

ELECTRONIC IGNITION OUTDOOR FIREPLACE INSERT



DBOF28EI



LBOF28EI

EI Series

On/Off Models

Installation & Operation Instructions



C US



FIRE INSPIRED[®]

Hearth Products Controls
Fire-inspired since 1975.

660-EI ON/OFF

NATIONAL
FIREPLACE
INSTITUTE





This is a Safety Alert Symbol

When you see this symbol on the EI Control Panel, or in this manual, look for one of the following signal word panels alerting you to the potential for personal injury, death or major property damage.



WARNING: For Outdoor Use Only.

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



WARNING

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

An LP-cylinder not connected for use shall not be stored in the vicinity of this or any other appliance.



DANGER

FIRE OR EXPLOSION HAZARD

If you smell gas:

- **Shut off gas to the appliance.**
- **Extinguish an open flame.**
- **If odor continues, leave the area immediately.**
- **After leaving the area, call your gas supplier or fire department.**

Failure to follow these instructions could result in fire or explosion, which could cause property damage, personal injury, or death.



DANGER

CARBON MONOXIDE HAZARD

This appliance can produce carbon monoxide which has no odor.

Using it in an enclosed space can kill you.

Never use this appliance in an enclosed space such as a camper, tent, car or home.



INSTALLER: Leave this manual with the appliance.

CONSUMER: Retain this manual for future reference.



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.

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1 Important Safety Information

- Hearth Products Controls Company recommends that our products are installed by professionals locally licensed by the authority having jurisdiction in gas piping. All installation instructions must be followed to ensure proper performance and safety. Hearth Products Controls Company assumes no responsibility for problems relating to the installation.
- To qualify for warranty, all instructions must be strictly followed. Otherwise, warranty may be void. Never alter product or configuration in any way.
- Annual servicing should be handled by professionals certified in the US by the National Fireplace Institute (NFI) as NFI Gas Specialists or in Canada by WETT (Wood Energy Technical Training).
- It is the installer's responsibility to ensure a safe installation and to educate the end-user regarding the features, safety recommendations and proper operation of this product.
- Please reference page 1 for all warnings.



Technical Support

For information and support contact your Hearth Products Controls dealer.

1 Important Safety Information

Symbol Legend



This is a Safety Alert Symbol

When you see this symbol on the EI Control Panel, or in this manual, look for one of the following signal word panels alerting you to the potential for personal injury, death or major property damage.



Necessary instructions



1 Important Safety Information

Please reference page 1 for all warnings.

Important Safety Information for Installers

Leave this manual with the end-user and instruct them to retain it for future reference. Instructions and product updates are also available at www.hpcfire.com under the Support tab.

Installers must carefully follow the instructions in this manual to prevent personal injury or property loss. These instructions contain information critical to the safe installation and operation of the fireplace.

- Instructions are updated as needed. It is the responsibility of the installers to check for product updates and installation manual updates at www.hpcfire.com/support.html prior to installation.
- It is the responsibility of the installer to follow:
 - The National Fuel Gas Code, ANSI Z223.1/NFPA 54 or International Fuel Gas Code.
 - Natural Gas and Propane Installation Code CSAB149.1 or CSA B149.2
 - The National Electrical Code, ANSI/NFPA 70. In Canada, Canadian Electrical Code CSA 22.1.
 - Local codes
- **Control options:** Use of wall switch, optional remote control (#578-C), automatic shut-off timer or whole house system.

Gas

- Only use the gas/fuel type specified for this fireplace insert, refer to the label on the EI Control Panel. Never use an alternative fuel to include biofuel, ethanol, lighter fluid or any other fuel.
- Gas pressure and type should be checked prior to use and installation.
 - **Natural Gas Fire Pit:** Supply Pressure: Minimum: 6.0 inches W.C.; Maximum: 7.0 inches W.C.
 - **LP Gas:** Supply Pressure: Minimum: 8.0 inches W.C.; Maximum: 11.0 inches W.C.

1 Important Safety Information

- If not using supplied flex line, ensure any flex line that may be used from the permanent main fuel supply to the product is rated to the stated max BTU of the product and certified to ANSI Z21.75*CSA 6.27.
- The EI Series is not for use with small LP Tanks and must utilize permanent fixed piping for fuel supply.

