



GRAND EFFECTS

Fire Pit Inserts (Automated Operation)

Operating and Maintenance Instructions

Table of Contents

Section 1: Gas and Electric Requirements.....	1
Section 2: Installation	2
Section 3: Burner Setup and Adjustment	10
Section 4: Maintenance.....	12
Section 5: Operation.....	13
Operating Instructions.....	13
Spare Parts.....	13
Section 6: Troubleshooting.....	14
Control Module Diagram	15
Wiring Diagram	16
Grand Effects Warranty (1 Year Residential; 6 Months Commercial)	17



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	
Gas Type	Natural	Propane
Gas Pressure (Nominal)	7" wc	11" wc
Gas Flow	24" Burner System 30" Burner System	275,000 btu/hr 400,000 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.

A LP gas regulator should never be installed in the fire pit. It should be installed by a gas expert in a remote location away from the heat source.

Install burner assembly 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.

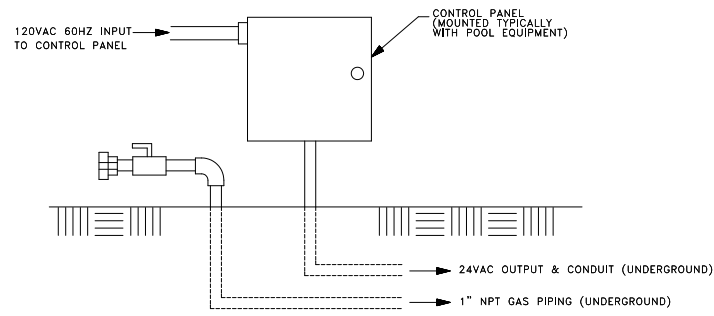
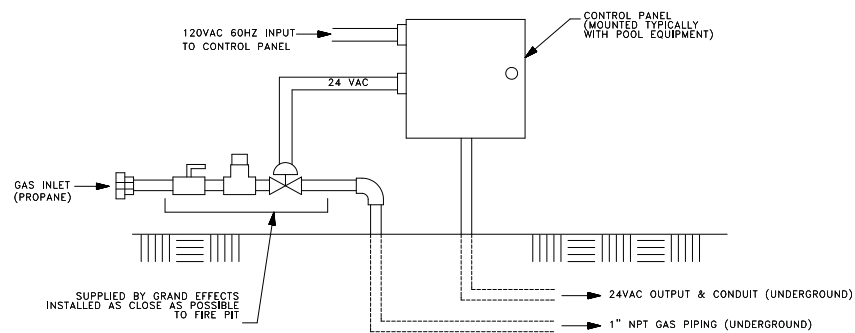
Using fire brick to line the inside of the fire pit is not recommended. Fire brick will retain heat and may result in overheating of the electronics.

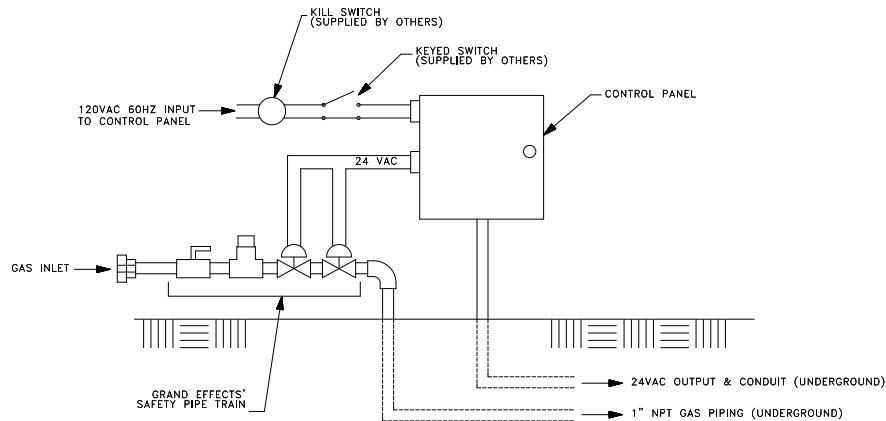
The control panel and approved gas valve must be located where they can be easily accessible so that the gas can be shut off quickly in case of an emergency.

1. Install the control panel and gas piping as shown in Figure 1: Natural Gas, Figure 2: Propane Gas, or Figure 3: Commercial Installation. Gas lines must be clean and free from any dirt, debris, or contamination.

Note: Piping and fire pit construction is different for natural gas and propane gas.

