

**GENERADOR PORTÁTIL
PORTABLE GENERATOR**

GEEL

GEEL3, GEEL5, GEEL7



**Manual de operación
Operator's Manual**

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1 INTRODUCTION

Thank you for trusting the **ENAR** brand.

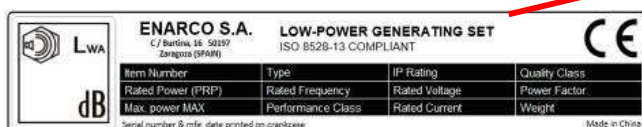
For the maximum performance of the equipment, we recommend read carefully the safety recommendations, maintenance, and usage listed in this manual.

Defective parts should be replaced immediately to avoid major problems.

The effective longevity of the equipment will increase if the manual instructions are followed.

We will glad to help you with any comments or suggestions in reference to our equipment.

SAVE THESE INSTRUCTIONS—This manual contains important instructions for the machine models listed below. These instructions must be followed during installation and maintenance of the generator (and battery, if equipped).



Machine identification

A nameplate listing the model number, item number, revision number, and serial number is attached to this machine. The location of the nameplate is shown above.

Serial number (S/N)

For future reference, record the serial number in the space provided below. You will need the serial number when requesting parts or service for this machine.

Serial Number:

Machine documentation

- From this point forward, this document will refer to ENAR.
Keep a copy of the Operator's Manual with the machine at all times.
- If you are missing any of these documents, please contact ENAR to order a replacement or visit www.enar.es.
- When ordering parts or requesting service information, be prepared to provide the machine model number, item number, revision number, and serial number.

Expectations for information in this manual

- This manual provides information and procedures to safely operate and maintain the above ENAR model(s). For your own safety and to reduce the risk of injury, carefully read, understand, and observe all instructions described in this manual.
- ENAR expressly reserves the right to make technical modifications, even without notice, which improve the performance or safety standards of its machines.
- The information contained in this manual is based on machines manufactured up until the time of publication. ENAR reserves the right to change any part of this information without notice.
- The illustrations, parts, and procedures in this manual refer to ENAR factory-installed components. Your machine may vary depending on the requirements of your specific region.

Manufacturer's approval

This manual contains references to approved parts, attachments, and modifications. The following definitions apply:

- **Approved parts or attachments** are those either manufactured or provided by ENAR.
- **Approved modifications** are those performed by an authorized ENAR service center according to written instructions published by ENAR.
- **Unapproved parts, attachments, and modifications** are those that do not meet the approved criteria.

Unapproved parts, attachments, or modifications may have the following consequences:

- Serious injury hazards to the operator and persons in the work area.
- Permanent damage to the machine which will not be covered under warranty.

Contact your ENAR dealer immediately if you have questions about approved or unapproved parts, attachments, or modifications.

2 SAFETY INFORMATION

2.1 SIGNAL WORDS USED IN THIS MANUAL

This manual contains DANGER, WARNING, CAUTION, NOTICE, and NOTE signal words which must be followed to reduce the possibility of personal injury, damage to the equipment, or improper service.



This is the safety alert symbol. It is used to alert you to potential personal hazards.

- ◆ Obey all safety messages that follow this symbol.



DANGER

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

- ◆ To avoid death or serious injury from this type of hazard, obey all safety messages that follow this signal word.



WARNING

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

- ◆ To avoid possible death or serious injury from this type of hazard, obey all safety messages that follow this signal word.



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

- ◆ To avoid possible minor or moderate injury from this type of hazard, obey all safety messages that follow this signal word.

NOTICE: Used without the safety alert symbol, NOTICE indicates a situation which, if not avoided, could result in property damage.

Note: A Note contains additional information important to a procedure.

2.2 MACHINE DESCRIPTION AND INTENDED USE

This machine is a portable electric power source. The ENAR Portable Generator consists of a tubular steel frame surrounding a fuel tank, a gasoline engine, a control panel, and an electric alternator. The control panel includes controls and receptacles. As the engine runs, the generator converts mechanical energy into electric power. The operator connects loads to the electric power receptacles.