Electrical

- Verify correct 120 VAC – 1 amp or 24 VAC – 4 amp power supply. Only use the type specified for this fireplace insert. Refer to the label on the EI Control Panel. All electronic applications should utilize a GFCI-protected circuit.
 - If removing power cord plug and hard wiring within junction box, use only a certified Electrician and must follow the National Electrical Code (NEC), NFPA 70 and all local codes.

IMPORTANT

24 VAC powered fireplace inserts:

- **Fire Pit will not perform properly if power supply rating is below 100W or wire size is too small.**
- **HPC highly recommends using our HPC/Sebco 24 VAC 100W power supply series (311-PS1, 311-PS3, 311-PS5 Models)**

A Class II 24 VAC, 4 amp, 100 W transformer must be used to power the EI Control Panel and be able to be switched on and off from a remote location to allow for easy access or emergency.

- **24 VAC wire sizing: Wire lengths 75 ft or less: 14 gauge**
- **Wire lengths 76 ft or more: 12 gauge**

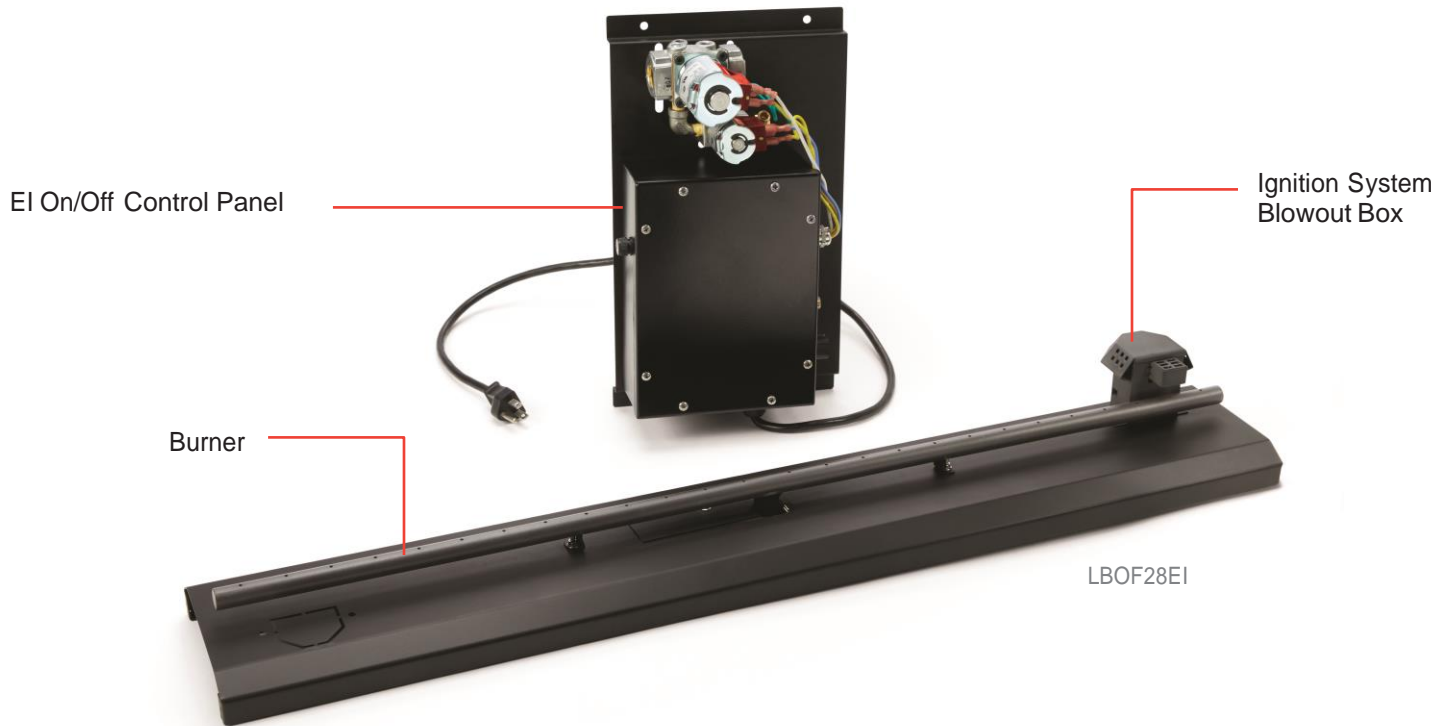
Important Safety Information for End-Users

- Never leave an operating fireplace insert unattended or with someone not familiar with its operation or emergency shut-off locations.
- Both children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns and clothing ignition.
- Young children should be carefully supervised when they are in the area of the fireplace.
- Keep the appliance area clear and free from combustible materials, gasoline, and other flammable vapors and liquids.



