Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's Date Code in the back of the manual (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

PREDATOR

4200 WATT DUAL FUEL SUPER QUIET INVERTER GENERATOR

3200 GASOLINE RUNNING WATTS
4200 GASOLINE MAX STARTING WATTS
2900 LPG RUNNING WATTS
4200 LPG MAX STARTING WATTS

Visit our website at:
https://www.harborfreight.com

Email our Product Support at:
productsupport@harborfreight.com

71203

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified service technician, service agency, manufacturer, or the gas supplier.

FOR YOUR SAFETY
IF YOU SMELL GAS:

1. Don't touch electrical switches.
2. Extinguish any open flame.
3. Immediately call your gas supplier.

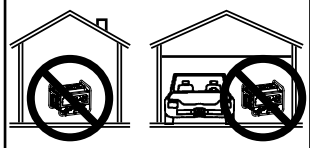
FOR YOUR SAFETY

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

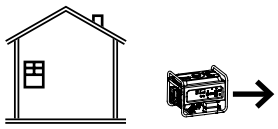
⚠ DANGER

Using a generator indoors CAN KILL YOU IN MINUTES.

Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.



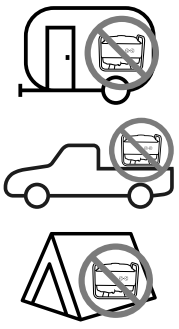
NEVER use inside a home or garage, EVEN IF doors and windows are open.



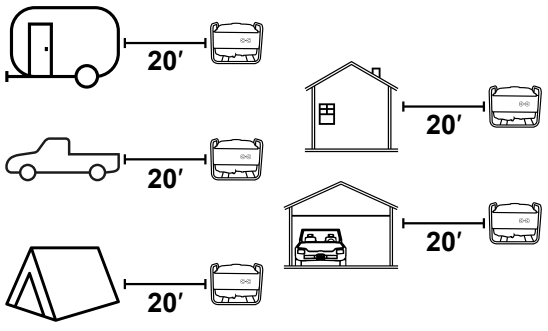
Only use OUTSIDE and far away from windows, doors, and vents.

⚠ DANGER

Do not use in trailers, truck beds, or tents.



Use at least 20 feet away from people, animals, and structures with exhaust pointed away. Generator will still produce carbon monoxide, even when burning propane.



When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please visit harborfreight.com/customer-support/contact-us as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.
Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein.
Tools required for assembly and service may not be included.

⚠ WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

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Specifications

Generator	AC Output (Gasoline)	120VAC, 60Hz, 26.7A, 1 Phase 3200 Running Watts 4200 Maximum Starting Watts
	AC Output (LPG/Propane)	120VAC, 60Hz, 24.2A, 1 Phase 2900 Running Watts 4200 Maximum Starting Watts
	DC Output	USB Ports, PD 30W, 5/9/12V
	Receptacles	2x 120VAC, 20A 1x 120VAC, RV TT-30R 1x USB-A 1x USB-C Parallel Ports
	Internal Battery	CO Sensor: 3V CR2032 Contains non-replaceable battery
Displacement		187cc
Compression Ratio		9.3:1
Engine Type		Horizontal Single Cylinder 4-stroke, OHV
Cooling System		Forced air cooled
Fuel	Type	87+ octane, stabilizer-treated unleaded gasoline or LPG/propane
	Gasoline Tank	1.48 Gallon / 5.60 Liter
	LPG/Propane Tank	20 lb tank minimum
Engine Oil	Type SAE	10W-30
	Capacity	0.60 Quart / 0.57 Liter
Run Time @ 25% Load with full gasoline tank		8.25 hours
Run Time @ 25% Load with 20 lb LPG/propane tank		25 hours
Sound Level at 7 meters, 25% load		59.8 dB(A)
Bore x Stroke		70mm x 48.5mm
Spark Plug	Type	BP6ES (NGK) or equivalent
	Gap	0.027"–0.031"
Valve Clearance	Intake	0.0025"–0.0039"
	Exhaust	0.0025"–0.0039"
Engine Speed		2500-3800 RPM

The emissions control system for this Engine is warranted for standards set by the U.S. Environmental Protection Agency and by the California Air Resources Board (also known as CARB). For warranty information, refer to the last pages of this manual.

WARNING SYMBOLS AND DEFINITIONS	
⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
⚠DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

Symbol Definitions

Symbol	Property or Statement
RPM	Revolutions Per Minute
HP	Horsepower
AWG	American Wire Gauge
	WARNING marking concerning Risk of Eye Injury. Wear ANSI-approved safety goggles with side shields.
	Read the manual before set-up and/or use.
	WARNING marking concerning Risk of Hearing Loss. Wear hearing protection.

Symbol	Property or Statement
	WARNING marking concerning Risk of Respiratory Injury. Operate engine OUTSIDE and far away from windows, doors, and vents.
	WARNING marking concerning Risk of Fire while handling fuel. Do not smoke while handling fuel.
	WARNING marking concerning Risk of Fire. Do not refuel while operating. Keep flammable objects away from engine.
	WARNING: Contains coin battery.

IMPORTANT SAFETY INSTRUCTIONS

WARNING! Read all instructions. Failure to follow all instructions listed below may result in fire, serious injury and/or DEATH.

The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

This manual contains important instructions that should be followed during installation and maintenance of the generator and any batteries.

SAVE THESE INSTRUCTIONS.

IF YOU SMELL GAS

1. **NO FLAMES OR SPARKS!** Immediately put out all smoking materials and other open flames. Do not operate lights, appliances, telephones, or cell phones. Flames or sparks from these sources can trigger an explosion or a fire.
2. **LEAVE THE AREA IMMEDIATELY!** Get everyone out of the area where you suspect gas is leaking.
3. **SHUT OFF THE GAS.** Turn off the main gas supply valve on your propane tank, if it is safe to do so. To close the valve, turn it to the right (clockwise).
4. **REPORT THE LEAK.** From a neighbor's home or other nearby building away from the gas leak, call your propane retailer right away. If you can't reach your propane retailer call 911 or your local fire department.
5. **DO NOT RETURN TO THE AREA** until your propane retailer, emergency responder, or qualified service technician determines that it is safe to do so.
6. **GET YOUR SYSTEM CHECKED.** Before you attempt to use your generator your propane retailer or a qualified service technician must check your entire system to ensure that it is leak-free.

CAN YOU SMELL IT?

Propane smells like rotten eggs, a skunk's spray, or a dead animal. Some people may have difficulty smelling propane due to their age (older people may have a less sensitive sense of smell); a medical condition; or the effects of medication, alcohol, tobacco, or drugs.

ODOR LOSS. On rare occasions, propane can lose its odor. Several things can cause this including:

- The presence of air, water, or rust in a propane tank or cylinder.
- The passage of leaking propane through the soil.

Since there is a possibility of odor loss or problems with your sense of smell, you should respond immediately to even a faint odor of propane.

GAS DETECTORS

Under some circumstances, you may not smell a propane. Propane detectors (not included) sound an alarm if they sense propane in the air. They can provide an additional measure of security. You should consider the purchase of one or more detectors for your home.

GUIDELINES regarding propane detectors:

- Buy only units that are listed under the latest Underwriters Laboratories (UL) standard.
- Follow the manufacturer's instructions regarding installation and maintenance.
- Never ignore the smell of propane, even if no detector is sounding an alarm.

GENERATOR MAINTENANCE

LEAVE IT TO THE EXPERTS. Only a qualified service technician has the training to install, inspect, service, maintain, and repair your generator. Have your generator and propane system inspected annually.

DO NOT TRY TO MODIFY OR REPAIR valves, regulators, connectors, controls, or other generator and cylinder/tank parts. Doing so creates the risk of a gas leak that can result in property damage, serious injury, or death.

CO AND YOUR SAFETY

WHAT IS CARBON MONOXIDE (CO)? You can't taste or smell CO, but it is a very dangerous gas. High levels of CO can come from engine exhaust fumes, appliances that are not operating correctly, or from a venting system or chimney that becomes blocked.

CO CAN BE DEADLY! High levels of CO can make you dizzy or sick. In extreme cases, CO can cause brain damage or death. Symptoms of CO poisoning include: headache, dizziness, fatigue, shortness of breath, and nausea.

IF YOU SUSPECT CO IS PRESENT, ACT IMMEDIATELY!

1. If you or a family member shows physical symptoms of CO poisoning, get everyone out of the area and call 911 or your local fire department.
2. If it is safe to do so, turn off any appliances you suspect may be releasing CO.
3. If no one has symptoms, but you suspect that CO is present, call your propane retailer, or a qualified service technician to check CO levels and your propane.

CO DETECTORS CAN IMPROVE SAFETY. For an extra measure of safety, consider installing a CO detector (not included) listed by UL on each level of your home.

TO HELP REDUCE THE RISK OF CO POISONING:

- Have a qualified service technician check your propane appliances and venting systems annually, preferably before the heating season.
- Install UL-listed CO detectors on every level of your home.
- Never use a gas oven or range-top burners to provide space heating.
- **DO NOT USE THE GENERATOR INDOORS OR IN ANY ENCLOSED SPACE OR IN ANY OTHER AREA OR SITUATION THAT WILL ALLOW CARBON MONOXIDE TO ACCUMULATE.**
- Never use a barbecue grill (propane or charcoal) indoors for cooking or heating.
- Regularly check your appliance exhaust vents for blockage.

RUNNING OUT OF GAS

DON'T RUN OUT OF GAS. SERIOUS SAFETY HAZARDS, INCLUDING FIRE OR EXPLOSION, CAN RESULT.

- If an appliance valve or a gas line is left open, a leak could occur when the system is recharged with propane.
- **A LEAK CHECK IS REQUIRED.** In many states, a propane retailer or a qualified service technician must perform a leak check of your propane system before turning on the gas.

LPG/Propane Precautions

1. LPG/Propane system must be installed and used in strict conformance with NFPA 58 (Liquefied Petroleum Gas Code), NFPA 54 (National Fuel Gas Code), manufacturer's recommendations, and all relevant local, state, and federal codes and regulations.
2. LPG/Propane and Gasoline fuel and fumes are flammable, and potentially explosive. Use proper fuel storage and handling procedures. Do not store fuel or other flammable materials nearby.
3. Fire and explosion hazard. Never use a gas container, LPG/propane connector hose, LPG/propane tank, or any other fuel item that appears to be damaged.
4. Fire and explosion hazard. Only use approved LPG/propane tanks with an Overfilling Prevention Device (OPD) valve. Keep the tank in a vertical position with the valve on top and placed at ground level on a flat surface. Do not allow tanks to be near any heat source. When transporting and storing, turn the propane tank valve to the fully closed position and disconnect the tank. Make sure to always cover the generator inlet and tank outlet with protective plastic caps.
5. Connect LPG/propane tank using provided attachment kit only. Kit includes 1.5 meter (4.9 ft) hose. Place tank as far away from Generator as hose allows and away from engine exhaust. Do not place tank above Generator.
6. Fire and explosion hazard. If there is a strong smell of Propane while operating the generator, fully close the LPG/Propane tank valve and shut down the Generator immediately. Once the LPG is off, use soapy water to check for leaks on the hose and connections on the tank valve and the generator. Do not smoke or light a cigarette or check for leaks using any open flame source such as a match or lighter. If a leak is found, contact a qualified technician to inspect and repair the LPG system before using the generator.
7. Generator will produce carbon monoxide when burning gasoline or LPG.
8. When exchanging LPG/propane tanks, be sure the tank connector is the same size and thread.
9. LPG/Propane will freeze skin. Prevent leaking propane from contacting skin at all times.
10. LPG/Propane is highly flammable and explosive.
11. LPG/Propane is heavier than air and will accumulate in low places.
12. LPG/Propane has a distinctive odor added to help detect potential leaks. This odor can diminish over time or due to other factors.
13. Keep LPG/Propane tanks in an upright position.
14. In case of a LPG/Propane fire, do not attempt to extinguish unless the fuel supply can be shut off safely. Leave the area immediately and call 911 or your local fire department.
15. Keep the LPG/Propane tank and hose away from engine exhaust.
16. Do not insert any object other than the matching plug into the quick-disconnect coupling. This may cause the coupling to leak, disconnect, or otherwise fail.
17. Do not allow the hose to be kinked, pinched, twisted, or torqued during installation.
18. Protect hose and fittings from dust and dirt while disconnected.

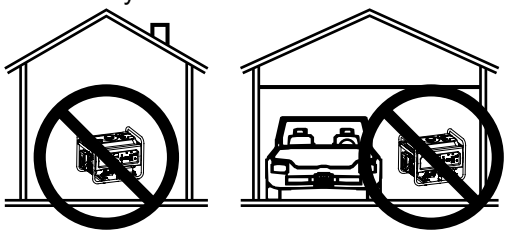
Set up Precautions

1. Gasoline fuel and fumes are flammable, and potentially explosive. Use proper fuel storage and handling procedures. Do not store fuel or other flammable materials nearby.
2. Have multiple ABC class fire extinguishers nearby.
3. Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.
4. Set up and use only on a flat, level, well-ventilated surface.
5. All connections and conduits from the Generator to the load must only be installed by trained and licensed electricians, and in compliance with all relevant local, state, and federal electrical codes and standards, and other regulations where applicable.
6. Connections for standby power to a building electrical system must be made by a qualified electrician. The connection must isolate the generator power from utility power, and must comply with all applicable laws and electrical codes.
7. A transfer switch should be installed by a licensed electrician in compliance with all applicable laws and electrical codes.
8. Wear ANSI-approved safety goggles, heavy-duty work gloves, and dust mask/respirator during set up.
9. Use only lubricants and fuel recommended in the Specifications chart of this manual.
10. Improper connections to a building electrical system can allow electrical current from the generator to backfeed into the utility lines. Such backfeed may electrocute utility company workers or others who contact the lines during a power outage, and the generator may explode, burn, or cause fires when utility power is restored. Consult the utility company and a qualified electrician if intending to use the generator for back up power.
11. Do not operate the Generator before grounding. The Generator must be earth-grounded in accordance with all relevant electrical codes and standards before operation.
12. Install carbon monoxide alarm(s) with battery backup in nearby buildings according to manufacturer's instructions.

