

GRAND EFFECTS



Fire and Water Bowls (Automated Operation)

Operating and Maintenance Instructions



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WARNING! If you smell gas, immediately take the following actions:

1. Shut off the gas to the appliance.
2. Extinguish any open flame near the unit.
3. If odor lingers, call your gas supplier.

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



This manual should remain with the homeowner or parties responsible for operation.

Section 1: Gas and Electric Requirements

Input Voltage	120 Vac / 60 Hz to Grand Effects Control Panel	
Output Voltage	24 Vac	
Gas Type	Natural	Propane
Gas Pressure (Nominal)	7" wc	11" wc
Water Flow	10–12 gpm	
Gas Flow	1 Bowl System:	60,000-80,000 btu/hr
	2 Bowl System:	120,000-160,000 btu/hr
	3 Bowl System:	180,000-240,000 btu/hr
	4 Bowl System:	240,000-320,000 btu/hr

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.

Section 2: Installation

⚠ WARNING! This unit is for outdoor use only.
Recommended CSA/AGA Clearances: Sides 4 ft / Top 6 ft

Do not install near any combustibles such as wood structures, fuels, clothing, fabrics, or dry vegetation.

Install bowls out of the way of pedestrian traffic.

Installation shall be performed by a licensed contractor. All aspects of installation must conform to local or national codes, or in the absence of codes, with Natural Fuel Gas Code ANZI Z223.1.

The control panel and approved 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.

1. Install the control panel and gas piping as shown in Figure 1: Natural Gas, Figure 2: Propane Gas, or Figure 3: Commercial Installation.

Note: Propane piping is different than natural gas piping (shown in Figure 1 and Figure 2).

2. The gas piping must be installed underground between the control panel and each fire or water bowl, as shown in Figure 1.

