



CO2 Generator



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Operating Manual

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CO2 GENERATOR



4 BURNER



8 & 10 BURNER

Features

- Electronic ignition
- LED status indicators
- Emergency safety and shutoff sensors
- Includes all necessary hardware for easy installation

MODEL SPECIFICATIONS



Natural Gas							
Operating Altitude	Model	Max Area (cu ft)	Max CO2 (cu ft)	BTU Rating	Gross Weight (lbs)	Item (mm) Dimensions	Package (mm) Dimensions
Low	220477	4000	10.80	11068	16.80	211x511x215	260x330x310
	220877	8000	21.60	22136	22.00	211x511x364	260x330x460
	221077	10000	27.50	27670	22.50	211x511x364	260x330x460
High	220474	4000	9.60	9820	16.80	211x511x215	260x330x310
	220874	8000	19.20	19640	22.00	211x511x364	260x330x460
	221074	10000	24.00	24550	22.50	211x511x364	260x330x460

Liquid Propane							
Operating Altitude	Model	Max Area (cu ft)	Max CO2 (cu ft)	BTU Rating	Gross Weight (lbs)	Item (mm) Dimensions	Package (mm) Dimensions
Low	220497	4000	10.60	9052	16.30	211x511x215	211x511x215
	220897	8000	21.20	18104	21.80	211x511x364	260x330x460
	221097	10000	26.50	22630	22.00	211x511x364	260x330x460
High	220494	4000	8.40	7152	16.30	211x511x215	211x511x215
	220894	8000	16.80	14304	21.80	211x511x364	260x330x460
	221094	10000	21.00	17880	22.00	211x511x364	260x330x460

WARNINGS

- Fully read instructions before installing or operating your CO2 Generator.
- Installation and connection of gas lines must be completely complied with local and national regulations. Check all connections with soapy water before firing.
- The CO2 generator is not waterproof, with built-in electronic component , please do not put generator in an area where it can get wet or sprayed.
- The Generator is designed to be operated only while hanging. Do not operate the Generator on a table or other surface because the unit requires unrestricted airflow through the bottom of the unit.
- Install the Generator in a well-ventilated area. Without well ventilation, CO2 can reach toxic levels. Levels above 2250 ppm can cause headaches and other symptoms, and levels above 4500 ppm are toxic.
- Do not put other objects like paper clips, tools, etc. into unit. The electrodes produce sparks, possible electrocution may occur.
- Do not use the standard Generator at altitudes higher than 4,500 ft above sea level if the burners are producing yellow flame.
- Avoid touching or handling CO2 generator chassis while operating. You may get burned.
- Use caution if operating CO2 generator in extremely humid environments.

INSTALLATION

Determine the best location for the generator. It must be hung in the horizontal level, in an open area that is adequately ventilated.

The generator requires on unrestricted flow of air through the bottom and must be hung. Select an overhead support, such as a ceiling joist, to hang the generator. The unit must have a minimum clearance of 24" of space between it and any other obstructions. Use the included hardware (20" chain, screw hook, and carabiners) to securely hang the generator.

1. Install the screw hook into the overhead support. Use the carabiners to secure the chain to the unit and the screw hook.
2. Verify that the generator is at hanging level. The generator has a safety feature of turning off the burners if the unit tips over or falls down and not in horizontal level.
3. Verify that the gas supply and the regulator being used match the type of CO2 generator you're using (LP or NG).
4. Securely tighten the gas connection with 2 wrenches using the included gas supply hose. Connect one end to the flare fitting and the other end to the provided gas regulator. Make sure the connection is secured safe.
5. Pressurize the gas line after connections are verified. Use soapy water and a spray bottle to check for leaks by spraying it onto the gas connection fittings and watch for bubbles. If bubbles appear, re-secure the connection and repeat the process.
6. Using the included power supply, connect the unit to a controller or timer that will determine the amount of time and how frequently the generator will operate.
7. The ignition module and firing sequence are activated by the 24VDC input. Once the generator has power and is in operation if the green 'Power' indicator light is on.

Note: This generator requires 24VDC power. Use the power supply included with the CO2 generator, or the 24VDC output from controller.

LED INDICATORS

There are 3 LED indicators on the side of the Generator.

- The “Power” LED illuminates when the 24VDC is connected and powered, the unit is turned on.
- The “Error” LED flashes to indicate the ignition control module has shut off the solenoid valves and the unit will not operate until it has been disconnected from and reconnected to power.
- The “Valve” LED illuminates when the ignition control module provides a spark for 15 seconds while the solenoid is activated.
- The LED will remain illuminated during operation.

START PROCEDURE

After completing the installation, follow this start up procedure.

- Verify there are no other objects or loose packing materials on or inside of the unit. Make sure nothing appears damaged or out of place.
- Check and confirm that the gas connections are connected properly.
- Pressurize the gas lines by opening any of the shut off valves on the gas supply. Test for gas leaks especially if this is the first time the unit will be used.
- Make sure there are no objects within 20” of the surface of the unit.
- Plug in the 24VDC power supply into a AC electric wall outlet.
- Then connect the small DC power cable to the 24VDC input power jack on the CO2 generator, the “Power” LED illuminate.
- Shortly after, the ignition module will attempt to ignite the burner(s) for approximately 5 seconds. The “Valve” LED indicator light should illuminate.
- If the burners fire, continue to next step.

- If this is the first time to use this unit or LP tank has been replaced recently, the burners may not fire at the first attempt. The ignition module keeps sparking for 15 seconds. If failed, the module will stop sparking for 30 seconds and then ignite again. After attempts for re-ignite 5 times, if it still not fire, the module will lock up and the LED "Error" will illuminate. Un-plug the 24VDC jack from the unit and wait for 5 minutes to allow the gas to dissipate. Retry to start the generator.

