Honeywell Home

VC1000, VC6000 Series

REPLACEMENT CARTRIDGES FOR 2-WAY & 3-WAY VC VALVES

INSTALLATION INSTRUCTIONS



These valves are only for use in cold, warm, and hot water applications. They are designed for a medium temperature range from 34 to 203 °F (1 to 95 °C), at a maximum pressure of 300 psig (20 bar). They are to be operated with the appropriate Resideo actuators only. Water must be properly filtered, treated and conditioned according to local conditions.

The presence of suspended particulate(s) in the system, such as detached calcium scale, sand, silt, large quantities of magnetite, etc., can affect operation of the valve. For trouble-free operation of this product, good installation practice should include initial system flushing, chemical water treatment, and the use of a 50 micron (or finer), 10% system side-stream filter(s). Remove all filters before flushing.

If removed cartridges have been jamming due to particulate build-up, Resideo recommends using flush caps, part no. 27286B to flush the system before replacing cartridges.

Put the VC actuator manual lever in the fully up position of the half open (down) position to allow initial system flushing with the actuator mounted. This may be done without electrical hook-up.

Do not use boiler additives, solder flux and wetted materials which are petroleum based or contain mineral oil, hydrocarbons, or ethylene glycol acetate. Compounds which can be used, with minimum 50% water dilution, are diethylene glycol, ethylene glycol, and propylene glycol (antifreeze solutions).

IMPORTANT

The presence of iron oxide (red rust) in the system voids the valve warranty.

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INSTALLATION

⚠ CAUTION

1. Read these instructions carefully. Failure to follow them could damage the product of cause a hazardous condition.
2. Always conduct a thorough checkout when installation is completed.
3. Installer must be a trained and experienced service technician.

⚠ CAUTION

Disconnect power supply before connecting wiring to prevent electrical shock and equipment damage.
On 24V systems, never jumper the valve coil terminals, even temporarily. This may damage the thermostat.

95C-10949-04

To Replace Cartridge

IMPORTANT

Installation of a replacement cartridge requires draining the hydronic system or isolating the valve from the system.

Two-way cartridges fit all two-way bodies. The Cv rating of a valve can be changed by replacing the cartridge, allowing for unique combinations. Three-way cartridges fit all three-way bodies. Cartridges for proportional control applications have high force springs color-coded red.

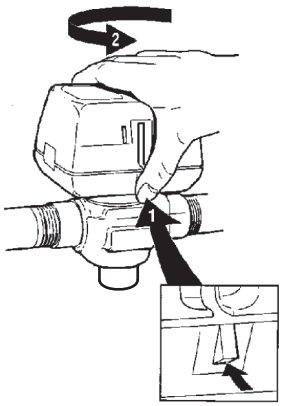


Fig. 1.

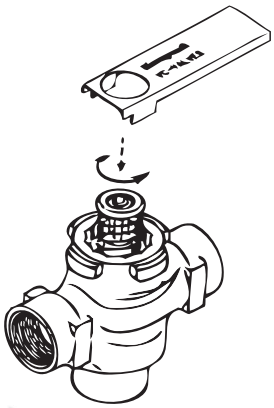


Fig. 2.

1. Check replacement part number for match with the old cartridge assembly for suitability with your valve.

   NOTE: VCZZ1 and VCZZ3 series cartridges are used for 2-way VC valves. VCZZ6 and VCZZ7 series cartridges are used for 3-way VC valves.

2. Disconnect power supply before servicing to avoid electrical shock or equipment damage. On 24V systems, never jumper the valve coil terminals, even temporarily. This may damage the thermostat.
3. Depending on the installation, it may be necessary to disconnect leadwires to valve actuator, or depress tab on Molex™ connector and remove. Where appropriate, label wires for rewiring.
4. Remove valve actuator by pressing up on the latch mechanism located directly below the red manual open lever with thumb (See Fig. 1). Simultaneously press the actuator down towards the valve body with moderate hand force and turn the actuator counter-clockwise by 1/8 turn (45°). Lift actuator off the valve body.
5. To replace a cartridge, isolate flow to the valve using installed shut off valves or other service equipment designed for this purpose. Remove old cartridge with 40007029-002 wrench supplied with the replacement unit (See Fig. 2). It may be necessary to use pliers or other tools to remove the old cartridge due to calcium or dirt buildup in the valve body.
6. Clean the valve surfaces marked * and ** in Fig. 3 to ensure the new cartridge O-rings seal at these points. Use care to avoid damage to these surfaces. (** for 3-way valves only).

