INSTALLATION INSTRUCTIONS
condensate pump, mounting bracket,
and pump treatment tablets
model PTC/BTC

Accessory Condensate Pump

Accessory Condensate Pump Installed on Unit

WARNING
Gas supply shall be shut-off and the electrical power
disconnected before proceeding with the conversion.
Failure to do so could result in fire, explosion, electrical
shock, or the unit starting suddenly resulting in injury.

CAUTION
This unit has rotating parts and safety precautions must
be exercised during installation, operation, and
maintenance to avoid injury.

IMPORTANT
1. The use of this manual is specifically intended for a
qualified installation and service agency. All installation
and service of these kits must be performed by a
qualified installation and service agency.
2. These instructions must also be used in conjunction
with the Installation and Service Manual originally
shipped with the appliance, in addition to any other
accompanying component supplier literature.

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THIS MANUAL IS THE PROPERTY OF THE OWNER.
PLEASE BE SURE TO LEAVE IT WITH THE OWNER WHEN YOU LEAVE THE JOB.
Condensate Pump Mounting Bracket

The accessory Condensate Pump Mounting Bracket provides a convenient place to mount the accessory Condensate Pump (Item Code 57869) to the bottom of the unit heater for ease of connection of the condensate drain lines and power and control wiring.

Mounting Bracket Assembly

The recommended procedure for assembly of the bracket is described as follows (refer to Figure 2.1):

1. Place the left side panel (①) inside the flange of the bottom panel (④) and secure using three 1/4"-20 x 1/2" machine screws and lock nuts provided, in the bottom three holes.
2. Place the right side panel (②) inside the flange of the bottom panel (④) and secure using three 1/4"-20 x 1/2" machine screws and lock nuts provided, in the bottom three holes.
3. Place the rear panel (③) on the back of the assembly with the flanges overlapping on the outside of the side panels (①, ②) and secure using four 1/4"-20 x 1/2" machine screws and lock nuts provided, two per side.
4. The gaskets (⑤, ⑥) and vibration pad (⑦) will be installed in a later step.

5. The assembled mounting bracket (Figure 2.2) can now be installed on the unit heater. Proceed to the next section for detailed instructions.

Mounting Bracket Installation

The recommended procedure for installation of the assembled bracket is described as follows:

1. The assembled mounting bracket (Figure 2.2) is designed to be suspended from the bottom panel of the unit heater at the rear corner of the unit closest to the heater condensate drain outlet connection, as shown in Figure 2.3.

Figure 2.1 – Mounting Bracket Exploded View

Figure 2.2 – Assembled Mounting Bracket

Figure 2.3 – Bracket Installed on Unit
2. Use the assembled bracket as a template to locate where the mounting holes will need to be drilled on the unit for fastening the bracket.

3. To locate the correct position of the holes, align the mounting flange of the bracket, square with the side edge where the service access panel meets the bottom panel, and also at the inside edge of the unit heater rear panel flange where the flange wraps around the unit heater bottom panel. Refer to Figures 2.3 and 3.1. Transcribe the locations of the center lines of the mounting holes in each of the mounting bracket flanges to the bottom of the unit heater.

**Note:** Do not allow the flange of the mounting bracket to go beyond the side edge of the bottom panel as it may cause interference with the service access door.

Figure 3.1 - Bracket Location as Viewed from Inside Unit

4. Using a 5/16" drill, drill the six holes in the bottom panel of the unit heater at the transcribed locations identified in the previous step.

5. Peel the backing off of the rear and side panel flange gaskets (●,○ in Figure 2.1) and secure the gaskets to the top mounting flanges of the panels.

6. Pierce a hole in the gasket at each of the mounting hole locations in the top flanges of the mounting bracket using an awl or other similar tool.

7. Peel the backing off of the vibration pad (● in Figure 2.1) and adhere the pad to the bottom pan of the bracket assembly.

8. The mounting bracket assembly can now be mounted to the bottom of the unit heater by aligning the holes in the bracket mounting flanges to the holes drilled in the bottom panel of the unit heater in Step 4. Secure the bracket to the bottom of the unit heater with six 1/4"-20 x 1/2" machine screws and lock nuts provided. The screws should be inserted through the bracket and into the bottom of the unit with the nuts located in the unit.

