OWNER’S MANUAL
PORTABLE INVERTER GENERATOR

IMPORTANT: Read all safety precautions and instructions carefully before operating equipment. Ensure engine is stopped and level before performing any maintenance or service.

Record product information to reference when ordering parts or obtaining warranty coverage.

DO NOT RETURN TO STORE!

CALL US FIRST!
CUSTOMER HOTLINE
1-844-347-6261
FOR QUESTIONS OR SERVICE INFORMATION

Serial Number: ________________
Purchase Date: ________________
P/N: 330745452 Rev: 00
**FCC Statement**

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

   (1) This device may not cause harmful interference.
   (2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

   – Reorient or relocate the receiving antenna.
   – Increase the separation between the equipment and receiver.
   – Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.
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INTRODUCTION

Thank you for purchasing a FIRMAN generator.

This manual contains safety information to make you aware of the hazards and risks associated with generator products and how to avoid them. This generator is designed and intended only for supplying electrical power for operating compatible electrical lighting, appliances, tools and motor loads, and is not intended for any other purpose. It is important that you read and understand these instructions thoroughly before attempting to start or operate this equipment. Save these original instructions for future reference.

This manual covers operation and maintenance of the FIRMAN generators. All information in this publication is based on the latest production information available at the time of approval for printing. The manufacturer reserves the right to change, alter or otherwise improve the generator and this documentation at any time without prior change.

Important Safety Information

The manufacturer cannot possibly anticipate every possible circumstance that might involve a hazard. The warnings in this manual and the tags and decals affixed to the unit are therefore not all-inclusive. If you use a procedure, work method or operating technique that the manufacturer does not specifically recommend you must satisfy yourself that it is safe for you and others. You must also make sure that the procedure work method or operating technique that you choose does not render the generator unsafe.

SAFETY INFORMATION

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

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

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate personal injury, or property damage.

- Toxic Fumes
- Fire Hazard
- Hot Surface. Do Not Touch the Surface.
- Kickback
- Risk of Electric Shock
- Explosion Hazard
- Rotating Parts Entanglement Hazard
- Operator’s Manual
SAFETY PRECAUTIONS

⚠️ WARNING ⚠️

POISONOUS GAS HAZARD.

Engine exhaust contains carbon monoxide, a poisonous gas that could kill you in minutes. You CANNOT smell it, see it, or taste it. Even if you do not smell exhaust fumes, you could still be exposed to carbon monoxide gas.

- Operate this product ONLY outside far away from windows, doors and vents to reduce the risk of carbon monoxide gas from accumulating and potentially being drawn towards occupied spaces.
- Install battery-operated carbon monoxide alarms or plug-in carbon monoxide alarms with battery back-up according to the manufacturer’s instructions. Smoke alarms cannot detect carbon monoxide gas.
- DO NOT run this product inside homes, garages, basements, crawlspaces, sheds, or other partially-enclosed spaces even if using fans or opening doors and windows for ventilation. Carbon monoxide can quickly build up in these spaces and can linger for hours, even after this product has shut off.
- ALWAYS place this product downwind and point the engine exhaust away from occupied spaces. If you start to feel sick, dizzy, or weak while using this product, shut it off and get to fresh air RIGHT AWAY. See a doctor. You may have carbon monoxide poisoning.

⚠️ WARNING ⚠️

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

⚠️ WARNING ⚠️

Certain components in this product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

- If you start to feel sick, dizzy or weak while using the portable generator, you may have carbon monoxide poisoning. Get outside to fresh air immediately and call 911 for emergency medical attention. Very high levels of CO can rapidly cause victims to lose consciousness before they can rescue themselves. DO NOT attempt to shut off the generator before moving to fresh air. Entering an enclosed space where a generator is or has been running may put you at greater risk of CO poisoning.
CORRECT USAGE
Example location to reduce risk of carbon monoxide poisoning

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

INCORRECT USAGE
Do not operate in any of the following locations:

Near any door, window or vent
Garage
Basement
Crawl Space
Living Area
Attic
Entry Way
Porch
Mudroom
WHEN OPERATING EQUIPMENT

● DO NOT operate this product inside any building, carport, porch, mobile equipment, marine applications, or enclosure.

● DO NOT tip engine or equipment at angle which causes fuel to spill.

● DO NOT stop engine by moving choke control to “Start” position.

WHEN TRANSPORTING, MOVING OR REPAIRING EQUIPMENT

● Transport/move/repair with fuel tank EMPTY or with fuel shutoff valve OFF.

● DO NOT tip engine or equipment at angle which causes fuel to spill.

● Disconnect spark plug wire.

WHEN STORING FUEL OR EQUIPMENT WITH FUEL IN TANK

● Store away from furnaces, stoves, water heaters, clothes dryers, or other appliances that have pilot light or other ignition source because they could ignite fuel vapors.

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

WHEN ADDING OR DRAINING FUEL

● Turn generator engine OFF and let it cool at least 2 minutes before removing fuel cap.

● Fill or drain fuel tank outdoors.

● DO NOT overfill tank. Allow space for fuel expansion.

● If fuel spills, wait until it evaporates before starting engine.

● Keep fuel away from sparks, open flames, pilot lights, heat, and other ignition sources.

● Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.

● DO NOT light a cigarette or smoke.

WHEN STARTING EQUIPMENT

● Ensure spark plug, muffler, fuel cap, and air cleaner are in place.

● DO NOT crank engine with spark plug removed.

Generator voltage could cause electrical shock or burn resulting in death or serious injury.

Use approved transfer equipment, suitable for the intended use, to prevent backfeed by isolating generator from electric utility workers.

This generator does not meet U. S. Coast Guard Regulation 33CFR-183 and should not be used on marine applications.

Failure to use the appropriate U. S. Coast Guard approved generator could result in death or serious injury and/or property damage.

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

When starting engine, pull cord slowly until resistance is felt and then pull rapidly to avoid kickback.

NEVER start or stop engine with electrical devices plugged in and turned on.
When using generator for backup power, notify utility company.

Use a ground fault circuit interrupter (GFCI) in any damp or highly conductive area, such as metal decking or steel work.

DO NOT touch bare wires or receptacles.

DO NOT use generator with electrical cords which are worn, frayed, bare or otherwise damaged.

DO NOT operate generator in the rain or wet weather.

DO NOT handle generator or electrical cords while standing in water, while barefoot, or while hands or feet are wet.

