Feuaue 100112330

Feuaue Milivolt Thermopile Replacement Parts User Manual

Model: 100112330

1. Introduction

This manual provides essential information for the installation, operation, and troubleshooting of the Feuaue Milivolt Thermopile Replacement Part, model 100112330. This component is designed to replace existing thermopiles in compatible water heater pilot assemblies, ensuring proper function of the water heater's gas valve system.
A thermopile is a safety device that generates a small electrical current when heated by the pilot flame. This current signals the gas valve to remain open, allowing gas to flow to the main burner. If the pilot flame extinguishes, the thermopile cools, the current drops, and the gas valve closes, preventing unburned gas from accumulating.

2. Important Safety Information

WARNING: Installation and service of gas appliances should only be performed by a qualified service technician. Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or loss of life.

- Always turn off the gas supply to the water heater before beginning any work.
- Disconnect electrical power to the water heater, if applicable.
- Allow the water heater to cool down before handling any components.
- Wear appropriate personal protective equipment, such as gloves and eye protection.
- Ensure adequate ventilation when working with gas appliances.
- Check for gas leaks after installation using a soap solution, never an open flame.
- Refer to your water heater's specific instruction manual for detailed safety procedures and disassembly/reassembly steps.

3. Compatibility

This thermopile replacement part is compatible with various water heater models. Please verify your water heater's model number against the lists below to ensure proper fit and function.

Compatible for Kenmore Water Heater Pilot Assembly:

153330230, 153330250, 153330270, 153330290
153331150, 153331492, 153331592, 153331620
153331630, 153331640, 153331651, 153331661
153331670, 153331682, 153331830, 153331840
153331851, 153331861, 153331882, 153332421
153336930, 153336931, 153336940, 153336941
153556300, 153556400, 153556500, 153559400
153559500, 153572400, 153572500, 153573400
153576300, 153576310, 153576320, 153576400
153576410, 153576420, 153576500, 153576510
153579400, 153579410, 153579420, 153579500
153579510

Compatible for Whirlpool Water Heater Parts:

N30T61-303, N40T61-403, N40T62-403
N50T61-403, N50T62-403, N50T91-403
N40T61-353, N40S61-403, N40T121-403
40S6-40NG, 40T6-34NG-400
40T10-40NG-400, 50T6-40NG-400

Compatible for American Water Heater Model:

N30S61-303, N30T61-303, N40S61-403
N40T61-343, N40T62-403, N40S91-403
N40T91-403, N40T121-403, N50T61-403
N50T61-504, N50T91-403, N50T122-403
BFG6140T403NO

Compatible for AO Smith Water Heater Thermopile:

GS6-300, GCV-300, GPX-300, GVK-300, XCZ-300
Replaces old A.O.Smith # 6911197/ 9007872005/ 100094024

Compatible for Reliance Water Heater Parts:

630 lort/lors 301, 630 loct/locs 401
640 lort/lors 301, 640 loct/lbcs 401
650 lort 301, 640gort 300
Note: *Not for use on Reliance C3 FAIR and C3 FVIR heater.*

4. Package Contents

The package includes the following items:

- 1x Milivolt Thermopile Assembly Replacement
- 1x Mounting Bracket (as pictured)

Image: The complete Milivolt Thermopile Assembly, including the thermopile probe, wiring, connectors, and a U-shaped metal mounting bracket.

5. Setup and Installation

This section outlines the general steps for replacing a thermopile. Always consult your specific water heater's service manual for detailed instructions and diagrams.

1. **Preparation:**
    - Turn off the gas supply to the water heater at the main gas valve.
    - Turn off the electrical power to the water heater at the circuit breaker, if applicable.
    - Allow the water heater to cool down completely.
    - Locate the pilot assembly access panel, usually at the bottom of the water heater.

2. **Accessing the Pilot Assembly:**
    - Remove the outer and inner access panels to expose the burner and pilot assembly.
    - Carefully observe how the existing thermopile is routed and connected.
3. **Removing the Old Thermopile:**
    - Disconnect the thermopile's electrical connections from the gas control valve. Note their positions.
    - Unscrew or unclip the thermopile from its mounting bracket within the pilot assembly.
    - Carefully remove the old thermopile from the water heater.
4. **Installing the New Thermopile:**
    - Insert the new thermopile probe into the pilot assembly, ensuring it is positioned correctly to be enveloped by the pilot flame.
    - Secure the thermopile with the provided mounting bracket or the existing bracket, if compatible.
    - Connect the thermopile's electrical leads to the appropriate terminals on the gas control valve. Ensure connections are secure and match the original configuration.
5. **Reassembly and Testing:**
    - Replace the inner and outer access panels.
    - Turn on the gas supply to the water heater.
    - Follow your water heater's instructions to relight the pilot.
    - Once the pilot is lit, observe the main burner. If the pilot stays lit and the main burner ignites when hot water is called for, the installation is successful.
    - Check all gas connections for leaks using a non-corrosive soap solution. Apply the solution to connections; bubbles indicate a leak.

