



**PENTAIR**

# CONDENSATE NEUTRALIZER KIT FOR USE WITH ETi® 250 HIGH EFFICIENCY HEATER

**⚠ WARNING**

## FOR YOUR SAFETY - READ INSTRUCTIONS BEFORE OPERATING

If you do not follow these instructions exactly, a fire or explosion may result, causing property damage, personal injury or loss of life.

**FOR YOUR SAFETY** - This product must be installed and serviced by authorized personnel, qualified in pool/spa heater installation. Improper installation and/or operation can create carbon monoxide gas, fire or explosion, and flue gases which can cause serious injury, property damage, or death. For indoor installations, as an additional measure of safety, Pentair strongly recommends installation of suitable **Carbon Monoxide detectors** near this appliance and in any adjacent occupied spaces. Improper installation and/or operation will void the warranty.

**⚠ WARNING**

**Risk of damage to appliance. The neutralization kit inlet and discharge must be at a lower elevation than the condensate drain from appliance.**

**Do not allow exhaust flue gases to vent through the neutralization kit. All condensate drains must have a trap to prevent flue gas leakage. Flue gas leakage can cause injury or death from carbon monoxide.**

**Connection to the appliance and neutralization kit must be installed to ensure that no condensate backflow into the appliance can occur.**

**FOR  
YOUR  
SAFETY**

### WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone.  
Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

DO NOT store or use gasoline or other flammable vapors and liquids near this or other appliances.

### Pentair Technical Support

8.00 AM to 8.00 PM (ET) - 8.00 AM to 5.00 PM (PT)

Phone: (800) 831-7133 - [www.pentair.com](http://www.pentair.com)

## Customer Service and Technical Support

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### **THE ETi 250 HEATER MUST BE SERVICED BY A PROFESSIONAL SERVICE TECHNICIAN, QUALIFIED IN POOL HEATER INSTALLATION.**

Pentair strongly recommends that all vents, pipes and exhaust systems be initially and periodically tested for proper operation. This testing can be accomplished by using a hand-held carbon monoxide meter and/or by consulting with a gas professional. Pool and spa heaters must be used in conjunction with carbon monoxide detectors installed near the pool heater. The carbon monoxide detectors must be periodically inspected for proper operation so as to insure continued safety. Broken or malfunctioning carbon monoxide detectors must be replaced immediately.

## **IMPORTANT!**

### **Background on the Pentair ETi® 250 Heater and Condensation**

The Pentair ETi® 250 Heater is a condensing appliance. The heater's flue gases will produce condensate while the heater is in operation and the condensate must be drained correctly. *Note: The condensate pH level is between 3.1 and 4.2. Pentair recommends that the condensate be neutralized to avoid potential damage over time to the drainage system, and to comply with local water authorities where applicable.* To neutralize the condensate, use an optional Condensate Neutralizer Kit (P/N 476375). The condensate drain must be installed so as to prevent accumulation of condensate. When a condensate pump is not used, the tubing must continuously slope downward toward the drain with no spiralling.

### **Operating the Pentair ETi® 250 Heater in Freezing Conditions**

The ETi 250 heater is designed for outdoor operation in non-freezing conditions. When operated during freezing conditions, the condensate may freeze in the condensate drain tubing and/or condensate neutralizer cartridge causing the heater to shut down due to a blocked condensate drain. This will trigger the heater to display ERR CFS (CFS (Condensate Float Switch)). When CFS is displayed on the control panel LCD, the heater will not operate until the blockage in the condensation drain path has been corrected and CFS has been cleared. Also, the heater condensate system components may be damaged by the ice forming on (or inside) the condensate drain line.

### **Reducing the Chance of Frozen Condensate Drain when Operating the Pentair ETi® 250 Heater in Freezing Conditions (Note: Freeze damage is not covered under warranty)**

In order to reduce the chance of blockage in the condensation drain path when the ETi 250 is operated in freezing conditions, **Pentair recommends usage of NVENT RAYCHEM FROSTGUARD heating cables or similar.** They are an easy-to-use, off-the-shelf solution designed to prevent frozen pipes in a wide range of applications. NVENT RAYCHEM FROSTGUARD heating cables or similar are available in various lengths and have a three-prong electrical connection at one end. They are designed to work with plastic pipes. In order to work effectively, the heating cable needs to be attached to the condensate drain tubing and condensate neutralizer, and pipe insulation needs to be placed around the heating cable, condensate drain tubing and the condensate neutralizer **See Figure 1 on page 4.** The thickness of the insulation needed will vary depending on the levels of freezing temperatures that the heater will be exposed to. NVENT RAYCHEM FROSTGUARD heating cables are available from many plumbing supply dealers and distributors. Please follow the instructions provided with the heating cables. Even with heating cables installed on the condensate drain tubing and condensate neutralizer, during periods of freezing weather, Pentair also recommends that the operator periodically check the condensate drain tubing and condensate neutralizer to ensure that ice is not accumulating. Be sure to inspect the condensate drain tubing, condensate neutralizer, and particularly the drain outlet where ice or icicles may form. **Note: Damage to equipment caused by freezing conditions is not covered under warranty.**