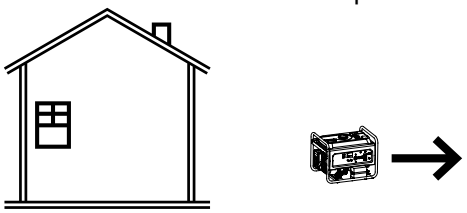
Operating Precautions

1. 

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



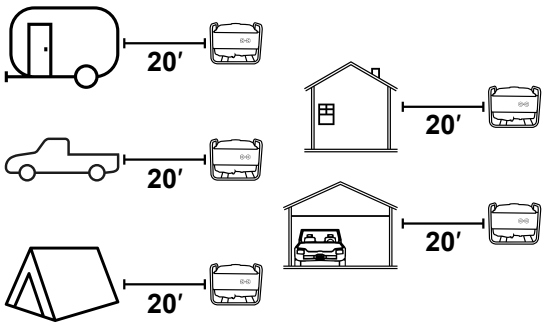
NEVER use inside a home or garage, EVEN IF doors and windows are open.



Only use OUTSIDE and far away from windows, doors, and vents.



Do not use in trailers, truck beds, or tents.



Use at least 20 feet away from people, animals, and structures with exhaust pointed away. Engine will still produce carbon monoxide, even when burning other fuels.

CARBON MONOXIDE SHUTOFF

DANGER! TO PREVENT SERIOUS INJURY AND DEATH FROM CARBON MONOXIDE INHALATION:
The Carbon Monoxide sensor is <u>an additional layer of protection</u> only. Do not use the Generator in any area or situation that will allow carbon monoxide to accumulate.

- FLASHING RED LIGHT:
  Dangerous levels of carbon monoxide gas have built up and generator will shutoff. Leave immediately until area has aired out. Move Generator to well-ventilated area before operation.
- FLASHING YELLOW LIGHT:
  Carbon monoxide sensor malfunction. Sensor needs service. Do not use the Generator until the sensor is working properly. For technical questions, please call 1-800-444-3353.

<u>NOTE:</u> Yellow light flashes once after starting to indicate passing self-check and is functioning normally.

Carbon Monoxide sensor must only be serviced by qualified technician to restore it to original settings. Do not modify or tamper with the Carbon Monoxide sensor. Not following these instructions can result in death or serious injury due to Carbon Monoxide sensor malfunction.

2. Never use a generator indoors, including in garages, basements, crawl spaces and sheds. Opening doors and windows or using fans will NOT prevent carbon monoxide build up in the home.
3. When using generators, keep them outdoors and far away from open doors, windows, and vents to avoid toxic levels of carbon monoxide from building up indoors.
4. If you start to feel sick, dizzy, or weak while using a generator, get to fresh air right away. The carbon monoxide from generators can quickly lead to full incapacitation and death.
5. Keep children away from the equipment, especially while it is operating.
6. Keep all spectators <u>at least six feet</u> from the Engine during operation.
7. Fire Hazard! Do not fill fuel tank while engine is running. Do not operate if gasoline has been spilled. Clean spilled gasoline before starting engine. Do not operate near pilot light or open flame.
8. Do not touch engine during use. Let engine cool down after use.
9. Never store fuel or other flammable materials near the engine.

10. If the plugged in product operates abnormally or unusually slow, immediately stop using the generator as a power source. Read and adhere to the instruction manual of the product to be powered to make sure that it can be safely and efficiently powered by a portable generator.
11. Before connecting an appliance or power cord to the generator: Make sure that it is in good working order. Faulty appliances or power cords can create a potential for electrical shock.
12. Do not exceed the maximum power rating of the generator. Make sure that the total electrical rating of the all of the tools or appliances plugged into the generator at the same time does not exceed that of the generator. Check that the startup surge will not be beyond the limit of the Generator.
13. Avoid substantially overloading which will trip the circuit breaker. Slightly overloading the generator may not trip the circuit breaker, but will lead to premature generator failure.
14. Do not attempt to connect or disconnect load connections while standing in water, or on wet or soggy ground.
15. Do not touch electrically energized parts of the Generator and interconnecting cables or conductors with any part of the body, or with any non-insulated conductive object.
16. Connect the Generator only to a load or electrical system (120 volt or 240 volt) that is compatible with the electrical characteristics and rated capacities of the Generator.
17. GFCI PRECAUTIONS
    Test Ground Fault Circuit Interrupter (GFCI) receptacles (if equipped) before each use as follows:
    a. Disconnect all devices from the Generator.
    b. Start the engine.
    c. Press Test button on receptacle to trip the GFCI device.
    d. The Reset button should extend, cutting off electricity to the receptacle.
    e. If above test fails, do not use receptacle until it is repaired or replaced.
    f. Press Reset button in for use.
18. **The Generator must be grounded before use. An ungrounded Generator has an increased risk of electric shock.** Refer to Grounding on page 13.
19. Insulate all connections and disconnected wires.
20. Guard against electric shock. Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.

    Only use a suitable means of transport and lifting devices with sufficient weight bearing capacity when transporting the generator.
21. Secure the generator on transport vehicles to prevent it from rolling, slipping, and tilting.
22. Industrial applications must follow OSHA requirements.
23. Do not leave the generator unattended when it is running. Turn off the generator (and remove safety keys, if available) before leaving the work area.
24. The generator can produce high noise levels. Prolonged exposure to noise levels above 85 dBA is hazardous to hearing. Wear ear protection when operating the generator or when working nearby while it is operating.
25. Wear ANSI-approved safety glasses, hearing protection, and NIOSH-approved dust mask/respirator during use.
26. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to a heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near the engine's magneto or recoil starter.
27. Use only accessories that are recommended by Harbor Freight Tools for your model. Accessories that may be suitable for one piece of equipment may become hazardous when used on another piece of equipment.
28. Do not operate in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Gasoline-powered engines may ignite the dust or fumes.
29. Stay alert, watch what you are doing and use common sense when operating this generator. Do not use while tired or under the influence of drugs, alcohol or medication.
30. Dress properly. Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
31. Parts, especially exhaust system components, get very hot during use. Stay clear of hot parts.
32. Do not cover the generator during operation.
33. Keep the engine, generator, and surrounding area clean at all times.
34. Do not smoke, or allow sparks, flames, or other sources of ignition around the equipment, especially when refuelling.
35. Use the generator, accessories, etc., in accordance with these instructions and in the manner intended for the particular type of equipment, taking into account the working conditions and the work to be performed. Use of the equipment for operations different from those intended could result in a hazardous situation.
36. Do not operate the generator with known leaks in the engine's fuel system.

37. When spills of fuel or oil occur, they must be cleaned up immediately. Dispose of fluids and cleaning materials as per any local, state, or federal codes and regulations. Store oil rags in a bottom-ventilated, covered, metal container.
38. Keep hands and feet away from moving parts. Do not reach over or across equipment while operating.
39. Before use, check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the equipment's operation. **If damaged, have the generator serviced before using.** Many accidents are caused by poorly maintained equipment.
40. Use the correct generator for the application. Do not modify the generator or its engine, and do not use the generator for a purpose for which it is not intended.
41. Extension Cord - Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized extension cord will cause a drop in line voltage resulting in loss of power and overheating.

    The table below shows the correct cord size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS					
CURRENT (AMPS)	**Load @ 120V (WATTS)**	**Load @ 240V (WATTS)**	**20 ~ 50 ft**	**50 ~ 75 ft**	**75 ~ 100 ft**
2	240	480	18 AWG		
4	480	960	18 AWG		16 AWG
6	720	1440	18 AWG	16 AWG	14 AWG
8	960	1920	16 AWG		12 AWG
10	1200	2400	16 AWG	14 AWG	12 AWG
15	1800	3600	14 AWG	12 AWG	10 AWG
20	2400	4800	12 AWG	10 AWG	
25	3000	6000	12 AWG	10 AWG	8 AWG
30	3600	7200	10 AWG	8 AWG	
35	4200	8400	8 AWG	6 AWG	
40	4800	9600	6 AWG		

Note: Do not use extension cords less than 20 feet in length.

Parallel Kit Precautions

⚠WARNING

TO PREVENT SERIOUS INJURY, DEATH, AND GENERATOR AND/OR EQUIPMENT DAMAGE FROM ELECTRIC SHOCK AND FIRE:

1. Follow Parallel Kit instructions provided with Kit for connection and use of a Parallel Kit.
2. Only connect two identical Generators together using a Parallel Kit.
3. Connect Parallel Kit only to terminals marked "Parallel Outlets" 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.

Button/Coin Battery Safety

⚠WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH OF CHILDREN**
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.



This symbol means:
INGESTION HAZARD: This product contains a button cell or coin battery.

1. Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
2. Even used batteries may cause severe injury or death.
3. Call a local poison control center for treatment information.
4. Non-rechargeable batteries are not to be recharged.
5. Do not force discharge, recharge, disassemble, heat above 140° Fahrenheit or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.

Service Precautions

1. **Before service, maintenance, or cleaning:**
   a. **Unplug all devices from the generator.**
   b. **Turn the Selector Switch to its "STOP" position.**
   c. **Allow the engine to completely cool.**
   d. **Then, remove the spark plug cap from the spark plug.**
2. Keep all safety guards in place and in proper working order. Safety guards include muffler, air cleaner, mechanical guards, and heat shields, among other guards.
3. **Keep all electrical equipment clean and dry.** Replace any wiring where the insulation is cracked, cut, abraded, or otherwise degraded. Replace terminals that are worn, discolored, or corroded. Keep terminals clean and tight.
4. **Do not alter or adjust any part of the equipment or its engine that is sealed by the manufacturer or distributor. Only a qualified service technician may adjust parts that may increase or decrease governed engine speed.**
5. Wear ANSI-approved safety goggles, heavy-duty work gloves, and dust mask/respirator during service.
6. Maintain labels and nameplates on the equipment. These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
7. Have the equipment serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the equipment is maintained. Do not attempt any service or maintenance procedures not explained in this manual or any procedures that you are uncertain about your ability to perform safely or correctly.
8. Store equipment out of the reach of children.
9. Follow scheduled engine and equipment maintenance.

Refueling:

1. Turn off the generator before refilling the fuel tank. Do not refill the fuel tank while the engine is hot.
2. Do not smoke, or allow sparks, flames, or other sources of ignition around the equipment, especially when refuelling.
3. **Do not fill fuel tank to the top.** Leave a little room for the fuel to expand as needed.
4. Refuel in a well-ventilated area only.
5. Wipe up any spilled fuel and allow excess to evaporate before starting engine. **To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.**

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠WARNING

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



Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required.
The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

At high altitudes, the engine's carburetor, governor, and any other parts that control the fuel-air ratio will need to be adjusted by a qualified mechanic to allow efficient high-altitude use and to prevent damage to the engine and any other devices used with this product.

Grounding

The Generator must be properly grounded in accordance with all relevant electrical codes and standards before operation. In many locations, local code will not require this generator to be grounded when used with cord and plug equipment plugged directly into the receptacles on the generator. However, your local regulations may require the generator to be grounded. Contact a licensed electrician or consult local authorities regarding local grounding requirements. If grounding is required, have the unit grounded by a qualified electrician if you are not qualified to do so.

General grounding instructions are as follows:

Use one of the following as the grounding electrode:

Pipe or conduit, minimum ¾ in. diameter, minimum 8 ft. long. If steel, it must have anti-corrosion coating.

Rod, stainless steel or copper- or zinc-coated steel, minimum 5/8 in. diameter, minimum 8 ft. long.

1. Drive electrode into the ground according to the requirements in the National Electrical Code.
2. Connect a #6 AWG grounding wire (not included) from the Grounding Terminal to the buried electrode.

For additional information on grounding methods, please see the National Electrical Code.

Note: There is a permanent conductor between the portable generator stator winding (Neutral Conductor) and the frame.

Components and Controls

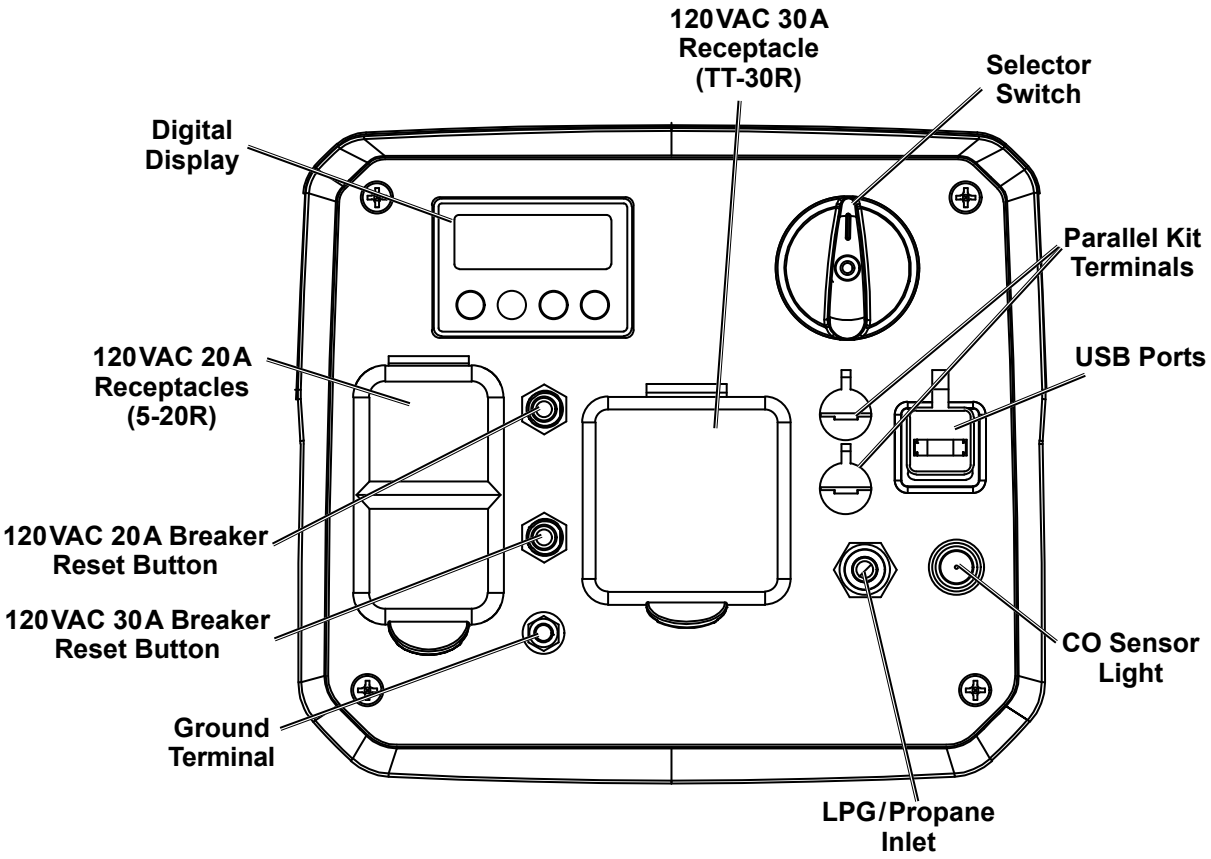


Figure A: Control Panel

WARNING! TO PREVENT SERIOUS INJURY: Follow Parallel Kit instructions for connection and use of a Parallel Kit (Parallel Kit and instructions sold separately).

