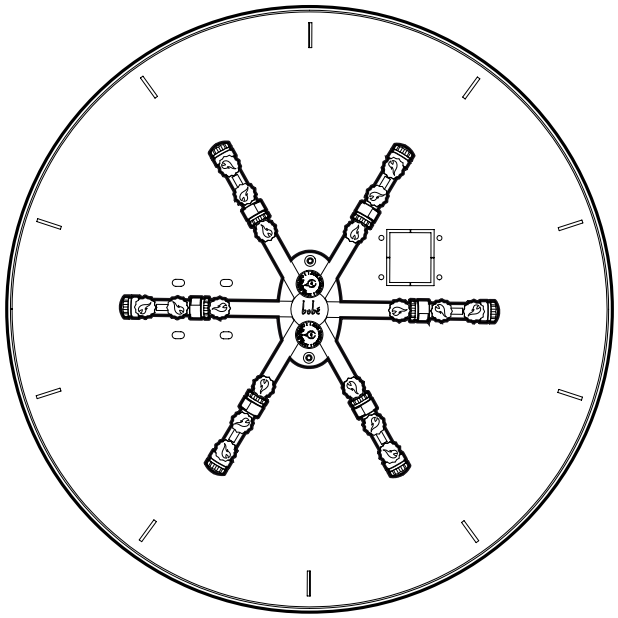
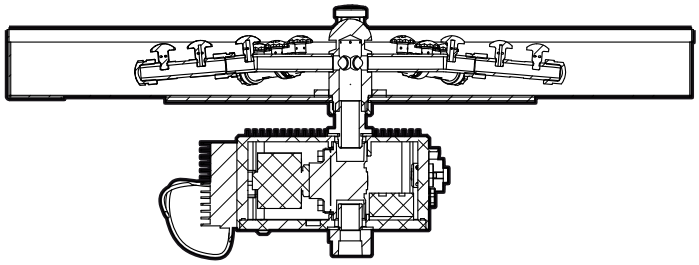
FIRE FEATURE "DIY" KITS

INSTALLATION INSTRUCTIONS - AUTO IGNITION

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE





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WATER & FIRE FEATURES

Scan for Step by Step instructions, or visit
www.c-m-p.com/tech

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.

B. SYSTEM REQUIREMENTS

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.

GAS REQUIREMENTS

PERFECT FLAME™ FIRE RING BURNERS		
SIZE	FEMALE THREADED INLET SIZE	AUTOMATIC BTU
22" FIRE RING	3/4"	254 K
29" FIRE RING	3/4"	340 K
35" FIRE RING	3/4"	365 K

PERFECT FLAME™ FIRE LINE BURNERS		
SIZE	FEMALE THREADED INLET SIZE	AUTOMATIC BTU
35" FIRE LINE	1/2"	95 K
48" FIRE LINE	1/2"	105 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

RECOMMENDED GAS PRESSURE	
DESCRIPTION	WATER COLUMN
LIQUID PROPANE	8.5 - 11"WC
NATURAL GAS	3.5 - 7" 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 LARGER FLOWS.

ELECTRICAL REQUIREMENTS

- Auto ignition requires minimum 12.6 volts DC, up to 36 Volts DC at the transformer
- The included transformer steps down to 12.6 V DC
- Installer should check voltage after installation to ensure proper values

1. LOCATION

DRAINAGE: Fire pans should have adequate drainage for rainwater. Select a location with adequate drainage. Install above grade to prevent water retention.

ACCESS: Leave easy adequate access for installation and maintenance.

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 combustable 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.

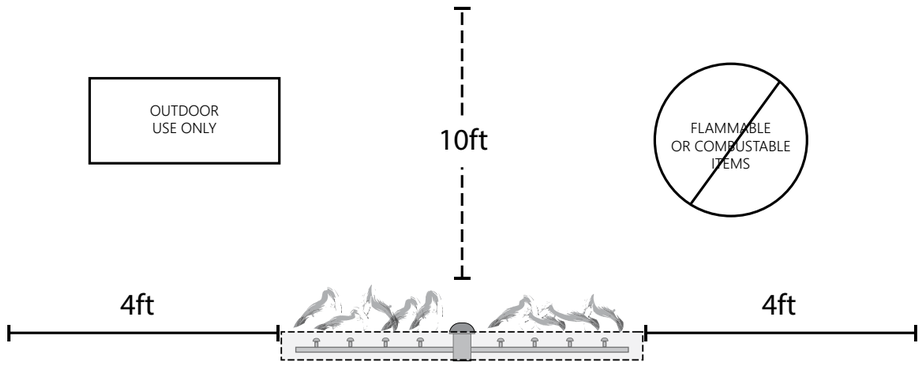

FIGURE 1: Adequate Clearance

2. SETUP

ENCLOSURE (FIG 2)

