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## Empire R2890

# Empire R2890 Furnace Pilot Burner Instruction Manual

Genuine Original Equipment Manufacturer (OEM) Part

## 1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of the Empire R2890 Furnace Pilot Burner. This component is a genuine OEM replacement part designed specifically for Empire DV210 and DV215 furnace models. It is intended for use with Propane (LP) gas only. For optimal performance and safety, please read these instructions thoroughly before proceeding with any installation or service.

## 2. IMPORTANT SAFETY INFORMATION

**WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.**

- Always disconnect the electrical power and turn off the gas supply to the furnace before attempting any service or installation.
- Installation and service must be performed by a qualified installer, service agency, or gas supplier.
- This pilot burner is designed for Propane (LP) gas only. Do not attempt to use it with natural gas or any other fuel type.
- Ensure all gas connections are properly sealed and tested for leaks after installation.
- Keep the area around the furnace clear and free from combustible materials, gasoline, and other flammable vapors and liquids.

## 3. PRODUCT OVERVIEW

The Empire R2890 Pilot Burner is a critical component in your furnace's ignition system. It provides a small, continuous flame that ignites the main burner when heat is called for. This specific model is an OEM replacement, ensuring compatibility and reliable performance with Empire DV210 and DV215 furnaces.



**Figure 1:** Empire R2890 Furnace Pilot Burner. This image displays the metallic pilot burner assembly, featuring a brass gas inlet, a mounting bracket, and the pilot flame head with a thermocouple connection point.

## 4. INSTALLATION INSTRUCTIONS

**Professional installation by a qualified technician is strongly recommended for this component.**

- 1. Preparation:** Ensure the furnace's gas supply is turned off and electrical power is disconnected at the circuit breaker or fuse box. Allow the furnace to cool completely if it has been in operation.
- 2. Access:** Carefully remove the furnace access panels to expose the pilot burner assembly. Refer to your specific furnace model's manual for detailed access instructions.
- 3. Disconnect Old Pilot Burner:**
  - Disconnect the thermocouple and pilot gas line from the existing pilot burner.
  - Unscrew or unclip any mounting hardware securing the old pilot burner in place.
  - Carefully remove the old pilot burner assembly.
- 4. Install New Pilot Burner:**

- Position the new Empire R2890 Pilot Burner in the same location as the old unit.
- Secure it using the appropriate mounting hardware. Ensure it is firmly in place and correctly oriented.
- Connect the pilot gas line to the new pilot burner. Use a suitable pipe sealant on threaded connections if required by local codes, ensuring it is gas-rated.
- Connect the thermocouple to the designated port on the pilot burner. Ensure a snug, secure connection.

5. **Leak Test:** After all connections are made, slowly turn on the gas supply. Apply a leak detection solution (e.g., soapy water) to all gas connections. Bubbles indicate a leak. If a leak is detected, turn off the gas supply immediately, tighten the connection, and re-test. Do not proceed until all leaks are eliminated.

6. **Restore Power and Test:** Restore electrical power to the furnace. Follow the furnace manufacturer's instructions for lighting the pilot and testing the main burner operation.

## 5. OPERATION

The R2890 Pilot Burner operates as part of a standing pilot ignition system. Once the pilot light is manually lit (or automatically if your furnace has an auto-ignition feature for the pilot), the flame heats the thermocouple. The thermocouple generates a small electrical current, which signals the gas valve to remain open, allowing gas to flow to the pilot burner. When the thermostat calls for heat, the main gas valve opens, and the pilot flame ignites the main burners.

If the pilot flame goes out, the thermocouple cools, stopping the electrical current and causing the gas valve to close, thus shutting off the gas supply for safety.

## 6. MAINTENANCE

Regular inspection and maintenance of the pilot burner are crucial for safe and efficient furnace operation. It is recommended to have your furnace, including the pilot burner, inspected annually by a qualified technician.

- **Visual Inspection:** Periodically check the pilot flame. It should be a strong, steady blue flame, enveloping the tip of the thermocouple. A weak, yellow, or flickering flame may indicate a problem.
- **Cleaning:** Over time, dust and debris can accumulate around the pilot burner orifice, affecting the flame. With the gas and electrical supply disconnected, carefully clean the pilot burner area using a soft brush or compressed air. Do not use sharp objects to clean the orifice, as this can damage it.
- **Thermocouple Check:** Ensure the thermocouple is securely seated and its tip is properly positioned within the pilot flame. A loose or improperly positioned thermocouple can cause the pilot to go out.

## 7. TROUBLESHOOTING

If you experience issues with your pilot burner, consider the following common problems. Always ensure gas and electrical supplies are off before inspecting components.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Pilot light won't stay lit	<ul style="list-style-type: none"> <li>• Faulty thermocouple</li> <li>• Pilot flame not heating thermocouple</li> <li>• Weak pilot flame</li> <li>• Drafts</li> </ul>	<ul style="list-style-type: none"> <li>• Replace thermocouple</li> <li>• Adjust pilot flame position</li> <li>• Clean pilot orifice</li> <li>• Check for and eliminate drafts</li> </ul>
Pilot light is weak or yellow	<ul style="list-style-type: none"> <li>• Partially clogged pilot orifice</li> <li>• Low gas pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Clean pilot orifice</li> <li>• Contact gas supplier or qualified technician to check gas pressure</li> </ul>
No pilot flame	<ul style="list-style-type: none"> <li>• No gas supply</li> <li>• Clogged pilot orifice</li> <li>• Faulty gas valve</li> </ul>	<ul style="list-style-type: none"> <li>• Check gas supply to furnace</li> <li>• Clean pilot orifice</li> <li>• Contact qualified technician for gas valve inspection</li> </ul>

If troubleshooting steps do not resolve the issue, contact a qualified HVAC technician for further assistance.

## 8. SPECIFICATIONS

- **Model:** R2890
- **Brand:** Empire
- **Fuel Type:** Propane (LP) Only
- **Compatibility:** Empire DV210, DV215 Furnace Models
- **Part Type:** Genuine Original Equipment Manufacturer (OEM) Replacement Part
- **Item Weight:** Approximately 2.71 ounces
- **Package Dimensions:** Approximately 2 x 1 x 0.4 inches

## 9. WARRANTY AND SUPPORT

For specific warranty information regarding your Empire R2890 Pilot Burner, please refer to the documentation provided with your original furnace or contact Empire customer support directly. As an OEM part, it typically falls under the warranty terms of the original appliance or a limited parts warranty.

For technical support or service inquiries, please contact a qualified HVAC professional or the Empire manufacturer's customer service department.