2 Product Features and Parts List

Product Features



Parts List

- Fireplace Insert
- EI Control Panel
- Gas Input Flex Line – 24"
- Installation and Operation Instructions

3 Selecting the Fireplace Insert Location

NOTE: All fireplace inserts and systems are designed and intended for outdoor use only.

IMPORTANT

It is recommended that material such as granite, marble or other dense stone be kept away from heat and especially flame due to risk of cracking. HPC is not responsible for damage resulting from failure to follow these recommendations.

- Select a location that
 - ensures above-grade installation of the fireplace.
 - allows easy access for installation and maintenance of the fireplace.
 - provides sufficient horizontal room to enjoy the fireplace while allowing a safe distance from the heat and flame.
- Fireplace inserts create very high temperatures. For clearances refer to table 4.1. Clothing or other flammable materials should not be placed on or near fire pit.

4 Minimum Fireplace Cavity Size

Clearances around Fire Pit

It's important to review the clearance requirements below for any type of overhead structure to ensure that the distances are met. Tables 4.1 and 4.2.

PART NUMBERS	MINIMUM FIREPLACE CAVITY SIZE		
	HEIGHT (A)	FRONT OPENING WIDTH (B)	DEPTH (C)
DBOF22EI	18"	36"	18"
DBOF28EI	18"	42"	18"
LBOF22EI	18"	26"	18"
LBOF28EI	18"	42"	18"
LBOF46EI	18"	60"	18"
LBOF58EI	18"	72"	18"
LBOF70EI	18"	84"	18"
LBOF82EI	18"	96"	18"

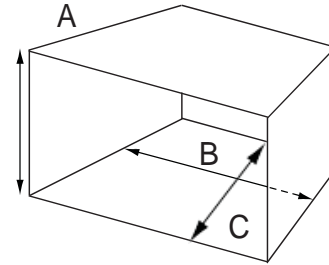


Table 4.2 – Cavity dimension key

Table 4.1 – Clearances for standard fire pit up to 200k BTU

We recommend all mantels made from noncombustible material. If using combustible materials, follow the guidelines below. Table 4.3.

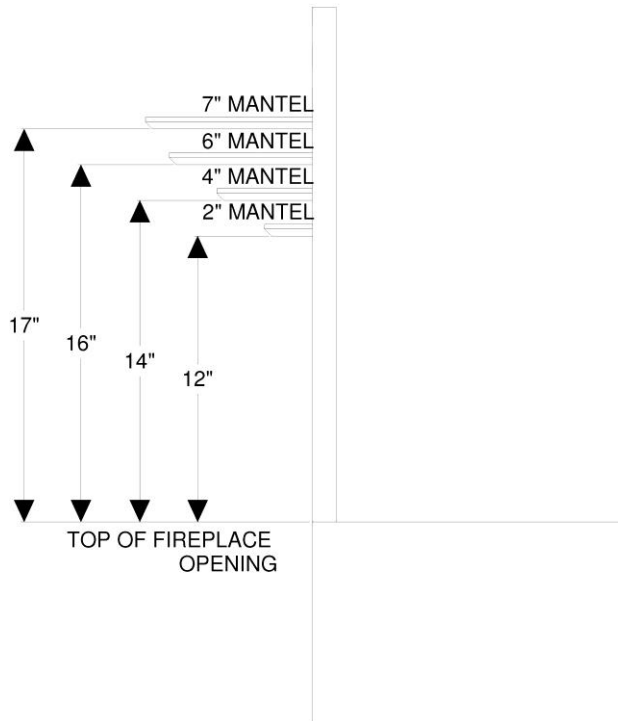


Table 4.3 – Combustible Materials clearances for mantels

5 Fireplace Enclosure Requirements

Location and design

- Refer to cut sheets on our website for important dimensional information for your fireplace insert. Visit www.hpcfire.com
- It is recommended that material such as granite, marble or other dense stone be kept away from heat and especially flame due to risk of cracking. Manufacturer is not responsible for damage.
- The enclosure must be constructed on a stable surface and be level.
- The product must be accessible for service.
- EI Control Panel must be mounted at a minimum of 24" above ground

NOTE: HPC cannot guarantee the fireplace insert pan on all of our products will be perfectly flat and will not warp due to heat.

