

VB-7000 Series Assemblies

Schneider Electric VB-7000 Series 1/2"...2" Globe Valves with NSR Forta M400/800/1500A (VB) and MG350 Series Actuators

Application

Schneider Electric NSR Forta M400A-VB, M800A-VB, and M1500A-VB Screw Mount series linear actuators mount directly onto 1/2"...2" VB-7xxx series two-way and three-way globe valve bodies. Schneider Electric NSR Forta M400A, M800A and M1500A U-Bolt series linear actuators mount to a valve with additional linkage. Applications include chilled or hot water and steam. Field selectable input signals include reverse and direct acting, floating or proportional 0...10 Vdc, 2...10 Vdc, or 4...20 mAdc, and proportional sequencing input signal ranges¹.

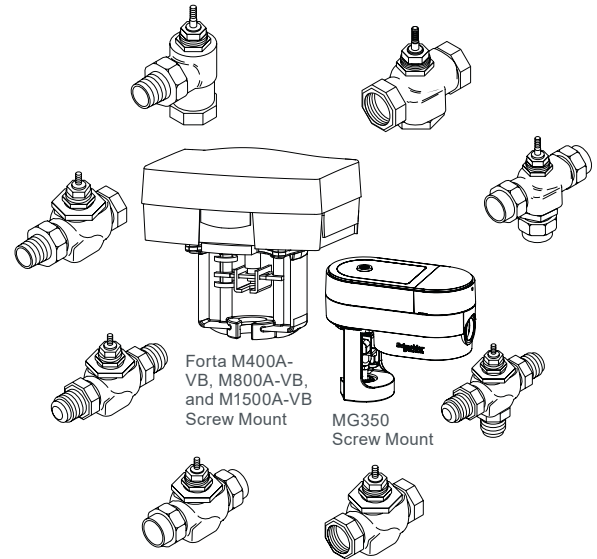
MG350 Non-spring actuators and VB-7000 series two and three-way globe valves provide for control of fan coils, unit ventilators, reheat, cooling units, perimeter heating and other applications. Input signal options include 0...10 Vdc, 2...10 Vdc, 4...20 mA proportional, floating, two-position, and pulse width modulation (PWM).

Note: Do not use for combustible gas applications. The valve packings are not rated for combustible gas applications, and if used in these applications, gas leaks and explosions may result.

Notice:

- Install the valve with the flow in the direction of the flow arrow(s).
- Do not exceed the ratings of the device.
- Avoid locations where excessive moisture, corrosive fumes or vibration are present.

¹) 0-5 Vdc, 5-10 Vdc, 2-6 Vdc, and 6-10 Vdc also available



Stem and Bonnet Nut Thread Information for All VB-7000 Valve Series

Valve Stem Threads: 1/4"-28 UNF-2A thread

Bonnet Nut Threads: 1-1/4" -16 thread

Bonnet Nut Outer Hex Size: 1-5/8" (use 1-5/8" open end wrench or equivalent)

Table 1. Valve Assembly Part Number Series

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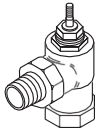
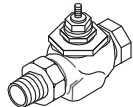
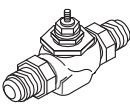
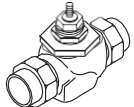
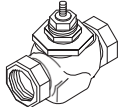
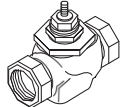
Valve Body Part Number Series	Valve Assembly Part Number Series*	Type of Valve	Inlet Port(s)	Outlet Port(s)	Flow Stem Up	Flow Stem Down
VB-7211	VA,VF,VK,VK4,VS or VU-7211	2-Way Stem Up Open	A	AB	Valve Open	Valve Closed
VB-7212	VA,VF,VK,VK4,VS or VU-7212					
VB-7213	VA,VC,VF,VK,VK4,VPVS or VU-7213					
VB-7214	VA,VC,VF,VK,VK4,VPVS or VU-7214					
VB-7253	VA,VC,VF,VK,VK4,VPVS or VU-7253					
VB-7273	VA,VC,VF,VK,VK4,VPVS or VU-7273	2-Way Stem Up Closed	A	AB	Valve Closed	Valve Open
VB-7275	VA,VC,VF,VK,VK4,VPVS or VU-7275					
VB-7221	VA,VF,VK,VK4,VS or VU-7221					
VB-7222	VA,VF,VK,VK4,VS or VU-7222					
VB-7223	VA,VF,VK,VK4,VPVS or VU-7223					
VB-7224	VA,VF,VK,VK4,VPVS or VU-7224	3-Way Mixing	B & A	AB	Flow B to AB	Flow A to AB
VB-7263	VA,VF,VK,VK4,VPVS or VU-7263					
VB-7283	VA,VF,VK,VK4,VPVS or VU-7283					
VB-7312	VA,VF,VK,VK4,VS or VU-7312	3-Way Diverting	B	A & AB	Flow B to AB	Flow B to A
VB-7313	VA,VC,VF,VK,VK4,VPVS or VU-7313					
VB-7314	VA,VC,VF,VK,VK4,VPVS or VU-7314					
VB-7323	VA,VC,VF,VK,VK4,VPVS or VU-7323	3-Way Sequencing	B & A	AB	Flow ** B to AB	Flow ** A to AB
VB-7332	VF,VK,VK4,VS or VU-7332					

* Valve bodies are designated by the prefix VB. When associated with an assembly, the prefix is assigned based on type of actuator. For example, the series part number of a valve assembly with a two-way, normally open, NPT Threaded valve with a pneumatic actuator is VK-7213.

