

VP531A,C Pneumatic Terminal Unit Valves

INSTALLATION INSTRUCTIONS

BEFORE INSTALLATION

The VP531A,C Valve is a single seated, normally-open, straight-through pneumatic valve designed to provide equal percentage flow in terminal units. It is available with NPT threaded or soldered end connections.

The valve should be installed so the stem is anywhere between upright and horizontal. The actuator cannot be lower than the body. The direction of flow must be in the same direction as the arrow on the valve body.

Refer to Fig. 1 for dimensions to determine the amount of space required for proper installation. Be sure to allow enough clearance around the actuator top for servicing the valve after installation.

INSTALLATION

Actuator Spring Selection

Series 2 VP531C Valves are built with a green (2-5 psi) actuator spring. Shipped with the valve is a loose orange (3-10 psi) spring. If desired, you can replace the green spring with the orange. To make this change, you must remove the cover fastener (see Fig. 2).

Before using the orange spring, make sure it can provide adequate close off for the application. Review the close-off ratings in Fig. 5.

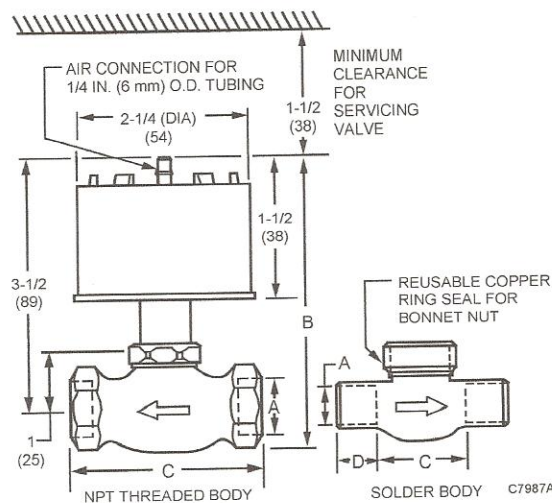
VP531A,C Soldered Body (Fig. 2)

! CAUTION

Soldered Body Valve Damage Hazard.
Connecting the valve without removing the internal assembly can overheat and damage the plug and packing beyond repair. Remove the top and insert assembly before connecting the VP531 soldered body valve.

The valve is shipped with a loose bonnet nut allowing easy removal of the top and insert assembly. Lift the assembly out before soldering the valve into place.

When soldering is completed, replace the top and insert assembly and tighten the bonnet nut firmly enough to compress the copper washer seal (35 to 45 ft-lb torque).



Body Size	A	B	C	D
1/2 in. NPT (1.6 or 2.3 Cv)	1/2 in. pipe	4-1/8 in. (104 mm)	2-9/32 in. (58 mm)	—
3/4 in. NPT (2.6 or 3.3 Cv)	3/4 in. pipe	4-3/16 in. (106 mm)	2-7/16 in. (61 mm)	—
1/2 in. Solder (1.6 Cv)	5/8 in. (16 mm) O.D. copper tubing	4-1/8 in. (104 mm)	1-5/8 in. (41 mm)	1/2 in. (13 mm)
3/4 in. Solder (2.6 or 3.3 Cv)	7/8 in. (22 mm) O.D. copper tubing	4-3/16 in. (106 mm)	1-1/2 in. (38 mm)	3/4 in. (19 mm)

Fig. 1. Approximate dimensions of VP531A,C in in. (mm).

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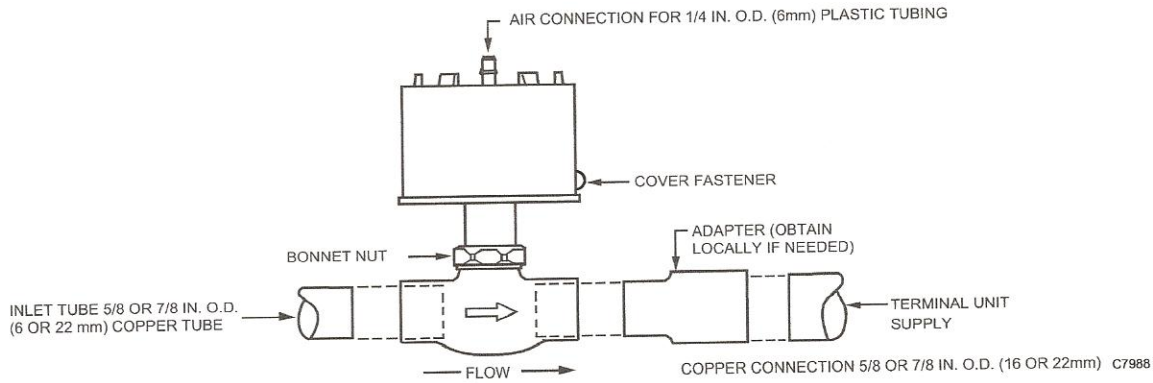


Fig. 2. VP531A,C solder body connection.

