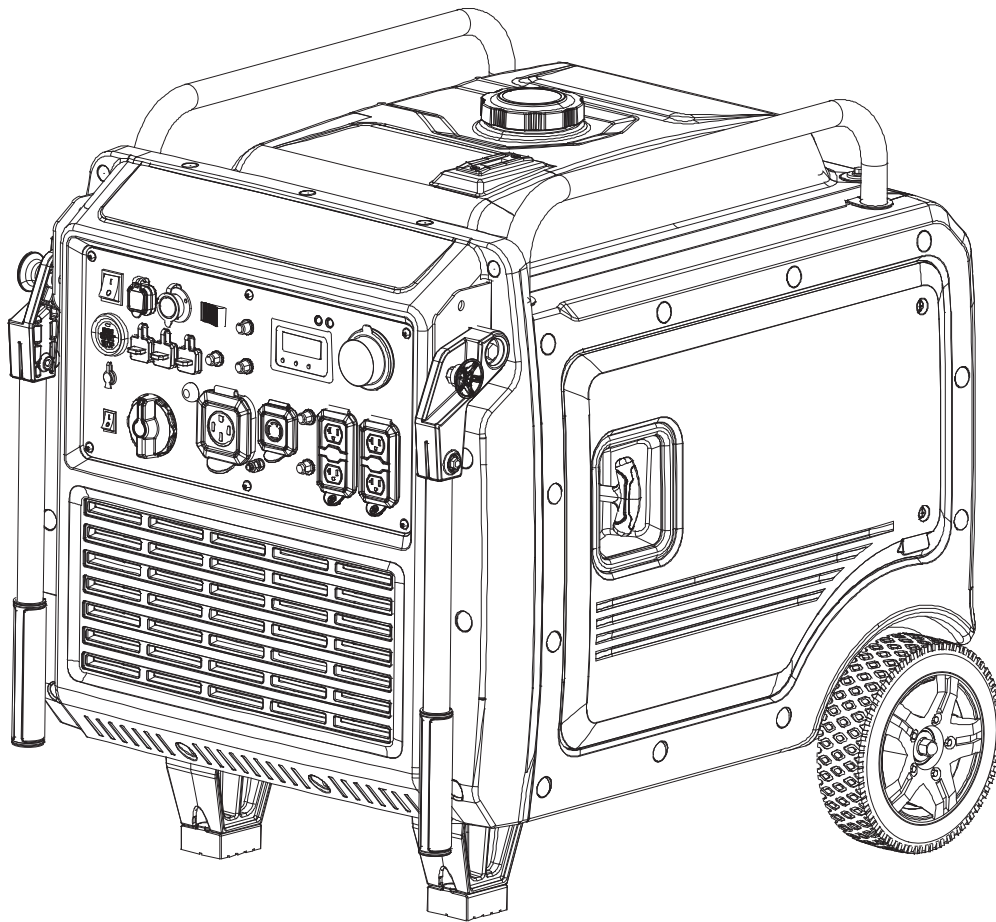




Model: PG105TiSRCO

10500 Watt Tri-Fuel Inverter Generator
OPERATOR'S MANUAL



Warning: The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



DO NOT RETURN TO STORE!

HAVE QUESTIONS OR NEED SERVICE?



866-591-8921



support@pulsar-products.com

Table of Contents

Safety Warnings.....	2	Adding Engine Oil.....	11
Safety Instructions.....	3	Connecting a LPG Tank.....	13
CO Sentry.....	5	Connecting a NG hose.....	14
Names of Components.....	6	Operation.....	16
Control Panel.....	7	Maintenance.....	20
Specifications.....	8	Troubleshooting.....	24
Assembly.....	9		
Preparation.....	10		

Introduction

Thank you for choosing Pulsar Products!
This manual provides instruction on how to operate and use your generator safely and correctly; be sure to read and understand this manual before using your generator. If you have ANY questions, please phone 866.591.8921 M-F or support@pulsar-products.com BEFORE using your generator.

All details and images in this Manual are believed to be accurate at the time of publication.

Pulsar Products reserves the right to make updates to this manual at any time.

Please contact Pulsar Support at 866.591.8921 or support@pulsar-products.com for the latest updates.

This manual is a permanent part of the generator set. If the generator is resold, kindly include this manual with the generator.

Safety Warnings and Notices

WARNING: Save This Manual For Future Reference

This manual contains important information regarding the safety, operation, maintenance, and storage of this product. Before use, read carefully and understand all cautions, warnings, instructions, and product labels. Failure to do so could result in serious personal injury and/or property damage.

Safety Definitions

The words DANGER, WARNING, CAUTION, and NOTICE are used throughout this manual to highlight important information. Make sure that the meaning of this safety information is known to all who operate, perform maintenance on, or are near the generator.

 This safety alert symbol appears with most safety statements. It means to pay attention and be alert, your safety is involved! Please read and abide by the message that follows the safety alerts symbol.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE

Failure to follow the instruction may result in the damage to your generator and other property.




Safety Symbols

Follow all safety information contained in this manual and on the generator.



Safety Instructions

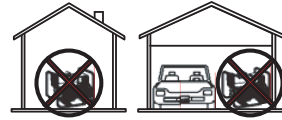
Before operating your generator, you must read and understand the manual and familiarize yourself with the safe operation practices.

SYMBOL	DESCRIPTION
	Safety Alert Symbol
	Electrocution Hazard
	Asphyxiation Hazard
	Burn Hazard. DO NOT touch hot surfaces.
	Electrical Shock Hazard
	Fire Hazard
	Maintain Safe Distance
	Lifting Hazard
	Read Manufacturer's Instructions
	DO NOT Operate in Wet Conditions
	Ground. Consult with electrician to determine grounding requirements before

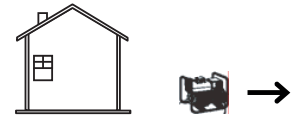
Safety Precautions

⚠ DANGER

Using a generator indoors **CAN KILL YOU IN MINUTES**. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.



NEVER use inside a home or garage, **EVEN IF** doors and windows are open.



ONLY use **OUTSIDE** and far away from windows, doors, and vents.

⚠ WARNING

POISONOUS GAS HAZARD: Engine exhaust contains carbon monoxide, a poisonous gas that could kill you in minutes. You **CAN NOT** smell it, see it, or taste it. Even if you do not smell exhaust fumes, you could still be exposed to carbon monoxide gas.

Operate this product **ONLY** outside far away from windows, doors, and vents to reduce the risk of carbon monoxide gas from accumulating and potentially being drawn towards occupied spaces.

Install battery-operated carbon monoxide alarms or plug-in carbon monoxide alarms with battery backup according to the manufacturer's instructions. Most smoke alarms cannot detect carbon monoxide gas.

DO NOT run this product inside homes, garages, basements, crawlspaces, sheds, or other partially enclosed spaces even if using fans or opening doors and windows for ventilation. Carbon monoxide can quickly build up in these spaces and can linger for hours, even after this product has shut off.

ALWAYS place this product downwind and point the engine exhaust away from occupied spaces. If you start to feel sick, dizzy, or weak while using this product, shut it off and get to fresh air **IMMEDIATELY** - then see a doctor; you may have carbon monoxide poisoning.

Safety Instructions

Correct Usage

Example location to reduce risk of carbon monoxide poisoning

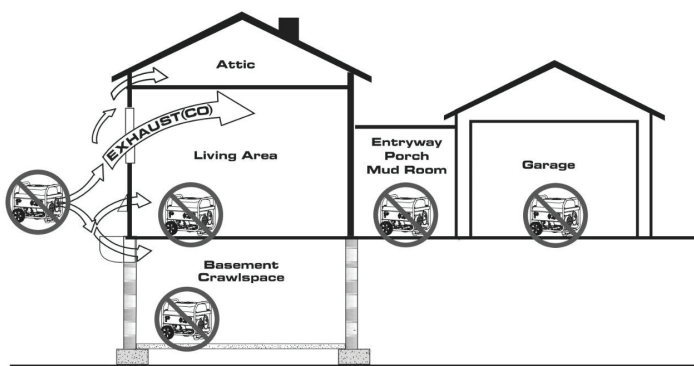
- **ONLY** use outside and downwind, far away from windows, doors, and vents.
- Direct exhaust away from occupied spaces.



Incorrect Usage

Do not operate in any of the following locations:

- Near any door, window, or vent
- Garage
- Basement
- Crawl Space
- Living Area
- Attic
- Entry Way
- Porch
- Mud Room



⚠ WARNING

Starter cord kickback (rapid retraction) could pull hand and arm toward the engine faster than you can let go which could cause broken bones, fractures, bruises, sprains, or other serious injuries.

⚠ WARNING



Fuel and its vapors are extremely flammable and explosive which could cause burns, fire, or explosion resulting in death or serious injury and/or property damage.

When Adding Or Draining Gasoline

Turn the generator engine OFF and let it cool for at least 2 minutes before removing the fuel cap. Loosen the cap slowly to relieve pressure in the tank.

