



COMMERCIAL HVAC COMPONENTS —
ENGINEERED FOR SUCCESS

Application And Selection Guide

About valve selection

The valve selection section is constructed in one of two ways:

For unassembled product:

As a reference, pictures will represent the valves and actuators separately; and part numbers are highlighted in blue. To order a complete product one OS# must be chosen from each blue box.

For factory assembled product:

The complete assembled OS# will be displayed in the body of the chart (except for cartridge cage valves, both an actuator and valve must be chosen). Pictures will also reference the factory assembled configuration.

Additional product information

To find more detailed information on the individual products included in this document, go to: <http://customer.honeywell.com> and use the search text box to quickly locate product specific content.

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Control Valve Applications													
Pipe Size, inches (DN)													
	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80	4" DN100	5" DN125	6" DN150	8-20" >DN200	
Unitary Equipment	Fan Coil Units	Fan coil/zone valves											
		Cartridge cage valves											
		Pressure regulated valves											
	Unit Heaters	Fan coil/zone valves											
		Cartridge cage valves											
		Pressure regulated valves											
	Convectors	Fan coil/zone valves											
		Cartridge cage valves											
		Cartridge globe valves											
		Pressure regulated valves											
Radiant Panels	Fan coil/zone valves												
	Cartridge cage valves												
	Cartridge globe valves												
	Pressure regulated valves												
Unit Ventilators	Cartridge cage valves												
	Cartridge globe valves												
	Control ball valves												
	Pressure regulated valves												
Reheat Coils	Cartridge cage valves												
	Cartridge globe valves												
	Control ball valves												
	Pressure regulated valves												
Water Source Heat Pump	Cartridge cage valves												
	Control ball valves												
	Pressure regulated valves												
Blower Coil	Cartridge cage valves												
	Cartridge globe valves												
	Control ball valves												
Pressure regulated valves													
Air Handling Units	Heating & Cooling Coils	Threaded globe valve											
		Threaded control ball valves											
								Flanged globe valve		Flanged ball valve			
		Pressure regulated valves											
Chilled Ceiling	Threaded globe valve												
	Threaded control ball valves												
	Pressure regulated valves												
Humidifiers	Threaded globe valve												
							Flanged globe valve						
Central Plant	Outdoor reset	Threaded globe valve											
		Threaded control ball valves											
								Flanged globe valve		Flanged ball valve			
	Boiler Bypass	Threaded globe valve											
		Threaded control ball valves											
								Flanged globe valve		Flanged ball valve			
	Resilient seat butterfly valves												
	Heat reclaim	Threaded globe valve											
		Threaded control ball valves											
	Steam Heat Exchangers	Threaded globe valve											
								Flanged globe valve					
	Greenhouse	Threaded globe valve											
		Threaded control ball valves											
								Flanged globe valve		Flanged ball valve			
Resilient seat butterfly valves													
Thermal Storage	Threaded globe valve												
	Threaded control ball valves												
							Flanged globe valve		Resilient seat butterfly valves				
Chillers	Threaded globe valve												
	Threaded control ball valves												
							Flanged globe valve		Flanged ball valve				
	Resilient seat butterfly valves												
Pressure regulated valves													
Cooling Towers	Threaded globe valve												
	Threaded control ball valves												
						Resilient seat butterfly valves							
Isolation valves	Threaded control ball valves												
	Resilient seat butterfly valves												

Product Selection - Valves

2-Way Control Valves

Attribute	Specification	Unitary				Globe					
		Fan Coil		Cartridge Cage	Cartridge Globe	Threaded			Flanged		
		VU52	VU53	VCzA/B	V58x2	V5011N	V5011F	V5011G	V5011A	V5011B	VGf2xS
Pipe Size	1/2" [DN15]	•	•	•	•	•					
	3/4" [DN20]	•	•	•	•	•					
	1" [DN25]	•	•	•		•					
	1-1/4" [DN32]			•		•					
	1-1/2" [DN40]					•					
	2" [DN50]					•					
	2-1/2" [DN65]						•	•	•		•
	3" [DN80]						•	•	•		•
	4" [DN100]								•	•	•
	5" [DN125]								•	•	•
6" [DN150]								•	•	•	
Other (maximum size)											
Pipe Fittings	Sweat	•	•	•	•						
	NPT Internal Thread	•	•	•	•	•	•	•			
	Inverted Flare	•	•	•							
	ANSI Flange								•	•	•
Static Pressure	ANSI 125/150					•	•	•	•	•	•
	ANSI 250/300										•
	Other	300 psi		300 psi	230 psi						
Media	Chilled Water	•	•	•	•	•	•	•	•	•	•
	Hot Water	•	•	•	•	•	•	•	•	•	•
	Low Pressure Steam					N1, N3	•	•	•	•	•
	High Pressure Steam					N2		•			•
Flow Capacity, Cv	Multiple ratings per pipe size	•	•	•	•	•	•	•	•	•	•
	One rating/size above 1/2"					•	•	•	•	•	•
Valve Action	Direct Acting (Stem down to close)					N1, N2	•	•	•	•	•
	Reverse Acting (Stem up to close)			•	•	N3				•	
	Rotary N.O.	•									
	Rotary N.C.		•								
Flow Characteristic	Equal Percentage				•	•	•		•	•	•
	Modified Equal Percentage			•							
	Linear			•		•		•			•
	Quick Open	•	•	•							
Close-off pressure***	High** (100 psid minimum)				•						
	Medium (40 psid minimum)			•	•						
	Varies with actuator	•	•			•	•	•	•	•	•
Maximum Seat Leakage	ANSI Class III (0.10% Cv max.)				0.02%	0.05%					•
	ANSI Class IV (0.01% Cv max.)								•	•	
	Bubble-tight design			•							
	Other (see product data literature)	33 mL/m					0.5%	0.5%			
Rangeability	High (50:1 minimum)	N/A			•	•	•	•	•	•	•
	Medium* (15~50:1)			•							
	Low (under 15:1)										
Trim	Brass, plated brass, bronze					N3	•		•	•	
	Brass plug /Stainless seat					N1					
	Stainless Steel					N2		•			•
	Resilient materials	•	•	•	•						
In-line Serviceability	Cartridge	•	•	•	•						
	Packing					•	•	•	•	•	•
	Rebuild					•	•	•	•	•	•
Actuation Options	Electronic Modulating			•	•	•	•	•	•	•	•
	Tri-state floating			•	•	•	•	•	•	•	•
	Pulse Width Modulation			•							
	2-position low voltage	•	•	•	0	•	•	•	•	•	•
	2-position line voltage	•	•	•		•	•	•	•	•	•
	Electric Spring Return	•	•		•	•	•	•	•	•	•
	Electronic Fail Safe			•							
	Pneumatic, low pressure				•	•	•	•	•	•	•
	Pneumatic bidirectional (Hi-Pr)										
Pneumatic spring return (Hi-Pr)											

Notes
 * Best used with supply water reset from outdoor air temperature.
 ** Can dead-head pumps. Use with VFD-controlled pumps with maximum pressure cut-out
 *** Maximum operating differential pressure. Static close-off pressure may be higher. Maximum pressure for quiet service may be less.

Product Selection - Valves

2-Way Control Valves

Attribute	Specification	Globe		Control Ball		Pressure-Regulated		Butterfly	
		Pressure-Balanced		Threaded	Flanged	Threaded	Wafer Flanged	Resilient Seat	
		V5862A3	VGf2xP	VBN2	VBF2	VRN2	VRW2	VFF1	VFF2
Pipe Size	1/2" [DN15]			•		•			
	3/4" [DN20]			•		•			
	1" [DN25]	•		•		•			
	1-1/4" [DN32]	•		•		•			
	1-1/2" [DN40]	•		•		•			
	2" [DN50]			•		•		•	•
	2-1/2" [DN65]		•	•		•	•	•	•
	3" [DN80]		•	•		•	•	•	•
	4" [DN100]		•		•		•	•	•
	5" [DN125]		•		•		•	•	•
6" [DN150]		•		•		•	•	•	
Other (maximum size)								20" [DN500]	
Pipe Fittings	Sweat								
	NPT Internal Thread	•		•		•			
	Inverted Flare								
	ANSI Flange		•		•		•	•	•
Static Pressure	ANSI 125/150		•		•		•		
	ANSI 250/300						•		
	Other		230 psi		360 psi		360 psi		250 psi
Media	Chilled Water	•	•	•	•	•	•	•	•
	Hot Water	•	•	•	•	•	•	•	•
	Low Pressure Steam		•						
	High Pressure Steam		•						
Flow Capacity, Cv	Multiple ratings per pipe size	•		•	•	x (gpm)	x (gpm)		
	One rating/size above 1/2"		•					•	•
Valve Action	Direct Acting (Stem down to close)	•	•						
	Reverse Acting (Stem up to close)								
	Rotary N.O.			0	0	0	0	•	0
	Rotary N.C.			•	•	•	•		•
Flow Characteristic	Equal Percentage		•			•	•		
	Modified Equal Percentage			•	•			•	•
	Linear	•	•			•			
	Quick Open								
Close-off pressure***	High** (100 psid minimum)	•	•	•	•	•	•	•	•
	Medium (40 psid minimum)							•	•
	Varies with actuator								
Maximum Seat Leakage	ANSI Class III (0.10% Cv max.)					•			
	ANSI Class IV (0.01% Cv max.)	•	•	•	•			•	•
	Bubble-tight design							•	•
	Other (see product data literature)						< 0.2%		
Rangeability	High (50:1 minimum)	•	•	•	•	•	•		
	Medium* (15~50:1)			0		< 10 gpm			
	Low (under 15:1)							•	•
Trim	Brass, plated brass, bronze			•		•			
	Brass plug /Stainless seat								
	Stainless Steel	•	•	•	•	•	•		
	Resilient materials					•	•	•	•
In-line Serviceability	Cartridge					•	•		
	Packing	•	•	•	•	•	•		
	Rebuild				•	Regulator			
Actuation Options	Electronic Modulating	•	•	•	•	•	•	•	•
	Tri-state floating	•	•	•	•	•	•	•	•
	Pulse Width Modulation								
	2-position low voltage		•	•	•	0	0	Limited	
	2-position line voltage		•	0	0	0	0	•	•
	Electric Spring Return	•	•	•	•	•		Limited	
	Electronic Fail Safe						•		
	Pneumatic, low pressure		•					Limited	
	Pneumatic bidirectional (Hi-Pr)							•	•
Pneumatic spring return (Hi-Pr)							•	•	

Notes * Best used with supply water reset from outdoor air temperature.

** Can dead-head pumps. Use with VFD-controlled pumps with maximum pressure cut-out

*** Maximum operating differential pressure. Static close-off pressure may be higher. Maximum pressure for quiet service may be less.

Product Selection - Valves

3-Way Control Valves

Attribute	Specification	Unitary				Globe				
		Fan Coil	Cartridge Cage	Cartridge Globe		Threaded	Flanged			
		VU54	VCzM/N	V58x3	V5863A3	V5013N...	V5013B	V5013C	VGf3xLD	VGf3xEM
Pipe Size	1/2" [DN15]	•	•	•		•				
	3/4" [DN20]	•	•	•		•				
	1" [DN25]	•	•		•	•				
	1-1/4" [DN32]		•		•	•				
	1-1/2" [DN40]				•	•				
	2" [DN50]					•				
	2-1/2" [DN65]						•		•	•
	3" [DN80]						•		•	•
	4" [DN100]						•	•	•	•
	5" [DN125]						•	•	•	•
6" [DN150]						•	•	•	•	
Other (maximum size)										
Pipe Fittings	Sweat	•	•	•						
	NPT Internal Thread	•	•	•	•	•				
	Inverted Flare	•	•							
	ANSI Flange						•	•	•	•
Static Pressure	ANSI 125/150					•	•	•	•	•
	ANSI 250/300								•	•
	Other	300 psi	300 psi	230 psi	230 psi					
Media	Chilled Water	•	•	•	•	•	•	•	•	•
	Hot Water	•	•	•	•	•	•	•	•	•
Flow Capacity, Cv	Multiple ratings per pipe size	•	•	•	•	•				
	One rating/size above 1/2"					•	•	•	•	•
Valve Action	Mixing A-B-AB porting			•	•	•	•			•
	Mixing A-AB-B porting		•							
	Diverting AB-B-A porting	•						•	•	
	Diverting A-AB-B porting		•							
A-port Flow Characteristic	Equal Percentage			•		•				•
	Modified Equal Percentage		•							
	Linear		•		•		•	•	•	
	Quick Open	•	•							
B-port Flow Characteristic	Modified Equal Percentage									
	Linear		•			•	•	•	•	•
	Linear, Reduced Cv			•	•					
	Total Constant Flow			•	•	•	•	•	•	
	Quick Open	•								
Close-off pressure***	High (60 psid minimum)		•	•	•					
	Medium (30 psid minimum)			•						
	Varies with actuator	•				•	•	•	•	•
Maximum Seat Leakage**	ANSI Class III (0.10% Cv max.)			•	•	•			•	
	ANSI Class IV (0.01% Cv max.)						•	•		
	Bubble-tight design		•							
	Other (see product data literature)	33 mL/m								A = 0.5%
Rangeability	High (50:1 minimum)			•	•	•	•	•	•	•
	Medium* (15-50:1)	N/A	•							
	Low (under 15:1)									
Trim	Brass, plated brass, bronze			•	•	•	•	•	•	•
	Stainless Steel					0			•	•
	Resilient materials	•	•	•						
In-line Serviceability	Cartridge	•	•	•						
	Packing				•	•	•	•	•	•
	Rebuild					•	•	•	•	•
Actuation Options	Electronic Modulating		•	•	•	•	•	•	•	•
	Tri-state floating		•	•	•	•	•	•	•	•
	Pulse Width Modulation		•							
	2-position low voltage	•	•	0	0	•	•	•	•	•
	2-position line voltage	•	•			•	•	•	•	•
	Electric Spring Return	•		•	•	•	•	•	•	•
	Electronic Fail Safe		•							
	Pneumatic, low pressure			•		•	•	•	•	•
	Pneumatic bidirectional (Hi-Pr)									
Pneumatic spring return (Hi-Pr)										

Notes * Best used with supply water reset from outdoor air temperature.

** A port specification

*** A-port maximum operating differential pressure. Static close-off pressure may be higher. Maximum pressure for quiet service may be less.

**** Stem down to close

***** Stem up to close

"Limited" = not available in large sizes

Product Selection - Valves

3-Way Control Valves

Attribute	Specification	Control Ball		Butterfly	
		Threaded	Flanged	Resilient Seat	
		VBN3	VBF3	VFF3	VFF6
Pipe Size	1/2" [DN15]	•			
	3/4" [DN20]	•			
	1" [DN25]	•			
	1-1/4" [DN32]	•			
	1-1/2" [DN40]	•			
	2" [DN50]	•		•	•
	2-1/2" [DN65]	•		•	•
	3" [DN80]			•	•
	4" [DN100]		•	•	•
	5" [DN125]		•	•	•
6" [DN150]		•	•	•	
Other (maximum size)				20" [DN500]	
Pipe Fittings	Sweat				
	NPT Internal Thread	•			
	Inverted Flare				
	ANSI Flange		•	•	•
Static Pressure	ANSI 125/150		•		
	ANSI 250/300				
	Other	360 psi		250 psi	
Media	Chilled Water	•	•	•	•
	Hot Water	•	•	•	•
Flow Capacity, Cv	Multiple ratings per pipe size	•	•		
	One rating/size above 1/2"			•	•
Valve Action	Mixing A-B-AB porting	•	•	•	
	Mixing A-AB-B porting				•
	Diverting AB-B-A porting	•	o	•	
	Diverting A-AB-B porting				•
A-port Flow Characteristic	Equal Percentage				
	Modified Equal Percentage	•	•	•	•
	Linear				
	Quick Open				
B-port Flow Characteristic	Modified Equal Percentage			•	•
	Linear				
	Linear, Reduced Cv	•	•		
	Total Constant Flow				
	Quick Open				
Close-off pressure***	High (60 psid minimum)		•	•	•
	Medium (30 psid minimum)	•		•	•
	Varies with actuator				
Maximum Seat Leakage**	ANSI Class III (0.10% Cv max.)				
	ANSI Class IV (0.01% Cv max.)	•	A-port	•	•
	Bubble-tight design			•	•
	Other (see product data literature)		B-port		
Rangeability	High (50:1 minimum)	•	•		
	Medium* (15-50:1)	o			
	Low (under 15:1)			•	•
Trim	Brass, plated brass, bronze	•			
	Stainless Steel		•		
	Resilient materials			•	•
In-line Serviceability	Cartridge				
	Packing	•	•		
	Rebuild		•		
Actuation Options	Electronic Modulating	•	•	•	•
	Tri-state floating	•	•	•	•
	Pulse Width Modulation				
	2-position low voltage	•	•	Limited	
	2-position line voltage	o	o	•	•
	Electric Spring Return	•	•	Limited	
	Electronic Fail Safe				
	Pneumatic, low pressure			Limited	
	Pneumatic bidirectional (Hi-Pr)			•	•
Pneumatic spring return (Hi-Pr)			•	•	

Notes

- * Best used with supply water reset from outdoor air temperature.
- ** A port specification
- *** A-port maximum operating differential pressure. Static close-off pressure may be higher. Maximum pressure for quiet service may be less.
- **** Stem down to close
- ***** Stem up to close
- "Limited" = not available in large sizes

Product Selection - Valves

Fan Coil and Zone Valves

Honeywell Fan Coil and Zone Valves family (VU Series) have withstood the test of time as a reliable and dependable product.

With a Cv range suitable for anything from radiator panels to fan coil units and both normally open and normally closed spring return functions, it's easy to select a model that fits your needs. Additionally you can choose between line voltage or low voltage actuators as well as three different types of pipe fittings: Female NPT, Sweat and Inverted flare.

Common Features

- Maximum static water pressure: 300 psig
- Ambient temp range: 34-104°F (at 34-250°F medium temperature)
- 3-way valve is diverting type
- Long service life with patented ball seal
- Quick opening / soft closing for optimal 2-position control
- Manual opener

Actuator O.S. Number		VU443A1008	VU443A1024	VU443A1115	VU443A1180	VU443E1009	VU444A1007
Power Supply	Voltage	120 Vac	208 Vac	230 Vac	120 Vac	120 Vac	120 Vac
	Frequency	60 Hz	60 Hz	50 / 60 Hz	60 Hz	60 Hz	60 Hz
	Power (60 Hz)	5 VA	5 VA	5 VA	5 VA	5 VA	5 VA
Control	2-Position SPST	•	•	•	•	•	•
Aux Switch	SPST					2.2 A/120 Vac	
Maximum Timing	Seconds @ 60 Hz, Driving	15	15	15	15	15	15
	Fail Safe	6	6	6	6	6	6
Fail Safe Action		N.C.	N.C.	N.C.	N.C.	N.C.	2-way N.O. 3-way N.O./N.C.
Electrical Connections	Leadwire Length, in.	6	18	6	6	18	6
	1/2 in. flexible conduit hole	•	•	•	•	•	•
Manual Override	(on power failure, auto reset)	•	•	•	•	•	•
Nickel plated motors	Condensing Atmosphere				•		

Valve Size (inches)	Connection Type	Flow Capacity (Cv)	Valve Action	Valve O.S. Number	2-way Valves Close-off							
1/2"	f NPT	1.0	Normally Open	VU52N1027							50	
	Sweat	1.0		VU52S2002							50	
	f NPT	2.5		VU52N1035							30	
	Sweat	2.5		VU52S2010							30	
	f NPT	3.5		VU52N1019							20	
	Sweat	3.5		VU52S2028							20	
3/4"	f NPT	3.5		VU52N1076							20	
	Sweat	3.5		VU52S2036							20	
	Sweat	5.0		VU52S2044							15	
	f NPT	8.0		VU52N1001							10	
1"	Sweat	8.0		VU52S2051							10	
	f NPT	8.0		VU52N1068							10	
1/2"	f NPT	1.0	Normally Closed	VU53N1041	50	50	50	50	50			
	Sweat	1.0		VU53S2018	50	50	50	50	50			
	f NPT	2.5		VU53N1058	30	30	30	30	30			
	Sweat	2.5		VU53S2026	30	30	30	30	30			
	Inverted Flare	3.5		VU53F1024	20	20	20	20	20			
	f NPT	3.5		VU53N1009	20	20	20	20	20			
3/4"	Sweat	3.5		VU53S2034	20	20	20	20	20			
	f NPT	3.5		VU53N1033	20	20	20	20	20			
	Sweat	3.5		VU53S2042	20	20	20	20	20			
	f NPT	5.0		VU53N1066	15	15	15	15	15			
	Sweat	5.0		VU53S2075	15	15	15	15	15			
	f NPT	8.0		VU53N1017	10	10	10	10	10			
	Sweat	8.0		VU53S2059	10	10	10	10	10			
	f NPT	8.0		VU53N1026	10	10	10	10	10			
	1"	Sweat		8.0	VU53S2000	10	10	10	10	10		
		f NPT		8.0								
Valve Size (inches)	Connection Type	Flow Capacity (Cv)		Valve Action	Valve O.S. Number	3-way Valves Close-off						
1/2"	Inverted Flare	4.0		Diverting	VU54F1022							20
	f NPT	4.0	VU54N1007								20	
	Sweat	4.0	VU54S2008								10	
3/4"	f NPT	4.0	VU54N1031								20	
	f NPT	5.0	VU54N1049								15	
	Sweat	5.0	VU54S2057								15	
	f NPT	7.0	VU54N1015								10	
	Sweat	7.0	VU54S2016								10	
	f NPT	7.0	VU54N1023								10	
1"	Sweat	7.0	VU54S2024								10	
	f NPT	7.0										



2-Way



3-Way

Product Selection - Valves

Fan Coil and Zone Valves



Actuator O.S. Number		VU444A1098	VU444A1106	VU444A1155	VU843A1004	VU843A1087	VU844A1003	VU844A1060
Power Supply	Voltage	227 Vac	230 Vac	120 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	60 Hz	50 / 60 Hz	60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power (60 Hz)	5 VA	5 VA	5 VA	0.32 A	0.32 A	0.32 A	0.32 A
Control	2-Position SPST	•	•	•	•	•	•	•
Aux Switch	SPST							
Maximum Timing	Seconds @ 60 Hz, Driving	15	15	15	15	15	15	15
	Fail Safe	6	6	6	6	6	6	6
Fail Safe Action		2-way N.O. 3-way N.O./N.C.	2-way N.O. 3-way N.O./N.C.	2-way N.O. 3-way N.O./N.C.	N.C.	N.C.	2-way N.O. 3-way N.O./N.C.	2-way N.O. 3-way N.O./N.C.
	Electrical Connections	Leadwire Length, in.	18	6	6	6	6	6
	1/2 in. flexible conduit hole	•	•	•	•	•	•	•
Manual Override	(on power failure, auto reset)	•	•	•	•	•	•	•
Nickel plated motors	Condensing Atmosphere			•		•		•

Valve Size (inches)	Connection Type	Flow Capacity (Cv)	Valve Action	Valve O.S. Number	2-way Valves Close-off									
2-Way	1/2"	f NPT	1.0	Normally Open	VU52N1027	50	50	50				50	50	
		Sweat	1.0		VU52S2002	50	50	50				50	50	
		f NPT	2.5		VU52N1035	30	30	30				30	30	
		Sweat	2.5		VU52S2010	30	30	30				30	30	
		f NPT	3.5		VU52N1019	20	20	20				20	20	
		Sweat	3.5		VU52S2028	20	20	20				20	20	
	3/4"	f NPT	3.5		VU52N1076	20	20	20				20	20	
		Sweat	3.5		VU52S2036	20	20	20				20	20	
		Sweat	5.0		VU52S2044	15	15	15				15	15	
		f NPT	8.0		VU52N1001	10	10	10				10	10	
		Sweat	8.0		VU52S2051	10	10	10				10	10	
		1"	f NPT		8.0	VU52N1068	10	10	10				10	10
	1/2"	f NPT	1.0	Normally Closed	VU53N1041				50	50				
		Sweat	1.0		VU53S2018				50	50				
		f NPT	2.5		VU53N1058				30	30				
		Sweat	2.5		VU53S2026				30	30				
		Inverted Flare	3.5		VU53F1024				20	20				
		f NPT	3.5		VU53N1009				20	20				
Sweat		3.5	VU53S2034					20	20					
3/4"		f NPT	3.5		VU53N1033				20	20				
		Sweat	3.5		VU53S2042				20	20				
		f NPT	5.0		VU53N1066				15	15				
		Sweat	5.0		VU53S2075				15	15				
		f NPT	8.0		VU53N1017				10	10				
	Sweat	8.0	VU53S2059				10	10						
1"	f NPT	8.0	VU53N1026				10	10						
	Sweat	8.0	VU53S2000				10	10						
Valve Size (inches)	Connection Type	Flow Capacity (Cv)	Valve Action	Valve O.S. Number	3-way Valves Close-off									
3-Way	1/2"	Inverted Flare	4.0	Diverting	VU54F1022	20	20	20				20	20	
		f NPT	4.0		VU54N1007	20	20	20				20	20	
		Sweat	4.0		VU54S2008	10	10	10				10	10	
	3/4"	f NPT	4.0		VU54N1031	20	20	20				20	20	
		f NPT	5.0		VU54N1049	15	15	15				15	15	
		Sweat	5.0		VU54S2057	15	15	15				15	15	
		f NPT	7.0		VU54N1015	10	10	10				10	10	
		Sweat	7.0		VU54S2016	10	10	10				10	10	
		f NPT	7.0		VU54N1023	10	10	10				10	10	
	1"	f NPT	7.0		VU54S2024	10	10	10				10	10	

VALVES

Product Selection - Valves

Cartridge Cage Valves

Honeywell Cartridge Cage Valves family (VC Series) are highly serviceable and completely rebuildable.

Select from 2-position (both low and line voltage), floating and modulating actuators, and fail safe actuators with configurable open/closed functionality on power failure depending on the application. Since these valves are not sensitive to flow direction; they can do both mixing and diverting without changing anything except the piping.



Actuator O.S. Number		Non-Fail Safe						
		VC6834ZZ11	VC6934ZZ11	VC7934ZZ11	VC4011ZZ11	VC4013ZZ11	VC8114ZZ11	VC8714ZZ11
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	100-130 Vac	200-240 Vac	24 Vac	24 Vac
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	60 Hz	60 Hz
	Power	6 VA	6 VA	6 VA	6 VA	6 VA	6 VA	6 VA
Control	2-10 Vdc			•				
	4-20 mA (external 500 Ohm resistor)			•				
	Floating	•	•					
	2-Position SPDT	•	•					
	2-Position SPST				•	•	•	•
	Pulse Width Modulation							
Aux Switch	SPDT Class II	2.2 A						2.2 A
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place
Reversible Operation	Wiring Change	•	•					
	DIP Switch							
Stroke Timing	Seconds @ 60 Hz (Drive)	120	120	120	6	6	6	6
	Fail Safe							
Electrical Connection	Cable length, in.	60	60	60	39.4	39.4	60	60
	Plenum-rated cable	•	•	•			•	•
	1/2 in. flexible conduit adapter	•	•	•			•	•



2-Way

Valve Size (inches)	Connection Type	Flow Capacity (Cv)	Flow Characteristic	Valve O.S. Number									
1/2"	f NPT	0.7	Modified Equal %	VCZBB3500	VCZBB3500	VCZBB3500							
	Sweat	0.7		VCZAA3500	VCZAA3500	VCZAA3500							
	f NPT	1.3		VCZBB3600	VCZBB3600	VCZBB3600							
	Sweat	1.3		VCZAA3600	VCZAA3600	VCZAA3600							
	Sweat	1.9		VCZAA3800	VCZAA3800	VCZAA3800							
	f NPT	1.9		VCZBB3800	VCZBB3800	VCZBB3800							
	Sweat	2.3		VCZAA3400	VCZAA3400	VCZAA3400							
	f NPT	2.3		VCZBB3400	VCZBB3400	VCZBB3400							
	f NPT	3.5	Linear	VCZBB3100	VCZBB3100	VCZBB3100	VCZBB1100	VCZBB1100	VCZBB1100	VCZBB1100			
	Sweat	3.5	Linear	VCZAA3100	VCZAA3100	VCZAA3100	VCZAA1100	VCZAA1100	VCZAA1100	VCZAA1100			
	3/4"	f NPT	3.9	Modified Equal %	VCZAL3400	VCZAL3400	VCZAL3400						
		Sweat	3.9	Modified Equal %	VCZAM3400	VCZAM3400	VCZAM3400						
f NPT		4.7	Linear	VCZAL3100	VCZAL3100	VCZAL3100	VCZAL1100	VCZAL1100	VCZAL1100	VCZAL1100			
Sweat		4.7	Linear	VCZAM3100	VCZAM3100	VCZAM3100	VCZAM1100	VCZAM1100	VCZAM1100	VCZAM1100			
1"	f NPT	4.2	Modified Equal %	VCZAR3400	VCZAR3400	VCZAR3400							
	Sweat	4.2	Modified Equal %	VCZAS3400	VCZAS3400	VCZAS3400							
	f NPT	6.6	Linear	VCZAR3100	VCZAR3100	VCZAR3100	VCZAR1100	VCZAR1100	VCZAR1100	VCZAR1100			
	Sweat	6.6		VCZAS3100	VCZAS3100	VCZAS3100	VCZAS1100	VCZAS1100	VCZAS1100	VCZAS1100			
f NPT	7	VCZBD3100		VCZBD3100	VCZBD3100	VCZBD1100	VCZBD1100	VCZBD1100	VCZBD1100				
Sweat	7	VCZBE3100		VCZBE3100	VCZBE3100	VCZBE1100	VCZBE1100	VCZBE1100	VCZBE1100				



3-Way Mixing/ Diverting

Valve Size (inches)	Connection Type	Flow Capacity (Cv)	Flow Characteristic	Valve O.S. Number									
1/2"	f NPT	0.7	Modified Equal %	VCZNB7500	VCZNB7500	VCZNB7500							
	Sweat	0.7		VCZMA7500	VCZMA7500	VCZMA7500							
	f NPT	1.5		VCZNB7600	VCZNB7600	VCZNB7600							
	Sweat	1.5		VCZMA7600	VCZMA7600	VCZMA7600							
	f NPT	1.5		VCZNB7800	VCZNB7800	VCZNB7800							
	Sweat	1.5		VCZMA7800	VCZMA7800	VCZMA7800							
	f NPT	2.7		VCZNB7400	VCZNB7400	VCZNB7400							
	Sweat	2.7		VCZMA7400	VCZMA7400	VCZMA7400							
	f NPT	3.7	Linear	VCZNB7100	VCZNB7100	VCZNB7100	VCZNB6100	VCZNB6100	VCZNB6100	VCZNB6100			
	Sweat	3.7	Linear	VCZMA7100	VCZMA7100	VCZMA7100	VCZMA6100	VCZMA6100	VCZMA6100	VCZMA6100			
	3/4"	f NPT	4.2	Modified Equal %	VCZMK7400	VCZMK7400	VCZMK7400						
		Sweat	4.2	Modified Equal %	VCZML7400	VCZML7400	VCZML7400						
f NPT		6.6	Linear	VCZMK7100	VCZMK7100	VCZMK7100	VCZMK6100	VCZMK6100	VCZMK6100	VCZMK6100			
Sweat		6.6		VCZML7100	VCZML7100	VCZML7100	VCZML6100	VCZML6100	VCZML6100	VCZML6100			
f NPT	8.3	VCZMR7100		VCZMR7100	VCZMR7100	VCZMR6100	VCZMR6100	VCZMR6100	VCZMR6100				
Sweat	8.3	VCZMS7100		VCZMS7100	VCZMS7100	VCZMS6100	VCZMS6100	VCZMS6100	VCZMS6100				
1-1/4"	f NPT	9	Linear	VCZND7100	VCZND7100	VCZND7100	VCZND6100	VCZND6100	VCZND6100	VCZND6100			
	Sweat	9		VCZNE7100	VCZNE7100	VCZNE7100	VCZNE6100	VCZNE6100	VCZNE6100	VCZNE6100			

Common Features

- 2-way straight-through or 3-way mixing/diverting body configurations
- Corrosion resistant, engineered plastic actuator housing
- 60 psid close-off on all models
- Fast acting 2-position actuator with soft close technology
- Position indicator/manual override lever standard
- Replaceable cartridge rebuilds valve to factory specifications without removing valve body from piping
- 300 psi operating pressure
- Combination position indicator/manual flush-and-fill manual lever on all actuators



		Fail Safe	
Actuator O.S. Number		VC6936ZZ11-530	VC7936ZZ11-529
Power Supply	Voltage	24 Vac	24 Vac
	Frequency	50/60 Hz	50/60 Hz
	Power	12 VA	12 VA
Control	2-10 Vdc		•
	4-20 mA (external 500 Ohm resistor)		•
	Floating	•	•
	2-Position SPDT	•	•
	2-Position SPST		•
	Pulse Width Modulation	•	•
Aux Switch	SPDT Class II		
Fail Safe Action		Electronic NO/NC	Electronic NO/NC
Reversible Operation	Wiring Change	•	•
	DIP Switch		•
Stroke Timing	Seconds @ 60 Hz (Drive)	120	60 / 120
	Fail Safe	12	12
Electrical Connection	Cable length, in.	60	60
	Plenum-rated cable	•	•
	1/2 in. flexible conduit adapter	•	•



Honeywell's Cartridge Cage Valves feature a field replaceable cartridge for all working parts

Valve Size (inches)	Connection Type	Flow Capacity (Cv)	Flow Characteristic	Y-pack O.S. Number		Replacement Cartridge Floating / Modulating	Replacement Cartridge Electronic Fail Safe		
2-Way	1/2"	f NPT	0.7	Modified Equal %	VC6936BB1500	VC7936BB1500	VCZZ3500	VCZZ1500	
		Sweat	0.7		VC6936AA1500	VC7936AA1500	VCZZ3500	VCZZ1500	
		f NPT	1.3		VC6936BB1600	VC7936BB1600	VCZZ3600	VCZZ1600	
		Sweat	1.3		VC6936AA1600	VC7936AA1600	VCZZ3600	VCZZ1600	
		Sweat	1.9		VC6936AA1800	VC7936AA1800	VCZZ3800	VCZZ1800	
		f NPT	1.9		VC6936BB1800	VC7936BB1800	VCZZ3800	VCZZ1800	
		Sweat	2.3		VC6936AA1400	VC7936AA1400	VCZZ3400	VCZZ1400	
		f NPT	2.3		VC6936BB1400	VC7936BB1400	VCZZ3400	VCZZ1400	
	f NPT	3.5	Linear	VC6936BB1100	VC7936BB1100	VCZZ3100	VCZZ1100*		
	Sweat	3.5	Linear	VC6936AA1100	VC7936AA1100	VCZZ3100	VCZZ1100*		
	3/4"	f NPT	3.9	Modified Equal %	VC6936AL1400	VC7936AL1400	VCZZ3400	VCZZ1400	
		Sweat	3.9	Modified Equal %	VC6936AM1400	VC7936AM1400	VCZZ3400	VCZZ1400	
		f NPT	4.7	Linear	VC6936AL1100	VC7936AL1100	VCZZ3100	VCZZ1100*	
		Sweat	4.7	Linear	VC6936AM1100	VC7936AM1100	VCZZ3100	VCZZ1100*	
	1"	f NPT	4.2	Modified Equal %	VC6936AR1400	VC7936AR1400	VCZZ3400	VCZZ1400	
		Sweat	4.2	Modified Equal %	VC6936AS1400	VC7936AS1400	VCZZ3400	VCZZ1400	
f NPT		6.6	Linear	VC6936AR1100	VC7936AR1100	VCZZ3100	VCZZ1100*		
Sweat		6.6		VC6936AS1100	VC7936AS1100	VCZZ3100	VCZZ1100*		
1-1/4"	f NPT	7	Linear	VC6936BD1100	VC7936BD1100	VCZZ3100	VCZZ1100*		
	Sweat	7		VC6936BE1100	VC7936BE1100	VCZZ3100	VCZZ1100*		
3-Way Mixing / Diverting	1/2"	f NPT	0.7	Modified Equal %	VC6936NB6500	VC7936NB6500	VCZZ7500	VCZZ6500	
		Sweat	0.7		VC6936MA6500	VC7936MA6500	VCZZ7500	VCZZ6500	
		f NPT	1.5		VC6936NB6600	VC7936NB6600	VCZZ7600	VCZZ6600	
		Sweat	1.5		VC6936MA6600	VC7936MA6600	VCZZ7600	VCZZ6600	
		f NPT	1.5		VC6936NB6800	VC7936NB6800	VCZZ7800	VCZZ6800	
		Sweat	1.5		VC6936MA6800	VC7936MA6800	VCZZ7800	VCZZ6800	
		f NPT	2.7		VC6936NB6400	VC7936NB6400	VCZZ7400	VCZZ6400	
		Sweat	2.7		VC6936MA6400	VC7936MA6400	VCZZ7400	VCZZ6400	
		f NPT	3.7		Linear	VC6936NB6100	VC7936NB6100	VCZZ7100	VCZZ6100*
		Sweat	3.7		Linear	VC6936MA6100	VC7936MA6100	VCZZ7100	VCZZ6100*
	3/4"	f NPT	4.2	Modified Equal %	VC6936MK6400	VC7936MK6400	VCZZ7400	VCZZ6400	
		Sweat	4.2	Modified Equal %	VC6936ML6400	VC7936ML6400	VCZZ7400	VCZZ6400	
		f NPT	6.6	Linear	VC6936MK6100	VC7936MK6100	VCZZ7100	VCZZ6100*	
		Sweat	6.6		VC6936ML6100	VC7936ML6100	VCZZ7100	VCZZ6100*	
		f NPT	8.3		VC6936MR6100	VC7936MR6100	VCZZ7100	VCZZ6100*	
		Sweat	8.3		VC6936MS6100	VC7936MS6100	VCZZ7100	VCZZ6100*	
	1-1/4"	f NPT	9	Linear	VC6936ND6100	VC7936ND6100	VCZZ7100	VCZZ6100*	
		Sweat	9		VC6936NE6100	VC7936NE6100	VCZZ7100	VCZZ6100*	

* Also applies to 2-position valve-actuator applications

Product Selection - Valves

Cartridge Globe Valves

For more than 50 years, Honeywell has manufactured the V58 series of premium Cartridge Globe Valves. The compact size and replacement capabilities make it a great choice for controlling modulating unitary equipment.

Valves 1" and larger feature a pressure balanced design with enhanced close-off (levels).

Common Features

- Maximum static pressure 235 psi
- Long stroke allows for a wide range of control
- Leakage rate: 0.02% of Cv
- Insert replacement tool allows for the valve cartridge to be replaced or changed without draining the system (1/2" and 3/4" models only)
- Brass body and stainless steel stem
- Threaded plastic valve cover/manual handle allows for manual operation
- Corrosion resistant



Actuator O.S. Number		Non-Fail Safe			
		M6410A1029	M6410A3017	M7410F1000	M7410F3006
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	Power	0.7 VA	0.7 VA	1.4 VA	1.4 VA
Control	Stem Force (lb.)	40.5	67.5	40.5	67.5
	2-Position SPDT	•	•		
	Floating	•	•		
	0(2)-10 Vdc			DIP Switch	DIP Switch
4-20 mA (external 500 Ohm resistor)				•	•
	Pneumatic Spring Range				
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place
Reversible Operation	Wiring Change	•	•		
	DIP Switch			•	•
Stroke Timing	Seconds @ 60 Hz (Drive)	125	125	125	125
	Fail Safe				
Manual Override	(Use valve dust cap)	•	•	•	•
Position Indicator		•	•	•	•
Electrical Connection	Cable length, in.	36	36	36	36
	Plenum-rated Cable	•	•	•	•
	Screw terminals				
	1/2 in. flexible conduit hub	•	•	•	•



2-Way

Valve Size (inches)	Pipe Connection Type	Flow Capacity (Cv)	Flow Characteristic	Valve Closes	Valve O.S. Number	Close-off Pressure, psid			
1/2"	f NPT	0.19	Equal%	Stem Down ²	V5862A2005	232		232	
	Sweat	0.19			V5852A2007	232		232	
	f NPT	0.29			V5862A2013	232		232	
	Sweat	0.29			V5852A2015	232		232	
	f NPT	0.47			V5862A2021	232		232	
	Sweat	0.47			V5852A2023	232		232	
	f NPT	0.74			V5862A2039	232		232	
	Sweat	0.74			V5852A2031	232		232	
	f NPT	1.2			V5862A2047	174		174	
	Sweat	1.2			V5852A2049	174		174	
	f NPT	1.9			V5862A2054	174		174	
	Sweat	1.9			V5852A2056	174		174	
	f NPT	2.9			V5862A2062	58		58	
	Sweat	2.9			V5852A2064	58		58	
1"	f NPT	4.9	Linear	Stem Up	V5862A2070	58		58	
	Sweat	4.9			V5852A2072	58		58	
	f NPT	5.5			V5862A3003		232		232
	Sweat	7.8			V5862A3011		232		232
1-1/4"	f NPT	11	Linear	Stem Up	V5862A3029		232	232	
	Sweat	18			V5862A3037		174		174
1-1/2"	f NPT	25			V5862A3045		145	145	



3-Way

Valve Size (inches)	Pipe Connection Type	Flow Capacity (Cv) ¹	Flow Characteristic	Valve Closes	Valve O.S. Number	Close-off Pressure, psid			
1/2"	f NPT	0.29	A-AB Equal%, B-AB Linear	Port A to AB Stem up	V5863A2004	116		116	
	Sweat	0.29			V5853A2006	116		116	
	f NPT	0.47			V5863A2012	116		116	
	Sweat	0.47			V5853A2014	116		116	
	f NPT	0.74			V5863A2020	116		36	
	Sweat	0.74			V5853A2022	116		36	
	f NPT	1.2			V5863A2038	36		36	
	Sweat	1.2			V5853A2030	36		36	
	f NPT	1.9			V5863A2046	34		34	
	Sweat	1.9			V5853A2048	34		34	
	f NPT	2.9			V5863A1006	34		34	
	Sweat	2.9			V5853A1008	34		34	
	f NPT	4.9			V5863A1014	34		34	
	Sweat	4.9			V5853A1016	34		34	
3/4"	f NPT	2.9	Linear	Stem up	V5863A2053	7.25		7.25	
	Sweat	2.9			V5853A2055	7.25		7.25	
	f NPT	4.9			V5863A2061	7.25		7.25	
	Sweat	4.9			V5853A2063	7.25		7.25	
	f NPT	5.5			V5863A3002		232		232
	Sweat	7.8			V5863A3010		232		232
	f NPT	11			V5863A3028		232		232
	Sweat	18			V5863A3036		174		174
1-1/2"	f NPT	25			V5863A3044		145	145	

¹ B port Cv is 20% less

² Fail safe position for 1/2" and 3/4" 2-way is Normally Open with Mx435 and MP958 spring return actuators. All other valves fail safe closed.

Product Selection - Valves

Cartridge Globe Valves



Actuator O.S. Number		Fail Safe				Pneumatic		
		M6435A1004	M6435A3000	M7435F1001	M7435F3007	MP958A1009	MP958A1017	MP958A1025
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac			
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz			
	Power	10 VA	10 VA	5 VA	5 VA			
Control	Stem Force (lb.)	40.5	90	40.5	90			
	2-Position SPDT	•	•					
	Floating	•	•					
	0(2)-10 Vdc			DIP Switch	DIP Switch			
	4-20 mA (external 500 Ohm resistor)			•	•			
Pneumatic Spring Range						2-5 psi	3-10 psi	8-11 psi
Fail Safe Action		Stem Up	Stem Up	Stem Up	Stem Up	Stem Up	Stem Up	Stem Up
Reversible Operation	Wiring Change	•	•					
	DIP Switch			•	•			
Stroke Timing	Seconds @ 60 Hz (Drive)	50	50	50	50			
	Fail Safe	10	10	10	10			
Manual Override (Use valve dust cap)		•	•	•	•	•	•	•
Position Indicator		•	•	•	•			
Electrical Connection								
Cable length, in.		—	—	—	—	—	—	—
Plenum-rated Cable								
Screw terminals		•	•	•	•			
1/2 in. flexible conduit hub		•	•	•	•			

Valve Size (inches)	Pipe Connection Type	Flow Capacity (Cv)	Flow Characteristic	Valve Closes	Valve O.S. Number	Close-off Pressure, psid				A-port Close-off Pressure, psid Full air pressure ³			Replacement Insert ⁴	
2-Way	1/2"	f NPT	Equal%	Stem Down ²	V5862A2005	232		232		232	232	232	0902812	
		Sweat			V5852A2007	232		232		232	232	232	0902812	
		f NPT			V5862A2013	232		232		232	232	232	0902811	
		Sweat			V5852A2015	232		232		232	232	232	0902811	
		f NPT			V5862A2021	232		232		232	232	232	0902810	
		Sweat			V5852A2023	232		232		232	232	232	0902810	
		f NPT			V5862A2039	232		232		232	232	232	0902809	
		Sweat			V5852A2031	232		232		232	232	232	0902809	
		f NPT			V5862A2047	174		174		232	140	120	0902808	
		Sweat			V5852A2049	174		174		232	140	120	0902808	
	3/4"	f NPT	V5862A2054	174		174		232	140	120	0902807			
		Sweat	V5852A2056	174		174		232	140	120	0902807			
		f NPT	V5862A2062	58		58		90	50	40	0902814			
		Sweat	V5852A2064	58		58		90	50	40	0902814			
		f NPT	V5862A2070	58		58		90	50	40	0902815			
		Sweat	V5852A2072	58		58		90	50	40	0902815			
		1"	f NPT	V5862A3003				232		232			0903827	
			f NPT	V5862A3011				232		232			0903827	
			f NPT	V5862A3029				232		232			0903827	
			1-1/4"	f NPT	V5862A3037				174		174		0903828	
1-1/2"	f NPT		V5862A3045				145		145		0903829			
3-Way	1/2"	f NPT	A-AB Equal%, B-AB Linear	Port A to AB Stem up	V5863A2004	116		116		20	80	232	0902821	
		Sweat			V5853A2006	116		116		20	80	232	0902821	
		f NPT			V5863A2012	116		116		20	80	232	0902822	
		Sweat			V5853A2014	116		116		20	80	232	0902822	
		f NPT			V5863A2020	36		36		20	80	232	0902823	
		Sweat			V5853A2022	36		36		20	80	232	0902823	
		f NPT			V5863A2038	36		36		N/A	10	100	0902824	
		Sweat			V5853A2030	36		36		N/A	10	100	0902824	
		f NPT			V5863A2046	34		34		N/A	10	100	0902825	
		Sweat			V5853A2048	34		34		N/A	10	100	0902825	
	3/4"	f NPT	V5863A1006				34		34				0902826	
		Sweat	V5853A1008				34		34				0902826	
		f NPT	V5863A1014				34		34				0902827	
		Sweat	V5853A1016				34		34				0902827	
		f NPT	V5863A2053	7.25		7.25		N/A	N/A	35			0902818	
		Sweat	V5853A2055	7.25		7.25		N/A	N/A	35			0902818	
		f NPT	V5863A2061	7.25		7.25		N/A	N/A	35			0902819	
		Sweat	V5853A2063	7.25		7.25		N/A	N/A	35			0902819	
		1"	f NPT	V5863A3002					232		232			0903827
			f NPT	V5863A3010					232		232			0903827
	f NPT		V5863A3028					232		232			0903827	
	1-1/4"		f NPT	V5863A3036				174		174			0903828	
	1-1/2"		f NPT	V5863A3044				145		145			0903829	

VALVES

¹ B port Cv is 20% less
² Fail safe position for 1/2" and 3/4" 2-way is Normally Open with Mx435 and MP958 spring return actuators. All other valves fail safe closed.
³ 20 psi for 2-way; 0 psi for 3-way
⁴ Insert determines Cv for 1/2" and 3/4" bodies. Grouped inserts are interchangeable.

Product Selection - Valves

2-Way Control Ball Valves With MVN Actuators 1/2"-1 1/4"



Example of complete orderable part number: **VBN2A000.38SA+MVN643A0000+C1**

Control Ball Valve, Female NPT Thread, 2-way, 1/2", CV .38, Stainless Steel, Standard Profile with MVN643A0000 Actuator, Fail in place and 1 meter cable.

**5-YEAR
LIMITED
WARRANTY**

Standard profile provides clearance between valve and actuator for insulation.
Low profile enables installation of valve and actuator in tight spaces.

If the complete orderable part number is too long for your ordering system, please refer to the Short Order Codes on pg 78 to 89.

2-Way

Valve Specification		Valve Profile	Standard Profile		Low Profile	
		Valve Trim	Plated Brass	Stainless Steel	Plated Brass	Stainless Steel
Valve Size (inches)	Close-off Differential Pressure (psi)	Cv	Valve Body Model Number			
1/2"	130	0.38	VBN2A000.38PA	VBN2A000.38SA	VBN2A000.38PL	VBN2A000.38SL
		0.68	VBN2A000.68PA	VBN2A000.68SA	VBN2A000.68PL	VBN2A000.68SL
		1.3	VBN2A001.30PA	VBN2A001.30SA	VBN2A001.30PL	VBN2A001.30SL
		2	VBN2A002.00PA	VBN2A002.00SA	VBN2A002.00PL	VBN2A002.00SL
		2.6	VBN2A002.60PA	VBN2A002.60SA	VBN2A002.60PL	VBN2A002.60SL
		4.7	VBN2A004.70PA	VBN2A004.70SA	VBN2A004.70PL	VBN2A004.70SL
		8	VBN2A008.00PA	VBN2A008.00SA	VBN2A008.00PL	VBN2A008.00SL
		11.7	VBN2A011.70PA	VBN2A011.70SA	VBN2A011.70PL	VBN2A011.70SL
3/4"	130	0.31	VBN2B000.31PA	VBN2B000.31SA	VBN2B000.31PL	VBN2B000.31SL
		0.63	VBN2B000.63PA	VBN2B000.63SA	VBN2B000.63PL	VBN2B000.63SL
		1.2	VBN2B001.20PA	VBN2B001.20SA	VBN2B001.20PL	VBN2B001.20SL
		2.5	VBN2B002.50PA	VBN2B002.50SA	VBN2B002.50PL	VBN2B002.50SL
		4.3	VBN2B004.30PA	VBN2B004.30SA	VBN2B004.30PL	VBN2B004.30SL
		7.4	VBN2B007.40PA	VBN2B007.40SA	VBN2B007.40PL	VBN2B007.40SL
		10.1	VBN2B010.10PA	VBN2B010.10SA	VBN2B010.10PL	VBN2B010.10SL
		14.7	VBN2B014.70PA	VBN2B014.70SA	VBN2B014.70PL	VBN2B014.70SL
1"	100	29	VBN2B029.00PA	VBN2B029.00SA	VBN2B029.00PL	VBN2B029.00SL
		4.4	VBN2C004.40PA	VBN2C004.40SA	VBN2C004.40PL	VBN2C004.40SL
		9	VBN2C009.00PA	VBN2C009.00SA	VBN2C009.00PL	VBN2C009.00SL
		15.3	VBN2C015.30PA	VBN2C015.30SA	VBN2C015.30PL	VBN2C015.30SL
		26	VBN2C026.00PA	VBN2C026.00SA	VBN2C026.00PL	VBN2C026.00SL
		44	VBN2C044.00PA	VBN2C044.00SA	VBN2C044.00PL	VBN2C044.00SL
1-1/4"	100	54	VBN2C054.00PA	VBN2C054.00SA	VBN2C054.00PL	VBN2C054.00SL
		4.4	VBN2D004.40PA	VBN2D004.40SA	VBN2D004.40PL	VBN2D004.40SL
		8.3	VBN2D008.30PA	VBN2D008.30SA	VBN2D008.30PL	VBN2D008.30SL
		14.9	VBN2D014.90PA	VBN2D014.90SA	VBN2D014.90PL	VBN2D014.90SL
		25	VBN2D025.00PA	VBN2D025.00SA	VBN2D025.00PL	VBN2D025.00SL
		37	VBN2D037.00PA	VBN2D037.00SA	VBN2D037.00PL	VBN2D037.00SL
		41	VBN2D041.00PA	VBN2D041.00SA	VBN2D041.00PL	VBN2D041.00SL
102	VBN2D102.00PA	VBN2D102.00SA	VBN2D102.00PL	VBN2D102.00SL		

Actuator Features						
MVN				Standard Profile		Low Profile
Actuator Type	Control Signal	Timing	Voltage	Enclosure	Actuator Model Number	
Fail-in-Place	Floating	90 sec.	24 VAC	NEMA 2	+MVN613A0000	+MVN613L0000
	Fast SPDT	30 sec.	24 VAC/DC		+MVN643A0000	+MVN643L0000
	Modulating	90 sec.	24 VAC/DC		+MVN713A0000	+MVN713L0000
Accessories	1 meter cable				+C1	

2-Way Control Ball Valves With Direct Coupled Actuators 1/2"-3"



Example of complete orderable part number: **VBN2E030.00SX+MN7505A2001**
 Control Ball Valve, Female NPT Thread, 2-way, 1-1/2", CV 30, Black Bracket, Stainless Steel with
 MN7505A2001 Actuator, Fail in place.

**5-YEAR
 LIMITED
 WARRANTY**

If the complete orderable part number is too long for your ordering system, please refer to the Short Order Codes on pg 78 to 89.

2-Way

Valve Specification		Valve Profile	Black Bracket	
Valve Size (inches)	Close-off Differential Pressure (psi)	Valve Trim	Plated Brass	Stainless Steel
		Cv	Valve Body Model Number	
1/2"	130	0.38	VBN2A000.38PX	VBN2A000.38SX
		0.68	VBN2A000.68PX	VBN2A000.68SX
		1.3	VBN2A001.30PX	VBN2A001.30SX
		2	VBN2A002.00PX	VBN2A002.00SX
		2.6	VBN2A002.60PX	VBN2A002.60SX
		4.7	VBN2A004.70PX	VBN2A004.70SX
		8	VBN2A008.00PX	VBN2A008.00SX
		11.7	VBN2A011.70PX	VBN2A011.70SX
3/4"	130	0.31	VBN2B000.31PX	VBN2B000.31SX
		0.63	VBN2B000.63PX	VBN2B000.63SX
		1.2	VBN2B001.20PX	VBN2B001.20SX
		2.5	VBN2B002.50PX	VBN2B002.50PSX
		4.3	VBN2B004.30PX	VBN2B004.30SX
		7.4	VBN2B007.40PX	VBN2B007.40SX
		10.1	VBN2B010.10PX	VBN2B010.10SX
		14.7	VBN2B014.70PX	VBN2B014.70SX
1"	100	29	VBN2B029.00PX	VBN2B029.00SX
		4.4	VBN2C004.40PX	VBN2C004.40SX
		9	VBN2C009.00PX	VBN2C009.00SX
		15.3	VBN2C015.30PX	VBN2C015.30SX
		26	VBN2C026.00PX	VBN2C026.00SX
		44	VBN2C044.00PX	VBN2C044.00SX
1-1/4"	100	54	VBN2C054.00PX	VBN2C054.00SX
		4.4	VBN2D004.40PX	VBN2D004.40SX
		8.3	VBN2D008.30PX	VBN2D008.30SX
		14.9	VBN2D014.90PX	VBN2D014.90SX
		25	VBN2D025.00PX	VBN2D025.00SX
		37	VBN2D037.00PX	VBN2D037.00SX
1-1/2"	100	41	VBN2D041.00PX	VBN2D041.00SX
		102	VBN2D102.00PX	VBN2D102.00SX
		23	VBN2E023.00PX	VBN2E023.00SX
		30	VBN2E030.00PX	VBN2E030.00SX
		41	VBN2E041.00PX	VBN2E041.00SX
		74	VBN2E074.00PX	VBN2E074.00SX
2"	100	172	VBN2E172.00PX	VBN2E172.00SX
		42	VBN2F042.00PX	VBN2F042.00SX
		57	VBN2F057.00PX	VBN2F057.00SX
		71	VBN2F071.00PX	VBN2F071.00SX
		100	VBN2F100.00PX	VBN2F100.00SX
		108	VBN2F108.00PX	VBN2F108.00SX
2-1/2"	100	210	VBN2F210.00PX	VBN2F210.00SX
		266	VBN2F266.00PX	VBN2F266.00SX
		45	VBN2G045.00PX	VBN2G045.00SX
		55	VBN2G055.00PX	VBN2G055.00SX
		72	VBN2G072.00PX	VBN2G072.00SX
		101	VBN2G101.00PX	VBN2G101.00SX
3"	100	162	VBN2G162.00PX	VBN2G162.00SX
		202	VBN2G202.00PX	VBN2G202.00SX
		49	VBN2H049.00PX	VBN2H049.00SX
		63	VBN2H063.00PX	VBN2H063.00SX
		82	VBN2H082.00PX	VBN2H082.00SX
		124	VBN2H124.00PX	VBN2H124.00SX
		145	VBN2H145.00PX	VBN2H145.00SX

Actuator Features

Direct Coupled Actuators					Model Number
Actuator Type	Control Signal	Timing	Voltage	Enclosure	
Fail-in-Place	Floating	95 sec.	24 VAC/DC	NEMA 2	+MN6105A1011
Fail-in-Place	Modulating, Floating	95 sec.			+MN7505A2001
Fail Safe	Modulating, Floating	95 sec.			+MS7505A2030
Fail Safe	2-Position	95 sec.			+MS8105A1030
Fail Safe Position (MS actuators only - open, closed, A-AB, B-AB)	FSC - Fail Safe Open FSC - Fail Safe Closed				FSC or FSC
Accessories	3R enclosure				+3R

VALVES

Product Selection - Valves

3-Way Control Ball Valves With MVN Actuators 1/2"-1 1/4"



Example of complete orderable part number: **VBN3A000.33PA+MVN613A0000+C1**
 Control Ball Valve, Female NPT Thread, 3-way, 1-1/2", CV .33, Plated Brass, with MVN613A0000 Actuator, Fail in place and 1 meter cable.

**5-YEAR
 LIMITED
 WARRANTY**

Standard profile provides clearance between valve and actuator for insulation.
 Low profile enables installation of valve and actuator in tight spaces.

If the complete orderable part number is too long for your ordering system, please refer to the Short Order Codes on pg 78 to 89.

Valve Specification		Valve Profile	Standard Profile	Low Profile
		Valve Trim	Plated Brass	Plated Brass
Valve Size (inches)	Close-off Differential Pressure (psi)	Cv	Valve Body Model Number	
1/2"	50	0.33	VBN3A000.33PA	VBN3A000.33PL
		0.59	VBN3A000.59PA	VBN3A000.59PL
		1	VBN3A001.00PA	VBN3A001.00PL
		2.4	VBN3A002.40PA	VBN3A002.40PL
		4.3	VBN3A004.30PA	VBN3A004.30PL
		8	VBN3A008.00PA	VBN3A008.00PL
3/4"	50	0.4	VBN3B000.40PA	VBN3B000.40PL
		0.66	VBN3B000.66PA	VBN3B000.66PL
		1.3	VBN3B001.30PA	VBN3B001.30PL
		2.4	VBN3B002.40PA	VBN3B002.40PL
		3.8	VBN3B003.80PA	VBN3B003.80PL
		7	VBN3B007.00PA	VBN3B007.00PL
		11	VBN3B011.00PA	VBN3B011.00PL
1"	50	0.4	VBN3C000.40PA	VBN3C000.40PL
		0.65	VBN3C000.65PA	VBN3C000.65PL
		1.3	VBN3C001.30PA	VBN3C001.30PL
		2.3	VBN3C002.30PA	VBN3C002.30PL
		3.5	VBN3C003.50PA	VBN3C003.50PL
		4.5	VBN3C004.50PA	VBN3C004.50PL
		8.6	VBN3C008.60PA	VBN3C008.60PL
		14.9	VBN3C014.90PA	VBN3C014.90PL
		22	VBN3C022.00PA	VBN3C022.00PL
		31	VBN3C031.00PA	VBN3C031.00PL
1-1/4"	40	4.1	VBN3D004.10PA	VBN3D004.10PL
		8.7	VBN3D008.70PA	VBN3D008.70PL
		12.7	VBN3D012.70PA	VBN3D012.70PL
		19.4	VBN3D019.40PA	VBN3D019.40PL
		27	VBN3D027.00PA	VBN3D027.00PL
		34	VBN3D034.00PA	VBN3D034.00PL

3-Way

Actuator Features					Standard Profile	Low Profile
MVN						
Actuator Type	Control Signal	Timing	Voltage	Enclosure	Actuator Model Number	
Fail-in-Place	Floating	90 sec.	24 VAC	NEMA 2	+MVN613A0000	+MVN613L0000
	Fast SPDT	30 sec.	24 VAC/DC		+MVN643A0000	+MVN643L0000
	Modulating	90 sec.	24 VAC/DC		+MVN713A0000	+MVN713L0000
Accessories	1 meter cable				+C1	

3-Way Control Ball Valves With Direct Coupled Actuators 1/2"-2 1/2"



Example of complete orderable part number: **VBN3E032.00PX+MN7505A2001**

Control Ball Valve, Female NPT Thread, 3-way, 1-1/2", CV 32, Black Bracket, Plated Brass with MN7505A2001 Actuator, Fail in place.

**5-YEAR
LIMITED
WARRANTY**

If the complete orderable part number is too long for your ordering system, please refer to the Short Order Codes on pg 78 to 89.

3-Way

Valve Specification		Valve Profile	Black Bracket
		Valve Trim	Plated Brass
Valve Size (inches)	Close-off Differential Pressure (psi)	Cv	Valve Body Model Number
1/2"	50	0.33	VBN3A000.33PX
		0.59	VBN3A000.59PX
		1	VBN3A001.00PX
		2.4	VBN3A002.40PX
		4.3	VBN3A004.30PX
		8	VBN3A008.00PX
3/4"	50	0.4	VBN3B000.40PX
		0.66	VBN3B000.66PX
		1.3	VBN3B001.30PX
		2.4	VBN3B002.40PX
		3.8	VBN3B003.80PX
		7	VBN3B007.00PX
1"	50	11	VBN3B011.00PX
		0.4	VBN3C000.40PX
		0.65	VBN3C000.65PX
		1.3	VBN3C001.30PX
		2.3	VBN3C002.30PX
		3.5	VBN3C003.50PX
		4.5	VBN3C004.50PX
		8.6	VBN3C008.60PX
		14.9	VBN3C014.90PX
		22	VBN3C022.00PX
		31	VBN3C031.00PX
1-1/4"	40	4.1	VBN3D004.10PX
		8.7	VBN3D008.70PX
		12.7	VBN3D012.70PX
		19.4	VBN3D019.40PX
		27	VBN3D027.00PX
		34	VBN3D034.00PX
1-1/2"	40	4	VBN3E004.00PX
		8.3	VBN3E008.30PX
		13.4	VBN3E013.40PX
		24	VBN3E024.00PX
		32	VBN3E032.00PX
		61	VBN3E061.00PX
2"	100	24	VBN3F024.00PX
		38	VBN3F038.00PX
		57	VBN3F057.00PX
		83	VBN3F083.00PX
		109	VBN3F109.00PX
2-1/2"	100	38	VBN3G038.00PX
		74	VBN3G074.00PX
		100	VBN3G100.00PX

Actuator Features

Direct Coupled Actuators					
Actuator Type	Control Signal	Timing	Voltage	Enclosure	Model Number
Fail-in-Place	Floating	95 sec.	24 VAC/DC	NEMA 2	+MN6105A1011
Fail-in-Place	Modulating, Floating	95 sec.			+MN7505A2001
Fail Safe	Modulating, Floating	95 sec.			+MS7505A2030
Fail Safe	2-Position	95 sec.			+MS8105A1030
Fail Safe Position (MS actuators only - open, closed, A-AB, B-AB)	FSA - A-AB Open FSB - B-AB Open				FSA or FSB
Accessories	3R enclosure				+3R

VALVES

Product Selection - Valves

MVN Actuator With Standard Profile, 2-Way NPT Valves 1/2"-1 1/4"


**5-YEAR
LIMITED
WARRANTY**

Common Features

- Max static pressure 360 psi (250°F)
- Medium: Water/glycol solutions up to 50%. Use globe valves for steam control.
- Fluid temperature range: -22 to +250°F
- Spring return actuators field-configurable for A-port normally open or normally closed fail safe.

VBN2 (Two-way)

- Equal % flow insert. Largest Cv rating in each valve size is full port, as noted
- Nickel-chrome plated brass or 316 stainless steel ball and stem
- ANSI class IV leakage (0.01% of Cv)

Actuator Features		Non-Fail Safe				Valve Only	
Actuator O.S Number/ Short Order Code		MVN613A0000	MVN613A0000+C1	MVN613A0000	MVN613A0000+C1	N/A	N/A
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac		
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz		
	Power	1.5 VA	1.5 VA	1.5 VA	1.5 VA		
Actuator Torque (lb.-in.)		27	27	27	27		
Control	Modulating (0)2-10Vdc						
	Floating	•	•	•	•		
	Fast acting SPDT						
Fail Safe Action		Fail in Place	Fail in Place	Fail in Place	Fail in Place		
Actuator Stroke (degrees)		90 ±3	90 ±3	90 ±3	90 ±3		
Timing (seconds)		90	90	90	90		
Valve Features	Trim	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass	Stainless Steel	Plated Brass

Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes					
			No Cable		1 Meter Cable		Valve Only	
1/2"	0.38	130	VBN2ABSA1000	VBN2ABSA1001	VBN2ABPA1000	VBN2ABPA1001	VBN2ABSA0000	VBN2ABPA0000
	0.68		VBN2ADSA1000	VBN2ADSA1001	VBN2ADPA1000	VBN2ADPA1001	VBN2ADSA0000	VBN2ADPA0000
	1.3		VBN2AESA1000	VBN2AESA1001	VBN2AEP1000	VBN2AEP1001	VBN2AESA0000	VBN2AEP10000
	2		VBN2AFSA1000	VBN2AFSA1001	VBN2AFPA1000	VBN2AFPA1001	VBN2AFSA0000	VBN2AFPA0000
	2.6		VBN2AGSA1000	VBN2AGSA1001	VBN2AGPA1000	VBN2AGPA1001	VBN2AGSA0000	VBN2AGPA0000
	4.7		VBN2AHSA1000	VBN2AHSA1001	VBN2AHPA1000	VBN2AHPA1001	VBN2AHSA0000	VBN2AHPA0000
	8		VBN2AJSA1000	VBN2AJSA1001	VBN2AJPA1000	VBN2AJPA1001	VBN2AJSA0000	VBN2AJPA0000
	11.7		VBN2AKSA1000	VBN2AKSA1001	VBN2AKPA1000	VBN2AKPA1001	VBN2AKSA0000	VBN2AKPA0000
3/4"	0.31	130	VBN2BBSA1000	VBN2BBSA1001	VBN2BBPA1000	VBN2BBPA1001	VBN2BBSA0000	VBN2BBPA0000
	0.63		VBN2BDSA1000	VBN2BDSA1001	VBN2BDPA1000	VBN2BDPA1001	VBN2BDSA0000	VBN2BDPA0000
	1.2		VBN2BESA1000	VBN2BESA1001	VBN2BEP1000	VBN2BEP1001	VBN2BESA0000	VBN2BEP10000
	2.5		VBN2BGSA1000	VBN2BGSA1001	VBN2BGPA1000	VBN2BGPA1001	VBN2BGSA0000	VBN2BGPA0000
	4.3		VBN2BHSA1000	VBN2BHSA1001	VBN2BHPA1000	VBN2BHPA1001	VBN2BHSA0000	VBN2BHPA0000
	7.4		VBN2BJS1000	VBN2BJS1001	VBN2BJPA1000	VBN2BJPA1001	VBN2BJS10000	VBN2BJPA0000
	10.1		VBN2BKSA1000	VBN2BKSA1001	VBN2BKPA1000	VBN2BKPA1001	VBN2BKSA0000	VBN2BKPA0000
	14.7		VBN2BLSA1000	VBN2BLSA1001	VBN2BLPA1000	VBN2BLPA1001	VBN2BLSA0000	VBN2BLPA0000
29*	VBN2BMSA1000	VBN2BMSA1001	VBN2BMPPA1000	VBN2BMPPA1001	VBN2BMSA0000	VBN2BMPPA0000		
1"	4.4	100	VBN2CHSA1000	VBN2CHSA1001	VBN2CHPA1000	VBN2CHPA1001	VBN2CHSA0000	VBN2CHPA0000
	9		VBN2CJSA1000	VBN2CJSA1001	VBN2CJPA1000	VBN2CJPA1001	VBN2CJSA0000	VBN2CJPA0000
	15.3		VBN2CLSA1000	VBN2CLSA1001	VBN2CLPA1000	VBN2CLPA1001	VBN2CLSA0000	VBN2CLPA0000
	26		VBN2CMSA1000	VBN2CMSA1001	VBN2CMPA1000	VBN2CMPA1001	VBN2CMSA0000	VBN2CMPA0000
	44		VBN2CNSA1000	VBN2CNSA1001	VBN2CNPA1000	VBN2CNPA1001	VBN2CNSA0000	VBN2CNPA0000
	54		VBN2CPSA1000	VBN2CPSA1001	VBN2CPPA1000	VBN2CPPA1001	VBN2CPSA0000	VBN2CPPA0000
	4.4		VBN2DHSA1000	VBN2DHSA1001	VBN2DHPA1000	VBN2DHPA1001	VBN2DHSA0000	VBN2DHPA0000
8.3	VBN2DJS1000	VBN2DJS1001	VBN2DJPA1000	VBN2DJPA1001	VBN2DJS10000	VBN2DJPA0000		
14.9	VBN2DKSA1000	VBN2DKSA1001	VBN2DKPA1000	VBN2DKPA1001	VBN2DKSA0000	VBN2DKPA0000		
25	VBN2DLSA1000	VBN2DLSA1001	VBN2DLPA1000	VBN2DLPA1001	VBN2DLSA0000	VBN2DLPA0000		
37	VBN2DMSA1000	VBN2DMSA1001	VBN2DMPPA1000	VBN2DMPPA1001	VBN2DMSA0000	VBN2DMPPA0000		
41	VBN2DNSA1000	VBN2DNSA1001	VBN2DNPA1000	VBN2DNPA1001	VBN2DNSA0000	VBN2DNPA0000		
102	VBN2DSSA1000	VBN2DSSA1001	VBN2DSPA1000	VBN2DSPA1001	VBN2DSSA0000	VBN2DSPA0000		



Product Selection - Valves

MVN Actuator With Standard Profile 2-Way NPT Valves 1/2"-1 1/4"

Actuator Features			Non-Fail Safe						
Actuator O.S Number/ Short Order Code	MVN643A0000	MVN643A0000+C1	MVN643A0000	MVN643A0000+C1	MVN713A0000	MVN713A0000+C1	MVN713A0000	MVN713A0000+C1	
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	
Actuator Torque	Power	6 VA	6 VA	6 VA	6 VA	5 VA	5 VA	5 VA	
	(lb.-in.)	27	27	27	27	27	27	27	
Control	Modulating (0)2-10Vdc					•	•	•	
	Floating								
	Fast acting SPDT	•	•	•	•				
Fail Safe Action	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	
Actuator Stroke (degrees)	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	
Timing (seconds)	30	30	30	30	90	90	90	90	
Valve Features	Trim	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass

Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes							
			No Cable	1 Meter Cable	No Cable	1 Meter Cable	No Cable	1 Meter Cable	No Cable	1 Meter Cable
1/2"	0.38	130	VBN2ABSA2000	VBN2ABSA2001	VBN2ABPA2000	VBN2ABPA2001	VBN2ABSA3000	VBN2ABSA3001	VBN2ABPA3000	VBN2ABPA3001
	0.68		VBN2ADSA2000	VBN2ADSA2001	VBN2ADPA2000	VBN2ADPA2001	VBN2ADSA3000	VBN2ADSA3001	VBN2ADPA3000	VBN2ADPA3001
	1.3		VBN2AESA2000	VBN2AESA2001	VBN2AEPA2000	VBN2AEPA2001	VBN2AESA3000	VBN2AESA3001	VBN2AEPA3000	VBN2AEPA3001
	2		VBN2AFSA2000	VBN2AFSA2001	VBN2AFPA2000	VBN2AFPA2001	VBN2AFSA3000	VBN2AFSA3001	VBN2AFPA3000	VBN2AFPA3001
	2.6		VBN2AGSA2000	VBN2AGSA2001	VBN2AGPA2000	VBN2AGPA2001	VBN2AGSA3000	VBN2AGSA3001	VBN2AGPA3000	VBN2AGPA3001
	4.7		VBN2AHSA2000	VBN2AHSA2001	VBN2AHPA2000	VBN2AHPA2001	VBN2AHSA3000	VBN2AHSA3001	VBN2AHPA3000	VBN2AHPA3001
	8		VBN2AJSA2000	VBN2AJSA2001	VBN2AJPA2000	VBN2AJPA2001	VBN2AJSA3000	VBN2AJSA3001	VBN2AJPA3000	VBN2AJPA3001
	11.7		VBN2AKSA2000	VBN2AKSA2001	VBN2AKPA2000	VBN2AKPA2001	VBN2AKSA3000	VBN2AKSA3001	VBN2AKPA3000	VBN2AKPA3001
3/4"	0.31	130	VBN2BBSA2000	VBN2BBSA2001	VBN2BBPA2000	VBN2BBPA2001	VBN2BBSA3000	VBN2BBSA3001	VBN2BBPA3000	VBN2BBPA3001
	0.63		VBN2BDSA2000	VBN2BDSA2001	VBN2BDPA2000	VBN2BDPA2001	VBN2BDSA3000	VBN2BDSA3001	VBN2BDPA3000	VBN2BDPA3001
	1.2		VBN2BESA2000	VBN2BESA2001	VBN2BEPA2000	VBN2BEPA2001	VBN2BESA3000	VBN2BESA3001	VBN2BEPA3000	VBN2BEPA3001
	2.5		VBN2BGSA2000	VBN2BGSA2001	VBN2BGPA2000	VBN2BGPA2001	VBN2BGSA3000	VBN2BGSA3001	VBN2BGPA3000	VBN2BGPA3001
	4.3		VBN2BHSA2000	VBN2BHSA2001	VBN2BHPA2000	VBN2BHPA2001	VBN2BHSA3000	VBN2BHSA3001	VBN2BHPA3000	VBN2BHPA3001
	7.4		VBN2BJS A2000	VBN2BJS A2001	VBN2BJPA2000	VBN2BJPA2001	VBN2BJS A3000	VBN2BJS A3001	VBN2BJPA3000	VBN2BJPA3001
	10.1		VBN2BKSA2000	VBN2BKSA2001	VBN2BKPA2000	VBN2BKPA2001	VBN2BKSA3000	VBN2BKSA3001	VBN2BKPA3000	VBN2BKPA3001
	14.7		VBN2BLSA2000	VBN2BLSA2001	VBN2BLPA2000	VBN2BLPA2001	VBN2BLSA3000	VBN2BLSA3001	VBN2BLPA3000	VBN2BLPA3001
29*	VBN2BMSA2000	VBN2BMSA2001	VBN2BMPA2000	VBN2BMPA2001	VBN2BMSA3000	VBN2BMSA3001	VBN2BMPA3000	VBN2BMPA3001		
1"	4.4	100	VBN2CHSA2000	VBN2CHSA2001	VBN2CHPA2000	VBN2CHPA2001	VBN2CHSA3000	VBN2CHSA3001	VBN2CHPA3000	VBN2CHPA3001
	9		VBN2CJSA2000	VBN2CJSA2001	VBN2CJPA2000	VBN2CJPA2001	VBN2CJSA3000	VBN2CJSA3001	VBN2CJPA3000	VBN2CJPA3001
	15.3		VBN2CLSA2000	VBN2CLSA2001	VBN2CLPA2000	VBN2CLPA2001	VBN2CLSA3000	VBN2CLSA3001	VBN2CLPA3000	VBN2CLPA3001
	26		VBN2CMSA2000	VBN2CMSA2001	VBN2CMPA2000	VBN2CMPA2001	VBN2CMSA3000	VBN2CMSA3001	VBN2CMPA3000	VBN2CMPA3001
	44		VBN2CNSA2000	VBN2CNSA2001	VBN2CNPA2000	VBN2CNPA2001	VBN2CNSA3000	VBN2CNSA3001	VBN2CNPA3000	VBN2CNPA3001
	54		VBN2CPSA2000	VBN2CPSA2001	VBN2CPPA2000	VBN2CPPA2001	VBN2CPSA3000	VBN2CPSA3001	VBN2CPPA3000	VBN2CPPA3001
1-1/4"	4.4	100	VBN2DHSA2000	VBN2DHSA2001	VBN2DHPA2000	VBN2DHPA2001	VBN2DHSA3000	VBN2DHSA3001	VBN2DHPA3000	VBN2DHPA3001
	8.3		VBN2DJSA2000	VBN2DJSA2001	VBN2DJPA2000	VBN2DJPA2001	VBN2DJSA3000	VBN2DJSA3001	VBN2DJPA3000	VBN2DJPA3001
	14.9		VBN2DKSA2000	VBN2DKSA2001	VBN2DKPA2000	VBN2DKPA2001	VBN2DKSA3000	VBN2DKSA3001	VBN2DKPA3000	VBN2DKPA3001
	25		VBN2DLSA2000	VBN2DLSA2001	VBN2DLPA2000	VBN2DLPA2001	VBN2DLSA3000	VBN2DLSA3001	VBN2DLPA3000	VBN2DLPA3001
	37		VBN2DMSA2000	VBN2DMSA2001	VBN2DMPA2000	VBN2DMPA2001	VBN2DMSA3000	VBN2DMSA3001	VBN2DMPA3000	VBN2DMPA3001
	41		VBN2DNSA2000	VBN2DNSA2001	VBN2DNPA2000	VBN2DNPA2001	VBN2DNSA3000	VBN2DNSA3001	VBN2DNPA3000	VBN2DNPA3001
	102		VBN2DSSA2000	VBN2DSSA2001	VBN2DSPA2000	VBN2DSPA2001	VBN2DSSA3000	VBN2DSSA3001	VBN2DSPA3000	VBN2DSPA3001

2-Way

VALVES

Product Selection - Valves

MVN Actuator With Low Profile 2-Way NPT Valves 1/2"-1 1/4"

Common Features

- Max static pressure 360 psi (250°F)
- Medium: Water/glycol solutions up to 50%. Use globe valves for steam control.
- Fluid temperature range: -22 to +250°F
- Spring return actuators field-configurable for A-port normally open or normally closed fail safe.

