Hearth Products Controls Co
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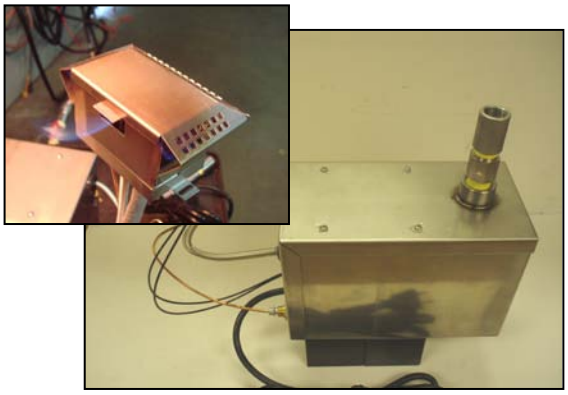
HWI Outdoor Flame Control System

(Thermocouple / Hot Wire Ignition System)

This system uses a revolutionary electronic control module (TCI Module) combining proven thermocouple technology with reliable hot-wire ignition.



NATIONAL FIREPLACE INSTITUTE NFI CERTIFIED www.nficertified.org

We suggest 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.

WARNING: FOR OUTDOOR USE ONLY

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.

Do not store gasoline or other flammable vapors and liquids in vicinity of this or any other appliance.

What to do if smell gas:

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

INSTALLER: Leave this manual with the appliance.
CONSUMER: Retain this manual for future reference.

WARNING: REMOTE CONTROL USE: TO PREVENT ACCIDENTAL START UP FROM UNWANTED RF SIGNALS, IT IS THE RESPONSIBILITY OF THE END USER TO TURN OFF POWER TO ELECTRICAL OUTLET FOR THE REMOTE CONTROL RECEIVER WHEN FIRE EFFECT IS NOT IN USE. THIS SHOULD BE DONE VIA WALL SWITCH OR BREAKER.

We require that our products be installed and serviced by professionals who are certified in the U.S. by NFI (National Fireplace Institute) or in Canada by WETT (Wood Energy Technical Training). Installer must follow all instructions carefully to ensure proper performance and safety. Hearth Products Controls Company is not responsible for your actions.

IMPORTANT: Confirm your gas type matches the requirement for this system- see label on side of control box.

Gas Pressure: This should be checked prior to use:

- **Natural Gas Fire Pit:**
  Supply Pressure: Minimum: 3.5" W.C.; **Maximum: 7.0" W.C.**
  Outlet Pressure: 3.5" to 5.0" W.C.
  Manifold Pressure: Nominal 3.5" W.C.
- **LP Gas:**
  Supply Pressure: Minimum: 8.0" W.C.; **Maximum: 15.0" W.C.**
  Outlet Pressure: 10.0" to 12.0" W.C.
  Manifold Pressure: Nominal 11.5" W.C.

It is the responsibility of the installer to follow all local and State Codes concerning the installation and operation of the fire pit.

INSTALLATION PREPARATION

Please carefully follow the steps below when: **1)** Selecting the Location. **2)** Construction of the Enclosure. **3)** Installation of the HWI system**.** The steps listed as **WARRANTY REQUIREMENT** must be strictly followed to qualify for product warranty**. Warranty will be void if not followed.**

SELECTING THE LOCATION

WARNING: HWI SYSTEMS ARE DESIGNED FOR OUTDOOR USE ONLY. *HEARTH PRODUCTS CONTROLS CO*. MUST BE NOTIFIED OF ANY OTHER USE.
WARNING: FIRE EFFECTS CREATE VERY HIGH TEMPERATURES- IT IS VERY IMPORTANT THAT COMBUSTIBLES BE KEPT AT SAFE DISTANCES.