VP531A,C NPT Threaded Valve

It may be convenient to remove the top and insert assembly when installing the valve. If so, unscrew the bonnet nut and lift the assembly out. When installation is complete, replace the top and insert assembly and tighten the bonnet nut firmly enough to compress the copper washer seal (35 to 45 ft-lb torque).

When connecting the valve into the system, use pipe dope sparingly and apply to the pipe threads only.

IMPORTANT

Do not allow pipe dope or other foreign material to enter the piping where it could lodge under the valve seat and prevent proper closing of the valve.

Use proper piping methods, when installing the valve to prevent distortion of the valve body. See Fig. 3.

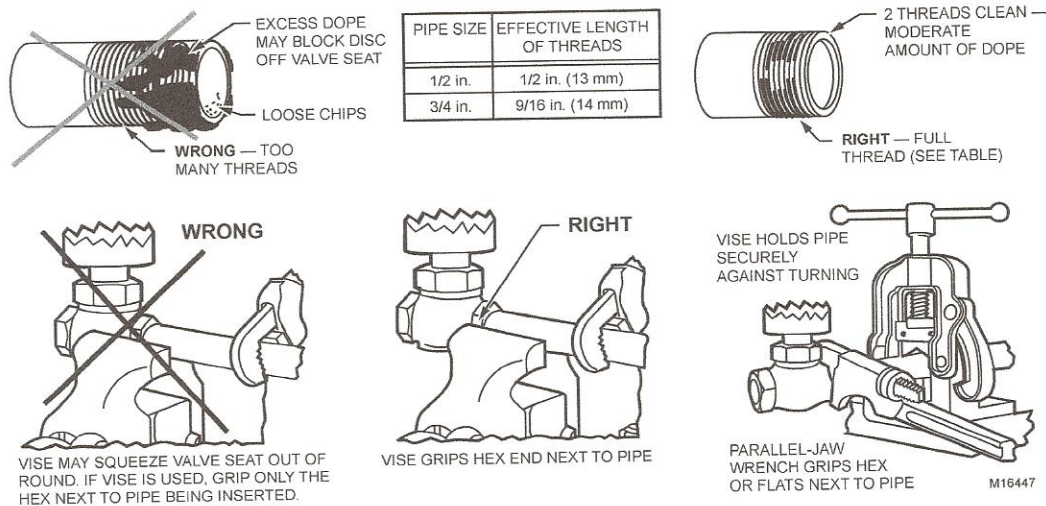


Fig. 3. Proper threaded valve installation practice.

Typical Operation

An increase in control air pressure to the valve acts to move the valve stem downward, toward the closed position, modulating flow through the valve.

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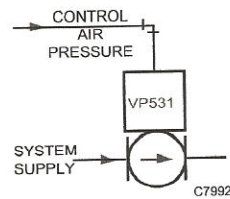


Fig. 4. Typical operation.

SPECIFICATIONS

Body Pressure Rating (maximum): 150 psi (1034 kPa).

Controlled Medium Temperature:

VP531A: 180°F (82°C) maximum.

VP531C: 240°F (116°C) maximum.

Maximum Difference for Alternating Hot and Cold Water:
140°F (78K).

Maximum Safe Air Pressure: 30 psi (207 kPa).

Maximum Pressure Differential (for quiet service and normal life of disc and seat):

Water: 20 psi (138 kPa).

Steam (VP531C only): 10 psi (69 kPa).

Close Off Ratings: See Fig. 5.

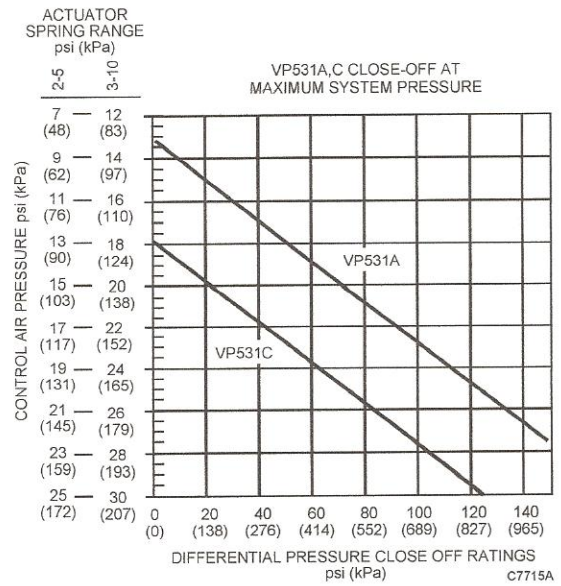


Fig. 5. VP531A,C close off ratings.

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