- Fill or drain fuel tank outdoors.
- **DO NOT** overfill the tank. Allow space for fuel expansion.
- If fuel spills, wipe it up and let the area dry before starting the engine.
- Keep fuel away from sparks, open flames, heat, and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks; replace if necessary.
- **DO NOT** light a cigarette or smoke anything.

When Starting Equipment

- Ensure spark plug, muffler, fuel cap, and air cleaner are in place.
- **DO NOT** crank engine with spark plug removed.

When Operating Equipment

- **DO NOT** operate this product inside any building, carport, porch, mobile enclosure, marine applications, or shed.
- **DO NOT** tip engine or equipment at an angle that causes fuel to spill.
- **DO NOT** stop the engine by moving the choke control to the "Start" position.
- **DO NOT** exceed the generator's wattage capacity.
- Start the generator and let the engine stabilize before connecting electrical loads.
- Connect electrical loads in the OFF position, then turn ON for operation.
- Turn electrical loads OFF and disconnect from the generator before stopping the generator.

Safety Instructions

NOTE

Improper treatment of the generator could damage it and shorten its life.

- Use generator only for intended applications.
- If you have questions about intended use, ask a dealer or contact your local Pulsar service center.
- Operate generator only on solid, level surfaces.
- DO NOT expose the generator to excessive moisture, dust, dirt, or corrosive vapors.
- DO NOT insert any objects through cooling slots.
- If connected devices overheat, turn them off and disconnect them from the generator.

Shut off the generator if:

- Electrical output is lost.
- Equipment sparks, smokes, or emits flames.
- Unit vibrates excessively.

Parallel Kit Precautions



To prevent serious injury, death, and generator and/or equipment damage from electric shock and fire:

1. Follow Parallel Kit instructions provided with it for connection and use of a Parallel Kit.
2. Only connect two identical Inverter Generators together using a Parallel Kit.
3. Connect Parallel Kit only to terminals marked "Parallel" on the front of the Generator.
4. Do not remove or connect a Parallel Kit while the Generator is running.
5. Do not use a Parallel Kit that is attached to only one Generator.

Carbon Monoxide Safety

Carbon Monoxide

Generators are very convenient, but they can also be very dangerous. All fuel-burning appliances and equipment release a poisonous gas called carbon monoxide. Carbon monoxide (also known as CO) can be dangerous for humans and pets, even in small amounts, because it blocks oxygen from getting into your body. Carbon monoxide poisoning can lead to death in a very short time. It is odorless, tasteless and invisible, so you may be exposed without knowing it. That is why carbon monoxide is sometimes called "the silent killer."

CO Sentry

The CO Sentry system was created to protect from dangerous carbon monoxide. Just like the detector for your home the CO Sentry tests the air for dangerous levels of carbon monoxide. If dangerous levels of carbon monoxide are detected this generator will automatically shut off.



Automatic shut off accompanied with a flashing RED light in the CO Sentry portion of the control panel is an indication that the generator was improperly located. If you start to feel sick, dizzy, weak, or carbon monoxide detectors in your home indicate an alarm, get to fresh air immediately. Call emergency services. You may have carbon monoxide poisoning.

CO Sentry Indicator Lights

RED

Carbon monoxide has accumulated around the generator. After shut off, the RED indicator light in the CO Sentry area of the control panel will flash to provide notification that the generator was shut off due to an accumulating CO hazard. The RED light will flash for at least five minutes after a CO shut off. Move the generator to an open, outdoor area far away from occupied spaces with exhaust pointed away. Once relocated to a safe area, the generator can be restarted. Introduce fresh air and ventilate the area where the generator had shut down.

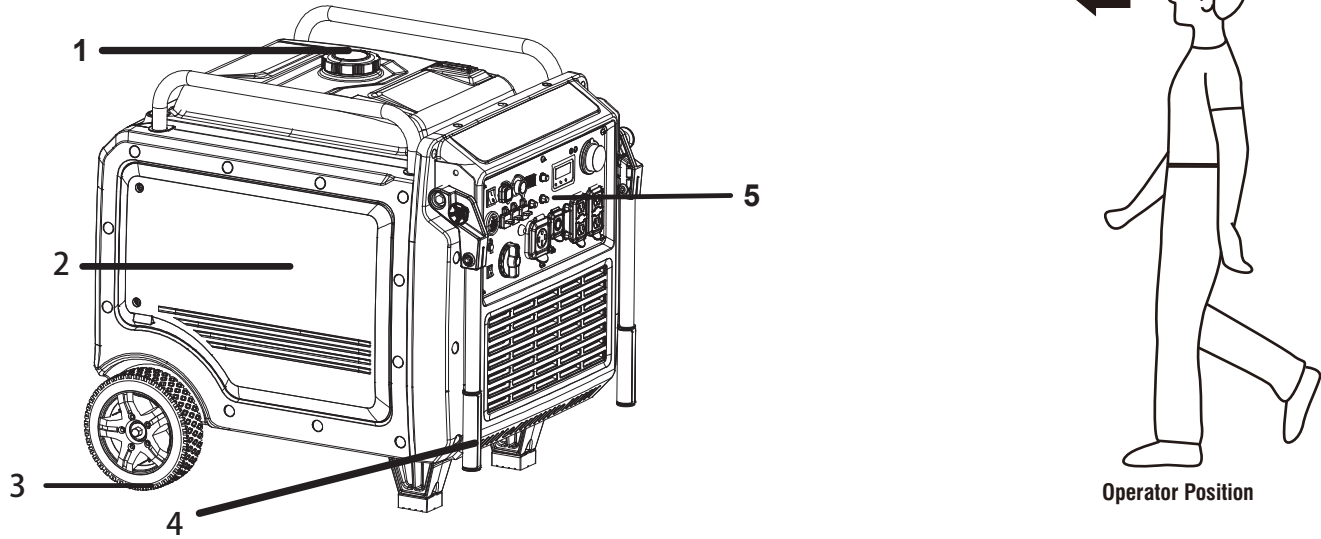
YELLOW

A CO Sentry system fault occurred. When a system fault occurs, the generator is automatically shut down and the YELLOW indicator light in the CO auto shut off area of the control panel will flash to provide notification that a fault has occurred. The YELLOW light will flash for at least five minutes after a fault. The generator can be re-started, but may continue to shut off.

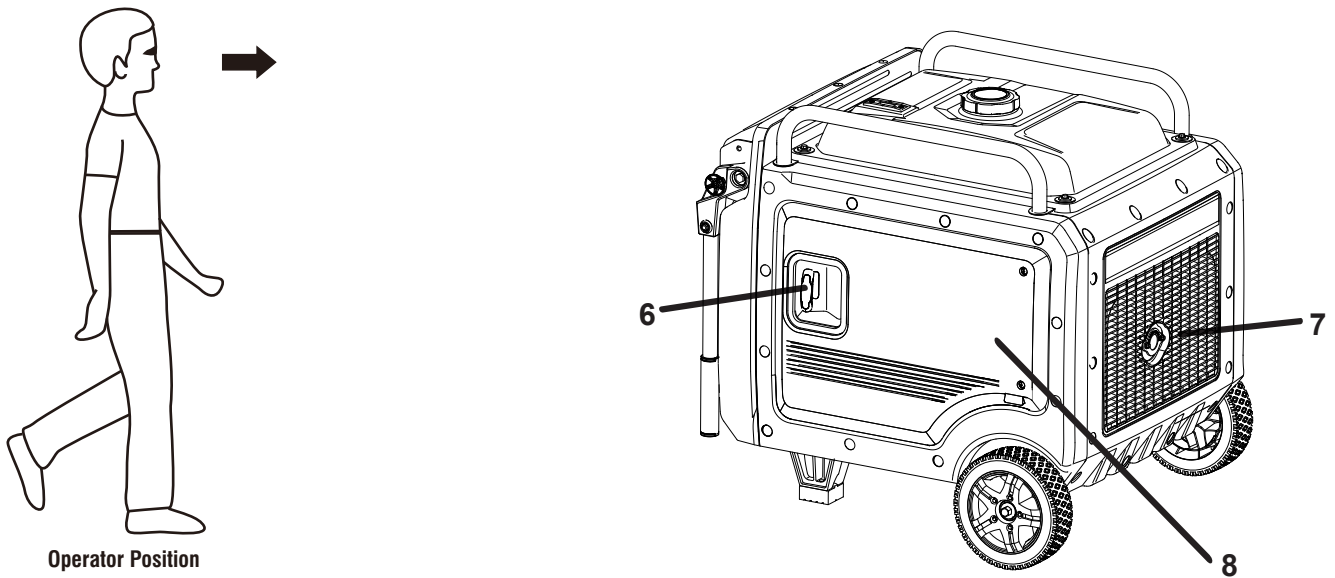


Components

Before operating your generator, you must read and understand the manual and familiarize yourself with the safe operation practices.