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**Condensate Pump Installation**

The unit heater and vent system require that condensate produced during operation be removed via drain pipe. For cases where the building drain lines are located above the level of the unit heater and vent system drains, a condensate pump is required.

The condensate pump offered by Modine has a built-in tank that collects the water. A float switch activates the pump when condensate fills the tank. When the tank has been emptied, the float switch automatically switches the pump off.

**Figure 3.2 – Accessory Condensate Pump**

Features included with this pump are:
- Rated current draw of 1.9 Amps @ 120V/60Hz.
- 3-prong grounded plug on factory installed power code.
- Flow rate of 1.6GPM at zero head (lift).
- Maximum head of 22 feet.
- A removable check valve for easy cleaning. The check valve prevents water from flowing back into the tank when the pump shuts off.
- Lights that show the pump status (Green=Power On, Yellow=Pump Running, Red=High Water Level Alarm).
- An alarm contact that closes when the water in the tank reaches an overflow condition.
- Stainless steel hanging tabs for easy wall or post mounting. **Note:** This document focuses on pumps installed in the mounting bracket installed in the previous section of this document. For other locations, refer to the manufacturer’s instructions for mounting requirements.
- Four inlet holes with reinforced walls offer installation flexibility and durability.
- A polyethylene float for chemical resistance and long life.
- Internal elastomeric motor mounting and external rubber feet dampen vibration which reduces noise.
- 1/4" quick connect terminals for the built-in overflow switch and alarm. Isolated contacts allow for connection to building automation systems.
- A dispenser for DiversiTech pan tablets.

The recommended procedure for installation of the condensate pump is described on the following page.
The recommended procedure for installation of the condensate pump is described as follows:

1. Installation of wiring must conform with local building codes, or in the absence of local codes of the National Electric Code ANSI/NFPA 70 - Latest Edition. Unit must be electrically grounded in conformance to this code. In Canada, wiring must comply with CSA C22.1, Part 1, Electrical Code.

2. Choose a location this is clean and dry. Do not use this pump in the presence of spraying or standing water as it may cause a shock. This pump is not suitable for use in Class I or Class II (explosive gas or dust locations).

3. Do not cover the pump air vents. The pump is air cooled and may be operated continuously as long as the air vents are not covered.

4. These instructions focus on installation in the mounting bracket covered in the previous section of this document.

5. Carefully open the carton to avoid damage to the pump. Do not use a knife or other sharp object that may damage the pump.

6. Remove the cardboard insert used to protect the float during shipment. Failure to remove the insert will cause the pump to run continuously.

7. Ensure the power supply matches what is shown on the pump nameplate. Source voltages lower than rated supply can reduce performance and cause the pump to overheat. Typically, the pump will be plugged into the convenience outlet located on the back of the unit heater. Refer to Figure 4.1.

8. Place the pump in the mounting bracket mounted on the bottom of the unit heater. Ensure that the pump is level. Note the orientation of the pump when placed in the bracket. The end with the check valve should be the leading end into the bracket. If the check valve is on the same end as the terminal connections, the top deck of the pump is reversible. Rotate top deck so that the check valve is on the opposite end from the wiring terminals. Refer to Figure 4.2 for correct orientation.

9. The condensate drain connections from the unit heater and vent system can now be made to the inlet holes on the pump. The following instructions will detail those connections.

10. There are four inlet holes located in the top deck of the pump. Only two will be used as shown in Figure 4.3. Pop out covers are provided to cover unused inlets. Be sure to cover the unused holes to prevent the pump from collecting debris or insects.

11. PVC pipe may be connected to the pump inlets. Be sure to cut the end at an angle to keep the end of the pipe from being blocked by the tank bottom.

12. Drain traps must be used from both drains prior to entering the pump. Refer to the latest revision of Installation & Service Manual 6-583 for instructions on proper trap construction. See Figure 4.3.
13. For the outlet connection from the pump, connect 3/8" flexible clear vinyl tubing to the barb fitting of the check valve on the pump. Secure with a screw type hose clamp.

14. Route the tubing to the overhead drain connection. Avoid compressing or kinking the tubing. Route the tubing so that it is clear of the unit heater fan, external junction box wiring connections on the back of the heater, vent system, and unit heater side access panel. The tube routing should be the shortest possible distance from the pump to the drain location.

