



We recommend that our fire pits be installed and serviced by professionals that are certified in the U.S. by NFI (National Fireplace Institute)

Burner conforms to: ANSI Z21.97/CSA 2.41 - (2014/03/01) "Outdoor Decorative Gas Appliances"



**DANGER - IF YOU SMELL GAS**

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



**WARNING**

Do not store or use gasoline or other flammable vapors and liquids in the 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**



**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.



**WARNING:**

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



**WARNING: FOR OUTDOOR USE ONLY!**

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

**WARNINGS:**

**IMPORTANT:** This appliance should be inspected before use and at least once annually by a qualified service person. More frequent cleaning may be required as necessary. It is imperative that the control compartment, burners and circulating air passageways of the appliance be kept clean.

**DANGER:** Carbon monoxide poisoning can lead to death!

**CARBON MONOXIDE POISONING:** Early signs of carbon monoxide poisoning resemble the flu, with symptoms including headache, dizziness, or nausea. If you experience these signs, the Fire Pit may not be working properly. Get fresh air at once! Have the Fire Pit serviced. Some people are more affected by carbon monoxide than others, including pregnant women, people with heart or lung disease or anemia, those under the influence of alcohol, and those at high altitudes.

**NATURAL GAS AND PROPANE:** To assist in detecting leaks, an odorant has been added to natural gas and propane. However, this odorant can fade, and gas may be present even though no odor exists. Make certain you read and understand all warnings. Keep this manual for reference. It is your guide to safe and proper operation of this appliance.

**WARNING:** Any modification to this appliance or its controls can be dangerous.

1. This appliance, as supplied, is only for use with the type of gas indicated on the rating plate.
2. When this appliance is connected to a fixed piping system, the installation must conform to local codes, or in the absence of local codes, to the National Fuel Gas Code, ANSI Z223.1/NFPA 54, or the International Fuel Gas Code.
3. Keep the appliance area clear and free from combustible materials, gasoline and other flammable vapors and liquids
4. Do not burn solid fuel in this appliance. Do not use this appliance to cook food or to burn paper or other objects.
5. Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns or clothing ignition.
6. Clothing or other flammable materials should not be hung from the appliance, or placed on or near the appliance.
7. Young children should be carefully supervised when they are in the area of the appliance.
8. Do not use the 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.
9. Inspect the appliance before each use.

10. Turn the appliance off and let cool before servicing, installing, repairing or covering. Any guard or other protective device removed for servicing the appliance must be replaced prior to operating the appliance. Only a qualified service person should install, service, or repair the appliance.

**HIGH ALTITUDE INSTALLATION**

The appliance is rated for installations up to 4500' (1372 m) above sea level. Above 4500' the appliance must be derated at the factory for the appropriate altitude unless the local fuel is pre derated.

