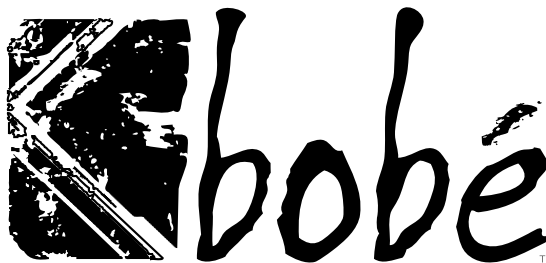
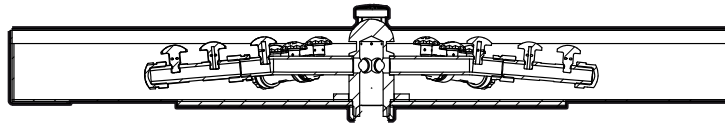
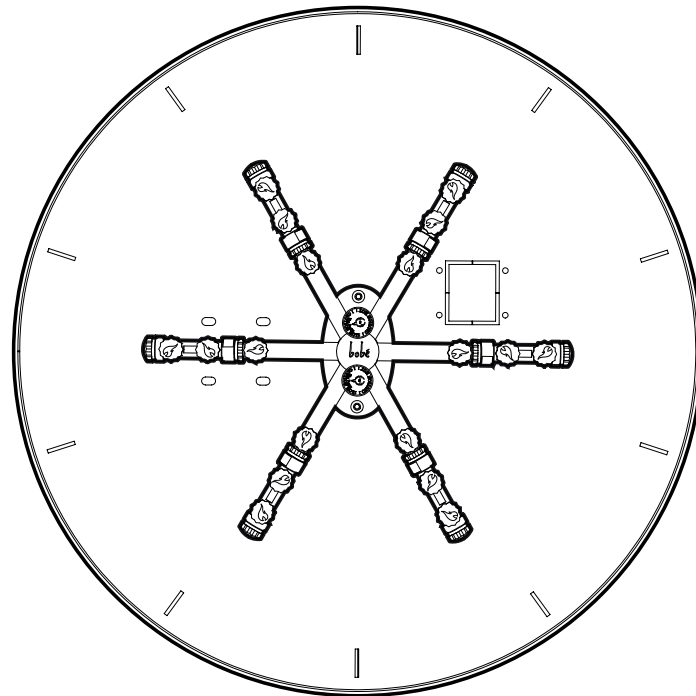




FIRE FEATURE "DIY" KITS

INSTALLATION INSTRUCTIONS - MANUAL GAS VALVE

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE



WATER & FIRE FEATURES

FIND YOUR ELEMENT™

IMPORTANT SAFETY INFORMATION: READ AND FOLLOW ALL INSTRUCTIONS

Save these instructions. Leave manual with homeowner after installation.

Improper installation, adjustment, alteration, service, or lack of maintenance can cause injury or property damage. Read the installation, operating, & maintenance instructions thoroughly before installing or servicing this equipment.

IMPORTANT WARNINGS & SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

WARNING

Do not store or use gasoline or flammable vapors and liquids in vicinity of this appliance. Do not install this appliance near any combustibles. A Liquid Propane cylinder not connected for use shall not be stored in the vicinity of this or any other appliance.

WARNING

For outdoor use only. Product is not intended to be a starter for wood or any other combustibles.

WARNING

Installation must be performed by a licensed professional. Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Installer must follow all local codes as well as National Fuel Gas Code, ANSI Z223.1.

CAUTION

If you smell gas, shut off the gas to the appliance and extinguish any open flame. If the odor lingers keep away from appliance and immediately call gas supplier or fire department. Do not leave any flame unsupervised.

DANGER

Carbon Monoxide Hazard: This appliance can produce carbon monoxide which has no odor. Using it in an enclosed space can cause serious injury or death. Never use this appliance in an enclosed space such as a camper, tent, car or home.

CAUTION

HOT! DO NOT TOUCH. SEVERE BURNS MAY RESULT. CLOTHING IGNITION MAY RESULT. Glass and other surfaces are hot during operation and cool-down. **CAREFULLY SUPERVISE** children near this appliance. Alert children and adults to hazards of high temperatures.