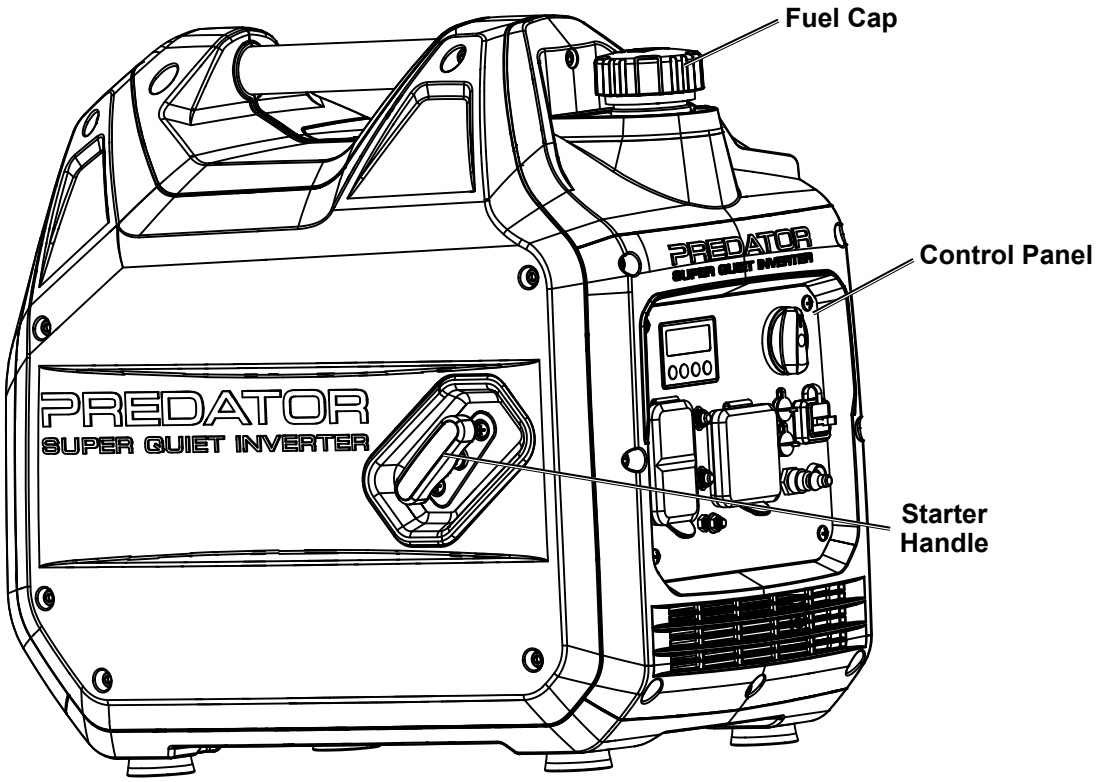


Figure B: Generator Handle Side

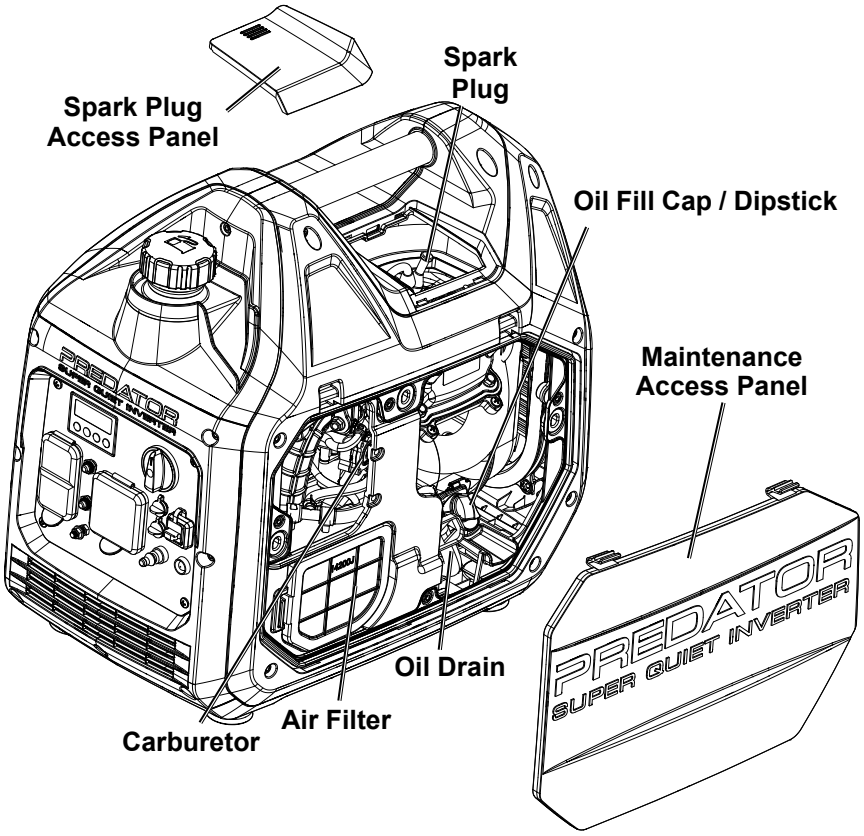
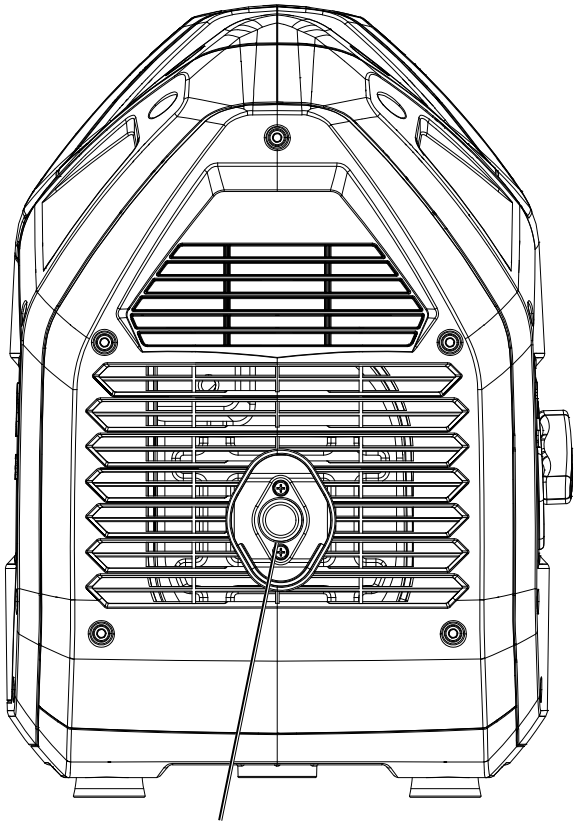


Figure C: Generator Rear and Interior



High Altitude Operation Above 2000 feet

⚠WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:
Follow instructions 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 proceeding. Do not smoke.

NOTICE: Warranty void if necessary adjustments are not made for high altitude use.

At high altitudes, the engine's carburetor, governor, and any other parts that control the fuel-air ratio will need to be adjusted by a qualified mechanic to allow efficient high-altitude use and to prevent damage to the engine and any other devices used with this product. The fuel system on this engine may be influenced by operation at higher altitudes. Proper operation can be ensured by installing an altitude kit at altitudes higher than 2000 ft. above sea level. At elevations above 8000 ft, the engine may experience decreased performance, even with the proper main jet. Operating this engine without the proper altitude kit installed may increase the engine's emissions and decrease fuel economy and performance. The kit should be installed by a qualified mechanic.

Note: Not all Generator models have a Solenoid. Skip those steps if a Solenoid is not present.

1. Turn off the Engine.
2. Close the Gasoline Valve by turning the Selector Switch to the "STOP" position.
3. Remove the Maintenance Access Panel to access the Carburetor.
4. Place a bowl under the Fuel Cup to catch any spilled fuel.
5. Unthread the screws holding the Solenoid in place.

CAUTION! Carburetor bowl may have gas in it which will leak upon removing the Solenoid/Bolt.

6. Disconnect the Solenoid and Solenoid Seal from the Bolt.
7. Unthread the Bolt holding the Fuel Cup.
8. Remove the Bolt, Bolt Seal, Fuel Cup, Fuel Cup Seal and Main Jet from the body of the Carburetor assembly. A carburetor screwdriver (not included) is needed to remove and install the Main Jet.

Note: The mixing tube is held in place by the Main Jet and might fall out when it is removed. If it falls out, replace it in the same orientation before replacing the Main Jet.

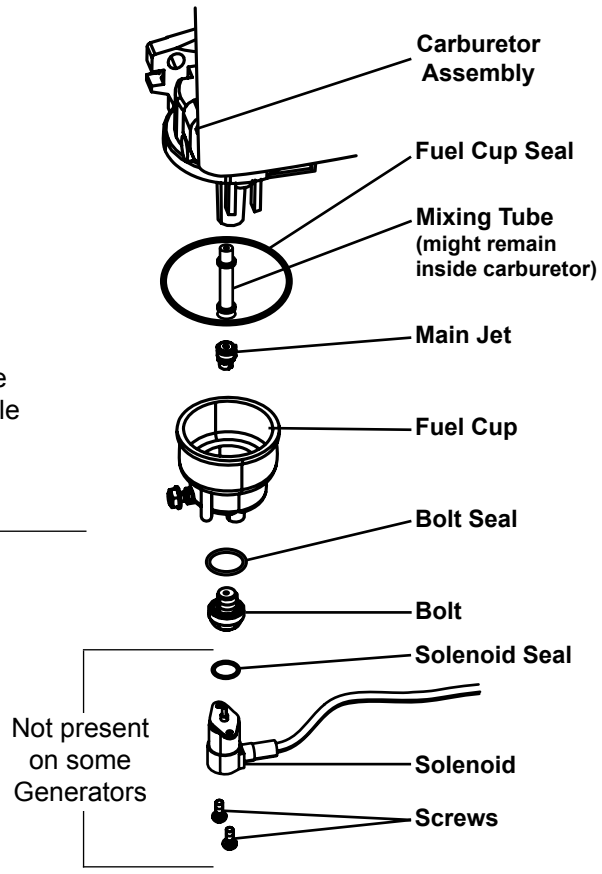
9. Replace the Main Jet with the replacement Main Jet needed for your altitude range (part 1a, 2a, or 3a).

Note: The Fuel Cup Seal and Bolt Seal may be damaged during removal and should be replaced with the new ones from the kit.

10. Replace the Fuel Cup Seal (5a), Fuel Cup, Bolt Seal (4a), and Bolt. Tighten in place.

NOTICE: Do not cross thread bolt when tightening. Finger tighten first and then use a wrench to make sure the bolt is properly threaded.

11. Replace the Solenoid and Solenoid Seal (6a), and tighten in place with screws.
12. Replace the Maintenance Access Panel.
13. Wipe up any spilled fuel and allow excess to evaporate before starting Engine. To prevent FIRE, do not start the Engine while the smell of fuel hangs in the air.



High Altitude Kit Component List - A

Part	Description	Qty
1a	Main Jet 2000-3000 ft.	1
2a	Main Jet 3000-6000 ft.	1
3a	Main Jet 6000-8000 ft.	1
4a	Bolt Seal	1
5a	Fuel Cup Seal	1
6a	Solenoid Seal	1

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

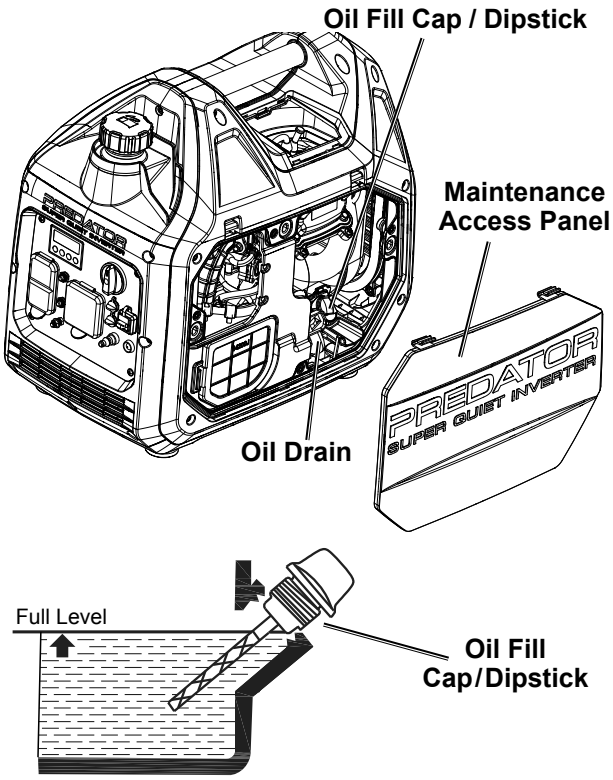
Pre-Start Checks

Only operate the generator outside and at least 20 feet away from people, animals, and structures, with exhaust pointed away. Inspect Engine and Generator looking for damaged, loose, and missing parts before set up and starting. Keep generator maintenance access panels in place and secured during operation. If any problems are found, do not use equipment until fixed properly.