- There is an 10" minimum enlosure 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/ventillation openings in the bottom of the fire pan. Combustion air vents for LP systems should not be obstructed so neccesary make-up air can be achieved.
- The fire pan should not be supported by the gas line or valve structure.
- Inside area should not be filled with any material.
- Floor of enclosure should be non-combustable material.
- Fire pans should always be level when installed.

A. FIRE PAN INSTALLATION

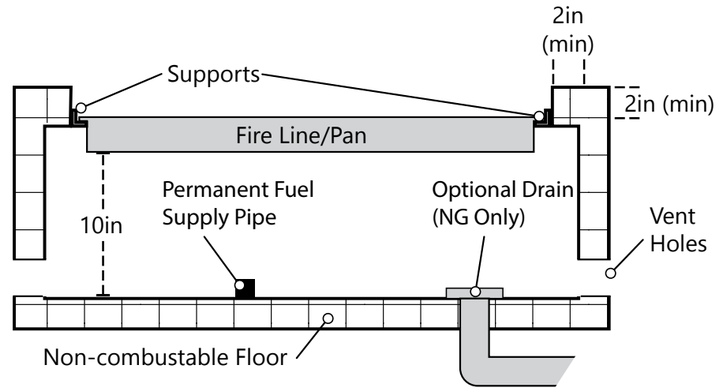

FIGURE 2: Fire Pan Enclosure

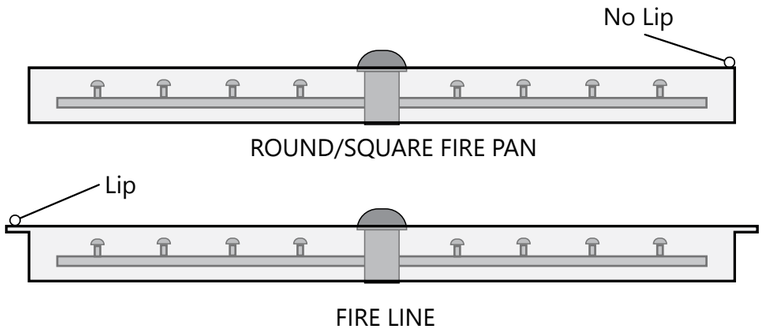

FIGURE 3: FIRE LINE VS FIRE PAN

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 ventillation 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.
- A minimum of two vents on opposing sides of the enclosure are required. See Table 1 for minimum vent requirements. Multiple vents evenly spaced totaling minumum requirement or more is also acceptable. Miniumum 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.

A. FIRE PAN INSTALLATION

PERFECT FLAME™ FIRE RING BURNERS		
SIZE	MINIMUM VENT SIZE (EACH - TWO REQUIRED)	EXAMPLE VENT SIZE
22" FIRE RING	63.5 in2	6.5"× 10"
29" FIRE RING	85 in2	8.5"× 10"
35" FIRE RING	90.75 in2	9.5"× 10"

PERFECT FLAME™ FIRE LINE BURNERS		
SIZE	MINIMUM VENT SIZE (EACH - TWO REQUIRED)	EXAMPLE VENT SIZE
35" FIRE LINE	21 in2	3"× 7"
48" FIRE LINE	26.25 in2	4"× 7 "
61" FIRE LINE	28.75 in2	4"× 7.5"
74" FIRE LINE	31.25 in2	4"× 8"
87" FIRE LINE	33.75 in2	4"× 8.5"
113" FIRE LINE	41.25 in2	6"× 7"
126" FIRE LINE	60.5 in2	6"× 10"

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.
- For gas pressure and BTU requirements see charts on page *3*.