- **WARRANTY REQUIREMENT**: For installation of 110vac or 24vac powered control systems, it is required to install a wall switch or breaker for the fire pit electrical outlet away from the enclosure to prevent unwanted ignition of the fire pit.
- **WARRANTY REQUIREMENT**: The HWI system location must accommodate a gas shut off outside of fire effect enclosure. The gas line should be a minimum of 3/4" or larger based on fire effect size.
- To enjoy your fire effect, select a well drained location that allows for sufficient clearance from combustible materials.
- Choose a location that allows easy access for installation and maintenance of the HWI system. Make sure that trees and shrubbery are well clear around and above the fire effect.
- Pick a location that allows sufficient horizontal room to enjoy the fire effect while allowing a safe distance from the heat and flame.
- Select a location where the fire effect can be attended during operation. Never leave an operating fire effect unattended or by someone not familiar with its operation or emergency shut off locations.

Wooden or solid surfaces such as granite or marble must be located far enough away that they do not reach a temperature of more than 100 degrees F plus ambient air temperature. Example: If surrounding air temperature is 70, the wood surface temperature must stay at or below 170 degrees F.

HWI Fire Effect Clearances

Under Valve Box	6"
Sides Surrounding Fire Pit	48"
Overhead Clearance	120"

IMPORTANT: Overhead Clearance applies to tree limbs and branches only- DO NOT install unit under overhang or ceiling without approved vent hood.

CONSTRUCTION OF THE ENCLOSURE

WARNING: THERE MUST BE AN ELECTRICAL (WALL SWITCH OR BREAKER) AND GAS SHUTOFF ON THE EXTERIOR OF THE FIRE EFFECT TO ALLOW FOR EASY ACCESS FOR SHUTDOWN OR IN THE CASE OF AN EMERGENCY.
WARNING: ALWAYS USE PROPER MATERIALS AND CONSTRUCTION FOR GAS SUPPLY, POWER, AND ENCLOSURE.

- **WARRANTY REQUIREMENT**: The enclosure must be constructed on a stable surface. Make sure that the fire effect is high enough that the HWI system is above the grade to prevent water damage to the controls inside the box. **NEVER** install a HWI system below ground level. Drainage must be provided for the enclosure to prevent water accumulation leading to damage to components in the HWI system.
- **WARRANTY REQUIREMENT**: The enclosure must incorporate 1 vent on at least two sides at a minimum size of **18 sq. inches each** (Example: 3"x 6" or larger) to allow heat within the enclosure to escape. Failure to do so will result in the fire effect automatically shutting down when the internal HWI system temperature reaches 175º F. This could lead to heat damage to internal components. **Some enclosures may require more ventilation based on material, size, and extended use.** This vent may work as a drain as well when installed at bottom sidewall to prevent water build up.

Vents- 2 Total

- **WARRANTY REQUIREMENT**: The interior void space of the enclosure surrounding the HWI system cannot be filled with any material (gravel, crushed rock, concrete, etc.)- It is a requirement to have a **minimum of 6"** under the valve box for proper ventilation.
- Select materials that are non-combustible in both initial installations as well as over time.
- Make sure that the structure is level.

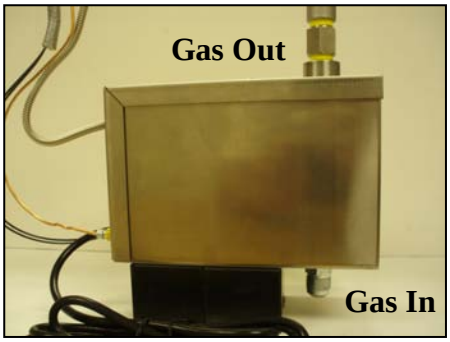
INSTALLATION OF THE HWI FLAME CONTROL SYSTEM

WARNING: CONFIRM THIS APPLIANCE IS BUILT FOR GAS USED- NATURAL GAS OR LP. DO NOT USE NATURAL GAS APPLIANCE WITH LP OR LP APPLIANCE WITH NATURAL GAS. REFER TO LABEL ON THIS APPLIANCE.
WARNING: LP APPLICATIONS: DO NOT USE THIS FLAME CONTROL SYSTEM ON A 12" FIRE RING OR SMALLER- WILL CAUSE BACKPRESSURE & LEAKING OUT AIR MIXER. CHECK FOR GAS LEAKAGE ON ALL LP APPLICATIONS.