VBN2 (Two-way)

- Equal % flow insert. Largest Cv rating in each valve size is full port, as noted
- Nickel-chrome plated brass or 316 stainless steel ball and stem
- ANSI class IV leakage (0.01% of Cv)



2-Way

Actuator Features		Non-Fail Safe				Valve Only	
Actuator O.S Number/ Short Order Code		MVN613L0000	MVN613L0000+C1	MVN613L0000	MVN613L0000+C1	N/A	N/A
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac		
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz		
	Power	1.5 VA	1.5 VA	1.5 VA	1.5 VA		
Actuator Torque (lb.-in.)	27	27	27	27			
Control	Modulating (0)2-10Vdc						
	Floating	•	•	•	•		
	Fast acting SPDT						
Fail Safe Action		Fail in Place	Fail in Place	Fail in Place	Fail in Place		
Actuator Stroke (degrees)		90 ±3	90 ±3	90 ±3	90 ±3		
Timing (seconds)		90	90	90	90		
Valve Features	Trim	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass	Stainless Steel	Plated Brass

Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes				Valve Only	
			No Cable	1 Meter Cable	No Cable	1 Meter Cable		
1/2"	0.38	130	VBN2ABSL1000	VBN2ABSL1001	VBN2ABPL1000	VBN2ABPL1001	VBN2ABSL0000	VBN2ABPL0000
	0.68		VBN2ADSL1000	VBN2ADSL1001	VBN2ADPL1000	VBN2ADPL1001	VBN2ADSL0000	VBN2ADPL0000
	1.3		VBN2AESL1000	VBN2AESL1001	VBN2AEPL1000	VBN2AEPL1001	VBN2AESL0000	VBN2AEPL0000
	2		VBN2AFSL1000	VBN2AFSL1001	VBN2AFPL1000	VBN2AFPL1001	VBN2AFSL0000	VBN2AFPL0000
	2.6		VBN2AGSL1000	VBN2AGSL1001	VBN2AGPL1000	VBN2AGPL1001	VBN2AGSL0000	VBN2AGPL0000
	4.7		VBN2AHS�1000	VBN2AHS�1001	VBN2AHPL1000	VBN2AHPL1001	VBN2AHS�0000	VBN2AHPL0000
	8		VBN2AJSL1000	VBN2AJSL1001	VBN2AJPL1000	VBN2AJPL1001	VBN2AJSL0000	VBN2AJPL0000
	11.7		VBN2AKSL1000	VBN2AKSL1001	VBN2AKPL1000	VBN2AKPL1001	VBN2AKSL0000	VBN2AKPL0000
	3/4"		0.31	130	VBN2BBSL1000	VBN2BBSL1001	VBN2BBPL1000	VBN2BBPL1001
0.63		VBN2BDSL1000	VBN2BDSL1001		VBN2BDPL1000	VBN2BDPL1001	VBN2BDSL0000	VBN2BDPL0000
1.2		VBN2BESL1000	VBN2BESL1001		VBN2BEPL1000	VBN2BEPL1001	VBN2BESL0000	VBN2BEPL0000
2.5		VBN2BGSL1000	VBN2BGSL1001		VBN2BGPL1000	VBN2BGPL1001	VBN2BGSL0000	VBN2BGPL0000
4.3		VBN2BHSL1000	VBN2BHSL1001		VBN2BHPL1000	VBN2BHPL1001	VBN2BHSL0000	VBN2BHPL0000
7.4		VBN2BJS�1000	VBN2BJS�1001		VBN2BJPL1000	VBN2BJPL1001	VBN2BJS�0000	VBN2BJPL0000
10.1		VBN2BKSL1000	VBN2BKSL1001		VBN2BKPL1000	VBN2BKPL1001	VBN2BKSL0000	VBN2BKPL0000
14.7		VBN2BLSL1000	VBN2BLSL1001		VBN2BLPL1000	VBN2BLPL1001	VBN2BLSL0000	VBN2BLPL0000
29*		VBN2BMSL1000	VBN2BMSL1001		VBN2BMPL1000	VBN2BMPL1001	VBN2BMSL0000	VBN2BMPL0000
1"	4.4	100	VBN2CHSL1000	VBN2CHSL1001	VBN2CHPL1000	VBN2CHPL1001	VBN2CHSL0000	VBN2CHPL0000
	9		VBN2CJSL1000	VBN2CJSL1001	VBN2CJPL1000	VBN2CJPL1001	VBN2CJSL0000	VBN2CJPL0000
	15.3		VBN2CLSL1000	VBN2CLSL1001	VBN2CLPL1000	VBN2CLPL1001	VBN2CLSL0000	VBN2CLPL0000
	26		VBN2CMSL1000	VBN2CMSL1001	VBN2CMPL1000	VBN2CMPL1001	VBN2CMSL0000	VBN2CMPL0000
	44		VBN2CNSL1000	VBN2CNSL1001	VBN2CNPL1000	VBN2CNPL1001	VBN2CNSL0000	VBN2CNPL0000
	54		VBN2CPSL1000	VBN2CPSL1001	VBN2CPPL1000	VBN2CPPL1001	VBN2CPSL0000	VBN2CPPL0000
	1-1/4"		4.4	100	VBN2DHSL1000	VBN2DHSL1001	VBN2DHPL1000	VBN2DHPL1001
8.3		VBN2DJS�1000	VBN2DJS�1001		VBN2DJPL1000	VBN2DJPL1001	VBN2DJS�0000	VBN2DJPL0000
14.9		VBN2DKSL1000	VBN2DKSL1001		VBN2DKPL1000	VBN2DKPL1001	VBN2DKSL0000	VBN2DKPL0000
25		VBN2DLSL1000	VBN2DLSL1001		VBN2DLPL1000	VBN2DLPL1001	VBN2DLSL0000	VBN2DLPL0000
37		VBN2DMSL1000	VBN2DMSL1001		VBN2DMPL1000	VBN2DMPL1001	VBN2DMSL0000	VBN2DMPL0000
41		VBN2DNSL1000	VBN2DNSL1001		VBN2DNPL1000	VBN2DNPL1001	VBN2DNSL0000	VBN2DNPL0000
102		VBN2DSSL1000	VBN2DSSL1001		VBN2DSPL1000	VBN2DSPL1001	VBN2DSSL0000	VBN2DSPL0000

Product Selection - Valves

MVN Actuator With Low Profile 2-Way NPT Valves 1/2"-1 1/4"

Actuator Features		Non-Fail Safe							
Actuator O.S Number/ Short Order Code		MVN643L0000	MVN643L0000+C1	MVN643L0000	MVN643L0000+C1	MVN713L0000	MVN713L0000+C1	MVN713L0000	MVN713L0000+C1
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	Power	6 VA	6 VA	6 VA	6 VA	5 VA	5 VA	5 VA	5 VA
Actuator Torque	(lb.-in.)	27	27	27	27	27	27	27	27
Control	Modulating (0)2-10Vdc					•	•	•	•
	Floating								
	Fast acting SPDT	•	•	•	•				
Fail Safe Action		Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place
Actuator Stroke (degrees)		90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3
Timing	(seconds)	30	30	30	30	90	90	90	90
Valve Features	Trim	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass

Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes											
			No Cable		1 Meter Cable		No Cable		1 Meter Cable		No Cable		1 Meter Cable	
1/2"	0.38	130	VBV2ABSL2000	VBV2ABSL2001	VBV2ABPL2000	VBV2ABPL2001	VBV2ABSL3000	VBV2ABSL3001	VBV2ABPL3000	VBV2ABPL3001				
	0.68		VBV2ADSL2000	VBV2ADSL2001	VBV2ADPL2000	VBV2ADPL2001	VBV2ADSL3000	VBV2ADSL3001	VBV2ADPL3000	VBV2ADPL3001				
	1.3		VBV2AESL2000	VBV2AESL2001	VBV2AEPL2000	VBV2AEPL2001	VBV2AESL3000	VBV2AESL3001	VBV2AEPL3000	VBV2AEPL3001				
	2		VBV2AFSL2000	VBV2AFSL2001	VBV2AFPL2000	VBV2AFPL2001	VBV2AFSL3000	VBV2AFSL3001	VBV2AFPL3000	VBV2AFPL3001				
	2.6		VBV2AGSL2000	VBV2AGSL2001	VBV2AGPL2000	VBV2AGPL2001	VBV2AGSL3000	VBV2AGSL3001	VBV2AGPL3000	VBV2AGPL3001				
	4.7		VBV2AHS�2000	VBV2AHS�2001	VBV2AHPL2000	VBV2AHPL2001	VBV2AHS�3000	VBV2AHS�3001	VBV2AHPL3000	VBV2AHPL3001				
	8		VBV2AJSL2000	VBV2AJSL2001	VBV2AJPL2000	VBV2AJPL2001	VBV2AJSL3000	VBV2AJSL3001	VBV2AJPL3000	VBV2AJPL3001				
	11.7		VBV2AKSL2000	VBV2AKSL2001	VBV2AKPL2000	VBV2AKPL2001	VBV2AKSL3000	VBV2AKSL3001	VBV2AKPL3000	VBV2AKPL3001				
3/4"	0.31	130	VBV2BBSL2000	VBV2BBSL2001	VBV2BBPL2000	VBV2BBPL2001	VBV2BBSL3000	VBV2BBSL3001	VBV2BBPL3000	VBV2BBPL3001				
	0.63		VBV2BDSL2000	VBV2BDSL2001	VBV2BDPL2000	VBV2BDPL2001	VBV2BDSL3000	VBV2BDSL3001	VBV2BDPL3000	VBV2BDPL3001				
	1.2		VBV2BESL2000	VBV2BESL2001	VBV2BEPL2000	VBV2BEPL2001	VBV2BESL3000	VBV2BESL3001	VBV2BEPL3000	VBV2BEPL3001				
	2.5		VBV2BGS�2000	VBV2BGS�2001	VBV2BGPL2000	VBV2BGPL2001	VBV2BGS�3000	VBV2BGS�3001	VBV2BGPL3000	VBV2BGPL3001				
	4.3		VBV2BHSL2000	VBV2BHSL2001	VBV2BHPL2000	VBV2BHPL2001	VBV2BHSL3000	VBV2BHSL3001	VBV2BHPL3000	VBV2BHPL3001				
	7.4		VBV2BJSL2000	VBV2BJSL2001	VBV2BJPL2000	VBV2BJPL2001	VBV2BJSL3000	VBV2BJSL3001	VBV2BJPL3000	VBV2BJPL3001				
	10.1		VBV2BKSL2000	VBV2BKSL2001	VBV2BKPL2000	VBV2BKPL2001	VBV2BKSL3000	VBV2BKSL3001	VBV2BKPL3000	VBV2BKPL3001				
	14.7		VBV2BLSL2000	VBV2BLSL2001	VBV2BLPL2000	VBV2BLPL2001	VBV2BLSL3000	VBV2BLSL3001	VBV2BLPL3000	VBV2BLPL3001				
29*	VBV2BMSL2000	VBV2BMSL2001	VBV2BMPL2000	VBV2BMPL2001	VBV2BMSL3000	VBV2BMSL3001	VBV2BMPL3000	VBV2BMPL3001						
1"	4.4	100	VBV2CHSL2000	VBV2CHSL2001	VBV2CHPL2000	VBV2CHPL2001	VBV2CHSL3000	VBV2CHSL3001	VBV2CHPL3000	VBV2CHPL3001				
	9		VBV2CJSL2000	VBV2CJSL2001	VBV2CJPL2000	VBV2CJPL2001	VBV2CJSL3000	VBV2CJSL3001	VBV2CJPL3000	VBV2CJPL3001				
	15.3		VBV2CLSL2000	VBV2CLSL2001	VBV2CLPL2000	VBV2CLPL2001	VBV2CLSL3000	VBV2CLSL3001	VBV2CLPL3000	VBV2CLPL3001				
	26		VBV2CMSL2000	VBV2CMSL2001	VBV2CMPL2000	VBV2CMPL2001	VBV2CMSL3000	VBV2CMSL3001	VBV2CMPL3000	VBV2CMPL3001				
	44		VBV2CNLSL2000	VBV2CNLSL2001	VBV2CNPL2000	VBV2CNPL2001	VBV2CNLSL3000	VBV2CNLSL3001	VBV2CNPL3000	VBV2CNPL3001				
	54		VBV2CPSL2000	VBV2CPSL2001	VBV2CPPL2000	VBV2CPPL2001	VBV2CPSL3000	VBV2CPSL3001	VBV2CPPL3000	VBV2CPPL3001				
1-1/4"	4.4	100	VBV2DHSL2000	VBV2DHSL2001	VBV2DHPL2000	VBV2DHPL2001	VBV2DHSL3000	VBV2DHSL3001	VBV2DHPL3000	VBV2DHPL3001				
	8.3		VBV2DJSL2000	VBV2DJSL2001	VBV2DJPL2000	VBV2DJPL2001	VBV2DJSL3000	VBV2DJSL3001	VBV2DJPL3000	VBV2DJPL3001				
	14.9		VBV2DKSL2000	VBV2DKSL2001	VBV2DKPL2000	VBV2DKPL2001	VBV2DKSL3000	VBV2DKSL3001	VBV2DKPL3000	VBV2DKPL3001				
	25		VBV2DLSL2000	VBV2DLSL2001	VBV2DLPL2000	VBV2DLPL2001	VBV2DLSL3000	VBV2DLSL3001	VBV2DLPL3000	VBV2DLPL3001				
	37		VBV2DMSL2000	VBV2DMSL2001	VBV2DMPL2000	VBV2DMPL2001	VBV2DMSL3000	VBV2DMSL3001	VBV2DMPL3000	VBV2DMPL3001				
	41		VBV2DNSL2000	VBV2DNSL2001	VBV2DNPL2000	VBV2DNPL2001	VBV2DNSL3000	VBV2DNSL3001	VBV2DNPL3000	VBV2DNPL3001				
	102		VBV2DSSL2000	VBV2DSSL2001	VBV2DSPL2000	VBV2DSPL2001	VBV2DSSL3000	VBV2DSSL3001	VBV2DSPL3000	VBV2DSPL3001				

2-Way

VALVES

Product Selection - Valves


MVN Actuator With Standard Profile 3-Way NPT Valves 1/2"-1 1/4"

Common Features

- Max static pressure 360 psi (250°F)
- Medium: Water/glycol solutions up to 50%. Use globe valves for steam control.
- Fluid temperature range: -22 to +250°F
- Spring return actuators field-configurable for A-port normally open or normally closed fail safe.

VBN2 (Two-way)

- Equal % flow insert. Largest Cv rating in each valve size is full port, as noted
- Nickel-chrome plated brass or 316 stainless steel ball and stem
- ANSI class IV leakage (0.01% of Cv)

Actuator Features		Non-Fail Safe						Valve Only
Actuator O.S Number/ Short Order Code		MVN613A0000	MVN613A0000+C1	MVN643A0000	MVN643A0000+C1	MVN713A0000	MVN713A0000+C1	N/A
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	
	Power	1.5 VA	1.5 VA	6 VA	6 VA	5 VA	5 VA	
Actuator Torque	(lb.-in.)	27	27	27	27	27	27	
Control	Modulating (0)2-10Vdc					•	•	
	Floating	•	•					
	Fast acting SPDT			•	•			
Fail Safe Action		Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	
Actuator Stroke (degrees)		90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	
Timing	(seconds)	90	90	30	30	90	90	
Valve Features	Trim	Plated Brass	Plated Brass	Plated Brass	Plated Brass	Plated Brass	Plated Brass	Plated Brass




3-Way

Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes							
			No Cable	1 Meter Cable	No Cable	1 Meter Cable	No Cable	1 Meter Cable	Valve Only	
1/2"	0.33	50	VBN3ABPA1000	VBN3ABPA1001	VBN3ABPA2000	VBN3ABPA2001	VBN3ABPA3000	VBN3ABPA3001	VBN3ABPA0000	
	0.59		VBN3ACPA1000	VBN3ACPA1001	VBN3ACPA2000	VBN3ACPA2001	VBN3ACPA3000	VBN3ACPA3001	VBN3ACPA0000	
	1		VBN3AEPa1000	VBN3AEPa1001	VBN3AEPa2000	VBN3AEPa2001	VBN3AEPa3000	VBN3AEPa3001	VBN3AEPa0000	
	2.4		VBN3AFPA1000	VBN3AFPA1001	VBN3AFPA2000	VBN3AFPA2001	VBN3AFPA3000	VBN3AFPA3001	VBN3AFPA0000	
	4.3		VBN3AHPA1000	VBN3AHPA1001	VBN3AHPA2000	VBN3AHPA2001	VBN3AHPA3000	VBN3AHPA3001	VBN3AHPA0000	
	8		VBN3AJPA1000	VBN3AJPA1001	VBN3AJPA2000	VBN3AJPA2001	VBN3AJPA3000	VBN3AJPA3001	VBN3AJPA0000	
3/4"	0.4		VBN3BCPA1000	VBN3BCPA1001	VBN3BCPA2000	VBN3BCPA2001	VBN3BCPA3000	VBN3BCPA3001	VBN3BCPA0000	
	0.66		VBN3BDPA1000	VBN3BDPA1001	VBN3BDPA2000	VBN3BDPA2001	VBN3BDPA3000	VBN3BDPA3001	VBN3BDPA0000	
	1.3		VBN3BEPA1000	VBN3BEPA1001	VBN3BEPA2000	VBN3BEPA2001	VBN3BEPA3000	VBN3BEPA3001	VBN3BEPA0000	
	2.4		VBN3BFPA1000	VBN3BFPA1001	VBN3BFPA2000	VBN3BFPA2001	VBN3BFPA3000	VBN3BFPA3001	VBN3BFPA0000	
	3.8		VBN3BGPA1000	VBN3BGPA1001	VBN3BGPA2000	VBN3BGPA2001	VBN3BGPA3000	VBN3BGPA3001	VBN3BGPA0000	
	7		VBN3BJPA1000	VBN3BJPA1001	VBN3BJPA2000	VBN3BJPA2001	VBN3BJPA3000	VBN3BJPA3001	VBN3BJPA0000	
	11		VBN3BKPA1000	VBN3BKPA1001	VBN3BKPA2000	VBN3BKPA2001	VBN3BKPA3000	VBN3BKPA3001	VBN3BKPA0000	
1"	0.4		VBN3CCPA1000	VBN3CCPA1001	VBN3CCPA2000	VBN3CCPA2001	VBN3CCPA3000	VBN3CCPA3001	VBN3CCPA0000	
	0.65		VBN3CDPA1000	VBN3CDPA1001	VBN3CDPA2000	VBN3CDPA2001	VBN3CDPA3000	VBN3CDPA3001	VBN3CDPA0000	
	1.3		VBN3CEPA1000	VBN3CEPA1001	VBN3CEPA2000	VBN3CEPA2001	VBN3CEPA3000	VBN3CEPA3001	VBN3CEPA0000	
	2.3		VBN3CFPA1000	VBN3CFPA1001	VBN3CFPA2000	VBN3CFPA2001	VBN3CFPA3000	VBN3CFPA3001	VBN3CFPA0000	
	3.5		VBN3CGPA1000	VBN3CGPA1001	VBN3CGPA2000	VBN3CGPA2001	VBN3CGPA3000	VBN3CGPA3001	VBN3CGPA0000	
	4.5	VBN3CHPA1000	VBN3CHPA1001	VBN3CHPA2000	VBN3CHPA2001	VBN3CHPA3000	VBN3CHPA3001	VBN3CHPA0000		
	8.6	VBN3CJPA1000	VBN3CJPA1001	VBN3CJPA2000	VBN3CJPA2001	VBN3CJPA3000	VBN3CJPA3001	VBN3CJPA0000		
	14.9	VBN3CKPA1000	VBN3CKPA1001	VBN3CKPA2000	VBN3CKPA2001	VBN3CKPA3000	VBN3CKPA3001	VBN3CKPA0000		
	22	VBN3CLPA1000	VBN3CLPA1001	VBN3CLPA2000	VBN3CLPA2001	VBN3CLPA3000	VBN3CLPA3001	VBN3CLPA0000		
	31	VBN3CMPA1000	VBN3CMPA1001	VBN3CMPA2000	VBN3CMPA2001	VBN3CMPA3000	VBN3CMPA3001	VBN3CMPA0000		
1-1/4"	4.1	VBN3DHPA1000	VBN3DHPA1001	VBN3DHPA2000	VBN3DHPA2001	VBN3DHPA3000	VBN3DHPA3001	VBN3DHPA0000		
	8.7	VBN3DJPA1000	VBN3DJPA1001	VBN3DJPA2000	VBN3DJPA2001	VBN3DJPA3000	VBN3DJPA3001	VBN3DJPA0000		
	12.7	VBN3DKPA1000	VBN3DKPA1001	VBN3DKPA2000	VBN3DKPA2001	VBN3DKPA3000	VBN3DKPA3001	VBN3DKPA0000		
	19.4	VBN3DLPA1000	VBN3DLPA1001	VBN3DLPA2000	VBN3DLPA2001	VBN3DLPA3000	VBN3DLPA3001	VBN3DLPA0000		
	27	VBN3DMPA1000	VBN3DMPA1001	VBN3DMPA2000	VBN3DMPA2001	VBN3DMPA3000	VBN3DMPA3001	VBN3DMPA0000		
	34	VBN3DNPA1000	VBN3DNPA1001	VBN3DNPA2000	VBN3DNPA2001	VBN3DNPA3000	VBN3DNPA3001	VBN3DNPA0000		

Product Selection - Valves

MVN Actuator With Low Profile 3-Way NPT Valves 1/2"-1 1/4"

Actuator Features		Non-Fail Safe						Valve Only
Actuator O.S Number/ Short Order Code		MVN613L0000	MVN613L0000+C1	MVN643L0000	MVN643L0000+C1	MVN713L0000	MVN713L0000+C1	N/A
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	
	Power	1.5 VA	1.5 VA	6 VA	6 VA	5 VA	5 VA	
Actuator Torque	(lb.-in.)	27	27	27	27	27	27	
Control	Modulating (0)2-10Vdc					•	•	
	Floating	•	•					
	Fast acting SPDT			•	•			
Fail Safe Action		Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	
Actuator Stroke (degrees)		90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	
Timing	(seconds)	90	90	30	30	90	90	
Valve Features	Trim	Plated Brass	Plated Brass	Plated Brass	Plated Brass	Plated Brass	Plated Brass	Plated Brass

Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes								
			No Cable		1 Meter Cable		No Cable		1 Meter Cable		Valve Only
			No Cable	1 Meter Cable	No Cable	1 Meter Cable	No Cable	1 Meter Cable	No Cable	1 Meter Cable	Valve Only
1/2"	0.33	50	VBN3ABPL1000	VBN3ABPL1001	VBN3ABPL2000	VBN3ABPL2001	VBN3ABPL3000	VBN3ABPL3001	VBN3ABPL0000		
	0.59		VBN3ACPL1000	VBN3ACPL1001	VBN3ACPL2000	VBN3ACPL2001	VBN3ACPL3000	VBN3ACPL3001	VBN3ACPL0000		
	1		VBN3AEPL1000	VBN3AEPL1001	VBN3AEPL2000	VBN3AEPL2001	VBN3AEPL3000	VBN3AEPL3001	VBN3AEPL0000		
	2.4		VBN3AFPL1000	VBN3AFPL1001	VBN3AFPL2000	VBN3AFPL2001	VBN3AFPL3000	VBN3AFPL3001	VBN3AFPL0000		
	4.3		VBN3AHPL1000	VBN3AHPL1001	VBN3AHPL2000	VBN3AHPL2001	VBN3AHPL3000	VBN3AHPL3001	VBN3AHPL0000		
	8		VBN3AJPL1000	VBN3AJPL1001	VBN3AJPL2000	VBN3AJPL2001	VBN3AJPL3000	VBN3AJPL3001	VBN3AJPL0000		
3/4"	0.4		VBN3BCPL1000	VBN3BCPL1001	VBN3BCPL2000	VBN3BCPL2001	VBN3BCPL3000	VBN3BCPL3001	VBN3BCPL0000		
	0.66		VBN3BDPL1000	VBN3BDPL1001	VBN3BDPL2000	VBN3BDPL2001	VBN3BDPL3000	VBN3BDPL3001	VBN3BDPL0000		
	1.3		VBN3BEPL1000	VBN3BEPL1001	VBN3BEPL2000	VBN3BEPL2001	VBN3BEPL3000	VBN3BEPL3001	VBN3BEPL0000		
	2.4		VBN3BFPL1000	VBN3BFPL1001	VBN3BFPL2000	VBN3BFPL2001	VBN3BFPL3000	VBN3BFPL3001	VBN3BFPL0000		
	3.8		VBN3BGPL1000	VBN3BGPL1001	VBN3BGPL2000	VBN3BGPL2001	VBN3BGPL3000	VBN3BGPL3001	VBN3BGPL0000		
	7		VBN3BJPL1000	VBN3BJPL1001	VBN3BJPL2000	VBN3BJPL2001	VBN3BJPL3000	VBN3BJPL3001	VBN3BJPL0000		
	11		VBN3BKPL1000	VBN3BKPL1001	VBN3BKPL2000	VBN3BKPL2001	VBN3BKPL3000	VBN3BKPL3001	VBN3BKPL0000		
1"	0.4		VBN3CCPL1000	VBN3CCPL1001	VBN3CCPL2000	VBN3CCPL2001	VBN3CCPL3000	VBN3CCPL3001	VBN3CCPL0000		
	0.65		VBN3CDPL1000	VBN3CDPL1001	VBN3CDPL2000	VBN3CDPL2001	VBN3CDPL3000	VBN3CDPL3001	VBN3CDPL0000		
	1.3		VBN3CEPL1000	VBN3CEPL1001	VBN3CEPL2000	VBN3CEPL2001	VBN3CEPL3000	VBN3CEPL3001	VBN3CEPL0000		
	2.3		VBN3CFPL1000	VBN3CFPL1001	VBN3CFPL2000	VBN3CFPL2001	VBN3CFPL3000	VBN3CFPL3001	VBN3CFPL0000		
	3.5		VBN3CGPL1000	VBN3CGPL1001	VBN3CGPL2000	VBN3CGPL2001	VBN3CGPL3000	VBN3CGPL3001	VBN3CGPL0000		
	4.5	VBN3CHPL1000	VBN3CHPL1001	VBN3CHPL2000	VBN3CHPL2001	VBN3CHPL3000	VBN3CHPL3001	VBN3CHPL0000			
	8.6	VBN3CJPL1000	VBN3CJPL1001	VBN3CJPL2000	VBN3CJPL2001	VBN3CJPL3000	VBN3CJPL3001	VBN3CJPL0000			
	14.9	VBN3CKPL1000	VBN3CKPL1001	VBN3CKPL2000	VBN3CKPL2001	VBN3CKPL3000	VBN3CKPL3001	VBN3CKPL0000			
	22	VBN3CLPL1000	VBN3CLPL1001	VBN3CLPL2000	VBN3CLPL2001	VBN3CLPL3000	VBN3CLPL3001	VBN3CLPL0000			
	31	VBN3CMPL1000	VBN3CMPL1001	VBN3CMPL2000	VBN3CMPL2001	VBN3CMPL3000	VBN3CMPL3001	VBN3CMPL0000			
1-1/4"	4.1	40	VBN3DHPL1000	VBN3DHPL1001	VBN3DHPL2000	VBN3DHPL2001	VBN3DHPL3000	VBN3DHPL3001	VBN3DHPL0000		
	8.7		VBN3DJPL1000	VBN3DJPL1001	VBN3DJPL2000	VBN3DJPL2001	VBN3DJPL3000	VBN3DJPL3001	VBN3DJPL0000		
	12.7		VBN3DKPL1000	VBN3DKPL1001	VBN3DKPL2000	VBN3DKPL2001	VBN3DKPL3000	VBN3DKPL3001	VBN3DKPL0000		
	19.4		VBN3DLPL1000	VBN3DLPL1001	VBN3DLPL2000	VBN3DLPL2001	VBN3DLPL3000	VBN3DLPL3001	VBN3DLPL0000		
	27		VBN3DMPL1000	VBN3DMPL1001	VBN3DMPL2000	VBN3DMPL2001	VBN3DMPL3000	VBN3DMPL3001	VBN3DMPL0000		
	34		VBN3DNPL1000	VBN3DNPL1001	VBN3DNPL2000	VBN3DNPL2001	VBN3DNPL3000	VBN3DNPL3001	VBN3DNPL0000		

3-Way

VALVES

Product Selection - Valves

2-Way NPT Valves 1/2" - 3", NEMA 2

Common Features

- Max static pressure 360 psi (250°F)
- Medium: Water/glycol solutions up to 50%. Use globe valves for steam control.
- Fluid temperature range: -22 to +250°F
- Spring return actuators field-configurable for A-port normally open or normally closed fail safe.

VBN2 (Two-way)

- Equal % flow insert. Largest Cv rating in each valve size is full port, as noted
- Nickel-chrome plated brass or 316 stainless steel ball and stem
- ANSI class IV leakage (0.01% of Cv)



2-Way

Actuator Features			Non-fail Safe				Valve Only	
Actuator O.S. Number	MN6105A1011	MN6105A1011	MN7505A2001	MN7505A2001	N/A	N/A		
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac			
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz			
	Power	5 VA	5 VA	5 VA	5 VA			
Actuator Torque	(lb.-in.)	44	44	44	44			
Control	(0)-2-10 Vdc			•	•			
	4-20 mA (external 500 Ohm Resistor)			•	•			
	Floating	•	•	•	•			
	Two-Position SPDT	•	•	•	•			
	Two-Position SPST			•	•			
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place			
Normal Position (no signal)		Closed	Closed	Closed	Closed			
Actuator Stroke	(degrees)	95° ± 3°	95° ± 3°	95° ± 3°	95° ± 3°			
Timing	(drive/spring return, seconds)	95	95	95	95			
Aux Switch	2 x SPDT Add-on	SSW2-1M	SSW2-1M	SSW2-1M	SSW2-1M			
Feedback	2-10 Vdc Built In	-	-	•	•			
Valve Features	Trim	Nickel-Plated Brass	Stainless Steel	Nickel-Plated Brass	Stainless Steel	Nickel-Plated Brass	Stainless Steel	
Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes					
1/2"	0.38	130	VBN2ABPX4000	VBN2ABSX4000	VBN2ABPX5000	VBN2ABSX5000	VBN2ABPX0000	VBN2ABSX0000
	0.68		VBN2ADPX4000	VBN2ADSX4000	VBN2ADPX5000	VBN2ADSX5000	VBN2ADPX0000	VBN2ADSX0000
	1.3		VBN2AEPX4000	VBN2AESX4000	VBN2AEPX5000	VBN2AESX5000	VBN2AEPX0000	VBN2AESX0000
	2		VBN2AFPX4000	VBN2AFSX4000	VBN2AFPX5000	VBN2AFSX5000	VBN2AFPX0000	VBN2AFSX0000
	2.6		VBN2AGPX4000	VBN2AGSX4000	VBN2AGPX5000	VBN2AGSX5000	VBN2AGPX0000	VBN2AGSX0000
	4.7		VBN2AHPX4000	VBN2AHSX4000	VBN2AHPX5000	VBN2AHSX5000	VBN2AHPX0000	VBN2AHSX0000
	8		VBN2AJPX4000	VBN2AJSX4000	VBN2AJPX5000	VBN2AJSX5000	VBN2AJPX0000	VBN2AJSX0000
11.7*	VBN2AKPX4000		VBN2AKSX4000	VBN2AKPX5000	VBN2AKSX5000	VBN2AKPX0000	VBN2AKSX0000	
0.31	VBN2BBPX4000		VBN2BBSX4000	VBN2BBPX5000	VBN2BBSX5000	VBN2BBPX0000	VBN2BBSX0000	
0.63	VBN2BDPX4000		VBN2BDSX4000	VBN2BDPX5000	VBN2BDSX5000	VBN2BDPX0000	VBN2BDSX0000	
1.2	VBN2BEPX4000		VBN2BESX4000	VBN2BEPX5000	VBN2BESX5000	VBN2BEPX0000	VBN2BESX0000	
2.5	VBN2BGPX4000		VBN2BGSX4000	VBN2BGPX5000	VBN2BGSX5000	VBN2BGPX0000	VBN2BGSX0000	
4.3	VBN2BHPX4000		VBN2BHSX4000	VBN2BHPX5000	VBN2BHSX5000	VBN2BHPX0000	VBN2BHSX0000	
7.4	VBN2BJPX4000		VBN2BJSX4000	VBN2BJPX5000	VBN2BJSX5000	VBN2BJPX0000	VBN2BJSX0000	
10.1	VBN2BKPX4000	VBN2BKSX4000	VBN2BKPX5000	VBN2BKSX5000	VBN2BKPX0000	VBN2BKSX0000		
14.7*	VBN2BLPX4000	VBN2BLSX4000	VBN2BLPX5000	VBN2BLSX5000	VBN2BLPX0000	VBN2BLSX0000		
29*	VBN2BMPX4000	VBN2BMSX4000	VBN2BMPX5000	VBN2BMSX5000	VBN2BMPX0000	VBN2BMSX0000		
1"	4.4	100	VBN2CHPX4000	VBN2CHSX4000	VBN2CHPX5000	VBN2CHSX5000	VBN2CHPX0000	VBN2CHSX0000
	9		VBN2CJPX4000	VBN2CJSX4000	VBN2CJPX5000	VBN2CJSX5000	VBN2CJPX0000	VBN2CJSX0000
	15.3		VBN2CLPX4000	VBN2CLSX4000	VBN2CLPX5000	VBN2CLSX5000	VBN2CLPX0000	VBN2CLSX0000
	26		VBN2CMPX4000	VBN2CMSX4000	VBN2CMPX5000	VBN2CMSX5000	VBN2CMPX0000	VBN2CMSX0000
	44*		VBN2CNPX4000	VBN2CNSX4000	VBN2CNPX5000	VBN2CNSX5000	VBN2CNPX0000	VBN2CNSX0000
	54*		VBN2CPPX4000	VBN2CPSX4000	VBN2CPPX5000	VBN2CPSX5000	VBN2CPPX0000	VBN2CPSX0000
	4.4		VBN2DHPX4000	VBN2DHSX4000	VBN2DHPX5000	VBN2DHSX5000	VBN2DHPX0000	VBN2DHSX0000
8.3	VBN2DJPX4000		VBN2DJSX4000	VBN2DJPX5000	VBN2DJSX5000	VBN2DJPX0000	VBN2DJSX0000	
14.9	VBN2DKPX4000		VBN2DKSX4000	VBN2DKPX5000	VBN2DKSX5000	VBN2DKPX0000	VBN2DKSX0000	
25	VBN2DLPX4000		VBN2DLSX4000	VBN2DLPX5000	VBN2DLSX5000	VBN2DLPX0000	VBN2DLSX0000	
37	VBN2DMPX4000		VBN2DMSX4000	VBN2DMPX5000	VBN2DMSX5000	VBN2DMPX0000	VBN2DMSX0000	
41*	VBN2DNPX4000		VBN2DNSX4000	VBN2DNPX5000	VBN2DNSX5000	VBN2DNPX0000	VBN2DNSX0000	
102*	VBN2DSPX4000		VBN2DSSX4000	VBN2DSPX5000	VBN2DSSX5000	VBN2DSPX0000	VBN2DSSX0000	
23	VBN2ELPX4000		VBN2ELSX4000	VBN2ELPX5000	VBN2ELSX5000	VBN2ELPX0000	VBN2ELSX0000	
30	VBN2EMPX4000	VBN2EMSX4000	VBN2EMPX5000	VBN2EMSX5000	VBN2EMPX0000	VBN2EMSX0000		
41	VBN2ENPX4000	VBN2ENSX4000	VBN2ENPX5000	VBN2ENSX5000	VBN2ENPX0000	VBN2ENSX0000		
74*	VBN2ERPX4000	VBN2ERSX4000	VBN2ERPX5000	VBN2ERSX5000	VBN2ERPX0000	VBN2ERSX0000		
172*	VBN2E1PX4000	VBN2E1SX4000	VBN2E1PX5000	VBN2E1SX5000	VBN2E1PX0000	VBN2E1SX0000		
2"	42	100	VBN2FNPX4000	VBN2FNSX4000	VBN2FNPX5000	VBN2FNSX5000	VBN2FNPX0000	VBN2FNSX0000
	57		VBN2FPPX4000	VBN2FPSX4000	VBN2FPPX5000	VBN2FPSX5000	VBN2FPPX0000	VBN2FPSX0000
	71		VBN2FRPX4000	VBN2FRSX4000	VBN2FRPX5000	VBN2FRSX5000	VBN2FRPX0000	VBN2FRSX0000
	100		VBN2FSPX4000	VBN2FSSX4000	VBN2FSPX5000	VBN2FSSX5000	VBN2FSPX0000	VBN2FSSX0000
	108*		VBN2FTPX4000	VBN2FTSX4000	VBN2FTPX5000	VBN2FTSX5000	VBN2FTPX0000	VBN2FTSX0000
	210		VBN2F1PX4000	VBN2F1SX4000	VBN2F1PX5000	VBN2F1SX5000	VBN2F1PX0000	VBN2F1SX0000
	266*		VBN2F2PX4000	VBN2F2SX4000	VBN2F2PX5000	VBN2F2SX5000	VBN2F2PX0000	VBN2F2SX0000
	45		VBN2GNPX4000	VBN2GNSX4000	VBN2GNPX5000	VBN2GNSX5000	VBN2GNPX0000	VBN2GNSX0000
	55		VBN2GPPX4000	VBN2GPSX4000	VBN2GPPX5000	VBN2GPSX5000	VBN2GPPX0000	VBN2GPSX0000
	72		VBN2GRPX4000	VBN2GRSX4000	VBN2GRPX5000	VBN2GRSX5000	VBN2GRPX0000	VBN2GRSX0000
2-1/2"	101	VBN2GSPX4000	VBN2GSSX4000	VBN2GSPX5000	VBN2GSSX5000	VBN2GSPX0000	VBN2GSSX0000	
	162	VBN2GUPX4000	VBN2GUSX4000	VBN2GUPX5000	VBN2GUSX5000	VBN2GUPX0000	VBN2GUSX0000	
	202*	VBN2G1PX4000	VBN2G1SX4000	VBN2G1PX5000	VBN2G1SX5000	VBN2G1PX0000	VBN2G1SX0000	
	49	VBN2HNPX4000	VBN2HNSX4000	VBN2HNPX5000	VBN2HNSX5000	VBN2HNPX0000	VBN2HNSX0000	
	63	VBN2HPPX4000	VBN2HPSX4000	VBN2HPPX5000	VBN2HPSX5000	VBN2HPPX0000	VBN2HPSX0000	
	82	VBN2HRPX4000	VBN2HRSX4000	VBN2HRPX5000	VBN2HRSX5000	VBN2HRPX0000	VBN2HRSX0000	
3"	124	VBN2HTPX4000	VBN2HTSX4000	VBN2HTPX5000	VBN2HTSX5000	VBN2HTPX0000	VBN2HTSX0000	
	145*	VBN2HUPX4000	VBN2HUSX4000	VBN2HUPX5000	VBN2HUSX5000	VBN2HUPX0000	VBN2HUSX0000	

* Full port ball. No flow characterizing insert.

Product Selection - Valves

2-Way NPT Valves 1/2" - 3", NEMA 3R

Common Features

- Max static pressure 360 psi (250°F)
- Medium: Water/glycol solutions up to 50%.
- Temperature range: -22 to +250°F
- Spring return actuators field-configurable for A-port normally open or normally closed fail safe.
- Removable handle for manual operation
- ANSI class IV leakage (0.01% of Cv)

VBN2 (Two-way):

- Equal % flow insert. (Largest Cv rating in each valve size is full port, as noted.)
- Nickel-chrome plated brass or 316 stainless steel ball and stem

With optional NEMA 3R actuator enclosure.



2-Way

Actuator Features			Non-fail Safe			
Actuator O.S. Number	MN6105A1011	MN6105A1011	MN7505A2001	MN7505A2001		
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	
Actuator Torque	Power	5 VA	5 VA	5 VA	5 VA	
	(lb.-in.)	44	44	44	44	
Control	(0)-2-10 Vdc			•	•	
	4-20 mA (external 500 Ohm Resistor)			•	•	
Fail Safe Action	Normal Position (no signal)	Stay in Place	Stay in Place	Stay in Place	Stay in Place	
	Actuator Stroke	Closed	Closed	Closed	Closed	
	Actuator Stroke (degrees)	95° ± 3°	95° ± 3°	95° ± 3°	95° ± 3°	
Timing (drive/spring return, seconds)	95	95	95	95		
Aux Switch	2 x SPDT Add-on	SSW2-1M	SSW2-1M	SSW2-1M	SSW2-1M	
Feedback	2-10 Vdc Built In			•	•	
Valve Features		Trim	Nickel-Plated Brass	Stainless Steel	Nickel-Plated Brass	Stainless Steel
Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes			
1/2"	0.38	130	VBN2ABPX4002	VBN2ABSX4002	VBN2ABPX5002	VBN2ABSX5002
	0.68		VBN2ADPX4002	VBN2ADSX4002	VBN2ADPX5002	VBN2ADSX5002
	1.3		VBN2AEPX4002	VBN2AESX4002	VBN2AEPX5002	VBN2AESX5002
	2		VBN2AFPX4002	VBN2AFSX4002	VBN2AFPX5002	VBN2AFSX5002
	2.6		VBN2AGPX4002	VBN2AGSX4002	VBN2AGPX5002	VBN2AGSX5002
	4.7		VBN2AHPX4002	VBN2AHSX4002	VBN2AHPX5002	VBN2AHSX5002
	8		VBN2AJPX4002	VBN2AJSX4002	VBN2AJPX5002	VBN2AJSX5002
11.7*	VBN2AKPX4002		VBN2AKSX4002	VBN2AKPX5002	VBN2AKSX5002	
3/4"	0.31		VBN2BBPX4002	VBN2BBSX4002	VBN2BBPX5002	VBN2BBSX5002
	0.63		VBN2BDPX4002	VBN2BDSX4002	VBN2BDPX5002	VBN2BDSX5002
	1.2		VBN2BEPX4002	VBN2BESX4002	VBN2BEPX5002	VBN2BESX5002
	2.5		VBN2BGPX4002	VBN2BGSX4002	VBN2BGPX5002	VBN2BGSX5002
	4.3		VBN2BHPX4002	VBN2BHSX4002	VBN2BHPX5002	VBN2BHSX5002
	7.4	VBN2BJPX4002	VBN2BJSX4002	VBN2BJPX5002	VBN2BJSX5002	
	10.1	VBN2BKPX4002	VBN2BKSX4002	VBN2BKPX5002	VBN2BKSX5002	
14.7*	VBN2BLPX4002	VBN2BLSX4002	VBN2BLPX5002	VBN2BLSX5002		
29*	VBN2BMPX4002	VBN2BMSX4002	VBN2BMPX5002	VBN2BMSX5002		
1"	4.4	VBN2CHPX4002	VBN2CHSX4002	VBN2CHPX5002	VBN2CHSX5002	
	9	VBN2CJPX4002	VBN2CJSX4002	VBN2CJPX5002	VBN2CJSX5002	
	15.3	VBN2CLPX4002	VBN2CLSX4002	VBN2CLPX5002	VBN2CLSX5002	
	26	VBN2CMPX4002	VBN2CMSX4002	VBN2CMPX5002	VBN2CMSX5002	
	44*	VBN2CNPX4002	VBN2CNSX4002	VBN2CNPX5002	VBN2CNSX5002	
	54*	VBN2CPPX4002	VBN2CPSX4002	VBN2CPPX5002	VBN2CPSX5002	
	4.4	VBN2DHPX4002	VBN2DHSX4002	VBN2DHPX5002	VBN2DHSX5002	
1-1/4"	8.3	VBN2DJPX4002	VBN2DJSX4002	VBN2DJPX5002	VBN2DJSX5002	
	14.9	VBN2DKPX4002	VBN2DKSX4002	VBN2DKPX5002	VBN2DKSX5002	
	25	VBN2DLPX4002	VBN2DLSX4002	VBN2DLPX5002	VBN2DLSX5002	
	37	VBN2DMPX4002	VBN2DMSX4002	VBN2DMPX5002	VBN2DMSX5002	
	41*	VBN2DNPX4002	VBN2DNSX4002	VBN2DNPX5002	VBN2DNSX5002	
	102*	VBN2DSPX4002	VBN2DSSX4002	VBN2DSPX5002	VBN2DSSX5002	
	23	VBN2ELPX4002	VBN2ELSX4002	VBN2ELPX5002	VBN2ELSX5002	
1-1/2"	30	VBN2EMPX4002	VBN2EMSX4002	VBN2EMPX5002	VBN2EMSX5002	
	41	VBN2ENPX4002	VBN2ENSX4002	VBN2ENPX5002	VBN2ENSX5002	
	74*	VBN2ERPX4002	VBN2ERSX4002	VBN2ERPX5002	VBN2ERSX5002	
	172*	VBN2E1PX4002	VBN2E1SX4002	VBN2E1PX5002	VBN2E1SX5002	
	42	VBN2FNPX4002	VBN2FNSX4002	VBN2FNPX5002	VBN2FNSX5002	
2"	57	VBN2FPPX4002	VBN2FPSX4002	VBN2FPPX5002	VBN2FPSX5002	
	71	VBN2FRPX4002	VBN2FRSX4002	VBN2FRPX5002	VBN2FRSX5002	
	100	VBN2FSPX4002	VBN2FSSX4002	VBN2FSPX5002	VBN2FSSX5002	
	108*	VBN2FTPX4002	VBN2FTSX4002	VBN2FTPX5002	VBN2FTSX5002	
	210	VBN2F1PX4002	VBN2F1SX4002	VBN2F1PX5002	VBN2F1SX5002	
	266*	VBN2F2PX4002	VBN2F2SX4002	VBN2F2PX5002	VBN2F2SX5002	
	45	VBN2GNPX4002	VBN2GNSX4002	VBN2GNPX5002	VBN2GNSX5002	
2-1/2"	55	VBN2GPPX4002	VBN2GPSX4002	VBN2GPPX5002	VBN2GPSX5002	
	72	VBN2GRPX4002	VBN2GRSX4002	VBN2GRPX5002	VBN2GRSX5002	
	101	VBN2GSPX4002	VBN2GSSX4002	VBN2GSPX5002	VBN2GSSX5002	
	162	VBN2GUPX4002	VBN2GUSX4002	VBN2GUPX5002	VBN2GUSX5002	
	202*	VBN2G1PX4002	VBN2G1SX4002	VBN2G1PX5002	VBN2G1SX5002	
	49	VBN2HNPX4002	VBN2HNSX4002	VBN2HNPX5002	VBN2HNSX5002	
3"	63	VBN2HPPX4002	VBN2HPSX4002	VBN2HPPX5002	VBN2HPSX5002	
	82	VBN2HRPX4002	VBN2HRSX4002	VBN2HRPX5002	VBN2HRSX5002	
	124	VBN2HTPX4002	VBN2HTSX4002	VBN2HTPX5002	VBN2HTSX5002	
	145*	VBN2HUPX4002	VBN2HUSX4002	VBN2HUPX5002	VBN2HUSX5002	

* Full port ball. No flow characterizing insert.

Product Selection - Valves

3-Way NPT Control Ball Valves 1/2"-2-1/2", NEMA2

Common Features

VBN3 (Three-way):

- Equal % A to AB, linear B to AB
- B-port Cv reduction of 20% approximates constant total loop flow
- Nickel-chrome plated brass ball and stem
- Convert to 2-way by plugging B port (plug not provided)
- Spring return actuators field-configurable for A-port normally open or normally closed fail safe.
- Mixing or diverting control with the same valve
- ANSI Class IV (0.01%) seat leakage on both A and B ports
- Available with NEMA 3R actuator enclosure



3-Way



Actuator Features			Non-fail Safe		Fail Safe			Valve Only	
Actuator O.S. Number			MN6105A1011	MN7505A2001	MS8105A1030	MS8105A1030	MS7505A2030	MS7505A2030	N/A
Power Supply	Voltage		24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	
	Frequency		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	
Actuator Torque	Power		5 VA	5 VA	8 VA	8 VA	7.5 VA	7.5 VA	
	(lb.-in.)		44	44	44	44	44	44	
Control	(0)2-10 Vdc		•				•	•	
	4-20 mA (external 500 Ohm Resistor)		•				•	•	
Fail Safe Action	Floating		•				•	•	
	Two-Position SPDT		•				•	•	
	Two-Position SPST		•		•	•	•	•	
Normal Position (no signal)			Stay in Place	Stay in Place	B-AB Open (FSB)	A-AB Open (FSA)	B-AB Open (FSB)	A-AB Open (FSA)	
Actuator Stroke	(degrees)		95° ± 3°	95° ± 3°	95° ± 3°	95° ± 3°	95° ± 3°	95° ± 3°	
Timing	(drive/spring return, seconds)		95	95	45/25	45/25	90/25	90/25	
Aux Switch	2 x SPDT Add-on		SSW2-1M	SSW2-1M					
Feedback	2-10 Vdc Built In		•				•	•	
Valve Features	Trim		Nickel-Plated Brass	Nickel-Plated Brass	Nickel-Plated Brass	Nickel-Plated Brass	Nickel-Plated Brass	Nickel-Plated Brass	Nickel-Plated Brass
Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes						
1/2"	0.33	50	VBN3ABPX4000	VBN3ABPX5000	VBN3ABPX7400	VBN3ABPX7300	VBN3ABPX6400	VBN3ABPX6300	VBN3ABPX0000
	0.59		VBN3ACPX4000	VBN3ACPX5000	VBN3ACPX7400	VBN3ACPX7300	VBN3ACPX6400	VBN3ACPX6300	VBN3ACPX0000
	1		VBN3AEPX4000	VBN3AEPX5000	VBN3AEPX7400	VBN3AEPX7300	VBN3AEPX6400	VBN3AEPX6300	VBN3AEPX0000
	2.4		VBN3AFPX4000	VBN3AFPX5000	VBN3AFPX7400	VBN3AFPX7300	VBN3AFPX6400	VBN3AFPX6300	VBN3AFPX0000
	4.3		VBN3AHPX4000	VBN3AHPX5000	VBN3AHPX7400	VBN3AHPX7300	VBN3AHPX6400	VBN3AHPX6300	VBN3AHPX0000
	8*		VBN3AJPX4000	VBN3AJPX5000	VBN3AJPX7400	VBN3AJPX7300	VBN3AJPX6400	VBN3AJPX6300	VBN3AJPX0000
3/4"	0.4	50	VBN3BCPX4000	VBN3BCPX5000	VBN3BCPX7400	VBN3BCPX7300	VBN3BCPX6400	VBN3BCPX6300	VBN3BCPX0000
	0.66		VBN3BDPX4000	VBN3BDPX5000	VBN3BDPX7400	VBN3BDPX7300	VBN3BDPX6400	VBN3BDPX6300	VBN3BDPX0000
	1.3		VBN3BEPX4000	VBN3BEPX5000	VBN3BEPX7400	VBN3BEPX7300	VBN3BEPX6400	VBN3BEPX6300	VBN3BEPX0000
	2.4		VBN3BFPX4000	VBN3BFPX5000	VBN3BFPX7400	VBN3BFPX7300	VBN3BFPX6400	VBN3BFPX6300	VBN3BFPX0000
	3.8		VBN3BGPX4000	VBN3BGPX5000	VBN3BGPX7400	VBN3BGPX7300	VBN3BGPX6400	VBN3BGPX6300	VBN3BGPX0000
	7		VBN3BJPX4000	VBN3BJPX5000	VBN3BJPX7400	VBN3BJPX7300	VBN3BJPX6400	VBN3BJPX6300	VBN3BJPX0000
1"	11*	50	VBN3BKPX4000	VBN3BKPX5000	VBN3BKPX7400	VBN3BKPX7300	VBN3BKPX6400	VBN3BKPX6300	VBN3BKPX0000
	0.4		VBN3CCPX4000	VBN3CCPX5000	VBN3CCPX7400	VBN3CCPX7300	VBN3CCPX6400	VBN3CCPX6300	VBN3CCPX0000
	0.65		VBN3CDPX4000	VBN3CDPX5000	VBN3CDPX7400	VBN3CDPX7300	VBN3CDPX6400	VBN3CDPX6300	VBN3CDPX0000
	1.3		VBN3CEPX4000	VBN3CEPX5000	VBN3CEPX7400	VBN3CEPX7300	VBN3CEPX6400	VBN3CEPX6300	VBN3CEPX0000
	2.3		VBN3CFPX4000	VBN3CFPX5000	VBN3CFPX7400	VBN3CFPX7300	VBN3CFPX6400	VBN3CFPX6300	VBN3CFPX0000
	3.5		VBN3CGPX4000	VBN3CGPX5000	VBN3CGPX7400	VBN3CGPX7300	VBN3CGPX6400	VBN3CGPX6300	VBN3CGPX0000
	4.5		VBN3CHPX4000	VBN3CHPX5000	VBN3CHPX7400	VBN3CHPX7300	VBN3CHPX6400	VBN3CHPX6300	VBN3CHPX0000
	8.6		VBN3CJPX4000	VBN3CJPX5000	VBN3CJPX7400	VBN3CJPX7300	VBN3CJPX6400	VBN3CJPX6300	VBN3CJPX0000
	14.9		VBN3CKPX4000	VBN3CKPX5000	VBN3CKPX7400	VBN3CKPX7300	VBN3CKPX6400	VBN3CKPX6300	VBN3CKPX0000
	22*		VBN3CLPX4000	VBN3CLPX5000	VBN3CLPX7400	VBN3CLPX7300	VBN3CLPX6400	VBN3CLPX6300	VBN3CLPX0000
1-1/4"	31*	50	VBN3CMPX4000	VBN3CMPX5000	VBN3CMPX7400	VBN3CMPX7300	VBN3CMPX6400	VBN3CMPX6300	VBN3CMPX0000
	4.1		VBN3DHPX4000	VBN3DHPX5000	VBN3DHPX7400	VBN3DHPX7300	VBN3DHPX6400	VBN3DHPX6300	VBN3DHPX0000
	8.7		VBN3DJPX4000	VBN3DJPX5000	VBN3DJPX7400	VBN3DJPX7300	VBN3DJPX6400	VBN3DJPX6300	VBN3DJPX0000
	12.7		VBN3DKPX4000	VBN3DKPX5000	VBN3DKPX7400	VBN3DKPX7300	VBN3DKPX6400	VBN3DKPX6300	VBN3DKPX0000
	19.4*		VBN3DLPX4000	VBN3DLPX5000	VBN3DLPX7400	VBN3DLPX7300	VBN3DLPX6400	VBN3DLPX6300	VBN3DLPX0000
	27		VBN3DMPX4000	VBN3DMPX5000	VBN3DMPX7400	VBN3DMPX7300	VBN3DMPX6400	VBN3DMPX6300	VBN3DMPX0000
1-1/2"	34*	40	VBN3DNPX4000	VBN3DNPX5000	VBN3DNPX7400	VBN3DNPX7300	VBN3DNPX6400	VBN3DNPX6300	VBN3DNPX0000
	4		VBN3EHPX4000	VBN3EHPX5000	VBN3EHPX7400	VBN3EHPX7300	VBN3EHPX6400	VBN3EHPX6300	VBN3EHPX0000
	8.3		VBN3EJPX4000	VBN3EJPX5000	VBN3EJPX7400	VBN3EJPX7300	VBN3EJPX6400	VBN3EJPX6300	VBN3EJPX0000
	13.4		VBN3EKPX4000	VBN3EKPX5000	VBN3EKPX7400	VBN3EKPX7300	VBN3EKPX6400	VBN3EKPX6300	VBN3EKPX0000
	24		VBN3ELPX4000	VBN3ELPX5000	VBN3ELPX7400	VBN3ELPX7300	VBN3ELPX6400	VBN3ELPX6300	VBN3ELPX0000
	32*		VBN3EMPX4000	VBN3EMPX5000	VBN3EMPX7400	VBN3EMPX7300	VBN3EMPX6400	VBN3EMPX6300	VBN3EMPX0000
2"	61*	40	VBN3EPPX4000	VBN3EPPX5000	VBN3EPPX7400	VBN3EPPX7300	VBN3EPPX6400	VBN3EPPX6300	VBN3EPPX0000
	24		VBN3FLPX4000	VBN3FLPX5000	VBN3FLPX7400	VBN3FLPX7300	VBN3FLPX6400	VBN3FLPX6300	VBN3FLPX0000
	38		VBN3FNPX4000	VBN3FNPX5000	VBN3FNPX7400	VBN3FNPX7300	VBN3FNPX6400	VBN3FNPX6300	VBN3FNPX0000
	57*		VBN3FPPX4000	VBN3FPPX5000	VBN3FPPX7400	VBN3FPPX7300	VBN3FPPX6400	VBN3FPPX6300	VBN3FPPX0000
	83		VBN3FRPX4000	VBN3FRPX5000	VBN3FRPX7400	VBN3FRPX7300	VBN3FRPX6400	VBN3FRPX6300	VBN3FRPX0000
	109*		VBN3FTPX4000	VBN3FTPX5000	VBN3FTPX7400	VBN3FTPX7300	VBN3FTPX6400	VBN3FTPX6300	VBN3FTPX0000
2-1/2"	38	40	VBN3GNPX4000	VBN3GNPX5000	VBN3GNPX7400	VBN3GNPX7300	VBN3GNPX6400	VBN3GNPX6300	VBN3GNPX0000
	74		VBN3GRPX4000	VBN3GRPX5000	VBN3GRPX7400	VBN3GRPX7300	VBN3GRPX6400	VBN3GRPX6300	VBN3GRPX0000
	100*		VBN3GSPX4000	VBN3GSPX5000	VBN3GSPX7400	VBN3GSPX7300	VBN3GSPX6400	VBN3GSPX6300	VBN3GSPX0000

* Full port ball. No flow characterizing insert.

Product Selection - Valves

3-Way NPT Control Ball Valves 1/2"-2-1/2", NEMA 3R

Actuator Features			Non-fail Safe		Fail Safe			
Actuator O.S. Number			MN6105A1011	MN7505A2001	MS8105A1030	MS8105A1030	MS7505A2030	MS7505A2030
Power Supply	Voltage	24 Vac		24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Actuator Torque	Power	5 VA		5 VA	8 VA	8 VA	7.5 VA	7.5 VA
	(lb.-in.)	44		44	44	44	44	44
Control	(0)2-10 Vdc			•			•	•
	4-20 mA (external 500 Ohm Resistor)			•			•	•
Fail Safe Action	Normal Position (no signal)	Stay in Place		Stay in Place	B-AB Open (FSB)	A-AB Open (FSA)	B-AB Open (FSB)	A-AB Open (FSA)
	Actuator Stroke (degrees)	95° ± 3°		95° ± 3°	95° ± 3°	95° ± 3°	95° ± 3°	95° ± 3°
	Timing (drive/spring return, seconds)	95		95	45/25	45/25	90/25	90/25
Aux Switch	2 x SPDT Add-on	SSW2-1M		SSW2-1M				
Feedback	2-10 Vdc Built In			•			•	•
Valve Features			Trim	Nickel-Plated Brass	Nickel-Plated Brass	Nickel-Plated Brass	Nickel-Plated Brass	Nickel-Plated Brass
Valve Size (inches)	Cv	Close-off Pressure (psid)	Short Order Codes					
			1/2"	0.33	50	VBN3ABPX4002	VBN3ABPX5002	VBN3ABPX7402
0.59	VBN3ACPX4002	VBN3ACPX5002		VBN3ACPX7402		VBN3ACPX7302	VBN3ACPX6402	VBN3ACPX6302
1	VBN3AEPX4002	VBN3AEPX5002		VBN3AEPX7402		VBN3AEPX7302	VBN3AEPX6402	VBN3AEPX6302
2.4	VBN3AFPX4002	VBN3AFPX5002		VBN3AFPX7402		VBN3AFPX7302	VBN3AFPX6402	VBN3AFPX6302
4.3	VBN3AHPX4002	VBN3AHPX5002		VBN3AHPX7402		VBN3AHPX7302	VBN3AHPX6402	VBN3AHPX6302
3/4"	8*	50	VBN3AJPX4002	VBN3AJPX5002	VBN3AJPX7402	VBN3AJPX7302	VBN3AJPX6402	VBN3AJPX6302
	0.4		VBN3BCPX4002	VBN3BCPX5002	VBN3BCPX7402	VBN3BCPX7302	VBN3BCPX6402	VBN3BCPX6302
	0.66		VBN3BDPX4002	VBN3BDPX5002	VBN3BDPX7402	VBN3BDPX7302	VBN3BDPX6402	VBN3BDPX6302
	1.3		VBN3BEPX4002	VBN3BEPX5002	VBN3BEPX7402	VBN3BEPX7302	VBN3BEPX6402	VBN3BEPX6302
	2.4		VBN3BFPX4002	VBN3BFPX5002	VBN3BFPX7402	VBN3BFPX7302	VBN3BFPX6402	VBN3BFPX6302
	3.8		VBN3BGPX4002	VBN3BGPX5002	VBN3BGPX7402	VBN3BGPX7302	VBN3BGPX6402	VBN3BGPX6302
	7		VBN3BJPX4002	VBN3BJPX5002	VBN3BJPX7402	VBN3BJPX7302	VBN3BJPX6402	VBN3BJPX6302
1"	11*	50	VBN3BKPX4002	VBN3BKPX5002	VBN3BKPX7402	VBN3BKPX7302	VBN3BKPX6402	VBN3BKPX6302
	0.4		VBN3CCPX4002	VBN3CCPX5002	VBN3CCPX7402	VBN3CCPX7302	VBN3CCPX6402	VBN3CCPX6302
	0.65		VBN3CDPX4002	VBN3CDPX5002	VBN3CDPX7402	VBN3CDPX7302	VBN3CDPX6402	VBN3CDPX6302
	1.3		VBN3CEPX4002	VBN3CEPX5002	VBN3CEPX7402	VBN3CEPX7302	VBN3CEPX6402	VBN3CEPX6302
	2.3		VBN3CFPX4002	VBN3CFPX5002	VBN3CFPX7402	VBN3CFPX7302	VBN3CFPX6402	VBN3CFPX6302
	3.5		VBN3CGPX4002	VBN3CGPX5002	VBN3CGPX7402	VBN3CGPX7302	VBN3CGPX6402	VBN3CGPX6302
	4.5		VBN3CHPX4002	VBN3CHPX5002	VBN3CHPX7402	VBN3CHPX7302	VBN3CHPX6402	VBN3CHPX6302
	8.6		VBN3CJPX4002	VBN3CJPX5002	VBN3CJPX7402	VBN3CJPX7302	VBN3CJPX6402	VBN3CJPX6302
	14.9		VBN3CKPX4002	VBN3CKPX5002	VBN3CKPX7402	VBN3CKPX7302	VBN3CKPX6402	VBN3CKPX6302
	22*		VBN3CLPX4002	VBN3CLPX5002	VBN3CLPX7402	VBN3CLPX7302	VBN3CLPX6402	VBN3CLPX6302
1-1/4"	31*	40	VBN3CMPX4002	VBN3CMPX5002	VBN3CMPX7402	VBN3CMPX7302	VBN3CMPX6402	VBN3CMPX6302
	4.1		VBN3DHPX4002	VBN3DHPX5002	VBN3DHPX7402	VBN3DHPX7302	VBN3DHPX6402	VBN3DHPX6302
	8.7		VBN3DJPX4002	VBN3DJPX5002	VBN3DJPX7402	VBN3DJPX7302	VBN3DJPX6402	VBN3DJPX6302
	12.7		VBN3DKPX4002	VBN3DKPX5002	VBN3DKPX7402	VBN3DKPX7302	VBN3DKPX6402	VBN3DKPX6302
	19.4*		VBN3DLPX4002	VBN3DLPX5002	VBN3DLPX7402	VBN3DLPX7302	VBN3DLPX6402	VBN3DLPX6302
	27		VBN3DMPX4002	VBN3DMPX5002	VBN3DMPX7402	VBN3DMPX7302	VBN3DMPX6402	VBN3DMPX6302
	34*		VBN3DNPX4002	VBN3DNPX5002	VBN3DNPX7402	VBN3DNPX7302	VBN3DNPX6402	VBN3DNPX6302
1-1/2"	4	40	VBN3EHPX4002	VBN3EHPX5002	VBN3EHPX7402	VBN3EHPX7302	VBN3EHPX6402	VBN3EHPX6302
	8.3		VBN3EJPX4002	VBN3EJPX5002	VBN3EJPX7402	VBN3EJPX7302	VBN3EJPX6402	VBN3EJPX6302
	13.4		VBN3EKPX4002	VBN3EKPX5002	VBN3EKPX7402	VBN3EKPX7302	VBN3EKPX6402	VBN3EKPX6302
	24		VBN3ELPX4002	VBN3ELPX5002	VBN3ELPX7402	VBN3ELPX7302	VBN3ELPX6402	VBN3ELPX6302
	32*		VBN3EMPX4002	VBN3EMPX5002	VBN3EMPX7402	VBN3EMPX7302	VBN3EMPX6402	VBN3EMPX6302
	61*		VBN3EPPX4002	VBN3EPPX5002	VBN3EPPX7402	VBN3EPPX7302	VBN3EPPX6402	VBN3EPPX6302
2"	24	40	VBN3FLPX4002	VBN3FLPX5002	VBN3FLPX7402	VBN3FLPX7302	VBN3FLPX6402	VBN3FLPX6302
	38		VBN3FNPX4002	VBN3FNPX5002	VBN3FNPX7402	VBN3FNPX7302	VBN3FNPX6402	VBN3FNPX6302
	57*		VBN3FPPX4002	VBN3FPPX5002	VBN3FPPX7402	VBN3FPPX7302	VBN3FPPX6402	VBN3FPPX6302
	83		VBN3FRPX4002	VBN3FRPX5002	VBN3FRPX7402	VBN3FRPX7302	VBN3FRPX6402	VBN3FRPX6302
	109*		VBN3FTPX4002	VBN3FTPX5002	VBN3FTPX7402	VBN3FTPX7302	VBN3FTPX6402	VBN3FTPX6302
2-1/2"	38	40	VBN3GNPX4002	VBN3GNPX5002	VBN3GNPX7402	VBN3GNPX7302	VBN3GNPX6402	VBN3GNPX6302
	74		VBN3GRPX4002	VBN3GRPX5002	VBN3GRPX7402	VBN3GRPX7302	VBN3GRPX6402	VBN3GRPX6302
	100*		VBN3GSPX4002	VBN3GSPX5002	VBN3GSPX7402	VBN3GSPX7302	VBN3GSPX6402	VBN3GSPX6302

* Full port ball. No flow characterizing insert.