B. AUTO IGNITION INSTALLATION

1. AUTO IGNITION COMPONENTS

- Auto Ignition Black Box: all gas and electrical connections are on the box.
- Transformer: A 12.6 Volt DC transformer is pre-installed.
- Probes: two probes connect to the side of the box with a quick connector. There are two probes: one for thermocouple temp sensor and one igniter.
- Other Items
  - Air mixer: included Liquid Propane units
  - Pressure regulator
  - Shut-off valve: not included

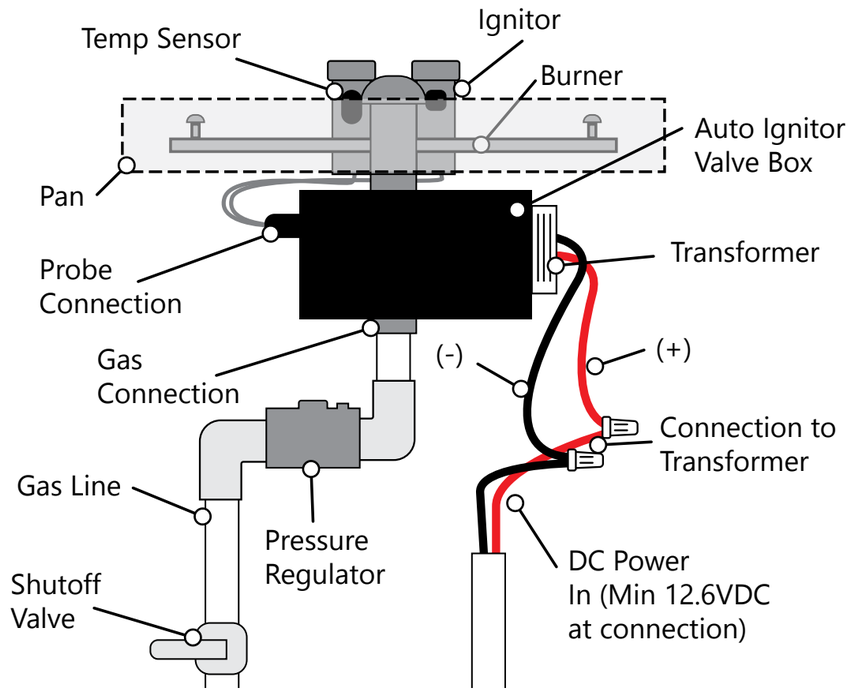

FIGURE 1: COMPLETE AUTO IGNITION SYSTEM

2. IMPORTANT INFORMATION FOR PROPANE UNITS

- Air mixers required for Liquid Propane.
- No elbows immediately after an air mixer. Do not attach the air mixer directly to the fire ring.
- 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.
- Vent collars should not be obstructed.
- Air intake holes on the air mixer should not be obstructed.

3. GAS CONNECTION

a. Before beginning, ensure the gas line is turned OFF.
b. 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. The air mixer should be installed immediately below the burner. (FIG 2)
c. Run 1/2” gas line to the bottom connection on the black box
d. Use pipe dope/joint compound on ALL threaded fittings EXCEPT flared fittings.
e. Keep pipe length and elbows to a minimum to eliminate unnecessary pressure drops.
f. The use of a corrugated gas line can cause unwanted noise.
g. Connect pressure regulator in line before the Auto Ignitor Box. The regulator should be installed horizontally. The directional arrow should point away from the gas source and towards the gas valve.
h. Confirm no more than 1/2 PSI on at the regulator inlet. If pressure is too high regulator will shut off gas flow. If above 1/2 PSI you can install a second regulator to reduce the pressure to 1/2 PSI before the included regulator.
i. Verify all gas connections are tightened securely. ALWAYS perform leak tests and make repairs as needed.
j. DO NOT daisy chain the gas lines. (See Section D)
k. A shut-off valve must be installed at each fire feature or valve. The primary gas valve must be located where they can be easily accessible so that the gas can be shut off quickly in case of an emergency.

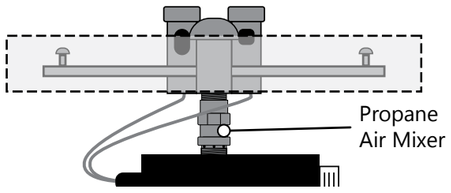

FIGURE 2: AIR MIXER LOCATION

4. ELECTRICAL CONNECTION

a. Power Requirements
   1. Auto ignition requires minimum 12.6 Volts DC, up to 36 Volts DC at the transformer
   2. The included transformer steps down to 12.6 V DC
   3. Installer should check voltage after installation to ensure proper values
b. Connections
   1. There are two wire connections on the side of the black box at the tranformer. Connect to power source using wire nuts.
   2. These are DC power connections. You must match polarity when connecting. Connect red wire to red wire and black wire to black or blue wire.
   3. Wrap wire nuts with electrical tape or some means to prevent moisture from getting in. Make sure wire nuts are positioned away from the bottom of the burner assembly.
   4. Connect ground from incoming power to ground lug (If required by local codes)
   5. Do not “daisy chain” electrical lines (See Section D