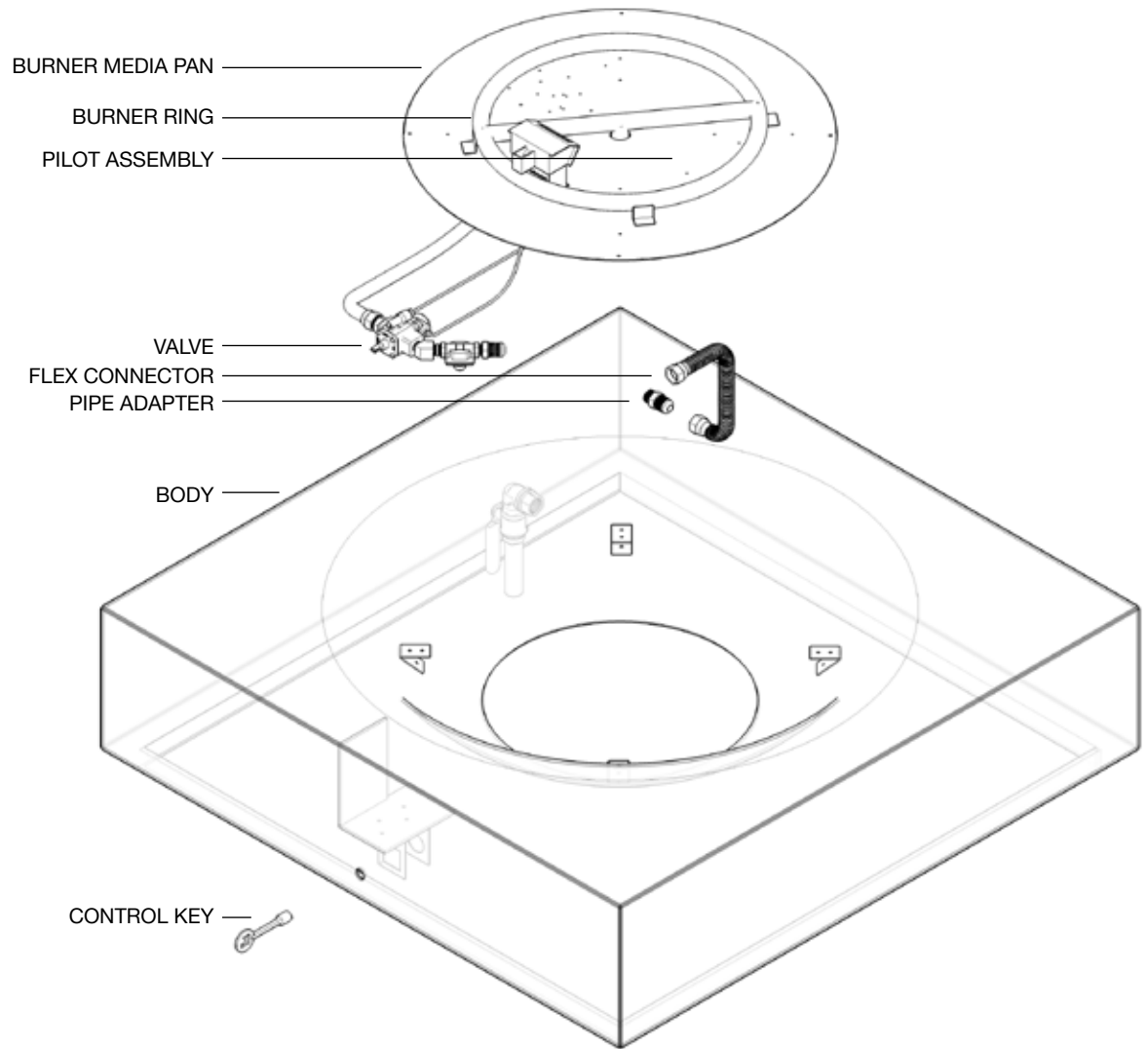
**LOCAL CODES**

Install and use your Outdoor Fire Pit with care. Follow local codes. In the absence of local codes, use the latest edition of The National Fuel Gas Code ANSI Z223.1/NFPA 54 available from:

American National Standards Institute Inc.  
1430 Broadway  
New York NY 10018

National Fire Protection Association, Inc.  
Batterymarch Park  
Quincy MA 02269.

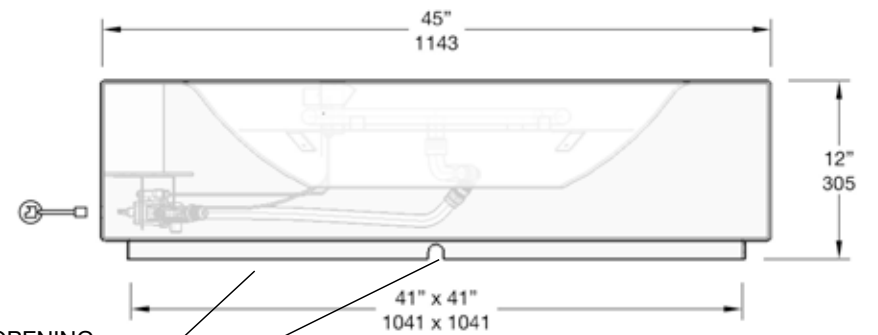
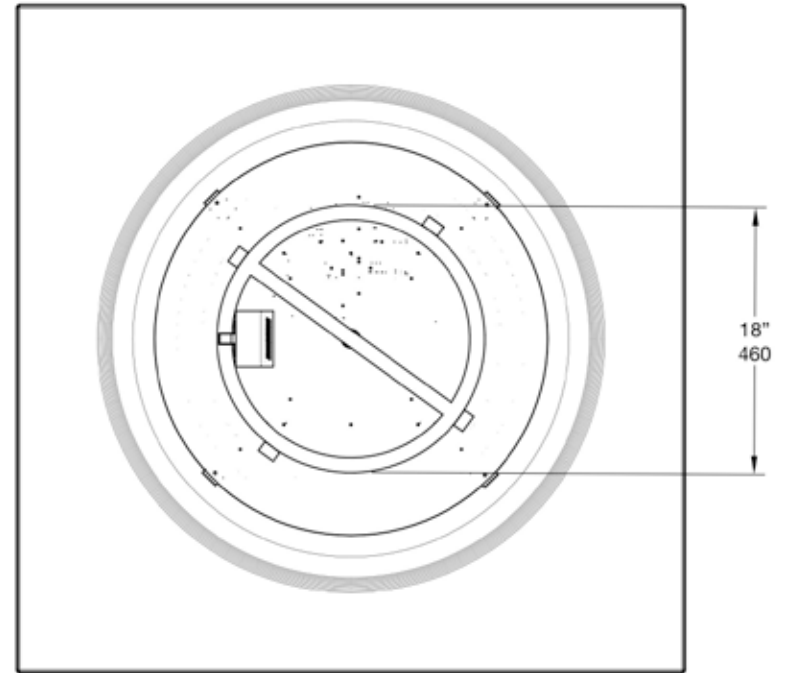
1. UNPACK: Account for all parts (see p. 13)
2. FRAGILE: Handle with care
3. LEVEL: Place on a solid, level surface
4. AIR VENTS: Do not block ventilation holes in base - if applicable (see p. 4)
5. GAS / PROPANE: Supply line is routed through the base of the unit and must be installed by licensed trades.  
Space is tight! Keep risers as low and compact as possible
6. MEDIA TOPPINGS: Review correct placement (p. 6-7)



**CAUTION: COR-TEN STEEL** is designed to oxidize and form a protective layer that resists corrosion. This layer can take several months to stabilize depending on climate and weather conditions. Rust will bleed until it stabilizes.

Do not place Cor-Ten fire pits on surfaces that will be permanently damaged or stained by rust bleed.

