

# HARGROVE GAS LOGS

## CONCENTRIC VALVE (CPE-PO)

### PILOT CONTROL SYSTEM

## INSTALLATION INSTRUCTIONS



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.

This gas pilot safety valve provides 100% shut-off of both pilot and main burner gas supply in the event of pilot flame failure. This valve is equipped with a manual gas control knob to provide for pilot lighting. It also has a control knob that controls flame height.

If the pilot flame goes out during normal operation, or if there is insufficient pilot flame to provide proper thermocouple output, the safety valve will close, stopping the flow of all gas. This valve is designed for use on all domestic heating gases up to ½" PSI.

### CAUTIONS

1. This valve should be installed only by an experienced service technician trained in gas safety equipment.
2. Turn off gas supply before installing valve.
3. All piping must meet applicable local codes and ordinances and the national fuel gas code (ANSI Z233.1/NFPA NO. 54)
4. All wiring must meet applicable electrical codes and ordinances.
5. Check out the complete system after installing the valve.
6. Prior to installation, verify conformance with burner manufacturer's installation instructions.
7. Make sure all piping is free of foreign matter.

### FOR YOUR SAFETY IF YOU SMELL GAS:

1. OPEN WINDOWS
2. DON'T TOUCH ELECTRICAL SWITCHES
3. EXTINGUISH ALL OPEN FLAMES
4. IMMEDIATELY CALL YOUR GAS SUPPLIER

**FLAMMABLE VAPORS MAY BE DRAWN BY AIR CURRENTS FROM OTHER AREAS OF YOUR HOUSE TO THIS APPLIANCE.**

### FOR YOUR SAFETY

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

# INSTALLATION INSTRUCTIONS

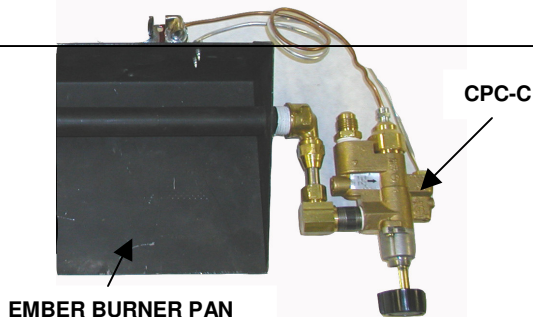
## **! WARNING !**

**Fire hazard. Do not disassemble or attempt repair of this unit. Disassembly, reassembly or internal adjustment could cause valve to malfunction, resulting in personal injury, death or property damage. If the control valve does not operate properly following installation or service, replace the unit.**

