

# Instruction Manual

## CO<sub>2</sub> GENERATOR (LP / NG)

# Contents



## Warning

### !!WARNING!!

In closed spaces without adequate ventilation, CO<sub>2</sub> levels can accumulate and become toxic (CO<sub>2</sub> levels above 5000 PPM are toxic). Plants benefit from levels up to 1500 PPM. Levels above 2500 PPM can cause headaches and /or other feelings of being ill. Determine the best location for the generator. It must be placed in an area that is adequately ventilated.

## Important Message

Read and understand this instruction manual BEFORE attempting to operate this product.

Failure to do so could result in personal injury and / or property damage.

Input Power		240V to 24-VDC Adapter					
Natural Gas (NG) Operating Pressure		4.50" WC / 1.15 kPa					
Liquid Propane (LP) Operating Pressure		11.0" WC / 2.8 kPa					
Model		BBL-LP-4 /BBL-NG-4	BBL-LP-8 /BBL-NG-8	BBL-LP-10 / BBL-NG-10			
Variable Burners		4	8	10	2	5	7
kW Rating	LP	2.65	5.30	6.65	1.35	3.30	4.65
	NG	3.25	6.50	8.10	1.60	4.05	5.65
BTU Rating	LP	9052	18104	22630	4526	11315	15841
	NG	11068	22136	27670	5534	13835	19369
CO <sub>2</sub> Output Per Hour	LP SCF	10.60	21.20	26.50	5.30	13.25	18.55
	NG SCF	10.80	21.60	27.70	5.40	13.50	18.90
	LP m <sup>3</sup>	0.30	0.60	0.75	0.15	0.38	0.53
	NG m <sup>3</sup>	0.31	0.61	0.78	0.15	0.38	0.54
Weight	lbs	23	23	26			
	kg	10.00	10.50	11.60			
Dimensions	inch	15.0 x 9.8 x 20.0					
	mm	380 x 250 x 510					
Approximate Coverage Area	CUFT	4000	8000	10000	2000	5000	7000
	m <sup>3</sup>	115	225	285	60	140	200

# Specifications

## High Altitude Models

For use at elevations higher than 4500 ft / 1375 m

Input Power		240V to 24-VDC Adapter					
Natural Gas (NG) Operating Pressure		4.50" WC / 1.15 kPa					
Liquid Propane (LP) Operating Pressure		11.0" WC / 2.8 kPa					
Model		BBL-LP-4 HA /BBL-NG-4 HA	BBL-LP-8 HA /BBL-NG-8 HA	BBL-LP-10 HA / BBL-NG-10 HA			
Variable Burners		4	8	10	2	5	7
kW Rating	LP	2.10	4.20	5.25	1.05	2.60	3.65
	NG	2.85	5.70	7.20	1.45	3.60	5.05
BTU Rating	LP	7152	14304	17880	3576	8940	12516
	NG	9820	19640	24550	4910	12275	17185
CO2 Output Per Hour	LP SCF	8.40	16.70	20.88	4.18	10.44	14.61
	NG SCF	9.60	19.20	24.00	4.80	12.00	16.80
	LP m <sup>3</sup>	0.24	0.47	0.59	0.12	0.30	0.41
	NG m <sup>3</sup>	0.27	0.54	0.68	0.14	0.34	0.48
Weight	lbs	23	23	26			
	kg	10.00	10.50	11.60			
Dimensions	inch	15.0 x 9.8 x 20.0					
	mm	380 x 250 x 510					
Approximate Coverage Area	CUFT	4000	8000	10000	2000	5000	7000
	m <sup>3</sup>	115	225	285	60	140	200

# Setup & Operation Instructions

## !!WARNING!!

Installation and connection of the gas lines must be completed in compliance with local and national building codes. Consult your local authorities for detailed requirements.

**Step 1:** Loosen the 2 wing bolts on each side, raise the top upward.(1)

**Step 2:** Tighten the bolts at the top limit. Install two stand feet when you need to place it on the ground.(2)



(1)



(2)

# Setup & Operation Instructions

**Step 3:** Connect the supplied hose to the gas source and generator. Verify that the gas supply matches the CO<sub>2</sub> generator model (LP or NG), and check thoroughly for any gas leaks at the connection points using soapy water. Plug in the 24V power supply.