SAVE THESE INSTRUCTIONS

ADHERE TO ALL LOCAL CODES CONCERNING INSTALLATION AND OPERATION.

- Test for gas leaks prior to use.
- Verify correct gas fuel type. Never use an alternative fuel, including bio-fuel, ethanol, lighter fluid or any other fuel.
- Installation must be performed by licensed gas piping professional
- When pit is not in use for an extended period, turn off gas to prevent unwanted start-up.
- The use of a cover when not in operation is recommended
- Verify gas shut off is located outside of the fire enclosure. The gas shutoff should NOT be used to adjust flame height.
- An approved gas valve or keyed valve shall be installed upstream of the unit and located in an accessible area that is within 5ft from the unit.

NOTICE

It is CRITICAL that all LP units are checked for back pressure after media has been installed.

WARNING

Do not modify units from factory configuration. Doing so will void the warranty.

NOTICE

Manufacturer is not responsible for damage due to improper installation.

A. FIRE PAN INSTALLATION

1. LOCATION

DRAINAGE

- Fire pans should have adequate drainage for rainwater. Select a location with adequate drainage. Install above grade to prevent water retention.
- Fire pans using propane should not have drains located at bottom of cavity. Drainage should be achieved with vent holes around the enclosure

ACCESS

- Leave easy adequate access for installation and maintenance.
- You must have clear and easy access to the ON / OFF valve AFTER the appliance is installed and connected to the gas supply in order to safely turn off the burner.

CLEARANCE

- Recommended Clearances: Sides 4 ft / Top 10 ft: Combustibles/structures not to be closer than 4' on the horizontal plane, 10' overhead. (FIG 1).
- No combustible structure should be above the fire feature. No more than two side structures should be around the fire feature.
- Do not recess the fire feature below ground/floor level
- Natural stone such as granite or marble must be kept away from heat and flame. Contact and close proximity can result in cracking or explosion.
- Install fire features out of the way of pedestrian traffic. Provide space to allow a safe distance from the heat and flame
- Vent collars should never be obstructed.

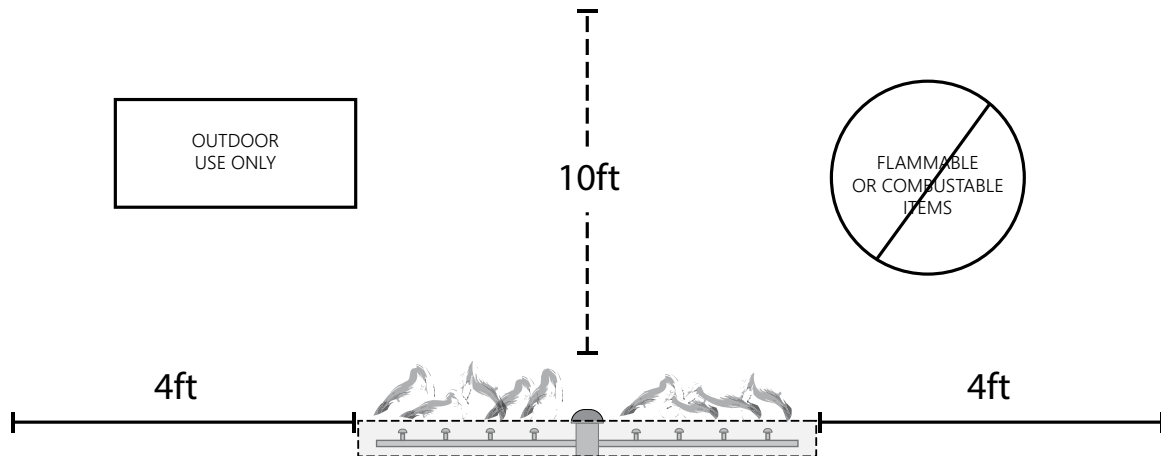


FIGURE 1: Adequate Clearance

2. SETUP

ENCLOSURE (FIG 2)

