PO

INSTALLATION GUIDE FOR
HARGROVE VENTED GAS LOGS
High Capacity Electronic Ignition Pilot Valve (RMBEI-WTHPF)

Installation and service must be provided by a qualified installer, service agency or the gas supplier.

FOR YOUR SAFETY
WHAT TO DO IF YOU SMELL GAS

1. Open windows.
2. Extinguish all open flames.
3. Do not try to light any appliance.
4. Do not touch any electrical switch; do not use the phone in your building.
5. Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
6. If you cannot reach your gas supplier, call the fire department.

WARNING

To avoid a potential fire hazard, do not disassemble or attempt to repair the safety gas valve. Disassembly, reassembly or internal adjustment could cause the valve to malfunction, resulting in property damage, personal injury, or death. If the control valve does not operate properly following the installation or service, replace the unit.

FOR YOUR SAFTEY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE LIQUIDS OR FLAMMABLE VAPORS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

CAUTIONS

1. This valve should be installed only by a qualified service technician trained in gas safety equipment.
2. Turn off the gas supply before installing the valve.
3. All piping must meet applicable local codes and ordinances and the National Fuel Gas Code (ANSI Z223.1/NFPA NO.54)
4. All wiring must meet the applicable electrical codes and ordinances.
5. Assure that the complete system is operating according to the manufacturer's instructions after installing the Parts Only Kit.
6. Prior to installation, verify conformance with the log unit's installation instructions.
7. Assure that all the piping is free of any foreign matter.

INSTALLING A HARGROVE SAFETY GAS VALVE IN A LOCATION OTHER THAN SPECIFIED IN THIS MANUAL WILL VOID THE WARRANTY EXCEPT WHEN THE SAFETY GAS VALVE IS INSTALLED OUTSIDE THE FIREBOX IN A SAFE AND PROPER INSTALLATION AND ACCESS IS PROVIDED FOR MAINTENANCE AND REPAIR OF THE SYSTEM. A QUALIFIED INSTALLER MUST MAKE INSTALLATION AND ADJUSTMENTS.

IMPORTANT

This system operates on 24V DC power. 110/120V outlet required. Use GFCI outlet for outdoor installation or where local building code requires.

FOR YOUR SAFETY

WARNING: If you do not follow these instructions exactly, a fire or explosion may occur resulting in property damage, personal injury, or loss of life.

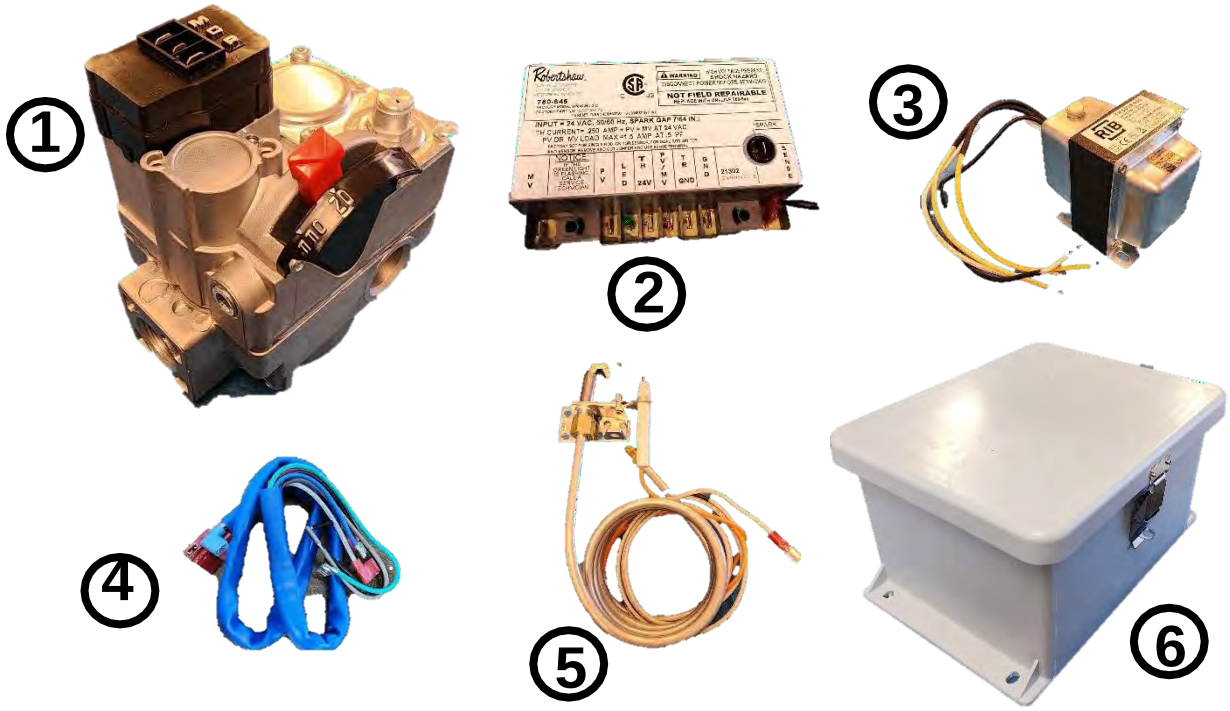
NATIONAL FIREPLACE INSTITUTE NFI CERTIFIED www.nficertified.org