**Note:**

DO NOT turn on the generator, until the unit has been successfully installed.



\*Suggested to operate the CO<sub>2</sub> generator with the CO<sub>2</sub> controller like  PPM-B1.

(3)

# Setup & Operation Instructions

**Step 4:** Turn the power switch to the ON position. The green 'MAIN POWER ON' LED should be illuminated. The intelligent ignition module will then attempt to ignite the burners. If the burners ignite properly and maintain a flame, the green 'MAIN VALVE ON' LED should remain illuminated. The yellow 'PILOT VALVE ON' LED indicator should also remain illuminated (for 10 burner units only).

**Note:**

If this is the first time using this unit or the LP tank has been replaced recently, the burners may not fire on the first attempt. After a 30 seconds pause, the generator will attempt to re-fire the burners again for 15 seconds. This cycle will repeat a maximum of 5 times.

**Note:**

The generator should fire before the 5th attempt, however if it does not, the generator will activate the Lock Out procedure and the red 'Lock out Error' LED will illuminate. If this happens, turn off the generator and wait for 5 minutes for the gas to dissipate. After the gas has dissipated, turn the generator back on to try again.

**Note:**

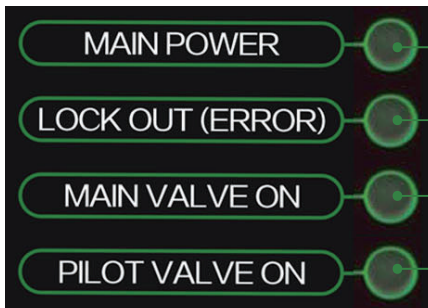
The intelligent electronic ignition system has built in safety features to prevent the release of gas if ignition is not completed. So, if the flame lasts less than 5 seconds, the unit will pause for 3 seconds and then attempt ignition again. After the 5th failed attempt to ignite the generator will enter LOCK OUT mode. Restart the unit using the ON/OFF switch and the unit will attempt to re-fire one more time. If the flame is still not present or stable the unit will again enter LOCK OUT mode. If the flames last more than 5 seconds then the LOCK OUT (ERROR) will be reset and normal operation will resume.

**Note:**

The unit will pause to self-check for 5 seconds after one hour of continuous burn time.



# LED Indicators



## **MAIN POWER:**

When illuminated, indicates that the 24 volt power supply is connected and the power switch is in the ON position.

## **LOCK OUT (ERROR):**

When flashing, this indicates that the control module cut power to the solenoid valve(s) and the unit has been locked out of operation (due to failed ignition or lack of a flame). The unit will not operate again until the power has been cycled OFF then back ON.

## **MAIN VALVE ON:**

When illuminated, the unit is operating and producing CO<sub>2</sub>.

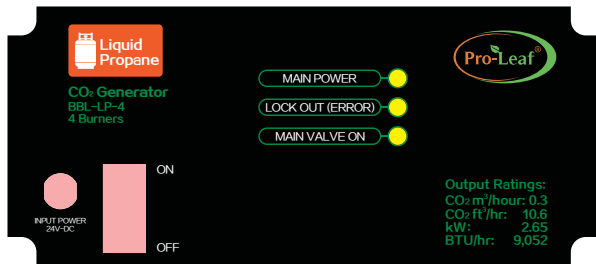
## **PILOT VALVE ON (for 10 burner units only):**

When power is applied, the intelligent electronic ignition module will provide a spark for a period of 15 seconds while the pilot solenoid is also energized. The LED indicator will remain illuminated while the solenoids are active during normal operation of CO<sub>2</sub> production.