VALVES

Product Selection - Valves

2-Way Flanged Control Ball Valves 4"-6", NEMA 2+3R

Common Features

- Maximum static pressure 240 psi (-22°F to 250°F)
- Spring return actuators field-configurable for A-port normally open or normally closed fail safe
- Use globe valves for steam ratings
- Medium: Water/glycol solutions up to 50%
- ANSI class 125 flanged connections
- ANSI class IV leakage (0.01% of Cv)
- Valve ball and stem 316 stainless steel
- Equal percentage flow (laser-milled stainless steel ball)
- Cast iron body construction -- not for use with open systems such as cooling towers

5-YEAR LIMITED WARRANTY



2-Way

Actuator Features		Non-fail Safe		Fail Safe		Valve Only
Actuator O.S. Number		MN6110A1003 4 to 5 in.	MN7510A2001 4 to 5 in.	MS8110A1008 4 to 5 in.	MS7510A2008 4 to 5 in.	N/A
		MN6134A1003 6 in.	MN7234A2008 6 in.	MS8120A1007 6 in.	MS7520A2007 6 in.	
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	
	Power	5 / 9 VA	5 / 9 VA	30 / 40 VA	14 / 16 VA	
Actuator Torque	(lb.-in.)	88/300	88/300	88/175	88/175	
Control	(0)2-10 Vdc		•		•	
	4-20 mA (external 500 Ohm Resistor)		•		•	
	Floating	•	•		•	
	Two-Position SPDT	•	•		•	
	Two-Position SPST	•	•	•	•	
Fail Safe Action	(field configurable)	Stay in Place	Stay in Place	A-AB Closed	A-AB Closed	
Normal Position (no signal)	(field configurable)	Closed	Closed	Closed	Closed	
Actuator Stroke	(degrees)	95°	95°	95°	95°	
Timing	(drive/spring return, seconds)	95	95	45/20	90/20	
Aux Switch	2 x SPDT Add-on	SW2-US	SW2-US	SW2-US	SW2-US	
Feedback	2-10 Vdc Built In		•		•	
Valve Features	Trim	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel


Valve Size (inches)	Cv*	Close-off Pressure (psid)	Valve O.S. Number				
NEMA 2 Actuator							
4"	91	70	VBF2JS1SOA	VBF2JS1SOB	VBF2JS1SOC	VBF2JS1SOD	VBF2JS1SOX
	118		VBF2JT1SOA	VBF2JT1SOB	VBF2JT1SOC	VBF2JT1SOD	VBF2JT1SOX
	152		VBF2JU1SOA	VBF2JU1SOB	VBF2JU1SOC	VBF2JU1SOD	VBF2JU1SOX
	197		VBF2J11SOA	VBF2J11SOB	VBF2J11SOC	VBF2J11SOD	VBF2J11SOX
	254		VBF2J21SOA	VBF2J21SOB	VBF2J21SOC	VBF2J21SOD	VBF2J21SOX
5"	144		VBF2KU1SOA	VBF2KU1SOB	VBF2KU1SOC	VBF2KU1SOD	VBF2KU1SOX
	185		VBF2K11SOA	VBF2K11SOB	VBF2K11SOC	VBF2K11SOD	VBF2K11SOX
	240		VBF2K21SOA	VBF2K21SOB	VBF2K21SOC	VBF2K21SOD	VBF2K21SOX
	309		VBF2K31SOA	VBF2K31SOB	VBF2K31SOC	VBF2K31SOD	VBF2K31SOX
	400		VBF2K41SOA	VBF2K41SOB	VBF2K41SOC	—	VBF2K41SOX
6"	208		VBF2L11SOA	VBF2L11SOB	VBF2L11SOC	VBF2L11SOD	VBF2L11SOX
	268		VBF2L21SOA	VBF2L21SOB	VBF2L21SOC	VBF2L21SOD	VBF2L21SOX
	346		VBF2L41SOA	VBF2L41SOB	VBF2L41SOC	—	VBF2L41SOX
	441		VBF2L51SOA	VBF2L51SOB	VBF2L51SOC	—	VBF2L51SOX
	577		VBF2L61SOA	VBF2L61SOB	VBF2L61SOC	—	VBF2L61SOX
650	VBF2L71SOA	VBF2L71SOB	VBF2L71SOC	—	VBF2L71SOX		
NEMA 3R Actuator							
4"	91	VBF2JC1SRA	VBF2JC1SRB	VBF2JC1SRC	VBF2JC1SRD	—	
	118	VBF2JT1SRA	VBF2JT1SRB	VBF2JT1SRC	VBF2JT1SRD	—	
	152	VBF2JU1SRA	VBF2JU1SRB	VBF2JU1SRC	VBF2JU1SRD	—	
	197	VBF2J11SRA	VBF2J11SRB	VBF2J11SRC	VBF2J11SRD	—	
	254	VBF2J21SRA	VBF2J21SRB	VBF2J21SRC	VBF2J21SRD	—	
5"	144	VBF2KU1SRA	VBF2KU1SRB	VBF2KU1SRC	VBF2KU1SRD	—	
	185	VBF2K11SRA	VBF2K11SRB	VBF2K11SRC	VBF2K11SRD	—	
	240	VBF2K21SRA	VBF2K21SRB	VBF2K21SRC	VBF2K21SRD	—	
	309	VBF2K31SRA	VBF2K31SRB	VBF2K31SRC	VBF2K31SRD	—	
	400	VBF2K41SRA	VBF2K41SRB	VBF2K41SRC	—	—	
6"	208	VBF2L11SRA	VBF2L11SRB	VBF2L11SRC	VBF2L11SRD	—	
	268	VBF2L21SRA	VBF2L21SRB	VBF2L21SRC	VBF2L21SRD	—	
	346	VBF2L41SRA	VBF2L41SRB	VBF2L41SRC	—	—	
	441	VBF2L51SRA	VBF2L51SRB	VBF2L51SRC	—	—	
	577	VBF2L61SRA	VBF2L61SRB	VBF2L61SRC	—	—	
650	VBF2L71SRA	VBF2L71SRB	VBF2L71SRC	—	—		

* Maximum flow 700 gpm

3-Way Flanged Control Ball Valves 4"-6", NEMA 2+3R

Common Features

- Mixing or diverting with the same 3-way valve
- Spring return actuators field-configurable for A-port normally open or normally closed fail safe
- Globe valve A-B-AB flow pattern (side B port)
- Valve ball and stem 316 stainless steel
- Three-way: A-AB equal percentage, B-AB linear (80% of Cv on B-port) (laser-milled ball)
- ANSI Class IV (0.01%) seat leakage on A port, only
- Cast iron body construction -- not for use with open systems such as cooling towers

Actuator Features		Non-fail Safe		Fail Safe		Valve Only
Actuator O.S. Number		MN6110A1003 4 to 5 in.	MN7510A2001 4 to 5 in.	MS8110A1008 4 to 5 in.	MS7510A2008 4 to 5 in.	N/A
		MN6134A1003 6 in.	MN7234A2008 6 in.	MS8120A1007 6 in.	MS7520A2007 6 in.	
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	
	Power	5 / 9 VA	5 / 9 VA	30 / 40 VA	14 / 16 VA	
Actuator Torque	(lb.-in.)	88/300	88/300	88/175	88/175	
Control	(0)2-10 Vdc		•		•	
	4-20 mA (external 500 Ohm Resistor)		•		•	
	Floating	•	•		•	
	Two-Position SPDT	•	•		•	
	Two-Position SPST	•	•	•	•	
Fail Safe Action	(field configurable)	Stay in Place	Stay in Place	A-AB Closed	A-AB Closed	
Normal Position (no signal)	(field configurable)	A-AB Closed	A-AB Closed	A-AB Closed	A-AB Closed	
Actuator Stroke	(degrees)	95°	95°	95°	95°	
Timing	(drive/spring return, seconds)	95	95	45/20	90/20	
Aux Switch	2 x SPDT Add-on	SW2-US	SW2-US	SW2-US	SW2-US	
Feedback	2-10 Vdc Built In		•		•	
Valve Features	Trim	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel

Valve Size (inches)	Cv*	Close-off Pressure (psid)	Valve O.S. Number				
			NEMA 2 Actuator				
4"	91	70	VBFB3JS1S0A	VBFB3JS1S0B	VBFB3JS1S0C	VBFB3JS1S0D	VBFB3JS1S0X
	118		VBFB3JT1S0A	VBFB3JT1S0B	VBFB3JT1S0C	VBFB3JT1S0D	VBFB3JT1S0X
	152		VBFB3JU1S0A	VBFB3JU1S0B	VBFB3JU1S0C	VBFB3JU1S0D	VBFB3JU1S0X
	197		VBFB3J11S0A	VBFB3J11S0B	VBFB3J11S0C	VBFB3J11S0D	VBFB3J11S0X
	254		VBFB3J21S0A	VBFB3J21S0B	VBFB3J21S0C	VBFB3J21S0D	VBFB3J21S0X
	327		VBFB3J31S0A	VBFB3J31S0B	VBFB3J31S0C	VBFB3J31S0D	VBFB3J31S0X
5"	144		VBFB3KU1S0A	VBFB3KU1S0B	VBFB3KU1S0C	VBFB3KU1S0D	VBFB3KU1S0X
	185		VBFB3K11S0A	VBFB3K11S0B	VBFB3K11S0C	VBFB3K11S0D	VBFB3K11S0X
	240		VBFB3K21S0A	VBFB3K21S0B	VBFB3K21S0C	VBFB3K21S0D	VBFB3K21S0X
	309		VBFB3K31S0A	VBFB3K31S0B	VBFB3K31S0C	VBFB3K31S0D	VBFB3K31S0X
	400		VBFB3K41S0A	VBFB3K41S0B	VBFB3K41S0C	—	VBFB3K41S0X
6"	208		VBFB3L11S0A	VBFB3L11S0B	VBFB3L11S0C	VBFB3L11S0D	VBFB3L11S0X
	268		VBFB3L21S0A	VBFB3L21S0B	VBFB3L21S0C	VBFB3L21S0D	VBFB3L21S0X
	346		VBFB3L41S0A	VBFB3L41S0B	VBFB3L41S0C	—	VBFB3L41S0X
	441		VBFB3L51S0A	VBFB3L51S0B	VBFB3L51S0C	—	VBFB3L51S0X
	577		VBFB3L61S0A	VBFB3L61S0B	VBFB3L61S0C	—	VBFB3L61S0X
	650		VBFB3L71S0A	VBFB3L71S0B	VBFB3L71S0C	—	VBFB3L71S0X
			NEMA 3R Actuator				
4"	91	70	VBFB3JS1SRA	VBFB3JS1SRB	VBFB3JS1SRC	VBFB3JS1SRD	—
	118		VBFB3JT1SRA	VBFB3JT1SRB	VBFB3JT1SRC	VBFB3JT1SRD	—
	152		VBFB3JU1SRA	VBFB3JU1SRB	VBFB3JU1SRC	VBFB3JU1SRD	—
	197		VBFB3J11SRA	VBFB3J11SRB	VBFB3J11SRC	VBFB3J11SRD	—
	254		VBFB3J21SRA	VBFB3J21SRB	VBFB3J21SRC	VBFB3J21SRD	—
	327		VBFB3J31SRA	VBFB3J31SRB	VBFB3J31SRC	VBFB3J31SRD	—
5"	144		VBFB3KU1SRA	VBFB3KU1SRB	VBFB3KU1SRC	VBFB3KU1SRD	—
	185		VBFB3K11SRA	VBFB3K11SRB	VBFB3K11SRC	VBFB3K11SRD	—
	240		VBFB3K21SRA	VBFB3K21SRB	VBFB3K21SRC	VBFB3K21SRD	—
	309		VBFB3K31SRA	VBFB3K31SRB	VBFB3K31SRC	VBFB3K31SRD	—
	400		VBFB3K41SRA	VBFB3K41SRB	VBFB3K41SRC	—	—
6"	208		VBFB3L11SRA	VBFB3L11SRB	VBFB3L11SRC	VBFB3L11SRD	—
	268		VBFB3L21SRA	VBFB3L21SRB	VBFB3L21SRC	VBFB3L21SRD	—
	346		VBFB3L41SRA	VBFB3L41SRB	VBFB3L41SRC	—	—
	441		VBFB3L51SRA	VBFB3L51SRB	VBFB3L51SRC	—	—
	577		VBFB3L61SRA	VBFB3L61SRB	VBFB3L61SRC	—	—
	650		VBFB3L71SRA	VBFB3L71SRB	VBFB3L71SRC	—	—

3-Way



**5-YEAR
LIMITED
WARRANTY**

* Maximum flow 700 gpm

Product Selection - Valves

Flanged Control Ball Valves 2½" - 6"

Common Features

- Sizes from 2-1/2" to 6" with ANSI Class 125 flanged connections
- Equal percentage or linear flow characteristics
- Choice of four actuator mounting positions on the 4", 5" and 6" valve
- Field configurable for normally open or normally closed fail safe position
- Removable manual operating handle to control valve during installation or in event of power failure (2-1/2" and 3" models)
- ANSI Class leakage specifications:
 - 2-way; ANSI Class IV leakage (0.01% of Cv)
 - 3-way; A to AB; ANSI Class IV leakage (0.01% of Cv)
 - 3-way; B to AB; ANSI Class III leakage (0.1% of Cv)
- Wide range of Cv choices from 63 to 360
- Valve ball and stem 316 stainless steel (4" to 6" models)



**5-YEAR
LIMITED
WARRANTY**

Actuator Features		Non-fail Safe							
Actuator O.S. Number		MN7505A2001	MN7510A2001	MS7505A2030	MS7510A2008	MS7520A2007	MS8105A1030	MS8110A1008	MS8120A1007
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	Power	5/9 VA	5/9 VA	7.5 VA	14 VA	16 VA	8 VA	30 VA	40 VA
	(lb.-in.)	44	88	44	88	175	44	88	175
Linkage Stem Force	(lbs.)	58	117	58	17	234	58	117	234
Control	(0)2-10 Vdc	•	•	•	•	•			
	4-20 mA (external 500 Ohm Resistor)	•	•	•	•	•			
	Floating	•	•	•	•	•			
	Two-Position SPDT	•	•	•	•	•			
	Two-Position SPST	•	•	•	•	•	•	•	•
Fail Safe Action		Stay in place	Stay in place	Open or Closed (config)/ A to AB Open or Closed (config)				A-AB Open	Open or Closed (config)
	Normal Position (no signal) (field configurable)	A to AB Closed	Closed/A to AB Closed						
Actuator Stroke	(degrees)	95	95	95	95	95	95	95	95
Timing	(seconds)	95	95	90	90	90	45	45	45
High Temperature Kit	Steam Application								
Aux Switch	SPDT Built In	SSW2-1M	SW2-US		SW3-US	SW2-US		SW2-US	
	1 x SPDT Add-On								
	2 x SPDT Add-On								
Feedback	(0)2-10 Vdc Built In		•	•	•	•			SW-US
	500 Ohm Add-On								
	2 kOhm Add-On								

	Valve Size (inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Flow Characteristic	Valve Trim	Valve OS Number	Close-off Pressure, psid				
2-Way	2-1/2"	63	On/Off, Mod	125	360 psi @ 250°F	Equal %	Stainless Steel	VBF5011A1734		100			
			On/Off, Mod	125	360 psi @ 250°F	Equal %	Stainless Steel	VBF5011A1734			100		
	3"	100	On/Off, Mod	125	360 psi @ 250°F	Equal %	Stainless Steel	VBF5011A1767		100			
			On/Off, Mod	125	360 psi @ 250°F	Equal %	Stainless Steel	VBF5011A1767			100		
	4"	160	On/Off, Mod	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5011A1858		70			
			On/Off, Mod	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5011A1858			70		
			On/Off, Mod	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5011A1858				70	
	5"	250	On/Off, Mod	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5011A1882		70			
			On/Off, Mod	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5011A1882			70		
			On/Off, Mod	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5011A1882				70	
	6"	360	On/Off, Mod	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5011A1916			70		
			On/Off, Mod	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5011A1916					70
3-Way	2.5	63	Mixing, Diverting	125	360 psi @ 250°F	Equal %	Brass	VBF5013B1003		40			
			Mixing, Diverting	125	360 psi @ 250°F	Equal %	Brass	VBF5013B1003			40		
	3	100	Mixing, Diverting	125	360 psi @ 250°F	Equal %	Brass	VBF5013B1011	70				
			Mixing, Diverting	125	360 psi @ 250°F	Equal %	Brass	VBF5013B1011		70			
	4	160	Mixing, Diverting	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5013B1029		70			
			Mixing, Diverting	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5013B1029			70		
	5	250	Mixing, Diverting	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5013B1037		70			
			Mixing, Diverting	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5013B1037			70		
	6"	360	Mixing, Diverting	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5013B1045			70		
			Mixing, Diverting	125	240 psig @ 250°F	Equal %	Stainless Steel	VBF5013B1045					70

Product Selection - Valves

Pressure Independent Control Valves, NPT 1/2"-1 1/4"



Example of complete orderable part number: **VRN2A000.38SA + MVN643A0000 + C1**
 Pressure Independent Control Valve, Female NPT Thread, 2-way, 1/2", CV .38, Stainless Steel with MVN643A0000 Actuator,
 Fail in place and 1 meter.

**5-YEAR
 LIMITED
 WARRANTY**

If the complete orderable part number is too long for your ordering system, please refer to the Short Order Codes on pg 95 to 100.

Valve Specification					Valve Profile	Standard Profile		Black Bracket	
					Valve Trim	Plated Brass	Stainless Steel	Plated Brass	Stainless Steel
Valve Size (inches)	Max. gpm	Differential Pressure, psid		Close-off	Valve Body Model Number				
		Min	Max						
1/2"	1.0	3.0	35	100	VRN2A001.00PA	VRN2A001.00SA	VRN2A001.00PX	VRN2A001.00SX	
	2.0				VRN2A002.00PA	VRN2A002.00SA	VRN2A002.00PX	VRN2A002.00SX	
	3.0				VRN2A003.00PA	VRN2A003.00SA	VRN2A003.00PX	VRN2A003.00SX	
	4.0				VRN2A004.00PA	VRN2A004.00SA	VRN2A004.00PX	VRN2A004.00SX	
	5.0				VRN2A005.00PA	VRN2A005.00SA	VRN2A005.00PX	VRN2A005.00SX	
	6.0				VRN2A006.00PA	VRN2A006.00SA	VRN2A006.00PX	VRN2A006.00SX	
	7.0				VRN2A007.00PA	VRN2A007.00SA	VRN2A007.00PX	VRN2A007.00SX	
3/4"	1.0	3.0	35	100	VRN2B001.00PA	VRN2B001.00SA	VRN2B001.00PX	VRN2B001.00SX	
	2.0				VRN2B002.00PA	VRN2B002.00SA	VRN2B002.00PX	VRN2B002.00SX	
	3.0				VRN2B003.00PA	VRN2B003.00SA	VRN2B003.00PX	VRN2B003.00SX	
	4.0				VRN2B004.00PA	VRN2B004.00SA	VRN2B004.00PX	VRN2B004.00SX	
	5.0				VRN2B005.00PA	VRN2B005.00SA	VRN2B005.00PX	VRN2B005.00SX	
	6.0				VRN2B006.00PA	VRN2B006.00SA	VRN2B006.00PX	VRN2B006.00SX	
	7.0				VRN2B007.00PA	VRN2B007.00SA	VRN2B007.00PX	VRN2B007.00SX	
	8.0	6.0	35	100	VRN2B008.00PA	VRN2B008.00SA	VRN2B008.00PX	VRN2B008.00SX	
	9.0				VRN2B009.00PA	VRN2B009.00SA	VRN2B009.00PX	VRN2B009.00SX	
	10.0				VRN2B010.00PA	VRN2B010.00SA	VRN2B010.00PX	VRN2B010.00SX	
1"	1.0	3.0	35	100	VRN2C001.00PA	VRN2C001.00SA	VRN2C001.00PX	VRN2C001.00SX	
	2.0				VRN2C002.00PA	VRN2C002.00SA	VRN2C002.00PX	VRN2C002.00SX	
	3.0				VRN2C003.00PA	VRN2C003.00SA	VRN2C003.00PX	VRN2C003.00SX	
	4.0				VRN2C004.00PA	VRN2C004.00SA	VRN2C004.00PX	VRN2C004.00SX	
	5.0				VRN2C005.00PA	VRN2C005.00SA	VRN2C005.00PX	VRN2C005.00SX	
	6.0				VRN2C006.00PA	VRN2C006.00SA	VRN2C006.00PX	VRN2C006.00SX	
	7.0				VRN2C007.00PA	VRN2C007.00SA	VRN2C007.00PX	VRN2C007.00SX	
	8.0	6.0	35	100	VRN2C008.00PA	VRN2C008.00SA	VRN2C008.00PX	VRN2C008.00SX	
	9.0				VRN2C009.00PA	VRN2C009.00SA	VRN2C009.00PX	VRN2C009.00SX	
	10				VRN2C010.00PA	VRN2C010.00SA	VRN2C010.00PX	VRN2C010.00SX	
	15	3.0	50	100	VRN2C015.00PA	VRN2C015.00SA	VRN2C015.00PX	VRN2C015.00SX	
	20	4.0			VRN2C020.00PA	VRN2C020.00SA	VRN2C020.00PX	VRN2C020.00SX	
	25	5.0			VRN2C025.00PA	VRN2C025.00SA	VRN2C025.00PX	VRN2C025.00SX	
1-1/4"	30	5.0	50	100	VRN2D030.00PA	VRN2D030.00SA	VRN2D030.00PX	VRN2D030.00SX	
	35				6.5	58	VRN2D035.00PA	VRN2D035.00SA	VRN2D035.00PX

Actuator Features					Standard Profile		Low Profile	
MVN					Actuator Model Number			
Actuator Type	Control Signal	Timing	Voltage	Enclosure				
Fail-in-Place	Floating	90 sec.	24 VAC	NEMA 2	+MVN613A0000		+MVN613L0000	
	Fast SPDT	30 sec.	24 VAC/DC		+MVN643A0000		+MVN643L0000	
	Modulating	90 sec.	24 VAC/DC		+MVN713A0000		+MVN713L0000	
Accessories	1 meter cable				+C1			

VALVES

Product Selection - Valves

Pressure Independent Control Valves, NPT 1½"-3"



Example of complete orderable part number: **VRN2E020.00PX + MN6105A1011**
 Pressure Independent Control Valve, Female NPT Thread, 2-way, 1-1/2", CV 20, Black Bracket,
 Plated Brass with MN6105A1011 Actuator, Fail in place.

**5-YEAR
 LIMITED
 WARRANTY**

If the complete orderable part number is too long for your ordering system, please refer to the Short Order Codes on pg 95 to 100.

Valve Specification				Valve Trim	Plated Brass	Stainless Steel
Valve Size (inches)	Max. gpm	Differential Pressure, psid		Close-off	Valve Body Model Number	
		Min	Max			
1-1/2"	10	3.0	50	100	VRN2E010.00PX	VRN2E010.00SX
	15				VRN2E015.00PX	VRN2E015.00SX
	20				VRN2E020.00PX	VRN2E020.00SX
	25				VRN2E025.00PX	VRN2E025.00SX
	30	4.0	58		VRN2E030.00PX	VRN2E030.00SX
	35				VRN2E035.00PX	VRN2E035.00SX
	40				VRN2E040.00PX	VRN2E040.00SX
	45				VRN2E045.00PX	VRN2E045.00SX
50	6.0	VRN2E050.00PX	VRN2E050.00SX			
2"	25	4.0	58	100	VRN2F025.00PX	VRN2F025.00SX
	30				VRN2F030.00PX	VRN2F030.00SX
	35				VRN2F035.00PX	VRN2F035.00SX
	40				VRN2F040.00PX	VRN2F040.00SX
	45	6.0	58		VRN2F045.00PX	VRN2F045.00SX
	50				VRN2F050.00PX	VRN2F050.00SX
	55				VRN2F055.00PX	VRN2F055.00SX
	60				VRN2F060.00PX	VRN2F060.00SX
	65	7.0	58		VRN2F065.00PX	VRN2F065.00SX
	70				VRN2F070.00PX	VRN2F070.00SX
75	VRN2F075.00PX			VRN2F075.00SX		
25	4.0			58	100	VRN2G025.00PX
30		VRN2G030.00PX	VRN2G030.00SX			
35		VRN2G035.00PX	VRN2G035.00SX			
40		VRN2G040.00PX	VRN2G040.00SX			
45	6.0	58	VRN2G045.00PX	VRN2G045.00SX		
50			VRN2G050.00PX	VRN2G050.00SX		
55			VRN2G055.00PX	VRN2G055.00SX		
60			VRN2G060.00PX	VRN2G060.00SX		
65	7.0	58	VRN2G065.00PX	VRN2G065.00SX		
70			VRN2G070.00PX	VRN2G070.00SX		
75			VRN2G075.00PX	VRN2G075.00SX		
80			VRN2G080.00PX	VRN2G080.00SX		
85	10	VRN2G085.00PX	VRN2G085.00SX			
95	12	VRN2G095.00PX	VRN2G095.00SX			
3"	25	4.0	58	100	VRN2H025.00PX	VRN2H025.00SX
	30				VRN2H030.00PX	VRN2H030.00SX
	35				VRN2H035.00PX	VRN2H035.00SX
	40				VRN2H040.00PX	VRN2H040.00SX
	45	6.0	58		VRN2H045.00PX	VRN2H045.00SX
	50				VRN2H050.00PX	VRN2H050.00SX
	55				VRN2H055.00PX	VRN2H055.00SX
	60				VRN2H060.00PX	VRN2H060.00SX
	65	7.0	58		VRN2H065.00PX	VRN2H065.00SX
	70				VRN2H070.00PX	VRN2H070.00SX
	75				VRN2H075.00PX	VRN2H075.00SX
	80				VRN2H080.00PX	VRN2H080.00SX
	85	10	VRN2H085.00PX		VRN2H085.00SX	
	95	12	VRN2H095.00PX		VRN2H095.00SX	

Actuator Features					
Direct Coupled Actuators					
Actuator Type	Control Signal	Timing	Voltage	Enclosure	Model Number
Fail-in-Place	Floating	95 sec.	24 VAC/DC	NEMA 2	+MN6105A1011
Fail-in-Place	Modulating, Floating	95 sec.			+MN7505A2001
Fail Safe	Modulating, Floating	95 sec.			+MS7505A2030
Fail Safe	2-Position	95 sec.			+MS8105A1030
Fail Safe Position (MS actuators only - open, closed, A-AB, B-AB)	FSO - Fail Safe Open FSC - Fail Safe Closed				FSO or FSC
Accessories					+3R

Product Selection - Valves

Pressure Independent Control Valves, NPT 1/2"-1 1/4"

Common Features

- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 1 to 95 gpm.
- Differential pressure regulator for constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design for long service life for flow control accuracy of ±5% over specified control range.
- Equal percentage flow characteristic using patented flow control ball insert.



Actuator Features	Non-Fail Safe						Valve Only	
Actuator O.S Number/ Short Order Code	MVN613A0000	MVN613A0000+C1	MVN613A0000	MVN613A0000+C1	MVN643A0000	MVN643A0000+C1	N/A	N/A
Power Supply	Voltage		24 Vac		24 Vac			
	Frequency		50/60 Hz		50/60 Hz			
	Power		1.5 VA		6 VA			
Actuator Torque (lb.-in.)	27		27		27			
Control	Modulating (0)2-10Vdc							
	Floating		•		•			
	Fast acting SPDT							
Fail Safe Action	Fail in Place		Fail in Place		Fail in Place			
Actuator Stroke (degrees)	90 ±3		90 ±3		90 ±3			
Timing (seconds)	90		90		30			
Valve Features	Trim		Plated Brass		Plated Brass		Plated Brass Stainless Steel	

Valve Size (inches)	Max. GPM	Min. Differential Pressure** (psid)	Max. Differential Pressure** (psid)	Close-off Pressure (psid)	Short Order Codes							
					No Cable	1 Meter Cable	No Cable	1 Meter Cable	No Cable	1 Meter Cable	Valve Only	
1/2	1	3.0	35	100	VRN2ABPA1000	VRN2ABPA1001	VRN2ABSA1000	VRN2ABSA1001	VRN2ABPA2000	VRN2ABPA2001	VRN2ABPA0000	VRN2ABSA0000
	2				VRN2ADPA1000	VRN2ADPA1001	VRN2ADSA1000	VRN2ADSA1001	VRN2ADPA2000	VRN2ADPA2001	VRN2ADPA0000	VRN2ADSA0000
	3				VRN2AEPFA1000	VRN2AEPFA1001	VRN2AESA1000	VRN2AESA1001	VRN2AEPFA2000	VRN2AEPFA2001	VRN2AEPFA0000	VRN2AESA0000
	4				VRN2AFPA1000	VRN2AFPA1001	VRN2AFSA1000	VRN2AFSA1001	VRN2AFPA2000	VRN2AFPA2001	VRN2AFPA0000	VRN2AFSA0000
	5				VRN2AGPA1000	VRN2AGPA1001	VRN2AGSA1000	VRN2AGSA1001	VRN2AGPA2000	VRN2AGPA2001	VRN2AGPA0000	VRN2AGSA0000
	6				VRN2AHPA1000	VRN2AHPA1001	VRN2AHPA1000	VRN2AHPA1001	VRN2AHPA2000	VRN2AHPA2001	VRN2AHPA0000	VRN2AHPA0000
	7				VRN2AJPA1000	VRN2AJPA1001	VRN2AJSA1000	VRN2AJSA1001	VRN2AJPA2000	VRN2AJPA2001	VRN2AJPA0000	VRN2AJSA0000
3/4	1	3.0	35	100	VRN2BBPA1000	VRN2BBPA1001	VRN2BBSA1000	VRN2BBSA1001	VRN2BBPA2000	VRN2BBPA2001	VRN2BBPA0000	VRN2BBSA0000
	2				VRN2BDPA1000	VRN2BDPA1001	VRN2BDSA1000	VRN2BDSA1001	VRN2BDPA2000	VRN2BDPA2001	VRN2BDPA0000	VRN2BDSA0000
	3				VRN2BEPFA1000	VRN2BEPFA1001	VRN2BESA1000	VRN2BESA1001	VRN2BEPFA2000	VRN2BEPFA2001	VRN2BEPFA0000	VRN2BESA0000
	4				VRN2BFPA1000	VRN2BFPA1001	VRN2BFSA1000	VRN2BFSA1001	VRN2BFPA2000	VRN2BFPA2001	VRN2BFPA0000	VRN2BFSA0000
	5				VRN2BGPA1000	VRN2BGPA1001	VRN2BGSA1000	VRN2BGSA1001	VRN2BGPA2000	VRN2BGPA2001	VRN2BGPA0000	VRN2BGSA0000
	6				VRN2BHPA1000	VRN2BHPA1001	VRN2BHSA1000	VRN2BHSA1001	VRN2BHPA2000	VRN2BHPA2001	VRN2BHPA0000	VRN2BHSA0000
	7				VRN2BJPA1000	VRN2BJPA1001	VRN2BJS1000	VRN2BJS1001	VRN2BJPA2000	VRN2BJPA2001	VRN2BJPA0000	VRN2BJS1000
	8	VRN2BKPA1000	VRN2BKPA1001	VRN2BKSA1000	VRN2BKSA1001	VRN2BKPA2000	VRN2BKPA2001	VRN2BKPA0000	VRN2BKSA0000			
	9	VRN2BLPA1000	VRN2BLPA1001	VRN2BLSA1000	VRN2BLSA1001	VRN2BLPA2000	VRN2BLPA2001	VRN2BLPA0000	VRN2BLSA0000			
	10*	VRN2BMPA1000	VRN2BMPA1001	VRN2BMSA1000	VRN2BMSA1001	VRN2BMPA2000	VRN2BMPA2001	VRN2BMPA0000	VRN2BMSA0000			
1	1	3.0	35	100	VRN2CBPA1000	VRN2CBPA1001	VRN2CBSA1000	VRN2CBSA1001	VRN2CBPA2000	VRN2CBPA2001	VRN2CBPA0000	VRN2CBSA0000
	2				VRN2CDPA1000	VRN2CDPA1001	VRN2CDSA1000	VRN2CDSA1001	VRN2CDPA2000	VRN2CDPA2001	VRN2CDPA0000	VRN2CDSA0000
	3				VRN2CEPA1000	VRN2CEPA1001	VRN2CESA1000	VRN2CESA1001	VRN2CEPA2000	VRN2CEPA2001	VRN2CEPA0000	VRN2CESA0000
	4				VRN2CFPA1000	VRN2CFPA1001	VRN2CFSA1000	VRN2CFSA1001	VRN2CFPA2000	VRN2CFPA2001	VRN2CFPA0000	VRN2CFSA0000
	5				VRN2CGPA1000	VRN2CGPA1001	VRN2CGSA1000	VRN2CGSA1001	VRN2CGPA2000	VRN2CGPA2001	VRN2CGPA0000	VRN2CGSA0000
	6				VRN2CHPA1000	VRN2CHPA1001	VRN2CHSA1000	VRN2CHSA1001	VRN2CHPA2000	VRN2CHPA2001	VRN2CHPA0000	VRN2CHSA0000
	7				VRN2CJPA1000	VRN2CJPA1001	VRN2CJSA1000	VRN2CJSA1001	VRN2CJPA2000	VRN2CJPA2001	VRN2CJPA0000	VRN2CJSA0000
	8	VRN2CKPA1000	VRN2CKPA1001	VRN2CKSA1000	VRN2CKSA1001	VRN2CKPA2000	VRN2CKPA2001	VRN2CKPA0000	VRN2CKSA0000			
	9	VRN2CLPA1000	VRN2CLPA1001	VRN2CLSA1000	VRN2CLSA1001	VRN2CLPA2000	VRN2CLPA2001	VRN2CLPA0000	VRN2CLSA0000			
	10	VRN2CMPA1000	VRN2CMPA1001	VRN2CMSA1000	VRN2CMSA1001	VRN2CMPA2000	VRN2CMPA2001	VRN2CMPA0000	VRN2CMSA0000			
1 1/4	15	4.0	35	100	VRN2CNPA1000	VRN2CNPA1001	VRN2CNPA1000	VRN2CNPA1001	VRN2CNPA2000	VRN2CNPA2001	VRN2CNPA0000	VRN2CNPA0000
	20				VRN2CPPA1000	VRN2CPPA1001	VRN2CPSA1000	VRN2CPSA1001	VRN2CPPA2000	VRN2CPPA2001	VRN2CPPA0000	VRN2CPSA0000
	10				VRN2DMPA1000	VRN2DMPA1001	VRN2DMSA1000	VRN2DMSA1001	VRN2DMPA2000	VRN2DMPA2001	VRN2DMPA0000	VRN2DMSA0000
	15				VRN2DNPA1000	VRN2DNPA1001	VRN2DNPA1000	VRN2DNPA1001	VRN2DNPA2000	VRN2DNPA2001	VRN2DNPA0000	VRN2DNPA0000
	20				VRN2DPPA1000	VRN2DPPA1001	VRN2DPPA1000	VRN2DPPA1001	VRN2DPPA2000	VRN2DPPA2001	VRN2DPPA0000	VRN2DPPA0000
	25				VRN2DQPA1000	VRN2DQPA1001	VRN2DQSA1000	VRN2DQSA1001	VRN2DQPA2000	VRN2DQPA2001	VRN2DQPA0000	VRN2DQSA0000
	30				VRN2DRPA1000	VRN2DRPA1001	VRN2DRSA1000	VRN2DRSA1001	VRN2DRPA2000	VRN2DRPA2001	VRN2DRPA0000	VRN2DRSA0000
	35*	VRN2DSPA1000	VRN2DSPA1001	VRN2DSSA1000	VRN2DSSA1001	VRN2DSPA2000	VRN2DSPA2001	VRN2DSPA0000	VRN2DSSA0000			

* Full port ball

** Differential pressure regulator operating range, ±5%

Product Selection - Valves

Pressure Independent Control Valves, NPT 1/2"- 1 1/4"

Common Features

- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 1 to 95 gpm.
- Differential pressure regulator for constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design for long service life for flow control accuracy of ±5% over specified control range.
- Equal percentage flow characteristic using patented flow control ball insert.



Actuator Features		Non-Fail Safe					
Actuator O.S Number/ Short Order Code		MVN643A0000	MVN643A0000+C1	MVN713A0000	MVN713A0000+C1	MVN713A0000	MVN713A0000+C1
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	Power	6 VA	6 VA	5 VA	5 VA	5 VA	5 VA
Actuator Torque (lb.-in.)		27	27	27	27	27	27
Control	Modulating (0)2-10Vdc			•	•	•	•
	Floating						
	Fast acting SPDT	•	•				
Fail Safe Action		Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place	Fail in Place
Actuator Stroke (degrees)		90 ±3	90 ±3	90 ±3	90 ±3	90 ±3	90 ±3
Timing (seconds)		30	30	90	90	90	90
Valve Features		Trim	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass	Stainless Steel

Valve Size (inches)	Max. GPM	Min. Differential Pressure** (psid)	Max. Differential Pressure** (psid)	Close-off Pressure (psid)	Short Order Codes					
					No Cable	1 Meter Cable	No Cable	1 Meter Cable	No Cable	1 Meter Cable
1/2"	1	3.0	35	100	VRN2ABSA2000	VRN2ABSA2001	VRN2ABPA3000	VRN2ABPA3001	VRN2ABSA3000	VRN2ABSA3001
	2				VRN2ADSA2000	VRN2ADSA2001	VRN2ADPA3000	VRN2ADPA3001	VRN2ADSA3000	VRN2ADSA3001
	3				VRN2AESA2000	VRN2AESA2001	VRN2AEP3000	VRN2AEP3001	VRN2AESA3000	VRN2AESA3001
	4				VRN2AFSA2000	VRN2AFSA2001	VRN2AFPA3000	VRN2AFPA3001	VRN2AFSA3000	VRN2AFSA3001
	5				VRN2AGSA2000	VRN2AGSA2001	VRN2AGPA3000	VRN2AGPA3001	VRN2AGSA3000	VRN2AGSA3001
	6				VRN2AHPA2000	VRN2AHPA2001	VRN2AHPA3000	VRN2AHPA3001	VRN2AHPA3000	VRN2AHPA3001
	7				VRN2AJSA2000	VRN2AJSA2001	VRN2AJPA3000	VRN2AJPA3001	VRN2AJSA3000	VRN2AJSA3001
3/4"	1	6.0	35	100	VRN2BBSA2000	VRN2BBSA2001	VRN2BBPA3000	VRN2BBPA3001	VRN2BBSA3000	VRN2BBSA3001
	2				VRN2BDSA2000	VRN2BDSA2001	VRN2BDPA3000	VRN2BDPA3001	VRN2BDSA3000	VRN2BDSA3001
	3				VRN2BESA2000	VRN2BESA2001	VRN2BEP3000	VRN2BEP3001	VRN2BESA3000	VRN2BESA3001
	4				VRN2BFSA2000	VRN2BFSA2001	VRN2BFPA3000	VRN2BFPA3001	VRN2BFSA3000	VRN2BFSA3001
	5				VRN2BGS2000	VRN2BGS2001	VRN2BGPA3000	VRN2BGPA3001	VRN2BGS3000	VRN2BGS3001
	6				VRN2BHPA2000	VRN2BHPA2001	VRN2BHPA3000	VRN2BHPA3001	VRN2BHPA3000	VRN2BHPA3001
	7				VRN2BBSA2000	VRN2BBSA2001	VRN2BBPA3000	VRN2BBPA3001	VRN2BBSA3000	VRN2BBSA3001
	8				VRN2BKSA2000	VRN2BKSA2001	VRN2BKPA3000	VRN2BKPA3001	VRN2BKSA3000	VRN2BKSA3001
	9				VRN2BLSA2000	VRN2BLSA2001	VRN2BLPA3000	VRN2BLPA3001	VRN2BLSA3000	VRN2BLSA3001
	10*				VRN2BMSA2000	VRN2BMSA2001	VRN2BMPA3000	VRN2BMPA3001	VRN2BMSA3000	VRN2BMSA3001
1"	1	3.0	50	100	VRN2CBSA2000	VRN2CBSA2001	VRN2CBPA3000	VRN2CBPA3001	VRN2CBSA3000	VRN2CBSA3001
	2				VRN2CDSA2000	VRN2CDSA2001	VRN2CDPA3000	VRN2CDPA3001	VRN2CDSA3000	VRN2CDSA3001
	3				VRN2CESA2000	VRN2CESA2001	VRN2CEPA3000	VRN2CEPA3001	VRN2CESA3000	VRN2CESA3001
	4				VRN2CFA2000	VRN2CFA2001	VRN2CFPA3000	VRN2CFPA3001	VRN2CFA3000	VRN2CFA3001
	5				VRN2CGSA2000	VRN2CGSA2001	VRN2CGPA3000	VRN2CGPA3001	VRN2CGSA3000	VRN2CGSA3001
	6				VRN2CHSA2000	VRN2CHSA2001	VRN2CHPA3000	VRN2CHPA3001	VRN2CHSA3000	VRN2CHSA3001
	7				VRN2CJSA2000	VRN2CJSA2001	VRN2CJPA3000	VRN2CJPA3001	VRN2CJSA3000	VRN2CJSA3001
	8				VRN2CKSA2000	VRN2CKSA2001	VRN2CKPA3000	VRN2CKPA3001	VRN2CKSA3000	VRN2CKSA3001
	9				VRN2CLSA2000	VRN2CLSA2001	VRN2CLPA3000	VRN2CLPA3001	VRN2CLSA3000	VRN2CLSA3001
	10				VRN2CMSA2000	VRN2CMSA2001	VRN2CMPA3000	VRN2CMPA3001	VRN2CMSA3000	VRN2CMSA3001
1 1/4"	10	4.0	50	100	VRN2CNPA2000	VRN2CNPA2001	VRN2CNPA3000	VRN2CNPA3001	VRN2CNPA3000	VRN2CNPA3001
	15				VRN2CPSA2000	VRN2CPSA2001	VRN2CPPA3000	VRN2CPPA3001	VRN2CPSA3000	VRN2CPSA3001
	20				VRN2DMSA2000	VRN2DMSA2001	VRN2DMPA3000	VRN2DMPA3001	VRN2DMSA3000	VRN2DMSA3001
	25				VRN2DNSA2000	VRN2DNSA2001	VRN2DNPA3000	VRN2DNPA3001	VRN2DNSA3000	VRN2DNSA3001
	30				VRN2DPSA2000	VRN2DPSA2001	VRN2DPPA3000	VRN2DPPA3001	VRN2DPSA3000	VRN2DPSA3001
	35*				VRN2DQSA2000	VRN2DQSA2001	VRN2DQPA3000	VRN2DQPA3001	VRN2DQSA3000	VRN2DQSA3001
	35*				VRN2DRSA2000	VRN2DRSA2001	VRN2DRPA3000	VRN2DRPA3001	VRN2DRSA3000	VRN2DRSA3001
					VRN2DSSA2000	VRN2DSSA2001	VRN2DSPA3000	VRN2DSPA3001	VRN2DSSA3000	VRN2DSSA3001

* Full port ball

** Differential pressure regulator operating range, ±5%

Product Selection - Valves

Pressure Independent Control Valves, NPT 1/2" - 1 1/4"

Common Features

- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 1 to 95 gpm.
- Differential pressure regulator for constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design for long service life for flow control accuracy of ±5% over specified control range.
- Equal percentage flow characteristic using patented flow control ball insert.



Actuator Features		Non-Fail Safe			
Actuator O.S Number		MN6105A1011	MN6105A1011	MN7505A2001	MN7505A2001
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Enclosure Rating	Power	5 VA	5 VA	5 VA	5 VA
		NEMA 2	NEMA 2	NEMA 2	NEMA 2
Actuator Torque (lb.-in.)		44	44	44	44
Control	(0)2-10Vdc			•	•
	4-20 mA (w/ external 500 Ohm Resistor)			•	•
	Floating	•	•	•	•
	Two-Position SPDT	•	•	•	•
	Two-Position SPST	•	•	•	•
Fail Safe Action (field configurable)		Stay in Place	Stay in Place	Stay in Place	Stay in Place
Normal Position (no signal) (field configurable)		Closed	Closed	Closed	Closed
Actuator Stroke (degrees)		95°	95°	95°	95°
Timing (seconds, 60 Hz)		90	90	90	90
Aux Switch	2 x SPDT Add-on	SSW2	SSW2	SSW2	SSW2
Feedback	2-10 Vdc Built In			•	•
Valve Features	Trim	Stainless Steel	Plated Brass	Stainless Steel	Plated Brass

Valve Size (inches)	Max. GPM	Min. Differential Pressure** (psid)	Max. Differential Pressure** (psid)	Close-off Pressure (psid)	Short Order Codes			
1/2"	1	3	35	100	VRN2ABSX4000	VRN2ABPX4000	VRN2ABSX5000	VRN2ABPX5000
	2				VRN2ADSX4000	VRN2ADPX4000	VRN2ADSX5000	VRN2ADPX5000
	3				VRN2AESX4000	VRN2AEPX4000	VRN2AESX5000	VRN2AEPX5000
	4				VRN2AFSX4000	VRN2AFPX4000	VRN2AFSX5000	VRN2AFPX5000
	5				VRN2AGSX4000	VRN2AGPX4000	VRN2AGSX5000	VRN2AGPX5000
	6				VRN2AHSX4000	VRN2AHPX4000	VRN2AHSX5000	VRN2AHPX5000
	7				VRN2AJSX4000	VRN2AJPX4000	VRN2AJSX5000	VRN2AJPX5000
3/4"	1	6	35	100	VRN2BBSX4000	VRN2BBPX4000	VRN2BBSX5000	VRN2BBPX5000
	2				VRN2BDSX4000	VRN2BDPX4000	VRN2BDSX5000	VRN2BDPX5000
	3				VRN2BESX4000	VRN2BEPX4000	VRN2BESX5000	VRN2BEPX5000
	4				VRN2BFSX4000	VRN2BFPX4000	VRN2BFSX5000	VRN2BFPX5000
	5				VRN2BGSX4000	VRN2BGPX4000	VRN2BGSX5000	VRN2BGPX5000
	6				VRN2BHSX4000	VRN2BHPX4000	VRN2BHSX5000	VRN2BHPX5000
	7				VRN2BJSX4000	VRN2BJPX4000	VRN2BJSX5000	VRN2BJPX5000
	8				VRN2BKSX4000	VRN2BKPX4000	VRN2BKSX5000	VRN2BKPX5000
	9				VRN2BLSX4000	VRN2BLPX4000	VRN2BLSX5000	VRN2BLPX5000
	10*				VRN2BMSX4000	VRN2BMPX4000	VRN2BMSX5000	VRN2BMPX5000
1"	1	3	35	100	VRN2CBSX4000	VRN2CBPX4000	VRN2CBSX5000	VRN2CBPX5000
	2				VRN2CDSX4000	VRN2CDPX4000	VRN2CDSX5000	VRN2CDPX5000
	3				VRN2CESX4000	VRN2CEPX4000	VRN2CESX5000	VRN2CEPX5000
	4				VRN2CFSX4000	VRN2CFPX4000	VRN2CFSX5000	VRN2CFPX5000
	5				VRN2CGSX4000	VRN2CGPX4000	VRN2CGSX5000	VRN2CGPX5000
	6				VRN2CHSX4000	VRN2CHPX4000	VRN2CHSX5000	VRN2CHPX5000
	7				VRN2CJSX4000	VRN2CJPX4000	VRN2CJSX5000	VRN2CJPX5000
	8				VRN2CKSX4000	VRN2CKPX4000	VRN2CKSX5000	VRN2CKPX5000
	9				VRN2CLSX4000	VRN2CLPX4000	VRN2CLSX5000	VRN2CLPX5000
	10				VRN2CMSX4000	VRN2CMPX4000	VRN2CMSX5000	VRN2CMPX5000
1-1/4"	15	4	50	100	VRN2CNSX4000	VRN2CNPX4000	VRN2CNSX5000	VRN2CNPX5000
	20				VRN2CPSX4000	VRN2CPPX4000	VRN2CPSX5000	VRN2CPPX5000
	25				VRN2DMSX4000	VRN2DMPX4000	VRN2DMSX5000	VRN2DMPX5000
	30				VRN2DNSX4000	VRN2DNPX4000	VRN2DNSX5000	VRN2DNPX5000
	35*				VRN2DPSX4000	VRN2DPPX4000	VRN2DPSX5000	VRN2DPPX5000
					VRN2DQSX4000	VRN2DQPX4000	VRN2DQSX5000	VRN2DQPX5000
					VRN2DRSX4000	VRN2DRPX4000	VRN2DRSX5000	VRN2DRPX5000
	VRN2DSSX4000	VRN2DSPX4000	VRN2DSSX5000	VRN2DSPX5000				

* Full port ball
 ** Differential pressure regulator operating range, ±5%

VALVES

Product Selection - Valves

Pressure Independent Control Valves, NPT 1/2"- 1 1/4"

Common Features

- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 1 to 95 gpm.
- Differential pressure regulator for constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design for long service life for flow control accuracy of ±5% over specified control range.
- Equal percentage flow characteristic using patented flow control ball insert.



Actuator Features		Fail Safe				Valve Only	
Actuator O.S Number		MS7505A2030	MS7505A2030	MS7505A2030	MS7505A2030	N/A	N/A
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac		
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz		
Enclosure Rating	Power	8 VA	8 VA	8 VA	8 VA		
		NEMA 2	NEMA 2	NEMA 2	NEMA 2		
Actuator Torque (lb.-in.)		44	44	44	44		
Control	(0)2-10Vdc	•	•	•	•		
	4-20 mA (w/ external 500 Ohm Resistor)	•	•	•	•		
	Floating	•	•	•	•		
	Two-Position SPDT	•	•	•	•		
Fail Safe Action (field configurable)	Two-Position SPST	•	•	•	•		
	Open (FSO)	Closed (FSC)	Open (FSO)	Closed (FSC)			
Normal Position (no signal) (field configurable)		Open	Closed	Open	Closed		
Actuator Stroke (degrees)		95°	95°	95°	95°		
Timing (seconds, 60 Hz)		90	90	90	90		
Aux Switch	2 x SPDT Add-on						
Feedback	2-10 Vdc Built In	•	•	•	•		
Valve Features	Trim	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass	Stainless Steel	Plated Brass



Valve Size (inches)	Max. GPM	Min. Differential Pressure** (psid)	Max. Differential Pressure** (psid)	Close-off Pressure (psid)	Short Order Codes					
1/2"	1	3	35	100	VRN2ABSX6100	VRN2ABSX6200	VRN2ABPX6100	VRN2ABPX6200	VRN2ABSX0000	VRN2ABPX0000
	2				VRN2ADSX6100	VRN2ADSX6200	VRN2ADPX6100	VRN2ADPX6200	VRN2ADSX0000	VRN2ADPX0000
	3				VRN2AESX6100	VRN2AESX6200	VRN2AEPX6100	VRN2AEPX6200	VRN2AESX0000	VRN2AEPX0000
	4				VRN2AFSX6100	VRN2AFSX6200	VRN2AFPX6100	VRN2AFPX6200	VRN2AFSX0000	VRN2AFPX0000
	5				VRN2AGSX6100	VRN2AGSX6200	VRN2AGPX6100	VRN2AGPX6200	VRN2AGSX0000	VRN2AGPX0000
	6				VRN2AHSX6100	VRN2AHSX6200	VRN2AHPX6100	VRN2AHPX6200	VRN2AHSX0000	VRN2AHPX0000
	7				VRN2AJSX6100	VRN2AJSX6200	VRN2AJPX6100	VRN2AJPX6200	VRN2AJSX0000	VRN2AJPX0000
3/4"	1	6	35	100	VRN2BBSX6100	VRN2BBSX6200	VRN2BBPX6100	VRN2BBPX6200	VRN2BBSX0000	VRN2BBPX0000
	2				VRN2BDSX6100	VRN2BDSX6200	VRN2BDPX6100	VRN2BDPX6200	VRN2BDSX0000	VRN2BDPX0000
	3				VRN2BESX6100	VRN2BESX6200	VRN2BEPX6100	VRN2BEPX6200	VRN2BESX0000	VRN2BEPX0000
	4				VRN2BFSX6100	VRN2BFSX6200	VRN2BFPX6100	VRN2BFPX6200	VRN2BFSX0000	VRN2BFPX0000
	5				VRN2BGSX6100	VRN2BGSX6200	VRN2BGPX6100	VRN2BGPX6200	VRN2BGSX0000	VRN2BGPX0000
	6				VRN2BHSX6100	VRN2BHSX6200	VRN2BHPX6100	VRN2BHPX6200	VRN2BHSX0000	VRN2BHPX0000
	7				VRN2BJSX6100	VRN2BJSX6200	VRN2BJPX6100	VRN2BJPX6200	VRN2BJSX0000	VRN2BJPX0000
	8				VRN2BKSX6100	VRN2BKSX6200	VRN2BKPX6100	VRN2BKPX6200	VRN2BKSX0000	VRN2BKPX0000
	9				VRN2BLSX6100	VRN2BLSX6200	VRN2BLPX6100	VRN2BLPX6200	VRN2BLSX0000	VRN2BLPX0000
	10*				VRN2BMSX6100	VRN2BMSX6200	VRN2BMPX6100	VRN2BMPX6200	VRN2BMSX0000	VRN2BMPX0000
1"	1	4	50	100	VRN2CBSX6100	VRN2CBSX6200	VRN2CBPX6100	VRN2CBPX6200	VRN2CBSX0000	VRN2CBPX0000
	2				VRN2CDSX6100	VRN2CDSX6200	VRN2CDPX6100	VRN2CDPX6200	VRN2CDSX0000	VRN2CDPX0000
	3				VRN2CESX6100	VRN2CESX6200	VRN2CEPX6100	VRN2CEPX6200	VRN2CESX0000	VRN2CEPX0000
	4				VRN2CFSX6100	VRN2CFSX6200	VRN2CFPX6100	VRN2CFPX6200	VRN2CFSX0000	VRN2CFPX0000
	5				VRN2CGSX6100	VRN2CGSX6200	VRN2CGPX6100	VRN2CGPX6200	VRN2CGSX0000	VRN2CGPX0000
	6				VRN2CHSX6100	VRN2CHSX6200	VRN2CHPX6100	VRN2CHPX6200	VRN2CHSX0000	VRN2CHPX0000
	7				VRN2CJSX6100	VRN2CJSX6200	VRN2CJPX6100	VRN2CJPX6200	VRN2CJSX0000	VRN2CJPX0000
	8				VRN2CKSX6100	VRN2CKSX6200	VRN2CKPX6100	VRN2CKPX6200	VRN2CKSX0000	VRN2CKPX0000
	9				VRN2CLSX6100	VRN2CLSX6200	VRN2CLPX6100	VRN2CLPX6200	VRN2CLSX0000	VRN2CLPX0000
	10				VRN2CMSX6100	VRN2CMSX6200	VRN2CMPX6100	VRN2CMPX6200	VRN2CMSX0000	VRN2CMPX0000
1-1/4"	15	5	50	100	VRN2CNSX6100	VRN2CNSX6200	VRN2CNPX6100	VRN2CNPX6200	VRN2CNSX0000	VRN2CNPX0000
	20				VRN2CPSX6100	VRN2CPSX6200	VRN2CPPX6100	VRN2CPPX6200	VRN2CPSX0000	VRN2CPPX0000
	25				VRN2DMSX6100	VRN2DMSX6200	VRN2DMPX6100	VRN2DMPX6200	VRN2DMSX0000	VRN2DMPX0000
	30				VRN2DNSX6100	VRN2DNSX6200	VRN2DNPX6100	VRN2DNPX6200	VRN2DNSX0000	VRN2DNPX0000
	35*				VRN2DPSX6100	VRN2DPSX6200	VRN2DPPX6100	VRN2DPPX6200	VRN2DPSX0000	VRN2DPPX0000
	35*				VRN2DQSX6100	VRN2DQSX6200	VRN2DQPX6100	VRN2DQPX6200	VRN2DQSX0000	VRN2DQPX0000
					VRN2DRSX6100	VRN2DRSX6200	VRN2DRPX6100	VRN2DRPX6200	VRN2DRSX0000	VRN2DRPX0000
					VRN2DSSX6100	VRN2DSSX6200	VRN2DSPX6100	VRN2DSPX6200	VRN2DSSX0000	VRN2DSPX0000

* Full port ball

** Differential pressure regulator operating range, ±5%

Product Selection - Valves

Pressure Independent Control Valves, NPT 1½"-3"

Common Features

- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 1 to 95 gpm.
- Differential pressure regulator for constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design for long service life for flow control accuracy of ±5% over specified control range.
- Equal percentage flow characteristic using patented flow control ball insert.

Actuator Features		Non-Fail Safe			
Actuator O.S Number		MN6105A1011	MN6105A1011	MN7505A2001	MN7505A2001
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power	5 VA	5 VA	5 VA	5 VA
	Enclosure Rating	NEMA 2	NEMA 2	NEMA 2	NEMA 2
Actuator Torque	(lb.-in.)	44	44	44	44
Control	(0)2-10Vdc			•	•
	4-20 mA (w/ external 500 Ohm Resistor)			•	•
	Floating	•	•	•	•
	Two-Position SPDT	•	•	•	•
	Two-Position SPST	•	•	•	•
Fail Safe Action	(field configurable)	Stay in Place	Stay in Place	Stay in Place	Stay in Place
Normal Position (no signal)	(field configurable)	Closed	Closed	Closed	Closed
Actuator Stroke	(degrees)	95°	95°	95°	95°
Timing	(seconds, 60 Hz)	90	90	90	90
Aux Switch	2 x SPDT Add-on	SSW2	SSW2	SSW2	SSW2
Feedback	2-10 Vdc Built In			•	•
Valve Features	Trim	Stainless Steel	Plated Brass	Stainless Steel	Plated Brass

Valve Size (inches)	Max. GPM	Min. Differential Pressure** (psid)	Max. Differential Pressure** (psid)	Close-off Pressure (psid)	Short Order Codes
1-1/2"	10	4	50	100	VRN2EMSX4000
	15				VRN2EMPX4000
	20				VRN2EMXS5000
	25	VRN2ENPX4000			
	30	VRN2ENSX5000			
	35	VRN2EPX4000			
	40	VRN2EPXS5000			
	45	VRN2EQSX4000			
	50	VRN2EQPX4000			
	55	VRN2EQXS5000			
	60	VRN2ERX4000			
	65	VRN2ERPX4000			
70	VRN2ERSX5000				
75	VRN2ERPXS5000				
80	VRN2ESSX4000				
85	VRN2ESPX4000				
95	VRN2ESSX5000				
2"	25	4	58	100	VRN2ETPX4000
	30				VRN2ETXS5000
	35				VRN2ETPX5000
	40	VRN2EUSX4000			
	45	VRN2EUPX4000			
	50	VRN2EUSX5000			
	55	VRN2E1SX4000			
	60	VRN2E1PX4000			
	65	VRN2E1SX5000			
	70	VRN2E2SX4000			
	75	VRN2E2PX4000			
	80	VRN2E2SX5000			
85	VRN2E2PX5000				
95	VRN2E3SX4000				
95*	VRN2E3PX4000				
2-1/2"	25	4	58	100	VRN2E4SX4000
	30				VRN2E4PX4000
	35				VRN2E4SX5000
	40	VRN2E5SX4000			
	45	VRN2E5PX4000			
	50	VRN2E5SX5000			
	55	VRN2E6SX4000			
	60	VRN2E6PX4000			
	65	VRN2E6SX5000			
	70	VRN2E6PX5000			
	75	VRN2E7SX4000			
	80	VRN2E7PX4000			
85	VRN2E7SX5000				
95*	VRN2E7PX5000				
3"	25	4	58	100	VRN2E8SX4000
	30				VRN2E8PX4000
	35				VRN2E8SX5000
	40	VRN2E9SX4000			
	45	VRN2E9PX4000			
	50	VRN2E9SX5000			
	55	VRN2F0SX4000			
	60	VRN2F0PX4000			
	65	VRN2F0SX5000			
	70	VRN2FRSX4000			
	75	VRN2FRPX4000			
	80	VRN2FRSX5000			
85	VRN2FRPX5000				
95*	VRN2FSSX4000				
3"	25	4	58	100	VRN2FSPX4000
	30				VRN2FSSX5000
	35				VRN2FTSX4000
	40	VRN2FTPX4000			
	45	VRN2FTSX5000			
	50	VRN2FUSX4000			
	55	VRN2FUPX4000			
	60	VRN2FUSX5000			
	65	VRN2F1SX4000			
	70	VRN2F1PX4000			
	75	VRN2F1SX5000			
	80	VRN2F2SX4000			
85	VRN2F2PX4000				
95*	VRN2F2SX5000				
3"	25	4	58	100	VRN2F3SX4000
	30				VRN2F3PX4000
	35				VRN2F3SX5000
	40	VRN2F4SX4000			
	45	VRN2F4PX4000			
	50	VRN2F4SX5000			
	55	VRN2F5SX4000			
	60	VRN2F5PX4000			
	65	VRN2F5SX5000			
	70	VRN2F6SX4000			
	75	VRN2F6PX4000			
	80	VRN2F6SX5000			
85	VRN2F6PX5000				
95*	VRN2G0SX4000				
3"	25	4	58	100	VRN2G0PX4000
	30				VRN2G0SX5000
	35				VRN2GRSX4000
	40	VRN2GRPX4000			
	45	VRN2GRSX5000			
	50	VRN2GSSX4000			
	55	VRN2GSPX4000			
	60	VRN2GSSX5000			
	65	VRN2GTPX4000			
	70	VRN2GTPX5000			
	75	VRN2GUSX4000			
	80	VRN2GUSX5000			
85	VRN2G1SX4000				
95*	VRN2G1PX4000				
3"	25	4	58	100	VRN2G1SX5000
	30				VRN2G2SX4000
	35				VRN2G2PX4000
	40	VRN2G2SX5000			
	45	VRN2G2PX5000			
	50	VRN2G3SX4000			
	55	VRN2G3PX4000			
	60	VRN2G3SX5000			
	65	VRN2G4SX4000			
	70	VRN2G4PX4000			
	75	VRN2G4SX5000			
	80	VRN2G4PX5000			
85	VRN2G5SX4000				
95*	VRN2G5PX4000				
3"	25	4	58	100	VRN2G5SX5000
	30				VRN2G6SX4000
	35				VRN2G6PX4000
	40	VRN2G6SX5000			
	45	VRN2G6PX5000			
	50	VRN2G7SX4000			
	55	VRN2G7PX4000			
	60	VRN2G7SX5000			
	65	VRN2G8SX4000			
	70	VRN2G8PX4000			
	75	VRN2G8SX5000			
	80	VRN2G8PX5000			
85	VRN2G9SX4000				
95*	VRN2G9PX4000				
3"	25	4	58	100	VRN2H0SX4000
	30				VRN2H0PX4000
	35				VRN2H0SX5000
	40	VRN2HRSX4000			
	45	VRN2HRPX4000			
	50	VRN2HRSX5000			
	55	VRN2HRSX5000			
	60	VRN2HSSX4000			
	65	VRN2HSPX4000			
	70	VRN2HSSX5000			
	75	VRN2HSPX5000			
	80	VRN2HTSX4000			
85	VRN2HTPX4000				
95*	VRN2HTSX5000				
3"	25	4	58	100	VRN2HTPX5000
	30				VRN2HUSX4000
	35				VRN2HUPX4000
	40	VRN2HUSX5000			
	45	VRN2HUPX5000			
	50	VRN2H1SX4000			
	55	VRN2H1PX4000			
	60	VRN2H1SX5000			
	65	VRN2H2SX4000			
	70	VRN2H2PX4000			
	75	VRN2H2SX5000			
	80	VRN2H2PX5000			
85	VRN2H3SX4000				
95*	VRN2H3PX4000				
3"	25	4	58	100	VRN2H3SX5000
	30				VRN2H4SX4000
	35				VRN2H4PX4000
	40	VRN2H4SX5000			
	45	VRN2H4PX5000			
	50	VRN2H5SX4000			
	55	VRN2H5PX4000			
	60	VRN2H5SX5000			
	65	VRN2H6SX4000			
	70	VRN2H6PX4000			
	75	VRN2H6SX5000			
	80	VRN2H6PX5000			
85	VRN2H7SX4000				
95*	VRN2H7PX4000				
3"	25	4	58	100	VRN2H7SX5000
	30				VRN2H8SX4000
	35				VRN2H8PX4000
	40	VRN2H8SX5000			
	45	VRN2H8PX5000			
	50	VRN2H9SX4000			
	55	VRN2H9PX4000			
	60	VRN2H9SX5000			
	65	VRN2H9PX5000			
	70	VRN2H9SX5000			
	75	VRN2H9PX5000			
	80	VRN2H9SX5000			
85	VRN2H9PX5000				
95*	VRN2H9SX5000				



* Full port ball
 ** Differential pressure regulator operating range, ±5%

Product Selection - Valves

Pressure Independent Control Valves, NPT 1½"-3"

Common Features

- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 1 to 95 gpm.
- Differential pressure regulator for constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design for long service life for flow control accuracy of ±5% over specified control range.
- Equal percentage flow characteristic using patented flow control ball insert.

Actuator Features		Fail Safe				Valve Only	
Actuator O.S Number	MS7505A2030	MS7505A2030	MS7505A2030	MS7505A2030	N/A	N/A	
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac		
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz		
Enclosure Rating	Power	8 VA	8 VA	8 VA	8 VA		
	Enclosure Rating	NEMA 2	NEMA 2	NEMA 2	NEMA 2		
Actuator Torque (lb.-in.)	44	44	44	44			
Control	(0)2-10Vdc	•	•	•	•		
	4-20 mA (w/ external 500 Ohm Resistor)	•	•	•	•		
	Floating	•	•	•	•		
	Two-Position SPDT	•	•	•	•		
Fail Safe Action (field configurable)	Two-Position SPST	•	•	•	•		
	Open (FSO)	Closed (FSC)	Open (FSO)	Closed (FSC)			
Normal Position (no signal) (field configurable)	Open	Closed	Open	Closed			
Actuator Stroke (degrees)	95°	95°	95°	95°			
Timing (seconds, 60 Hz)	90	90	90	90			
Aux Switch	2 x SPDT Add-on						
Feedback	2-10 Vdc Built In	•	•	•	•		
Valve Features	Trim	Stainless Steel	Stainless Steel	Plated Brass	Plated Brass	Stainless Steel	Plated Brass



Valve Size (inches)	Max. GPM	Min. Differential Pressure** (psid)	Max. Differential Pressure** (psid)	Close-off Pressure (psid)	Short Order Codes
1-1/2"	10	4	50	100	VRN2EMSX6100 VRN2EMSX6200 VRN2EMPX6100 VRN2EMPX6200 VRN2EMSX0000 VRN2EMPX0000
	15				VRN2ENSX6100 VRN2ENSX6200 VRN2ENPX6100 VRN2ENPX6200 VRN2ENSX0000 VRN2ENPX0000
	20				VRN2EPSX6100 VRN2EPSX6200 VRN2EPPX6100 VRN2EPPX6200 VRN2EPSX0000 VRN2EPPX0000
	25	5			VRN2EQSX6100 VRN2EQSX6200 VRN2EQPX6100 VRN2EQPX6200 VRN2EQSX0000 VRN2EQPX0000
	30				VRN2ERSX6100 VRN2ERSX6200 VRN2ERPX6100 VRN2ERPX6200 VRN2ERSX0000 VRN2ERPX0000
	35				VRN2ESSX6100 VRN2ESSX6200 VRN2ESPX6100 VRN2ESPX6200 VRN2ESSX0000 VRN2ESPX0000
	40	4			VRN2ETSX6100 VRN2ETSX6200 VRN2ETPX6100 VRN2ETPX6200 VRN2ETSX0000 VRN2ETPX0000
	45				VRN2EUSX6100 VRN2EUSX6200 VRN2EUPX6100 VRN2EUPX6200 VRN2EUSX0000 VRN2EUPX0000
	50				VRN2E1SX6100 VRN2E1SX6200 VRN2E1PX6100 VRN2E1PX6200 VRN2E1SX0000 VRN2E1PX0000
	55	7			VRN2E2SX6100 VRN2E2SX6200 VRN2E2PX6100 VRN2E2PX6200 VRN2E2SX0000 VRN2E2PX0000
	60				VRN2E3SX6100 VRN2E3SX6200 VRN2E3PX6100 VRN2E3PX6200 VRN2E3SX0000 VRN2E3PX0000
	65				VRN2E4SX6100 VRN2E4SX6200 VRN2E4PX6100 VRN2E4PX6200 VRN2E4SX0000 VRN2E4PX0000
	70	6			VRN2E5SX6100 VRN2E5SX6200 VRN2E5PX6100 VRN2E5PX6200 VRN2E5SX0000 VRN2E5PX0000
	75				VRN2E6SX6100 VRN2E6SX6200 VRN2E6PX6100 VRN2E6PX6200 VRN2E6SX0000 VRN2E6PX0000
	80				VRN2E7SX6100 VRN2E7SX6200 VRN2E7PX6100 VRN2E7PX6200 VRN2E7SX0000 VRN2E7PX0000
85	4	VRN2E8SX6100 VRN2E8SX6200 VRN2E8PX6100 VRN2E8PX6200 VRN2E8SX0000 VRN2E8PX0000			
95		VRN2E9SX6100 VRN2E9SX6200 VRN2E9PX6100 VRN2E9PX6200 VRN2E9SX0000 VRN2E9PX0000			
25		VRN2FQSX6100 VRN2FQSX6200 VRN2FQPX6100 VRN2FQPX6200 VRN2FQSX0000 VRN2FQPX0000			
30	6	VRN2FRSX6100 VRN2FRSX6200 VRN2FRPX6100 VRN2FRPX6200 VRN2FRSX0000 VRN2FRPX0000			
35		VRN2FSSX6100 VRN2FSSX6200 VRN2FSPX6100 VRN2FSPX6200 VRN2FSSX0000 VRN2FSPX0000			
40		VRN2FTSX6100 VRN2FTSX6200 VRN2FTPX6100 VRN2FTPX6200 VRN2FTSX0000 VRN2FTPX0000			
45	7	VRN2FUSX6100 VRN2FUSX6200 VRN2FUPX6100 VRN2FUPX6200 VRN2FUSX0000 VRN2FUPX0000			
50		VRN2F1SX6100 VRN2F1SX6200 VRN2F1PX6100 VRN2F1PX6200 VRN2F1SX0000 VRN2F1PX0000			
55		VRN2F2SX6100 VRN2F2SX6200 VRN2F2PX6100 VRN2F2PX6200 VRN2F2SX0000 VRN2F2PX0000			
60	4	VRN2F3SX6100 VRN2F3SX6200 VRN2F3PX6100 VRN2F3PX6200 VRN2F3SX0000 VRN2F3PX0000			
65		VRN2F4SX6100 VRN2F4SX6200 VRN2F4PX6100 VRN2F4PX6200 VRN2F4SX0000 VRN2F4PX0000			
70		VRN2F5SX6100 VRN2F5SX6200 VRN2F5PX6100 VRN2F5PX6200 VRN2F5SX0000 VRN2F5PX0000			
75	6	VRN2F6SX6100 VRN2F6SX6200 VRN2F6PX6100 VRN2F6PX6200 VRN2F6SX0000 VRN2F6PX0000			
25		VRN2GQSX6100 VRN2GQSX6200 VRN2GQPX6100 VRN2GQPX6200 VRN2GQSX0000 VRN2GQPX0000			
30		VRN2GRSX6100 VRN2GRSX6200 VRN2GRPX6100 VRN2GRPX6200 VRN2GRSX0000 VRN2GRPX0000			
35	7	VRN2GSSX6100 VRN2GSSX6200 VRN2GSPX6100 VRN2GSPX6200 VRN2GSSX0000 VRN2GSPX0000			
40		VRN2GTSX6100 VRN2GTSX6200 VRN2GTPX6100 VRN2GTPX6200 VRN2GTSX0000 VRN2GTPX0000			
45		VRN2GUSX6100 VRN2GUSX6200 VRN2GUPX6100 VRN2GUPX6200 VRN2GUSX0000 VRN2GUPX0000			
50	4	VRN2G1SX6100 VRN2G1SX6200 VRN2G1PX6100 VRN2G1PX6200 VRN2G1SX0000 VRN2G1PX0000			
55		VRN2G2SX6100 VRN2G2SX6200 VRN2G2PX6100 VRN2G2PX6200 VRN2G2SX0000 VRN2G2PX0000			
60		VRN2G3SX6100 VRN2G3SX6200 VRN2G3PX6100 VRN2G3PX6200 VRN2G3SX0000 VRN2G3PX0000			
65	6	VRN2G4SX6100 VRN2G4SX6200 VRN2G4PX6100 VRN2G4PX6200 VRN2G4SX0000 VRN2G4PX0000			
70		VRN2G5SX6100 VRN2G5SX6200 VRN2G5PX6100 VRN2G5PX6200 VRN2G5SX0000 VRN2G5PX0000			
75		VRN2G6SX6100 VRN2G6SX6200 VRN2G6PX6100 VRN2G6PX6200 VRN2G6SX0000 VRN2G6PX0000			
80	7	VRN2G7SX6100 VRN2G7SX6200 VRN2G7PX6100 VRN2G7PX6200 VRN2G7SX0000 VRN2G7PX0000			
85		VRN2G8SX6100 VRN2G8SX6200 VRN2G8PX6100 VRN2G8PX6200 VRN2G8SX0000 VRN2G8PX0000			
95*		VRN2G9SX6100 VRN2G9SX6200 VRN2G9PX6100 VRN2G9PX6200 VRN2G9SX0000 VRN2G9PX0000			
25	4	VRN2HQSX6100 VRN2HQSX6200 VRN2HQPX6100 VRN2HQPX6200 VRN2HQSX0000 VRN2HQPX0000			
30		VRN2HRSX6100 VRN2HRSX6200 VRN2HRPX6100 VRN2HRPX6200 VRN2HRSX0000 VRN2HRPX0000			
35		VRN2HSSX6100 VRN2HSSX6200 VRN2HSPX6100 VRN2HSPX6200 VRN2HSSX0000 VRN2HSPX0000			
40	6	VRN2HTSX6100 VRN2HTSX6200 VRN2HTPX6100 VRN2HTPX6200 VRN2HTSX0000 VRN2HTPX0000			
45		VRN2HUSX6100 VRN2HUSX6200 VRN2HUPX6100 VRN2HUPX6200 VRN2HUSX0000 VRN2HUPX0000			
50		VRN2H1SX6100 VRN2H1SX6200 VRN2H1PX6100 VRN2H1PX6200 VRN2H1SX0000 VRN2H1PX0000			
55	7	VRN2H2SX6100 VRN2H2SX6200 VRN2H2PX6100 VRN2H2PX6200 VRN2H2SX0000 VRN2H2PX0000			
60		VRN2H3SX6100 VRN2H3SX6200 VRN2H3PX6100 VRN2H3PX6200 VRN2H3SX0000 VRN2H3PX0000			
65		VRN2H4SX6100 VRN2H4SX6200 VRN2H4PX6100 VRN2H4PX6200 VRN2H4SX0000 VRN2H4PX0000			
70	4	VRN2H5SX6100 VRN2H5SX6200 VRN2H5PX6100 VRN2H5PX6200 VRN2H5SX0000 VRN2H5PX0000			
75		VRN2H6SX6100 VRN2H6SX6200 VRN2H6PX6100 VRN2H6PX6200 VRN2H6SX0000 VRN2H6PX0000			
80		VRN2H7SX6100 VRN2H7SX6200 VRN2H7PX6100 VRN2H7PX6200 VRN2H7SX0000 VRN2H7PX0000			
85	1	VRN2H8SX6100 VRN2H8SX6200 VRN2H8PX6100 VRN2H8PX6200 VRN2H8SX0000 VRN2H8PX0000			
95*		VRN2H9SX6100 VRN2H9SX6200 VRN2H9PX6100 VRN2H9PX6200 VRN2H9SX0000 VRN2H9PX0000			

* Full port ball

** Differential pressure regulator operating range, ±5%

Pressure Independent Control Valves, Flanged 2½"-6"

Common Features

- Multi-sized bodies from 2-1/2 to 6 inch pipes with wafer flanged connections.
- Combination ANSI/ASME Class 150/300 pressure rating.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 39 to 469 gpm.
- Stainless steel pressure regulator maintains constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design provides flow control accuracy of ±5% over specified pressure range.
- Equal percentage flow characteristic using multi turn, nonrising, characterized plug.
- High close-off rating.
- 50 discrete, selectable flow rates available per valve size.
- Stainless steel trim.
- Six-turn actuator with floating or modulating inputs available with stay-in-place or electronic fail safe action.
- Fail safe actuators field-configurable for normally open or normally closed power failure return position.
- Two Test Ports for venting or pressure gauge attachment.



Flanged Pressure Independent Control Valves							
Actuator Features			Non-Fail Safe		Fail Safe		
Power Supply	Voltage		24 Vac/30 Vdc		24 Vac/30 Vdc		
	Frequency		50 / 60 Hz		50 / 60 Hz		
	Power		20 VA		20 VA		
Enclosure	(ingress protection)		IP44		IP44		
Control	2-10 Vdc		•		•		
	4-20 mA (w/external 500 Ohm Resistor)		•		•		
	Pulse-width Modulating		•		•		
	Floating		•		•		
	Two-Position SPDT		•		•		
Fail Safe Action	(field configurable*)		Stay in Place		Open/Closed*		
Normal Position (no signal)	(field configurable)		Open/Closed		Open/Closed		
Actuator Stroke	(degrees)		6 x 360°		6 x 360°		
Timing	(seconds, 60 Hz)		150		150		
Feedback	4-20 mA (2-10 Vdc) Built in		•		•		
			Trim		Stainless Steel		
			Body		Cast Iron		
			Pressure Ratings		ANSI 150/300		
			Test Ports		Two - 1/4" ISO		
Valve Features							
Valve Size	Flow, gpm*		Differential Pressure (psid)			Valve O.S. Number	
	Min.	Max.	Min.**	Max.**	Close-off		
2-1/2 and 3 in. [DN65-DN80]	39	112	5.1	58	100	VRW2JV4SMB	VRW2JV4SMD
	56	155	11.6			VRW2JW4SMB	VRW2JW4SMD
3 and 4 in. [DN80-DN100]	55	147	5.1			VRW2KV4SMB	VRW2KV4SMD
	73	222	8.6			VRW2KW4SMB	VRW2KW4SMD
5 and 6 in. [DN125-DN150]	103	370	5.1			VRW2LV4SMB	VRW2LV4SMD
	118	469	8.6			VRW2LW4SMB	VRW2LW4SMD

* Field adjustable

** Differential pressure regulator operating range, ±5%

VALVES

Product Selection - Valves

NPT Globe Valves 1/2" - 3", With Dedicated Valve Actuators

For more than 50 years, Honeywell Globe Valves (V5011/13, VGF) have provided precise control for most applications.

Globe valves provide the rangeability and close-off needed to keep tight control of the environment.

Valve and Actuator Assemblies available.

Full part numbers are **valve part number+actuator part number**

Example of complete orderable part number: **V5011N1008+ML7984A4009**



Actuator Features		Non-Fail Safe					
Actuator O.S. Number		ML7984A4009	ML6984A4000	ML7420A3065	ML7420A3063	ML6420A3049	ML6420A3066
Power Supply	Voltage	24 Vac / 28 Vdc	24 Vac / 28 Vdc	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	0 / 50 / 60 Hz	0 / 50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power	12 VA	12 VA	7 VA	7 VA	6 VA	6 VA
Stem Force	(lbs.)	160	160	135	135	135	135
Control	(0)2-10 Vdc	•		•	•		
	4-20 mA (external 500 Ohm Resistor)	Built-in		•	•		
	Floating		•			•	•
	Two-Position SPDT		•			•	•
	Two-Position SPST						
	135 Ohm	•					
Fail Safe Action		Stay in place	Stay in place	Stay in place	Stay in place	Stay in place	Stay in place
Normal Position (no signal)	(field configurable)	Stem Up	Stem Up	Stem Up	Stem Up	Stem Up	Stem Up
Actuator Stroke	(inches)	0.5 - 1 self adj	0.5 - 1 self adj	0.75	0.75	0.75	0.75
Timing	(seconds at 0.75" stroke)	63	63	60	30	60	30
Aux Switch	1 x SPDT Add-On	272630D	272630D				
	2 x SPDT Add-On					43191680-105	43191680-105
Feedback	2-10 Vdc Built-in			•	•		
	2-10 Vdc Add-On	272630D	272630D	•	•		
	220 Ohm Add-On			43191679-112	43191679-112	43191679-112	43191679-112
	10 kOhm Add-On			43191679-111	43191679-111	43191679-111	43191679-111

Valve Size (inches)	Cv	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid						
2-Way Water Valves Straight Through	1/2"	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem down to close	V5011N1008	230	230	230	230	230	230	
					Stem down to close	V5011N1016	230	230	230	230	230	230	
					Stem down to close	V5011N1024	230	230	230	230	230	230	
					Stem down to close	V5011N1032	230	230	230	230	230	230	
					Stem up to close	V5011N3004	230	230	230	230	230	230	
					Stem down to close	V5011N1040	230	230	230	230	230	230	
	3/4"	250 psi @ 100F	100 psig / 337 F	Linear	Stem down to close	Stem up to close	V5011N3012	230	230	230	230	230	230
						Stem down to close	V5011N1057	230	230	230	230	230	230
						Stem up to close	V5011N3020	230	230	230	230	230	230
						Stem down to close	V5011N1065	193	193	163	163	163	163
						Stem up to close	V5011N3038	193	193	163	163	163	163
						Stem down to close	V5011N1073	123	123	104	104	104	104
						Stem up to close	V5011N3046	123	123	104	104	104	104
						Stem down to close	V5011N1081	79	79	67	67	67	67
						Stem down to close	V5011N1099	44	44	37	37	37	37
						Stem down to close	V5011F1105	33	33	28	28	28	28
2"	250 psi @ 100F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	Stem down to close	V5011F1113	19	19	16	16	16	16	
					Stem down to close	V5011N2006	100	100	100	100	100	100	
3-Way Water Valves Mixing	1/2"	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	Stem down to close	V5011N2014	100	100	100	100	100	
						Stem down to close	V5011N2022	100	100	100	100	100	100
						Stem down to close	V5011N2030	100	100	100	100	100	100
						Stem down to close	V5011N2048	100	100	100	100	100	100
						Stem down to close	V5011N2055	100	100	100	100	100	100
						Stem down to close	V5011N2063	100	100	100	100	100	100
	3/4"	250 psi @ 100F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	Stem down to close	V5011N2071	100	100	100	100	100	
						Stem down to close	V5011N2089	79	79	67	67	67	67
						Stem down to close	V5011N2097	44	44	37	37	37	37
						Stem down to close	V5011G1111	33	33	28	28	28	28
						Stem down to close	V5011G1129	19	19	16	16	16	16
						Stem down to close	V5013N1030	230	230	230	230	230	230
1"	250 psi @ 100F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	Stem down to close	V5013N1048	230	230	230	230	230		
					Stem down to close	V5013N1055	230	230	230	230	230	230	
					Stem down to close	V5013N1063	193	193	163	163	163	163	
					Stem down to close	V5013N1071	123	123	104	104	104	104	
					Stem down to close	V5013N1089	79	79	67	67	67	67	
					Stem down to close	V5013N1097	44	44	37	37	37	37	

NPT Globe Valves 1/2" - 3", With Dedicated Valve Actuators

Common Features

- ANSI body class 150
- Close-off pressure = maximum differential pressure
- Maximum static water pressure (250°F): 240 psi
- Maximum steam pressure
- 2-way steam valves, 337°F: 100 psi
- 2-way water valves: 15 psi
- Stem travel: 0.75"
- Rangeability: 50:1
- Leakage < 0.05% of Cv
- Body material: Red brass, stainless steel stem (steam valve has stainless steel trim.)

