Code No. LIT-1900471
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VG1000 Series

Press End Connection Stainless Steel Trim Ball Valves

Description

VG1000 Series Ball Valves are designed to regulate the flow of hot or chilled water and, for some models, low pressure steam in response to the demand of a controller in Heating, Ventilating, and Air Conditioning (HVAC) systems. Available in sizes 1/2 through 1 in. (DN15 through DN25), this family of two- and three-way forged brass valves is factory or field mounted to Johnson Controls® VA9104 Series Non-Spring Return and VA2202 Series Spring Return Electric Actuators for on/off, floating, or proportional control. When supplied with an actuator, the actuator is not mounted to the valve to allow access to the end connections.

Refer to the *VG1000 Series Forged Brass Ball Valves Product Bulletin (LIT-977132)* for important product application information.

Features

- forged brass body — provides 300 psig static pressure rating
- graphite-reinforced Polytetrafluoroethylene (PTFE) seats — include 15% graphite-reinforced ball seals, providing better wear resistance
- 500:1 rangeability — provides accurate control under all load conditions
- maintenance-free design — performs without failure in excess of 200,000 full stroke cycles in iron-oxide contaminated water
- press end connections — designed to work with RIDGID® pressing tools, reducing installation costs

Repair Information

If the VG1000 Series Ball Valve fails to operate within its specifications, replace the unit. For a replacement valve, contact the nearest Johnson Controls representative.

VG1000 Series Press End Connection Valves

Selection Charts

VG1000 Press End Connection Valves, Stainless Steel Trim, Non-Spring Return Actuators (Part 1 of 2)

Valve	Size, in.	Cv	Closeoff psig	AC 24 V		
				On/Off (Floating) without Timeout[1]	On/Off (Floating) with Timeout	0 to 10 VDC Proportional
				VA9104-AGA-xS[2]	VA9104-IGA-xS[2]	VA9104-GGA-xS[2]
Two-Way						
VG1295AD	1/2	1.2[3]	200	VG1295AD+9T4AGA	VG1295AD+9T4IGA	VG1295AD+9T4GGA
VG1295AE		1.9[3]		VG1295AE+9T4AGA	VG1295AE+9T4IGA	VG1295AE+9T4GGA
VG1295AF		2.9[3]		VG1295AF+9T4AGA	VG1295AF+9T4IGA	VG1295AF+9T4GGA
VG1295AG		4.7[3]		VG1295AG+9T4AGA	VG1295AG+9T4IGA	VG1295AG+9T4GGA
VG1295AL		7.4[3]		VG1295AL+9T4AGA	VG1295AL+9T4IGA	VG1295AL+9T4GGA
VG1295AN		11.7		VG1295AN+9T4AGA	VG1295AN+9T4IGA	VG1295AN+9T4GGA
VG1295BG	3/4	4.7[3]	200	VG1295BG+9T4AGA	VG1295BG+9T4IGA	VG1295BG+9T4GGA
VG1295BL		7.4[3]		VG1295BL+9T4AGA	VG1295BL+9T4IGA	VG1295BL+9T4GGA
VG1295BN		11.7		VG1295BN+9T4AGA	VG1295BN+9T4IGA	VG1295BN+9T4GGA
VG1295CL	1	7.4[3]	200	VG1295CL+9T4AGA	VG1295CL+9T4IGA	VG1295CL+9T4GGA
VG1295CN		11.7[3]		VG1295CN+9T4AGA	VG1295CN+9T4IGA	VG1295CN+9T4GGA
VG1295CP		18.7		VG1295CP+9T4AGA	VG1295CP+9T4IGA	VG1295CP+9T4GGA

Press End Connection Stainless Steel Trim Ball Valves (Continued)

VG1000 Press End Connection Valves, Stainless Steel Trim, Non-Spring Return Actuators (Part 2 of 2)