NOTE: If starting the unit for the first time or after a new tank is connected, make sure to “purge” the gas line of any air to ensure gas is flowing to the burners.

- Once the burners ignite, look under the unit and confirm the flame is blue and consistent and resembles a flower or 6 point star. **WARNING!!** Power the unit off immediately if the flame appears yellow or excessively large. DO NOT OPERATE with yellow, excessively large, or small “lazy” blue flames.
- If the flame appears yellow or too large, verify the correct gas supply is being used and that the supplied gas regulator is being used. High pressure or incorrect gas type may increase flames to dangerous heights.
- If the flame is blue but appears small, verify the correct gas supply is being used and that the supplied gas regulator is being used. High pressure or incorrect gas type may increase flames to dangerous heights.
- If the flame is blue but appears small, verify the correct gas supply is being used (if LP, verify tank level is not low) and that the supplied gas regulator is being used. Low pressure or low LP tank may cause small or "lazy" blue flames.
- After the generator has been tested at full capacity, connect the generator to a compatible controller or timer.

HIGH ALTITUDE GENERATORS

High Altitude Generators are specially designed to operate and compensate for reduced oxygen levels at altitudes higher more than 4,500 ft above sea level. BTU and CO₂ outputs will be reduced because there is less oxygen in the air at high altitudes (see Specifications table).

A High Altitude Generator may be operated at altitudes as low as 2,500 ft above sea level, but the unit should be tested before use to ensure all burners ignite correctly and consistently

control is not being used, burners can be removed and replaced with the provided brass pipe plugs.

TROUBLESHOOTING

Why isn't the Generator working and why aren't the LEDs illuminating even though the power is connected?

Make sure the generator is in the horizontal level.

Why won't the burners ignite even though the unit is attempting to ignite them?

Verify the unit is generating a spark and the burner closest to the electrodes is active. Ensure there are no kinks or twists in the gas line and the gas supply is adequate. Turn off the gas regulator for 30 seconds, then try again.

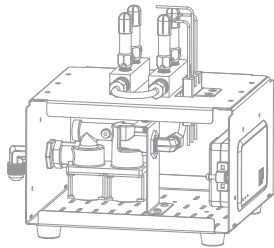
Why isn't the CO₂ level increasing to the desired ppm?

Check for air leakage in the growing area. Do not operate exhaust fans while CO₂ is being produced.

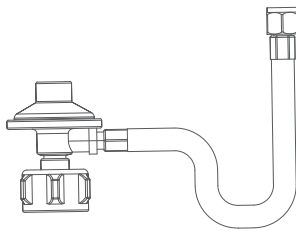
What if the growing area gets too humid or hot?

Reduce the settings on the controller or timing device. If an output

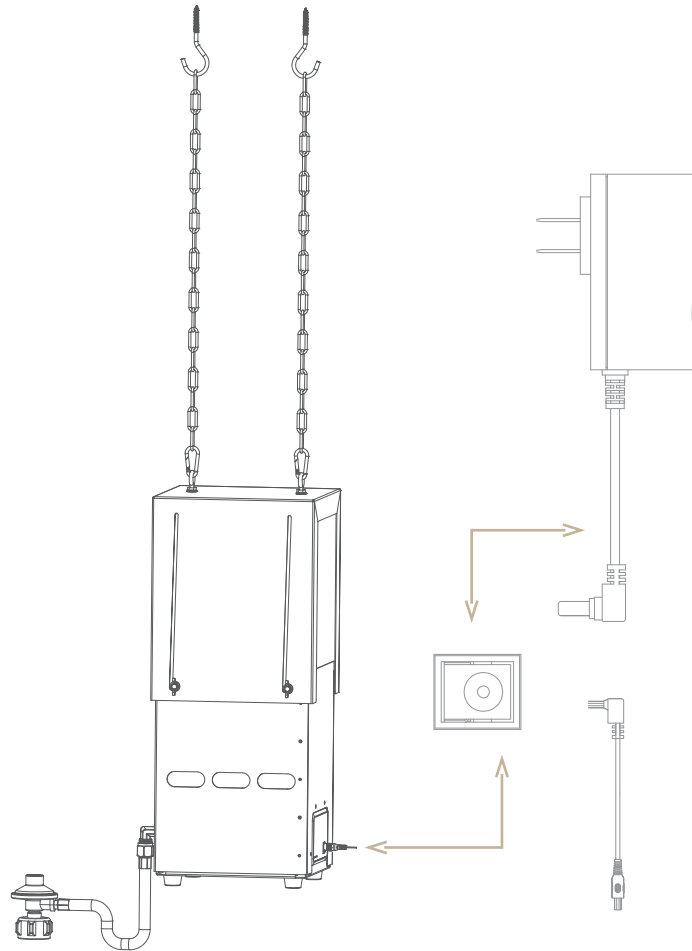
INSTALLATION EXAMPLE 4 BURNER



Inner Nozzles

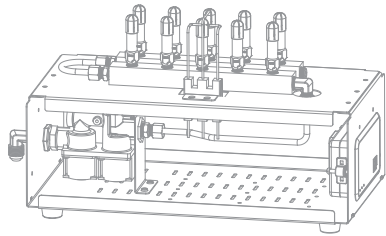


LP or NG
Gas

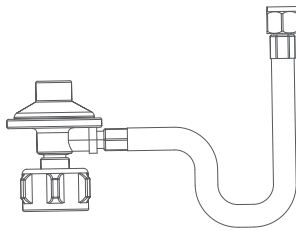


INSTALLATION EXAMPLE

8 & 10 BURNER



Inner Nozzles



LP or NG
Gas

