



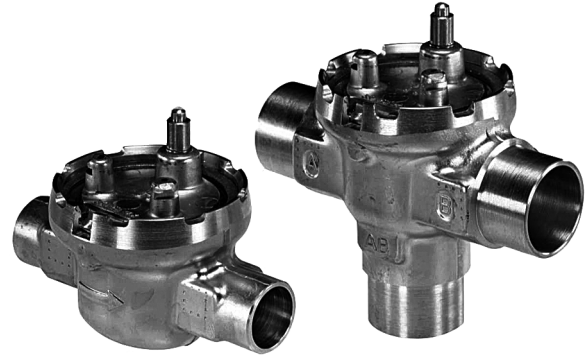
# VU52; VU53; VU54 Fan Coil Valves

## PRODUCT DATA

The VU52, VU53, and VU54 high pressure zone valves are used to control the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils, and convectors.

**IMPORTANT**

*These valves are not for use in systems containing dissolved oxygen.*



## SPECIFICATIONS

**Models:**

- VU52: 2-way, normally open.
- VU53: 2-way, normally closed.
- VU54: 3-way diverting or mixing.

**Maximum Temperature:**

Standard Models (with Class A motor):  
200° F (93° C) fluid @ 125° F (52° C) ambient.

**Minimum Fluid Temperature:** 34° F (1° C) for all models.

**Maximum Operating Pressure Rating:** 300 psi (2000 kPa), PN20.

**Flow Characteristics:** Quick opening for on-off application.

**Material:**

- Valve body: forged brass.
- Drive shaft stem: brass.
- Ball plug: Buna-N rubber.
- O-ring seals: EPDM rubber.

**Service Medium:**

Suitable for hot and chilled water with up to 50% glycol. Not for use with potable water or steam.

**Dimensions:** See Fig. 1.

**Approvals:** CSA C/US Certified.

**Valve Styles, Sizes, Flow Capacity Rating (Cv) & Maximum Close-off Pressure Rating (psi):**

Model	Suffix Type	Pipe Connections		Flow Capacity Rating		Maximum Close-off Pressure			
		End Fittings	Size	Cv	Kv	psi	kPa		
VU52 2-way normally open	N	NPT (internal)	1/2"	1.0	0.9	50	345		
			1/2"	2.3	2.0	30	207		
			1/2"	3.5	3.0	20	138		
	S	Sweat	3/4"	3.5	3.0	20	138		
			3/4"	5.0	4.3	12	83		
			3/4"	8.0	6.8	10	69		
VU53 2-way normally closed	S	Sweat	1"	8.0	6.8	10	69		
			N	NPT (internal)	1/2"	1.5	1.3	28	193
					1/2"	3.0	2.6	28	193
	S	Sweat	1/2"	4.4	3.8	20	138		
			3/4"	7.0	6.0	12	83		
	VU54 3-way diverting mixing	S	Sweat	1"	7.0	6.0	12	83	

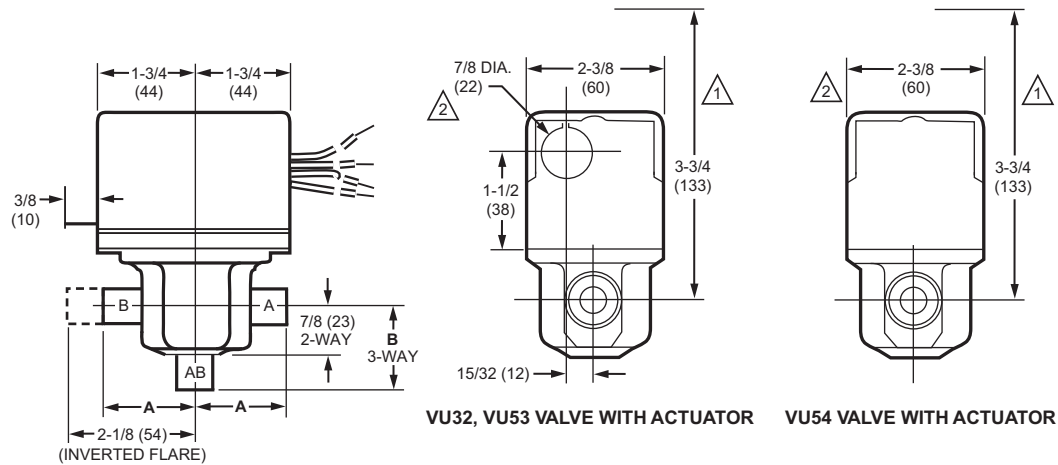
NOTE: Not all body styles are offered for sale in all markets.

**Use VU443/843 actuators ONLY with VU53 2-way valve bodies.** Water hammer may result and actuator life will be shortened if used on VU54 3-way body.

Use VU444/844 on either VU52 or VU54 valve bodies. Close-off pressure ratings will be reduced if used with VU53.