**WARNING:** Valves may not shut off if flow is not in direction of arrow on valve body.

**WARNING:** Warranty is void if the CPC-C is installed behind the burner pan in the fireplace. (Fig. 1)

**Fig. 1 DO NOT INSTALL CPC-C BEHIND THE EMBER BURNER PAN IN THE FIREPLACE. CPC-C MAY OVERHEAT.**

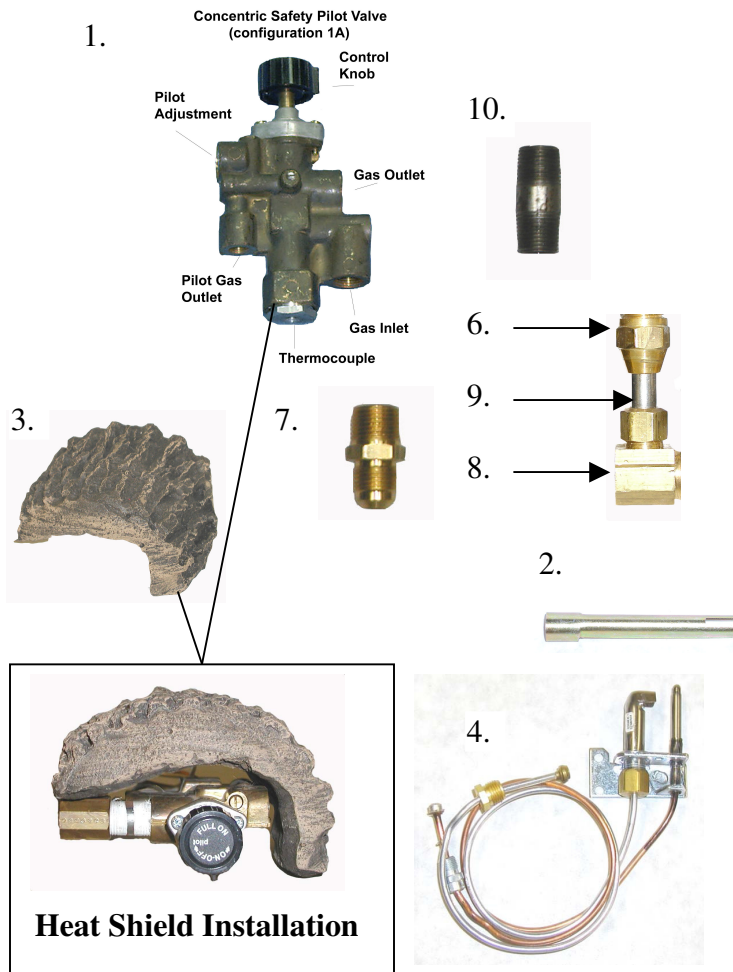


### Parts List (Fig.2):

#### NATURAL GAS PARTS

1. **CPC-C** Concentric Safety Gas Valve
2. **SPC-EH** Knob Extension Stem
3. **HSCPCCL** Safety Gas Valve Heat Shield
4. **RSTPB-18** Thermocouple & Pilot Burner Assembly
5. (2) **#8 x 1/2"** Screw (not shown – mount pilot assbly)
6. **41S-6** Brass Flare Nut
7. **48-6** Brass 3/8" MIP X 3/8" FL
8. **70-6** Brass Elbow 3/8" FIP X 3/8" FL compression
9. **SC-1** Stainless Tubing
10. **N-6X1.5** 3/8" Nipple

**Fig.2 Parts Included In CPE-PO**



# EXTERNAL BURNER INSTALLATION INSTRUCTIONS NATURAL GAS

This gas valve should be installed according to the following instructions. Check for gas leaks with a soap solution after completing installation.

## MAIN PIPING CONNECTIONS

1. Be sure the main gas supply is shut off before starting the installation. It should be located so that the gas control knob is easily accessible.
2. Direction of gas flow is indicated by the directional arrow on the outlet boss.
3. You should use new pipe, which is properly chamfered and reamed. If you use old pipe, be sure it is clean and free of rust, scale, burrs, chips and old pipe joint compound.
4. Apply pipe joint compound (pipe dope) that is approved for all gasses, only to the male threads of pipe joints. Do not apply compound to first two threads. Do not thread pipe too far.

**NOTE:** Applying pipe joint compound to pipe threads will prevent chips from passing into internal valve parts, since the pipe joint compound will collect and retain chips that are formed as the pipe is threaded into the body.

5. If a vise or open-ended wrench is used to hold the control while installing piping, do not tighten excessively, as this may damage the control.

## CPC INSTALLATION See Fig. 3

1. Attach the brass elbow 50-6-8 (included in the Standard Burner Accessory kit box) to the pipe extending out of the Ember Burner Pan. Make sure the flared end of the 50-6-8 is facing toward the front of the Ember Burner Pan.
2. Attach the 70-6 to the N-6X1.5 black nipple.
3. Assure the 41S-6 flare nut is on the SC-1 tubing with the open end facing toward the flared end of the SC-1.
4. Tighten the 70-6 compression sleeve onto the SC-1.
5. Attach the N-6X1.5 black nipple into the outlet of the CPC-C. NOTE: The brass elbow on the 70-6 and SC-1 tubing should be facing toward the back of the valve.
6. Attach the 41S-6 flare nut to the 50-6-8.
7. Use (2) #8X1/2 screws (not shown) to attach the RSTPB-18 pilot assembly to the backside of the burner pan in the pre-drilled holes. Attach the pilot so that the pilot burner is above the back wall of the burner pan.