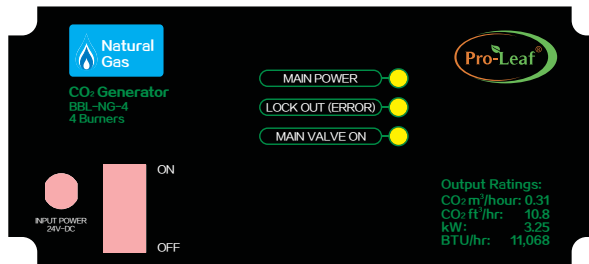
# CO<sub>2</sub> Generator

# 4 Burner Models

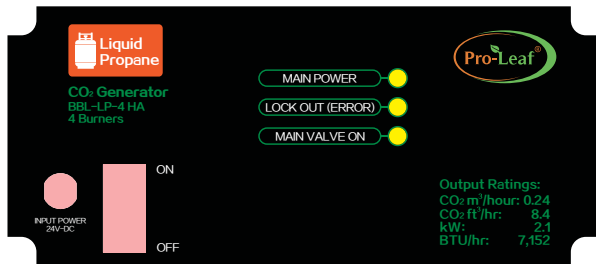
## BBL-LP-4



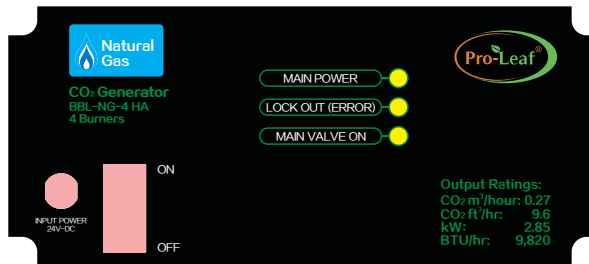
## BBL-NG-4



## BBL-LP-4 HA



## BBL-NG-4 HA



# CO<sub>2</sub> Generator

# 8 Burner Models

## BBL-LP-8



**Liquid Propane**  
CO<sub>2</sub> Generator  
BBL-LP-8  
8 Burners

**Pro-Leaf**

MAIN POWER

LOCK OUT (ERROR)

MAIN VALVE ON

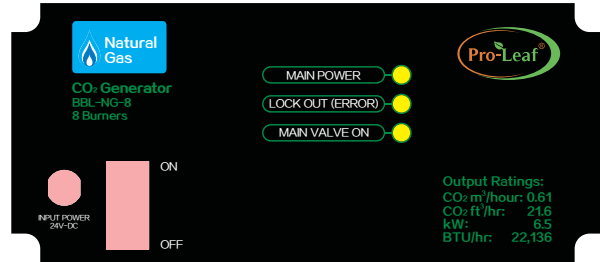
INPUT POWER 24V-DC

ON

OFF

Output Ratings:  
CO<sub>2</sub> m<sup>3</sup>/hour: 0.6  
CO<sub>2</sub> ft<sup>3</sup>/hr: 21.2  
kW: 5.3  
BTU/hr: 18,104

## BBL-NG-8



**Natural Gas**  
CO<sub>2</sub> Generator  
BBL-NG-8  
8 Burners

**Pro-Leaf**

MAIN POWER

LOCK OUT (ERROR)

MAIN VALVE ON

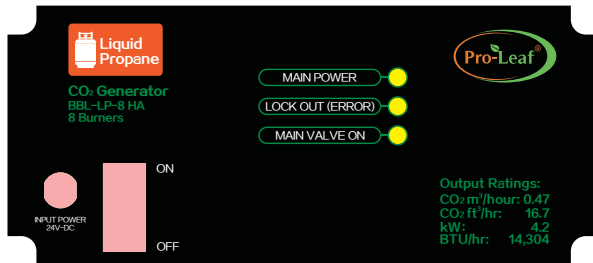
INPUT POWER 24V-DC

ON

OFF

Output Ratings:  
CO<sub>2</sub> m<sup>3</sup>/hour: 0.61  
CO<sub>2</sub> ft<sup>3</sup>/hr: 21.6  
kW: 5.5  
BTU/hr: 22,136

## BBL-LP-8 HA



**Liquid Propane**  
CO<sub>2</sub> Generator  
BBL-LP-8 HA  
8 Burners

**Pro-Leaf**

MAIN POWER

LOCK OUT (ERROR)

