

# GENPOWER<sup>®</sup>

G E N E R A T O R

## DIESEL PORTABLE GENERATORS USER AND MAINTENANCE MANUEL

### *GDG SERIES*



## **DEAR GENPOWER GENERATOR SET USER;**

Welcome to Genpower Family!

Thank you for choosing Genpower generator and hope your works will not be unfinished.

Genpower generator sets are produced in compliance with ISO 9001:2000 Quality Management System and “CE” norms and in an environment-friendly way compatible to ISO 14001:2004 Environment Management System.

Our generators are delivered to our end users by being subjected to a careful quality control and tests which are applied in every stage of production. We are attempting to continuously improve our product and provide a better service for you, with our staff specialized in their field of interests and in modern factory facilities.

Please read the operating manual carefully before initial starting of generator set and also recommend you have it be installed by our authorized service in order to avoid from any unfinished matter.

This operating manual, for engine service–maintenance and alternator service–maintenance books are delivered together with generator set.

This operating and maintenance manual was prepared in order to ensure users to easily handle the generator and help them how they are going to make its maintenance. This is not a workshop repair manual.

The diesel portable generators is under guarantee for **1 (one) years or 1000 operating hours** provided the use of it in accordance with the matters stated in operating and maintenance manuals. Any repair or replacement of parts caused by any modification held on the generator without giving consent of the original manufacturer or by use of non-original parts are excluded from scope of guarantee.

We recommend you to make a periodical maintenance agreement with our authorized services which provide continuous service for 7 days/ 24 hours in order to have much more performance and prolonged life -cycle of generator.

Please comply with attention and warning indicators on the generator set and take necessary safety measures mentioned in this manual for your safety and your surrounding lives.

Information included in this manual may not contain all features belonging to the generator.

Genpower has the right of making any amendment to improve the product quality without notifying.

## **GENPOWER GENERATOR**

**“Keep this manual for later assistance”**

## **GENPOWER GENERATORS UNIQUE SUPERIOR FEATURES AND ADVANTAGES**

- ◆ **Half A Century Old Experience in Generator Production**
  - ◆ Low-level Noise
- ◆ **Advanced Technology and High-Quality Diesel Engines**
  - ◆ Low-level Exhaust Emission
- ◆ **Advanced Technology and High-Quality Alternators**
  - ◆ Low Operating Costs
- ◆ **Flexible Control Card Suitable for All Kinds of Applications**
  - ◆ Low Fuel Consumption
  - ◆ **Reliable and High-Quality Technology**
    - ◆ Low Oil Consumption
  - ◆ **Compact, Silent, Patented Design Canopy**
    - ◆ Tropical, 50 °C Radiator
  - ◆ **Compatible to Heavy Duty Conditions**
  - ◆ Water and Particulate Separated Fuel Filter
  - ◆ **First Class Product Support**
    - ◆ Durability
- ◆ **Abundant and Reasonable Cost Spare Parts**
  - ◆ Global Network in Service and Maintenance

## **IMPORTANT GENERAL INFORMATION**

### ***Generator Rating Definitions:***

*Genpower generators are produced in compliance with; TS ISO 8528-1, 8528-4, ISO 8528-5, BS500, ISO 3046/1:1985, IEC 60034, NEMA MG-1.22, BS5514/1 standard.*

**Standby Power (ESP)** is defined as the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a reliable utility power outage. over 24 hours of operation shall not exceed 70% of the ESP rating. Under the condition of generator`s periodic maintenance has done in compliance with manufacturers maintenance procedures, total operating time at 70% ESP rating shall not exceed 200 hours/year. For applications supporting an unreliable utility service, the Prime Power (PRP) rating should be used.

**Prime Power (PRP)** is defined as being the maximum power which a generator set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year. The permissible average power output over 24 hours of operation shall not exceed 70% of the PRP. Total operating time at 100% PRP rating shall not exceed 500 hours/year. At 12-hour operating time %10 overloading can be done in one-hour zone, total operating time at overloading with 10% PRP rating shall not exceed 25 hours/year.

**Limited Continuous Power (LTP)** Under the condition of generator`s periodic maintenance has done in compliance with manufacturers maintenance procedures, total operating time at %100 LTP rating shall not exceed 500 hours/year. No overload capability is available for this rating.

**Continuous Power (COP)** is defined as being able to supply utility power at a constant 100 percent load for an unlimited number of hours per year. No overload capability is available for this rating.



*Recommended to follow these instructions in selection and operation of generator;*

- Generator, In Continuous Power, under the condition of generator`s periodic maintenance has done in compliance with manufacturers maintenance procedures and is used original spare parts and oil in compliance with manufacturer`s catalogues, may operate maximum %70 load at PRP.
- Generators shall not operated under the level of %50 at PRP rating. This may cause extreme oil consumption in engine, after in a short while permanent and unrecoverable damages may occurs.
- Dual or triple sync, equally aged and with fault redundancy systems should be chosen if the power output necessity is 1000 kVa and higher.