DO NOT allow unqualified persons or children to operate or service generator.

WARNING

Unintentional sparking could cause fire or electric shock resulting in death or serious injury.

WHEN ADJUSTING OR MAKING REPAIRS TO YOUR GENERATOR

- Disconnect the spark plug wire from the spark plug and place the wire where it cannot contact spark plug.

WHEN TESTING FOR ENGINE SPARK

- Use approved spark plug tester.

- DO NOT check for spark with spark plug removed.

WARNING

Starter and other rotating parts could entangle hands, hair, clothing, or accessories resulting in serious injury.

NEVER operate generator without protective housing or covers.

DO NOT wear loose clothing, jewelry or anything that could be caught in the starter or other rotating parts.

Tie up long hair and remove jewelry.

CAUTION

Excessively high operating speeds could result in minor injury. Excessively low operating speeds impose a heavy load.

DO NOT tamper with governor spring, links or other parts to increase engine speed.

Generator supplies correct rated frequency and voltage when running at governed speed.

DO NOT modify generator in any way.

NOTE:

Exceeding generators wattage/amperage capacity could damage generator and/or electrical devices connected to it.

- DO NOT exceed the generator’s wattage amperage capacity.

- Start generator and let engine stabilize before connecting electrical loads.

- Connect electrical loads in OFF position, then turn ON for operation.

- Turn electrical loads OFF and disconnect from generator before stopping generator.

WARNING

Exhaust heat/gases could ignite combustibles, structures or damage fuel tank causing a fire, resulting in death or serious injury and/or property damage. Contact with muffler area could cause burns resulting in serious injury.

- DO NOT touch hot parts and AVOID hot exhaust gases.

- Allow equipment to cool before touching.

- It is a violation of California Public Resource Code, Section 4442, to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order. Other states or federal jurisdictions may have similar laws. Contact the original equipment manufacturer, retailer, or dealer to obtain a spark arrester designed for the exhaust system installed on this engine.

- Replacement parts must be the same and installed in the same position as the original parts.

WARNING

Exhaust heat/gases could ignite combustibles, structures or damage fuel tank causing a fire, resulting in death or serious injury and/or property damage. Contact with muffler area could cause burns resulting in serious injury.

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WARNING

Unintentional sparking could cause fire or electric shock resulting in death or serious injury.

WHEN ADJUSTING OR MAKING REPAIRS TO YOUR GENERATOR

- Disconnect the spark plug wire from the spark plug and place the wire where it cannot contact spark plug.

WHEN TESTING FOR ENGINE SPARK

- Use approved spark plug tester.

- DO NOT check for spark with spark plug removed.
NOTE:
Improper treatment of generator could damage it and shorten its life.
- Use generator only for intended uses.
- If you have questions about intended use, ask dealer or contact local service center.
- Operate generator only on level surfaces.
- DO NOT expose generator to excessive moisture, dust, dirt, or corrosive vapors.
- DO NOT insert any objects through cooling slots.
- If connected devices overheat, turn them off and disconnect them from generator.
- Shut off generator if:
  - Electrical output is lost.
  - Equipment sparks, smokes, or emits flames.
  - Unit vibrates excessively.

![WARNING](image)

**Medical and Life Support Uses.**
- In case of emergency, call 911 immediately.
- NEVER use this product to power life support devices or life support appliances.
- NEVER use this product to power medical devices or medical appliances.
- Inform your electricity provider immediately if you or anyone in your household depends on electrical equipment to live.
- Inform your electrical provider immediately if a loss of power would cause you or anyone in your household to experience a medical emergency.

**UNPACKING THE GENERATOR**
- Open carton and Remove packaging materials.
- Remove generator, accessories boxes, and literature from carton. If any items are missing or damaged, contact our product service department at 1-844-347-6261.

**Parts Included**
Your gasoline powered inverter generator ships with the following parts:

1. Engine Oil (Bottle) ........................................ 1
2. Oil Funnel ..................................................... 1
3. Wrench for Spark Plug ...................................... 1
4. Screwdriver .................................................. 1
5. Battery Charge Cable ...................................... 1
6. Remote .......................................................... 1
7. Manual .......................................................... 1
8. Quick Reference Guide ..................................... 1
9. Battery Charger (12V DC) ................................... 1

![Image of generator parts]
1- Fixed Carrying Handle
2- Fuel Cap
3- Recoil Starter
4- Never Flat Wheel
5- Control Panel
6- Muffler/Spark Arrester
7- Muffler Maintenance Cover
8- Maintenance Cover – Oil filler and air filter access.
9- Folding Handle

*We are always working to improve our products. Therefore, the enclosed product may differ slightly from the image on this page.
**Control Panel**

**NOTE:**
Total power drawn from all receptacles must not exceed the name plate rating.

1. **Engine Start Switch** – Used to start engine from the starter motor (Electric start model only). To start engine, press and hold the switch in the “START” (II) position, the engine will crank and attempt to start. When the engine starts, release the switch to the “RUN” (I) position.

2. **Economy Control Switch**
   The Economy Control switch can be activated in order to minimize fuel consumption and noise while operating the unit during times of reduced electrical output, allowing the engine speed to idle during periods of non-use. The engine speed returns to normal when an electrical load is connected. When the economy switch is off, the engine runs at normal speed continuously.

3. **3-1 Data-Minder (Multi-Meter)** – Push the SELECT button to show the Voltage, Hertz and running hours.

4. **120V, 20A Duplex** – (NEMA 5-20R) 20 Amp of current may be drawn from this 120 Volt receptacle.

5. **120V, 30A RV (NEMA TT-30R)** – Maximum full load 30 Amp current may be drawn from this 120 Volt receptacle.

6. **Battery Power Restore Switch** – Restore the battery power to the control module. **You must press this switch and hold for 3 seconds before start the generator, including recoil start, electric start and remote start.**

7. **Output Ready Indicator Light** – Remains “ON” during normal operating conditions. Shuts “OFF” when generator is overloaded. The green AC Power Indicator Light comes on when the engine starts and generates power.

8. **Overload Indicator Light** – This light turns “ON” when the generator is overloaded and will cut power to the receptacles. If the engine overload indicator light comes on, the generator’s wattage / amperage capacity has been exceeded by connected electrical devices or by a power surge. When this occurs, the green AC Power Indicator Light (Item 7) will go off. The engine will continue to run, but the red Engine Overload Indicator Light will stay on and power will no longer be supplied to connected electronic devices.