Checking and Filling Engine Oil

NOTICE: Generator is shipped without engine oil. Engine's crankcase MUST be filled with oil before first use. Your Warranty is VOID if the Engine's crankcase is not properly filled with oil before first use and before each use thereafter. Before each use, check the oil level. Engine will not start with low or no engine oil.

1. Make sure the Engine is stopped and is level.
2. On the right side of the Generator, remove the Maintenance Access Panel, as shown to the right.
3. Clean the top of the Oil Fill Cap/Dipstick and the area around it. Remove the Cap/Dipstick, turning it counterclockwise.
4. Check the oil level. The oil level should be up to the edge of the hole as shown.
5. As needed, add the appropriate type of oil until the oil level is at the proper level. SAE 10W-30 oil is recommended for general use.
6. Thread the Oil Fill Cap/Dipstick back in clockwise and replace the Maintenance Access Panel.



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

For Gasoline Operation: Checking and Filling Fuel



⚠WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:
Fill the fuel 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 fuel. Do not smoke.

1. Clean the Fuel Cap and the area around it.
2. Unscrew and remove the Fuel Cap.
3. Remove the Strainer and remove any dirt and debris. Then replace the Strainer.

Note: Do not use gasoline containing more than 10% ethanol (E10). Do not use E85 ethanol. Add fuel stabilizer to the gasoline or the Warranty is VOID.

Note: 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 and/or causing damage.

4. If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use.
5. Replace the Fuel Cap.
6. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

For LPG Operation: Connecting LPG/Propane Tank

a. **The LPG/Propane tank must have a minimum capacity of 20lb.**

b. **The LPG/Propane tank must conform to the standard as listed in Setup Precautions section.**

c. **Propane tanks that use a liquid withdrawal system cannot be used with this Generator.**

d. **Verify the re-qualification date on the tank has not expired.**

e. **Connect LPG/Propane tank using provided attachment kit only. Kit includes 1.5 meter (4.9 ft) Hose. Place tank as far away from Generator as Hose allows and away from engine exhaust. Do not place tank above Generator. Do not use included LPG/Propane Hose with any other appliances.**

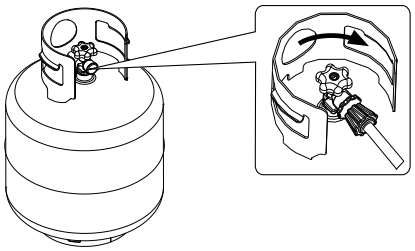
f. **All new tanks or used tanks that have not been plugged or kept closed must be purged of air and moisture by a propane supplier prior to filling.**

g. **Position the tank so the connection between the tank valve and the LPG/Propane Inlet will not cause sharp bends or kinks in the Hose.**

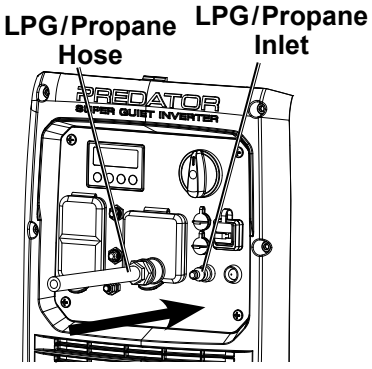
h. **Inspect the LPG/Propane Hose before every use. Do not use damaged equipment. If damage is detected, have the problem corrected before further use.**

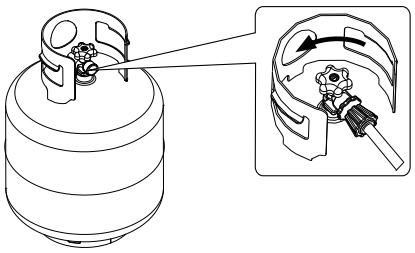
⚠WARNING! EXPLOSION HAZARD. TO PREVENT SERIOUS INJURY:
Do not start the engine if the smell of LPG/Propane hangs in the air. Close the propane tank valve and disconnect the LPG/Propane hose from the Generator when not in use.

1. Turn the Generator OFF and place on a flat surface in a well ventilated area.
2. Verify that the propane tank valve is in the fully closed position.
3. Remove the cover on the LPG/Propane Inlet.
4. Align the finger on the female hose fitting on the LPG/Propane Hose with the slot next to the male coupling on the Generator.
5. Insert the female hose fitting into the coupling and push in until it clicks into place.
6. Remove the safety plug or cap from the propane tank valve.
7. Attach the other end of the Hose to the LPG/Propane connector on the tank. Hand tighten clockwise to a positive stop. To prevent damage, do not use a wrench or tool to tighten the connector.
8. Turn the propane tank valve to the fully open position. Check for leaks by applying soapy water to all connections. Look for bubbles. If bubbles are present at connections, close the propane tank valve and tighten connections. Open the valve and recheck connections. If a leak continues or is not at a connection do not use the Generator. Have the problem corrected before further use.



Close Tank Valve





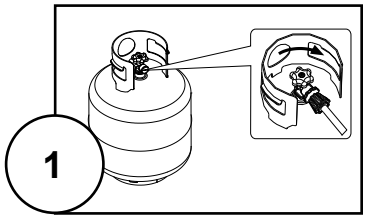
Open Tank Valve

Starting the Engine – Gasoline Operation

Before Starting the Engine

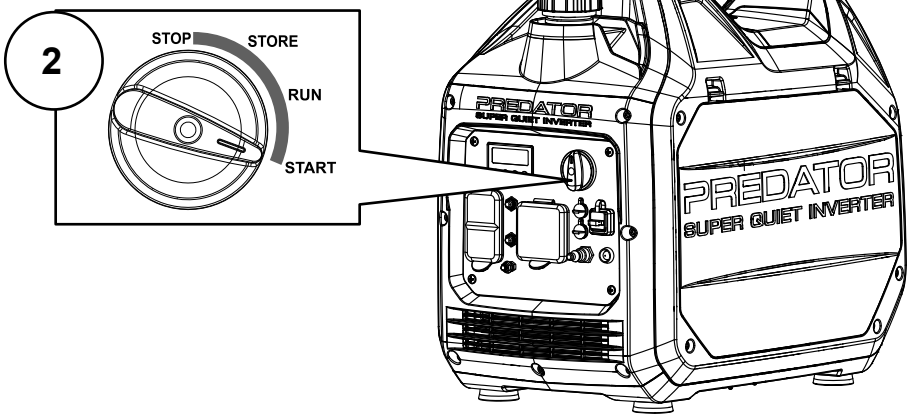
a. **Inspect the generator and engine.**
b. **Disconnect all electrical loads from the generator.**
c. **Fill the engine with the proper amount and type of both stabilizer-treated unleaded gasoline and oil.**

1. Fully close the valve on the LPG/Propane tank.

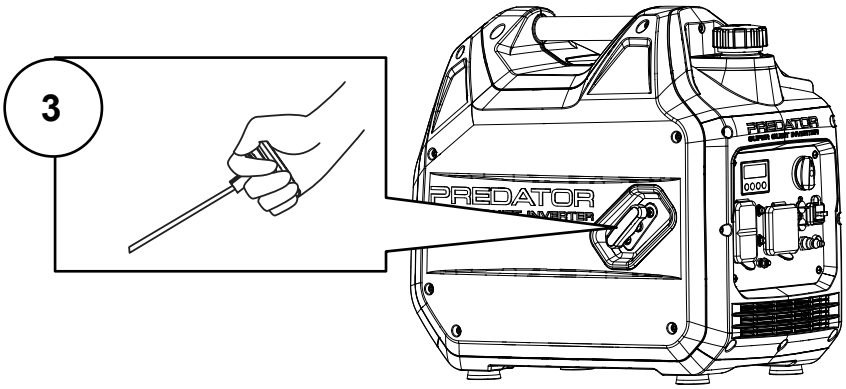


2. Turn Switch to START position.

Note: If Engine is warm, turn Switch to RUN position.

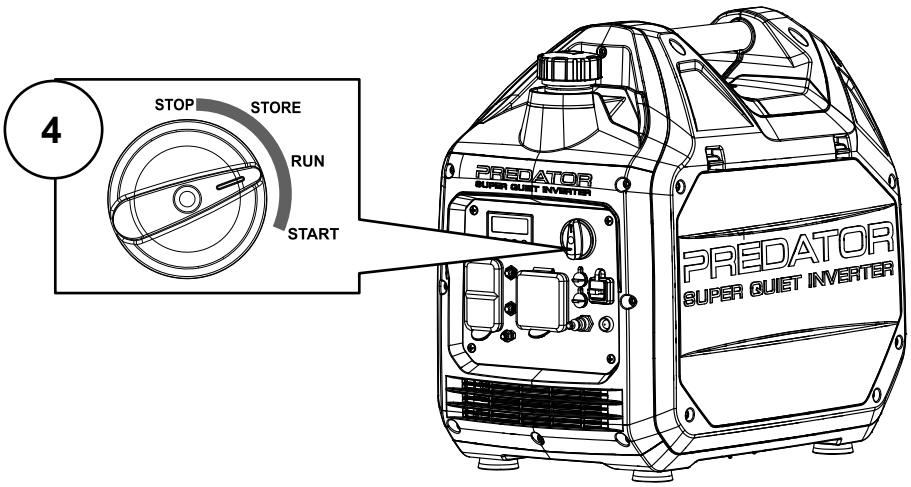


3. Grip the Starter Handle loosely and pull it slowly several times to allow gasoline to flow into the Engine's carburetor. Then pull the Starter Handle gently until resistance is felt. Allow Cable to retract fully and then pull it quickly. Repeat until the Engine starts. Do not let the Starter Handle snap back against the housing. Hold it as it recoils so it doesn't hit the housing.



4. Turn Switch to RUN position.

Note: If LPG/Propane tank valve is open the Generator will run off LPG/Propane.



If engine does not start:

- **Check engine oil level**. Engine will not start with low or no engine oil.
- **Check spark arrestor cleanliness**. Engine will not start if spark arrestor is clogged.

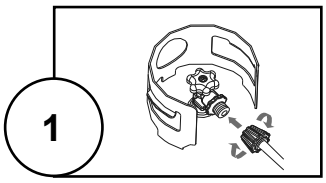
IMPORTANT: Allow the Engine to run at no load for five minutes after each start-up so that the Engine can stabilize.

Starting the Engine – LPG/Propane Operation

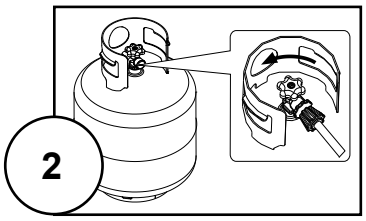
Before Starting the Engine

a. **Inspect the generator and engine.**
b. **Disconnect all electrical loads from the generator.**
c. **Make sure the LPG/Propane hose is correctly connected to the generator and propane tank.**

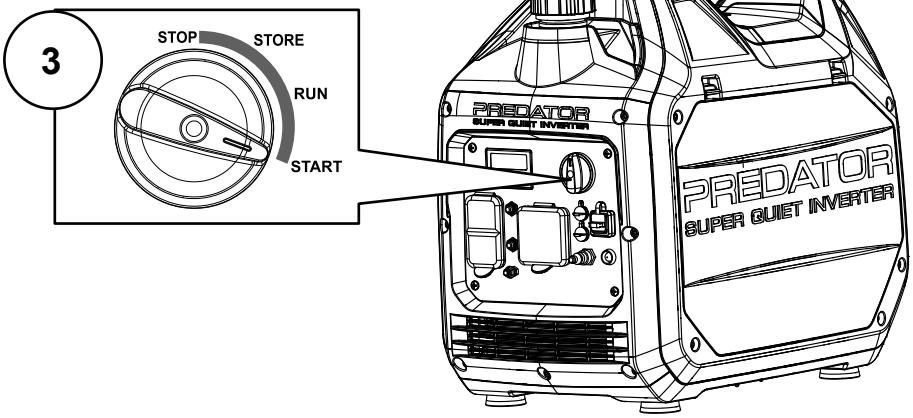
1. Connect LPG/Propane hose to LPG/Propane tank and LPG Inlet on Generator.



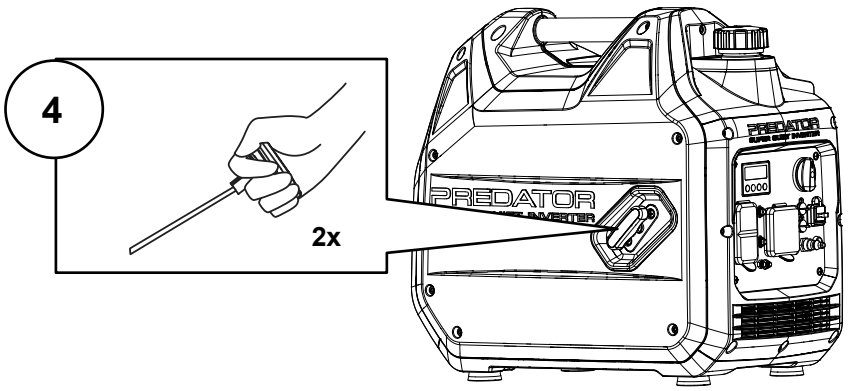
2. Fully open the valve on the LPG/Propane tank.