We recommend that our gas hearth products be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute® (NFI) as NFI Gas Specialists.

PFS® US

REV 043024

PARTS LIST



ITEM	PART NUMBER	DESCRIPTION
1	RMBEI-C	ELECTRONIC IGNITION SAFETY VALVE
2	RMBEI-MOD	VALVE CONTROL MODULE
3	TRANS-24VD	24VOLT DC TRANSFORMER
4	RMBEI-WH	WIRE HARNESS
5	RMBEI-PIL-60	60 INCH PILOT
6	WTHPF-BOX-8X10	WEATHERPROOF BOX

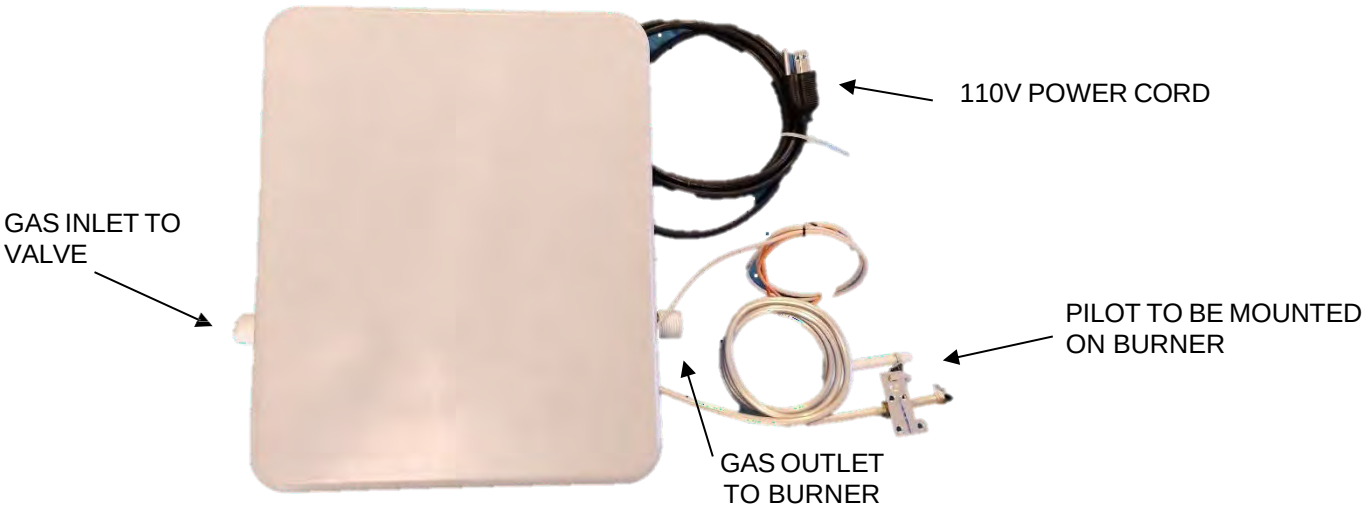
PILOT CONNECTION

Attach the small side of the pilot bracket to the predrilled holes on the back wall of the burner pan using the screws provided.

Attach the pilot assembly to the burner keeping the pilot out of the main burner flame.

IMPORTANT: The pilot assembly should be mounted on the outside of the burner pan. Placement of burner media (sand, vermiculite, glass, stone, etc.) MUST NOT cover the pilot assembly

VALVE CONNECTION



LIGHTING THE BURNER SYSTEM

Make sure all gas connection fittings and wire connections are secure and safe for ignition.

