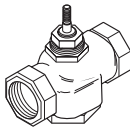
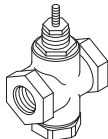
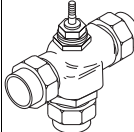
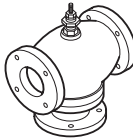
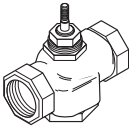
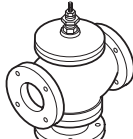


3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators

TABLE 1. Select **Valve Body** including P Code (Valve Size, CV Rating, Port Code) or select **Valve Assembly** with correct Input Signal (refer to Table 3A also) less **Actuator Code (XXX)** including the **P Code** (Size, Cv Rating, Port Code). (Refer to Pages 846 to 853 for Valve Sizing.)

TABLE 1. Select Valve Body including P Code (Valve Size, CV Rating, Port Code) or select Valve Assembly with correct Input Signal (refer to Table 3A also) less Actuator Code (XXX) including the P Code (Size, Cv Rating, Port Code). (Refer to Pages 846 to 853 for Valve Sizing.)		Application						
		Chilled or Hot Water						
		Screwed NPT	Screwed NPT	Union Sweat	Flanged	Screwed NPT	Flanged	
								
Size		1/2 to 2 in.	2-1/2 & 3 in.	1/2 to 2 in. I.D.	2-1/2 to 6 in.	1/2 to 2 in.	2-1/2 to 6 in.	
Valve Body, Actuator Provides Normal Position ^a		VB-7313-0-4-P	VB-9313-0-4-P	VB-7314-0-4-P	VB-9313-0-5-P	VB-7323-0-4-P	VB-9323-0-5-P	
Actuator Types	Input Signal	Factory Available Valve Assemblies						
MA-318-XXX, MC-418-XXX, MC-419-XXX	SPST (Refer to Table 3)	VA-7313-XXX-4-P	VA-9313-XXX-4-P	VA-7314-0-4-P	VA-9313-3XX-5-P	VA-7323-XXX-4-P	VA-9323-30X-5-P	
MC-351, MC-421, MC-431, MC-4311, MC5-4311	SPDT (Refer to Table 3)	VC-7313-XXX-4-P	VC-9313-XXX-4-P	VC-7314-0-4-P	VC-9313-XXX-5-P	—	VC-9323-4XX-5-P	
MP-461-600, MP-471-600, MP-481-600	2 to 15 Vdc System 8000 (Refer to Table 3)	VS-7313-XXX-4-P	VS-9313-XXX-4-P	VS-7314-0-4-P	VS-9313-XXX-5-P	VS-7323-XXX-4-P	VP-9323-XXX-5-P	
MM/MMR-400-XXX MM/MMR-500-XXX	(Refer to Table 3B)	VM-7313-XXX-4-P	VM-9313-XXX-4-P	—	VM-9313-XXX-5-P	—	—	
MF-22XX3 ^b , MF-631X3	Floating SPDT Multiple Input (Refer to Table 3C)	VF-7313-25X-4-P	VF-9313-30X-4-P	VF-7314-0-4-P	VF-9313-30X-5-P	—	—	
MP-361, MP-371, MP-38X, MP-46X, MP-47X, MP-48X, MP-4851,MP-9XXX	(Refer to Table 3A)	VP-7313-XXX-4-P	VP-9313-XXX-4-P	VP-7314-XXX-4-P	VP-9313-XXX-5-P	—	VP-9323-XXX-5-P	
MS-7913, MS-7923	(Refer to Table 3D)	VS-7313-36X-4-P	VS-9313-36X-4-P	—	VS-9313-36X-5-P	—	—	
NOTE: These charts are color coded as shown below to assist valve selection. Note it is possible to select either a valve assembly or component parts (actuator, valve linkage, valve body).	Flow Type	Mixing	Mixing	Mixing	Mixing	Diverting	Diverting	
	Material	Body	Bronze	Bronze	Bronze	Iron	Bronze	Iron
		Seat				Bronze		Bronze
		Stem	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
		Plug	Brass	Brass	Brass	Brass		Bronze
		Packing	Spring Loaded TFE	Spring Loaded TFE	Spring Loaded TFE	Spring Loaded TFE	Spring Loaded TFE	Grafoil
		Disc	None	None	None	None	None	None
	ANSI Pressure Class ^c (psig) Refer to page 843	250 (up to 400 psig below 150°F)				125 (200 psig below 150°F)	250 (up to 400 psig below 150°F)	125 (200 psig below 150°F)
Allowable Control Media Temp ^d	20 to 300°F (-7 to 149°C)	40 to 300°F (4 to 149°C)	20 to 300°F (-7 to 149°C)	40 to 300°F (4 to 149°C)	20 to 300°F (-7 to 149°C)	40 to 300°F (4 to 149°C)		
Allowable Differential Pressure for Water psig (kPa) ^e	35 psi (241)Max. for normal life (Refer to page 846 for cavitation limits)							

ORDERING EXAMPLES:

1. **Valve Assembly:**
VP-7313-301-4-10

2. **Valve Body:**
VB-7313-0-4-10

Actuator: **MP-361**

Linkage: **AV-391**

☐ **Valve Body** Data less P Code (Size, Cv Rating, Port Code) or Valve Assembly less Actuator Code (XXX) and less P Code (Size, Cv Rating, Port Code)

☐ **P Code** (Size, Cv Rating, Port Code)

☐ **Actuator or Actuator Code (XXX)** for Valve Assemblies

☐ **Valve Linkage**

TO SELECT A PORT CODE (P).