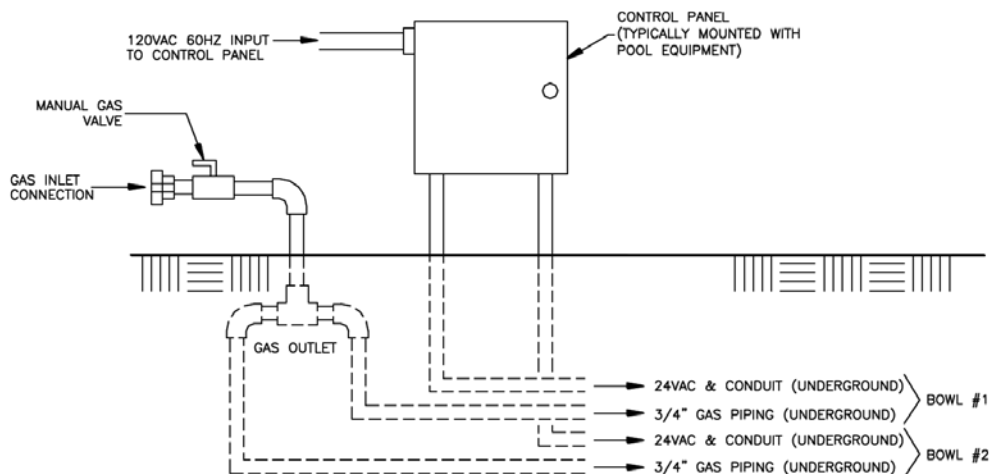


Figure 1: Natural Gas

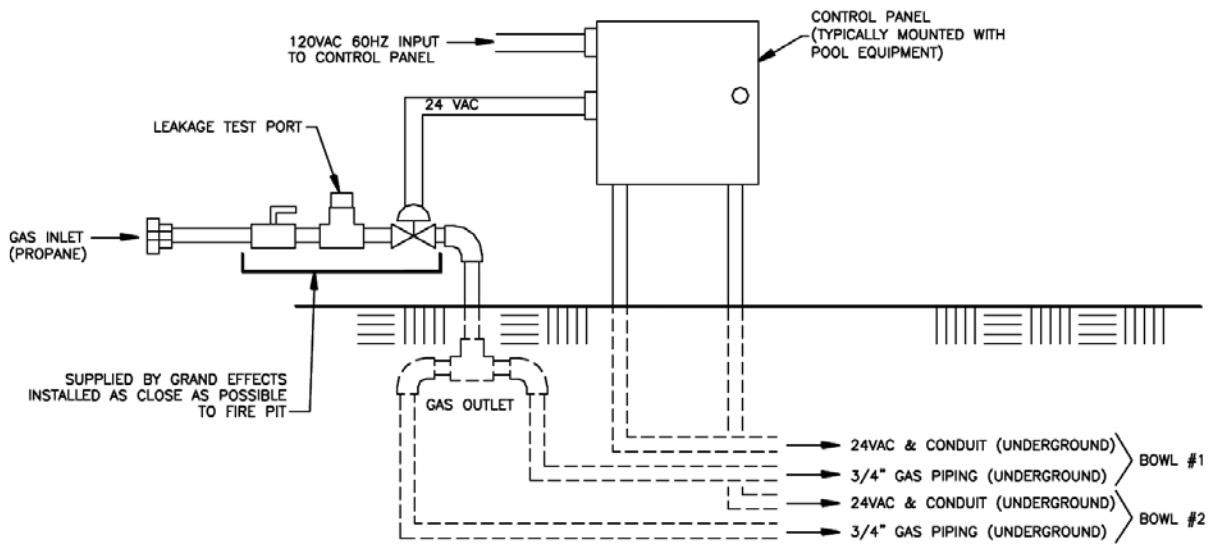


Figure 2: Propane Gas

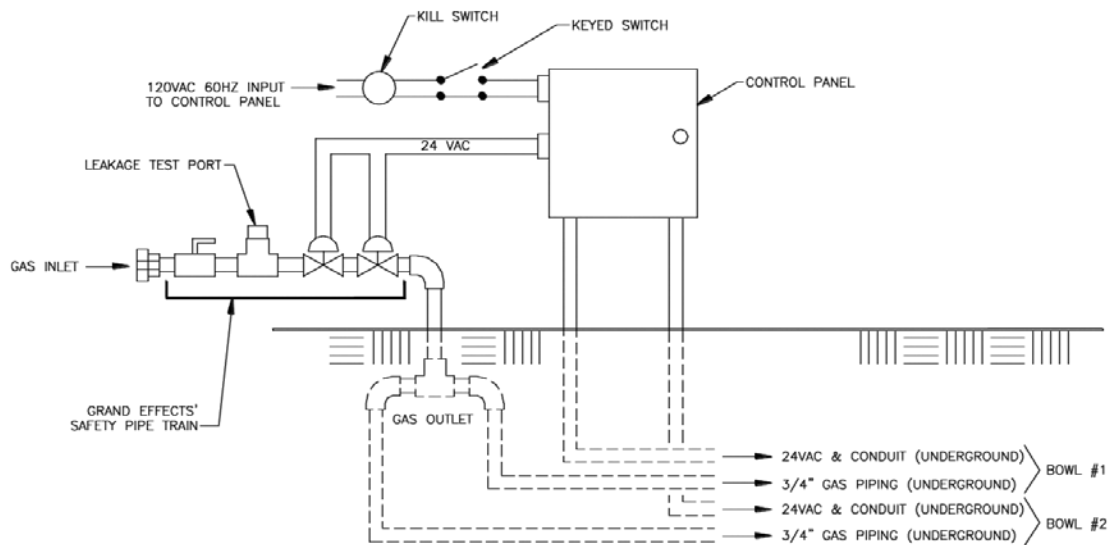


Figure 3: Commercial Installation

3. The piping must be reduced to $\frac{1}{2}$ " NPT or larger at each bowl, as shown in Figure 4.
4. At each bowl, install a 90° gas pipe elbow on the gas line for proper installation of a gas hose. Do not kink or make a tight radius bend on the gas hose.

Note: The gas, electrical, and water connection at each bowl must be located at the center of each bowl. The connections must be installed as shown in Figure 4.

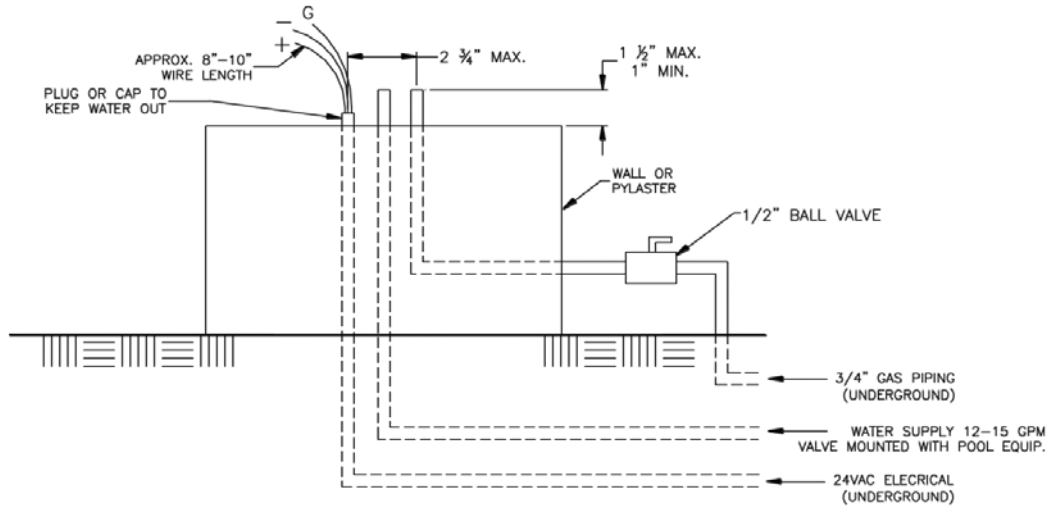


Figure 4: Piping

5. Install low voltage wiring (14 or 16 ga. 24VAC) underground between the control panel and each bowl. Wire per Grand Effects wiring diagram. 120v source into the control panel can come from any 120v source, including auxiliary relay from the pool controller or home system. Typically, the pool controller is the device that turns the unit on and off. If a pool controller is not available, Grand Effects can provide a hand held remote system or an electrician can wire a decorative switch for on/off control up stream of the Grand Effects control panel.
6. Maintain good piping practice by keeping pipe length and elbows to a minimum to eliminate unnecessary pressure drops. Corrugated flex gas lines should not be used.
7. Gas and electric should be centered in the middle of the column.
8. On commercial installations, it is recommended to install a keyed switch and kill switch located in close proximity and in visible sight of feature or features. The keyed and kill switches are supplied by others.
9. Install the mounting bracket as shown in Figure 5. The mounting bracket should be secured using three bolts.
10. Center the bowl on top of the mounting bracket. The bowl should rest on top of the three spacers located on the mounting bracket. Using a hammer, carefully bend over the metal prongs to secure the bowl.
11. Install 90° pipe elbow and gas hose at the gas connection as shown in Figure 5.
12. Connect gas hose to the burner assembly.