⚠ **WARNING: GLASS MEDIA USAGE WITH LP GAS- WHEN USING APPROVED DECORATIVE GLASS TO COVER BURNER APPLY ONLY ENOUGH TO HIDE BURNER. APPLYING OVER 1/2" MAY CREATE BACK PRESSURE AND GAS LEAKAGE FROM AIR MIXER RESULTING IN LP POOLING UNDER FIRE PIT. LAVA ROCK MAY BE APPLIED DEEPER DUE TO LARGER SIZE- LAVA ROCK MAXIMUM DEPTH IS 3" ABOVE BURNER.**

IMPORTANT: BURN TESTING- IT IS THE RESPONSIBILITY OF THE QUALIFIED INSTALLER TO TEST FOR GAS LEAKS AT ALL CONNECTIONS.
ALSO WITH LP GAS THE UNIT MUST BE TESTED WITH MEDIA OVER BURNER FOR CONFIRMATION OF NO BACK PRESSURE CREATING GAS TO LEAK OUT OF AIR MIXER VENTURI HOLES. THIS MAY HAVE TO BE DONE PRIOR TO PLACING IN ENCLOSURE IF NO ACCESS DOOR.

- The main gas should already be plumbed to the location of the fire effect area. A flex line coming from the HWI system should be connected to the main gas line. Tighten the flex line fittings to the gas supply stub and to the HWI system. **Avoid sharp bends with flex line to prevent whistling.**
- Turn on main gas supply and check all fittings in and around fire effect for leaks using a leak reactant, leak detector or soapy water. If leaks are found, shut off gas supply repair leaks and retest.
- The 3' power cord can be either tied into the main power supply for use with wall switch or or plugged into remote receiver to use remotely. **POWER MUST BE TURNED OFF TO ELECTRICAL OUTLET WHEN NOT IN USE.**



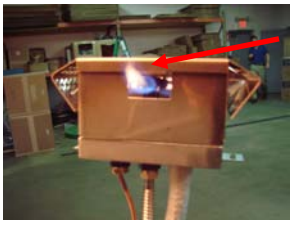
The above picture shows "Gas In" & "Gas Out" to main burner.

Pilot Assembly Mounting:

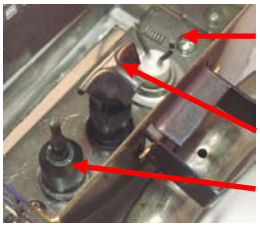
The pilot assembly should be mounted next to the main burner with pilot flame window lined up with and ABOVE a burner hole. The assembly can be mounted to the pan or to the burner as explained below.

WARNING: Do not touch the igniter to any metal material while energized- will blow internal fuse.

IMPORTANT: For proper operation, it is required for the pilot assembly to receive fresh air from underneath- cut rectangular hole in pan to size indicated below or larger; If no pan is used, do not block pilot assembly blow out box underside with media (lava rock or glass)- must remain open.



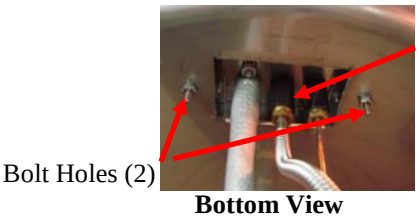
Pilot Assembly



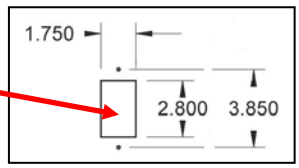
Pilot Assembly Components

Pan Mounting:

1) Cut rectangular hole (2.8" x 1.75") in pan for pilot assembly mounting (see drawing below).
2) Drill two (2) 5/32" bolt holes for mounting of pilot assembly.



