

# VG7000 Series Brass Trim Globe Valves with V-3801 Compact Pneumatic Actuators

## Description

VG7000 Series Brass Trim Globe Valves with V-3801 Compact Pneumatic Actuators control hot or chilled water or 15 psig saturated steam.

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

- valve trim: brass
- valve stem: stainless steel
- maximum supply air pressure: 25 psig (172 kPa)
- fluid temperature: 35 to 248°F (2 to 120°C)
- valve body static pressure rating: ANSI Class 250
- factory or field assembly



V-3801-8001 Pneumatic Actuator Mounted on VG7842 Brass Globe Valve

## Features

- compact; fits in tight spaces such as baseboard radiators and convectors
- rugged actuator die-cast enclosure, enclosed spring
- effective diaphragm area: 4 sq. in.
- controls: hot or chilled water, 15 psig saturated steam

## 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.

## Selection Chart

Actuator Code Number			V-3801-8001					
Mounting Kit			VG7000-1010		VG7000-1011		VG7000-1012	
Spring Range			3 to 6 psig		4 to 8 psig		9 to 13 psig	
Valve Code Number	Size, in.	Cv	Closeoff psig	Code Number	Closeoff psig	Code Number	Closeoff psig	Code Number
<b>Two-Way Normally Open — NPT End Connections</b>								
VG7241CS	1/2	0.73	186	VG7241CS+3801B	157	VG7241CS+3801D	84	VG7241CS+3801E
VG7241ES	1/2	1.8	186	VG7241ES+3801B	157	VG7241ES+3801D	84	VG7241ES+3801E
VG7241GS	1/2	4.6	105	VG7241GS+3801B	89	VG7241GS+3801D	48	VG7241GS+3801E
VG7241LS	3/4	7.3	67	VG7241LS+3801B	56	VG7241LS+3801D	30	VG7241LS+3801E
<b>Two-Way Normally Closed — NPT End Connections</b>								
VG7441CS	1/2	0.73	37	VG7441CS+3801B	57	VG7441CS+3801D	158	VG7441CS+3801E
VG7441ES	1/2	1.8	37	VG7441ES+3801B	57	VG7441ES+3801D	158	VG7441ES+3801E
VG7441GS	1/2	4.6	18	VG7441GS+3801B	28	VG7441GS+3801D	76	VG7441GS+3801E
VG7441LS	3/4	7.3	11	VG7441LS+3801B	16	VG7441LS+3801D	45	VG7441LS+3801E
<b>Three-Way Mixing — NPT End Connections</b>								
VG7842CS	1/2	0.73	186/37	VG7842CS+3801B	157/57	VG7842CS+3801D	84/158	VG7842CS+3801E
VG7842ES	1/2	1.8	186/37	VG7842ES+3801B	157/57	VG7842ES+3801D	84/158	VG7842ES+3801E
VG7842GS	1/2	4.6	105/18	VG7842GS+3801B	89/28	VG7842GS+3801D	48/76	VG7842GS+3801E
VG7842LS	3/4	7.3	67/11	VG7842LS+3801B	56/16	VG7842LS+3801D	30/45	VG7842LS+3801E
<b>Two-Way Normally Open — Union Sweat End Connections</b>								
VG7281CS	1/2	0.73	186	VG7281CS+3801B	157	VG7281CS+3801D	84	VG7281CS+3801E
VG7281ES	1/2	1.8	186	VG7281ES+3801B	157	VG7281ES+3801D	84	VG7281ES+3801E
VG7281GS	1/2	4.6	105	VG7281GS+3801B	89	VG7281GS+3801D	48	VG7281GS+3801E
VG7281LS	3/4	7.3	67	VG7281LS+3801B	56	VG7281LS+3801D	30	VG7281LS+3801E
<b>Two-Way Normally Closed — Union Sweat End Connections</b>								
VG7481CS	1/2	0.73	37	VG7481CS+3801B	57	VG7481CS+3801D	158	VG7481CS+3801E
VG7481ES	1/2	1.8	37	VG7481ES+3801B	57	VG7481ES+3801D	158	VG7481ES+3801E
VG7481GS	1/2	4.6	18	VG7481GS+3801B	28	VG7481GS+3801D	76	VG7481GS+3801E
VG7481LS	3/4	7.3	11	VG7481LS+3801B	16	VG7481LS+3801D	45	VG7481LS+3801E
<b>Three-Way Mixing — Union Sweat End Connections</b>								
VG7882CS	1/2	0.73	186/37	VG7882CS+3801B	157/57	VG7882CS+3801D	84/158	VG7882CS+3801E
VG7882ES	1/2	1.8	186/37	VG7882ES+3801B	157/57	VG7882ES+3801D	84/158	VG7882ES+3801E
VG7882GS	1/2	4.6	105/18	VG7882GS+3801B	89/28	VG7882GS+3801D	48/76	VG7882GS+3801E
VG7882LS	3/4	7.3	67/11	VG7882LS+3801B	56/16	VG7882LS+3801D	30/45	VG7882LS+3801E
<b>Two-Way Normally Open — 3/8 in. Union Sweat End Connections</b>								
VG7271CS	1/2	0.73	186	VG7271CS+3801B	157	VG7271CS+3801D	84	VG7271CS+3801E
VG7271ES	1/2	1.8	186	VG7271ES+3801B	157	VG7271ES+3801D	84	VG7271ES+3801E
VG7271GS	1/2	4.6	105	VG7271GS+3801B	89	VG7271GS+3801D	48	VG7271GS+3801E