## PILOT GAS CONNECTION

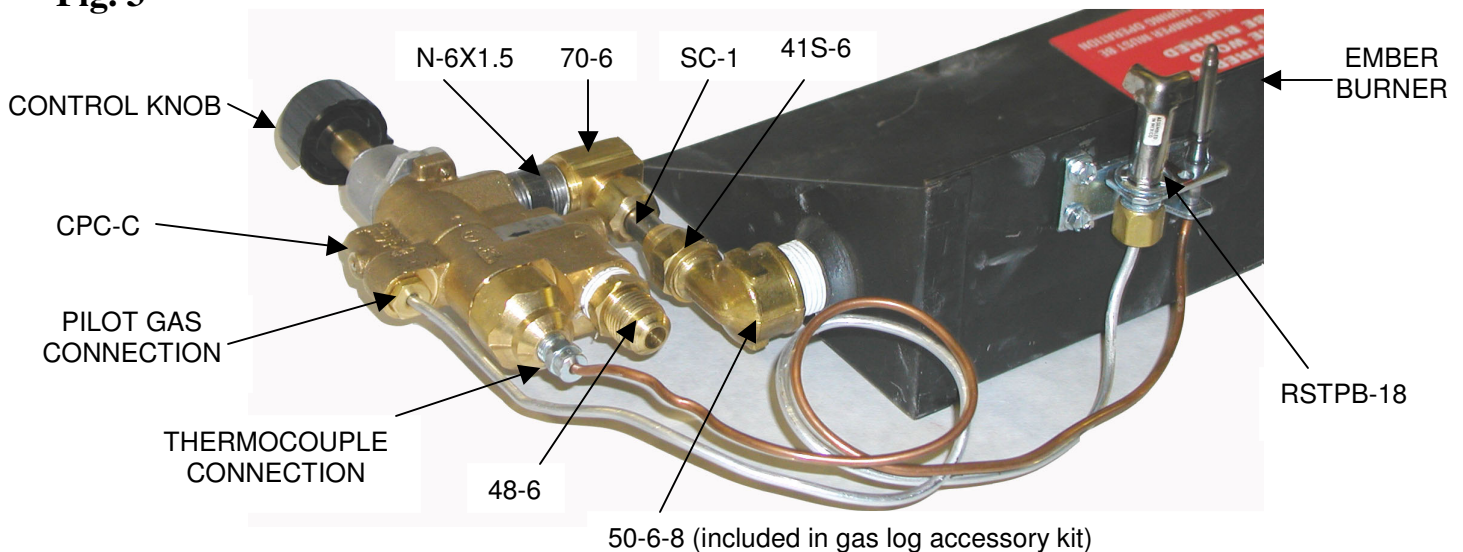
Install the silver tubing from the RSTPB-18 in the pilot gas tapping, turning until finger-tight. Slowly tighten the fitting until a slight "give" is felt. Then tighten an additional 1 ½ turns.

## THERMOCOUPLE CONNECTION

The thermocouple connector should be clean for good electrical contact. Run the thermocouple nut into the thermocouple connection as far as possible by hand. Then set the nut with ¼ to ½ additional turn.

## BACK VIEW OF EMBER BURNER CPE INSTALLATION NATURAL GAS

Fig. 3



# INTERNAL BURNER INSTALLATION INSTRUCTIONS

## NATURAL GAS

This gas valve should be installed according to the following instructions. Check for gas leaks with a soap solution after completing installation.

### MAIN PIPING CONNECTIONS

1. Be sure the main gas supply is shut off before starting the installation. It should be located so that the gas control knob is easily accessible.
2. Direction of gas flow is indicated by the directional arrow on the outlet boss.
3. You should use new pipe, which is properly chamfered and reamed. If you use old pipe, be sure it is clean and free of rust, scale, burrs, chips and old pipe joint compound.
4. Apply pipe joint compound (pipe dope) that is approved for all gasses, only to the male threads of pipe joints. Do not apply compound to first two threads. Do not thread pipe too far.