	NATURAL GAS	PROPANE
Burner Model #	CIF-M-18	CIF-M-18P
Max Heat Input	69,000 BTU/h	60,000 BTU/h
Inlet Pressure - Min.	4.5" W.C.	11.0" W.C.
Inlet Pressure - Max.	10.5" W.C.	13.0" W.C.
Orifice Size	18	37
Burner Ports	68	68
Port Size	1/8"	1/8"



GAS SUPPLY OPENING

VENTILATION HOLES

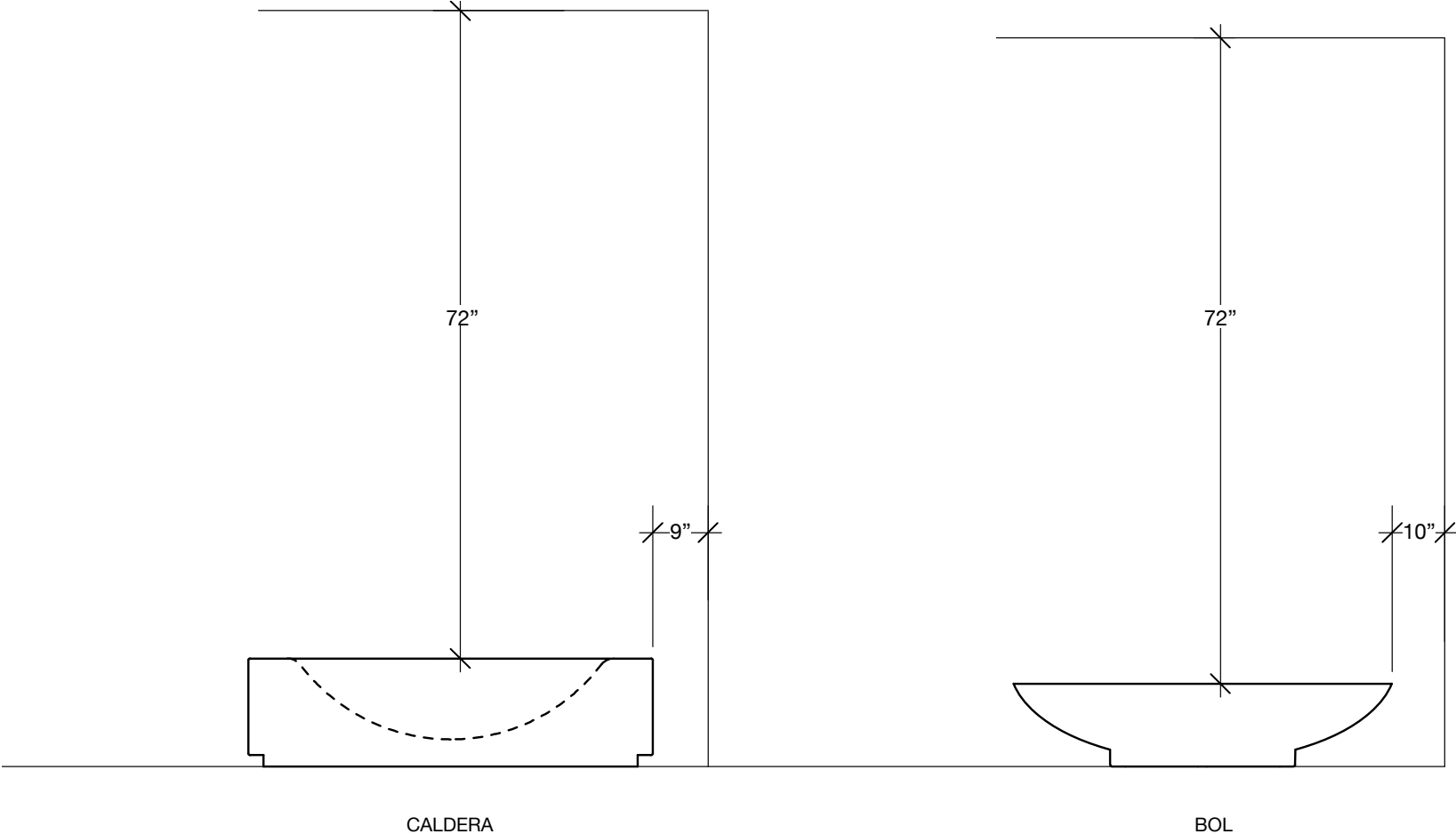


FIG 1. MINIMUM CLEARANCES TO COMBUSTIBLES

**WARNING:**

Failure to position parts in accordance with these diagrams and instructions and/or failure to use parts specifically approved for use with this appliance may result in property damage or personal injury.

Do not remove the data plates attached to the Outdoor Fire Pit Burner. These plates contain important information.

**NOTICE:**

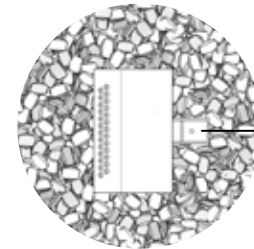
Installation and repair should be done by a qualified service person. The appliance should be inspected before use and at least once annually by a qualified service person. More frequent cleaning may be required as necessary. It is imperative that control compartment, burner ports and circulating air passageways of the appliance be kept clean.

