

FPPK-UN Control Kit
Installation & Operating Instructions
(Pan and Burner not included)



INSTALLER: Please leave these instructions with the consumer.
CONSUMER: Please retain instructions for future reference.

WARNING: If the information in this manual is not followed, an explosion or fire could result causing property damage, personal injury, or loss of life.
IF YOU SMELL GAS: Shut off gas to appliance immediately. If odor continues, call gas supplier or Fire Department immediately.

We recommend 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.

Assembly Instructions

<u>Quan.</u>	<u>Item</u>	<u>Description</u>	<u>Comments</u>
1	120-FPPK	Electrode Mounting Bracket	
5	610	6/32 Nut	
5	611	6/32 x 1/2" Screw	
1	692	Igniter w/ ground	
1	690	Spark Igniter Unit	
1	111	Black Knob	
1	900	Valve Log 22700/045 80865453	
1	901	Copreci Thermocouple 80871632	
1	902	Nut M1508032504	
2	903	Nut M8 8605609	
1	904	Valve Box (heat shield) for FPPK	
1	212	Switch CR-EO14 O/O	
1	213S	Wires for FPPK valve box	
2	504	3/8" x 1.5" Nipple 6818706249800	
1	408	1/2" x 3/8" FIP 90 5125708063800	
1	461	Drilled at #14 size (Natural Gas- 85k Btu)	
1	501	3/8" FIP x 3/8" F 3523506069800	
1	512	3/8" x 10" Nipple 68187065699800	
1	515	3/8" x 2.5" Nipple	
1	505	1/2" FIP x 3/8" F Reducer 3516508069800	
1	509	Coupler 3/8" x 3/8"	
1	582	3/8" x 3/8" FIP Union 35657060699800	
1	510	3/8" x 3" Nipple	
1	502	3/8" M to 3/8" F Elbow	
2	SSC24	24" Gas Flex Line 20-2132-18	
1	422	1/2" Flare x 3/8" Fitting	
1	634	9v Battery	

Assembly Steps:

Valve Box:

- 1) Plug in ground wire to spark igniter unit (2nd terminal down); attach other end (spade connector) to nut (610).
- 2) Mount Spark Igniter Unit (690) in valve box (904)- fasten with 2 screws / nuts (611 & 610).
- 3) Mount valve (900) in valve box- hand tighten face plate nut.
- 4) Apply Teflon tape, insert and hand tighten 1.5" nipple (504) into outlet of valve.
- 5) Apply Teflon tape, insert and hand tighten 3" nipple (510) into inlet of valve.
- 6) Finish tightening face plate nut on valve.
- 7) Finish tightening 1.5" nipple (504) into outlet. Finish tightening 3" nipple (510) into inlet of valve.
- 8) Apply Teflon tape, attach and tighten brass 1/2" x 3/8" FIP 90 (408) to 3" nipple (510).
- 9) Connect both wires (213S) to switch (212).
- 10) Feed wires through square hole in valve box, connect to bottom 2 terminals of spark igniter unit.
- 11) Insert switch into square hole and snap in place. NOTE: On position "I" on switch lever should be towards top, "O" on bottom..
- 12) Apply Teflon tape, attach and tighten 3/8" coupler (509) to 1.5" nipple (504).
- 13) Drill out Air Mixer (460) with drill size #45. Mark with **RED** marker.
- 14) Apply Teflon tape, attach and tighten Air Mixer (460) to coupler (509). NOTE: Adjusting nut toward coupler.
- 15) Attach Black Knob (111) to valve (900). If loose, carefully spread shaft w/ flathead screwdriver in valve shaft.
- 16) Apply decal (829-HS) to outside of valve box.

Hard Pipe Assembly:

- 17) Assemble other end of union (582) to 10" nipple (512)
- 18) Assemble 3/8" x 2.5" nipple (515) to 3/8" x 3/8" elbow (501).
- 19) Assemble other end of 3/8" x 2.5" nipple (515) to 1/2" x 3/8" reducer (505).
- 20) Assemble (do not tighten) 3/8" x 3/8" Union (582) to 90 degree 3/8" FIP x 3/8" M (502).
- 21) Drill out Natural Gas orifice (461) with drill size #14.

Electrode Mounting Bracket:

- 22) Using electrode mounting bracket (120-FPPK), attach igniter (692) and thermocouple (901) to bracket and tighten both.
- 23) Place 2 screws (611) in bracket, hand tighten 2 nuts (610).