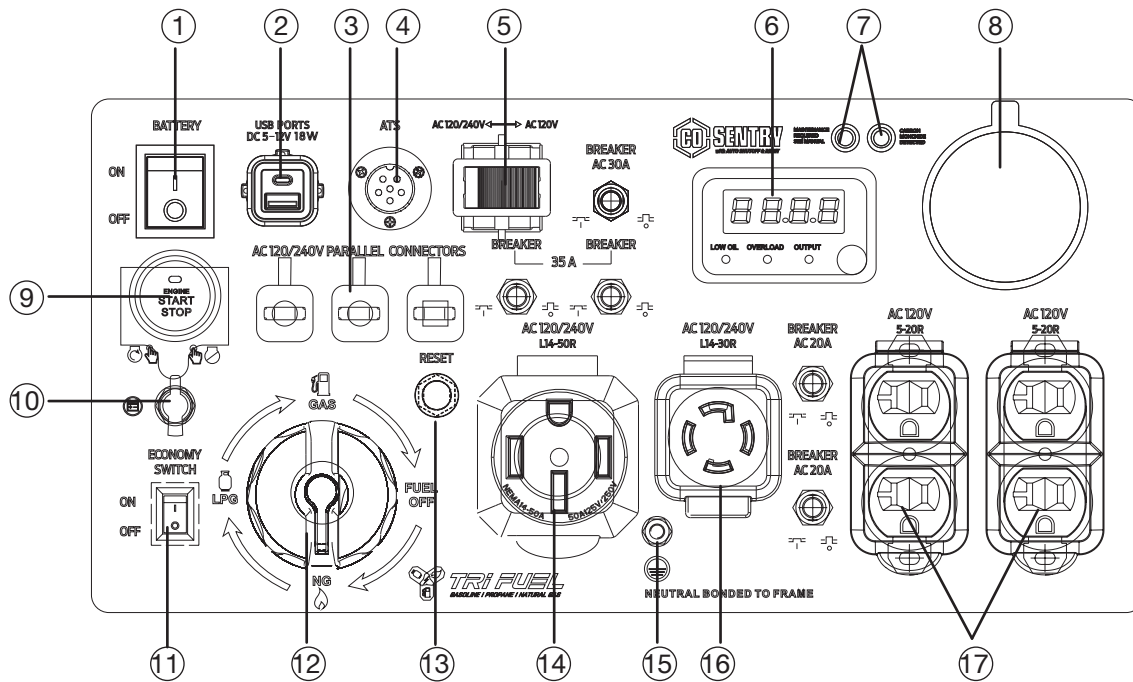


- 1. **Fuel Cap:** Add gasoline here.
- 2. **Left Side Panel:** Engine, Air Filter, Carburetor, Spark Plug.
- 3. **Transport Wheels**
- 4. **Transport Handles**
- 5. **Control Panel:** The control panel contains the outlets and operational controls.



- 6. **Recoil Handle:** Pull the recoil handle to manually start the engine.
- 7. **Muffler and Spark Arrestor:** The spark arrestor prevents sparks from exiting the muffler.
- 8. **Right Side Panel:** Add or Drain Oil, Battery Disconnect.

Control Panel



1. **Battery Switch:** Turns battery ON and OFF. Must be ON before electric start or remote start.
2. **USB Ports:** USB Type A 5V/3.6A, 9V/2.5A, 12V/2A and USB Type C.
3. **Parallel Connectors:** A compatible Pulsar Inverter Generator can be connected for additional power output.
4. **ATS Interface:** For connecting to ATS control box.
5. **Voltage Switch:** Switch between 120V and 240V voltage as required.
6. **Digital Hour Meter:** Real-time LED display with runtime, remaining fuel, load/output, volts and lifetime hours data.
 Low oil level light: When the oil level in the crankcase falls below the safe operating limit, the low oil level indicator lights up red and the generator will automatically shut off the engine.
 Overload light: When the red light is on, it indicates that the generator is overloaded and the generator will stop output.
 Output light: When the generator is running normally, the light will be green and steady on.
7. **CO Sentry Indicator Lights:** The CO Sentry monitors the accumulation of poisonous carbon monoxide gas. If increasing levels of CO gas are detected, the CO Sentry automatically shuts down the engine.
8. **LPG/NG Supply Hose and Inlet Connector :** Gas connections must be secure, tight and comply with all local regulations.
9. **Push Button Start/Stop:** Push once to automatically start the engine. Push again to stop the engine.
10. **Battery Charging Port:** Used to charge the battery with the included battery charger.
11. **Eco Mode:** Eco mode minimizes fuel consumption and noise by adjusting the engine RPM to the minimum required for the current load.
12. **Fuel Selector Switch:** Used to select Gasoline or Propane or Natural Gas.
13. **Reset Button:** If the generator is overloaded, the inverter will automatically turn off the output and the overload indicator will light up, but the engine will continue to run. Unplug all devices, press the reset button, and the generator will resume output.
14. **120/240 Volt, 50 Amp, AC receptacle. And comes with an AC Circuit Breaker.**
15. **Ground Terminal:** The ground terminal is used to externally ground the generator.
16. **240/120 Volt, 30-amp, AC Receptacle with Circuit Breaker.**
17. **120 Volt, 20-amp, AC Duplex Receptacle with Circuit Breaker.**

Specifications

Model	PG105TiSRCO
Engine Type	Single Cylinder, Four Stroke, Air Cooled Gasoline Engine
Displacement	457cc
Rated Power (kW) Gasoline	8.5
Peak Power (kW) Gasoline	10.5
Rated Power (kW) LPG/Propane	8.0
Peak Power (kW) LPG/Propane	9.5
Rated Power (kW) NG/Natural gas	6.8
Peak Power (kW) NG/Natural gas	8.4
Rated Voltage	240V/120V
Rated Frequency	60Hz
Phase	Single Phase
Starting Type	Recoil, Electric Start, and Remote
Fuel Type	Regular Gasoline
Fuel Capacity	7.13 Gallons
Total Harmonic Distortion	≤ 3%
Oil Type	10w-30
Oil Capacity	1.1L (37.2oz)
Maximum Ambient Temperature	104°F (40° C)

Assembly

Preparation

Your generator requires some assembly. This generator ships from our factory without oil; it must be properly filled with oil before operation.

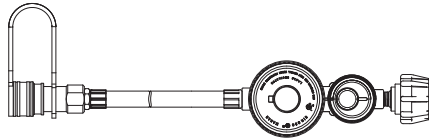
Unpacking

1. Set the shipping carton on a solid, flat surface.
2. Remove everything from the carton except the generator.
3. Using the carrying handles of the unit, carefully remove the generator from the box (minimum two people lifting is required).

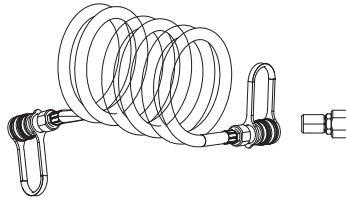
Packing List

Check all loose parts to the following list. Contact your dealer if any loose parts are not included.

① 1x Propane connection hose



② 1x Natural Gas connection hose and 1x Gas adapter



Other auxiliary Parts

- Remote
- Charger
- Warranty Card
- Operator's Manual
- Spark Plug Wrench
- Funnel
- Dual-Use Screwdriver

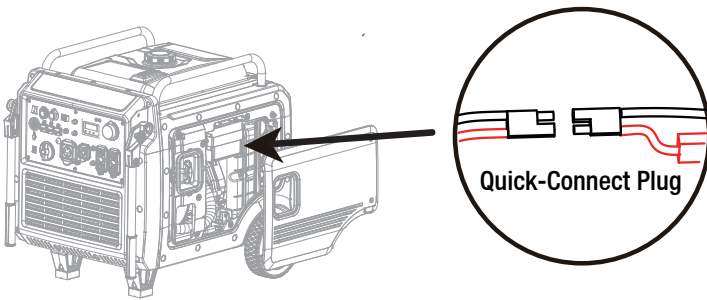
Preparation

Preparation

The generator battery is shipped disconnected for safety. You must connect the battery quick-connect cables before using the generator.

Connecting the battery

- A quick connect battery plug is pre-installed on the battery and the generator, connect both together as shown.
- Never attempt to connect different colored battery wires together!



NOTICE

NOTE:

- When the engine is running, this generator will add charge back to the battery, much the same as an automobile does.
- Also, like an automobile, if the battery sits for several months, without use, the battery may need an external charge to start the generator electrically.

CAUTION

Cover the terminals with the rubber covers. When removing the battery for replacement: Remove the nut and bolt first from the negative (Black) post, then from the positive (Red) post, being careful not to short across the terminals. Always abide by the safety warnings provided with the battery. Remove the battery and dispose of it according to your local and state regulations.

WARNING

NON-SPILLABLE SEALED BATTERY

This is a ready filled, activated sealed battery. Never remove strip.



WEAR EYE PROTECTION, EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.



DO NOT SMOKE OR SPARK NEAR THE BATTERY



SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS

IF ELECTROLYTE CONTACT THE SKIN WASH THE AREA IMMEDIATELY WITH CLEAN WATER



IF YOU GET ELECTROLYTE CONTACT WITH YOUR EYE. RINSE IMMEDIATELY WITH CLEAN WATER AND SEEK MEDICAL ATTENTION.

Antidotes for battery acid

CONTACT	TREATMENT
External	Flush with water.
Internal	Drink large quantities of milk or water, followed by milk of magnesia, vegetable oil or beaten eggs. Get immediate medical attention.
Eyes	Flush with water. Get immediate medical attention.

