



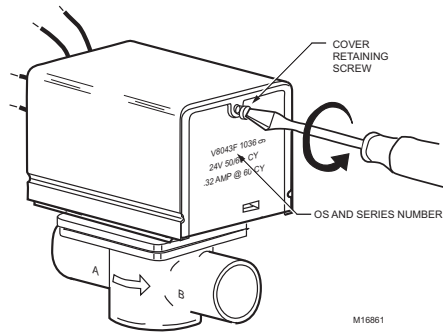
## 40003916 Powerhead

### INSTALLATION INSTRUCTIONS

### APPLICATION

The 40003916 is a replacement powerhead for the V4043, V4044, V8043, and V8044 fan coil and zone valves. See Table 1. The powerhead includes the motor, housing, and 2 mounting screws. Models are available for low or line voltage applications.

This powerhead is for use with new style valve bodies (series 6) or old style valve bodies (series 1-5) that have been converted to accept this powerhead. The new style valve bodies are identified with a sideways number on the powerhead after the OS number and an indent under the OS number on the powerhead. See Fig.1. If using an old style valve, the valve must be converted using Part No. 40003918 (order separately).



**Fig. 1. Sideways number after OS number on powerhead identifies valve series.**

### 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

**Disconnect power supply before connecting wiring to prevent electrical shock or equipment damage.**

#### SYSTEMS WITH OLD STYLE VALVE BODIES (SERIES 1-5)

To install this powerhead in a system with an old style valve body (series 1-5), the valve body must be converted to accept 40003916 Powerhead using Part No. 40003918 Conversion Kit. The kit includes a metal plate with driveshaft and rubber plug, O-ring, and 4 screws.

#### IMPORTANT

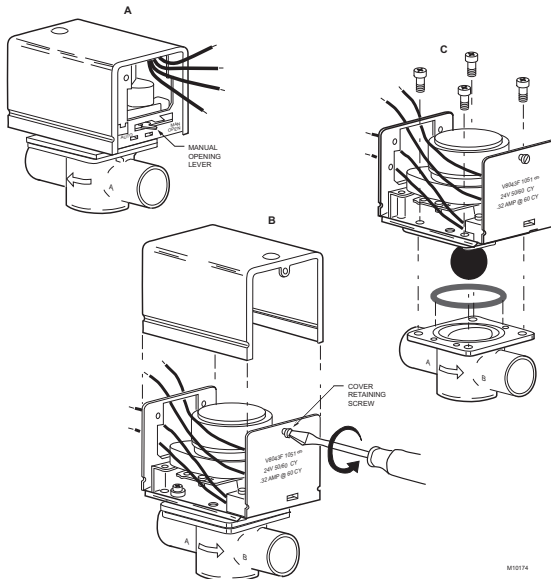
*Converting the valve body for use with the new powerhead does not require removal of the valve body from the pipeline. It is, however, necessary to drain the water from the system before beginning the conversion.*

1. Disconnect power supply before connecting wiring to prevent electrical shock or equipment damage.
2. Disconnect the leadwires to the powerhead at terminal block or conduit connection. Remove conduit or cable connector if fitted. Label each wire for rewiring later.
3. Drain the water from the system.
4. Remove the old powerhead from the valve body. (See Fig. 2.)
  - Place the manual opening lever (normally closed models only) on the old powerhead in the MAN. OPEN position. (Fig. 2A.)
  - Remove the cover. (Fig. 2B.)
  - With the cover off, remove the 4 screws securing the powerhead to the valve body.
  - Lift the powerhead off the valve body. (Fig. 2C.)
  - Remove the O-ring from the top of the valve body.