Valve and Actuator Assemblies available.

Full part numbers are **valve part number+actuator part number**

Example of complete orderable part number: **V5011N1008+ML7421A1032**



Actuator Features		Non-Fail Safe		Fail Safe			
Actuator O.S. Number		ML7421A1032	ML6421A1017	ML7425A3013	ML7425B3012	ML6425A3022	ML6425B3013
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power	12 VA	11 VA	12 VA	12 VA	11 VA	11 VA
Stem Force	(lbs.)	404	404	135	135	135	135
Control	(0)2-10 Vdc	•		•	•		
	4-20 mA (external 500 Ohm Resistor)	•		•	•		
	Floating		•			•	•
	Two-Position SPDT		•			•	•
	Two-Position SPST					•	•
	135 Ohm						
Fail Safe Action		Stay in place	Stay in place	Stem Down	Stem Up	Stem Down	Stem Up
Normal Position (no signal)	(field configurable)	Stem Up	Stem Up	Stem Up	Stem Up	Stem Up	Stem Up
Actuator Stroke	(inches)	0.75	0.75	0.75	0.75	0.75	0.75
Timing	(seconds at 0.75" stroke)	90	90	90	90	90	90
Aux Switch	1 x SPDT Add-On						
	2 x SPDT Add-On		43191680-102			43191680-105	43191680-105
Feedback	2-10 Vdc Built-in	•		•	•		
	2-10 Vdc Add-On						
	220 Ohm Add-On			43191679-112	43191679-112	43191679-112	43191679-112
	10 kOhm Add-On	43191679-101	43191679-101	43191679-111	43191679-111	43191679-111	43191679-111

Valve Size (inches)	Cv	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid						
2-Way Water Valves Straight Through	1/2"	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem down to close	V5011N1008			230*	230**	230*	230**	
					Stem down to close	V5011N1016			230*	230**	230*	230**	
					Stem down to close	V5011N1024			230*	230**	230*	230**	
					Stem down to close	V5011N1032			230*	230**	230*	230**	
					Stem up to close	V5011N3004			230**	230*	230**	230*	
					Stem down to close	V5011N1040			230*	230**	230*	230**	
	3/4"	7.3	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem up to close	V5011N3012			230*	230**	230*	230**
						Stem down to close	V5011N1057			230*	230**	230*	230**
						Stem up to close	V5011N3020			230**	230*	230**	230*
						Stem down to close	V5011N1065	230	230	163*	163**	163*	163**
						Stem up to close	V5011N3038	230	230	163**	163*	163**	163*
						Stem down to close	V5011N1073	230	230	104*	104**	104*	104**
	1-1/4"	18.7	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem up to close	V5011N3046	230	230	104**	104*	104**	104*
						Stem down to close	V5011N1081	221	221	67*	67**	67*	67**
						Stem down to close	V5011N1099	126	126	37*	37**	37*	37**
						Stem down to close	V5011F1105	100	100	28*	28**	28*	28**
Stem down to close						V5011F1113	61	61	16*	16**	16*	16**	
Stem down to close						V5011N2006			100*	100**	100*	100**	
2-Way Steam Valves Straight Through	1/2"	217 psi @ 248 F	100 psig / 337 F	Linear	Stem down to close	V5011N2014			100*	100**	100*	100**	
						V5011N2022			100*	100**	100*	100**	
						V5011N2030			100*	100**	100*	100**	
						V5011N2048			100*	100**	100*	100**	
						V5011N2055			100*	100**	100*	100**	
						V5011N2063	100	100	100*	100**	100*	100**	
	3/4"	7.3	217 psi @ 248 F	100 psig / 337 F	Linear	Stem down to close	V5011N2071	100	100	100*	100**	100*	100**
							V5011N2089	100	100	67*	67**	67*	67**
							V5011N2097	100	100	37*	37**	37*	37**
							V5011G1111	100	100	28*	28**	28*	28**
							V5011G1129	61	61	16*	16**	16*	16**
							V5013N1030			230	230	230	230
3-Way Water Valves Mixing	1/2"	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1048			230	230	230	230	
						V5013N1055			230	230	230	230	
						V5013N1063	230	230	163	163	163	163	
						V5013N1071	230	230	104	104	104	104	
						V5013N1089	221	221	67	67	67	67	
						V5013N1097	126	126	37	37	37	37	

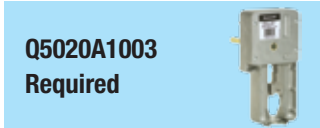
* valve is Normally Closed on loss of power
** valve is Normally Open on loss of power.

Product Selection - Valves

NPT Globe Valves 1/2" - 3", With DCA and Valve Linkage

Common Features

- ANSI body class 150
- Close-Off pressure = maximum differential pressure
- Maximum static water pressure (250°F): 240 psi
- Maximum steam pressure 2-way steam valves, 337°F: 100 psi
2-way water valves: 15 psi
- Stem travel: 0.75"
- Rangeability: 50:1
- Leakage < 0.05% of Cv
- Body material: Red brass, stainless steel stem (steam valve has stainless steel trim.)



Actuator Features		Non-Fail Safe					
Actuator O.S. Number		ML7161A2008	ML6161B2024	ML7174A2001	ML6174B2019	MN7505A2001 MN7505A2209	MN6105A1011 MN6105A1201
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power	5.4 VA	1.8 VA	5.4 VA	2.4 VA	5 VA	5 VA
Actuator Torque	(lb.-in.)	35	35	70	70	44	44
Linkage Stem Force	(lbs.)	46	46	93	93	58	58
Control	(0)2-10 Vdc	•		•		•	
	4-20 mA (external 500 Ohm Resistor)	•		•		•	
	Floating		•		•	•	•
	Two-Position SPDT		•		•	•	•
	Two-Position SPST					•	•
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place
Normal Position (no signal)	(field configurable)	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(inches)	90°	90°	90°	90°	95°	95°
Timing	(seconds at 0.75" stroke)	90	90	90	90	95	95
Aux Switch	2 x SPDT Built In					0 / 2	0 / 2
	1 x SPDT Add-On	201052A	201052A	201052A	201052A		
	2 x SPDT Add-On	201052B	201052B	201052B	201052B	SSW2	SSW2
Feedback	(0)2-10 Vdc Built In					•	
	500 Ohm Add-On	200976A	200976A	200976A	200976A		
	2 kOhm Add-On	200976B	200976B	200976B	200976B		

	Valve Size (inches)	Cv	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid					
2-Way Water Valves Straight Through	1/2"	0.73	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem down to close	V5011N1008	230	230	230	230	230	230
		1.16					V5011N1016	230	230	230	230	230	230
		1.85					V5011N1024	230	230	230	230	230	230
		2.9					V5011N1032	230	230	230	230	230	230
		2.9					V5011N3004	230	230	230	230	230	230
	4.7	V5011N1040					143	143	230	230	188	188	
	4.7	V5011N3012					143	143	230	230	188	188	
	3/4"	7.3					V5011N1057	69	69	156	156	91	91
	3/4"	7.3					V5011N3020	69	69	156	156	91	91
	1"	11.7					V5011N1065	47	47	109	109	63	63
	1"	11.7	V5011N3038	47	47	109	109	63	63				
	1-1/4"	18.7	V5011N1073	29	29	69	69	39	39				
	1-1/4"	18.7	V5011N3046	29	29	69	69	39	39				
	1-1/2"	29.3	V5011N1081	17	17	44	44	24	24				
	2"	46.8	V5011N1099	8	8	24	24	12	12				
2-Way Steam Valves Straight Through	1/2"	0.73	217 psi @ 248 F	100 psig / 337 F	Linear	Stem down to close	V5011F1105	5	5	16	16	7	7
		1.16					V5011N2006	100	100	100	100	100	100
		1.85					V5011N2014	100	100	100	100	100	100
		2.9					V5011N2022	100	100	100	100	100	100
		4.7					V5011N2030	100	100	100	100	100	100
	4.7	V5011N2048					100	100	100	100	100	100	
	3/4"	7.3					V5011N2055	69	69	100	100	91	91
	1"	11.7					V5011N2063	47	47	100	100	63	63
	1-1/4"	18.7					V5011N2071	29	29	69	69	39	39
	1-1/2"	29.3					V5011N2089	17	17	44	44	24	24
2"	46.8	V5011N2097	8	8	24	24	12	12					
2-1/2"	63	V5011G1111	5	5	16	16	7	7					
3"	100	V5011G1129	2	2	9	9	3	3					
3-Way Water Valves Mixing	1/2"	2.9	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1030	230	230	230	230	230	230
	1/2"	4.7					V5013N1048	143	143	230	230	188	188
	3/4"	7.3					V5013N1055	69	69	156	156	91	91
	1"	11.7					V5013N1063	47	47	109	109	63	63
	1-1/4"	18.7					V5013N1071	29	29	69	69	39	39
	1-1/2"	29.3					V5013N1089	17	17	44	44	24	24
	2"	46.8					V5013N1097	8	8	24	24	12	12

Product Selection - Valves

NPT Globe Valves 1/2" - 3", With DCA and Valve Linkage

**Q5020A1003
Required**



Actuator Features		Non-Fail Safe					
Actuator O.S. Number		MN7510A2001 MN7510A2009	MN6110A1003 MN6110A1201	MN7220A2007 MN7220A2205	MN6120A1002 MN6120A1200	MN7234A2008	MN6134A1003
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power	5 VA	5 VA	6 VA	6 VA	9 VA	9 VA
Actuator Torque	(lb.-in.)	88	88	175	175	300	300
Linkage Stem Force	(lbs.)	117	117	234	234	402	402
Control	(0)2-10 Vdc	•		•		•	
	4-20 mA (external 500 Ohm Resistor)	•		•		•	
	Floating	•	•	•	•		•
	Two-Position SPDT	•	•	•	•		•
	Two-Position SPST	•	•	•	•	•	•
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place
Normal Position (no signal)	(field configurable)	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(inches)	95°	95°	95°	95°	95°	95°
Timing	(seconds at 0.75" stroke)	95	95	95	95	95	95
Aux Switch	2 x SPDT Built In	0 / 2	0 / 2	0 / 2	0 / 2		
	1 x SPDT Add-On						
	2 x SPDT Add-On	SSW2	SSW2	SW2-US	SW2-US	SW2-US	SW2-US
Feedback	(0)2-10 Vdc Built In	•		•		•	
	500 Ohm Add-On						
	2 kOhm Add-On						

Valve Size (inches)	Cv	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid							
2-Way Water Valves Straight Through	1/2"	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem down to close	V5011N1008	230	230	230	230	230	230		
						V5011N1016	230	230	230	230	230	230		
						V5011N1024	230	230	230	230	230	230		
						V5011N1032	230	230	230	230	230	230		
						V5011N3004	230	230	230	230	230	230		
						V5011N1040	230	230	230	230	230	230		
	3/4"					7.3	V5011N3012	230	230	230	230	230	230	230
							V5011N1057	192	192	230	230	230	230	
							V5011N3020	192	192	230	230	230	230	
	1"					11.7	V5011N1065	135	135	230	230	230	230	
	1-1/4"					18.7	V5011N3038	135	135	230	230	230	230	
	1-1/4"					18.7	V5011N1073	85	85	168	168	230	230	
	1-1/2"					29.3	V5011N3046	85	85	168	168	230	230	
	2"					46.8	V5011N1081	55	55	113	113	180	180	
	2-1/2"					63	V5011N1099	30	30	63	63	103	103	
3"	100	V5011F1105	19	19	42	42	74	74						
		V5011F1113	11	11	26	26	45	45						
2-Way Steam Valves Straight Through	1/2"	217 psi @ 248 F	100 psig / 337 F	Linear	Stem down to close	V5011N2006	100	100	100	100	100	100		
						V5011N2014	100	100	100	100	100	100		
						V5011N2022	100	100	100	100	100	100		
						V5011N2030	100	100	100	100	100	100		
						V5011N2048	100	100	100	100	100	100		
						V5011N2055	100	100	100	100	100	100		
	3/4"					7.3	V5011N2063	100	100	100	100	100	100	
							V5011N2071	85	85	100	100	100	100	
							V5011N2089	55	55	100	100	100	100	
	1"					11.7	V5011N2097	30	30	58	58	100	100	
	1-1/4"					18.7	V5011G1111	19	19	42	42	74	74	
	1-1/2"					29.3	V5011G1129	11	11	26	26	45	45	
	2"					46.8								
	2-1/2"					63								
	3"					100								
3-Way Water Valves Mixing	1/2"	2.9	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1030	230	230	230	230	230		
	1/2"	4.7					V5013N1048	230	230	230	230	230		
	3/4"	7.3					V5013N1055	192	192	230	230	230		
	1"	11.7					V5013N1063	135	135	230	230	230		
	1-1/4"	18.7					V5013N1071	85	85	168	168	230		
	1-1/2"	29.3					V5013N1089	55	55	105	105	180		
	2"	46.8					V5013N1097	30	30	103	103	103		

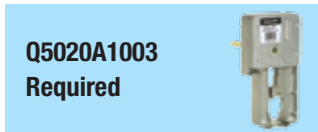
VALVES

Product Selection - Valves

NPT Globe Valves 1/2" - 3", With DCA and Valve Linkage

Common Features

- ANSI body class 150
- Close-Off pressure = maximum differential pressure
- Maximum static water pressure (250°F): 240 psi
- Maximum steam pressure
2-way steam valves, 337°F: 100 psi
2-way water valves: 15 psi
- Stem travel: 0.75"
- Rangeability: 50:1
- Leakage < 0.05% of Cv
- Body material: Red brass, stainless steel stem (steam valve has stainless steel trim.)



Actuator Features		Fail Safe					
Actuator O.S. Number		MS7505A2030 MS7505A2130	MS8105A1030 MS8105A1130	MS4105A1030 MS4105A1130	MS7510A2008 MS7510A2206 MS7510H2209	MS8110A1008 MS8110A1206	
Power Supply	Voltage	24 Vac	24 Vac	100-250 Vac	24 Vac	24 Vac	
	Frequency	50 / 60 Hz	50 / 60 Hz	60 Hz	50 / 60 Hz	50 / 60 Hz	
	Power	7.5VA	8 VA	11VA	14 VA	30 VA	
Actuator Torque	(lb.-in.)	44	44	44	88	88	
Linkage Stem Force	(lbs.)	58	58	58	117	117	
Control	(0)2-10 Vdc	•			•		
	4-20 mA (external 500 Ohm Resistor)	•			•		
	Floating	•			•		
Two-Position SPDT		•			•		
Two-Position SPST		•			•		
Fail Safe Action		Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed	
	Normal Position (no signal)	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down	
	Actuator Stroke	(inches)	95°	95°	95°	95°	95°
	Timing	(seconds at 0.75" stroke)	90	90	90	90	90
	Aux Switch	SPDT Built In	0 / 1	0 / 1	0 / 1	0 / 2 / 2	0 / 2
	2 x SPDT Add-On				SW2-US	SW2-US	
Feedback	2-10 Vdc Built In	•			•		

2-Way Water Valves Straight Through

Valve Size (inches)	Cv	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic
1/2"	0.73	217 psi @ 248 F	15 psi (2-position)	Equal %
	1.16			
	1.85			
	2.9			
	4.7			
	4.7			
	4.7			
3/4"	7.3			
3/4"	7.3			
1"	11.7			
1"	11.7			
1-1/4"	18.7			
1-1/4"	18.7			
1-1/2"	29.3			
2"	46.8			
2-1/2"	63	250 psi @ 100F		
3"	100	250 psi @ 100F		

2-Way Steam Valves Straight Through

Valve Size (inches)	Cv	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic
1/2"	0.73	217 psi @ 248 F	100 psig / 337 F	Linear
	1.16			
	1.85			
	2.9			
	4.7			
	4.7			
	4.7			
3/4"	7.3			
1"	11.7			
1-1/4"	18.7			
1-1/2"	29.3			
2"	46.8			
2-1/2"	63	250 psi @ 100F		
3"	100	250 psi @ 100F		

3-Way Water Valves Mixing

Valve Size (inches)	Cv	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic
1/2"	2.9	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB
1/2"	4.7			
3/4"	7.3			
1"	11.7			
1-1/4"	18.7			
1-1/2"	29.3			
2"	46.8			

Valve Action	Valve OS Number	Close-off Pressure, psid				
Stem down to close	V5011N1008	230	230	230	230	230
Stem down to close	V5011N1016	230	230	230	230	230
Stem down to close	V5011N1024	230	230	230	230	230
Stem down to close	V5011N1032	230	230	230	230	230
Stem up to close	V5011N3004	230	230	230	230	230
Stem down to close	V5011N1040	184	184	184	230	230
Stem up to close	V5011N3012	184	184	184	230	230
Stem down to close	V5011N1057	79	79	79	150	150
Stem up to close	V5011N3020	79	79	79	150	150
Stem down to close	V5011N1065	66	66	66	136	136
Stem up to close	V5011N3038	66	66	66	136	136
Stem down to close	V5011N1073	40	40	40	84	84
Stem up to close	V5011N3046	40	40	40	84	84
Stem down to close	V5011N1081	26	26	26	55	55
Stem down to close	V5011N1099	13	13	13	30	30
Stem down to close	V5011F1105	9	9	9	21	21
Stem down to close	V5011F1113	6	6	6	13	13
	V5011N2006	100	100	100	100	100
	V5011N2014	100	100	100	100	100
	V5011N2022	100	100	100	100	100
	V5011N2030	100	100	100	100	100
	V5011N2048	100	100	100	100	100
	V5011N2055	79	79	79	100	100
	V5011N2063	66	66	66	100	100
	V5011N2071	40	40	40	84	84
	V5011N2089	26	26	26	55	55
	V5011N2097	13	13	13	30	30
	V5011G1111	9	9	9	21	21
	V5011G1129	6	6	6	13	13
	V5013N1030	230	230	230	230	230
	V5013N1048	184	184	184	230	230
	V5013N1055	79	79	79	150	150
	V5013N1063	66	66	66	136	136
	V5013N1071	40	40	40	84	84
	V5013N1089	26	26	26	55	55
	V5013N1097	13	13	13	30	30

Product Selection - Valves

NPT Globe Valves 1/2"- 3", With DCA and Valve Linkage

**Q5020A1003
Required**



Actuator Features		Fail Safe			
Actuator O.S. Number		MS4110A1002 MS4110A1200	MS7520A2007 MS7520A2205 MS7520H2208	MS8120A1007 MS8120A1205	MS4120A1001 MS4120A1209
Power Supply	Voltage	100-250 Vac	24 Vac	24 Vac	100-250 Vac
	Frequency	60 Hz	50 / 60 Hz	50 / 60 Hz	60 Hz
	Power	45 VA	16 VA	40 VA	60 VA
Actuator Torque	(lb.-in.)	88	175	175	175
Linkage Stem Force	(lbs.)	117	234	234	234
Control	(0)2-10 Vdc		•		
	4-20 mA (external 500 Ohm Resistor)		•		
	Floating		•		
	Two-Position SPDT		•		
	Two-Position SPST		•		
Fail Safe Action		Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed
Normal Position (no signal) (field configurable)		Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(inches)	95°	95°	95°	95°
Timing	(seconds at 0.75" stroke)	90	90	90	90
Aux Switch	SPDT Built In	0 / 2	0 / 2 / 2	0 / 2	0 / 2
	2 x SPDT Add-On	SW2-US	SW2-US	SW2-US	SW2-US
Feedback	2-10 Vdc Built In		•		

	Valve Size (inches)	Cv	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid			
2-Way Water Valves Straight Through	1/2"	0.73	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem down to close	V5011N1008	230	230	230	230
		1.16					V5011N1016	230	230	230	230
		1.85					V5011N1024	230	230	230	230
		2.9					V5011N1032	230	230	230	230
		2.9					V5011N3004	230	230	230	230
		4.7					V5011N1040	230	230	230	230
	4.7	V5011N3012	230	230	230	230					
	3/4"	7.3	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem down to close	V5011N1057	150	230	230	230
	1"	11.7					V5011N3020	150	230	230	230
	1"	11.7					V5011N1065	136	230	230	230
	1-1/4"	18.7					V5011N3038	136	230	230	230
	1-1/4"	18.7					V5011N1073	84	171	171	171
	1-1/2"	29.3					V5011N3046	84	171	171	171
	2"	46.8	250 psi @ 100F	100 psig / 337 F	Linear	Stem down to close	V5011N1081	55	113	113	113
	2-1/2"	63					V5011N1099	30	63	63	63
	3"	100					V5011F1105	21	45	45	45
		V5011F1113					13	27	27	27	
		V5011N2006					100	100	100	100	
		V5011N2014					100	100	100	100	
2-Way Steam Valves Straight Through	1/2"	0.73	217 psi @ 248 F	100 psig / 337 F	Linear	Stem down to close	V5011N2022	100	100	100	100
		1.16					V5011N2030	100	100	100	100
		1.85					V5011N2048	100	100	100	100
		2.9					V5011N2055	100	100	100	100
		4.7					V5011N2063	100	100	100	100
		4.7					V5011N2071	84	100	100	100
	3/4"	7.3	250 psi @ 100F	100 psig / 337 F	Linear	Stem down to close	V5011N2089	55	100	100	100
	1"	11.7					V5011N2097	30	63	63	63
	1-1/4"	18.7					V5011G1111	21	45	45	45
	1-1/2"	29.3					V5011G1129	13	27	27	27
2"	46.8	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1030	230	230	230	230	
2-1/2"	63					V5013N1048	230	230	230	230	
3"	100					V5013N1055	150	230	230	230	
						V5013N1063	136	230	230	230	
						V5013N1071	84	171	171	171	
						V5013N1089	55	113	113	113	
3-Way Water Valves Mixing	1/2"	2.9	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1097	30	63	63	63
	1/2"	4.7									
	3/4"	7.3									
	1"	11.7									
	1-1/4"	18.7									
	1-1/2"	29.3									
	2"	46.8									

VALVES

Product Selection - Valves

NPT Globe Valves 1/2" - 3", With Pneumatic Actuator

Common Features

- Rolling diaphragm for long life and low hysteresis
- Easily installation and attachment to the valve
- Direct or reverse acting
- No positive positioner

Valve and Actuator Assemblies available.

Full part numbers are **valve part number+actuator part number**



Example of complete orderable part number: **V5011N3004+MP953C1000**



Actuator Features		Without Positive Positioner											
Actuator O.S. Number		MP953C1000	MP953C1018	MP953C1026	MP953C1067	MP953C1075	MP953C1083	MP953C1554	MP953C1562	MP953D1107	MP953D1131	MP953D1172	
Direct Acting / Reverse Acting		Direct Acting						Reverse Acting					
Diaphragm Size		5"			8"			13"			7-1/8"		
Fail Safe Action		Stem Up						Stem Down					
Actuator Force		Low			Medium			High			Medium		
Spring Range	2-7 psi	•			•			•					
	3-7 psi											•	
	8-12 psi		•			•							
	8-13 psi									•			
	4-11 psi			•			•		•		•		

Valve Size (inches)	Cv	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure - See Charts On Page 110-111													
					A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	N/A	C-NO	C-NO	C-NO	D*-NC	D*-NC	D*-NC	
2-Way Water Valves Straight Through	1/2"	2.9	Equal %	Stem up to close	V5011N3004	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	N/A	C-NO	C-NO	C-NO			
	1/2"	4.7			V5011N3012	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	N/A	C-NO	C-NO	C-NO			
	3/4"	7.3			V5011N3020	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	N/A	C-NO	C-NO	C-NO			
	1"	11.7			V5011N3038	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	N/A	C-NO	C-NO	C-NO			
	1-1/4"	18.7			V5011N3046	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	N/A	C-NO	C-NO	C-NO			
	1/2"	0.73			V5011N1008	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC			
	1/2"	1.16		V5011N1016	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
	1/2"	1.85		V5011N1024	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
	1/2"	2.9		V5011N1032	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
	1/2"	4.7		V5011N1040	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
	3/4"	7.3		V5011N1057	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
	1"	11.7		V5011N1065	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
	1-1/4"	18.7		V5011N1073	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
	1-1/2"	29.3		V5011N1081	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
	2"	46.8		V5011N1099	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	N/A	D-NC	D-NC	D-NC				
2-1/2"	63	V5011F1105	L-NO	L-NO	L-NO	L-NO	L-NO	L-NO	N/A	G-NC	G-NC	G-NC						
3"	100	V5011F1113	L-NO	L-NO	L-NO	L-NO	L-NO	L-NO	N/A	G-NC	G-NC	G-NC						
2-Way Steam Valves Straight Through	1/2"	0.73	Linear	Stem down to close	V5011N2006	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	1/2"	1.16			V5011N2014	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	1/2"	1.85			V5011N2022	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	1/2"	2.9			V5011N2030	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	1/2"	4.7			V5011N2048	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	3/4"	7.3			V5011N2055	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	1"	11.7			V5011N2063	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	1-1/4"	18.7			V5011N2071	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	1-1/2"	29.3			V5011N2089	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	2"	46.8			V5011N2097	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC			
	2-1/2"	63			V5011G1111	L*-NO	L*-NO	L*-NO	L*-NO	L*-NO	L*-NO	N/A	G*-NC	G*-NC	G*-NC			
	3"	100			V5011G1129	L*-NO	L*-NO	L*-NO	L*-NO	L*-NO	L*-NO	N/A	G*-NC	G*-NC	G*-NC			
	3-Way Water Valves Mixing	1/2"			2.9	Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1030	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	N/A	K-NC	K-NC	K-NC
		1/2"			4.7			V5013N1048	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	N/A	K-NC	K-NC	K-NC
		3/4"			7.3			V5013N1055	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	N/A	K-NC	K-NC	K-NC
1"		11.7	V5013N1063	H-NC	H-NC			H-NC	J-NC	J-NC	J-NC	N/A	K-NC	K-NC	K-NC			
1-1/4"		18.7	V5013N1071	H-NC	H-NC			H-NC	J-NC	J-NC	J-NC	N/A	K-NC	K-NC	K-NC			
1-1/2"		29.3	V5013N1089	H-NC	H-NC			H-NC	J-NC	J-NC	J-NC	N/A	K-NC	K-NC	K-NC			
2"		46.8	V5013N1097	H-NC	H-NC			H-NC	J-NC	J-NC	J-NC	N/A	K-NC	K-NC	K-NC			

*The close-off pressure not to exceed rated pressure of steam valve
 NC = Normally Closed
 NO = Normally Open

Product Selection - Valves

NPT Globe Valves 1/2" - 3", With Pneumatic Actuator

Common Features

- Rolling diaphragm for long life and low hysteresis
- Easily installation and attachment to the valve
- Direct or reverse acting
- Integrated positive positioner

Valve and Actuator Assemblies available.

Full part numbers are **valve part number+actuator part number**



Example of complete orderable part number: **V5011N3004+MP953E1301**



Actuator Features		With Positive Positioner												
Actuator O.S. Number		MP953E1301	MP953E1319	MP953E1327	MP953E1368	MP953E1376	MP953E1384	MP953E1435	MP953E1443	MP953F1093	MP953F1101	MP953F1119		
Direct Acting / Reverse Acting		Direct Acting						Reverse Acting						
Diaphragm Size		5"				8"			13"			7-1/8"		
Fail Safe Action		Stem Up						Stem Down						
Actuator Force		Low			Medium			High			Medium			
Positioner Span	10 psi		•	•			•					•		
	5 psi					•			•					
	3 psi	•			•					•				

Valve Size (inches)	Cv	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure - See Charts On Page 110-111											
					A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	N/A	C-NO	C-NO	C-NO	D*-NC	D*-NC
2-Way Water Valves Straight Through		Equal %	Stem up to close	V5011N3004	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	N/A	C-NO	C-NO	C-NO		
1/2"	2.9			V5011N3012	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	C-NO	C-NO	C-NO			
3/4"	4.7			V5011N3020	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	C-NO	C-NO	C-NO			
1"	7.3			V5011N3038	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	C-NO	C-NO	C-NO			
1-1/4"	11.7			V5011N3046	A-NC	A-NC	A-NC	B-NC	B-NC	B-NC	C-NO	C-NO	C-NO			
1-1/2"	18.7			V5011N1008	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC			
1/2"	0.73		V5011N1016	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
1/2"	1.16		V5011N1024	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
1/2"	1.85		V5011N1032	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
1/2"	2.9		V5011N1040	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
1/2"	4.7		V5011N1057	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
3/4"	7.3		V5011N1065	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
1"	11.7		V5011N1073	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
1-1/4"	18.7		V5011N1081	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
1-1/2"	29.3		V5011N1099	F-NO	F-NO	F-NO	E-NO	E-NO	E-NO	D-NC	D-NC	D-NC				
2"	46.8	V5011F1105							G-NC	G-NC	G-NC					
2-1/2"	63	V5011G1111							G*-NC	G*-NC	G*-NC					
3"	100	V5011G1129							G*-NC	G*-NC	G*-NC					
2-Way Steam Valves Straight Through		Linear	Stem down to close	V5011N2006	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	N/A	D*-NC	D*-NC	D*-NC		
1/2"	0.73			V5011N2014	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
1/2"	1.16			V5011N2022	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
1/2"	1.85			V5011N2030	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
1/2"	2.9			V5011N2048	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
1/2"	4.7			V5011N2055	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
3/4"	7.3			V5011N2063	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
1"	11.7			V5011N2071	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
1-1/4"	18.7			V5011N2089	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
1-1/2"	29.3			V5011N2097	F*-NO	F*-NO	F*-NO	E*-NO	E*-NO	E*-NO	D*-NC	D*-NC	D*-NC			
2"	46.8										G*-NC	G*-NC	G*-NC			
2-1/2"	63										G*-NC	G*-NC	G*-NC			
3"	100								G*-NC	G*-NC	G*-NC					
3-Way Water Valves Mixing		Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1030	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	N/A	K-NC	K-NC	K-NC		
1/2"	2.9			V5013N1048	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	K-NC	K-NC	K-NC			
1/2"	4.7			V5013N1055	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	K-NC	K-NC	K-NC			
3/4"	7.3			V5013N1063	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	K-NC	K-NC	K-NC			
1"	11.7			V5013N1071	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	K-NC	K-NC	K-NC			
1-1/4"	18.7			V5013N1089	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	K-NC	K-NC	K-NC			
1-1/2"	29.3			V5013N1097	H-NC	H-NC	H-NC	J-NC	J-NC	J-NC	K-NC	K-NC	K-NC			
2"	46.8								K-NC	K-NC	K-NC					

*The close-off pressure not to exceed rated pressure of steam valve.
 **The close-off pressure not to exceed rated pressure of steam valve. Use 4-11 spring range for positive positioner models.
 NC = Normally Closed
 NO = Normally Open

Close-off Pressure Charts - Valves

NPT Globe Valves 1/2" - 3"

Chart A

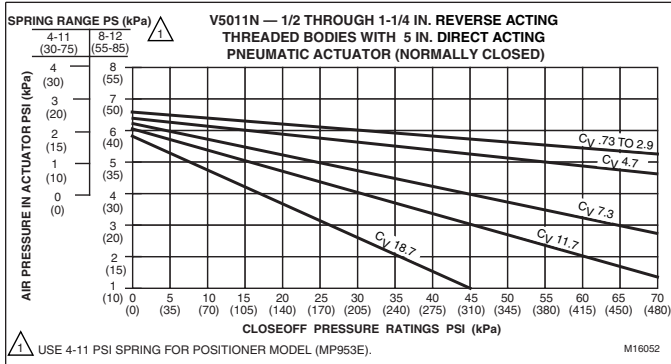


Chart B

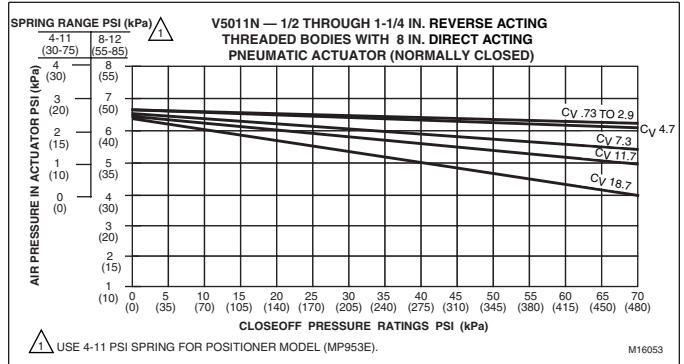


Chart E

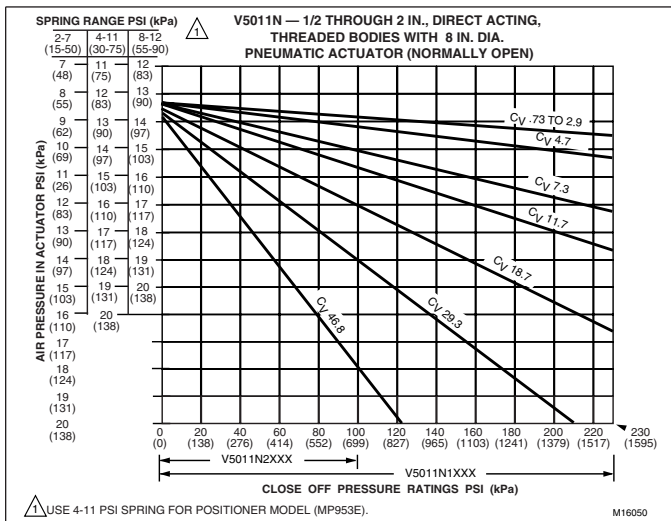


Chart F

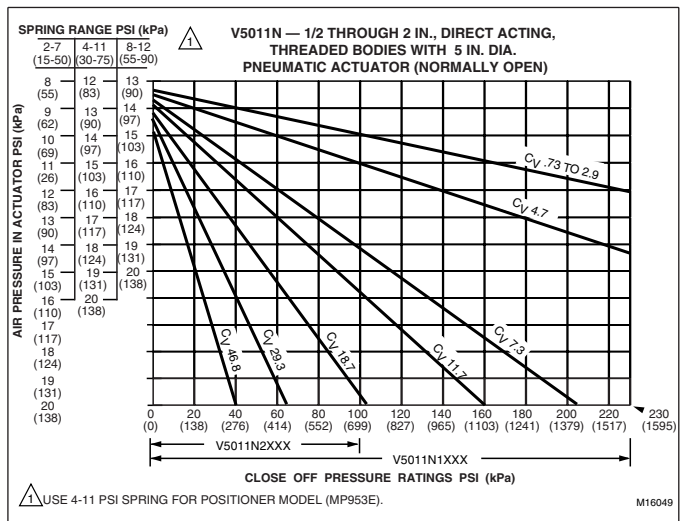


Chart J

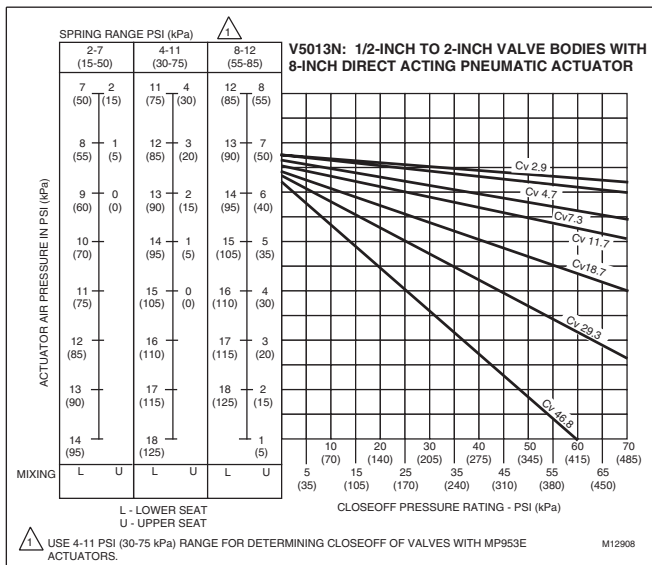
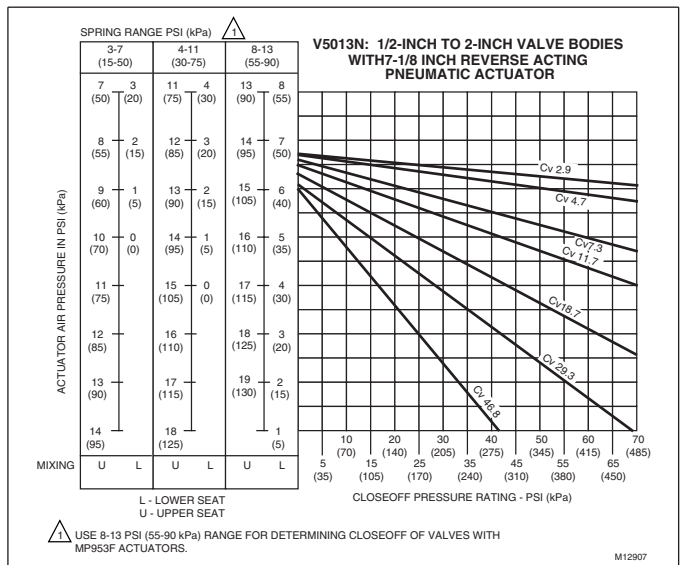


Chart K



Close-off Pressure Charts - Valves

NPT Globe Valves 1/2" - 3"

Chart C

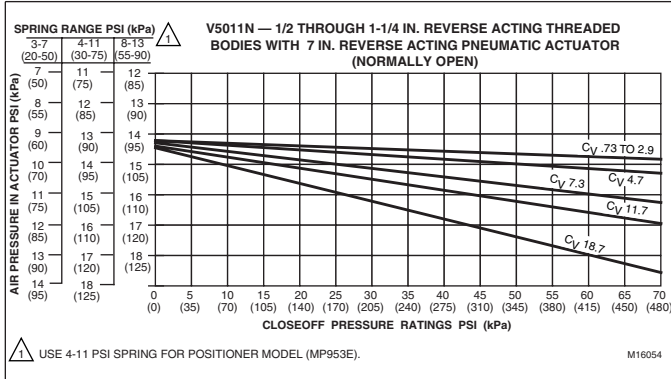


Chart D

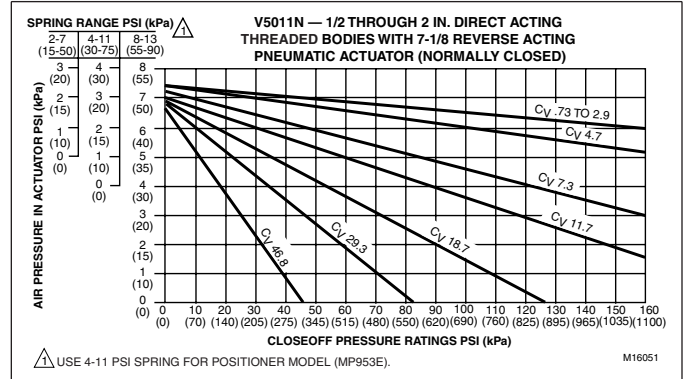


Chart G

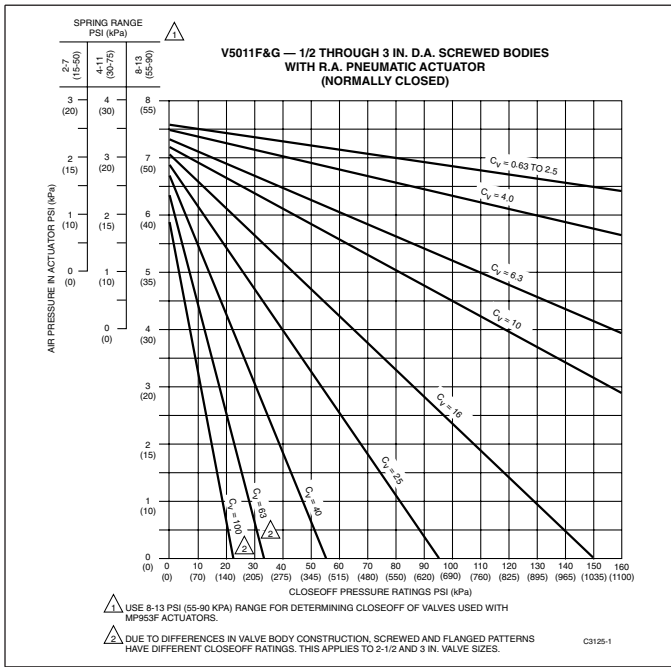


Chart H

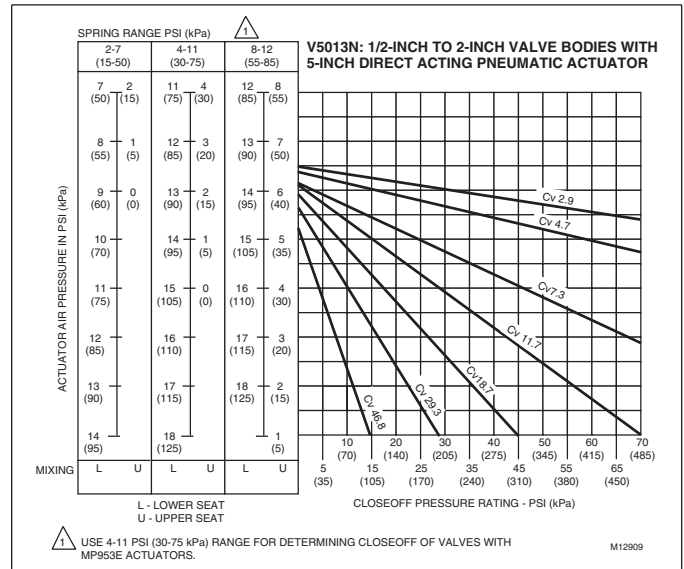
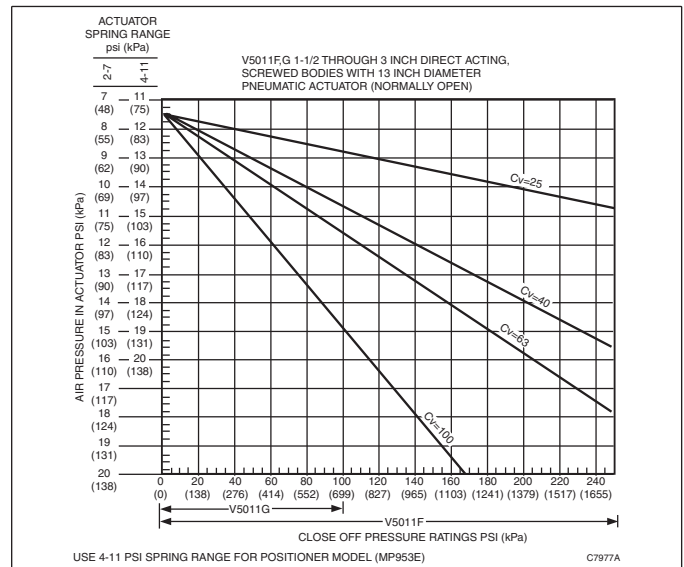


Chart L



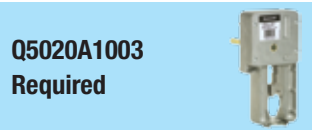
VALVES

Product Selection - Valves

Flanged Globe Valves 2½"- 3", With DCA and Valve Linkage

Common Features

- ANSI body class 125 or 250
- Close-off pressure = Maximum differential pressure
- Maximum static water pressure: Up to 400 psi
- Maximum steam pressure (VGF, 2-pos or modulating): 100 psi
- Maximum steam pressure (V5011, 2-pos): 15 psi
- Stem travel: 0.75"
- Rangeability: 50:1
- Body material: Cast iron
- Body trim: Stainless steel stem, brass seat (V5011/13), stainless steel (VGF)



Actuator Features		Non-fail Safe			
Actuator O.S. Number		MN7220A2007	MN6120A1002	MN7234A2008	MN6134A1003
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Actuator Torque	Power	6 VA	6 VA	9 VA	9 VA
	(lb.-in.)	175	175	300	300
Linkage Stem Force	(lbs.)	234	234	402	402
Control	(0)2-10 Vdc	•		•	
	4-20 mA (external 500 Ohm Resistor)	•		•	
	Floating	•	•		•
	Two-Position SPDT	•	•		•
	Two-Position SPST	•	•	•	•
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place
Normal Position (no signal)	(field configurable)	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(degrees)	95°	95°	95°	95°
Timing	(seconds)	95	95	95	95
High Temperature Kit	Steam Application	43196000-001	43196000-001	43196000-001	43196000-001
	Aux Switch	SPDT Built In	0 / 2	0 / 2	
	1 x SPDT Add-On				
	2 x SPDT Add-On	SW2-US	SW2-US	SW2-US	SW2-US
	Feedback	(0)2-10 Vdc Built In	•	•	
	500 Ohm Add-On				
	2 kOhm Add-On				

2-Way Water & Steam Valves ANSI Class III (< 0.05% Cv) Seat Leakage

Valve Size (Inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid			
ANSI Class III seat leakage												
2-1/2"	63	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1734	52	52	88	88
								VGF21ES25	52	52		
	70			175 psi @ 130 F	125 psig / 353 F	Equal %		VGF21LS25	52	52		
						Linear		VGF22ES25	52	52		
3"	100	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1767	24	24	42	42
								VGF21ES30	26	26		
	115			175 psi @ 130 F	125 psig / 353 F	Equal %		VGF21LS30	26	26		
						Linear		VGF22ES30	26	26		
120	400 psi @ 130 F			Equal %								
				Equal %								

2-Way Water & Steam Valves ANSI Class IV (< 0.01% Cv) Seat Leakage

Valve Size (Inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid							
ANSI Class IV seat leakage																
2-1/2"	70	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP25	175	175	175	175				
		Standard						VGF21ES25			77	77				
		Pressure Balanced						VGF21LP25	175	175	175	175				
	Standard	VGF21LS25						77	77							
	3"	115	Pressure Balanced	125				175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF22ES25			77	77
			Standard									VGF21EP30	175	175	175	175
Pressure Balanced			VGF21ES30				38					38				
120	Standard	Pressure Balanced	250	400 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21LP30				175	175	175	175	
		Standard						VGF21LS30						38	38	
		Standard						VGF22ES30						38	38	

3-Way Water Valves

Valve Size (Inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid													
ANSI Class III seat leakage																						
2-1/2"	63	Mixing	125	150 psi @ 240 F	N/A	Constant Total	Stem up closes A-AB	V5013B1003	52	52	88	88										
		Diverting						V5013C1001	52	52	88	88										
		Mixing						VGF31EM25	66	66	97	97										
		Diverting						VGF31LD25	52	52	97	97										
		Mixing						VGF32EM25	66	66	97	97										
		Diverting						VGF32LD25	52	52	97	97										
	3"	100	Mixing	125				150 psi @ 240 F	N/A	Constant Total	Stem up closes A-AB	V5013B1011	24	24	42	42						
			Diverting									V5013C1019	24	24	42	42						
			Mixing									VGF31EM30	44	44	65	65						
		Diverting	VGF31LD30									26	26	65	65							
		115	Standard									Mixing	250	400 psi @ 130 F	N/A	Equal % A-AB	Stem up closes A-AB	VGF32EM30	44	44	65	65
												Diverting						VGF32LD30	26	26	65	65
Linear, Constant Total																						
120	Standard	Mixing	250	400 psi @ 130 F	N/A	Linear, Constant Total	Stem up closes B-AB															
		Diverting																				
		Linear, Constant Total																				

Product Selection - Valves

Flanged Globe Valves 2 1/2" - 3", With DCA and Valve Linkage

Common Features

- ANSI body class 125 or 250
- Close-off pressure = Maximum differential pressure
- Maximum static water pressure: Up to 400 psi
- Maximum steam pressure (VGF, 2-pos or modulating): 100 psi
- Maximum steam pressure (V5011, 2-pos): 15 psi
- Stem travel: 0.75"
- Rangeability: 50:1
- Body material: Cast iron
- Body trim: Stainless steel stem, brass seat (V5011/13), stainless steel (VGF)



**Q5020A1003
Required**



Actuator Features		Fail Safe		
Actuator O.S. Number		MS7520A2007 MS7520A2205 MS7520HZ208	MS8120A1007	MS4120A1001
Power Supply	Voltage	24 Vac	24 Vac	100-250 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	60 Hz
	Power	16 VA	40 VA	60 VA
Actuator Torque	(lb.-in.)	175	175	175
Linkage Stem Force	(lbs.)	234	234	234
Control	(0)2-10 Vdc	•		
	4-20 mA (external 500 Ohm Resistor)	•		
	Floating	•		
	Two-Position SPDT	•		
	Two-Position SPST	•	•	•
Fail Safe Action		Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed
Normal Position (no signal)	(field configurable)	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(degrees)	95°	95°	95°
Timing	(seconds)	90	90	90
High Temperature Kit	Steam Application	43196000-001	43196000-001	43196000-001
Aux Switch	SPDT Built In	0 / 2 / 2	0 / 2	0 / 2
	1 x SPDT Add-On			
	2 x SPDT Add-On	SW2-US	SW2-US	SW2-US
Feedback	(0)2-10 Vdc Built In	•		
	500 Ohm Add-On			
	2 kOhm Add-On			

Valve Size (inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid						
ANSI Class III seat leakage															
2-1/2"	63	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1734	56	56	56				
				175 psi @ 130 F		Equal %		VGF21ES25	71	71	71				
				175 psi @ 130 F		Linear		VGF21LS25	71	71	71				
	3"		100	125	150 psi @ 240 F	15 psi (2-position)		Equal %	VGF22ES25	71	71	71			
					175 psi @ 130 F			Equal %	V5011A1767	25	25	25			
					175 psi @ 130 F			Linear	VGF21ES30	35	35	35			
	125	175 psi @ 130 F	125 psig / 353 F	Linear	VGF21LS30	35	35	35							
	120	400 psi @ 130 F	250	400 psi @ 130 F	Equal %	VGF22ES30	35	35	35						
ANSI Class IV seat leakage															
2-1/2"	70	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP25	175	175	175				
						Standard		Equal %	VGF21ES25						
		Standard	250	400 psi @ 130 F		Linear		VGF21LP25	175	175	175				
				Linear		Linear		VGF21LS25							
		3"	115	Pressure Balanced		125		175 psi @ 130 F	Equal %	VGF22ES25					
									Equal %	VGF21EP30	175	175	175		
Standard	250			400 psi @ 130 F	Linear	VGF21ES30									
				Linear	VGF21LP30	175	175	175							
	120	Standard	250	400 psi @ 130 F	Equal %	VGF21LS30									
	120	Standard	250	400 psi @ 130 F	Equal %	VGF22ES30									
ANSI Class III seat leakage															
2-1/2"	63	Mixing	125	150 psi @ 240 F	N / A	Constant Total	Stem up closes A-AB	V5013B1003	56	56	56				
						Constant Total		Stem up closes B-AB	V5013C1001	56	56	56			
						Equal % A-AB		Stem up closes A-AB	VGF31EM25	89	89	89			
		70				Diverting		250	400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF31LD25	71	71	71
										Equal % A-AB	Stem up closes A-AB	VGF32EM25	89	89	89
										Linear, Constant Total	Stem up closes B-AB	VGF32LD25	71	71	71
	3"	100	Mixing	125		150 psi @ 240 F	Constant Total	Stem up closes A-AB	V5013B1011	25	25	25			
							Constant Total	Stem up closes B-AB	V5013C1019	25	25	25			
							Equal % A-AB	Stem up closes A-AB	VGF31EM30	59	59	59			
		120	Diverting				250	400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF31LD30	35	35	35	
									Equal % A-AB	Stem up closes A-AB	VGF32EM30	59	59	59	
									Linear, Constant Total	Stem up closes B-AB	VGF32LD30	35	35	35	
	115	Mixing	250	400 psi @ 130 F											
	120	Diverting	250	400 psi @ 130 F											

2-Way Water & Steam Valves ANSI Class III (< 0.05% Cv) Seat Leakage

2-Way Water & Steam Valves ANSI Class IV (< 0.01% Cv) Seat Leakage

3-Way Water Valves

VALVES

Product Selection - Valves

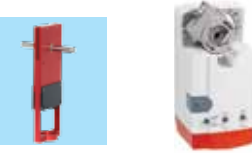
Threaded/Flanged Globe Valves 2"- 3", With Tandem DCA and Valve Linkage

Common Features

- Stem travel: 0.75"
- Rangeability: 50:1
- Body material: Bronze (V5011/13N), Cast iron
- Seat Material: Bronze (V5011/13), Stainless Steel (VGF2), Cast Iron (VGF3)
- Stem Material: Stainless Steel



**Q5022A1001
Required**



Actuator Features		Non-fail Safe			
		MN7220A2007	MN6120A1002	MN72342008	MN6134A1003
Actuator O.S. Number (Two required per linkage/valve)	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz
	6 VA	6 VA	9 VA	9 VA	9 VA
Actuator Torque	(lb.-in.)	175	175	300	300
Linkage Stem Force, Two Actuators	(lbs.)	655	655	1115	1115
Control	(0)2-10 Vdc	•	•	•	•
	4-20 mA (external 500 Ohm Resistor)	•	•	•	•
	Floating	•	•	•	•
	Two-Position SPDT	•	•	•	•
	Two-Position SPST	•	•	•	•
Fail Safe Action	Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place
	Normal Position (no signal) (field configurable)	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(inches)	0.75	0.75	0.75	0.75
Timing	(seconds)	95	95	95	95
Aux Switch	2 x SPDT Add-On	SW2-US	SW2-US	SW2-US	SW2-US
	2 x SPDT Built In				
Feedback	(0)2-10 Vdc Built In	•	•	•	•

Valve Size (inches)	Pipe Fitting	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid						
ANSI Class III seat leakage																
2"	f NPT	47	Standard	150	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem down to close	V5011N1099	162	162	240	240			
2"	f NPT	47		150	217 psi @ 248 F	100 psig / 337 F	Equal %		V5011N2097	100	100	100	100			
2-1/2"	Flanged	63		125	150 psi @ 240 F	15 psi (2-position)	Equal %		V5011A1734	130	130	225	225			
	f NPT			150	250 psi @ 100F	15 psi (2-position)	Equal %		V5011F1105	130	130	225	225			
	f NPT			150	250 psi @ 100F	100 psig / 337 F	Linear		V5011G1111	100	100	100	100			
	f NPT			125	175 psi @ 130 F	Equal %	VGF21ES25		110	110	190	190				
3"	Flanged	70		125	175 psi @ 130 F	125 psig / 353 F	Linear		VGF21LS25	110	110	190	190			
				250	400 psi @ 130 F	Equal %	VGF22ES25		110	110	190	190				
				125	150 psi @ 250 F	15 psi (2-position)	Equal %		V5011A1767	66	66	115	115			
				150	250 psi @ 100F	15 psi (2-position)	Equal %		V5011F1113	65	65	115	115			
	f NPT	100		150	250 psi @ 100F	100 psig / 337 F	Linear		V5011G1129	65	65	100	100			
				125	175 psi @ 130 F	Equal %	VGF21ES30		55	55	94	94				
			125	175 psi @ 130 F	Linear	VGF21LS30	55	55	94	94						
			250	400 psi @ 130 F	Equal %	VGF22ES30	55	55	94	94						
ANSI Class IV seat leakage																
2-1/2"	Flanged	70	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP25	175*	175*	175*	175*			
			Standard				VGF21ES25		74	74	152	152				
			Pressure Balanced				VGF21LP25		175*	175*	175*	175*				
			Standard				VGF21LS25		74	74	152	152				
		3"	115	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF22ES25	74	74	152	152		
				Standard				VGF21EP30		175*	175*	175*	175*			
				Pressure Balanced				VGF21ES30		36	36	75	75			
				Standard				VGF21LP30		175*	175*	175*	175*			
		120	Standard	250	400 psi @ 130 F			VGF21LS30	36	36	75	75				
		120	Standard	250	400 psi @ 130 F			VGF22ES30	36	36	75	75				
ANSI Class III seat leakage																
2-1/2"	f NPT	47	Mixing	150	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1097	162	162	240	240			
			Mixing				150 psi @ 240 F		Constant Total	V5013B1003	130	130	225	225		
			Diverting				150 psi @ 240 F		Constant Total	V5013C1001	130	130	225	225		
			Mixing				175 psi @ 130 F		Linear B-AB / Equal % A-AB	VGF31EM25	141	141	240	240		
		70	Diverting	175 psi @ 130 F	Linear, Constant Total	VGF31LD25	110	110	190	190						
			Mixing	250	400 psi @ 130 F	Linear B-AB / Equal % A-AB	VGF32EM25	141	141	240	240					
			Diverting	250	400 psi @ 130 F	Linear, Constant Total	VGF32LD25	110	110	190	190					
			Mixing	150 psi @ 240 F	Constant Total	V5013B1011	65	65	115	115						
	3"	Flanged	100	Diverting	125	175 psi @ 130 F	N / A	Constant Total	Stem up closes B-AB	V5013C1019	65	65	115	115		
				Mixing				175 psi @ 130 F		Linear B-AB / Equal % A-AB	VGF31EM30	94	94	160	160	
				Diverting				175 psi @ 130 F		Linear, Constant Total	VGF31LD30	110	110	190	190	
				Mixing				250		400 psi @ 130 F	Linear B-AB / Equal % A-AB	VGF32EM30	94	94	160	160
		120	120	120	Diverting	250	400 psi @ 130 F	N / A	Linear, Constant Total	Stem up closes B-AB	VGF32LD30	110	110	190	190	

*Only requires single actuator

** For high pressure steam-rated valves, close-off is the lesser of Maximum Steam Pressure or water close-off rating

Threaded/Flanged Globe Valves 2"- 3", With Tandem DCA and Valve Linkage

Common Features

- Stem travel: 0.75"
- Rangeability: 50:1
- Body material: Bronze (V5011/13N), Cast iron
- Seat Material: Bronze (V5011/13), Stainless Steel (VGF2), Cast Iron (VGF3)
- Stem Material: Stainless Steel



**Q5022A1001
Required******



Actuator Features		Fail Safe		
Actuator O.S. Number (Two required per linkage/valve)		MS7520A2007 MS7520A2205	MS8120A1007	MS4120A1001
Power Supply	Voltage	24 Vac	24 Vac	100-250 Vac
	Frequency	60 Hz	60 Hz	60 Hz
	Power	16 VA	40 VA	60 VA
Actuator Torque	(lb.-in.)	175	175	175
Linkage Stem Force, Two Actuators	(lbs.)	655	655	655
Control	(0)2-10 Vdc	•		
	4-20 mA (external 500 Ohm Resistor)	•		
	Floating	•		
	Two-Position SPDT	•		
	Two-Position SPST	•	•	•
Fail Safe Action		Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed
Normal Position (no signal)	(field configurable)	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(inches)	0.75	0.75	0.75
Timing	(seconds)	90	90	90
Aux Switch	2 x SPDT Add-On	SW2-US	SW2-US	SW2-US
	2 x SPDT Built In	0 / 2		
Feedback	(0)2-10 Vdc Built In	•		

Valve Size (inches)	Pipe Fitting	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid				
ANSI Class III seat leakage														
2"	f NPT	47	Standard	150	217 psi @ 248 F	15 psi (2-position)	Equal %	Stem down to close	V5011N1099	162	162	162		
2"	f NPT	47		150	217 psi @ 248 F	100 psig / 337 F	Equal %		V5011N2097	100	100	20		
2-1/2"	Flanged	63		125	150 psi @ 240 F	15 psi (2-position)	Equal %		V5011A1734	130	130	130		
				150	250 psi @ 100F	15 psi (2-position)	Equal %		V5011F1105	130	130	130		
	Flanged	70		150	250 psi @ 100F	100 psig / 337 F	Linear		V5011G1111	100	100	100		
				125	175 psi @ 130 F		Equal %		VGF21ES25	110	110	110		
				125	175 psi @ 130 F	125 psig / 353 F	Linear		VGF21LS25	110	110	110		
				250	400 psi @ 130 F		Equal %		VGF22ES25	110	110	110		
3"	Flanged	100		125	150 psi @ 250 F	15 psi (2-position)	Equal %		V5011A1767	66	66	66		
				150	250 psi @ 100F	15 psi (2-position)	Equal %		V5011F1113	65	65	65		
	Flanged	120		150	250 psi @ 100F	100 psig / 337 F	Linear		V5011G1129	65	65	65		
				125	175 psi @ 130 F		Equal %		VGF21ES30	55	55	55		
			125	175 psi @ 130 F	125 psig / 353 F	Linear	VGF21LS30	55	55	55				
			250	400 psi @ 130 F		Equal %	VGF22ES30	55	55	55				
ANSI Class IV seat leakage														
2-1/2"	Flanged	70	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP25	175*	175*	175*		
							Equal %		VGF21ES25	74	74	74		
			Standard	Linear	VGF21LP25		175*		175*	175*				
				Linear	VGF21LS25		74		74	74				
			115	Pressure Balanced	250		400 psi @ 130 F		Equal %	VGF22ES25	74	74	74	
									Equal %	VGF21EP30	175*	175*	175*	
		Standard		125	175 psi @ 130 F	Equal %	VGF21ES30	36	36	36				
				115	Pressure Balanced	Linear	VGF21LP30	175*	175*	175*				
				120	Standard	Linear	VGF21LS30	36	36	36				
				120	Standard	250	400 psi @ 130 F	Equal %	VGF22ES30	36	36	36		
		ANSI Class III seat leakage												
		2-1/2"	Flanged	47	Mixing	150	217 psi @ 248 F	N / A	Linear B-AB / Equal % A-AB	Stem up closes A-AB	V5013N1097	162	162	162
Constant Total	V5013B1003								130		130	130		
63	Mixing				125	150 psi @ 240 F	Constant Total		V5013C1001		130	130	130	
							Linear B-AB / Equal % A-AB		VGF31EM25		141	141	141	
70	Diverting				250	400 psi @ 130 F	Linear, Constant Total		VGF31LD25		110	110	110	
							Linear B-AB / Equal % A-AB		VGF32EM25		141	141	141	
	Mixing			250	400 psi @ 130 F	Linear, Constant Total	VGF32LD25		110		110	110		
						Constant Total	V5013B1011		65		65	65		
				100	Diverting	125	150 psi @ 240 F		Constant Total		V5013C1019	65	65	65
									Linear B-AB / Equal % A-AB		VGF31EM30	94	94	94
3"	Mixing			100	150 psi @ 240 F	Linear, Constant Total	VGF31LD30		110		110	110		
						Linear B-AB / Equal % A-AB	VGF32EM30		94		94	94		
	115			Mixing	250	400 psi @ 130 F	Linear, Constant Total		VGF32LD30		110	110	110	
							Linear B-AB / Equal % A-AB		VGF32EM30		94	94	94	
				120	Diverting	250	400 psi @ 130 F		Linear, Constant Total		VGF32LD30	110	110	110
									Linear B-AB / Equal % A-AB		VGF32EM30	94	94	94

*Only requires single actuator

** For high pressure steam-rated valves, close-off is the lesser of Maximum Steam Pressure or water close-off rating.

***Q5022A linkage compatible with VGF valves with 1/4-28UNF stem thread (Manufactured after June, 2005)

Product Selection - Valves

Flanged Globe Valves 2½"- 3", With Dedicated Valve Actuators



Common Features

- ANSI body class 125 or 250
- Close-off pressure = Maximum differential pressure
- Maximum static water pressure: Up to 400 psi
- Maximum steam pressure (VGF, 2-pos or modulating): 100 psi
- Maximum steam pressure (V5011, 2-pos): 15 psi
- Stem travel: 0.75"
- Rangeability: 50:1
- Body material: Cast iron
- Body trim: Stainless steel stem, brass seat (V5011/13), stainless steel (VGF)



Actuator Features		Non-fail Safe			
Actuator O.S. Number		ML7984A4009*	ML6984A4000**	ML7420A3065	ML7420A3063
	Power Supply	24 Vac / 28 Vdc	24 Vac / 28 Vdc	24 Vac	24 Vac
	Frequency	0 / 50 / 60 Hz	0 / 50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power	12 VA	12 VA	7 VA	7 VA
Stem Force	(lbs.)	160	160	135	135
Control	(0)2-10 Vdc	•		•	•
	4-20 mA (external 500 Ohm Resistor)	Built-in		•	•
	Floating		•		
	Two-Position SPDT		•		
	Two-Position SPST				
	135 Ohm	•			
Fail Safe Action		Stay in place	Stay in place	Stay in place	Stay in place
Normal Position (no signal)	(field configurable)	Stem Up	Stem Up	Stem Up	Stem Up
Actuator Stroke	(inches)	0.5 - 1 self adj	0.5 - 1 self adj	0.75	0.75
Timing	(seconds at 0.75" stroke)	63	63	60	30
High Temperature Kit	Steam Application			43196000-001	43196000-001
Aux Switch	1 x SPDT Add-On	272630D	272630D		
	2 x SPDT Add-On			43191680-105	43191680-105
Feedback	2-10 Vdc Built In			•	•
	2-10 Vdc Add-On	272630D	272630D		
	220 Ohm Add-On				
	10 kOhm Add-On				

Valve Size (inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid										
ANSI Class III seat leakage																			
2-1/2"	63	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1734	33	33	28	28							
								VGF21ES25	27*	27*	23	23							
								VGF21LS25	27*	27*	23	23							
	100			125	150 psi @ 240 F	15 psi (2-position)		Equal %	Stem down to close	V5011A1767	19	19	16	16					
										VGF21ES30	13*	13*	11	11					
										VGF21LS30	13*	13*	11	11					
120	250	400 psi @ 130 F	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF22ES30	13*	13*	11	11							
ANSI Class IV seat leakage																			
2-1/2"	70	Pressure Balanced Standard	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP25	175	175	175	175							
								VGF21ES25											
		Pressure Balanced Standard		250				400 psi @ 130 F	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21LP25	175	175	175		
														VGF21LS25					
		Standard		115				Pressure Balanced Standard	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF22ES25					
														VGF21EP30	175	175	175	175	
3"	115	Standard	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21ES30											
								VGF21LP30	175	175	175	175							
120	120	Standard	250	400 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21LS30											
								VGF22ES30											
ANSI Class III seat leakage																			
2-1/2"	63	Mixing	125	150 psi @ 240 F	N / A	Constant Total	Stem up closes A-AB	V5013B1003	27	27	23	23							
								Constant Total	Stem up closes B-AB	V5013C1001	25	25	21	21					
		Diverting		175 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF31EM25	34	34	29	29							
								Linear, Constant Total	Stem up closes B-AB	VGF31LD25	27	27	23	23					
		70		Mixing		250	400 psi @ 130 F	N / A	Equal % A-AB	Stem up closes A-AB	VGF32EM25	34	34	29	29				
	Diverting										250	400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD25	27	27	23	23
	3"	100		Mixing		125	150 psi @ 240 F	N / A	Constant Total	Stem up closes A-AB	V5013B1011	13	13	11	11				
											Constant Total	Stem up closes B-AB	V5013C1019	17	17	14	14		
		120		Diverting			175 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF31EM30	22	22	19	19				
Linear, Constant Total			Stem up closes B-AB		VGF31LD30						13	13	11	11					
115		Mixing	250	400 psi @ 130 F	Equal % A-AB		Stem up closes A-AB		VGF32EM30	22	22	19	19						
	Linear, Constant Total					Stem up closes B-AB		VGF32LD30	13	13	11	11							

*Requires 272629A adapter kit to provide upper stop for actuator torque switch

Product Selection - Valves

Flanged Globe Valves 2½"- 3", With Dedicated Valve Actuators



Actuator Features		Non-fail Safe			
Actuator O.S. Number		ML6420A3049	ML6420A3056	ML7421A1032	ML6421A1017
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power	6 VA	6 VA	12 VA	11 VA
Stem Force	(lbs.)	135	135	404	404
Control	(0)2-10 Vdc			•	
	4-20 mA (external 500 Ohm Resistor)			•	
	Floating	•	•		•
	Two-Position SPDT	•	•		•
	Two-Position SPST				
	135 Ohm				
Fail Safe Action		Stay in place	Stay in place	Stay in place	Stay in place
Normal Position (no signal)	(field configurable)	Stem Up	Stem Up	Stem Up	Stem Up
Actuator Stroke	(inches)	0.75	0.75	0.75	0.75
Timing	(seconds at 0.75" stroke)	60	30	90	90
High Temperature Kit	Steam Application	43196000-001	43196000-001	43196000-001	43196000-001
Aux Switch	1 x SPDT Add-On				
	2 x SPDT Add-On	43191680-105	43191680-105	43191680-102	43191680-102
Feedback	2-10 Vdc Built In			•	
	2-10 Vdc Add-On				
	220 Ohm Add-On	43191679-112	43191679-112		43191679-101
	10 kOhm Add-On	43191679-111	43191679-111		

Valve Size (inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid					
ANSI Class III seat leakage														
2-1/2"	63	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1734	28	28	77	77		
				175 psi @ 130 F				VG21ES25	23	23				
	175 psi @ 130 F			VG21LS25	23	23								
	400 psi @ 130 F			VG22ES25	23	23								
3"	100	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1767	16	16	53	53		
				175 psi @ 130 F				VG21ES30	11	11				
	175 psi @ 130 F			VG21LS30	11	11								
	400 psi @ 130 F			VG22ES30	11	11								
ANSI Class IV seat leakage														
2-1/2"	70	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VG21EP25	175	175	175	175		
		Standard						VG21ES25			69	69		
		Pressure Balanced						VG21LP25	175	175	175	175		
		Standard						VG21LS25			69	69		
3"	115	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VG22ES25			69	69		
		Standard						VG21EP30	175	175	175	175		
		Pressure Balanced						VG21ES30			34	34		
		Standard						VG21LP30	175	175	175	175		
3"	120	Standard	250	400 psi @ 130 F	N / A	Equal %	Stem down to close	VG21LS30			34	34		
		Standard						VG22ES30			34	34		
		Standard												
		Standard												
ANSI Class III seat leakage														
2-1/2"	63	Mixing	125	150 psi @ 240 F	N / A	Constant Total	Stem up closes A-AB	V5013B1003	23	23	77	77		
		Diverting						V5013C1001	21	21	77	77		
		Mixing						VG21EM25	29	29	87	87		
		Diverting						VG21LD25	23	23	69	69		
	70	Mixing	250	400 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	Linear, Constant Total	Stem up closes B-AB	VG23EM25	29	29	87	87
		Diverting								VG23LD25	23	23	69	69
		Mixing								VG23EM25	29	29	87	87
		Diverting								VG23LD25	23	23	69	69
3"	100	Mixing	125	150 psi @ 240 F	N / A	Constant Total	Stem up closes A-AB	V5013B1011	11	11	53	53		
		Diverting						V5013C1019	14	14	53	53		
		Mixing						VG23EM30	19	19	58	58		
		Diverting						VG23LD30	11	11	34	34		
	120	Mixing	250	400 psi @ 130 F		Equal % A-AB	Linear, Constant Total	Stem up closes A-AB	Stem up closes B-AB	VG23EM30	19	19	58	58
		Diverting								VG23LD30	11	11	34	34
		Mixing								VG23EM30	19	19	58	58
		Diverting								VG23LD30	11	11	34	34
120	Mixing	250	400 psi @ 130 F	Equal % A-AB	Linear, Constant Total	Stem up closes A-AB	Stem up closes B-AB	VG23EM30	19	19	58	58		
	Diverting							VG23LD30	11	11	34	34		
	Mixing							VG23EM30	19	19	58	58		
	Diverting							VG23LD30	11	11	34	34		

2-Way Water & Steam Valves ANSI Class III (< 0.05% Cv) Seat Leakage

2-Way Water & Steam Valves ANSI Class IV (< 0.01% Cv) Seat Leakage

3-Way Water Valves

VALVES

Product Selection - Valves

Flanged Globe Valves 2½"- 3", With Dedicated Valve Actuators



Common Features

- ANSI body class 125 or 250
- Close-off pressure = Maximum differential pressure
- Maximum static water pressure: Up to 400 psi
- Maximum steam pressure (VGF, 2-pos or modulating): 100 psi
- Maximum steam pressure (V5011, 2-pos): 15 psi
- Stem travel: 0.75"
- Rangeability: 50:1
- Body material: Cast iron
- Body trim: Stainless steel stem, brass seat (V5011/13), stainless steel (VGF)



Actuator Features	Fail Safe			
	ML7425A3013	ML7425B3012	ML6425A3022	ML6425B3013
Actuator O.S. Number				
Power Supply Voltage	24 Vac	24 Vac	24 Vac	24 Vac
Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Power	12 VA	12 VA	11 VA	11 VA
Stem Force (lbs.)	135	135	135	135
Control	(0)2-10 Vdc	•	•	
4-20 mA (external 500 Ohm Resistor)	•	•		
Floating			•	•
Two-Position SPDT			•	•
Two-Position SPST			•	•
135 Ohm				
Fail Safe Action	Stem Down (2-way N.C.)	Stem Up (2-way N.O.)	Stem Down (2-way N.C.)	Stem Up (2-way N.O.)
Normal Position (no signal) (field configurable)	Stem Up	Stem Up	Stem Up	Stem Up
Actuator Stroke (inches)	0.75	0.75	0.75	0.75
Timing (seconds at 0.75" stroke)	90	90	90	90
High Temperature Kit Steam Application	43196000-001	43196000-001	43196000-001	43196000-001
Aux Switch 1 x SPDT Add-On				
2 x SPDT Add-On	43191680-105	43191680-105	43191680-105	43191680-105
Feedback 2-10 Vdc Built In	•	•		
2-10 Vdc Add-On				
220 Ohm Add-On	43191679-112	43191679-112	43191679-112	43191679-112
10 kOhm Add-On	43191679-111	43191679-111	43191679-111	43191679-111