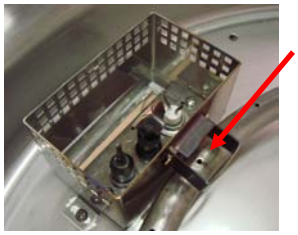
Bottom View



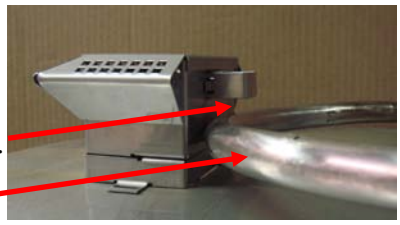
Pilot Assembly Footprint

Top View- note next to burner

IMPORTANT: **a) Pilot assembly should be directly beside burner to ensure main burner ignition.**
b) Center of pilot flame window must be lined up with burner hole and above burner.



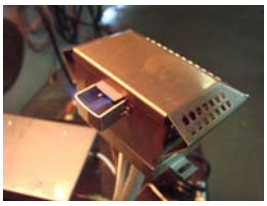
Pilot Window lined up with burner hole.



c) Do NOT reduce rectangular hole size- must be large to prevent suffocation of pilot flame.

Burner Mounting:

The pilot assembly can also be mounted directly to the burner using a U-bolt or bracket. The center portion of the T-pilot hood should be aligned with an orifice of fire ring or burner as shown above.



HWI FLAME CONTROL SYSTEM OPERATION

WARNING: BEFORE USE, BE SURE TO TEST ALL GAS CONNECTIONS FOR LEAKS. DO NOT USE FIRE EFFECT IF THERE IS ANY EVIDENCE OF LEAKING GAS. IF LEAKING GAS IS SUSPECTED, TURN OFF THE MAIN GAS SUPPLY AND REPAIR IMMEDIATELY.

WARNING: WHEN SYSTEM IS NOT IN OPERATION, POWER TO ELECTRICAL OUTLET MUST BE TURNED OFF VIA WALL SWITCH OR BREAKER.

WARNING: NEVER USE ANY MATERIAL THAT IS NON-POROUS AND HOLDS MOISTURE LIKE GRAVEL, PEBBLES, RIVER ROCK, ETC. THIS MATERIAL, WHEN HEATED WILL CAUSE THE TRAPPED MOISTURE TO BOIL, AND FRACTURE UNEXPECTEDLY. THIS MATERIAL IS NOT SUFFICIENTLY POROUS TO ALLOW HEATED STEAM TO READILY ESCAPE WHICH CAN BREAK AND CAUSE PERSONAL INJURY OR DAMAGE.

WARNING: LEAVES, STICKS, WOOD, PAPER, CLOTHING, FOOD MATERIAL, SHOULD ALWAYS BE KEPT AWAY FROM THE FIRE EFFECT. MAKE SURE THAT THERE IS NO VEGITATION OR OTHER OBJECTS OVER THE TOP OR SIDES OF THE FIRE EFFECT THAT COULD INTERFERE WITH SAFE & PROPER OPERATION.

HWI System Start Up:

Initial Start-up: Several "on/off" cycles may be necessary to purge air in gas lines after system installation. System will lockout after 15 attempts to light pilot: Please power OFF then ON to restart.

Sequence of Operation:

1. The hot wire igniter will be powered (glow red) for 5 seconds before pilot valve opens.

2. The hot wire igniter will only be powered the initial 15 seconds of the 60 second pilot cycle. This sequence will repeat up to 15 times (~15 minutes) before going into lockout. To reset, turn "OFF" power then back "ON" again.

3. Pilot flame will ignite and warm thermocouple- it may take 30 seconds at times for thermocouple to get hot. If thermocouple is not hot in 60 seconds, system will shutdown then go back to Step 1.