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**VG7000 Series Brass Trim Globe Valves with V-3801 Compact Pneumatic Actuators  
(Continued)**

Actuator Code Number			V-3801-8001					
Mounting Kit			VG7000-1010		VG7000-1011		VG7000-1012	
Spring Range			3 to 6 psig		4 to 8 psig		9 to 13 psig	
Valve Code Number	Size, in.	Cv	Closeoff psig	Code Number	Closeoff psig	Code Number	Closeoff psig	Code Number
<b>Two-Way Normally Closed — 3/8 in. Union Sweat End Connections</b>								
VG7471CS	1/2	0.73	37	VG7471CS+3801B	57	VG7471CS+3801D	158	VG7471CS+3801E
VG7471ES	1/2	1.8	37	VG7471ES+3801B	57	VG7471ES+3801D	158	VG7471ES+3801E
VG7471GS	1/2	4.6	18	VG7471GS+3801B	28	VG7471GS+3801D	76	VG7471GS+3801E
<b>Three-Way Mixing — 3/8 in. Union Sweat End Connections</b>								
VG7872CS	1/2	0.73	186/37	VG7872CS+3801B	157/57	VG7872CS+3801D	84/158	VG7872CS+3801E
VG7872ES	1/2	1.8	186/37	VG7872ES+3801B	157/57	VG7872ES+3801D	84/158	VG7872ES+3801E
VG7872GS	1/2	4.6	105/18	VG7872GS+3801B	89/28	VG7872GS+3801D	48/76	VG7872GS+3801E
<b>Two-Way Normally Open — 3/4 in. Union Sweat End Connections</b>								
VG7291CS	1/2	0.73	186	VG7291CS+3801B	157	VG7291CS+3801D	84	VG7291CS+3801E
VG7291ES	1/2	1.8	186	VG7291ES+3801B	157	VG7291ES+3801D	84	VG7291ES+3801E
VG7291GS	1/2	4.6	105	VG7291GS+3801B	89	VG7291GS+3801D	48	VG7291GS+3801E
<b>Two-Way Normally Closed — 3/4 in. Union Sweat End Connections</b>								
VG7491CS	1/2	0.73	37	VG7491CS+3801B	57	VG7491CS+3801D	158	VG7491CS+3801E
VG7491ES	1/2	1.8	37	VG7491ES+3801B	57	VG7491ES+3801D	158	VG7491ES+3801E
VG7491GS	1/2	4.6	18	VG7491GS+3801B	28	VG7491GS+3801D	76	VG7491GS+3801E
<b>Three-Way Mixing — 3/4 in. Union Sweat End Connections</b>								
VG7892CS	1/2	0.73	186/37	VG7892CS+3801B	157/57	VG7892CS+3801D	84/158	VG7892CS+3801E
VG7892ES	1/2	1.8	186/37	VG7892ES+3801B	157/57	VG7892ES+3801D	84/158	VG7892ES+3801E
VG7892GS	1/2	4.6	105/18	VG7892GS+3801B	89/28	VG7892GS+3801D	48/76	VG7892GS+3801E
<b>Two-Way Normally Open — Union Globe End Connections</b>								
VG7251CS	1/2	0.73	186	VG7251CS+3801B	157	VG7251CS+3801D	84	VG7251CS+3801E
VG7251ES	1/2	1.8	186	VG7251ES+3801B	157	VG7251ES+3801D	84	VG7251ES+3801E
VG7251GS	1/2	4.6	105	VG7251GS+3801B	89	VG7251GS+3801D	48	VG7251GS+3801E
VG7251LS	3/4	7.3	67	VG7251LS+3801B	56	VG7251LS+3801D	30	VG7251LS+3801E
<b>Two-Way Normally Closed — Union Globe End Connections</b>								
VG7451CS	1/2	0.73	37	VG7451CS+3801B	57	VG7451CS+3801D	158	VG7451CS+3801E
VG7451ES	1/2	1.8	37	VG7451ES+3801B	57	VG7451ES+3801D	158	VG7451ES+3801E
VG7451GS	1/2	4.6	18	VG7451GS+3801B	28	VG7451GS+3801D	76	VG7451GS+3801E
<b>Two-Way Normally Open — Union Angle End Connections</b>								
VG7551CS	1/2	0.73	186	VG7551CS+3801B	157	VG7551CS+3801D	84	VG7551CS+3801E
VG7551ES	1/2	1.8	186	VG7551ES+3801B	157	VG7551ES+3801D	84	VG7551ES+3801E
VG7551GS	1/2	4.6	105	VG7551GS+3801B	89	VG7551GS+3801D	48	VG7551GS+3801E
VG7551LS	3/4	7.3	67	VG7551LS+3801B	56	VG7551LS+3801D	30	VG7551LS+3801E