- There is an 10" minimum enclosure depth requirement
- The pan should be recessed a minimum of two inches from the top of the enclosure. Minimum 2" width on all sides of the enclosure.
- Rectangular fire lines have a lip that can be used to support during installation. Round and square fire pans should be supported at the bottom of the pan. (FIG 3)
- Set the lip/pan with a minimum of one square inch bracket at each corner, or two per side.
- The pan can also be supported at the lip by galvanized cross members or by constructing supports with concrete blocks.
- When constructing supports, do not block any drain/ventilation openings in the bottom of the fire pan. Combustion

A. FIRE PAN INSTALLATION

air vents for LP systems should not be obstructed so necessary make-up air can be achieved.

- The fire pan should not be supported by the gas line or valve structure.
- The fire feature should always be installed with a burner pan.
- Inside area should not be filled with any material.
- Floor of enclosure should be non-combustible material.
- Fire pans should always be level when installed.

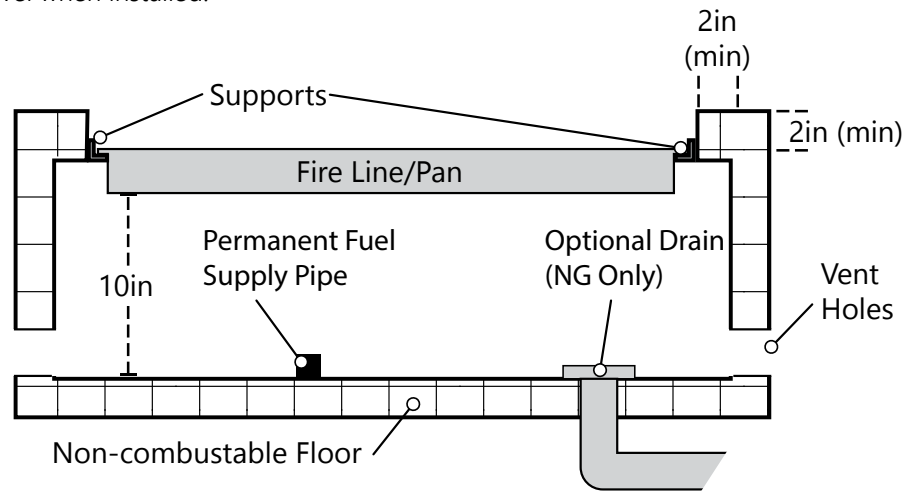


FIGURE 2: Fire Pan Enclosure

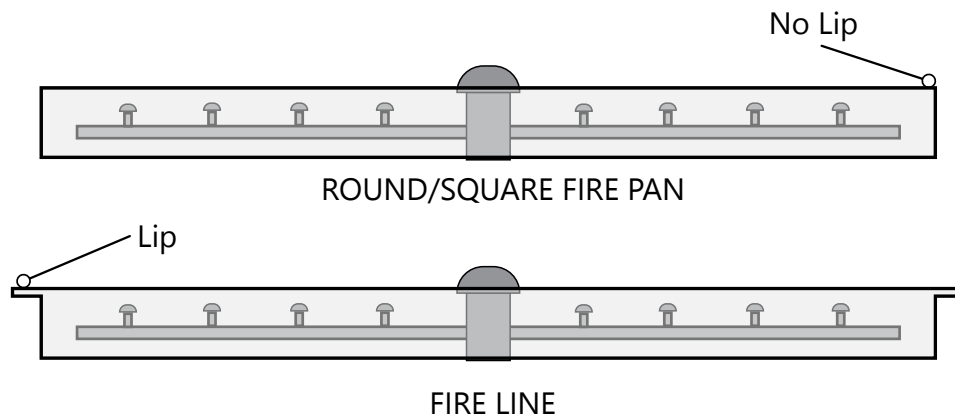


FIGURE 3: FIRE LINE VS FIRE PAN

DRAINAGE

- For natural gas only, a dedicated drain line can may be installed under the pan.
- Fire pans using propane should not have drains located at bottom of cavity. Drainage should be achieved with vent holes around the enclosure.