2. The gas piping must be installed underground between the control panel and each burner, as shown in Figure 1, 2 and 3.

**Figure 1: Natural Gas****Figure 2: Propane Gas**



3. The piping must be reduced to 3/4" NPT at each burner, as shown in Figure 4, 5 and 6.
4. At each burner, 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.

Important: Do not come straight up with the gas hose. As shown in Figure 4,5 and 6, 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.

Important: Do not come straight up with the gas hose. As shown in Figure 4,5 and 6, 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.

Note: The gas and electrical connection should be located at the center of each fire pit. The connections should be installed as shown in Figures 4,5 and 6.

5. Install low voltage wiring (14 or 16 ga.24VAC) underground between the control panel and the burner assembly. 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.

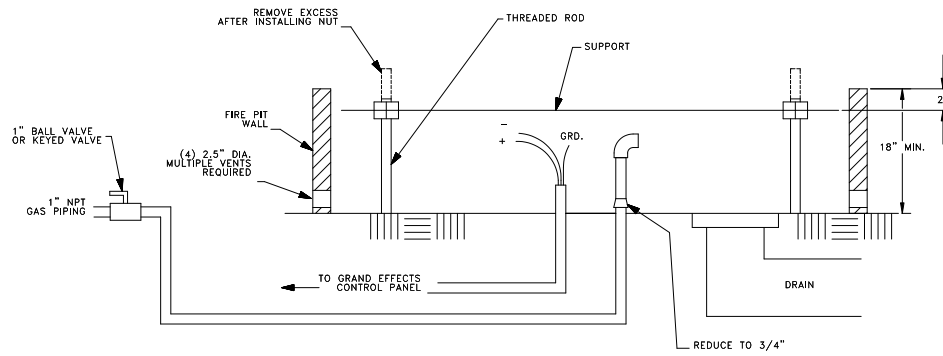


Figure 4: Natural Gas-Residential Installation

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. The Support Plate can be installed in a few different methods. Smaller Support Plates can be supported using legs (threaded rod) supplied by Grand Effects. When using threaded rod, adjust the height of the support plate as shown in Figures 4, 5 and 6. Cut off the excessive length of bolts. When using threaded rod as legs, the bottom of the fire pit should be concrete to support the weight of the Support Plate, Burner Assembly and decorative media. When using larger Support Plates, stainless “L” brackets may be sufficient to hold Support Plate and burner assembly and media. If not, then structural galvanized angle iron cross members should be included. Cross member supports should be fixed and laid across fire pit in a rigid manner to hold Support Plate, Burner Assembly and decorative media.
8. Venting is required to keep burner electronics from overheating. Venting is achieved with air holes located at the bottom of the fire pit walls as shown in Figures 4, 5 and 6.

Note: Providing good drainage is critical. Fire Pits using propane should not have drains located at bottom of cavity. Drainage should be achieved with vent holes located at bottom of side walls as shown in Figures 5 and 7.

Important: There is an 18" minimum depth requirement on residential fire pits and 24" minimum depth on commercial fire pits as shown in Figures 4, 5, 6 and 7.