** Stem mid stroke no flow both A and B ports are closed

Valve Body and Actuator Selection

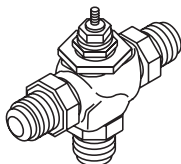
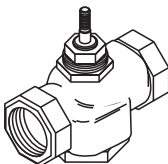
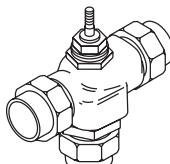
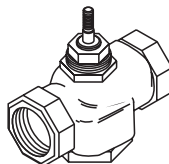
Table 2. Schneider Electric VB-72xx Series Two-Way Valve Bodies

Two-Way Valves		Application: Chilled or Hot Water					Application: Hot Water or Steam	
								
		Union Angle	Union Straightway	SAE Flared	Union Sweat	NPT Threaded Rp Threaded	NPT Threaded	
Size		1/2" ... 1-1/4"	1/2" ... 1-1/4"	5/8" OD	1/2" ... 2"	1/2" ... 2" (15...50 mm)	1/2" ... 2"	
Valve Body Part Number, Stem Up Open		VB-7211-0-3-P	VB-7211-0-4-P	VB-7212-0-4-P	VB-7214-0-4-P	VB-7213-0-4-P VB-7215-0-4-P ^a	VB-7253-0-4-P	VB-7273-0-4-P
Valve Body Part Number, Stem Up Closed		—	VB-7221-0-4-P	VB-7222-0-4-P	VB-7224-0-4-P	VB-7223-0-4-P VB-7225-0-4-P ^a	VB-7263-0-4-P	VB-7283-0-4-P
Flow Type		Equal %					Modified Linear	
Material	Body	Bronze					Bronze	
	Seat	Bronze					Stainless Steel	
	Stem	Stainless Steel					Stainless Steel	
	Plug	Brass					Stainless Steel	
	Packing	Spring Loaded TFE/EPDM					Spring Loaded TFE	
	Disc	EPDM					Teflon	None
Pressure Class		ANSI 250 Up to 400°F (204°C) below 150°F (65°C) ISO PN16						
Maximum Inlet Pressure, Steam		35 PSIG (241 kPa)					100 PSIG (690 kPa)	150 PSIG (1034 kPa)
Allowable Control Media Temperature		20°F...281 °F (-7°C...138°C)					20...340°F (-7...171°C)	20...400°F (-7...205°C)
Allowable Differential Pressure, Water ^b		35 PSI (241 kPa) for Normal Life					35 PSIG (241 kPa)	35 PSIG (241 kPa)
Allowable Differential Pressure, Steam ^b		20 PSI (138 kPa)					35 PSI (241 kPa)	50 PSI (345 kPa)
To Select a Port Code (P)								
P Code	Valve Size	Cv (kvs) Rating						
1	1/2" (15 mm)	0.4 (0.34)	0.4 (0.34)	0.4 (0.34)	0.4 (0.34)	0.4 (0.34)	0.4 (0.34)	0.4 (0.34)
2		1.3 (1.1)	1.3 (1.1)	1.3 (1.1)	1.3 (1.1)	1.3 (1.1)	1.3 (1.1)	1.3 (1.1)
3		2.2 (1.9)	2.2 (1.9)	2.2 (1.9)	2.2 (1.9)	2.2 (1.9)	2.2 (1.9)	2.2 (1.9)
4		5.0 (4.3)	4.4 (3.8)	4.4 (3.8)	4.4 (3.8)	4.4 (3.8)	4.4 (3.8)	4.4 (3.8)
5	3/4" (20 mm)	5.5 (4.7)	5.5 (4.7)	—	5.5 (4.7)	5.5 (4.7)	5.5 (4.7)	5.5 (4.7)
6		8.5 (7.4)	7.5 (6.5)	—	7.5 (6.5)	7.5 (6.5)	7.5 (6.5)	7.5 (6.5)
7	1" (25 mm)	14 (12)	10 (8.6)	—	10 (8.6)	10 (8.6)	10 (8.6)	10 (8.6)
8		16 (14)	14 (12)	—	14 (12)	14 (12)	12 (10.4)	12 (10.4)
9	1-1/4" (32 mm)	22 (19)	20 (17.3)	—	20 (17.3)	20 (17.3)	20 (17.3)	20 (17.3)
10	1-1/2" (40 mm)	—	—	—	28 (21.2)	28 (21.2)	28 (21.2)	28 (21.2)
11	2" (50 mm)	—	—	—	40 (34.6)	40 (34.6)	40 (34.6)	40 (34.6)

a - 15...50 mm valves with metric thread Rp 1/2...Rp 2

b - Maximum recommended differential in full open position. Do not exceed recommended differential pressure (pressure drop) or integrity of parts may be affected.