**Dimensions:**



VU53 AND VU54 VALVE DIMENSIONS WITH ACTUATOR

VALVE BODY SIZE	A	B
1/2 IN. SWEAT	1-5/6 (33)	1-5/16 (33)
3/4 IN. SWEAT	1-3/8 (35)	1-11/16 (43)
1 IN. SWEAT	1-11/16 (43)	1-11/16 (43)
1/2 IN. NPT	1-7/8 (47)	1-7/8 (47)
3/4 IN. NPT	1-7/8 (47)	1-7/8 (47)

- 1 HEIGHT NEEDED TO REMOVE ACTUATOR COVER.
- 2 OPENING FOR 1/2 IN. FLEXIBLE CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

M32235

**Fig. 1. Mounting Dimensions in inches (mm).**

# INSTALLATION

## When Installing this Product...

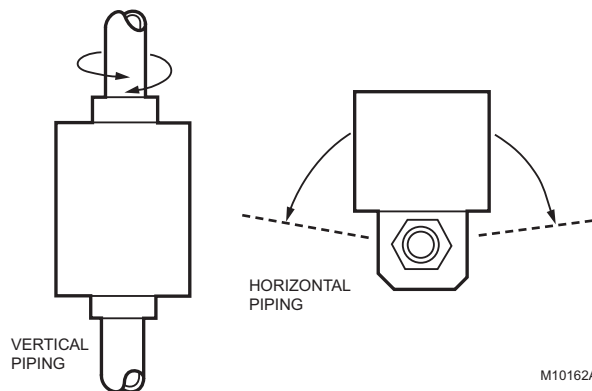
1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.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

## CAUTION

1. Disconnect power supply before connecting wiring to prevent electrical shock or equipment damage.
2. On 24V systems, never jumper the valve coil terminals even temporarily. This can burn out the heat anticipator in the thermostat.
3. **Wear safety glasses to protect eyes from injury when removing or installing the large spring clip that holds the actuator plate to the valve body. Use proper snap ring pliers to remove or install spring clip.**

## Mounting

The valve can be mounted in any position on a vertical line. See Fig. 2. If the valve is mounted horizontally: the actuator must be even with or above the center line of the piping. Make sure to leave enough room above the actuator to remove the actuator or cover for servicing.



**Fig. 2. Mounting positions.**

Mount the valve directly in the tube or pipe. **Make sure that the flow through the valve is in the direction indicated by the arrow stamped on the 2-way valve body.**

On diverting valves, the three fittings or ports are labeled on the bottom of the valve body casting. Port AB is the inlet port and is open at all times. Port A is closed and Port

B is open when the valve is de-energized. Refer to the equipment manufacturer instructions to determine which port (A or B) should be connected to the coil bypass.

## Sweat Copper Models

1. Use new, properly reamed pipe, free from dents or corrosion.
2. Place the valve on the pipe. **Rotate the valve stem** so that the shaft slot points to the notch in the side of the body (90° to flow direction). See Fig. 3. This protects the plug inside the valve by removing it from the seat.
3. Sweat the joints, keeping the outer surface free from solder. **DO NOT use silver solder** because of the high melting temperature required.

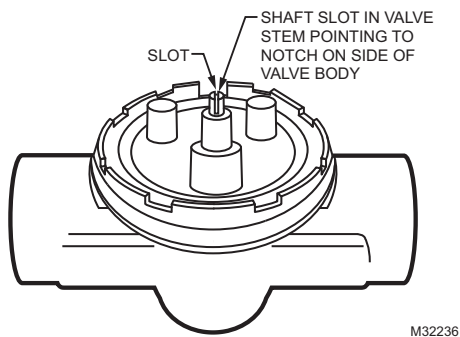


Fig. 3. Slot position.

## CHECKOUT

### Installing Actuator

NOTE: VU-series actuator may be wired either before or after installation on valve body.

1. Rotate valve stem so that shaft slot points to notch on side of valve body, per Fig. 3.
2. Set position lever on VU-series actuator to MAN. OPEN position.
3. Snap actuator onto body.

For instructions for operating the valve actuator, see the Product Data literature provided for the specific actuator.

## SERVICE

This valve should be serviced by a trained, experienced service technician.

1. If the valve is leaking, drain the system and check to see if the O-ring needs replacing.
2. If the gear train is damaged, replace the entire actuator. See the Installation section. If the motor is burned out, replace the motor.
3. **Wear safety glasses to protect eyes from injury when removing or installing the large spring clip that holds the actuator plate to the valve body. Use proper snap ring pliers to removed or install spring clip.**

NOTE: The fan coil valves are designed and tested for silent operation in properly designed and installed systems; however, water noises can occur as a result of excessive water velocity or piping noises can occur in high temperature (higher than 212° F [100° C]) systems with insufficient water pressure. Valves are designed for normal cycling operations. Product life will be shortened if energized continuously or if operated above rated temperatures.

VU52; VU53; VU54 FAN COIL VALVES



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1-800-468-1502  
95C-10884-04 M.S. Rev. 04-20 | Printed in United States

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