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Vermont Castings 20308978

Vermont Castings 4-Way LP Pilot Assembly (Model 20308978) Instruction Manual

Manufacturer: Hearth and Home Technologies

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Vermont Castings 4-Way LP Pilot Assembly, part number 20308978. This assembly is designed for use with various Vermont Castings gas stove models and is crucial for the safe and efficient operation of your appliance. Please read this manual thoroughly before attempting any installation or maintenance.

2. SAFETY INFORMATION

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information, consult a qualified installer, service agency, or the gas supplier.

- Always disconnect the gas supply and electrical power before servicing.
- Ensure proper ventilation during installation and operation.
- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Installation and repair should be performed by a qualified service person.
- Keep the appliance area clear and free from combustible materials, gasoline, and other flammable vapors and liquids.
- Do not obstruct the flow of combustion and ventilation air.

3. PACKAGE CONTENTS

The Vermont Castings 4-Way LP Pilot Assembly (20308978) package typically includes:

- 1x 4-Way LP Pilot Assembly (Part #20308978)
- Associated wiring and tubing (as depicted in product images)

This LP pilot assembly (Part #20308978) is compatible with the following Vermont Castings gas stove models:

- 30ICFDVL
- ICFDV40L
- 40ICFDVL
- KHLDV500
- KSTDV500
- 500DVKST
- V31LDVI
- VC41LDVI
- WDV600
- WDVST500

It may also fit other models. Always refer to your appliance's owner's manual for specific part numbers and compatibility verification.

5. SETUP AND INSTALLATION

Installation of the pilot assembly requires careful attention to detail and adherence to safety guidelines. If you are unsure about any step, consult a qualified technician.

5.1 Component Identification



Figure 2: Close-up view of the pilot assembly, showing the thermocouple, ignitor, pilot hood, and thermopile.

The pilot assembly consists of several key components:

- **Thermocouple:** A safety device that senses the pilot flame and generates a small electrical current to keep the gas valve open.
- **Ignitor Wire:** Provides the spark to ignite the pilot flame.
- **Pilot Tubing:** Delivers gas to the pilot hood.
- **Thermopile:** Generates a larger electrical current to power the main gas valve.
- **Pilot Hood:** Directs the pilot flame.

5.2 General Installation Steps (LP Gas)

1. **Disconnect Power and Gas:** Ensure the gas supply to the appliance is turned off and the electrical power is disconnected at the circuit breaker.
2. **Access Pilot Assembly:** Carefully open the appliance to access the existing pilot assembly. Refer to your stove's owner's manual for specific access procedures.
3. **Remove Old Assembly:** Disconnect all wiring and gas lines from the old pilot assembly. Note the routing and connections for reinstallation. Remove the old assembly.
4. **Install New Assembly:** Position the new Vermont Castings 4-Way LP Pilot Assembly (20308978) in the same location as the old one. Secure it using the appropriate fasteners.
5. **Connect Gas Lines:** Carefully connect the pilot gas line to the new assembly. Ensure all connections are tight and leak-free. Use a gas leak detector or soapy water solution to check for leaks after gas supply is restored.
6. **Connect Wiring:** Connect the thermocouple, ignitor wire, and thermopile wires to their respective terminals on the gas valve and control board. Ensure correct polarity and secure connections.
7. **Verify Pilot Flame Appearance:** After restoring gas and power, light the pilot. The pilot flame should be stable, blue, and engulf the thermocouple and thermopile tips. Refer to the "Operating Instructions" section for pilot lighting.

5.3 Pilot Assembly Conversion (LPG to NG)

The provided pilot assembly is for LP (Propane) gas. If you need to convert your appliance to Natural Gas (NG), a different nozzle is required. The following video demonstrates the process of replacing the propane nozzle with a natural gas nozzle. This procedure should only be performed by a qualified technician.

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Video 1: Demonstration of converting a pilot assembly from LPG to NG by replacing the nozzle. This video is for informational purposes and conversion should be done by a professional.

Another video provides a general overview of a 3-way pilot assembly, which shares similar components and principles:

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Video 2: Overview of a 3-Way Pilot Assembly, highlighting its components and general function.

6. OPERATING INSTRUCTIONS (PILOT LIGHTING)

Refer to your specific Vermont Castings gas stove owner's manual for detailed pilot lighting instructions. General steps typically include:

1. Ensure the gas supply is on.
2. Turn the appliance control knob to the "PILOT" position.
3. Press and hold the control knob while simultaneously pressing the ignitor button repeatedly until the

pilot flame ignites.

4. Continue to hold the control knob for 30-60 seconds after ignition to allow the thermocouple to heat up and generate sufficient voltage.
5. Release the control knob. If the pilot flame remains lit, turn the control knob to the "ON" position to operate the main burner. If the pilot extinguishes, repeat the process.

A properly functioning pilot flame should appear stable and blue, as illustrated in the following video:

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Video 3: Visual guide to the correct pilot flame appearance for a natural gas pilot assembly. The principles of flame appearance are similar for LP.

7. MAINTENANCE

Regular maintenance ensures the longevity and safe operation of your pilot assembly:

- **Cleaning:** Periodically inspect the pilot assembly for dust, lint, or debris. Use a soft brush or compressed air to gently clean the pilot hood, thermocouple, and ignitor. Ensure no blockages in the pilot orifice.
- **Flame Inspection:** Regularly observe the pilot flame. It should be a strong, steady blue flame. A weak, yellow, or flickering flame may indicate a problem with gas pressure, a partially clogged orifice, or a failing thermocouple/thermopile.
- **Connection Check:** Ensure all gas line and electrical connections remain secure and free from corrosion.

8. TROUBLESHOOTING

If your pilot assembly is not functioning correctly, consider the following common issues:

Problem	Possible Cause	Solution
Pilot will not light.	No gas supply, clogged pilot orifice, faulty ignitor, faulty thermocouple.	Check gas supply. Clean pilot orifice. Inspect ignitor for spark. Test/replace thermocouple.
Pilot lights but will not stay lit.	Faulty thermocouple, weak pilot flame, loose connections.	Ensure pilot flame engulfs thermocouple. Check/tighten connections. Replace thermocouple.
Main burner does not ignite after pilot is lit.	Faulty thermopile, main gas valve issue, control board issue.	Test/replace thermopile. Consult a qualified technician for gas valve or control board issues.

If troubleshooting steps do not resolve the issue, contact a qualified service technician.

9. SPECIFICATIONS

- **Part Number:** 20308978
- **Type:** 4-Way LP Pilot Assembly
- **Fuel Type:** Liquid Propane (LP)
- **Manufacturer:** Hearth and Home Technologies

- **Package Dimensions:** 6 x 6 x 4 inches
- **Item Weight:** 8 ounces



10. WARRANTY AND SUPPORT

This product is backed by a 3-year quality assurance. For warranty claims or technical support, please contact Hearth and Home Technologies or your authorized Vermont Castings dealer. Always provide your product model number and part number (20308978) when seeking support.

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Video 4: Product overview of the Majestic SIT Pilot Assembly 10002265 Propane Gas (LP), which is similar to the Vermont Castings 20308978 and highlights quality assurance.