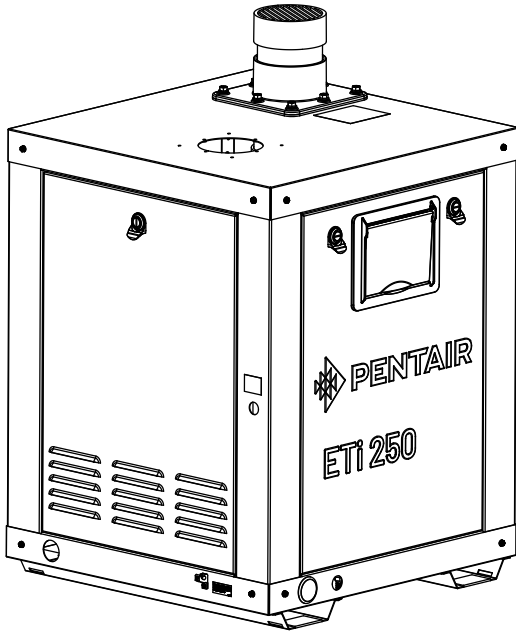




GAS CONTROL VALVE KIT (P/N 462057)

FOR ETi® 250 POOL HEATERS



INSTALLATION GUIDE

**THIS PRODUCT MUST BE INSTALLED
AND SERVICED BY A QUALIFIED SERVICE
PROFESSIONAL!**

READ AND FOLLOW ALL INSTRUCTIONS!

IMPORTANT SAFETY INSTRUCTIONS



IMPORTANT NOTICE - Attention Installer: This Installation Guide ("Guide") contains important information about the installation, operation and safe use of this product. This guide should be given to the owner and/or operator of this heater.

Before installing this product, read and follow all warning notices and instructions in this Guide. Failure to follow warnings and instructions can result in severe injury, death, or property damage.

Call (800) 831-7133, or visit www.pentair.com, for additional free copies of these instructions.

⚠ DANGER

SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS PRODUCT IS NOT INSTALLED AND USED CORRECTLY.

⚠ DANGER

INSTALLERS, POOL OPERATORS AND POOL OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THE HEATER.

⚠ WARNING

Most state and local codes regulate the construction, installation, and operation of public pools and spas, and the construction of residential pools and spas. It is important to comply with these codes, many of which directly regulate the installation and use of this product. Consult your local building and health codes for more information.

IN CANADA: INSTALLATION AND/OR CONVERSION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROVINCIAL AUTHORITIES HAVING JURISDICTION AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL GAS AND PROPANE INSTALLATION CODE CSA B149.1

⚠ WARNING

Failure to follow instructions could result in fire or explosion, which may result in serious injury or property damage.

⚠ WARNING

This kit **MUST** be installed by a qualified service professional in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. The information in this guide must be followed to minimize the risk of fire or explosion and to prevent property damage, personal injury, or death. The qualified service professional is responsible for proper installation of this kit. Installation is not complete until the operation of the heater is checked as directed in this installation guide.

⚠ WARNING

RISK OF FIRE OR EXPLOSION. Do not attempt to operate a heater set up for natural gas on propane gas or vice versa. Only a qualified service professional should attempt to convert the heater from one fuel to the other. Do not attempt to alter the rated input or type of gas by changing the orifice.

Serious malfunction of the burner can occur which may result in loss of life. Any additions or modifications required in order for the heater to satisfactorily meet application needs must be made by a qualified service professional using factory specified and approved parts.

IMPORTANT SAFETY INSTRUCTIONS

⚠️ WARNING Risk of explosion if a unit converted to propane gas is installed in a pit or other low spot. Propane is heavier than air. Do not install the heater using propane in pits or other locations where gas might collect.

Consult your local building code officials to determine heater installation requirements relative to propane storage tanks and filling equipment. In Canada, installation must meet the requirements of the Standard for the Storage and Handling of Liquid Petroleum Gases, CAN/CSA B149.1 (latest edition). In the U.S. installation must meet the requirements of the Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 (latest edition), and National Fuel Gas Code ANSI Z223.1/NFPA 54. Consult local codes and fire protection authorities about specific installation restrictions.

Propane (LPG) fired heaters must not be installed in garages in Massachusetts, by order of the Massachusetts State Fire Marshall. For more information, call the Fire Marshall's office.

