Code No. LIT-1900556
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VG7000 Series Brass Trim Globe Valves with VA7800 Series Electric Actuators

Description

VG7000 Series Globe Valves are designed to regulate the flow of hot water, chilled water, glycol solutions, and steam in response to the demand of a controller in HVAC systems. Available in sizes 1/2 through 2 in. (DN15 through DN50), this family of two- and three-way bronze valves is available in Normally Open (N.O.), Normally Closed (N.C.), and three-way mixing configurations.

Refer to the *VG7000 Series Bronze Control Valves Product Bulletin (LIT-977140)* for important product application information.

Features

- available in brass and stainless steel trim
- available with spring-return and non-spring-return actuators
- meets requirements of American Society of Mechanical Engineers (ASME) B16.15 class 250
- long life replaceable ring packing provides highest reliability and longest life
- every valve tested for tight shutoff
- optional end switches available
- voltage 24 VAC/VDC, 20 VA transformer sizing

Repair Information

If the VG7000 Series Globe Valve fails to operate within its specifications, replace the valve body, actuator, or entire assembly. For replacement parts, contact the nearest Johnson Controls® representative.

VG7000 Series Valve with VA7820 Actuator

Selection Charts

VG7000 Series Brass Trim Globe Valves with VA7800 Series Non-Spring-Return Electric Actuators

Valve Code Number	Size, in.	Cv	Closeoff psig	Non-Spring Return			
				Without Auxiliary Switches		With Two Auxiliary Switches	
				VA7810-AGA-2 On/Off (Floating)	VA7810-HGA-2 (Proportional)	VA7810-AGC-2 On/Off (Floating)	VA7810-HGC-2 (Proportional)
Two-Way Push-Down-to-Close — NPT End Connections							
VG7241NT	1	11.6	182	VG7241NT+71CAGA	VG7241NT+71CHGA	VG7241NT+71CAGC	VG7241NT+71CHGC
VG7241PT	1-1/4	18.5	111	VG7241PT+71CAGA	VG7241PT+71CHGA	VG7241PT+71CAGC	VG7241PT+71CHGC
VG7241RT	1-1/2	28.9	71	VG7241RT+71CAGA	VG7241RT+71CHGA	VG7241RT+71CAGC	VG7241RT+71CHGC
VG7241ST	2	46.2	46	VG7241ST+71CAGA	VG7241ST+71CHGA	VG7241ST+71CAGC	VG7241ST+71CHGC
Three-Way Mixing — NPT End Connections							
VG7842NT	1	11.6	182/213	VG7842NT+71CAGA	VG7842NT+71CHGA	VG7842NT+71CAGC	VG7842NT+71CHGC
VG7842PT	1-1/4	18.5	111/122	VG7842PT+71CAGA	VG7842PT+71CHGA	VG7842PT+71CAGC	VG7842PT+71CHGC
VG7842RT	1-1/2	28.9	71/76	VG7842RT+71CAGA	VG7842RT+71CHGA	VG7842RT+71CAGC	VG7842RT+71CHGC
VG7842ST	2	46.2	46/47	VG7842ST+71CAGA	VG7842ST+71CHGA	VG7842ST+71CAGC	VG7842ST+71CHGC

VG7000 Series Brass Trim Globe Valves with VA7800 Series Spring-Return Electric Actuators