***ATTENTION! NEVER LOAD GENERATOR TILL TEMPERATURE OF WATER REACH 60 °C IN MANUAL OPERATED GENERATORS.***

# 1. PART: SAFETY MEASURES

## 1.1. INTRODUCTION

\* Generator groups produced by our company have been designed and conceived by prioritizing all sorts of safety of lives and property.

\* Generators should be installed and used in accordance with maintenance and operating rules stated in this catalogue both in terms of using the generator economically for a long-term and ensuring continuous safety of life and property. Required safety measures should be taken in advance during the installation, usage and maintenance. Safe operating responsibility of the generator set belongs to people using and maintaining it. Provided that instructions, methods and safety rules in this manual are complied with, risk of accident will decrease.

\* Otherwise, unexpected defects and accidents which may result within serious injured and death of people and damage on the equipment. Please have your generator used and maintained by well-trained people who issued or authorized persons in order to prevent these occasions.

\* Please plan any part, machine or engine you are operating in a way to ensure easy access to every point. Take pre-safety measures about how you can avoid from exposure to occasions like touching with rotating parts, burning and cut with sharp edges while checking out the engine. Ensure that covers of turbo compressor driving shaft, pump shaft, fan belts and winglets among engine components are fitted.

\* Never operate your generator when it is broken down and in unsafe conditions. Always isolate accumulator negative (-) lead terminal by separating from the accumulator. Bring attention of people by hanging a **WARNING/CAUTION** sign on the engine or its neighboring.

\* Never make any maintenance or repair while the generator set is operating. Turn off the generator and take all safety measures before any maintenance initiated.

\* Never have unauthorized persons repaired and maintained, this will cause damage in your generator and also be out of from scope of guarantee. We recommend you to use our authorized services providing 7/24 service.

## 1.2. **ATTENTION! DON'T DO THE FOLLOWINGS:**

\* The proper fuel for the diesel generator set is light diesel fuel. Do not use gasoline, kerosene and or other fuels other than light diesel fuel,

\* Do not carry the generator on its side or in an inclined position during transportation. Oil or fuel may overflow into the air filter and wets the filter, and the filter will not work if it does not absorb enough air. If this happens, remove the filter, wash it until the oil or fuel is clean, dry it and put it back or replace it with a new one.

\* Don't start the engine indoors. Exhaust gases are odorless and can be deadly as they contain carbon monoxide.

\* Do not insert your hands and feet into moving or rotating parts.

\* Do not store, pour or use fuel near open flames or appliances such as stoves, water heaters or sparking devices.

\* Do not refuel in places such as poorly ventilated rooms. Do this in an open area.

\* Do not refuel while the engine is running. Allow the engine to cool for 20 minutes before filling the gas tank. Store fuel in safe containers.

\* Do not remove the fuel tank cap while the engine is running.

\* Do not start the engine in the presence of fuel odor or other explosive conditions.

\* Do not start the engine if it is overflowing or dripping fuel. Move the generator away from the stream and block ignition until the fuel has evaporated.

\* Do not carry the generator from one place to another with fuel in the tank.

\* Do not smoke while refueling.

\* Do not run the engine at excessive speed. This can lead to accidents.

\* Do not touch the speed lever, links or parts that can increase speed.

\* Do not change the engine speeds selected by the manufacturer.

\* Do not hit the flywheel with a hard object while it is operating, it may break. Use the correct tool for servicing.

\* Do not run the engine without a muffler. Check frequently and replace if necessary. If there is a muffler deflector, check it periodically and replace it with the correct deflector if necessary.

\* Do not run the engine in the presence of flammable materials around the muffler.

\* Do not touch the hot muffler, cylinder or cooling fins as this will cause burns.

\* Do not operate the engine without the air cleaner, air cleaner cover and/or carburetor air intake cover.

## 1.3. **ATTENTION! DO THE FOLLOWINGS:**

\* Even if mains is not off, run the generator for at least 5-10 minutes every once in a while (once a week) so that the battery does not discharge, your battery will remain constantly charged. Because dry batteries complete their life after they are discharged.

\* If your generator is a system with accumulator (E, EC, ECX or TECX series generators), remove the negative (minus) terminal of the accumulator.

\* If your generator is accumulator started, do not neglect accumulator maintenance and cleaning. Keep the accumulator away from sparks, especially during charging. Accumulator acid is corrosive. It is especially dangerous for the skin and eyes.

- \* When repairing the electrical circuit is required, first disconnect the cables connected to the battery terminals.
- \* Clean the cylinder cooling fins and speed governor parts as they can affect engine speed.
- \* Check the muffler periodically to make sure it is working properly. Worn leaking muffler should be repaired or replaced.
- \* Use fresh diesel fuel. Stale fuel can cause gumming and leaking in the carburetor.
- \* Check the fuel connections and gaskets for cracks and leaks. Renew if necessary.
- \* When the battery-started generator is not running, always remove the ignition key to prevent accidental starting.
- \* Always keep the fuel cock closed when you do not start the generator.
- \* Accumulator compartments boxes are manufactured in a safe way. Do not allow any occasion which may cause bare flame or electric arc near the accumulators. Hydrogen gas emitted from the accumulators may cause very serious injuries since it is so combustive and inflammable. Never **disconnect** lead terminals, impact on and bend over them while the engine is **starting** or operating.
- \* Have sufficient amount of **fulfilled fire extinguisher** present near to the generator.