**NOTE:** Applying pipe joint compound to pipe threads will prevent chips from passing into internal valve parts, since the pipe joint compound will collect and retain chips that are formed as the pipe is threaded into the body.

5. If a vise or open-ended wrench is used to hold the control while installing piping, do not tighten excessively, as this may damage the control.

### CPC INSTALLATION See Fig. 3

1. Attach the brass elbow 49-6-6Z2 (included in the H-Burner Accessory kit box) to the pipe extending out of the H-Burner Pan. Make sure the flared end of the 49-6-6Z2 is facing toward the front of the H-Burner Pan.
2. Attach the 70-6 to the N-6X1.5 black nipple.
3. Assure the 41S-6 flare nut is on the SC-1 tubing with the open end facing toward the flared end of the SC-1.
4. Tighten the 70-6 compression sleeve onto the SC-1.
5. Attach the N-6X1.5 black nipple into the outlet of the CPC-C. **NOTE:** The brass elbow on the 70-6 and SC-1 tubing should be facing toward the back of the valve.
6. Attach the 41S-6 flare nut to the 50-6-8.
7. Use (2) #8X1/2 screws (not shown) to attach the RSTPB-18 pilot assembly to the backside of the burner pan in the pre-drilled holes. Attach the pilot so that the pilot burner is above the back wall of the burner pan.

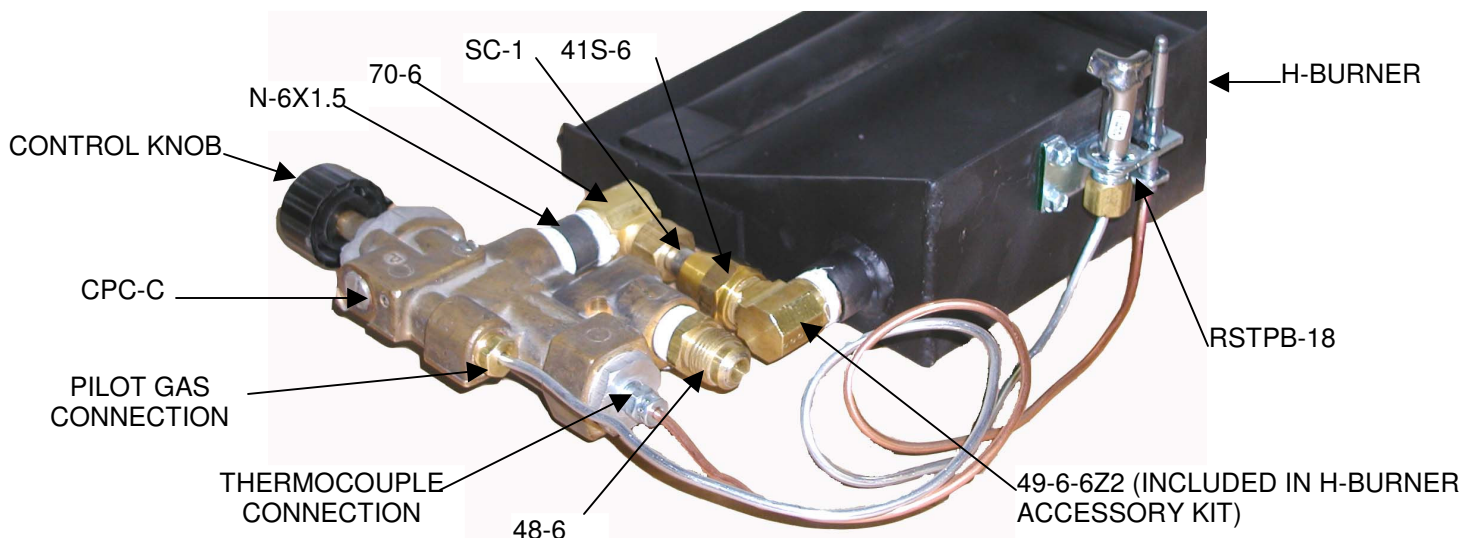
### PILOT GAS CONNECTION

Install the silver tubing from the RSTPB-18 in the pilot gas tapping, turning until finger-tight. Slowly tighten the fitting until a slight “give” is felt. Then tighten an additional 1 ½ turns.