13. Install wire nuts on wires from the control panel and burner assembly. Be careful to hook up the “positive” to the “positive” and the “negative” to the “negative.” Wrap wire nuts with electrical tape or some means to prevent moisture from getting in. Make sure wire nuts are positioned at the bottom of the bowl, away from the bottom of the burner assembly.
14. With all gas connections tight, position the burner assembly so that it sits level in the bowl. Rotate as required so that the gas hose rests in a compact position.

Important: The mounting bracket must be installed for proper cooling of the burner assembly. Warranty is voided if the mounting bracket is not installed. Do not kink or make sharp radius on the metal gas hose. Do not come straight up with the gas hose. As shown in Figure 5, a 90° gas pipe elbow must be installed on the gas line for proper installation of the gas hose. The product warranty is voided if it is not installed with an elbow as shown in Figure 5.

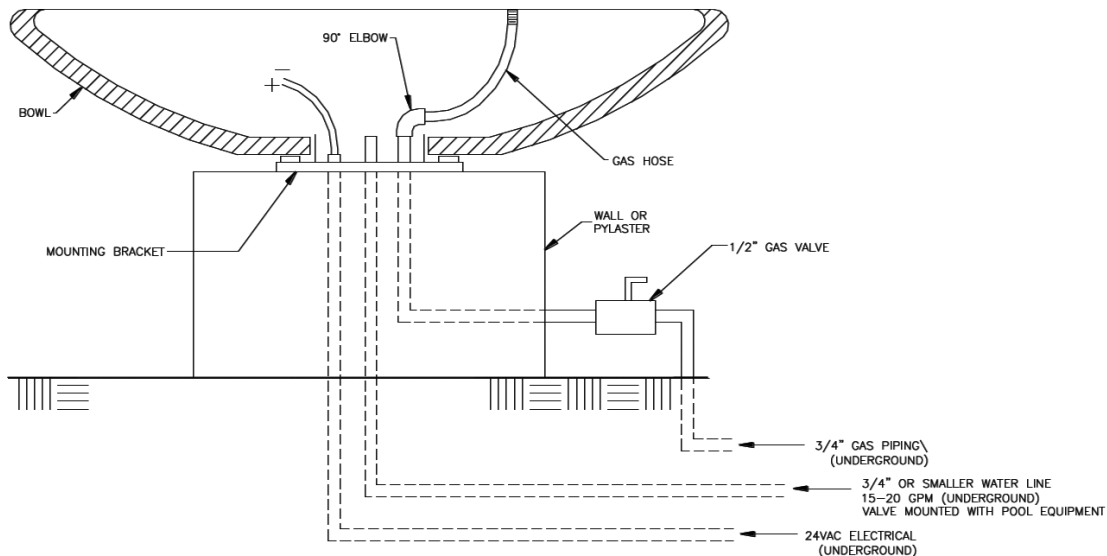


Figure 5: Mounting

Note: Do not caulk or seal around the base of the Bowl (see Figure 10).

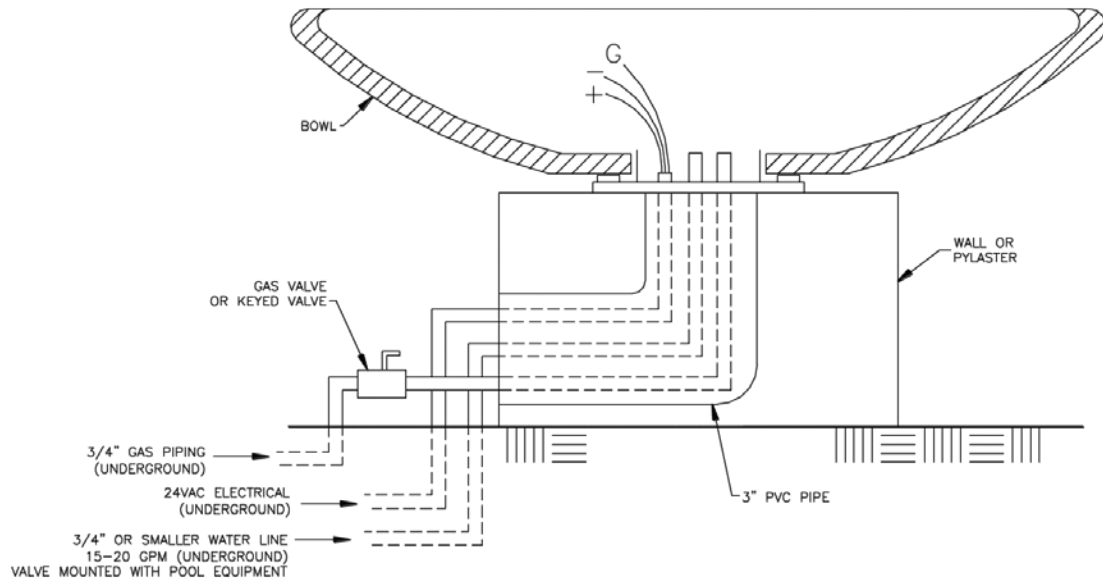


Figure 6: Optional Drain Orientation

Note: The optional drain orientation shown in Figure 6 prevents dirty water from draining out on the wall.