Table 3. Schneider Electric VB-73xx Series Three-Way Valve Bodies

Three-Way Valves Mixing or Diverting 5/8" OD SAE Flared 1/2" to 2" NPT or Rp Threaded 1/2" to 2" Union Sweat		Application: Chilled or Hot Water			
					
		SAE Flared	NPT Threaded Rp Threaded	Union Sweat	NPT Threaded
		5/8" OD	1/2"...2" (15...50 mm)	1/2"...2"	1/2"...2"
Size					
Valve Body Part Number, Mixing ^a		VB-7312-0-4-P	VB-7313-0-4-P VB-7315-0-4-P ^b	VB-7314-0-4-P	—
Valve Body, Part Number Diverting ^c		—	—	—	VB-7323-0-4-P
Material	Flow Type	Equal %			
	Body	Bronze			
	Seat	Bronze			
	Stem	Stainless Steel			
	Plug	Brass			
	Packing	Spring Loaded TFE/EPDM			
	Disc	None			
Pressure Class		ANSI 250 Up to 400°F (204°C) below 150°F (65°C) ISO PN16			
Allowable Control Media Temperature		20°F...281°F (-7°C...138°C)	20°F...300°F (-7°C...149°C)		
Allowable Differential Pressure, Water ^d		35 PSI (241 kPa) for Normal Life			
To Select a Port Code (P)					
P Code	Valve Size	Cv (kvs) Rating			
02 04	1/2" (15 mm)	2.2 (1.9)	2.2 (1.9)	2.2 (1.9)	—
		4.4 (3.8)	4.4 (3.8)	4.4 (3.8)	4.4 (3.8)
06	1" (25 mm)	—	7.5 (6.5)	7.5 (6.5)	7.5 (6.5)
08		—	14 (12)	14 (12)	15 (13)
09	1-1/4" (32 mm)	—	20 (17.3)	20 (17.3)	20 (17.3)
10	1-1/2" (40 mm)	—	28 (21.2)	28 (21.2)	28 (21.2)
11	2" (50 mm)	—	41 (36)	41 (36)	40 (34.6)

a - On VB-7313 and VB-7315 mixing valves, port AB is the common port (located on the side) and ports A and B are inlets. Flow is from B to AB when the valve stem is in up position (port A closed). Flow is from A to AB when valve stem is in down position (port B closed).

b - 15 to 50 mm valves with metric thread Rp 1/2 to Rp 2

c - On VB-7323 diverting valves, inlet port B is the common port (located on the bottom) and ports AB and B are outlets. When the valve stem is in the up position, flow is from B to AB (port A closed). When the valve stem is in the down position, flow is from port B to A (port AB closed).

d - Maximum recommended differential in full open position. Do not exceed recommended differential pressure (pressure drop) or integrity of parts may be affected.

Table 4. Forta: NSR Actuator Models

Model	Actuator Code	Linkage Kit	Force, lbf (N)	Power	Running VA	Transformer Sizing VA	Floating Control ^a	Proportional Control ^a	Feedback	(2) SPDT Auxiliary Switches			
M400A ^c	— ^b	AV-821 ^c	90 (400)	24 Vac ±10% 50/60 Hz, or 20 to 29 Vdc	6	30 ^e	Yes	0-10 Vdc, 2-10 Vdc, or 4-20 mA _{dc} with 500 ohm resistor	2-10 Vdc	No			
M400A-VB	674	—								24 Vac 4A res			
M400A-S2 ^c	— ^b	AV-821 ^c											
M400A-S2-VB	— ^b	—											
M800A ^c	— ^b	AV-821 ^c	180 (800)									No	
M800A-VB	680	—											
M800A-S2 ^c	— ^b	AV-821 ^c			15	50 ^e						24 Vac 4A res	
M800A-S2-VB	— ^b	—											
M1500A ^c ^d	— ^b	AV-821 ^c	337 (1500)									No	
M1500A-VB ^d	686	—											
M1500A-S2 ^c ^d	— ^b	AV-821 ^c			24	50 ^e						24 Vac 4A res	
M1500A-S2-VB ^d	— ^b	—										24 Vac 4A res	

a - DIP switch selectable.

b - No actuator code. No factory assemblies offered.

c - AV-821 linkage (order separately) required for mounting actuators to VB-7xxx globe valve bodies using U-Bolt style Forta.

d - Do not use M1500 actuators on VB-7323 three way diverting valves.

e - M400/800 DC Power 20W, M1500 Dc Power 30W.