MAIN VALVE ON

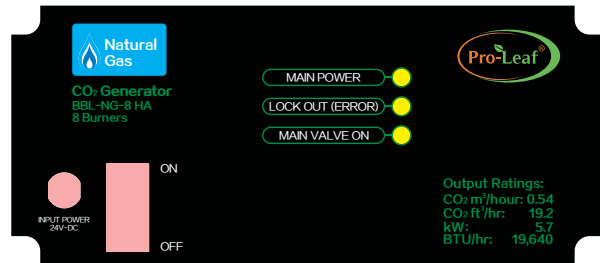
INPUT POWER 24V-DC

ON

OFF

Output Ratings:  
CO<sub>2</sub> m<sup>3</sup>/hour: 0.47  
CO<sub>2</sub> ft<sup>3</sup>/hr: 16.7  
kW: 4.2  
BTU/hr: 14,304

## BBL-NG-8 HA



**Natural Gas**  
CO<sub>2</sub> Generator  
BBL-NG-8 HA  
8 Burners

**Pro-Leaf**

MAIN POWER

LOCK OUT (ERROR)

MAIN VALVE ON

INPUT POWER 24V-DC

ON

OFF

Output Ratings:  
CO<sub>2</sub> m<sup>3</sup>/hour: 0.54  
CO<sub>2</sub> ft<sup>3</sup>/hr: 19.2  
kW: 5.7  
BTU/hr: 19,640

# CO<sub>2</sub> Generator

# 10 Burner Models

## BBL-LP-10

CO<sub>2</sub> Generator  
BBL-LP-10  
10 Burners

Burners	Wt (lb/min)	CO <sub>2</sub> (g/hr)	Switch-A	Switch-B
2	135	0.15	OFF	OFF
5	330	0.38	ON	OFF
7	465	0.53	OFF	ON
10	600	0.75	ON	ON

Output Ratings:  
CO<sub>2</sub>/Hr: 26.5  
BTU/Hr: 22,839

## BBL-NG-10

CO<sub>2</sub> Generator  
BBL-NG-10  
10 Burners

Burners	Wt (lb/min)	CO <sub>2</sub> (g/hr)	Switch-A	Switch-B
2	150	0.15	OFF	OFF
5	405	0.38	ON	OFF
7	565	0.53	OFF	ON
10	810	0.75	ON	ON

Output Ratings:  
CO<sub>2</sub>/Hr: 27.7  
BTU/Hr: 27,678

## BBL-LP-10 HA

CO<sub>2</sub> Generator  
BBL-LP-10 HA  
10 Burners

Burners	Wt (lb/min)	CO <sub>2</sub> (g/hr)	Switch-A	Switch-B
2	105	0.12	OFF	OFF
5	260	0.30	ON	OFF
7	365	0.41	OFF	ON
10	525	0.59	ON	ON

Output Ratings:  
CO<sub>2</sub>/Hr: 20.88  
BTU/Hr: 17,880

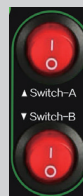
## BBL-NG-10 HA

CO<sub>2</sub> Generator  
BBL-NG-10 HA  
10 Burners

Burners	Wt (lb/min)	CO <sub>2</sub> (g/hr)	Switch-A	Switch-B
2	145	0.14	OFF	OFF
5	360	0.34	ON	OFF
7	505	0.48	OFF	ON
10	720	0.68	ON	ON

