ACEUP ENERGY

GAS GENERATOR AG1200

PETROL GENERATOR
Owner's Manual



SAVE THIS MANUAL FOR FUTURE REFERENCE

Read the en re instruc on manual carefully and make sure that you fully understand it before you use the equipment.

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Section 1 Introduction and Safety

Introduction

⚠WARNING



Consult Manual. Read and understand manual completely before using product. Failure to completely understand manual and product could result in death or serious injury.

The owner is responsible for proper maintenance and safe use of the equipment. Before operating, servicing or storing this generator:

• Study all warnings in this manual and on the product carefully.

• Become familiar with this manual and the unit before use.

• Refer to the Assembly section of the manual for instructions on final assembly procedures. Follow the instructions completely.

Save these instructions for future reference. ALWAYS supply this manual to any individual that will use this machine.

THE INFORMATION CONTAINED HEREIN WAS BASED ON MACHINES IN PRODUCTION AT THE TIME OF PUBLICATION.

Safety Rules

The manufacturer cannot anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and on tags and decals affixed to the unit are, therefore, not all inclusive. If using a procedure, work method or operating technique that the manufacturer does not specifically recommend, verify that it is safe for others. Also make sure the procedure, work method or operating technique utilized does not render the equipment unsafe.

Throughout this publication, and on tags and decals affixed to the generator, DANGER, WARNING, CAUTION and NOTE blocks are used to alert personnel to special instructions about a particular operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully. Their definitions are as follows:

⚠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.

NOTE: Notes contain additional information important to a procedure and will be found within the regular text of this manual.

These safety warnings cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the action or service are essential to preventing accidents.

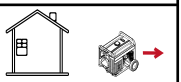
Safety Symbols and Meanings

⚠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.

• Adequate, unobstructed flow of cooling and ventilating air is critical to correct generator operation. Do not alter the installation or permit even partial blockage of ventilation provisions, as this can seriously affect safe operation of the generator. The generator MUST be operated outdoors.

⚠DANGER



Asphyxiation. Running engines produce carbon monoxide, a colorless, odorless, poisonous gas. Carbon monoxide, if not avoided, will result in death or serious injury.

⚠DANGER



Electrocution. Water contact with a power source, if not avoided, will result in death or serious injury.

⚠DANGER



Electrocution. Turn utility and emergency power supplies to OFF before connecting power source and load lines. Failure to do so will result in death or serious injury.

• It is recommended to obtain parts and service from your local IASD to keep this unit in safe working order.
• Do not operate unit on uneven surfaces, or in areas where it can be exposed to excessive moisture, dirt, dust, or corrosive vapors.

⚠WARNING

Moving Parts. Keep clothing, hair, and appendages away from moving parts. Failure to do so could result in death or serious injury.

⚠WARNING



Hot Surfaces. When operting machine, do not touch hot surfaces. Keep machine away from combustables during use. Hot surfaces could result in severe burns or fire.

⚠WARNING

Equipment and property damage. Do not alter construction of, installation, or block ventilation for generator. Failure to do so could result in unsafe operation or damage to the generator.

⚠WARNING

Do not insert any object through the air cooling slots. Generator can start at any time and could result in death, serious injury, and unit damage.

• When working on this equipment, remain alert at all times.
• Never work on the equipment when physically or mentally fatigued.
• Never use the generator or any of its parts as a step. Stepping on the unit can stress and break parts, and may result in dangerous operating conditions from leaking exhaust gases, fuel leakage, oil leakage, etc.

Exhaust and Location Hazards

⚠DANGER



Asphyxiation. Running engines produce carbon monoxide, a colorless, odorless, poisonous gas. Carbon monoxide, if not avoided, will result in death or serious injury.

⚠DANGER



The exhaust system must be properly maintained. Do not alter or modify the exhaust system as to render it unsafe or make it noncompliant with local codes and/or standards. Failure to do so will result in death or serious injury.

⚠WARNING



Asphyxiation. Always use a battery operated carbon monoxide alarm indoors and installed according to the manufacturer's instructions. Failure to do so could result in death or serious injury.

⚠WARNING

Equipment and property damage. Do not alter construction of, installation, or block ventilation for generator. Failure to do so could result in unsafe operation or damage to the generator.

• If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air IMMEDIATELY. See a doctor, as you could have carbon monoxide poisoning.

Electrical Hazards

⚠DANGER



Electrocution. Contact with bare wires, terminals, and connections while generator is running will result in death or serious injury.

