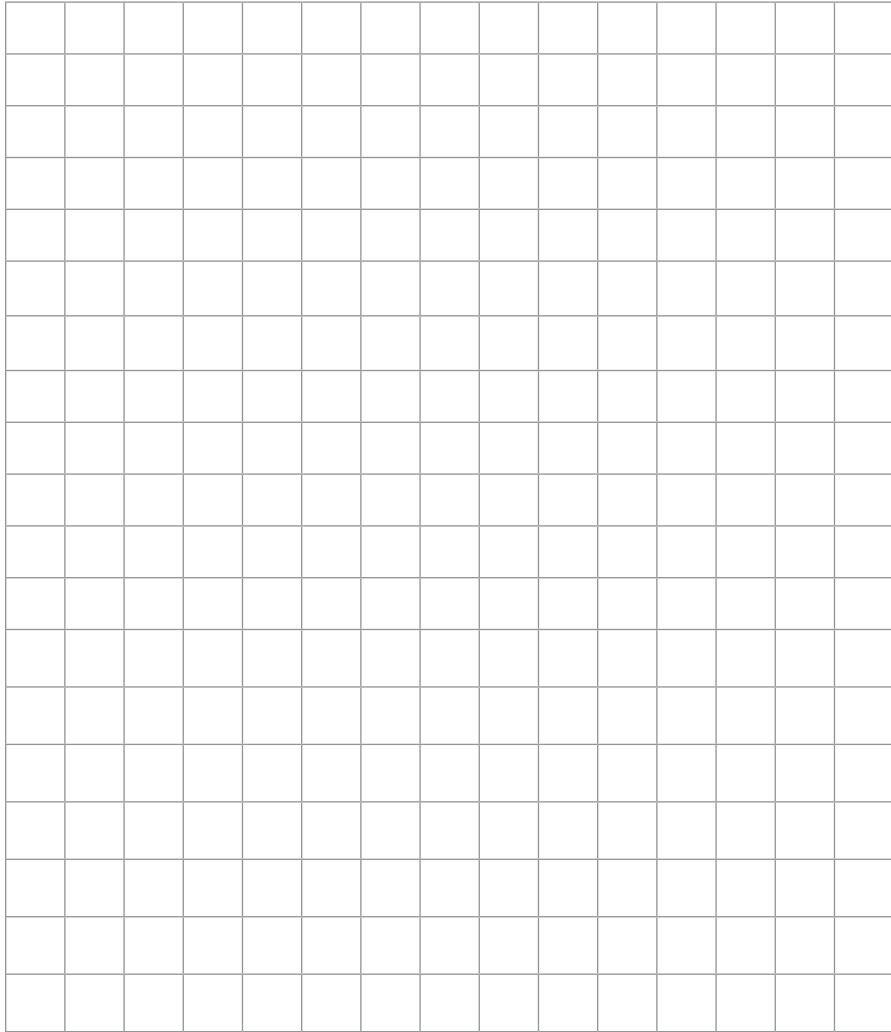


1 Square = \_\_\_\_ Foot/Feet



**TITAN<sup>®</sup>**  
**CONTROLS**

# ARES<sup>™</sup> SERIES

10 Burner LP/NG

## Instruction Manual



**Sunlight Supply, Inc.**

National Garden Wholesale.

VANCOUVER, WASHINGTON U.S.A. 

[www.titancontrols.net](http://www.titancontrols.net)

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# Ares™ 10 Burner Series

- Warnings
- Ares™ Series - CO<sub>2</sub> Generator Overview
- Installation
- Start Up Procedure
- Troubleshooting Notes
- **What to do if you smell gas?**
- CO<sub>2</sub> Generator Specifications
- Warranty Information
- Service and Repair Program