**CAUTION:**

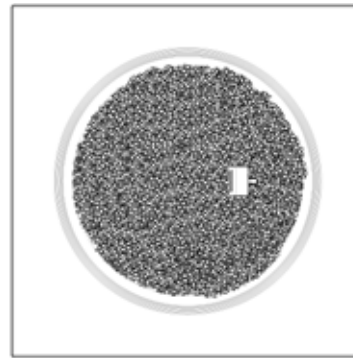
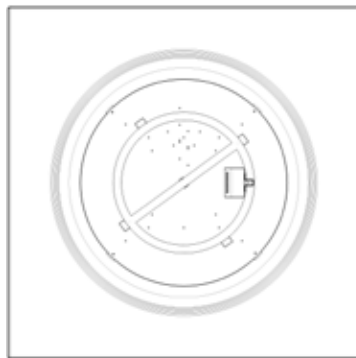
New Lava Rock may pop or crackle when first heated. This should subside after 30 minutes to one hour or more of operation. Maintain safe distance during this time.

**TO ASSEMBLE THE FIRE PIT**

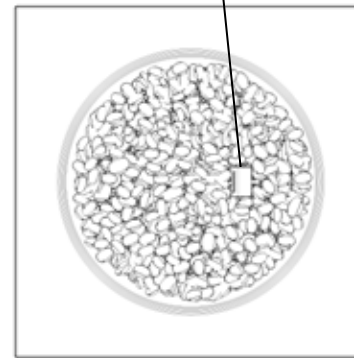
1. Connect the Burner Assembly to the gas/propane supply using the supplied flex connector and following the instructions on page 8.
2. Carefully leak test all connections following the procedure on page 8.
3. Cover the burner evenly and completely with burner media (crushed tempered glass for natural gas; volcanic rock for propane). Do not obstruct the pilot lighting port with burner media! Use only burner media supplied by Paloform!
4. Follow the Initial Lighting Instructions on page 9. Make sure that the flame carries to all parts of the burner. Turn OFF the appliance and let it cool before proceeding to the next step.
5. Evenly distribute decorative topping (river stones, crushed glass or lava rock) on top of burner media. An uneven or excessively thick layer of topping can result in an uneven flame. Place boulders if applicable.
6. Do not cover pilot shield. Keep the lighting port open and free of media. Do not use any media not supplied by the manufacturer!



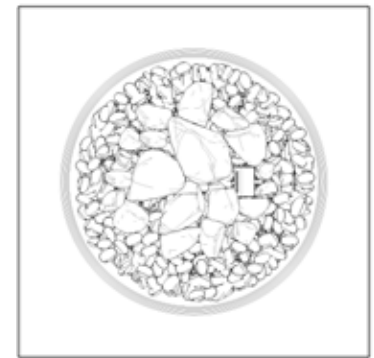
LIGHTING PORT:  
DO NOT OBSTRUCT



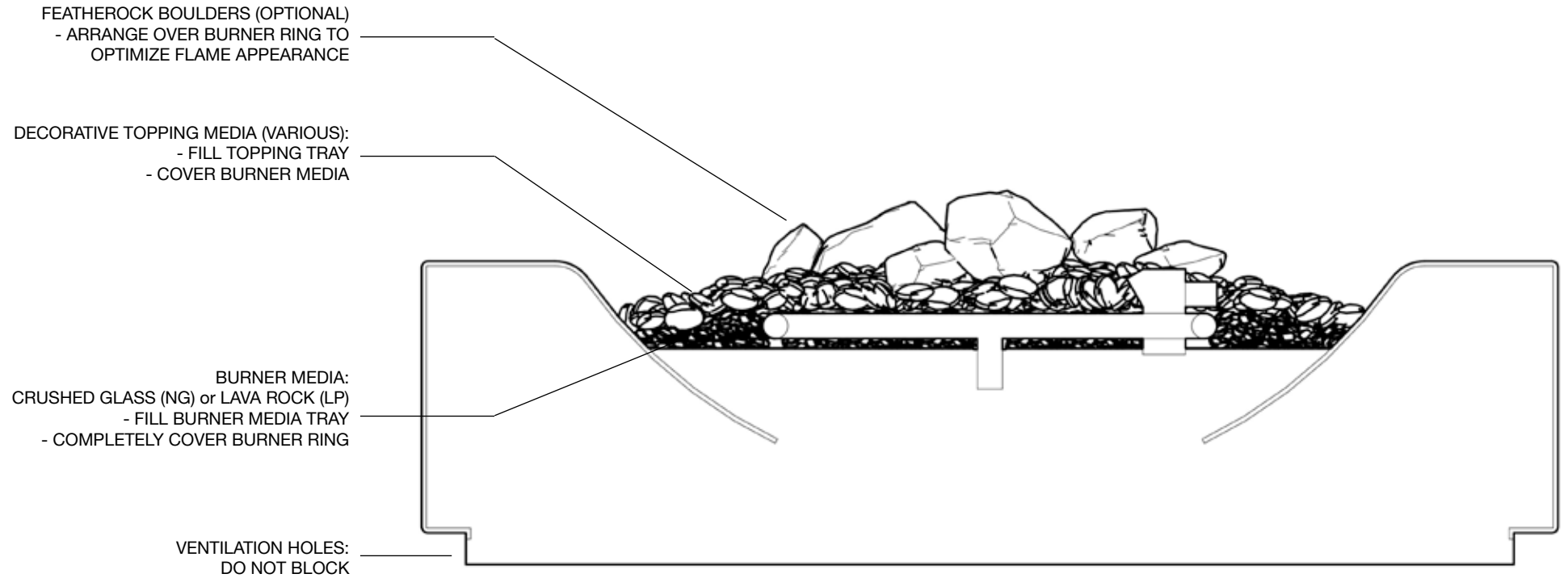
BURNER MEDIA



DECORATIVE TOPPING



FEATHEROCK BOULDERS  
(OPTIONAL)



**! WARNING:**

A qualified service person must connect the appliance to the gas supply. Follow all local codes.