### THERMOCOUPLE CONNECTION

The thermocouple connector should be clean for good electrical contact. Run the thermocouple nut into the thermocouple connection as far as possible by hand. Then set the nut with ¼ to ½ additional turn.

### BACK VIEW OF H-BURNER CPE INSTALLATION NATURAL GAS



# LIGHTING INSTRUCTIONS

## **FOR YOUR SAFETY READ BEFORE LIGHTING**

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

A. This appliance has a pilot, which must be lit by hand. When lighting the pilot, follow these instructions exactly.

B. Before lighting smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

### **FOR YOUR SAFETY**

#### **"What to do if you smell gas"**

- \* **Do not try to light any appliance.**
- \* **Do not touch any electrical switch; do not use any phone in your building.**
- \* **Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.**
- \* **If you cannot reach your gas supplier, call the fire department.**

C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it. Call a qualified service technician. Forced or attempted repair may result in a fire or explosion.

D. **Do not** use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

### **PILOT LIGHTING PROCEDURE**

1. Turn the gas control knob to the *off* position (it will be necessary to depress the knob slightly at the *pilot* position). Allow five minutes for any gas in the combustion chamber to escape (LP gas, which is heavier than air, may require forced ventilation).

2. Turn the gas control knob to the *pilot* position.

3. Push in on the gas control knob and light the pilot immediately. Hold the knob down for one full minute after lighting the pilot.

4. When the gas control knob is released, the pilot flame should continue to burn (if the pilot goes out, repeat the above steps).

5. Rotate the gas control knob from *pilot* to *on* position (full counterclockwise position) to supply full flow of gas to main burner.

6. You can adjust the flame height by the control knob, if you turn it back towards the *pilot position* you will *decrease* the gas flow, in turn you will decrease the flame height.

### **PILOT FLAME ADJUSTMENT**

These controls are factory preset and will not normally require additional adjustment of the pilot flame. If field adjustment of the pilot flame is required, turn the adjusting screw clockwise reduce flame, or counterclockwise to increase flame.

# HARGROVE MANUFACTURING CORPORATION

## SAFETY PILOT CONTROL TROUBLE SHOOTING GUIDE

### POSSIBLE CAUSES:

### CORRECTIVE ACTIONS

#### 1) Nature of Trouble: Pilot light won't light.

- |                     |                                                                                                                              |
|---------------------|------------------------------------------------------------------------------------------------------------------------------|
| 1a) Gas supply off. | 1a) Turn gas supply on.                                                                                                      |
| 1b) Air in line.    | 1b) Bleed gas through ember burner until all the air is out of the line. Bleeding through the pilot burner is not effective. |
| 1c) Kink in line.   | 1c) Straighten the tubing and assure there are no cracks in the tubing, or replace the tubing.                               |

#### 2) Nature of Trouble: Pilot light won't stay lit after releasing knob.

- |                                                                                           |                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2a) Line from thermocouple is not making good contact with valve.                         | 2a) Tighten fitting that connects thermocouple line to the pilot control valve.                                                                                                                      |
| 2b) Pilot light flame is too strong and blows itself out.                                 | 2b) Adjust the flame on the pilot burner in accordance with the pilot control instructions, or replace the pilot orifice with a larger orifice.                                                      |
| 2c) Pilot light flame is too low and does not transmit enough electricity to pilot valve. | 2c) Adjust the flame on the pilot burner in accordance with the pilot control instructions, or replace the pilot orifice with a larger one.                                                          |
| 2d) Pilot light flame hits thermocouple too close to cold junction.                       | 2d) A cold junction is located on the lower 1/3 of the thermocouple. The pilot light flame must hit only the top 1/4 of the thermocouple or the cold junction will overheat and shut the system off. |
| 2e) Bad thermocouple.                                                                     | 2e) Replace the thermocouple. This is unlikely on a new set as all thermocouples have been factory tested before shipping.                                                                           |