P Code	Valve Size ^c in.	Cv						
-2 ^f	1/2	2.2	—	2.2	—	—	—	
-4		4.4		4.4				
-6	3/4	7.5		7.5				
-8	1	14		14		15		
-9	1-1/4	20		20		20		
-10	1-1/2	28		28		28	Port	
-11	2	41	67	41	40	“U”	“L”	
-12	2-1/2	—		—	74	—	68	75
-13	3				101		85	95
-14	4				170		160	180
-15	5				290		195	220
-16	6				—		390	250

^a Refer to Table 3 and Table 7 for flow pattern, port designations, and normal position.

^b MF-22203 for hot water and steam applications only.

^c CAUTION: Solder, tubing and/or pipe schedules must meet or exceed working static pressure requirements.

^d CAUTION: Freeze protection required for fluid temperatures below 32°F (0°C).

^e Less than 20 psi recommended for quiet service.

^f Factory assemblies are not available for two-position application using reduced port valve bodies.

3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators

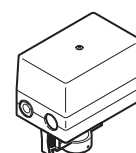
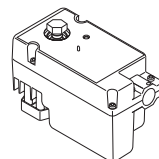
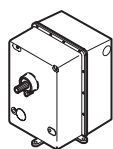
TABLE 2. Select **Actuator Type** or **Actuator Code (XXX)** series with correct Input Signal having sufficient close-off for the application. If selecting Component Parts, select **Valve Linkage**.

Refer to Table 3C		Two-Position SPST		Refer to Table 3 and Table 3A		Refer to Table 3 and Table 3A		Refer to Table 3 and Table 3A		Refer to Table 3A		Refer to Table 3A		Refer to Table 3D	
AV-630 or AV-630-010		AV-391		AV-391		AV-393		—		—		—		AV-680	
AV-630 or AV-630-030		AV-395		AV-395		AV-396		AV-352		AV-357		AV-681		AV-681	
—		—		—											
AV-630 or AV-630-040		AV-300 and AV-29		V-300 and AV-29		AV-300 and AV-30		—		—		—		—	
—		—		—		AV-352		—		—		—		—	
Refer to Table 3B	None	Refer to Table 3	Refer to Table 3 and Table 3A	None		None		None		None		None		Stem Up	Stem Down
301, 311	401	3XX	3XX	40X, 41X, 42X, 44X		46X		903		365		366		366	
MM-500 MMR-500	MM-400 MMR-400	MA-318-XXX MA-418-XXX	MP-X6XX MP-X7XX	MC-351, MC-4XX MP-38X, MP-48X		MP-9730 (4 in.) MP-9750 (5 and 6 in.)		MP-7913		MP-7923					
ACTUATOR CLOSE-OFF PRESSURE RATING (psi) ^{a b c d}															
SU	SD	SU	SD	SU	SD	SU	SD	SU	SD	SU	SD	SU	SD	SU	SD
210	178	250	250	250	250	250	250	250	250	—	—	—	—	—	—
108	98			200	200	200	200			—	—	—	—	—	—
70	70			150	150	150	150			—	—	—	—	—	—
40	40	160	160	90	90	90	90	200	200	—	—	—	—	—	—
30	30	110	110	60	60	60	60	140	140	—	—	—	—	60	60
16	16	60	60	35	35	35	35	80	80	—	—	—	—	35	35
10	10	40	40	20	20	20	20	50	50	110	110	—	—	20	20
8	8	29	29	12	12	12	12	35	35	70	70	—	—	12	12
10	10	42	40	20	20	20	20	50	50	110	110	—	—	20	20
8	8	29	29	12	12	12	12	35	35	70	70	—	—	12	12
4	4	16	16	6	6	6	6	17	17	40	40	70	70	6	6
—	—	—	—	—	—	—	—	—	—	18	18	45	45	—	—
—	—	—	—	—	—	—	—	—	—	11	11	30	30	—	—
250	250	250	250	250	250	250	250	250	250	—	—	—	—	—	—
										—	—	—	—	—	—
										—	—	—	—	—	—
										—	—	—	—	—	—
										—	—	—	—	—	—
125	125	125	125	125	125	125	125	125	125	—	—	—	—	—	—
										125	125	—	—	—	—
—	—	—	—	—	—	—	—	—	—	125	125	—	—	—	—
—	—	—	—	—	—	—	—	—	—	125	125	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	125	125	—	—

- ^a Close-off ratings for mixing or diverting valves: (SU = "A" port, SD = "B" port). "A" port (SU) ratings equal pressure at port "A" minus pressure at port "B". "B" port (SD) ratings equal pressure at port "B" minus pressure at port "A".
- ^b SU — Stem Up; SD — Stem Down. Refer to Table 3 and Table 7 for flow pattern, port designations, and normal position.
- ^c Close-off pressure ratings describe only the differential pressure which the actuator can close-off to standards with adequate seating force. Consult valve body specifications for the limitations.
- ^d Leakage ratings on 2 1/2 to 6 inch VB-9323 diverting valves are ANSI II (0.5%). Maximum differential pressure between opposite end ports is 50 psi.

3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators

TABLE 2A. Select **Actuator Type** or **Actuator Code (XXX)** series with correct Input Signal having sufficient close-off for the application. If selecting Component Parts, select **Valve Linkage**.