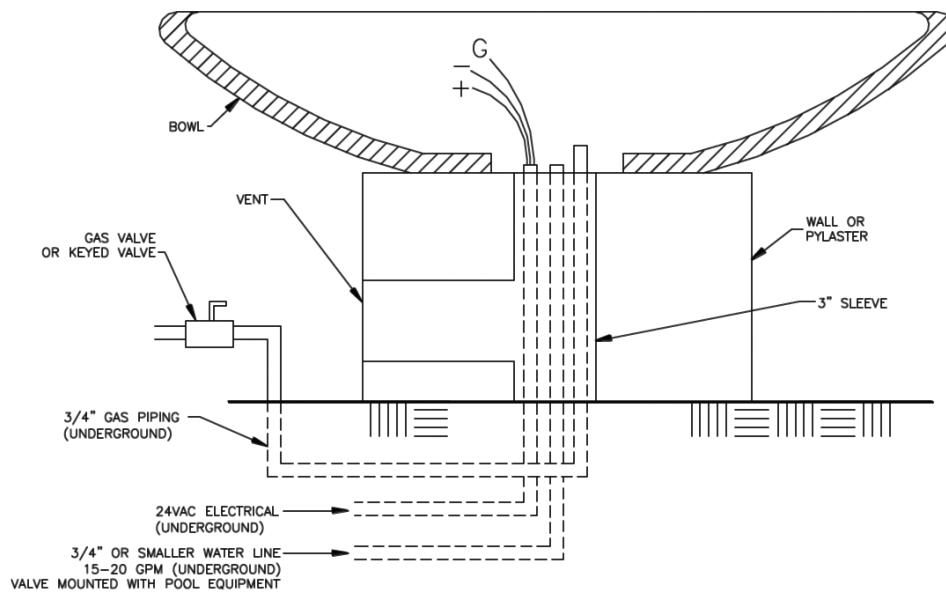


Figure 7: Optional Mounting Method without Mounting Bracket

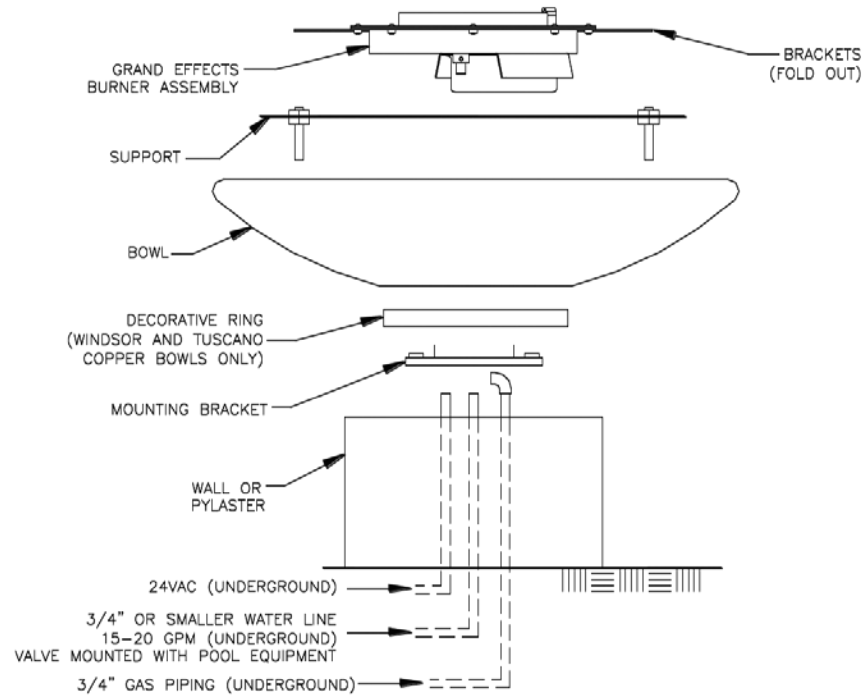


Figure 8

Important: When customers supply their own bowl, the burner assembly must be installed as shown below. The mounting bracket must be installed for proper cooling and drainage. The burner assembly must be installed flush with the top of the bowl. The mounting bracket must be installed for proper cooling of the burner assembly. The warranty is voided if the mounting bracket is not installed.