Preparation

Preparation

Your generator requires some assembly. This generator ships from our factory without oil; it must be properly filled with oil before operation.

Add Engine Oil

⚠ CAUTION

DO NOT attempt to crank or start the engine before it has been properly filled with the recommended type and amount of oil. Damage to the generator from failing to follow these instructions will void your warranty.

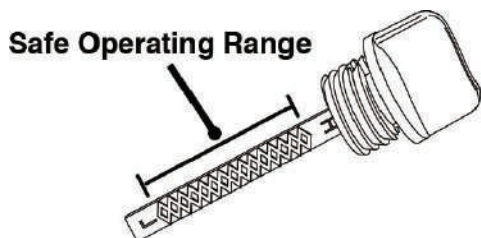
NOTICE

Failure to follow this instruction may result in the damage to your generator and other property.

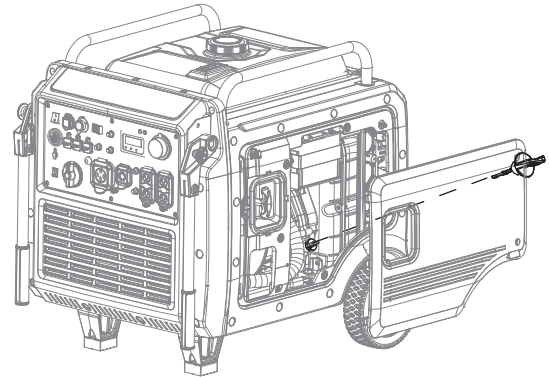
If running the generator in extreme temperatures, refer to the following chart for recommended oil type.

Recommended Engine Oil Type	
10W-30	→
5W-30	←
10W-40	→
5W-30 Synthetic	←
°F	-20 0 20 40 60 80 100 120
°C	-28.9 -17.8 -6.7 4.4 15.6 26.7 37.8 48.9
Ambient temperature	

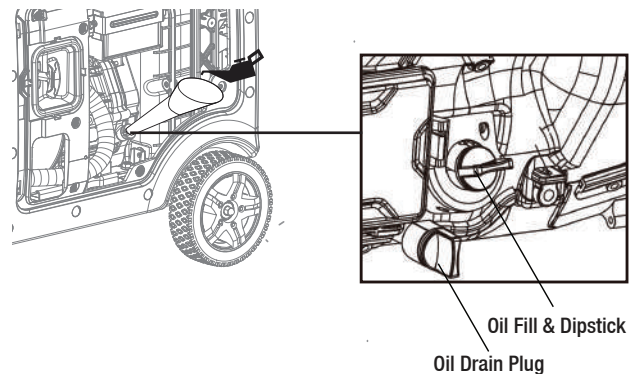
NOTE: Check engine oil level before each use, and add as needed.



1. Place the generator on a solid, flat, level surface.
2. On the right side of the generator, loosen the screws and remove the maintenance cover.



3. Remove oil fill cap/dipstick to add oil.
4. Using a funnel, add the appropriate type of oil until the oil level is at the proper level. SAE 10W-30 oil is recommended for general use. DO NOT OVERFILL. Replace oil fill cap/dipstick and secure maintenance cover.



NOTICE

Residual oil from the factory may remain in the engine, add oil slowly to prevent overfilling of the engine.

Once the oil has been added, oil level should appear 1-2 threads below the fill hole. DO NOT screw in the dipstick while checking.

Preparation

NOTICE

Check oil level often during the break-in period. Refer to the Maintenance section for recommended service intervals.

CAUTION

This engine is equipped with a low oil shut-off and will stop when the oil level in the crankcase falls below a critical level.

NOTICE

The first 5 hours of run time are the break-in period for the generator. During the break-in period stay at or below 50% of the running watt rating and vary the load occasionally to allow stator windings to heat and cool. Adjusting the load will also cause the engine speed to vary slightly and help seat the piston rings. After the 5-hour break-in period, change the oil.

NOTICE

Synthetic oil may be used after the 5-hour initial break-in period. Using synthetic oil does not increase the recommended oil change interval. Full synthetic 5w-30 oil will aid in starting in cold < 41° F (5° C) temperatures.

Add Gasoline

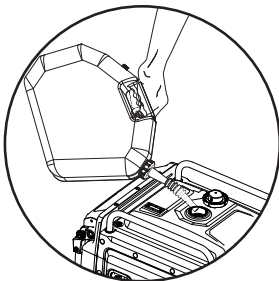
WARNING



TO PREVENT SERIOUS INJURY FROM FIRE:

Fill the gasoline tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding gasoline. Do not smoke.

1. Make sure the generator is on a solid, flat, level surface.
2. Unscrew the fuel cap and set it aside.
3. Slowly add gasoline to the fuel tank. Be careful not to overfill. The fuel gauge on the top of the fuel tank indicates how much gasoline is in the generator fuel tank.



4. Replace the fuel cap and wipe up any spilled gasoline with a dry cloth then remove the cloth from the area.

DANGER

Do not overfill the gasoline the tank. Overfilling can result in a fire, explosion, or death.

WARNING

Gasoline can expand. Do not fill the gasoline tank to the top. Leave a minimum of 1.5 inches open space. Gasoline fumes are explosive. Do not fill the tank near an open flame. Always check for gasoline spills.

- To ensure that the generator runs smoothly use only FRESH GASOLINE WITH AN OCTANE RATING OF 87.
- Never use old gasoline.
- Avoid getting dirt or water in the gasoline tank.
- Gasoline WILL age in the tank and make it hard to start the generator in the future.
- Never store generator for extended periods of time with gasoline in the tank.

Connecting a Propane Tank

NOTICE

- Propane tanks that use liquid withdrawal system can not be used on these models.
- Confirm that the re-qualification date on the tank has not expired.
- DO NOT use included LPG hose for any other appliances.

Connecting a Natural Gas Hose

NOTICE

- Fire and Explosion Hazard! NEVER connect or disconnect ANY Gas Hose while the engine is running!
- Always shut the generator OFF and allow it to cool for at least 5 minutes before adding or removing ANY gas connection!

Preparation-Propane

NOTICE

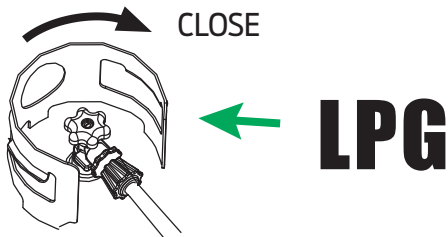
- All new propane tanks must be purged of air and moisture prior to filling. Used propane tanks that have not been plugged or kept closed must also be purged. The purging process should be done by a propane tank supplier (propane tanks from an exchange supplier should have been purged and filled properly).
- ALWAYS position the propane tank so the connection between the valve and the gas inlet will not cause sharp bends or kinks in the hose.

WARNING

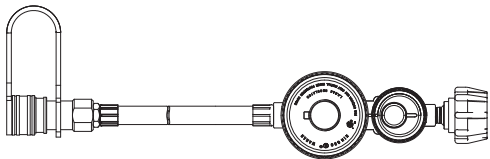
Explosion hazard. DO NOT start generator if you smell propane. ALWAYS fully close the propane tank valve and disconnect the LPG hose from the generator when not in use. Nevert invert (turn upside down) a LPG tank while in use.

Connecting a Propane Tank

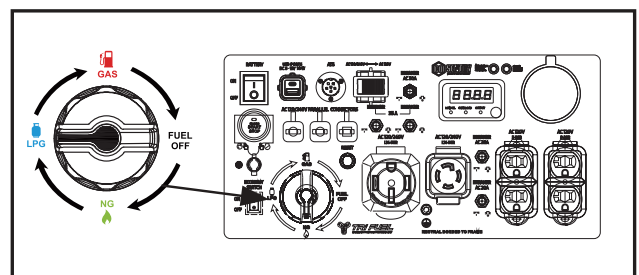
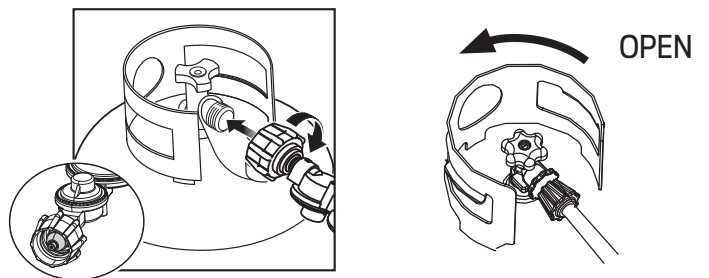
1. Turn the generator OFF and leave on a flat surface in a well ventilated area.
2. Verify that the propane tank valve is in the fully closed position.



IMPORTANT: DO NOT use thread seal tape or any other type of sealant to seal the LPG hose connection.