9. **Oil Warning Indicator Light** – Check oil level when this light turns “ON”. Engine will not run when indicator is lit. When the oil falls below the minimum level, the oil warning indicator light comes on and the engine stops automatically. The engine will not start until the proper amount of oil is in the crank case.

10. **Engine Start Switch**

11. **DC 5V 2.1A USB Outlet**

12. **Circuit Breakers** – The receptacles are protected by an AC circuit protector. If the generator is overloaded or an external short circuit occurs, the circuit protector will trip. If this occurs, disconnect all electrical loads and try to determine the cause of the problem before attempting to use the generator again. If overloading causes the circuit protector to trip, reduce the load. **Note: Continuous tripping of the circuit protector may cause damage to generator or equipment.** The circuit protector may be reset by pushing the button of the protector.

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**English**

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**DC Circuit Breaker** - The circuit protector may be reset by pushing the button of the protector.

**Parallel Operation Outlets** - These outlets are used for connecting two FIRMAN inverter generators for parallel operation. A FIRMAN parallel kit (optional equipment) is required for parallel operation.

**12V DC outlet** – 8.3 Amp of DC current may be drawn from this receptacle. Use this outlet to charge 12V automotive type batteries **ONLY**. See 12V DC outlet (Battery Charger) section.

**Remote Start Program Button** - Use this button along with the remote control to program the generator to be started remotely.

**Remote Start Indicator light** - The light will light or flash depending on the status of the remote start system.

**Ground Terminal** – Consult an electrician for local grounding regulations.

**Outlet Cover** - Protect the receptacles from dust and debris.

**Fuel Valve Knob**

**Choke Button**

**Recoil Stater**

**12V DC Battery Charger Port** - Plug the 120 Volt AC charger into this port to charge the generator battery.

---

**Remote Control Programming**

Before the generator can be started, an initial start-up procedure must be performed so the generator and the remote control recognize each other.

**NOTE:**

**YOUR REMOTE CONTROL IS ALREADY PROGRAMMED IN FACTORY FOR YOUR CONVENIENCE AND IT IS READY TO START THE GENERATOR.**

If the remote control is replaced then you will need to go through following procedure with new remote control.

1. Flip the engine switch to the "RUN" (I) position.

2. Push the battery power restore switch for about 3 seconds and then release.

3. Press the program button and hold on, the remote indicator light will light up for about 3 seconds and then be off. After that, release the program button. Erase the remote program successfully.

4. Push the program button on the control panel once and the remote indicator light will light up.
5. Push the "START" button on the remote control and hold on. Release the button when the indicator light become off.  

6. The remote control is programmed to generator successfully.

**Battery Cable Connection**

Follow below instruction to connect battery to the generator:

1. Unscrew the air cleaner cover by provided screwdriver.
2. Cut wire tie that is binding the black battery cables A and B.
3. Insert the male connector of cable A into female connector of cable B.
4. Reattach the air cleaner cover.

**Remote Control Power Consumption**

While the Engine Switch is in the “RUN” (I) position and the battery power restore switch has been pressed for about 3 seconds, the remote module is active and waiting for signal. This function requires electrical current which is consuming the battery.

**This generator will automatically disconnect the battery after 12 hours to avoid battery drainage, if the generator is not running and the engine switch is left in “RUN” (I) position. You must go through starting procedure to resume running the unit again.**
AN IMPORTANT MESSAGE ABOUT TEMPERATURE:

Your Firman Power Equipment product is designed and rated for continuous operation at ambient temperatures up to 40°C (104°F). When your product is needed, your product may be operated at temperatures ranging from -15°C (5°F) to 50°C (122°F) for short periods. If the product is exposed to temperatures outside this range during storage, it should be brought back within this range before operation. In any event, the product must always be operated outdoors, in a well-ventilated area and away from doors, windows and other vents.

- When operated above 77°F (25°C) 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 and etc. Maximum power decreases about 3.5% for each 1,000 feet above sea level; and will also decrease about 1% for each 10°F (-12.2°C) above 60°F (16°C) ambient temperature.

### SPECIFICATIONS

<table>
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<th>Model</th>
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<tr>
<td>Starting Watts</td>
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<tr>
<td>Running Watts</td>
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<td>Rated AC Voltage</td>
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<tr>
<td>Rated Frequency</td>
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<tr>
<td>Ignition System</td>
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<td>Air Cleaner</td>
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<td>P.T.O. shaft rotation</td>
<td>Counter Clockwise (Facing P.T.O.)</td>
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<tr>
<td>Oil Type</td>
<td>See “Add Engine Oil” Section</td>
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<tr>
<td>Spark Plug</td>
<td>TORCH F6RTC/NGK BPR6ES/CHAMPION RN9YC</td>
</tr>
</tbody>
</table>

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English

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Add Engine Oil

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

NOTE:
The recommended oil type is 10W-30 automotive oil. However, outdoor temperatures will determine the space proper oil viscosity for the engine. Use the chart to select the best for the outdoor temperature range expected.

1. Place generator on a flat and level surface.
2. Loosen the cover screw and remove the maintenance cover.
3. Remove oil fill cap/dipstick.
4. Using oil funnel, slowly pour contents of provided oil bottle into oil fill opening to the “H” mark on dipstick. Be careful do not overfill. Overfilling with oil could cause the engine to not start or hard starting.

<table>
<thead>
<tr>
<th>Degrees Celsius (Outside)</th>
<th>Full Synthetic 5W-30</th>
<th>5W-30</th>
<th>10W-40</th>
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<tr>
<td>-28.9</td>
<td>-17.8</td>
<td>-6.7</td>
<td>4.4</td>
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<tr>
<td>-26.7</td>
<td>15.6</td>
<td>26.7</td>
<td>37.8</td>
</tr>
<tr>
<td>-20</td>
<td>37.8</td>
<td>48.9</td>
<td>55.5</td>
</tr>
</tbody>
</table>

5. Replace oil fill cap/dipstick and fully tighten.
6. Reinstall maintenance cover and tighten screws.
7. Oil Level should be checked prior to each use or at least 8 hours or operation. Keep oil level maintained.