Gas

- Fireplace must have a gas shutoff on the exterior of the fireplace to allow for emergency shut off and maintenance. The gas shutoff should NOT be used to adjust flame height.
- Fuel line sizing is the responsibility of the installer and must be able to supply the stated maximum BTU for the product – refer to product label on EI Control Panel.
- Gas lines should be behind or to the side of the fireplace insert. See Figure 5.1. Center fireplace in opening.

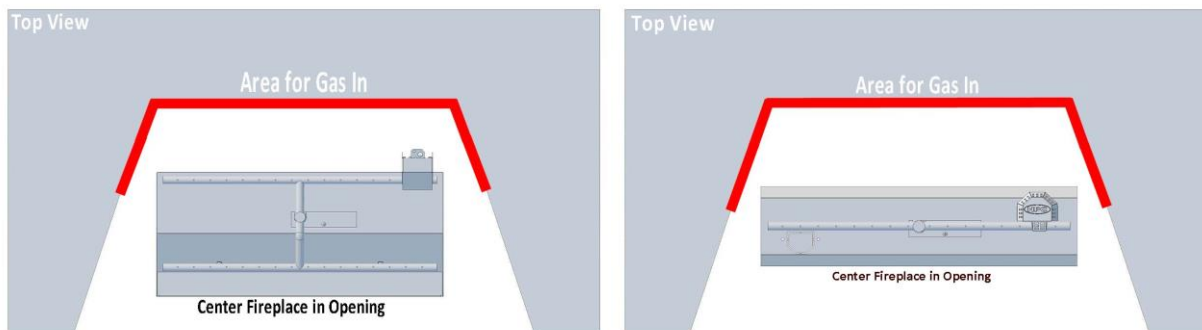


Figure 5.1 – Gas lines and fireplace locations

5 Fireplace Enclosure Requirements

Construction materials

- Use non-combustible materials and construction for gas supply, power and enclosure.

Venting if Enclosing EI Control Panel

- The enclosure must incorporate vents to allow heat and or residual fuel to escape. Failure to properly vent the enclosure may result in the fireplace overheating or explosion.
- Some enclosures may require more ventilation based on material, size, and extended use.
- Failure to properly vent the enclosure may result in the fireplace overheating or explosion. Continuous overheating could lead to heat damage to internal components.
- **OVERHEATING:** the fireplace will automatically close the gas valve if the temperature exceeds 190°F inside the control box to prevent component damage. Turn main power to the fireplace off and on to reset. To correct overheating, ensure enclosure has adequate ventilation per the guidelines in this section.
- Ensure enclosure has adequate ventilation per the guidelines in this section.

6 Installing the Fireplace Insert

Fuel line

- Fireplace must have a gas shutoff on the outside of the exterior of the fireplace to allow for emergency shut off and maintenance. The gas shutoff should not be used to adjust flame height.
- The installer is responsible for using the correct fuel line sizing that is able to supply the stated maximum BTU for the product – refer to product label on the fireplace for specifications.

INSTALLATION

We suggest that our products be installed by professionals that are locally licensed by the authority having jurisdiction in gas piping.

- Perform all leak tests with leak detector or leak reactant.

IMPORTANT To prevent damage, isolate the appliance when performing any pressure testing.

IMPORTANT *Burn Testing:* It is the responsibility of the qualified installer to test for gas leaks at all connections.

IMPORTANT *Gas Plumbing Connections:* Use joint compound or tape that is resistant to all gases. Apply joint compound only to all male pipe fittings. **DO NOT use on flex line flared fittings.** Be sure to tighten every joint securely.