VENTING

- All installations must have proper ventilation around and under the unit to allow possible accumulated gas to escape. Failure to do so may cause a dangerous build-up of gas and can explode.
- Ventilation location must be such that any settled gas can escape
- Top of the column or pedestal on which fire feature is installed should be sealed around.
- A minimum of two vents on opposing sides of the enclosure are required. See Table 1 for minimum vent requirements.

A. FIRE PAN INSTALLATION

Multiple vents evenly spaced totaling minimum requirement or more is also acceptable. Minimum air openings shall not be less than 3".

- One vent should be within 12 inches of the bottom of the enclosure and another within 12 inches from the top of the enclosure.
- Vents should not be blocked from air circulation

VENTILATION OPENING SIZE		
BURNER SIZE	BTUS (IN K'S)	MINIMUM VENT SIZE (EACH - TWO REQUIRED)
FIRE RING-9"	73	18.25 in ²
FIRE RING -16"	165	41.25 in ²
FIRE RING -22"	254	63.50 in ²
FIRE RING -29"	340	85.00 in ²
FIRE RING -35"	363	90.75 in ²
FIRE RING -42"	388	97.00 in ²
FIRE LINE -24"	58	14.50 in ²
FIRE LINE -29"	73	18.25 in ²
FIRE LINE -35"	85	21.25 in ²
FIRE LINE -48"	105	26.25 in ²
FIRE LINE -61"	115	28.75 in ²
FIRE LINE -74"	125	31.25 in ²
FIRE LINE -87"	135	33.75 in ²
FIRE LINE -100"	150	37.50 in ²
FIRE LINE -113"	165	41.25 in ²
FIRE LINE -126"	242	60.50 in ²
FIRE LINE -134"	256	64.00 in ²
FIRE LINE -146"	270	67.50 in ²

AIR MIXER FOR PROPANE UNITS			
BURNER SIZE	BTUS	AIR MIXER P/N	AIR MIXER BTUS
FIRE RING-9"	73K	8-1361-02	73K
FIRE RING -16"	165K	8-1361-08	165K
FIRE RING -22"	254K	8-1361-09	250K
FIRE RING -29"	340K	8-1361-10	380K
FIRE RING -35"	363K	8-1361-10	380K
FIRE RING -42"	388K	8-1361-10	380K
FIRE LINE -24"	58K	8-1361-01	58K
FIRE LINE -29"	73K	8-1361-02	73K
FIRE LINE -35"	85K	8-1361-03	85K
FIRE LINE -48"	105K	8-1361-04	105K
FIRE LINE -61"	115K	8-1361-05	125K
FIRE LINE -74"	125K	8-1361-05	125K
FIRE LINE -87"	135K	8-1361-06	135K
FIRE LINE -100"	150K	8-1361-07	150K
FIRE LINE -113"	165K	8-1361-08	165K
FIRE LINE -126"	242K	8-1361-06	270K (2 × 135K)
FIRE LINE -134"	256K	8-1361-06	270K (2 × 135K)
FIRE LINE -146"	270K	8-1361-06	270K (2 × 135K)

TABLE 1: VENT REQUIREMENT

3. GAS LINE

- The gas piping shall be installed underground to each fire feature. The piping shall be reduced to 1/2" NPT at each pan.
- To eliminate unnecessary pressure drop, ensure the pipe length and amount of elbows used is minimized.
- Corrugated flex hoses are known to cause a whistling sound. A whistle-free hose is recommended for gas supply to the burner.
- Gas lines should be centered in the middle of the pan.
- You must have clear and easy access to the ON / OFF valve AFTER the appliance is installed and connected to the gas supply in order to safely turn off the burner.
- Openings from the gas/water line should be sealed, so that gas does not collect in these spaces.
- For gas pressure and BTU requirements see charts on page 8.

B. GAS VALVE INSTALLATION

Installation must be performed by a licensed contractor. Installer must follow all local codes as well as National Fuel Gas Code, ANSI Z223.1. 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 or in Canada by WETT (Wood Energy Technical Training). Installer must follow all instructions carefully to ensure proper performance and safety.

NOTICE

This Product is for outdoor use only.