This machine is intended for the purpose of supplying electrical power to connected loads. Refer to the product specifications for the output voltage and frequency of this generator, and the maximum output power limit of this generator

This machine has been designed and built strictly for the intended use described above. Using the machine for any other purpose could permanently damage the machine or seriously injure the operator or other persons in the area. Machine damage caused by misuse is not covered under warranty.

The following are some examples of misuse:

- Connecting a load that has voltage and frequency requirements that are incompatible with the generator output
- Overloading the generator with a load that draws excessive power during either continuous running or start-up
- Operating the generator in a manner that is inconsistent with all federal, state and local codes and regulations
- Using the machine as a ladder, support, or work surface
- Using the machine to carry or transport passengers or equipment
- Operating the machine out of factory specifications.

This machine has been designed and built in accordance with the latest global safety standards. It has been carefully engineered to eliminate hazards as far as practicable and to increase operator safety through protective guards and labeling. However, some risks may remain even after protective measures have been taken. They are called residual risks. On this machine, they may include exposure to:

- Heat, noise, exhaust, and carbon monoxide from the engine
- Fire hazards from improper refueling techniques
- Fuel and its fumes
- Electric shock and arc flash
- Personal injury from improper lifting techniques

To protect yourself and others, make sure you thoroughly read and understand the safety information presented in this manual before operating the machine.

2.3 OPERATING SAFETY

DANGER



Carbon monoxide. Using a generator indoors CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide (CO). This is a poison you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. But even if you cannot smell the exhaust, you could be breathing CO.

- ◆ NEVER use a generator inside homes, buildings, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does NOT supply enough fresh air.
- ◆ ONLY use a generator outside, and far away from homes, buildings, windows, doors, and vents. Windows, doors, and vents can pull in generator exhaust.
- ◆ Point the engine exhaust away from homes, buildings, windows, doors, and vents. Also, point the engine exhaust away from combustible materials.
- ◆ Even when you use a generator correctly, CO may leak into the home or building. ALWAYS use a battery-powered or battery-backup CO alarm in the home or building.
- ◆ If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air RIGHT AWAY. See a doctor. You could have carbon monoxide poisoning.

WARNING



Risk of electric shock or electrocution.

- ◆ Do not operate this generator in rain, snow, or standing water.

Operator training

Before operating the machine:

- Read and understand the operating instructions contained in all manuals delivered with the machine.
- Familiarize yourself with the location and proper use of all controls and safety devices.
- Contact ENAR for additional training if necessary.

When operating this machine::

- Do not allow improperly trained people to operate the machine. People operating the machine must be familiar with the potential risks and hazards associated with it.

Operator qualifications

Only trained personnel are permitted to start, operate, and shutdown the machine. They also must meet the following qualifications:

- Have received instruction on how to properly use the machine.
- Are familiar with required safety devices.

The machine must not be accessed or operated by:

- Children.
- People impaired by alcohol or drugs.

	Be aware of the application area.
Application area	• Keep unauthorized personnel, children, and pets away from the machine. • Remain aware of changing positions and the movement of other equipment and personnel in the application area/job site. • Identify whether special hazards exist in the application area, such as toxic gases, or unstable ground conditions, and take appropriate action to eliminate the special hazards before using the machine.
	Be aware of the application area.
	• Do not operate the machine in areas that contain flammable objects, fuels, or products that produce flammable vapors.
Safety devices, controls, and attachments	Only operate the machine when: • All safety devices and guards are in place and in working order. • All controls operate correctly. • The machine is set up correctly according to the instructions in the Operator's Manual. • The machine is clean. • The machine's labels are legible. To ensure safe operation of the machine: • Do not operate the machine if any safety devices or guards are missing or inoperative. • Do not modify or defeat the safety devices. • Do not use accessories or attachments that are not approved by ENAR.
Safe operating practises	When operating this machine: • Remain aware of the machine's moving parts. Keep hands, feet, and loose clothing away from the machine's moving parts. When operating this machine: • Do not operate a machine in need of repair.
Personal Protective Equipment (PPE)	Wear the following Personal Protective Equipment (PPE) while operating this machine: • Close-fitting work clothes that do not hinder movement • Safety glasses with side shields • Hearing protection • Safety-toed footwear.