#### 1.4. MOVING COMPONENTS AND IRRITATING MATERIALS:

- \* As a general maintenance rule; ensure diesel engine is on STOP state or its covers are installed on it. Never operate engines **without protection guard** which are disassembled except the case that exceptional maintenance and settings must be performed.
- \* Coming close to an operating engine is a safety risk. Remember wide and loose clothes, long hairs may cause serious accidents by being put on rotating components.
- \* Putting tools or equipment down on operating engine due to incaution may lead to serious injuries in case of close contact to the engine.
  - \* Avoid from touching with operating engine exhaust system.
  - \* Install materials for safety and protection purpose disassembled during the service on their places before **starting** the engine.
  - \* Avoid contact diesel fuel, oils, cooling water and accumulator electrolyte used in the engine with your **bare** body.
  - \* Wear **protection** gloves and oil proof clothes while engaging with these works.
  - \* Oils, especially used oils **influence under the skin and so** may lead to irritation and eczema on skin.
  - \* Thoroughly wash your skin after contact with oil and use protective creams.
  - \* Always use face mask and acid proof clothes while **working** with the accumulator.
  - \* Hot oils may cause burns. Do not touch hot oil, your skin may burn. Ensure there is no pressure in the system before starting to work while operating with the lubrication system.

#### 1.5. EXHAUST GASES:

- \* Breathing exhaust gases is toxic and dangerous. Operate the generator on OPEN air or in environments with a good air circulation.
- \* Take attention that exhaust gas outlet points do not **exhaust** to human **living** areas or near to air intake channels.
- \* Do not operate the generator in the exhaust system having gas **leakage**.

#### 1.6. ELECTRIC SHOCK AND FIRST AID:

##### 1.6.1. What Is First Aid?

In the event of an accident or life-threatening situation, the treatment without medicines is called first aid until the assistance of the medical staff is provided, in order to prevent life from getting worse or worse.  
FIRST AID APPLICATION IS ABSOLUTELY NOT USED.

##### 1.6.2. What Is The Purpose In First Aid?

- \* Protection and maintenance of life
- \* Prevent deterioration of the situation
- \* Facilitate the healing process.

##### 1.6.3. What Are The Features And Responsibilities Of The First Aider?

- \* He must be calm and unhurried.
- \* Keep the patient calm.
- \* Determine whether there is a danger that evaluates the environment.
- \* Do not endanger the safety of his / her life.
- \* Organize the people in charge to inform health institutions, fire and security.
- \* Evaluate the condition of the patient and begin appropriate first aid.
- \* Ensure that the patient arrives at the health facility as soon as possible.

##### 1.6.4. What are the basics of First Aid?

- \* Opening of the breathing passage

- \* Correcting the respiratory system.
- \* Ensuring activity of the circulatory system.

#### ***1.6.5. First Aid In Electric Shock***

- \* First ensure your own (first-aider) safety.
- \* Turn off the source of electricity, if possible.
- \* If not, move the source away from you and the person, using a dry, nonconducting object like plastic or wood.
- \* Begin CPR if the person shows no signs of circulation, such as breathing, coughing or movement.
- \* Apply a bandage. Cover any burned areas with a sterile gauze bandage.

#### ***1.6.6. First Aid for Carbon Monoxide Poisoning***

- \* The patient is immediately moved to fresh air.
- \* Deep breathing is carried out in the fresh air.
- \* CPR is applied to patients who are unable to breathe or breathe.
- \* Cover the top of the body to prevent the patient from chilling.
- \* The patient shall be sent to the health center immediately.

#### ***1.6.7. First Aid for Bleeding***

- \* If the wound is on the arm or leg, raise limb above the heart, if possible, to help slow bleeding.
- \* Apply direct pressure on the cut or wound with a clean cloth, tissue, or piece of gauze until bleeding stops.
- \* Apply a tourniquet if the bleeding is severe and not stopped with direct pressure in 5 minutes.

#### ***1.6.8. First Aid for Minor Burnings***

- \* **Cool the burn.** Hold the burned area under cool (not cold) running water or apply a cool, wet compress until the pain eases.
- \* Remove rings or other tight items from the burned area.
- \* Don't break blisters.
- \* **Bandage the burn.** Cover the burn with a sterile gauze bandage (not fluffy cotton)

## **2. PART: BEFORE STARTING**

- \* GENPOWER generators have been produced in international standards.
- \* Our air-cooled diesel portable generators have some of the following features:

- Lightweight construction
- Air cooled
- Four-stroke diesel internal combustion engine
- Direct fuel injection system
- Recoil starter or an optional electric starter
- Large fuel tank
- Automatic voltage stabilizer
- NFB circuit protector
- AC and DC outputs
- Low oil pressure alarm

\* There is an oil level sensor in the generators to prevent damage to the engine in case of oil shortage. When the oil level falls below a certain level, this sensor does not allow the generator to operate.