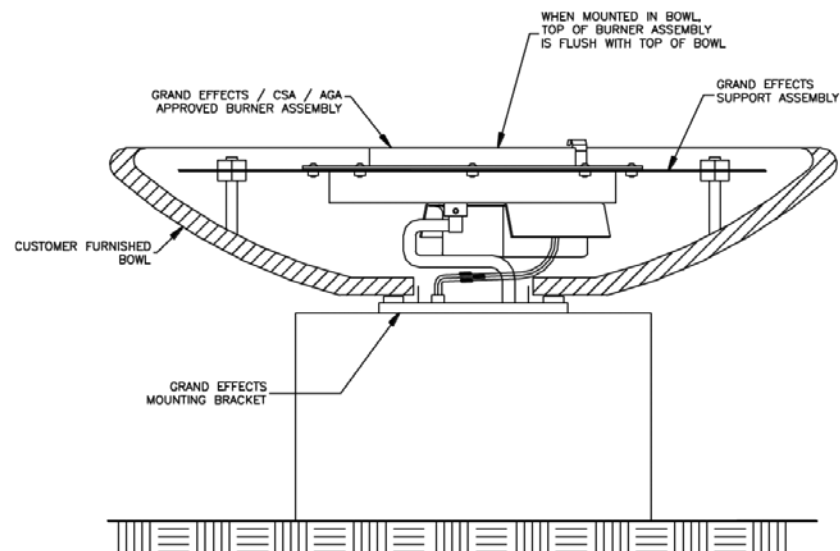


Figure 9: Customer-supplied Bowl

Section 3: Burner Setup and Adjustment

1. At the control panel, turn the manual gas valve to the “Off” position.
2. With 120 VAC coming into the control panel, turn the burner switch “On”.
3. At each burner assembly, check that the spark electrode is arcing across to the pilot hood. You should be able to hear and see the electrode spark. If there is no spark, make sure that the burner assembly is receiving 24 VAC from the control panel. Check that the main gas adjusting valve is in the full open position. It is located on the bottom of the burner assembly as shown in Figure 7.
4. Reposition the burner assembly so that it is sitting level in the bowl.
5. At the control panel, open the manual gas valve.
6. In the control panel, turn the burner switch to the “On” position.
7. After all bowls have been lit, they can be adjusted for flame size.

Important: At this time, the corresponding fire bowl should ignite. If the burner does not light, it may be a result of air in the gas line. If this happens, carefully purge the air from the gas line by disconnecting the gas hose from the burner assembly. The end of the gas hose should be outside of the bowl when purging air from the gas line.

⚠ CAUTION! When purging air from a propane system, disconnect wires going to the burner assemblies (terminals X1/X2) located in Grand Effects control panel. There should be no power at the burner assemblies when purging propane. The propane adder valve should remain wired and energized when purging. After purging is complete, make sure the area is vented and free from built-up gas. Reinstall wires at X1/X2 terminals, thus providing power to burner assemblies.

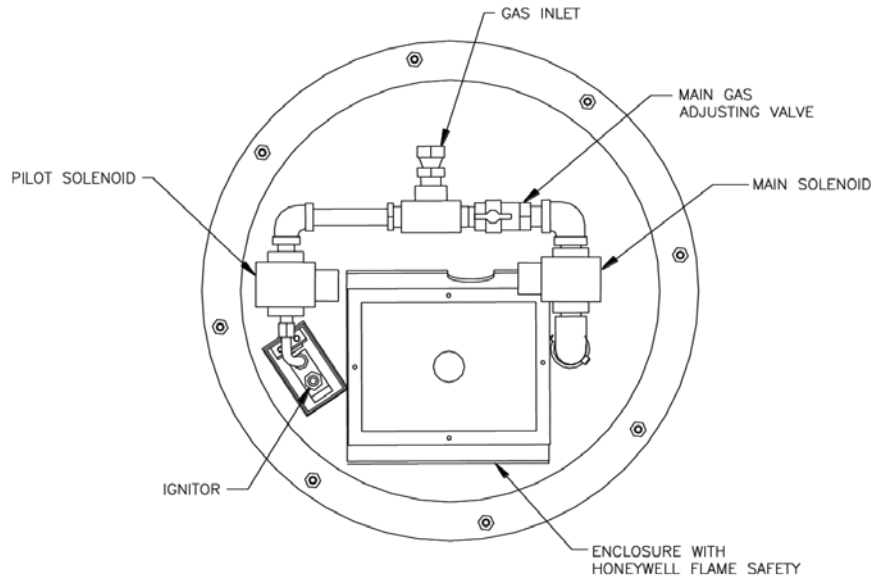


Figure 9: Bottom Side of the Burner Assembly

Burner Adjustment

Note: Each burner should have a flame height of approximately 12" – 15" from the top of the bowl. If the burner is adjusted too low, it will create an unstable pilot, resulting in possible On/Off cycling.

1. The height of the flame can be adjusted at each burner by opening or closing the $\frac{1}{2}$ " gas valve or keyed valve as shown in Figure 4.


Each burner should be adjusted as required so that the flame size at each bowl is similar in appearance to each other.

2. After all burners have been adjusted, make sure that the burner assembly is repositioned so that it is sitting level in each bowl.
3. Install decorative rock or glass on top of the "burner support" and burner assembly. Larger lava rock is recommended (2" - 4" in size). It will work better than smaller rock. Make sure that all rock is clear of the pilot area and hood area. Pilot hood area needs to remain clear of rock for proper ventilation.

Note: Do not use glass with propane installations. (If you use glass with natural gas, you will need to lay down stainless mesh screen to prevent glass from falling through. Do not cover the burner assembly and support plate. Fire glass requires a glass pilot hood, which is different than a standard pilot hood used with lava rock. Please consult the Grand Effects Glass Install Manual. If you use $\frac{1}{4}$ " pieces of lava, it should be treated as a glass installation).