Installing as backup power

Special hazards exist when installing this machine as a backup power supply. Improper connection of generator to a building's electrical system can allow electrical current from the generator to backfeed into utility lines. This may result in electrocution of utility workers, fire, or explosion.



WARNING

Backfeed from the generator into the public power distribution system can cause serious injury or death to utility workers!.

- Connections to a building's electrical system must be made by a qualified electrician and comply with all applicable laws and electrical codes.

If connected to a building's electrical system, the generator must meet the power, voltage, and frequency requirements of the equipment in the building. Differences in power, voltage, and frequency requirements may exist and improper connection may lead to equipment damage, fire, and personal injury or death.

Transporting and installing the machine

- Never allow untrained personnel to operate or service the generator. The generator set should be set up by a certified electrician.
- Do not stand under the machine while it is being hoisted or moved. Do not attach equipment to the machine when it is suspended.
- Always transport the generator in an upright position.
- Always position and operate the generator on a firm, noncombustible, level surface.
- Always make certain the machine is well-grounded and securely fastened to a good earthen ground per national and local regulations.
- Always remove all tools, cords, and other loose items from the generator before starting it..

General Safety

- Do not operate the generator when open containers of fuel, paint, or other flammable liquids are near.
- Do not operate the generator, or tools attached to the generator, with wet hands.
- Do not run the electrical cords under the generator, or over vibrating or hot parts.
- Do not enclose or cover the generator when it is in use or when it is hot.
- Do not overload the generator. The total amperage of the tools and equipment attached to the generator must not exceed the load rating of the generator.
- Do not operate the machine in snow, rain, or standing water.
- Do not stand on the machine.

Machine vibration

Generators vibrate in normal use. During and after the use of the generator, inspect the generator as well as extension cords and power supply cords connected to it for damage from vibration.

- Have damaged items repaired or replaced as necessary.

Do not use plugs or cords that show signs of damage such as broken or cracked insulation or damaged blades.

After use

- Store the machine properly when it is not being used. The machine should be stored in a clean, dry location out of the reach of children.

Cleaning

When cleaning and servicing the machine.

- Keep the machine clean and free of debris such as leaves, paper, cartons, etc.
- Keep the labels legible.

When cleaning the machine.

- Do not clean the machine while it is running.
- Never use gasoline or other types of fuels or flammable solvents to clean the machine. Fumes from fuels and solvents can become explosive, etc.

2.4 OPERATOR SAFETY WHILE USING INTERNAL COMBUSTION ENGINES



WARNING

Internal combustion engines present special hazards during operation and fueling. Failure to follow the warnings and safety standards could result in severe injury or death.

- ♦ Read and follow the warning instructions in the engine owner's manual and the safety guidelines below.



DANGER

Carbon monoxide. Using a generator indoors CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide (CO). This is a poison you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. But even if you cannot smell the exhaust, you could be breathing CO.

Refueling safety

When refueling the engine:

- Do not smoke.
- Do not refuel if the generator is sitting in a truck fitted with a plastic bed liner. Static electricity can ignite the fuel or fuel vapors.
- Do not refuel a hot or running engine.
- Do not refuel the engine near an open flame.

When refueling the engine, always:

- Refill the fuel tank in a well-ventilated area.
- Replace the fuel tank cap after refueling.

Operating safety

When operating the generator:

- Check the fuel lines and the fuel tank for leaks and cracks before starting the engine.
- Do not run the machine if fuel leaks are present or the fuel lines are loose.
- Do not run the engine near open flames.
- Do not start the engine if fuel has spilled or a fuel odor is present. Move the machine away from the spill and wipe the machine dry before starting.
- Do not smoke while operating the machine.

2.5 SERVICE SAFETY

Service training

Before servicing or maintaining the machine:

- Read and understand the instructions contained in all manuals delivered with the machine.
- Familiarize yourself with the location and proper use of all controls and safety devices.
- Only trained personnel should troubleshoot or repair problems occurring with the machine.
- Contact ENAR for additional training if necessary.

