and AB
Actuator <b>Retracts</b> (1 to 0)	Valve Opens	Valve Closes	Valve Opens between Port B and AB



## CG/DG Series Globe Valves - Close-Off Charts

### 2-Way Close-Off Chart (PSI)

Actuator Model Details				Non-Fail Safe		Non-Spring Return		Fail Safe		Spring Return	
				GA24-67	GAM24-67	GA24-225	GAM24-225	GA24-67-FS	GAM24-67-FS	GAMS24-225	GAMS24-225
Model Number	Size		Cv	Floating	Modulating	Floating	Modulating	Floating	Modulating	Floating	Modulating
	In.	mm		24 VAC	24 VAC 0 to 10 VDC	24 VAC	24 VAC 0-10 VDC/4-20mA	24 VAC	0 to 10 VDC*	24 VAC	24 VAC 0-10 VDC/4-20mA
CG05-2-004	.5	15	0.4	120	120	-	-	120	120	-	-
CG05-2-006	.5	15	0.63								
CG05-2-01	.5	15	1								
CG05-2-02	.5	15	1.6								
CG05-2-03	.5	15	2.5	65	65	-	-	65	65	-	-
CG05-2-04	.5	15	4								
CG75-2-07	.75	20	6.3	55	55	-	-	55	55	-	-
CG1-2-10	1.0	25	10								
DG125-2-16	1.25	32	16	-	-	124	-	-	-	124	-
DG150-2-25	1.5	40	25	-	-	80	-	-	-	80	-
DG2-2-40	2.0	50	40	-	-	49	-	-	-	49	-

### 3-Way Close-Off Chart (PSI)

Actuator Model Details				Non-Fail Safe		Non-Spring Return		Fail Safe		Spring Return	
				GA24-67	GAM24-67	GA24-225	GAM24-225	GA24-67-FS	GAM24-67-FS	GAMS24-225	GAMS24-225
Model Number	Size		Cv	Floating	Modulating	Floating	Modulating	Floating	Modulating	Floating	Modulating
	In.	mm		24 VAC	24 VAC 0 to 10 VDC	24 VAC	24 VAC 0-10 VDC/4-20mA	24 VAC	0 to 10 VDC*	24 VAC	24 VAC 0-10 VDC/4-20mA
CG05-3-004	.5	15	0.4	95	95	-	-	95	95	-	-
CG05-3-006	.5	15	0.63								
CG05-3-01	.5	15	1								
CG05-3-02	.5	15	1.6								
CG05-3-03	.5	15	2.5	50	50	-	-	50	50	-	-
CG05-3-04	.5	15	4								
CG75-3-07	.75	20	6.3	40	40	-	-	40	40	-	-
CG1-3-10	1.0	25	10								
DG125-3-16	1.25	32	16	-	-	117		-	-	117	
DG150-3-25	1.5	40	25	-	-	73		-	-	73	
DG2-3-40	2.0	50	40	-	-	44		-	-	44	

NOTE: Values in chart are for 10 VDC supplied to the actuator.

## CG/DG Series Globe Valves - Steam Capacity Chart

Steam Capacity Chart - lb/hr (CG & DG)														
Mode/Valve Size				Inlet Pressure (PSI)										
				2		5			10			15		
Model Number	Size		Cv	lb/hr										
	In.	mm		1	2	3	4	5	6	8	10	9	12	15
CG05-2-004	.5	15	0.4	4.78	6.66	8.78	10	11	14	15	17	18	19	22
CG05-2-006	.5	15	0.63	7.53	11	14	16	17	21	24	26	28	31	34
CG05-2-01	.5	15	1	12	17	22	25	28	34	38	42	45	48	54
CG05-2-02	.5	15	1.6	19	27	35	40	44	54	61	67	72	78	87
CG052-03	.5	15	2.5	30	42	55	62	69	85	96	104	112	121	135
CG05-2-04	.5	15	4	48	67	88	100	110	136	153	167	179	194	217
CG75-2-07	.75	20	6.3	75	105	138	157	174	214	241	263	282	305	341
CG1-2-10	1.0	25	10	120	166	219	250	275	339	382	417	447	485	542
DG125-2-16SS	1.25	32	16	191	266	351	400	441	542	611	667	716	775	867
DG150-2-25SS	1.5	40	25	299	416	549	625	689	847	955	1042	1118	1211	1355
DG2-2-40SS	2.0	50	40	478	666	878	1000	1102	1356	1529	1667	1789	1938	2168

Steam Capacity Chart - lb/hr (DG Only)											
Mode/Valve Size				Inlet Pressure (PSI)							
				25			50			100	
Model Number	Size		Cv	lb/hr							
	In.	mm		5	15	20	15	30	32.5	50	57.5
DG125-2-16SS	1.25	32	16	648	1044	1158	1392	1835	1885	3182	3340
DG150-2-25SS	1.5	40	25	1013	1632	1810	2175	2867	2946	4972	5220
DG2-2-40SS	2.0	50	40	1620	2611	2895	3480	4587	4713	7956	8351

NOTE: Table is expressed in pounds per hour (lb/h).

## CG/DG Series Globe Valves - Adjusted Cv Chart

Adjusted Cv Chart - (CG & DG)												
Mode/Valve Size				Pipe Size /At Full Open (Adjusted Cv)								
Model Number	Size		Cv	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
	In.	mm										
CG05-X-004	.5	15	0.4	0.40	0.40	0.40	0.40	-	-	-	-	-
CG05-X-006	.5	15	0.63	0.63	0.63	0.63	0.63	-	-	-	-	-
CG05-X-01	.5	15	1	1.00	1.00	0.99	0.99	-	-	-	-	-
CG05-X-02	.5	15	1.6	1.60	1.58	1.57	1.56	-	-	-	-	-
CG05X-03	.5	15	2.5	2.50	2.44	2.39	2.36	-	-	-	-	-
CG05-X-04	.5	15	4	4.00	3.76	3.59	3.50	-	-	-	-	-
CG75-X-07	.75	20	6.3	-	6.30	6.18	6.04	5.96	-	-	-	-
CG1-X-10	1.0	25	10	-	-	10.00	9.89	9.75	9.56	-	-	-
DG125-X-16SS	1.25	32	16	-	-	-	16.00	15.87	15.50	15.26	-	-
DG150-X-25SS	1.5	40	25	-	-	-	-	25.00	24.52	24.00	23.65	-
DG2-X-40SS	2.0	50	40	-	-	-	-	-	40.00	39.57	39.00	38.23

X = (2) for 2-Way  
(3) for 3-Way

# **Bray** COMMERCIAL

**Bray Commercial** provides automated Butterfly, Ball, Globe and Pressure Independent Control Valves to the commercial building HVAC market throughout the world. Wherever valve performance is required to maintain climate controlled environments, Bray can provide the required automated valves to meet the demanding flow applications of chiller/boiler isolation, air handlers and terminal units for new construction, retrofit and/or LEED certification applications in buildings.

## Building Types

- Healthcare
- Data Centers
- Government and Municipal
- Sports/Entertainment/  
Convention Centers
- K-12 and University Education
- Transportation
- Hotels
- Office Buildings
- Retail

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