Input Signal				Refer to Table 3A		Floating SPDT	Proportional	Floating SPDT	Floating SPDT and Multiple Input	
Valve Linkage for VB-7313		1/2 to 2 in.		—		(Included)	(Included)	(Included)	—	
Valve Linkage for VB-9313		2-1/2 to 4 in.		—		—	—	—	AV-672	
		5 to 6 in.		AV-358		—	—	—	—	
Valve Linkage VB-7314, VB-7323, VB-9314		1/2 to 2 in.		—		(Included)	(Included)	(Included)	AV-671 (Included)	
Actuator Code (XXX)				951		252	256	262	301	303
						255		265		
						256		266		
Actuator Types				MP-9810		MF-22XX3 ^a	MS-22353	MF-23XX3 ^b	MF-63103	MF-63123
Valve Assembly	Valve Body	P Code	Size in.	ACTUATOR CLOSE-OFF PRESSURE RATING (psi) ^{c d e f}						
				SD	SU	SU/SD	SU/SD	SU/SD	SD	SU
VF-7313-25X-4-P VS-7313-256-4-P	VB-7313-0-4-P VB-7314-0-4-P	-2-4	1/2 or 5/8	—	—	130	130	250	250	250
		-6	3/4	—	—	80	80	170		
		-8	1	—	—	40	40	80	230	230
		-9	1-1/4	—	—	25	25	50	140	140
		-10	1-1/2	—	—	15	15	33	90	90
		-11	2	—	—	6	6	16	50	50
VP-9313-30X-4-P VP-9313-30X-5-P	VB-9313-0-4-P VB-9313-0-5-P	-12	2-1/2	—	—	—	—	—	35	35
		-13	3	—	—	—	—	—	25	25
		-14	4	—	—	—	—	—	13	13
		-15	5	60	60	—	—	—	—	—
		-16	6	40	40	—	—	—	—	—
VF-7323-25X-4-P VS-7323-25X-4-P	VB-7323-0-4-P	-4	1/2	—	—	—	—	250	250	250
		-6	3/4	—	—					
		-8	1	—	—					
		-9	1-1/4	—	—					
		-10	1-1/2	—	—					
		-11	2	—	—					

^a MF-222X3 for hot water and steam applications only.

^b Controller must time out drive signal in a given direction after 3 min. or less.

^c Close-off ratings for mixing or diverting valves: (SU = "A" port, SD = "B" port). "A" port (SU) ratings equal pressure at port "A" minus pressure at port "B". "B" port (SD) ratings equal pressure at port "B" minus pressure at port "A".

^d SU — Stem Up; SD — Stem Down. Refer to Table 3 and Table 7 for flow pattern, port designations and normal position.

^e Close-off pressure ratings describe only the differential pressure which the actuator can close-off to standards with adequate seating force. Consult valve body specifications for other limitations.

^f Do not use mixing valves on diverting applications. Diverting valves may be used in mixing applications with minor affect on flow.

3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators

TABLE 3. Factory Assemblies (VA-X3XX, VC-X3XX and VS-X3XX), select exact **Actuator Code (XXX)**. Any MA-3XX, MC-3XX, MC-4XX, MF-221X3, MS-22353, and 220 lb-in. MP-4XX electric gear train actuator can be assembled to valve bodies with the close-off pressure ratings listed in Table 2 and Table 2A. Select Actuator Type having sufficient close-off for the application. Select actuator, linkage, valve body, and field assemble.

Input Signal	Normal Position	Voltage	Hz	VA	Aux. Switch	Actuator Part Number	Assembly Series	Actuator Code for Factory Assembly
Two-Position SPST	Stem Up (Spring Return)	24	60	92	No	MA-318	VA-73X3 VA-93X3	301
		120		108		MA-418		303
Two-Position SPDT	None (Non-Spring Return)	24	60	96	Yes	MC-351	VC-73X3 VC-93X3	401
		120				MC-431		413
						MC-431 w/AV-352		461
						240		MC5-4311
Floating SPDT	None (Non-Spring Return)	24	60	24	No	MF-22203	VF-73X3	252
						MF-22303		255
						MF-22323		256
2 to 10 Vdc or 4 to 20 mAdc	None (Non-Spring Return)	24	60	4	No	MS-22353	VS-73XX	256
2 to 15 Vdc System 8000	Stem Down	120	60	50	Yes	MP-461-600	VS-73X3 VS-93X3	311
	Stem Up					MP-471-600		312
	None					MP-481-600 w/AV-39X		414
						MP-481-600 w/AV-352		462

3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators

TABLE 3A. Factory Assemblies (VP-93XX), Multiple Input (refer to table below), select exact **Actuator Code (XXX)**. Any 220 lb-in. MP-4XX, MP-9XXX electric gear train or MS-8305X hydraulic actuator can be assembled to valve bodies with the close-off pressure ratings listed in Table 2 and Table 2A. Select Actuator Type having sufficient close-off for the application. Select actuator, linkage, valve body and field assemble.