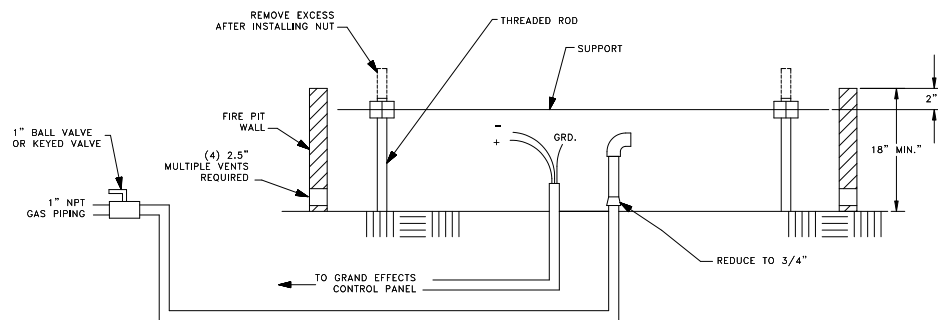
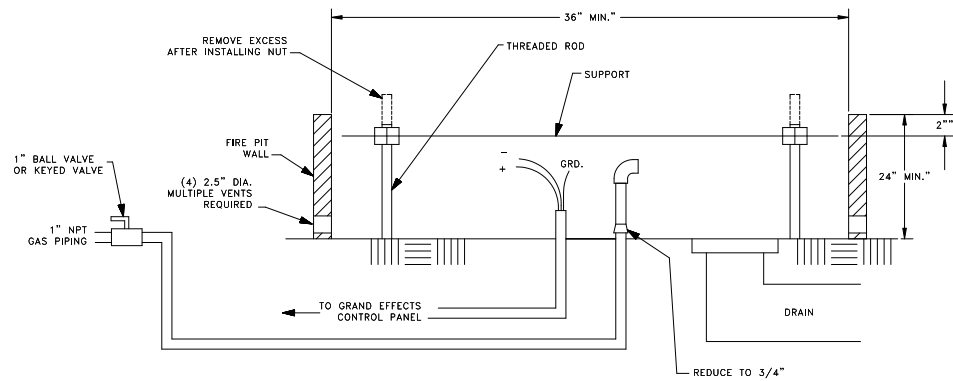
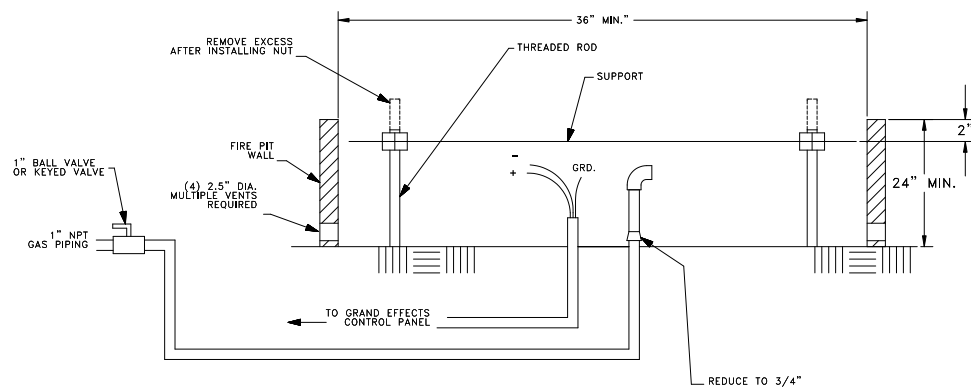


Figure 5: Propane-Residential Installation

9. On commercial installations, it is recommended to install a keyed switch and kill switch located in close proximity of feature or features. The keyed and kill switches must be electrically wired into the 110v upstream of the Grand Effects' Control Panel.
10. Install the Subpanel at the bottom of Fire pit as shown in Figures: 9,10,11,12. It is important to have good drainage as warranty is void if Subpanel becomes submerged with water. The burner assembly must be centered and supported by the support plate. Install wire nuts on wires from the control panel to the Subpanel. 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. Install electrical Burner Ground and Burner Spark from Subpanel to burner.
11. Install pilot and main gas hoses from Subpanel to Burner Assembly. With all gas connections tight, position the burner assembly so that it sits level on the Support Plate.

