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VF Series

M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves (without Weather Shield)

Description

VF Series M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature Two-Way Butterfly Valves are specifically designed for a wide range of Heating, Ventilating, and Air Conditioning (HVAC) applications, including two-position and modulating control of hot, chilled, or condenser water, and 50/50 glycol solutions. These valves are also bidirectional, allowing positive shutoff with the flow in either direction.

Two-way configurations are available in sizes from 2 through 6 in. non-spring return, and 2 through 5 in. spring return. M9000 electrically actuated, non-weather shield models feature an integral handle for manual positioning of the valve, independent of a power supply.

Refer to the *VF Series Standard-Pressure, Standard-Temperature Butterfly Valves Product Bulletin (LIT-977205P)* for important product application information.

Features

- low seating/unseating torques
- bubble-tight shutoff
- broad range of pre-assembled actuators
- compatible with all types of American National Standards Institute (ANSI) 125/150 slip-on and weld-neck flanges
- high-integrity components
- M9000 electric actuators available with or without a rugged, factory-installed weather shield
- M9000 electric actuators available with or without end switches

Repair Information

If the M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valve (without Weather Shield) fails to operate within its specifications, refer to the *VF Series Standard-Pressure, Standard-Temperature Butterfly Valves Product Bulletin (LIT-977205P)* for a list of repair parts available.

Two-Way Valve with M9000 Series Spring Return Electric Actuator (without Weather Shield)

Two-Way Valve with M9000 Series Non-Spring Return Electric Actuator (without Weather Shield)

Selection Chart

Size, in.	Cv at 90°	Cv at 70°	Closeoff Pressure (psig)[1]	Two-Way Butterfly Valves (without Weather Shield) (Part 1 of 2)			
				Two-Way – Spring Return			
				Spring Open	Spring Closed	Spring Open	Spring Closed
				Floating Control			
				M9220-AGA-3 without End Switches		M9220-AGC-3 with Two End Switches	
2	144	84	175	VFN020HB+92NAGA	VFC020HB+94NAGA	VFN020HB+92NAGC	VFC020HB+94NAGC
2-1/2	282	163	175	VFN025HB+92NAGA	VFC025HB+94NAGA	VFN025HB+92NAGC	VFC025HB+94NAGC
3	461	267	175	VFN030HB+92NAGA	VFC030HB+94NAGA	VFN030HB+92NAGC	VFC030HB+94NAGC
4	841	496	50	VFN040LB+92NAGA	VFC040LB+94NAGA	VFN040LB+92NAGC	VFC040LB+94NAGC
4	841	496	175	VFN040HB292NAGA[2]	VFC040HB294NAGA[2]	VFN040HB292NAGC[2]	VFC040HB294NAGC[2]
5	1376	775	50	VFN050LB292NAGA[2]	VFC050LB294NAGA[2]	VFN050LB292NAGC[2]	VFC050LB294NAGC[2]
				On/Off			
				M9220-BGA-3 without End Switches		M9220-BGC-3 with Two End Switches	
2	144	84	175	VFN020HB+92NBGA	VFC020HB+94NBGA	VFN020HB+92NBGC	VFC020HB+94NBGC
2-1/2	282	163	175	VFN025HB+92NBGA	VFC025HB+94NBGA	VFN025HB+92NBGC	VFC025HB+94NBGC
3	461	267	175	VFN030HB+92NBGA	VFC030HB+94NBGA	VFN030HB+92NBGC	VFC030HB+94NBGC
4	841	496	50	VFN040LB+92NBGA	VFC040LB+94NBGA	VFN040LB+92NBGC	VFC040LB+94NBGC
4	841	496	175	VFN040HB292NBGA[2]	VFC040HB294NBGA[2]	VFN040HB292NBGC[2]	VFC040HB294NBGC[2]
5	1376	775	50	VFN050LB292NBGA[2]	VFC050LB294NBGA[2]	VFN050LB292NBGC[2]	VFC050LB294NBGC[2]

M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves (without Weather Shield) (Continued)