When servicing or maintaining this machine:

- Do not allow improperly trained people to service or maintain the machine. Personnel servicing or maintaining the machine must be familiar with the associated potential risks and hazards.

Precautions

Follow the precautions below when servicing or maintaining the machine:

- Read and understand the service procedures before performing any service to the machine.
- All adjustments and repairs must be completed before operation. Do not operate the machine with a known problem or deficiency.
- All repairs and adjustments shall be completed by a qualified technician.
- Turn off the machine before performing maintenance or making repairs.
- Remain aware of the machine's moving parts. Keep hands, feet, and loose clothing away from the machine's moving parts.
- Re-install the safety devices and guards after repair and maintenance procedures are complete.

Machine modifications

When servicing or maintaining the machine:

- Use only accessories/attachments that are approved by ENAR.

When servicing or maintaining the machine:

- Do not defeat safety devices.
- Do not modify the machine without the express written approval of ENAR.

Replacing parts and labels

- Replace worn or damaged components.
- Replace all missing and hard-to-read labels.
- When replacing electrical components, use components that are identical in rating and performance to the original components.
- When replacement parts are required for this machine, use only ENAR replacement parts or those parts equivalent to the original in all types of specifications, such as physical dimensions, type, strength, and material.

Cleaning

When cleaning and servicing the machine.

- Keep the machine clean and free of debris such as leaves, paper, cartons, etc.
- Keep the labels legible.

When cleaning the machine.

- Do not clean the machine while it is running.
- Never use gasoline or other types of fuels or flammable solvents to clean the machine. Fumes from fuels and solvents can become explosive, etc.

Personal Protective Equipment (PPE)

Wear the following Personal Protective Equipment (PPE) while servicing or maintaining this machine:

- Close-fitting work clothes that do not hinder movement
- Safety glasses with side shields
- Hearing protection
- Safety-toed footwear.

In addition, before servicing or maintaining the machine:

- Tie back long hair.
- Remove all jewelry (including rings).

Precautions

- Do not allow water to accumulate around the base of the machine. If water is present, move the machine and allow the machine to dry before servicing.
- Do not service the machine if your clothing or skin is wet.
- Always turn the engine off before servicing the machine. If the engine has electric start, disconnect the negative terminal on the battery before servicing the machine.
- Always let the engine cool before transporting or servicing the machine.

3 LABELS

3.1 LABEL LOCATIONS

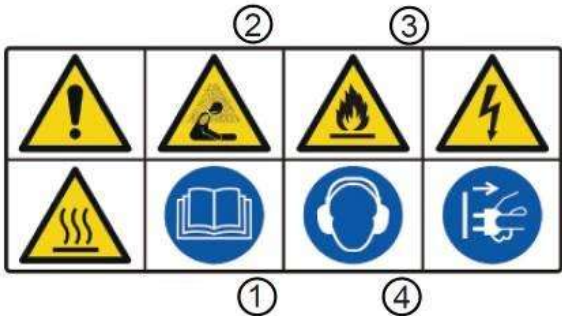
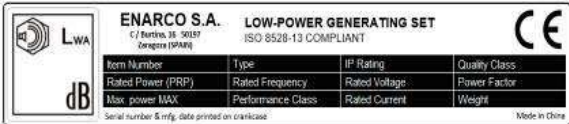
GEEL3

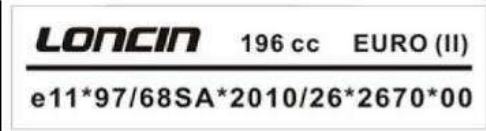
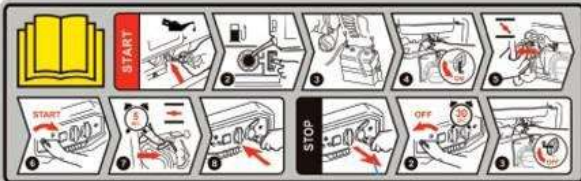
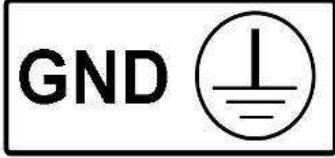