⚠DANGER



Electrocution. Water contact with a power source, if not avoided, will result in death or serious injury.

• National Electric Code (NEC) requires the frame and external electrically conductive parts of the generator be properly connected to an approved earth ground. Local electrical codes may also require proper grounding of the generator. Consult with a local electrician for grounding requirements in the area.
• Use a ground fault circuit interrupter (GFCI) in any damp or highly conductive area (such as metal decking or steel work).

⚠DANGER

Electrocution. In the event of electrical accident, immediately shut power OFF. Use non-conductive implements to free victim from live conductor. Apply first aid and get medical help. Failure to do so will result in death or serious injury.

⚠WARNING

Accidental Start-up. Disconnect the negative battery cable, then the positive battery cable when working on unit. Failure to do so could result in death or serious injury.

Fire Hazards

⚠DANGER

Explosion and Fire. Fuel and vapors are extremely flammable and explosive. Add fuel in a well ventilated area. Keep fire and spark away. Failure to do so will result in death or serious injury.

⚠DANGER

Do not overfill fuel tank. Fill to 1/2 in. of top of tank to allow for fuel expansion. Overfilling may cause fuel to spill onto engine causing fire or explosion, which will result in death or serious injury.

⚠DANGER

Risk of fire. Allow fuel spills to completely dry before starting engine. Failure to do so will result in death or serious injury.

⚠WARNING

Do not insert any object through the air cooling slots. Generator can start at any time and could result in death, serious injury, and unit damage.

• Do not operate the generator if connected electrical devices overheat, if electrical output is lost, if engine or generator sparks or if flames or smoke are observed while unit is running.
• Keep a fire extinguisher near the generator at all times.

Replacement Hazard Labels

Vertical CO Warning Decal



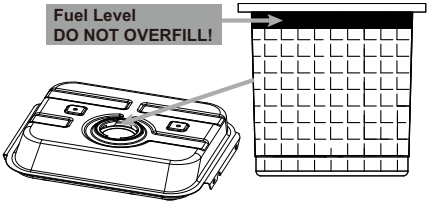
Section 2 Service Precautions

1. Before service, maintenance, or cleaning:
   a. Unplug all devices from the generator.
   b. Turn the engine switch to its “OFF” 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. Do not smoke, or allow sparks, flames, or other sources of ignition around the equipment, especially when refuelling.
2. Do not refill the fuel tank while the engine is running or hot.
3. Do not fill fuel tank to the top.

Leave a little room for the fuel to expand as needed. TO PREVENT FUEL LEAKAGE AND FIRE HAZARD, do not fill fuel above the bottom of fuel strainer.



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.

Section 3 Set Up

⚠IMPORTANT

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.

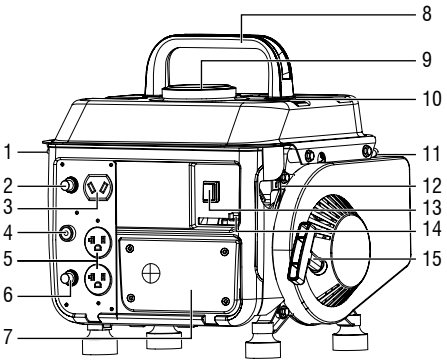
⚠WARNING

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.

Grounding

1. The Generator must be properly grounded in accordance with all relevant electrical codes and standards before operation. Have the unit grounded by a qualified electrician if you are not qualified to do so.
2. To ground the Generator, connect a #10 AWG grounding wire (not included) from the Grounding Terminal on the side of the unit to a grounding rod (not included). The grounding rod must be an earth-driven copper or brass rod (electrode) which can adequately ground the Generator.
3. Refer to local regulations for ground source information.

TABLE 1. Components and Controls



1. Grounding Terminal - connect grounding wires here to properly ground the generator.
2. DC Reset Button - Reset button that protects the generator from outlet overload.
3. DC outlet - 12 Volt DC Receptacle, DC current.
4. Indicator lamp - power light.
5. 120 Volt AC Receptacle - for connecting electrical devices that run on 120V, 60 Hz, single phase, AC current.
6. AC Reset Button - Reset button that protects the generator from outlet overload.
7. Air Cleaner- a removable, cleanable, sponge-like element that filters the air entering the engine.
8. Carrying Handle - for easy transport of the generator (installed by user).
9. Fuel Cap - access to the fuel tank for adding fuel.
10. Fuel Tank - 1.05 gallon capacity.
11. Spark Plug - ignites engine.
12. Fuel Valve - allows fuel to enter engine from the fuel tank.
13. Engine Switch - to start / stop engine.
14. Choke Lever - adjusts the amount of air let into the engine during startup.
15. Recoil Starter - pull-cord for starting engine.

