V5011N, V5013N Two-Way and Three-Way NPT Threaded Globe Valves

INSTALLATION INSTRUCTIONS

DESCRIPTION

V5011N valves are single-seated, two-way, straight-through valves that provide control of steam, glycol solutions (up to 50 percent concentration) and hot or chilled water in HVAC systems requiring tight shutoff. V5013N valves are three-way mixing valves that provide proportional control of glycol solutions (up to 50 percent concentration) and hot or chilled water in HVAC systems. V5013N valves direct the flow from one of two inlets to a common outlet (mixing).

V5011N and V5013N are suitable for actuation with pneumatic actuators such as MP953; for actuation with electric operators such as Modutrol IV Motors when used with Q5001 linkage; for electric actuation using valve direct coupled actuators such as ML6874, ML7984, ML6421, ML7421, ML6425, and ML7425. Refer to actuator specifications to determine dimensional, wiring and mounting requirements for a particular actuator. Table 1 shows available size and flow capacities for the valves. The stroke for both valves is 3/4 in. (20 mm).

Table 1. V5011N and V5013N Size and Flow Capacities.

Valve Size (in.)	V5011N (C_V)	V5013N (C_V)
1/2—DN15	0.73	—
1/2—DN15	1.16	—
1/2—DN15	1.85	—
1/2—DN15	2.9	2.9
1/2—DN15	4.7	4.7
3/4—DN20	7.3	7.3
1—DN25	11.7	11.7
1-1/4—DN32	18.7	18.7
1-1/2—DN40	29.3	29.3
2—DN50	46.8	46.8

INSTALLATION

When Installing this Product . . .

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given on the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a train, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

IMPORTANT

1. *Do not lift the valve by holding the stem.*
2. *Mount the valve body with the stem upright to 90 degrees from vertical. Do not mount the valve with the stem pointed lower than horizontal.*
3. *Mount the valve with the flow arrow pointed in the direction of flow through the valve.*
4. *Mount the valve between pipes which are in line. Mounting the valve on pipes that are not aligned causes leakage at the valve to pipe connection.*
5. *Ensure complete engagement on pipe to valve body threads.*
6. *Hold the valve body with a clamp or pipe wrench on the hexagonal fitting nearest the pipe to prevent damage to the valve body while mounting on the pipe. Refer to Fig. 1.*
7. *Be sure to allow enough room for installation and service. Clearance for installation of the valve is dependent on the size of the actuator and the pipe size of the valve.*

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Location

Select a location where the valve, linkage (if used), and actuator to be used are within the appropriate ambient pressure and temperature ratings.

Leave sufficient clearance above the valve to accommodate installation of the actuator and allow room for servicing the valve body. (The valve body should be completely installed in the pipe line before the actuator and linkage are installed.)

When selecting a location for the valve, consider actuator mounting restrictions. Most Modutrol IV Motors require that shafts be mounted horizontally.

Mounting

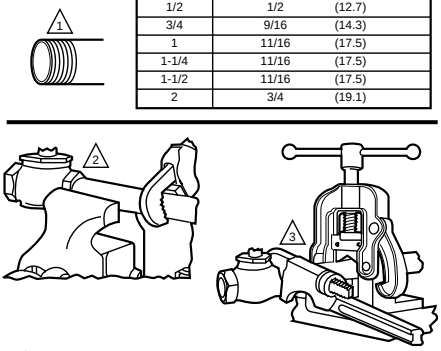
The preferred mounting position of the valve is with the stem vertical. For steam applications, mount with the stem at a 45 degree angle. Do not mount the valve with the stem more than 90 degrees from the vertical (pointing lower than horizontal). Scale and foreign material can collect and can score the stem and cause packing leakage. Protect the stem from damage due to bending or scratching.

V5011N, V5013N screwed body threads conform to American Standard Taper Pipe Threads (NPT).

Align the pipes squarely with the valve at each end connection. If the pipes are forced into the valve, the body can become twisted and improper seating can result. Apply pipe dope sparingly. Be careful to prevent pipe debris such as pipe chips, scale, etc., from entering the piping because this material can lodge in the seat and prevent proper closing.

Refer to Fig. 1 for valve pipe sizes and thread lengths. Fig. 1 also shows two effective methods of holding the valve and pipe when attaching it. The valve will not function properly if twisted or squeezed during installation.

PIPE SIZE (IN.)	EFFECTIVE LENGTH OF THREADS IN IN. (MM)	
1/2	1/2	(12.7)
3/4	9/16	(14.3)
1	11/16	(17.5)
1-1/4	11/16	(17.5)
1-1/2	11/16	(17.5)
2	3/4	(19.1)



1 USE PROPERLY REAMED AND CLEANED PIPE AND MODERATE AMOUNT OF DOPE (LEAVE TWO THREADS BARE).

2 USE VISE GRIPS WITH THE HEX END NEXT TO THE PIPE (DO NOT TWIST OR SQUEEZE VALVE BODY).

3 USE VISE TO HOLD PIPE SECURELY TO PREVENT TURNING. USE PARALLEL-JAW WRENCH TO GRIP VALVE HEX FLATS NEXT TO PIPE.

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Fig. 1. Installing valve with threaded connections.

CHECKOUT

Before installing linkage (if used) and actuator, make sure that valve stem operates freely. Impaired stem operation can indicate that the body was twisted or that the stem was bent. Either of these conditions may require valve replacement.

Check valve body and connections for leaks. After installing linkage and actuator, check the operation according to installation information provided with these controls. Operate the system through one complete cycle to be sure the valve controls properly.

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