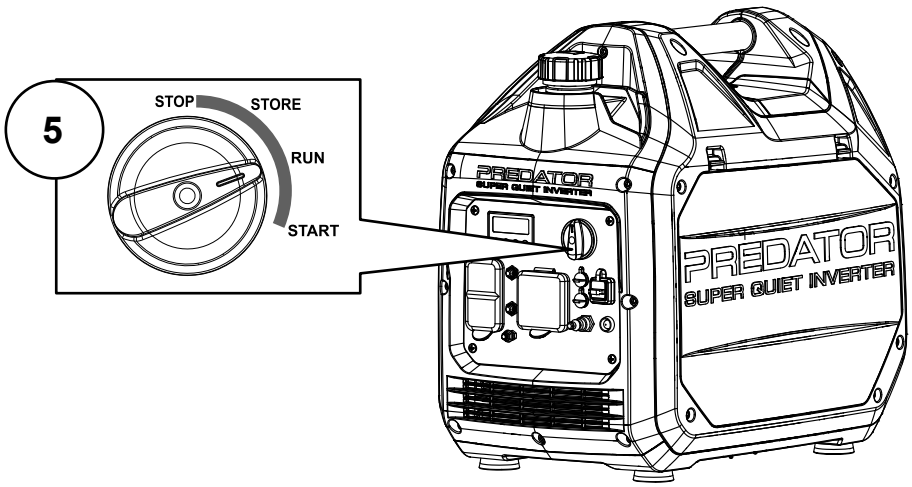
3. Turn Switch to START position.



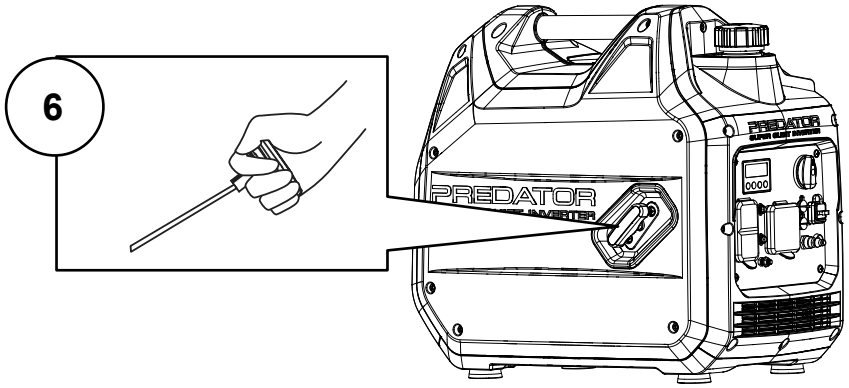
4. Grip the Starter Handle loosely and pull it slowly twice to allow gasoline to flow into the Engine's carburetor.



5. Turn Switch to RUN position.



6. Grip the Starter Handle loosely and pull the Starter Handle gently until resistance is felt. Allow Cable to retract fully and then pull it quickly. Repeat until the Engine starts. Do not let the Starter Handle snap back against the housing. Hold it as it recoils so it doesn't hit the housing.



If engine does not start:

- **Check engine oil level**.
  Engine will not start with low or no engine oil.
- **Check spark arrestor cleanliness**.
  Engine will not start if spark arrestor is clogged.

IMPORTANT: Allow the Engine to run at no load for five minutes after each start-up so that the Engine can stabilize.

Switching Fuel Sources

Fire and explosion hazard. DO NOT add gasoline to the fuel tank or connect LPG/Propane Hose to the generator while the generator is in operation.

The fuel source can be switched while the Engine is running if a propane tank is connected to the Generator BEFORE operation.

Switching from Gasoline to LPG/Propane

1. **IMPORTANT: Disconnect all electrical loads from the Generator before switching from one fuel type to another.**
2. Fully open the valve on the LPG/Propane tank.

Switching from LPG/Propane to Gasoline

1. **IMPORTANT: Disconnect all electrical loads from the Generator before switching from one fuel type to another.**
2. Turn the LPG/Propane tank valve to the fully closed position.

Note: When switching fuel sources, the Engine may run rough for a few seconds. If the Engine stops when switching fuel sources, the unit may be restarted using either fuel source.

Break-in Period

a. Breaking-in the Engine will help to ensure proper equipment and Engine operation.

b. The break-in period will last about 30 hours of use.
DO NOT exceed 75% of the Generator's running wattage during this period.

- Change the engine oil after this period.

Under normal operating conditions subsequent maintenance follows the schedule explained in the **MAINTENANCE** section.

CARBON MONOXIDE SHUTOFF

DANGER! TO PREVENT SERIOUS INJURY AND DEATH FROM CARBON MONOXIDE INHALATION:
The Carbon Monoxide sensor is an additional layer of protection only.
DO NOT USE THE GENERATOR INDOORS OR IN ANY ENCLOSED SPACE OR IN ANY OTHER AREA OR SITUATION THAT WILL ALLOW CARBON MONOXIDE TO ACCUMULATE.

- FLASHING RED LIGHT:
  Dangerous levels of carbon monoxide gas have built up. Leave immediately until area has aired out. Move Generator to well-ventilated area before operation.
- FLASHING YELLOW LIGHT:
  Carbon monoxide sensor malfunction. Sensor needs service. Call 1-800-444-3353 as soon as possible. Do not use the Generator until the sensor is working properly.
  NOTE: Yellow light flashes once after starting to indicate passing self-check and is functioning normally.

The Carbon Monoxide sensor must only be serviced by a qualified technician to restore it to original settings. Do not modify or tamper with the Carbon Monoxide sensor. Not following these instructions can result in death or serious injury due to Carbon Monoxide sensor malfunction.-

Calculating Total Wattage of Devices Used with the Generator

Before using the Generator, check that the products you want to plug into the unit are below the rated and maximum wattage ratings of the Generator. Use the Wattage Calculation Table below, and the watts listed on your products, to help calculate multiple wattage totals.

To use the table:

1. Add up the Running Watts for all items you would like to use at any given time.
2. Make sure that this total is under the 3200 Gasoline, 2900 LPG running wattage of the Generator.
3. Find the single highest starting watts for the selected items and add to the total.
4. Make sure that this total is under the 4200 max. starting wattage of the Generator.
5. Plug in and turn on products from largest wattage to smallest.

Wattage Calculation Table

Equipment	Running Watts
Total Running Watts (must be less than 3200 Gasoline - 2900 LPG)	
Largest Additional Start-up Watts	
Total Startup Watts needed for all loads (must be less than 4200)	

Example

Equipment	Running Watts
Electric Water Heater (2,000 + 0)	*2,000*
Hand Drill (600 + 600)	*600*
Total Running Watts (must be less than 3200 Gasoline -2900 LPG)	*2,600*
Largest Additional Start-up Watts	*600*
Total Startup Watts needed for all loads (must be less than 4200)	*3,200*

A generator that is rated more than the minimum required max. starting watts will last much longer than a generator that only supplies the exact watts needed.

To Calculate Wattage
Volts and amps can be multiplied together to get watts (volts x amps = watts).

To Calculate Additional Start-Up Watts (If They Are Not Listed)
For equipment with a motor: Use the rated watts amount as an estimate of additional Start-up Watts.

For most lights or heaters: there are no additional start-up watts.

Wattage Estimate Charts

Note: Wattages listed below are estimates for that type of equipment only. Check nameplate wattages on all loads before connecting to Generator.

EMERGENCY		
Device	**Running Watts**	**Additional Start-up Watts**
Refrigerator/Freezer	700	1500
Radio	100	0

JOB SITE		
Device	**Running Watts**	**Additional Start-up Watts**
Air Compressor - 1/2 HP	1000	1000
Table Saw - 10"	1700	1300
Belt Sander - 3"	1200	1200
Hand Drill - 1/2"	600	600
Halogen Work Light	1000	0
Recipricating Saw	900	900

RECREATION		
Device	**Running Watts**	**Additional Start-up Watts**
AM/FM Radio	100	0
Electric Grill	1700	0
Inflator Pump	50	100
CD/DVD Player	100	0
Box Fan - 20"	200	200
Coffee Maker	600	0

HOUSEHOLD		
Device	**Running Watts**	**Additional Start-up Watts**
Computer w/ Monitor	800	0
Electric Clothes Dryer	5500	500
Electric Range	2100	0
Electric Water Heater	2000	0
Light Bulb - 100 watts	100	0
Microwave - 1000 watts	1000	200
Sump Pump - 1/2 HP	1000	1100
Television	400	0
Washing Machine	1100	1100
Well Pump - 1/2 HP	1000	1000

LAWN & GARDEN		
Device	**Running Watts**	**Additional Start-up Watts**
Hedge Trimmer	400	400
Pressure Washer	1200	1200
Lawn Mower	1200	1200
Edger	1000	1000

HEATING & COOLING		
Device	**Running Watts**	**Additional Start-up Watts**
Central AC - 10,000 BTU	1500	1500
Furnace Fan - 1/2 HP	900	1400
Space Heater	1800	0
Window AC - 10,000 BTU	1200	600

Connecting 120VAC Loads to the Generator

Overload (Output) Indicator

Note: The Output Button may turn red for a few seconds as a large device starts up. 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.
2. The Output Button will begin blinking red if the generator is approaching overload limit. If the Output Button stays solid red the Generator stops producing power, the generator has been overloaded.
3. Turn off and disconnect all electrical devices. 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. Press the Output Button to restore output.
6. Reconnect devices while being careful to not overload Generator.
7. Distribute loads evenly across receptacles to achieve rated output.

Low Oil Indicator

1. If the Engine oil level is too low, the LOW OIL light turns on and the Engine will automatically shut off.
2. The Engine cannot be restarted until the proper amount of oil has been added. 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: Do not run the engine with too little oil. Engine will shut off if engine oil level is too low.

Economy (ESC) Button

Note: Press ECS Button to turn ON (green) and OFF (no illumination).

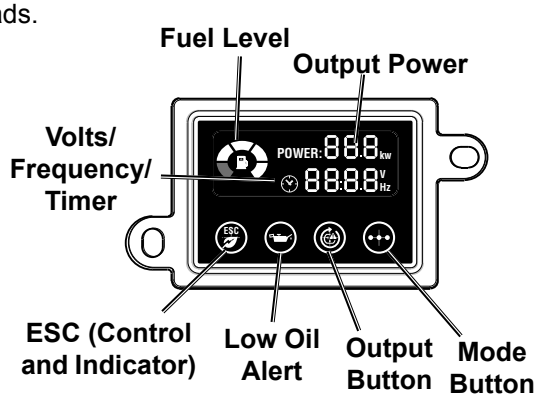
1. Turn ON ESC Button to limit noise and fuel consumption for lighter Generator loads.
2. Turn OFF ESC Button to operate engine at full speed for heavy loads.

Digital Display

The Display Screen can be used to monitor the operating status of the Generator. Use the Display Control Button to toggle through the following indicators:

- V - Voltage
- Hz - Frequency
- KW - Power
- Hour - Current run time and accumulative run time.

Fuel Level Display - Always shown on screen.



Circuit Breakers

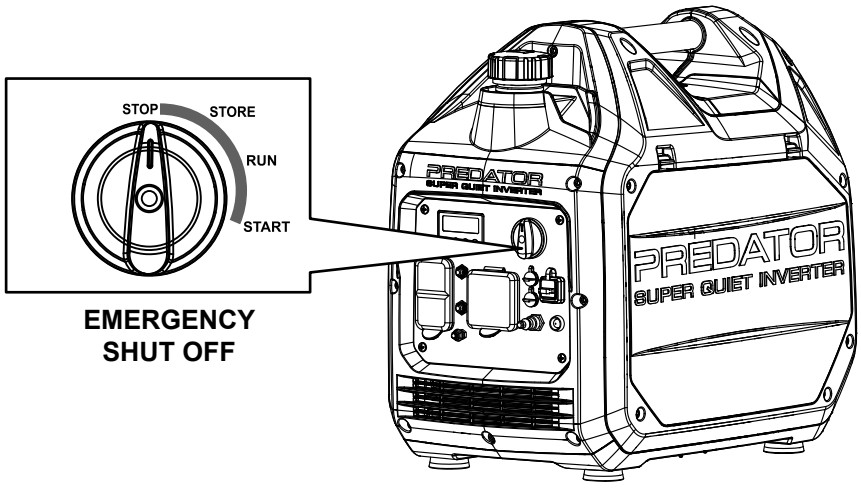
The circuit breaker protects the Generator from overloading. The rating of the breaker and the load it protects are marked near the breaker. Should any of the Circuit Breakers trip, the Generator will stop the electricity output. If this happens, unplug all loads from the Generator. Then, turn the tripped Circuit Breaker to ON and re-attach loads gradually.

Note: For push-type Circuit Breakers allow a few minutes for cool-down before restarting.

Stopping the Engine

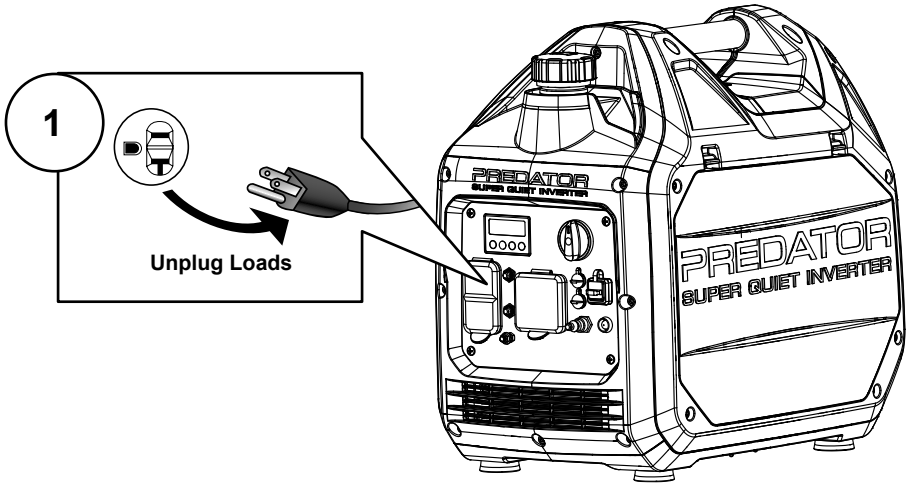
To stop the Engine in an emergency, turn the Selector Switch to the “STOP” position.

NOTICE: Generator shutoff under load may damage the Generator and attached equipment.