Note: Both sides of the pilot hood need to be clear of rock for proper ventilation.

Important: Do not use fire glass with propane installations.

 **CAUTION!** Use only approved decorative media to cover the burner assembly. Lava and tumbled lava/ceramic stone and fire glass are all accepted media. However, use caution when in the immediate area, as pieces may pop or explode when exposed to heat or when wet and exposed to heat.

Section 4: Maintenance

Periodically clean the burner assembly and bowl with a wet cloth or cleaning solution to remove carbon build-up.

Frequency of the cleaning will depend on usage.

Frequently inspect the gap between the base of the bowl and the mounting bracket. It should be kept free of dirt and debris that may restrict cooling air and drainage (see Figure 10).

Periodically inspect the underside of the burner assembly for any signs of excessive temperatures.

Check that all gas connections are tight.

The units should be cycled frequently, especially after a rain. The burner assembly will not work in snow and ice conditions. The burner assembly should be covered and protected from snow and ice. The burner should not be operated in high wind conditions. High winds can limit the cooling air required for cooling of the burner assembly and cause over heating of the electronics.

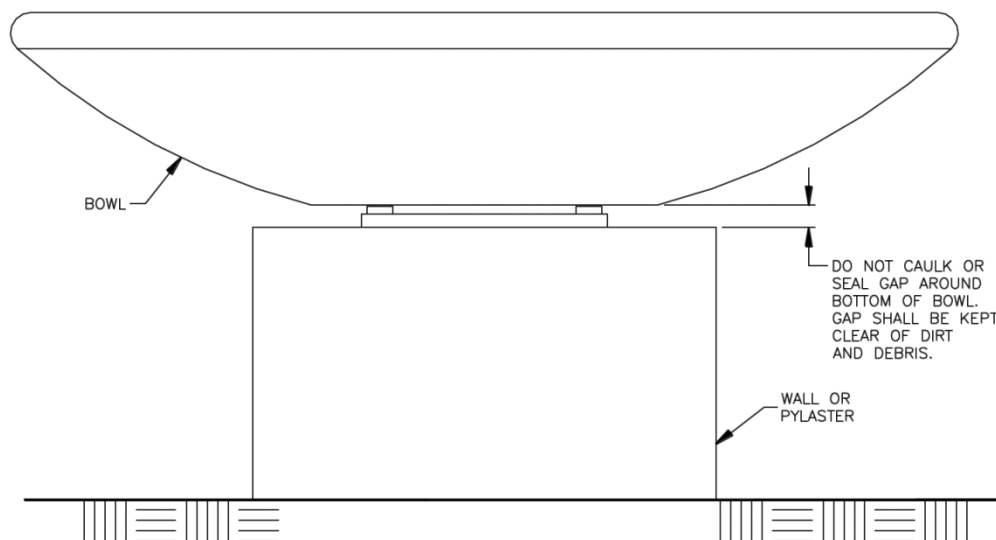


Figure 10: Maintenance

Important: The system needs to be turned on/off after a rain to remove any water in the pilot area.

Note: If any problems are present, consult a licensed heating specialist or call Grand Effects.

Section 5: Operation

⚠ WARNING! This unit is for outdoor use only.

For your safety:

- If you smell gas, shut off the gas valve immediately.
- Extinguish any open flame.
- If odor continues, immediately call your gas supplier.
- Do not store or use gasoline or other flammable vapors and/or liquids in the vicinity of this appliance.
- Do not leave flame on while unsupervised.
- Do not operate in windy or rainy conditions. If this is done, the unit will cycle on and off automatically.
- Unit should be operated only by a responsible adult.
- When in use, an open flame is present; therefore, use with extreme care and at your own risk.
- Before any inspection of the unit, always turn off power and gas supply at the control panel.
- If you experience problems with this unit, call Grand Effects or a licensed heating professional. All work on this unit must be performed by a licensed heating professional.

⚠ CAUTION! Before you turn on the Grand Effects System, make sure that features are clear of people, animals, or any objects that are combustible.

Operating Instructions

To turn unit "On":

1. Open manual gas valve.
2. Turn Burner Switch "On".

To turn unit "Off":

