

2-Way Globe Valves, Union End (1/2 to 1-1/4 in.) and Flared (1/2 & 5/8 in. O.D.) with Electric, Hydraulic, and Pneumatic 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 4 also) less Actuator Code (XXX) including the P Code (Size, Cv Rating, Port Code). (Refer to Pages 172 to 179 for Valve Sizing.)

Size		Application			
		Chilled or Hot Water 281°F Max; 35 psig Steam			
Normally Open Valves	Valve Body	1/2 to 1-1/4 in.	1/2 to 1-1/4 in.	1/2 in. O.D., SAE Flare	5/8 in. O.D., SAE Flare
		Valve Assembly 2-Position SPST	VB-7211-0-3-P	VB-7211-0-4-P	VB-121-0-4-P
	Valve Assembly 2 to 15 Vdc Input, 4 to 20 mA	VA-7211-XXX-3-P	VA-7211-XXX-4-P	VA-1219-0-4-P	VA-7212-XXX-4-P
	Valve Assembly Pneumatic	VS-7211-XXX-3-P	VS-7211-XXX-4-P	VS-1219-0-4-P	VS-7212-XXX-4-P
Non-Spring Return (no normal position)	Valve Assembly Floating	VK-7211-XXX-3-P	VK-7211-XXX-4-P	VK-1219-0-4-P	VK-7212-XXX-4-P
	Valve Assembly Proportional 2 to 10 Vdc or 4 to 20 mA	VF-7211-XXX-3-P	VF-7211-XXX-4-P	VF-1219-0-4-P	VF-7212-XXX-4-P
Normally Closed Valves	Valve Body	—	VB-7221-0-4-P	—	VB-7222-0-4-P
	Valve Assembly 2-Position SPST	—	VA-7221-XXX-4-P	—	VA-7222-XXX-4-P
	Valve Assembly 2 to 15 Vdc Input, 4 to 20 mA	—	VS-7221-XXX-4-P	—	VS-7222-XXX-4-P
	Valve Assembly Pneumatic	—	VK-7221-XXX-4-P	—	VK-7222-XXX-4-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).

ORDERING EXAMPLES:

- Valve Assembly . . .
VA-7221-211-4-8
 - Valve Body
VB-7221-0-4-8
Actuator MA -5210
Linkage AV-7600-1
- 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

Material	Flow Type		Equal % (Refer to page 170)			
	Body	Seat	Bronze	Bronze	Brass	Bronze
	Stem	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
	Plug	Brass	Brass	Brass	Brass	Brass
	Packing	Spring Loaded TFE	Spring Loaded TFE	PTFE	PTFE	Spring Loaded TFE
	Disc	Composition	Composition	Composition	Composition	Composition
ANSI Pressure Class ^a (psig) Refer to page 169	250 (up to 400 psig below 150°F)		250			
Maximum Inlet Pressure Steam psig (kPa)	35 (241)		35 (241)			
Allowable Control Media Temp ^b	20 to 281°F (-7 to 138°C)		20 to 281°F (-7 to 138°C)			
Allowable Differential Pressure for Water psig (kPa)	35 psi (241) Max. for normal life (Refer to page 172 for cavitation limits)		35 psi (241) Max. for normal life (Refer to page 172 for cavitation limits)			
Allowable Differential Pressure for Steam	20 psi (138 kPa)		20 psi (138 kPa)			

TO SELECT A PORT CODE (P).

P Code	Valve Size ^a in.	Cv ^c			
		1/2 or 5/8	3/4	1	1-1/4
-1 ^d	1/2 or 5/8	0.4	0.4	0.9	0.4
-2 ^c		1.3	1.3	1.4	1.3
-3 ^c		2.2	2.2	1.9	2.2
-4		5.0	4.4	—	4.4
-5 ^c	3/4	5.5	5.5	—	—
-6		8.5	7.5	—	—
-7 ^c		14	10	—	—
-8 ^c	1	16	14	—	—
-9		22	20	—	—

^a CAUTION: Fittings and/or piping schedules must meet or exceed working static pressure requirements.