Table 5. MG350V NSR Actuator Models

Model	Valve Assembly Prefix	Actuator Code	Force, lbf (N)	Approx. Timing in Seconds for 1/2" Stroke	Power ^a	Proportional Input ^b (VDC)	Proportional Input ^c (VDC, mA)	Floating, Two Wire (Form A) Two Position	PWM ^d	Position Output Signal ^e
MG350V-24F	VF	110	79 (350)	102	5 VA	—	—	Yes	—	—
MGF350V-24FP	VF	112	67 (300)	51	7.2 VA	—	—	Yes	Yes	2...10 / 0...5 Vdc
MG350V-24M	VS	110	79 (350)	102	7.2 VA	Yes	—	—	—	—
MGF350V-24MP	VS	112	67 (300)	51	7.2 VA	—	Yes	—	—	2...10 / 0...5 Vdc

a - 24 Vac (Class 2 power supply), ±20%, 50/60 Hz, 20...29 Vdc, 5 W; see the MG350V series installation instruction (F-27852) for more information.

b - DIP switch configurable 0...10 Vdc or 2...10 Vdc control input, (4...20 mA requires an externally mounted 500 ohm resistor).

c - DIP switch configurable 0...10 Vdc, 2...10 Vdc, or 4...20 mA control input.

d - DIP switch configurable 0.1...25.5 sec, 0.59...2.93 sec.

e - DIP switch configurable 2...10 Vdc or 0...5 Vdc.

Table 6. Forta and MG350 Restrictions on Ambient Temperature for Valve Actuators

Fluid Temperature in Valve Body	Maximum Allowable Ambient Temperature ^a	
	Forta	MG350
Chilled Water	122°F (50°C)	131 °F (55 °C) (Chilled water up to 266 °F (130 °C))
281°F (138°C)	113°F (45°C)	127 °F (53 °C)
300°F (149°C)	107°F (42°C)	-
340°F (171°C)	100°F (38°C)	115 °F (46 °C)
366°F (186°C)	90°F (32°C)	-
400 °F (204 °C)	102 °F (39 °C)	102 °F (39 °C)

a - Minimum allowable ambient operating temperature 14°F (-10°C)

NOTE: When installing valve and actuator assemblies, observe the minimum and maximum fluid and ambient temperature limits.

Table 7. Forta: Select Valve/Actuator Combination Having Sufficient Close-off for Application

Valve Body			Close-off Ratings, psi (kPa)		
Two-Way Valves	P Code	Size	M400A- (VB)	M800A- (VB)	M1500A- (VB)
VB-7211-0-3-P, VB-7211-0-4-P VB-7212-0-4-P, VB-7213-0-4-P VB-7214-0-4-P, VB-7215-0-4-P VB-7221-0-4-P, VB-7222-0-4-P VB-7223-0-4-P, VB-7224-0-4-P VB-7225-0-4-P, VB-7253-0-4-P VB-7263-0-4-P, VB-7273-0-4-P VB-7283-0-4-P	-01, -02, -03, -04	1/2" (15 mm)	250 (1712)	250 (1712)	—
	-05, -06	3/4" (20 mm)	198 (1356)	250 (1712)	
	-07, -08	1" (25 mm)	92 (630)	207 (1418)	
	-9	1-1/4" (32 mm)	56 (384)	130 (890)	
	-10	1-1/2" (40 mm)	37 (253)	88 (603)	177 (1212)
	-11	2" (50 mm)	19 (130)	48 (329)	98 (671)
Three-Way Valves	P Code	Size	M400A (VB)	M800A (VB)	M1500A (VB) ^a
VB-7312-0-4-P VB-7313-0-4-P VB-7314-0-4-P VB-7315-0-4-P	-02, -04	1/2" (15 mm)	250 (1712)	250 (1712)	—
	-6	3/4" (20 mm)	198 (1356)	250 (1712)	
	-8	1" (25 mm)	92 (630)	207 (1418)	
	-9	1-1/4" (32 mm)	56 (384)	130 (890)	
	10	1-1/2" (40 mm)	37 (253)	88 (603)	
	-11	2" (50 mm)	19 (130)	48 (329)	
VB-7323-0-4-P	-04, -06, -08, -09, -10, -11	1/2"...2"	250 (1712)		Do Not Use ^a

a - Do not use M1500A on VB-7323 three-way valves.

Table 8. MG350: Select Valve/Actuator Combination Having Sufficient Close-Off for Application

Body		Close-off Ratings, psi (kPa) ^b		Compatible Two-Way Valve Series
P Code	Size	MGF350V-24FP, MGF350V-24MP	MG350V-24F, MG350V-24M	
-01, -02, -03, -04	1/2" (15 mm)	219 (1510)	250 (1724)	VB-7211-0-3-P, VB-7211-0-4-P VB-7212-0-4-P, VB-7213-0-4-P VB-7214-0-4-P, VB-7215-0-4-P VB-7221-0-4-P, VB-7222-0-4-P VB-7223-0-4-P, VB-7224-0-4-P VB-7225-0-4-P, VB-7253-0-4-P VB-7263-0-4-P ^a , VB-7273-0-4-P, VB-7283-0-4-P
-05, -06	3/4" (20 mm)	135 (931)	157 (1082)	
-07, -08	1" (25 mm)	67 (462)	79 (545)	
-09	1-1/4" (32 mm)	42 (290)	49 (338)	
P Code	Size	MGF350V-24FP, MGF350V-24MP	MG350V-24F, MG350V-24M	Compatible Three-Way Valve Series
-02, -04	1/2" (15 mm)	219 (1510)	250 (1724)	VB-7312-0-4-P, VB-7313-0-4-P VB-7314-0-4-P, VB-7315-0-4-P VB-7363-0-4-P
-06	3/4" (20 mm)	135 (931)	157 (1082)	
-08	1" (25 mm)	67 (462)	79 (545)	
-09	1-1/4" (32 mm)	42 (290)	49 (338)	
-04, -06, -08, -09, -10, -11	1/2"...2"	250 (1712)		VB-7323-0-4-P VB-7325-0-4-P