Installation Steps:

1. Set fireplace insert in properly constructed fireplace enclosure, read **Section 5 – Fireplace Enclosure Requirements**.
2. Position fireplace insert following safety recommendations with access to all gas connections for testing. Read **Section 3 – Selecting the Fireplace Insert Location** for more details.
3. Shut off gas supply to fireplace.
4. Connect proper 120 VAC or 24 VAC electrical power following all local codes.
5. Mount EI Control Panel on the outside of the fireplace using the 4 mounting holes. EI Control Panel should be at least 24" off the ground. Figure 6.1.
6. Connect EI Control Panel to main gas supply. Warning: avoid sharp bends with flex line to prevent whistling.



Figure 6.1 – Mounting EI Box

7 Adding Approved Media



WARNING

FOR 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.



WARNING

FOR GLASS MEDIA USAGE 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.



WARNING

NEVER USE ANY MATERIAL THAT IS NON-POROUS OR HOLDS MOISTURE SUCH AS GRAVE, PEBBLES, RIVER ROCK, ETC. WHEN HEATED, NON-POROUS MATERIAL WILL NOT ALLOW HEATED STEAM TO READILY ESCAPE WHICH CAN BREAK AND CAUSE PERSONAL INJURY OR DAMAGE. MATERIAL THAT HOLDS MOISTURE CAN BOIL AND FRACTURE UNEXPECTEDLY WHEN EXPOSED TO HEAT.

IMPORTANT

The fireplace insert is designed to use approved media correctly installed over the burner to achieve proper combustion.

- Never install a mesh or screen under the media.
- Media affects flame pattern greatly. It is possible to create an unusual flame pattern that could damage your enclosure. Enclosure damage from an open flame fire feature is not covered under any warranty.



DBOF inserts height adjustments are located on the rear of the pan. Adjust height as needed, not necessary, to achieve the desired flame presence.

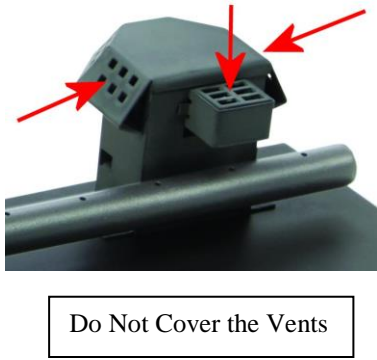
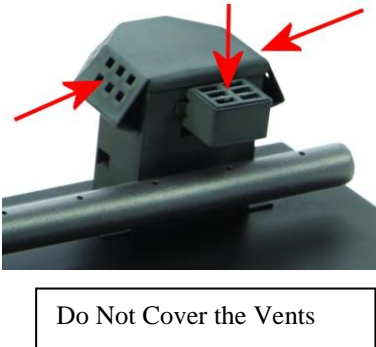


7 Adding Approved Media

Application of Approved Media

Please follow the instructions below to add the finishing touch to your fireplace insert. Particular attention needs to be on the pilot assembly area.

Incorrect media installation will cause the pilot flame to suffocate and turn off fireplace insert or delay main burner ignition.

Lava Rock Only Application	Decorative Glass Application
<ol style="list-style-type: none">1) Install your fireplace insert per instructions.2) Apply lava rock ONLY deep enough to cover ring.3) Blowout Box: Leave vents open. Do not cover vents with lava rock or allow any rock to block flame opening. Incorrect media installation will cause the pilot flame to suffocate and turn off fireplace insert or delay main burner ignition. 	<ol style="list-style-type: none">1) Install your fireplace insert per instructions.2) Fill pan with media. Cover burner with 1/4 to 1/2 inches of glass. Do not overfill pan with glass. All LP installations must be checked for back pressure with media installed. Failure to do so may result in personal injury or property damage.3) Blowout Box: Do not cover blowout box vents or opening with glass. Incorrect media installation will cause the pilot flame to suffocate and turn off fireplace inset or delay main burner ignition. 

IMPORTANT

For log sets, place logs where they are NOT directly in the flame but has the best aesthetics for the fire.