Size, in.	Cv at 90°	Cv at 70°	Closeoff Pressure (psig)[1]	Two-Way Butterfly Valves (without Weather Shield) (Part 2 of 2)			
				0 to 10 VDC Proportional Control			
				M9220-GGA-3 without End Switches		M9220-GGC-3 with Two End Switches	
2	144	84	175	VFN020HB+92NGGA	VFC020HB+94NGGA	VFN020HB+92NGGC	VFC020HB+94NGGC
2-1/2	282	163	175	VFN025HB+92NGGA	VFC025HB+94NGGA	VFN025HB+92NGGC	VFC025HB+94NGGC
3	461	267	175	VFN030HB+92NGGA	VFC030HB+94NGGA	VFN030HB+92NGGC	VFC030HB+94NGGC
4	841	496	50	VFN040LB+92NGGA	VFC040LB+94NGGA	VFN040LB+92NGGC	VFC040LB+94NGGC
4	841	496	175	VFN040HB292NGGA[2]	VFC040HB294NGGA[2]	VFN040HB292NGGC[2]	VFC040HB294NGGC[2]
5	1376	775	50	VFN050LB292NGGA[2]	VFC050LB294NGGA[2]	VFN050LB292NGGC[2]	VFC050LB294NGGC[2]
				Two-Way – Non-Spring Return			
				On/Off (Floating) Control		0 to 10 VDC Proportional Control	
				M91xx-AGA-2 without switches	M91xx-AGC-2 with 2 Switches	M91xx-GGA-2 without switches	M91xx-GGC-2 with 2 Switches
2	144	84	175	VFN020HB+916AGA	VFN020HB+916AGC	VFN020HB+916GGA	VFN020HB+916GGC
2-1/2	282	163	175	VFN025HB+916AGA	VFN025HB+916AGC	VFN025HB+916GGA	VFN025HB+916GGC
3	461	267	175	VFN030HB+916AGA	VFN030HB+916AGC	VFN030HB+916GGA	VFN030HB+916GGC
4	841	496	175	VFN040HB+924AGA	VFN040HB+924AGC	VFN040HB+924GGA	VFN040HB+924GGC
5	1376	775	50	VFN050LB+924AGA	VFN050LB+924AGC	VFN050LB+924GGA	VFN050LB+924GGC
5	1376	775	175	VFN050HB2924AGA[2]	VFN050HB2924AGC[2]	VFN050HB2924GGA[2]	VFN050HB2924GGC[2]
6	1850	1025	50	VFN060LB2924AGA[2]	VFN060LB2924AGC[2]	VFN060LB2924GGA[2]	VFN060LB2924GGC[2]

1. Valves rated for 175 psig closeoff have 75 psig maximum dead-end service rating. Valves rated for 50 psig closeoff are not rated for dead-end service.
2. Valve assemblies have two actuators mounted in tandem.

Technical Specifications

M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves (without Weather Shield)[1]		
Service		Hot, Chilled, or Condenser Water, and 50/50 Glycol Solutions (Not designed for use in steam applications.)
Body Styles and Sizes		Two-Way, 2 through 6 in., Fully Lugged
Fluid Temperature Limits		-40°F to 250°F (-40°C to 121°C)
Body Pressure Rating		175 psig
Maximum Fluid Velocity		30 ft/second (9 m/second)
Rangeability		Refer to the *VF Series Standard-Pressure, Standard-Temperature Butterfly Valves Product Bulletin (LIT-977205P).*
Leakage		Bubble Tight
Flow Characteristics		Modified Equal Percentage
Materials	Body	Cast Iron ASTM A126 Class B
	Tee (Three-Way Valves Only)	Cast Iron
	Disc	Ductile Iron, Nylon 11 Coated, ASTM A536 Gr 65-45-12
	Seat	Ethylene Propylene Diene Monomer (EPDM)
	Stem	416 Stainless Steel
Ambient Temperature Limits	Storage	-20 to 150°F (-29 to 66°C), Preferably 40 to 85°F (4 to 29°C)
	Operating	Spring Return Actuator: -40 to 131°F (-40 to 55°C) Non-Spring Return Actuator: -4 to 122°F (-20 to 50°C)

1. Refer to the *VF Series Standard-Pressure, Standard-Temperature Butterfly Valves Product Bulletin (LIT-977205P)* for actuator specifications.