1. Turn Burner Switch "Off".
2. Close manual gas valve.

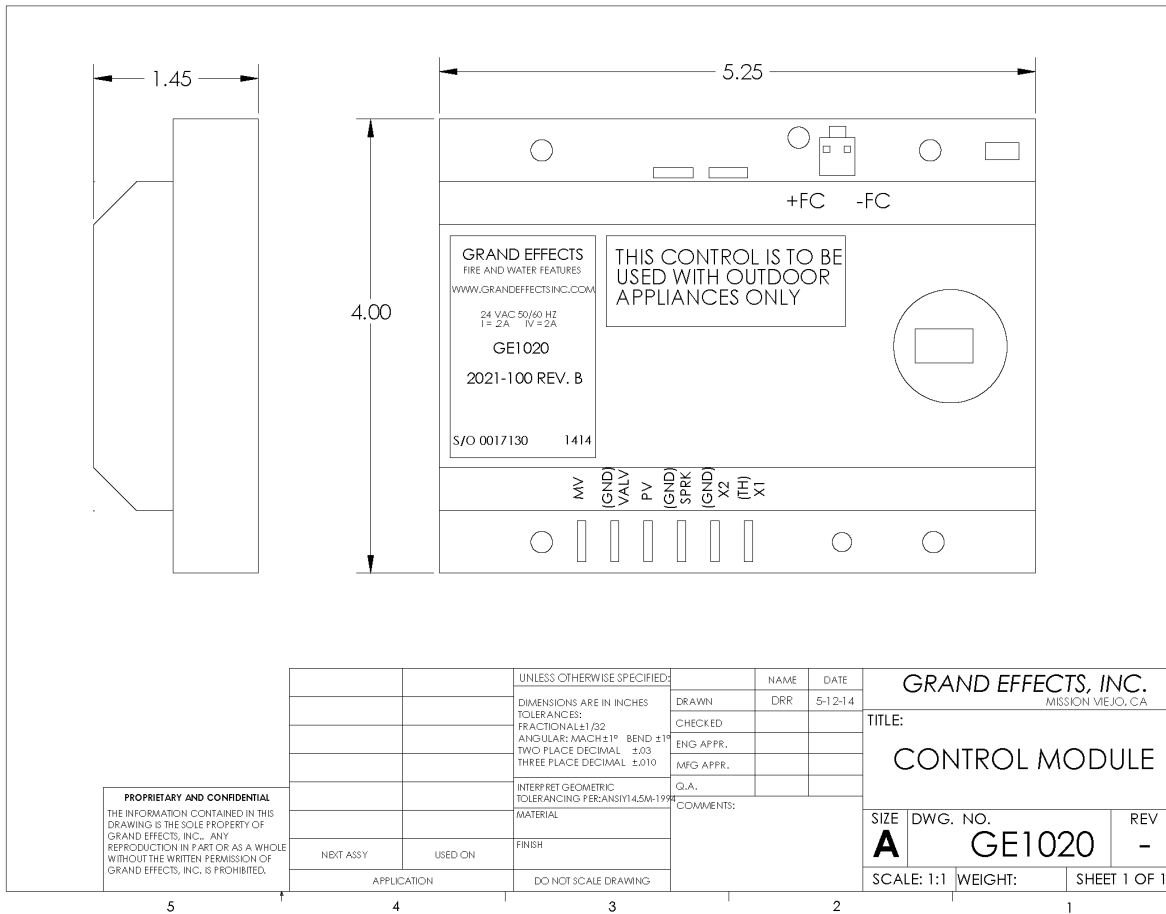
Note: If burner fails to light, turn corresponding burner switch in the control panel to the "Off" position, and then to the "On" position. This will initiate a new trial for ignition.

Section 6: Troubleshooting

Model 100 Burner Assembly

Main burner does not light (no spark)	<ol style="list-style-type: none">1) Remove rock/glass away from pilot area. (Look for small pieces obstructing pilot.)2) If still no spark, confirm that you have 24 VAC out of the panel and at the burner (measure voltage on terminals 1, C).3) If you have voltage going out to the burner, but no spark, replace the control module. (Look for excess heat on the module.)4) If you have no voltage out of the panel, check fuses F1 and F2 and GFI confirm 110 V going into panel on terminals H, N.5) If you have 110 V on H, N and the fuses check OK, but still no 24 V output, replace the transformer.
Spark (but no pilot)	<ol style="list-style-type: none">1) Remove rock/glass away from pilot area. (Look for small pieces obstructing pilot.)2) Confirm if gas is coming out of the pilot; you can hear it. (Use a BBQ lighter to determine if gas is coming out of the pilot.)3) If no pilot gas, check that gas is turned on.4) Pilot orifice may be plugged. Replace orifice or complete pilot assembly.5) If still no gas, pilot valve may not be opening. Turn gas off and confirm if pilot solenoid is energizing.6) If not energizing, replace the control module. If it is energizing, clean out pilot solenoid.
Burner goes On/Off	<ol style="list-style-type: none">1) Is it going off because of wind? If so, how windy? Slight breeze or gusty? (If wind, rotate burner assembly in bowl or add 3.5" x 17" wind band.)2) Remove rock/glass away from pilot area. Does it get better? How much glass? Thin down glass on burner assembly.3) Remove all rock/glass from the burner assembly. (Does the problem go away?)4) Is the main flame adjusted too low? (If burner is adjusted too low, the pilot will be too small and unstable.)5) If burner shuts off after a 30-minute period and then goes off and doesn't come back on, replace the control module.
Pilot comes on but no main burner	<ol style="list-style-type: none">1) Confirm that red handled ball valve underneath the burner is open.2) If possible, confirm that main gas solenoid is energizing. If not possible, replace the control module.3) Main burner solenoid may have to be replaced if buzzing.
Main burner or pilot does not shut off	<ol style="list-style-type: none">1) Remove solenoid coil and clean inside of solenoid (looking for contaminants).