3. Remove the cover on the generator gas inlet.
4. Push back the quick connect collar on the Propane hose, fit it securely over the Gas Inlet, and release the collar. Check for a secure connection.
5. Remove the safety plug or cap from the propane tank valve and attach the other end of the hose to the LPG connector on the tank hand-tighten. Then turn the fuel selector switch to "propane".
6. Turn the propane tank valve to the fully open position. Check all connections for leaks by wetting the fittings with a solution of soap and water. Bubbles which appear or bubbles which grow indicate that a leak exists. If a leak exists at a fitting, turn the propane tank valve to the fully closed position and tighten the fitting. Open the propane tank valve and recheck the fitting with the soap and water solution. If the leak continues or if the leak is not at a fitting then DO NOT use the generator and contact an authorized Pulsar service center.



Preparation-Natural Gas

NOTICE

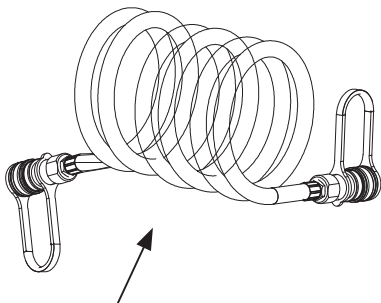
- Fire and Explosion Hazard! NEVER connect or disconnect ANY Gas Hose while the engine is running!
- Always shut the generator OFF and allow it to cool for at least 5 minutes before adding or removing ANY gas connection!

⚠ DANGER

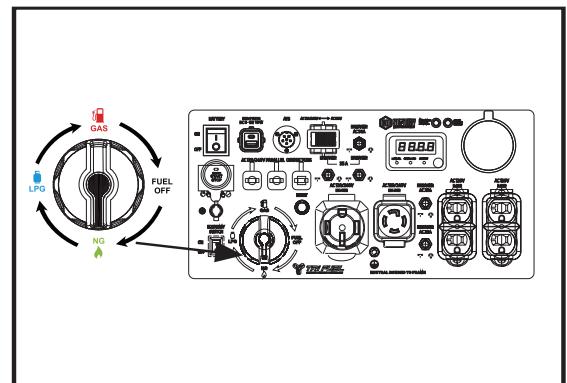
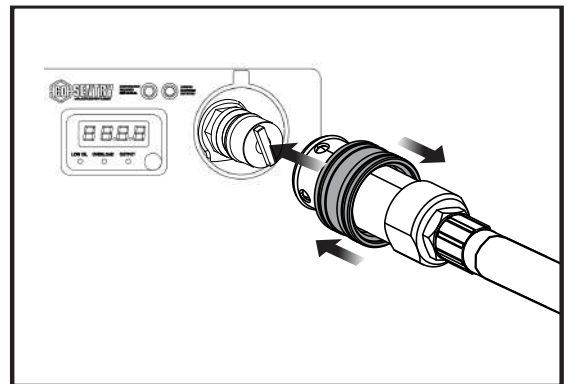
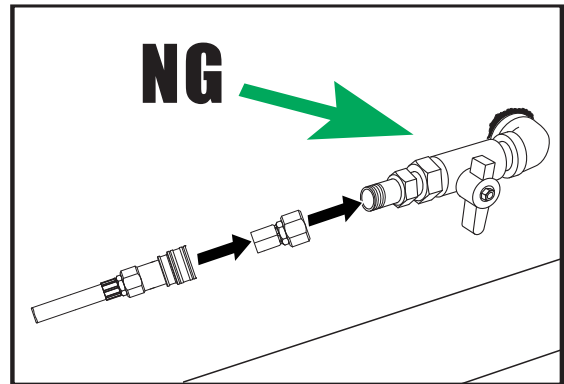
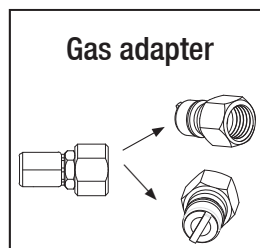
- To reduce the risk of injury, perform a leak test any time the natural gas hose is disconnected and reconnected.
- Never use a natural gas supply line, natural gas hose, or any other fuel item that appears to be damaged.

Connecting Natural Gas

1. Pulsar Products requires that this gas connection shall only be performed by a licensed gas contractor! In some locations this is required by law.
2. Your licensed gas contractor MUST use appropriate gas-rated Teflon tape, or paste to seal the NPT threads, per local code.
3. The service end of this connection must be covered when not in use to prevent exposure to the elements.
4. When your licensed gas contractor has finished the installation, you should have a gas adapter and a quarter-turn gate valve for the gas supply.
5. The QC fitting for both ends of the NG hose is the same, with one end connected to the gas adapter and the other to the generator inlet. (Connection method: Retract the QC fitting collar and securely attach each end to the gas adapter and intake inlet, then release the collar and verify a solid lock.)
6. You must test this connection with the gas valve ON, by spraying a soapy water solution over the fittings. If ANY bubbles are present, STOP at once, close the gate valve, and contact your local gas contractor to resolve the leak.
7. Once a leak-free connection has been verified, you may turn the fuel-selector knob on the front panel to the Natural Gas position.



NG hose (Both ends are Quick Connect)



Preparation

Grounding The Generator

Attach grounding wire (if required by code)

- Ground the generator by connecting a suitable grounding cable to the grounding stud on the panel and tightening the nut.
- Connect the other end to a copper or brass grounding rod that's driven into the earth.

A generally acceptable grounding wire is a No. 12 AWG (American Wire Gauge) stranded copper wire.

Grounding codes vary by location. Please contact a local electrician to check the grounding regulations for your area.



Failure to properly ground the generator can result in electrocution.

Operation

Generator Location

⚠ WARNING

NEVER operate the generator inside any building, garage, basement, crawlspace, shed, or enclosure, including the generator compartment of a recreational vehicle.

NEVER operate or start the generator in the back of an SUV, camper, trailer, truck bed (regular sides, flat or other configuration), under staircases, stairwells, next to walls or buildings, or in any other location that will not allow for adequate cooling of the generator or for the proper exit of the exhaust flow.

DO NOT operate or store the generator in wet weather conditions such as rain or snow. Using a generator in wet conditions could result in serious injury or death due to electrocution.

Generators must have a minimum of 5 feet (1.5 m) of clearance from all combustibile material.

Generators must also have a minimum of 5 feet (1.5 m) of airflow clearance on all sides to allow for adequate cooling, maintenance, and service.

Always place the generator in a well-ventilated area. NEVER place the generator near air intake vents or where exhaust fumes could be drawn into occupied or confined spaces.

Always carefully consider wind and air currents when positioning the generator.

Always allow generators to properly cool before transport or for storage purposes.

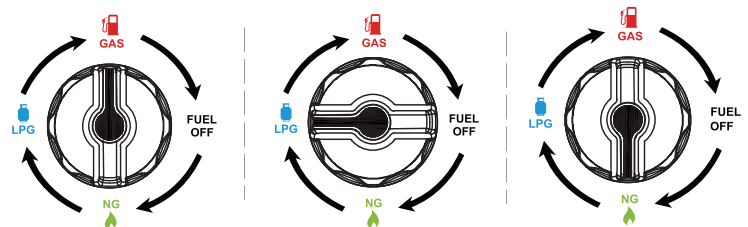
Failure to follow proper safety precautions may result in personal injury, damage to the generator, and void the manufacturer's warranty.

⚠ WARNING

During operation, the muffler and exhaust fumes will become hot. If there is inadequate cooling space or if the generator is blocked or enclosed, temperatures can rise quickly and may lead to a fire.

Starting The Generator

1. Make sure the generator is on a solid, flat, level surface.
2. Disconnect all electrical loads from the generator. Never start or stop the generator with electrical loads connected.
3. Turn the Fuel Switch to desired fuel source. When the Fuel Switch is in the Gasoline position, the generator is ready to start with Gasoline. When the Fuel Switch is in the LPG position, the generator is ready to start with propane. When the Fuel Switch is in the Natural Gas(NG) position, the generator is ready to start with Natural gas.



STARTING ON GASOLINE

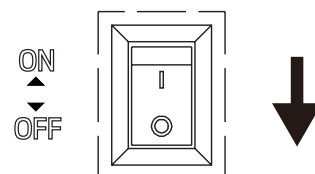
STARTING ON LPG

STARTING ON NG

4. Turn OFF Economy Switch

The Economy Switch is located on the control panel. Flip the Economy Switch down to disable low idle when starting the generator.

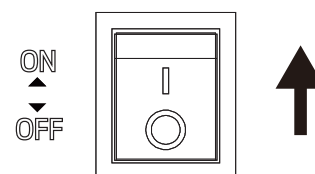
ECONOMY



5. Turn ON Battery Switch

Press the Battery Switch up to the "ON" position to start the generator.