WARNING

Do not modify units from factory configuration. Doing so will void the warranty.

1. PARTS INCLUDED/REQUIRED

- Gas Valve
- Valve Key Access Trim Piece With Key
- 3/4" To 1/2" Reducer
- 1/2" X 12" Pipe
- 1/2" Nipple
- 1/2" Coupling
- 1/2" Air Mixer (Propane Kit Only)
- 1/2" 90° Elbow
- Also Required: Pipe Dope/Sealant (Not Included)

2. IMPORTANT INFORMATION FOR PROPANE UNITS

- Air mixers required for Liquid Propane. For propane units, use only the air mixer which are rated for that burner.
- No elbows immediately after an air mixer. Do not attach the air mixer directly to the fire ring.
- Air intake holes on the air mixer should not be obstructed
- Vent collars for an air mixer intake on a propane system should not be obstructed.
- Our units are NOT intended to be used with small portable LP tanks.
- For the air mixer, be sure to follow specific instructions and make sure the gas is flowing in the same direction as the arrow on the air mixer. Failure to do so could result in personal injury and damage to unit/property.

B. GAS VALVE INSTALLATION

3. MANUAL GAS VALVE INSTALLATION STEPS

VALVE INSTALLATION

- Before beginning, ensure the gas line is turned OFF. Note the assembly order for the manual key valve as shown in the diagram
- Install 3/4" to 1/2" reducer to the bottom of the burner on the underside of the pan
- Install the gas valve with Valve Key in an accessible location
- NOTE: The air mixer must be installed to use liquid propane. The "holes" on the air mixer should always face DOWN, away from the burner and pan.
- Run 1/2" gas line to one side of the gas valve

GAS PRESSURE REGULATOR

- All installations must have gas regulator installed to maintain the gas pressure to the system. Refer to Table 3 for the required gas pressure to be maintained after the gas regulator.
- Gas regulator should be installed towards the bottom of the fire feature such that it doesn't see temperature from the burner.