Normal Position	INPUT SIGNAL							Voltage Vac (Hz)	Aux. Switch	Actuator Part Number	Actuator Code(XXX) for Factory Available Assembly			
	2 to 15 Vdc System 8000	4 to 20 mA etc.	Slidewire (Series 90)	SPST	SPDT Snap Acting	Pneumatic to Electric	SPDT Floating Direct Digital Control							
Stem Down	1	9	2	Yes	Yes	11	Yes	24 (60)	Yes	MP-361	301			
	3	4, 10				8, 12		120 (60)		MP-465	313			
	5	4				8		240 (50)		MP5-4651	342			
Stem Up	1	9				11		24 (60)		MP-371	302			
	3	4, 10				8, 12		120 (60)		MP-475	314			
	5	4				8		240 (50)		MP5-4751	344			
None	1	9		—		Yes		11		Yes	24 (60)	Yes	MP-381	401
	3	4, 10						8, 12			120 (60)		MP-485	415
	5	4						8			240 (50)		MP5-4851	443
Non-Spring Return	1	9						11			24 (60)		MP-381 w/ AV-352	461
	3	4, 10						8, 12			120 (60)		MP-485 w/ AV-352	463
													MP-9730, MP-9750	903
	6	4						7					8	MP-9810

- Requires CP-8301-024 or CP-930X ordered separately.
- Requires AE-504 ordered separately.
- Requires CP-8301-120 or CP-930X ordered separately.
- Requires CP-8391-716 or CP-9302 ordered separately.
- Requires CP-8301-240 or CP-930X ordered separately.
- Requires CP-8391-456 or CP-930X ordered separately.

- Requires AM-345 and AE-504 ordered separately.
- Requires CP-8391-716 or CP-9302 and PP-8311 ordered separately.
- Requires CP-8391-913 or CP-9301 ordered separately.
- Requires CP-8391-910 or CP-9302 ordered separately.
- Requires CP-8391-913 or CP-9301 and PP-8311 ordered separately.
- Requires CP-8391-910 or CP-9302 and PP-8311 ordered separately.

TABLE 3B. Factory Assemblies VM-93XX for Modular Actuator, and VF-93XX for MF-631X3, select **Actuator Code (XXX)**. Refer to Table 3C for optional inputs.

Normal Position	Voltage (50/60 Hz)	Aux. Switch	Actuator Part No.	Actuator Code (XXX) for Factory Assembly
Stem Up	24	No	MM-500	301
Stem Down				311
None Non-Spring Return			MM-400	401
None Non-Spring Return			MF-63103	301
			MF-63123	303

TABLE 3C. Input Signal for Modular Actuators (MM/MMR-400 or MM/MMR-500 and MF-63123). Order these control modules separately.

Input Signal	Control Module (order separately)	
	MM/MMR-400 or MM/MMR-500	MF-63123
Two-Position, Floating	MMC-468	None (Base Actuator)
4 to 20 mAdc	MMC-420	MFC-420 ^a
135 Ω Slidewire	MMC-90	—
2 to 20 mAdc or 1 to 20 Vdc	MMC-8000	—
4 to 20 mAdc with Drive-to-20 mA Position	MMC-421	—
6 to 9 Vdc	—	MFC-8000 ^a

^a Other ranges available by Dip Switch setting on module.

3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators

TABLE 4. Dimensions in Inches (Millimeters). (Refer to the following pages for illustrations.)

Valve Body						Actuator Series				
						MA-318-XXX MA-41X-XXX	MC-351, MP-38X, MP-48X MP-X6XX, X7XX	MC-351, MP- 38X, 48X w /AV-352	MP-9750 MP-9810	MM-400, 500 MMR-400, 500
Part Number	Size In.	A	B ^a	C	D ^a	E ^b	E	E	E	E
VB-7313-0-4-P VB-7314-0-4-P VB-7323-0-4-P	1/2	3 (76)	4-3/16 (106)	1-3/8 (35)	2-5/16 (59)	12-13/16 (325)	13-9/16 (344)	13-9/16 (344)	—	11-1/4 (286)
	3/4	3-5/8 (92)	5-7/16 (138)	1-11/16 (43)	2-5/8 (67)	12-13/16 (325)	13-9/16 (344)	13-9/16 (344)	—	11-1/4 (286)
	1	4-5/8 (117)	6-5/8 (168)	1-9/16 (40)	3-1/8 (79)	12-7/8 (327)	13-5/8 (346)	13-5/8 (346)	—	11-5/16 (287)
	1-1/4		6-13/16 (173)	1-5/8 (41)	3-7/16 (86)	13-1/8 (333)	13-7/8 (352)	13-7/8 (352)	—	11-9/16 (294)
	1-1/2	5-3/8 (137)	8-5/16 (211)	1-5/8 (41)	3-3/4 (95)	13-1/4 (337)	14 (356)	14 (356)	—	11-11/16 (297)
	2	6-1/8 (156)	9-3/16 (233)	1-7/8 (48)	4-3/16 (106)	13-5/16 (338)	14-1/16 (357)	14-1/16 (357)	—	11-3/4 (298)
VB-9313-0-4-P	2-1/2	8-1/2 (216)	—	4-5/8 (117)	—	15-15/16 (405)	16-11/16 (424)	16-11/16 (424)	—	14-3/8 (365)
	3	9-1/2 (241)	—	5 (127)	—	16-3/8 (416)	17-1/8 (435)	17-1/8 (435)	—	14-7/8 (378)
VB-9313-0-5-P	2-1/2	8-1/2 (216)	—	5-3/8 (136)	—	15-1/8 (384)	15-7/8 (403)	15-7/8 (403)	—	14-1/4 (362)
	3	9-1/2 (241)	—	6-3/8 (162)	—	16-5/8 (422)	17-3/8 (441)	17-3/8 (441)	—	14-7/8 (378)
	4	11-1/2 (292)	—	8-1/2 (216)	—	17-1/2 (445)	18-1/4 (464)	18-1/4 (464)	22 (559)	14-1/4 (362)
	5	13 (330)	—	8-3/4 (222)	—	—	—	18 (457)	24-3/8 (629)	—
	6	14 (356)	—	9-3/4 (248)	—	—	—	18-1/2 (470)	25-1/8 (638)	—
	2-1/2	9 (229)	—	7 (178)	—	16-13/16 (351)	—	—	—	16 (406)
VB-9323-0-5-P	3	10 (254)	—	8 (203)	—	17-9/16 (446)	—	—	—	16-3/4 (425)
	4	12 (305)	—	10 (254)	—	—	—	—	—	—
	5	13 (330)	—	10-1/2 (267)	—	—	—	—	—	—
	6	14-1/8 (359)	—	11-1/8 (283)	—	—	—	—	—	—