- Turn the power ON to the 110V outlet.
- Watch and listen for a spark at the Pilot Assembly.
- Pilot should light within a few seconds (if the pilot does not light within 10 seconds you may have to bleed the gas line to get the air out of the gas inlet pipe).
- Once the pilot lights, the heat sensor will heat up and then activate the gas to the main burner.
- When gas begins to flow to the main burner the pilot will light the burner gas and remain in operation during the operation cycle.
- When the power is turned OFF, the main burner flame and pilot flame will shut down.

TROUBLESHOOTING

<u>IMPORTANT:</u> Unplug or turn off all power to the appliance if service is to be performed.

1. **Main flame will shut off and then cycle back on again.**
   - This could be caused by a poorly grounded system. If the system has a bad ground, it can cause the valve to turn off and then cycle back on again. Check the valve and pilot to ensure that they are secure. Also check the wires to the valve for a tight connection.
   - This can be caused by not enough heat to the sensor rod, causing the system to turn off and then cycle back on again. Check sensor rod to insure it is in the pilot flame and is glowing.
2. **Pilot and or main flame won't light but there is spark at the pilot hood.**
   - Check gas supply.
   - Check selector switch on valve.
   - Check wire connections.
3. **Can hear spark, but no spark is visible at pilot hood.**
   - This could be caused by cracked ceramic on ignition rod. This would arc at the crack to the nearest ground.
4. **Turn system on and there is no spark.**
   - Check main power.
   - Check wiring.
   - This could be caused by improper spark gap between igniter rod and pilot hood. It should be no greater than 0.25" gap.

LIMITED WARRANTY

Refractory Logs

Hargrove gas logs carry a limited lifetime warranty against any manufactured defect or breakage when installed indoors. A replacement will be available from the dealer at which the appliance was purchased. This warranty does not cover breakage caused by excessive handling once installed and fired. Outdoor applications carry a one (1) year limited warranty.

Burner & Grate

If the burner or grate fails due to deterioration within five (5) years of the verified purchase date, a free replacement will be made available from the dealer at which the appliance was purchased.

Valves, Remote Controls, & Switching Devices

Hargrove warrants all valves, remote controls and switching devices against manufacturing defects, which appear within two (2) years of the verified purchase date. Warranty does not cover products that have been damaged by misuse from overheating. Before any product is returned a Return Goods Authorization number (RGA) must be issued by Hargrove's Customer Service Department. All returns must be accompanied by an explanation of the problem and all necessary parts.

All Other Parts

If any assembled part should fail to operate or be found defective which appear within two (2) years of the verified purchase date, a replacement will be available from the dealer at which the appliance was purchased.

Buyer shall notify Hargrove Mfg Corp. of any defect covered by this warranty no later than thirty (30) days after defect is discovered. Failure to provide notice within thirty (30) days shall void the limited warranty.

WHAT IS NOT COVERED

1. Removal and reinstallation costs.
2. Labor costs for replacement or repairs.
3. Transportation or shipping cost.
4. The cost of a service call to diagnose trouble.
5. Painted Surfaces.
6. Damage or defect caused by improper installation, accident, misuse, abuse, alteration, or authorized service technician.
7. Replacement of burner or combustion chamber resulting from improper storage of the appliance.

LIMITATIONS AND EXCLUSIONS

1. No one has authority to add to or vary this limited warranty, or to create for Hargrove Manufacturing Corporation any other obligation or liability in connection with this appliance.
2. Any implied warranty applicable to this appliance is limited in duration to the same period of time as this written Warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.
3. HARGROVE MANUFACTURING CORPORATION WILL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL OR CONTINGENT DAMAGES YOU MIGHT SUFFER AS A RESULT OF A CLAIM UNDER THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you.
4. This warranty applies only to the original purchaser and may not be transferred or assigned.
5. If you cannot verify the purchase date of the appliance, the warranty period will begin on the date of which the appliance was manufactured.
6. Replacement or repair parts are warranted for the remaining period of the original part warranty. Warranty parts must be obtained through authorized dealers of this product who will provide original factory replacement parts. Failure to use original factory replacement parts voids this warranty.
7. The maximum liability of Hargrove Mfg Corp. in connection with this limited warranty shall not in any case exceed the contract price paid for the product claimed to be defective or unsuitable.
8. Purchaser or user agrees to hold Hargrove Mfg Corp. harmless from any and all claims by the buyer as a result of injury or damage to an ultimate user or other person caused by the product sold herein by the seller to the buyer, whether the injury or damage results from the assembly, installation, operation, shipment, storage, or manufacture of this product. Hargrove Mfg Corp. makes no warranties, expressed or implied, other than those expressly stated herein.