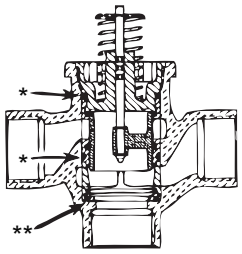


Fig. 3.

7. Thread the prelubricated cartridge assembly by hand into the valve body and tighten it down with the enclosed wrench until it bottoms out. DO NOT OVER TIGHTEN (maximum torque is 40 in-lb [4.5 Nm]). The top surface of the cartridge should be flush with the top edge of the body casting.
8. Replace valve actuator by reversing the process in (4).

   NOTE: The actuator head is automatically latched to the valve.

9. Reconnect leadwires or Molex™ connector if necessary.
10. Refill hydronic system or restore system flow by opening isolating valves.
11. Restore power, and checkout operation of cartridge in valve, making sure of no internal seat leakage or external body leakage.
12. Restore system pressure slowly to the valve to allow any trapped air to escape. Check for leaks. Re-install the actuator.

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Models

40007029-002:
Cartridge installation wrench (included with all VCZZ replacement cartridges)

272866B:
Valve caps for system flushing (10 per pack)

2-way Replacement Cartridges:
VCZZ1000: quick open
VCZZ1100: high Cv, linear flow
VCZZ3100: high Cv, linear flow
VCZZ3400: medium-high Cv, equal percentage flow
VCZZ3500: low Cv, equal percentage flow
VCZZ3600: medium-low Cv, equal percentage flow
VCZZ3800: medium Cv, equal percentage flow

Table 1. VC Series 2-way Valve Body/Cartridge Combinations

2-way Valve Number	Cartridge / Pipe Fitting Sizes [2]	1000	1100 [1]	3100	3400	3500	3600	3800 [5]
		Nominal Cv Rating						
VCZ**AA**	1/2" Sweat	3.5	3.3	3.3	2.3	0.6	1.3	1.9
VCZ**BB**	1/2" NPT (int.)							
VCZ**AL**	3/4" NPT (int.)	6.2	4.7	4.7	3.9			3.2
VCZ**AM**	3/4" Sweat							
VCZ**AR**	1" NPT (int.)	7.0	6.6	6.6	4.2	0.7	1.5	3.5
VCZ**AS**	1" Sweat							
VCZ**BE**	1-1/4" Sweat	8.3	7.0	7.0				
VCZ**BD**	1-1/4" NPT (int.)							
FLOW CHARACTERISTIC		Quick Open	Linear		Equal Percentage			
APPLICATION		2-position		Proportional Control [4]				

[1] "1200" series cartridge has the same Cv/kV rating as "1100" series. Suitable for use in potable water situations.
[2] Models are country specific. Not all models are available in all markets. Cv values in greyed-out boxes are listed for reference only.
[3] A port is 5% higher, and B port is 5% lower in mixing configuration. B port is 5% higher, and A port is 5% lower in diverting configuration.

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3-way Replacement Cartridges
VCZZ6000: quick open
VCZZ6100: high Cv, linear flow
VCZZ7100: high Cv, linear flow
VCZZ7400: medium-high Cv, linear flow
VCZZ7500: low Cv, linear flow
VCZZ7600: medium-low Cv, linear flow
VCZZ7800: medium Cv, linear flow

Table 2. VC Series 3-way Valve Body/Cartridge Combinations

3-way Valve Number	Cartridge / Pipe Fitting Sizes [2]	6000	6100	7100	7400	7500	7600	7800 [5]
		Nominal Cv Rating						
VCZ**MA**	1/2" Sweat	4.2	3.8	3.8	2.7	0.7	1.3	2.2
VCZ**NB**	1/2" NPT (int.)							
VCZ**MK**	3/4" NPT (int.)	8.0	6.6	6.6	4.2			3.4
VCZ**ML**	3/4" Sweat							
VCZ**MR**	1" NPT (int.)	9.0	7.4	7.4	5.2	0.8	1.5	4.2
VCZ**MS**	1" Sweat							
VCZ**NE**	1-1/4" Sweat	9.9	8.3	8.3				
VCZ**ND**	1-1/4" NPT (int.)							
FLOW CHARACTERISTIC		Quick Open	Linear		Equal Percentage			
APPLICATION		2-position		Proportional Control [4]				

[4] Divide Cv value by 0.4 to obtain rangeability.
[5] -800 Cartridge Cv ratings in larger bodies sizes are estimates at time of printing.
[6] O.S. Example: 1/2" 2-way NPT, 3.3Cv, for proportional control is VCZBB body with 3100 cartridge = VCZBB3100.

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Pittway Sarl, Z.A. La Piece 4,
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Country of origin: Hungary
95C-10949—04 M.S. Rev. 06-20 | Printed in United States

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