SIEMENS

Technical Instructions

Document No. 155-116A

June 14, 2012

VMP42 Two-Way and 3-Way Valves

Description

The VMP Two-way and Three-way Valves are designed to control water and glycol solutions. By removing the cap from the bottom by-pass port (B), this valve assembly is converted to a three-way valve.

Features

- Stainless steel plug and stem
- No tools are required to assemble the actuator to the valve.
- Valve is shipped with a plastic cap which allows manual positioning to 80% of stroke.

Application

The VMP is used in HVAC installations for the control of the water side of terminal units such as induction units, fan coil units, and small reheat coils. It is suitable for use in two-pipe or 3-pipe systems.

Product Numbers

Table 1.

Line Size in Inches (mm)	Cv (Kvs)	Product Number	Max ΔP* psig (kPa)	External Thread on Valve Body
1/2 (15)	0.29 (0.25)	VMP42.09(2)	58 (400)	1/2" NPT
	0.47 (0.4)	VMP42.10(2)		
	0.74 (0.63)	VMP42.11(2)		
	1.17 (1.0)	VMP42.12(2)		
3/4 (20)	1.87 (1.6)	VMP42.13(2)		3/4" NPT
	2.92 (2.5)	VMP42.14(2)		

* Max. ΔP = Maximum recommended differential pressure for modulating service.

Table 2. Maximum Water Capacity – U.S. Gallons per Minute.

Product Number	Pressure Differential psi											
	Cv1	2	4	6	8	10	15	20	25	30	40	50
VMP42.09(2)	0.29	0.41	0.58	0.71	0.82	0.92	1.12	1.30	1.45	1.59	1.83	2.05
VMP42.10(2)	0.47	0.66	0.94	1.15	1.33	1.49	1.82	2.10	2.35	2.57	2.97	3.32
VMP42.11(2)	0.74	1.05	1.48	1.81	2.09	2.34	2.87	3.31	3.70	4.05	4.68	5.23
VMP42.12(2)	1.17	1.65	2.34	2.87	3.31	3.70	4.53	5.23	5.85	6.41	7.40	8.27
VMP42.13(2)	1.87	2.64	3.74	4.58	5.29	5.91	7.24	8.36	9.35	10.24	11.83	13.22
VMP42.14(2)	2.93	4.14	5.86	7.18	8.29	9.27	11.35	13.10	14.65	16.05	18.53	20.72

Warning/Caution Notations

WARNING:		Personal injury/loss of life may occur if a procedure is not performed as specified.
CAUTION:		Equipment damage may occur if the user does not follow procedure as specified.

Specifications

Valve Body	Body Style	Globe, screwed
	Line size/Capacity	See Tables 1 and 2
	Medium	Water, glycol to 50%
	Body	Bronze
	Trim	Stainless Steel
	Body rating	ANSI Class 250 (PN 16)
	Packing	Double O-ring
	Medium temperature	41°F to 230°F (5°C to 110°C)
	Rangeability	
	1/2-inch	50:1
	3/4-inch	100:1
	Flow characteristics	
	Equal percentage	A to AB
	Linear	B to AB
	Leakage rate	
	A to AB	0.02% of C_V
	B to AB	0.2% of C_V
	Maximum inlet pressure	232 psig (1600 kPa)
	Maximum pressure differential for modulating service	58 psig (400 kPa)
	Dimensions	See Figure 3.
	Shipping weight	
	1/2"	1 lb (0.45 kg)
	3/4"	1.2 lbs (0.55 kg)

Applications

Arrow on valve indicates the direction of flow. Direction of flow is always from A to AB.

Two-port Valves

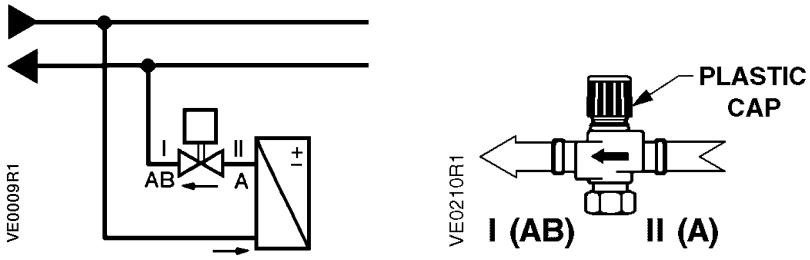


Figure 1. Direction of Flow with Two-port Valves.

Three-port Valves

These valves must always be used as mixing valves. The arrow on the valve indicates the direction of flow. Direction of flow is from A and B to AB.