YOUR DUTIES

This appliance must be installed by a qualified installer, operated and maintained in accordance with all applicable codes and the instructions furnished with the appliance. You must provide a receipt verifying the purchase date of the appliance when making a warranty claim with the dealer from which the appliance was purchased.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

CONTACT INFO: Hargrove Manufacturing Corp. Tele: (800) 725-4166

TROUBLESHOOTING GUIDE
712 SERIES PILOT IGNITION SYSTEMS (FLAME RECTIFICATION)

LOCKOUT MODEL 712-005 • 712-006 • 712-008 • 712-009

NON-LOCKOUT MODELS 712-005 • 712-016 • 712-017 • 712-019 • 712-022

CSA DESIGN CERTIFIED TO APPLICABLE A.N.S.I. STANDARD Z21.71-1993 FOR FIELD INSTALLATION

SYSTEM CHECKOUT PROCEDURES

The initial installation portion is now completed. The checkout procedures listed below must be followed. While there are redundant safety features built into the system, it is imperative that you follow the steps outlined below to ensure proper and safe operation. If you encounter any irregularities, refer to the TROUBLESHOOTING GUIDE.

1. Check all wiring connections.
2. Turn on main gas supply and put the manual valve or selector arm on the gas valve into the "ON" position.
3. Use a leak test solution to check piping for gas leaks. Repair if needed.
4. Turn on electrical power.
5. Set thermostat to high.

WARNING: Vent damper must be in the fully open position before the ignition system is energized. Failure to verify this may cause a serious health hazard to occupants.

6. Sparking begins, pilot gas ignites.
7. Pilot flame on ignitor/sensor, main burner on.
8. If the ignition control unit is a 780-715, with main burner on, cycle thermostat off then on. System will turn off and immediately on again.
9. With the main burner on, turn the manual gas valve to off position. Wait until all flame is out. Turn manual gas valve on again.
   A. Sparking will begin as soon as the pilot flame is out.
   B. Pilot ignition takes place when gas flow is restored.
10. **If the ignition control unit is a 780-845 (lockout):** With the main burner on, turn the manual gas valve off. Sparking will begin when the pilot flame goes out. After 90 seconds the system will go into time delay (6 minutes) and sparking will cease. The lockout ignition control used provides 90 seconds of spark followed by a six minute time delay (purge) period between ignition attempts. After three tries, if no pilot flame is sensed, a 1-hour lockout period will begin. At the end of the 1-hour lockout period, if the demand for heat is still present, unit repeats the three tries for ignition.
11. Check manifold pressure and compare the reading with those obtained in the PRE-INSTALLATION - SAFETY INSPECTION PROCEDURES. Adjust pressure regulator (if necessary) to match the original input.
12. Visually determine that the main burner is burning properly, as it was during the PRE-INSTALLATION - SAFETY INSPECTION PROCEDURES; i.e., no floating, lifting, or flashback. Adjust the primary air shutter(s) as required.
13. It is absolutely necessary that the system be cycled normally (thermostatically controlled) through at least three complete heating cycles. Set thermostat to a temperature slightly higher (at least 5°) than the existing ambient. Allow the appliance to cycle ON and run through a normal cycle. Do not manually shorten the cycle.
14. **Applicable only to furnaces:** Check both the limit control and the fan control for proper operation. Limit control operation can be checked by blocking the circulating air inlet or temporarily disconnecting the electrical supply to blower motor. Determine that the limit control acts to shut off the main burner gas. Applicable only to boilers: Determine that the circulating water pumps are in operating condition. Test low water cutoffs, automatic feed controls, pressure and temperature limit controls, and relief valves in accordance with the manufacturer's recommendation to determine they are in operating condition.
15. The initial checkout procedures have been completed. If the system has functioned normally, return thermostat setting to its normal setting. The qualified installing agency must completely fill out and apply the yellow appliance conversion sticker to the front of the appliance. Leave these and all other instructions with the homeowner.

TROUBLESHOOTING GUIDE

PILOT IGNITION SYSTEM / FLAME RECTIFICATION / IGNITION CONTROL UNITS 780-715 AND 780-845

There are five potential problem conditions with the thermostat set high.

To perform the following test you will need a volt /ohmmeter. Refer to your appropriate wiring diagrams.

The ignition control can also be tested, using the Robertshaw ignition control tester, part number 900-575.

problem #1: Thermostat on, no spark, no pilot gas.