**Figure 6: Natural Gas-Commercial Installation****Figure 7: Propane-Commercial Installation**

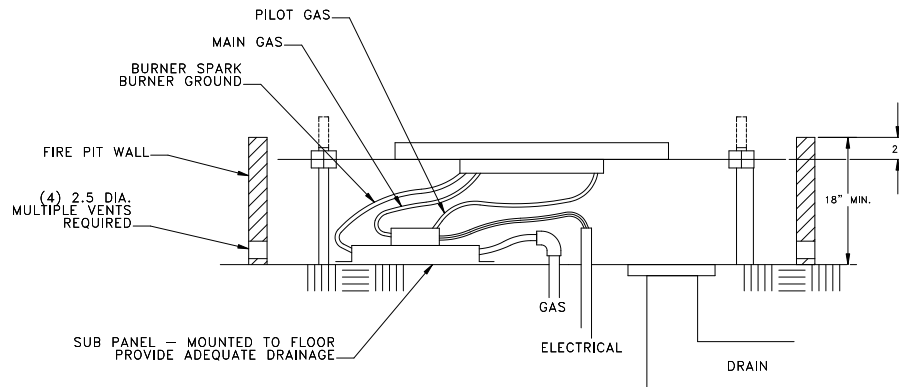


Figure 9: Natural Gas-Residential Installation

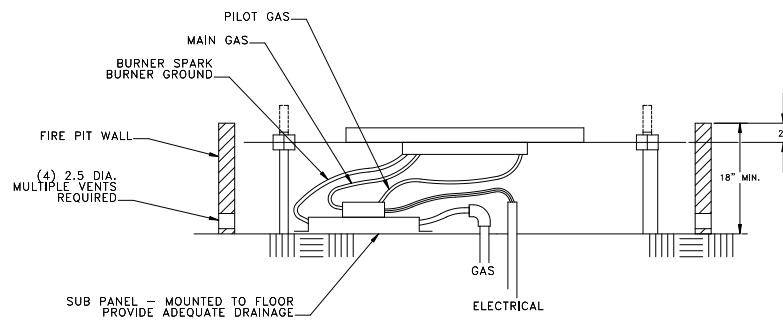


Figure 10: Propane-Residential Installation

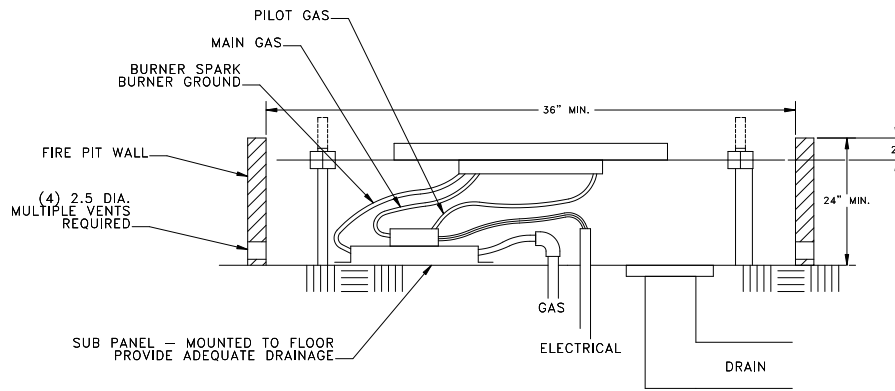


Figure 11: Residential Gas-Commercial Installation

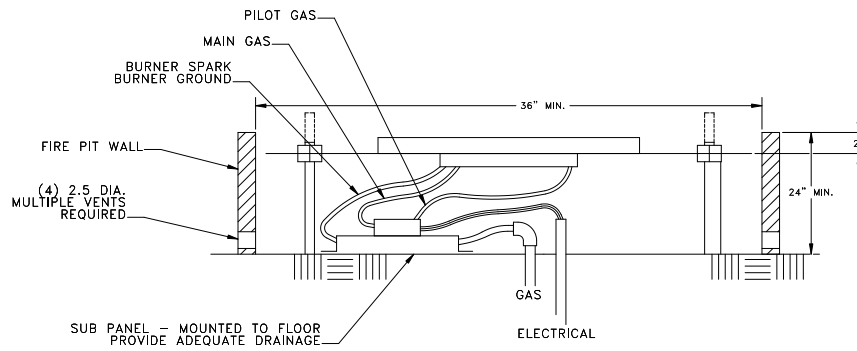



Figure 12: Propane Gas-Commercial Installation

Section 3: Burner Setup and Adjustment

1. At the control panel, turn the manual gas valve to the “Off” position.
2. With 120VAC coming into the control panel, turn the burner switch “On.”
3. At the 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 24VAC from the control panel.
4. Reposition the burner assembly so that it is sitting level in the fire pit.
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 burner has been lit, it can be adjusted for flame size by adjusting the red handled gas ball valve located on the subpanel or keyed valve located on side of fire pit. The burner should have a flame height of approximately 12” – 15” from the top of the burner
8. Install decorative rock or glass on top of the “burner support” and burner assembly. Larger lava rock is recommended (2” - 4” in size). 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 pre-cut stainless mesh screen to prevent glass from falling through.


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.

Important: At this time, the corresponding burner 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 burner when purging air from the gas line.

Note:.

 **CAUTION!** When purging air from a propane system, disconnect wires going to the burner assembly (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 build-up gas. Reinstall wires at X1/X2 terminals, thus providing power to burner assembly.

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.

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 operated on a regular basis, 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.

Gas should be securely shut off during nonuse.

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”:

- Turn burner switch “On.”

To turn unit “Off”:

- Turn burner switch “Off.”

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.