8 Operating the Fireplace Insert

- Before use, be sure to test all gas connections for leaks. Do not use fireplace insert if there is any evidence of leaking gas. If leaking gas suspected, turn off the main gas supply and repair immediately.
- Do not use the enclosure as a seating area. Wind and gusty conditions will affect the flame in an unpredictable manner. If conditions exist that are not safe for patrons, turn off the fireplace insert.
- The hose should be inspected before each use of the fireplace insert and replaced prior to use if there is evidence of excessive abrasion or wear or if the hose is damaged. The replacement hose assembly shall be that specified by the manufacturer.
- Do not use the fireplace insert if any part has been under water. Immediately call a qualified service technician to inspect the unit and to replace any part of the control system and any gas control that has been under water.
- Never use any material that is non-porous and holds moisture such as 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.
- Solid fuels shall not be burned in the fireplace insert.
- Leaves, sticks, wood, paper, clothing, food material, should be kept away from the fireplace insert. Clothing or other flammable materials should not be hung from the appliance or placed on or near the appliance. Keep the appliance area free from gasoline, and other flammable vapors and liquids.
- Fireplace insert is not for cooking.
- Make sure that there is no vegetation or other objects over the top or sides of the fireplace insert that could interfere with safe operation. See clearances in **Section 3 – Selecting the Fireplace Insert Location**.
- If lava rock is wet, allow the fire pit to burn for 45 minutes prior to coming within 15 feet of the fireplace insert.
- When the unit is not in operation, turn off gas valve.



DBOF inserts height adjustments are located on the rear of the pan. Adjust height as needed, not necessary, to achieve the desired flame presence.



8 Operating the Fireplace Insert

Start-up

Initial Start-up: Several “ON/OFF” cycles may be necessary to purge air in gas lines after system installation. EI Control Panel will lockout after 15 attempts to light pilot, please power OFF then ON to restart.

Sequence of Operation:

1. The igniter will be powered (glow red) for five seconds before pilot valve opens.
2. The igniter will only be powered the initial 15 seconds of the 30-second pilot cycle. This sequence will repeat up to 15 times (approximately 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 shut down. If this occurs, 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 any time, system will shut down, and then automatically restart (Step 1).



DANGER

If you smell gas:

- 1) Shut off gas to appliance.
- 2) Extinguish any open flame.
- 3) If odor continues, keep away from appliance and immediately call gas supplier or fire department.

EI Control Panel Start Up

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

This product is not for use with small tanks.

EI Control Panel Shutdown

1. Turn “OFF” fireplace insert using remote or app.

IMPORTANT

FOR USE WITH WALL SWITCH OR REMOTE, YOU MUST ALSO TURN OFF POWER TO ELECTRICAL OUTLET OR GAS TO FIREPLACE INSERT TO PREVENT ACCIDENTAL START.

9 Maintaining the Fireplace Insert

- Any guard or protective device removed for servicing must be replaced prior to operating the fireplace insert.
- We suggest that our products be serviced annually by a professional certified in the US by the National Fireplace Institute (NFI) as NFI Gas Specialists.
- Ensure gas is shut off and fireplace insert is cool before servicing.
- In some areas of the country, spiders or insects have been known to build nests and/or lay eggs in the venturi holes of the air-mixer for LP units. This can cause fuel to fill the fire feature cavity and result in personal injury or property damage. Periodic inspection by a qualified service technician of the air-mixer is required to ensure your fire feature performs properly, Figure 9.1.
- **Burner Cleaning: One time a year.** 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. If evidence of damage, burner must be replaced with burner specified by the manufacturer.
- **Thermocouple cleaning of soot: Once every six months or as needed.** Remove lava rock & glass around pilot, then the blowout 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 in **Section 7 – Adding Approved Media.**
- **Visually inspect the pilot.** The pilot flame should cover 3/8 inch to 1/2 inch of the thermocouple, Figure 9.2. Cleaning of the pilot orifice may be required by removing pilot hood counter clockwise and removing orifice, Figure 9.3.

Service

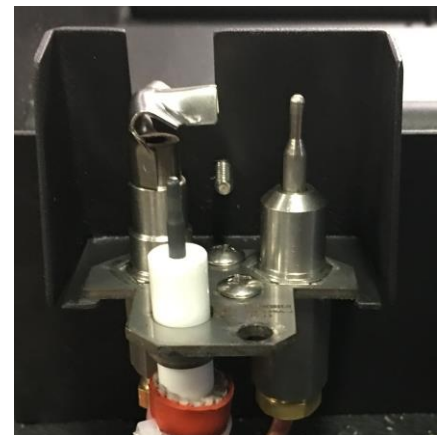
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We suggest that our products be serviced by a professional certified in the US by the National Fireplace Institute (NFI) as NFI Gas Specialists.