Valve	Size, in.	Cv	Closeoff psig	AC 24 V		
				On/Off (Floating) without Timeout[1]	On/Off (Floating) with Timeout	0 to 10 VDC Proportional
				VA9104-AGA-xS[2]	VA9104-IGA-xS[2]	VA9104-GGA-xS[2]
Three-Way						
VG1895AD	1/2	1.2[3]	200	VG1895AD+9T4AGA	VG1895AD+9T4IGA	VG1895AD+9T4GGA
VG1895AE		1.9[3]		VG1895AE+9T4AGA	VG1895AE+9T4IGA	VG1895AE+9T4GGA
VG1895AF		2.9[3]		VG1895AF+9T4AGA	VG1895AF+9T4IGA	VG1895AF+9T4GGA
VG1895AG		4.7[3]		VG1895AG+9T4AGA	VG1895AG+9T4IGA	VG1895AG+9T4GGA
VG1895AL		7.4[3]		VG1895AL+9T4AGA	VG1895AL+9T4IGA	VG1895AL+9T4GGA
VG1895AN		11.7		VG1895AN+9T4AGA	VG1895AN+9T4IGA	VG1895AN+9T4GGA
VG1895BG	3/4	4.7[3]	200	VG1895BG+9T4AGA	VG1895BG+9T4IGA	VG1895BG+9T4GGA
VG1895BL		7.4[3]		VG1895BL+9T4AGA	VG1895BL+9T4IGA	VG1895BL+9T4GGA
VG1895BN		11.7		VG1895BN+9T4AGA	VG1895BN+9T4IGA	VG1895BN+9T4GGA
VG1895CL	1	7.4[3]	200	VG1895CL+9T4AGA	VG1895CL+9T4IGA	VG1895CL+9T4GGA
VG1895CN		11.7[3]		VG1895CN+9T4AGA	VG1895CN+9T4IGA	VG1895CN+9T4GGA
VG1895CP		18.7		VG1895CP+9T4AGA	VG1895CP+9T4IGA	VG1895CP+9T4GGA

1. To avoid excessive wear or drive time on the motor for the AGx models, use a controller or software that provides a timeout function to remove the signal at the end of rotation (stall).
2. Code numbers shown are for a VA9104-xGA-3S actuator with M3 screw terminals. To specify a 48-in. plenum-rated cable, change 9T4 to 9A4 in the code number for a VA9104-xGA-2S actuator. For example, VG1241AD+**9T4**AGA becomes VG1241AD+**9A4**AGA.
3. Cv has a characterizing disk.

VG1000 Press End Connection Valves, Stainless Steel Trim, Two-Way Spring Return Actuators

Valve	Size, in.	Cv	Closeoff psig	AC 24 V			AC 120 V
				Floating	0 to 10 VDC Proportional	On/Off	On/Off
				VA2202-AGA-2	VA2202-GGA-2	VA2202-BGA-2	VA2202-BAA-2
Two-Way Spring Return Valve Open (Normally Open)							
VG1295AD	1/2	1.2[1]	200	VG1295AD+22TAGA	VG1295AD+22TGGA	VG1295AD+22TBGA	VG1295AD+22TBAA