a - VB-7263 series valves with port codes from -28...-82 have the same close-off ratings as the respective matching pipe size VB-7263 series valves with port codes -01...-11.

b - For higher close-off rating options refer to the U.S. Globe Valve and Actuators Catalog, F-27855.

Table 9. Forta Valve and Actuator Assemblies — Two-Way Valves ^a

Valve Assembly Part Number ^b	Actuator Model (Actuator Code ^b)				
	P Code ^b	Size	M400A-VB (674)	M800A-VB (680)	M1500A-VB (686)
VU-7213-xxx-4-P VU-7253-xxx-4-P VU-7273-xxx-4-P	-01, -02, -03, -04	1/2"	X	X	—
	-05, -06	3/4"	X	X	—
	-07, -08	1"	X	X	—
	-9	1-1/4"	X	X	—
	10	1-1/2"	X	X	X
	11	2"	X	X	X

a - See Table 7 for close-off pressures

b - Insert Actuator Code in third field of assembly part number. Insert P Code in last field of assembly part number.

Table 10. Forta and MG350 Valve and Actuator Assemblies — Three-Way Mixing Valves ^a

Valve Assembly Part Number ^b	P Code ^b	Size	Actuator Model (Actuator Code ^{bc})		MGF350V-24FP, MGF350V-24MP (112)	MG350V-24F, MG350V-24M (110)
			M400A-VB (674)	M800A-VB (680)		
VU-7313-xxx-4-P	-02, -04	1/2"	X	X	X	X
	-6	3/4"	X	X	X	X
	-8	1"	X	X	X	X
	-9	1-1/4"	X	X	X	X
	10	1-1/2"	X	X	-	-
	11	2"	X	X	-	-

a - See Table 7 for close-off pressures

b - Insert Actuator Code in third field of assembly part number. Insert P Code in last field of assembly part number. MG350: Enter VF for a floating or two-position or PWM input signal or VS for a proportional (VDC/mA) input signal valve and actuator assembly.

c - MG350 Some actuator codes may not be available for all valve assembly part numbers.

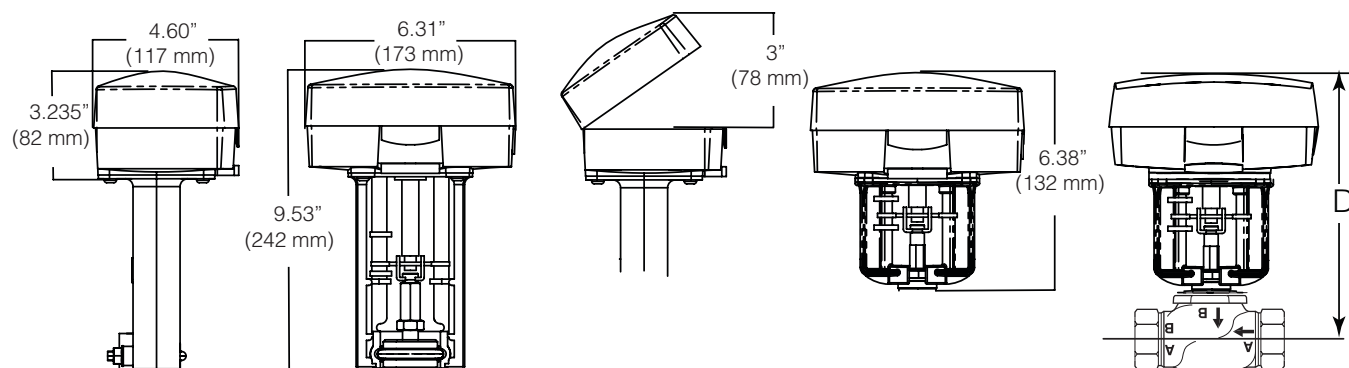
Table 11. Forta Valve and Actuator Assemblies — Diverting Valves ^a