- \* Use **15W40** oil.

\* Each generator has a group identification plate. Serial number, qualifications, weights and manufacturing date of generators are written on this group plate. Use this serial number in spare parts, repair claims, interviews and at your demands.

\* It is recommended to use high quality detergent oils classified as SE, SF, SD or SC. Detergent oils keep the engine clean and prevent gumming and deposits. Nothing should be added to the recommended oil. The viscosity of the lubricating oil used should be selected in accordance with the ambient temperature range in which the engine operates.

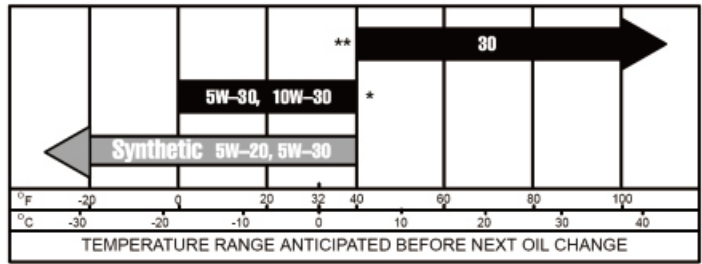
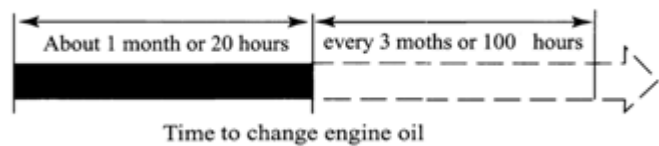


Figure 1

## 2.1. FILLING OIL:

**⚠ ATTENTION!** Your generator has been shipped without oil. Before using, be sure to fill in the oil. Do not ship with oil.



- \* Put the generator on a flat surface.
- \* Clean up around the mouth of the oil tank.
- \* Remove the oil filler plug or rod, fill the oil slowly. If there is an oil plug, fill up to the overflow point. If there is a oil dipstick, fill it to the FULL point on the dipstick. Do not overfill.



Dipstick

Bolt To Drain Lubricating Oil



Dipstick

Bolt To Drain Lubricating Oil

Figure 2

**⚠ ATTENTION!** Do not rotate the dipstick.

- \* Put the oil plug or dipstick in its place.

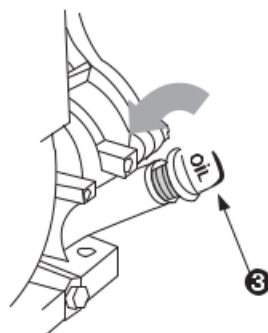


Figure 3

## 2.2. CHECKING THE OIL LEVEL:

- \* Put the generator on a flat surface.
- \* Remove the dipstick and wipe it with a clean cloth.
- \* Put the dipstick back in place.
- \* Take it out again to check the oil level.
- \* While engine running, the dipstick should be firmly seated in its socket.

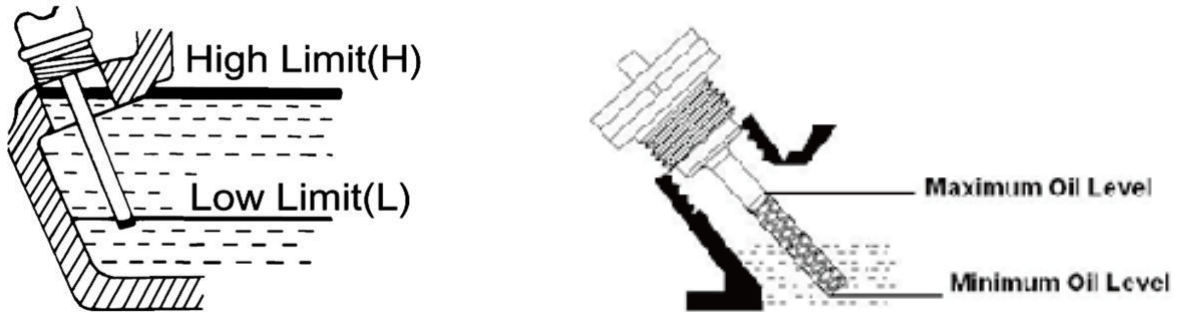


Figure 4

## 2.3. DIESEL FUEL RECOMMENDATIONS:

- \* Use only light diesel fuel,
- \* The fuel should be filtered clean,
- \* Never let dust and water mix with fuel in the fuel tank, otherwise it will clog the fuel lines and oil nozzles. It may also damage your pressure pump,
- \* It is dangerous to overfill the fuel tank. Never exceed the red piston in the filter.
- \* Purchase the amount of fuel to be used in the 30-day period. This ensures fuel freshness and the required fuel viscosity according to the season.
- \* Do not open the fuel cap while the engine is running.