TABLE 2. Product Specifications

Generator Specifications	
Rated Power	900 W
Peak Power	1200 W
Rated AC Voltage	120 V
Rated AC Load Current @ 120V	7.5 Amps
Rated Frequency	60 Hz @ 3600 RPM
Generator Dry Weight (assembled)	34.8 lbs. (15.8 kg)
** Operating Temperature Range: -18 deg. C (0 deg. F) to 40 Deg. C (104 Deg. F). When operated above 25 deg. C (77 deg. F) there may be a decrease in power. ** Maximum wattage and current are subject to, and limited by, such factors as fuel Btu content, ambient temperature, altitude, engine condition, etc.. Maximum power decreases about 3.5% for each 1,000 feet above sea level; and will also decrease about 1% for each 6° C (10° F) above 16° C (60° F) ambient temperature.	
Engine Specifications	
Displacement	71 cc
Spark Plug Type	F5TC
Engine Type	2-Stroke
Gasoline Capacity	1.05 gal (4 L)
Fuel Type	Pre-mixed fuel:Petrol &oil(50:1)
Run Time at 50% Load	6 Hours

Section 4 Operation

Pre-Start Checks

Inspect engine and equipment looking for damaged, loose, and missing parts before set up and starting. If any problems are found, do not use equipment until fixed properly.

⚠DANGER

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.
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.

⚠ IMPORTANT

Your Warranty is VOID if the Engine's Fuel Tank is not filled with the proper mixture (50:1) of stabilizer-treated unleaded gasoline and 2-cycle oil before each use. Before each use, check the fuel level. Do not run the Engine with an improper unleaded gasoline/2-cycle oil mixture. Running the Engine with an improper mixture WILL permanently damage the Engine.

4. To obtain the proper gasoline and 2-cycle oil mixture, mix 2.5 fluid ounces of 2-cycle oil with 1 gallon of 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive into an approved container. Then gently agitate the container to thoroughly mix the gasoline/2-cycle oil. (See Figure A).
5. If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with the pre-mixed stabilizer-treated unleaded gasoline/2-cycle oil mixture.
6. Then replace the Fuel Cap.
7. 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.

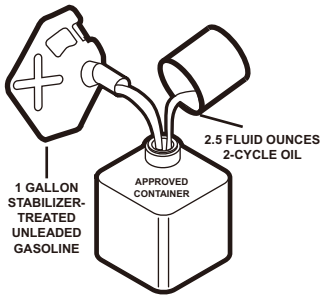


Figure A. Fuel-Oil Mixture

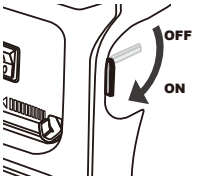
Starting the Engine

⚠IMPORTANT

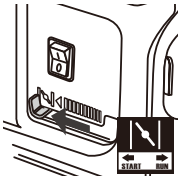
Before starting the engine:
a.Inspect the generator and engine.
b. Disconnect all electrical loads from the generator.
c. Fill the engine with the proper amount and type of stabilizer-treated unleaded gasoline and 2-cycle oil mixture.

Manual Start

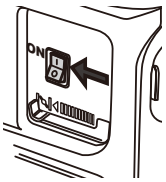
1. Open the Fuel Valve.



2. To start a cold engine, move the Choke to the START position.
To restart a warm engine, leave the Choke in the RUN position.



3. Turn the Engine Switch on.



4. Grip the Starter Handle of the Engine loosely and pull it slowly several times to allow the 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.

Note: Do not let the Starter Handle snap back against the engine.Hold it as it recoils so it doesn't hit the engine.



5. Allow the Engine to run for several seconds. Then, if the Choke lever is in the START position, move the Choke Lever very slowly to its RUN position.

Note: Moving the Choke Lever too fast could stall the engine.

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



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 25 hours of use. DO NOT exceed 75% of the Generator's rated capacity during this
period.
• Change the engine fuel/oil mixture after this period.
Under normal operating conditions subsequent maintenance follows the schedule explained in the Maintenance section.