Valve Assembly Part Number ^b	P Code ^b	Size	Actuator Model (Actuator Code)	
			M400A-VB (674)	M800A-VB (680)
VU-7323-674-4-P	-4	1/2"	X	X
	-6	3/4"	X	X
	-8	1"	X	X
	-9	1-1/4"	X	X
	10	1-1/2"	X	X
	11	2"	X	X

a - See Table 7 for close-off pressures

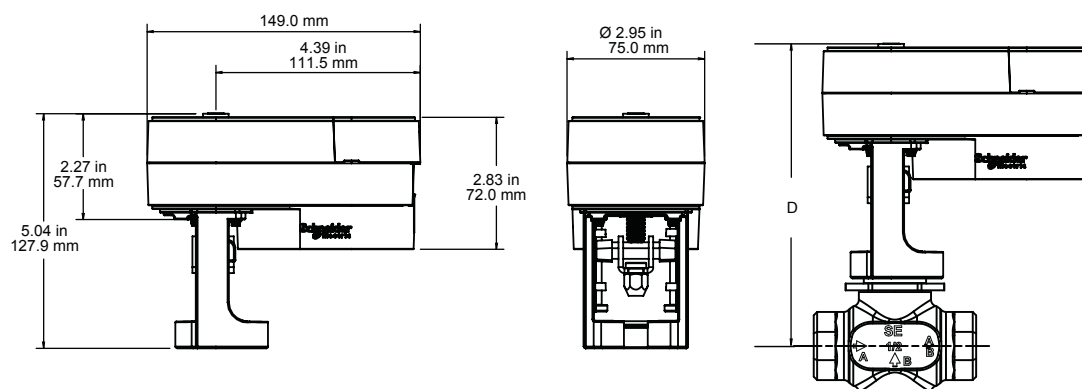
b - Insert P Code in last field of assembly part number.

Dimensions



See Table 12

MG350 Dimensions Screw Mount



See Table 12

Table 12. Dimensions — Two-Way Valves

Valve Body Part Number	Size	Dimensions in Inches (mm)					
		A	B	C	U-Bolt Style ^a -D	Screw Mount Style ^a -D	MG350 Screw Mount- D
VB-7211-0-3-P	1/2"	3-1/8 (79)	1-5/8 (41)	3/4 (19)	10-9/32 (261)	7-13/32 (188)	5-7/8 (148)
	3/4 "	3-5/8 (92)	1-11/16 (43)	15/16 (24)	10-15/32 (266)	7-19/32 (193)	6-1/16 (153)
	1 "	4-1/16 (103)	1-15/16 (49)	1-1/4 (32)	10-25/32 (274)	7-29/32 (201)	6-3/8 (161)
	1-1/4 "	4-5/16 (110)	2-3/16 (56)	1-11/16 (43)	11-7/32 (285)	8-11/32 (212)	6-13/16 (172)
VB-7211-0-4-P	1/2 "	4-3/16 (106)	1-1/16 (27)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	3/4"	4-15/16 (125)	1-1/16 (27)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	1"	6 (152)	1-1/8 (29)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)	6-5/16 (166)
	1-1/4"	6-1/4 (159)	1-3/8 (35)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)	6-9/16 (166)
VB-7212-0-4-P	5/8" O.D.	4 (102)	1-1/16 (27)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-14 (158)
VB-7213-0-4-P VB-7215-0-4-P VB-7253-0-4-P VB-7273-0-4-P	1/2" (15 mm)	3 (76)	1-1/16 (27)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	3/4" (20 mm)	3-5/8 (92)	1-1/16 (27)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	1" (25 mm)	4-5/8 (117)	1-1/8 (29)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)	6-5/16 (159)
	1-1/4" (32 mm)	4-5/8 (117)	1-3/8 (35)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)	6-9/16 (166)
	1-1/2 (40 mm)	5-3/8 (137)	1-1/2 (38)	1-7/8 (48)	11-13/32 (290)	8-17/32 (217)	7 (177)
	2"(50 mm)	6-1/8 (156)	1-9/16 (40)	2-1/8 (54)	11-21/32 (296)	8-25/32 (223)	7-1/4 (183)
VB-7214-0-4-P	1/2"	4-3/16 (106)	1-1/16 (27)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	3/4"	5-7/16 (138)	1-1/16 (27)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	1"	6-5/8 (168)	1-1/8 (29)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)	6-5/16 (159)
	1-1/4"	6-13/16 (173)	1-3/8 (35)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)	6-9/16 (166)
	1-1/2"	8-5/16 (211)	1-1/2 (38)	1-7/8 (48)	11-13/32 (290)	8-17/32 (217)	7 (177)
	2"	9-3/16 (233)	1-9/16 (40)	2-1/8 (54)	11-21/32 (296)	8-25/32 (223)	7-1/4 (183)
VB-7221-0-4-P	1/2"	4-3/16 (106)	1-1/4 (32)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	3/4"	4-15/16 (125)	1-1/4 (32)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	1"	6 (152)	1-3/4 (45)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)	6-5/16 (159)
	1 1/2"	6-1/4 (159)	1-3/4 (45)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)	6-9/16 (166)
VB-7222-0-4-P	5/8" OD	4 (102)	1-1/4 (32)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
VB-7223-0-4-P VB-7225-0-4-P VB-7263-0-4-P VB-7283-0-4-P	1/2" (15 mm)	3-1/16 (78)	1-3/16 (30)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	3/4" (20 mm)	3-5/8 (92)	1-3/16 (30)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	1" (25 mm)	4-5/8 (117)	1-3/4 (44)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)	6-5/16 (159)
	1-1/4" (32 mm)	4-5/8 (117)	1-3/4 (44)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)	6-9/16 (166)
	1-1/2" (40 mm)	5-3/8 (137)	1-13/16 (46)	1-9/16 (40)	11-3/32 (282)	8-7/32 (209)	6-11/16 (169)
	2" (50 mm)	6-1/8 (156)	2-1/4 (57)	1-5/8 (42)	11-5/32 (283)	8-9/32 (210)	6-3/4 (171)
VB-7224-0-4-P	1/2"	4-3/16 (106)	1-1/4 (32)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	3/4"	5-7/16 (138)	1-1/4 (32)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)	6-1/4 (158)
	1"	6-5/8 (168)	1-3/4 (45)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)	6-5/16 (159)
	1 1/4"	6-13/16 (173)	1-3/4 (45)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)	6-9/16 (166)
	1 1/2"	8-5/16 (211)	1-13/16 (45)	1-9/16 (40)	11-3/32 (282)	8-7/32 (209)	6-11/16 (169)
	2"	9-3/16 (233)	2-1/16 (53)	1-5/8 (42)	11-5/32 (283)	8-9/32 (210)	6-3/4 (171)