INSTALLATION PREPARATION

Please carefully follow the steps below when: 1) Selecting the Location. 2) Construction of the Enclosure. 3) Installation of the Complete Fire Pit.

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

The steps listed as **WARRANTY REQUIREMENT** must be strictly followed to qualify for product 3 year warranty. **Warranty will be void if not followed.**

1) SELECTING THE LOCATION:

WARNING: FIRE PITS ARE DESIGNED STRICTLY FOR **OUTDOOR USE ONLY**.
HEARTH PRODUCTS CONTROLS CO. MUST BE NOTIFIED OF ANY OTHER USE.

WARNING: FIRE PITS CREATE VERY HIGH TEMPERATURES- IT IS VERY IMPORTANT THAT COMBUSTIBLES BE KEPT AT SAFE DISTANCES. LP CYLINDERS NOT CONNECTED TO THIS DEVICE MUST BE STORED AWAY FROM FIRE PIT.

- **WARRANTY REQUIREMENT:** The fire pit location must accommodate a gas shut off within **4 feet** of the fire pit. Gas shut off must be outside of fire pit. The gas line should be sized minimum gas pressure at maximum flow rate (Btu/hr).
- To enjoy your fire pit, 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 fire pit. Make sure that trees and shrubbery are well clear around and above the fire pit.
- Pick a location that allows sufficient horizontal room to enjoy the fire pit while allowing a safe distance from the heat and flame.
- Select a location where the fire pit can be attended during operation. Never leave an operating fire pit unattended or by someone not familiar with its operation or emergency shut off locations.
Wooden surfaces 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.

FPPK Fire Pit Clearances

Sides Surrounding Fire Pit	14"
Above Fire Pit	96"

2) CONSTRUCTION OF THE ENCLOSURE:

WARNING: THERE MUST BE A GAS SHUTOFF ON THE EXTERIOR OF THE FIRE PIT TO ALLOW FOR EASY ACCESS IN THE CASE OF AN EMERGENCY.

WARNING: ALWAYS USE PROPER MATERIALS AND CONSTRUCTION FOR GAS SUPPLY AND ENCLOSURE.

- **WARRANTY REQUIREMENT:** The enclosure must be constructed on a stable surface. Make sure that the fire pit is high enough that the control box is above the grade to prevent water damage to the controls inside the box. **NEVER** install a fire pit below ground level. Drainage must be provided for the enclosure to prevent water accumulation leading to damage to components in the valve box.
- Select materials that are non-combustible in both initial installation as well as over time.
- Make sure that the structure is level.

FPPK Enclosure Types and Construction Tips:

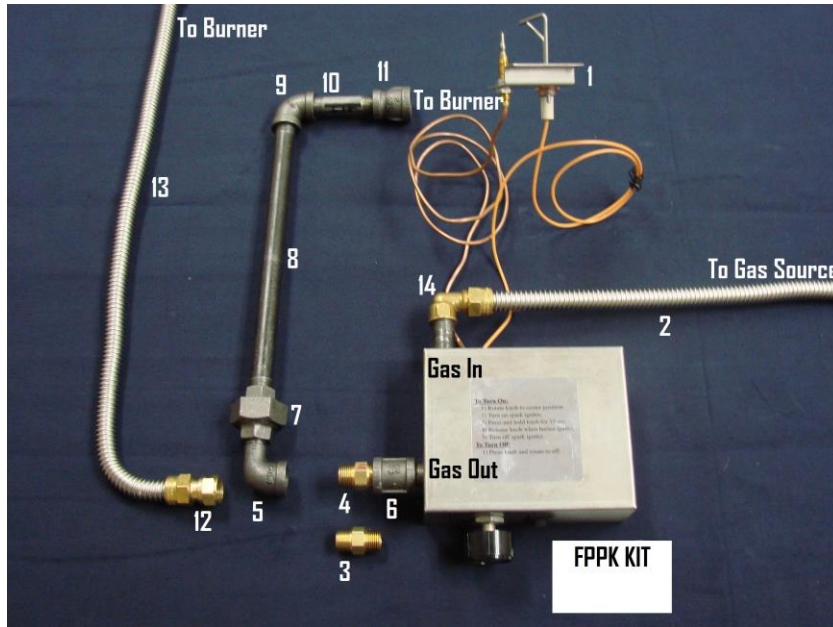
Copper Bowls: Using a 1" hole saw, drill a hole in bottom of bowl on center for gas line (from valve box to burner), Thermocouple line, and Spark Ignition Wire. Afterwards file hole to remove any sharp edges.