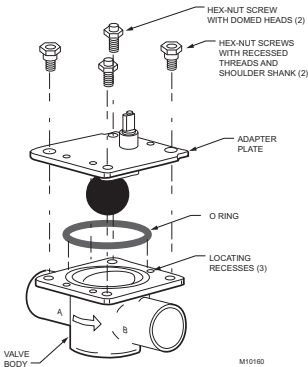
**Table 1. Powerhead Replacements**

Valve Model Number	Replacement Powerhead Part Number		Voltage (Vac) and Frequency (Hz)	Current Draw (A)	Type of Electrical Connections	Comments
	Electrical Connection on Manual Opener End	Electrical Connection Opposite Manual Opener				
V4043A	40003916-024	—	120, 60	0.08	18 in. [457 mm] leads (conduit opening)	Class F
	40003916-022	—	220/50, 240/60	0.04		
	40003916-023	—	240, 50	0.04		
V4043B	40003916-031	—	120, 60	0.08	Terminal Block	Class F, plated
	40003916-029	—	208, 60	0.04		
	40003916-030	—	220/50, 240/60	0.04		
	40003916-028	—	208, 60	0.04		
V4043E	40003916-041	—	120, 60	0.08	Terminal Block	Class F
	40003916-042	—	208, 60	0.04		
V8043A	40003916-021	—	24, 50/60	0.32	Terminal Block	Class A
V8043B	40003916-027	—	24, 50/60	0.32		Class A
V8043E	40003916-026	—	24, 50/60	0.32		Class A
V8043F	40003916-048	—	24, 50/60	0.32		Class A
V8043J (Steam)	—	—	24, 50/60	0.32	18 in. [457 mm] leads (conduit opening)	
V4044A	40003916-047	40003916-036	120, 60	0.08	96 in. [2438 mm] leads (conduit opening)	Class F, plated
	—	40003916-020	120, 60	0.08	72 in. [1829 mm]	
	—	40003916-033	208, 60	0.04	18 in. [457 mm] leads (conduit opening)	
	—	40003916-035	220/50, 240/60	0.04		
	—	40003916-034	240, 50	0.04		
V4044B	40003916-045	40003916-040	120, 60	0.08	18 in. [457 mm] leads (conduit opening)	Class F, plated
	—	40003916-039	220/50, 240/60	0.04		
	—	40003916-038	240, 50	0.04		
V4044C	—	40003916-049	120, 60	0.08	72 in. [1829 mm]	Class F, plated
V8044A	40003916-046	40003916-032	24, 50/60	0.32	18 in. [457 mm] leads (conduit opening)	Class A, plated
V8044B	40003916-044	40003916-037	24, 50/60	0.32		
V8044E	40003916-025	40003916-043	24, 50/60	0.32		
			24, 50/60	0.32		



**Fig. 2. Remove old powerhead from old style valve bodies.**

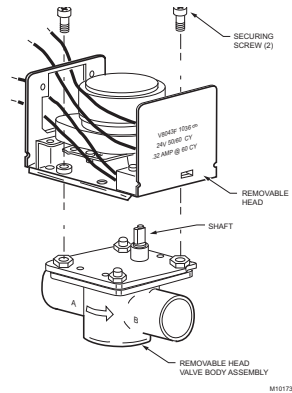
5. Install 40003918 Conversion Kit (See Fig. 3).
  - Insert new O-ring in the valve body.
  - Place metal plate with rubber plug on top of valve body. Make sure the guide pins on the underside of metal plate fit into recesses on valve body.
  - Secure the metal plate to the valve body with the 4 screws (2 sets) provided. One set of screws has heads with recessed threads to insert screws for mounting powerhead; insert this set in the larger screw openings. The other set has domed heads; insert this set in the smaller screw openings. Each set must be inserted in the opposite corners of the metal plate so screws sit flat on the plate. Make sure the guide pins on the plate fit into recesses on valve body.



**Fig. 3. Install 4003918 conversion kit.**

6. Install new powerhead (Fig. 4).
  - Place the manual opening lever (normally closed models only) on the new powerhead in the MAN. OPEN position.
  - Fit the powerhead onto the valve body, ensuring that the shaft seats correctly. The powerhead should be aligned so that the manual opening lever or slot for lever is at the port A end of the valve body.
  - Secure the powerhead to the valve body with the 2 screws provided.

- If fitted, reconnect the conduit or cable.
  - Reconnect the leadwires.
  - Replace powerhead cover.
7. Turn on power.