Connecting Loads to the Generator

Load And Circuit Breaker:

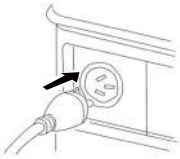
1. The total combined load through the outlet on the Generator must not exceed the rated maximum power of the unit.
2. Reduce the load if the AC Circuit Breaker turns off. Once the load is reduced, press the Circuit Breaker Button to reset the Generator and continue operation.

Calculate Power Draw:Power draw can be calculated by multiplying volts and amps. The resulting number is wattage.

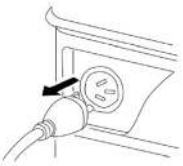
a. Never exceed the rated maximum wattage for the Generator or any outlet amperage rating.
b. Refer to appliance/tool owner's manuals to determine the wattage of electrical load devices.
c. Long power cords and extension cords draw additional power. Keep cord length at a minimum.

3. Allow the Engine to run at no load for five minutes after each start-up to allow the Engine to stabilize.
4. Plug the power cord of the 120 volt appliance/tool into the 120 volt AC Outlet on the Generator.

Note: Do not allow the generator to completely run out of fuel with devices attached. A generator's output may sharply spike as it runs out of fuel, causing damage to attached devices.

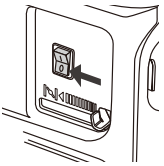


5. When finished using the appliance/tool, turn it off and unplug it from the AC Outlet on the Generator.

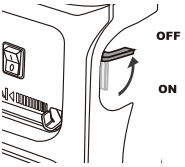


Stopping the Engine

1. To stop the engine in an emergency, turn the Engine Switch off.



2. Under normal conditions, use the following procedure:
   a. Remove all electrical load devices from the Generator.
   b. Turn the Engine Switch off.
   c. Close the Fuel Valve.



Section 5 Maintenance

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING:
Turn the Power Switch of the equipment to its “OFF” 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.

Maintenance 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 20 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
Brush off outside of engine	✓	✓	✓	✓	✓	✓
Check engine fuel/oil mixture level	✓	✓	✓	✓	✓	✓
Check air cleaner	✓		✓	✓	✓	✓
Check sediment cup	✓			✓	✓	✓
Clean air filter			✓	✓	✓	✓
Check and clean spark plug				✓	✓	✓
1. Check/adjust idle speed 2. Check/adjust valve clearance 3. Clean fuel tank, strainer and carburetor 4. Clean carbon build-up from combustion chamber					✓	✓
Replace fuel line if necessary						✓

Checking and Filling Fuel

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.

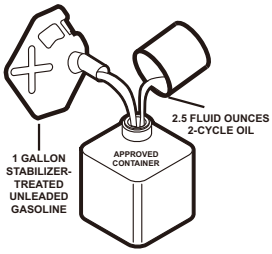
1. Clean the Fuel Cap and the area around it.
2. Unscrew and remove the Fuel Cap.
3. Remove the Strainer and remove any dirt and debris. Then replace the Strainer.

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.

▲IMPORTANT

Your Warranty is VOID if the Engine's Fuel Tank is not filled with the proper mixture (50:1) of stabilizer-treated unleaded gasoline and 2-cycle oil before each use. Before each use, check the fuel level. Do not run the Engine with an improper unleaded gasoline/2-cycle oil mixture. Running the Engine with an improper mixture WILL permanently damage the Engine.



Fuel-Oil Mixture

4. To obtain the proper gasoline and 2-cycle oil mixture, mix 2.5 fluid ounces of 2-cycle oil with 1 gallon of 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive into an approved container. Then gently agitate the container to thoroughly mix the gasoline/2-cycle oil.
5. If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with the pre-mixed stabilizer-treated unleaded gasoline/2-cycle oil mixture.
6. Then replace the Fuel Cap.
7. 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.

Air Filter Maintenance

1. Remove the Air Cleaner Cover and the air filter(s) and check for dirt. Clean as described below.
2. Cleaning:
   a. For paper filters:
      To prevent injury from dust and debris, wear ANSI-approved safety goggles, NIOSH-ap proved 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 filter.
   b. For foam filters:
      Wash the filter 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.
3. Install the cleaned filter(s). Secure the Air Cleaner Cover before use.