⚠️ CAUTION

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

NOTE:
We consider the first 5 hours of run time to be the break-in period for the unit. During the break-in period stay at or below 50% of the running watt rating and vary the load occasionally to allow stator windings to heat and cool. Adjusting the load will also cause engine speed to vary and help seat piston rings.

Low oil shutdown
The unit is equipped with a low oil shutdown. If the oil level becomes lower than required, the sensor will activate a warning device or stop the engine. If generator shuts off and the oil level is within specifications, check to see if generator is sitting at an angle that forces oil to shift. Place on an even surface to correct this. If engine fails to start, the oil level may not be sufficient to deactivate low oil level switch. Make sure the sump is completely full of oil.
Add Fuel
Fuel must meet these requirements:
• Clean, fresh, unleaded gasoline.
• Use regular UNLEADED gasoline with the generator engine with a minimum 87 octane / 87 AKI (91 RON).
   For high altitude use, see "Operation at High Altitude".
• Do not use gasoline with more than 10% alcohol such as E85 or ethanol.

NOTE: Avoid generator damage.
Failure to follow Operator's Manual for fuel recommendations voids warranty.
• DO NOT use unapproved gasoline such as E85.
• DO NOT mix oil in gasoline.
• DO NOT modify engine to run on alternate fuels.

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

WHEN ADDING FUEL
• Fill fuel tank outdoors.
  DO NOT overfill tank. Allow space for fuel expansion. If the tank is overfilled, fuel can overflow onto a hot engine and cause fire or explosion. Wipe up any spilled fuel immediately.
• If fuel spills, wait until it evaporates before starting engine.
• Keep fuel away from sparks, open flames, pilot lights, heat, and other ignition sources.
• Check fuel lines, tank, cap and fittings frequently for cracks or leaks. Replace if necessary.
  DO NOT light a cigarette or smoke when filling the fuel tank.
1. Clean area around fuel fill cap, remove cap.
2. Slowly add unleaded fuel to fuel tank. Be careful not to fill above the red fuel level indicator. This allows adequate space for fuel expansion.
3. Install fuel cap and let any spilled fuel evaporate before starting engine or wipe up any spilled gasoline.

CAUTION
Slowly add unleaded gasoline to fuel tank.
Do not overfill tank.
Do not fill above the red fuel level indicator. This will allow expansion in hot weather and prevent overflow.

IMPORTANT: It is important to prevent gum deposits from forming in fuel system parts such as the carburetor, fuel hose or tank during storage. Alcohol-blended fuels (called gasohol, ethanol or methanol) can attract moisture, which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage. To avoid engine problems, the fuel system should be emptied before storage of 30 days or longer. See the "Long Term Storage" section. Never use engine or carburetor cleaner products in the fuel tank as permanent damage may occur.

Operation at High Altitude
At altitudes over 5,000 feet (1524 meters), a minimum 85 octane / 85 AKI (89 RON) gasoline is acceptable.
The density of air at high altitude is lower than at sea level. Engine power is reduced as the air mass and air-fuel ratio decrease. Engine power and generator output will be reduced approximately 3.5% for every 1000 feet of elevation above sea level. This is a natural trend and cannot be changed by
adjusting the engine. At high altitudes increased exhaust emissions can also result due to the increased enrichment of the air fuel ratio. Other high altitude issues can include hard starting, increased fuel consumption and spark plug fouling. To alleviate high altitude issues other than the natural power loss, FIRMAN can provide a high altitude carburetor main jet. The alternative main jet and installation instructions can be obtained by contacting Customer Support. Installation instructions are also available in the Technical Bulletin area of the FIRMAN internet site.

The part number and recommended minimum altitude for the application of the high altitude carburetor main jet is listed in the table below.

| Altitude main jet 1 | 330717002 | 3000-6000 Feet |
| Altitude main jet 2 | 330717003 | 6000-8000 Feet |

**WARNING**

Operation using the alternative main jet at elevations lower than the recommended minimum altitude can damage the engine. For operation at lower elevations, the standard main jet must be used. Operating the engine with the wrong engine configuration at a given altitude may increase its emissions and decrease fuel efficiency and performance.

**Grounding**

The National Electric Code requires your generator must be properly connected to an appropriate ground to help prevent electric shock.

**WARNING**

Failure to properly ground the generator can result in electric shock.

A ground terminal connected to the frame of the generator has been provided on the control panel. For remote grounding, connect of a length of heavy gauge (12 AWG minimum) copper wire between the generator ground terminal and a copper rod driven into the ground. We strongly recommend that you consult with a qualified electrician to ensure compliance with local electrical codes.

**WARNING**

Generator voltage could cause electrical shock or burn resulting in death or serious injury.

- Use approved transfer equipment to prevent backfeed by isolating generator from electric utility workers.
- When using generator for backup power, notify utility company.
- Use a ground fault circuit interrupter (GFCI) in any damp or highly conductive area, such as metal decking or steel work.
- DO NOT touch bare wires or receptacles.
- DO NOT use generator with electrical cords which are worn, frayed, bare or otherwise damaged.
- DO NOT operate generator in the rain or wet weather.
- DO NOT handle generator or electrical cords while standing in water, while barefoot, or while hands or feet are wet.
- DO NOT allow unqualified persons or children to operate or service generator.

**Connecting to a Building’s Electrical System**

Connections for standby power to a building’s electrical system must be made by a qualified electrician. The connection must isolate the generator power from utility power or other alternative power sources and must comply with all applicable laws and electrical codes.
OPERATION

Generator Location

⚠️ WARNING

Make sure you review each warning in order to prevent fire hazard.

- Keep area clear of inflammables or other hazardous materials.
- Select a site that is dry, well ventilated and protected from the weather.
- Keep exhaust pipe clear of foreign objects.
- Keep generator away from open flame.
- Keep generator on a stable and level surface.

⚠️ CAUTION

Tilting can cause fuel spillage.

- Do not block generator air vents with paper or other material.

⚠️ WARNING

POISONOUS GAS HAZARD.

Engine exhaust contains carbon monoxide, a poisonous gas that could kill you in minutes. You CANNOT smell it, see it, or taste it. Even if you do not smell exhaust fumes, you could still be exposed to carbon monoxide gas.