4. Once thermocouple is hot, main valve will open allowing main burner to ignite.

5. If pilot flame is blown out at anytime, system will shutdown, then automatically restart (Step 1).

NOTE: IF POWER TO FIRE PIT IS TURNED "OFF" THEN IMMEDIATELY TURNED BACK "ON" WHILE MAIN BURNER IS "ON", THE SYSTEM WILL GO INTO LOCKOUT MODE IF THERMOCOUPLE DOES NOT COOL PRIOR TO 30 SECONDS AS A SAFETY FEATURE. TO RESET, TURN "OFF" POWER THEN BACK "ON" AGAIN.

HWI SYSTEM START UP

1. **STOP! Read the safety information on "What to Do If Smell Gas" (Pg. 1).**
2. Confirm there is no debris in fire effect (as mentioned in warnings) including water.
3. Turn "ON" electrical power and gas to fire effect.
4. Using wall switch or remote, turn "ON" fire effect- this may take several cycles to purge any air.
5. To reset after lockout, power unit down then restart.
6. Once fire effect has ignited, **DO NOT** leave unattended.

<u>OVERHEATING:</u> The HWI system will automatically close gas valve if temperature exceeds 175º F inside valve box to prevent component damage. When unit cools below 175º F, the unit will automatically restart. To correct overheating, ensure enclosure has adequate ventilation- see "Construction of Enclosure".

HWI SYSTEM SHUTDOWN

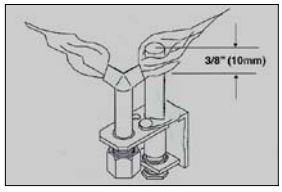
1. Turn "OFF" fire effect using remote control or wall switch.

<u>IMPORTANT:</u> REMOTE CONTROL USE: YOU MUST ALSO TURN OFF POWER TO ELECTRICAL OUTLET OR GAS TO FIRE EFFECT TO PREVENT ACCIDENTAL START.

2. Once fire effect is cooled, use appropriate cover to protect fire effect.

HWI System Maintenance:

1) **Keep fire effect covered at all times when not in use.**
2) Keep any debris out of fire effect- clean as needed.
3) Burner Cleaning: If flames exhibit any abnormal shapes or behavior, or if burner fails to ignite properly, then the burner holes may require cleaning. The appliance can be cleaned by carefully removing the logs and media to allow access to burner. Use a brush to carefully remove dust, spider webs, and loose particles from base, logs, and fire ring itself.
4) **Thermocouple Cleaning of Soot:** Remove lava rock & glass around pilot, then blow out box lid. Clean thermocouple of any soot using soft brush. Be careful not to damage hot wire element. Place lava rock or glass back as explained on Pg. 7.
5) Visually inspect the pilot- The pilot flame should cover 3/8" to 1/2" of the thermocouple as shown below.
Cleaning of orifice may be required by removing pilot hood and removing orifice as shown below.



Pilot Hood- turn CCW

Orifice

Lava Rock & Glass Application

Please follow the instructions below to add the finishing touch to your fire effect. Remember the deeper your lava rock or glass the more risk of reducing if not smothering the flame. Particular attention needs to be on the pilot assembly area- if thermocouple is covered, this will cause the pit to shutdown due to smothering pilot flame.

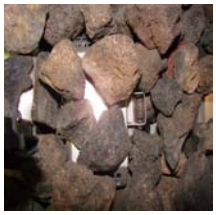
IMPORTANT: SEE BOXED WARNINGS ON PAGE 3 REGARDING LP & GLASS USAGE.

Lava Rock Only Application

1) Install your fire pit per instructions.

2) Apply lava rock ONLY deep enough to and hide fire ring and pan- less than 2" slightly above ring.

3) IMPORTANT: Do not cover blowout box with lava rock- leave open. Do not allow any rock to touch the flame sensor rod.