**CAUTION:**  
Use only new black iron or steel pipe. Internally tinned copper tubing may be used in certain areas. Use pipe of 1/2" diameter or greater to allow proper gas volume to Outdoor Fire Pit Burner. If pipe is too small, undue loss of pressure will occur.

- INSTALLATION ITEMS NEEDED:**  
Before installing the Outdoor Fire Pit, make sure you have all items listed below:
- piping (check local codes)
  - sealant
  - manual shutoff valve
  - adjustable (crescent) wrench or pliers
  - sediment trap
  - tee joints
  - pipe wrench

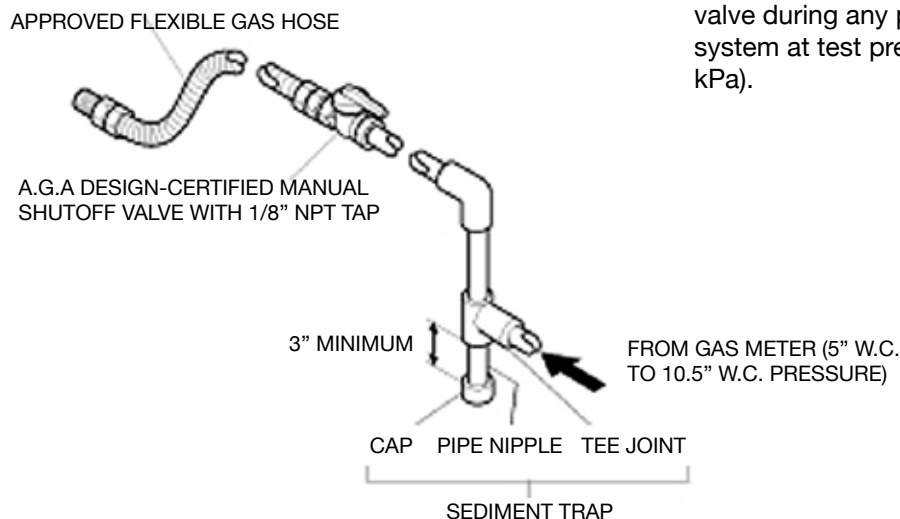
## INSTALLATION REQUIREMENTS

Installation must include a manual shutoff valve, union, and plugged 1/8" NPT tap. Locate NPT tap within reach for test gauge hook up. NPT tap must be upstream from the appliance.

Apply pipe joint sealant lightly to male threads. This will prevent excess sealant from going into pipe. Excess sealant in pipe could result in a clogged burner injector.

Install sediment trap in supply line as shown below. Locate sediment trap where it is within reach for cleaning and trapped matter is not likely to freeze.

A sediment trap prevents moisture and contaminants from entering the Outdoor Fire Pit controls. If a sediment trap is not installed, or is installed incorrectly, the unit may not work properly.



## CHECKING GAS CONNECTION

**! WARNING:** Test all gas piping and connections for leaks after installing or servicing. Correct all leaks immediately.

**! WARNING:** Never use an open flame to check for a leak. Apply a mixture of liquid soap and water to all joints. Bubbles forming on joints while the gas is running indicate a leak. Correct all leaks at immediately.

**Test Pressures in Excess Of 1/2 psi (3.5 kPa)**  
This appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5 kPa).

**Test Pressures Equal To or Less Than 1/2 psi (3.5 kPa)**  
This appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5 kPa).





## WARNINGS:

Failure to follow these instructions exactly may result in fire or explosion causing property damage, personal injury or loss of life.

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Before operating the appliance, check all around the appliance area and on the surrounding floor for the smell of gas - some gas is heavier than air and may settle on the floor in the event of a leak. IF YOU SMELL GAS, follow the safety instructions on page 1 of this manual.

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The main gas valve in this appliance is not serviceable. Do not try to repair or modify the valve, as doing so may result in a fire or explosion. Call a qualified service technician if you have any safety concerns.

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Do not use this appliance if any part of it 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 that has been under water.

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Improper installation, adjustment, alteration, service or maintenance can result in injury or property damage. For assistance or additional information, consult a qualified installer, service agency or the gas supplier.

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

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## INITIAL LIGHTING INSTRUCTIONS

1. Purge air from the supply line as follows:
  - Open the main shutoff valve.
  - Unscrew the main pressure test point on the appliance regulator
  - Leave the inlet test screw open until gas flows in.
  - When the gas is flowing, tighten the inlet screw immediately.
2. Test for leaks in each of the following locations:
  - The gas supply line connection to the main valve;
  - The Burner connections and pilot;
  - All joints on the valve and control body;
  - All field made joints and gas shutoff valves;
  - All factory made joints and connections.
3. You may check for gas leaks using one of the following methods only:
  - Soap and water solution. **WARNING:** If using a soap and water solution to test for leaks, **DO NOT** spray the solution onto electronic parts;
  - An approved leak testing spray;
  - An electronic sniffer. **NOTE:** Remove any excess pipe compound from connections if using this method, as the compound can set off electronic sniffers.

**DANGER: NEVER USE AN OPEN FLAME TO CHECK FOR GAS LEAKS.**

## STOP!

Review the safety information on pages 1, 2 and 9 of this manual.