VG1295AE		1.9[1]		VG1295AE+22TAGA	VG1295AE+22TGGA	VG1295AE+22TBGA	VG1295AE+22TBAA
VG1295AF		2.9[1]		VG1295AF+22TAGA	VG1295AF+22TGGA	VG1295AF+22TBGA	VG1295AF+22TBAA
VG1295AG		4.7[1]		VG1295AG+22TAGA	VG1295AG+22TGGA	VG1295AG+22TBGA	VG1295AG+22TBAA
VG1295AL		7.4[1]		VG1295AL+22TAGA	VG1295AL+22TGGA	VG1295AL+22TBGA	VG1295AL+22TBAA
VG1295AN		11.7		VG1295AN+22TAGA	VG1295AN+22TGGA	VG1295AN+22TBGA	VG1295AN+22TBAA
VG1295BG	3/4	4.7[1]	200	VG1295BG+22TAGA	VG1295BG+22TGGA	VG1295BG+22TBGA	VG1295BG+22TBAA
VG1295BL		7.4[1]		VG1295BL+22TAGA	VG1295BL+22TGGA	VG1295BL+22TBGA	VG1295BL+22TBAA
VG1295BN		11.7		VG1295BN+22TAGA	VG1295BN+22TGGA	VG1295BN+22TBGA	VG1295BN+22TBAA
VG1295CL	1	7.4[1]	200	VG1295CL+22TAGA	VG1295CL+22TGGA	VG1295CL+22TBGA	VG1295CL+22TBAA
VG1295CN		11.7[1]		VG1295CN+22TAGA	VG1295CN+22TGGA	VG1295CN+22TBGA	VG1295CN+22TBAA
VG1295CP		18.7		VG1295CP+22TAGA	VG1295CP+22TGGA	VG1295CP+22TBGA	VG1295CP+22TBAA
Two-Way Spring Return Valve Closed (Normally Closed)							
VG1295AD	1/2	1.2[1]	200	VG1295AD+24TAGA	VG1295AD+24TGGA	VG1295AD+24TBGA	VG1295AD+24TBAA
VG1295AE		1.9[1]		VG1295AE+24TAGA	VG1295AE+24TGGA	VG1295AE+24TBGA	VG1295AE+24TBAA
VG1295AF		2.9[1]		VG1295AF+24TAGA	VG1295AF+24TGGA	VG1295AF+24TBGA	VG1295AF+24TBAA
VG1295AG		4.7[1]		VG1295AG+24TAGA	VG1295AG+24TGGA	VG1295AG+24TBGA	VG1295AG+24TBAA
VG1295AL		7.4[1]		VG1295AL+24TAGA	VG1295AL+24TGGA	VG1295AL+24TBGA	VG1295AL+24TBAA
VG1295AN		11.7		VG1295AN+24TAGA	VG1295AN+24TGGA	VG1295AN+24TBGA	VG1295AN+24TBAA
VG1295BG	3/4	4.7[1]	200	VG1295BG+24TAGA	VG1295BG+24TGGA	VG1295BG+24TBGA	VG1295BG+24TBAA
VG1295BL		7.4[1]		VG1295BL+24TAGA	VG1295BL+24TGGA	VG1295BL+24TBGA	VG1295BL+24TBAA
VG1295BN		11.7		VG1295BN+24TAGA	VG1295BN+24TGGA	VG1295BN+24TBGA	VG1295BN+24TBAA
VG1295CL	1	7.4[1]	200	VG1295CL+24TAGA	VG1295CL+24TGGA	VG1295CL+24TBGA	VG1295CL+24TBAA
VG1295CN		11.7[1]		VG1295CN+24TAGA	VG1295CN+24TGGA	VG1295CN+24TBGA	VG1295CN+24TBAA
VG1295CP		18.7		VG1295CP+24TAGA	VG1295CP+24TGGA	VG1295CP+24TBGA	VG1295CP+24TBAA