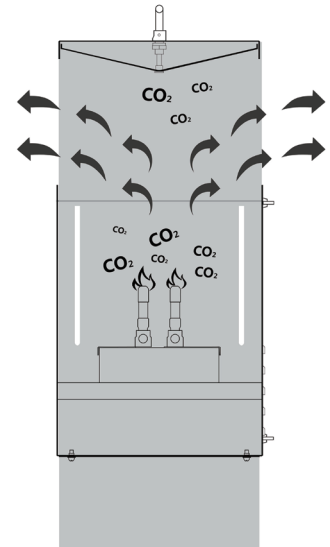
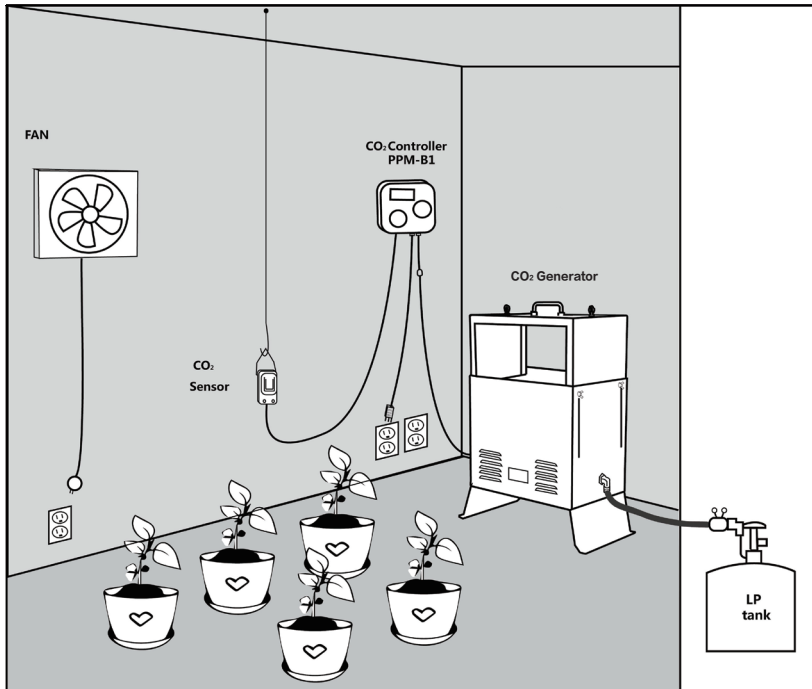
Output Ratings:  
CO<sub>2</sub>/Hr: 24.0  
BTU/Hr: 24,550

\* Switch options  
for variable output:



Burners	Switch-A	Switch-B
2	OFF	OFF
5	ON	OFF
7	OFF	ON
10	ON	ON

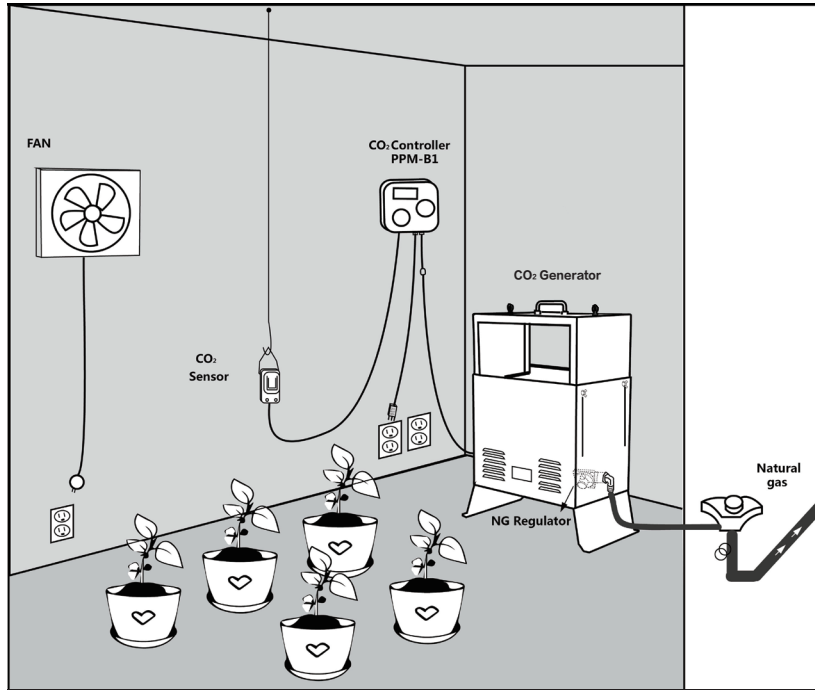
# CO<sub>2</sub> Generator using LP Tank