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**VG7000 Series Brass Trim Globe Valves with V-3801 Compact Pneumatic Actuators  
(Continued)**
**Technical Specifications**

VG7000 Series Brass Trim Globe Valves with V-3801 Compact Pneumatic Actuators		
<b>Service<sup>1</sup></b>		Hot Water, Chilled Water, 50/50 Glycol Solutions, and Steam for HVAC Systems
<b>Fluid Temperature Limits</b>	<b>Water</b>	35 to 248°F (2 to 120°C)
	<b>Steam</b>	15 psig (103 kPa) Saturated Steam
<b>Maximum Allowable Pressure/Temperature</b>	<b>Water</b>	400 psig (2,756 kPa) up to 150°F (66°C) Decreasing to 365 psig (2,515 kPa) at 248°F (120°C)
	<b>Steam</b>	15 psig (103 kPa) Saturated Steam at 248°F (120°C)
<b>Valve Body Pressure/Temperature Rating</b>		Meets Requirements of ANSI B16.15, Class 250
<b>Maximum Recommended Operating Pressure Drop</b>	<b>Water</b>	35 psig (241 kPa)
	<b>Steam</b>	15 psig (103 kPa)
<b>Flow Characteristics</b>	<b>Two-Way Valves</b>	Equal Percentage
	<b>Three-Way Valves</b>	Linear Flow Characteristics
<b>Rangeability<sup>2</sup></b>		> 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
<b>Leakage</b>		0.01% of Maximum Flow per ANSI/FCI 70-2, Class 4
<b>Actuator Ambient Operating Temperature Limits</b>		-20 to 150°F (-29 to 66°C)
<b>Maximum Actuator Supply Pressure</b>		25 psig (172 kPa) Maximum
<b>Materials</b>	<b>Body</b>	Cast Bronze
	<b>Bonnet</b>	Brass
	<b>Stem</b>	Stainless Steel
	<b>Plug</b>	Brass
	<b>Seat</b>	Brass against Molded Elastomeric Disk
	<b>Packing</b>	Self-Adjusting Ethylene Propylene Rubber (EPR) Ring Pack U-Cups
<b>Compliance</b>	<b>Canada</b>	CRN: 0C1099.9087YTN

1. Refer to the VDI 2035 Guideline for recommended proper water treatment.

2. Rangeability is defined as the ratio of maximum controllable flow to minimum controllable flow.