15. The pump overflow safety switch is to be wired to the unit heater 24V gas control circuit to shut the gas controls down if the pump senses an overflow condition. The pump safety switch connections are standard ¼” quick connect terminals located on the top cover (see Figure 5.1). Wiring connections to be made on the pump are two wires to the “Com” and “Run” terminals. The other ends of the wires are to be connected to the unit heater, as described in the next step.

16. On the unit heater control wiring terminal board (see Figure 5.2), a brass jumper bar needs to be removed prior to wiring the switch into the circuit. The terminal board is designed for use with two field wired safety switches, one being an external Safety Overflow Switch and the other is the condensate pump safety switch. If just the condensate pump switch is being used, remove the “T1” to “C” jumper. If the external Safety Overflow Switch is also being used, the other available jumper bar that can be removed is the “C” to “V” jumper bar. Remove the jumper bar by loosening the terminal screws to slide the jumper bar out. Connect the pump switch wires from Step 15 to the terminals from which the jumper bar was removed. Tighten the screws on those terminals.

17. Optional: A remote alarm or trouble light (by others) can be connected to the pump for remote notification of a pump overflow condition. Connection can be made between the “Com” and “Alarm” terminals on the pump. Refer to Figure 5.1.

18. Connect the pump power cord to a properly grounded outlet. The unit heater is supplied with a 115V condensate pump convenience outlet for ease of installation (see Figure 5.2). The pump must be operated by a continuous source of power and must not be connected to switched outlets or other power supplies that may be inadvertently or automatically turned off. All aspects of the installation must conform to requirements of the NEC, and any applicable local codes.

19. The pump features a dispenser which holds DiversiTech pan treatment tablets. The dispenser may be filled with multiple tablets to aid in keeping the pump, tank, and outlet tubing slime free. Refer to Figure 6.2.

20. Refer to page 6 for start-up and maintenance instructions.
Condensate Pump Start-Up
Check the following to ensure proper pump function:

1. Turn the room thermostat down to its lowest setting and turn the unit disconnect switch on the unit junction box to the “Off” position (refer to Figure 5.2). Turn on power to the unit heater. If the pump is plugged into the convenience outlet on the unit, this should automatically apply power to the pump. Verify the pump is powered by observing the green light on the pump. If lit, the pump is powered. See Figure 6.1 for light location on the pump.

2. Test the float and safety switch by filling the tank with water through one of the unused inlet holes. It may be easiest to do this by using a funnel and flexible tubing. As the pump is filled, it should start running with the yellow status light illuminated. Continue to fill the pump until the red light is illuminated.

3. Test the safety switch operation with the unit running by turning the thermostat up to its highest setting and then turning the unit disconnect switch to the “On” position. With a call for heat and the unit on, the gas controls should start.

CAUTION: This unit has rotating parts and safety precautions must be exercised during installation, operation, and maintenance to avoid injury.

Condensate Pump Maintenance
The following should be performed annually, or as required based on operating environment conditions:

1. Always disconnect power before performing maintenance.
2. Unplug the pump from the convenience outlet and remove control wiring to the pump wiring terminals.
3. Disassemble the unions in the drain piping leading to the pump and remove the piping into the pump.
4. Remove the pump discharge tubing from the barbed fitting on the pump check valve.
5. Remove the pump from the bracket for servicing.
6. The pump and deck may be removed from the tank by pushing tabs located on the tank sides away from the deck while lifting on the pump cover.
7. Periodically inspect the pump tank to assure it is free of accumulated dirt or sludge. Do not use solvent cleaners. Clean the tank with soap and warm water only.
8. The check valve may be removed for cleaning or replacement by unscrewing with a 9/16” wrench.
9. Clean inlet and outlet piping of slime and debris.
10. Add DiversiTech pump treatment tablets to the tablet dispenser as shown in Figure 6.2.
11. Reassemble system and check for correct operation by going through the steps in sections “Condensate Pump Installation” and “Condensate Pump Start-Up”.

Figure 6.1 – Pump Status Lights

Yellow Red Green

Figure 6.2 – Pump Pan Treatment Tablet Dispenser
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