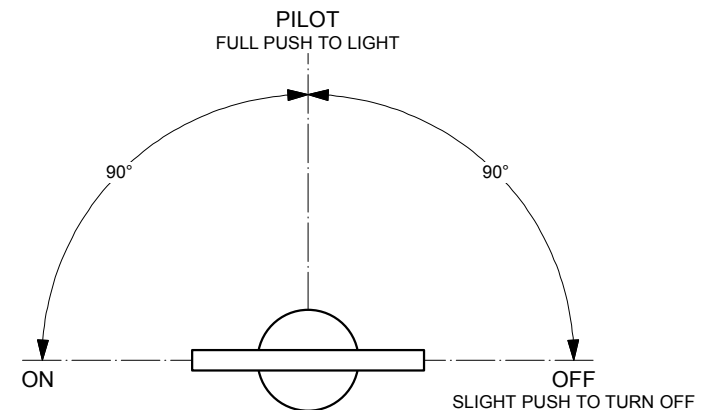
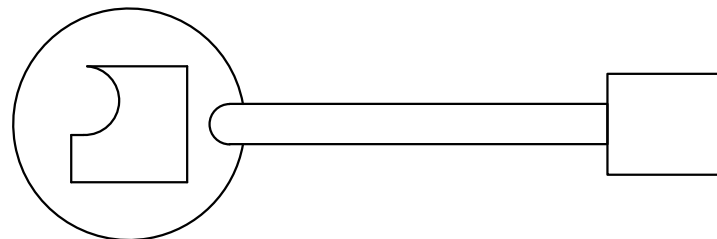
## OPERATING INSTRUCTIONS

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

1. Turn the gas control key to the OFF position (it will be necessary to depress the key slightly at the PILOT position). Allow five minutes for any gas in the vicinity to dissipate. (LP gas, which is heavier than air, may require forced ventilation).
2. Turn the gas control key to the PILOT position.
3. Push down on the gas control key and light the pilot immediately by applying a flame to the lighting port. Hold the key down for one full minute after lighting the pilot.
4. When the gas control key is released, the pilot flame should continue to burn (if the pilot goes out, repeat the above steps).
5. Rotate the gas control key from PILOT to ON position (full counterclockwise position) to supply full flow to main burner.

NOTE: Not turning the gas control key to the full ON position will reduce the flow and could result in poor ignition of main burner.

6. To extinguish main burner, rotate the gas control key clockwise to the PILOT position.
7. To extinguish pilot, depress control key slightly and turn to the OFF position (fully clockwise).



## KEEP YOUR FIRE PIT COVERED

Covering your fire pit with its all-weather cover when not in use will prolong the life of all its components.

**WARNING:** Turn off gas before servicing fire pit.

We recommend that a qualified service technician perform the following check-ups at the beginning of each fire pit season.

If any irregularities are apparent with operation. Please refer to Troubleshooting guide, page 12.

## BURNER ELEMENT AND PILOT

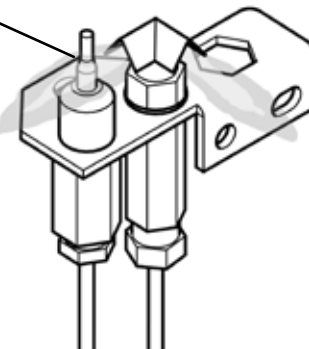
Keep the burner and pilot area clean by vacuuming or brushing at least twice a year. Make sure the burner porting and burner air openings are free of obstructions at all times. Remove pilot cover to inspect pilot.

Remove topping from top of burner ring and inspect area around the burner. Remove any lint or foreign material with a brush or vacuum cleaner.

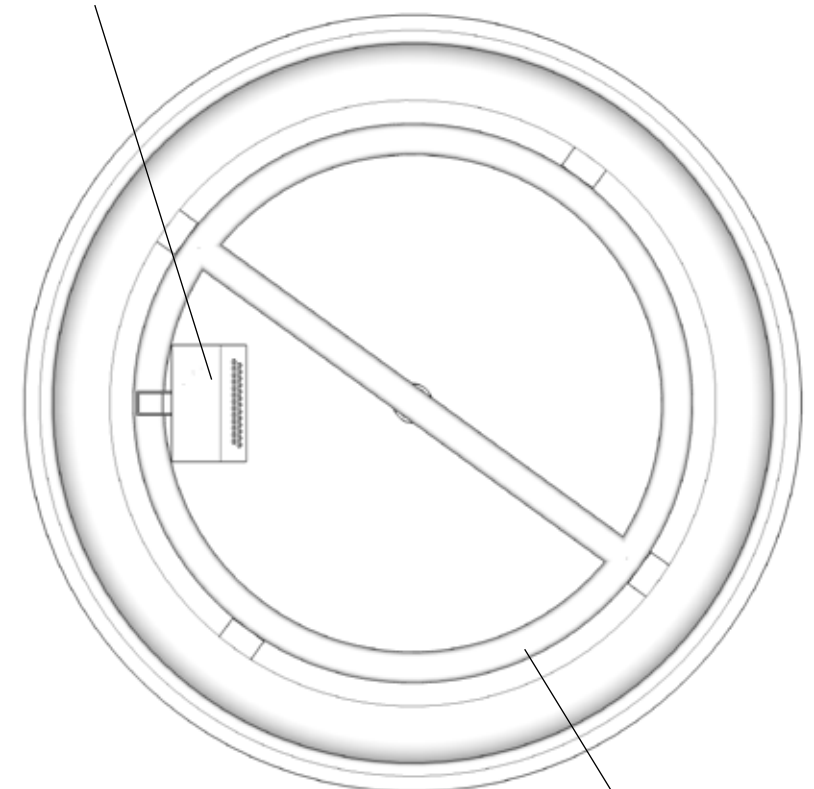
## PILOT FLAME

The flames from the pilot should be visually checked as soon as the unit is installed, and periodically during normal operation. The pilot flame must always be present when the fire pit is in operation. The pilot flame has two distinct flames: one engulfing the thermocouple and the other reaching to the main burner.