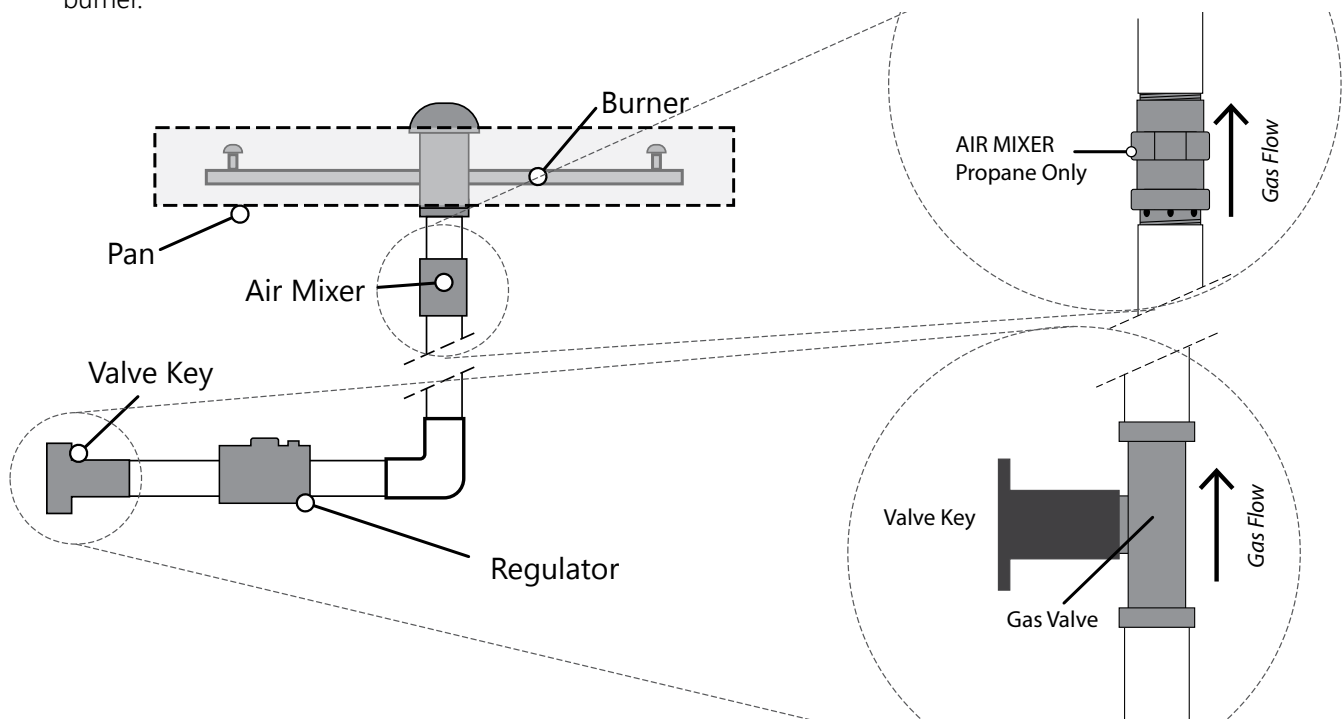


FIGURE 4: VALVE KEY LOCATION

GAS CONNECTION

- Connect the gas feed line to the other side of the valve.
- Replace the burner/pan assembly and turn gas to the system back ON.
- Use pipe dope/joint compound on ALL threaded fittings EXCEPT flared fittings.
- Verify all gas connections are tightened securely. ALWAYS perform leak tests and make repairs as needed.
- DO NOT daisy chain the gas line.

B. GAS VALVE INSTALLATION

IMPORTANT - PLEASE NOTE

- If using with propane gas the air mixer must be correctly installed. Air mixer is not required with Natural Gas
- ½ " air mixer for propane includes stamped marking for gas flow direction
- The approved gas valve must be easily accessible so that the gas can be shut off quickly in case of an emergency.
- Maintain good piping practice by keeping pipe length and elbows to a minimum to eliminate unnecessary pressure drops.
- The use of a corrugated gas line can cause unwanted noise.
- Upon completing the gas line connection, a small amount of air will be in the lines. When first lighting the burner, it will take a few minutes for the lines to purge themselves of this air. Subsequent lighting of the appliance will not require such purging.

PERFECT FLAME™ FIRE RING BURNERS			PERFECT FLAME™ FIRE LINE BURNERS		
SIZE	FEMALE THREADED INLET SIZE	BTU	SIZE	FEMALE THREADED INLET SIZE	BTU
22" FIRE RING	3/4"	254 K	35" FIRE LINE	1/2"	95 K
29" FIRE RING	3/4"	340 K	48" FIRE LINE	1/2"	105 K
35" FIRE RING	3/4"	365 K	61" FIRE LINE	1/2"	115 K
			74" FIRE LINE	1/2"	125 K
			87" FIRE LINE	1/2"	135 K
			113" FIRE LINE	1/2"	165 K
			126" FIRE LINE	TWO, 1/2"	240 K

TABLE 2: BTU REQUIREMENTS

REQUIRED GAS PRESSURE	
DESCRIPTION	WATER COLUMN
LIQUID PROPANE	8.5-11"WC
NATURAL GAS	3.5 - 6" WC

NOTE: CHECK WITH YOUR GAS SUPPLIER TO VERIFY GAS FLOWS AND PRESSURES AVAILABLE AT THE LOCATION OF YOUR INSTALLATION. IN MANY CASES UTILITY COMPANIES WILL INSTALL LARGER METERS AT NO CHARGE TO ACCOMMODATE HIGHER FLOWS.

TABLE 3: RECOMMENDED GAS PRESSURE

C. OPERATION & MAINTENANCE

1. MEDIA

- Use only approved fire glass or rock media on burners.
- The glass or rock media must not be covering any gas ports

2. BURNER SETUP

- Prior to turning appliance on visually inspect fire feature to ensure debris such as leaves or other combustible material has not collected inside the feature which could burn and emit embers once the fire feature is turned on. Each burner should have a flame height of approximately 12" – 15" from the top of the pan.
- The height of the flame can be adjusted at each burner by opening or closing the keyed valve.
- Each burner should be adjusted as required so that the flame size at each burner is similar in appearance to each other.
- Install decorative rock or glass on top of the "burner support" and burner assembly. Do not completely cover/obstruct the burner.