# INSTALLATION INSTRUCTIONS

**NOTE: Check with your local water authority for regulations regarding discharge of treated condensate to the drain or sewer system.**

Connection to the appliance and Condensate Neutralization kit (P/N 476375) must be installed to ensure that no condensate backflow into the appliance can occur.

- Connections to the appliance and neutralization kit must be installed to ensure that no condensate backflow can occur
- The capsule inlet has a center connection port and the outlet connection is off center
- Mount the neutralization capsule on the wall or floor securing it with the provided brackets

Mount the capsule in the horizontal position (preferred mounting method) rotate the tube so the outlet is at its highest point. **See Figures 1 and 2 on page 4.**

1. Connect corrosion resistant piping and secure it to the floor to prevent movement. If traffic poses a risk, install some protection to prevent movement and/or damage.
2. Do not route the condensate line through any area that is exposed to freezing temperatures. 3. Mount as per installation diagram. **Note: Any connection supplied with the neutralizing condensate (NC-1S) should be installed after the trap. The NC-1S will raise the pH of the condensate to a more neutral level before it is discharged to drain.**
5. Be sure the condensate flows freely from the appliance drain into the capsule then to the drain. Use pH pool chemistry test strips to check the effectiveness of the neutralizing media. Access to the discharge is necessary for proper maintenance.

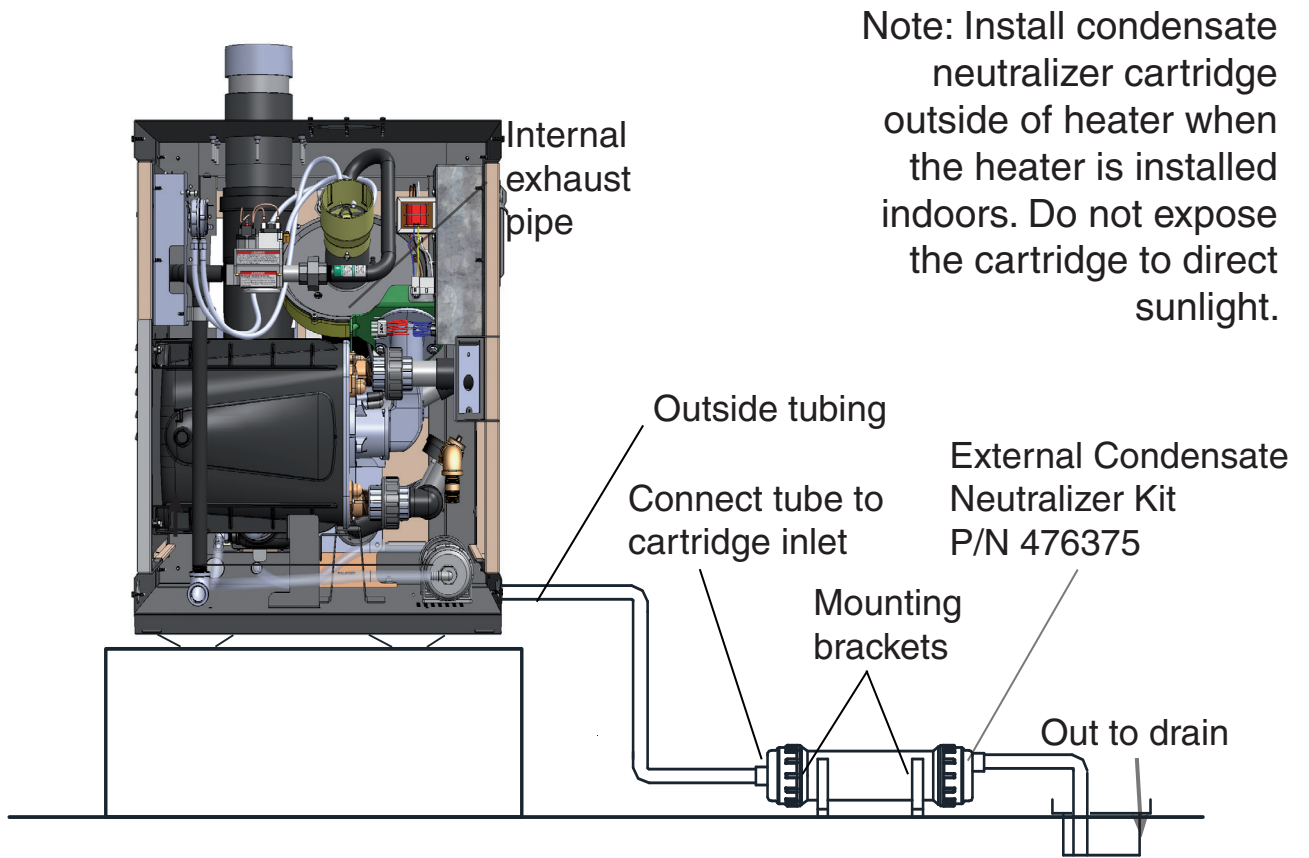
**Note: If there is no gravity drain available, install a condensate removal pump designed for use on condensing boilers and furnaces. The condensate pump must be equipped with an over flow switch to prevent the appliance from running should a failure occur.**

