

Raypak 006535F

Raypak Flame Sensor 006535F Instruction Manual

For Raypak Hi Delta 302B-902B/992B-2342B Pool/Spa Heaters

1. INTRODUCTION

This instruction manual provides essential information for the proper installation, operation, and maintenance of the Raypak Flame Sensor, model 006535F. This component is designed for use with specific Raypak Hi Delta pool and spa heater models, including 302B-902B and 992B-2342B series. Adherence to these instructions is crucial for ensuring the safety, efficiency, and longevity of your heating system.

The Raypak Flame Sensor is a critical safety device that detects the presence of a flame in the combustion chamber. If a flame is not detected when the burner is active, the sensor signals the control system to shut down the gas supply, preventing the accumulation of unburnt gas.

2. PRODUCT OVERVIEW

The Raypak Flame Sensor 006535F is a replacement part engineered to meet the specifications of compatible Raypak pool and spa heaters. It is identified by Raypak Inc. Part Number 006535F and Catalog Part Number 6239-403.



Figure 1: Main view of the Raypak Flame Sensor 006535F, showing the ceramic insulator, metal bracket, and sensing rod.

3. SETUP AND INSTALLATION

WARNING: Installation should only be performed by a qualified service technician. Improper installation can lead to property damage, serious injury, or death. Always disconnect power to the heater and shut off the gas supply before beginning any installation or maintenance procedures.

This flame sensor is a direct replacement part. Refer to your specific Raypak heater's service manual for detailed, model-specific installation instructions. General steps typically include:

1. **Safety First:** Ensure the heater is completely powered off and the gas supply valve is closed.
2. **Access:** Locate and access the combustion chamber and the existing flame sensor within your heater. This may require removing access panels.
3. **Disconnect:** Carefully disconnect the electrical wiring from the old flame sensor. Note the orientation and connection points.
4. **Remove Old Sensor:** Unfasten and remove the old flame sensor from its mounting bracket.
5. **Install New Sensor:** Mount the new Raypak Flame Sensor 006535F into the bracket, ensuring it is correctly positioned according to the heater's service manual.
6. **Connect Wiring:** Reconnect the electrical wiring to the new flame sensor. Ensure connections are secure and correct.
7. **Verify:** Double-check all connections and ensure the sensor is firmly in place.
8. **Restore Power:** Once installation is complete and all panels are secured, restore the gas supply and electrical power to the heater.
9. **Test Operation:** Initiate a heating cycle to confirm proper operation and flame detection.



Figure 2: Angled view of the flame sensor, highlighting the electrical connector terminal.

4. OPERATING PRINCIPLES

The flame sensor operates automatically as part of the heater's ignition and combustion control system. It does not require manual operation by the user. When the heater attempts to ignite, the control board sends a signal to the igniter and opens the gas valve. As the gas ignites, the flame sensor detects the presence of the flame through a process called flame rectification. This signal confirms to the control board that ignition has occurred and that it is safe to continue the heating cycle. If the flame sensor does not detect a flame within a specified timeframe, or if the flame is lost during operation, the control board will shut down the gas supply to prevent unsafe conditions.

5. MAINTENANCE

Regular inspection and maintenance of the flame sensor are important for reliable heater operation. While the sensor itself is a robust component, its performance can be affected by deposits or damage.

- **Visual Inspection:** Periodically inspect the flame sensor for signs of corrosion, carbon buildup, or physical damage. This should be done by a qualified technician during routine heater servicing.
- **Cleaning:** If carbon or other deposits are present on the sensing rod, they can interfere with its ability to detect flame. The sensor can often be carefully cleaned with fine-grit sandpaper or steel wool to remove deposits. Avoid bending or damaging the rod during cleaning.
- **Replacement:** If the flame sensor is damaged, heavily corroded, or consistently fails to detect flame even after cleaning, it should be replaced with a new Raypak Flame Sensor 006535F.



Figure 3: Close-up view of the flame sensor's metal mounting bracket with screw holes.

6. TROUBLESHOOTING

If your Raypak heater is experiencing ignition issues or displaying error codes related to flame detection, the flame sensor may be a contributing factor. Common symptoms of a faulty or dirty flame sensor include:

- Heater attempts to ignite but fails, then locks out.
- Heater ignites briefly, then extinguishes.
- Specific error codes on the heater's display related to flame loss or ignition failure.