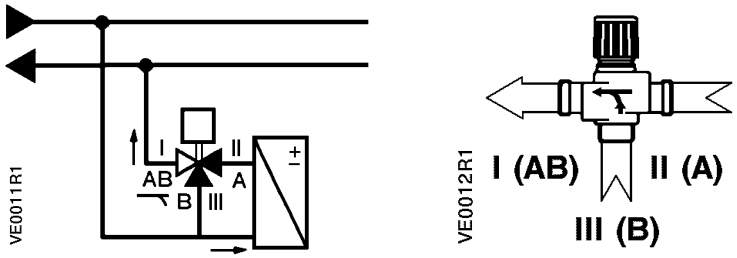


Figure 2. Direction of Flow with Three-port Valves.

Installation

- Valve assembly should be mounted in the return.
- Match the direction of flow with the symbol cast on the valve body.

CAUTION:

Before start-up and troubleshooting the valve, ensure that the piping system is free of dirt and foreign particles.

The lower the C_V, the greater probability of valve performance problems due to suspended solids in the piping system.

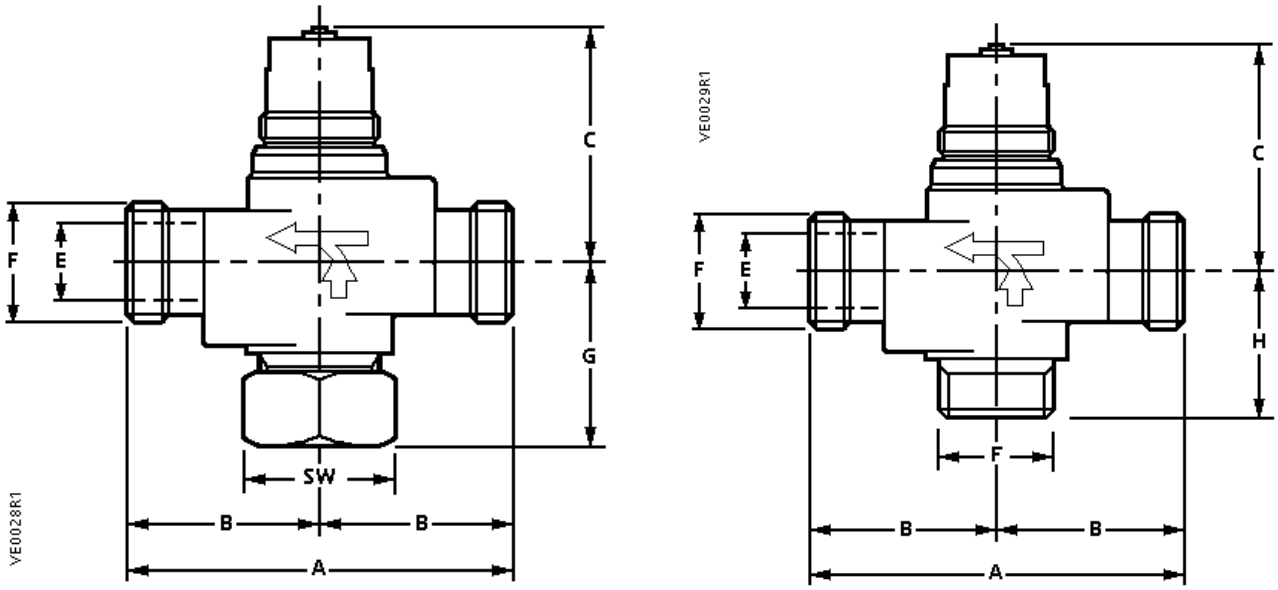
Strainer guidelines:

- 80 mesh for C_V 0.47 and smaller
- 40 mesh for C_V 0.63 and larger

Service

If inoperative, replace the unit.

Dimensions



Valve Size	A	B	C	E	F	G	SW	H
1/2 (15)	3-5/16 (84)	1-11/16 (42)	1-7/8 (47)	7/16 (11.5)	1/2" NPT	1-11/16 (16)	15/16 (24)	1-3/8 (35)
3/4 (20)	4 (101)	2 (51)	2 (51)	11/16 (17)	3/4" NPT	1-7/8 (48)	1-3/16 (30)	1-5/8 (41)

Figure 3. Dimensions in Inches (Millimeters).

Siemens Industry, Inc.
Building Technologies Division
1000 Deerfield Parkway
Buffalo Grove, IL 60089
USA
+ 1 847-215-1000