Valve Size (inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid						
ANSI Class III seat leakage															
2-1/2"	63	Standard	125	150 psi @ 240 F	15 psig (2-position)	Equal %	Stem down to close	V5011A1734	28	28	28	28			
				175 psi @ 130 F	125 psig / 353 F	Equal %		VGF21ES25	23	23	23	23			
				175 psi @ 130 F		Linear		VGF21LS25	23	23	23	23			
	100			400 psi @ 130 F		Equal %		VGF22ES25	23	23	23	23			
				115	125	150 psi @ 240 F		15 psig (2-position)	Equal %	V5011A1767	16	16	16	16	
					125	175 psi @ 130 F			Equal %	VGF21ES30	11	11	11	11	
120	125	175 psi @ 130 F		Linear	VGF21LS30	11	11	11	11	11					
	250	400 psi @ 130 F		Equal %	VGF22ES30	11	11	11	11	11					
	ANSI Class IV seat leakage														
2-1/2"	70	Pressure Balanced Standard	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP25	175	175	175	175			
						Equal %		VGF21ES25							
		Pressure Balanced Standard		Linear		VGF21LP25		175	175	175	175				
				Linear		VGF21LS25									
	Standard	250	400 psi @ 130 F	Equal %		VGF22ES25									
		115	Pressure Balanced Standard	125		175 psi @ 130 F		Equal %	VGF21EP30	175	175	175	175		
Equal %	VGF21ES30														
Pressure Balanced Standard	Linear		VGF21LP30		175		175	175	175						
	120	125	175 psi @ 130 F	Linear	VGF21LS30										
120	250	400 psi @ 130 F	Equal %	VGF22ES30											
ANSI Class III seat leakage															
2-1/2"	63	Mixing	125	150 psi @ 240 F	N / A	Constant Total	Stem up closes A-AB	V5013B1003	21	21	21	21			
						Constant Total	Stem up closes B-AB	V5013C1001	21	21	21	21			
						Equal % A-AB	Stem up closes A-AB	VGF31EM25	29	29	29	29			
		70		Diverting		175 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF31LD25	23	23	23	23		
						250	400 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF32EM25	29	29	29	29	
								Linear, Constant Total	Stem up closes B-AB	VGF32LD25	23	23	23	23	
	100	Mixing	125	150 psi @ 240 F		Constant Total	Stem up closes A-AB	V5013B1011	14	14	14	14			
						Constant Total	Stem up closes B-AB	V5013C1019	14	14	14	14			
						Equal % A-AB	Stem up closes A-AB	VGF31EM30	19	19	19	19			
		120	Diverting	125		175 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF31LD30	11	11	11	11		
							250	400 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF32EM30	19	19	19	19
									Linear, Constant Total	Stem up closes B-AB	VGF32LD30	11	11	11	11

2-Way Water & Steam Valves ANSI Class III (< 0.05% Cv) Seat Leakage

2-Way Water & Steam Valves ANSI Class IV (< 0.01% Cv) Seat Leakage

3-Way Water Valves

Product Selection - Valves

Flanged Globe Valves 4"- 6", With Tandem DCA and Valve Linkage

Common Features

- Stem travel: 1.5"
- Rangeability: 50:1
- Body material: Cast iron
- Seat Material: Bronze (V5011/13), Stainless Steel (VGF)
- Stem Material: Stainless Steel
- Normal position field configurable to stem up or stem down



**Q5022B1009
Required*****



Actuator Features		Non-fail Safe			
Actuator O.S. Number (Two Actuators per valve/linkage)		MN7220A2007	MN6120A1002	MN72342008	MN6134A1003
Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	60 Hz	60 Hz	60 Hz	60 Hz
	Power	6 VA	6 VA	9 VA	9 VA
Actuator Torque	(lb.-in.)	175	175	300	300
Linkage Stem Force, Two Actuators	(lbs.)	325	325	555	555
Control	(0)-10 Vdc	•	•	•	•
	4-20 mA (external 500 Ohm Resistor)	•	•	•	•
	Floating	•	•	•	•
	Two-Position SPDT	•	•	•	•
	Two-Position SPST	•	•	•	•
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place
Normal Position (no signal)	(field configurable)	Stem Up/Down	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(inches)	1.5	1.5	1.5	1.5
Timing	(seconds)	95	95	95	95
Aux Switch	2 x SPDT Add-On	SW2-US	SW2-US	SW2-US	SW2-US
	2 x SPDT Built In				
Feedback	(0)-10 Vdc Built In	•	•	•	•

Valve Size (inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid				
ANSI Class III seat leakage													
4"	160	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1858	20	20	34	34	
	160			150 psi @ 240 F	15 psi (2-position)	Equal %	Stem up to close	V5011B1013	20	20	34	34	
	150			175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21ES40	27	27	47	47	
	155			175 psi @ 130 F		Linear		VGF21LS40	27	27	47	47	
	150			400 psi @ 130 F		Equal %		VGF22ES40	27	27	47	47	
	250			150 psi @ 240 F		15 psi (2-position)		Equal %	V5011A1882	16	16	28	28
	250		150 psi @ 240 F	15 psi (2-position)	Equal %	Stem up to close	V5011B1047	16	16	28	28		
	285		175 psi @ 130 F	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21ES50	11	11	18	18
	320		175 psi @ 130 F		Linear	VGF21LS50	11		11	18	18		
	320		400 psi @ 130 F		Equal %	VGF22ES50	11		11	18	18		
	360		150 psi @ 240 F		15 psi (2-position)	Equal %	V5011A1916		11	11	19	19	
	360		150 psi @ 240 F		15 psi (2-position)	Equal %	Stem up to close		V5011B1070	11	11	19	19
365	175 psi @ 130 F	175 psi @ 130 F	Equal %		Stem down to close	VGF21ES60	11		11	18	18		
370	175 psi @ 130 F	125 psig / 353 F	Linear	VGF21LS60		11	11	18	18				
370	400 psi @ 130 F	Equal %	VGF22ES60	11		11	18	18					
ANSI Class IV seat leakage													
4"	150	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP40	175	175	175**	175**	
	150					Linear		VGF21LP40	175	175	175**	175**	
	5"					285		Equal %	VGF21EP50	175	175	175**	175**
						320		Linear	VGF21LP50	175	175	175**	175**
	6"					365		Equal %	VGF21EP60	175	175	175**	175**
						370		Linear	VGF21LP60	175	175	175**	175**
ANSI Class III seat leakage													
4"	160	Mixing	125	150 psi @ 240 F	N / A	Constant Total	Stem up closes A-AB	V5013B1029	20	20	34	34	
	160	Diverting		150 psi @ 240 F		Constant Total	Stem up closes B-AB	V5013C1027	20	20	34	34	
	150	Mixing		175 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF31EM40	27	27	47	47	
	160	Diverting		175 psi @ 130 F		Linear, Constant Total	Stem up closes B-AB	VGF31LD40	27	27	47	47	
	170	Mixing		250		400 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF32EM40	27	27	47	47
	160	Diverting		250		400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD40	27	27	47	47
	5"	250	Mixing	125		150 psi @ 240 F	Constant Total	Stem up closes A-AB	V5013B1037	16	16	28	28
		250	Diverting	150 psi @ 240 F		Constant Total	Stem up closes B-AB	V5013C1035	16	16	28	28	
		320	Mixing	175 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF31EM50	11	11	18	18	
		285	Diverting	175 psi @ 130 F		Linear, Constant Total	Stem up closes B-AB	VGF31LD50	11	11	18	18	
		320	Mixing	250		400 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF32EM50	11	11	18	18
		285	Diverting	250		400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD50	11	11	18	18
	6"	360	Mixing	125		150 psi @ 240 F	Constant Total	Stem up closes A-AB	V5013B1045	11	11	19	19
		360	Diverting	150 psi @ 240 F		Constant Total	Stem up closes B-AB	V5013C1043	11	11	19	19	
		370	Mixing	175 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF31EM60	11	11	18	18	
		380	Diverting	175 psi @ 130 F		Linear, Constant Total	Stem up closes B-AB	VGF31LD60	11	11	18	18	
		370	Mixing	250		400 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF32EM60	11	11	18	18
		380	Diverting	250		400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD60	11	11	18	18

**Only requires single actuator

120 ***Q5022B linkage compatible with VGF valves with 7/16-20UNF stem thread (Manufactured after June, 2005)

Product Selection - Valves

Flanged Globe Valves 4"- 6", With Tandem DCA and Valve Linkage

**Q5022B1009
Required*****



Actuator Features		Fail Safe		
Actuator O.S. Number (Two Actuators per valve/linkage)		MS7520A2007 MS7520A2205	MS8120A1007	MS4120A1001
Power Supply	Voltage	24 Vac	24 Vac	100-250 Vac
	Frequency	60 Hz	60 Hz	60 Hz
	Power	16 VA	40 VA	60 VA
Actuator Torque	(lb.-in.)	175	175	175
Linkage Stem Force, Two Actuators	(lbs.)	325	325	325
Control	(0)2-10 Vdc	•		
	4-20 mA (external 500 Ohm Resistor)	•		
	Floating	•		
	Two-Position SPDT	•		
	Two-Position SPST	•	•	•
Fail Safe Action		Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed
Normal Position (no signal)	(field configurable)	Stem Up/Down	Stem Up/Down	Stem Up/Down
Actuator Stroke	(inches)	1.5	1.5	1.5
Timing	(seconds)	90	90	90
Aux Switch	2 x SPDT Add-On	SW2-US	SW2-US	SW2-US
	2 x SPDT Built In	0 / 2		
Feedback	(0)2-10 Vdc Built In	•		

Valve Size (inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid					
ANSI Class III seat leakage														
4"	160	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1858	20	20	20			
	160			150 psi @ 240 F	15 psi (2-position)	Equal %	Stem up to close	V5011B1013	20	20	20			
	150			175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21ES40	27	27	27			
	155			175 psi @ 130 F		Linear		VGF21LS40	27	27	27			
	150			400 psi @ 130 F	Equal %	VGF22ES40		27	27	27				
	250			150 psi @ 240 F	15 psi (2-position)	Equal %		V5011A1882	16	16	16			
	250		150 psi @ 240 F	15 psi (2-position)	Equal %	V5011B1047		16	16	16				
	285		175 psi @ 130 F	125 psig / 353 F	Equal %	VGF21ES50		11	11	11				
	320		175 psi @ 130 F	125 psig / 353 F	Linear	Stem down to close	VGF21LS50	11	11	11				
	320		400 psi @ 130 F		Equal %		VGF22ES50	11	11	11				
	360		150 psi @ 240 F	15 psi (2-position)	Equal %		V5011A1916	11	11	11				
	360		150 psi @ 240 F	15 psi (2-position)	Equal %		V5011B1070	11	11	11				
365	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21ES60		11	11	11					
370	175 psi @ 130 F		Linear		VGF21LS60		11	11	11					
370	400 psi @ 130 F	Equal %	VGF22ES60		11	11	11							
ANSI Class IV seat leakage														
4"	150	Pressure Balanced	125		175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP40	175	175	175		
	150						Linear		VGF21LP40	175	175	175		
5"	285			Equal %			Stem down to close		VGF21EP50	175	175	175		
	320			Linear					VGF21LP50	175	175	175		
6"	365			Equal %					Stem down to close	VGF21EP60	175	175	175	
	370			Linear						VGF21LP60	175	175	175	
ANSI Class III seat leakage														
4"	160	Mixing	125	150 psi @ 240 F	N / A	Constant Total		Stem up closes A-AB		V5013B1029	20	20	20	
	160	Diverting		150 psi @ 240 F		Constant Total	Stem up closes B-AB	V5013C1027		20	20	20		
	150	Mixing		175 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF31EM40		27	27	27		
	160	Diverting		175 psi @ 130 F		Linear, Constant Total	Stem up closes B-AB	VGF31LD40	27	27	27			
	170	Mixing		250		400 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF32EM40	27	27	27		
	160	Diverting		250		400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD40	27	27	27		
	5"	250	Mixing	125		150 psi @ 240 F	N / A	Constant Total	Stem up closes A-AB	V5013B1037	16	16	16	
		250	Diverting			150 psi @ 240 F		Constant Total	Stem up closes B-AB	V5013C1035	16	16	16	
		320	Mixing			175 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF31EM50	11	11	11	
		320	Diverting			175 psi @ 130 F		Linear, Constant Total	Stem up closes B-AB	VGF31LD50	11	11	11	
		320	Mixing			250		400 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF32EM50	11	11	11
		285	Diverting			250		400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD50	11	11	11
6"	360	Mixing	125	150 psi @ 240 F	N / A	Constant Total		Stem up closes A-AB	V5013B1045	11	11	11		
	360	Diverting		150 psi @ 240 F		Constant Total		Stem up closes B-AB	V5013C1043	11	11	11		
	370	Mixing		175 psi @ 130 F		Equal % A-AB		Stem up closes A-AB	VGF31EM60	11	11	11		
	380	Diverting		175 psi @ 130 F		Linear, Constant Total		Stem up closes B-AB	VGF31LD60	11	11	11		
	370	Mixing		250		400 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF32EM60	11	11	11	
	380	Diverting		250		400 psi @ 130 F		Linear, Constant Total	Stem up closes B-AB	VGF32LD60	11	11	11	

***Q5022B linkage compatible with VGF valves with 7/16-20UNF stem thread (Manufactured after June, 2005)

Product Selection - Valves

Flanged Globe Valves 4"- 6", With Dedicated Valve Actuators

Common Features

- ANSI body class 125 or 250
- Close-off pressure = Maximum differential pressure
- Maximum static water pressure: Up to 400 psi
- Maximum steam pressure (VGF, 2-pos or modulating): 100 psi
- Maximum steam pressure (V5011, 2-pos): 15 psi
- Stem travel: 1.5"
- Rangeability: 50:1
- Leakage < 0.05% of Cv
- Body material: Cast iron
- Body trim: Stainless steel stem, brass seat (V5011/13), stainless steel seat (VGF)



Actuator Features		Non-fail Safe	
Actuator O.S. Number		ML7421B1023	ML6421B1040
Power Supply	Voltage	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz
	Power	12 VA	11 VA
Stem Force	(lbs.)	404	404
Control	(0)2-10 Vdc	•	
	4-20 mA (external 500 Ohm Resistor)	•	
	Floating		•
	Two-Position SPDT		•
Fail Safe Action		Stay in Place	Stay in Place
Normal Position (no signal) (field configurable)		Stem Up	Stay in Place
Actuator Stroke	(inches)	1.5	1.5
Stroke Timing	(seconds)	175	175
High Temperature Kit	Steam Application	43196000-038	43196000-038
Aux Switch	2 x SPDT (24 Vac) (add-on)	43191680-102	43191680-102
Feedback	1 x 220 Ohm Potentiometer (add-on)	43191679-102	
	2-10 Vdc (built in)	•	

Valve Size (inches)	Cv	Valve Type	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid			
ANSI Class III seat leakage												
4"	160	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem down to close	V5011A1858	29	29		
	160			150 psi @ 240 F	15 psi (2-position)	Equal %	Stem up to close	V5011B1013	29	29		
	150			175 psi @ 130 F	125 psig / 353 F	Linear	Stem down to close	VGF21ES40	34	34		
	155			175 psi @ 130 F		Linear		VGF21LS40	34	34		
	150			400 psi @ 130 F		Equal %		VGF22ES40	34	34		
	5"		250	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem up to close	V5011A1882	18	18
			250			150 psi @ 240 F	15 psi (2-position)	Equal %	Stem up to close	V5011B1047	18	18
			285			175 psi @ 130 F	Equal %	VGF21ES50	13	13		
			250		175 psi @ 130 F	125 psig / 353 F	Stem down to close	Linear	VGF21LS50	13	13	
					320	175 psi @ 130 F		Linear	VGF22ES50	13	13	
320		400 psi @ 130 F			Equal %	V5011A1916		12	12			
6"	360	Standard	125	150 psi @ 240 F	15 psi (2-position)	Equal %	Stem up to close	V5011B1070	12	12		
	360			150 psi @ 240 F	15 psi (2-position)	Equal %	Stem up to close	V5011B1070	12	12		
	365			175 psi @ 130 F	Equal %	VGF21ES60	13	13				
	250		370	175 psi @ 130 F	125 psig / 353 F	Stem down to close	VGF21LS60	13	13			
			370	175 psi @ 130 F	Linear		VGF21LS60	13	13			
			370	400 psi @ 130 F	Equal %		VGF22ES60	13	13			
ANSI Class IV seat leakage												
4"	150	Pressure Balanced	125	175 psi @ 130 F	125 psig / 353 F	Equal %	Stem down to close	VGF21EP40	175	175		
	150					Linear		VGF21LP40	175	175		
5"	285					Equal %		VGF21EP50	175	175		
	320					Linear		VGF21LP50	175	175		
6"	365					Equal %		VGF21EP60	175	175		
	370					Linear		VGF21LP60	175	175		
ANSI Class III seat leakage												
4"	160	Mixing	125	150 psi @ 240 F	N/A	Constant Total	Stem up closes A-AB	V5013B1029	29	29		
	160	Diverting		150 psi @ 240 F		Constant Total	Stem up closes B-AB	V5013C1027	29	29		
	150	Mixing		175 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF31EM40	34	34		
	160	Diverting		175 psi @ 130 F		Linear, Constant Total	Stem up closes B-AB	VGF31LD40	34	34		
	170	Mixing		400 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF32EM40	34	34		
	5"	160	Diverting	250		400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD40	34	34	
		250	Mixing	125		150 psi @ 240 F	Constant Total	Stem up closes A-AB	V5013B1037	18	18	
		250	Diverting			150 psi @ 240 F	Constant Total	Stem up closes B-AB	V5013C1035	18	18	
		320	Mixing			175 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF31EM50	13	13	
		285	Diverting			175 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF31LD50	13	13	
320	Mixing	250	400 psi @ 130 F		Equal % A-AB	Stem up closes A-AB	VGF32EM50	13	13			
6"	285	Diverting	250	400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD50	13	13			
	360	Mixing	125	150 psi @ 240 F	Constant Total	Stem up closes A-AB	V5013B1045	12	12			
	360	Diverting		150 psi @ 240 F	Constant Total	Stem up closes B-AB	V5013C1043	12	12			
	370	Mixing		175 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF31EM60	13	13			
	380	Diverting		175 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF31LD60	13	13			
	370	Mixing		250	400 psi @ 130 F	Equal % A-AB	Stem up closes A-AB	VGF32EM60	13	13		
	250	380		Diverting	400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD60	13	13		
		380		Diverting	400 psi @ 130 F	Linear, Constant Total	Stem up closes B-AB	VGF32LD60	13	13		

2-Way Water & Steam Valves ANSI Class III (< 0.05% Cv) Seat Leakage

2-Way Water & Steam Valves ANSI Class IV (< 0.01% Cv) Seat Leakage

3-Way Water Valves

Flanged Cage Valves 2½" - 6" With Tandem DCA and Valve Linkage

The V5051 Series advantage lies in its ability to perform like a globe valve while achieving high close-off pressures with a single spring return actuator. This premium valve delivers a high close-off using a single spring return actuator on all valves up to 6". It is highly suitable for medium-pressure steam applications.

Common Features

- Pressure balanced design for high close-off
- Close-off pressure = Maximum differential pressure
- ANSI body class 125
- Stem travel 1.5"
- Body material: Cast iron
- Body valve trim: Stainless steel
- Leakage: 0.01% Cv 2.5"-4" and 0.03% Cv 5"-6"
- Max static water pressure: 150 psi
- Max static steam pressure: 55 psi
- Flow characteristic: Modified linear



Q5020C1009 Required



Actuator Features		Non-fail Safe			Fail Safe	
Actuator O.S. Number		MN6120A1002 MN6120A1200	MN7220A2007 MN7220A2205	MS7520A2007 MS7520A2205 MS7520H2208	MS8120A1007 MS8120A1205	MN4120A1001 MS4120A1209
	Power Supply	Voltage	24 Vac	24 Vac	24 Vac	24 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	60 Hz
	Power	6 VA	6 VA	16 VA	40 VA	60 VA
Actuator Torque	(lbs.)	175	175	175	175	175
Control	(0)2-10 Vdc		•	•		
	4-20 mA (external 500 Ohm Resistor)		•	•		
	Floating	•	•	•		
	Two-Position SPDT	•	•	•		
	Two-Position SPST		•	•	•	•
Fail Safe Action		Stay in Place	Stay in Place	Configurable Open/Closed	Configurable Open/Closed	Configurable Open/Closed
Normal Position (no signal)	(field configurable)	Stem Up	Stem Up	Stem Up	Stem Up	Stem Up
Linkage Stroke	(inches)	1.5	1.5	1.5	1.5	1.5
Stroke Timing	(seconds)	95	95	90	90	90
High Temperature Kit	Steam Application					
Aux Switch	2 x SPDT (built in)	0 / 2	0 / 2	0 / 2 / 2	0 / 2	0 / 2
	2 x SPDT (add-on)	SW2-US	SW2-US	SW2-US	SW2-US	SW2-US
Feedback	2-10 Vdc (built in)		•	•		

2-Way Water & Steam Valves	Valve Size (inches)	Cv	ANSI Class	Max Static Water Pressure	Max Steam Pressure / Temperature	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure, psid				
	2 1/2"	75	125	150 psi @ 100 F	55 psig / 300 F	Modified Linear	Stem down to close	V5051A3004	150	150	150	150	150
	3"	116						V5051A3012	150	150	150	150	150
	4"	178						V5051A3020	150	150	150	150	150
	5"	318						V5051A3038	150	150	150	150	150
	6"	390						V5051A3046	150	150	150	150	150

Product Selection - Valves

Flanged Globe Valves 2½"- 3", With Pneumatic Actuators

Common Features

- Rolling diaphragm for long life and low hysteresis
- Easily installation and attachment to the valve
- Direct or reverse acting
- No positive positioner



Actuator Features	Without Positive Positioner							
Actuator O.S. Number	MP953C1067	MP953C1075	MP953C1083	MP953C1554	MP953C1562	MP953D1107	MP953D1131	MP953D1172
Direct Acting/ Reverse Acting	Direct Acting				Reverse Acting			
Diaphragm Size	8"			13"		7-1/8"		
Fail Safe Action	Stem Up				Stem Down			
Actuator Force	Medium			High		Medium		
Spring Range	2-7 psi	•			•			
	3-7 psi							•
	8-12 psi		•					
	8-13 psi					•		
	4-11 psi			•	•		•	

2-Way Water & Steam Valves

Valve Size (Inches)	Cv	Valve Type	Max Static Water Pressure	ANSI Class	Max Steam Pressure	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure - See Charts On Page 126								
2-1/2"	63	Standard	250 psi	125	15 psi (2-position) 125 psig / 353 F	Equal %	Stem down to close	V5011A1734	M*-NO	M*-NO	M*-NO	P*-NO	P*-NO	N*-NC	N*-NC	N*-NC	
	70	Pressure Balanced	175 psi					VGF21EP25	L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC	
	70	Standard						VGF21ES25	L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC	
	72	Pressure Balanced						VGF21LP25	L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC	
	70	Standard						VGF21LS25	L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC	
	70	Standard	400 psi					250	VGF22ES25	L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC
3"	100	Standard	250 psi	125	15 psi (2-position) 125 psig / 353 F	Equal %	Stem down to close	V5011A1767	M*-NO	M*-NO	M*-NO	P*-NO	P*-NO	N*-NC	N*-NC	N*-NC	
	115	Pressure Balanced	VGF21EP30					L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC		
	115	Standard	VGF21ES30					L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC		
	120	Pressure Balanced	VGF21LP30					L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC		
	125	Standard	VGF21LS30					L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC		
	120	Standard	400 psi					250	VGF22ES30	L*-NO	L*-NO	L*-NO	O*-NO	O*-NO	R*-NC	R*-NC	R*-NC
2-1/2"	63	Mixing	250 psi	125	N/A	Constant Total	Stem up closes A-AB	V5013B1003	S-NC	S-NC	S-NC	T-NC	T-NC	U-NO	U-NO	U-NO	
	63	Diverting	250 psi					V5013C1001	S-NC	S-NC	S-NC	T-NC	T-NC	U-NO	U-NO	U-NO	
	70	Mixing	175 psi					VGF31EM25	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO	
	70	Diverting	175 psi					VGF31LD25	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO	
	70	Mixing	400 psi					250	VGF32EM25	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO
	70	Diverting	400 psi					250	VGF32LD25	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO
3"	100	Mixing	250 psi	125	N/A	Constant Total	Stem up closes A-AB	V5013B1011	S-NC	S-NC	S-NC	T-NC	T-NC	U-NO	U-NO	U-NO	
	100	Diverting	250 psi					V5013C1019	S-NC	S-NC	S-NC	T-NC	T-NC	U-NO	U-NO	U-NO	
	120	Mixing	175 psi					VGF31EM30	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO	
	120	Diverting	175 psi					VGF31LD30	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO	
	115	Mixing	400 psi					250	VGF32EM30	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO
	120	Diverting	400 psi					250	VGF32LD30	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO

*The close-off pressure not to exceed rated pressure of steam valve
 NC = Normally Closed
 NO = Normally Open

Product Selection - Valves

Flanged Globe Valves 2½" - 3", With Pneumatic Actuators

Common Features

- Rolling diaphragm for long life and low hysteresis
- Easily installation and attachment to the valve
- Direct or reverse acting
- Integrated positive positioner



Actuator Features		With Positive Positioner							
Actuator O.S. Number		MP953E1368	MP953E1376	MP953E1384	MP953E1435	MP953E1443	MP953F1093	MP953F1101	MP953F1119
Direct Acting/ Reverse Acting		Direct Acting				Reverse Acting			
Diaphragm Size		8"		13"		7-1/8"			
Fail Safe Action		Stem Up				Stem Down			
Actuator Force		Medium			High		Medium		
Positioner Span	10 psi		•			•			•
	5 psi		•		•			•	
	3 psi	•					•		

Valve Size (inches)	Cv	Valve Type	Max Static Water Pressure	ANSI Class	Max Steam Pressure	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure - See Charts On Page 126								
									M**-NO	M**-NO	M**-NO	P**-NO	P**-NO	N**-NC	N**-NC	N**-NC	N**-NC
2-1/2"	63	Standard	250 psi	125	15 psi (2-position)	125 psig / 353 F	Stem down to close	V5011A1734	M**-NO	M**-NO	M**-NO	P**-NO	P**-NO	N**-NC	N**-NC	N**-NC	
	70	Pressure Balanced	175 psi					VGf21EP25	L**-NO	L**-NO	L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC	
	70	Standard						VGf21ES25	L**-NO	L**-NO	L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC	
	72	Pressure Balanced						VGf21LP25	L**-NO	L**-NO	L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC	
	70	Standard						VGf21LS25	L**-NO	L**-NO	L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC	
	70	Standard	400 psi					250	125 psig / 353 F	VGf22ES25	L**-NO	L**-NO	L**-NO	O**-NO	O**-NO	R**-NC	R**-NC
	100	Standard	250 psi	125	V5011A1767	M**-NO		M**-NO		M**-NO	P**-NO	P**-NO	N**-NC	N**-NC	N**-NC		
	3"	115	Pressure Balanced	175 psi	VGf21EP30	L**-NO		L**-NO		L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC		
		115	Standard		VGf21ES30	L**-NO		L**-NO		L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC		
		120	Pressure Balanced		VGf21LP30	L**-NO		L**-NO	L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC			
125		Standard	VGf21LS30		L**-NO	L**-NO	L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC					
120	Standard	400 psi	250	VGf22ES30	L**-NO	L**-NO	L**-NO	O**-NO	O**-NO	R**-NC	R**-NC	R**-NC					
3-Way Water Valves	2-1/2"	63	Mixing	250 psi	125	N/A	Stem up closes A-AB	V5013B1003	S-NC	S-NC	S-NC	T-NC	T-NC	U-NO	U-NO	U-NO	
		63	Diverting	250 psi			Constant Total	V5013C1001	S-NC	S-NC	S-NC	T-NC	T-NC	U-NO	U-NO	U-NO	
		70	Mixing	175 psi			Equal % A-AB	VGf31EM25	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO	
		70	Diverting	175 psi			Linear, Constant Total	VGf31LD25	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO	
		70	Mixing	400 psi			250	Equal % A-AB	VGf32EM25	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO
		70	Diverting	400 psi			250	Linear, Constant Total	VGf32LD25	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO
	3"	100	Mixing	250 psi	125	N/A	Stem up closes A-AB	V5013B1011	S-NC	S-NC	S-NC	T-NC	T-NC	U-NO	U-NO	U-NO	
		100	Diverting	250 psi			Constant Total	V5013C1019	S-NC	S-NC	S-NC	T-NC	T-NC	U-NO	U-NO	U-NO	
		120	Mixing	175 psi			Equal % A-AB	VGf31EM30	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO	
		120	Diverting	175 psi			Linear, Constant Total	VGf31LD30	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO	
		115	Mixing	400 psi			250	Equal % A-AB	VGf32EM30	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO
		120	Diverting	400 psi			250	Linear, Constant Total	VGf32LD30	L-NC	L-NC	L-NC	O-NC	O-NC	R-NO	R-NO	R-NO

*The close-off pressure not to exceed rated pressure of steam valve
 **The close-off pressure not to exceed rated pressure of steam valve. Use 4-11 spring range for positive positioner models.
 NC = Normally Closed
 NO = Normally Open

VALVES

Close-off Pressure Charts - Valves

Flanged Globe Valves 2½" - 3"

Chart L

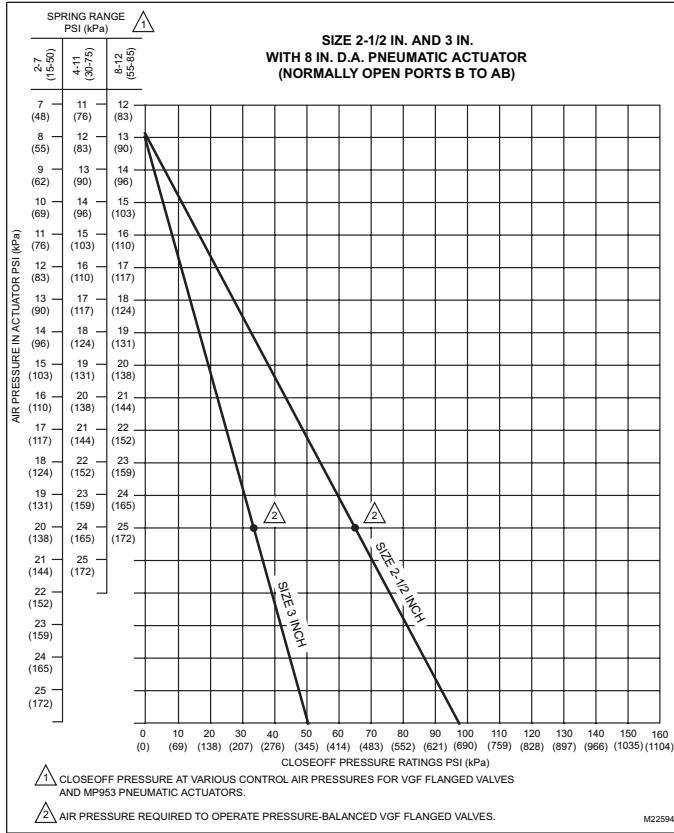


Chart M

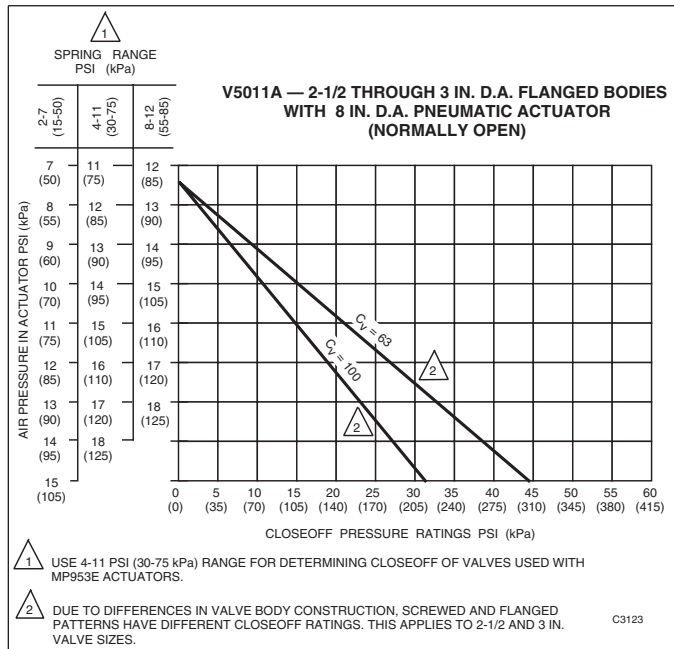


Chart P

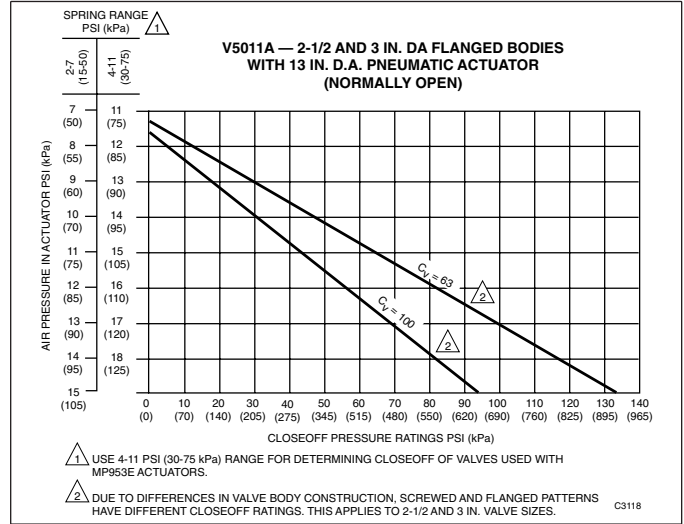
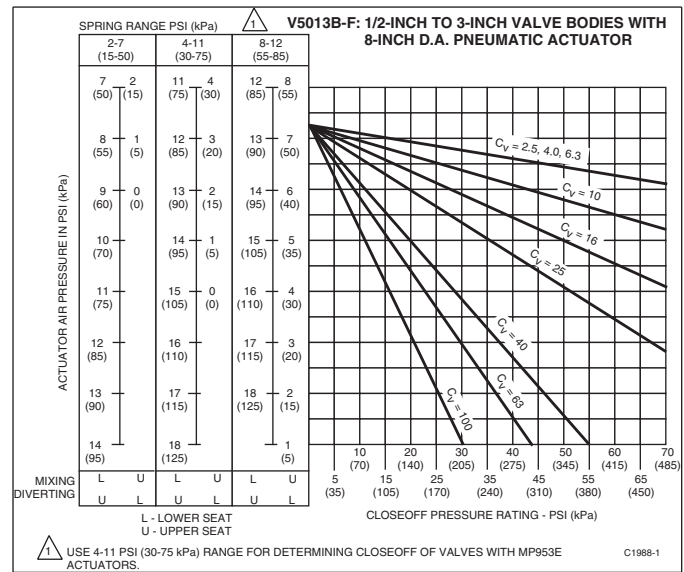
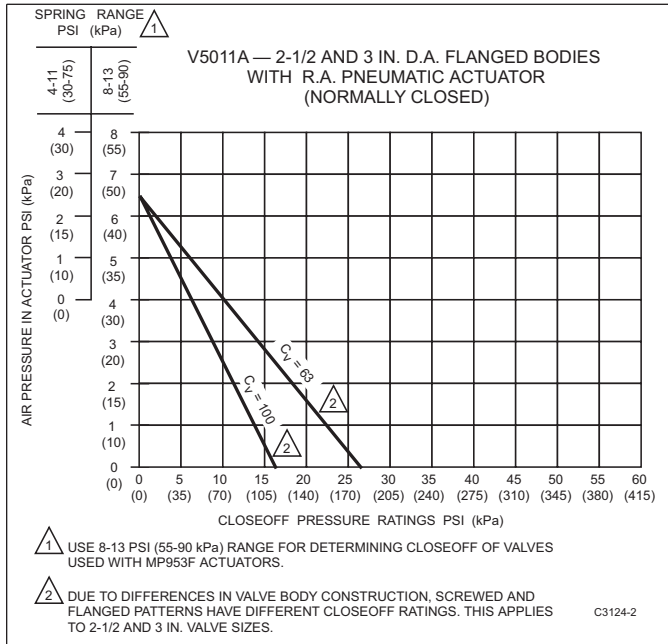


Chart S



Close-off Pressure Charts - Valves

Chart N



Flanged Globe Valves 2 1/2" - 3"

Chart O

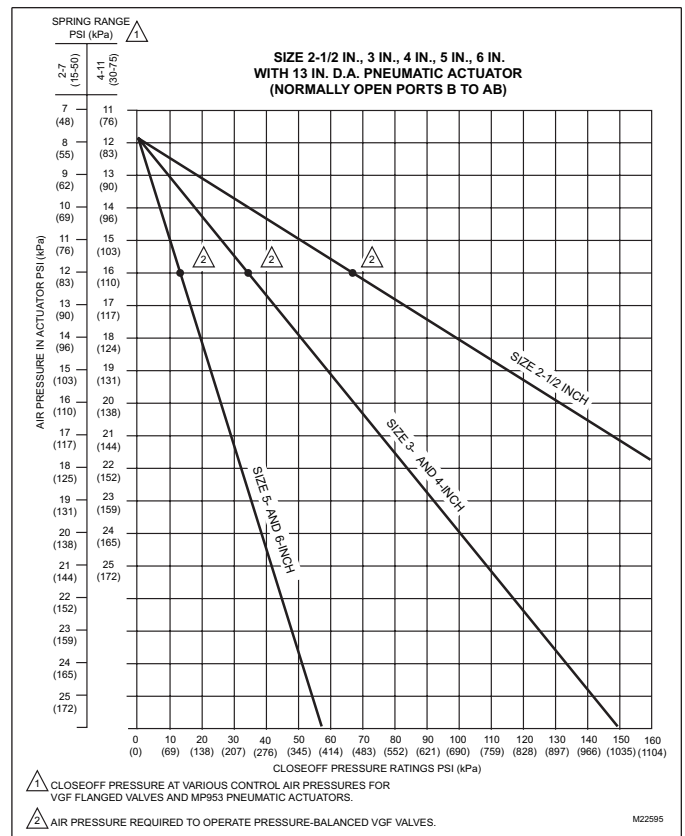


Chart R

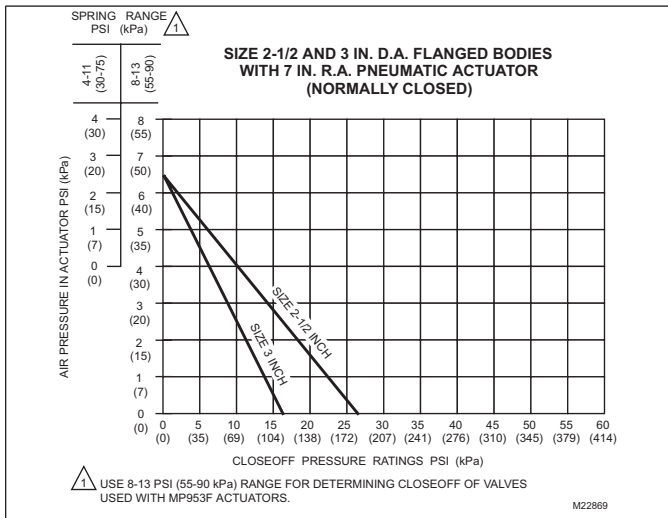


Chart T

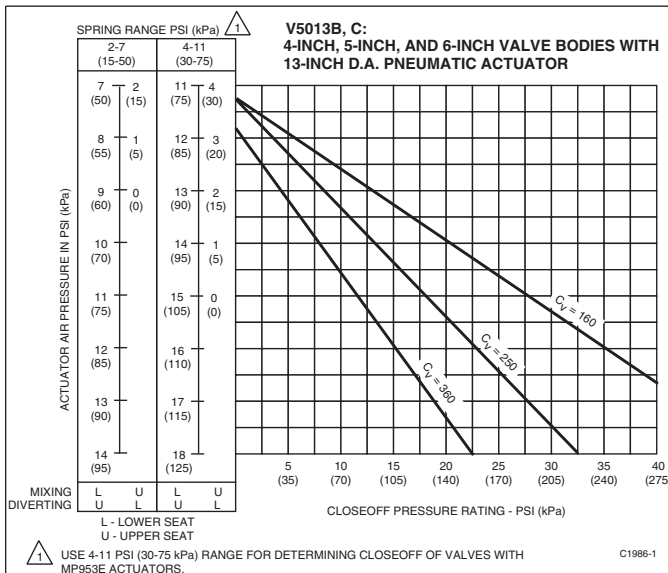
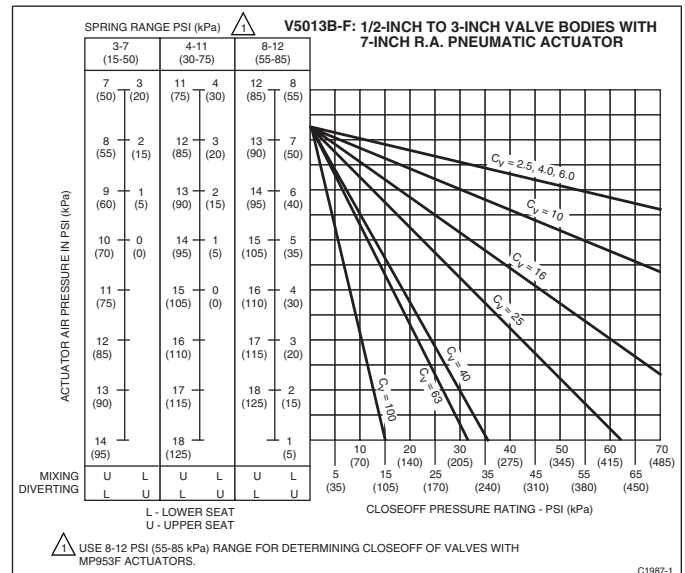


Chart U



VALVES

Product Selection - Valves

Flanged Globe Valves 4"- 6", With Pneumatic Actuators

Common Features

- Rolling diaphragm for long life and low hysteresis
- Easily installation and attachment to the valve
- Direct or reverse acting



Actuator Features	Without Positive Positioner			With Positive Positioner		
Actuator O.S. Number	MP953C1471	MP953C1489	MP953C1547	MP953E1285	MP953E1400	MP953E1418
Direct Acting / Reverse Acting	Direct Acting					
Diaphragm Size	13"		8"		13"	
Fail Safe Action	Stem Up					
Actuator Force	High		Medium		High	
Stroke	1-1/2"					
Spring Range	2-7 psi	•				
	4-11 psi		•	•	•	•
	3-15 psi		•			
Positioner Span	10 psi	N/A				•
	5 psi			•	•	

2-Way Water & Steam Valves

Valve Size (inches)	Cv	Valve Type	Max Static Water Pressure	ANSI Class	Max Steam Pressure	Flow Characteristic	Valve Action	Valve OS Number	Close-off Pressure - See Charts On Page 129								
4"	160	Standard	250 psi	125	15 psi (2-position)	Equal %	Stem down to close	V5011A1858	V*-NO	V*-NO	V*-NO	V**-NO	V**-NO	V**-NO			
	160	Standard	250 psi		15 psi (2-position)		Stem up to close	V5011B1013	W*-NO	W*-NO	W*-NO	W**-NO	W**-NO	W**-NO			
	150	Pressure Balanced	175 psi		125 psig / 353 F		Linear	Stem down to close	VGf21EP40	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO		
	150	Standard	175 psi						VGf21ES40	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO		
	150	Pressure Balanced	175 psi						VGf21LP40	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO		
	155	Standard	175 psi						VGf21LS40	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO		
	150		400 psi	VGf22ES40	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO							
	250	Standard	250 psi	125	15 psi (2-position)	Equal %	Stem up to close	V5011A1882	V*-NO	V*-NO	V*-NO	V**-NO	V**-NO	V**-NO			
	250		250 psi		15 psi (2-position)			V5011B1047	W*-NO	W*-NO	W*-NO	W**-NO	W**-NO	W**-NO			
	285	Pressure Balanced	175 psi	125 psig / 353 F	Linear	Stem down to close	VGf21EP50	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO				
285	Standard	175 psi	VGf21ES50				O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO					
320	Pressure Balanced	175 psi	VGf21LP50				O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO					
320	Standard	175 psi	VGf21LS50				O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO					
320		400 psi	VGf22ES50	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO								
360	Standard	250 psi	125	15 psi (2-position)	Equal %	Stem up to close	V5011A1916	V*-NO	V*-NO	V*-NO	V**-NO	V**-NO	V**-NO				
360		250 psi		15 psi (2-position)			V5011B1070	W*-NO	W*-NO	W*-NO	W**-NO	W**-NO	W**-NO				
365	Pressure Balanced	175 psi	125 psig / 353 F	Linear	Stem down to close	VGf21EP60	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO					
365	Standard	175 psi				VGf21ES60	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO					
370	Pressure Balanced	175 psi				VGf21LP60	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO					
370	Standard	175 psi				VGf21LS60	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO					
370	Standard	400 psi	250		Equal %		VGf22ES60	O*-NO	O*-NO	O*-NO	O**-NO	O**-NO	O**-NO				
3-Way Water Valves	4"	160	Mixing	250 psi	125	N/A	Constant Total	Stem up closes A-AB	V5013B1029	T-NC	T-NC	T-NC	T-NC	T-NC	T-NC		
		160	Diverting	250 psi			Constant Total	Stem up closes B-AB	V5013C1027	T-NC	T-NC	T-NC	T-NC	T-NC	T-NC		
		150	Mixing	175 psi			Equal % A-AB	Stem up closes A-AB	VGf31EM40	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC		
		160	Diverting	175 psi			Linear, Constant Total	Stem up closes B-AB	VGf31LD40	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC		
		170	Mixing	400 psi			250	Equal % A-AB	Stem up closes A-AB	VGf32EM40	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC	
		160	Diverting	400 psi			250	Linear, Constant Total	Stem up closes B-AB	VGf32LD40	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC	
	5"	250	Mixing	250 psi	125	N/A	N/A	Constant Total	Stem up closes B-AB	V5013B1037	T-NC	T-NC	T-NC	T-NC	T-NC	T-NC	
		250	Diverting	250 psi				Constant Total	Stem up closes B-AB	V5013C1035	T-NC	T-NC	T-NC	T-NC	T-NC	T-NC	
		320	Mixing	175 psi				Equal % A-AB	Stem up closes A-AB	VGf31EM50	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC	
		285	Diverting	175 psi				Linear, Constant Total	Stem up closes B-AB	VGf31LD50	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC	
		320	Mixing	400 psi				250	Linear, Constant Total	Stem up closes B-AB	VGf32EM50	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC
		285	Diverting	400 psi				250	Linear, Constant Total	Stem up closes B-AB	VGf32LD50	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC
	6"	360	Mixing	250 psi	125	N/A	N/A	Constant Total	Stem up closes A-AB	V5013B1045	T-NC	T-NC	T-NC	T-NC	T-NC	T-NC	
		360	Diverting	250 psi				Constant Total	Stem up closes B-AB	V5013C1043	T-NC	T-NC	T-NC	T-NC	T-NC	T-NC	
		370	Mixing	175 psi				Equal % A-AB	Stem up closes A-AB	VGf31EM60	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC	
		380	Diverting	175 psi				Linear, Constant Total	Stem up closes B-AB	VGf31LD60	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC	
		370	Mixing	400 psi				250	Equal % A-AB	Stem up closes A-AB	VGf32EM60	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC
		380	Diverting	400 psi				250	Linear, Constant Total	Stem up closes B-AB	VGf32LD60	O-NC	O-NC	O-NC	O-NC	O-NC	O-NC

*The close-off pressure not to exceed rated pressure of steam valve
 **The close-off pressure not to exceed rated pressure of steam valve. Use 4-11 spring range for positive positioner models.
 NC = Normally Closed
 NO = Normally Open

Close-off Pressure Charts - Valves

Flanged Globe Valves 4" - 6", With Pneumatic Actuators

Chart V

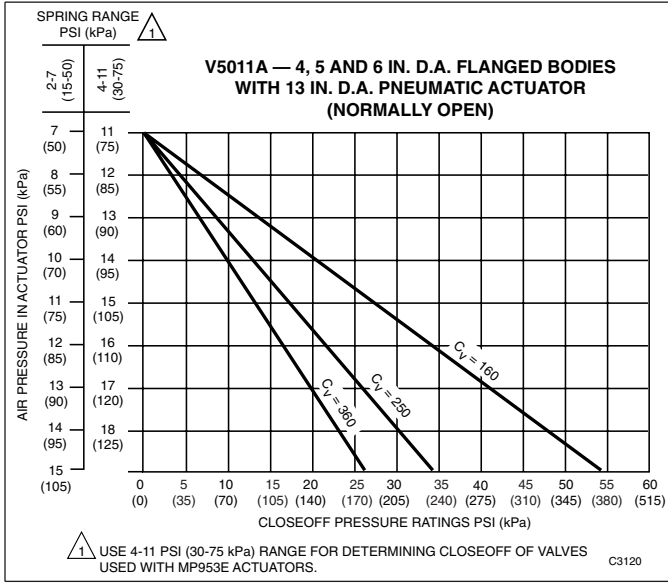


Chart W

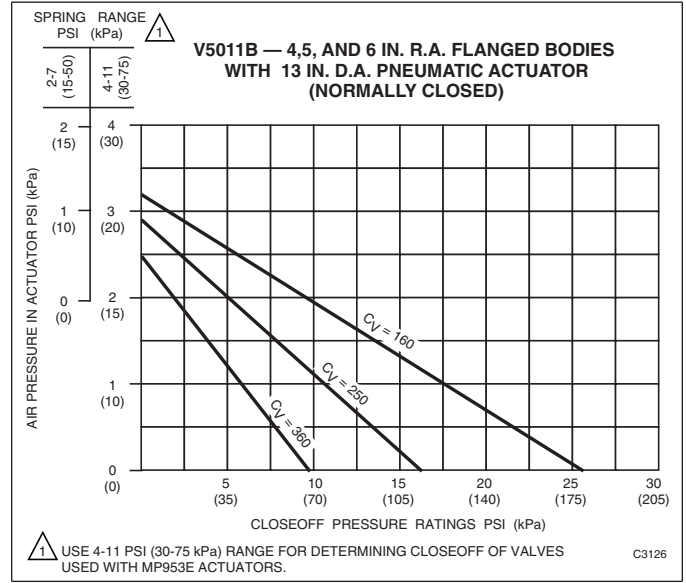


Chart O

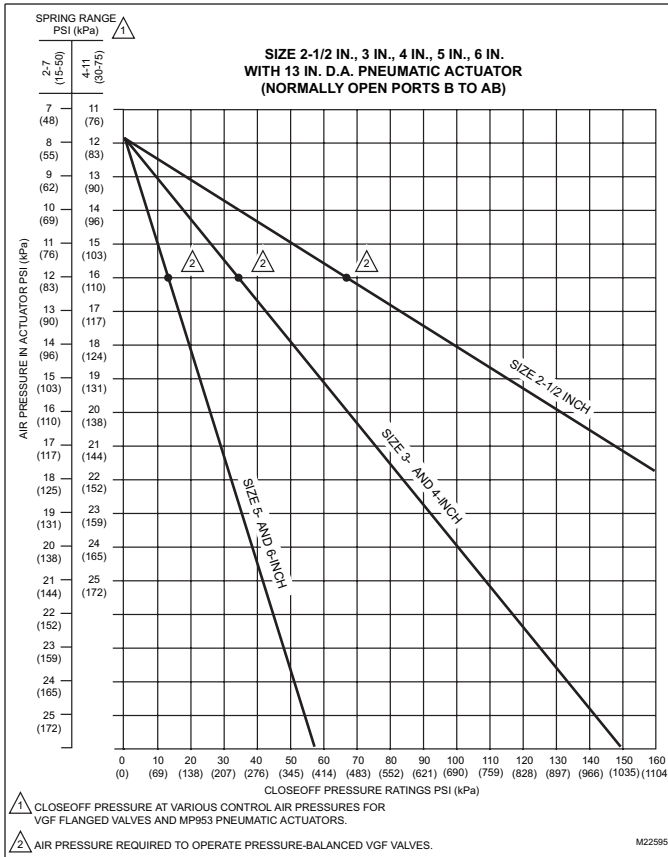
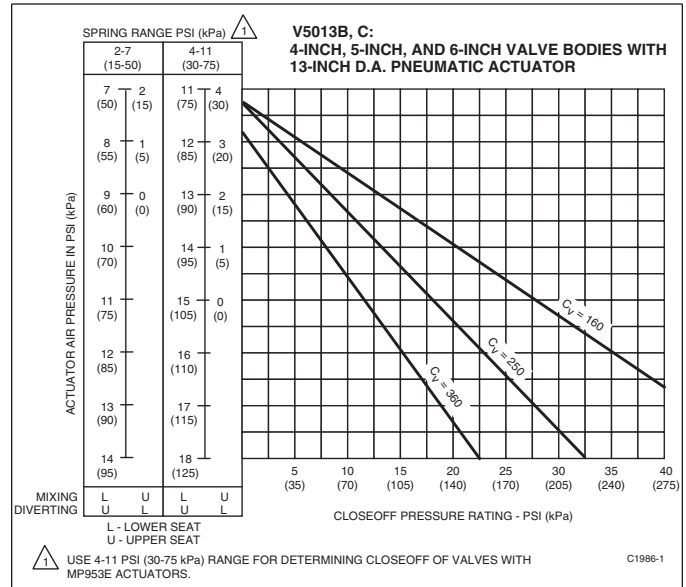


Chart T



VALVES

Product Selection - Valves

Resilient Seat Butterfly Valves, 2-Way Electric Actuation

Honeywell Resilient Seat Butterfly Valves family (VFF) offers options in sizes 2" to 20", highlighted with an industry unique tandem mount using Honeywell direct coupled actuators on valves up to 8" size.

Common Features

- Honeywell direct coupled actuators up to 8" size
- Maximum static pressure 175 psi at 250°F
- Body style: lugged butterfly valve, full-cut (150-175 psid close-off) or under-cut disc (50 psid close-off)
- ANSI 125/150 flanged connections
- Bubble-tight ANSI class VI seat leakage at rated close-off
- Heaters built into NEMA 4X and NEMA 4 actuators
- Controlled media: Water or glycol solutions up to 50% concentration
- Flow characteristics: Equal percentage from 20°-60° stem rotation, modified linear over full stroke
- Normally closed configuration (field configurable)
- Resilient Seat Butterfly Valves come with factory-fitted actuators



2-Way Normally Closed (Field-Configurable Normally Open)


Actuator Features		Non-fail Safe					
		Floating			Modulating		
Actuator O.S. Number	MN6134A1003	Industrial Actuators			MN7234A2008	Industrial Actuators	
	NEMA 2	NEMA 4X	NEMA 4	NEMA 2	NEMA 4X	NEMA 4	
Power Supply	Voltage	24 Vac	120 Vac	120 Vac	24 Vac	120 Vac	120 Vac
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	Power	9 / 18 [†] VA	1.4 - 3.0 ALR	3.2 - 4.0 ALR	9 / 18 [†] VA	1.4 - 3.0 ALR	3.2 - 4.0 ALR
Actuator Torque	lb.-in.	300 / 600 [†]	300 - 6,500	8,850 - 31,000	300 / 600 [†]	300 - 6,500	8,850 - 31,000
Control	(0)2-10 Vdc				•	•	•
	4-20 mA (external 500 ohm resistor)				•	In-built	In-built
	Floating	24 Vac	120 Vac	120 Vac	24 Vac		
	2-Position	•	•	•	•		
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place
Normal Position		Configurable Open / Closed	Configurable Open / Closed	Configurable Open / Closed	Configurable Open / Closed	Configurable Open / Closed	Configurable Open / Closed
Aux Switch	Built in		2 x SPDT	2 x SPDT		2 x SPDT	2 x SPDT
	Add-On	SW2-US			SW2-US		
Feedback	Built in				2-10 Vdc	4-20mA / 2-10Vdc	4-20mA / 2-10Vdc
Manual Override			•	•		•	•
Conduit Connection		•	•	•	•	•	•
Waterproof			•	•		•	•
Corrosion-resistant			•	•		•	•
Anti-condensate heater			•	•		•	•

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number					
2"	61	144	175	VFF2FW1Y2A	VFF2FW1YXA		VFF2FW1Y2B	VFF2FW1YXB	
			250						
2-1/2"	107	282	175	VFF2GW1Y2A	VFF2GW1YXA		VFF2GW1Y2B	VFF2GW1YXB	
			250						
3"	154	461	175	VFF2HW1Y2A	VFF2HW1YXA		VFF2HW1Y2B	VFF2HW1YXB	
			250						
4"	274	841	50	VFF2JV1Y2A	VFF2JV1YXA		VFF2JV1Y2B	VFF2JV1YXB	
			175	VFF2JW1Y2A [†]	VFF2JW1YXA		VFF2JW1Y2B [†]	VFF2JW1YXB	
			250						
5"	428	1376	50	VFF2KV1Y2A*	VFF2KV1YXA		VFF2KV1Y2B*	VFF2KV1YXB	
			175	VFF2KW1Y2A [†]	VFF2KW1YXA		VFF2KW1Y2B [†]	VFF2KW1YXB	
			250						
6"	567	1850	50		VFF2LV1YXA			VFF2LV1YXB	
			175	VFF2LW1Y2A [†]	VFF2LW1YXA		VFF2LW1Y2B [†]	VFF2LW1YXB	
			250						
8"	1081	3316	50	VFF2MV1Y2A [†]	VFF2MV1YXA		VFF2MV1Y2B [†]	VFF2MV1YXB	
			175		VFF2MW1YXA			VFF2MW1YXB	
			250						
10"	1710	5430	50		VFF2NV1YXA			VFF2NV1YXB	
			175		VFF2NW1YXA			VFF2NW1YXB	
			250						
12"	2563	8077	50		VFF2PV1YXA			VFF2PV1YXB	
			175		VFF2PW1YXA			VFF2PW1YXB	
			250						
14"	3384	10538	50		VFF2RV1YXA			VFF2RV1YXB	
			150		VFF2RW1YXA			VFF2RW1YXB	
			250						
16"	4483	13966	50		VFF2SV1YXA			VFF2SV1YXB	
			150			VFF2SW1Y4A			VFF2SW1Y4B
			250						
18"	5736	17214	50		VFF2TV1YXA			VFF2TV1YXB	
			150			VFF2TW1Y4A			VFF2TW1Y4B
			250						
20"	7144	22339	50			VFF2UV1Y4A			VFF2UV1Y4B
			150			VFF2UW1Y4A			VFF2UW1Y4B
			250						

[†] Tandem mount
*Chilled water service only

Product Selection - Valves

Resilient Seat Butterfly Valves, 2-Way Electric Actuation

Actuator Features		Fail Safe			Valve Only Manual operation for end-of-line service				
		2-Position	Modulating						
Actuator O.S. Number		MS8120A1007	MS4120A1001	MS7520A2007					
		NEMA 2	NEMA 2	NEMA 2					
Power Supply	Voltage	24 Vac	100-250 Vac	24 Vac					
	Frequency	60 Hz	60 Hz	50 / 60 Hz					
	Power	40 / 80 [†] VA	60 / 120 [†] VA	16 / 32 [†] VA					
Actuator Torque		175 / 350 [†]	175 / 350 [†]	175 / 350 [†]					
Control	(0)2-10 Vdc			•					
	4-20 mA (external 500 ohm resistor)			•					
	Floating			24 Vac					
		2-Position	•	•			•		
Fail Safe Action		Configurable Open / Closed	Configurable Open / Closed	Configurable Open / Closed					
Normal Position		Configurable Open / Closed	Configurable Open / Closed	Configurable Open / Closed					
Aux Switch	Built in								
	Add-On	SW2-US	SW2-US	SW2-US					
Feedback		Built in		2-10 Vdc					
Manual Override							Lever	Gear Wheel	
Conduit Connection		•	•	•					
Waterproof									
Corrosion-resistant									
Anti-condensate heater									

2-Way Normally Closed (Field-Configurable Normally Open)

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number				
2"	61	144	175	VFF2FW1Y2C	VFF2FW1Y2E	VFF2FW1Y2D		
			250				VFF2FW2YLX	VFF2FW2YGX
2-1/2"	107	282	175	VFF2GW1Y2C	VFF2GW1Y2E	VFF2GW1Y2D		
			250				VFF2GW2YLX	VFF2GW2YGX
3"	154	461	175	VFF2HW1Y2C [†]	VFF2HW1Y2E [†]	VFF2HW1Y2D [†]		
			250				VFF2HW2YLX	VFF2HW2YGX
4"	274	841	50	VFF2JV1Y2C	VFF2JV1Y2E	VFF2JV1Y2D		
			175					
			250				VFF2JW2YLX	VFF2JW2YGX
5"	428	1376	50	VFF2KV1Y2C ^{†*}	VFF2KV1Y2E ^{†*}	VFF2KV1Y2D ^{†*}		
			175					
			250				VFF2KW2YLX	VFF2KW2YGX
6"	567	1850	50					
			175					
			250				VFF2LW2YLX	VFF2LW2YGX
8"	1081	3316	50					
			175					
			250				VFF2MW2YLX	VFF2MW2YGX
10"	1710	5430	50					
			175					
			250				VFF2NW2YLX	VFF2NW2YGX
12"	2563	8077	50					
			175					
			250				VFF2PW2YLX	VFF2PW2YGX
14"	3384	10538	50					
			150					
			250					VFF2RW2YGX
16"	4483	13966	50					
			150					
			250					VFF2SW2YGX
18"	5736	17214	50					
			150					
			250					VFF2TW2YGX
20"	7144	22339	50					
			150					
			250					VFF2UW2YGX

[†]Tandem mount
*Chilled water service only

Product Selection - Valves

Resilient Seat Butterfly Valves, 3-Way Electric Actuation

Common Features

- VFF3 – A-B-AB porting, full-cut (150-175 psid close-off) or under-cut disc (50 psid close-off)
- VFF6 – A-AB-B porting, full-cut (150-175 psid close-off) or under-cut disc (50 psid close-off)
- Honeywell direct coupled actuators up to 6" size
- Mixing or diverting control
- Standard right-angle cast-iron T-pipe
- A-port configured to closed position at factory
- Porting pattern field-configurable with valve linkage adjustment
- Resilient Seat Butterfly Valves come with factory-fitted actuators



3-Way Mixing / Diverting Valve Porting

3-Way Mixing / Diverting Center Common Port

Actuator Features	Non-fail Safe						
	Floating			Modulating			
Actuator O.S. Number	MN6134A1003	Industrial Actuators			MN7234A2008	Industrial Actuators	
	NEMA 2	NEMA 4X	NEMA 4	NEMA 2	NEMA 4X	NEMA 4	
Power Supply	Voltage	24 Vac	120 Vac	120 Vac	24 Vac	120 Vac	
	Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	
	Power	9 / 18 [†] VA	1.4 - 3.0 ALR	3.2 - 4.0 ALR	9 / 18 [†] VA	1.4 - 3.0 ALR	
Actuator Torque	lb.-in.	300 / 600 [†]	300 - 6,500	8,850 - 31,000	300 / 600 [†]	300 - 6,500	
Control	(0)2-10 Vdc				•	•	
	4-20 mA (external 500 ohm resistor)				•	In-built	
	Floating	24 Vac	120 Vac	120 Vac	24 Vac		
	2-Position	•	•	•	•		
Fail Safe Action		Stay in Place	Stay in Place	Stay in Place	Stay in Place	Stay in Place	
Normal Position		Configurable	Configurable	Configurable	Configurable	Configurable	
		Open / Closed	Open / Closed	Open / Closed	Open / Closed	Open / Closed	
Aux Switch	Built in		2 x SPDT	2 x SPDT		2 x SPDT	
	Add-On	SW2-US			SW2-US		
Feedback	Built in				2-10 Vdc	4-20mA / 2-10Vdc	
Manual Override			•	•		•	
Conduit Connection		•	•	•	•	•	
Waterproof		•	•	•	•	•	
Corrosion-resistant		•	•	•	•	•	
Anti-condensate heater		•	•	•	•	•	

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number			
2"	61	144	175	VFF3FW1Y2A	VFF3FW1YXA	VFF3FW1Y2B	VFF3FW1YXB
2-1/2"	107	282	175	VFF3GW1Y2A	VFF3GW1YXA	VFF3GW1Y2B	VFF3GW1YXB
3"	154	461	175	VFF3HW1Y2A	VFF3HW1YXA	VFF3HW1Y2B	VFF3HW1YXB
			50	VFF3JV1Y2A	VFF3JV1YXA	VFF3JV1Y2B	VFF3JV1YXB
4"	274	841	175	VFF3JW1Y2A [†]	VFF3JW1YXA	VFF3JW1Y2B [†]	VFF3JW1YXB
			50	VFF3KW1Y2A [†]	VFF3KV1YXA	VFF3KW1Y2B [†]	VFF3KV1YXB
5"	428	1376	175	VFF3KW1Y2A [†]	VFF3KW1YXA	VFF3KW1Y2B [†]	VFF3KW1YXB
			50	VFF3LV1Y2A [†]	VFF3LV1YXA	VFF3LV1Y2B [†]	VFF3LV1YXB
6"	567	1850	175	VFF3LW1YXA			VFF3LW1YXB
			50	VFF3MV1YXA			VFF3MV1YXB
8"	1081	3316	175	VFF3MW1YXA			VFF3MW1YXB
			50	VFF3NV1YXA			VFF3NV1YXB
10"	1710	5430	175	VFF3NW1YXA			VFF3NW1YXB
			50	VFF3PW1YXA			VFF3PW1YXB
12"	2563	8077	175	VFF3PW1YXA			VFF3PW1YXB
			50	VFF3RV1YXA			VFF3RV1YXB
14"	3384	10538	150		VFF3RW1Y4A		VFF3RW1Y4B
			50	VFF3SV1YXA			VFF3SV1YXB
16"	4483	13966	150		VFF3SW1Y4A		VFF3SW1Y4B
			50	VFF3TV1Y4A			VFF3TV1Y4B
18"	5736	17214	150	VFF3TW1Y4A			VFF3TW1Y4B
			50	VFF3UV1Y4A			VFF3UV1Y4B
20"	7144	22339	150	VFF3UW1Y4A			VFF3UW1Y4B

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number			
2"	61	144	175	VFF6FW1Y2A	VFF6FW1YXA	VFF6FW1Y2B	VFF6FW1YXB
2-1/2"	107	282	175	VFF6GW1Y2A	VFF6GW1YXA	VFF6GW1Y2B	VFF6GW1YXB
3"	154	461	175	VFF6HW1Y2A	VFF6HW1YXA	VFF6HW1Y2B	VFF6HW1YXB
			50	VFF6JV1Y2A	VFF6JV1YXA	VFF6JV1Y2B	VFF6JV1YXB
4"	274	841	175	VFF6JW1Y2A [†]	VFF6JW1YXA	VFF6JW1Y2B [†]	VFF6JW1YXB
			50	VFF6KW1Y2A [†]	VFF6KV1YXA	VFF6KW1Y2B [†]	VFF6KV1YXB
5"	428	1376	175	VFF6KW1Y2A [†]	VFF6KW1YXA	VFF6KW1Y2B [†]	VFF6KW1YXB
			50	VFF6LV1Y2A [†]	VFF6LV1YXA	VFF6LV1Y2B [†]	VFF6LV1YXB
6"	567	1850	175	VFF6LW1YXA			VFF6LW1YXB
			50	VFF6MV1YXA			VFF6MV1YXB
8"	1081	3316	175	VFF6MW1YXA			VFF6MW1YXB
			50	VFF6NV1YXA			VFF6NV1YXB
10"	1710	5430	175	VFF6NW1YXA			VFF6NW1YXB
			50	VFF6PV1YXA			VFF6PV1YXB
12"	2563	8077	175	VFF6PW1YXA			VFF6PW1YXB
			50	VFF6RV1YXA			VFF6RV1YXB
14"	3384	10538	150		VFF6RW1Y4A		VFF6RW1Y4B
			50	VFF6SV1YXA			VFF6SV1YXB
16"	4483	13966	150		VFF6SW1Y4A		VFF6SW1Y4B
			50	VFF6TV1Y4A			VFF6TV1Y4B
18"	5736	17214	150	VFF6TW1Y4A			VFF6TW1Y4B
			50	VFF6UV1Y4A			VFF6UV1Y4B
20"	7144	22339	150	VFF6UW1Y4A			VFF6UW1Y4B

[†] Tandem mount
*Chilled water service only

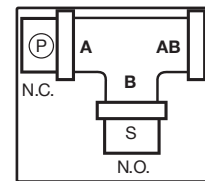
Resilient Seat Butterfly Valves, 3-Way Electric Actuation

Actuator Features		Fail Safe			Valve Only End-of-line Service
		2-Position		Modulating	
Actuator O.S. Number		MS8120A1007	MS4120A1001	MS7520A2007	
		NEMA 2	NEMA 2	NEMA 2	
Power Supply	Voltage	24 Vac	100-250 Vac	24 Vac	
	Frequency	60 Hz	60 Hz	50 / 60 Hz	
	Power	40 / 80 [†] VA	60 / 120 [†] VA	16 / 32 [†] VA	
Actuator Torque		175 / 350 [†]	175 / 350 [†]	175 / 350 [†]	
Control				•	
4-20 mA (external 500 ohm resistor)				•	
Floating				24 Vac	
2-Position		•	•	•	
Fail Safe Action		Configurable Open / Closed	Configurable Open / Closed	Configurable Open / Closed	
Normal Position		Configurable Open / Closed	Configurable Open / Closed	Configurable Open / Closed	
Aux Switch		Built in			
Add-On		SW2-US	SW2-US	SW2-US	
Feedback		Built in		2-10 Vdc	
Manual Override					
Conduit Connection		•	•	•	
Waterproof					
Corrosion-resistant					
Anti-condensate heater					

3-Way Mixing / Diverting Valve Porting

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number		
2"	61	144	175	VFF3FW1Y2C	VFF3FW1Y2E	VFF3FW1Y2D
2-1/2"	107	282	175	VFF3GW1Y2C	VFF3GW1Y2E	VFF3GW1Y2D
3"	154	461	175	VFF3HW1Y2C [†]	VFF3HW1Y2E [†]	VFF3HW1Y2D [†]
			50	VFF3JV1Y2C	VFF3JV1Y2E	VFF3JV1Y2D
4"	274	841	175			
			50	VFF3KV1Y2C ^{*†}	VFF3KV1Y2E ^{*†}	VFF3KV1Y2D ^{*†}
5"	428	1376	175			
			50			
6"	567	1850	175			
			50			
8"	1081	3316	175			
			50			
10"	1710	5430	175			
			50			
12"	2563	8077	175			
			50			
14"	3384	10538	150			
			50			
16"	4483	13966	150			
			50			
18"	5736	17214	150			
			50			
20"	7144	22339	150			
			150			

Use a pair of 2-way valves with standard flanged Tee



VFF3 Default Configuration

Notes:

Viewed from above

P = Actuator and Primary Valve

S = Slave Valve

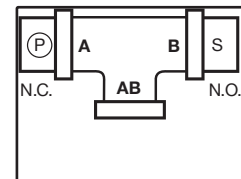
VFF3 valve action is mixing for fluid flow from left to right.