Troubleshooting Steps (for qualified technicians):

1. **Check Connections:** Ensure all electrical connections to the flame sensor are clean, tight, and free from corrosion.
2. **Inspect and Clean:** As described in the Maintenance section, visually inspect and clean the flame sensor rod.
3. **Test Resistance/Current:** A qualified technician can use a multimeter to test the flame sensor's resistance or the microamp current it produces during operation. Refer to the heater's service manual for expected values.
4. **Replace Sensor:** If the sensor is clean, connections are good, and it still fails diagnostic tests, replacement is necessary.



Figure 4: Top-down view of the flame sensor's mounting bracket, showing the central ceramic component.

7. SPECIFICATIONS

Attribute	Detail
Brand	Raypak
Model Number	006535F
Manufacturer Part Number	006535F
Catalog Part Number	6239-403
Product Dimensions (L x W x H)	9.4 x 3.9 x 1.6 inches
Item Weight	16 ounces (1 Pound)
Measuring Range	Off - On (Flame Detection)
Style	Modern



Figure 5: Side view of the flame sensor, showing the full length of the sensing rod and the ceramic insulator.

8. WARRANTY INFORMATION


Specific warranty details for the Raypak Flame Sensor 006535F are typically provided with the original product packaging or can be obtained directly from Raypak or your authorized dealer. Please retain your purchase receipt for warranty claims. Warranty coverage generally applies to manufacturing defects and does not cover damage due to improper installation, misuse, or normal wear and tear.






9. SUPPORT AND CONTACT

For technical assistance, troubleshooting beyond the scope of this manual, or to locate an authorized service technician, please contact Raypak customer support or refer to the contact information provided in your main heater manual. Always provide your heater's model and serial number, along with the flame sensor's part number (006535F), when seeking support.

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Related Documents - 006535F

 The image shows the cover of the 'INSTALLATION & OPERATING INSTRUCTIONS' manual for Raypak Hi Delta heaters. It features the Raypak logo, a photo of a heater unit, and lists model numbers 992B-2342B and Types H, WH, R.P. The cover also includes safety warnings and a table of contents.	<p>Raypak Hi Delta Installation and Operating Instructions</p> <p>Comprehensive installation and operating instructions for Raypak Hi Delta heaters, covering safety, installation codes, component locations, operation, maintenance, and troubleshooting. Includes model numbers 992B-2342B.</p>
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	<p>Raypak Gas-Fired Pool & Spa Heater Installation and Operation Manual (Models 268 & 408)</p> <p>Comprehensive installation, operation, and service manual for Raypak Gas-Fired Pool & Spa Heaters, Atmospheric Models 268 and 408. Covers setup, maintenance, troubleshooting, and safety guidelines for optimal pool and spa heating.</p>
	<p>Raypak Pool Heater Limited Warranty</p> <p>This document outlines the limited warranty provided by Raypak, Inc. for their pool and spa heaters. It details the scope of the warranty, applicable warranty periods for various models, conditions and exclusions, and the process for making a warranty claim. The warranty covers defects in materials and workmanship under normal use and service.</p>
	<p>Raypak Gas-Fired Pool and Spa Heater Installation and Operation Manual (Models 206A, 266A, 336A, 406A)</p> <p>This manual provides detailed instructions for the installation, operation, and maintenance of Raypak atmospheric gas-fired pool and spa heaters, including models 206A, 266A, 336A, and 406A. It covers safety, setup, usage, and troubleshooting.</p>
	<p>Raypak AVIA Gas-Fired Pool and Spa Heater Installation and Operation Manual (Models 264, 404)</p> <p>Comprehensive installation and operation manual for Raypak AVIA gas-fired pool and spa heaters, models 264 and 404. Covers installation, operation, maintenance, troubleshooting, and safety guidelines.</p>
	<p>Raypak AVIA Gas-Fired Pool and Spa Heater Installation & Operation Manual (Models 264, 404)</p> <p>Comprehensive installation and operation manual for the Raypak AVIA gas-fired pool and spa heater, covering models 264 and 404. Includes safety warnings, installation guidelines, operating procedures, maintenance, and troubleshooting.</p>