THERMOCOUPLE



PILOT ASSEMBLY



BURNER ELEMENT

**WARNING:**

Turn off appliance and let cool before servicing. Only a qualified service person should service and repair this appliance.

**IMPORTANT:** Operating unit where impurities in air exist may create odors. Cleaning supplies, paint, paint remover, cigarette smoke, cements and glues, new carpet or textiles, etc., create fumes. These fumes may mix with combustion air and create odors. These odors will disappear over time.



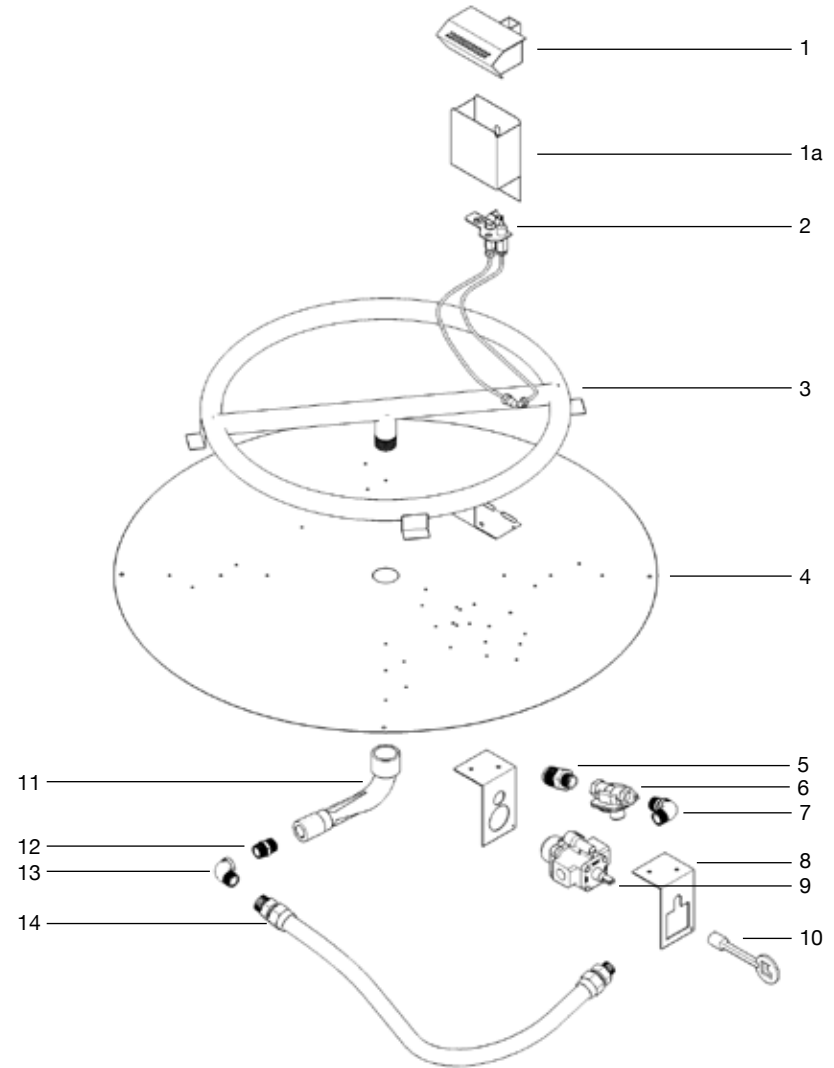
**IF YOU SMELL GAS:**

Shut off gas supply.  
Do not try to light any appliance.  
Do not touch any electrical switch; do not use any phone in the vicinity of the appliance.

Immediately call your gas supplier from a safe distance. Follow your gas supplier's instructions.