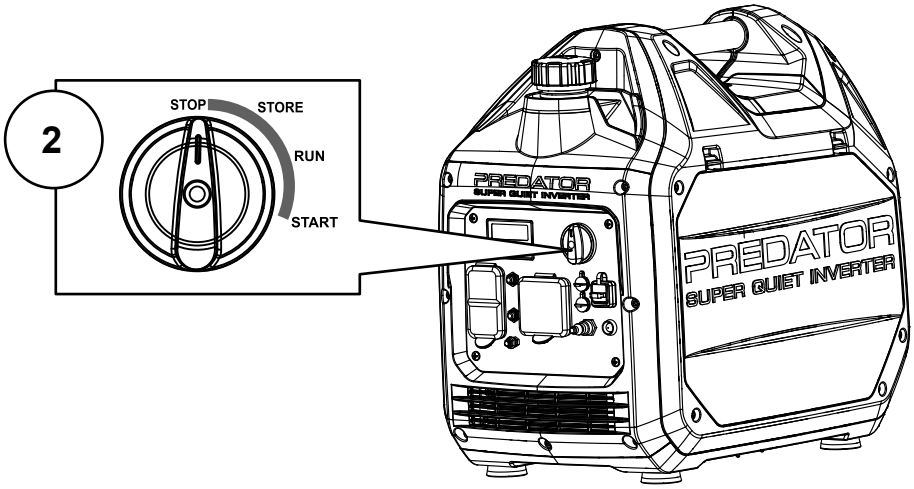


Under normal conditions, use the following procedure to shut off the Generator:

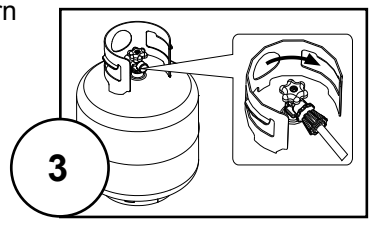
1. Turn all electrical load devices off and unplug them from the Generator.



2. Turn the Selector Switch to the “STOP” position.



3. If operating on LPG/Propane, turn the propane tank valve to the fully closed position.



⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING:
Turn the Selector Switch to the "STOP" position, wait for the engine to cool, and disconnect the spark plug cap before performing any inspection, maintenance, or cleaning procedures.

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

Follow all service instructions in this manual. The engine may fail critically if not serviced properly.

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.

Cleaning, Maintenance, and Lubrication Schedule

Note: This maintenance schedule is intended solely as a general guide. If performance decreases or if equipment operates unusually, check systems immediately. The maintenance needs of each piece of equipment will differ depending on factors such as duty cycle, temperature, air quality, fuel quality, and other factors.

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

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	Page
1. Brush off outside of engine 2. Check engine oil level 3. Check air filter 4. Check LPG/Propane hose assembly	✓						
Change engine oil				✓			28
Clean/replace air cleaner			✓*				29
Check and clean spark arrestor				✓			29
Check and clean spark plug				✓			30
1. Check/adjust valve clearance 2. Clean fuel tank, strainer and carburetor 3. Clean carbon build-up from combustion chamber					✓**		–
Replace fuel line if necessary						✓**	–

*Service more frequently when used in dusty areas.

**These items should be serviced by a qualified technician.

Checking and Filling Fuel



⚠WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:
Fill the fuel 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 fuel.
Do not smoke.

1. Clean the Fuel Cap and the area around it.
2. Unscrew and remove the Fuel Cap.
3. Remove the Strainer and remove any dirt and debris. Then replace the Strainer.

Note: Do not use gasoline containing more than 10% ethanol (E10). Do not use E85 ethanol. Add fuel stabilizer to the gasoline or the Warranty is VOID.

Note: 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 and/or causing damage.

4. If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use.
5. Replace the Fuel Cap.
6. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

Engine Oil Change

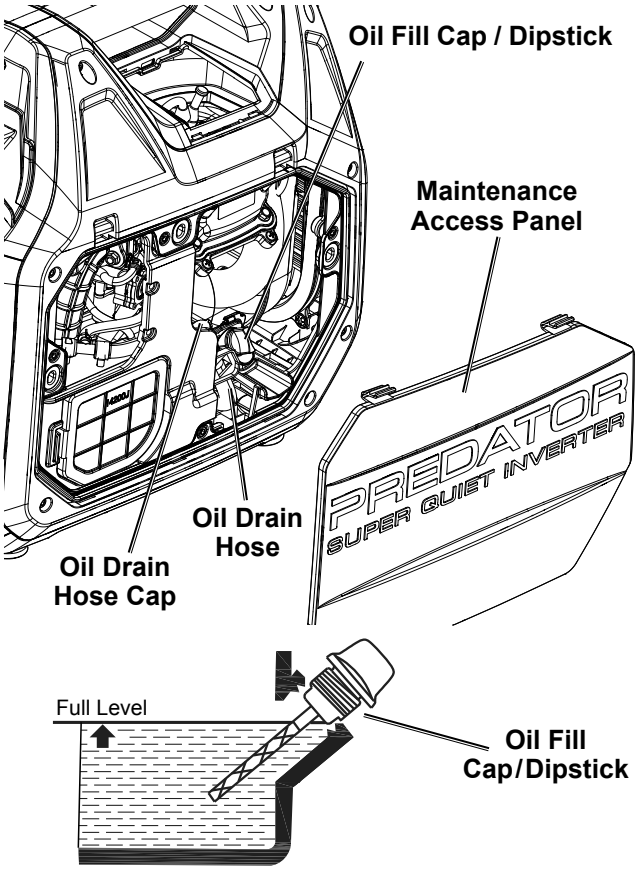
⚠**CAUTION!** Oil is very hot during operation and can cause burns. Wait for engine to cool before changing oil.

1. Make sure the Engine is stopped and is level.
2. On the right side of the Generator, press down on the two Tabs and remove the Maintenance Access Panel, as shown to the right.
3. Clean the top of the Oil Fill Plug / Dipstick and the area around it. Remove the Cap / Dipstick, turning it counterclockwise.
4. Unclip Oil Drain Hose and remove the Cap. Place hose into oil drain pan. Tilt Generator slightly to facilitate drainage. Wait for oil to drain completely. Recycle used oil.
5. Replace the Oil Drain Cap. Put Oil Drain Hose back into the Generator. Set Generator back down on a level surface.
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.

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

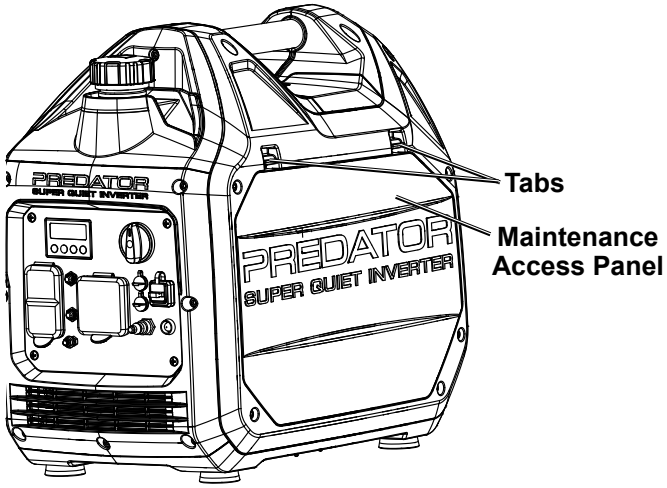
7. Check the oil level. The oil level should be up to the edge of the hole as shown.
8. Thread the Oil Fill Cap/Dipstick back in clockwise and replace the Maintenance Access Panel.

NOTICE: Do not run the engine with too little oil. Engine will not start with low or no engine oil.

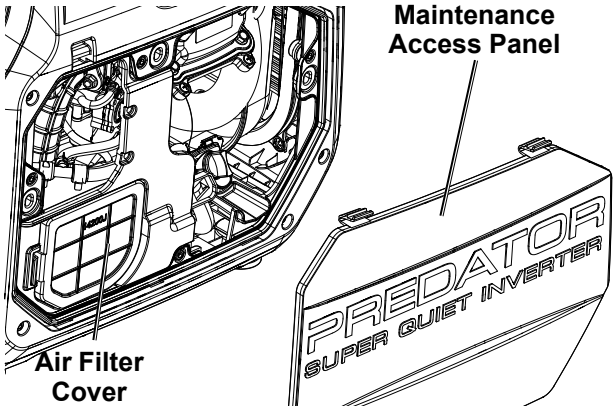


Air Filter Element Maintenance

1. Remove the Maintenance Access Panel on the right side of the Generator by pressing down on the two tabs and pulling the panel off.



2. Remove the Air Filter Cover and the air filter elements and check for dirt. Clean as described below.



3. **Cleaning:**
   - For “paper” filter elements:
     To prevent injury from dust and debris, wear ANSI-approved safety goggles, NIOSH-approved dust mask/respirator, and heavy-duty work gloves. In a well-ventilated area away from bystanders, use pressurized air to blow dust out of the air filter.
   - For foam filter elements:
     Wash the element in warm water and mild detergent several times. Rinse. Squeeze out excess water and allow it to dry completely. Soak the filter in lightweight oil briefly, then squeeze out the excess oil.
4. Install the cleaned filter.
5. Secure the Air Filter Cover and replace the Maintenance Access Panel before use.

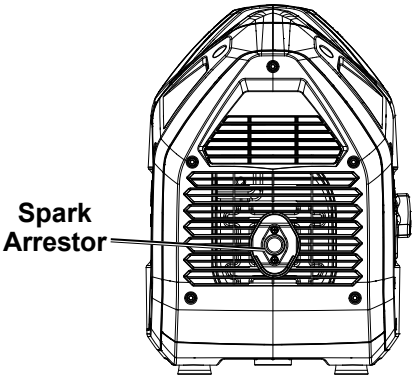
Spark Arrestor Maintenance

⚠WARNING

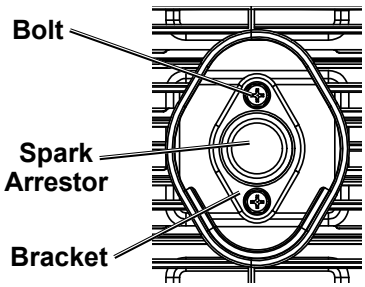
TO PREVENT SERIOUS INJURY AND FIRE: Operate only with proper spark arrestor installed.

Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

1. Allow the Generator to cool completely.
2. Remove the two Bolts holding the Spark Arrestor Bracket in place.



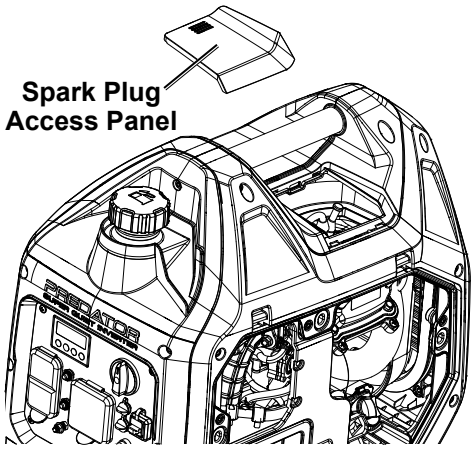
3. Clean the Spark Arrestor using a wire brush (sold separately). Replace Arrestor if damaged.



4. **WARNING! TO PREVENT SERIOUS INJURY FROM ACCIDENTAL BRUSH FIRE, secure Spark Arrestor back in place immediately after cleaning and before further operation.**

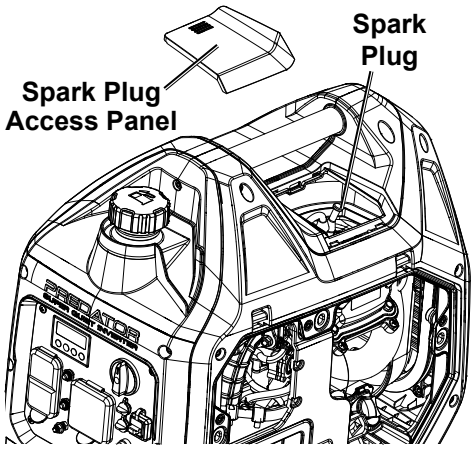
Spark Plug Maintenance

1. Remove Spark Plug Access Cover from top of Generator by sliding it towards you.



2. Remove Spark Plug Cap from end of plug by pulling it upwards by hand. Clean out debris from around Spark Plug.

3. Use the Hex Spark Plug Wrench through the access in the top of the Generator to 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, polish it using emery paper. If the white insulator is cracked or chipped, the Spark Plug needs to be replaced.

NOTICE: Use only BP6ES (NGK) type spark plug or equivalent. Using an incorrect spark plug may damage the engine.

5. When installing a new spark plug, adjust the plug's gap to the specification on the Specifications chart. Do not pry against the 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.
   - **Gasket-style**:
     Finger-tighten until the gasket contacts the cylinder head, then tighten about 1/2-2/3 turn more.
   - **Non-gasket-style**:
     Finger-tighten until the plug contacts the cylinder head, then tighten about 1/16 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 be damaged.

7. Apply dielectric spark plug boot protector (not included) to the end of the spark plug and reattach the cap securely.

8. Replace Spark Plug Access Cover before use.

Storage

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

1. **CLEANING**:
   Wait for engine to cool, then clean engine with dry cloth. **NOTICE: Do not clean using water.** The water will gradually enter the engine and cause damage.

Note: Cover the LPG/Propane Inlet with the provided cap during cleaning and storage.

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. Follow fuel stabilizer manufacturer's recommendations for use. Refer to *Checking and Filling Fuel* on page 17.

   Aged gasoline that has not been treated with stabilizer ahead of time must be safely drained away and not run through the Engine.



   ⚠WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:
   Fill 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 fuel. Do not smoke.

   Draining the Carburetor

   After closing the Fuel Valve by turning the Selector Switch to the "STOP" position, place an appropriate container under the Carburetor. Route the fuel drain hose on the Carburetor to the container, then carefully loosen the Drain Bolt and allow the fuel to drain completely. Replace the Drain Bolt after draining.

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

Note: Know and obey city and state laws for proper disposal of oil and gasoline. Dispose of properly in accordance with all local laws and regulations.