LBOF Fireplace Inserts



DBOF Fireplace Inserts

10 Troubleshooting

Table 10.1, below indicates some potential causes and countermeasures to the symptoms indicated in bold type. **Please contact your retailer or certified technician for service and repair.**

- The error number and description are shown by the number of LED blinks on the module inside of the EI Control Panel.

Service

**NATIONAL
FIREPLACE
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We suggest that our products be serviced by a professional certified in the US by the National Fireplace Institute (NFI) as NFI Gas Specialists.

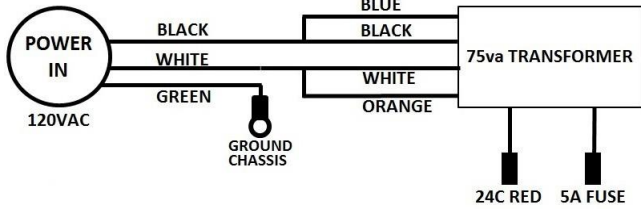
Error Number & Description	Problem	Possible Causes	Solution
1 Igniter failure 6 Igniter open	Pilot Will Not Light	Air in gas line	New install – May take several attempts
		No gas flow – Gas not ON or line obstruction	Confirm gas is ON upstream Possible debris in line – insulation, dirt, plastic, etc.
		Pilot orifice dirty or clogged	Remove orifice and clean (Section 9)
		Gas pressure improper	Confirm proper gas pressure (Section 1)
		Igniter element damaged	Change igniter element
		Damaged wires	Inspect wires to igniter. Confirm insulation is in good condition and connections are tight
3 Thermocouple error 4 Hardware fault pilot/main valve 5 Flame at startup	No Main Burner (Pilot Flame Present)	Loose thermocouple at the valve box	Tighten down connection at valve box. Should be tightly snug.
		Thermocouple cracked/broke under pilot assembly	Replace thermocouple
		Gas pressure improper	Confirm proper gas pressure (Section 1)
		Small pilot flame	Remove pilot head and clean orifice (Section 9)
		Dirty thermocouple	Clean using soft brush
		Fire ring obstructed	Confirm no debris or water in ring
		Improperly applied media	See Section 7.
Pilot flame present at all times	Possible debris inside valve		
	Main Burner Turning Off/On Frequently	Small pilot flame	Remove pilot head and clean orifice (Section 9)
		Improperly applied media	See Section 7.
		Gas pressure improper	Gas pressure too low (Section 1)
		Thermocouple defective	Change thermocouple
2 Over temperature 10 Internal control fault or Over temperature	No Power or Response from Unit	No power to unit	Confirm breaker, wall switch and remote are on
		Remote not working	Change batteries
			Re-sync remote (High/Low models only)
		Has power to unit but will not cycle	Check external fuse (5A)
			Check voltage to unit Module sensing wrong voltage. Replace module and transformer
Over temperature	Inadequate venting see proper venting in Section 5. Power OFF then back ON to reset		

Table 10.1 – Troubleshooting

11 Wiring Diagram

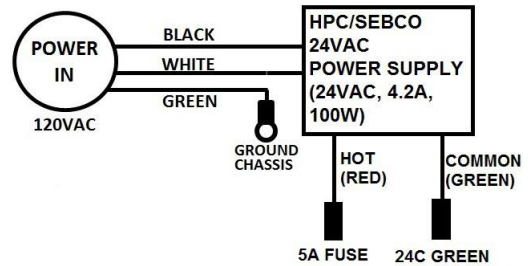
120VAC Models:

(Included in EI Control Panel)