V top design  
spread out the CO<sub>2</sub> fast

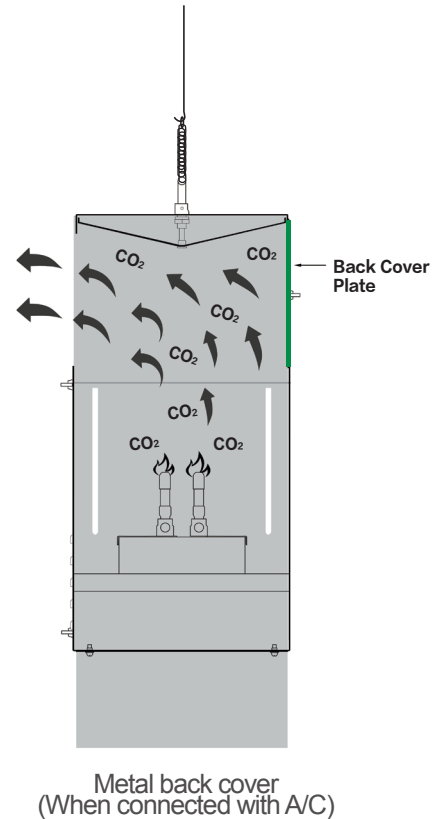
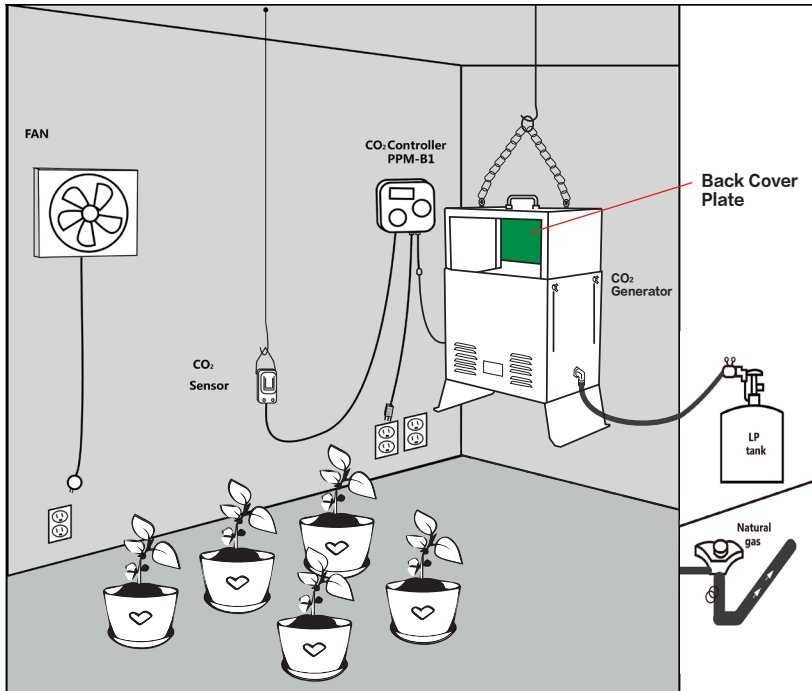
- This generator can be setup for use on the floor with the included metal feet (height of 3.9' with feet attached) or, alternatively, suspended from the ceiling using the included hanging hardware kit.

# CO<sub>2</sub> Generator using NG Supply Line

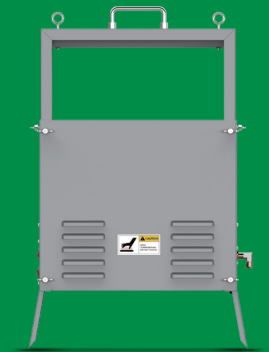


- For Natural Gas model generators, the regulator has been pre-installed inside the unit. Please connect the included NG hose to your natural gas inlet according to local code and in accordance with all laws. It is recommended to have a metal fitting pressed onto the included NG line for the most secure and safe connection.

# How to use the Metal Backplate?



- When the generator is hoisted to one side of the room, install the metal backplate to the side facing the wall prevents heat from burning the wall and allows CO2 to flow only where it is needed.



[www.pro-leaf.com](http://www.pro-leaf.com)