- Operate this product ONLY outside far away from windows, doors and vents to reduce the risk of carbon monoxide gas from accumulating and potentially being drawn towards occupied spaces.
- Install battery-operated carbon monoxide alarms or plug-in carbon monoxide alarms with battery back-up according to the manufacturer’s instructions. Smoke alarms cannot detect carbon monoxide gas.
- DO NOT run this product inside homes, garages, basements, crawlspaces, sheds, or other partially-enclosed spaces even if using fans or opening doors and windows for ventilation. Carbon monoxide can quickly build up in these spaces and can linger for hours, even after this product has shut off.
- ALWAYS place this product downwind and point the engine exhaust away from occupied spaces. If you start to feel sick, dizzy, or weak while using this product, shut it off and get to fresh air RIGHT AWAY. See a doctor. You may have carbon monoxide poisoning.

Surge Protection

⚠️ CAUTION

Voltage fluctuation may impair the proper functioning of sensitive electronic equipment.

Electronic devices, including computers and many programmable appliances use components that are designed to operate within a narrow voltage range and may be affected by momentary voltage fluctuations. While there is no way to prevent voltage fluctuations, you can take steps to protect sensitive electronic equipment.

Install UL1449, CSA-listed, plug-in surge suppressors on the outlets feeding your sensitive equipment. Surge suppressors come in single- or multi-outlet styles. They’re designed to protect against virtually all short-duration voltage fluctuations.
Starting the Generator (Recoil Start)

1. Before starting the generator, check for loose or missing parts and for any damage which may have occurred during shipment.
2. Check oil level and fuel.

3. Disconnect all electrical loads from the generator. Never start or stop the generator with electrical devices plugged in or turned on.

4. Turn the fuel valve to the “ON” (I) position.

5. Flip the engine switch to the "RUN" (I) position.

6. Push the battery power restore switch for about 3 seconds and then release.

7. Push the choke button to the “CHOKE” position.

8. Pull the starter cord slowly until resistance is felt and then pull rapidly.

9. Push the choke button to the “RUN” position.

10. Allow generator to run at no load for few minutes upon each initial start-up to permit engine and generator to stabilize.

**WARNING**

Starter cord kickback (rapid retraction) will pull hand and arm toward engine faster than you can let go which could cause broken bones, fractures, bruises, or sprains resulting in serious injury. When starting engine, pull cord slowly until resistance is felt and then pull rapidly to avoid kickback.
**NOTE:**

Keep choke lever in “CHOKE” position for only 1 pull of the recoil starter. After first pull, move choke lever to the “RUN” position for up to the next 3 pulls of the recoil starter. Too much choke leads to sparkplug fouling/engine flooding due to the lack of incoming air. This will cause the engine not to start.

**NOTE:**

If engine starts after 3 pulls but fails to run, or if unit shuts down during operation, make sure unit is on a level surface and check for proper oil level in crankcase. This unit may be equipped with a low oil protection device. If so, oil must be at proper level for engine to start.

**Manual Choke Start**

(When the battery is dead)

If the battery is dead or not able to produce enough current to power the push button choke, the choke itself can be operated manually to help start the engine. To manually choke and start the inverter, follow these steps:

1. Loosen the screws and remove the maintenance cover.
2. Locate the yellow manual choke lever.
3. Turn the choke lever to the “CHOKE” (right) position.
4. Turn the fuel valve to the “ON”(l) position.
5. Flip the engine switch to the “RUN”(l) position.
6. Pull the starter cord slowly until resistance is felt and then pull rapidly.
7. As the engine starts to roll over, move the choke lever to the “RUN”(left) position.
8. Allow generator to run at no load for few minutes upon each initial start-up to permit engine and generator to stablize.
Starting the Generator (Electric Start)

Electric Start and Remote Start Operations

This model is provided with recoil start, electric start and remote start capabilities. The charger is a low amperage maintenance type charger. It will charge your battery as your generator runs. Avoid prolonged cranking, as it can damage the engine.

⚠️ WARNING

Storage batteries give off EXPLOSIVE hydrogen gas while charging. Do not allow smoking, open flames, sparks, or spark producing equipment in the area while charging.

⚠️ WARNING

Battery electrolyte fluid is comprised of sulfuric acid that can be very dangerous and cause severe burns. Do not allow this fluid to contact eyes, skin, clothing, etc. If contact or spillage does occur, flush the area with water immediately.

1. Before starting the generator, check for loose or missing parts and for any damage which may have occurred during shipment.

2. Check oil level and fuel.

3. Disconnect all electrical loads from the generator. Never start or stop the generator with electrical devices plugged in or turned on.

4. Turn the fuel valve to the "ON" (I) position.

5. Flip the engine switch to the "RUN" (I) position.

6. Push the battery power restore switch for about 3 seconds and then release.

7. Push the choke button to the "CHOKE" position.

8. Press and hold the engine switch in the "START" (II) position for few seconds and release the switch to the "RUN" (I) position.
2. Check oil level and fuel.

3. Disconnect all electrical loads from the generator. Never start or stop the generator with electrical devices plugged in or turned on.

4. Turn the fuel valve to the “ON” position.

5. Flip the engine switch to the “RUN” position.

10. Allow generator to run at no load for few minutes upon each initial start-up to permit engine and generator to stabilize.

Starting the Generator (Remote Start)

The generator can be started remotely from up to a maximum of 164 feet away using the remote control with new fully charged batteries in the remote control. As the batteries state of charge in the remote control reduces, the distance to start the generator will also reduce. (Wireless signal may not pass through some solid objects.)

NOTE:
YOUR REMOTE CONTROL IS ALREADY PROGRAMMED IN FACTORY FOR YOUR CONVENIENCE AND IT IS READY TO START THE GENERATOR.

If the remote control is replaced, then you will need to go through programming procedure in "Remote Control Programming” section.

1. Before starting the generator, check for loose or missing parts and for any damage which may have occurred during shipment.

2. Check oil level and fuel.

3. Disconnect all electrical loads from the generator. Never start or stop the generator with electrical devices plugged in or turned on.

4. Turn the fuel valve to the “ON” position.

5. Flip the engine switch to the "RUN" position.

6. Push the battery power restore switch for about 3 seconds and then release.

7. Push and release the "START" button on the remote control. The generator will turn over for 3 to 5 seconds and start.

An engine warmup delay is programmed into the remote start cycle. After the generator is running, there will be a delay of electrical output for 15 seconds. If the engine fails to start within 3 to 5 seconds, the engine will attempt to start five additional times. If the generator failed to start, the remote start indicator light will flash. If the generator fails to start after a total of six attempts, the start button on the remote control must be pushed again to begin another cycle of six start attempts.
8. Allow generator to run at no load for few minutes upon each initial start-up to permit engine and generator to stabilize.