^a Use B and D dimensions for VB-7314 valve body.

^b Subtract 3/4 in. (19 mm) on VA assemblies.

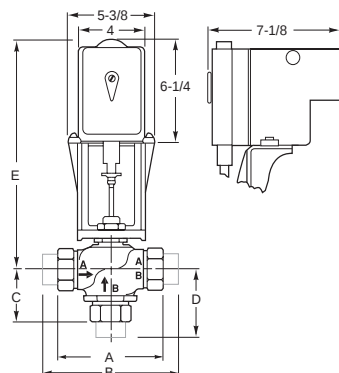
TABLE 5A. Dimensions in Inches (Millimeters). (Refer to the pages following pages for illustrations.)

Valve Body						Actuator Series		
						MF-22XX3 ^a MS-22353	MF-631X3	MS-7913 MS-7923
Part Number	Size In.	A	B ^b	C	D ^b	E	E	E
VB-7313-0-4-P VB-7314-0-4-P VB-7323-0-4-P	1/2	3 (76)	4-3/16 (106)	1-3/8 (35)	2-5/16 (59)	4-1/8 (105)	7-1/8 (181)	—
	3/4	3-5/8 (92)	5-7/16 (138)	1-11/16 (43)	2-5/8 (67)	4-1/8 (105)	7-1/8 (181)	—
	1	4-5/8 (117)	6-5/8 (168)	1-9/16 (40)	3-1/8 (79)	4-3/16 (106)	7-3/16 (183)	—
	1-1/4		6-13/16 (173)	1-5/8 (41)	3-7/16 (86)	4-7/16 (113)	7-7/16 (189)	—
	1-1/2	5-3/8 (137)	8-5/16 (211)	1-5/8 (41)	3-3/4 (95)	4-9/16 (116)	7-1/2 (191)	—
	2	6-1/8 (156)	9-3/16 (233)	1-7/8 (48)	4-3/16 (106)	4-5/8 (117)	7-5/8 (194)	—
VB-9313-0-4-P	2-1/2	8-1/2 (216)	—	4-5/8 (117)	—	—	10-3/8 (264)	—
	3	9-1/2 (241)	—	5 (127)	—	—	10-13/16 (275)	—
VB-9313-0-5-P	2-1/2	8-1/2 (216)	—	5-3/8 (136)	—	—	10-1/4 (260)	—
	3	9-1/2 (241)	—	6-3/8 (162)	—	—	10-1/2 (267)	—
	4	11-1/2 (292)	—	8-1/2 (216)	—	—	11-1/4 (286)	—

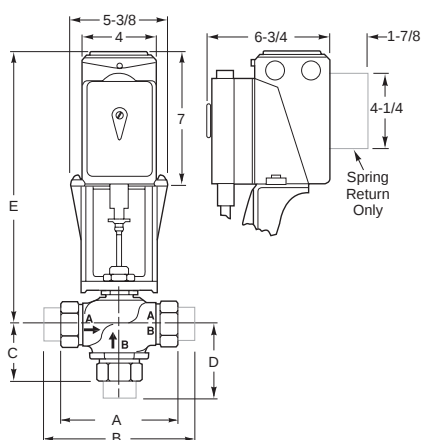
^a MF-22203 for hot water and steam applications only.

^b Use B and D dimensions for VB-7314 valve body.

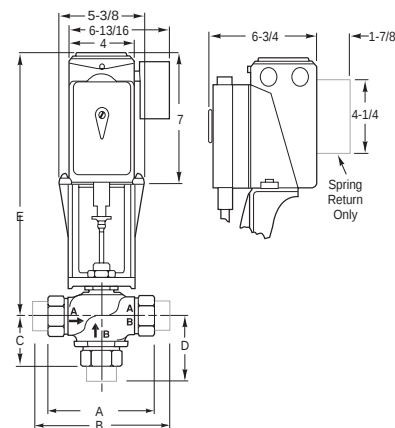
3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators



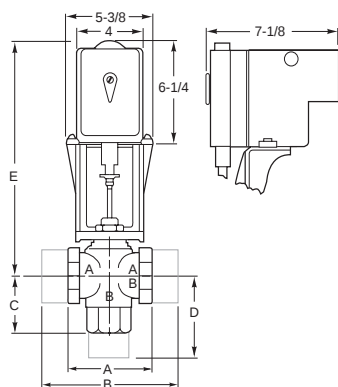
MA-318-XXX
MA-41X-XXX
with
VB-7313-0-4-P
VB-7314-0-4-P
VB-7323-0-4-P