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
Unit is smoking / sooting excessively. (Note: It is natural and unavoidable for appliance sets to produce moderate levels of carbon (soot) where flames contact the media.)	<ol style="list-style-type: none"> <li>Poor fuel quality</li> <li>Excessive flame impingement or blockage</li> <li>Improper fuel/air mixture</li> </ol>	<ol style="list-style-type: none"> <li>Contact local natural gas company</li> <li>Separate the stones to allow more flame passage</li> <li>Remove any foreign items from the flame pattern and/or check for proper orifice sizing</li> </ol>
Burner is excessively noisy (Note: The movement and combustion of gas will create low, unavoidable levels of noise.)	<ol style="list-style-type: none"> <li>Passage of air/gas across irregular surfaces</li> <li>Excessive gas pressure on natural gas units</li> </ol>	<ol style="list-style-type: none"> <li>Relieve any tight bends or kinks in gas supply line</li> <li>Check/reset gas regulator pressure</li> </ol>
Gas odor even when manual valve is in the OFF position	<ol style="list-style-type: none"> <li>Gas leak. See Warning statement below.</li> <li>Main gas valve defective.</li> </ol>	<ol style="list-style-type: none"> <li>Locate and correct all leaks (see <i>Checking Gas Connections, pg 8</i>)</li> <li>Replace gas valve</li> </ol>
Unit produces unwanted odors	<ol style="list-style-type: none"> <li>Gas leak. See Warning statement below.</li> </ol>	<ol style="list-style-type: none"> <li>Locate and correct all leaks (see <i>Checking Gas Connections, pg 8</i>)</li> </ol>
Pilot cannot be lit	<ol style="list-style-type: none"> <li>Gas supply turned off or manual shutoff valve closed</li> <li>Air in gas lines when installed</li> <li>Pilot adjustment screw closed</li> <li>Pilot is clogged</li> </ol>	<ol style="list-style-type: none"> <li>Turn off gas supply or open manual shutoff valve</li> <li>Purge air from the supply line</li> <li>Adjust pilot flame for approximately 1" blue flame</li> <li>Clean pilot (see <i>Cleaning and Maintenance, page 11</i>) or replace pilot assembly</li> </ol>
Pilot does not stay lit after control is released	<ol style="list-style-type: none"> <li>Flame sensor/thermocouple is not hot enough</li> <li>Thermocouple is damaged</li> </ol>	<ol style="list-style-type: none"> <li>Retry, holding control Okey for a longer period of time (20 seconds or more) before releasing</li> <li>Replace thermocouple</li> </ol>
Burner does not light after pilot is lit	<ol style="list-style-type: none"> <li>Burner orifice is clogged</li> <li>Inlet gas pressure is too low</li> <li>Burner orifice diameter is too small</li> <li>Flame sensor lead loose or disconnected</li> </ol>	<ol style="list-style-type: none"> <li>Clean burner orifice</li> <li>Contact local gas or propane supplier</li> <li>Replace burner orifice</li> <li>Reconnect or tighten lead</li> </ol>
Delayed burner ignition	<ol style="list-style-type: none"> <li>Pilot flame is obstructed</li> </ol>	<ol style="list-style-type: none"> <li>Clear media/debris from lighting port</li> </ol>
Burner flame is too low	<ol style="list-style-type: none"> <li>Incorrect gas supply or pressure</li> <li>Blocked burner orifice or burner ports</li> <li>Improper burner orifice size</li> </ol>	<ol style="list-style-type: none"> <li>Check for proper gas supply pressure</li> <li>Free burner orifice and burner ports of any burrs, paint, or other blockage</li> <li>Verify proper burner orifice sizing (see <i>page 4</i>)</li> </ol>

		Natural Gas	Propane
1	Pilot Cover	CIR-EPC	same
1a	Pilot Shroud	CIR-EPC	same
2	Pilot Assembly	PIL-M-388	same
3	18" Burner Ring	CIR-18-BUR	same
4	Burner Pan	CIF-18-PAN	same
5	3/8" Flare Adapter	-	-
6	Regulator	M-REG-RV20-NG	M-REG-RV20-LP
7	3/8" Street Elbow	-	-
8	Valve Bracket	SOB28-BRA-WR764	same
9	Main Gas Valve	M-VAL-WR-764-109	same
10	Control Key	M-KEY-WR109	same
11	Venturi	CIR-VEN-1	same
12	Orifice	FIT-ORI-18	FIT-ORI-37
13	3/8" Street Elbow	-	-
14	Flex Connector	CON-SS-5MM-24	same
15	Burner Media (not shown)	Crushed Glass	Lava Pebbles
16	Topping Media (not shown)	Various	Various
17	Fabric Cover (not shown)	COV-CAL45-LC	same
18	Corten Vessel (not shown)	CAL45-10	same



## RETAIN FOR WARRANTY

MODEL: (circle one)      Caldera-M NG  
                                 Caldera-M LP

SERIAL NO: \_\_\_\_\_

DATE PURCHASED: \_\_\_\_\_

## LIMITED WARRANTY

This product is warranted to the original owner, subject to proof of purchase:

### BASIC WARRANTY

Paloform warrants the components and materials in your appliance to be free from manufacturing and material defects for a period of one year from date of installation. After installation, if any of the components manufactured by Paloform in the appliance are found to be defective in materials or workmanship, Paloform will, at its option, replace or repair the defective components at no charge to the original owner. Paloform will also pay for reasonable labor cost incurred in replacing or repairing such components for a period of one year from date of installation. Any products presented for warranty repair must be accompanied by a dated proof of purchase.

This Warranty will be void if the appliance is not installed by a qualified installer in accordance with installation instructions. The Warranty will also be void if the appliance is not operated and maintained according to the operating instructions supplied with the appliance, and does not extend to (1) fire pit burner assembly damaged by accident, neglect, misuse, abuse, alterations, negligence of others, including the installation thereof by unqualified installers, (2) the costs of removal, reinstallation or transportation of defective parts on the appliance, or (3) incidental or consequential damage. All service work must be performed by an authorized service representative.

This warranty is expressly in lieu of other warranties, express or implied, including the warranty of merchantability of fitness for purpose and of all other obligations or liabilities. Paloform does not assume for it any other obligations or liabilities in connection with sale or use of the appliance. In states that do not allow limitations on how long an implied warranty lasts, or do not allow exclusion of indirect damage, those limitations of exclusions may not apply to you. You may also have additional right not covered in the Limited Lifetime Warranty. Paloform reserves the right to investigate any and all the claims against this Warranty and decide upon method of settlement. For information about this warranty contact:

Paloform  
888.823.8883  
info@paloform.com