3. **LUBRICATION:**
   a. Change engine oil.
   b. Clean out area around spark plug. Remove spark plug and pour one tablespoon of engine oil into cylinder through spark plug hole.
   c. Replace spark plug, but leave spark plug cap disconnected.
   d. Pull Starter Handle to distribute oil in cylinder. Stop after one or two revolutions when you feel the piston start the compression stroke (when you start to feel resistance).

4. **STORAGE AREA:**
   Cover and store in a dry, level, well-ventilated area out of reach of children. Storage area should also be away from ignition sources, such as water heaters, clothes dryers, and furnaces.
   Prevent Generator damage and malfunction! Do not stand Generator on its end. Fuel and oil can run into Generator components ruining Generator.

NOTICE: During extended storage periods the Engine must be started every 3 months and allowed to run for 15–20 minutes or the Warranty is VOID.

5. **AFTER STORAGE:**
   Before starting the Engine after storage, keep in mind that 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 sitting beyond the fuel stabilizer's recommended time period, or if the Engine does not start.

Troubleshooting

Problem	Possible Causes	Probable Solutions
Engine will not start	FUEL RELATED:	FUEL RELATED:
	1. No fuel in tank or gasoline valve closed.	1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline and open gasoline valve. **Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.).**
	2. No fuel flow.	2. Move Selector Switch to Run or Start. For LPG/Propane fuel, make sure valve on LPG/Propane tank is fully open.
	3. Gasoline with more than 10% ethanol used. (E15, E20, E85, etc.)	3. Clean out ethanol rich gasoline from fuel system. Replace components damaged by ethanol. Use fresh 87+ octane stabilizer-treated unleaded gasoline only. **Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.).**
	4. Low quality or deteriorated, old gasoline.	4. Use fresh 87+ octane stabilizer-treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.).**
	5. Carburetor not primed.	5. Pull on Starter Handle to prime.
	6. Dirty fuel passageways.	6. Clean out passageways using fuel additive. Heavy deposits may require further cleaning.
	7. Carburetor needle stuck. Fuel can be smelled in the air.	7. **Gently** tap side of carburetor float chamber with screwdriver handle.
	8. Too much fuel in chamber. This can be caused by the carburetor needle sticking.	8. Turn Choke to RUN position. Remove spark plug and pull the start handle several times to air out the chamber. Reinstall spark plug and set Choke to START position.
	9. Clogged Fuel Filter.	9. Replace Fuel Filter.
	IGNITION (SPARK) RELATED:	IGNITION (SPARK) RELATED:
	1. Spark plug cap not connected securely.	1. Connect spark plug cap properly.
	2. Spark plug electrode wet or dirty.	2. Clean spark plug.
	3. Incorrect spark plug gap.	3. Correct spark plug gap.
	4. Spark plug cap broken.	4. Replace spark plug cap.
	5. Incorrect spark timing or faulty ignition system.	5. Have qualified technician diagnose/ repair ignition system.
	COMPRESSION RELATED:	COMPRESSION RELATED:
	1. Cylinder not lubricated. Problem after long storage periods.	1. Pour tablespoon of oil into spark plug hole. Crank engine a few times and try to start again.
	2. Loose or broken spark plug. (Hissing noise will occur when trying to start.)	2. Tighten spark plug. If that does not work, replace spark plug. If problem persists, may have head gasket problem, see #3.
	3. Loose cylinder head or damaged head gasket. (Hissing noise will occur when trying to start.)	3. Tighten head. If that does not remedy problem, replace head gasket.
	4. Engine valves or tappets mis-adjusted or stuck.	4. Have qualified technician adjust/ repair valves and tappets.
	ENGINE OIL RELATED:	ENGINE OIL RELATED:
	1. Low engine oil.	1. Fill engine oil to proper level. Check engine oil before EVERY use.
	2. Engine is over filled with oil.	2. Remove excess oil. Fill engine oil to proper level. See Checking and Filling Engine Oil on page 17.
	3. Engine mounted on slope, triggering low oil shutdown.	3. Operate engine on level surface. Check engine oil level.
	SPARK ARRESTOR RELATED:	SPARK ARRESTOR RELATED:
	Spark Arrestor clogged with soot.	Clean and replace Spark Arrestor.

Follow all safety precautions whenever diagnosing or servicing the generator or engine.

Problem	Possible Causes	Probable Solutions
Engine misfires	1. Spark plug cap loose. 2. Incorrect spark plug gap or damaged spark plug. 3. Defective spark plug cap. 4. Old or low quality gasoline. 5. Incorrect compression.	1. Check cap and wire connections. 2. Re-gap or replace spark plug. 3. Replace spark plug cap. 4. Use only fresh 87+ octane stabilizer-treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.).** 5. Diagnose and repair compression. Use **Engine will not start: COMPRESSION RELATED** section.
Engine stops suddenly	1. Carbon Monoxide level high. Red light on Carbon Monoxide Sensor illuminates. 2. CO Sensor Alarm flashes yellow continually shortly after starting. 3. CO Sensor Alarm flashes yellow continually after longer period of operation. 4. Low oil shutdown. 5. Fuel tank empty or full of impure or low quality gasoline. 6. Faulty magneto. 7. Disconnected or improperly connected spark plug cap.	1. Leave area immediately and allow area to ventilate thoroughly. Only operate generator outside. 2. Carbon monoxide sensor malfunction. Sensor needs service. Call 1-800-444-3353 as soon as possible. Do not use the Generator until the sensor is working properly. 3. Make sure to operate Generator within rated ambient temperature; maintain minimum 5 ft. clearance from all sides. 4. Fill engine oil to proper level. Check engine oil before EVERY use. 5. Fill fuel tank with fresh 87+ octane stabilizer treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 6. Have qualified technician service magneto. 7. Secure spark plug cap.
Engine stops when under heavy load	1. Dirty air filter 2. Engine running cold.	1. Clean element. 2. Allow engine to warm up prior to operating equipment.
Engine knocks	1. Old or low quality gasoline. 2. Engine overloaded. 3. Incorrect spark timing, deposit buildup, worn engine, or other mechanical problems.	1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.).** 2. Do not exceed equipment's load rating. 3. Have qualified technician diagnose and service engine.
Engine backfires	1. Impure or low quality gasoline. 2. Engine too cold. 3. Intake valve stuck or overheated engine. 4. Incorrect timing.	1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.).** 2. Use cold weather fuel and oil additives to prevent backfiring. 3. Have qualified technician diagnose and service engine. 4. Check engine timing.
Attached device doesn't have power	1. Device not plugged in properly. 2. Circuit Breaker tripped. 3. Product needs service.	1. Turn off and unplug the device, then plug it back in again and turn on. 2. Turn off and unplug device, reset Circuit Breaker, plug in device and turn on. 3. Have product repaired.
Attached device begins to operate abnormally	1. Problem with device. 2. Rated load capacity exceeded.	1. Immediately unplug device. Have device repaired by a qualified technician, or replace device. 2. Lower the number of items plugged into the Generator to stay within the rated capacity, or use a more powerful generator.

Follow all safety precautions whenever diagnosing or servicing the generator or engine.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE COMPONENT LISTS AND ASSEMBLY DIAGRAMS IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

R**ecord Product's Date Code Here:**_____

Note: If product has no Date Code, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175532374 when ordering parts.

Generator Component List

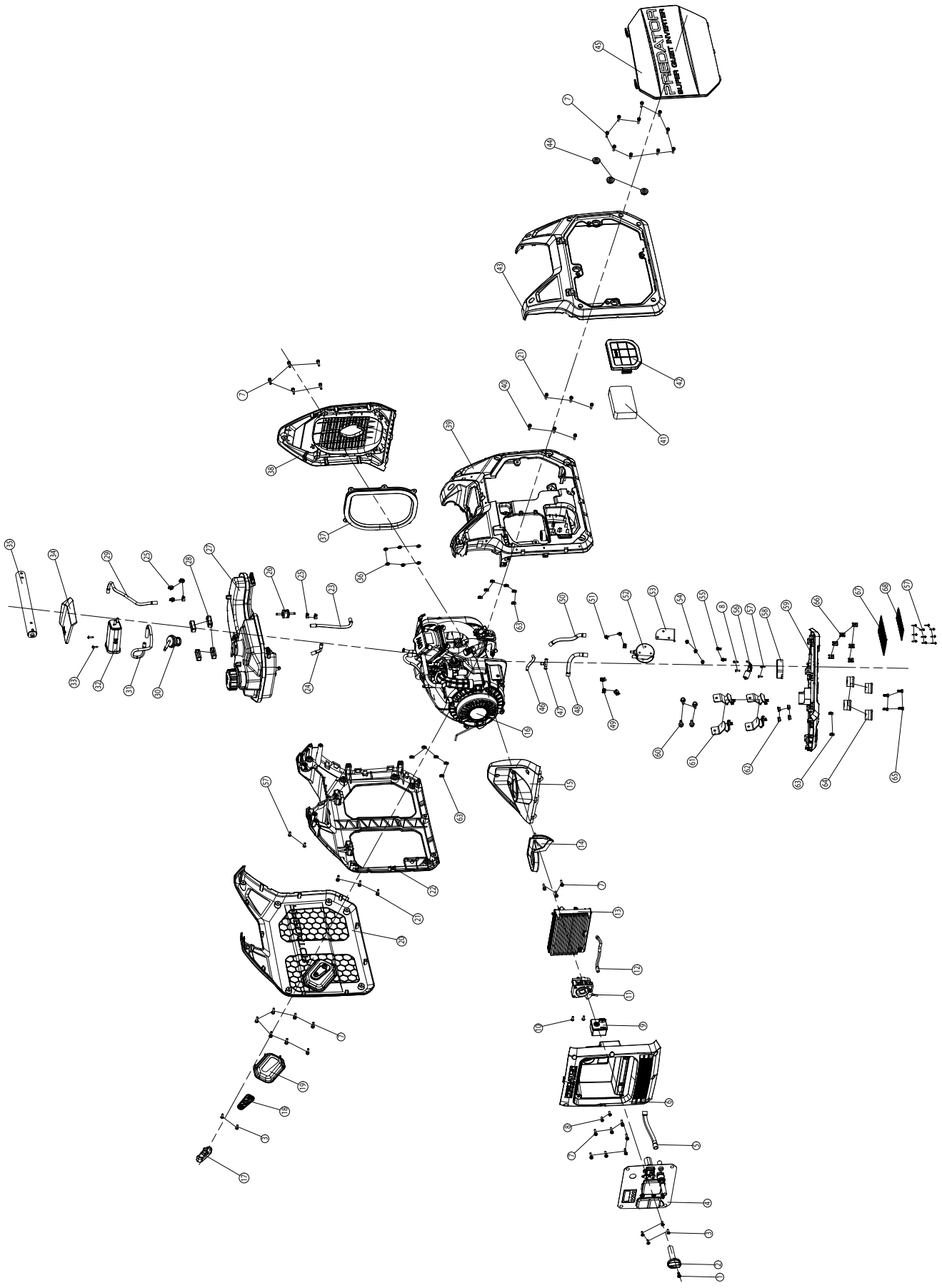
Part	Description	Qty
1	Cross Pan Head Screw M4x16	1
2	Switch Knob	1
3	Cross Pan Head Screw M5x10	6
4	Control Panel Assy	1
5	Gas Pipe	1
6	Intake Plate	1
7	Round Head Bolt M5-0.8x16	34
8	Cross Pan Head Screw M5x14	4
9	CO Alarm	1
10	Tapping Screw M4x14	2
11	Switch	1
12	Fuel Pipe	1
13	Inverter Component	1
14	Oil Filler	1
15	Front Cover Plate	1
16	Engine Assy	1
17	Handle	1
18	Baffle Plate	1
19	Starting Ring	1
20	Left Panel Assy	1
21	Round Head Hex Socket Bolt	6
22	Left Shell Assy	1
23	Fuel Pipe	1
24	Fuel Pipe	1

Part	Description	Qty
25	Clamp	6
26	Check Valve	1
27	Fuel Tank Assy	1
28	Rubber Tank Jacket	1
29	Breather Pipe	1
30	Dump Valve Assy	1
31	Breather Pipe	1
32	Carbon Canister	1
33	Cross Pan Head Tapping Screw ST4.8x/16	2
34	Spark Plug Repair Cover Plate	1
35	Handle Tube Assy	1
36	Hole with Wire Ring	1
37	Air Outlet Rubber Sleeve	1
38	Outlet Plate	1
39	Right Shell Assy	1
40	Round Head Hex Socket Bolt	3
41	Air Filter Element	1
42	Air Filter Cover Plate	1
43	Right Panel Assy	1
44	Rubber Sleeve	3
45	Service Cover Assy	1
46	Fuel Pipe	1
47	Tee Pipe	1
48	Gas Pipe	1
49	Clamp	3
50	Breather Pipe	1

Part	Description	Qty
51	Clamp	3
52	Secondary Pressure Reducing Valve Assy	1
53	Pressure Reducing Valve Support	1
54	Hex Flange Bolt M6-1x10	3
55	Hex Flange Bolt M6-1x12	2
56	Solenoid Valve	1
57	Cross Recessed Pan Head Tapping Screw ST4.8x16	12
58	Power Module	1
59	Power Mounting Base Plate Assy	1
60	Hex Flange Bolt M6-1x16	4
61	Damping Mount	4
62	Hex Flange Nut M6x1	4
63	Clip Nut M5/65MN	12
64	Damping Pad	4
65	Hex Flange Bolt M6-1x16	4
66	Clip Nut M6 Screw Hole 22.6x16x9.8/65MN	6
67	Filter Screen	1
68	Filter Screen	1

The component list and assembly diagram are shown for reference only.
To view all currently available replacement parts, please visit harborfreight.com/parts

