VG2000 Series Pneumatic Cast Iron Flanged Globe Valves Catalog Page

2023-02-23 LIT-1900096

Description

Figure 1: VG2000 and MP8000



VG2000 Series Valve

VG2000 Series Cast Iron Flanged Globe Valves are designed primarily to regulate the flow of water and steam in response to the demand of a controller.

Refer to the *VG2000 Series Cast Iron Flanged Globe Valve Product Bulletin (LIT-977133)* for important product application information.

MP8000 Series Actuators

MP8000 Series Pneumatic Actuators are designed to accurately position hot-water, chilled-water, and steam-control valves in response to a pneumatic signal from a controller.

Refer to the *MP8000 Series Pneumatic Valve Actuators Product Bulletin (LIT-977257)* for important product application information.

Features

VG2000 Series Valve

- Controls hot or chilled water, 35 psig saturated steam
- ANSI cast iron 125 flange meets ANSI B16.1
- ANSI III closeoff, leakage: 0.1% of maximum flow
- 175 psig static pressure rating at water temperatures 35°F to 150°F; decreasing to 125 psig at 281°F
- Maximum recommended operating pressure drop: 35 psig
- Maximum actuator supply pressure: 25 psig

MP8000 Series Actuators

- Three sizes: 25 sq. in., 50 sq. in., and 100 sq. in. effective diaphragm area
- Spring action field reversible
- Optional pneumatic or electro-pneumatic positioner

Repair information

If the VG2000 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.

For complete details about VG2000 Series Cast Iron Flanged Valve repair parts, refer to the *VG2000 Series Cast Iron Flanged Valve Product Bulletin (LIT-977133)*. For complete details about MP8000 Series Pneumatic Actuator repair parts, refer to the *MP8000 Series Pneumatic Actuator Product Bulletin (LIT-977257)*.

Johnson Controls

Selection charts

Table 1: Two-way normally open pneumatic cast iron flanged globe valves

Spring range			3 psig to 7 psig		4 psig to 8 psig		9 psig to 13 psig	
Valve code number	Size, in.	Cv (Kvs)	Closeoff psig	Code number	Closeoff psig	Code number	Closeoff psig	Code number
With MP82 Series Actuators — 25 sq. in. effective diaphragm area								
VG2231TL	2 1/2	45 (38.6)	53	VG2231TL+823C00	49	VG2231TL+823D00	28	VG2231TL+823E00
VG2231UL	3	59 (50.6)	37	VG2231UL+823C00	34	VG2231UL+823D00	19	VG2231UL+823E00
With MP84 Series Actuators — 50 sq. in. effective diaphragm area								
VG2231TM	2 1/2	45 (38.6)	109	VG2231TM+843C00	100	VG2231TM+843D00	58	VG2231TM+843E00
VG2231UM	3	59 (50.6)	75	VG2231UM+845C00	70	VG2231UM +845D00	40	VG2231UM+845E00
VG2231VM	4	105 (90.0)	42	VG2231VM+845C00	39	VG2231VM+845D00	23	VG2231VM+845E00
With MP86 Series Actuators — 100 sq. in. effective diaphragm area								
VG2231UN	3	59 (50.6)	152	VG2231UN+865C00	140	VG2231UN+865D00	81	VG2231UN+865E00
VG2231VN	4	105 (90.0)	86	VG2231VN+865C00	79	VG2231VN+865D00	46	VG2231VN+865E00
VG2231WN	5	147 (126.0)	55	VG2231WN +867C00	51	VG2231WN +867D00	29	VG2231WN+867E00
VG2231YN	6	226 (193.7)	38	VG2231YN+867C00	35	VG2231YN+867D00	20	VG2231YN+867E00

Table 2: Two-way normally closed pneumatic cast iron flanged globe valves

Spring range			3 psig to 7 psig		4 psig to 8 psig		9 psig to 13 psig	
Valve code number	Size, in.	Cv	Closeoff psig	Code number	Closeoff psig	Code number	Closeoff psig	Code number
With MP84 Series Actuators — 50 sq. in. effective diaphragm area								
VG2431TM	2 1/2	47 (40.3)	24	VG2431TM+843C00	32	VG2431TM+843D00	75	VG2431TM+843E00
VG2431UM	3	75 (64.3)	17	VG2431UM+845C00	22	VG2431UM +845D00	52	VG2431UM+845E00
VG2431VM	4	130 (111.4)	9	VG2431VM+845C00	13	VG2431VM+845D00	29	VG2431VM+845E00
With MP86 Series Actuators — 100 sq. in. effective diaphragm area								
VG2431UN	3	75 (64.3)	34	VG2431UN+865C00	46	VG2431UN+865D00	105	VG2431UN+865E00
VG2431VN	4	130 (111.4)	19	VG2431VN+865C00	26	VG2431VN+865D00	59	VG2431VN+865E00
VG2431WN	5	189 (162)	12	VG2431WN +867C00	17	VG2431WN +867D00	38	VG2431WN+867E00
VG2431YN	6	279 (239.1)	9	VG2431YN+867C00	11	VG2431YN+867D00	26	VG2431YN+867E00