Control Module Diagram



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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	GRAND EFFECTS, INC. MISSION VIEJO, CA	
		DIMENSIONS ARE IN INCHES	DRAWN	DRR	5-12-14	TITLE: CONTROL MODULE
		TOLERANCES:	CHECKED			
		FRACTIONAL: 1/32	ENG APPR.			
		ANGULAR: MACH ±1° BEND ±1°	MFG APPR.			
		TWO PLACE DECIMAL ±.03	Q.A.			SIZE DWG. NO. REV
		THREE PLACE DECIMAL ±.010	COMMENTS:			A GE1020 -
		INTERPRET GEOMETRIC TOLERANCING PER: ANSI Y14.5M-1998				SCALE: 1:1 WEIGHT: SHEET 1 OF 1
		MATERIAL				
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				

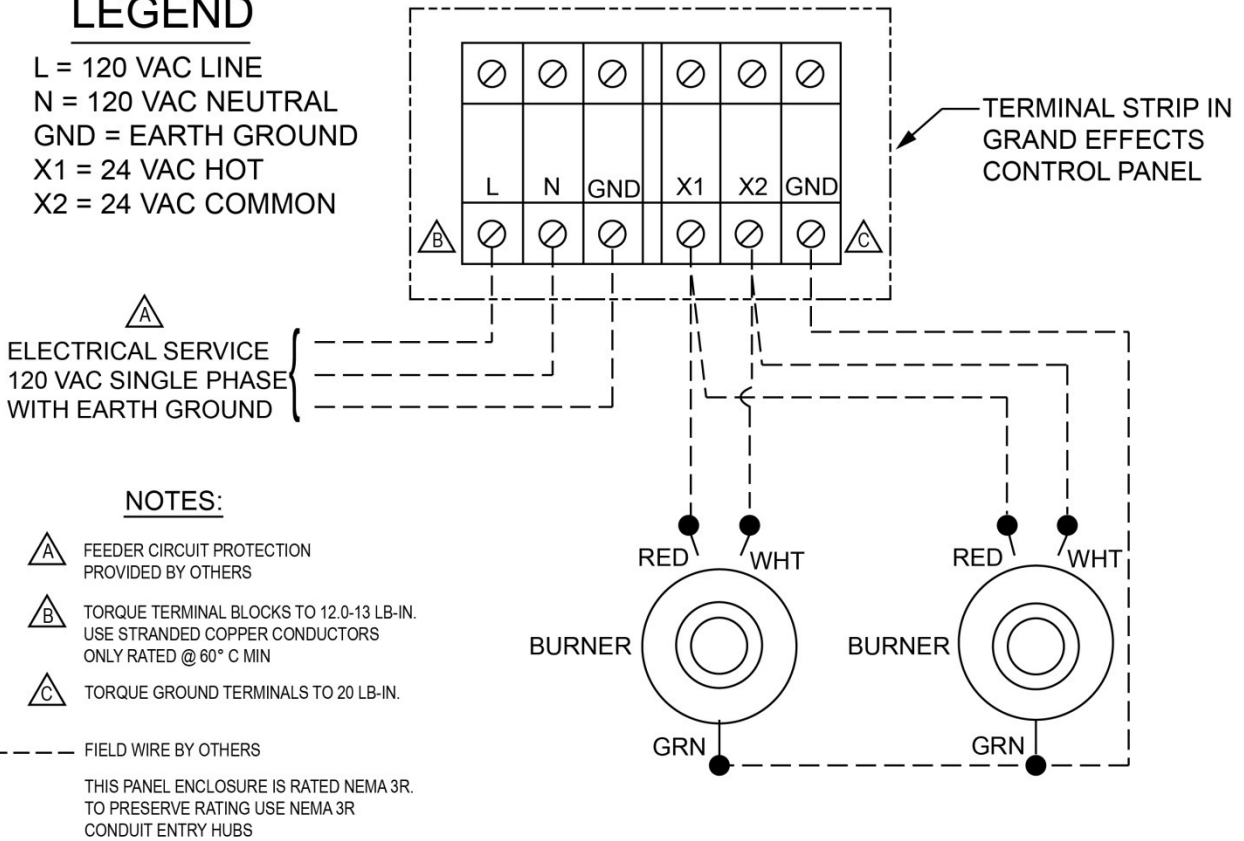
5 4 3 2 1

Wiring Diagram

CPWD-2

LEGEND

L = 120 VAC LINE
 N = 120 VAC NEUTRAL
 GND = EARTH GROUND
 X1 = 24 VAC HOT
 X2 = 24 VAC COMMON



Grand Effects Warranty (1 Year Residential; 6 Months Commercial)

Grand Effects will attempt to repair, at its expense, any unit, which in normal use, has proven to be defective in workmanship or material, provided that the Buyer provides or arranges for the return of the product prepaid to Grand Effects with proof of product date of delivery to the end user of the product and provides Grand Effects with reasonable opportunity to verify the alleged defect by inspection, which shall not be more than 15 days after receipt by Grand Effects. If the unit is deemed defective and cannot be repaired, Grand Effects will replace. Grand Effects will not be responsible for any asserted defect, which has resulted from misuse, abuse, repair or alteration. Under no circumstances will Grand Effects be liable for incidental or consequential damage resulting from defective products. This warranty is Grand Effects' sole warranty and sets forth the exclusive remedy, with respect to defective products, all other warranties, expressed or implied, whether of merchantability, fitness for purpose or otherwise, are expressly disclaimed by Grand Effects. Grand Effects is not responsible for any injury or mishap related to misuse, abuse or lack of judgment choosing fire display locations.



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