Generator Assembly Diagram



Engine Component List

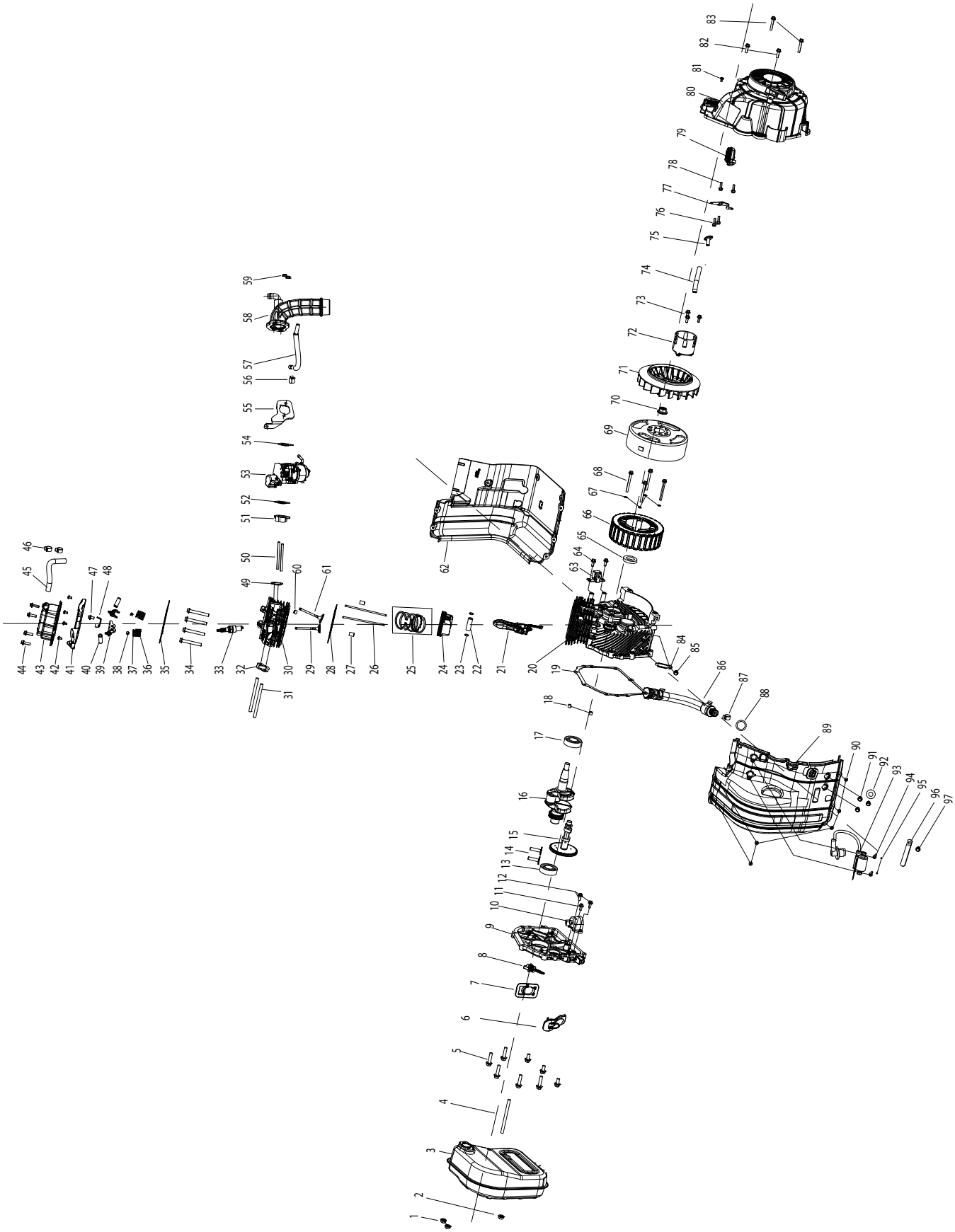
Part	Description	Qty
1A	Hex Flange Nut M8	2
2A	Hex Flange Nut M6x10	1
3A	Muffler Assy	1
4A	Air Intake Stud	1
5A	Hex Flange Face Bolt	7
6A	Sealant Sleeve	1
7A	Rubber Pad	1
8A	Oil Gauge Assy	1
9A	Crankcase Cover	1
10A	Oil Sensor	1
11A	Hex Flange Bolt M6x12	1
12A	Hex Flange Bolt M6x14	2
13A	Bearing	1
14A	Valve Tappet	2
15A	Camshaft Assy	1
16A	Crankshaft Assy	1
17A	Bearing	1
18A	Locating Pin	2
19A	Crankcase Cover Gasket	1
20A	Crankcase	1
21A	Connecting Rod Assy	1
22A	Piston Pin	1
23A	Piston Pin Clamp Ring	2
24A	Piston	1
25A	Piston Ring Assy	1
26A	Valve Push Rod	2
27A	Locating Pin	2
28A	Cylinder Head Gasket	1
29A	Exhaust Valve	1
30A	Cylinder Head Assy	1
31A	Exhaust Stud	2
32A	Exhaust Port Gasket	1
33A	Spark Plug Assy	1
34A	Hex Flange Bolt M8x60	4
35A	Cylinder Head Gasket	1
36A	Valve Spring	2
37A	Valve Spring Seat	2
38A	Air Lock Clamp	2
39A	Valve Rocker Arm Assy	2
40A	Rocker Arm Shaft Assy	2
41A	Cylinder Head Enclosure Cover	1
42A	Cross Recessed Pan Head Tapping Screw	4
43A	Cylinder Head Assy	1
44A	Hex Flange Bolt M6x20	4
45A	Exhaust Pipe/Molding Pipe	1
46A	Clamp	2
47A	Hex Flange Bolt M6x10	1
48A	Rocker Arm Shaft Baffle	1
49A	Air Intake Gasket	1

Part	Description	Qty
50A	Stud Bolt	2
51A	Carburetor Connection Block	1
52A	Carburetor Gasket	1
53A	Carburetor Assy	1
54A	Air Filter Gasket	1
55A	Carburetor Bracket	1
56A	Clamp	1
57A	Fuel Pipe	1
58A	Inlet Pipe	1
59A	Hex Flange Nut M6	2
60A	Intake Valve Oil Shield	1
61A	Inlet Valve	1
62A	Lower Enclosure Assy	1
63A	Switch Valve	1
64A	Hex Flange Bolt M6x14	2
65A	Oil Seal	1
66A	Variable Frequency Motor Stator	1
67A	Spring Washer	4
68A	Hex Flange Bolt M6x55	4
69A	Variable Frequency Motor Rotor	1
70A	Hex Flange Nut M14	1
71A	Fan	1
72A	Starting Cup	1
73A	Hex Flange Bolt M6x18	3
74A	Replenishment Valve Tube	1
75A	Air Relief Valve Connection Flange	1
76A	Hex Flange Bolt M6x18	2
77A	Air Relief Valve Mounting Bracket	1
78A	Hex Flange Bolt M6x12	2
79A	Secondary Recharge Valve	1
80A	Kickback Starter Assy	1
81A	Cross Recessed Pan Head Tapping Screw	1
82A	Hex Flange Bolt M6x20	2
83A	Hex Flange Bolt M6x80	2
84A	Cable Clamp	1
85A	Hex Flange Bolt M6x12	1
86A	Oil Drain Tube	1
87A	Hoop	1
88A	Aluminium Gasket	1
89A	Top Enclosure Assy	1
90A	Cross Recessed Pan Head Tapping Screw	5
91A	Hex Flange Bolt M6x14	3
92A	Washer	1
93A	High Pressure Pack	1
94A	Cross Recessed Pan Head Screws	2
95A	Spring Washer	2
96A	Wire Clamp	1
97A	Hex Flange Bolt M6x14	1

When ordering replacement parts from this list, the “A” suffix must be included in order to get the correct part.

The component list and assembly diagram are shown for reference only.
To view all currently available replacement parts, please visit harborfreight.com/parts

Engine Assembly Diagram



Limited 90 Day Warranty (Retail)

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS, EXCEPT FOR THE EMISSIONS CONTROL SYSTEM WARRANTY BELOW.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. HFT also warrants that the emissions control system on your engine is designed, built, and equipped so that it conforms to the United States Environmental Protection Agency's (EPA) emissions requirements in effect at the time of manufacture.

Emissions Control System Warranty

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board, the United States Environmental Protection Agency, and Harbor Freight Tools (HFT) are pleased to explain the emissions control system warranty on your 2025 Small Off-Road Engine and engine powered equipment. In California, new equipment that uses small off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. HFT must warrant the emissions control system on your Small Off-Road Engine and engine powered equipment for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road engine or equipment leading to the failure of the emissions control system. HFT also warrants that the emissions control system on your engine is designed, built, and equipped so that it conforms to the United States Environmental Protection Agency's (EPA) emissions requirements in effect at the time of manufacture.

Your emissions control system may include parts such as the carburetor or fuel-injection system, the ignition system, catalytic converter, fuel tanks, fuel lines (for liquid fuel and fuel vapors), fuel caps, valves, canisters, filters, clamps and other associated components. Also included may be hoses, belts, connectors, and other emission-related assemblies.

Where a warrantable condition exists, HFT will repair your Small Off-Road Engine and engine powered equipment at no cost to you, including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE

This emissions control system is warranted for two years. If any emission-related part on your Small Off-Road Engine and engine powered equipment is defective, the part will be repaired or replaced by HFT.

OWNER'S WARRANTY RESPONSIBILITIES

As the Small Off-Road Engine and engine powered equipment owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. HFT recommends that you retain all receipts covering maintenance on your small off-road engine/equipment, but HFT cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the Small Off-Road Engine and engine powered equipment owner, you should however be aware that HFT may deny you warranty coverage if your Small Off-Road Engine or engine powered equipment or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.

You are responsible for presenting your Small Off-Road Engine or engine powered equipment to HFT as soon as the problem exists. To obtain warranty repair or replacement, either:

(a) contact HFT Product Support at 1-800-444-3353 or productsupport@harborfreight.com; or

(b) bring the Small Off-Road Engine or engine powered equipment to your nearest Harbor Freight Tools retail store. The nearest Harbor Freight Tools retail store can be found on the internet at https://www.harborfreight.com. The warranty repairs or replacement should be completed in a reasonable amount of time, not to exceed 30 days.

If you have a question regarding your warranty coverage, you should contact HFT Product Support at 1-800-444-3353 or productsupport@harborfreight.com.

GENERAL EMISSIONS WARRANTY COVERAGE

a) The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser. The warranty period is two years.

b) HFT warrants to the ultimate purchaser and each subsequent owner that the engine is:
   1. Designed, built, and equipped so as to conform with the applicable United States Environmental Protection Agency's (EPA) emissions requirements in effect at the time of manufacture and all applicable regulations adopted by the California Air Resources Board; and
   2. Free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a period of two years.

c) The warranty on emissions-related parts is as follows:
   1. Any warranted part that is not scheduled for replacement as required maintenance in the written instructions provided is warranted for the warranty period stated above. If any such part fails during the period of warranty coverage, it will be repaired or replaced by HFT. Any such part repaired or replaced under the warranty will be warranted for the remaining warranty period.
   2. Any warranted part that is scheduled only for regular inspection in the written instructions is warranted for the warranty period stated above. A statement in the written instructions to the effect of "repair or replace as necessary" does not reduce the period of warranty coverage. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.
   3. Any warranted part that is scheduled for replacement as required maintenance in the written instructions will be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part will be repaired or replaced by HFT. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
   4. Repair or replacement of any warranted part under the warranty will be performed at no charge to the owner at a retail store or by HFT paying for shipping the product for repair.
   5. Notwithstanding the provisions herein, warranty services or repairs will be provided at all retail stores or by contacting HFT Product Support at 1-800-444-3353 or productsupport@harborfreight.com.
   6. The owner will not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a retail store.
   7. HFT is liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.
   8. Throughout the engine's and emission control system's warranty period stated above, HFT will maintain a supply of warranted parts sufficient to meet the expected demand for such parts and will obtain additional parts if that supply is exhausted.
   9. Any replacement part may be used in the performance of any warranty maintenance or repairs and will be provided without charge to the owner. Manufacturer-approved replacement parts that do not increase emissions will be used in the performance of any warranty maintenance or repairs and will be provided without charge to the owner. Such use will not reduce the warranty obligations of HFT.
   10. Add-on or modified parts that are not exempted by the California Air Resources Board may not be used. The use of any non-exempted add-on or modified parts will be grounds for disallowing a warranty claim. HFT is not liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.
   11. HFT will provide any documents that describe its warranty procedures or policies upon request of the Executive Officer.

d) Emission Warranty Component List.

1. Fuel Metering System
    a. Carburetor and its internal parts (and/or pressure regulator or fuel injection system).
    b. Fuel tank.
    c. Cold start enrichment system.
    d. Air/fuel ratio feedback and control system.
2. Air Induction System
    a. Controlled hot air intake system.
    b. Intake manifold.
    c. Air filter.
3. Ignition System
    a. Spark plugs.
    b. Magneto ignition system.
    c. Spark advance/retard system.
4. Catalyst System (if so equipped)
    a. Exhaust pipe stud/exhaust manifold.
    b. Thermal reactor.
    c. Catalytic converter (if so equipped).
5. Particulate Controls
    a. Traps, filters, precipitators, and any other device used to capture particulate emissions.
6. Miscellaneous Items Used in Above Systems
    a. Vacuum, temperature and time sensitive valves and switches.
    b. Hoses, belts, connectors, and assemblies.
7. Evaporative Emission Control System
    a. Fuel tank.
    b. Fuel cap.
    c. Fuel Lines (for liquid fuel and fuel vapors).
    d. Fuel Line Fittings.
    e. Clamps.*
    f. Pressure Relief Valves.*
    g. Control Valves.*
    h. Control Solenoids.*
    i. Electronic Controls.*
    j. Vacuum Control Diaphragms.*
    k. Control Cables.*
    l. Control Linkages.*
    m. Purge Valves.*
    n. Gaskets.*
    o. Liquid/Vapor Separator.
    p. Carbon Canister.
    q. Canister Mounting Brackets.
    r. Carburetor Purge Port Connector.
8. Air Injection System (if so equipped)
    a. Air pump or pulse valve.
    b. Valves affecting distribution of flow.
    c. Distribution manifold.

* Note: As they relate to the evaporative emission control system.

HFT will furnish with each new small off-road engine/equipment written instructions for the maintenance and use of the engine/equipment by the owner.

PREDATOR®

26677 Agoura Road • Calabasas, CA 91302 • 1-800-444-3353