GEEL5, GEEL7



3.2 LABEL MEANINGS

A		CAUTION! Hot Surface
B		1. Read the operator's manual carefully before operating the product. 2. Exhaust gas is poisonous. Do not operate in an unventilated room. WARNING marking concerning Risk of Respiratory Injury. Operate engine OUTSIDE and far away from windows, doors, and vents. NEVER use inside a home or garage, EVEN IF doors and windows are open. 3. Do not fill the fuel tank with fuel while the engine is running. Do not smoke or use a naked flame near the fuel tank. Be careful not to spill fuel during refueling. If fuel is spilled, wipe it off and let dry before starting the product. Switch off the generator and close the fuel switch when not in use. 4. WARNING marking concerning Risk of Hearing Loss. Wear hearing protection.
C		A nameplate listing the model number, item number, revision number, and serial number is attached to each unit. Please record the information found on this nameplate so it will be available should the nameplate become lost or damaged. When ordering parts or requesting service information, you will always be asked to specify the model number, item number, revision number, and serial number of the unit.
D		Sound power label
E		Choke valve ON-OFF
F		Fuel valve ON-OFF

G		Oil level label.
H		EUV Emission label.
I		Read the operator's manual carefully before operating the product.
J		Machine label.
K		The engine shipped from our factory is without oil. Before starting the engine, must fill with oil. But do not overfill.
L		Company logo and label.
M		Engine label.
N		Ground label.
O		Waste electrical label

4 LIFTING AND TRANSPORTING

Lifting the Machine

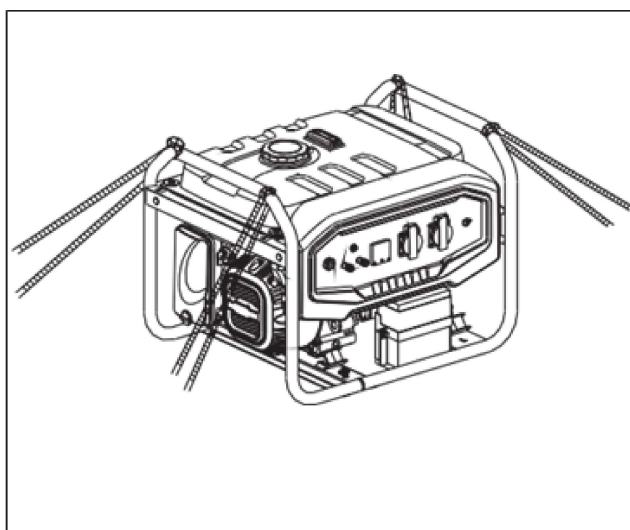
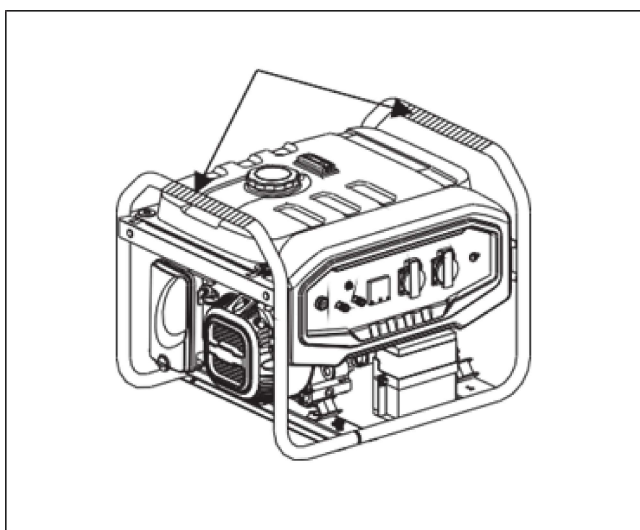
This generator, while compact, is heavy enough to cause injury if proper lifting techniques are not used. Observe the following guidelines when lifting the generator.

- ◆ Do not attempt to lift and carry the generator unassisted. Use appropriate lifting equipment such as slings, chains, hooks, ramps, or jacks.
- ◆ Make sure lifting equipment is attached securely and has enough weight-bearing capacity to lift or hold the machine safely.
- ◆ Remain aware of the location of other people nearby when lifting the machine.

Transporting the Machine

Observe the following guidelines when transporting the generator to and from the job site.