Remote Control Power Consumption

While the Engine Switch is in the “RUN” (I) position and the battery power restore switch has been pressed for about 3 seconds, the remote module is active and waiting for signal. This function requires electrical current which is consuming the battery. THIS GENERATOR WILL AUTOMATICALLY DISCONNECT THE BATTERY AFTER 12 HOURS TO AVOID BATTERY DRAINAGE, IF THE GENERATOR IS NOT RUNNING AND THE ENGINE SWITCH IS LEFT IN “RUN” (I) POSITION. YOU MUST GO THROUGH STARTING PROCEDURE TO RESUME RUNNING THE UNIT AGAIN.

Connecting Electrical Loads

This unit has been pretested and adjusted to handle its full capacity. Before starting the generator, disconnect all load. Apply load only after generator is running. Voltage is regulated via the engine speed adjusted at the factory for correct output. Readjusting will void warranty.

**CAUTION**

When applying a load, do not exceed the maximum wattage rating of the generator when using one or more receptacles. Also, do not exceed the amperage rating of any one receptacle.

Do not apply heavy electrical load during break-in period (the first five hours of operations).

1. Let engine stabilize and warm up for a few minutes after starting.
2. Ensure circuit breaker on control panel is in on position.
3. Plug in and turn on the desired 120 Volt AC, single phase, 60Hz electrical loads. It is better to attach the item with largest load first.

**NOTE:**

Connecting a generator to your electric utility company’s power lines or to another power source may be against the law. In addition this action, if done incorrectly, could damage your generator and appliances and could cause serious injury or even death to you or a utility worker who may be working on nearby power lines. If you plan to run a portable electric generator during an outage, please notify your electric utility company immediately and remember to plug your appliances directly into the generator. Do not plug the generator into any electric outlet in your home. Doing so could create a connection to the utility company power lines. You are responsible for ensuring that your generator’s electricity does not feed back into the electric utility power lines. If the generator will be connected to a building electrical system, consult your local utility company or a qualified electrician. Connections must isolate generator power from utility power and must comply with all applicable laws and codes.

Economy Control Switch

The Economy Control switch can be activated in order to minimize fuel consumption and noise while operating the unit during times of reduced electrical output, allowing the engine speed to idle during periods of non-use. The engine speed returns to normal when an electrical load is connected. When the economy switch is off, the engine runs at normal speed continuously.

**WARNING**

For periods of high electrical load or momentary fluctuations, the Economy Control Switch should be turned OFF.
1. Before connecting the battery charging cable to a battery that is installed in a vehicle, disconnect the vehicle battery ground cable from the negative (–) battery terminal.

Do not continue to charge a battery that becomes hot or is fully charged.

**DC CIRCUIT PROTECTOR**

A DC circuit protector has been provided to protect the circuit from overloads. If an overload occurs, the circuit protector will trip. The circuit protector may be reset by pushing the button of the protector.

Charging a large capacity battery or a totally discharged battery may cause the DC breaker to turn off. In these cases, a separate battery charger unit connected to an AC power source is recommended instead of the DC receptacle on the generator.

**Stopping the Engine**

1. Turn off and remove entire electrical loads. Never start or stop the generator with electrical devices plugged in or turned on.

Let the generator run at no-load for two minutes to stabilize internal temperatures of the engine and generator.

2. **Remote Start Operation**

Push and release the “STOP” button on the remote control. The generator will be shut down.

**Note:** Skip this step and go to step 3, if you are not using Remote Start to shutdown the engine.
Low Oil Shutdown
If the engine oil drops below a preset level, an oil switch will stop the engine. Check oil level with dipstick.
If oil level is between the LOW and HIGH mark on dipstick:
1. DO NOT try to restart the engine.
2. Contact an Authorized FIRMAN Service Dealer.
3. DO NOT operate engine until oil level is corrected.
If oil level is below the LOW mark on dipstick:
1. Add oil to bring level to HIGH mark.
2. Restart engine and if the engine stops again a low oil condition may still exist. DO NOT try to restart the engine.
3. Contact an Authorized FIRMAN Service Dealer.
4. DO NOT operate engine until oil level is corrected.

Do Not Overload Generator
Overloading a generator in excess of its rated wattage capacity can result in damage to the generator and to connected electrical devices.
To prolong the life of your generator and attached devices, follow these steps to add electrical load:
1. Start the generator with no electrical load attached.
2. Allow the engine to run for several minutes to stabilize.
3. Plug in and turn on the first item. It is best to attach the item with the largest load first.
4. Allow the engine to stabilize.
5. Plug in and turn on the next item.
6. Allow the engine to stabilize.
7. Repeat steps 5-6 for each additional item.

Overload Operation
The overload indicator light will turn on and cut power to the receptacles after 30 seconds when the load exceeds 3080W(approximately).
The overload indicator light will turn on and cut power to the receptacles after 2 seconds when the load exceeds 3150W(appproximately).

How to Correct
1. Disconnect any electronic devices, and then stop the engine.
2. Reduce the total wattage of connected electronic devices until it is within the generator’s rated output.
3. Inspect the Air Inlet and Control Panel for any blockage. Remove blockage if found.
4. Restart Engine.

Parallel Operation
Any two FIRMAN inverter generator with parallel port including two FIRMAN inverter model W03083 can be paralleled to increase the total available electrical power to 5500 Watts. A FIRMAN Parallel kit (not included) is required for parallel operation. For Kit availability, call customer Service at 1-844-347-6261 or visit: www.firmangenerators.com.

CAUTION:
DO NOT disconnect parallel cables while generator is running.
## MAINTENANCE SCHEDULE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>NOTES</th>
<th>Daily (Before operation)</th>
<th>Initial 25 hours</th>
<th>Every 50 hours</th>
<th>Every 100 hours (or annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spark Plug</td>
<td>Check condition. Adjust gap and clean. Replace if necessary.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Engine Oil</td>
<td>Check oil level.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replace.</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Air Filter</td>
<td>Clean, replace if necessary.</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Fuel Filter</td>
<td>Clean fuel filter and fuel tank strainer. Replace if necessary.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Fuel Line</td>
<td>Check fuel hose for cracks or other damage. Replace if necessary.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaust System</td>
<td>Check for leakage. Retighten or replace gasket if necessary.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check spark arrester screen. Clean/Replace if necessary.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Carburetor</td>
<td>Check choke operation.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting System</td>
<td>Check recoil starter operation.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fittings/Fasteners</td>
<td>Check. Replace if necessary.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

### General Recommendations

Regular maintenance will improve the performance and extend the life of the generator. See any authorized dealer for service. The generator’s warranty does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, the operator must maintain the generator as instructed in this manual. Some adjustments will need to be made periodically to properly maintain your generator. All service and adjustments should be made at least once each season. Follow the requirements in the Maintenance Schedule chart above.