Flower Pots: USE ONLY NON-COMBUSTABLE MATERIAL- DO NOT USE PLASTIC.

Using 1" masonry bit (for cement) or 1" hole saw (for steel or aluminum) drill in side of pot for gas line (from valve box to burner). Hole should be measured and marked accurately prior to drilling. It is recommended to have a drain hole in bottom for water drainage.

Brick, Pavers, or Stone Enclosures: Assemble on level and stable surface. Measure and plan for proper location of hole for gas line (from valve box to burner) prior to construction.

3) INSTALLATION OF THE FPPK Control Kit:



(Fig. 1)

FPPK CONTROL KIT Parts List:

<u>Item</u>	<u>Part #</u>	<u>Description</u>
#1	692, 901	Spark Igniter / Thermocouple Assembly (1)
#2	SSC24	Inlet Flex Line- 24" (1)
#3	461	Natural Gas Orifice (Large Hole)- 85k Btu (1)
#4	460	LP Gas Air Mixer Orifice w/ nut- 47k Btu (1)
		NOTE: Already mounted into coupler with valve.
#5	502	3/8" M x 3/8" F Elbow (1)
#6	509	3/8" x 3/8" Coupler (attached to outlet of valve box)
#7	582	3/8" x 3/8" FIP Union (1)
#8		3/8" x X" Pipe (1)
		NOTE: X= 10", 14", or 16" length depending on model.
#9	501	3/8" x 3/8" Elbow (1)
#10	515	3/8" x 2.5" Pipe (1)
#11	505	1/2" FIP x 3/8" Reducing Coupler (1)
#12	422	3/8" M x 3/8" F Brass Fitting (1)
#13	SSC24	Outlet Flex Line- 24" (1)
#14	408	1/2" x 3/8" Brass elbow.

Installation Steps:

WARNING: Check gas type: For **NATURAL GAS:** Minimum inlet pressure should be 5 inches W/C, maximum inlet is 10.5 inches W/C. For **PROPANE GAS:** Minimum inlet pressure should be 8 inches W/C, maximum inlet is 13 inches W/C.

WARNING: Gas Plumbing Connections: Use only joint compound that is resistant to all gases. Apply joint compound to all male pipe fittings only- DO NOT use on FLARED fittings. Be sure to tighten every joint securely.

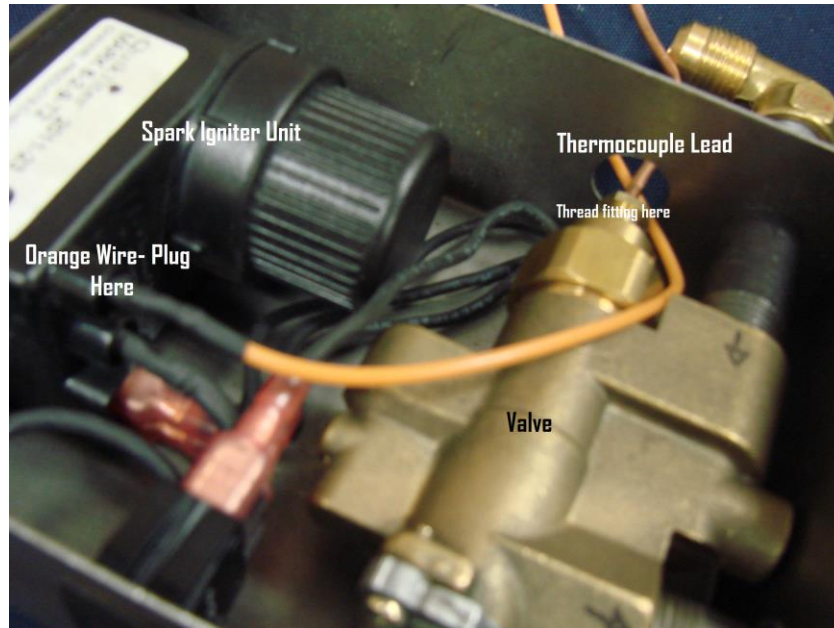
- The FPPK Fire Pit must be disconnected for pressure testing for systems over 1/2 psi.
- The FPPK Fire Pit should be installed so it can be removed for any future service.