## 2.4. RECOMMENDATIONS FOR AN EFFICIENT PERFORMANCE:

- \* Keep the generator flat while filling, storing and operating with oil and fuel.
- \* Do not use pressurized starting fluid.
- \* Use oil suitable for the temperature.
- \* Do not start the engine with a low oil level.
- \* Run the generator at no load (idle) once in a while.
- \* Use fresh fuel.
- \* A hot battery has more starting capacity than a cold battery.
- \* If the engine is cold, make sure to adjust the choke fully.
- \* A hot engine requires less choke than a cold engine.
- \* Engine oil is the most important factor in determining the life of your generator engine. If you use poor engine oil or if you don't change the oil regularly, the piston and cylinder will wear easily or seize up. Also the life of the other parts in your engine such as bearings and other rotating parts will shorten considerably.
- \* Although there is an alarm system to check for low oil pressure, please check the amount of oil inside the engine regularly. If the oil level is low, fill it before starting the engine.
- \* It is more easy to drain the oil from the engine is when the diesel engine is still hot. If the engine is fully cooled, it is more difficult to drain all the oil out or some impurities will remain in the engine.

### 3. PART: MAIN PARTS OF THE GENERATOR:

**⚠ ATTENTION!** Below picture shows a typical portable diesel portable generator's parts! Parts may vary from model to model.