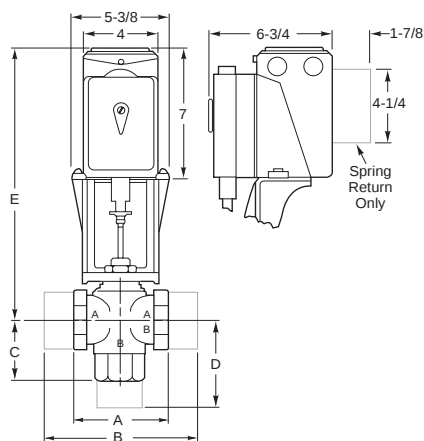
MC-351, 4XX
MP-38X, 48X
MP-X6XX, X7XX
with
VB-7313-0-4-P
VB-7314-0-4-P
VB-7323-0-4-P



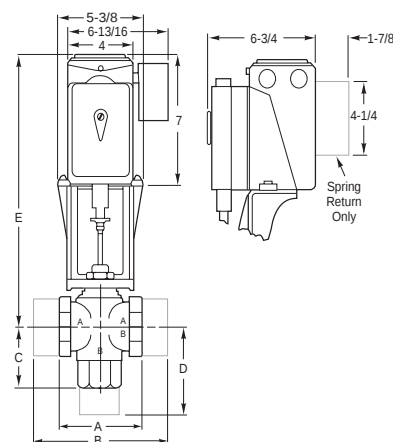
MP-38X, 48X
MP-X6XX, X7XX
with
VB-7313-0-4-P
VB-7314-0-4-P
VB-7323-0-4-P
and Electronic Drive



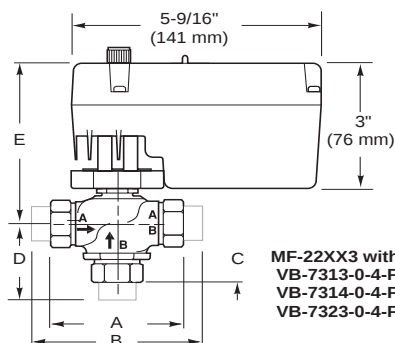
MA-318-XXX
MA-41X-XXX
with
VB-9313-0-4-P
VB-9314-0-4-P
VB-9323-0-4-P



MC-351, 4XX
MP-38X, 48X
MP-X6XX, X7XX
with
VB-9313-0-4-P
VB-9314-0-4-P
VB-9323-0-4-P

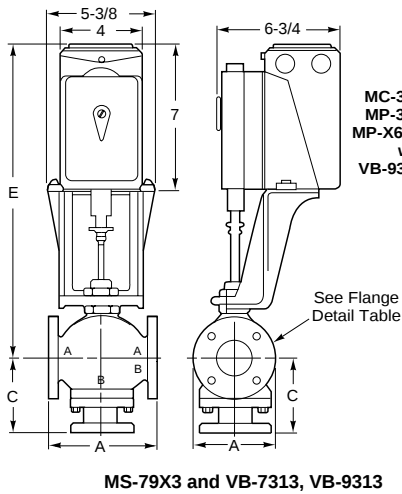
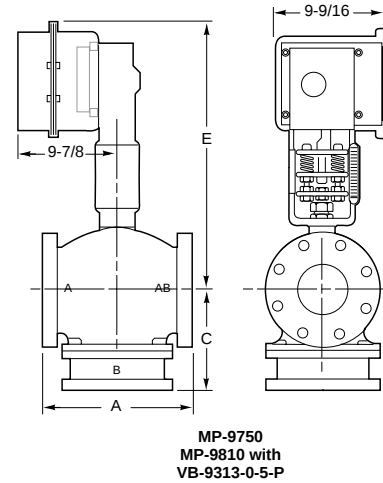
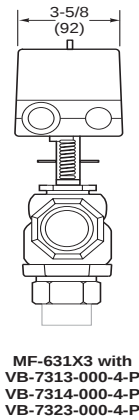
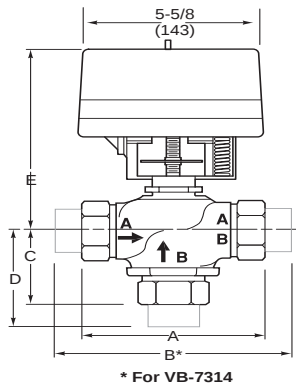
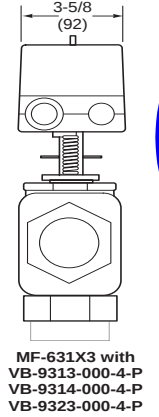
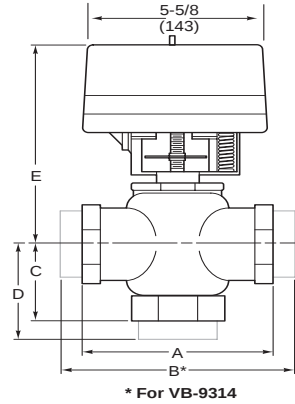
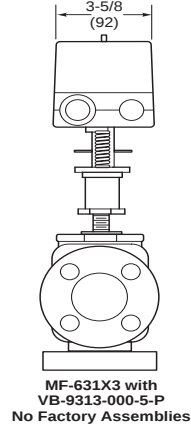
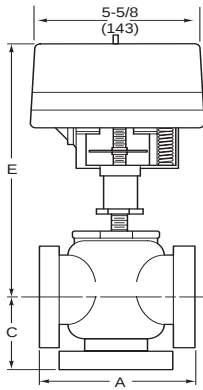