1. Cv has a characterizing disk.

Press End Connection Stainless Steel Trim Ball Valves (Continued)

VG1000 Press End Connection Valves, Stainless Steel Trim, Three-Way Spring Return Actuators

Valve	Size, in.	Cv	Closeoff psig	AC 24 V			AC 120 V
				Floating	0 to 10 VDC Proportional	On/Off	On/Off
				VA2202-AGA-2	VA2202-GGA-2	VA2202-BGA-2	VA2202-BAA-2
Three-Way Spring Return Counterclockwise, Port A (Coil) Open							
VG1895AD	1/2	1.2[1]	200	VG1895AD+22TAGA	VG1895AD+22TGGA	VG1895AD+22TBGA	VG1895AD+22TBAA
VG1895AE		1.9[1]		VG1895AE+22TAGA	VG1895AE+22TGGA	VG1895AE+22TBGA	VG1895AE+22TBAA
VG1895AF		2.9[1]		VG1895AF+22TAGA	VG1895AF+22TGGA	VG1895AF+22TBGA	VG1895AF+22TBAA
VG1895AG		4.7[1]		VG1895AG+22TAGA	VG1895AG+22TGGA	VG1895AG+22TBGA	VG1895AG+22TBAA
VG1895AL		7.4[1]		VG1895AL+22TAGA	VG1895AL+22TGGA	VG1895AL+22TBGA	VG1895AL+22TBAA
VG1895AN		11.7		VG1895AN+22TAGA	VG1895AN+22TGGA	VG1895AN+22TBGA	VG1895AN+22TBAA
VG1895BG	3/4	4.7[1]	200	VG1895BG+22TAGA	VG1895BG+22TGGA	VG1895BG+22TBGA	VG1895BG+22TBAA
VG1895BL		7.4[1]		VG1895BL+22TAGA	VG1895BL+22TGGA	VG1895BL+22TBGA	VG1895BL+22TBAA
VG1895BN		11.7		VG1895BN+22TAGA	VG1895BN+22TGGA	VG1895BN+22TBGA	VG1895BN+22TBAA
VG1895CL	1	7.4[1]	200	VG1895CL+22TAGA	VG1895CL+22TGGA	VG1895CL+22TBGA	VG1895CL+22TBAA
VG1895CN		11.7[1]		VG1895CN+22TAGA	VG1895CN+22TGGA	VG1895CN+22TBGA	VG1895CN+22TBAA
VG1895CP		18.7		VG1895CP+22TAGA	VG1895CP+22TGGA	VG1895CP+22TBGA	VG1895CP+22TBAA
Three-Way Spring Return Clockwise, Port B (Bypass) Open							
VG1895AD	1/2	1.2[1]	200	VG1895AD+24TAGA	VG1895AD+24TGGA	VG1895AD+24TBGA	VG1895AD+24TBAA
VG1895AE		1.9[1]		VG1895AE+24TAGA	VG1895AE+24TGGA	VG1895AE+24TBGA	VG1895AE+24TBAA
VG1895AF		2.9[1]		VG1895AF+24TAGA	VG1895AF+24TGGA	VG1895AF+24TBGA	VG1895AF+24TBAA
VG1895AG		4.7[1]		VG1895AG+24TAGA	VG1895AG+24TGGA	VG1895AG+24TBGA	VG1895AG+24TBAA
VG1895AL		7.4[1]		VG1895AL+24TAGA	VG1895AL+24TGGA	VG1895AL+24TBGA	VG1895AL+24TBAA
VG1895AN		11.7		VG1895AN+24TAGA	VG1895AN+24TGGA	VG1895AN+24TBGA	VG1895AN+24TBAA
VG1895BG	3/4	4.7[1]	200	VG1895BG+24TAGA	VG1895BG+24TGGA	VG1895BG+24TBGA	VG1895BG+24TBAA
VG1895BL		7.4[1]		VG1895BL+24TAGA	VG1895BL+24TGGA	VG1895BL+24TBGA	VG1895BL+24TBAA
VG1895BN		11.7		VG1895BN+24TAGA	VG1895BN+24TGGA	VG1895BN+24TBGA	VG1895BN+24TBAA
VG1895CL	1	7.4[1]	200	VG1895CL+24TAGA	VG1895CL+24TGGA	VG1895CL+24TBGA	VG1895CL+24TBAA
VG1895CN		11.7[1]		VG1895CN+24TAGA	VG1895CN+24TGGA	VG1895CN+24TBGA	VG1895CN+24TBAA
VG1895CP		18.7		VG1895CP+24TAGA	VG1895CP+24TGGA	VG1895CP+24TBGA	VG1895CP+24TBAA

1. Cv has a characterizing disk.

Technical Specifications

VG1000 Series Press End Connection Stainless Steel Trim Ball Valves (Part 1 of 2)		
Service[1]		Hot Water, Chilled Water, and 50/50 Glycol Solutions for HVAC Systems
Fluid Temperature Limits		-22 to 212°F (-30 to 100°C)
Maximum Actuator Fluid Temperature Limit		212°F (100°C)
Valve Body Pressure Rating		300 psig (2,067 kPa)
Maximum Closeoff Pressure		200 psig (1,378 kPa)
Maximum Recommended Operating Pressure Drop	**Valves with Characterized Flow Control Disk**	50 psi
	Quiet Service Ball Valves	30 psi
Flow Characteristics	**Two-Way**	Equal Percentage
	Three-Way	Equal Percentage Flow Characteristics on the In-Line Port A (Coil) and Linear Flow Characteristics of the Angle Port B (Bypass)
Rangeability[2]		Greater than 500:1
Minimum Ambient Operating Temperature	**VA2202 Series Spring Return Actuators**	-22°F (-30°C)
	VA9104 Series Non-Spring Return Actuators	-4°F (-20°C)
Maximum Ambient Operating Temperature[3] (Limited by the Actuator)	**VA2202 Series Spring Return Actuators**	122°F (50°C)
	VA9104 Series Non-Spring Return Actuators	140°F (60°C)
Leakage		0.01% of Maximum Flow per ANSI/FCI 70-2, Class 4

Press End Connection Stainless Steel Trim Ball Valves (Continued)

VG1000 Series Press End Connection Stainless Steel Trim Ball Valves (Part 2 of 2)		
End Connections		Press (ProPress® Compatible, 1/2 through 1 in. Sizes) Press End Connections are designed to work with RIDGID pressing tools.
Materials	**Body**	Forged Brass
	Ball	300 Series Stainless Steel
	Blowout Proof Stem	300 Series Stainless Steel
	Seats	Graphite-Reinforced PTFE with Ethylene Propylene Diene Monomer (EPDM) O-Ring Backing
	Stem Seals	EPDM Double O-Rings
	Characterizing Disk	Amodel® AS-1145HS Polyphtalamide Resin

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