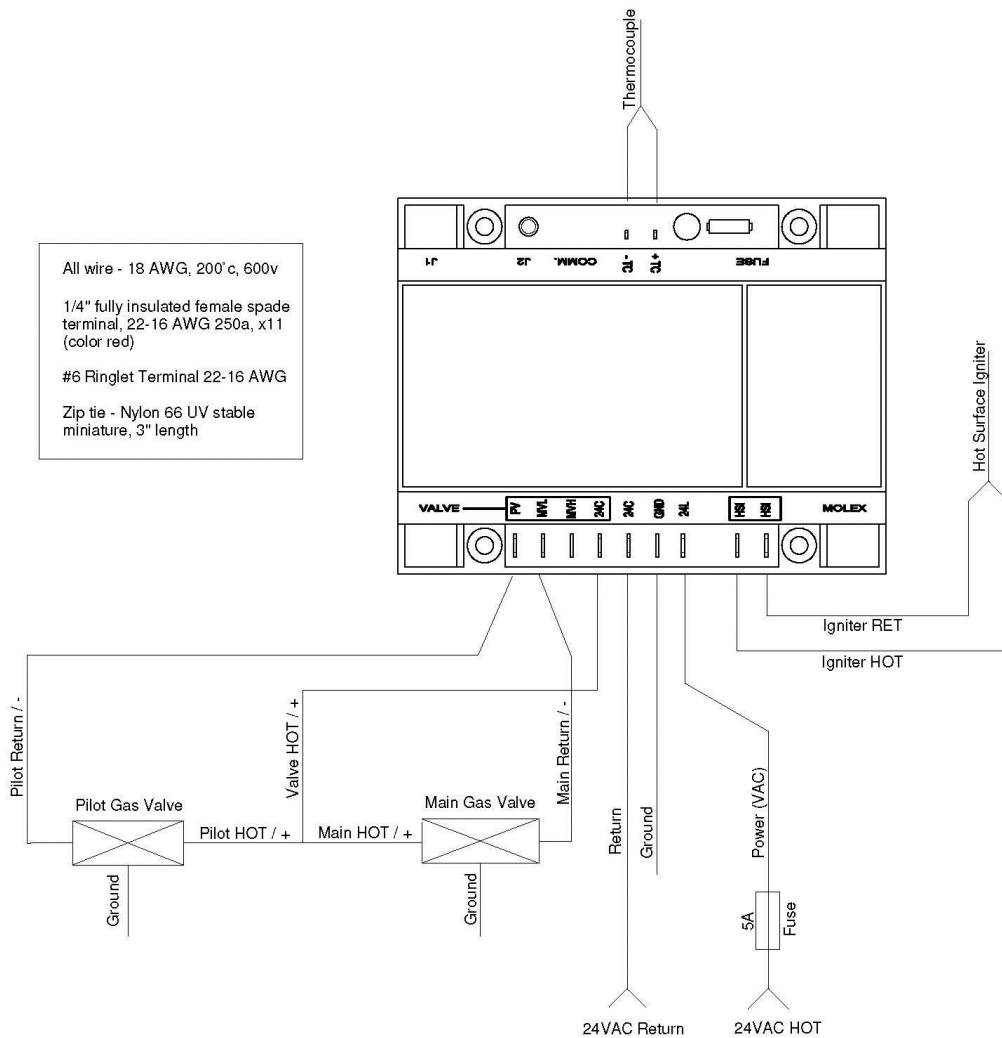


24VAC Models:

(Power supply sold separately)
311-PSI, 311-PS3, 311-PS5



NOTE: 100W Output Required



12 Compatible Accessories

Please contact your dealer for parts – if unsure please contact HPC or visit our website at www.hpcfire.com and we will be happy to help you.

12 Replacement Parts

Please contact your dealer for parts – if unsure please contact HPC or visit our website at www.hpcfire.com and we will be happy to help you.

14 Warranty

Warranty

Hearth Products Controls Co. (HPC) warrants fire pits against manufacturing defects that prevent safe and correct function as follows:

1) **Stainless Steel Fire Pit and Outdoor Fireplace Burners - Lifetime Warranty**

Limited Warranty:

- 2) Electronics, Gas Valve: Commercial-1 year; Residential-3 year.
- 3) Pilot Assembly: Commercial-1 year; Residential-2 year.
- 4) Stainless Steel Pan, Valve Box: Commercial-1 year; Residential-5 years

Warranty 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.

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FIRE INSPIRED™
Hearth Products Controls
Fire-inspired since 1975.

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For detailed product information, go to www.hpcfire.com