- ◆ Allow the engine to cool before transporting the generator.
- ◆ Drain the fuel tank before transporting the machine.
- ◆ Close the fuel valve.
- ◆ Ensure that the generator is securely strapped down in the transport vehicle to prevent it from sliding or tipping.
- ◆ Do not refuel the generator in or on the transport vehicle. Move the generator to its operating location and then fill the fuel tank.



5 MAINTENANCE



DANGER

Carbon monoxide. Using a generator indoors CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide (CO). This is a poison you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. But even if you cannot smell the exhaust, you could be breathing CO.



WARNING

Risk of electric shock or electrocution.

- ◆ Do not operate this generator in rain, snow, or standing water.
-

5.1 PREPARING THE MACHINE FOR FIRST USE

1. Make sure all loose packaging materials have been removed from the machine.
 2. Check the machine and its components for damage. If there is visible damage, do not operate the machine! Contact your ENAR dealer immediately for assistance.
 3. Take inventory of all items included with the machine and verify that all loose components and fasteners are accounted for.
 4. Attach component parts not already attached.
 5. Add fluids as needed and applicable, including fuel, engine oil, and battery acid.
 6. Move the machine to its operating location.
-

5.2 DETERMINING POWER REQUIREMENTS

Background

This generator is designed to operate single-phase. Check the nameplate or label provided on tools and appliances to make sure their power requirements match the power output of the generator.

Some appliances and tools require a surge of current when starting. This means that the amount of power needed to initially start the equipment is larger than the power required to keep it running. The generator must be capable of supplying this “surge” current. Other types of appliances require more power than is actually stated on their nameplate.

The information in “Approximate Starting Power Requirements” is offered only as a general guideline to help you in determining power requirements for different types of equipment. Check with your nearest ENAR, or contact the manufacturer or dealer of the tool or appliance, with questions regarding its power requirements.

NOTICE: If a tool or appliance does not reach full speed within a few seconds when switched on, turn it off immediately to avoid damage.

Approximate Starting Power Requirements.

- ◆ Incandescent lights and appliances such as irons and hot plates, which use a resistive-type heating element, require the same wattage to start and run as is stated on their nameplates.
- ◆ Fluorescent and mercury lamps require 1.2–2 times their stated wattage to start.
- ◆ Electrical motors and many types of electrical tools often require a large starting current. The amount of starting current depends on the type of motor and its use.
- ◆ Most electrical tools require 1.2–3 times their stated wattage for starting.
- ◆ Loads such as submersible pumps and air compressors require a very large force to start. They need as much as 3–5 times the wattage stated on the nameplate in order to start.

If the wattage is not given for a particular tool or appliance, it can be calculated by multiplying its voltage and amperage requirements:

Single Phase: VOLTS x AMPS = WATTS.

5.3 INSTALLATION OF THE GENERATOR

Remember

Place the generator in an area where it will not be exposed to rain, snow, or direct sunlight. Make sure it is positioned on firm, level ground, so it will not slide or shift. Position the engine exhaust away from areas where people may be present.

The surrounding area must be free from water and moisture. All components must be protected from excessive moisture.



DANGER! Using a generator indoors CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell. NEVER use this generator inside a home or garage, EVEN IF doors and windows are open. Only use this generator OUTSIDE and far away from windows, doors, and vents.



DANGER! NEVER install a generator in an enclosed area such as a tunnel or a trench. Using a generator in a tunnel or a trench CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell. NEVER use this generator inside a tunnel or a trench.

5.4 GENERATOR DERATING

All generators are subject to derating for altitude and temperature. Internal combustion engines, unless modified, run less efficiently at higher altitudes due to the reduction of air pressure. This translates into a lack of power and thus reduction in generator output. Temperature affects both engine and generator performance. As temperature increases, an engine will run less efficiently and more resistance will be found in electrical components. Therefore, as the temperature increases, the output of the generator decreases. Altitude also affects the cooling capacity of air—the higher the altitude the less dense the air is and thus the lower its ability to transfer heat.