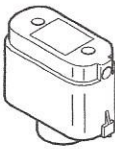
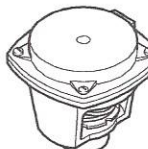

^b CAUTION: Freeze protection required for fluid temperatures below 32°F (0°C). Avoid ice formation on stems. Do not use Hydraulic Actuators with fluid temperatures below 40°F (4°C). Do not use MF-22203 actuator models in chilled water applications.

^c Kvs = Cv X 0.865

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

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TABLE 2. Select **Actuator Type** with correct Input Signal having sufficient close-off for the application. If selecting Component parts, Select **Valve Linkage**

			
Input Signal	Pneumatic		Pneumatic
Valve Linkage	AV-7400		AV-401
Positive Positioner	AK-42309-500		AK-42039-500
Actuator Type	MK-2690		MK-4601 MK-4611 MK-4621
Actuator Code	201	202	203
Spring Range (psig)	3 to 7	5 to 10	8 to 13

ACTUATOR CLOSE-OFF PRESSURE RATING (psi) ^{b c}																		
N.P.	Factory Available Valve Assemblies ^d	Valve Body	P Code	Size in.	Supply Air Pressure (psig)												—	
					15	20	15	20	15	20	15	20	15	20	15	20	15	20
N.O.	VA-7211-XXX-3-P	VB-7211-0-3-P	-1-2-3-4	1/2	130	220	60	170	—	90	250	250	—	—	10	200	130	—
	VF-7211-2XX-3-P		-5-6	3/4	80	130	40	120	—	60	180	250	—	—	—	120	80	—
	VK-7211-XXX-3-P		-7-8	1	35	70	—	50	—	25	90	150	—	—	—	65	40	—
	VS-7211-XXX-3-P		-9	1-1/4	20	40	—	30	—	15	50	90	—	—	—	40	25	—
	VA-7211-XXX-4-P	VB-7211-0-4-P	-1-2-3-4	1/2 [5/8] ^e	130	220	60	170	—	90	250	250	120	250	10	200	130	—
	VF-7211-2XX-4-P		-5-6	3/4	80	130	40	120	—	60	180	250	80	180	—	120	80	—
	VK-7211-XXX-4-P		-7-8	1	35	70	15	50	—	25	90	150	35	100	—	65	40	—
	VS-7211-XXX-4-P		-9	1-1/4	20	40	8	30	—	15	50	90	20	60	—	40	25	—
N.C.	VA-7221-XXX-4-P	VB-7221-0-4-P	-1-2-3-4	1/2 [5/8] ^e	—	—	50	130	30	100	250	200	130	—	—	—	—	
	VF-7221-2XX-4-P		-5-6	3/4	—	—	30	60	20	70	160	130	80	—	—	—	—	
	VK-7221-XXX-4-P		-7-8	1	—	—	9	30	5	30	60	50	40	—	—	—	—	
	VS-7221-XXX-4-P		-9	1-1/4	—	—	—	15	—	15	40	35	25	—	—	—	—	
N.O.	VA-1219-XXX-4-P	VB-121-0-4-P	-1, -2, -3	1/2	190	250	90	220	—	160	250	250	180	250	40	250	125	—
	VF-1219-XXX-4-P																	
	VK-1219-XXX-4-P																	
	VS-1219-XXX-4-P																	

^a MF-5X1X, MP-541X, MP-551X MPR-561X, use AV-7600-1 and AV-601.

^b Close-off rated for ANSI IV (.01%) with pressure at inlet (port A). Ratings for normally open valves are with indicated supply air pressure applied to actuator. Ratings for normally closed valves are with 1 psi or less applied to actuator (for kPa multiply by 6.89). See "Valve General Information" section for seat leakage ratings.

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

^d Consult price guide for factory available valve assemblies.

^e 5/8 O.D. SAE 45° fittings on VB-7212 and VB-7222 valves.