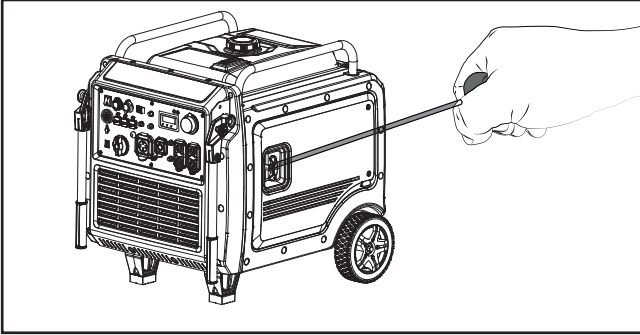
BATTERY



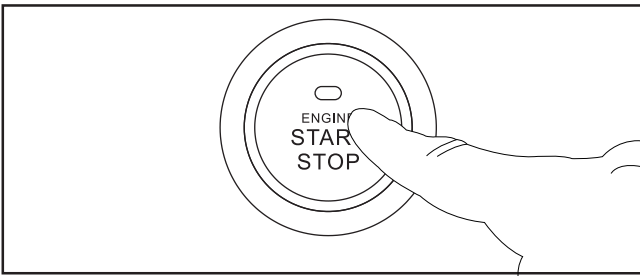
Operation

6. For Recoil Start

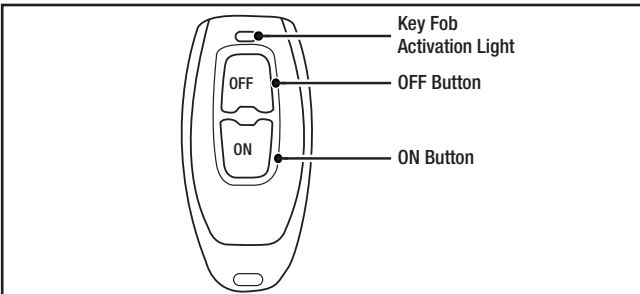
Recoil Start: Firmly grasp and pull the recoil handle slowly until you feel resistance, let it retract then pull swiftly. If it fails to start successfully, wait for 3 seconds then repeat this step.



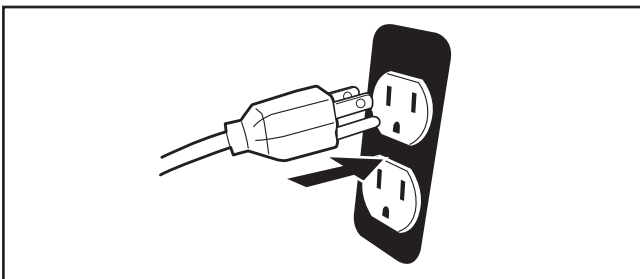
Engine Start/Stop: Press the start button once, the engine will attempt to start twice automatically. If it fails to start successfully, press the start button again.



Remote Start: Push and hold the ON button on the remote start key fob for one second.



7. Plug in devices



Fire and explosion hazard. Always turn the propane tank valve to the fully closed position if not running the generator on propane.



When using the generator with propane, make sure there is no possible ignition source close to the generator.

Gasoline To LPG/NG

IMPORTANT: Load capacity is reduced when running on LPG or NG. Make sure the generator can supply enough (running) and surge (starting) watts for the devices you are powering before switching to LPG or NG.

1. Turn the LPG tank valve or natural gas supply line valve to the fully open position.
2. Turn the fuel selector switch to LPG or NG operation.

LPG/NG To Gasoline

1. Turn the fuel selector switch to gasoline operation.
2. Turn the LPG tank valve(natural gas supply line valve) to the fully closed position.

NOTE: When switching to LPG/NG operation the engine may run rough for a few seconds while it purges gasoline from the carburetor.

If the engine stops when switching fuel sources, disconnect all loads then restart the unit on the fuel source of choice.

Parallel Operation

The parallel connection ports allow you to connect two generators to increase the total available electrical power. Follow the instructions included with your parallel connection kit for proper installation and operation.

Overload Indicator

Note: The OVERLOAD light may turn on for a few seconds as a large device starts. This is normal for loads approaching the capacity of this generator.

1. The total combined load through the outlets on the generator must not exceed the running power of the unit.

Operation

2. If the OVERLOAD light turns on and the generator stops producing power, it has been overloaded.
3. Turn off and disconnect all electrical devices and stop the engine. Compare device requirements to generator rating and reduce the total wattage of connected devices if necessary. Move anything that may be limiting generator ventilation away.
4. Check if any circuit breakers have tripped and make sure that ALL circuit breakers are reset before starting the generator again.
5. Restart the engine and reconnect devices while being careful to not overload the generator.
6. Any generator will produce less power at high altitudes and/or in hot weather. Please contact Pulsar Support at 866.591.8921 for details.

Low Oil Indicator

1. If the engine oil level is too low, the LOW OIL light turns on, the engine will automatically shut off.
2. The engine cannot be restarted until the proper amount of oil has been added.

NOTICE

Do not run the engine with too little oil. Engine will shut off if engine oil level is too low.

Economy Switch

1. Turn the economy switch ON to limit noise and fuel consumption for lighter generator loads.
2. Switch low idle OFF to operate engine at full speed when:
 - Starting the generator
 - A heavy load is applied

Voltage Selector

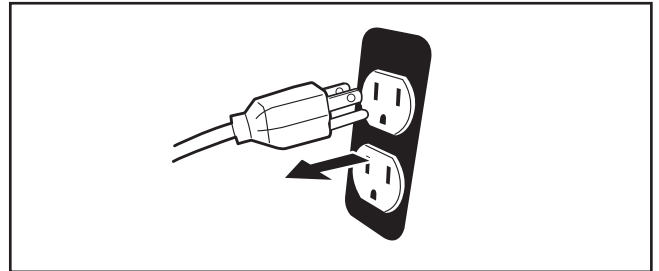
The Voltage Selector allows more current to be available at 120V outlets if 240V output is not required:

- Switch to 120V only: 120V sockets and 120V/240V dual voltage sockets can be used, but 120V/240V dual voltage sockets can only output 120V.
- Switch to 120V/240V: Both 120V and 240V outlets can be used.

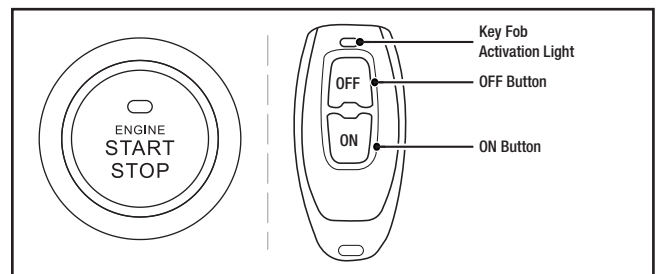
NOTE: Do not change the switch while under load. For parallel function, switch position must be at 120/240V.

Stop The Engine

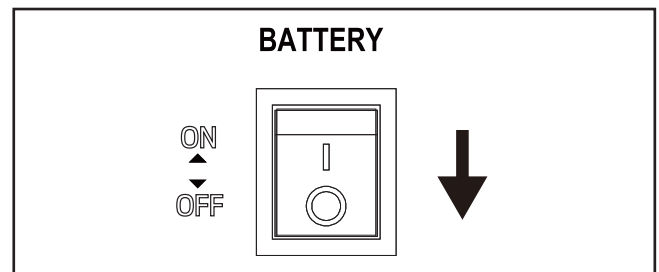
1. Turn off and unplug all connected electrical loads. Never start or stop the generator with electrical devices plugged in or turned on.



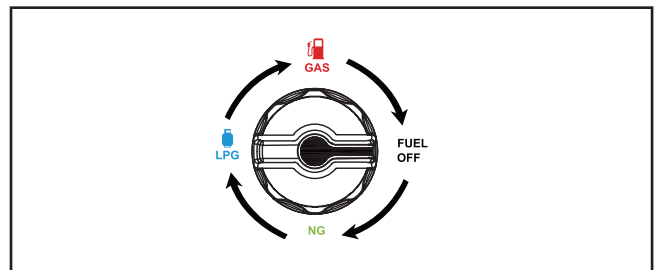
2. Press and hold the START/STOP button for 1-3 seconds to stop the engine.
3. Press the remote start key OFF button for 1-3 seconds to stop the engine.



4. Turn OFF Battery Switch.



5. Turn the Fuel Switch to the off position.



Operation

Generator Capacity

NOTICE

Do not overload the generator's capacity. Exceeding your generator's wattage capacity can damage the generator and/or electrical devices connected to it.

Make sure the generator can supply enough continuous (running) and surge (starting) watts for the devices you will power at the same time.

The total power requirements (Volts x Amps=Watts) of all devices connected must be considered. Appliance and power tool manufacturers usually list rating information near the model or serial number. To determine power requirements:

1. Select the devices you will power at the same time.
2. Total the continuous (running) watts of these devices. This is the amount of power the generator must produce to keep the items running. See the wattage reference chart on the next page.
3. Estimate how many surge (starting) watts you will need. Surge wattage is the short burst of power needed to start electric motor-driven tools or appliances such as a circular saw or refrigerator. Not all motors start at the same time, total surge watts can be estimated by adding only the item(s) with the highest additional surge watts to the total rated watts from step 2.

Example:

Tool or Appliance	Running Watts*	Starting Watts*
RV Air Conditioner (13,000 BTU)	1100	1800
TV (Flat Screen)	150	150
RV Refrigerator	180	600
Radio	50	50
Light (75 Watts)	75	75
Coffee Maker	600	600
	2155 Total	3275
	Running Watts*	Highest Starting Watts*

*Wattages listed are approximate. Verify actual wattage.