**Notice** Once a year you should clean or replace the spark plug and replace the air filter. New spark plugs and clean air filter assure proper fuel-air mixture and help your engine run better and last longer.
ENGINE MAINTENANCE
To prevent accidental starting, remove and ground spark plug wire before performing any service.

Change Engine Oil
Change engine oil every 100 hours.
(for a new engine, change oil after 25 hours.)
If you are using your generator under extremely dirty or dusty conditions, or in extremely hot weather, change the oil more often.

⚠️ CAUTION ⚠️
Avoid prolonged or repeated skin contact with used motor oil.
• Used motor oil has been shown to cause skin cancer in certain laboratory animals.
• Thoroughly wash exposed areas with soap and water.

(a) Loosen the cover screws and remove the maintenance cover.

(b) Pop up the rubber plug from below yellow draining bolt.

(c) Remove yellow drain bolt.
(d) Tilt the generator on its side and allow the oil to drain completely.
(e) Replace yellow drain bolt.
(f) Fill the engine with oil until it reaches the HIGH (H) level on the oil filler cap. DO NOT OVERFILL.

● Use fresh and high quality lubricating oil to the specified quantity.
If contaminated or deteriorated oil is used or the quantity of the engine oil is not sufficient, the engine damage will result and its life will be greatly shortened.

Air Filter Maintenance
Maintaining an air filter in proper condition is very important. Dirt induced through improperly installed, improperly serviced, or inadequate elements damages and wears out engines. Always keep the element clean.

(a) Remove the air cleaner cover and locate the air filter plastic cover.

(b) Remove the foam element.

(c) After wetting the element by clean engine oil squeeze it tight by hand.

(d) Put the element in the case and install it securely.
(e) Reattach the air filter cover.
(f) Reinstall the air cleaner cover and tighten the cover screw securely.
**Inspect Muffler and Spark Arrester**

Inspect the muffler for cracks, corrosion, or other damage. Remove the spark arrester, if equipped, and inspect for damage or carbon blockage. If replacement parts are required, make sure to use only original equipment replacement parts.

**WARNING**

Exhaust heat/gases could ignite combustibles, structures or damage fuel tank causing a fire, resulting in death or serious injury and/or property. Contact with muffler area could cause burns resulting in serious injury.

- **DO NOT** touch hot parts and **AVOID** hot exhaust gases.
- Allow equipment to cool before touching.
- Keep at least 5 feet (1.5 m) of clearance on all sides of generator including overhead.
- Replacement parts must be the same and installed in the same position as the original parts.

**Clean or replace spark arrester as follows:**

Depending on the type fuel used, the type and amount of lubricant used, and/or your operating conditions, the exhaust part and muffler may become blocked with carbon deposits. If you notice power loss, you may need to remove these deposits to restore performance.

1. Allow the engine to cool completely before servicing the spark arrester.
2. Loosen the spark arrester clamp, remove the spark arrester cover, and with a thin blade screwdriver remove the spark arrester.

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**Spark Plug Maintenance**

Changing the spark plug will help your engine to start easier and run better.

(a) Remove the maintenance cover.

(b) Remove the spark plug cable from the spark plug.

(c) Remove the spark plug using provided wrench.

(d) Inspect the spark plug for damage and clean with a wire brush before reinstalling.

(e) Adjust the electrode gap to 0.7 to 0.8 mm (0.028” to 0.031”).

(f) Seat the spark plug in position and thread by hand to prevent cross threading.

(g) Tighten the plug with provided wrench and put the cap back on.

**Spark Plug: TORCH F6RTC**
- NGK BPR6ES
- CHAMPION RN9YC
3. Carefully remove the carbon deposits from the spark arrester screen with a wire brush.

4. Replace the spark arrester if it is damaged.
5. Position the spark arrester in the muffler and attach spark arrester cover with the screws.

⚠️ CAUTION
Failure to clean the spark arrester will result in degraded engine performance.

**GENERATOR MAINTENANCE**

Make certain that the generator is kept clean and stored properly. Only operate the unit on a flat, level surface in a clean, dry operating environment. **DO NOT** expose the unit to extreme conditions, excessive dust, dirt, moisture or corrosive vapours.

⚠️ CAUTION
**DO NOT** use a garden hose to clean the generator. Water can enter the generator through the cooling slots and damage the generator windings.

Use a damp cloth to clean exterior surfaces of the generator.

Use a soft bristle brush to remove dirt and oil.

Use an air compressor (25 PSI) to clear dirt and debris from the generator.

Inspect all air vents and cooling slots to ensure that they are clean and unobstructed.

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**Battery Replacement**

1. Unscrew the air cleaner cover by provided screwdriver.

2. Release the battery retaining rubber belt.
3. Remove the protective cover (rubber sheath) from battery.
4. Disconnect the black(-) cable from black(-) terminal on the battery.
5. Pull out the battery and replace with new battery: 12V sealed lead acid 5.5AH

LXWXH:90X70X100mm(3.54X2.76X3.84in)
6. Connect the red(+) battery cable to the positive terminal of battery first and then connect the black(-) battery cable to the negative terminal of battery.
7. Reattach the air cleaner cover.

⚠️ WARNING

**Always** connect the positive (+) battery cable (red boot) first when connecting battery cables.
ALWAYS disconnect the negative (-) battery cable (black boot) first when disconnecting battery cables.
NEVER connect the negative (-) battery cable (black boot) to the positive (+) post on the battery.
NEVER connect the positive (+) battery cable (red boot) to the negative (-) post on the battery.
NEVER touch both battery posts simultaneously.
NEVER place a metal tool across both battery posts.
ALWAYS use insulated or nonconducting tools when installing the battery.