## Warnings

- Read all instructions before operating your Ares™ Series – CO<sub>2</sub> Generator
- Do not put your CO<sub>2</sub> generator in an area where it can get wet or sprayed
- Mount your CO<sub>2</sub> generator SECURELY to the ceiling using hardware provided
- LP/NG gases can be dangerous – check all connections with soapy water before firing
- If you smell gas, unplug CO<sub>2</sub> generator and do NOT re-light until connections are tightened
- When using “bug bombs” in area, cover CO<sub>2</sub> generator completely to avoid corrosion
- There are no serviceable parts in CO<sub>2</sub> generator. Do not attempt to repair the unit
- Breaking “warranty” seal will void your warranty
- When CO<sub>2</sub> generator is NOT in use, place in sealed bag (i.e. garbage bag, etc)
- Do not put paper clips, tools, etc. into unit. Possible electrocution may occur
- Make sure to verify your power source prior to plugging CO<sub>2</sub> generator into outlet
- Check that all equipment that will activate this CO<sub>2</sub> generator is the proper voltage
- Avoid touching or handling CO<sub>2</sub> generator chassis while operating. You may get burned
- Use caution when operating CO<sub>2</sub> generator in extremely humid environments
- Operate CO<sub>2</sub> generator in well ventilated area
- Do NOT use Teflon tape on gas connections. All gas fittings are self sealing
- Do not use CO<sub>2</sub> generator for purposes other than the unit was designed to function
- Use CO<sub>2</sub> generator within defined environmental specifications
- Ask your Dealer for tips and techniques regarding the use of this CO<sub>2</sub> generator
- Be conscientious when disposing of any products

### FOR WARRANTY SERVICE: Please read warranty information first.

If after reviewing the troubleshooting tips the unit will still not work, you should return it to the Dealer where you purchased the controller. They will be able to further evaluate the unit and test its various components and quite possibly will be able to identify and/or fix any problems. If the Dealer is unable to fix the unit, they will return it to us for factory repair.

If there are no Dealers in your area, you may contact us directly for technical support. If we cannot help you resolve the problem over the phone, we will issue you a RMA # (return merchandise authorization) authorizing you to return the unit to us for factory reconditioning (if the unit is under warranty). Contact the number below for a RMA and shipping address. Complete the form below and include it with your unit. Also please write the RMA # on the outside of the box.

Please package the unit in its original packaging. If it is damaged in shipment we cannot be responsible.

Once we receive the unit back, we will repair the controller within 48 hours (business) and return it to you freight prepaid via UPS ground shipment.

Include the following if returning directly to Titan Controls®

- Proof of purchase
- This completed form
- RMA # on the outside of the box

Return Merchandise Authorization Number (Required)

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone #: \_\_\_\_\_

Email address: \_\_\_\_\_

What is the nature of the problem? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Shipping address will be given when the RMA # is issued.



**TITAN**  
CONTROLS

[www.titancontrols.net](http://www.titancontrols.net)

For technical assistance call us at 1-888-80-Titan or 1-888-808-4826.

## Service and Repair Program

- For all service and repairs please contact our Technical Service Representative for a Return Merchandise Authorization (RMA) number.
- All factory service & repairs will be completed within 48 hours of receipt of controller and after authorization by customer for repairs.
- Titan Controls® will, at its discretion, repair or replace the controller.
- Factory calibration services are available for all Titan Controls®.
- Returning Units: Please contact your retail store for returns.

### Notes:

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## Ares™ Series – CO<sub>2</sub> Generator Overview

The Ares™ Series – CO<sub>2</sub> Generator is used to create and maintain the CO<sub>2</sub> in your growing environment. CO<sub>2</sub> has been proven to considerably increase the growth of plants. The normal level of CO<sub>2</sub> in the environment is between 300 parts per million (ppm) to 600 ppm. The recommended level of CO<sub>2</sub> in the grow area should be between 1000 ppm and 1500 ppm. Your plants uptake CO<sub>2</sub> only during day light hours, so by utilizing a CO<sub>2</sub> controller (Atlas® Series CO<sub>2</sub> Monitor/ Controller) or short cycle timer (Apollo™ Series timer) or a multi-functional controller (Kronus® Series Environmental controller) will allow you to effectively monitor and dose CO<sub>2</sub> in a safe and efficient method. The Ares™ Series – CO<sub>2</sub> Generator is easy to set up and operate (See **Installation Examples**). Products created for our industry, by our industry. Ares™ Series – CO<sub>2</sub> Generators are built with the highest quality components to provide the operator with years of trouble free service.

### Installation

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

**WARNING:** In spaces without proper ventilation CO<sub>2</sub> levels can accumulate and become toxic (levels above 5,000 PPM). Plants benefit from levels up to 1,500 PPM. Levels above 2,500 PPM can cause headaches and/or feelings of being ill.

The generator requires an 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 20" 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 hanging level. The generator has a safety feature (the tip over switch) that will turn off the burners if the unit tips over or falls down. The switch is like a pendulum and will turn off the unit if it is not level.
3. Verify that the gas supply and the regulator being used match the type of CO<sub>2</sub> generator you're using (LP or NG).
4. Securely tighten the gas connection with 2 wrenches using the included 12' gas supply hose. Connect one end to the flare fitting and the other end to the provided gas regulator. Verify 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.