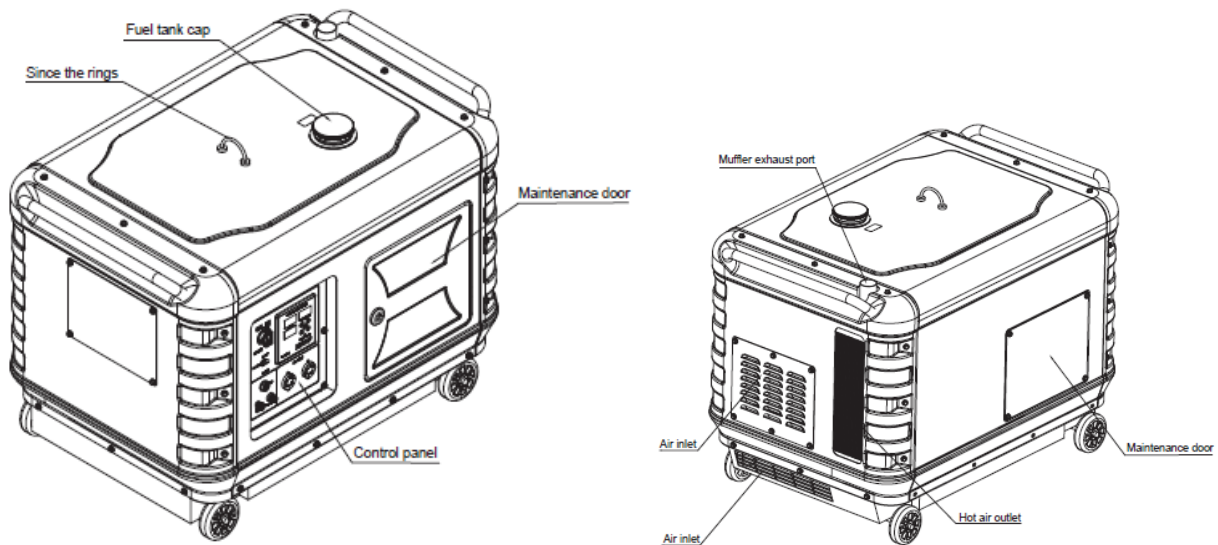


Figure 5

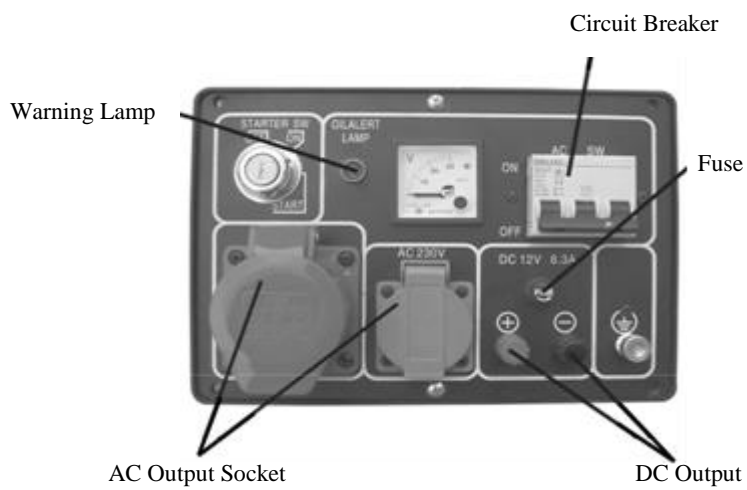


Figure 6

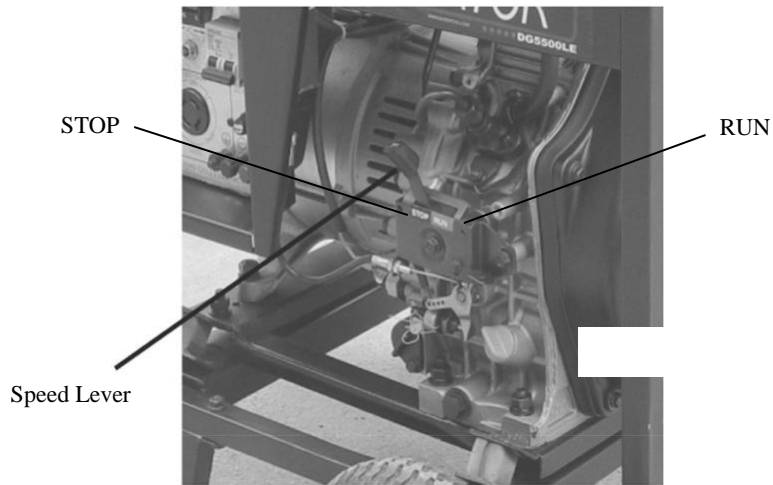
### 4. PART: STARTING GENERATOR

**⚠ ATTENTION!** Before starting the generator make sure the Circuit Breaker is in the **“OFF”** position, Starting the generator with the switch in the **“ON”** position is very dangerous.

**⚠ ATTENTION!** Before starting the generator make sure the generator should be grounded in order to prevent electric shock..

**4.1. Insert Key:** Insert key into start switch and turn it in the “OFF” position.

**4.2. Speed Lever:** Move the speed lever in the “RUN” position as shown on the **Figure 7**.



**Figure 7**

**4.3. Start Switch:** Turn the start switch clockwise to the “START” position; set the silent type, first turn it clockwise to the “RUN” (ON) position for 1-2 seconds. The electromagnetic iron will be triggered, now turn it clockwise to the “START” position as shown on **Figure 8**.



**Figure 8**

**4.4. After Starting:** After the diesel engine is started, remove your hand from the switch handle; the switch will automatically reset itself to the “ON” position.

**4.5. If Not Started:** If the engine is not started after 10 seconds of cranking, wait about 15 seconds before trying it again. If you crank too long, the voltage of the battery will drop. This can lead to improper ignition. When the diesel engine is operating, let the ignition remain on the “ON” position.

## 4.6. Loading:

**4.6.1. Load Conditions:** Exert loads in accordance with the specified parameters.

### 4.6.2. Output of Electricity:

- 4.6.2.1. Raise the revolutions per minute (turn the speed lever to the max setting) of the generator to get the maximum power out of the generator. If not, the automatic voltage regulator device will excite and doing this for long periods of time will cause the capacitor to burn.
- 4.6.2.2. Observe the pointer of the voltmeter, it should point to 230V/400V±5%(50Hz). (For 60Hz set, it will be 240V±5%). Meanwhile put the switch in the GEN position. The AC voltage from the socket of the power supply can be output.
- 4.6.2.3. When connecting devices to the generator, make sure to connect these devices in order. Connect the bigger loads onto the generator first.
- 4.6.2.4. If everything is functional, smaller loads can then be added. If the generator shuts off, it may be because the load being drawn by all the various devices are too high. In this event, decrease the number of small devices until everything is functional.
- 4.6.2.5. The total load should not exceed the maximum output power of the generator. In order to reset the generator after overload, let it be steady for several minutes. If the indication of the voltmeter is too high or too low, adjust the speed accordingly. If there are problems, stop the generator immediately and fix the issue.

## 4.7. Charging The Battery:

- \* For the electric starter on the generator, the 12V battery is automatically charged through the regulator on the side of the engine when it is running.
- \* If the generator is not used for long periods of time, the battery should be disconnected to avoid energy loss from the battery.
- \* Do not connect the negative and positive terminals of the battery together at any time. Doing so will damage the battery.
- \* Do not reverse the polarities when attaching the battery cables to the battery. Doing so will damage both the battery and the electric starter.
- \* When charging the battery, the battery produces flammable gases. Do not smoke, let flames, and sparks far away the battery while it is charging as this may cause a fire. To avoid sparking while connecting the cables, connect the cables to the battery then to the engine. To disconnect battery cables, first disconnect the engine end of the cable.



*ATTENTION! Do not start more than two devices simultaneously. Each device should be started one by one to prevent overloading the generator. The generator should be running at 3000/3600 RPM in order to achieve the (50/60Hz) frequency. The speed of the engine can be adjusted from the speed governor.*

## 5. PART: STOPPING GENERATOR

- \* Before stopping the generator, always disconnect it from the load.
- \* Put the speed lever in the “**RUN**” position and let the engine run for 3 minutes after unloading. Do not stop the diesel engine immediately, let it warm down. Stopping the diesel engine suddenly may raise the temperature of the engine abnormally may lock the nozzle and damage the diesel engine.
- \* Turn the key switch to the “**OFF**” position,

## 6. PART: MAINTENANCE

- \* General maintenance of the generator is described in this section.
- \* Always have authorized persons or authorized services maintained your generator set. Note that guarantee will be void in case of maintenance, repair and setting made by unauthorized services or persons.
- \* Always use original spare parts in maintenance and repair. Never use non-original parts or those approved by Genpower in written form.
- \* Guarantee of the generator set will be void as a result of damages caused by non-original maintenance or repair parts.

