VG7000 Series Stainless Steel 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-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

Stainless Steel 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							
VG7243CT	1/2	0.73	308	VG7243CT+71CAGA	VG7243CT+71CHGA	VG7243CT+71CAGC	VG7243CT+71CHGC
VG7243ET	1/2	1.8	308	VG7243ET+71CAGA	VG7243ET+71CHGA	VG7243ET+71CAGC	VG7243ET+71CHGC
VG7243GT	1/2	4.6	278	VG7243GT+71CAGA	VG7243GT+71CHGA	VG7243GT+71CAGC	VG7243GT+71CHGC
VG7243LT	3/4	7.3	177	VG7243LT+71CAGA	VG7243LT+71CHGA	VG7243LT+71CAGC	VG7243LT+71CHGC
VG7243NT	1	11.6	112	VG7243NT+71CAGA	VG7243NT+71CHGA	VG7243NT+71CAGC	VG7243NT+71CHGC
VG7243PT	1-1/4	18.5	68	VG7243PT+71CAGA	VG7243PT+71CHGA	VG7243PT+71CAGC	VG7243PT+71CHGC
VG7243RT	1-1/2	28.9	44	VG7243RT+71CAGA	VG7243RT+71CHGA	VG7243RT+71CAGC	VG7243RT+71CHGC
VG7243ST	2	46.2	28	VG7243ST+71CAGA	VG7243ST+71CHGA	VG7243ST+71CAGC	VG7243ST+71CHGC
Three-Way Mixing — NPT End Connections							
VG7844CT	1/2	0.73	308/308	VG7844CT+71CAGA	VG7844CT+71CHGA	VG7844CT+71CAGC	VG7844CT+71CHGC
VG7844ET	1/2	1.8	308/308	VG7844ET+71CAGA	VG7844ET+71CHGA	VG7844ET+71CAGC	VG7844ET+71CHGC
VG7844GT	1/2	4.6	278/308	VG7844GT+71CAGA	VG7844GT+71CHGA	VG7844GT+71CAGC	VG7844GT+71CHGC
VG7844LT	3/4	7.3	177/197	VG7844LT+71CAGA	VG7844LT+71CHGA	VG7844LT+71CAGC	VG7844LT+71CHGC
VG7844NT	1	11.6	112/131	VG7844NT+71CAGA	VG7844NT+71CHGA	VG7844NT+71CAGC	VG7844NT+71CHGC
VG7844PT	1-1/4	18.5	68/75	VG7844PT+71CAGA	VG7844PT+71CHGA	VG7844PT+71CAGC	VG7844PT+71CHGC
VG7844RT	1-1/2	28.9	44/46	VG7844RT+71CAGA	VG7844RT+71CHGA	VG7844RT+71CAGC	VG7844RT+71CHGC
VG7844ST	2	46.2	28/29	VG7844ST+71CAGA	VG7844ST+71CHGA	VG7844ST+71CAGC	VG7844ST+71CHGC

Stainless Steel Trim Globe Valves with VA7800 Series Spring-Return Electric Actuators (Part 1 of 2)

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							
VG7243CT	1/2	0.73	308	VG7243CT+72CHGA	VG7243CT+72CHGC		
VG7243ET	1/2	1.8	308	VG7243ET+72CHGA	VG7243ET+72CHGC		
VG7243GT	1/2	4.6	278	VG7243GT+72CHGA	VG7243GT+72CHGC		
VG7243LT	3/4	7.3	177	VG7243LT+72CHGA	VG7243LT+72CHGC		
VG7243NT	1	11.6	112	VG7243NT+72CHGA	VG7243NT+72CHGC		
VG7243PT	1-1/4	18.5	68	VG7243PT+72CHGA	VG7243PT+72CHGC		
VG7243RT	1-1/2	28.9	44	VG7243RT+72CHGA	VG7243RT+72CHGC		
VG7243ST	2	46.2	28	VG7243ST+72CHGA	VG7243ST+72CHGC		

VG7000 Series Stainless SteelTrim Globe Valves with VA7800 Series Electric Actuators (Continued)

Stainless Steel Trim Globe Valves with VA7800 Series Spring-Return Electric Actuators (Part 2 of 2)

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-Open (Normally Closed) — NPT End Connections							
VG7443CT	1/2	0.73	308	VG7443CT+72CHGA	VG7443CT+72CHGC		
VG7443ET	1/2	1.8	308	VG7443ET+72CHGA	VG7443ET+72CHGC		
VG7443GT	1/2	4.6	308	VG7443GT+72CHGA	VG7443GT+72CHGC		
VG7443LT	3/4	7.3	197	VG7443LT+72CHGA	VG7443LT+72CHGC		
VG7443NT	1	11.6	131	VG7443NT+72CHGA	VG7443NT+72CHGC		
VG7443PT	1-1/4	18.5	75	VG7443PT+72CHGA	VG7443PT+72CHGC		
VG7443RT	1-1/2	28.9	46	VG7443RT+72CHGA	VG7443RT+72CHGC		
VG7443ST	2	46.2	29	VG7443ST+72CHGA	VG7443ST+72CHGC		
Three-Way Mixing — NPT End Connections							
VG7844CT	1/2	0.73	308/308	VG7844CT+72CHGA	VG7844CT+72CHGC	VG7844CT+74CHGA	VG7844CT+74CHGC
VG7844ET	1/2	1.8	308/308	VG7844ET+72CHGA	VG7844ET+72CHGC	VG7844ET+74CHGA	VG7844ET+74CHGC
VG7844GT	1/2	4.6	278/308	VG7844GT+72CHGA	VG7844GT+72CHGC	VG7844GT+74CHGA	VG7844GT+74CHGC
VG7844LT	3/4	7.3	177/197	VG7844LT+72CHGA	VG7844LT+72CHGC	VG7844LT+74CHGA	VG7844LT+74CHGC
VG7844NT	1	11.6	112/131	VG7844NT+72CHGA	VG7844NT+72CHGC	VG7844NT+74CHGA	VG7844NT+74CHGC
VG7844PT	1-1/4	18.5	68/75	VG7844PT+72CHGA	VG7844PT+72CHGC	VG7844PT+74CHGA	VG7844PT+74CHGC
VG7844RT	1-1/2	28.9	44/46	VG7844RT+72CHGA	VG7844RT+72CHGC	VG7844RT+74CHGA	VG7844RT+74CHGC
VG7844ST	2	46.2	28/29	VG7844ST+72CHGA	VG7844ST+72CHGC	VG7844ST+74CHGA	VG7844ST+74CHGC

1. VA7820 and VA7830 spring-return actuators are shipped from the factory set 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.

Technical Specifications

VG7000 Series Stainless Steel 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 338°F (2 to 170°C)
	Steam	100 psig (690 kPa) at 338°F (170°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 308 psig (2,122 kPa) at 338°F (170°C)
	Steam	100 psig (690 kPa) Saturated Steam at 338°F (170°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]		> 25:1 According to EN60534-2-4 for the 1/2 in. Size, Cv 0.73, Valve Bodies > 100:1 According to EN60534-2-4 for All Other Valves
Actuator Ambient Operating Temperature Limits	**VA7800 Series**	23 to 131°F (-5 to 55°C)
Leakage		0.05% of Maximum Flow
End Connections	**NPT**	Factory or Field Assembly
Materials	**Body**	Cast Bronze
	Bonnet	Brass
	Stem	300 Series Stainless Steel
	Plug	300 Series Stainless Steel
	Seat	300 Series Stainless Steel
	Packing	Spring-Loaded Polytetrafluoroethylene (PTFE) and Elastomer V-Rings
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.