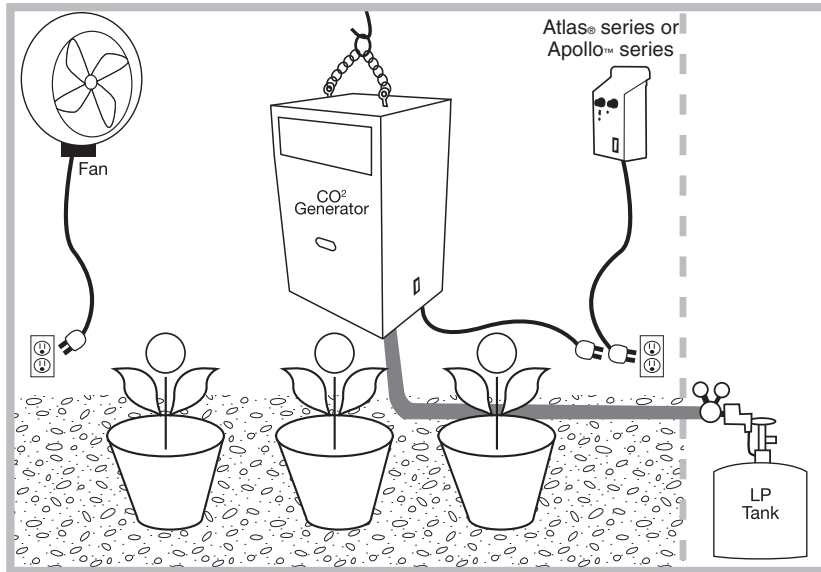
**Note:** This generator requires 120 VAC to 24VDC power. Use only power supply included with the CO<sub>2</sub> generator.

7. The ignition module and firing sequence are activated by the main power switch located on the side of the generator. The generator has power and is in operation if the green 'Power On' indicator light is on.

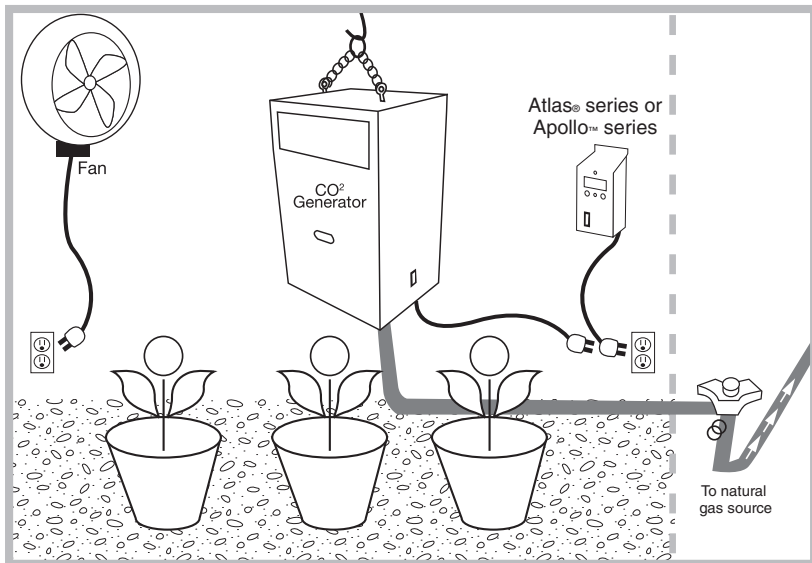
**Note:** DO NOT TURN ON THE GENERATOR. After the unit has been successfully installed, read the 'Start-Up Procedure' to ensure safe and proper use of the generator.

**WARNING:** A spark is produced from a pair of electrodes near the tip of the brass burners to ignite the gas. Keep foreign objects away from the electrodes.

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



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



### Natural Gas

NG supply to the generator must be regulated to a very low pressure of 4.5" WC or 1/4 PSI. Because the incoming gas pressure from these pipelines can vary from less than 1/4 PSI to more than 5 PSI, the provided regulator MUST be used to ensure proper pressure regulation.

Please Note: WC = inches of water column, a standard measuring unit for low pressures.