Spare Parts

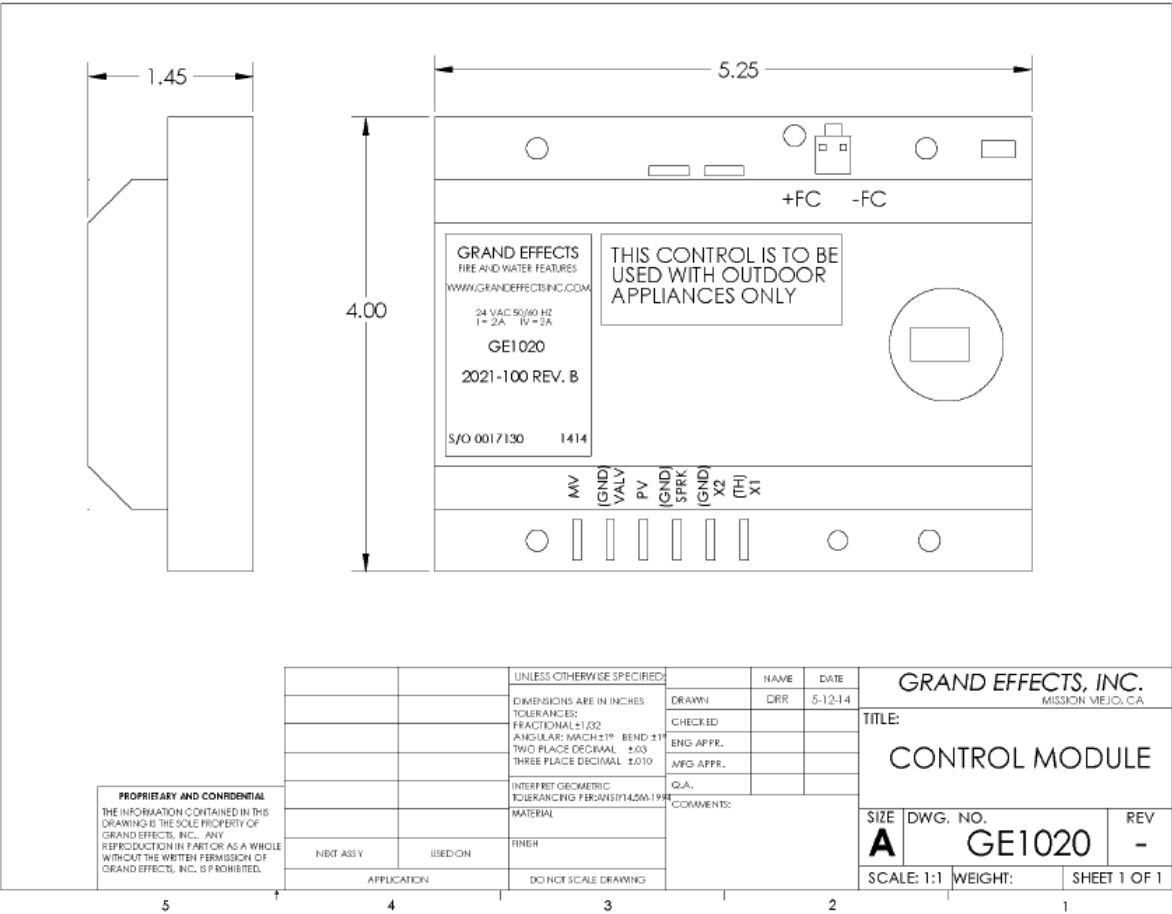
- 1/4” Pilot Solenoid
- 3/8” Main Solenoid
- Ignition Module