IMPORTANT: Apply joint compound to all male pipe fittings only- DO NOT use on FLARED fittings. Use TEFLON tape on flared fittings.

- Step 1:** Check the parts you received against the parts list. **INSTALL 9V BATTERY IN SPARK IGNITER UNIT AS SHOWN ON PG. 6 UNDER “Installing / Changing Batteries”.**
- Step 2:** Confirm gas type: **Natural Gas** or **LP**. Select appropriate orifice- either Part #3 (NG) or Part #4 (LP Air Mixer). Part #4 (LP) is already mounted in union with valve ready for use.
- Step 3:** **If using Natural Gas, remove air mixer (Part #4) and insert and tighten Natural Gas orifice (Part #3).**
- Step 4:** Place and tighten reducing coupler (Part #11) to bottom of your pan or burner.
- Step 5:** Insert and tighten 2.5” pipe (Part #10) into reducing coupler (Part #11)
- Step 6:** Insert and tighten other end of 2.5” pipe into elbow (Part #9).

OPTIONAL TO USE HARD PIPE OR FLEX LINE FOR GAS OUTLET (FROM VALVE BOX TO BURNER ASSY):

If using Hard Pipe, proceed to **Step 7**. If using Flex Line, proceed to **Step 15**.



Valve Box- Inside (Fig. 2)

USING HARD PIPE FOR GAS OUTLET:

- Step 7:** Insert and tighten other end of orifice (Part #3 or #4) into elbow (Part #5).
- Step 8:** Unscrew and separate union (Part #7). Insert and tighten other end of elbow (Part #5) into one side of Union (Part #7). **Note:** Other side of union use in Step 11.
- Step 9:** Insert and tighten 3/8” x X” pipe (Part #8) into elbow (Part #9).
- Step 10:** Place your burner assembly in your enclosure. Carefully feed thermocouple line, spark igniter wire, and pipe (Part #8) through enclosure hole(s).
- Step 11:** Insert and tighten other end of pipe (Part #8) into other side of union (Part #7).
- Step 12:** Insert and tighten thermocouple line into valve. (FIG. 2) **BE CAREFUL NOT TO KINK OR BREAK LINE.**
- Step 13:** Plug in **ORANGE** spark igniter wire in to spark igniter unit (FIG. 2).
- Step 14:** Assemble both ends of union and tighten securely while holding valve box straight.

USING FLEX LINE FOR GAS OUTLET:

- Step 15:** Insert and tighten 3/8” x 3/8” brass fitting into elbow (Part #9).
- Step 16:** Attach flex line to brass fitting and tighten securely.
- Step 17:** Place your burner assembly into your enclosure. Carefully feed thermocouple line, spark igniter wire, and flex line (Part #13) through enclosure hole(s).
- Step 18:** Insert and tighten orifice (Part #3 or #4) into 3/8” M x 3/8” F brass fitting (Part #12).
- Step 19:** Attach and tighten flex line (Part #13) to brass fitting (Part #12).
- Step 20:** Insert and tighten thermocouple line into valve. (FIG. 2) **BE CAREFUL NOT TO KINK OR BREAK LINE.**
- Step 21:** Plug in **ORANGE** spark igniter wire in to spark igniter unit (FIG. 2).

Step 22: INLET: Attach and tighten flex line (Part #2) to brass elbow (Part #14).

Step 23: Attach and tighten other end to regulator (for LP) or gas line (for Natural Gas).

Step 24: Turn on gas and test for leaks using soapy water.

NEVER USE A FLAME TO CHECK FOR LEAKS.

- Fill area around and over the ring with lava rock to a depth of about 1/2” over the ring. Build up the area to as much as 1.5” in the middle. Use a fireplace poker to move the chunks around to create the flame effect you desire.

COMPLETE FIREPIT OPERATION:

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

WARNING: WHEN FIRE PIT IS NOT IN OPERATION, GAS SUPPLY MUST BE TURNED OFF AT LOCATION OUTSIDE ENCLOSURE.

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: DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS IN OR AROUND PIT. ALSO LEAVES, STICKS, WOOD, PAPER, CLOTHING, FOOD MATERIAL, SHOULD ALWAYS BE KEPT AWAY FROM THE FIREPIT. MAKE SURE THAT THERE IS NO VEGETATION OR OTHER OBJECTS OVER THE TOP OR SIDES OF THE FIREPIT THAT COULD INTERFERE WITH SAFE & PROPER OPERATION.