**WARNING:** Installation and connection of gas lines must be in compliance with local and national building codes.

### Liquid Propane

Liquid Propane (LP) is stored in various sized pressurized tanks. The supplied LP regulator is designed to connect directly to portable LP tanks and MUST be used. The propane gas supplied to the generator must be regulated to a very low pressure of 11" WC (water columns). Large outdoor propane tanks may be used, as long as the gas pressure is 11" WC.

## Warranty Information

Titan Controls® warrants the original purchase of this product against defects in material and workmanship under normal use for three (3) years from the date of purchase.

- During the warranty period, Titan Controls® will, at our option, and without charge, repair or replace this product if the controller or any of its components fail or malfunction.
- All returns or repairs must be accompanied by a Return Merchandise Authorization (RMA) number prior to any service of the product.
- This warranty is expressly in lieu of all other warranties, expressed or implied, including the warranties of merchantability and fitness for use and of all other obligations or liabilities on the part of the seller.
- This warranty shall not apply to this product or any part thereof which had been damaged by accident, abuse, misuse, modification, negligence, alteration or misapplication.
- Controllers with serial numbers or date tags that have been removed, altered or obliterated; broken seals or that show evidence of tampering; mismatched serial numbers or nonconforming parts; are excluded from coverage.
- Titan Controls® makes no warranty whatsoever in respect to accessories or parts not supplied by Titan Controls®.
- Monetary refunds of the warranty will not be given.
- The Buyer assumes all responsibility regarding the use & installation of this controller.
- All warranty service is provided through the factory or an authorized service representative.
- This warranty shall apply only to the United States, including Alaska, Hawaii and territories of the United States and Canada.
- Defective controllers need to be returned with the "proof of purchase" receipt.
- For additional warranty information, contact a Titan Controls® Technical Service Representative or your Dealer.
- **NOTE:** Titan Controls® is a controller manufacturer. All sales offerings to the public are done through a nationwide group of Dealers. No sales offerings will be made directly to the general public.

### Should the generator be buzzing and or sparking?

**Yes.** When the unit is firing you will hear “sparking” sounds. It will attempt this up to 5 times before going into ‘Lock Out Error’ mode.

### The indicator light beside the “Lock Out Error” is flashing.

The unit may be out of propane or the gas supply may have been interrupted. The ‘Lock Out Error’ mode is an automatic built-in feature that will activate if the pilot does not fire after 5 attempts. Once the problem has been corrected, turning the power off for 30 seconds and then back on will reset this function. It will also reset itself after 20 minutes and attempt to ignite the burners.

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.

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

Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

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. The Ares™ Series requires 24 volts DC. *The unit should be operated only with appropriate controls and/or timers.*

## What To Do If You Smell Gas

- Do not try to light any appliances.
- Do not touch any electrical switches and do not use any phones within the building.
- Open doors or windows to ventilate the area.
- Immediately call your gas supplier from outdoors.
- If you cannot reach your gas supplier, call the fire department.

## CO<sub>2</sub> Generator Specifications

- Power Requirements: 120 VAC - 24VDC Power Adaptor
- Number of Burners: 2, 6 or 10
- Burner Material: Brass
- Propane Rating: 4,526-22,630 Maximum BTU's
- Natural Gas Rating: 5,534-27670 Maximum BTU's
- Cubic Ft CO<sub>2</sub> per Hour: 6-27
- Pressure Propane: 11” WC/2.8 kpa
- Natural Gas: 4.5” WC/1.15 kpa

## Start Up Procedure

### After successfully completing the installation, follow these steps...

1. Verify the power switch is OFF and the unit is NOT plugged in.
2. Verify there are no foreign objects or loose packaging materials on the inside of the unit.
3. Make sure nothing appears to be damaged or out of place.
4. Check and confirm the gas connections are properly connected.
5. Pressurize the gas lines by opening any of the shut off valves on the gas supply. Test for gas leaks and verify that there are none.
6. Make sure there are no objects within 20” of the surface of the unit.
7. Plug the power supply into a 120V power source. Then connect the small power cable to the power inlet jack on the generator.
8. Turn the power switch ON. The green ‘Power On’ LED light should be illuminated.
9. The ignition module will attempt to ignite the burners. The yellow ‘Pilot Valve On’ LED indicator light should illuminate.
10. If the burners fire, continue to the next step. 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 second 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 ‘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: If starting the generator for the first time or after recently replacing the LP tank, make sure to purge the gas line of any air to ensure gas is flowing to the burners.