CUSTOMER SERVICE / TECHNICAL SUPPORT

Hours: 8:00AM to 7:30PM EST (5:00AM - 4:30PM PST)

Call: (800) 831-7133

Visit: www.pentair.com

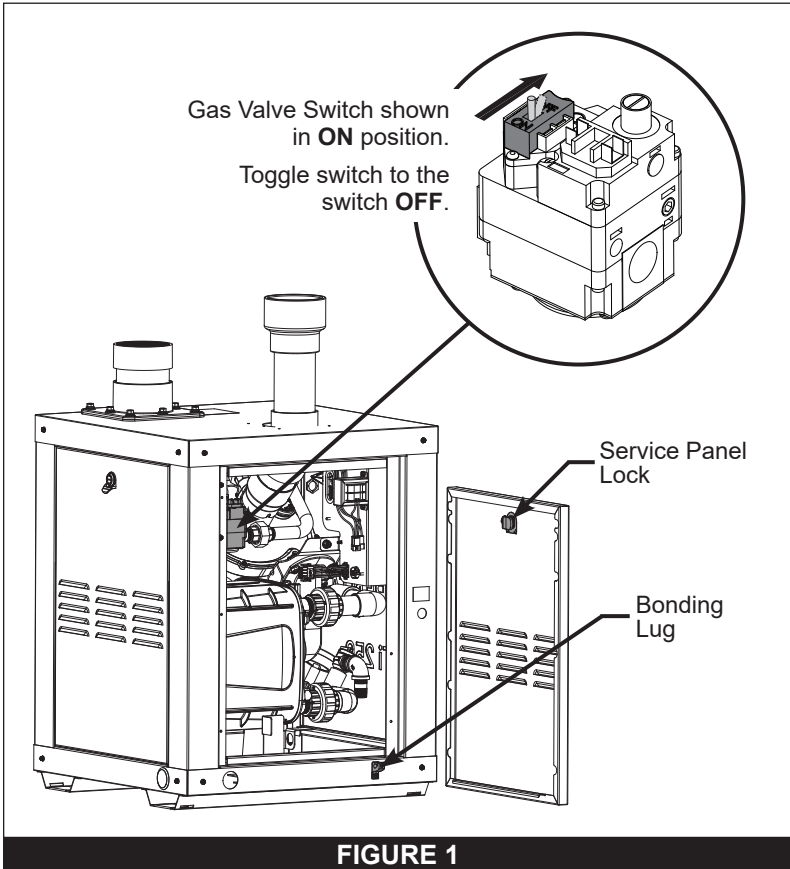
Fax: (800) 284-4151

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REMOVING THE EXISTING GAS VALVE

1. **Before beginning valve removal;**
 - Refer to the *ETi 250 Installation and User's Guide (P/N 476361)* and verify all installation and gas supply requirements were met during unit installation.
 - Close the Supply Line Valve. Refer to **FIGURE 3**, page 5.
 - **Disconnect all power to the heater, filtration pump and any automation systems at the circuit breaker.**
2. Locate the Bonding Lug (**FIGURE 1**) at the bottom of the heater. The Service Panel on this side of the heater will be removed.
3. Using a flat-blade screwdriver, turn the Service Panel Lock (**FIGURE 1**) to unlock the service panel and remove it from the heater.
4. Toggle the heater Gas Valve Switch (**FIGURE 1**) to the **OFF** position.



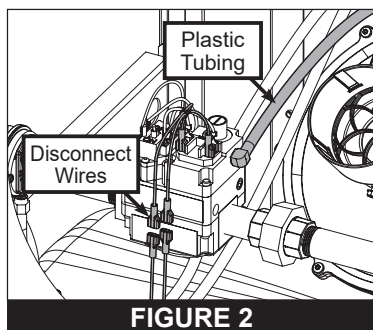
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REMOVING THE EXISTING GAS VALVE (cont.)

- Remove and discard the Plastic Tubing (**FIGURE 2**) running from the Gas Valve to the Air Orifice.

Note: If needed, a heat gun may be used to help remove tubing from the air orifice.

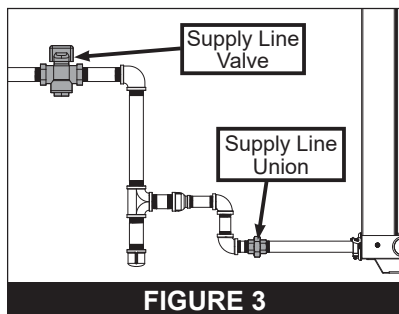
- Disconnect the Yellow and Yellow/White wires at the connectors (**FIGURE 2**).
- Using a pipe wrench or tongue-and-groove pliers, unfasten the Supply Line Union (**FIGURE 3**) between the main supply line and heater.



