Goodman 4171485

Goodman 20165703S Hot Surface Ignitor Instruction Manual

Model: 4171485 | Brand: Goodman

1. Product Overview

This document provides essential information for the installation, operation, and maintenance of the Goodman 20165703S Hot Surface Ignitor. This component is a genuine Goodman OEM replacement part designed to ensure correct ignition performance in compatible gas furnaces.

The ignitor features silicon nitride construction, which contributes to its long-lasting durability and high heat resistance. It is rated for 120 VAC operation and is compatible with Norton #601TB-1142 ignitors. Its direct-fit design facilitates quick installation to restore reliable burner ignition in your furnace system.

Image of the Goodman 20165703S Hot Surface Ignitor, showing its ceramic body and electrical leads.

2. What's in the Box

- One (1) Hot Surface Ignitor assembly

3. Safety Information

WARNING: Installation and servicing of heating equipment can be hazardous due to gas and electrical components. This ignitor operates at 120 VAC. Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or loss of life.

- Always disconnect electrical power to the furnace before attempting any installation, service, or maintenance.
- Turn off the gas supply to the furnace before beginning work.
- Wear appropriate personal protective equipment (PPE), such as gloves and eye protection.
- This product must be installed by a qualified service technician. Professional installation and adherence to all local codes and safety precautions are required.
- Do not touch the ignitor element with bare hands, as oils from skin can reduce its lifespan.
- Handle the ignitor carefully to avoid breakage, as it is a fragile ceramic component.

4. Setup and Installation

This section provides general guidance for replacing a hot surface ignitor. Due to the complexity and safety risks associated with gas furnace systems, it is strongly recommended that installation be performed by a qualified HVAC professional.

General Installation Steps (for Qualified Technicians):

1. **Power and Gas Disconnection:** Ensure all electrical power and gas supply to the furnace are completely shut off at the main service panel and gas valve.
2. **Access Ignitor:** Locate and carefully remove the access panel(s) to the furnace's burner assembly.
3. **Locate Old Ignitor:** Identify the existing hot surface ignitor, typically mounted near the burner assembly.
4. **Disconnect Wiring:** Disconnect the electrical wiring from the old ignitor. Note the wiring configuration for correct re-connection.
5. **Remove Old Ignitor:** Carefully unmount the old ignitor from its bracket. Handle with care as it may be fragile.
6. **Install New Ignitor:** Mount the new Goodman 20165703S ignitor onto the bracket, ensuring it is securely fastened and positioned correctly according to the furnace manufacturer's specifications. Avoid overtightening.
7. **Connect Wiring:** Connect the electrical wiring to the new ignitor. Ensure connections are secure and match the original configuration.
8. **Restore Access Panels:** Replace all furnace access panels securely.
9. **Restore Power and Gas:** Restore gas supply and electrical power to the furnace.
10. **Test Operation:** Initiate a heating cycle to verify proper ignitor function and furnace operation. Observe the ignitor glowing and the burners igniting.

If you are unsure about any step, consult a professional HVAC technician.

5. Operating Instructions

The Goodman 20165703S Hot Surface Ignitor operates automatically as part of your furnace's ignition sequence. It does not require manual operation.

Ignition Sequence Overview:

1. When the thermostat calls for heat, the furnace control board initiates the heating cycle.
2. The inducer motor starts, creating a draft and proving safe venting.
3. After a pre-purge period, the control board sends power to the hot surface ignitor.
4. The ignitor heats up rapidly, glowing bright orange.
5. Once the ignitor reaches sufficient temperature, the gas valve opens, releasing gas to the burners.
6. The hot surface ignitor ignites the gas.

7. A flame sensor detects the flame, and the ignitor typically de-energizes.
8. The main blower fan then starts to distribute heated air.

If the furnace fails to ignite, refer to the Troubleshooting section or consult a qualified technician.

6. Maintenance

The Goodman 20165703S Hot Surface Ignitor is designed for reliable operation and generally requires minimal maintenance. However, periodic inspection of your furnace system by a qualified technician is recommended to ensure all components, including the ignitor, are functioning correctly.

Recommended Checks (by Qualified Technicians):

- **Visual Inspection:** During routine furnace servicing, a technician can visually inspect the ignitor for any signs of damage, cracks, or excessive carbon buildup.
- **Electrical Connections:** Ensure all electrical connections to the ignitor are clean and secure.
- **Ignitor Resistance:** A technician may test the ignitor's resistance with a multimeter to ensure it falls within the manufacturer's specified range.

Do not attempt to clean the ignitor element with abrasive materials, as this can damage the silicon nitride and shorten its lifespan. If the ignitor appears damaged or faulty, it should be replaced by a qualified professional.

7. Troubleshooting

If your furnace is not igniting or experiencing issues, the hot surface ignitor may be a contributing factor. Troubleshooting furnace components should only be performed by a qualified HVAC technician due to the presence of high voltage and gas.

Common Symptoms of a Faulty Ignitor:

- **Furnace Fails to Ignite:** The most common symptom. The inducer motor may run, but the ignitor does not glow, and no gas is released.
- **Ignitor Glows but No Ignition:** The ignitor heats up, but the gas does not ignite, or it ignites and then immediately extinguishes. This could indicate a weak ignitor, gas supply issue, or flame sensor problem.
- **Intermittent Ignition:** The furnace sometimes ignites, and sometimes it doesn't.
- **Cracked or Damaged Ignitor:** A visual inspection may reveal a cracked or broken ceramic ignitor element.

Troubleshooting Steps (for Qualified Technicians):

1. **Check for Power:** Verify that the ignitor is receiving the correct voltage (120 VAC) during the ignition sequence.
2. **Inspect Ignitor:** Visually inspect the ignitor for any physical damage.
3. **Test Resistance:** Measure the ignitor's resistance with a multimeter. Compare the reading to the manufacturer's specifications. An open circuit or significantly high resistance indicates a faulty ignitor.
4. **Check Wiring:** Ensure all wiring connections are secure and free from corrosion.

If the ignitor is determined to be faulty, it must be replaced. Do not attempt to repair a damaged ignitor.

8. Specifications

Part Number	20165703S
Model Number	4171485
Brand	Goodman
Compatibility	Norton #601TB-1142
Voltage Rating	120 VAC
Construction Material	Silicon Nitride
Item Weight	1.76 ounces
Package Dimensions	7.24 x 2.32 x 2.09 inches
Date First Available	July 8, 2016

9. Warranty Information

This Goodman Hot Surface Ignitor is covered by the manufacturer's standard warranty. Specific warranty terms and conditions, including duration and coverage details, are provided by Goodman Manufacturing. Please refer to the documentation included with your furnace or contact Goodman customer service for detailed warranty information.

Keep your proof of purchase for warranty claims.

10. Support

For technical assistance, installation questions, or troubleshooting beyond the scope of this manual, please contact a qualified HVAC professional or Goodman customer support.

Goodman Customer Support:

- Refer to the official Goodman website for the most current contact information.
- Consult your furnace's original manual for specific service contacts.

When contacting support, please have your product model number (4171485) and any relevant furnace information readily available.