High Altitude Operation

At high altitude, the standard carburetor air/fuel mixture will be too rich. Performance will decrease, and fuel consumption will increase. A very rich mixture will also foul the spark plug and cause hard starting. Operation at an altitude that differs from that at which this engine was certified, for extended periods of time, may increase emissions. High altitude performance can be improved by specific modifications to the carburetor. If you always operate your generator at altitudes above 5,000 feet (1,500 meters), have your qualified technician perform this carburetor modification. This engine, when operated at high altitude with the carburetor modifications for high altitude use, will again meet each emission standard. Even with carburetor modification, engine power will decrease about 3.5% for each 1,000-foot (300-meter) increase in altitude.

Maintenance



Turn the generator “OFF”, wait for the engine to cool, and disconnect the spark plug cable before performing any inspection, maintenance, or cleaning procedures.

EQUIPMENT FAILURE: Do not use damaged equipment. If abnormal noise, vibration, or excess smoking occurs, have the problem corrected before further use.

Many maintenance procedures, including any not detailed in this manual, will need to be performed by a qualified technician for safety. If you have any doubts about your ability to safely service the equipment or engine, have a qualified technician service the equipment instead.

Power

Cleaning, Maintenance, and Lubrication Schedule

Note: This maintenance schedule is intended as a general guide. If performance decreases or if equipment operates unusually, have the generator inspected at once. The maintenance needs of generator will differ depending on factors such as duty-cycle, temperature, air quality, fuel quality.

Note: The following procedures are in addition to the regular checks and maintenance explained as part of the regular generator.

Procedure	Before Each Use	Monthly or every 8 hr. of use	Every 3 mo. or 50 hr. of use	Every 6 mo. or 100 hr. of use	Yearly or every 300 hr. of use	Every 2 Years
1. Brush off outside of engine 2. Check engine oil level 3. Check air filter	✓					
Change engine oil				✓		
Clean/replace air cleaner			✓			
1. Check and clean spark plug 2. Check and clean spark arrestor				✓		
1. Check/adjust idle speed 2. Check/adjust valve clearance 3. Clean fuel tank, strainer and carburetor 4. Clean carbon build-up from combustion chamber					✓	
Replace fuel line if necessary						✓

Maintenance

Checking and Filling Fuel

! WARNING

TO PREVENT SERIOUS INJURY FROM FIRE:
You must shut off the engine while refueling.

1. Clean the Fuel Cap and the area around it.
2. Unscrew and remove the Fuel Cap.
3. Remove the strainer and discard any dirt and debris, then replace the strainer.

NOTICE

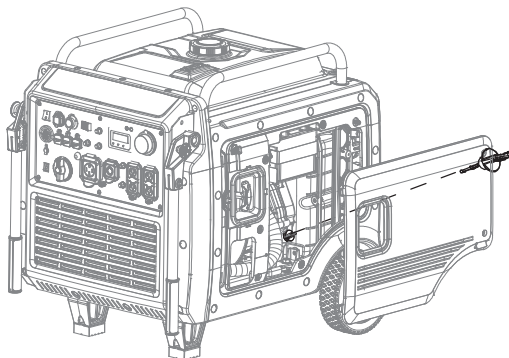
- Do not use gasoline containing more than 10% ethanol (E10).
 - Do not use E85 ethanol. Add a fuel stabilizer (such as Sta-Bil or Pri-G) to the gasoline or the Warranty is VOID.
 - Do not use gasoline that has been stored in a metal fuel container or a dirty fuel container. It can cause particles to enter the carburetor, affecting engine performance or causing damage.
4. Add fuel, if needed.
 5. Replace the Fuel Cap.
 6. Wipe up any spilled fuel and allow excess to evaporate before starting the engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

Engine Oil Change

! CAUTION

Oil is very hot during operation and can cause burns. Wait for the engine to cool before changing the oil.

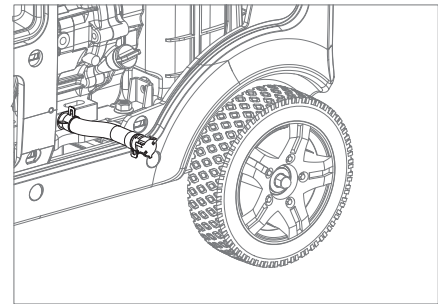
1. Make sure the engine is stopped and is level.
2. On the right side of the generator, loosen the screws and remove the right-side panel.



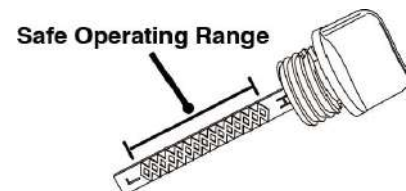
3. Place an oil drain pan under the generator and center it under the oil drain opening.
4. Remove the right access panel and set it aside. Locate the folded rubber drain tube from the bottom of the engine. Unfold this drain tube, unscrew the cap, and tilt the generator so that the oil drains into an approved container.
5. Clean the top of the oil fill and the area around it.
6. Add the appropriate type of oil until the oil level is at the proper level. SAE 10w-30 oil is recommended for general use.

NOTICE

Note: Make sure the generator is level when adding oil to prevent overfilling which could cause engine damage.



7. Check engine oil level daily and add as needed. Remove and clean the dipstick. Reinsert the dipstick but do not screw it back in. Remove the dipstick and verify the oil is at the correct level.
8. When the engine oil is at the correct level, reinstall the dipstick and screw it down until it is sealed. Then reinstall the right-side panel.



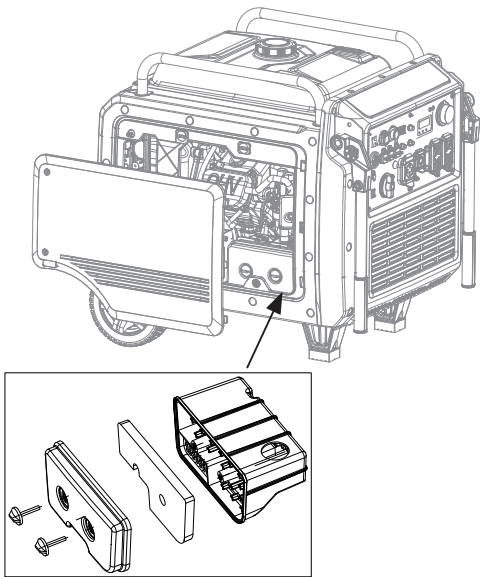
NOTICE

Do not attempt to run the generator with too little oil. The engine will not start with low or no engine oil.

Maintenance

Air Filter Maintenance

1. Loosen the screw and remove the left panel to access the air filter.
2. Remove Air Filter Cover- see figure below.
3. Remove the Air Filter Element.



4. Wash the foam air filter element in hot, soapy water, squeezing the solution through the foam until it is clean, rinse the air filter element with clear water and dry it thoroughly before reinstallation.
5. Rinse the air filter with fresh water and allow it to dry completely.

NOTE: Avoid contact with engine oil. Wear protective clothing and safety glasses Wash all exposed skin with soap and water.

Spark Arrestor Maintenance



TO PREVENT SERIOUS INJURY AND FIRE: Operate only with proper spark arrestor installed

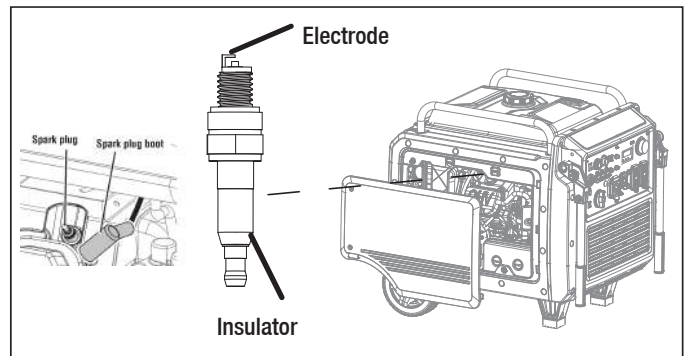
1. Allow the generator to cool completely.
2. Remove the screws from the back of the generator.
3. Remove the clamp and spark arrestor.
4. Clean the Spark Arrestor using a wire brush.
5. Replace the arrestor if damaged.



TO PREVENT ACCIDENTAL BRUSH FIRE, secure spark arrestor back in place immediately after cleaning and before further operation.

Spark Plug Maintenance

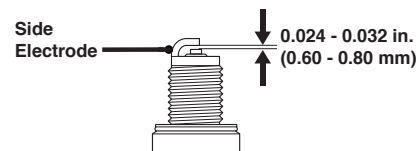
1. Loosen the screw and remove the left panel of the machine to access the spark plug.



2. Disconnect Spark Plug boot from the end of plug. Clean out debris from around Spark Plug.

3. Using the Spark Plug Wrench, remove the Spark Plug.

4. Inspect the Spark Plug: If the electrode is oily, clean it using a clean, dry rag. If the electrode has deposits on it, clean it with a brass wire brush. If the white insulator is cracked or chipped, replace the spark plug.



Spark plug gap: 0.024 – 0.032 in. (0.60 – 0.80 mm)

Maintenance

NOTICE

Use only BPR6ES (NGK) type spark plug or equivalent. Using an incorrect spark plug may damage the engine.