Decorative Glass Application

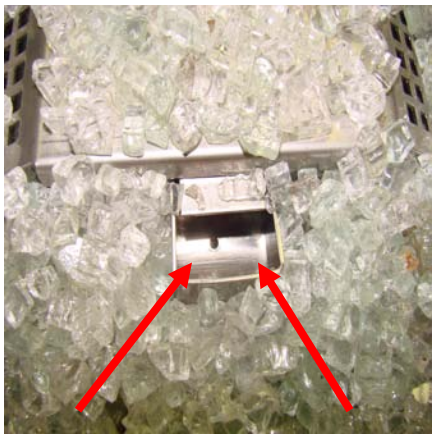
1) Install your fire pit per instructions.

2) Add base layer of lava rock as filler to enhance flame. Height should be above fire ring- use **smaller** pieces of rock supplied on top of ring.

3) Apply top coat of glass to lava rock, again just deep enough to hide lava rock and pan.

Blowout Box: Do not cover blowout box vents or opening with lava rock or glass- this must remain open. This will cause the pilot flame to suffocate and turn off pit.

DO NOT COVER VENTS!



DO NOT COVER PILOT OPENING!

HWI Flame Control System Trouble Shooting

Below are some potential causes and countermeasures to the symptoms indicated in bold. If still unable to resolve issue, please contact your retailer or certified technician.

Hot Wire Will Not Glow

1. No power to unit.	Confirm breaker, wall switch, and remote are on (120Vac)
2. Blown fuse in module.	Change 5A fuse located on module in valve box.

Fuse

3. Hi Limit Switch Tripping	This will occur after fire effect has burned for awhile- see proper venting in "Construction of Enclosure" (Pg. 3)
4. Hot wire element damaged	Change hot wire element.
5. Damaged wires.	Inspect wires to hot wire- confirm insulation is in good condition and connections are tight.

No Pilot Flame (Hot Wire Glows)

1. Air in gas line.	If new install, may takes several attempts to purge air
2. Debris in gas line.	Confirm gas line is clear (insulation, dirt, plastic etc..)
3. Gas Pressure Improper	Confirm proper gas pressure found (Pg. 2)
4. Pilot Orifice Dirty	Remove pilot head and clean orifice.

No Main Burner (Pilot Lights)

1. Gas Pressure Improper	Confirm proper gas pressure found (Pg. 2)
2. Small Pilot Flame	Remove pilot head and clean orifice. Should be 3/8" flame on thermocouple (Pg. 6)
3. Dirty Thermocouple	Clean using soft brush (Pg. 6)
4. Burner Obstructed	Confirm no debris or water in burner (Always cover fire effect!)

Main Burner Turning Off/On Frequently

1. Small Pilot Flame	Remove pilot head and clean orifice. Should be 3/8" flame on thermocouple (Pg. 6)
2. Too much Media over blow out box.	This will suffocate flame See Pg. 7 for application of Lava Rock or Glass
3. Gas Pressure Improper	Gas pressure too low (Pg. 2)
4. Thermocouple Defective	Change Thermocouple

Limited Warranty

Hearth Products Controls Company (HPC) warranties HWI Flame Control System against manufacturing defects that prevent safe and correct function as follows:

- **Electronics, Gas Valve, & Pilot Assembly: Commercial-6mos; Residential- 1 yr.**
- **Stainless Steel Valve Box: Commercial-1yr.; Residential 3yrs.**

This commences from the date of original sale / shipment from HPC FOB Dayton, Ohio.

This warranty is for parts and in-house (HPC) labor. The defective product must be sent back to HPC with a Return Merchandise Authorization (RMA) issued by HPC for that specific product and any other additional information for the nature of the defect or warranty claim.

The warranty does not cover items that have been damaged by overheating, modification, abuse, or improper storage. Also any labor involving installation or maintenance with the unit is not covered.

This warranty excludes claims for consequential, indirect-collateral expenses arising from product defects or warranty recovery.