a - Assembly height, centerline of valve body to top of actuator. Leave an additional 3" (76 mm) clearance for cover removal. MG350: Leave an additional 8" (203 mm) clearance for actuator cover removal.

Dimensions — Two and Three-Way Valves for Forta and MG350

(Different valve where noted for MG350)

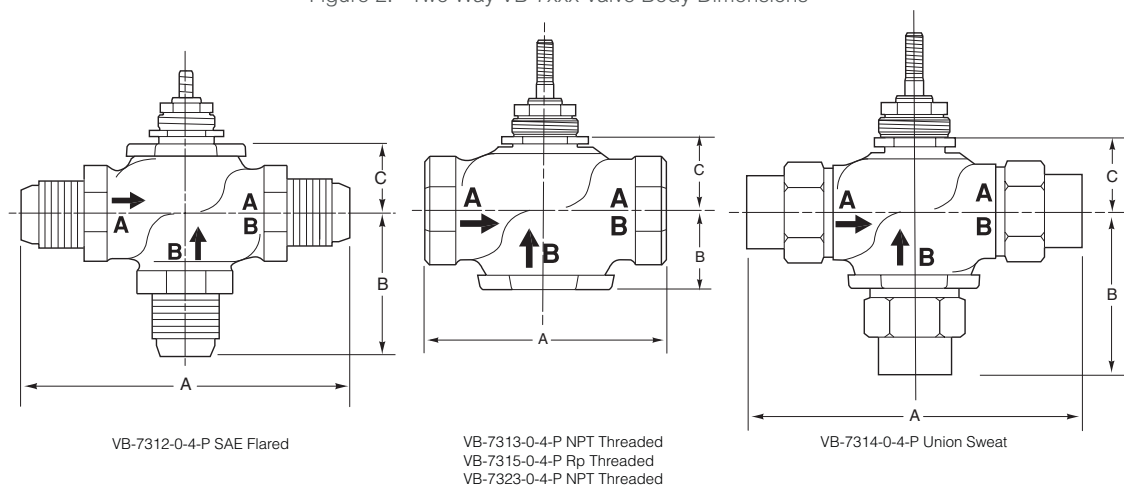
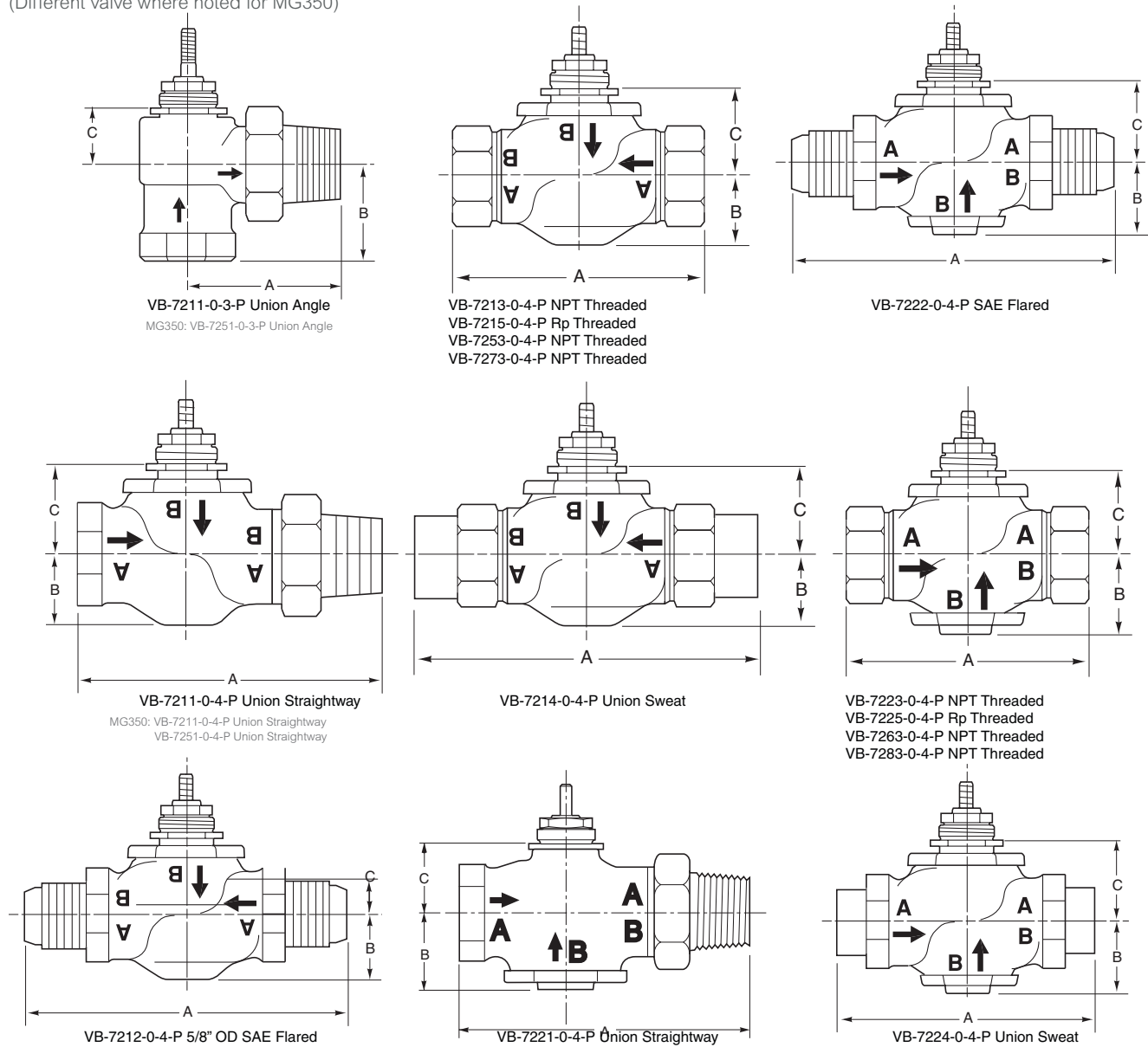