#### 3) Nature of Trouble: Pilot light goes out after being lit.

- |                                                                                           |                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3a) Down drafts blowing out flame.                                                        | 3a) Correct chimney down draft problems.                                                                                                                                                               |
| 3b) Pilot light flame is too strong and blows itself out.                                 | 3b) Adjust the flame on the pilot burner in accordance with the pilot control instructions, or replace the pilot orifice with a larger orifice.                                                        |
| 3c) Pilot light flame is too low and does not transmit enough electricity to pilot valve. | 3c) Adjust the flame on the pilot burner in accordance with the pilot control instructions, or replace the pilot orifice with a larger one.                                                            |
| 3d) Pilot light flame hits thermocouple too close to cold junction.                       | 3d) A cold junction is located on the lower 1/3 of the thermocouple. The pilot light flame must hit only the top 1/4 of the thermocouple or the cold junction will over heat and shut the system down. |

#### 4) Nature of Trouble: Pilot light is noisy.

- |                                      |                                                                                                                                                 |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 4a) Pilot light flame is too strong. | 4a) Adjust the flame on the pilot burner in accordance with the pilot control instructions, or replace the pilot orifice with a larger orifice. |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|



### **5) Nature of Trouble: Pilot light goes out when ember burner is turned on.**

5a) Ember burner robs gas from line feeding the pilot light.

5a) Turn gas to ember burner on slower.

5a) Replace orifice adapter to ember burner with an orifice adapter with a smaller opening. NOTE: This will reduce the amount of flame on logs.

### **6) Nature of Trouble: Delayed ignition of ember burner. (Gas should ignite in 4 seconds.)**

6a) Gas is not getting to pilot light quick enough.

6a) Clear passageway through sand to allow easier and quicker access for gas from ember burner to pilot light.

6b) Incorrect locations or direction of pilot light.

6b) Assure pilot light directs flame over ember burner pan as well as properly hitting the thermocouple.

### **7) Nature of Trouble: System shuts down after burning 0-5 minutes. Cold junction on thermocouple has overheated.**

7a) Immediate over heating of the cold junction on the thermocouple.

7a) Assure thermocouple and pilot burner assembly are mounted on the back side of the ember burner pan per safety pilot control instructions. Assure the assembly is free from contact with silica sand or other materials.

7a) Check for leaks resulting in improper flame hitting the thermocouple.

### **8) Nature of Trouble: System shuts down after burning more than 5 minutes. Cold junction on thermocouple has overheated.**

8a) Front log positioned over thermocouple reflecting flame and heat onto thermocouple.

8a) If front log is laying flat, position the log on its edge such that the flat side is facing the back of the fireplace.

8b) Thermocouple knocked out of position or interfered with by grate.

8b) Reassemble thermocouple in its assembly and move the grate so that it will not interfere with thermocouple.

8c) Heating of thermocouple copper tubing via flame, contact with ember burner pan, grate or other materials.

8c) Assure copper tubing is not touching any materials and is routed approximately one inch off the fireplace floor and has a minimum of 1/2" air space surrounding the tubing.

8d) The firebox retains too much heat.

8d) If your fireplace has glass doors they must remain fully open. Make sure the damper is completely open during burning. Do not install safety pilot controls in stoves.

8e) Down drafts blowing flame on thermocouple.

8e) Correct down draft problems.

### **9) Nature of Trouble: Pilot valve will not shut gas off.**

9a) Pilot valve has overheated possibly components and/or seals.

9a) Shield from heat, or move valve out of firebox. Assure not gaskets or seals have been damaged and causing leaks. Turn off gas at a secondary shut off. Correct reason for overheating and replace valve.