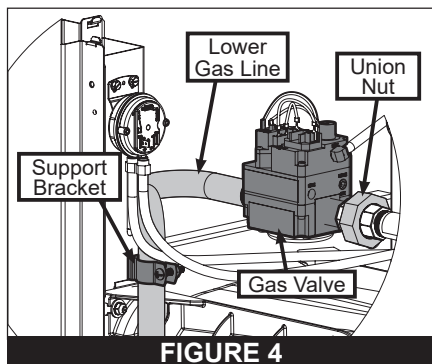
- Locate the elbow joining the Main Supply Line to the heater's Lower Gas Line (**FIGURE 4**).

Note: This elbow will be located in the bottom left corner of the heater.

- Using a pair of pipe wrenches or tongue-and-groove pliers, disconnect the Main Supply Line from the bottom of the elbow.
- Using a Philips-head screwdriver, remove the screw from the lower gas line Support Bracket (**FIGURE 4**) and place it aside.

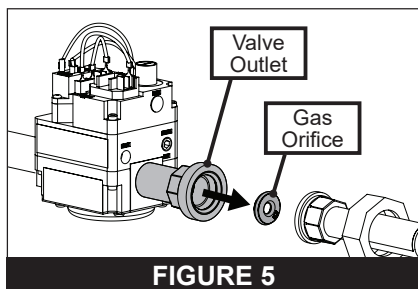


- Using a pipe wrench or tongue-and-groove pliers, unfasten the upper gas line Union Nut (**FIGURE 4**).
- Separate the upper gas line from the gas valve.
- Remove the factory-installed Gas Orifice from the Valve Outlet and place it aside. Refer to **FIGURE 5**.



- Carefully lift the Lower Gas Line and valve assembly out of the heater.
- Using a pair of pipe wrenches or tongue-and-groove pliers, remove the Gas Valve from the Lower Gas Line (**FIGURE 4**).

- Using a pair of pipe wrenches or tongue-and-groove pliers, remove the Valve Outlet (**FIGURE 5**) from the Gas Valve and place it aside.



- Discard the existing Gas Valve.

INSTALLING THE NEW GAS VALVE

⚠ DANGER This gas control valve is **ONLY** intended for use with an Pentair ETi 250 heaters. If this valve is used in any other model of heater, it can create a risk of fire and/or excess of carbon monoxide, which can result in to property damage, personal injury (including brain damage) or death. The release of carbon monoxide is colorless and odorless and may result in serious injury or death.

Kit Contents

- Gas Valve
- Plastic Tubing
- Wiring Harness
- Elbow Fitting
- Label Sheet

Valve Installation

⚠ DANGER Throughout the installation process, apply gas-rated thread sealant to all threaded gas valve and supply line connections. Failure to apply thread sealant could result in a gas leak(s) which can result in personal injury, property damage or death.

1. Locate the labels marked 472579 and 472587 on the provided label sheet and apply them to the back side of the gas valve.
2. Install the provided Elbow Fitting into the Vent Port of the new Gas Valve. Refer to **FIGURE 6**.
3. Using a pair of pipe wrenches or tongue-and-groove pliers, reinstall the Valve Outlet (**FIGURE 5**, page 5) into the Gas Valve.
4. Using a pair of pipe wrenches or tongue-and-groove pliers, reinstall the Lower Gas Line (**FIGURE 7**) into the Gas Valve.
5. Carefully place the Lower Gas Line and valve assembly into the heater.
6. Ensure the elbow at the bottom of the Lower Gas Line is oriented so that the Main Supply Line may be easily reconnected.
7. With the stamped letters "ON" facing outwards, reinsert the Gas Orifice into the Valve Outlet. Refer to **FIGURE 5**, page 5.