Section 6: Troubleshooting

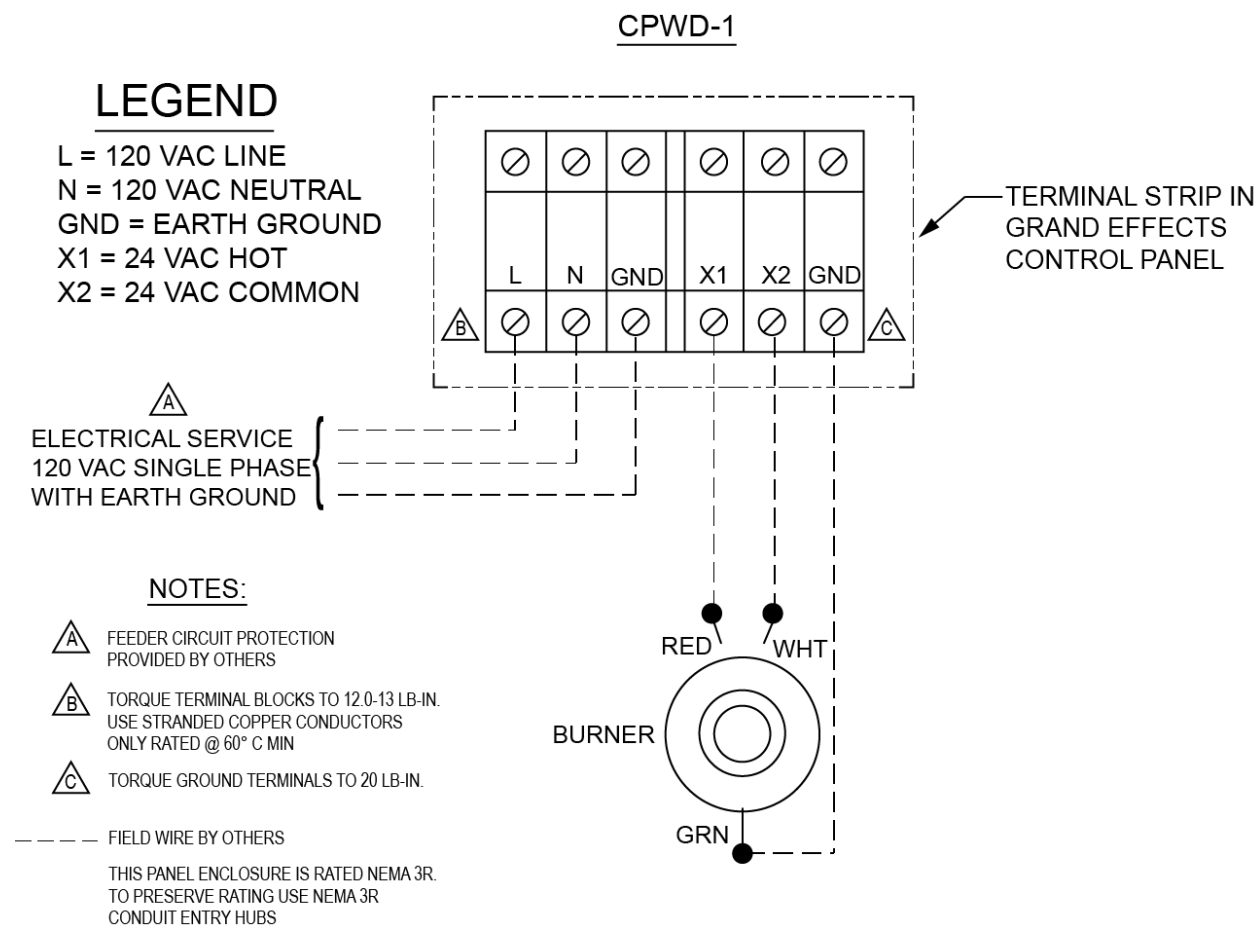
Model 100/100A Burner Assembly

Main burner does not light (no spark)	<ol style="list-style-type: none">1) Remove rock/glass away from pilot area.2) Remove pilot hood. (Look for small pieces obstructing pilot.)3) If still no spark, confirm that you have 24VAC out of the panel and at the burner (measure voltage on terminals L, N).4) If you have voltage going out to the burner, but no spark, replace the control module. (Look for excess heat on the module.)5) If you have no voltage out of the panel, reset fuse button on transformer and breaker switch. Confirm 110v going into panel on terminals L, N.6) If you have 110 V on L, N and fuses check OK, but still have no 24 V output on X1, X2, replace the transformer.
Spark (but no pilot)	<ol style="list-style-type: none">1) Remove rock/glass away from pilot area.2) Remove pilot hood. (Look for small pieces obstructing pilot.)3) Confirm if gas is coming out of pilot. You can hear it. (Use BBQ lighter to determine if gas is coming out of pilot).4) If no pilot gas, check that the gas is turned on.5) Pilot orifice may be plugged. Replace orifice or complete pilot assembly.6) If still no gas, pilot valve may not be opening. Turn gas off and confirm if pilot solenoid is energizing.7) 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 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) On Model 100 burner assembly, confirm that red handled ball valve underneath the burner is open.2) If possible, confirm that main gas solenoid is energizing. If not, 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



Wiring Diagram



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.



Contact us at:

GRAND EFFECTS

18 Technology Dr. #110

Irvine, CA 92618

Office: (949) 697-5270

Fax: (949) 625-8027

E-mail: info@grandeffectsinc.com