Table 13. Dimensions — Three-Way Valves

Valve Body Part Number	Dimensions in Inches (mm)					
	Size	A	B	C	U-Bolt Style ^a -D	Screw Mount Style ^a -D
VB-7312-0-4-P	5/8" OD	4 (102)	2-1/4 (57)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)
VB-7313-0-4-P VB-7315-0-4-P	1/2" (15 mm)	3-1/16 (76)	1-3/4 (44)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)
	3/4" (20 mm)	3-5/8 (92)	1-13/16 (46)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)
	1 (25 mm)	4-5/8 (118)	1-3/4 (44)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)
	1-1/4 (32 mm)	4-5/8 (118)	1-3/4 (44)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)
	1-1/2 (40 mm)	5-3/8 (137)	1-13/16 (46)	1-9/16 (40)	11-3/32(282)	8-7/32 (209)
	2 (50 mm)	6-1/8 (156)	2-1/4 (57)	1-5/8 (42)	11-5/32 (283)	8-9/32 (210)
VB-7314-0-4-P	1/2 (15 mm)	4-3/16 (106)	2-5/16 (59)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)
	3/4 (20 mm)	5-7/16 (138)	2-5/8 (67)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)
	1 (25 mm)	6-5/8 (168)	3-3/16 (81)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)
	1-1/4 (32 mm)	6-13/16 (173)	3-7/16 (87)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)
	1-1/2 (40 mm)	8-5/16 (211)	3-3/4 (95)	1-9/16 (40)	11-3/32(282)	8-7/32 (209)
	2 (50 mm)	9-3/16 (233)	4-3/16 (106)	1-5/8 (42)	11-5/32 (283)	8-9/32 (210)
VB-7323-0-4-P	1/2 (15 mm)	3-1/16 (76)	1-3/8 (35)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)
	3/4 (20 mm)	3-5/8 (92)	1-11/16 (43)	1-1/8 (29)	10-21/32 (271)	7-25/32 (198)
	1 (25 mm)	4-5/8 (118)	1-9/16 (40)	1-3/16 (30)	10-23/32 (272)	7-27/32 (199)
	1-1/4 (32 mm)	4-5/8 (118)	1-5/8 (41)	1-7/16 (37)	10-31/32 (279)	8-3/32 (206)
	1-1/2 (40 mm)	5-3/8 (137)	1-11/16 (43)	1-9/16 (40)	11-3/32(282)	8-7/32 (209)
	2 (50 mm)	6-1/8 (156)	1-7/8 (48)	1-5/8 (42)	11-5/32 (283)	8-9/32 (210)

a - Assembly height, centerline of valve body to top of actuator (see Figure-1). Leave an additional 3" (76 mm) clearance for cover removal.