VFF3 valve action is diverting for fluid flow from right to left

3-Way Mixing / Diverting Center Common Port

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number		
2"	61	144	175	VFF6FW1Y2C	VFF6FW1Y2E	VFF6FW1Y2D
2-1/2"	107	282	175	VFF6GW1Y2C	VFF6GW1Y2E	VFF6GW1Y2D
3"	154	461	175	VFF6HW1Y2C [†]	VFF6HW1Y2E [†]	VFF6HW1Y2D [†]
			50	VFF6JV1Y2C	VFF6JV1Y2E	VFF6JV1Y2D
4"	274	841	175			
			50	VFF6KV1Y2C ^{*†}	VFF6KV1Y2E ^{*†}	VFF6KV1Y2D ^{*†}
5"	428	1376	175			
			50			
6"	567	1850	175			
			50			
8"	1081	3316	175			
			50			
10"	1710	5430	175			
			50			
12"	2563	8077	175			
			50			
14"	3384	10538	150			
			50			
16"	4483	13966	150			
			50			
18"	5736	17214	150			
			50			
20"	7144	22339	150			
			150			

Use a pair of 2-way valves with standard flanged Tee



VFF6 Default Configuration

Notes:

Viewed from above

P = Actuator and Primary Valve

S = Slave Valve

VFF6 may be piped for mixing control with water exiting port AB, or for diverting control with water entering port AB

[†] Tandem mount
*Chilled water service only

Product Selection - Valves

Resilient Seat Butterfly Valves, 2-Way Pneumatic Actuation

Common Features

Honeywell offers a wide selection of pneumatic actuators:

- 20 psi spring return (up to 10" size)
- 80 psi spring return
- 80 psi double acting bi-directional

Configurable with accessories:

- Positioner
- Electro-pneumatic positioner (80 psi only)
- Electro-pneumatic solenoid (80 psi only)
- VFF1 configured normally open and VFF2 normally closed at factory for spring return actuators
- Body style: lugged butterfly valve with full-cut (150-175 psid close-off) or under-cut disc (50 psid close-off)
- Bi-directional actuator 175 psid close-off on all sizes with full cut disc (2-way only)
- Normally-open configuration (VFF1 spring return)
- Normally-closed configuration (VFF2 spring return)



Actuator Features		Non-fail Safe (Bidirectional)				
Actuator		80 psi Actuator				
		Standard	E-P Solenoid	E-P Solenoid	Positioner	E-P Positioner
Power Supply	Voltage		24 Vac	120 VAc		24 Vac
	Frequency		50 / 60 Hz	50 / 60 Hz		50 / 60 Hz
	Power		6 W	6 W		
Control	Modulating Pneumatic	•			•	
	2-Position		•	•		
	4-20 mA					•
Auxiliary Switch	Add-On	VFF50-0400	VFF50-0400	VFF50-0400		
Manual Override		•				
Conduit Connection			•	•		•
Waterproof						•
Fail Safe						

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number				
				VFF2FW1YXR	VFF2GW1YXR	VFF2HW1YXR	VFF2JV1YXR	VFF2JW1YXR
2"	61	144	175					
2-1/2"	107	282	175					
3"	154	461	175					
4"	274	841	50					
			175					
5"	428	1376	50					
			175					
6"	567	1850	50					
			175					
8"	1081	3316	50					
			175					
10"	1710	5430	50					
			175					
12"	2563	8077	50					
			175					
14"	3384	10538	50					
			150*					
16"	4483	13966	50					
			150*					
18"	5736	17214	50					
			150*					
20"	7144	22339	50					
			150*					
Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number				
2"	61	144	175	VFF2FW1YXR	VFF2GW1YXR	VFF2HW1YXR	VFF2JV1YXR	VFF2JW1YXR
2-1/2"	107	282	175	VFF2FW1YER	VFF2GW1YER	VFF2HW1YER	VFF2JV1YER	VFF2JW1YER
3"	154	461	175	VFF2FW1YPR	VFF2GW1YPR	VFF2HW1YPR	VFF2JV1YPR	VFF2JW1YPR
			50	VFF2FW1YDR	VFF2GW1YDR	VFF2HW1YDR	VFF2JV1YDR	VFF2JW1YDR
4"	274	841	50	VFF2FW1YER	VFF2GW1YER	VFF2HW1YER	VFF2JV1YER	VFF2JW1YER
			175	VFF2FW1YPR	VFF2GW1YPR	VFF2HW1YPR	VFF2JV1YPR	VFF2JW1YPR
5"	428	1376	50	VFF2FW1YDR	VFF2GW1YDR	VFF2HW1YDR	VFF2JV1YDR	VFF2JW1YDR
			175	VFF2FW1YER	VFF2GW1YER	VFF2HW1YER	VFF2JV1YER	VFF2JW1YER
6"	567	1850	50	VFF2FW1YPR	VFF2GW1YPR	VFF2HW1YPR	VFF2JV1YPR	VFF2JW1YPR
			175	VFF2FW1YDR	VFF2GW1YDR	VFF2HW1YDR	VFF2JV1YDR	VFF2JW1YDR
8"	1081	3316	50	VFF2FW1YER	VFF2GW1YER	VFF2HW1YER	VFF2JV1YER	VFF2JW1YER
			175	VFF2FW1YPR	VFF2GW1YPR	VFF2HW1YPR	VFF2JV1YPR	VFF2JW1YPR
10"	1710	5430	50	VFF2FW1YDR	VFF2GW1YDR	VFF2HW1YDR	VFF2JV1YDR	VFF2JW1YDR
			175	VFF2FW1YER	VFF2GW1YER	VFF2HW1YER	VFF2JV1YER	VFF2JW1YER
12"	2563	8077	50	VFF2FW1YPR	VFF2GW1YPR	VFF2HW1YPR	VFF2JV1YPR	VFF2JW1YPR
			175	VFF2FW1YDR	VFF2GW1YDR	VFF2HW1YDR	VFF2JV1YDR	VFF2JW1YDR
14"	3384	10538	50	VFF2FW1YER	VFF2GW1YER	VFF2HW1YER	VFF2JV1YER	VFF2JW1YER
			175*	VFF2FW1YPR	VFF2GW1YPR	VFF2HW1YPR	VFF2JV1YPR	VFF2JW1YPR
16"	4483	13966	50	VFF2FW1YDR	VFF2GW1YDR	VFF2HW1YDR	VFF2JV1YDR	VFF2JW1YDR
			175*	VFF2FW1YER	VFF2GW1YER	VFF2HW1YER	VFF2JV1YER	VFF2JW1YER
18"	5736	17214	50	VFF2FW1YPR	VFF2GW1YPR	VFF2HW1YPR	VFF2JV1YPR	VFF2JW1YPR
			175*	VFF2FW1YDR	VFF2GW1YDR	VFF2HW1YDR	VFF2JV1YDR	VFF2JW1YDR
20"	7144	22339	50	VFF2FW1YER	VFF2GW1YER	VFF2HW1YER	VFF2JV1YER	VFF2JW1YER
			175*	VFF2FW1YPR	VFF2GW1YPR	VFF2HW1YPR	VFF2JV1YPR	VFF2JW1YPR

2-Way Normally Open

2-Way Normally Closed

Use VFF2 models for Bi-directional pneumatic operation

* Full cut valves with bi-directional pneumatic actuators feature 175 psi close-off in all body sizes

Product Selection - Valves

Resilient Seat Butterfly Valves, 2-Way Pneumatic Actuation

Actuator Features				Fail Safe							
Actuator	20 psi Actuator			80 psi Actuator							
	8-13 spring	Positioner	Standard	E-P Solenoid	E-P Solenoid	Positioner	E-P Positioner				
Power Supply	Voltage			24 Vac	120 Vac		24 Vac				
	Frequency			50 / 60 Hz	50 / 60 Hz		50 / 60 Hz				
	Power			6 W	6 W						
Control	Modulating Pneumatic	•	•	•		•					
	2-Position				•	•					
	4-20 mA									•	
Auxiliary Switch	Add-On			VFF50-0400	VFF50-0400	VFF50-0400					
Manual Override				•							
Conduit Connection					•	•					
Waterproof											
Fail Safe		•	•	•	•	•	•	•	•	•	•

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number							
				2"	61	144	175	VFF1FW1Y8P	VFF1FW1YPP	VFF1FW1YXS	VFF1FW1YCS
2-1/2"	107	282	175	VFF1GW1Y8P	VFF1GW1YPP	VFF1GW1YXS	VFF1GW1YCS	VFF1GW1YES	VFF1GW1YPS	VFF1GW1YDS	
3"	154	461	175	VFF1HW1Y8P	VFF1HW1YPP	VFF1HW1YXS	VFF1HW1YCS	VFF1HW1YES	VFF1HW1YPS	VFF1HW1YDS	
4"	274	841	50	VFF1JV1Y8P	VFF1JV1YPP	VFF1JV1YXS	VFF1JV1YCS	VFF1JV1YES	VFF1JV1YPS	VFF1JV1YDS	
			175	VFF1JW1Y8P	VFF1JW1YPP	VFF1JW1YXS	VFF1JW1YCS	VFF1JW1YES	VFF1JW1YPS	VFF1JW1YDS	
5"	428	1376	50	VFF1KV1Y8P	VFF1KV1YPP	VFF1KV1YXS	VFF1KV1YCS	VFF1KV1YES	VFF1KV1YPS	VFF1KV1YDS	
			175	VFF1KW1Y8P	VFF1KW1YPP	VFF1KW1YXS	VFF1KW1YCS	VFF1KW1YES	VFF1KW1YPS	VFF1KW1YDS	
6"	567	1850	50	VFF1LW1Y8P*	VFF1LW1YPP*	VFF1LW1YXS	VFF1LW1YCS	VFF1LW1YES	VFF1LW1YPS	VFF1LW1YDS	
			175	VFF1LW1Y8P	VFF1LW1YPP	VFF1LW1YXS	VFF1LW1YCS	VFF1LW1YES	VFF1LW1YPS	VFF1LW1YDS	
8"	1081	3316	50	VFF1MV1Y8P	VFF1MV1YPP	VFF1MV1YXS	VFF1MV1YCS	VFF1MV1YES	VFF1MV1YPS	VFF1MV1YDS	
			175	VFF1MW1Y8P [†]	VFF1MW1YPP [†]	VFF1MW1YXS	VFF1MW1YCS	VFF1MW1YES	VFF1MW1YPS	VFF1MW1YDS	
10"	1710	5430	50	VFF1NV1Y8P [†]	VFF1NV1YPP [†]	VFF1NV1YXS	VFF1NV1YCS	VFF1NV1YES	VFF1NV1YPS	VFF1NV1YDS	
			175			VFF1NW1YXS	VFF1NW1YCS	VFF1NW1YES	VFF1NW1YPS	VFF1NW1YDS	
12"	2563	8077	50			VFF1PV1YXS	VFF1PV1YCS	VFF1PV1YES	VFF1PV1YPS	VFF1PV1YDS	
			175			VFF1PW1YXS	VFF1PW1YCS	VFF1PW1YES	VFF1PW1YPS	VFF1PW1YDS	
14"	3384	10538	50			VFF1RV1YXS	VFF1RV1YCS	VFF1RV1YES	VFF1RV1YPS	VFF1RV1YDS	
			150			VFF1RW1YXS	VFF1RW1YCS	VFF1RW1YES	VFF1RW1YPS	VFF1RW1YDS	
16"	4483	13966	50			VFF1SV1YXS	VFF1SV1YCS	VFF1SV1YES	VFF1SV1YPS	VFF1SV1YDS	
			150			VFF1SW1YXS	VFF1SW1YCS	VFF1SW1YES	VFF1SW1YPS	VFF1SW1YDS	
18"	5736	17214	50			VFF1TV1YXS	VFF1TV1YCS	VFF1TV1YES	VFF1TV1YPS	VFF1TV1YDS	
			150			VFF1TW1YXS	VFF1TW1YCS	VFF1TW1YES	VFF1TW1YPS	VFF1TW1YDS	
20"	7144	22339	50			VFF1UV1YXS	VFF1UV1YCS	VFF1UV1YES	VFF1UV1YPS	VFF1UV1YDS	
			150			VFF1UW1YXS	VFF1UW1YCS	VFF1UW1YES	VFF1UW1YPS	VFF1UW1YDS	

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number							
				2"	61	144	175	VFF2FW1Y8P	VFF2FW1YPP	VFF2FW1YXS	VFF2FW1YCS
2-1/2"	107	282	175	VFF2GW1Y8P	VFF2GW1YPP	VFF2GW1YXS	VFF2GW1YCS	VFF2GW1YES	VFF2GW1YPS	VFF2GW1YDS	
3"	154	461	175	VFF2HW1Y8P	VFF2HW1YPP	VFF2HW1YXS	VFF2HW1YCS	VFF2HW1YES	VFF2HW1YPS	VFF2HW1YDS	
4"	274	841	50	VFF2JV1Y8P	VFF2JV1YPP	VFF2JV1YXS	VFF2JV1YCS	VFF2JV1YES	VFF2JV1YPS	VFF2JV1YDS	
			175	VFF2JW1Y8P	VFF2JW1YPP	VFF2JW1YXS	VFF2JW1YCS	VFF2JW1YES	VFF2JW1YPS	VFF2JW1YDS	
5"	428	1376	50	VFF2KV1Y8P	VFF2KV1YPP	VFF2KV1YXS	VFF2KV1YCS	VFF2KV1YES	VFF2KV1YPS	VFF2KV1YDS	
			175	VFF2KW1Y8P	VFF2KW1YPP	VFF2KW1YXS	VFF2KW1YCS	VFF2KW1YES	VFF2KW1YPS	VFF2KW1YDS	
6"	567	1850	50	VFF2LW1Y8P*	VFF2LW1YPP*	VFF2LW1YXS	VFF2LW1YCS	VFF2LW1YES	VFF2LW1YPS	VFF2LW1YDS	
			175	VFF2LW1Y8P	VFF2LW1YPP	VFF2LW1YXS	VFF2LW1YCS	VFF2LW1YES	VFF2LW1YPS	VFF2LW1YDS	
8"	1081	3316	50	VFF2MV1Y8P	VFF2MV1YPP	VFF2MV1YXS	VFF2MV1YCS	VFF2MV1YES	VFF2MV1YPS	VFF2MV1YDS	
			175	VFF2MW1Y8P [†]	VFF2MW1YPP [†]	VFF2MW1YXS	VFF2MW1YCS	VFF2MW1YES	VFF2MW1YPS	VFF2MW1YDS	
10"	1710	5430	50	VFF2NV1Y8P [†]	VFF2NV1YPP [†]	VFF2NV1YXS	VFF2NV1YCS	VFF2NV1YES	VFF2NV1YPS	VFF2NV1YDS	
			175			VFF2NW1YXS	VFF2NW1YCS	VFF2NW1YES	VFF2NW1YPS	VFF2NW1YDS	
12"	2563	8077	50			VFF2PV1YXS	VFF2PV1YCS	VFF2PV1YES	VFF2PV1YPS	VFF2PV1YDS	
			175			VFF2PW1YXS	VFF2PW1YCS	VFF2PW1YES	VFF2PW1YPS	VFF2PW1YDS	
14"	3384	10538	50			VFF2RV1YXS	VFF2RV1YCS	VFF2RV1YES	VFF2RV1YPS	VFF2RV1YDS	
			150			VFF2RW1YXS	VFF2RW1YCS	VFF2RW1YES	VFF2RW1YPS	VFF2RW1YDS	
16"	4483	13966	50			VFF2SV1YXS	VFF2SV1YCS	VFF2SV1YES	VFF2SV1YPS	VFF2SV1YDS	
			150			VFF2SW1YXS	VFF2SW1YCS	VFF2SW1YES	VFF2SW1YPS	VFF2SW1YDS	
18"	5736	17214	50			VFF2TV1YXS	VFF2TV1YCS	VFF2TV1YES	VFF2TV1YPS	VFF2TV1YDS	
			150			VFF2TW1YXS	VFF2TW1YCS	VFF2TW1YES	VFF2TW1YPS	VFF2TW1YDS	
20"	7144	22339	50			VFF2UV1YXS	VFF2UV1YCS	VFF2UV1YES	VFF2UV1YPS	VFF2UV1YDS	
			150			VFF2UW1YXS	VFF2UW1YCS	VFF2UW1YES	VFF2UW1YPS	VFF2UW1YDS	

2-Way Normally Open

2-Way Normally Closed

VALVES

[†]Tandem mount
^{*}Use full cut, 175psid close-off valves - No under-cut, 50psid close-off valve available

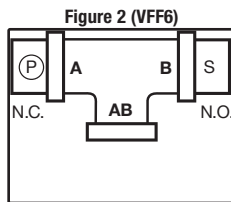
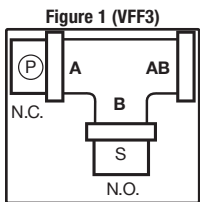
Product Selection - Valves

Resilient Seat Butterfly Valves, 3-Way Pneumatic Actuation

Common Features

Honeywell offers a wide selection of pneumatic actuators:

- FF3 – A-B-AB porting, full-cut (150-175 psid close-off) or under-cut disc (50 psid close-off) (Figure 1 - from 63-2661-03 fig. 12)
- VFF6 – A-AB-B porting, full-cut (150-175 psid close-off) or under-cut disc (50 psid close-off) (Figure 2 - from 63-2661-03 fig. 12)
- 20 psi spring return (up to 8" size)
- 80 psi spring return
- 80 psi double acting bi-directional
- Mixing or diverting control
- Standard right-angle cast-iron T-pipe
- A-port configured to closed position at factory
- Porting pattern field-configurable with valve linkage adjustment



Notes:

Viewed from above

P = Actuator and Primary Valve

S = Slave Valve

VFF3 valve action is mixing for fluid flow from left to right.

VFF3 valve action is diverting for fluid flow from right to left

VFF6 may be piped for mixing control with water exiting port AB, or for diverting control with water entering port AB

Actuator Features		Non-fail Safe (Bidirectional)				
Actuator		80 psi Actuator				
Power Supply		Standard	E-P Solenoid	E-P Solenoid	Positioner	E-P Positioner
Voltage			24 Vac	120 Vac		24 Vac
Frequency			50 / 60 Hz	50 / 60 Hz		50 / 60 Hz
Power			6 W	6 W		
Control						
Modulating Pneumatic		•			•	
2-Position			•	•		
4-20 mA						•
Auxiliary Switch		Add-On	VFF50-0400	VFF50-0400	VFF50-0400	
Manual Override		•				
Conduit Connection			•	•		•
Waterproof						•
Fail Safe						

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number				
				VFF3FW1YXR	VFF3FW1YCR	VFF3FW1YER	VFF3FW1YPR	VFF3FW1YDR
2"	61	144	175	VFF3FW1YXR	VFF3FW1YCR	VFF3FW1YER	VFF3FW1YPR	VFF3FW1YDR
2-1/2"	107	282		VFF3GW1YXR	VFF3GW1YCR	VFF3GW1YER	VFF3GW1YPR	VFF3GW1YDR
3"	154	461		VFF3HW1YXR	VFF3HW1YCR	VFF3HW1YER	VFF3HW1YPR	VFF3HW1YDR
4"	274	841	50	VFF3JV1YXR	VFF3JV1YCR	VFF3JV1YER	VFF3JV1YPR	VFF3JV1YDR
			175	VFF3JW1YXR	VFF3JW1YCR	VFF3JW1YER	VFF3JW1YPR	VFF3JW1YDR
5"	428	1376	50	VFF3KV1YXR	VFF3KV1YCR	VFF3KV1YER	VFF3KV1YPR	VFF3KV1YDR
			175	VFF3KW1YXR	VFF3KW1YCR	VFF3KW1YER	VFF3KW1YPR	VFF3KW1YDR
6"	567	1850	50	VFF3LV1YXR	VFF3LV1YCR	VFF3LV1YER	VFF3LV1YPR	VFF3LV1YDR
			175	VFF3LW1YXR	VFF3LW1YCR	VFF3LW1YER	VFF3LW1YPR	VFF3LW1YDR
8"	1081	3316	50	VFF3MV1YXR	VFF3MV1YCR	VFF3MV1YER	VFF3MV1YPR	VFF3MV1YDR
			175	VFF3MW1YXR	VFF3MW1YCR	VFF3MW1YER	VFF3MW1YPR	VFF3MW1YDR
10"	1710	5430	50	VFF3NV1YXR	VFF3NV1YCR	VFF3NV1YER	VFF3NV1YPR	VFF3NV1YDR
			175	VFF3NW1YXR	VFF3NW1YCR	VFF3NW1YER	VFF3NW1YPR	VFF3NW1YDR
12"	2563	8077	50	VFF3PV1YXR	VFF3PV1YCR	VFF3PV1YER	VFF3PV1YPR	VFF3PV1YDR
			175	VFF3PW1YXR	VFF3PW1YCR	VFF3PW1YER	VFF3PW1YPR	VFF3PW1YDR
14"	3384	10538	50	VFF3RV1YXR	VFF3RV1YCR	VFF3RV1YER	VFF3RV1YPR	VFF3RV1YDR
			150	VFF3RW1YXR	VFF3RW1YCR	VFF3RW1YER	VFF3RW1YPR	VFF3RW1YDR
16"	4483	13966	50	VFF3SV1YXR	VFF3SV1YCR	VFF3SV1YER	VFF3SV1YPR	VFF3SV1YDR
			150	VFF3SW1YXR	VFF3SW1YCR	VFF3SW1YER	VFF3SW1YPR	VFF3SW1YDR
18"	5736	17214	50	VFF3TV1YXR	VFF3TV1YCR	VFF3TV1YER	VFF3TV1YPR	VFF3TV1YDR
			150	VFF3TW1YXR	VFF3TW1YCR	VFF3TW1YER	VFF3TW1YPR	VFF3TW1YDR
20"	7144	22339	50	VFF3UV1YXR	VFF3UV1YCR	VFF3UV1YER	VFF3UV1YPR	VFF3UV1YDR
			150	VFF3UW1YXR	VFF3UW1YCR	VFF3UW1YER	VFF3UW1YPR	VFF3UW1YDR

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number				
				VFF6FW1YXR	VFF6FW1YCR	VFF6FW1YER	VFF6FW1YPR	VFF6FW1YDR
2"	61	144	175	VFF6FW1YXR	VFF6FW1YCR	VFF6FW1YER	VFF6FW1YPR	VFF6FW1YDR
2-1/2"	107	282		VFF6GW1YXR	VFF6GW1YCR	VFF6GW1YER	VFF6GW1YPR	VFF6GW1YDR
3"	154	461		VFF6HW1YXR	VFF6HW1YCR	VFF6HW1YER	VFF6HW1YPR	VFF6HW1YDR
4"	274	841	50	VFF6JV1YXR	VFF6JV1YCR	VFF6JV1YER	VFF6JV1YPR	VFF6JV1YDR
			175	VFF6JW1YXR	VFF6JW1YCR	VFF6JW1YER	VFF6JW1YPR	VFF6JW1YDR
5"	428	1376	50	VFF6KV1YXR	VFF6KV1YCR	VFF6KV1YER	VFF6KV1YPR	VFF6KV1YDR
			175	VFF6KW1YXR	VFF6KW1YCR	VFF6KW1YER	VFF6KW1YPR	VFF6KW1YDR
6"	567	1850	50	VFF6LV1YXR	VFF6LV1YCR	VFF6LV1YER	VFF6LV1YPR	VFF6LV1YDR
			175	VFF6LW1YXR	VFF6LW1YCR	VFF6LW1YER	VFF6LW1YPR	VFF6LW1YDR
8"	1081	3316	50	VFF6MV1YXR	VFF6MV1YCR	VFF6MV1YER	VFF6MV1YPR	VFF6MV1YDR
			175	VFF6MW1YXR	VFF6MW1YCR	VFF6MW1YER	VFF6MW1YPR	VFF6MW1YDR
10"	1710	5430	50	VFF6NV1YXR	VFF6NV1YCR	VFF6NV1YER	VFF6NV1YPR	VFF6NV1YDR
			175	VFF6NW1YXR	VFF6NW1YCR	VFF6NW1YER	VFF6NW1YPR	VFF6NW1YDR
12"	2563	8077	50	VFF6PV1YXR	VFF6PV1YCR	VFF6PV1YER	VFF6PV1YPR	VFF6PV1YDR
			175	VFF6PW1YXR	VFF6PW1YCR	VFF6PW1YER	VFF6PW1YPR	VFF6PW1YDR
14"	3384	10538	50	VFF6RV1YXR	VFF6RV1YCR	VFF6RV1YER	VFF6RV1YPR	VFF6RV1YDR
			175*	VFF6RW1YXR	VFF6RW1YCR	VFF6RW1YER	VFF6RW1YPR	VFF6RW1YDR
16"	4483	13966	50	VFF6SV1YXR	VFF6SV1YCR	VFF6SV1YER	VFF6SV1YPR	VFF6SV1YDR
			175*	VFF6SW1YXR	VFF6SW1YCR	VFF6SW1YER	VFF6SW1YPR	VFF6SW1YDR
18"	5736	17214	50	VFF6TV1YXR	VFF6TV1YCR	VFF6TV1YER	VFF6TV1YPR	VFF6TV1YDR
			175*	VFF6TW1YXR	VFF6TW1YCR	VFF6TW1YER	VFF6TW1YPR	VFF6TW1YDR
20"	7144	22339	50	VFF6UV1YXR	VFF6UV1YCR	VFF6UV1YER	VFF6UV1YPR	VFF6UV1YDR
			175*	VFF6UW1YXR	VFF6UW1YCR	VFF6UW1YER	VFF6UW1YPR	VFF6UW1YDR

3-Way Mixing / Diverting Valve Porting

3-Way Mixing / Diverting Center Common Port

* Full cut valves with bi-directional pneumatic actuators feature 175 psi close-off in all body sizes

Product Selection - Valves

Resilient Seat Butterfly Valves, 3-Way Pneumatic Actuation

Actuator Features				Fail Safe							
Actuator		20 psi Actuator		80 psi Actuator							
		8-13 spring	Positioner	Standard	E-P Solenoid	E-P Solenoid	Positioner	E-P Positioner			
Power Supply	Voltage				24 Vac	120 Vac			24 Vac		
	Frequency				50 / 60 Hz	50 / 60 Hz			50 / 60 Hz		
	Power				6 W	6 W					
Control	Modulating Pneumatic	•	•	•				•			
	2-Position				•	•					
	4-20 mA								•		
Auxiliary Switch	Add-On			VFF50-0400	VFF50-0400	VFF50-0400					
Manual Override				•							
Conduit Connection					•	•			•		
Waterproof									•		
Fail Safe		•	•	•	•	•	•	•	•		

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number							
				2"	61	144	175	VFF3FW1Y8P	VFF3FW1YPP	VFF3FW1YXS	VFF3FW1YCS
2-1/2"	107	282	175	VFF3GW1Y8P	VFF3GW1YPP	VFF3GW1YXS	VFF3GW1YCS	VFF3GW1YES	VFF3GW1YPS	VFF3GW1YDS	
3"	154	461	175	VFF3HW1Y8P	VFF3HW1YPP	VFF3HW1YXS	VFF3HW1YCS	VFF3HW1YES	VFF3HW1YPS	VFF3HW1YDS	
			50	VFF3JV1Y8P	VFF3JV1YPP	VFF3JV1YXS	VFF3JV1YCS	VFF3JV1YES	VFF3JV1YPS	VFF3JV1YDS	
4"	274	841	175	VFF3JW1Y8P	VFF3JW1YPP	VFF3JW1YXS	VFF3JW1YCS	VFF3JW1YES	VFF3JW1YPS	VFF3JW1YDS	
			50	VFF3KW1Y8P*	VFF3KW1YPP*	VFF3KW1YXS	VFF3KW1YCS	VFF3KW1YES	VFF3KW1YPS	VFF3KW1YDS	
5"	428	1376	175	VFF3KW1Y8P	VFF3KW1YPP	VFF3KW1YXS	VFF3KW1YCS	VFF3KW1YES	VFF3KW1YPS	VFF3KW1YDS	
			50	VFF3LV1Y8P	VFF3LV1YPP	VFF3LV1YXS	VFF3LV1YCS	VFF3LV1YES	VFF3LV1YPS	VFF3LV1YDS	
6"	567	1850	175	VFF3LV1Y8P†	VFF3LV1YPP†	VFF3LV1YXS	VFF3LV1YCS	VFF3LV1YES	VFF3LV1YPS	VFF3LV1YDS	
			50	VFF3MV1Y8P†	VFF3MV1YPP†	VFF3MV1YXS	VFF3MV1YCS	VFF3MV1YES	VFF3MV1YPS	VFF3MV1YDS	
8"	1081	3316	175			VFF3MW1YXS	VFF3MW1YCS	VFF3MW1YES	VFF3MW1YPS	VFF3MW1YDS	
			50			VFF3NV1YXS	VFF3NV1YCS	VFF3NV1YES	VFF3NV1YPS	VFF3NV1YDS	
10"	1710	5430	175			VFF3NW1YXS	VFF3NW1YCS	VFF3NW1YES	VFF3NW1YPS	VFF3NW1YDS	
			50			VFF3PV1YXS	VFF3PV1YCS	VFF3PV1YES	VFF3PV1YPS	VFF3PV1YDS	
12"	2563	8077	175			VFF3PW1YXS	VFF3PW1YCS	VFF3PW1YES	VFF3PW1YPS	VFF3PW1YDS	
			50			VFF3RV1YXS	VFF3RV1YCS	VFF3RV1YES	VFF3RV1YPS	VFF3RV1YDS	
14"	3384	10538	150			VFF3RW1YXS	VFF3RW1YCS	VFF3RW1YES	VFF3RW1YPS	VFF3RW1YDS	
			50			VFF3SV1YXS	VFF3SV1YCS	VFF3SV1YES	VFF3SV1YPS	VFF3SV1YDS	
16"	4483	13966	150								
			50			VFF3TV1YXS	VFF3TV1YCS	VFF3TV1YES	VFF3TV1YPS	VFF3TV1YDS	
18"	5736	17214	150								
			50			VFF3UV1YXS	VFF3UV1YCS	VFF3UV1YES	VFF3UV1YPS	VFF3UV1YDS	
20"	7144	22339	150								

Valve Size (inches)	Cv @ 60°	Cv @ 90°	Close-off (psid)	Valve O.S. Number						
				2"	61	144	175			VFF6FW1YXS
2-1/2"	107	282	175			VFF6GW1YXS	VFF6GW1YCS	VFF6GW1YES	VFF6GW1YPS	VFF6GW1YDS
3"	154	461	175			VFF6HW1YXS	VFF6HW1YCS	VFF6HW1YES	VFF6HW1YPS	VFF6HW1YDS
			50			VFF6JV1YXS	VFF6JV1YCS	VFF6JV1YES	VFF6JV1YPS	VFF6JV1YDS
4"	274	841	175			VFF6JW1YXS	VFF6JW1YCS	VFF6JW1YES	VFF6JW1YPS	VFF6JW1YDS
			50			VFF6KV1YXS	VFF6KV1YCS	VFF6KV1YES	VFF6KV1YPS	VFF6KV1YDS
5"	428	1376	175			VFF6KW1YXS	VFF6KW1YCS	VFF6KW1YES	VFF6KW1YPS	VFF6KW1YDS
			50			VFF6LV1YXS	VFF6LV1YCS	VFF6LV1YES	VFF6LV1YPS	VFF6LV1YDS
6"	567	1850	175			VFF6LW1YXS	VFF6LW1YCS	VFF6LW1YES	VFF6LW1YPS	VFF6LW1YDS
			50			VFF6MV1YXS	VFF6MV1YCS	VFF6MV1YES	VFF6MV1YPS	VFF6MV1YDS
8"	1081	3316	175			VFF6MW1YXS	VFF6MW1YCS	VFF6MW1YES	VFF6MW1YPS	VFF6MW1YDS
			50			VFF6NV1YXS	VFF6NV1YCS	VFF6NV1YES	VFF6NV1YPS	VFF6NV1YDS
10"	1710	5430	175			VFF6NW1YXS	VFF6NW1YCS	VFF6NW1YES	VFF6NW1YPS	VFF6NW1YDS
			50			VFF6PV1YXS	VFF6PV1YCS	VFF6PV1YES	VFF6PV1YPS	VFF6PV1YDS
12"	2563	8077	175			VFF6PW1YXS	VFF6PW1YCS	VFF6PW1YES	VFF6PW1YPS	VFF6PW1YDS
			50			VFF6RV1YXS	VFF6RV1YCS	VFF6RV1YES	VFF6RV1YPS	VFF6RV1YDS
14"	3384	10538	150			VFF6RW1YXS	VFF6RW1YCS	VFF6RW1YES	VFF6RW1YPS	VFF6RW1YDS
			50			VFF6SV1YXS	VFF6SV1YCS	VFF6SV1YES	VFF6SV1YPS	VFF6SV1YDS
16"	4483	13966	150							
			50			VFF6TV1YXS	VFF6TV1YCS	VFF6TV1YES	VFF6TV1YPS	VFF6TV1YDS
18"	5736	17214	150							
			50			VFF6UV1YXS	VFF6UV1YCS	VFF6UV1YES	VFF6UV1YPS	VFF6UV1YDS
20"	7144	22339	150							

3-Way Mixing / Diverting Valve Porting

3-Way Mixing / Diverting Center Common Port

VALVES

*Tandem mount
 †Use full cut, 175psid close-off valves - No under-cut, 50psid close-off valve available

Submittal Data - Valves

Pneumatic Valve Actuators



Pneumatic actuators provide proportional control of steam or hot or cold liquids in HVAC systems by operating V5011, V5013 and VGF valve assemblies. Replacement devices are available for older Honeywell actuators.

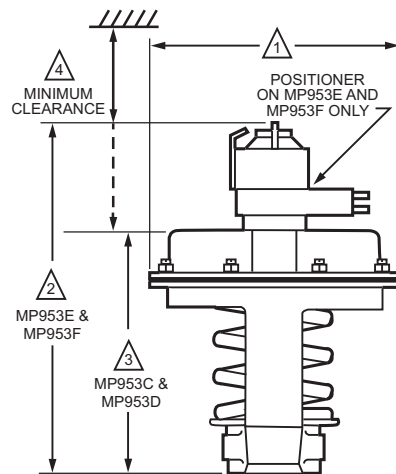
FEATURES

- Rolling diaphragm for long life and low hysteresis.
- Easily attached to valve.
- Can be installed after piping valve.
- Slide lock feature permits simple engagement to valve stem.
- Direct- or reverse-action control.
- Does not include positive positioner.

SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Spring Return
Air Connections	Dual barbed fitting for 5/32 in. O.D. and 1/4 in. O.D. plastic tubing
Temperature Range	0 F to 140 F (-18 C to +60 C)
Maximum Operating Pressure	(172 kPa) 25 psi
Humidity Range	5 to 95% RH

DIMENSIONS DIAGRAM



OPERATION SIZE NOMINAL DIA.	1	2	3	4
5 INCH	5-1/8 (130)	9-1/4 (235)	4-5/8 (117)	4-3/8 (111)
7-1/8 INCH	7-1/8 (181)	10-1/2 (267)	5-5/8 (143)	4-3/8 (111)
8 INCH	8-1/4 (210)	11-1/8 (283)	6-1/2 (165)	5-3/8 (137)
13 INCH	13-1/2 (343)	18-1/8 (460)	10 (254)	7-11/16 (195)

M13903

Pneumatic Valve Actuators



Pneumatic actuators provide proportional control of steam or hot or cold liquids in HVAC systems by operating V5011, V5013 and VGF valve assemblies. Replacement devices are available for older Honeywell actuators.

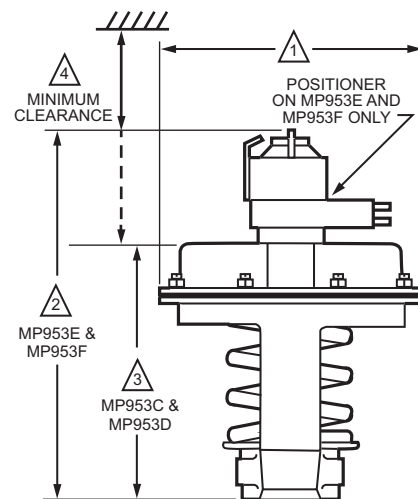
FEATURES

- Rolling diaphragm for long life and low hysteresis.
- Easily attached to valve.
- Can be installed after piping valve.
- Slide lock feature permits simple engagement to valve stem.
- Direct- or reverse-action control.
- Integral positive positioner relay provides positive positioning under varying load conditions.

SPECIFICATIONS

Actuator Type	Valve
Action	Direct Acting
Fail Safe Mode.....	Spring Return
Air Connections	Pilot: Barbed fitting for 5/32 in. O.D. plastic tubing Main: Barbed fitting for 1/4 in. O.D. plastic tubing
Temperature Range.....	0 F to 140 F (-18 C to +60 C)
Maximum Operating Pressure.....	(172 kPa) 25 psi
Humidity Range.....	.5 to 95% RH

DIMENSIONS DIAGRAM



OPERATION SIZE NOMINAL DIA.	1	2	3	4
5 INCH	5-1/8 (130)	9-1/4 (235)	4-5/8 (117)	4-3/8 (111)
7-1/8 INCH	7-1/8 (181)	10-1/2 (267)	5-5/8 (143)	4-3/8 (111)
8 INCH	8-1/4 (210)	11-1/8 (283)	6-1/2 (165)	5-3/8 (137)
13 INCH	13-1/2 (343)	18-1/8 (460)	10 (254)	7-11/16 (195)

M13903

Submittal Data - Valves

Pneumatic Valve Actuators

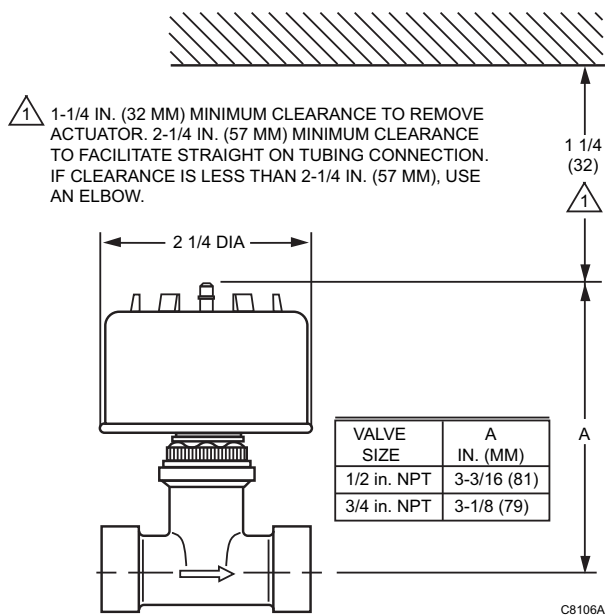


The MP958 Pneumatic Valve Actuator is direct acting and used only with Honeywell V5852A2xx, V5862A2xx, V5853A2xx, and V5863A2xx Terminal Unit Valves to control hot and/or chilled water.

SPECIFICATIONS

Actuator Type	Valve
Action	Direct Acting
Fail Safe Mode	Spring Return
Air Connections	Barbed fitting for 1/4 in. O.D. plastic tubing
Maximum Operating Pressure	30 psi

DIMENSIONS DIAGRAM





The VU844 Fan Coil Valve Actuators are used in conjunction with the VU52, VU53 and VU54 valves for controlling the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors. These valves are humidity resistant and are suitable for use in condensing, non-corrosive environments.

FEATURES

- Compact construction for easy installation.
- Fits under the cover of most baseboard convectors with actuator fitted to valve body.
- One-button, quick release. Secure 3-point, metal latch to valve body.
- Spring return operation.
- Stainless steel case and aluminum cover. Rust-proof nickel-plated motors available.
- Line or low voltage, rust-resistant motors.
- Manual opener for installation and valve operation on power failure.
- Valve returns to automatic position when power is restored.
- Actuator may be reinstalled or serviced without draining the system or disassembling the valve.
- Slotted conduit hole for faster wiring.

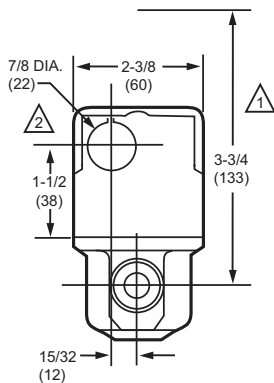
SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Spring Return
Electrical Connections	Leads
Frequency	60 Hz
Manual operation	Lever
Materials	Stainless Case, Aluminum Cover
Medium Temperature	200 F (94 C)
Ambient Temperature Range	34 F to 125 F ambient at 200 F Fluid (1 C to 52 C ambient at 93 C Fluid)
Maximum Differential Pressure Ratings (Close-off)	Depends on Cv rating of valve
Comments	For controlling the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors

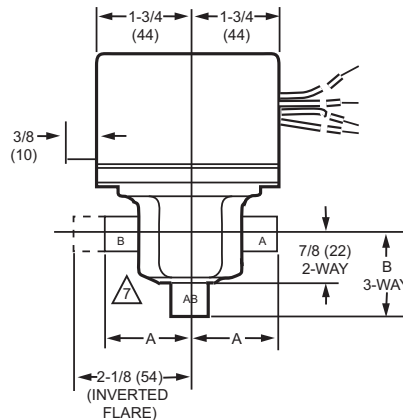
APPROVALS

Canadian Standards Association..... Certified C/US File No. LR1322

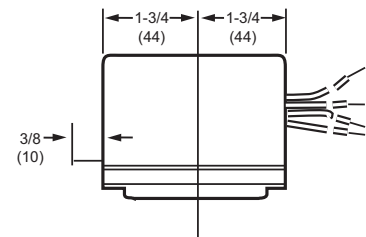
DIMENSIONS DIAGRAM



VU53 VALVE WITH VU448 ACTUATOR



VU53 AND VU54 VALVE WITH ACTUATOR



VU5 ACTUATOR

- 1 HEIGHT NEEDED TO REMOVE ACTUATOR OR COVER
- 2 OPENING FOR 1/2 IN. CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

VALVE BODY SIZE	A	B
1/2 IN. SWEAT	1-5/6 (33)	1-5/6 (33)
3/4 IN. SWEAT	1-3/8 (35)	1-11/16 (43)
1 IN. SWEAT	1-11/16 (43)	1-11/16 (43)
1/2 IN. NPT	1-3/8 (35)	1-5/16 (33)
3/4 IN. NPT	1-11/16 (43)	1-7/16 (37)
1 IN. NPT	1-11/16 (43)	1-7/16 (37)

Submittal Data - Valves

Unitary Valve Actuators, Two-Position



Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low or line voltage SPST or SPDT controller such as a room thermostat.

FEATURES

- Use with two-way or three-way valves.
- Minimal actuator power consumption.
- Quick-connect or one meter cable electrical connections available.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- On/Off models with six second nominal timing
- Use two-position actuators with 1000 Series 2 way and 6000 Series 3-way VC valve bodies only.
- All VC Series actuator-valve combinations provide 60 psi close-off.

SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Stays in place
Maximum Differential Pressure Ratings (Close-off) (psi)	60 psid
Dimensions, Approximate	2.8 in. high x 3.7 in. wide x 2.7 in. deep (70 mm high x 94 mm wide x 68 mm deep)
Electrical Protection	Double Insulated
Electrical Connections	Plenum-rated cable
Ingress Protection Rating	IP40
Frequency	60 Hz
Manual operation	Lever
Mounting	Direct Coupled
Shaft Adapter Type	Self-alignment
Stroke	0.4 in. (10 mm)
Timing; Nominal Driving @ 60 Hz (sec)	6 sec
Materials	Plastic housing
Operating Humidity Range (% RH)	5 to 95% RH, non-condensing
Medium Temperature	203 F (95 C)
Ambient Temperature Range	32 F to 150 F (0 C to 65 C)
Temperature Ratings (Shipping)	-40 F to +150 F (-40 C to +65 C)
Storage Temperature Range	-40 F to +150 F (-40 C to +65 C)
Weight	0.57 lb (0.26 kg)

APPROVALS

Canadian Standards Association	CSA Certified: LR1322-367
CE	89/336/ECC, 73/23/EEC
Underwriters Laboratories, Inc.	UL Recognized, File# MH11826

Unitary Valve Actuators, Proportional



Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by a low voltage SPST or SPDT switch, pulse-width modulated 24 Vac signal, or floating input, modulating controller such as a room thermostat, Aquastat control, flow switch or a 0/2 to 10 Vdc controller.

FEATURES

- Use with two-way or three-way valves.
- Double insulated actuator.
- Five foot plenum-rated cable.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- Selectable/switchable electronic fail safe normally open or normally closed.
- Available with valve bodies with 1000-series 2-way and 6000-series 3-way cartridges for new construction.
- All VC Series actuator-valve combinations provide 60 psi close-off.

SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Stays in place
Cable Entry	Molded strain relief, conduit clamp
Dimensions, Approximate	2.8 in. high x 3.7 in. wide x 2.7 in. deep (70 mm high x 94 mm wide x 68 mm deep)
Electrical Protection	Double Insulated
Electrical Connections	Plenum-rated cable
Electrical Connection Length	5 ft. (1.5 m)
Ingress Protection Rating	IP40
Frequency	50 Hz; 60 Hz
Manual operation	Lever
Mounting	Direct Coupled
Shaft Adapter Type	Self-alignment
Stroke	0.4 in. (10 mm)
Timing; Nominal Driving @ 60 Hz (sec)	120 sec
Supply Voltage	24 Vac
Power Consumption (Driving)	6 VA
Materials	Plastic housing
Operating Humidity Range (% RH)	5 to 95% RH, non-condensing
Medium Temperature	203 F (95 C)
Ambient Temperature Range	32 F to 150 F (0 C to 65 C)
Temperature Ratings (Shipping)	-40 F to +150 F (-40 C to +65 C)
Storage Temperature Range	-40 F to +150 F (-40 C to +65 C)
Weight	0.84 lb (0.38 kg)

APPROVALS

Canadian Standards Association	CSA Certified: LR1322-367
Underwriters Laboratories, Inc.	Listed 94-5V

Submittal Data - Valves

Unitary Valve Actuators, Fail Safe Proportional



Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low or line voltage SPST or SPDT or floating or modulating controller such as a room thermostat, Aquastat control, flow switch or a 0/2 to 10 Vdc controller.

FEATURES

- Use with two-way or three-way valves.
- Minimal actuator power consumption.
- Double insulated actuator.
- Five foot plenum-rated cable electrical connections available.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- Selectable/switchable electronic fail safe normally open or normally closed.
- Includes valve bodies with 1000-series 2-way and 3000-series 3-way cartridges.
- All VC Series actuator-valve combinations provide 60 psi close-off.

SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode.....	N.O. or N.C., switchable electronic
Cable Entry.....	Molded strain relief, conduit clamp
Dimensions, Approximate	2.8 in. high x 3.7 in. wide x 2.7 in. deep (70 mm high x 94 mm wide x 68 mm deep)
Electrical Protection.....	Double Insulated
Electrical Connections.....	Plenum-rated cable
Electrical Connection Length	5 ft. (1.5 m)
Ingress Protection Rating	IP40
Frequency	50 Hz; 60 Hz
Manual operation.....	Lever
Mounting.....	Direct Coupled
Shaft Adapter Type.....	Self-alignment
Number of Internal Auxiliary Switch	0
Stroke	0.4 in. (10 mm)
Supply Voltage	24 Vac
Materials.....	Plastic housing
Operating Humidity Range (% RH)	5 to 95% RH, non-condensing
Medium Temperature	203 F (95 C)
Ambient Temperature Range	32 F to 150 F (0 C to 65 C)
Temperature Ratings (Shipping).....	-40 F to +150 F (-40 C to +65 C)
Storage Temperature Range	-40 F to +150 F (-40 C to +65 C)
Weight	0.84 lb (0.38 kg)
Includes.....	Flexible conduit adapter

APPROVALS

Canadian Standards Association.....	CSA Certified: LR1322-367
CE	89/336/ECC, 73/23/EEC
Underwriters Laboratories, Inc.....	Listed 94-5V

Unitary Valve Actuators M6410; M7410



Cartridge Globe Valve Actuators are small electric actuators for individual room control that provide floating or modulating control of V5852, V5862 two-way or V5853, V5863 three-way valves.

FEATURES

- Suitable for Excel/IRC system or other controllers providing specified signals.
- Magnetic coupling for torque limitation independent of voltage supply and self-adjustment of the close-off port.
- No mounting tools required.
- Small size allows installation in limited space of fan coil units, induction units, and small reheaters or recoilers.
- Visual position indication (red pin).

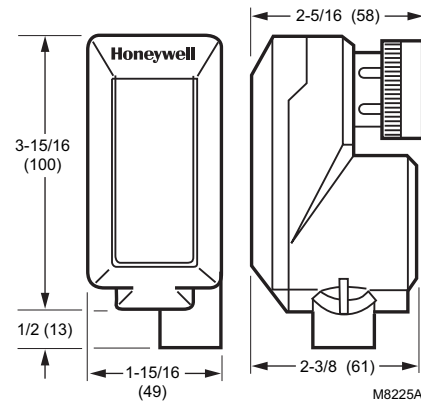
SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Stays in place
Cable Entry	Threaded conduit connector
Electrical Protection	Class I Insulation (24 Vac)
Electrical Connections	Plenum-rated cable
Ingress Protection Rating	IP42
Feedback	No
Frequency	50 Hz; 60 Hz
Manual operation	None (use valve dust cap)
Mounting	Threads onto V58XX valve bonnet
Number of Internal Auxiliary Switch	0
Stroke	1/4 in. (6 mm)
Supply Voltage	24 Vac +10/-30%
Timing; Nominal Driving @ 60 Hz (sec)	125 sec
Materials	Low Maintenance Plastic Housing
Operating Humidity Range (% RH)	5 to 95% RH
Medium Temperature	266 F Maximum (130 C Maximum)
Ambient Temperature Range	32 F to 122 F (0 C to 50 C)
Storage Temperature Range	-40 F to +158 F (-40 C to +70 C)
Weight	0.3125 lb (0.15 kg)
Includes	1/2 in. conduit hub

APPROVALS

Underwriters Laboratories, Inc..... UL94-5V

DIMENSIONS DIAGRAM



Submittal Data - Valves

Unitary Valve Actuators M6435; M7435



Cartridge Globe Valve Spring Return Actuators are small electric actuators for individual room control that provide floating or modulating control of V5852, V5862 two-way or V5853, V5863 three-way valves.

FEATURES

- Stem actuator retracts up on power failure. Fail safe mode depends on valve seat rest position.
- Suitable for Excel/IRC system or other controllers providing specified signals.
- Magnetic coupling for torque limitation independent of voltage supply and self-adjustment of the close-off port.
- No mounting tools required.
- Compact size allows installation in limited space of fan coil units, induction units, and small reheaters or recoolers.
- Visual position indication (red disk).

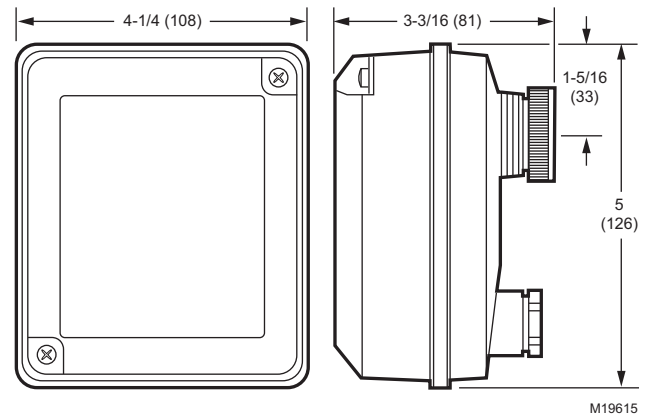
SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Spring Return, operator retracts up (Normally open for 1/2 in. and 3/4 in. V5852 and V5862. Normally closed for all other V58XX valves.)
Spring Return Direction	Stem up
Cable Entry	Threaded conduit connector
Electrical Protection	Class I Insulation (24 Vac)
Electrical Connections	Screw terminals
Ingress Protection Rating	IP54
Feedback	No
Frequency	50 Hz; 60 Hz
Manual operation	None (use valve dust cap)
Mounting	Threads onto V58XX valve bonnet
Number of Internal Auxiliary Switch	0
Stroke	1/4 in. (6 mm)
Supply Voltage	24 Vac +20%, -15%
Timing; Nominal Driving @ 60 Hz (sec)	50 sec
Spring Return Timing (Nominal (sec))	10 sec
Materials	Low Maintenance Plastic Housing
Operating Humidity Range (% RH)	5 to 95% RH
Medium Temperature	266 F Maximum (130 C Maximum)
Ambient Temperature Range	32 F to 122 F (0 C to 50 C)
Storage Temperature Range	-40 F to +158 F (-40 C to +70 C)
Weight	1.1 lb (0.5 kg)
Includes	1/2 in. conduit hub

APPROVALS

Underwriters Laboratories, Inc.UL94-5V

DIMENSIONS DIAGRAM



Direct Coupled Valve Actuators, MVN



MVN 3Nm (27 lb-in.) Control Valve Actuator is used with the VBN2 2-way and the VBN3 3-way Control Ball Valves to control hot and chilled water with glycol solutions up to 50% in heating, ventilating and air conditioning (HVAC) systems to provide two position or modulating functions.

FEATURES

- Non-spring Return
- Floating and modulating
- Space saving, click-on installation – no tool required
- Extendable position indicator for easy commissioning
- Available with or without cable
- Compatible with control ball valves from 1/2 to 1-1/4 inches.
- Actuator can be mounted on the valve in any of four positions.

SPECIFICATIONS

Actuator Type	Valve
Rotational Stroke	90° ±3°
Fail Safe Mode	Non-spring return, Fail in place
Torque	27 lb-in. (3 Nm)
External Auxiliary Switches Available ..	No
Supply Voltage	24 Vac +20%, -15%, 24 Vdc
Power Consumption	5 VA- Modulating; 1.5 VA - Floating; 6 VA - Fast Acting SPDT
Environmental Rating	NEMA2
Frequency	50 Hz; 60 Hz
Mounting	Click-on installation – no tool required
Noise Rating at 1m (Maximum)	35 dB(A) max at 1 m [50 dB (A) for MVN643]
Materials	Plenum rated plastic housing
Operating Humidity Range (% RH)	5 to 95% RH, noncondensing
Ambient Temperature Range	-4 °F to 131 °F (-20 °C to 55 °C)
Storage Temperature Range	-40 °F to 176 °F (-40 °C to 80 °C)
Dimensions	See page 161
Timing	90 sec. for MVN613 and MVN713; 30 sec. for MVN643
Electrical Connections	Field wiring 18 to 20 AWG to screw terminals, located under the removable access cover.
Humidity Ratings	5% to 95% RH noncondensing
Design Life (at Rated Voltage)	60,000 cycles; 1 cycle = 0°...90°...0°
Cable Specification	18 AWG, Plenum Rated, 300 V, 10 A, 3 ft. length from end of access cover.
Environmental Protection Ratings	IP40
Approvals	UL/cUL; UL60730

DIMENSIONS DIAGRAM

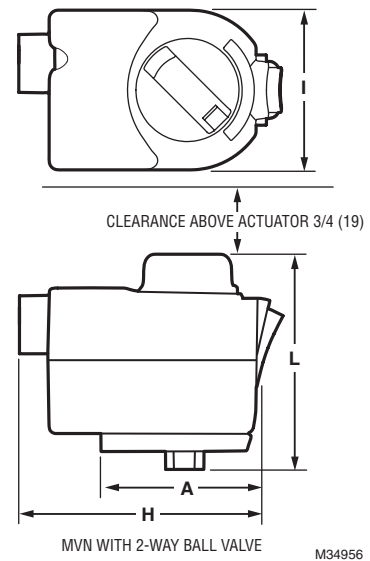


Table 1. Actuators and Accessories

Actuator	Description	Accessory
MVN613A0000	Floating control ball valve actuator	C1- 1 meter cable
MVN613L0000	Floating control ball valve actuator	
MVN643A0000	Fast acting SPDT control ball valve actuator	
MVN643L0000	Fast acting SPDT control ball valve actuator	
MVN713A0000	Modulating control ball valve actuator	
MVN713L0000	Modulating control ball valve actuator	

To order actuator with accessories order actuator part number + accessory. For example: MVN613A0000 + C1

Submittal Data - Valves

Direct Coupled Valve Actuators, ML6420; ML7420



Direct Coupled Globe Valve Actuators provide floating or modulating control of chilled water, hot water or steam, and mount directly on VGF series, V5011 and V5013 globe valves from 1/2 to 3 inches.

FEATURES

- Easy and quick installation on valves with 1 3/8 in. bonnet and 3/4 in. stroke.
- No separate linkage required.
- Conduit connector standard.
- No adjustments required on linkage.
- Accurate valve positioning.
- Low power consumption.
- High close-off ratings.
- Force limiting end switches.
- Manual operator.
- Synchronous motor.
- Maintenance free.
- ML7420 has an internal selector plug that can be used to reverse the direction of action.

SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Stays in place
Cable Entry	Conduit connector and one knockout on actuator case
Electrical Protection	Class I Insulation (24 Vac)
Electrical Connections	Screw terminals
Ingress Protection Rating	IP54
Frequency	50 Hz; 60 Hz
Manual operation	Knob
Mounting	Directly on V5011/V5013 Globe Valves and VGF Flanged Globe Valves (3/4 in. or 20mm stroke)
Number of Internal Auxiliary Switch	0
Stroke	3/4 in. (20 mm)
Supply Voltage	24 Vac \pm 15%
Materials	ABS-FR Plastic, aluminum yoke
Operating Humidity Range (% RH)	5 to 95% RH
Medium Temperature	300 F Maximum (150 C Maximum)
Ambient Temperature Range	14 F to 122 F (-10 C to +50 C)
Storage Temperature Range	-40 F to +158 F (-40 C to +70 C)
Weight	2.9 lb (1.3 kg)
Includes	1/2 in. conduit hub; 1/2 in. flexible conduit adapter

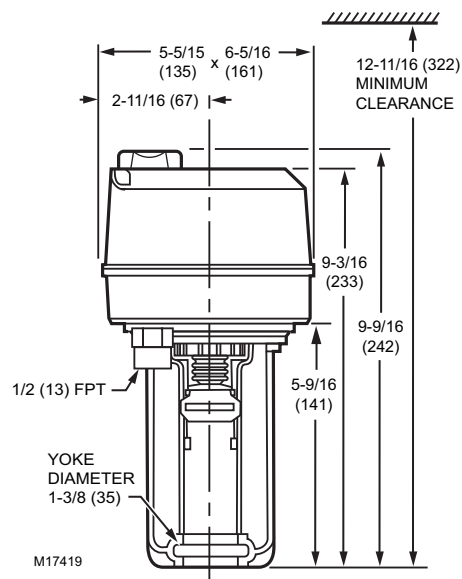
APPROVALS

Canadian Standards Association	Certified
CE	Listed
Underwriters Laboratories, Inc.	UL94-5V

ACCESSORIES

- 312495—Large stem button provides anti-spin for globe valves up to 3 in. (1/4-28UNF stem) with ML6420, ML7420, ML6421A, ML7421A, ML6425, and ML7425 actuators. Not required with ML6984/7984 actuators or Q5022A linkage; not compatible with Q5020 linkage.
- 43196000-001—High Temperature Kit for actuators with 3/4 inch (20 mm) stroke, stem button attachment
- 43191679-111—Potentiometer, 10k ohm, for ML6425, ML7425
- 43191679-112—Potentiometer, 220 ohm for ML6425, ML7425
- 43191680-105—Dual Auxiliary Switch for CREVAL actuators

DIMENSIONS DIAGRAM



Direct Coupled Valve Actuators, ML6421; ML7421



Direct Coupled Globe Valve Actuators provide floating or modulating control of chilled water, hot water or steam, and mount directly on VGF series, V5011 and V5013 valves. These Non-Spring Return High Force Actuators will operate 1-1/2 to 6 inch valves.

FEATURES

- Easy and quick installation on valves with 1 3/8 in. bonnet and 3/4 in. stroke, or with 1 7/8 in. bonnet and 1 1/2 in. stroke.
- High force for VGF Pressure-balanced valves.
- No separate linkage required.
- Conduit connector standard.
- No adjustments required on linkage.
- Accurate valve positioning.
- Low power consumption.
- High close-off ratings.
- Force limiting end switches.
- Manual operator.
- Synchronous motor.
- Maintenance free.

SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode.....	Stays in place
Cable Entry.....	Two knockout holes for 1/2 in. conduit standard on actuator case
Electrical Protection.....	Class I Insulation (24 Vac)
Electrical Connections.....	Screw terminals
Ingress Protection Rating	IP54
Frequency	50 Hz; 60 Hz
Manual operation.....	Knob
Mounting.....	Directly on V5011/V5013 Globe Valves and VGF Flanged Globe Valves
Number of Internal Auxiliary Switch	0
Materials.....	ABS Plastic
Operating Humidity Range (% RH)	5 to 95% RH
Medium Temperature	300 F Maximum (150 C Maximum)
Ambient Temperature Range	14 F to 122 F (-10 C to +50 C)
Storage Temperature Range	-40 F to +158 F (-40 C to +70 C)
Weight	5.1 lb (2.3 kg)
Includes.....	1/2 in. conduit hub; 1/2 in. flexible conduit adapter

APPROVALS

Canadian Standards Association.....	Certified
CE.....	Recognized
Underwriters Laboratories, Inc.....	UL94-5V

ACCESSORIES

312495—Large stem button provides anti-spin for globe valves up to 3 in. (1/4-28UNF stem) with ML6420, ML7420, ML6421A, ML7421A, ML6425, and ML7425 actuators. Not required with ML6984/7984 actuators or Q5022A linkage; not compatible with Q5020 linkage.

43191679-101—Auxiliary Potentiometer for ML6421A

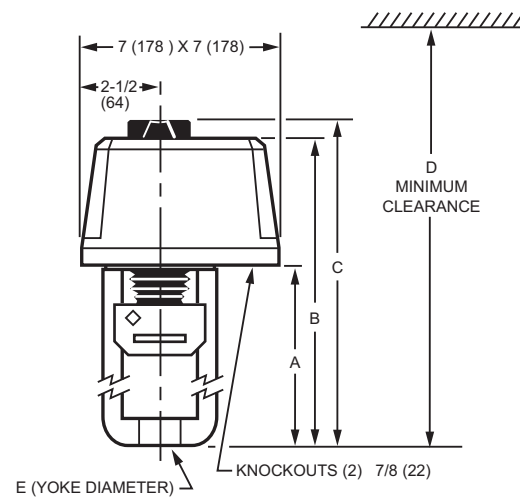
43191679-102—220 ohm Auxiliary Potentiometer for ML6421B

43191680-102—Dual Auxiliary Switch for CREVAL actuators

43196000-001—High Temperature Kit for actuators with 3/4 inch (20 mm) stroke, stem button attachment

43196000-038—High Temperature Kit for actuators with 1-1/2 inch (38 mm) stroke, stem button attachment

DIMENSIONS DIAGRAM



	ML6421A, ML7421A	ML6421B, ML7421B
A	5-5/8 (142)	8 (204)
B	9-3/8 (239)	11-7/8 (301)
C	10-3/8 (264)	12-3/4 (326)
D	14-1/4 (360)	16-7/8 (430)
E	1-3/8 (35)	1-7/8 (48)

M16827

Submittal Data - Valves

Direct Coupled Valve Actuators, ML6425; ML7425



Direct Coupled Globe Valve Actuators provide floating and modulating control of chilled water, hot water and steam, and mount directly on VGF series, V5011 and V5013 globe valves. These Spring Return Actuators will operate 1/2 to 3 inch valves.

FEATURES

- Easy and quick installation on valves with 1 3/8 in. bonnet and 3/4 in. stroke.
- No separate linkage required.
- Conduit connector standard.
- No adjustments required on linkage.
- Accurate valve positioning.
- Low power consumption.
- High close-off ratings.
- Force limiting end switches.
- Internal manual operator.
- Synchronous motor.
- Maintenance free.

SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Stem down on power failure
Cable Entry	Conduit connector and one knockout on actuator case
Electrical Protection	Class I Insulation (24 Vac)
Electrical Connections	Screw terminals
Ingress Protection Rating	IP54
Frequency	50 Hz; 60 Hz
Manual operation	Manual override winding
Mounting	Directly on V5011/V5013 Globe Valves and VGF Flanged Globe Valves (3/4 in. or 20mm stroke)
Number of Internal Auxiliary Switch	0
Stroke	3/4 in. (20 mm)
Materials	ABS-FR Plastic, aluminum yoke
Operating Humidity Range (% RH)	5 to 95% RH
Medium Temperature	300 F Maximum (150 C Maximum)
Ambient Temperature Range	14 F to 122 F (-10 C to +50 C)
Storage Temperature Range	-40 F to +158 F (-40 C to +70 C)
Weight	5.1 lb (2.3 kg)
Includes	1/2 in. conduit hub; 1/2 in. flexible conduit adapter

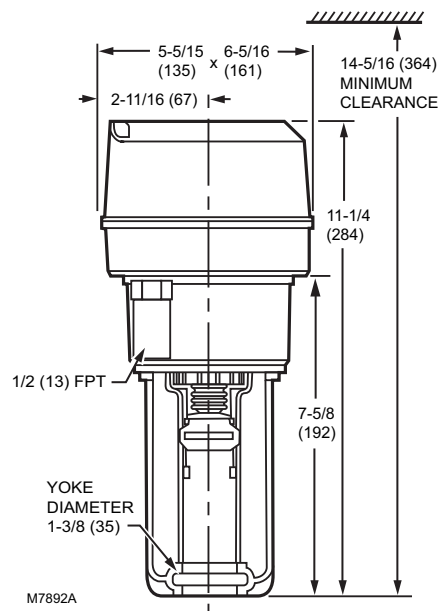
APPROVALS

CE	Recognized
Underwriters Laboratories, Inc.	UL94-5V

ACCESSORIES

312495—Large stem button provides anti-spin for globe valves up to 3 in. (1/4-28UNF stem) with ML6420, ML7420, ML6421A, ML7421A, ML6425, and ML7425 actuators. Not required with ML6984/7984 actuators or Q5022A linkage; not compatible with Q5020 linkage.
 43191679-111—Potentiometer, 10k ohm, for ML6425, ML7425
 43191679-112—Potentiometer, 220 ohm for ML6425, ML7425
 43191680-105—Dual Auxiliary Switch for CREVAL actuators
 43196000-001—High Temperature Kit for actuators with 3/4 inch (20 mm) stroke, stem button attachment

DIMENSIONS DIAGRAM



Direct Coupled Valve Actuators, ML6984



The ML6984 is a self-contained, self-adjusting, motorized linkage that mounts directly onto V5011 two-way or V5013 three-way valves and provides up to 25 mm (1") of linear travel (stem lift). For use with low voltage 3-wire SPDT Series 20 (on-off); Series 60 (floating) electromechanical (dry) contacts; or electronic (triac output) controllers (3-wire installation).

FEATURES

- Allows the use of one common transformer power supply for multiple actuators and controllers.
- Self-contained, motorized valve linkage.
- Linkage self-adjusts to valve stroke of 12 to 25 mm (1/2 to 1 in.).
- Multi-pose mounting.
- Strong valve seat closing force 160 lbf (710 N).
- Compact size for easy installation in confined area.
- One device for either 24 Vac or 28 Vdc power supply application.
- Electronic current sensing provides internal protection and positive full closing force.
- Field-addable position feedback/auxiliary switch module available (5-wire control wiring only).
- Compatible with 3-wire control systems.

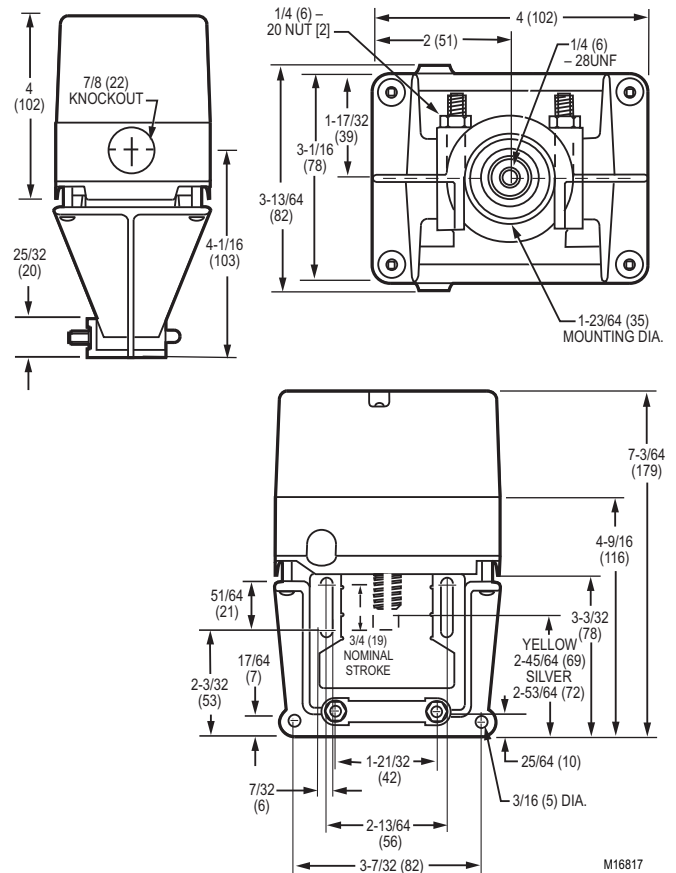
SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Stays in place
(Rated) Stem Force	160 lbf (710 N)
Cable Entry	7/8 in. hole for 1/2 in. conduit
External Auxiliary Switches Available	272630D
Electrical Protection	NEMA 3R
Electrical Connections	Screw terminals
Ingress Protection Rating	NEMA 3R, IP54 (mounted in vertical position)
Feedback	Position feedback available w/ 272630D; 2-10 Vdc
Frequency	50 Hz; 60 Hz
Manual operation	None
Mounting	Screws onto 1/4-28 UNF threaded valve stem
Number of Internal Auxiliary Switch	0
Stroke	1/2 to 1 in. (13 to 25 mm)
Supply Voltage	24 Vac; 28 Vdc
Materials	UV-stabilized plastic cover, aluminum base & yoke
Operating Humidity Range (% RH)	15 to 95% RH at 104 F (40 C)
Medium Temperature	300 F Maximum (150 C Maximum)
Ambient Temperature Range	32 F to 130 F (0 C to 50 C)
Temperature Ratings (Shipping)	-40 F to +150 F (-40 C to +65 C)
Storage Temperature Range	-40 F to +150 F (-40 C to +65 C)
Weight	2.2 lb (1 kg)
Includes	Screw terminals
Comments	3 or 5-wire operation. (3-wire required for XL10 controllers)

ACCESSORIES

272629A—Adapter Kit for mounting ML6984/ML7984 to V5045 and VGF non-pressure balanced 2-way valves
 272630D—Position feedback and SPDT pilot duty auxiliary switch

DIMENSIONS DIAGRAM



VALVES

Submittal Data - Valves

Direct Coupled Valve Actuators, ML7984



The ML7984 is a self-contained, self-adjusting, motorized linkage that mounts directly onto V5011 two-way or V5013 three-way valves and provides up to 25 mm (1") of linear stem travel. For use with Series 70 2-10Vdc, 4-20mA; Series 90 135 ohm; and Electronic (Super Mod) modulating signals controllers.

FEATURES

- Allows the use of one common transformer power supply for multiple actuators and controllers.
- Self-contained, motorized valve linkage.
- Linkage self-adjusts to valve stroke from 12 to 25 mm (1/2 - 1 in.).
- Multi-pose mounting.
- Strong valve seat closing force 160 lbf (710 N).
- Compact size for easy installation in confined area.
- One device for either Vac or Vdc power supply application.
- Electronic current sensing provides internal protection and positive full closing force.
- Field-addable position feedback/auxiliary switch module available.

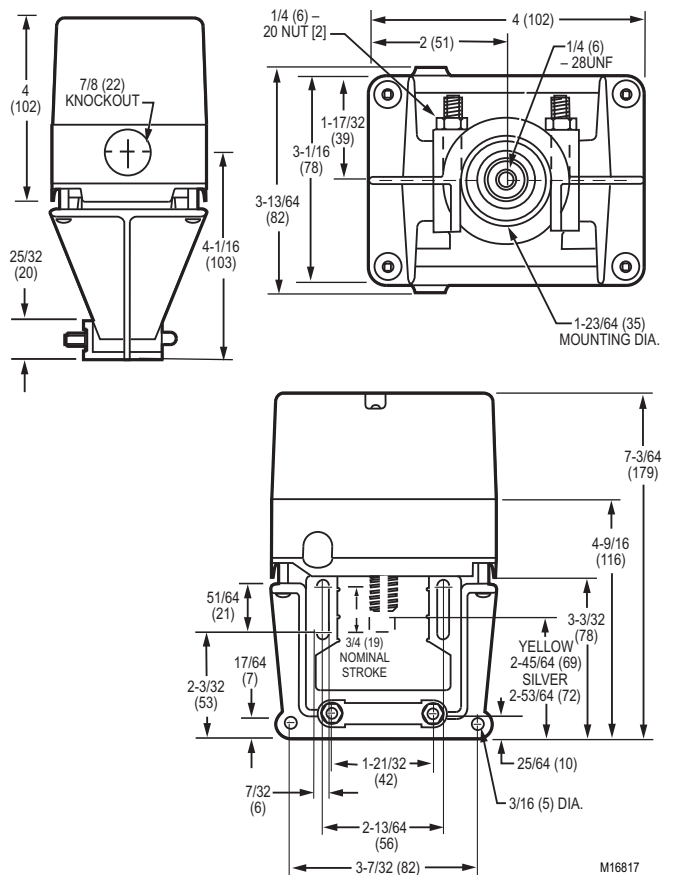
SPECIFICATIONS

Actuator Type	Valve
Fail Safe Mode	Stays in place
Cable Entry	7/8 in. hole for 1/2 in. conduit
External Auxiliary Switches Available	272630D
Electrical Protection	NEMA 3R
Electrical Connections	Screw terminals
Ingress Protection Rating	NEMA 3R, IP54 (mounted in vertical position)
Feedback	Position feedback available w/ 272630D; 2-10 Vdc
Frequency	50 Hz; 60 Hz
Manual operation	None
Mounting	Screws onto 1/4-28 UNF threaded valve stem
Number of Internal Auxiliary Switch	0
Stroke	1/2 to 1 in. (13 to 25 mm)
Supply Voltage	24 Vac; 28 Vdc
Materials	UV-stabilized plastic cover, aluminum base & yoke
Operating Humidity Range (% RH)	15 to 95% RH at 104 F (40 C)
Ambient Temperature Range	32 F to 130 F (0 C to 55 C)
Temperature Ratings (Shipping)	-40 F to +150 F (-40 C to +65 C)
Storage Temperature Range	-40 F to +150 F (-40 C to +65 C)
Weight	2.2 lb (1 kg)
Includes	Screw terminals
Comments	Direct/Reverse Acting Switch

ACCESSORIES:

- 272629A—Adapter Kit for mounting ML6984/ML7984 to V5045 and VGF non-pressure balanced 2-way valves
- 272630D—Position feedback and SPDT pilot duty auxiliary switch

DIMENSIONS DIAGRAM





Two-way Fan Coil Valves, the VU53 high pressure zone valves are used to control the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors. **IMPORTANT** These valves are not for use in systems containing dissolved oxygen.

FEATURES

- Compact construction for easy installation.
- Fits under the cover of most baseboard convectors with actuator fitted to valve body.
- VU52 and VU53 provide 2-way, straight-through control of water.
- Available in normally closed (VU53) or normally open (VU52) configurations.
- 300 psi (2,000 kPa, PN20) operating pressure rating.
- Patented ball seal provides long service life, soft close off.
- Triple O-ring seal provides three lines of defense against corrosion and water leakage around drive shaft.
- Quick opening flow curve.
- Available with NPT end connections for iron or steel piping.

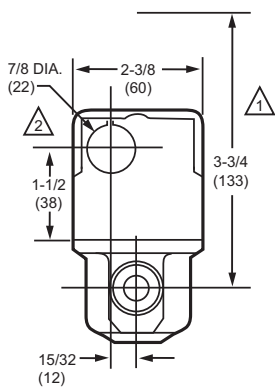
SPECIFICATIONS

Valve Type	Fan Coil Valve
Actuation:	Must be purchased separately
Flow Characteristic:	Quick opening
Body Pattern	Two-way, Straight-through
Controlled Fluid	Chilled or hot water with up to 60% Glycol
Maximum Safe Operating Pressure	300 psig (2068 kPa)
Ambient Temperature Range	34 F to 125 F at 200 F Fluid (1 to 52 C @ 94 C Fluid)
Materials	
(Body)	Brass
(Stem)	Brass
(Seat)	Brass
(Plug/Ball/Disc)	Buna-N rubber
(Packing)	EPDM rubber

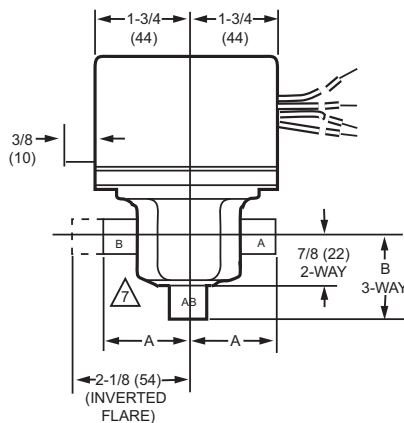
APPROVALS

Canadian Standards Association CSA C/US

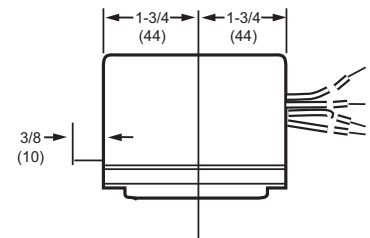
DIMENSIONS DIAGRAM



VU53 VALVE WITH VU448 ACTUATOR



VU53 AND VU54 VALVE WITH ACTUATOR



VU5 ACTUATOR

- 1 HEIGHT NEEDED TO REMOVE ACTUATOR OR COVER
 2 OPENING FOR 1/2 IN. CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

VALVE BODY SIZE	A	B
1/2 IN. SWEAT	1-5/6 (33)	1-5/6 (33)
3/4 IN. SWEAT	1-3/8 (35)	1-11/16 (43)
1 IN. SWEAT	1-11/16 (43)	1-11/16 (43)
1/2 IN. NPT	1-3/8 (35)	1-5/16 (33)
3/4 IN. NPT	1-11/16 (43)	1-7/16 (37)
1 IN. NPT	1-11/16 (43)	1-7/16 (37)

M18261A

Submittal Data - Valves

Unitary Valve, VU54



Three-way Fan Coil Valve, the VU54 high pressure zone valves are used to control the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors.

IMPORTANT These valves are not for use in systems containing dissolved oxygen.

FEATURES

- Compact construction for easy installation.
- Fits under the cover of most baseboard convectors with actuator fitted to valve body.
- VU54 provides three-way diverting control of water.
- 300 psi (2,000 kPa, PN20) operating pressure rating.
- Patented ball seal provides long service life, soft close off.
- Triple O-ring seal provides three lines of defense against corrosion and water leakage around drive shaft.
- Quick opening flow curve.
- Choice of NPT end connections for iron or steel piping.