WARNING: IF LAVA ROCK IS WET, ALLOW FIRE PIT TO BURN FOR 30 MINUTES PRIOR TO COMING 15 FEET WITHIN FIRE PIT.

Fire Pit Start Up:

LP GAS ONLY: INITIAL START UP: Adjust air mixer after pit is lit to remove soot as desired.

- 1) Turn “On” gas to fire pit at LP bottle or other remote location.
- 2) Confirm there is no debris in fire pit (as mentioned in warnings) including water.
- 3) Rotate gas valve knob CCW to center position.
- 4) Turn “On” spark igniter by flipping switch to the UP position.
- 5) Depress and hold the valve knob.
- 6) Once lit, turn “Off” spark igniter while continuing to depress valve knob for 15 seconds.
NOTE: If fails to light, wait 5 minutes for gas to clear, repeat Steps 3 ~ 6.
If goes out, repeat Steps 3 ~ 6.
- 7) Once fire pit has ignited, do NOT leave unattended.

Fire Pit Shutdown:

- 1) Turn “off” fire pit by slightly pressing and turning valve knob CW to “OFF” position..
- 2) Turn “off” gas to fire pit at LP bottle or other remote location.
- 3) Once fire pit has cooled completely, use appropriate cover to protect fire pit.

Fire Pit Maintenance:

- 1) Keep fire pit covered at all times when not in use.
- 2) Keep any debris out of fire pit- clean as needed.
- 3) Clean thermocouple and igniter with emery cloth 1 x month during usage season.

Installing / Changing Batteries to Spark Igniter Unit in Valve Box:

- 1) Carefully unscrew the spark igniter unit cap.
- 2) Remove cap with battery as shown in FIG. 3.
- 3) Remove old battery from cap, install new 9V battery
- 4) Holding by cap, slide battery into spark igniter unit as shown in FIG. 3.
- 5) Tighten cap lightly- DO NOT over tighten.



Fig. 3

FIRE PIT ACCESSORIES

You may want to use one of our log sets to further enhance the appearance. Our log sets come in Campfire style and Woodland style and are especially made for outdoor use.

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BTU'S Are a rate of usage

This is an all too common question, "What is the btu rating?"
Btu's are a rate of usage, the higher/ more you use, the more fuel/ btu usage.
The higher the pressure the more gas you can burn.
Here is a useful site with BTU ratings charts on burner rings:
<http://www.daganind.com/resources.html>
If you turn it up or turn it down your BTU usage will change.

Burning 100,000 btu's = 1 gallon (actually 91,600 btu's = one gallon of propane, 103,000 btu's in one gallon of natural gas)

Now for the long version:

Table 1 – Average Btu Content of Fuels

Electricity:

1 KW 3,412 Btu/hr

Natural Gas:

1 Cubic Foot of Natural Gas 1,030 Btu's

1 CCF = 100 Cu Ft = 1 Therm 103,000 Btu's

1 MCF = 1,000 Cu Ft = 10 Therms 1,034,000 Btu's = 1.034 MMBtu's

Propane:

1 Gal Propane 91,600 Btu's

1 Cu Ft Propane 2,500 Btu's

Gasoline:

1 Gal of Gasoline (mid grade) 125,000 Btu's

Ethanol:

1 Gal of Ethanol 76,000 Btu's

Fuel Oil:

1 Gal of #1 Kerosene 135,000 Btu's

1 Gal of #2 Fuel Oil 138,000 Btu's

1 Gal of #4 Fuel Oil 145,000 Btu's

1 Gal of #6 Fuel Oil 150,000 Btu's

Other:

Wood (air dried) 20,000,000/cord or 8,000/pound

Pellets (for pellet stoves; premium) 16,500,000/ton

Coal 28,000,000/ton

1 Barrel of Oil = 42 Gallons

1 Btu = 252 calories

1 Btu = .293 watt

1 ton of refrigeration = 12,000 Btu/hr

1lb residential garbage = 2,500 Btu

1lb coal = 12,000 Btu

1lb wood = 3,500 Btu

1hp = 746 watts

1hp = 33,479 Btu/hr (boiler)

1hp = 33,000 foot-lbs./min

1hp = 42,440 Btu/min.

1 watt = 3.412 Btu

1 kilowatt = 1,000 watts

1 kilowatt = 1.341 horsepower

1,000 kilowatts = 1 Megawatt