## Operation

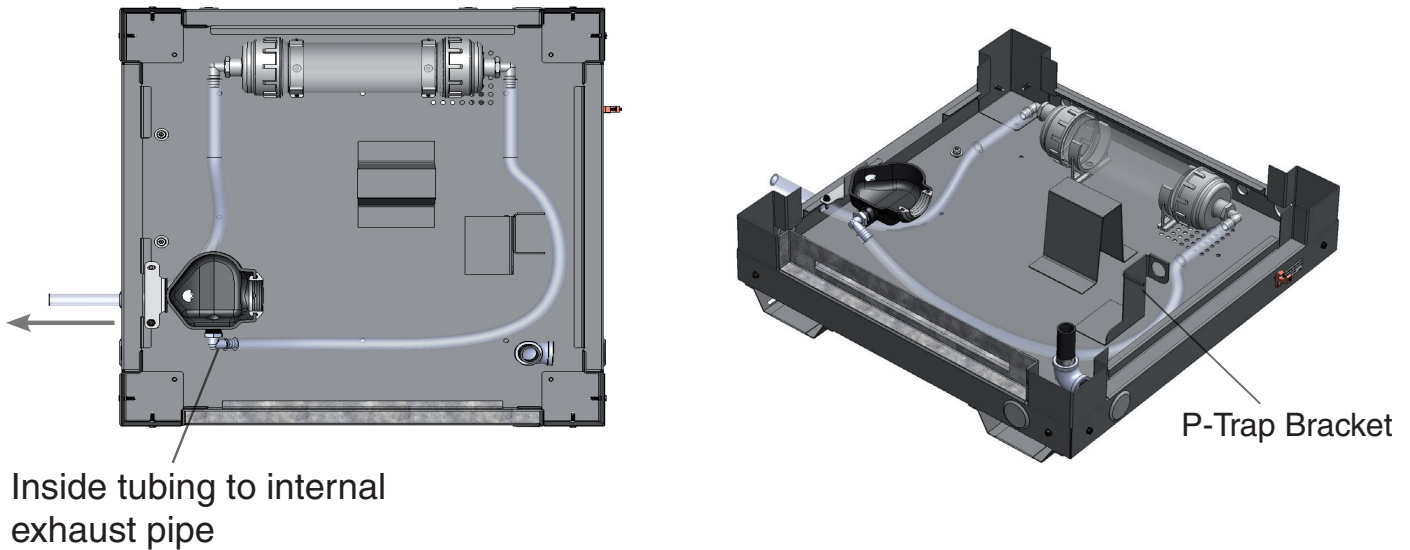
- The appliance condensate will flow through the neutralizing media, raising the pH of the condensate to a level that will help prevent corrosion of the domestic drain and the public sewer system.

## Maintenance

- Monitor the level of the neutralization media in the capsule periodically. Check the pH level at the outlet of the neutralizing kit annually and use a suitable pH test strip paper or an electronic pH meter for precise measurement. The neutralizing media should be replaced when the pH level drops below the minimum level of the local water authority.



**Figure 1.** External Neutralizer Cartridge for indoor heater Installation



**Figure 2.** Internal Neutralizer Cartridge installed on base of heater for outdoor heater Installation

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## Notes

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