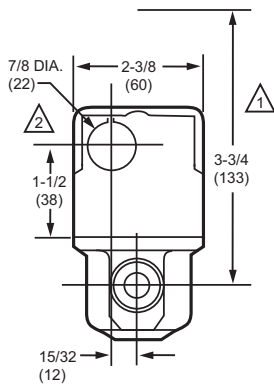
SPECIFICATIONS

Valve Type	Fan Coil Valve
Valve Action:.....	Mixing
Body Pattern	Three-way A-AB-B
Flow Characteristic:.....	quick opening
Controlled Fluid	Chilled or hot water with up to 60% Glycol
Maximum Safe Operating Pressure	300 psig (2068 kPa)
Ambient Temperature Range	34 F to 125 F at 200 F Fluid (1 to 52 C @ 94 C Fluid)
Actuation:	Must be purchased separately
Materials	
(Body).....	Brass
(Stem).....	Brass
(Seat).....	Brass
(Plug/Ball/Disc).....	Buna-N rubber
(Packing).....	EPDM rubber

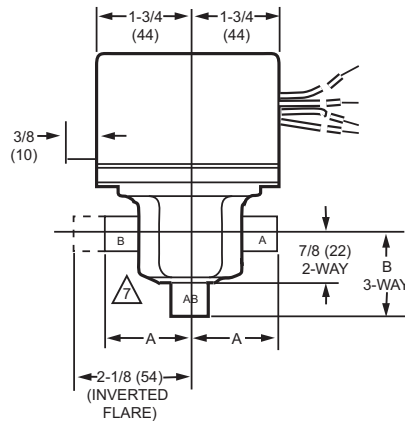
APPROVALS

Canadian Standards Association..... CSA C/US

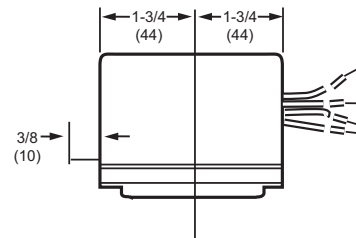
DIMENSIONS DIAGRAM



VU53 VALVE WITH VU448 ACTUATOR



VU53 AND VU54 VALVE WITH ACTUATOR



VU5 ACTUATOR

- △1 HEIGHT NEEDED TO REMOVE ACTUATOR OR COVER
- △2 OPENING FOR 1/2 IN. CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

VALVE BODY SIZE	A	B
1/2 IN. SWEAT	1-5/6 (33)	1-5/6 (33)
3/4 IN. SWEAT	1-3/8 (35)	1-11/16 (43)
1 IN. SWEAT	1-11/16 (43)	1-11/16 (43)
1/2 IN. NPT	1-3/8 (35)	1-5/16 (33)
3/4 IN. NPT	1-11/16 (43)	1-7/16 (37)
1 IN. NPT	1-11/16 (43)	1-7/16 (37)

M18261A



Two-way Cartridge Cage Valves are intended for hydronic applications in a normal indoor environment to control the flow of hot water or chilled water glycol solution to 60% concentration. These valves are designed for zone control of heating/cooling systems, or to control individual fan coil, baseboard radiator or convector applications. Depending on the model selected they can be controlled by SPST or SPDT two position controller, tristate (floating), or modulating proportional

controller. For best control, outdoor temperature compensation of supply water temperature is recommended. For trouble-free operation of the product, good installation practice must include initial system flushing, chemical water treatment, and the use of a 50 micron (or finer) system side stream filter(s). Remove all filters before flushing.

SPECIFICATIONS

Valve Type	Cartridge Cage Valve
Valve Action:	Stem up to close A port
Body Pattern	Two-way, Straight-through
Connection Type	Sweat
Controlled Fluid	Chilled or hot water with up to 60% Glycol
Maximum Safe Operating Pressure	300 psi (2068 kPa (20 Bar))
Maximum Differential Pressure Ratings (Close-off)	(414 kPa (4 bar)); 60 psi
Fluid Temperature Range	34 F to 203 F (1 C to 95 C)
Ambient Temperature Range	32 F to 150 F (0 C to 65 C)
Stem Travel	0.4 in. (10 mm)
Materials	
(Body)	Bronze
(Stem)	Stainless Steel
(Seat)	EPDM O-ring seals on Noryl piston
(Cartridge)	Ryton®, Noryl® engineering plastic
(Packing)	EPDM rubber
Includes:	Cartridge installation wrench

APPROVALS

Canadian Standards Association CSA Certified

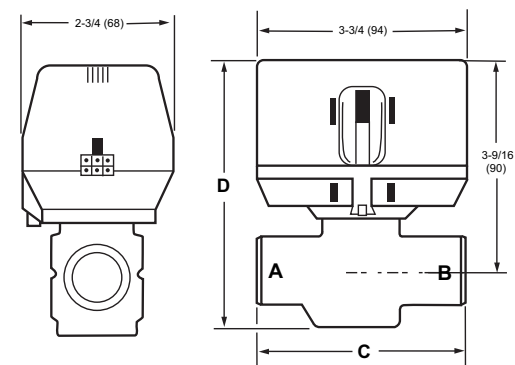
ACCESSORIES

40007029-002—Wrench for cartridge (included with sweat valves and all replacement cartridges)

FEATURES

- Quick open, linear, and equal percentage flow characteristics available
- Bi-directional installation
- 3000-series valves for floating and modulating non-fail safe applications
- 1000-series valves for two-position control
- High close-off rating independent of Cv
- Available with a variety of North American and international pipe fittings
- No tools required for actuator installation or removal
- Actuator removal does not require draining system
- Service is by replacement of cartridge, not valve body
- Cartridge replacement rebuilds valve to factory-new condition.

DIMENSIONS DIAGRAM



Pipe Fitting Sizes North American Standard	C		D		Pipe Fitting Sizes	C		D	
	in.	mm	in.	mm		in.	mm	in.	mm
3/8" FLARE	3-7/8	98	4-3/8	111	1/2" BSPP (int.)	3-7/8	98	4-3/8	111
1/2" SWEAT	3-1/2	89			1/2" BSPT (int.)				
1/2" FLARE	3-7/8	98			3/4" BSPP (int.)	3-11/16	94	4-7/16	113
1/2" INVERTED FLARE					3/4" BSPT (int.)				
1/2" NPT (int.)					3/4" BSPP (ext.)				
3/4" NPT (int.)	3-11/16	94	4-7/16	113	22 mm Compression	4-7/16	112		
3/4" SWEAT					1" BSPP (int.)	3-11/16	94		
1" NPT (int.)					1" BSPP (ext.)	3-11/17	95	4-7/17	114
1" SWEAT					1" BSPT (int.)	3-11/16	94	4-7/16	113
1-1/4" SWEAT	4-5/16	110	4-5/8	118	28 mm Compression	4-9/16	116		
1-1/4" NPT (int.)									

△ NO ADAPTERS

△ SUITABLE FOR USE AS 15 MM COMPRESSION FITTING

△ DIMENSIONS SHOWN WITH NUTS AND OLIVES INSTALLED

△ SOME MODELS NOT AVAILABLE IN ALL COUNTRIES

M18942

Submittal Data - Valves

Unitary Valve, VCZM; VCZN



Three-way Cartridge Cage Valves are intended for hydronic applications in a normal indoor environment to control the flow of hot water or chilled water glycol solution to 60% concentration. These valves are designed for zone control of heating/cooling systems, or to control individual fan coil, baseboard radiator or convactor applications. Depending on the model selected they can be controlled by SPST or SPDT two position controller, tristate (floating), or modulating proportional controller. For best control, outdoor

temperature compensation of supply water temperature is recommended. For trouble-free operation of the product, good installation practice must include initial system flushing, chemical water treatment, and the use of a 50 micron (or finer) system side stream filter(s). Remove all filters before flushing.

FEATURES

- Quick open and linear flow characteristics available
- Mixing or diverting application
- A-AB-B body pattern
- 7000-series valves for floating and modulating non-fail safe applications
- 6000-series valves for two-position control
- High close-off rating independent of Cv
- Available with a variety of North American and international pipe fittings
- No tools required for actuator installation or removal
- Actuator removal does not require draining system
- Service is by replacement of cartridge, not valve body
- Cartridge replacement rebuilds valve to factory-new condition

SPECIFICATIONS

Valve Type	Cartridge Cage Valve
Valve Action:.....	Stem up to close A port
Body Pattern	Three-way A-AB-B
Controlled Fluid	Chilled or hot water with up to 60% Glycol
Maximum Safe Operating Pressure	300 psi (2068 kPa (20 Bar))
Maximum Differential Pressure Ratings (Close-off).....	(414 kPa (4 bar)); 60 psi
Fluid Temperature Range.....	34 F to 203 F (1 C to 95 C)
Ambient Temperature Range	32 F to 150 F (0 C to 65 C)
Stem Travel.....	0.4 in. (10 mm)
Includes:.....	Cartridge changing tool
Materials	
(Body).....	Bronze
(Stem).....	Stainless Steel
(Seat).....	EPDM O-ring seals on Noryl piston
(Cartridge).....	Ryton®, Noryl® engineering plastic
(Packing).....	EPDM rubber

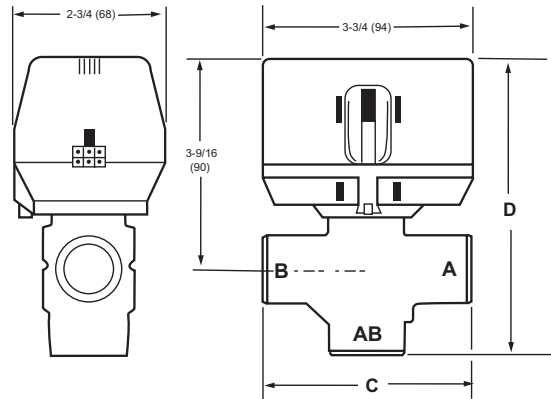
APPROVALS

Canadian Standards Association..... CSA Certified

ACCESSORIES

40007029-002—Wrench for cartridge (included with sweat valves and all replacement cartridges)

DIMENSIONS DIAGRAM



Pipe Fitting Sizes North American Standard	C		D		Pipe Fitting Sizes	C		D	
	in.	mm	in.	mm		in.	mm	in.	mm
3/8" FLARE	3-7/8	98	5-11/32	136	1/2" BSPP (int.)	3-7/8	98	5-11/32	136
1/2" SWEAT	3-1/2	89	5-1/8	130	1/2" BSPT (int.)				
1/2" FLARE	3-7/8	98	5-11/32	136	3/4" BSPP (int.)	3-11/16	94	5-1/8	130
1/2" INVERTED FLARE					3/4" BSPT (int.)				
1/2" NPT (int.)					3/4" BSPP (ext.)				
3/4" NPT (int.)	3-11/16	94	5-1/8	130	22 mm Compression	4-7/16	112	5-1/2	140
3/4" SWEAT			5-3/16	132	1" BSPP (int.)	3-11/16	94	5-11/32	136
1" NPT (int.)				136	1" BSPP (ext.)	3-11/17	95	5-11/33	137
1" SWEAT			5-11/32	136	1" BSPT (int.)	3-11/16	94	5-11/32	136
1-1/4" SWEAT	4-5/16	110	5-5/8	142	28 mm Compression	4-9/16	116	5-13/16	147
1-1/4" NPT (int.)									

△ NO ADAPTERS

△ SUITABLE FOR USE AS 15 MM COMPRESSION FITTING

△ DIMENSIONS SHOWN WITH NUTS AND OLIVES INSTALLED

M18943

Unitary Valve, V5852; V5862



Two-way Cartridge Globe Valves control hot and/or chilled water for VAV terminal units, fan coil units, small reheaters and recoolers in electric/electronic temperature control systems. Used with the M6410 3-position floating Non-Spring Return Valve Actuator and the M7410 selectable 0 to 10 Vdc or 2 to 10 Vdc Non-Spring Return Actuator. The 1/2 in. and 3/4 in. valves are compatible with the

M6435 floating Spring Return Actuator, the M7435 selectable 0 to 10 Vdc or 2 to 10 Vdc Spring Return Actuator, and the MP958 Pneumatic Actuator. Larger valves (1 in. through 1-1/2 in.) are pressure balanced, which results in higher close-off pressures.

SPECIFICATIONS

Valve Type	Cartridge Globe Valve
Body Pattern	Two-way
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Leakage Rating	1/2 in. and 3/4 in. valves: ANSI Class IV (0.01% of Cv maximum) 1 in., 1-1/4 in., 1-1/2 in. valves: ANSI Class III (less than 0.02% of Cv)
Maximum Safe Operating Pressure	235 psi (1620 kPa)
Fluid Temperature Range	36 F to 230 F (2 C to 110 C)
Stem Travel	1/4 in. (6.4 mm)
Actuation:	Must be purchased separately
Materials	
(Body)	Brass
(Stem)	Stainless Steel
(Seat)	Brass
(Cartridge)	Brass
(Plug/Ball/Disc)	Brass

ACCESSORIES

- 0902807—Replacement Insert for 1/2 in. V5852/V5862, 1.9 Cv
Interchangeable with 0902808
- 0902808—Replacement Insert for 1/2 in. V5852/V5862, 1.2 Cv
Interchangeable with 0902807
- 0902809—Replacement Insert for 1/2 in. V5852/V5862, 0.74 Cv
Interchangeable with 0902810 or 090212
- 0902810—Replacement Insert for 1/2 in. V5852/V5862, 0.47 Cv
Interchangeable with 0902809 or 090212

REPLACEMENT PARTS

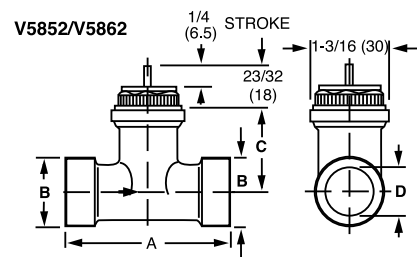
- 0902812—Replacement Insert for 1/2 in. V5852/V5862, 0.19 Cv
Interchangeable with 0902809 or 090210
- 0902814—Replacement Insert for 3/4 in. V5852/V5862, 2.9 Cv
Interchangeable with 0902815
- 0902815—Replacement Insert for 3/4 in. V5852/V5862, 4.9 Cv
Interchangeable with 0902814
- 0903827—Replacement Packing for 1 in. V5862/63
- 0903828—Replacement Packing for 1-1/4 in. V5862/63
- 0903829—Replacement Packing for 1-1/2 in. V5862/63

FEATURES

Long stroke allows wider range of control.

- Soft valve seat provides low leakage rate.
- Inserts for 1/2 in. and 3/4 in. valves are changeable without draining valve when used with an insert replacement tool.
- Brass body and Stainless Steel stem.
- Threaded plastic cover/manual handle allows manual operation.
- Easily installed in areas where space is limited.

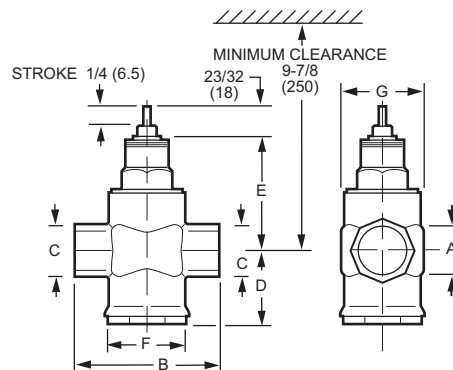
DIMENSIONS DIAGRAM



VALVE SIZE	A	B	C	D (NPT)	D (SWEAT)
1/2 (13)	3 (77)	3/4 (19)	1-5/16 (34)	1/2 (13)	5/8 (16)
3/4 (19)	3-1/2 (88)	1 (25)	1-1/4 (32)	3/4 (19)	7/8 (22)

NOTE: SOLDER ENDS CONFORM TO ANSI B16-18.

M18917



VALVE SIZE A (NPT)	B	C	D	E	F	G
1 (25)	4-1/8 (105)	1-5/8 (41)	2-1/16 (53)	3-5/8 (92)	2 (50)	1-3/4 (44)
1-1/4 (32)	4-15/16 (125)	2 (50)	2-7/16 (62)	3-5/8 (92)	2-3/16 (55)	2-1/4 (57)
1-1/2 (38)	5-1/8 (130)	2-3/16 (55)	2-9/16 (65)	3-7/8 (98)	2-3/8 (60)	2-5/8 (67)

Submittal Data - Valves

Unitary Valve, V5853; V5863



Three-way Cartridge Globe Valves control hot and/or chilled water for VAV terminal units, fan coil units, small reheaters and recoolers in electric/ electronic temperature control systems. Used with the M6410 3-position floating Non-Spring Return Valve Actuator and the M7410 selectable 0 to 10 Vdc or 2 to 10 Vdc Non-Spring Return Actuator. The 1/2 in. and 3/4 in. valves are also compatible with the M6435 floating Spring Return

Actuator, the M7435 selectable 0 to 10 Vdc or 2 to 10 Vdc Spring Return Actuator, and the MP958 Pneumatic Actuator.

FEATURES

- Long stroke allows wider range of control.
- Soft valve seat provides low leakage rate.
- Inserts for 1/2 in. and 3/4 in. valves are changeable without draining valve when used with an insert replacement tool.
- Brass body and stainless steel stem.
- Threaded plastic cover/manual handle allows manual operation.
- Easily installed in areas where space is limited.

SPECIFICATIONS

Valve Type	Cartridge Globe Valve
Body Pattern	Three-way
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Leakage Rating	1/2 in. and 3/4 in. valves: ANSI Class IV (0.01% of Cv maximum) 1 in., 1-1/4 in., 1-1/2 in. valves: ANSI Class III (less than 0.02% of Cv)
Maximum Safe Operating Pressure	235 psi (1620 kPa)
Maximum Differential Pressure Ratings (Close-off)	34 psi (234 kPa)
Fluid Temperature Range	36 F to 230 F (2 C to 110 C)
Stem Travel	1/4 in. (6.4 mm)
Actuation:	Must be purchased separately

Materials

(Body)	Brass
(Stem)	Stainless Steel
(Seat)	Brass
(Cartridge)	Brass
(Plug/Ball/Disc)	Brass

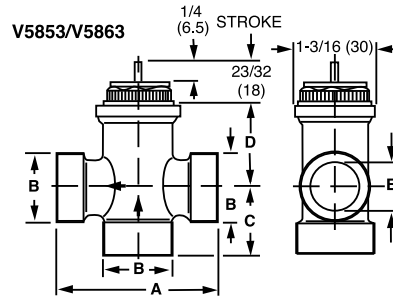
ACCESSORIES

0903827—Replacement Packing for 1 in. V5862/63

REPLACEMENT PARTS

- 0902821—Replacement Insert for 1/2 in. V5853/V5863, 0.29 Cv
Interchangeable with 0902822 or 0902823 or 0902824
- 0902822—Replacement Insert for 1/2 in. V5853/V5863, 0.47 Cv
Interchangeable with 0902821 or 0902823 or 0902824
- 0902823—Replacement Insert for 1/2 in. V5853/V5863, 0.74 Cv
Interchangeable with 0902821 or 0902822 or 0902824
- 0902824—Replacement Insert for 1/2 in. V5853/V5863, 1.2 Cv
Interchangeable with 0902821 or 0902822 or 0902823
- 0902825—Replacement Insert for 1/2 in. V5853/V5863, 1.9 Cv
Interchangeable with 0902827
- 0902827—Replacement Insert for 3/4 in. V5853/V5863, 4.9 Cv
Interchangeable with 0902825
- 0903827—Replacement Packing for 1 in. V5862/63
- 0903828—Replacement Packing for 1-1/4 in. V5862/63
- 0903829—Replacement Packing for 1-1/2 in. V5862/63

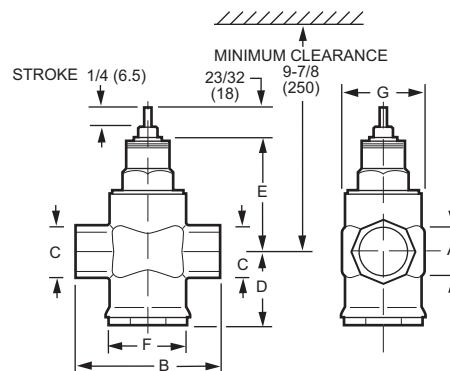
DIMENSIONS DIAGRAM



VALVE SIZE	A	B	C	D	E (NPT)	E (SWEAT)
1/2 (13)	3 (77)	3/4 (19)	1-5/16 (34)	1-5/16 (34)	1/2 (13)	5/8 (16)
3/4 (19)	3-1/2 (88)	1 (25)	1-1/2 (38)	1-1/4 (32)	3/4 (19)	7/8 (22)

NOTE: SOLDER ENDS CONFORM TO ANSI B16-18.

M18919



VALVE SIZE A (NPT)	B	C	D	E	F	G
1 (25)	4-1/8 (105)	1-5/8 (41)	2-1/16 (53)	3-5/8 (92)	2 (50)	1-3/4 (44)
1-1/4 (32)	4-15/16 (125)	2 (50)	2-7/16 (62)	3-5/8 (92)	2-3/16 (55)	2-1/4 (57)
1-1/2 (38)	5-1/8 (130)	2-3/16 (55)	2-9/16 (65)	3-7/8 (98)	2-3/8 (60)	2-5/8 (67)



The Fail Safe VC6936 Floating and VC7936 Modulating Control valves provides proportional control of hot or chilled water in commercial heating and cooling applications, such as unit ventilators. On a power failure, this patented actuator design drives the valve to the fail safe position, either fully open or closed according to the installer's wiring connections.

These actuators use a microprocessor-controlled, low voltage stepper motor with a super capacitor-based power supply capable of storing enough power to drive the valve to its when 24V power is removed from the actuator.

A VC hydronic valve consists of a valve body, a replaceable characterized cartridge assembly and a Honeywell VC6900 or VC7900-series actuator, providing proportional flow control. Three-way bodies may be used in either diverting or mixing applications. VC valves use cam-operated cartridge travel to resist water hammer. Limit switches prevent motor overrun. For best control, outdoor temperature compensation of supply water temperature is recommended.

SPECIFICATIONS

Valve Type	Cartridge Cage Valve
Valve Action:	Stem up to close A port
Controlled Fluid	Chilled or hot water with up to 60% Glycol
Maximum Safe Operating Pressure.....	300 psi (2068 kPa (20 Bar))
Maximum Differential Pressure	
Ratings (Close-off).....	60 psi (414 kPa (4 bar))
Fluid Temperature Range	34 F to 203 F (1 C to 95 C)
Ambient Temperature Range	32 F to 150 F (0 C to 65 C)
Stem Travel	0.4 in. (10 mm)
Timing (sec, min.):.....	For VC6936: 2 minutes; For VC7936: installer-selectable 60 or 120 seconds.
Materials	
(Body).....	Bronze
(Stem)	Stainless Steel
(Seat).....	EPDM O-ring seals on Noryl piston
(Cartridge).....	Ryton®, Noryl® engineering plastic
(Packing)	EPDM rubber

APPROVALS

Canadian Standards Association.....CSA Certified

Submittal Data - Valves

NPT Control Ball Valve, VBN2



The VBN2 Two-Way Control Ball Valves control hot and chilled water with glycol solutions up to 50% in heating, ventilating and air conditioning (HVAC) systems to provide two-position or modulating functions. These valve assemblies can be ordered with or without factory-mounted non-spring return or spring return actuators.

SPECIFICATIONS

Valve Type	Control Ball Valve
Body Pattern	Two-way
Connection Type	Female NPT
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Leakage Rating	ANSI Class IV (0.01% of Cv maximum)
Maximum Safe Operating Pressure	360 psi (2482 kPa)
Fluid Temperature Range	-22 F to +250 F (-30 C to +121 F)
Materials	
(Body)	Brass
(Seat)	Teflon® seals with EPDM O-rings
(Flow Control Insert)	Noryl®

FEATURES

- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Equal percentage flow characteristic.
- Reduced B port CV for constant loop flow.
- Choice of factory-installed actuation: floating, modulating (2-10 V), spring return or non-spring return
- 2-Position, Spring Return Modulating/Floating.
- Field configurable for normally open or normally closed fail-safe position.
- Removable manual operating handle to control valve during installation or in an event of power failure.
- Actuator can be mounted on the valve in any of four orientations.
- Field-serviceable stem assembly.
- Wide range of CV choices from 0.33 to 266.
- Nickel-chrome plated brass or 316 stainless steel ball and stem.
- Valve installs in a globe valve “T” pattern, no extra elbows or piping required.
- Mixing or Diverting control for 3-way valves.
- ANSI Class IV seat leakage specification (0.01% of CV) for 3-way A port and ANSI Class III seat leakage specification (0.1% of CV) for 3-way B port.

Dimensional Diagrams - Valves

NPT Control Ball Valve, VBN2

DIMENSIONS DIAGRAM

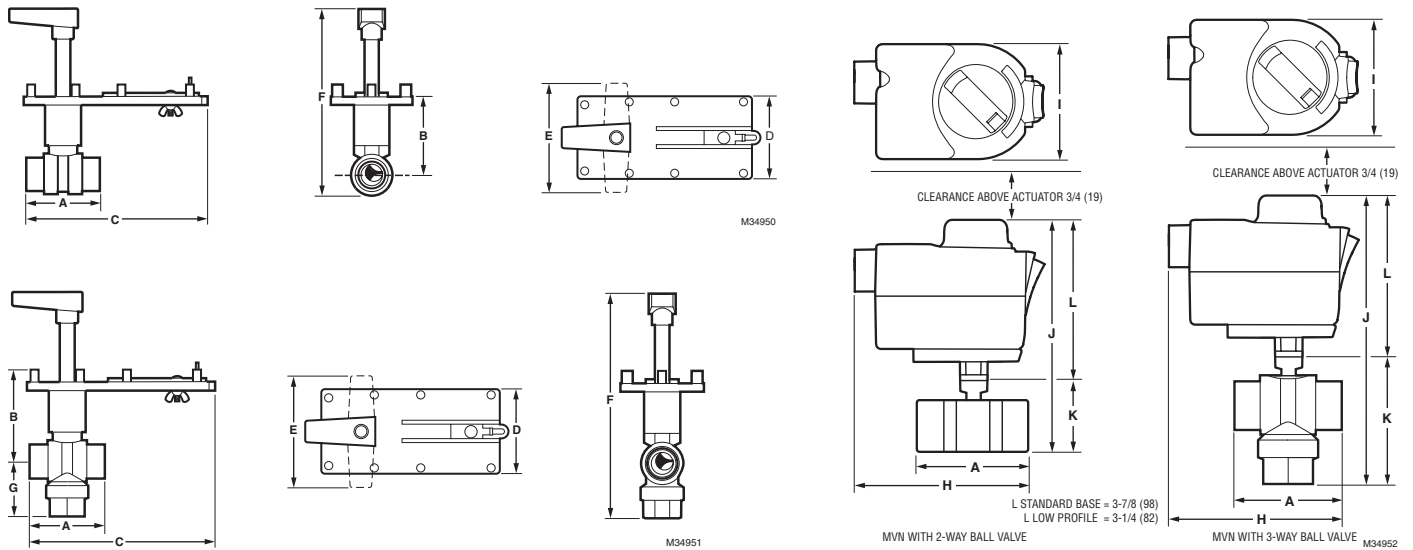


Table 7. VBN2 dimensions in inches (millimeters).

Pipe Size			C _y Designators	MVN, MN, AND MS ACTUATORS WITH 2-WAY BALL VALVE Dimensions in in. (mm)										Weight (valve only) lbs.	Replacement Stem Assembly**		
In.	(DN)	Code		A	B	C	D	E	Fms ^a	Fmn ^b	H	I	J (w/std)			J (w/low)	K
1/2	15	VBN2A	0.38, 0.68, 1.30, 2.00, 2.60, 4.70, 8.00, 11.70*	2-3/8 (60)	3-7/16 (87)	6-5/8 (168)	3 (76)	4 (102)	8-1/8 (206)	6-7/8 (175)			5-7/16 (139)	4-13/16 (123)	1-5/8 (41)	1	5112-19 5112-22(SS)
3/4	20	VBN2B	0.31, 0.63, 1.20, 2.50, 4.30, 7.40, 14.70*	2-3/8 (60)	3-7/16 (87)	6-7/16 (164)	3 (76)	4 (102)	8-1/8 (206)	6-7/8 (175)			5-7/16 (139)	4-13/16 (123)	1-5/8 (41)	1	
			10.10, 29.00*	2-5/8 (67)	3-11/16 (94)	6-1/2 (165)	3 (76)	4 (102)	8-5/16 (211)	7-1/16 (180)			5-5/8 (143)	5 (127)	1-13/16 (45)	1	
1	25	VBN2C	9.00	3-3/4 (95)	3-11/16 (94)	7-1/16 (179)	3 (76)	4 (102)	8-5/16 (211)	7-1/16 (180)	4-9/16 (116)	2-3/16 (71)	5-5/8 (143)	5 (127)	1-13/16 (45)	1	5112-20 5112-23(SS)
			4.40, 15.30, 26.00, 44.00, 54.00*	3-1/16 (77)	3-15/16 (100)	6-3/4 (171)	3 (76)	4 (102)	8-11/16 (221)	7-7/16 (189)			6 (152)	5-3/8 (137)	2-3/16 (55)	1.4	
1-1/4	32	VBN2D	4.40, 8.30, 14.90, 25.00, 41.00*	3(76)	3-15/16 (100)	6-11/16 (170)	3 (76)	4 (102)	8-11/16 (221)	7-7/16 (189)			6 (152)	5-3/8 (137)	2-1/8 (54)	1.4	5112-20 5112-23(SS)
			37.00, 102.00*	3-5/8 (92)	4-7/16 (113)	7 (178)	3 (76)	4 (102)	9-1/16 (231)	7-13/16 (198)			6-3/8 (162)	5-3/4 (146)	2-9/16 (64)	2.4	
1-1/2	40	VBN2E	23.00, 30.00, 74.00*	3-7/16 (87)	3-15/16 (100)	6-15/16 (176)	3 (76)	4 (102)	9-1/16 (231)	7-13/16 (198)						2.4	5112-21 5112-24(SS)
			41.00, 172.00*	4-1/16 (103)	5-3/16 (132)	7-1/16 (179)	3 (76)	4 (102)	8-7/8 (225)	7-5/8 (194)						3.2	
2	50	VBN2F	42.00, 108.00*	4(101)	3-3/4 (95)	7-3/16 (183)	3 (76)	4 (102)	8-7/8 (225)	7-5/8 (194)						3.2	5112-21 5112-24(SS)
			57.00, 71.00, 100.00, 210.00, 266.00*	4-15/16 (125)	4-1/16 (103)	7-7/16 (188)	3 (76)	4 (102)	10-1/2 (267)	9-1/4 (235)						5	
2-1/2	65	VBN2G	45.00, 55.00, 72.00, 101.00, 162.00, 202.00*	5-5/16 (135)	4-1/16 (103)	7-9/16 (192)	3 (76)	4 (102)	10-1/2 (267)	9-1/4 (235)						5.5	5112-21 5112-24(SS)
3	80	VBN2H	49.00, 63.00, 82.00, 124.00, 145.00*	5(127)	5-7/8 (149)	7-11/16 (196)	3 (76)	4 (102)	10-11/16 (271)	9-7/16 (240)						5.9	

^a For models using the MS direct coupled actuator.

^b For models using the MN direct coupled actuator.

* Indicates full port valve: no flow characterizing insert.

** Replacement stems available in brass or stainless steel--use accordingly to valve part number.

Submittal Data - Valves

NPT Control Ball Valve, VBN3



The VBN3 Three-Way Control Ball Valves control hot and chilled water with glycol solutions up to 50% in heating, ventilating and air conditioning (HVAC) systems to provide two-position or modulating functions. These valve assemblies can be ordered with or without factory-mounted non-spring return or spring return actuators.

SPECIFICATIONS

Valve Type	Control Ball Valve
Body Pattern	Three-way
Flow Characteristic:	Linear (B-AB); Equal Percentage (A-AB)
Connection Type	Female NPT
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Leakage Rating	ANSI Class IV (0.01% of Cv maximum)
Maximum Safe Operating Pressure	360 psi (2482 kPa)
Fluid Temperature Range	-22 F to +250 F (-30 C to +121 F)
Materials	
(Body)	Brass
(Stem):	Brass
(Seat)	Teflon® seals with EPDM O- rings
(Plug/Ball/Disc):	Nickel-plated brass ball
(Flow Control Insert)	Noryl®

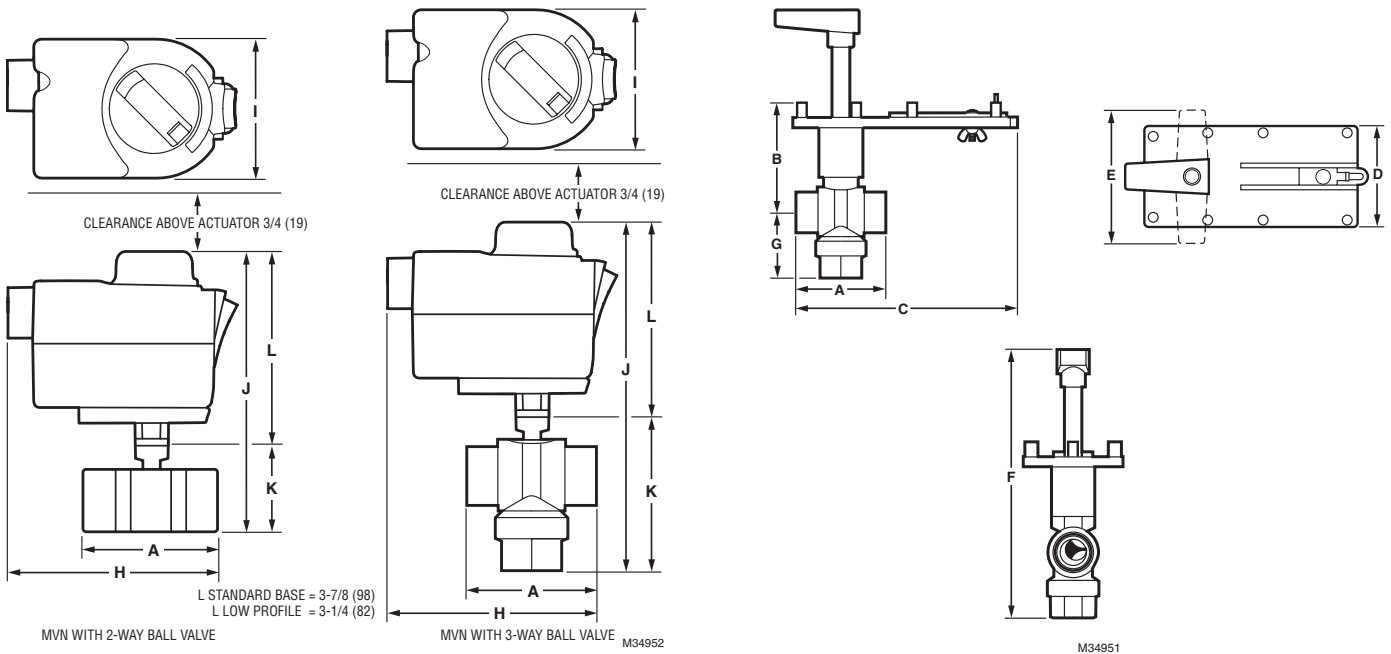
FEATURES

- Sizes from 1/2 to 2-1/2 inches with internal (female) NPT connections.
- Equal percentage or linear flow characteristics.
- Reduced B-port Cv for constant loop flow.
- Choice of four, factory-installed actuation control schemes: Floating, Modulating (2-10 V), Spring Return 2-Position, Spring Return Modulating/Floating.
- Field configurable for normally open or normally closed fail safe position.
- Removable manual operating handle to control valve during installation or in an event of power failure.
- ANSI Class IV seat leakage specification (0.01% of Cv).
- Optional NEMA 3R (IP54) rated enclosure for outdoor applications.
- Actuator can be mounted on the valve in any of four orientations.
- Wide Cv choices from 0.33 to 109.
- Valve installs in a globe valve "T" pattern, no extra elbows or piping required.
- Field-serviceable stem assembly.
- Nickel-chrome plated brass ball and stem.
- Mixing or Diverting control.

Dimensional Diagrams - Valves

NPT Control Ball Valve, VBN3

DIMENSIONS DIAGRAM



Pipe Size			C _v Designators	MVN WITH 3-WAY BALL VALVE											Weight (valve only) lbs.	Replacement Stem Assembly		
In.	(DN)	Code		Dimensions in in. (mm)														
				A	B	C	D	E	F	G	H	I	J (w/ std)	J (w/ low)	K			
1/2	15	VBN3A	0.33, 0.59, 1.00, 2.40, 4.30, 8.00	3-1/2 (89)	3-5/16 (84)	7 (178)	3 (76)	4 (102)	9-3/8 (238)	2-3/8 (60)				6-11/16 (170)	6-1/16 (154)	2-7/8 (72)	2.4	
3/4	20	VBN3B	0.40, 0.66, 1.30, 2.40, 3.80, 11.00*	2-13/16 (71)	3-5/16 (84)	6-1/2 (165)	3 (76)	4 (102)	8-13/16 (224)	2 (51)				6-1/8 (156)	5-1/2 (140)	2-5/16 (58)	2	5112-19
1	25	VBN3C	0.40, 0.65, 1.30, 2.30, 3.50	3-13/16 (97)	3-5/16 (84)	7-5/16 (185)	3 (76)	4 (102)	9-1/2 (241)	2-3/4 (70)				6-13/16 (173)	6-3/16 (157)	3 (75)	2.8	
			8.60, 22.00	3 (76)	3-13/16 (97)	6-13/16 (173)	3 (76)	4 (102)	9-13/16 (249)	2-5/8 (67)	4-9/16 (116)	2-13/16 (71)			7-1/8 (181)	6-1/2 (165)	3-5/16 (83)	2.6
1-1/4	32	VBN3D	4.10, 8.70, 19.00*	3 (76)	3-13/16 (97)	6-13/16 (173)	3 (76)	4 (102)	9-13/16 (249)	2-1/2 (64)				7-1/8 (181)	6-1/2 (165)	3-5/16 (83)	2.5	5112-20
			12.70, 27.00, 34.00*	3-5/8 (91)	4 (102)	7-5/16 (185)	3 (76)	4 (102)	10-5/16 (262)	2-3/4 (70)				7-5/8 (194)	7 (178)	3-13/16 (96)	2.8	
1-1/2	40	VBN3E	4.00, 8.30, 13.40, 32.00*	4-5/16 (114)	4 (102)	7-13/16 (198)	3 (76)	4 (102)	10-13/16 (275)	3-1/4 (83)							3.3	
			24.00, 61.00	4 (102)	4-1/2 (114)	7-5/16 (185)	3 (76)	4 (102)	11 (279)	3-1/4 (83)								3.3
2	50	VBN3F	24.00, 38.00, 57.00	4 (102)	4-1/2 (114)	7-5/16 (185)	3 (76)	4 (102)	11 (279)	3-1/4 (83)							3.3	
			83.00, 109.00	5 (127)	5-13/16 (147)	7-13/16 (198)	3 (76)	4 (102)	12-5/16 (313)	3-3/4 (95)							3.8	5112-21
2-1/2	65	VBN3G	38.00, 74.00, 100.00	5 (127)	5-13/16 (147)	7-13/16 (198)	3 (76)	4 (102)	12-5/16 (313)	3-3/4 (95)							3.8	

*Indicates full A-port: no flow characterizing insert.

Submittal Data - Valves

Flanged Control Ball Valve, VBF2



The VBF2 Two-Way Ball Valve Assemblies, with and without actuators, control hot and chilled water with glycol solutions up to 50% in closed loop heating, ventilating and air conditioning (HVAC) systems to provide two-position or modulating functions. These valve assemblies can be ordered with or without factory-mounted non-spring return or spring return direct-coupled actuators (DCA).

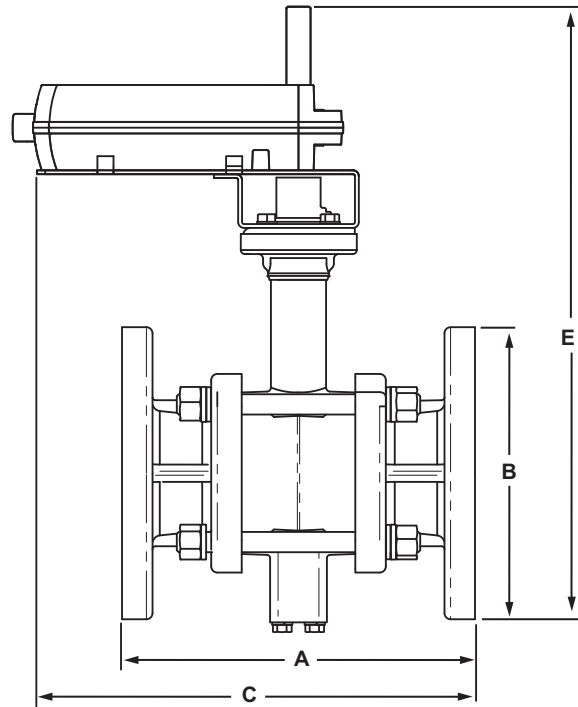
FEATURES

- Sizes from 4 to 6 inch with ANSI Class 125 flanged connections.
- Equal percentage or linear flow characteristics.
- Choice of four, factory-installed actuation control schemes: Floating, Modulating (2-10 V), Spring Return 24V 2-Position, Spring Return Modulating/Floating.
- Field configurable for normally open or normally closed fail safe position.
- Removable manual operating handle to control valve during installation or in an event of power failure.
- ANSI Class IV leakage specification (0.01% of Cv).
- Optional NEMA 3R (IP54) rated enclosure for outdoor applications.
- Option of four actuator mounting positions on the valve.
- Wide range of Cv choices from 91 to 650.
- Valve ball and stem 316 stainless steel.

SPECIFICATIONS

Valve Type	Control Ball Valve
Body Pattern	Two-way
Connection Type	Flanged
Flow Characteristic:.....	Equal Percentage
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Leakage Rating	ANSI Class IV (0.01% of Cv maximum)
Maximum Safe Operating Pressure	240 psi (1655 kPa)
Maximum Differential Pressure	
Ratings (Close-off)	70 psi (483 kPa)
Fluid Temperature Range	-22 F to +250 F (-30 C to +121 F)
Materials	
(Body).....	Cast Iron
(Stem).....	316 Stainless Steel
(Seat).....	Teflon®
(Plug/Ball/Disc).....	316 stainless steel

DIMENSIONS DIAGRAM



Size (in.)	Model Number	A in. (mm)	B in. (mm)	C in. (mm)	D (depth) (not shown) in. (mm)	E in. (mm)	Wt. lb (kg)
4	VBF2J	11 (278)	9 (229)	13-1/4 (337)	9 (229)	18-3/4 (476)	65 (31)
5	VBF2K	12-3/8 (352)	10 (254)	14-1/4 (362)	10 (254)	19 (483)	75 (34)
6	VBF2L	13-7/8 (352)	11 (278)	15-1/8 (384)	11 (278)	19-7/8 (505)	90 (41)

M13732

Flanged Control Ball Valve, VBF3



The VBF3 Three-Way Ball Valve Assemblies, with and without actuators, control hot and chilled water with glycol solutions up to 50% in closed loop heating, ventilating and air conditioning (HVAC) systems to provide two-position or modulating functions. These valve assemblies can be ordered with or without factory-mounted non-spring return or spring return direct-coupled actuators (DCA).

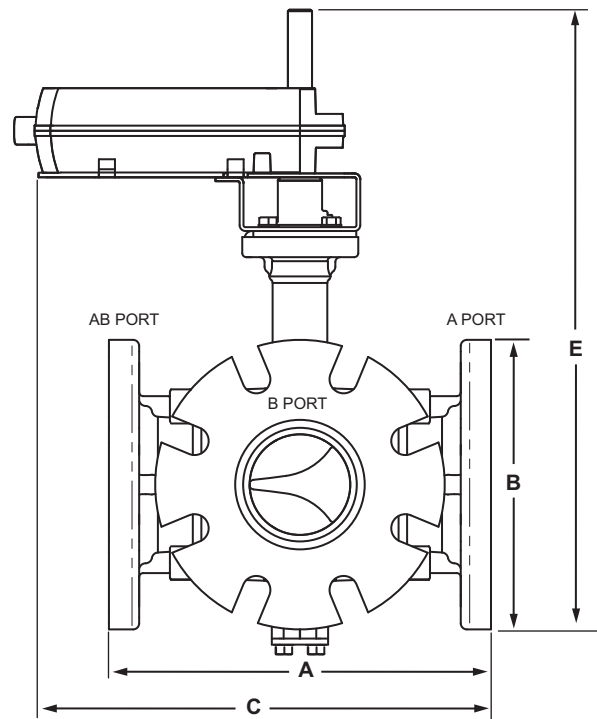
FEATURES

- Sizes from 4 to 6 inch with ANSI Class 125 flanged connections.
- Equal percentage or linear flow characteristics.
- Choice of four, factory-installed actuation control schemes: Floating, Modulating (2-10 V), Spring Return 24V 2-Position, Spring Return Modulating/Floating.
- Field configurable for normally open or normally closed fail safe position.
- Removable manual operating handle to control valve during installation or in an event of power failure.
- ANSI Class IV A-port seat leakage (0.01% of Cv).
- Optional NEMA 3R (IP54) rated enclosure for outdoor applications.
- Option of four actuator mounting positions on the valve.
- Wide range of Cv choices from 91 to 650.
- Valve ball and stem 316 stainless steel.
- Non-isolating mixing or diverting control.

SPECIFICATIONS

Valve Type	Control Ball Valve
Body Pattern	Three-way
Connection Type.....	Flanged
Flow Characteristic:.....	Linear (B-AB); Equal Percentage (A-AB)
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Leakage Rating	ANSI Class IV (A port only) B port ~2% leakage
Maximum Safe Operating Pressure.....	240 psi (1655 kPa)
Maximum Differential Pressure	
Ratings (Close-off).....	70 psi (483 kPa)
Fluid Temperature Range	-22 F to +250 F (-30 C to +121 F)
Materials	
(Body).....	Cast Iron
(Stem)	316 Stainless Steel
(Seat).....	Teflon®
(Plug/Ball/Disc).....	316 stainless steel

DIMENSIONS DIAGRAM



Size (in.)	Model Number	A in. (mm)	B in. (mm)	C in. (mm)	D (depth) (not shown) in. (mm)	E in. (mm)	Wt. lb (kg)
4	VBF3J	11-7/8 (278)	9 (229)	14-1/8 (337)	10-3/8 (229)	18-1/2 (470)	75 (34)
5	VBF3K	13-7/8 (352)	10 (254)	15-1/8 (362)	12 (254)	19-3/8 (483)	90 (41)
6	VBF3L	15-7/8 (403)	11 (278)	16-1/8 (410)	13-3/8 (521)	20-1/2 (521)	105 (48)

M13733A

Submittal Data - Valves

NPT Globe Valve, V5011F; V5011G



Used for two-position or modulating control of steam and water and glycol solutions (to 50 percent concentration) in heating or cooling systems.

FEATURES

- Sizes range from 2-1/2 to 3 inches.
- Direct acting
- High pressure steam models with stainless steel trim.
- Spring-loaded, self-adjusting packing.
- Stainless steel stem prevents corrosion.
- Valve designs provide equal percentage characteristics of flow for close control of water, and linear characteristic of flow for close control of steam or chilled water.
- Valves utilize direct mounting, electric or pneumatic linear valve actuators; Q5001 linkage with Modutrol Motor; or Q5020/Q5022A linkages with Direct Coupled Actuators to operate the valve.

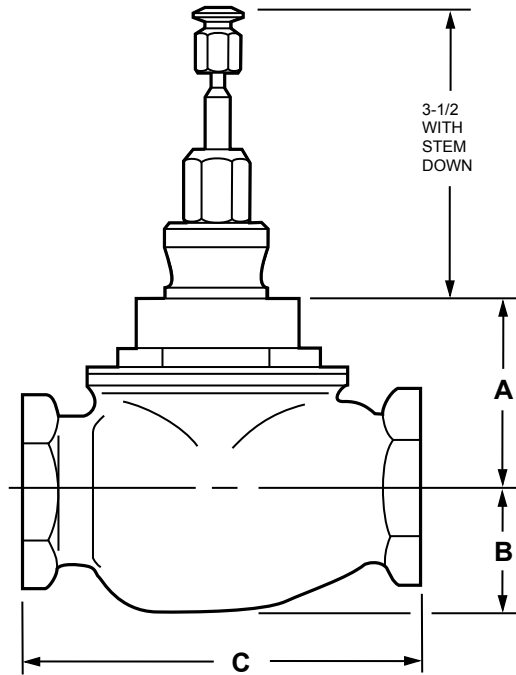
SPECIFICATIONS

Valve Type	Globe Valve
Body Pattern	Two-way, Straight-through
Connection Type	Female NPT
Leakage Rating	0.5% of Cv
Maximum Differential for Quiet Water Service	20 psid (138 kPa)
Fluid Temperature Range	40 F to 337 F (4 C to 169 C)
Stem Travel	3/4 in. (20 mm)
Bonnet Size:	1-3/8 in. (35 mm)
Valve Action:	Stem down to close
ANSI/ASME Rating:	150
Actuation:	Must be purchased separately
Materials	
(Body)	Red Brass
(Stem)	Stainless Steel
(Seat):	V5011F: Brass; V5011G: Stainless Steel
(Plug/Ball/Disc):	V5011F: Teflon disc; V5011G: Stainless steel plug with carbon-loaded Teflon disc
(Packing):	V5011F: Teflon and Nitrile; V5011G: Teflon Cone

APPROVALS

CRN Number 0C0861.9087YTN

DIMENSIONS DIAGRAM



V5011F,G

BODY STYLE	PIPE SIZE (in.)	DIMENSIONS					
		A		B		C	
		in	mm	in	mm	in	mm
V5011F,G THREADED DIRECT BODY	1/2	2	51	1-3/4	45	3-3/8	86
	3/4	1-3/4	45	1-3/4	45	3-3/8	86
	1	1-7/8	48	1-3/4	45	4-1/4	108
	1-1/4	2	51	1-5/8	42	4-7/8	124
	1-1/2	2-7/8	73	1-5/8	42	5-5/8	143
	2	3-1/8	80	2	51	5-5/8	143
	2-1/2	2-3/4	70	2-3/8	61	7-1/2	191
	3	3-1/8	80	2-5/8	67	8-7/8	226

M2804A

NPT Globe Valve, V5011N



Used for two-position or modulating control of steam and water and glycol solutions (to 50 percent concentration) in heating or cooling systems.

FEATURES

- Sizes range from 1/2 to 2 inches.
- Direct and reverse acting
- High pressure steam models with stainless steel trim
- Spring-loaded, self-adjusting packing.
- Stainless steel stem prevents corrosion.
- Valve designs provide equal percentage characteristics of flow for close control of water, and linear characteristic of flow for close control of steam or chilled water.
- Valves utilize direct mounting, electric or pneumatic linear valve actuators; Q5001 linkage with Modutrol Motor; or Q5020/Q5022A linkages with direct coupled rotary actuators to operate the valve.
- Not suitable for combustible gases.

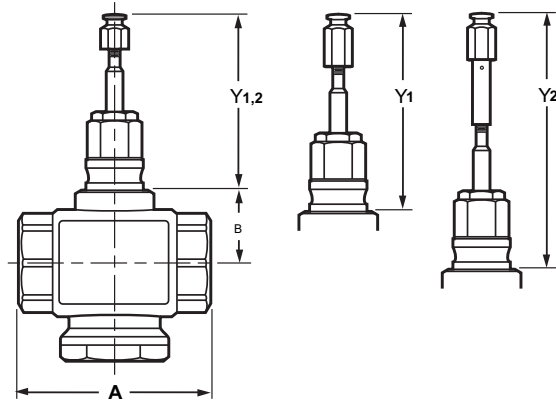
SPECIFICATIONS

Valve Type	Globe Valve
Body Pattern.....	Two-way
Connection Type.....	Female NPT
Leakage Rating	Seat: 0.05% of Cv
Maximum Differential f or Quiet Water Service.....	20 psid (138 kPa)
Maximum Differential Pressure	
Ratings (Close-off).....	240 psi (1655 kPa)
Ambient Temperature Range	36 F to 248 F water (2 C to 120 C water)
Stem Travel	3/4 in. (20 mm)
Bonnet Size:	1-3/8 in. (35 mm)
ANSI/ASME Rating:	150
Actuation:	Must be purchased separately
Materials	
(Body)	Red Brass
(Stem)	Stainless Steel
(Packing)	Teflon

APPROVALS

CRN Number0C0861.9087YTN/0C0861.99

DIMENSIONS DIAGRAM



VALVE SIZE (IN)	A in. (mm)	B in. (mm)
1/2	3-1/4 (83)	1-9/16 (40)
3/4		
1	4-1/16 (103)	
1-1/4	4-3/16 (106)	
1-1/2	4-3/4 (120)	1-13/16 (47)
2	5-1/4 (134)	

VALVE	Y1 in. (mm)	Y2 ^a in. (mm)
V5011N1XXX OR V5011N2XXX	3-1/2 (89)	5-1/4 (133)
V5011N3XXX	4-3/16 (107)	5-15/16 (151)
	STEM FULLY UP	
	STEM FULLY DOWN	

^aY2 WITH STEM EXTENSION FOR MP953C,E (8 IN. ONLY)

M17378A

Submittal Data - Valves

NPT Globe Valve, V5013N



The V5013N is a three-way threaded globe valve that controls hot water, cold water and glycol solutions (up to 50 percent concentration) in heating or cooling HVAC applications. The valves are used for mixing service to direct flow from one or two inlets to a common outlet in two-position or modulating control systems.

FEATURES

- Red brass body with NPT-threaded connections.
- Stainless steel stem and brass plug.
- Low seat leakage rating, < 0.05%.
- Spring-loaded, self adjusting packing.
- 50:1 rangeability per VDI/VDE 2173.
- Constant total flow throughout full stem travel.
- Accurate positioning to ensure state-of-the-art temperature control.
- Sizes range from 1/2 inch to 2 inches.
- Valves utilize direct mounting, electric or pneumatic valve actuators; Q5001 linkage with Modutrol Motor; or Q5020/Q5022 linkages with Direct Coupled Actuators to operate the valve.
- Repack and rebuild kits available for field servicing.
- Not suitable for combustible gases.

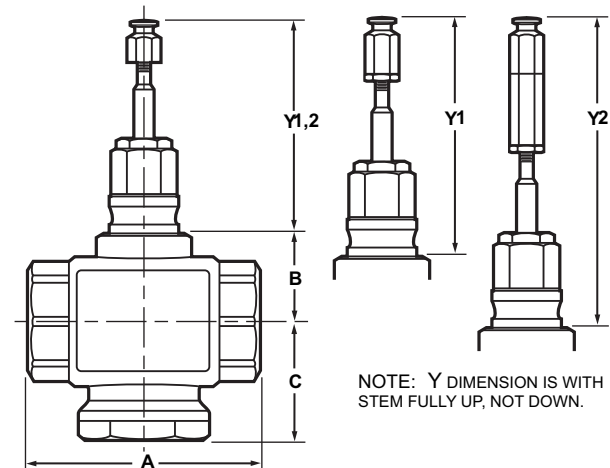
SPECIFICATIONS

Valve Type	Globe Valve
Body Pattern	Three-way mixing, A-B-AB porting
Flow Characteristic:.....	Linear (B-AB), Equal Percentage (A-AB)
Connection Type	Female NPT
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Leakage Rating	0.05% of Cv
Maximum Safe Operating Pressure	217 psi at 248 F (1500 kPa at 120 C)
Maximum Differential for Quiet Water Service	20 psid (138 kPa)
Maximum Differential Pressure	
Ratings (Close-off)	240 psi (1655 kPa)
Ambient Temperature Range	36 F to 248 F water (2 C to 120 C water)
Stem Travel.....	3/4 in. (20 mm)
Bonnet Size:	1-3/8 in. (35 mm)
Valve Action:.....	Mixing
ANSI/ASME Rating:.....	150
Actuation:	Must be purchased separately
Materials	
(Body).....	Red Brass
(Stem)	Stainless Steel
(Plug/Ball/Disc).....	Brass
(Packing).....	Teflon/EPDM

APPROVALS

CRN Number.....0C0861.9087YTN/0C0861.123

DIMENSIONS DIAGRAM



VALVE SIZE	A	B	C	STEM UP	
				Y ₁	Y ₂ ^a
1/2 (15)	3-1/4 (83)	1-9/16 (39.7)	2-9/16 (65)	4-3/16 (106)	5-15/16 (151)
3/4 (20)	3-1/4 (83)	1-9/16 (39.7)	2-9/16 (65)		
1 (25)	4-1/16 (103)	1-9/16 (39.7)	2-5/8 (66.5)		
1-1/4 (32)	4-3/16 (106)	1-9/16 (39.7)	2-7/8 (72.5)		
1-1/2 (40)	4-3/4 (120)	1-13/16 (46.5)	3 (77)		
2 (50)	5-1/4 (134)	1-13/16 (46.5)	3-5/16 (83.5)		

^a Y₂ WITH STEM EXTENSION FOR MP953C,E (8 IN. ONLY)

M12901A

Flanged Cage Valve, V5051A



Single-Seated Cage Valves control steam, air, liquids or non-combustible gases in two-position, proportional or floating control systems where line isolation is not required.

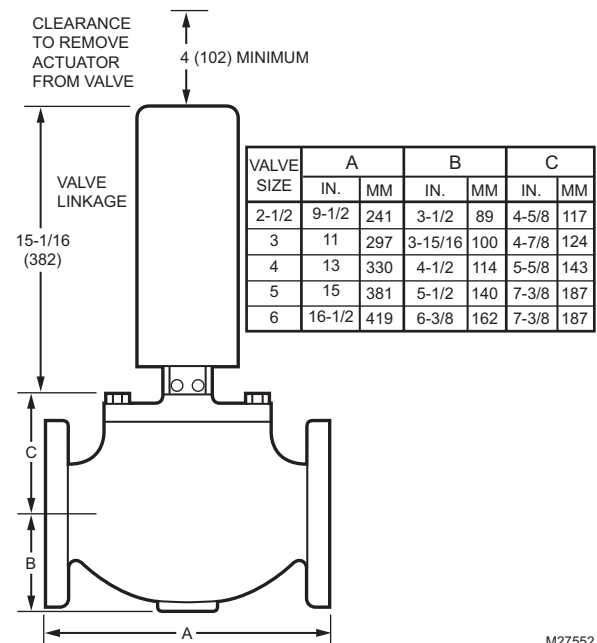
FEATURES

- Pressure balanced cage type construction.
- Low operating force allows fail safe operation with spring return actuator.
- Combines 1 3/8 in. bonnet with 1 1/2 in. stroke.
- Sizes range from 2-1/2 to 6 in. (DN65 to DN150).
- Spring-loaded Teflon V-ring packing.
- Requires Q5020C valve linkage with one rotary, direct coupled actuator, or Q5001D with Modutrol Motor.

SPECIFICATIONS

Valve Type	Cage Valves
Body Pattern	Two-way, Straight-through
Connection Type	Flanged
Flow Characteristic	Modified Linear
Controlled Fluid	Steam; Chilled or hot water with up to 50% Glycol. Not for use with fuels
Leakage Rating	0.01% of Cv, 0.03% of Cv @ 5 & 6 in.
Maximum Safe Operating Pressure	55 psi steam (379 kPa steam); 150 psi water at 100F (1034 kPa water at 38 C)
Maximum Differential Pressure	
Ratings (Close-off)	150 psi (1034 kPa)
Ambient Temperature Range	35 F to 300 F (2 C to 150 C)
Stem Travel	1 1/2 in. (38 mm)
Bonnet Size:	1-3/8 in. (35 mm)
Valve Action:	Stem down to close
ANSI/ASME Rating:	125
Actuation:	Must be purchased separately
Comments:	Q5001D1000 requires 1/2 in. 220867A Cam.
Materials	
(Body)	Cast Iron
(Stem)	Stainless Steel
(Seat)	Resilient
(Plug/Ball/Disc)	Stainless Steel
(Packing)	Teflon

DIMENSIONS DIAGRAM



M27552

Submittal Data - Valves

Flanged Globe Valve, V5011A; V5011B



Used for proportional control of hot or chilled water and glycol solutions (to 50 percent concentration) and for two-position control of low pressure steam in closed loop HVAC systems.

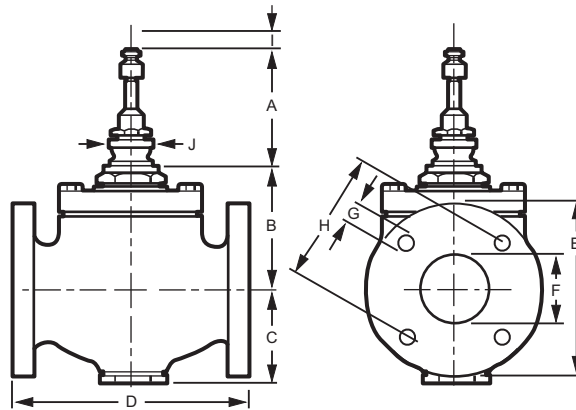
FEATURES

- Sizes range from 2-1/2 to 6 inches.
- Stainless steel stem with serviceable Teflon packing.
- Valves utilize direct mounting valve actuators, Q5020/ Q5022 linkages with Direct Coupled Actuators, or Pneumatic Valve Actuators to operate the valve.
- Equal Percentage flow characteristic.

SPECIFICATIONS

Valve TypeGlobe Valve
 Body PatternTwo-way
 Connection TypeFlanged
 Flow Characteristic:.....Equal percentage
 Controlled FluidChilled or hot water with up to 50% Glycol. Not for use with fuels; Low pressure steam
 Maximum Safe Operating Pressure 15 psi steam (100 kPa steam); 150 psi at 240 F water (1034 kPa at 115 C water)
 Maximum Differential for Quiet Water Service20 psid (138 kPa)
 Ambient Temperature Range40 F to 250 F (4 C to 121 C)
 ANSI/ASME Rating:.....125
 Actuation:Must be purchased separately
Materials
 (Body).....Cast Iron
 (Stem).....316 Stainless Steel
 (Seat).....Bronze
 (Packing).....Teflon Cone

DIMENSIONS DIAGRAM



MODEL	VALVE SIZE	A*	B	C	D	E	F	G	H	I (TRAVEL)	J (DIAMETER)
V5011A	2-1/2 (64)	3-1/2 (89)	4-13/16 (122)	4 (102)	9-1/2 (241)	7 (178)	2-1/2 (64)	3/4 (19)	5-1/2 (140)	3/4 (19)	1-3/8 (35)
	3 (76)	3-1/2 (89)	3-1/2 (89)	4-5/8 (117)	11 (279)	7-1/2 (191)	3 (76)	3/4 (19)	6 (152)	3/4 (19)	1-3/8 (35)
	4 (102)	5-1/4 (133)	5-1/4 (133)	5-3/16 (132)	13 (330)	9 (229)	4 (102)	3/4 (19)	7-1/2 (191)	1-1/2 (38)	1-7/8 (48)
V5011B	4 (102)	6-3/4 (171)	6-3/4 (171)	8-1/16 (205)	13 (330)	9 (229)	4 (102)	3/4 (19)	7-1/2 (191)	1-1/2 (38)	1-7/8 (48)

M27256

Submittal Data - Valves

Flanged Globe Valve, V5013B; V5012C



The V5013B are three-way mixing valves. The V5013C are three-way diverting valves. These valves provide proportional or two-position control of hot or chilled water in closed loop heating or cooling systems. These valves are offered in sizes 2 1/2 in. through 6 in.

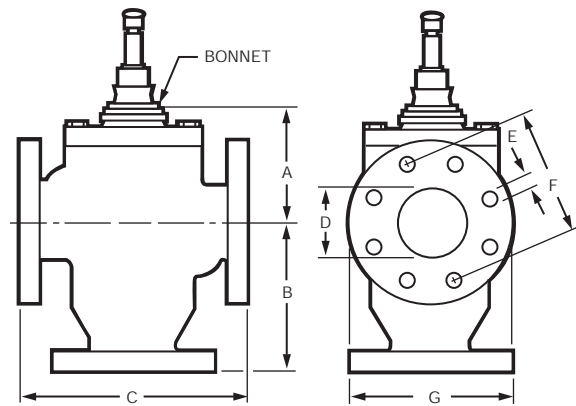
FEATURES

- Not suitable for combustible gases.
- Valves utilize direct mounting valve actuators, Q5020/ Q5022 linkages with Direct Coupled Actuators, or Pneumatic Valve Actuators to operate the valve.
- Constant total flow through full plug travel.
- Stainless steel stem prevents corrosion.
- Class IV (0.01% of Cv) Leakage Rating.

SPECIFICATIONS

Valve Type	Globe Valve
Body Pattern	Three-way
Flow Characteristic:	Linear (constant total)
Connection Type	Flanged
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Maximum Safe Operating Pressure.....	150 psi at 240 F water (1034 kPa at 115 C water)
Maximum Differential f or Quiet Water Service.....	20 psid (138 kPa)
Ambient Temperature Range	40 F to 250 F (4 C to 121 C)
ANSI/ASME Rating	125
Actuation:	Must be purchased separately
Materials	
(Body)	Cast Iron
(Stem)	Stainless Steel
(Seat)	Bronze
(Packing)	Teflon Cone

DIMENSIONS DIAGRAM



V5013B,C DIMENSIONS

VALVE SIZE IN INCHES (MM)					
	2-1/2 (64)	3 (76)	4 (102)	5 (125)	6 (152)
A	4-1/2 (114)	5-1/4 (133)	5-7/8 (149)	6-1/4 (159)	7-1/4 (184)
B	6-7/17 (164)	6-5/8 (168)	8-11/16 (221)	9-5/8 (244)	10-11/16 (271)
C	9-1/2 (241)	11 (279)	13 (330)	15 (381)	16-1/2 (419)
D	2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)
E	3/4 (19)	3/4 (19)	3/4 (19)	7/8 (22)	7/8 (22)
F	5-1/2 (140)	6 (152)	7-1/2 (191)	8-1/2 (216)	9-1/2 (241)
G	7 (178)	7-1/2 (191)	9 (229)	10 (254)	11 (279)

VALVE SIZE	BONNET SIZE	NUMBER OF BOLT HOLES
2-1/2 (64)	1-3/8 (35)	4
3 (76)		
4 (102)		
5 (125)	1-7/8 (48)	8
6 (152)		

C7959B

Submittal Data - Valves

Flanged Globe Valve, VGF2



VGF Flanged Globe Valves are used for 2-position or modulating control of steam, hot water or chilled water-glycol solutions up to 50 percent concentration in closed loop heating, ventilation and air conditioning (HVAC) systems. They can be operated by ML6984/7984, ML6420/6425, ML6421/7421 Electric Linear Actuators, MP953 Pneumatic Actuators, Modutrol™ Motors with Q5001 valve linkage or MN/MS Series

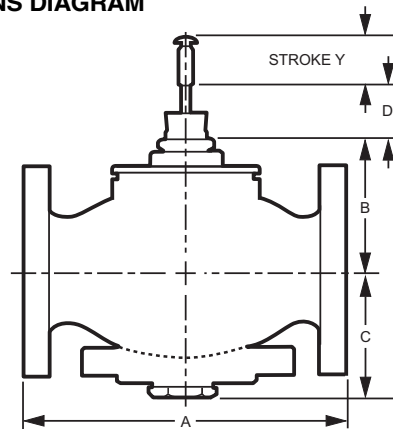
FEATURES

- ANSI Class 125 and Class 250 cast iron bodies with flanged end connections
- Equal percentage and linear flow characteristics
- Face-to-face flange dimensions per ANSI/ISA S75.03 standard
- Sizes from 2-1/2 to 6 in.
- Stainless steel trim standard for long life span
- ANSI Class III or IV seat leakage
- Steam inlet pressure up to 125 psig and 353 F maximum temperature
- Self-adjusting packing
- Accurate positioning with equal percentage and linear flow characteristics to ensure precise temperature control
- Universal bonnet for direct-coupled electric and pneumatic actuators for easy mounting, or linkage coupled Modutrol™ Motors and MN/MS Series direct coupled actuators.
- Not suitable for combustible gasses.
- Valves utilize direct mounting valve actuators, Q5020/ Q5022 linkages with Direct Coupled Actuators or Pneumatic Valve Actuators to operate the valve.

SPECIFICATIONS

Valve Type.....	Globe Valve
Valve Action:.....	Stem down to close
Body Pattern	Two-way
Connection Type	Flanged
Controlled Fluid.....	Steam; Chilled or hot water with up to 50% Glycol. Not for use with fuels
Fluid Temperature Range.....	20 F to 250 F, steam 353 F (-7 C to +120 C, steam 180 C)
Actuation:	Must be purchased separately
Stem Travel	
2-1/2 and 3 inch valves	3/4 in. (20 mm)
4 to 6 inch valves:	1-1/2 in. (39 mm)
Bonnet Size	
2-1/2 and 3 inch valves	1-3/8 in. (35 mm)
4 to 6 inch valves:	1-7/8 in. (47.6 mm)
Materials	
(Body).....	Cast Iron ASTM A126 Class B
(Stem).....	Stainless Steel
(Seat).....	Stainless Steel
(Cartridge).....	Stainless Steel
(Plug/Ball/Disc):.....	Stainless Steel
(Packing).....	Spring-loaded PTFE cone rings

DIMENSIONS DIAGRAM



1 DOTTED LINE REPRESENTS ANSI 125 VALVE BONNET.

MODEL NUMBER	DIMENSIONS, IN. (MM)				
	A	B	C	E	Y
2-WAY VALVES, ANSI CLASS 125. STEM DOWN TO CLOSE. EQUAL PERCENTAGE OR LINEAR FLOW CHARACTERISTIC					
VGF21_S25	10-7/8 (276)	4-3/8 (112)	7 (178)	3-1/2 (89)	13/16 (20)
VGF21_S30	11-3/4 (298)	6-3/8 (161)	7-1/2 (191)		
VGF21_S40	13-7/8 (352)	5-7/8 (150)	9 (229)	5-1/4 (133)	1-1/2 (38)
VGF21_S50	15-3/4 (400)	6-3/16 (157)	10 (254)		
VGF21_S60	17-3/4 (451)	6-3/16 (157)	11 (279)		
2-WAY VALVES, ANSI CLASS 250. STEM DOWN TO CLOSE. EQUAL PERCENTAGE FLOW CHARACTERISTIC					
VGF22ES25	11-1/2 (292)	4-3/8 (112)	7-1/2 (191)	3-1/2 (89)	13/16 (20)
VGF22ES30	12-1/2 (318)	6-3/8 (161)	8-1/4 (210)		
VGF22ES40	14-1/2 (368)	5-7/8 (150)	10 (254)	5-1/4 (133)	1-1/2 (38)
VGF22ES50	16-5/8 (422)	6-3/16 (157)	11 (279)		
VGF22ES60	18-5/8 (473)	6-3/16 (157)	12-1/2 (318)		
2-WAY VALVES, PRESSURE-BALANCED, ANSI CLASS 125. STEM DOWN TO CLOSE. EQUAL PERCENTAGE OR LINEAR FLOW CHARACTERISTIC					
VGF21_P25	10-7/8 (276)	4-3/16 (107)	7 (178)	3-1/2 (89)	13/16 (20)
VGF21_P30	11-3/4 (298)	5-7/8 (150)	7-1/2 (191)		
VGF21_P40	13-7/8 (352)	5-7/8 (150)	9 (229)	5-1/4 (133)	1-1/2 (38)
VGF21_P50	15-3/4 (400)	6-1/8 (156)	10 (254)		
VGF21_P60	17-3/4 (451)	6-1/8 (156)	11 (279)		

Flanged Globe Valve, VGF3



VGF Flanged Globe Valves are used for 2-position or modulating control of hot water or chilled water-glycol solutions up to 50% concentration in closed loop heating, ventilation and air conditioning (HVAC) systems. They can be operated by ML6984/7984, ML6420/6425, ML6421/7421 Electric Linear Actuators, MP953 Pneumatic Actuators, Modutrol™ Motors with Q5001 valve linkage or MN/MS Series Direct Coupled Actuators with Q5020 or Q5022 valve linkages. Three-way bodies are available in mixing or diverting style with equal percentage and

linear flow characteristics, respectively. For boiler/chiller bypass applications requiring tight close-off, use VGF31/32LD diverting valves. For outdoor temperature compensation of building supply water or modulating control of heat exchangers, use VGF31/32EM mixing valves.

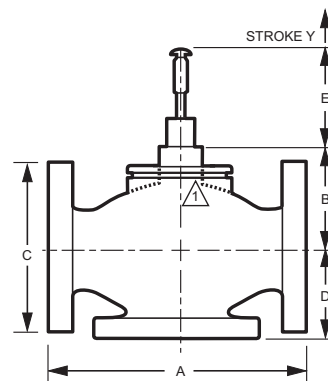
SPECIFICATIONS

Valve Type	Globe Valve
Body Pattern	Three-way
Connection Type	Flanged
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Leakage Rating	Port A seat leakage: 0.5%; Port B seat leakage 1.0%.
Maximum Safe Operating Pressure	175 psig at 130 F (66 C) (1206 kPa at 66 C (130 F))
Maximum Differential Pressure Ratings (Close-off)87 psi (599 kPa)
Fluid Temperature Range20 F to 250 F (-7 C to +120 C)
Actuation:	Must be purchased separately
Stem Travel	
2-1/2 and 3 inch valves	3/4 in. (20 mm)
4 to 6 inch valves:	1-1/2 in. (39 mm)
Bonnet Size	
2-1/2 and 3 inch valves	1-3/8 in. (35 mm)
4 to 6 inch valves:	1-7/8 in. (47.6 mm)
Materials	
(Body)	Cast Iron ASTM A126 Class B
(Stem)	Stainless Steel
(Seat)	Stainless Steel
(Cartridge)	Stainless Steel
(Plug/Ball/Disc)	Stainless Steel
(Packing)	Spring-loaded PTFE cone rings

FEATURES

- ANSI Class 125 and Class 250 cast iron bodies with flanged end connections.
- Face-to-face flange dimensions per ANSI/ISA S75.03 standard.
- Sizes from 2-1/2 to 6 inches.
- Stainless steel trim standard for long life span.
- Self-adjusting packing.
- Accurate positioning with equal percentage and linear flow characteristics to ensure precise temperature control.
- Universal bonnet for direct-coupled electric and pneumatic actuators for easy mounting, or linkage coupled Modutrol™ Motors and MN/MS Series direct coupled actuators.
- Constant total flow throughout full plug travel (3-way diverting models).
- Not suitable for combustible gasses.
- Valves utilize direct mounting valve actuators, Q5020/ Q5022 linkages with Direct Coupled Actuators or Pneumatic Valve Actuators.

DIMENSIONS DIAGRAM



▲ DOTTED LINE REPRESENTS ANSI 125 VALVE BONNET.