5. When installing a new spark plug, adjust the electrode gap to the specification on the Specifications Chart. Do not pry against the center electrode, the spark plug can be damaged.

6. Apply anti-seize material to Spark Plug threads. Install the new spark plug or the cleaned spark plug into the engine.

- Hand-tighten until the gasket contacts the cylinder head, then tighten about 3/4 turn more.

NOTICE

Tighten the Spark Plug properly. If loose, the Spark Plug will cause the engine to overheat. If overtightened, the threads in the engine block will get damaged.

7. Re-install the Spark Plug Access Cover.

Storage

When the generator is to remain idle for longer than 20 days, prepare the engine for storage as follows:

1. Cleaning:

Wait for the engine to cool, open both side access panels and blow (or vacuum) any dirt or debris.

NOTICE

Do not clean using water. The water will gradually enter the engine and cause damage.

2. Fuel:

Gasoline Treatment/Draining the Fuel Tank To protect the fuel tank during storage, fill the tank with fresh gasoline that has been treated with a fuel stabilizer additive (such as Sta-Bil, or Pri-G).

Follow fuel stabilizer manufacturer's recommendations for use.

WARNING

Fill the fuel tank in a well-ventilated area away from ignition sources. If the engine is hot from use and wait for it to cool before adding fuel. Do not smoke or vape anything.

3. Draining the Carburetor for Generator Storage:

After closing the Fuel Valve, place an appropriate container under the Carburetor and carefully remove the Drain Bolt from the bottom of the Carburetor Bowl, allowing the fuel to drain completely.

Replace the Drain Bolt after draining.

Aged gasoline that has not been treated with stabilizer ahead of time must be safely drained and disposed of, never run old gasoline through the engine.

WARNING

To prevent serious injury and fire, close the Fuel Valve before draining the Carburetor..

4. Extended storage:

a. Change engine oil.

b. Clean out the area around the spark plug. Remove the spark plug and pour one tablespoon of engine oil into the cylinder through the spark plug hole.

c. Replace spark plug, but leave spark plug cap disconnected.

d. Pull Starter Handle to distribute oil in the cylinder. Stop after one or two revolutions when you feel the piston start the compression stroke (when you start to feel resistance).

5. STORAGE AREA:

Cover and store in a dry, level, well-ventilated area out of reach of children. The storage area should also be away from ignition sources, such as water heaters, clothes dryers, and furnaces.

NOTICE

During extended storage periods, the engine should be started every 3 months and allowed to run for 15-20 minutes.

6. AFTER STORAGE:

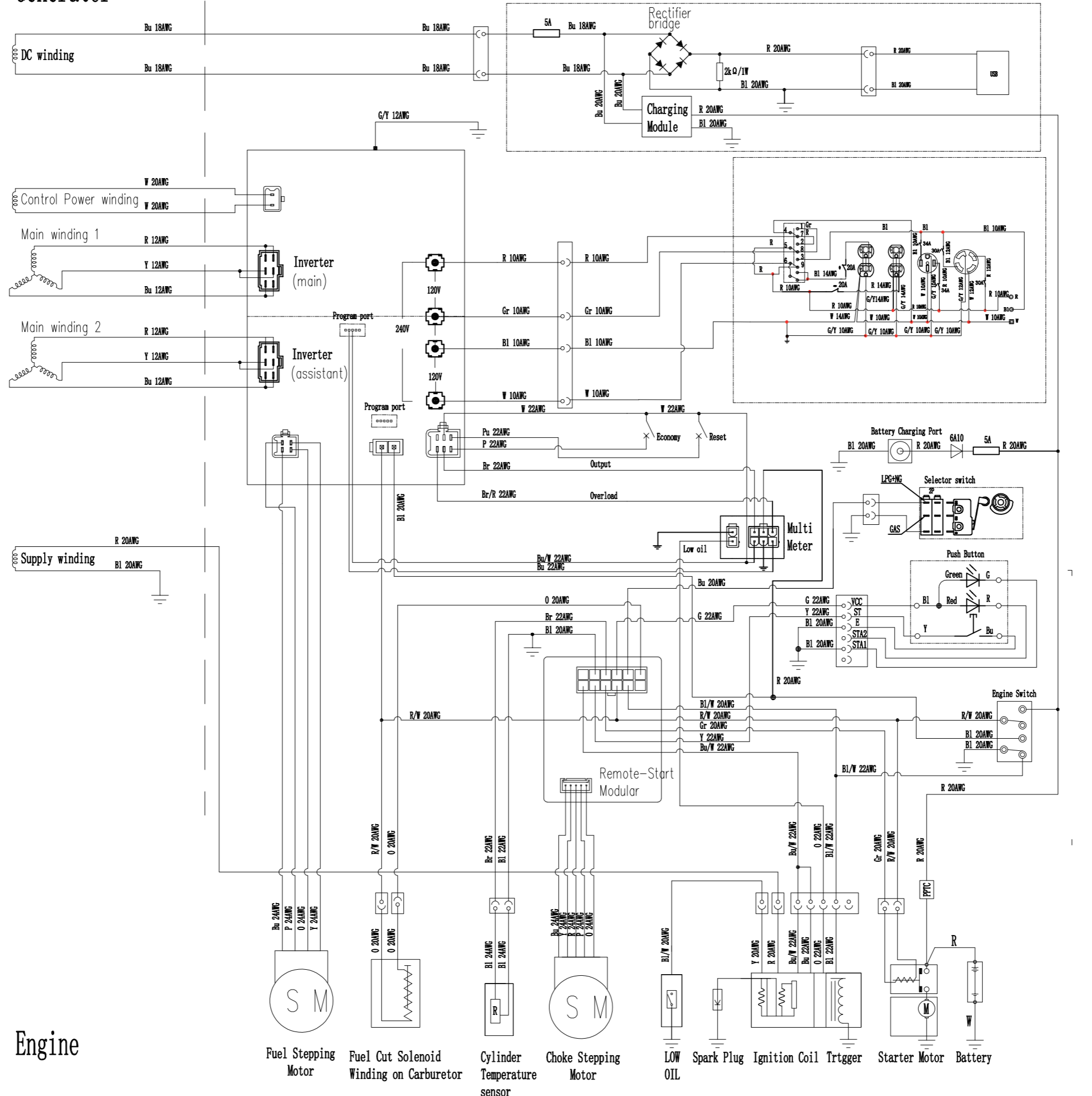
Untreated gasoline will deteriorate quickly. Drain the fuel tank and change to fresh fuel if untreated gasoline has been sitting for a month, if treated gasoline has been stored beyond the fuel stabilizer's recommended time, or if the engine does not start.

Troubleshooting

Problem	Cause	Solution
Engine is running, but AC output is not available	<ol style="list-style-type: none"> 1. Open circuit breaker 2. Poor connection 3. Defective cord set 4. Connected device is faulty 5. Fault in generator 	<ol style="list-style-type: none"> 1. Reset circuit breaker 2. Check and repair 3. Check and repair 4. Connect a device that is working properly 5. Contact service department
Engine runs well without load but bogs down when loads are connected	<ol style="list-style-type: none"> 1. Short circuit in connected device 2. Generator is overloaded LED light 3. Clogged fuel filter 4. Engine speed is too slow 5. Short circuit in generator 	<ol style="list-style-type: none"> 1. Disconnect device 2. See pg 15 "Don't overload generator" 3. Contact service to replace fuel filter 4. Contact service department 5. Contact service department
Engine will not start, shuts down during operation, or starts and runs rough.	<ol style="list-style-type: none"> 1. ON/OFF switch set to "OFF" 2. Dirty Air filter 3. Clogged fuel filter 4. Stale fuel 5. Spark plug wire disconnected from spark plug 6. Bad spark plug 7. Water in fuel 8. Low oil level (Low oil LED light) 9. Intake valve stuck open or close 10. Loss of engine compression 11. Engine has flooded 12. CO Sensor indicator light turn red 13. CO Sensor indicator light turns yellow 	<ol style="list-style-type: none"> 1. Turn switch to "ON" 2. Replace Air filter 3. Clean or replace fuel filter 4. Replace fuel 5. Reconnect spark plug wire 6. Replace spark plug 7. Drain fuel tank and replace fuel 8. Add oil 9. Contact service department 10. Contact service department 11. Contact service department 12. Move the generator to an open outdoor area 13. Contact service department
Engine lacks power	<ol style="list-style-type: none"> 1. Generator is overloaded 2. Clogged in-line filter 3. Dirty air filter 4. Engine needs servicing 	<ol style="list-style-type: none"> 1. See pg. 15 "Don't overload generator" 2. Contact service to replace in-line filter 3. Replace Air filter 4. Contact service department
Engine "hunts" or falters	<ol style="list-style-type: none"> 1. Clogged in-line filter 2. Carburetor is running too rich or too lean 	<ol style="list-style-type: none"> 1. Contact service to replace in-line filter 2. Contact service department

Generator

Control Panel



Engine

- Fuel Stepping Motor
- Fuel Cut Solenoid Winding on Carburetor
- Cylinder Temperature sensor
- Choke Stepping Motor
- LOW OIL
- Spark Plug
- Ignition Coil
- Trtgger
- Starter Motor
- Battery