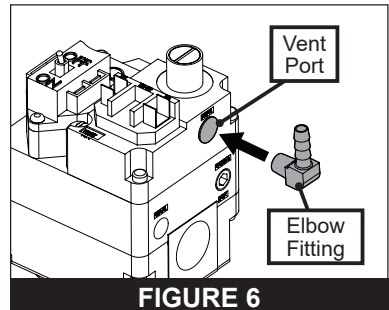


FIGURE 6

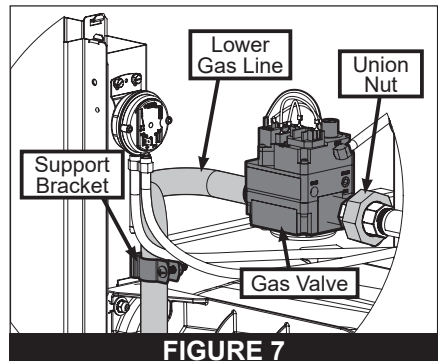


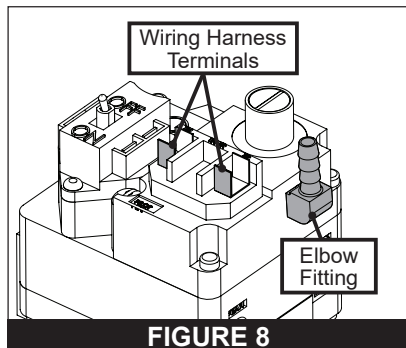
FIGURE 7

Note: Ensure the gas orifice is seated flush inside the control valve outlet.

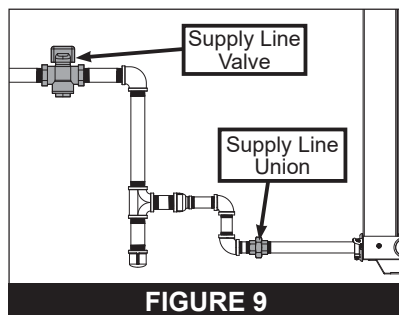
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Valve Installation (cont.)

8. Using a pair of pipe wrenches or tongue-and-groove pliers, thread the upper gas line Union Nut onto the Valve Outlet. Refer to **FIGURE 7**, page 6
9. Connect the white locking connectors of the provided Wire Harness to the Terminals highlighted in **FIGURE 8**.
10. Connect the opposite ends of the Wire Harness to the Yellow and Yellow/White wires previously disconnected.
11. Secure the provided Plastic Tubing to the Elbow Fitting (**FIGURE 8**) and Air Orifice.
12. Using a pair of pipe wrenches or tongue-and-groove pliers, reconnect the Main Supply Line to the elbow at the bottom of the Lower Gas Line.



13. Using a pipe wrench refasten the Supply Line Union (**FIGURE 9**) between the main supply line and heater.
14. Reinsert the Lower Gas Line into the Support Bracket and reinstall the bracket screw. Refer to **FIGURE 7**, page 6.
15. Inspect all union, air line and wiring connections to ensure they are properly tightened and secured.



16. Toggle the heater Gas Control Valve Switch to the ON position. Refer to **FIGURE 1**, page 4.
17. Open the Supply Line Valve. Refer to **FIGURE 9**.
18. Reestablish power to the heater, filtration pump and any automation systems at the circuit breaker.
19. Start the heater at the control panel and check for proper operation.
20. **IMPORTANT! Using a soap/water solution, check for leaks around all gas line connections and unions.**
21. Run the heater for a minimum of 10 minutes, then Insert a combustion analyzer probe into the exhaust and measure CO₂ levels. Ensure flue gas CO₂ level is within the recommended range of 7.8 - 9.2%.
22. Refer to the *ETi 250 Installation and User's Guide (P/N 476361)* for instructions on verifying offset pressure.
23. Reinstall the service panel.

VERIFYING GAS PRESSURE

After installing the gas control valve, verify the gas supply pressure by following the instructions below:

1. Use a 3/16" hex key to remove the plug from the PRESSURE TAP port on the right-side of the Gas Control Valve.
2. Install a 1/8" NPT barbed fitting into the PRESSURE TAP port.
3. Use a flexible tube to connect it to the HIGH side of a differential pressure gauge or slope gauge. This gauge will measure low (outlet) pressure, which requires a high degree of resolution.
4. Open the main supply line valve.
5. Leak-test the heater and all gas connections using a soap/water solution.

⚠ WARNING Risk of fire or explosion. Never test for gas leaks using an open flame.

6. Reestablish power to the heater, filtration pump and any automation systems at the circuit breaker.
7. Start the filtration pump and start the heater at the control panel.

Note: If using a slope gauge, close the gauge's shutoff valve to avoid pulling liquid out of the gauge when the blower activates.
8. After the burner lights, verify the supply pressure is within 4" to 12" wc and there is no more than 2" drop between static (heater off) and dynamic (heater on) pressure.

Note: If supply pressure drops outside of this range when the burner ignites, the gas line capacity may be inadequate and should be increased.
9. With the burner on, disconnect the plastic hose between the gas valve and "VENT" tap and the blower mixer inlet.

The pressure gauge should then read 1.4" \pm 0.1" WC. If the pressure is outside the range listed, call Pentair at 1-800-831-7133. Do not try to adjust the pressure yourself.



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