Spark plug Maintenance

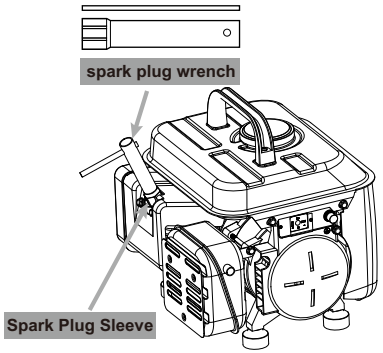
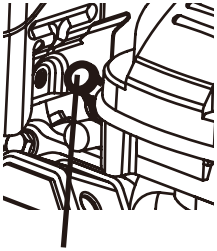


Figure B. Spark plug Maintenance

1. Disconnect spark plug cap from end of plug. Clean out debris from around spark plug.
2. Using a spark plug wrench, remove the spark plug (See Figure B).
3. 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.

Recommended Spark Plug: *F5TC*



Spark Plug Cap

4. 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.
5. 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 blo ck will be damaged.

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

Section 6 Long-Term 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 t
he Engine and cause rust damage. Apply a thin coat of rust preventive oil to all metal parts.

2. FUEL:
To protect the fuel tank during storage, make sure to drain both the tank and fuel lines.

⚠WARNING



TO PREVENT SERIOUS INJURY FROM FIRE: Drain 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 draining fuel. Do not smoke.

3. LUBRICATION:

a. Clean out area around spark plug. Remove spark plug and pour one tablespoon of engine oil into cylinder through spark plug hole.
b. Replace spark plug, but leave spark plug cap disconnected.
c. 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.

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 during or 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.

Section 7 Troubleshooting

Problem	Possible Causes	Probable Solutions
Engine will not start	***FUEL RELATED:*** 1. No fuel in tank or fuel valve closed. 2. Choke not in START position, cold engine. 3. Gasoline with more than 10% ethanol used. (E15, E20, E85, etc.) 4. Low quality or deteriorated, old gasoline/oil mixture. 5. Carburetor not primed. 6. Dirty fuel passageways. 7. Carburetor needle stuck. Fuel can be smelled in the air. 8. Too much fuel in chamber. This can be caused by the carburetor needle sticking. 9. Clogged Fuel Filter.	***FUEL RELATED:*** 1. Fill fuel tank with 87+ octane stabilizer-treated unleaded gasoline/oil mixture and open fuel valve. 2. Move Choke to START position. 3. Clean out ethanol rich gasoline from fuel system. Replace components damaged by ethanol. Use fresh 87+ octane stabilizer-treated unleaded gasoline/oil mixture only. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 4. Use fresh 87+ octane stabilizer-treated unleaded gasoline/oil mixture. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 5. Pull on Starter Handle to prime. 6. Clean out passageways using fuel additive. Heavy deposits may require further cleaning. 7. Gently tap side of carburetor float chamber with screwdriver handle. 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. Replace Fuel Filter.
	IGNITION (SPARK) RELATED: 1. Spark plug cap not connected securely. 2. Spark plug electrode wet or dirty. 3. Incorrect spark plug gap. 4. Spark plug cap broken. 5. Incorrect spark timing or faulty ignition system.	***IGNITION (SPARK) RELATED:*** 1. Connect spark plug cap properly. 2. Clean spark plug. 3. Correct spark plug gap. 4. Replace spark plug cap. 5. Have qualified technician diagnose/repair ignition system.
	COMPRESSION RELATED: 1. Cylinder not lubricated. Problem after long storage periods. 2. Loose or broken spark plug. (Hissing noise will occur when trying to start.) 3. Loose cylinder head or damaged head gasket. (Hissing noise will occur when trying to start.) 4. Engine valves or tappets mis-adjusted or stuck.	***COMPRESSION RELATED:*** 1. Pour tablespoon of oil into spark plug hole. Crank engine a few times and try to start again. 2. Tighten spark plug. If that does not work, replace spark plug. If problem persists, may have head gasket problem, see #3. 3. Tighten head. If that does not remedy problem, replace head gasket. 4. Have qualified technician adjust/repair valves and tappets.

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/oil mixture. 5. Incorrect compression.	1. Check wire connections. 2. Re-gap or replace spark plug. 3. Replace spark plug cap. 4. Use only fresh 87+ octane stabilizer-treated unleaded gasoline/oil mixture. 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. Fuel tank empty or full of impure or low quality gasoline/oil mixture. 2. Defective fuel tank cap creating vacuum, preventing proper fuel flow. 3. Faulty magneto. 4. Disconnected or improperly connected spark plug cap.	1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline/oil mixture. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Test/replace fuel tank cap. 3. Have qualified technician service magneto. 4. 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/oil mixture. 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/oil mixture. 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/oil mixture. 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/oil mixture. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Use cold weather fuel 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. !

NOTE


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