MP-38X, 48X
MP-X6XX, X7XX
with
VB-9313-0-4-P
VB-9314-0-4-P
VB-9323-0-4-P
and Electronic Drive



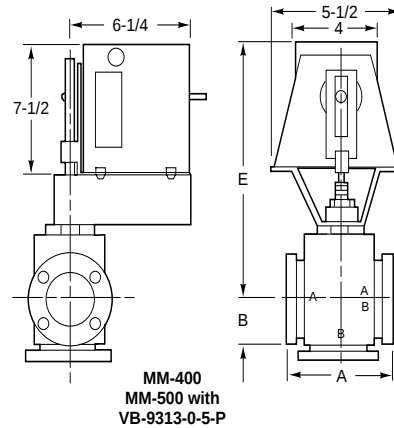
MF-22XX3 with
VB-7313-0-4-P
VB-7314-0-4-P
VB-7323-0-4-P

3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators

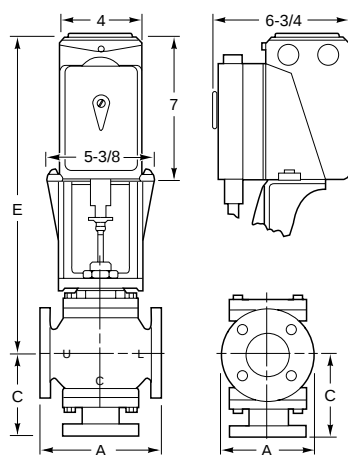


MC-351, 4XX
MP-38X, 48X
MP-X6XX, X7XX
with
VB-9313-0-5-P

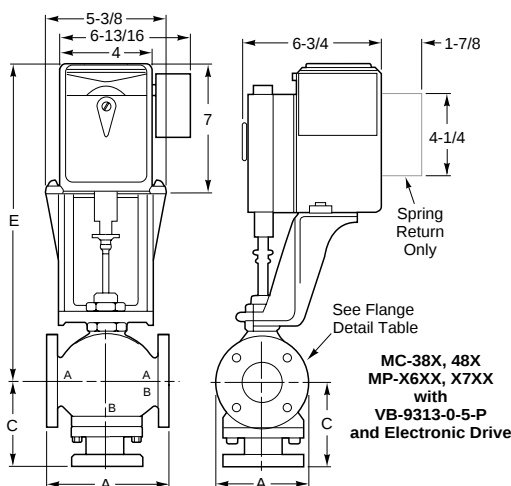
See Flange
Detail Table



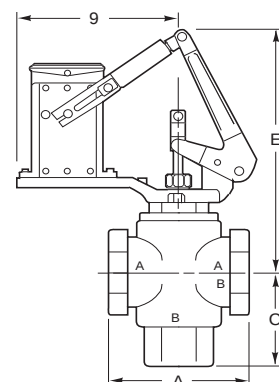
3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators



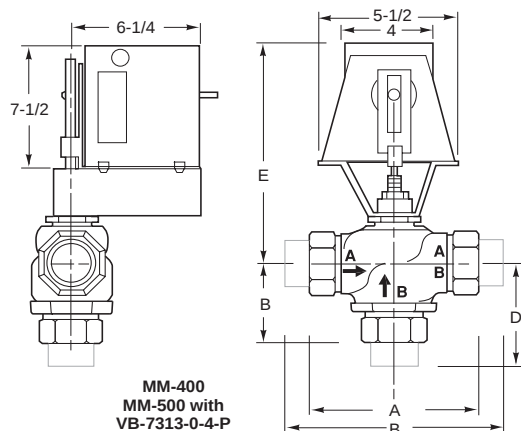
MC-351, 4XX
MP-38X, 48X
MP-X6XX, X7XX
with
VB-9323-0-5-P



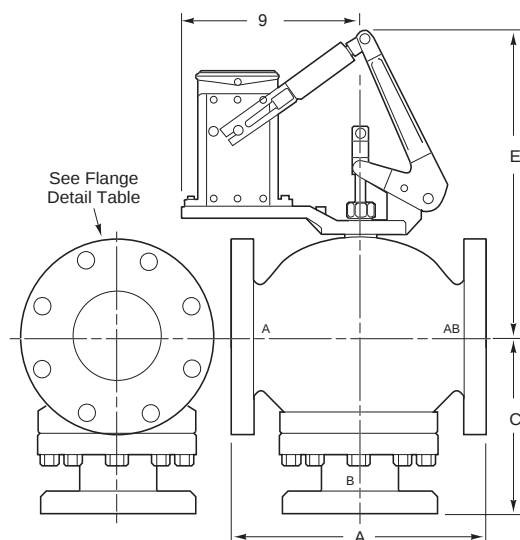
MC-38X, 48X
MP-X6XX, X7XX
with
VB-9313-0-5-P
and Electronic Drive



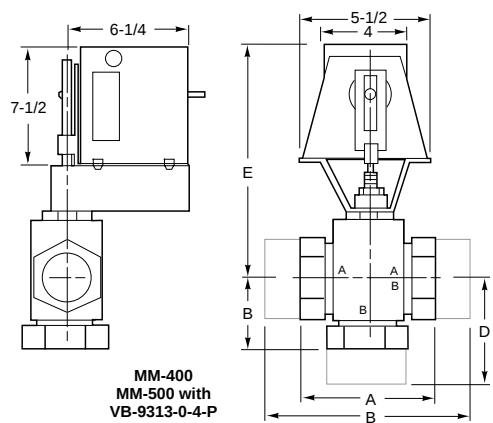
MC-351, 4XX
MP-38X, 48X
with VB-9313-0-4-P
(2-1/2"-3") and
AV-352 Linkage