Valve Code Number	Size, in.	Cv	Closeoff psig	Spring Return			
				Spring Return Stem Up		Spring Return Stem Down	
				VA7820-HGA-2[1] Proportional without Switches	VA7820-HGC-2[1] Proportional with Two Switches	VA7830-HGA-2[1] Proportional without Switches	VA7830-HGC-2[1] Proportional with Two Switches
Two-Way Push-Down-to-Close (Normally Open) — NPT End Connections							
VG7241NT	1	11.6	182	VG7241NT+72CHGA	VG7241NT+72CHGC		
VG7241PT	1-1/4	18.5	111	VG7241PT+72CHGA	VG7241PT+72CHGC		
VG7241RT	1-1/2	28.9	71	VG7241RT+72CHGA	VG7241RT+72CHGC		
VG7241ST	2	46.2	46	VG7241ST+72CHGA	VG7241ST+72CHGC		
Two-Way Push-Down-to-Open (Normally Closed) — NPT End Connections							
VG7441NT	1	11.6	213	VG7441NT+72CHGA	VG7441NT+72CHGC		
VG7441PT	1-1/4	18.5	122	VG7441PT+72CHGA	VG7441PT+72CHGC		
VG7441RT	1-1/2	28.9	76	VG7441RT+72CHGA	VG7441RT+72CHGC		
VG7441ST	2	46.2	47	VG7441ST+72CHGA	VG7441ST+72CHGC		
Three-Way Mixing — NPT End Connections							
VG7842NT	1	11.6	182/213	VG7842NT+72CHGA	VG7842NT+72CHGC	VG7842NT+74CHGA	VG7842NT+74CHGC
VG7842PT	1-1/4	18.5	111/122	VG7842PT+72CHGA	VG7842PT+72CHGC	VG7842PT+74CHGA	VG7842PT+74CHGC
VG7842RT	1-1/2	28.9	71/76	VG7842RT+72CHGA	VG7842RT+72CHGC	VG7842RT+74CHGA	VG7842RT+74CHGC
VG7842ST	2	46.2	46/47	VG7842ST+72CHGA	VG7842ST+72CHGC	VG7842ST+74CHGA	VG7842ST+74CHGC

1. VA7820 and VA7830 spring-return actuators are shipped from the factory set up for 0-10 VDC proportional control. These actuators have field-selectable switches that allow the actuators to be used for on/off control, or three-wire floating control.

VG7000 Series Brass Trim Globe Valves with VA7800 Series Electric Actuators (Continued)

Technical Specifications

VG7000 Series Brass Trim Globe Valves with VA7800 Series Electric Actuators[1]		
Service[2]		Hot Water, Chilled Water, 50/50 Glycol Solutions, and 38 psig (262 kPa) Saturated Steam for HVAC Systems
Fluid Temperature Limits	**Water**	35 to 284°F (2 to 140°C)
	Steam	38 psig (262 kPa) at 284°F (140°C)
Valve Stroke	**5/16 in.**	For All 1/2 and 3/4 in. Valves
	1/2 in.	For All 1 and 1-1/4 in. Valves
	3/4 in.	For All 1-1/2 and 2 in. Valves
Valve Body Rating		Meets Requirements of ASME B16.15 Class 250
Valve Assembly Maximum Allowable Pressure/Temperature	**Water**	400 psig (2,756 kPa) up to 150°F (66°C); Decreasing to 365 psig (2,515 kPa) at 248°F (120°C)
	Steam	35 psig (262 kPa) Saturated Steam at 284°F (140°C)
Maximum Recommended Operating Pressure Drop	**35 psi**	For 1/2 through 1-1/4 in. Valves
	30 psi	For 1-1/2 and 2 in. Valves
Flow Characteristics	**Two-Way**	Equal Percentage
	Three-Way	Linear
Rangeability[3]		> 100:1 According to EN60534-2-4
Actuator Ambient Operating Temperature Limits	**VA7800 Series**	23 to 131°F (-5 to 55°C)
Leakage		0.01% of Maximum Flow per ANSI/FCI 70-2, Class 4
End Connections	**NPT**	Factory or Field Assembly
	Sweat	Field Assembly Only
	Union Globe	Field Assembly Only
	Union Angle	Field Assembly Only
Materials	**Body**	Cast Bronze
	Bonnet	Brass
	Stem	300 Series Stainless Steel
	Plug	Brass
	Seat	Brass against Molded Elastomeric Disk
	Packing	Self-Adjusting Ethylene Propylene Rubber (EPR) Ring Pack U-Cups
Compliance	**Canada**	CRN: 0C1099.9087YTN

1. In steam applications, install the valve with the stem horizontal to the piping, and wrap the valve and piping with insulation.
2. Proper water treatment is recommended; refer to the VDI 2035 Guideline.
3. Rangeability is defined as the ratio of maximum controllable flow to minimum controllable flow.