Possible Causes:

A. No main power
B. Faulty transformer
C. Faulty thermostat
D. Faulty limit
E. Faulty ignition control unit

Solution:

1. With power on and thermostat set high, set your test meter to the 24 volt scale. Probe terminals TH and TR. If you do not read 24 volts, the problem is not the ignition system. Perform normal system checks of main power, transformer, thermostat and the limit control. If you do read 24 volts at TH and TR the problem is in the ignition system. Check for loose or defective wiring. If wiring is good replace the ignition control unit.

problem #2: Have spark, no pilot gas flow.

Possible Causes:

A. Main gas supply turned off
B. Manual valve on gas valve turned off
C. Faulty primary valve in the gas valve
D. Faulty wire connection
E. Faulty ignition control unit

Solution: Set test meter to 24 volt scale.

1. Be sure main gas valve (gas cock or selector arm) is turned on.
2. With gas on and the system sparking, probe terminals PV and TR. If 24 volts is read at these terminals and pilot gas does not flow, replace the gas valve.
3. If you do not read 24 volts at terminals PV and MV/PV replace the ignition control unit.

problem #3: Have pilot gas, no spark.

Possible Causes:

A. Defective ignitor/sensor and/or its wiring
B. Faulty ignition control unit

Solution: Set test meter to ohm scale.

1. Disconnect the wire from the IGN terminal on the ignition control unit.
2. Touch one meter probe to the tip of the ignitor/sensor rod in the pilot. Touch the other probe to the quick-connect at the other end of the ignitor/sensor wire.
3. If you have continuity from the tip of the ignitor/sensor rod to the connector and no spark, replace the ignition control unit.
4. If you do not have continuity through the wire and the ignitor/sensor, check for loose wire connection in the wire. Repair as needed.
5. Check to see if spark shorts to furnace through a cut in the ignitor wire.

problem #4: Have pilot flame, main burner will not turn on.

Possible Causes:

A. Faulty main valve coil in the gas valve
B. Faulty ignitor/sensor and/or its wiring
C. Ground wire not attached to furnace chassis
D. Flame rectification signal from pilot to ignition control unit weak
E. Faulty ignition control unit

Solution: Set test meter to 24 volt scale.

1. With pilot flame on ignitor/sensor - probe terminals MV and MV/PV on the ignition control unit. If you read 24 volts here, but not at the gas valve, there is a loose wiring connection. Repair or replace as needed.
2. If you do read 24 volts at MV and MV/PV and the pilot flame is impinging on the ignitor/sensor rod, the problem may be:
   - Faulty ignitor/sensor and/or its wiring
   - Faulty ignition control unit
   - No flame rectification signal to ignition control unit.
3. Set test meter to the ohm scale. Set thermostat low-system off.
4. Check continuity through the green ground wire between the pilot mounting bracket and the ignition control unit. Repair or replace as needed.
5. Check continuity through the green ground wire between the gas valve and the ignition control unit. Repair or replace as needed.
6. Check ignitor/sensor for continuity, through the spark/ sensor rod. Also, check ignitor/sensor ceramic for cracks. Repair or replace as needed.
7. Reconnect all wires that were disconnected, including the ignitor/ sensor wire and the ground wire.
8. Set thermostat high. With the pilot burning and the flame on the ignitor/sensor rod, if the main burner does not turn on - replace the ignition control unit.

Problem #5: Short-cycling of main burner. main burner turns off before the thermostat is satisfied.

Possible Causes:

A. Draft condition pulls pilot flame away from ignitor/ sensor rod

B. Incorrect thermostat anticipator setting

C. Pilot flame gets smaller when main burner comes on.

D. Faulty limit control

Solution:

1. Check the thermostat anticipator setting. Set to .7 amp. A lower setting will cause short-cycling.
2. Set thermostat high, with main burner on, observe the pilot flame impingement on the ignitor/sensor rod.
   - If pilot flame is small and draft condition pulls flame from ignitor/sensor rod the burner will turn off and then on again.
   - Adjust pilot flame higher or clean pilot orifice.
   - Bend ignitor/sensor rod closer to pilot flame .
3. If flame impingement on the ignitor/sensor is stable and the system short-cycles, check the limit switch.
4. Set test meter to 110 volt scale.
   - When the system cycles off, probe the switch terminals of the limit switch.
   - If you read 110V or 24V across the switch terminals the limit switch is open. Replace the limit switch.
5. A pilot flame set too high will also cause burner to short cycle. Pilot flame lifts over ignitor/sensor.

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