11. Once the burners fire, look into the unit and confirm the flame is blue and consistent, and resembles a 6 point star.

WARNING: Power the unit off IMMEDIATELY if the flame appears yellow, excessively large, or blue but small. 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 (if LP, verify the 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.

12. After the generator has been tested at full capacity, connect it to a compatible Titan Controls® CO<sub>2</sub> controller or timer.

WARNING: The 10 Burner Generator produces almost 27,000 BTU's of heat at full capacity. Verify that the generator is not getting too hot for the surrounding area.

**WARNING:** Always verify that the burners are operating correctly. Burners burning very yellow indicate a rich condition, or possibly low oxygen levels. Burners that do not consistently ignite could be dogged or may not be receiving enough gas pressure. A burner that burns almost invisibly with a clean blue-white flame is operating correctly.

**ELECTRONIC IGNITION CONTROL MODULE:**

For safer operation, this generator has an Electronic Ignition Control Module which eliminates the “open” pilot flame. The module creates a spark that lights the burners, providing consistent and controlled starts. The dual redundant solenoid valves are controlled by the ignition controller.

**LED INDICATORS:**

There are 3 LED indicator lights located on the side of the generator near the power switch.

Main Power On- When lit, this LED indicates the 24V power supply is connected and the generator is powered on.

Lock Out Error- When flashing, this LED indicates that the ignition controller shut off the solenoid valve and the generator is locked out and will not operate until power has been shut off and then turned back on. For more information on why this occurs, review the Start-Up Procedure.

Pilot Valve On- When power is applied, the electronic ignition module will begin to provide a spark for 15 seconds while the pilot solenoid is energized. The LED will remain lit while the solenoid is activated and should be lit during operation.

## Using the Variable Burner Function

**VARIABLE OUTPUT:**

The 10 Burner CO<sub>2</sub> Generator by Titan Controls® features variable burners which can be modified by the user. You have the option of running all 10 burners, only running 6 burners, or only running 2 burners. The variable output changes the CO<sub>2</sub> output and makes this generator extremely versatile and able to work for a variety of grow room sizes.

There are 2 selector switches on the generator which allow you to activate/deactivate 2 separate sets of burners (2 burners will always remain active). Use the chart below to help determine the number of burners needed based on the size of the grow room. To calculate the cubic feet of your area, multiply the height x width x depth.

GAS TYPE	CUBIC FT	# OF BURNERS	CU FT CO2/H	BTU OF HEAT
NG	0-2,000	2	5.5	5,534
LP	0-2,000	2	5.3	4,526
NG	2,000 - 6,000	6	16.2	16,602
LP	2,000 - 6,000	6	15.9	13,578
NG	6,000- 10,000	10	27.7	27,670
LP	6,000- 10,000	10	26.5	22,630

## Troubleshooting Notes

**Should there be a gas smell in the area?**

**NO.** Turn off the gas supply immediately. Do not turn on any electrical devices. Ventilate the area by opening vents, doors, or windows. Leave the area until the gas smell is no longer present. Once ventilated and the gas smell is gone, determine where the leak is by using soapy water. Spray the soapy solution on the gas connections and watch for bubbles. Bubbles will appear if the connection(s) are leaking. Seal the leaks. If this does not correct the problem, consult your Dealer.

**The power is connected but the generator is not working and no indicator lights are on.**

The “tip over” switch may have been activated. Tilt the unit to one side and listen for a clicking noise. The switch is like a pendulum and will turn off the unit if it is not level.

**The burners are not lighting but the unit is trying.**

If the burners do not fire during the first attempt, the CO<sub>2</sub> generator will try again. After a 30 second pause the unit will attempt to re-fire the burner(s) for 15 seconds. This cycle will repeat a maximum of 5 times. After 5 unsuccessful attempts, the module will lock itself. The LED light next to ‘Lock Out Error’ will be illuminated. Verify that the spark is being generated and the position of the sparking electrodes is close enough to the burner to be lit. Review the Start-Up Procedure for other possible explanations.

**One or more of the burners is not lighting.**

Make sure the gas line is not kinked or twisted and the gas supply is adequate. Do not operate if yellow or large flames are present. If using propane, turn off the gas regulator for 30 seconds, and then try again.

**The CO<sub>2</sub> level is not increasing to my desired PPM level.**

If all burners are operating; check for air leakage in the grow area and confirm that exhaust fans are not operating when CO<sub>2</sub> is being produced.