Table 3: Three-way mixing pneumatic cast iron flanged globe valves

Spring range			3 psig to 7 psig		4 psig to 8 psig		9 psig to 13 psig	
Valve code number	Size, in.	Cv	Closeoff psig	Code number	Closeoff psig	Code number	Closeoff psig	Code number
With MP84 Series Actuators — 50 sq. in. effective diaphragm area								
VG2831TM	2 1/2	49 (42.0)	65 / 14	VG2831TM+843C00	60 / 19	VG2831TM+843D00	35 / 45	VG2831TM+843E00
VG2831UM	3	74 (63.4)	45 / 10	VG2831UM+845C00	42 / 13	VG2831UM +845D00	24 / 31	VG2831UM+845E00
VG2831VM	4	131 (112.3)	25 / 6	VG2831VM+845C00	23 / 8	VG2831VM+845D00	14 / 18	VG2831VM+845E00
With MP86 Series Actuators — 100 sq. in. effective diaphragm area								
VG2831UN	3	74 (63.4)	91 / 21	VG2831UN+865C00	84 / 28	VG2831UN+865D00	49 / 63	VG2831UN+865E00
VG2831VN	4	131 (112.3)	51 / 12	VG2831VN+865C00	47 / 16	VG2831VN+865D00	27 / 35	VG2831VN+865E00
VG2831WN	5	197 (168.8)	33 / 7	VG2831WN +867C00	30 / 10	VG2831WN +867D00	18 / 23	VG2831WN+867E00
VG2831YN	6	284 (243.4)	23 / 5	VG2831YN+867C00	21 / 7	VG2831YN+867D00	12 / 16	VG2831YN+867E00

Johnson Controls

Table 4: Optional positioner — change the 00 at the end of the code number to either 01 or 02

Optional positioner	Mounting bracket	Type	Control input	Output capacity	Ordering code
V-9502-95	MP8000-6002	Pneumatic	2 psig to 12 psig start 3 psig to 13 psig span	1,000 scim – dual barbed fitting 1,600 scim – 1/4 in. barbed fitting	01
EPP-1000-8	MP8000-6003	Electro- pneumatic	0 VDC to 10 VDC 4 mA to 20 mA 135 ohm slidewire	476 scim	02

Technical specifications

Table 5: VG2000 Series Pneumatic Cast Iron Flanged Globe Valves

Specification		Description
Service		Hot water, chilled water, 50/50 glycol solutions, and steam for HVAC systems
Fluid temperature limits	Water	35°F to 281°F (2°C to 138°C)
	Steam	35 psig (241 kPa) saturated steam
Maximum allowable pressure / temperature	Water	175 psig (1,206 kPa) up to 150°F (66°C), decreasing to 125 psig (861 kPa) at 281°F (138°C)
	Steam	35 psig (241 kPa) saturated steam at 281°F (138°C)
Valve body pressure / temperature rating		Meets requirements of ANSI B16.15, Class 125
Maximum recommended operating pressure drop		35 psig (241 kPa)
Flow characteristics		Modified linear
Rangeability	2 1/2 in. valves	6.5:1
	3 in. valves	7.7:1
	4 in. valves	9.3:1
	5 in. valves	10.7:1
	6 in. valves	10.4:1
Leakage		0.1% of maximum flow per ANSI / FCI 70-2, Class 3
Actuator ambient operating temperature limits		-20°F to 150°F (-29°C to 66°C)
Maximum actuator supply pressure		25 psig (172 kPa) maximum
Materials	Body	Cast iron with black lacquer finish
	Stem	Stainless steel
	Plug	Brass
	Packing	Ethylene Propylene Terpolymer (EPT) rink packs
Compliance	Canada	CRN: 0C22368.5

ⓘ **Note:** Refer to the VDI 2035 Guideline for correct water treatement specifications.

ⓘ **Note:** Rangeability is the ratio of maximum controllable flow to minimum controllable flow.

⚠ WARNING

This product is made of copper alloy, which contains lead. The product is therefore not to be used on drinking water.

⚠ WARNING

This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Johnson Controls

WARNING

WARNING: BRASS MAY CONTAIN LEAD

To fulfill our obligations towards Article 33, in accordance to the European REACH Regulation No 1907/2006 EC, we hereby inform you that this article contains the following Substances of Very High Concern mentioned on the Candidate list: Lead

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Single point of contact

APAC	EU	UK	NA/SA
JOHNSON CONTROLS C/O CONTROLS PRODUCT MANAGEMENT NO. 32 CHANGJIANG RD NEW DISTRICT WUXI JIANGSU PROVINCE 214028 CHINA	JOHNSON CONTROLS VOLTAWEG 20 6101 XK ECHT THE NETHERLANDS	JOHNSON CONTROLS TYCO PARK GRIMSHAW LANE MANCHESTER M40 2WL UNITED KINGDOM	JOHNSON CONTROLS 5757 N GREEN BAY AVE. GLENDALE, WI 53209 USA

© 2023 Johnson Controls. All rights reserved. All specifications and other information shown were current as of document revision and are subject to change without notice.
www.johnsoncontrols.com

Johnson Controls