4. CHECK SYSTEM

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. Do not add glass or rock media to the pan until a system test is complete.
d. Turn on the unit at the switch or control panel. The igniter should start glowing followed shortly by the gas valve opening and fire igniting.
e. Allow the unit to run for approximately five minutes then turn off.
f. Allow to cool down for approximately three minutes before trying to re-start. As a safety feature, the thermocouple will not allow the unit to re-fire until it has cooled down.
g. To adjust flame height, remove the silver cap on the regulator and rotate white plastic adjuster up or down. This will adjust the water column up or down

D. OPERATION & MAINTENANCE

1. GLASS OR ROCK FILL MEDIA

- Use only approved fire glass or rock media on burners.
- For LP applications, use NO MORE than 1/2” of coverage on top of burner.
- Media must not cover up the holes on the side of the temp sensor, otherwise the auto ignition will not work properly. (FIG 3)

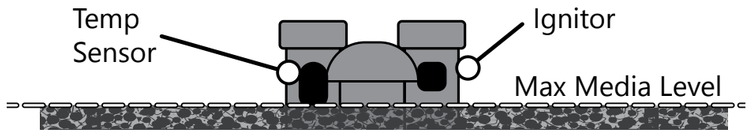

FIGURE 3: GLASS AND ROCK LEVEL

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.
- 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. START UP

h. 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 then air and will settle on the floor.
i. 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.
j. Turn on the unit at the switch or control panel. The igniter should start glowing followed shortly by the gas valve opening and fire igniting.
k. If the unit does not light the first time, there may be air in the gas line. Turn off unit and allow to sit for 30 seconds

the power back on. This could potentially take two-three cycles but then should fire consistently.

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.
- Periodically inspect the underside of the burner assembly for any signs of excessive temperatures.
- Keep the ignition and temperature probe locations clear of media or debris.
- 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.
- 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 replaced before operating.

COMMON ISSUES/MISTAKES

- Check line connections - do not daisy chain gas or electrical connections (see Section C)
- Check gas pressure for natural gas and propane (see Section B)
- If using with propane gas - ONLY use with air mixer correctly installed. (See Fig 2) ½ " air mixer for propane includes stamped marking for gas flow direction. Air mixer is not required with Natural Gas.
- Check electrical voltage. Minimum volts at the transformer connection is 12.6 VDC.
- Check electrical connections. Auto ignitor uses DC power. Connect positive/red to positive/red/brown and negative/black to negative/black/blue.
- Check ground connections. (if required)
- 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 should not require such purging.

a. LED Indicators
   1. There are three LED indicators on the side of the valve next to the probe connection
   2. The LED indicators are an obsolete component and can be disregarded

FIGURE 5: DAISY CHAIN GUIDE

HOW TO PERFORM A LEAK TEST

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.

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.

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. A regulator must be installed at each burner.
System will not light / will not stay lit	Incorrect gas pressure	Confirm proper gas pressures. Check for leaks.
	Improperly Applied Media	Remove excess media and attempt to relight
	Incorrect Voltage	Connection at transformer must be minimum 12. VDC
	Incorrect Electrical Connections	Connections are DC, confirm positive and negative wires are connected correctly.
LED indicators do not come on when the system has power	N/A - The LED indicators are an old component that are not used in the latest revision to the auto igniter and can be disregarded.	N/A
System with propane does not burn currectly / is very black / produces a lot of soot.	Lack of ventillation will cause improper burning or failure	Confirm air mixer is installed correctly. Check for proper ventillation, do not block an ventillation paths in the system.
	Propane source may be introducing impurities into the system	Check with your propane provider
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

SAVE THESE INSTRUCTIONS

Record Information on this System Below & Keep for Your Records

Installer _____

System Purchased From _____

Installation Date _____

Serial Number _____

CMP, LLC
36 HERRING ROAD, NEWNAN, GA 30265
WWW.C-M-P.COM/DEL

0620sb REVA