- \* Comply with safety measures mentioned in previous sections while performing the maintenance.

**⚠ ATTENTION!** When servicing your generator, disconnect the spark plug wire from the spark plug to prevent the engine from starting suddenly. Disconnect the accumulator, if any. Take safety precautions and follow them.

**6.1. Check Oil Level Regularly:** Check every 5 hours of operation or daily. Make sure the oil level is just right.

**6.2. Oil Change:**

- \* Replace oil after the first 5 hours of use.
- \* Under normal operating conditions, engine oil should be changed every 50 working hour.
- \* At high temperatures and loads the oil should be changed every 25 hours.
- \* When the engine is warm drain the oil by removing the oil drain plug and replace the plug. Fill the oil with the recommended oil.

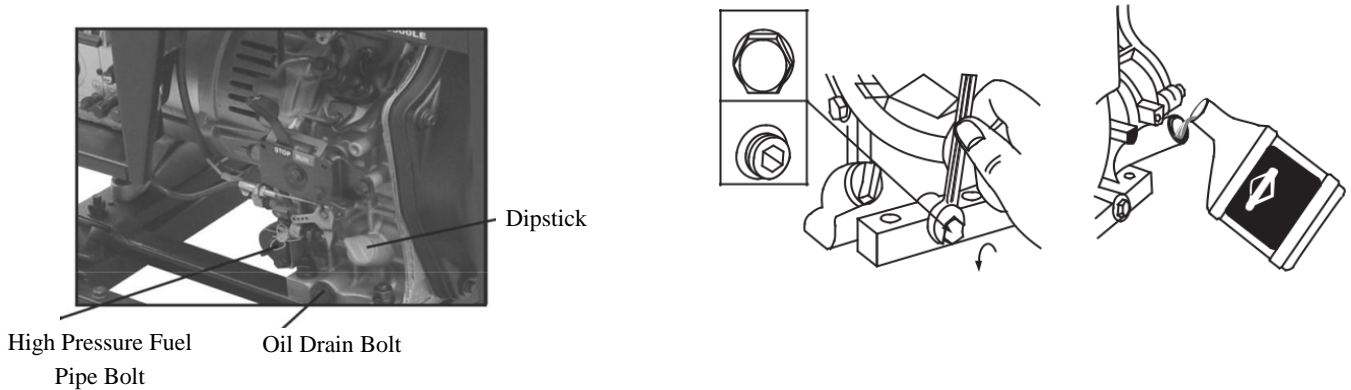


Figure 9

**6.3. Air Filter Maintenance:**

- \* After every 500 hours of operation or 6 months, perform cleaning maintenance.
- \* If necessary, replace it,
- \* Do not use detergent to clean air filter element,
- \* When the performance of the engine decreases or when the color of the exhaust gases is bad, replace the filter element.
- \* To check the air filter; loosen the butterfly nut, take the cover of the air filter off and take the air filter element out as shown on **Figure 10**.
- \* After replacing the air filter element, replace the cover and tighten the butterfly nut firmly.

**⚠ ATTENTION!** Perform maintenance more frequently in dusty conditions.

**⚠ ATTENTION!** Never start the engine without the air filter. This can cause serious damage to the engine if foreign objects enter the intake system. Always change the air filter on time.

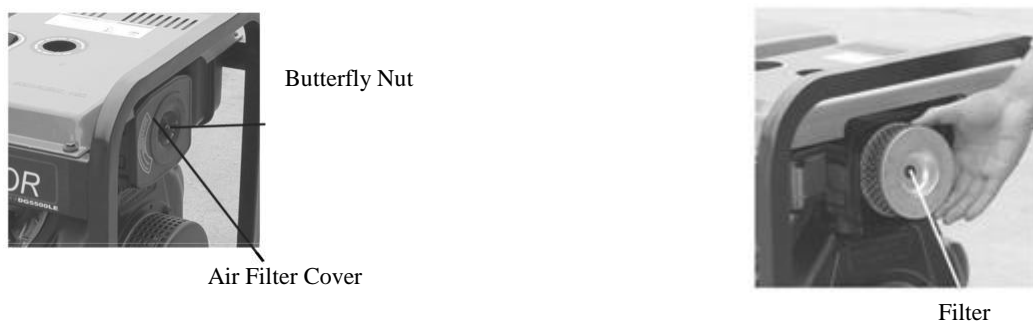


Figure 10

#### 6.4. Fuel Filter Maintenance:

- \* The fuel filter should be cleaned often to keep the engine running at maximum performance,
- \* The recommended time period for cleaning the fuel filter is 6 months or 500 hours of operation,
- \* To do this, first drain the fuel from the fuel tank,
- \* Loosen the small screws on the fuel switch and remove the fuel filter from the port. Use diesel fuel to clean the fuel filter.

Also remove the fuel injector and clean the carbon deposit around it. The recommended time period for this is **3 months or 100 hours**.