Image: Visual representation of the installation process, showing a technician working on the gas control valve and pilot assembly of a water heater. This illustrates the typical location and type of work involved in replacing the thermopile.

Image: A water heater with its lower access panel removed, revealing the pilot assembly area. An inset shows the thermopile replacement part, indicating its intended location within the water heater system.

6. Operating Principles

The thermopile operates on the principle of the Seebeck effect, where a temperature difference across two dissimilar electrical conductors generates a voltage. In a water heater, the pilot flame heats the thermopile, causing it to produce a small millivolt (mV) electrical current (typically around 750mV when sufficiently heated). This current flows to the gas control valve, energizing a solenoid that holds the main gas valve open.
If the pilot flame goes out, the thermopile cools down, and the generated voltage drops. When the voltage falls below a certain threshold, the solenoid in the gas valve de-energizes, closing the main gas valve and shutting off the gas supply to the burner. This is a critical safety feature to prevent gas leaks.
Note: The necessary working temperature for this thermopile to reach 750mV is approximately 1202°F (650°C).

7. Maintenance

Regular maintenance of your water heater's pilot assembly can extend the life of components like the thermopile. While the thermopile itself is a sealed unit and does not require direct maintenance, ensuring a clean pilot environment is crucial.

- **Pilot Flame Inspection:** Periodically check the pilot flame. It should be a strong, steady blue flame that fully envelops the tip of the thermopile. A weak, yellow, or flickering flame may indicate a dirty pilot orifice or insufficient air supply, which can affect thermopile performance.
- **Cleaning:** If the pilot assembly appears dirty or obstructed by dust/debris, carefully clean it using a soft brush or compressed air (with gas supply off). Do not use harsh chemicals.
- **Ventilation:** Ensure the area around the water heater is clear of obstructions and has adequate ventilation to prevent issues with combustion and pilot flame stability.

8. Troubleshooting

If your water heater is experiencing issues related to the pilot assembly, the thermopile may be a contributing factor. Here are common problems and potential solutions:

- **Pilot Light Is Always Off / Does Not Stay Lit:**
  - **Weak Thermopile:** The thermopile may not be generating enough voltage to keep the gas valve open. This is a common sign of a failing thermopile.
  - **Improper Pilot Flame:** The pilot flame might be too small, yellow, or not fully engulfing the thermopile tip. Clean the pilot orifice or adjust the pilot flame if possible (refer to water heater manual).
  - **Loose Connections:** Check that the thermopile connections to the gas control valve are secure and clean.
  - **Faulty Gas Control Valve:** Less common, but the gas control valve itself might be faulty and unable to hold open even with sufficient thermopile voltage.
- **Water Heater Does Not Heat Due to Damaged Thermopile:**
  - If the thermopile is physically damaged (e.g., bent, cracked), it will not function correctly. Replacement is necessary.
- **Intermittent Heating / Improper Ignition / Low Efficiency:**
  - These symptoms can indicate a thermopile that is intermittently failing or not consistently generating enough voltage.
  - Ensure the pilot flame is stable and consistently heating the thermopile. Drafts or obstructions can cause instability.

If troubleshooting steps do not resolve the issue, it is recommended to contact a qualified service technician for diagnosis and repair.

9. Specifications

Product Name	Milivolt Thermopile Replacement Part
Brand	Feuaue
Model Number	100112330
Part Number	100112330
ASIN	B0F1FHTW1M
Required Operating Temperature	Approx. 1202°F (650°C) for 750mV output
Compatibility	Kenmore, Whirlpool, American, AO Smith, Reliance water heaters (refer to Section 3 for specific models)

10. Warranty and Support

This product is an aftermarket replacement part. For specific warranty information or technical support, please refer to the seller or manufacturer, Feuaue, directly. It is recommended to retain your purchase receipt for any warranty claims. Before ordering, please compare the appearance, shape, and size of this product with your original part to ensure compatibility. If you encounter any problems or have questions, please contact the seller for assistance.