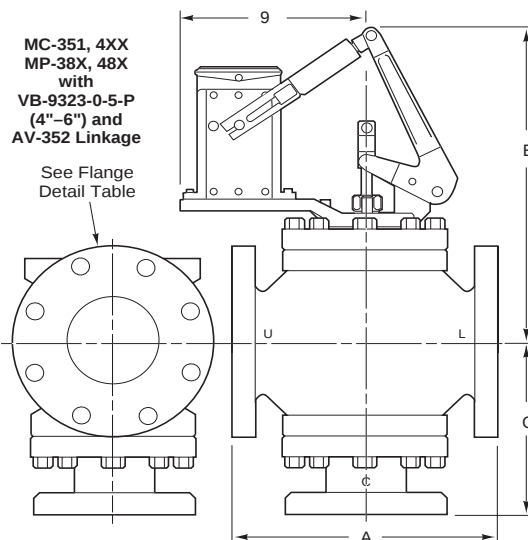
MM-400
MM-500 with
VB-7313-0-4-P
VB-7314-0-4-P
VB-7323-0-4-P



MC-351, 4XX
MP-38X, 48X
with
VB-9313-0-5-P
and AV-352 Linkage



MM-400
MM-500 with
VB-9313-0-4-P
VB-9314-0-4-P
VB-9323-0-4-P



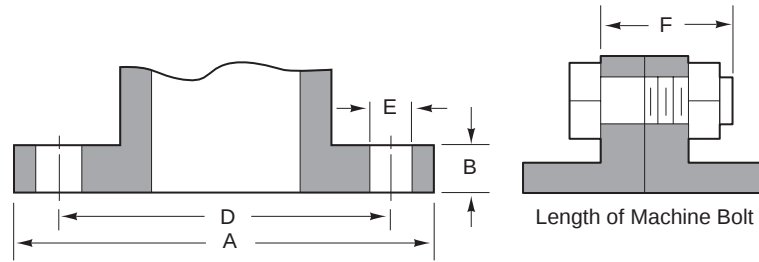
MC-351, 4XX
MP-38X, 48X
with
VB-9323-0-5-P
(4"-6") and
AV-352 Linkage

3-Way Globe Valves, Mixing (1/2 to 6 in.), Diverting (1/2 to 6 in.), Screwed (1/2 to 3 in.), Union Sweat (1/2 to 2 in.) and Flanged (2-1/2 to 6 in) with Electric Gear Train Actuators

TABLE 6. Restrictions on Maximum Ambient Temperature for Valve Actuators.

TEMPERATURES °F (°C)							
Actuator Code	3XX	251 ^a	253 ^a	30X	40X, 41X, 42X	46X	90X
Actuator Series	MA-318-XXX MA-41X-XXX MP-X6XX, X7XX MM-500, MMR-500	MF-22X03	MF-22X23	MF-631X3	MC-351, 4XX MP-38X, 48X MM-400, MMR-400	MC-351, 4XX MP-38X, 48X w/AV-352	MP-9730 MP-9750 MP-9810
Maximum Ambient	136 (57)	140 (60)		140 (60)	136 (57)	136 (57)	130 (54)
Max. Allowable Fluid	260 (127)	220 (140)		260 (126)	260 (127)	260 (127)	260 (127)
VB-9313-0-5-P VB-9323-0-5-P	Maximum Fluid	300 (149)	281 (138)	300 (149)	300 (149)	300 (149)	300 (149)
	Max. Allowable Ambient	100 (38)	115 (46)	100 (38)	100 (38)	100 (38)	100 (38)
VB-7313-0-4-P VB-7314-0-4-P VB-7323-0-4-P VB-9313-0-4-P VB-9314-0-4-P VB-9323-0-4-P	Maximum Fluid	281 (138)	281 (138)	281 (138)	281 (138)	281 (138)	—
	Max. Allowable Ambient	125 (52)	115 (46)	125 (52)	125 (52)	125 (52)	—

^a MF-221X3 for hot water and steam applications only.



Flange Detail Dimensions in Inches (Metric conversion 25.4 mm = 1 in.).

Nominal Pipe Size	Flanges		Drilling		Bolting		Length of Machine Bolts F
	Flange Diameter A	Flange Thickness B	Diameter of Bolt Circle D	Diameter of Bolt Holes E	Number of Bolts	Diameter of Bolts	
2-1/2	7	11/16	5-1/2	3/4	4	5/8	2-1/2
3	7-1/2	3/4	6	3/4	4	5/8	2-1/2
4	9	15/16	7-1/2	3/4	8	5/8	3
5	10	15/16	8-1/2	7/8	8	3/4	3
6	11	1	9-1/2	7/8	8	3/4	3-1/4

TABLE 7. Flow Pattern.

Body Part Number	Flow Type	Stem Up (SU)		Stem Down (SD)	
		Flow	Closed Port	Flow	Closed Port
VB-7313-0-4-P VB-7314-0-4-P VB-9313-0-5-P	Mixing	B to AB	A	A to AB	B
VB-7323-0-4-P VB-9323-0-5-P	Diverting	C to L	U	B to A C to U	AB L