Battery Replacement On Remote
1. Loosening and remove cover screws.
2. Remove the cover.
3. Remove the depleted batteries and insert two new CR2016 lithium batteries with the “+” terminal facing up.
4. Close the remote cover and tight the screws.

Charging The Generator Battery

⚠️ WARNING ⚠️
Storage batteries give off EXPLOSIVE hydrogen gas while charging. Do not allow smoking, open flames, sparks, or spark producing equipment in the area while charging.

⚠️ WARNING ⚠️
Battery electrolyte fluid is comprised of sulfuric acid that can be very dangerous and cause severe burns. Do not allow this fluid to contact eyes, skin, clothing, etc. If contact or spillage does occur, flush the area with water immediately. To ensure the battery remains charged, the supplied battery charger should be plugged into the generator. Plug the cord from the charger into the charging port on the generator control panel. Plug the charger into a 120 volt AC wall outlet.

There is a light on the charger. This light will remain red until the battery get charged and then it will be changed to green. The charger won’t charge the battery or will stop charging when the light is green to prevent any damage to battery and generator. Unplug battery charger from wall outlet and generator control panel when generator is going to be used.
SERVICE AND STORAGE

Infrequent Service
If the unit is used infrequently, difficult starting may result. To eliminate hard starting, follow these instructions:
1. Run the generator at least 30 minutes every month.
2. Run the generator, then close the fuel shut-off valve and allow the unit to run until the engine stops.
3. Move the engine switch to the "OFF" position.

Long Term Storage
It is important to prevent gum deposits from forming in essential fuel system parts such as the carburetor, fuel hoses or tank during storage. Also, experience indicates that alcohol-blended fuels (called gasohol, ethanol or methanol) can attract moisture, which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage.

When the generator set is not being operated, or is being stored more than one month, follow these instructions to avoid engine problems:
1. **ADD** a properly formulated commercially FUEL STABILIZER to the tank if it is not already added.
2. Operate the engine for 5-10 minutes to circulate treated fuel into fuel lines and carburetor before shutdown.
3. After engine cools down, remove all gasoline from the fuel tank. Use a commercially available, non-conductive vacuum siphon.

4. **FUEL STARVATION:** Start and run the generator until stops from lack of fuel. This will dry out all remained fuel in tank, fuel lines and carburetor.
5. Allow the unit to cool entirely before cleaning and storage.
6. Change oil with recommended grade oil.
7. Remove spark plug and pour about one teaspoon of engine oil through the spark plug hole, pull the recoil starter several times to distribute the oil for lubricating the cylinder. Reattach the spark plug. Pull recoil slowly until resistance is felt. This will close valves so moisture cannot enter engine cylinder. Gently release recoil starter.
8. Keep the engine switch and fuel valve on “OFF” position.
9. Cover the unit and store in a clean, dry place out of direct sunlight. **NEVER USE WATER TO CLEAN GENERATOR.**

**NOTE:**
- We recommend always using a fuel stabilizer. A FUEL STABILIZER will minimize the formulation of fuel gum deposits during storage, the fuel stabilizer can be added to the gasoline in the fuel tank, or into the gasoline in a storage container.
- If it is not practical to empty the fuel tank and the unit is to be stored for some time, use a commercially available FUEL STABILIZER added to the gasoline to increase the life of the gasoline. Run the unit for 5-10 minutes, turn off the fuel valve and allow to run until engine stops from lack of fuel (FUEL STARVATION).
- Any damages or hazards caused by using improper fuel, improperly stored fuel, and/or improperly formulated stabilizers, are not covered by manufacturer’s warranty.
- Do not store gasoline from one season to another season.

**DANGER**
Drain fuel into approved container outdoors, away from open flame. Be sure engine is cool.
Do not smoke.
## TROUBLE SHOOTING

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
</table>
| Engine is running, but no AC output is available.              | 1. Circuit breaker is open.  
2. Fault in generator.  
3. Poor connection or defective cord set.  
4. Connected device is bad. | 1. Reset circuit breaker.  
2. Contact authorized service facility.  
3. Check and repair.  
4. Connect another device that is in good condition. |
| Engine runs good at no-load but “bogs down” when loads are connected. | 1. Short circuit in a connected load.  
2. Engine speed is too slow.  
3. Generator is overloaded.  
5. Clogged or dirty fuel filter. | 1. Disconnect shorted electrical load.  
2. Contact authorized service facility.  
3. See Don’t Overload Generator  
4. Contact authorized service facility.  
5. Clean or replace fuel filter. |
| Engine will not start; starts and runs rough or shuts down when running. | 1. Engine switch set to OFF (O) position.  
2. Fuel shutoff lever is in OFF (O) position.  
3. Low oil level.  
4. Dirty air cleaner.  
5. Out of fuel.  
7. Spark plug wire not connected to spark plug.  
8. Bad spark plug.  
10. Flooded.  
11. Excessively rich fuel mixture.  
12. Intake valve stuck open or closed.  
13. Engine has lost compression.  
14. Clogged or dirty fuel filter. | 1. Set engine switch to ON (I) position.  
2. Move fuel shutoff lever to ON (I) position.  
3. Fill crankcase to proper level or place generator on level surface.  
4. Clean or replace air cleaner.  
5. Fill fuel tank.  
6. Drain fuel tank and carburetor; fill with fresh fuel.  
7. Connect wire to spark plug.  
8. Replace spark plug.  
9. Drain gas tank and carburetor; fill with fresh fuel.  
10. Wait 5 minutes and re-crank engine.  
11. Contact authorized service facility.  
12. Contact authorized service facility.  
13. Contact authorized service facility.  
14. Clean or replace fuel filter. |
| Engine lacks power.                                             | 1. Load is too high.  
2. Dirty air filter.  
3. Clogged or dirty fuel filter.  
4. Clogged spark arrester. | 1. Don’t Overload Generator  
2. Replace air filter.  
3. Clean or replace fuel filter.  
4. Clean or replace spark arrester. |
| Engine “hunts” or falters.                                      | 1. Carburetor is running too rich or too lean.  
2. Clogged or dirty fuel filter. | 1. Contact authorized service facility.  
2. Clean or replace fuel filter. |
| Engine shuts down when running.                                 | 1. Out of fuel.  
2. Dirty air cleaner.  
3. Low oil level. | 1. Fill fuel tank.  
2. Clean or replace air cleaner.  
3. Fill crankcase to proper level or place generator on level surface. |
171cc Engine Parts Diagram