MODEL NUMBER	DIMENSIONS, IN. (MM)					
	A	B	C	D	E	Y
3-WAY MIXING VALVES, ANSI CLASS 125. STEM UP TO CLOSE A-AB						
VGF31EM25	10-7/8 (276)	3 (76)	7 (178)	3-3/4 (95)	4-3/16 (107)	13/16 (20)
VGF31EM30	11-3/4 (298)	4-3/16 (107)	7-1/2 (191)	4-3/8 (111)		
VGF31EM40	13-7/8 (352)	5-8/16 (140)	9 (229)	5-1/8 (130)	6-11/16 (170)	1-1/2 (38)
VGF31EM50	15-3/4 (400)	5-3/8 (137)	10 (254)	5-3/4 (146)		
VGF31EM60	17-3/4 (451)	5-11/16 (145)	11 (279)	6-5/8 (168)		
3-WAY MIXING VALVES, ANSI CLASS 250. STEM UP TO CLOSE A-AB						
VGF32EM25	11-1/2 (292)	4-3/8 (112)	7-1/2 (191)	3-3/4 (95)	4-3/16 (107)	13/16 (20)
VGF32EM30	12-1/2 (318)	6-3/8 (161)	8-1/4 (210)	4-3/8 (111)		
VGF32EM40	14-1/2 (368)	5-7/8 (150)	10 (254)	5-1/8 (130)	6-11/16 (170)	1-1/2 (38)
VGF32EM50	16-5/8 (422)	6-3/16 (157)	11 (279)	5-3/4 (146)		
VGF32EM60	18-5/8 (473)	6-3/16 (157)	12-1/2 (318)	6-5/8 (168)		
3-WAY DIVERTING VALVES, ANSI CLASS 125. STEM DOWN TO CLOSE AB-A						
VGF31LD25	10-7/8 (276)	3 (76)	7 (178)	3-3/4 (95)	4-3/16 (107)	13/16 (20)
VGF31LD30	11-3/4 (298)	4-3/16 (107)	7-1/2 (191)	4-3/8 (111)		
VGF31LD40	13-7/8 (352)	5-8/16 (140)	9 (229)	5-1/8 (130)	6-11/16 (170)	1-1/2 (38)
VGF31LD50	15-3/4 (400)	5-3/8 (137)	10 (254)	5-3/4 (146)		
VGF31LD60	17-3/4 (451)	5-11/16 (145)	11 (279)	6-5/8 (168)		
3-WAY DIVERTING VALVES, ANSI CLASS 250. STEM DOWN TO CLOSE AB-A						
VGF32LD25	11-1/2 (292)	4-3/8 (112)	7-1/2 (191)	3-3/4 (95)	4-3/16 (107)	13/16 (20)
VGF32LD30	12-1/2 (318)	6-3/8 (161)	8-1/4 (210)	4-3/8 (111)		
VGF32LD40	14-1/2 (368)	5-7/8 (150)	10 (254)	5-1/8 (130)	6-11/16 (170)	1-1/2 (38)
VGF32LD50	16-5/8 (422)	6-3/16 (157)	11 (279)	5-3/4 (146)		
VGF32LD60	18-5/8 (473)	6-3/16 (157)	12-1/2 (318)	6-5/8 (168)		

M27604

Submittal Data - Valves

Pressure Independent Control Valves, VRN



The VRN2 two-way pressure independent control ball valves maintain constant flow of hot or chilled water in closed loop heating, ventilating and air conditioning (HVAC) systems regardless of head pressure fluctuations above the minimum specified pressure drop. These valve assemblies can be used with Honeywell non-spring return or spring return direct coupled actuators (DCA) with minimum torque of 35 lb-in (4 Nm) on valve sizes up to 3 inches (DN80). The built-in differential pressure regulator makes fluid flow through the valve independent of changes in supply pressure, eliminating "hunting" by the control system, even at low coil flow. The pressure regulator virtually eliminates cavitation in the valve, and decouples the control valve from the effects of piping components such as reducers and elbows.

Pressure independent control valves are sized to match design coil flow regardless of coil size. VRN2 valves eliminate the need to balance the system for proper flow, and allow chillers to be operated at design temperature differential for maximum efficiency at every load condition. When used in a system with variable speed pump drives, 3-way valves and coil bypass lines are not required. In new construction, VRN2 valves perform better than reverse return piping designs without the extra materials these systems need.

Systems that utilize the capabilities of properly installed and monitored pressure independent control valves may qualify for LEED points. Pressure independent control requires less flow, enabling use of smaller piping, pumps and chillers.

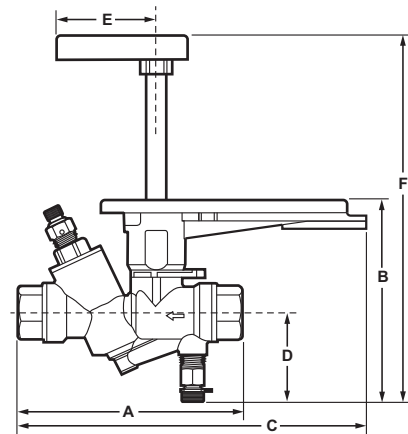
SPECIFICATIONS

Valve Type	Dynamic pressure independent control valve
Body Pattern	2-way, straight-through
Pipe Connection Type	Female-NPT
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Valve Action.....	Quarter-turn rotary
Maximum Safe Operating Pressure	360 psi (2500 kPa)
Maximum Safe Operating Temperature.....	248 F (120 C)
Maximum Close-off Pressure	100 psid (690 kPa)
Fluid Temperature Range.....	-22 F to 250 F (-30 C to 121 C)
Ambient Temperature Range	14 F to 131 F (-10 C to 55 C)
Accuracy	±5% over specified pressure range
Stem Travel.....	90 deg. rotation
Materials	
(Body).....	Forged Brass ASTM B584
(Seat).....	Teflon seals/EPDM O-rings
(Regulator)	Stainless Steel
(Packing).....	Teflon seals/EPDM O-rings
(Diaphragm).....	Hydrogenated Acrylonitrile Butadiene Rubber
Comments	No feedback signal Full port ball; No feedback

FEATURES

- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 1 to 95 gpm.
- Differential pressure regulator for constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design for long service life for flow control accuracy of ±5% over specified control range.
- Equal percentage flow characteristic using patented flow control ball insert.
- Multiple regulated flow rates available per valve size.
- Patented ball seals require low operating torque.
- Nickel-chrome plated brass or stainless steel trim.
- Choice of factory-installed actuation using Honeywell N05/S05-series direct-coupled actuators: Floating, Modulating (2-10 V), Spring Return Modulating/Floating.
- Spring return actuators field-configurable for normally open or normally closed fail safe position.
- Actuators available with optional auxiliary switches.
- Removable, manual operating handle to control valve during installation or in an event of power failure.
- Upstream Test Port for venting or pressure gauge attachment.
- Three actuator orientations on the valve for cramped spaces.

DIMENSIONS DIAGRAM



VALVE SIZE (IN.)	DIMENSIONS IN INCHES (MM)						
	A	B	C	D	E	F _z ^a	F _s ^a
1/2	5-11/16 (145)	4-5/16 (109)	8-19/32 (218)	1 (26)	2-1/2 (64)	8-13/32 (213)	7-3/16 (182)
3/4			8-45/64 (221)				
1	5-29/32 (150)	4-19/32 (117)	10-57/64 (277)	1-5/8 (41)		9-13/32 (239)	8-3/16 (207)
	9 (229)		10-19/32 (269)				
1-1/4	8-3/32 (213)	5-3/16 (132)	10-1/2 (267)	2-3/32 (53)		10-13/32 (264)	9-3/16 (232)
1-1/2	8-3/16 (208)		12-3/32 (307)				
2	9-29/32 (251)	12 (305)	12-3/16 (310)				
	10 (254)		12-13/32 (314)				
2-1/2	10-9/32 (263)						
3	10-13/16 (274)						

^a LONG SHAFT SUPPLIED WITH "ZELIX" (Z) DIRECT COUPLED ACTUATORS; SHORT SHAFT SUPPLIED WITH "SALT" (S) NON-SPRING RETURN DCAS.

Pressure Independent Control Valves, VRW



The VRW2 two-way pressure independent control valves maintain constant flow of hot and chilled water in closed-loop heating, ventilating and air conditioning (HVAC) systems regardless of head pressure fluctuations above minimum specified pressure drop. These valves come complete with proportional, stay-in-place or electronic fail safe actuators.

The built-in differential pressure regulator makes fluid flow through the valve independent of changes

in supply pressure, eliminating “hunting” by the control system, even at low coil flow. The pressure regulator virtually eliminates cavitation in the valve, and decouples the control valve from the effects of piping components such as reducers and elbows.

Pressure independent control valves are sized to match design coil flow regardless of coil size. VRW2 valves eliminate the need to balance the system for proper flow, and allow chillers to be operated at design temperature differential for maximum efficiency at every load condition. When used in a system with variable speed pump drives, 3-way valves and coil bypass lines are not required.

Systems that utilize the capabilities of properly installed, adjusted, and monitored pressure independent control valves may qualify for LEED points.

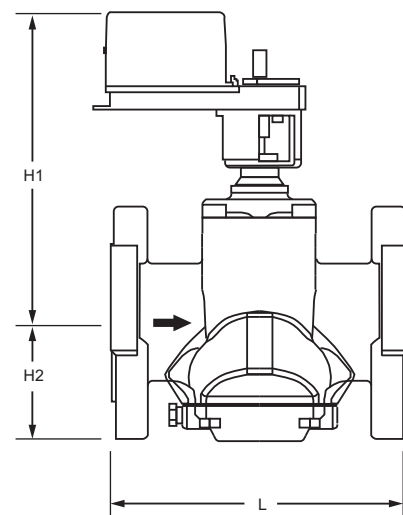
FEATURES

- Multi-sized bodies from 2-1/2 to 6 inch pipes with wafer flanged connections.
- Combination ANSI/ASME Class 150/300 pressure rating.
- Controls hot or chilled water with up to 50% glycol.
- Regulated flow rates available from 39 to 469 gpm.
- Stainless steel pressure regulator maintains constant pressure drop across valve seat.
- Positive pressure, rolling diaphragm regulator design provides flow control accuracy of $\pm 5\%$ over specified pressure range.
- Equal percentage flow characteristic using multi turn, non-rising, characterized plug.
- High close-off rating.
- 50 discrete, selectable flow rates available per valve size.
- Stainless steel trim.
- Six-turn actuator with floating or modulating inputs available with stay-in-place or electronic fail safe action.
- Fail safe actuators field-configurable for normally open or normally closed power failure return position.
- Two Test Ports for venting or pressure gauge attachment.

SPECIFICATIONS

Valve Type	Wafer flanged dynamic pressure independent control valve
Body Pattern	2-way, straight-through
Flow Characteristic	Equal Percentage
Pipe Connection Type	Wafer flange
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Valve Action	Multi-turn linear
Leakage Rating	0.2% max.
Maximum Safe Operating Pressure.....	580 psig (4000 kPa)
Maximum Safe Operating Temperature.....	248 F (120 C)
Maximum Close-off Pressure.....	101 psid (700 kPa)
Fluid Temperature Range	-4 F to 248 F (-20 C to 120 C)
Ambient Temperature Range	14 F to 131 F (-10 C to 55 C)
Accuracy	$\pm 5\%$ over specified pressure range
Stem Travel	1 to 6 Rotations in 51 equal, field-selectable increments
ANSI/ ASME Class.....	150/300
Comments	2 - 10V position feedback signal
Materials	
(Body)	Ductile Iron, ASTM A536 ∇ 65T, Class 60-45-18
(Stem)	Stainless Steel
(Seat)	316 Stainless steel
(Regulator).....	316 Stainless steel
(Plug/Ball/Disc).....	316 stainless steel
(Packing)	EPDM and Nitrile O-rings
(Diaphragm)	EPDM

DIMENSIONS DIAGRAM



L		H ₁		H ₂	
in.	mm	in.	mm	in.	mm
8 3/4	224	9 3/4	246	3 3/4	95
12 5/8	320	11 3/8	290	5 1/4	135
16 5/8	422	13 1/4	338	7 1/8	180

M31311

Submittal Data - Valves

Resilient Seat Butterfly Valves, VFF1

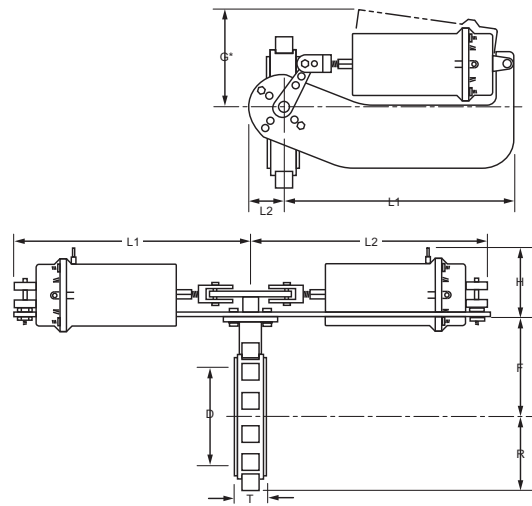


Resilient seat in two-way valves, provide control for HVAC system applications including chilled water, hot water, cooling tower water and thermal storage systems.

SPECIFICATIONS

Body Pattern	2 way (S/R NO)
Valve Action.....	Normally Open
Connection Type	Lugged
Controlled Fluid.....	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Actuator Control Type.....	Pneumatic
Type of Enclosure.....	Pneumatic
Flow Characteristic.....	Modified Equal Percent
Mounting	ANSI Flanged
Static Pressure Rating (max).....	250 psi (1724 kPa)
Actuator Temperature Ratings	-20 F to 150 F (-29 C to 66 C)
Fluid Temperature Range.....	-40 F to 250 F (-40 C to 121 C)
Number of Flange Bolts	
For 2 in., 2-1/2 in., 3 in. valves:	4
For 4 in., 5 in., 6 in., 8 in., valves:	8
For 10 in., 12 in., 14 in. valves:.....	12
For 16 in., 18 in. valves:	16
For 20 in. valves:	20
Flange Bolt Thread	
For 2 in., 2-1/2 in., 3 in. valves:	5/8 in.-11 pitch
For 4 in., 5 in., 6 in., 8 in., valves:.....	3/4 in.-10 pitch
For 10 in., 12 in., 14 in. valves:.....	7/8 in.-9 pitch
For 16 in., 18 in., 20 in. valves:.....	1-1/8 in.-7 pitch
Materials	
(Body).....	Polyester-coated cast iron ASTM A126 Class B
(Stem).....	416 Stainless Steel
(Seat).....	Peroxide-cured EPDM resilient seat
(Plug/Ball/Disc).....	Nylon 11-coated ductile iron

DIMENSIONS DIAGRAM



PIPE SIZE IN. [mm]	FULL CUT DISK, 175 PSI CLOSE-OFF (VFF1/2_V1Y8P/PP)					THICKNESS T	UNDER CUT DISK, 50 PSI CLOSE-OFF** (VFF1/2_V1Y8P/PP)				
	G	H	HP	L1	L2		G	H	HP	L1	L2*
2 [DN50]						1-5/8 [41]					
2-1/2 [DN65]	5-5/8 [144]	3-1/8 [79]	6-1/4 [160]	16 [406]	3 [76]	1-3/4 [44]					
3 [DN80]						2 [51]	5-5/8 [144]	3-1/8 [79]	6-1/4 [160]	16 [406]	
4 [DN100]	7-1/4 [186]		10 [254]	20 [506]		2-1/8 [54]	7-1/4 [186]		10 [254]	20 [506]	3 [76]
5 [DN125]											
6 [DN150]	9 [227]	6-7/8 [175]	10-1/8 [257]	22-3/4 [578]							
8 [DN200]					22-3/4 [578]	2-1/2 [64]	9 [227]	6-7/8 [175]	10-1/8 [257]	22-3/4 [578]	
10 [DN250]											22-3/4 [578]
12 [DN300]	LOW PRESSURE ACTUATORS NOT AVAILABLE IN THESE, AND LARGER BODY SIZES.										

**NOTE: VALVE SIZES 2 TO 3 INCHES ARE AVAILABLE ONLY WITH FULL CUT DISKS. VALVE STROKE IS LIMITED TO 70 DEGREES.

M16908

Resilient Seat Butterfly Valves, VFF2



Resilient seat two-way valves provide control for HVAC system applications including chilled water, hot water, cooling tower water and thermal storage systems.

SPECIFICATIONS

Body Pattern.....	2 way (NC, NC/NO; NSR)
Valve Action.....	Normally Closed, convertible to Normally Open with Spring Return DCA
Connection Type.....	Lugged
Controlled Fluid.....	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Flow Characteristic.....	Modified Equal Percent
Mounting.....	ANSI Flanged
Static Pressure Rating (max).....	250 psi (1724 kPa)
Actuator Temperature Ratings.....	-5 F to 140 F (-20 C to 60 C)
Fluid Temperature Range.....	-40 F to 250 F (-40 C to 121 C)
Number of Flange Bolts	
For 2 in., 2-1/2 in., 3 in. valves:.....	4
For 4 in., 5 in., 6 in., 8 in., valves:.....	8
For 10 in., 12 in., 14 in. valves:.....	12
For 16 in., 18 in. valves:.....	16
For 20 in. valves:.....	20
Flange Bolt Thread	
For 2 in., 2-1/2 in., 3 in. valves:.....	5/8 in.-11 pitch
For 4 in., 5 in., 6 in., 8 in., valves:.....	3/4 in.-10 pitch
For 10 in., 12 in., 14 in. valves:.....	7/8 in.-9 pitch
For 16 in., 18 in., 20 in. valves:.....	1-1/8 in.-7 pitch
Materials	
(Body).....	Polyester-coated cast iron ASTM A126 Class B
(Stem).....	416 Stainless Steel
(Seat).....	Peroxide-cured EPDM resilient seat
(Plug/Ball/Disc).....	Nylon 11-coated ductile iron

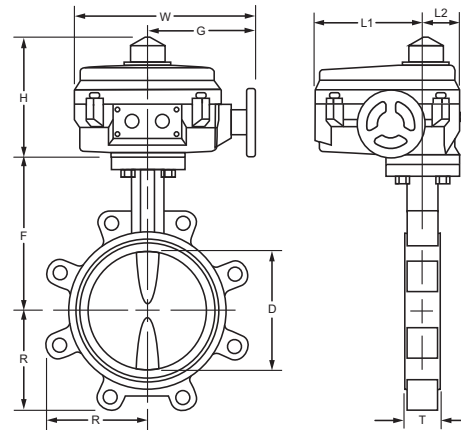
APPROVALS

CE.....	Compliant
Underwriters Laboratories, Inc.	C/US UL873, Plenum Rated

ACCESSORIES

VFF50-0400—Position status monitor for VFF butterfly valves with high pressure pneumatic actuators

DIMENSIONS DIAGRAM



PIPE SIZE IN. [mm]	FULL CUT DISK, HIGH CLOSE-OFF* NEMA 4X (VFF2_W1YXA/B)					THICK- NESS T	UNDER CUT DISK, 50 PSI CLOSE-OFF** NEMA 4X (VFF2_V1YXA/B)				
	W	H1	L1	L2	G		W	H1	L1	L2	G
2 [DN50]						1-5/8 [41]					
2-1/2 [DN65]	7-1/2 [191]	6-3/4 [170]	5-1/2 [141]	2 [51]	5-3/4 [147]	1-3/4 [44]					
3 [DN80]						2 [51]	7-1/2 [191]	6-3/4 [170]	5-1/2 [141]	2 [51]	5-3/4 [147]
4 [DN100]						2-1/8 [54]					
5 [DN125]	10-1/8 [257]	8-1/8 [206]	7-3/8 [188]	2-3/4 [68]	7-3/4 [198]	2-1/2 [64]	10-1/8 [257]	8-1/8 [206]	7-3/8 [188]	2-3/4 [68]	7-3/4 [198]
6 [DN150]						3 [76]					
8 [DN200]						4 [102]	12-1/8 [307]	8-3/4 [224]	8-7/8 [226]	3-1/4 [81]	9-1/2 [241]
10 [DN250]						4-1/4 [108]					
12 [DN300]	12-1/8 [307]	8-3/4 [224]	8-7/8 [226]	3-1/4 [81]	9-1/2 [241]	5 [127]					
14 [DN350]											
16 [DN400]											
18 [DN450]	8-1/2 [217]	16 [406]	8-3/4 [221]	4-1/2 [115]	12-1/2 [320]						
20 [DN500]											

* 175 PSI [1206 KPA] CLOSE-OFF UP TO 12 INCHES [DN 300], 150 PSI [1034 KPA] OTHERWISE
 **NOTE: VALVE SIZES 2 TO 3 INCHES HAVE 175 PSI [1206 KPA] CLOSE-OFF AND ARE AVAILABLE ONLY WITH FULL CUT DISKS.

▲ NEMA 4X ACTUATORS ARE WATERPROOF AND CORROSION-RESISTANT.

M16907

VALVES

Submittal Data - Valves

Resilient Seat Butterfly Valves, VFF3



Resilient seat three-way valves provide control for HVAC system applications including chilled water, hot water, cooling tower water and thermal storage systems.

SPECIFICATIONS

Body Pattern 3 way (A-B-AB porting)
 Valve Action..... Normally Closed
 Connection Type Lugged
 Controlled Fluid..... Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
 Actuator Control Type..... Electric floating
 Flow Characteristic..... Modified Equal Percent
 Mounting ANSI Flanged
 Static Pressure Rating (max)..... 250 psi (1724 kPa)
 Actuator Temperature Ratings -5 F to 140 F (-20 C to 60 C)
 Fluid Temperature Range..... -40 F to 250 F (-40 C to 121 C)
 Number of Flange Bolts
 For 2 in., 2-1/2 in., 3 in. valves: 4
 For 4 in., 5 in., 6 in., 8 in., valves: 8
 For 10 in., 12 in., 14 in. valves: 12
 For 16 in., 18 in. valves: 16
 For 20 in. valves: 20
 Flange Bolt Thread
 For 2 in., 2-1/2 in., 3 in. valves: 5/8 in.-11 pitch
 For 4 in., 5 in., 6 in., 8 in., valves: 3/4 in.-10 pitch
 For 10 in., 12 in., 14 in. valves: 7/8 in.-9 pitch
 For 16 in., 18 in., 20 in. valves: 1-1/8 in.-7 pitch
 Materials
 (Body)..... Polyester-coated cast iron
 ASTM A126 Class B
 (Stem)..... 416 Stainless Steel
 (Seat)..... Peroxide-cured EPDM resilient seat
 (Plug/Ball/Disc)..... Nylon 11-coated ductile iron

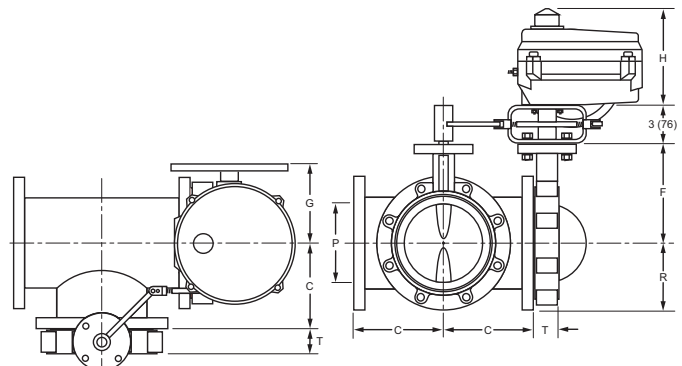
APPROVALS

CE..... Compliant
 Underwriters Laboratories, Inc..... C/US UL873, Plenum Rated

ACCESSORIES

VFF50-0400—Position status monitor for VFF butterfly valves with high pressure pneumatic actuators

DIMENSIONS DIAGRAM



PIPE SIZE IN. [mm]	FULL CUT DISK, 175 PSI CLOSE-OFF NEMA 4X (VFF3/6, W1YXA/B)					THICKNESS T	UNDER CUT DISK, 50 PSI CLOSE-OFF** NEMA 4X (VFF3/6, V1YXA/B)				
	W	H	L1	L2	G		W	H	L1	L2	G
2 [DN50]						1-5/8 [41]					
2-1/2 [DN65]	7-1/2 [191]	6-3/4 [170]	5-1/2 [141]	2 [49]	5-3/4 [147]	1-3/4 [44]					
3 [DN80]											
4 [DN100]						2 [51]	7-1/2 [191]	6-3/4 [170]	5-1/2 [141]	2 [49]	5-3/4 [147]
5 [DN125]						2-1/8 [54]					
6 [DN150]	10-1/8 [257]	8-1/8 [206]	7-3/8 [188]	2-3/4 [68]	7-3/4 [198]						
8 [DN200]						2-1/2 [64]	10-1/8 [257]	8-1/8 [206]	7-3/8 [188]	2-3/4 [68]	7-3/4 [198]
10 [DN250]	12-1/8 [307]	8-3/4 [224]	8-7/8 [226]	3-1/4 [81]	9-1/2 [241]						
12 [DN300]						3 [76]	12-1/8 [307]	8-3/4 [224]	8-7/8 [226]	3-1/4 [81]	9-1/2 [241]
14 [DN350]	NEMA 4 (VFF3/6, W1Y4A/4B)										
16 [DN400]						4 [102]					
18 [DN450]	8-1/2 [217]	16 [406]	8-3/4 [221]	4-1/2 [115]	12-1/2 [320]	4-1/4 [108]	NEMA 4 (VFF3/6, V1Y4A/4B)				
20 [DN500]						5 [127]	8-1/2 [217]	16 [406]	8-3/4 [221]	4-1/2 [115]	12-1/2 [320]

* 175 PSI [1206 KPA] CLOSE-OFF UP TO 12 INCHES [DN 300], 150 PSI [1034 KPA] OTHERWISE
 **NOTE: VALVE SIZES 2 TO 3 INCHES HAVE 175 PSI [1206 KPA] CLOSE-OFF AND ARE
 AVAILABLE ONLY WITH FULL CUT DISKS.

M16906



Resilient seat three-way valves provide control for HVAC system applications including chilled water, hot water, cooling tower water and thermal storage systems.

SPECIFICATIONS

Body Pattern.....	3 way (A-AB-B porting)
Valve Action.....	Normally Closed
Connection Type.....	Lugged
Controlled Fluid	Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Actuator Control Type.....	Electric floating
Type of Enclosure.....	NEMA 2 housing
Flow Characteristic.....	Modified Equal Percent
Mounting.....	ANSI Flanged
Static Pressure Rating (max).....	250 psi (1724 kPa)
Actuator Temperature Ratings.....	-5 F to 140 F (-20 C to 60 C)
Fluid Temperature Range	-40 F to 250 F (-40 C to 121 C)
Number of Flange Bolts	
For 2 in., 2-1/2 in., 3 in. valves:.....	4
For 4 in., 5 in., 6 in., 8 in., valves:.....	8
For 10 in., 12 in., 14 in. valves:.....	12
For 16 in., 18 in. valves:.....	16
For 20 in. valves:.....	20
Flange Bolt Thread	
For 2 in., 2-1/2 in., 3 in. valves:.....	5/8 in.-11 pitch
For 4 in., 5 in., 6 in., 8 in., valves:.....	3/4 in.-10 pitch
For 10 in., 12 in., 14 in. valves:.....	7/8 in.-9 pitch
For 16 in., 18 in., 20 in. valves:.....	1-1/8 in.-7 pitch
Materials	
(Body).....	Polyester-coated cast iron ASTM A126 Class B
(Stem).....	416 Stainless Steel
(Seat).....	Peroxide-cured EPDM resilient seat
(Plug/Ball/Disc).....	Nylon 11-coated ductile iron

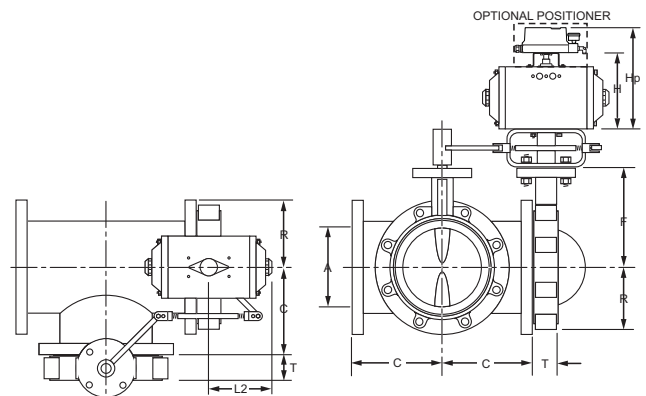
APPROVALS

CE.....	Compliant
Underwriters Laboratories, Inc.....	C/US UL873, Plenum Rated

ACCESSORIES

VFF50-0400—Position status monitor for VFF butterfly valves with high pressure pneumatic actuators

DIMENSIONS DIAGRAM



PIPE SIZE IN. [mm]	FULL CUT DISK, HIGH CLOSE-OFF* (VFF3/6_W1YCS/DS/ES/PS/XS)						THICK- NESS T	UNDER CUT DISK, 50 PSI CLOSE-OFF** (VFF3/6_V1YCS/DS/ES/PS/XS)				
	W	H	HP	L1	L2	W		H	HP	L1	L2	
2 [DN50]	2-3/4 [70]	4-1/4 [109]	10-1/4 [262]	3 [76]	3 [76]	1-5/8 [41]						
2-1/2 [DN65]	3-5/8 [91]	5-2/8 [132]	11-2/8 [284]	4 [100]	4 [100]	1-3/4 [44]						
3 [DN80]	4 [100]	5-1/2 [141]	11-1/2 [293]	4-1/2 [113]	4-1/2 [113]							
4 [DN100]	4-3/4 [120]	6-7/8 [176]	12-7/8 [328]	6 [154]	6 [154]	2 [51]	4 [100]	5-1/2 [141]	11-1/2 [293]	4-1/2 [113]	4-1/2 [113]	
5 [DN125]	5-3/8 [137]	7-3/4 [196]	13-3/4 [349]	6-1/8 [157]	6-1/8 [157]	2-1/8 [54]	4-3/4 [120]	6-7/8 [176]	12-7/8 [328]	6 [154]	6 [154]	
6 [DN150]	6-3/4 [172]	9-3/8 [238]	15-3/8 [391]	7-3/4 [196]	7-3/4 [196]		6-3/4 [172]	9-3/8 [238]	15-3/8 [391]	7-3/4 [196]	7-3/4 [196]	
8 [DN200]	8-7/8 [224]	11-5/8 [295]	17-5/8 [447]	9-1/2 [240]	9-1/2 [240]	2-1/2 [64]						
10 [DN250]												
12 [DN300]	10-3/4 [273]	13-1/2 [342]	19-1/2 [495]	13-3/8 [339]	13-3/8 [339]	3 [76]	8-7/8 [224]	11-5/8 [295]	17-5/8 [447]	9-1/2 [240]	9-1/2 [240]	
14 [DN350]												
16 [DN400]						4 [102]						
18 [DN450]						4-1/4 [108]	10-3/4 [273]	13-1/2 [342]	19-1/2 [495]	13-3/8 [339]	13-3/8 [339]	
20 [DN500]						5 [127]						

* 175 PSI [1206 KPA] CLOSE-OFF UP TO 12 INCHES [DN 300], 150 PSI [1034 KPA] AT 14 INCHES AND NO PRODUCT AVAILABLE GREATER THAN 14 INCHES.

**NOTE: VALVE SIZES 2 TO 3 INCHES ARE AVAILABLE ONLY WITH FULL CUT DISKS.

M16905

VALVES

Submittal Data - Valves

Valve Linkage, Q5001



The Q5001 Valve Linkage connects a Modutrol® Motor to a 2- or 3-way valve. It is used primarily on V5011 or V5013 steam and water valves.

SPECIFICATIONS

Linkage TypeValve
 Mounting.....Linkage mounts directly to the valve bonnet; motor mounts on linkage bracket.
 Used with ActuatorModutrol Motor
 Stem Force Rating80 or 160 lbf (356 N or 712 N)
 Ambient Temperature Range-40 F to +150 F (-40 C to +66 C)

ACCESSORIES

220829BCQ1—Barber-Colman Valve Adapter Kit
 220829LGQ3—Landis and Gyr Powers Valve Adapter Kit

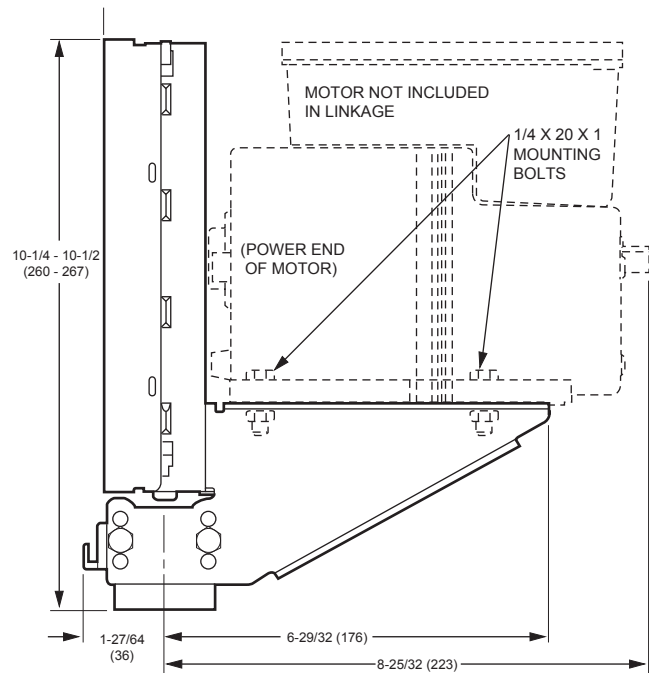
REPLACEMENT PARTS

220845/0767—Retainer button for Q5001

FEATURES

- Q5001 Valve Linkage is applicable to 2-Way or 3-Way valves in modulating or two-position service.
- Linkage requires no adjustment when used with Honeywell valves and Modutrol IV™ Motors.
- Q5001 Valve Linkage replaces Q601 and Q618 Valve Linkages.
- Linkage mounts directly to the valve bonnet; motor mounts to linkage bracket.
- Easy-to-read position indicator.
- Valve stem lift height cam selectable.
- Overtravel permits tight close-off without excessive motor strain.
- Available brackets make linkages adaptable to many valve bodies.
- Models available with 80 lb, 160 lb, and 320 lb stem force.
- Reversible cams on the Q5001 allow field selection of normally open or normally closed valve operation.
- All models have anti-spin clips.

DIMENSIONS DIAGRAM



M13993

Globe Valve Linkage, Q5020



The Q5020 Globe Valve Linkages connect a Honeywell direct coupled actuator (DCA) to a steam or water globe valve. The Q5020 Linkages are compatible with two-way and three-way globe valves up to 3 inch (DN80).

FEATURES

- Used with two-way and three-way globe valves in modulating or two-position service.
- Used with 25, 50, and 142 lb-in. spring return and 35, 70, 150, and 300 lb-in. non-spring return DCA.
- Quick and simple installation with no disassembly required.
- Heavy-duty steel rack and pinion construction and aluminum die-cast housing.
- Maintenance-free construction.
- Precision roller-bearing rack construction prevents premature valve packing wear and leakage.
- Flexible actuator mounting orientation.
- Adjustable manual override lever and valve position indicator.
- Can be mounted on specific non-Honeywell valves using a 32004629 Bonnet Adapter Kit.

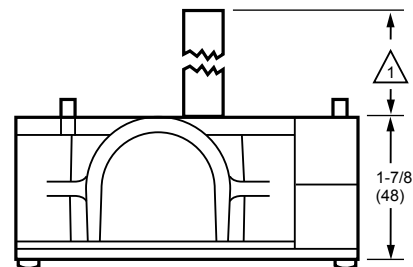
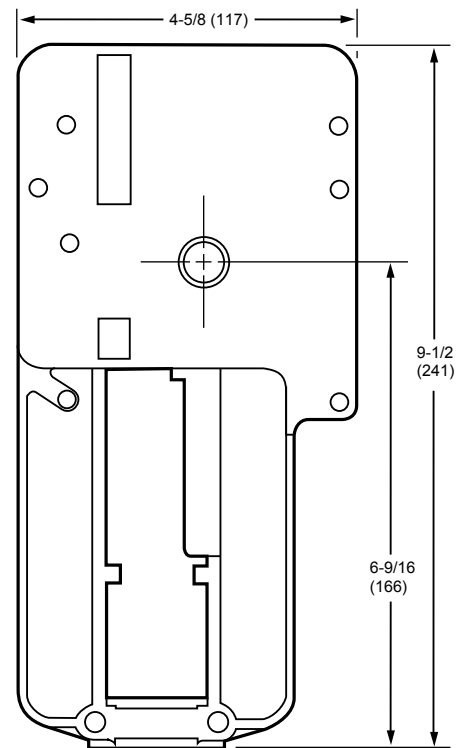
SPECIFICATIONS

Linkage Type..... Valve
 Mounting Linkage mounts directly to the valve bonnet; actuator mounts on linkage
 Used with Actuator Direct Coupled Actuator

ACCESSORIES

- 32004629-001—Bonnet adapter kit to adapt Siemens (Landis/Power) Flowrite 599 1/2 inch to 3 inch globe valves with Q5020A or Q5009B
- 32004629-002—Bonnet adapter kit to adapt Johnson VG7000 1/2 inch to 3/4 inch globe valves with Q5020D
- 32004629-003—Bonnet adapter kit to adapt Johnson VG7000 1 inch to 2 inch globe valves with Q5020A, Q5020B or Q5020D
- 32004629-004—Bonnet adapter kit to adapt Siebe VB7000 1/2 inch to 2 inch globe valves with Q5020D

DIMENSIONS DIAGRAM



1 Q5020A,B,D: 4-7/16 (112)
 Q5020C: 3-7/8 (98)

M16346A

Submittal Data - Valves

Globe Valve Linkage, Q5022



The Q5022A,B Globe Valve Linkages connect one or two Honeywell direct coupled rotary actuators (DCA) to a globe valve for control of chilled water, hot water, or steam. The Q5022A,B Linkages are compatible with 2 and 3-way globe valves up to 6 in. (DN150) pipe size.

Q5022A is used to provide enhanced close-off ratings with Honeywell globe valves up to 3 in. with 1-3/8 in. diameter bonnet and 3/4 in. stem stroke.

Q5022B is used with Honeywell globe valves 4 to 6 in. with 1-7/8 in. diameter bonnet and 1-1/2 in. stem stroke.

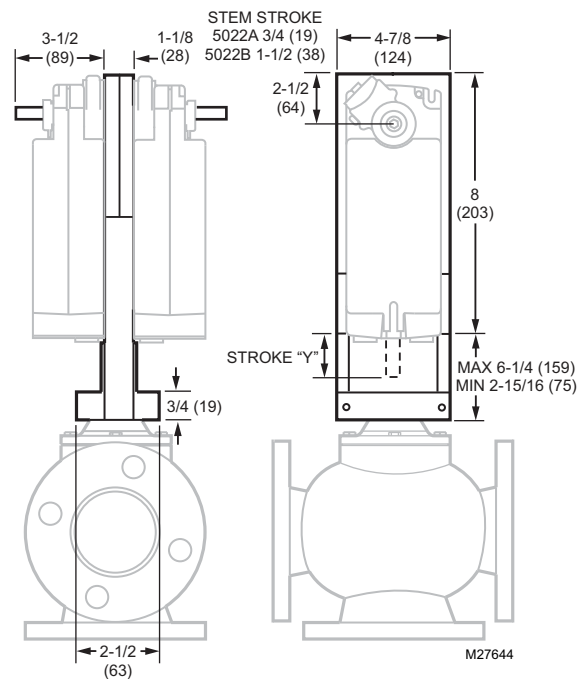
FEATURES

- For use with 2-way and 3-way globe valves in modulating or two-position service.
- For use with 175 lb.-in. (S20) spring return or 175 and 300 lb.-in. (N20, N34) non-spring return DCAs.
- Accepts single or dual matching actuators for higher close-off pressures.
- Fail safe operation with spring return DCAs, field selectable normally open or normally closed for direct or reverse-acting valves.
- Linkage threads onto valve stem.
- Oilite™ self-lubricated actuator shaft bearing.
- Anodized extruded aluminum housing.
- Maintenance-free construction.
- Precision roller-bearing rack construction to prevent premature valve packing wear and leakage.
- Flexible actuator mounting orientation.

SPECIFICATIONS

Linkage Type	Valve
Mounting	Linkage mounts directly to the valve bonnet; actuator(s) mount on linkage
Used with Actuator	Direct Coupled Actuator
Stem Force Rating	1117 max. (4969 max.)
Includes	Anti-spin brackets
Comments	This linkage is not compatible with the 43196000 high temperature kits

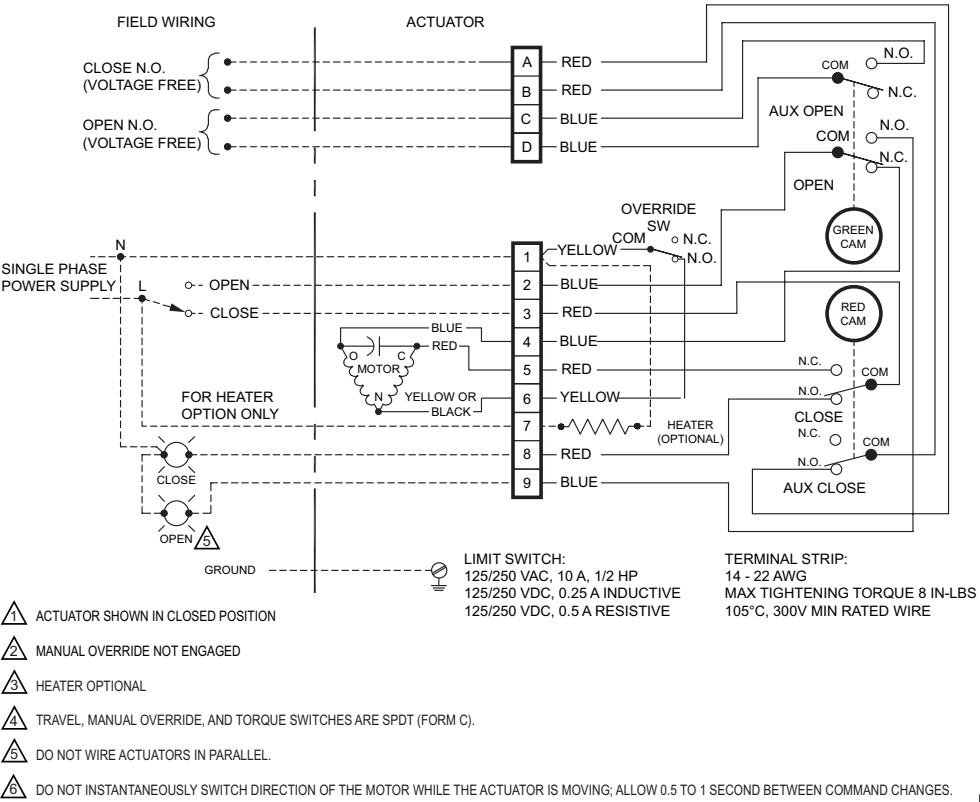
DIMENSIONS DIAGRAM



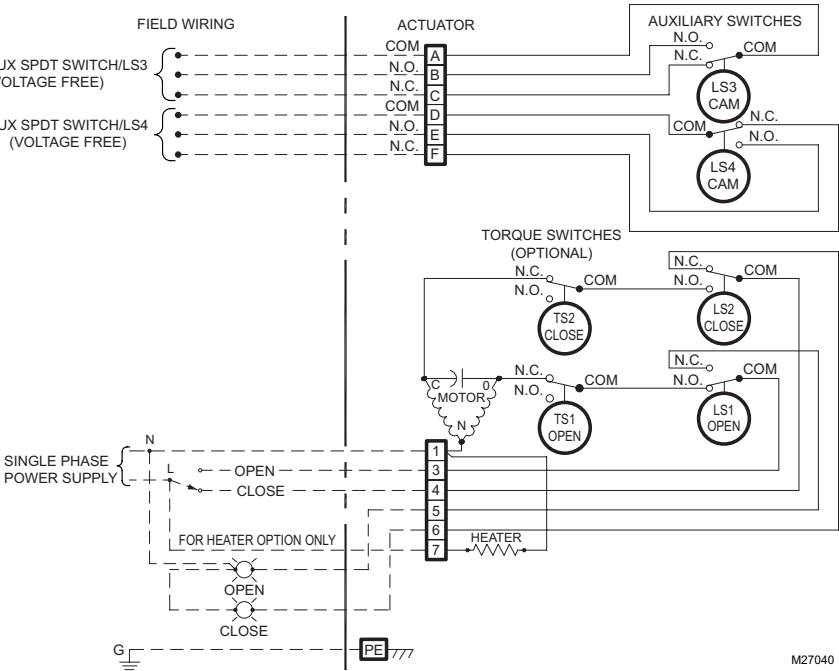
Wiring Diagrams - Valves

Butterfly Valve Actuators, VFF1; VFF2; VFF3; VFF6

NEMA 4X floating/2-position industrial-grade actuator for valves up to 18"



NEMA 4 floating/2-position industrial-grade actuator for valves 14" to 20"

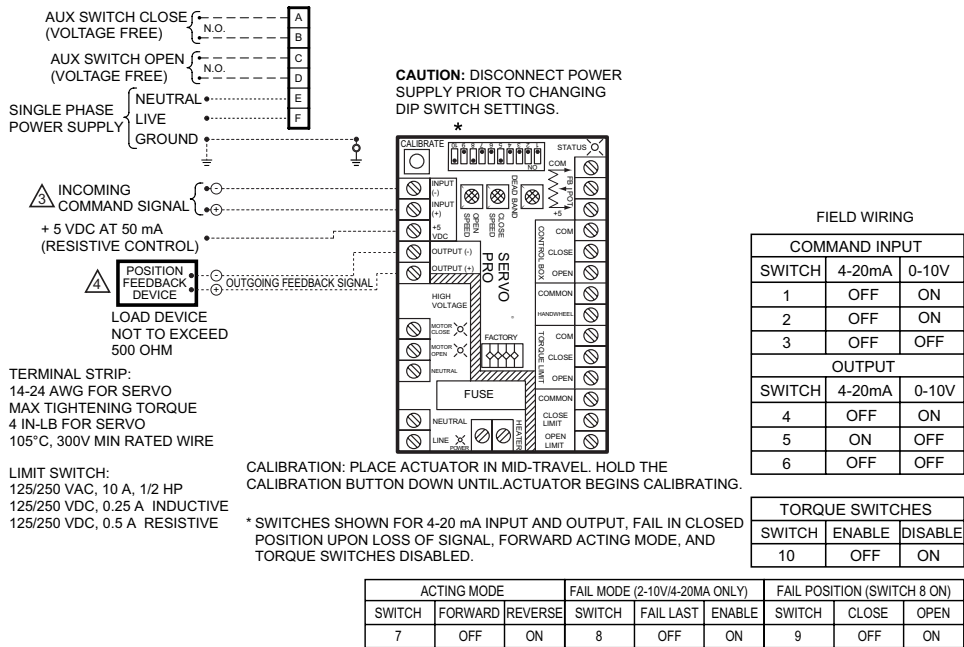


VALVES

Wiring Diagrams - Valves

Butterfly Valve Actuators, VFF1; VFF2; VFF3; VFF6

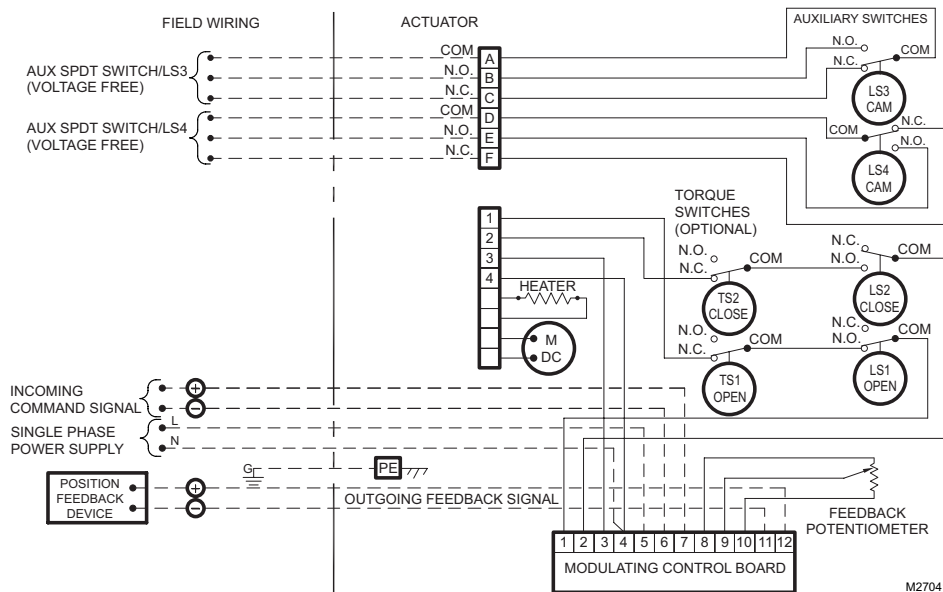
NEMA 4X floating/2-position industrial-grade actuator for valves up to 18"



- ⚠ ACTUATOR SHOWN IN CLOSED POSITION.
- ⚠ MANUAL OVERRIDE NOT ENGAGED.
- ⚠ COMMAND SIGNAL AND FEEDBACK SIGNAL MUST BE ISOLATED FROM EACH OTHER AND ANY OTHER CIRCUIT.
- ⚠ FEEDBACK LOOP IS POWERED BY THE SERVO, DO NOT SUPPLY EXTERNAL POWER.
- ⚠ SEE MANUAL FOR DETAILS.
- ⚠ HEATER OPTIONAL.
- ⚠ TRAVEL LIMIT AND MANUAL OVERRIDE SWITCHES ARE SPDT (FORM C).
- ⚠ SEE NAME TAG FOR POWER RATING.

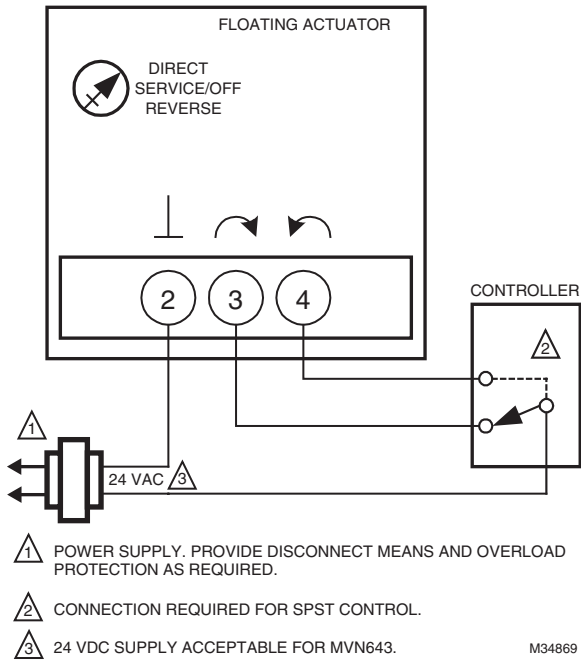
M27039

NEMA 4 modulating industrial-grade actuator for valves 14" to 20"

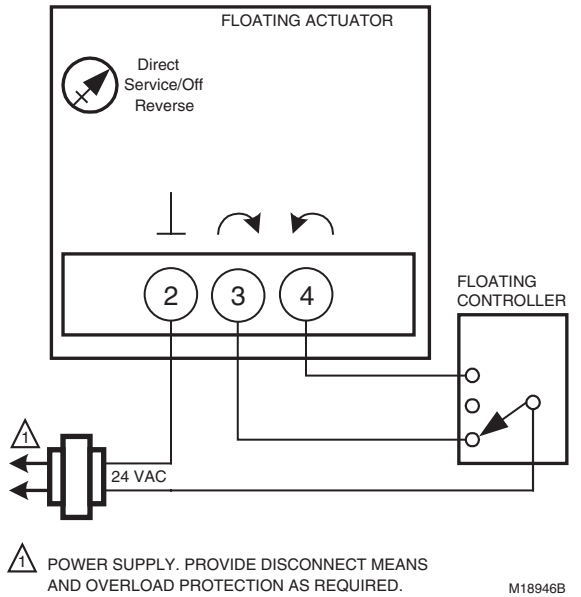


M27041

MN6105 with On/Off Control.



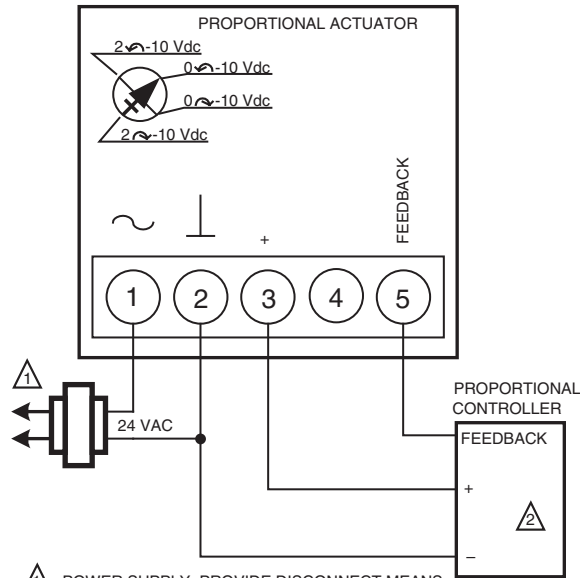
MN6105 with Floating Control.



Wiring Diagrams - Valves

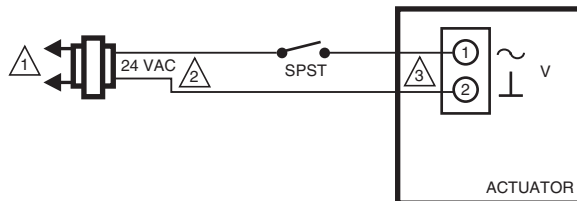
Ball Valve Actuators

MN7505 with Modulating Control.

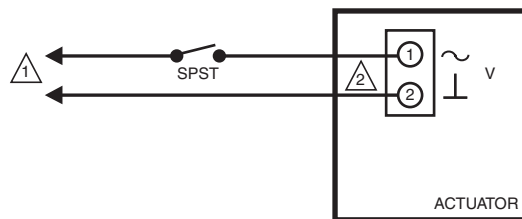


- ⚠️ 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 0(2)-10 VDC OF 0(4)-20 mA CONTROL SIGNAL ACCEPTABLE. SET CONTROL SIGNAL DIP SWITCH TO "OFF" FOR VOLTAGE. SET TO "ON" FOR CURRENT.
- M18947B

MS8105 with On/Off Control.

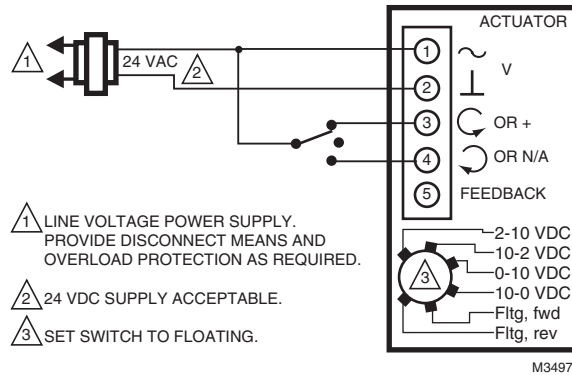


- ⚠️ 1 LINE VOLTAGE POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 24 VDC SUPPLY ACCEPTABLE.
- M34973

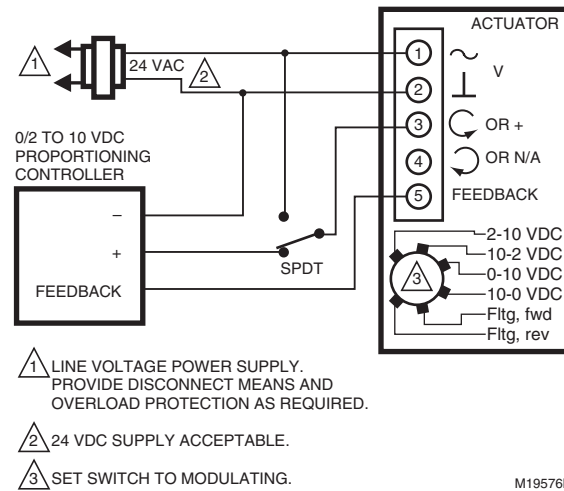


- ⚠️ 1 LINE VOLTAGE POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- M34974

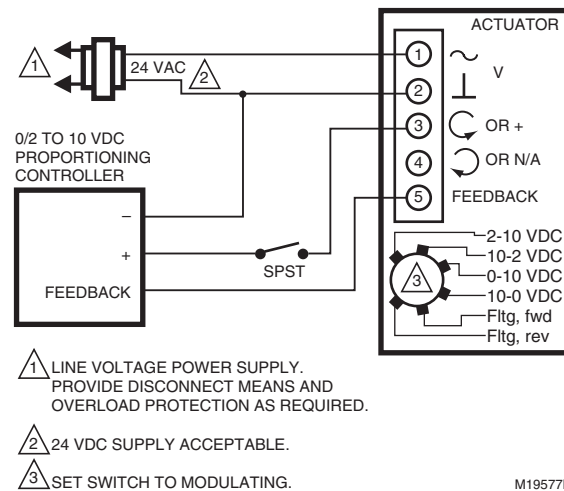
MS7505 with Floating Control (Floating mode setting).



MS7505 with override to full open (Modulating mode setting).



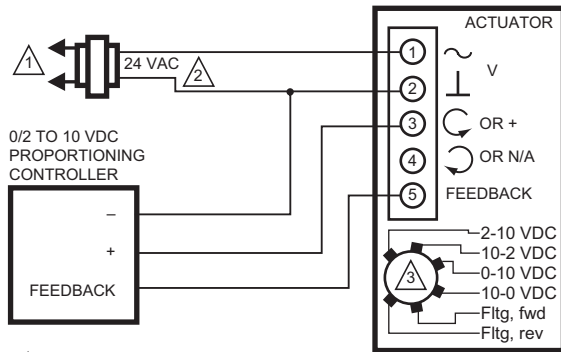
MS7505 with override to full closed (Modulating mode setting).



Wiring Diagrams - Valves

Ball Valve Actuators

MS7505 with Proportioning Controllers (Modulating mode setting).

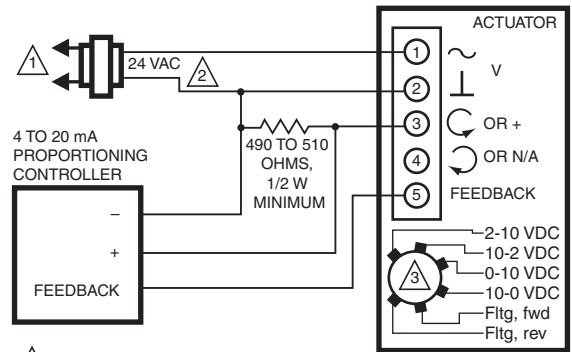


1 LINE VOLTAGE POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 24 VDC SUPPLY ACCEPTABLE.

3 SET SWITCH TO MODULATING.

M34976



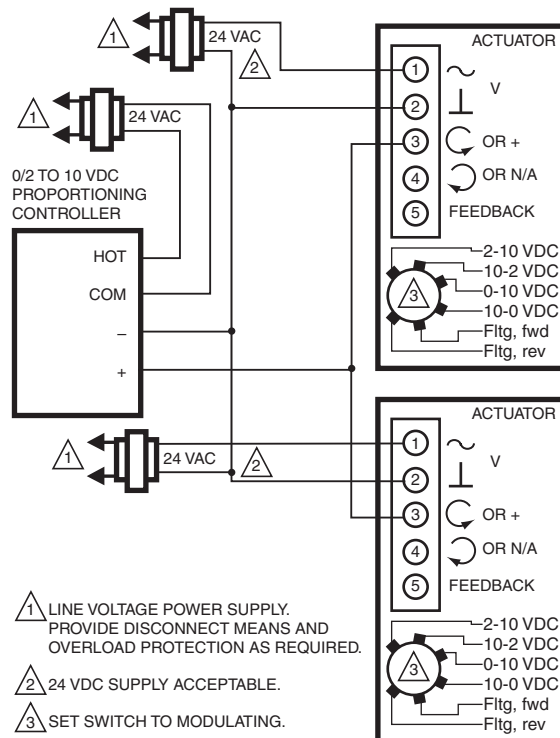
1 LINE VOLTAGE POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 24 VDC SUPPLY ACCEPTABLE.

3 SET SWITCH TO MODULATING.

M34977

MS7505 with Proportioning controllers operating multiple actuators (Modulating mode setting).



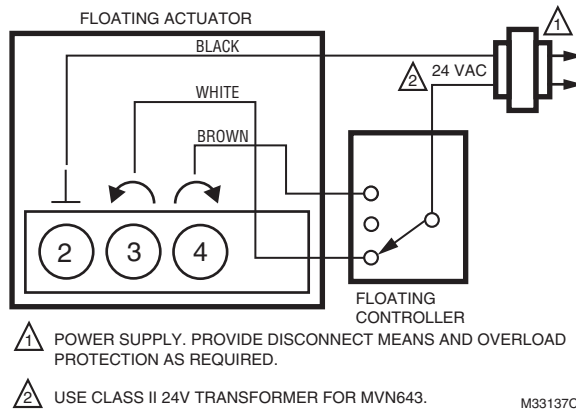
1 LINE VOLTAGE POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 24 VDC SUPPLY ACCEPTABLE.

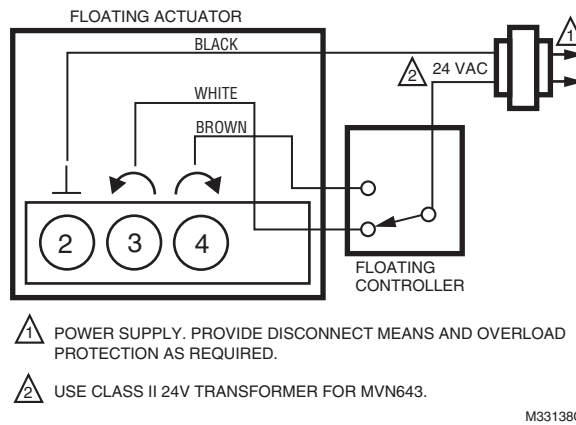
3 SET SWITCH TO MODULATING.

M34978

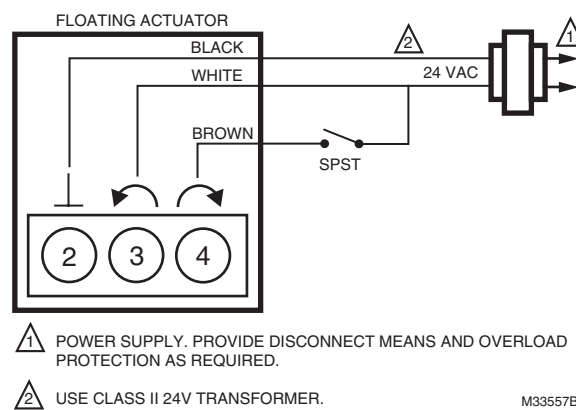
MVN613 or MVN643 with Floating Control.



MVN613 or MVN643 with 2 position or Floating Control.



MVN643 with Two Position SPST Control.

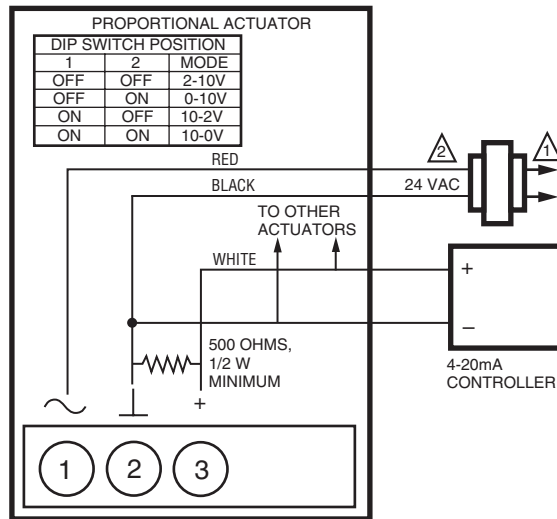


Wiring Diagrams - Valves

MVN Actuator

MVN713 with 4-20mA Control.

PROPORTIONAL/MODULATING: 4-20mA CONTROLLER OUTPUT WITH 500Ω SERIES RESISTOR



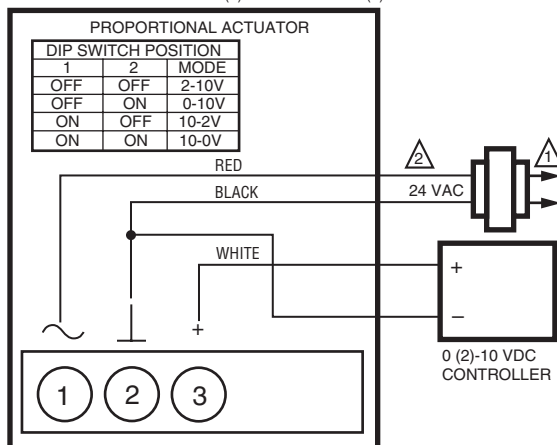
⚠️ POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

⚠️ USE CLASS II 24V TRANSFORMER.

M33141B

MVN713 with 0 (2)-10 VDC Control.

PROPORTIONAL/MODULATING: 0(2)...10 VDC OR 10...0(2) VDC CONTROLLER OUTPUT



⚠️ POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

⚠️ 24 VDC SUPPLY ACCEPTABLE.

M33140A

Accessories - Valves

Valve Actuator Accessories

Product Number	Description	Used With
114191A	Auxiliary Switch Assembly	—
127834A	Switch (made)	—
272629A	Adapter Kit for mounting ML6984/ML7984 to V5045 and VGF non-pressure balanced 2-way valves	ML6984 or ML7984, V5045; VGF21ES; VGF21LS, VGF22ES; VGF22LS
272630D	Position feedback and SPDT pilot duty auxiliary switch	ML6984/ML7984 Series 4000 and higher (ML6984 in 5-wire mode only)
312495	Large stem button provides anti-spin for CREVAL actuators with globe valves up to 3 in.	ML6420, ML6421, ML6425, ML7420, ML7421, or ML7425; Not required with ML6984/M7984 Actuators or Q5022A linkage; Not compatible with Q5020 linkage
40003793-005	U-bolt bag assembly for ML6984 & ML7984.	ML6984 or ML7984
43191679-101	Auxiliary Potentiometer for ML6421A	ML6421A
43191679-102	220 ohm Auxiliary Potentiometer for ML6421B	ML6421B
43191679-111	Potentiometer, 10k ohm, for ML6425, ML7425	ML6425 or ML7425
43191679-112	Potentiometer, 220 ohm for ML6425, ML7425	ML6425 or ML7425
43191680-102	Dual Auxiliary Switch for CREVAL actuators	ML6421, ML7421
43191680-105	Dual Auxiliary Switch for CREVAL actuators	ML6420, ML6425
43196000-001	High Temperature Kit for actuators with 3/4 inch (20 mm) stroke, stem button attachment	ML6420, ML6421, ML6425, ML7420, ML7421, or ML7425; Not compatible with Q5022A
43196000-038	High Temperature Kit for actuators with 1-1/2 inch (38 mm) stroke, stem button attachment	ML6421, ML7421; Not compatible with Q5022B;

Accessories - Valves

Valve Actuator Accessories

Product Number	Description	Used With
5112-3R	Weather Enclosure Assembly	MN6105A1011, MN7505A2001, MS7505A2030, MS8105A1030
5112-24/U	Replacement SS Stem Kit	For VBN & VRN Valves. Refer to Table 7 on page 161 for specific models
5112-23/U	Replacement SS Stem Kit	For VBN & VRN Valves. Refer to Table 7 on page 161 for specific models
5112-22/U	Replacement Stem Kit	For VBN & VRN Valves. Refer to Table 7 on page 161 for specific models
5112-21/U	Replacement Stem Kit	For VBN & VRN Valves. Refer to Table 7 on page 161 for specific models
5112-20/U	Replacement Stem Kit	For VBN & VRN Valves. Refer to Table 7 on page 161 for specific models
5112-19/U	Replacement Stem Kit	For VBN & VRN Valves. Refer to Table 7 on page 161 for specific models
MVNAAA	Replacement Valve Adaptor	MVN613A0000, MVN643A0000, MVN713A0000
MVNAAL	Replacement Valve Adaptor, Low Profile	MVN613L0000, MVN643L0000, MVN713L0000
MVNAC7131	Replacement Cable with Terminal 1m, Modulation (RED, BLACK, WHITE)	MVN713A0000, MVN713L0000
MVNAC6131	Replacement Cable with Terminal 1m, Floating (RED, BLACK, WHITE)	MVN613A0000, MVN613L0000, MVN643A0000, MVN643L0000
MVNAT3	Replacement Screw type Terminal Block, Pluggable	MVN613A0000, MVN613L0000, MVN643A0000, MVN643L0000, MVN713A0000, MVN713L0000
5112-11	Replacement actuator bracket	MN6105A1011, MN7505A2001, MS7505A2030, MS8105A1030
205860	Minimum position Potentiometer	MN6105A1011, MN7505A2001, MS7505A2030, MS8105A1030
32006306-001	Resistor Kit (500 ohm); converts 4-20 mA signal to 2-10 Vdc	MS7505A2030, MS8105A1030
Q7002B1009	Universal Interface Module	MN6105A1011, MN7505A2001, MS7505A2030, MS8105A1030
STRN-SCSA	Self-centering Shaft Adapter	MS7505A2030, MS8105A1030
32000085-001	Strain Relief Fitting (10 pack)	MN6105A1011, MN7505A2001, MS7505A2030, MS8105A1030
AT120A1004	120 to 24 Vac Transformer (20 VA)	MVN613A0000, MVN613L0000, MVN643A0000, MVN643L0000, MVN713A0000, MN6105A1011, MN7505A2001, MS7505A2030, MS8105A1030
AT140A1000	120 to 24 Vac Transformer (40 VA)	MVN613A0000, MVN613L0000, MVN643A0000, MVN643L0000, MVN713A0000, MN6105A1011, MN7505A2001, MS7505A2030, MS8105A1030
STRN-STRNRLF	Strain Relief Fitting (10 pack)	MS7505A2030, MS8105A1030

Accessories - Valves

Valve Linkage Accessories

Product Number	Description	Used With
220845/0767	Retainer button for Q5001	Q5001
220848A	Q5001 Cam	Q5001
220852A	Stroke Indicator, Q5001	Q5001
220861A	3/4 inch lift Q5001 linkage cam assembly	Q5001
220863A	1 inch lift Q5001 linkage cam assembly	Q5001
220864A	1 1/8 inch lift Q5001 linkage cam assembly	Q5001
220865A	1 1/4 inch lift Q5001 linkage cam assembly	Q5001
220867A	1 1/2 inch lift Q5001 linkage cam assembly	Q5001
32004629-001	Bonnet adapter kit to adapt Seimens (Landis/Power) Flowrite 599 1/2 inch to 3 inch globe valves with Q5020A or Q5009B	Siemens valves
32004629-002	Bonnet Adapter Kit, Johnson Controls 1/2 to 3/4 in., Q5020	Johnson valves; Q5020
32004629-003	Bonnet Adapter Kit, Johnson Controls 1 to 2 in., Q5020	Johnson valves; Q5020
32004629-004	Bonnet Adapter Kit, Siebe 1/2 to 2 in., Q5020	Siebe valves; Q5020
4074ETB	Antispin Kit, Q5001	Q5001

VU Series Fan Coil Actuator Accessories

Product Number	Description	Used With
272885C	Nickel-plated replacement motor for 24V VU-series valve actuators	VU843A, VU844A
272885D	Nickel-plated replacement motor for 120 VU-series valve actuators	VU443A1008/A1180/E1009; VU444A1007/A1155

Accessories - Valves

Pneumatic Valve Actuator Accessories

Product Number	Description	Used With
14002039-001	MP953D Diaphragm Sleeve	MP953B,D,F
14002040-002	MP953D Diaphragm	MP953B,D,F
14003124-002	MP953B,D,F Diaphragm Repair Kit (includes 14002039-001 and 14002040-002)	MP953B,D,F
14004138-001	MP953B,F (Reverse Acting) Positive Positioner Retrofit Kit	MP953B,F
14004139-001	MP953A,E (Direct Acting, 8 in. and 13 in. diameter, 3/4 in. stroke) Positive Positioner Retrofit Kit	MP953A,E
14004140-001	MP953A,E (Direct Acting, 8 in. and 13 in. diameter, 1-1/2 in. stroke) Positive Positioner Retrofit Kit	MP953A,E
14004211-001	MP953E (8 in. and 13 in. diameter, 3/4 in. stroke) Feedback Spring Kit	MP953E
14004212-001	MP953E (8 in. and 13 in. diameter, 1-1/2 in. stroke) Feedback Spring Kit	MP953E
14004213-001	MP953F (Reverse Acting) Feedback Spring Kit	MP953F
14004214-001	MP953A,E (5 in. diameter) 3/4 inch stroke Positive Positioner Retrofit Kit	MP953A,E
14004298-001	Thread forming Screw, Size 4-40	MP953D,F
14004298-003	MP953C,E (5 in. dia.) and MP953B,D,F (7-1/8 in. dia.) Actuator Base Screw, size 1/4-20	MP953B,D,F; MP953C,E (5 in.)
14004577-001/U	MP953 A, C, and E (Direct Acting, 5 in. diameter) Yoke/Base Assembly	MP953A,C,E
14004578-001	MP953 B, D, and F (Reverse Acting, 7-1/8 in. diameter) Yoke/Base Assembly	MP953B,D,F
14004660-001	Cup, aluminum die cast alloy 7 1/64 inch	MP953D
14004667-001	Offset Crank arm assembly with 2 screws (304725-062), nuts (14004102-001), crank arm (14004655-001) for 1/2 in. Drive Axle	Pneumatic Actuators
14004697-001	Stem extension for 13 in. MP953C,E with 3/4 in. Stroke	MP953C,E
310664	MP953A, C and E (5 in. and 8 in. models only) Tension Spring	MP953A,C,E
310665/0062	Spring Support for MP 953	MP953A,C,E (5 in.)
310668	MP953A, C and E (5 in. diameter) High Temperature Silicone Diaphragm - Old Style	MP953A,C,E
311393	White Spring, 4- 11 psi	MP953C,E
311616	MP953A, C and E (5 in. diameter) Main Spring (2-7 psi sp ring range - Brown)	MP953A,C,E (5 in.)
311618	MP953A, C and E (5 in. diameter) Main Spring (8-12 psi sp ring range - Gray)	MP953A,C,E (5 in.)
311749/0605	Cup diaphragm, 8 in. for MP95 3A, C, E	MP953A,C,E (8 in.)
311750	MP953A, C and E (8 in. diameter) Regular Temperature Neoprene Diaphragm - New Style	MP953A,C,E
311851/0062	Stem extension for 8 in. dia. 3/4 in. stroke MP953A,C,E	MP953A,C,E (8 in.)

Accessories - Valves

Pneumatic Valve Actuator Accessories

Product Number	Description	Used With
311852	Brown Spring for MP953A,C 3/4 inch stroke (8 inch diameter), 2-7 psi range	MP953A,C (8 in., 2-7 psi)
311855	Gray spring for MP953C (8 inch diameter), 8-12 psi range	MP953C
311863	Stem Retainer for the MP953C,E (8 in. diameter)	MP953C,E
312099	1-1/2 in. stroke Spider for 13 in. MP953C and E	MP953C,E
312203	Black Spring for MP953D,F for 8-13 psi range	MP953D,F
312466/0605	Stem Extension for MP953C1489, MP953C1471, MP953E1392, MP953E1400, and MP953E1418	MP953C,E
312471	White Spring for MP953C,E (13 in. dia. 1/2 in. stroke)	MP953C,E (13 in.)
312505	MP953A,C,E (13 in. diameter) regular temperature Neoprene diaphragm - New style	MP953A,C,E
312760	MP953A,C,E (5 in. diameter) regular temperature Neoprene diaphragm - New style	MP953A,C,E
312817/U	MP953 (5 in. diameter) Cover	MP953A,C,E
313745	MP953 (5 in. diameter) Cover	MP953C (5 in.)
314153	MP953A, C and E (8 in. diameter) High Temperature Silicone Diaphragm - New Style	MP953A,C,E
314646A/0062	Plate, Spring for 13 in. diameter MP953A,C,E	MP953A,C,E
314650A	MP953B, D and F (Reverse Acting) Support Assembly (for Series-2 actuators only, use this Support Assembly and 316059A Yoke Assembly to Convert Series-1 MO/MP953)	MP953B,D,F
314651A	MP953B,D,F (Reverse Acting) yoke assembly for support assembly- with nylon insert for use with old style actuators not made with a Helicoil insert in yoke	MP953B,D,F
314652	Spring for MP953D, F (used in yoke assembly)	MP953D,F
314683/0062	Stem Retainer for 13 in. diameter MP953A,C,E (Latches on Stem Button)	MP953A,C,E (13 in.)
315020	Cup for MP953C,E (13 inch diameter)	MP953C,E (13 in.)
316059A	MP953B, D and F (Reverse Acting) Yoke Assembly for Support Assembly- with helicoil insert	MP953B,D,F

