

VF Series

Two-Way, Industrial-Grade, Non-Spring Return, VA-90xx Series Electric Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies

Description

VF Series Two-Way, Industrial-Grade, Non-Spring Return, VA-90xx Series Electric Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies are specifically designed for a wide range of Heating, Ventilating, and Air Conditioning (HVAC) applications including two-position and modulating/throttling control of hot water, chilled water, condenser water, and steam. Refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves for Steam Service Application Note (LIT 977321)* for more information on steam applications. These lug-style valves offer bidirectional shutoff at full-rated American National Standards Institute (ANSI) Class 150 and 300 operating pressures, increasing the range of applications—particularly in high-rise building HVAC control applications. ANSI Class 150 and 300 models are also suitable for steam applications.

Refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves Product Bulletin (LIT-977208)* for important product application information.

Features

- compatible with all types of ANSI 150/300 slip-on and weld-neck flanges
- high-pressure, high-temperature design
- bidirectional shutoff, dead-end service
- live-loaded seat design with fully encased O-ring
- double offset stem design
- broad range of compact pre-assembled actuators available
- direct actuator-to-stem mounting

Repair Information

If the Two-Way, Industrial-Grade, Non-Spring Return, VA-90xx Series Electric Actuated, High-Pressure, High-Temperature Butterfly Valve fails to operate within its specifications, refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves Product Bulletin (LIT-977208)* for a list of replacement parts available.



Two-Way, Industrial-Grade, Non-Spring Return, VA-90xx Series Electric Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies

Selection Chart

Actuator				AC 120 V Powered Actuator		AC 24 V Powered Actuator	
Size, in.	Cv at 90°	Cv at 70°	Closeoff Pressure	On/Off	0 to 10 VDC Proportional	On/Off	0 to 10 VDC Proportional
Two-Way, Normally Closed – ANSI Class 300 Flanges¹							
2-1/2	160	100	550 psig	VFC-025ZE-723D	VFC-025ZE-703N	VFC-025ZE-725D4	VFC-025ZE-705N4
3	185	155		VFC-030ZE-723D	VFC-030ZE-703N	VFC-030ZE-725D4	VFC-030ZE-705N4
4	375	315		VFC-040ZE-723D	VFC-040ZE-703N	VFC-040ZE-725D4	VFC-040ZE-705N4
5	790	500		VFC-050ZE-725D	VFC-050ZE-705N	VFC-050ZE-725D4	VFC-050ZE-705N4
6	1,000	710		VFC-060ZE-726D	VFC-060ZE-706N	VFC-060ZE-727D4	VFC-060ZE-707N4
8	2,000	1,360		VFC-080ZE-727D	VFC-080ZE-707N	VFC-080ZE-727D4	VFC-080ZE-707N4
10	2,650	1,740		VFC-100ZE-927D	VFC-100ZE-907N	—	—
12	4,000	2,500		VFC-120ZE-928D	VFC-120ZE-908N	—	—
14	4,100	2,600		VFC-140ZE-928D	VFC-140ZE-908N	—	—
Two-Way, Normally Closed – ANSI Class 150 Flanges²							
2-1/2	160	100	240 psig	VFC-025VE-722D	VFC-025VE-702N	VFC-025VE-722D4	VFC-025VE-702N4
3	185	155		VFC-030VE-722D	VFC-030VE-702N	VFC-030VE-722D4	VFC-030VE-702N4
4	375	315		VFC-040VE-722D	VFC-040VE-702N	VFC-040VE-722D4	VFC-040VE-702N4
5	790	500		VFC-050VE-724D	VFC-050VE-704N	VFC-050VE-725D4	VFC-050VE-705N4
6	1,350	750		VFC-060VE-725D	VFC-060VE-705N	VFC-060VE-725D4	VFC-060VE-705N4
8	2,800	1,590		VFC-080VE-726D	VFC-080VE-706N	VFC-080VE-727D4	VFC-080VE-707N4
10	4,300	2,430		VFC-100VE-727D	VFC-100VE-707N	VFC-100VE-727D4	VFC-100VE-707N4
12	6,650	3,750		VFC-120VE-728D	VFC-120VE-708N	—	—
14	7,650	4,300		VFC-140VE-927D	VFC-140VE-907N	—	—
16	9,800	5,510		VFC-160VE-928D	VFC-160VE-908N	—	—

1. Maximum closeoff pressure for ANSI Class 300 valves is 740 psig (5102.1 kPa) for fluid temperatures below 100°F (37.8°C), and 550 psig (3,790 kPa) for fluid temperatures at 250°F (121.1°C). Maximum steam pressure is 150 psig (1034.2 kPa) for On/Off service, and 50 psig (344.8 kPa) for proportional service.
 2. Maximum closeoff pressure for ANSI Class 150 valves is 285 psig (1965 kPa) for fluid temperatures below 100°F (37.8°C), and 240 psig (1654.8 kPa) for fluid temperatures at 250°F (121.1°C). Maximum steam pressure is 150 psig (1034.2 kPa) for On/Off service, and 50 psig (344.8 kPa) for proportional service.

Two-Way, Industrial-Grade, Non-Spring Return, VA-90xx Series Electric Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies (Continued)

Technical Specifications

Two-Way, Industrial-Grade, Non-Spring Return, VA-90xx Series Electric Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies ¹		
Service		Hot Water, Chilled Water, Condenser Water, and Steam ²
Body Styles and Sizes		Two-Way, 2-1/2 through 16 in., Fully Lugged ³
Fluid Temperature Limits		-20 to 500°F (-29 to 260°C)
Maximum Closeoff Pressure	2-1/2 through 16 in. ANSI Class 150 Valves (Type V)	240 psig (1,654 kPa) at 250°F (121°C) Fluid Temperature, Bidirectional ³
	2-1/2 through 14 in. ANSI Class 300 Valves (Type Z)	240 psig (1,654 kPa) at 250°F (121°C) Fluid Temperature, Dead-End Service ^{3, 4}
Maximum Closeoff Pressure	2-1/2 through 14 in. ANSI Class 300 Valves (Type Z)	550 psig (3,790 kPa) at 250°F (121°C) Fluid Temperature, Bidirectional ^{3, 5}
	2-1/2 through 14 in. ANSI Class 300 Valves (Type Z)	550 psig (3,790 kPa) at 250°F (121°C) Fluid Temperature, Dead-End Service ^{3, 4, 5}
Materials	Body	Carbon Steel, ASTM A216 GR WCB/A516 GR 70
	Disc	Stainless Steel, ASTM A 351 GR CF8M
	Seat Assembly	RTFE with Silicone Rubber O-Ring
	Seat Retainer	Carbon Steel, ASTM A516 GR 70
	Stem	17-4 PH Stainless Steel, ASTM A564-Type 630
Ambient Storage Temperature Limits		-20 to 150°F (-29 to 66°C); Preferably 40 to 85°F (4 to 29°C)

1. Refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves Product Bulletin (LIT-977208)* for actuator specifications.
2. Type V and Z valves are rated for 150 psig (1,034 kPa) saturated steam at 366°F (186°C) for two-position applications, and 50 psig (345 kPa) saturated steam at 297°F (147°C) for modulating applications. Refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves for Steam Service Application Note (LIT-977321)* for more information.
3. For 18 in. or larger ANSI Class 150 valves and 16 in. or larger ANSI Class 300 valves, consult the local Johnson Controls office.
4. The preferred orientation of the seat retainer in dead-end service is against the flange.
5. For pressures between 550 and 740 psig (3,790 and 5,099 kPa), consult the local Johnson Controls office.