#### 6.5. Cleaning of Generator:

- \* Remove dirt and debris with a cloth or brush and clean it.
- \* Water jet washing does not recommended due to engine fuel system with alternator winding and electrical equipment may break down.
- \* Do not keep combustible parts on or near of exhaust muffler.
- \* Generator cooling provided by the air flow passing over it. Therefore, the air ducts on the engine body and the alternator air outlet windows must be open and clean.
- \* Grass and dirt can clog the starter guard and the air cooling system becomes inadequate, especially as a result of extended maintenance time.
- \* Every 100 hours or every season, remove the starter guard and clean the area shown in **Figure 11**.

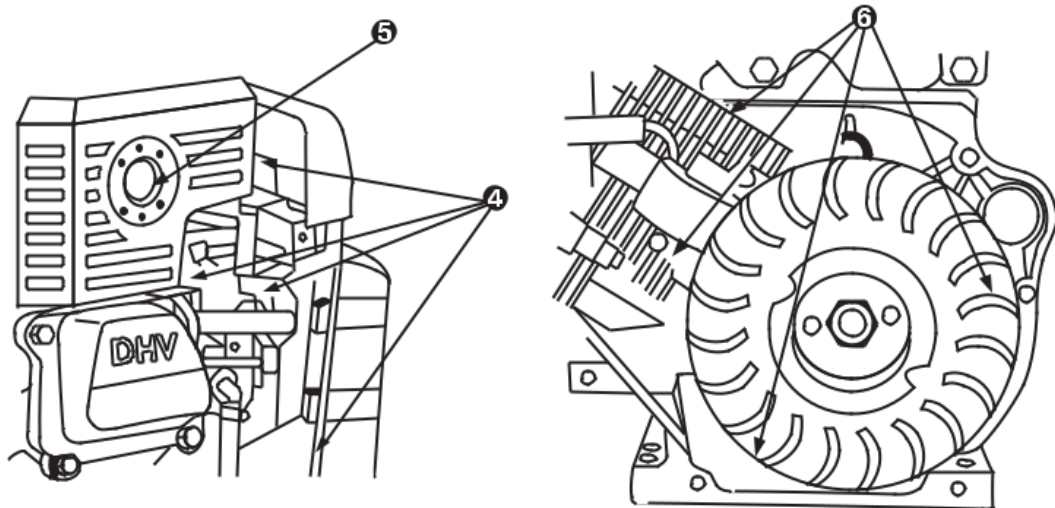


Figure 11

**6.6. Storing for long periods of time:** If your generator needs to be stored for long periods of time, the following preparations should be made.

- 6.6.1.** Start the diesel engine for 3 minutes then stop it,
- 6.6.2.** When the engine is still hot, change the engine oil with new engine oil of the proper grade.
- 6.6.3.** Pull the rubber plug out of the cylinder head cover and put 2CC of lubricating oil in it, then cover the plughole up again.
- 6.6.4.** Press the decompression handle down and crank the engine for 2-3 seconds. To do this, put the starter switch in the “Start” position. (Do not start the diesel engine)
- 6.6.5.** Clean the genset and store it in a dry place.

### 6.7. Example Of Maintenance Schedule:

ITEM	PERIOD				
	Daily	First Month	Every 3 Months	Every 6 Months	Every 1 Year
Engine Oil Check	Check				
Replace Engine Oil		Replace		Replace	
Air Filter Check	Check				
Air Filter Wash			Clean		
Oil Filter				Clean	
Battery Electrolyte Level	Clean				
Valve Clearance					Check, Readjust
Cylinder Cover Wash					Clean
Fuel Tank	Replace every 3-year				

## 7. PART: TROUBLESHOOTING

Causes of Malfunction		Responsive Action
GENSET Not Started	Not enough fuel	Add enough fuel
	The switch of fuel is not at "OPEN" position High-pressure pump and nozzle do not inject	Turn the switch of fuel to "OPEN" position
	Fuel or the injected amount is less	Disassemble the nozzle and adjust it at test table
	Speed control lever is not at "RUN" position	Turn speed control lever to "RUN" position
	Check level of lubrication oil	The standard oil amount of lubricating oil should be between high graduation "H" and low graduation "L"
	It is not quick and powerful to pull reactive starter	Start diesel engine in accordance with the requirements of "start operation procedures"
	Nozzle exists dirt	Clean the nozzle
	The Battery is lower power	Charge the battery or replace it

Causes of Malfunction		Responsive Action
GENSET Not Generates	Master switch is not be switched on	Turn capacity switch handle to "ON" position
	Carbon brush of generator was worn,	Replace the carbon brush
	The contact of socket is not working properly	Adjust the contact of socket
	The electric switching is not working properly	Make it reach to the rated revolution in accordance with the requirements
	AVR automatic governor is damaged	Replace it
	The fuse is not working	Replace it

***THANK YOU FOR CHOOSING GENPOWER GENERATOR SETS, WE WISH FOR YOU TO USE YOUR GENPOWER GENERATOR THROUGH LONG AGES IN ACCORDANCE WITH THESE OPERATING AND MAINTANCE MANUAL.***

**GENPOWER**<sup>®</sup>  
GENERATOR



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