3. BASIC OPERATION STEPS

- a. Perform all above listed safety checks before start up. Before operating smell all around the appliance area for gas odors and next to the floor because some gases are heavier than air and will settle on the floor.
- b. Ensure any person standing close to the fire feature is aware you will be turning the fire feature on prior to actually turning it on.
- c. Use valve key to open gas valve. NEVER attempt to open the valve by hand or using other tools.
- d. Once installed, gas control valve should not be used to adjust the flame
- e. When you hear gas flowing, using either a long stem wooden match or a butane fireplace lighter, place the flame near the burner.
- f. If the burner does not light, does not stay lit, or the flame is very low, shut off all gas supply and wait five minutes to allow all gas fumes to clear before trying again.
- g. Turn off by closing the manual gas valve.

4. MAINTENANCE & CARE

- Periodically clean the burner assembly with a wet cloth or cleaning solution to remove carbon build-up.
- Frequency of the cleaning will depend on usage. Frequency of the cleaning will depend on usage.
- Periodically inspect the underside of the burner assembly for any signs of excessive temperatures.
- Check that all gas connections are tight.
- The burner assembly should be covered and protected from snow and ice. The burner should not be operated in high wind conditions.
- Visually inspect burner holes for debris/insect infestation.
- Clean burners as necessary using compressed air. Clean burners as necessary using compressed air.
- Use the system! If the feature has been inactive for an extended period, turn fire feature on to ensure proper operation.
- Inspect the gas line regularly. If the line shows evidence of excessive abrasion or wear or if the line is damaged, it must be replaced before use.
- Inspect the burner before each use of the appliance. If there is any evidence that the burner is damaged, it must be replaced before operating.
- If any repairs are required, contact a licensed professional.

D. TROUBLESHOOTING

SITUATION	POSSIBLE CAUSE	CORRECTIVE ACTION
System will not light	Air in gas line	On a new install, it may take multiple attempts to completely purge air. On an existing install, check for leaks.
	Debris in gas line	Confirm gas line is clear (insulation, dirt, plastic, excessive pipe sealer etc..)
	Incorrect gas pressure	Confirm proper gas pressures. Check for leaks.
System will not stay lit	Incorrect gas pressure	Confirm proper gas pressures. Check for leaks.
	Improperly Applied Media	Remove excess media and attempt to relight
Whistling Sound	Corrugated gas line used for installation	Use whistle free hose - Adjust hose to create the path of least resistance for gas.
		Install optional gas muffler to reduce whistling noises. Depending on your installation a muffler may not completely remove all gas whistling.

HOW TO PERFORM A LEAK TEST

Perform a leak test at least once a year whether the gas supply has been disconnected or not. Whenever any part of the gas system is disconnected or replaced, perform a leak test. As a safety precaution, remember to always leak test your fire pit outdoors in a well-ventilated area. Never smoke or permit sources of ignition in the area while doing a leak test. Do not use a flame, such as a lighted match to test for leaks.

- a. Prepare a leak testing solution of soapy water by mixing in a spray bottle one part liquid soap to one part water.
- b. Make sure all the control knobs are in the OFF position.
- c. Turn on the gas.
- d. Apply the leak-testing solution by spraying it on joints of the gas delivery system. Blowing bubbles in the soap solution indicates that a leak is present.
- e. Stop a leak by tightening the loose joint or by replacing the faulty part with a replacement part recommended by the manufacturer.
- f. Turn the control knob back to the full OFF position.
- g. **If you are unable to stop a leak:** Please consult a gas specialist. Shut off the gas supply to the fire pit and release pressure in the hose and manifold. Call/consult an authorized gas appliance service technician or an liquid propane gas dealer. Do NOT use the appliance until the leak is corrected.

SAVE THESE INSTRUCTIONS

Record Information on this System Below & Keep for Your Records

Installer _____

System Purchased From _____

Installation Date _____

Serial Number _____