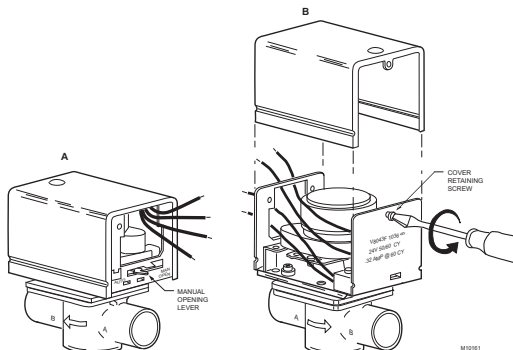
**Fig. 4. Install new powerhead.**

#### Systems with new style valve bodies (Series 6)

#### IMPORTANT

*On a new style valve body or a valve body that has been converted to accept this new powerhead, it is not necessary to drain the system if the valve body remains in the pipeline.*

1. Disconnect power supply before connecting wiring to prevent electrical shock or equipment damage.
2. Disconnect leadwires to powerhead at terminal block or conduit connection. Disconnect conduit or cable connector if fitted. Label each wire for rewiring later.
3. Remove old powerhead (See Fig. 5).
  - Place the manual opening lever (normally closed models only) on the old powerhead in the MAN. OPEN position. (Fig. 5A.)
  - Remove screw securing the cover to the powerhead. Lift powerhead cover off. (Fig. 5B.)
  - Remove the 2 screws securing the powerhead to the valve body. (Fig. 4.)
  - Lift the powerhead off the valve body.



**Fig. 5. Remove old powerhead from new style valve body.**

4. Install the new powerhead (See Fig. 4).
  - Place the manual opening lever (normally closed models only) on the new powerhead in the MAN. OPEN position.
  - Fit the powerhead onto the valve body, ensuring that the shaft seats correctly. The powerhead should be aligned so that the manual opening lever or slot is at the port A end of the valve body.
  - Secure the powerhead to the valve body with the 2 screws provided.
  - If fitted, reconnect the conduit or cable.
  - Reconnect the leadwires to the powerhead.
  - Replace powerhead cover.
5. Turn on power.

NOTE: Inlet Port is stamped "A", Outlet Port is stamped "B" on the valve body.

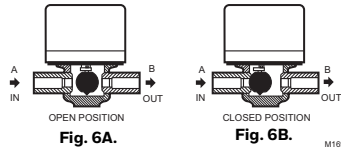


Fig. 6A.

Fig. 6B.

M16955

Fig. 6. Valve.

## OPERATION AND CHECKOUT



### CAUTION

On 24 V systems, never jumper the valve coil terminals even temporarily. This may burn out the heat anticipator in the thermostat.

## Operation

### Normally closed models

With the manual opening lever set to AUTO and the powerhead energized, the valve is opened as shown in Fig. 6A. When the powerhead is de-energized, a spring-return mechanism drives the valve to the closed position as shown in Fig. 6B. The valve can also be opened with no electrical power by moving the manual opening lever over the stop and pushing slowly and firmly to the MAN. OPEN position. The stop permits the valve to be locked in the open position. The valve will return to automatic position when the valve is energized.

Auxiliary switch is not energized when valve is manually opened.

### Normally open models

When the powerhead is de-energized, a spring-return mechanism drives the valve to the open position (Fig. 6A). When energized, the valve is closed as shown in Fig. 6B. A reverse-acting thermostat is required to control a normally open valve.

## Checkout

1. Raise the set point on the zone thermostat above room temperature to initiate a call for heat.
2. Observe all control devices - the valve should open and the auxiliary switch should make the circuit to the circulator or other valve at the end of the opening stroke.
3. Lower the set point on the zone thermostat below room temperature.
4. Observe the control devices. The valve should close and auxiliary devices should stop.

## 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 to be replaced.
2. If the gear train is damaged, replace the entire powerhead assembly. See Installation. If motor is burned out, replace motor. See Replacement Parts list in TRADELINE® Catalog.

NOTE: Resideo zone valves are designed and tested for silent operation in properly designed and installed systems. However, water noises may occur as a result of excessive water velocity. Piping noises may occur in high temperature (over 212° F [100° C]) systems with insufficient water pressure.



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