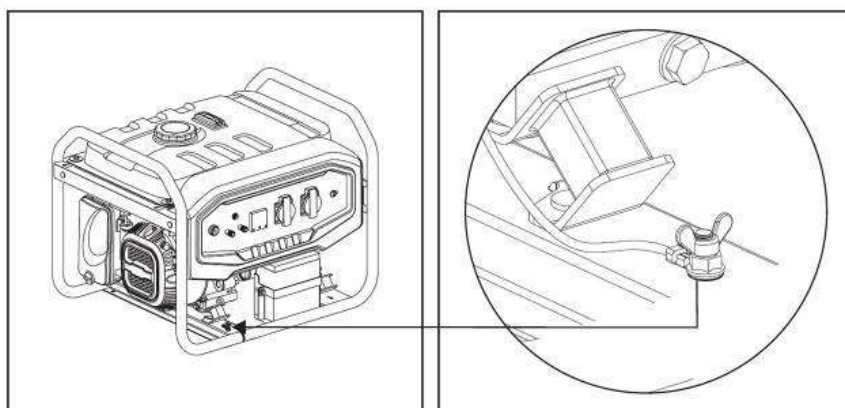
For every increase in altitude of 500 m (1650 ft.) above 1000 m (3300 ft.), the output of the generator will be reduced by 3%. For every increase of 5° C (9° F) in ambient temperature above 40° C (104° F), the output of the generator will be reduced by 3%. Use the tables shown for altitude and temperature deration factors. It may be necessary to consider both altitude and ambient temperature deration factors to determine true generator output.

Ambient Temperature °C (°F)	Derate	Factor
45 (113)	3 %	0.97
50 (122)	6 %	0.94
55 (131)	9 %	0.91
60 (140)	12 %	0.88

Altitude m (ft)	Derate	Factor
1500 (4900)	3 %	0.97
2000 (6600)	6 %	0.94
2500 (8200)	9 %	0.91
3000 (9900)	12 %	0.88
3500 (11500)	15 %	0.85
4000 (13100)	18 %	0.82

5.5 GROUNDING THE GENERATOR

A ground connection is located on the generator frame. For proper operating safety, this ground terminal must be connected to a good ground source. This ground connection must comply with National Electrical Code standards, and state and local regulations.



5.6 OPERATING HEAVY LOADS

Remember

Limit operations requiring the maximum rated output of:

- 3000 Watts (GEEL3)
- 5500 Watts (GEEL5)
- 6500 Watts (GEEL7)

to 20–30 minutes. For continuous operation, do not exceed the continuous rated output of:

- 2800 Watts (GEEL3)
- 5000 Watts (GEEL5)
- 6000 Watts (GEEL7)

NOTICE: DO NOT exceed the current limit specified on the control panel for any receptacle.

5.7 USE OF EXTENSION CORDS

Background

When a long extension cord is used to connect an appliance or tool to the generator, a voltage loss occurs—the longer the cord, the greater the voltage loss. This results in less voltage being supplied to the appliance or tool and increases the amount of current draw or reduces performance. A heavier cord with a larger wire size will reduce the voltage loss.



WARNING

Damaged extension cords can cause electrical shock, resulting in serious injury or death. DO NOT use worn, bare, or frayed cords. Replace damaged cords immediately.

Use the chart below as a guide for selecting proper cable size.

Current (Amps)	Loads in Watts		Maximum Cable Length in Feet			
	120V	240V	#10	#12	#14	#16
2.5	300	600	1000	600	375	250
5	600	1200	500	300	200	125
7.5	900	1800	350	200	125	100
10	1200	2400	250	150	100	-
15	1800	3600	150	100	65	-
20	2400	4800	125	75	50	-

Remember

Use only extension cords rated for outdoor use and equipped with a third-wire ground.

NOTICE: Operating equipment at low voltage can cause it to overheat.

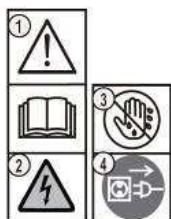
5.8 GENERATOR CONTROL PANEL

Ref	Description	Ref	Description
a	Engine switch	d	AC receptacles
b	DC output	e	AC breaker
c	Data meter	f	DC breaker

GEEL 3 CE



GEEL 3 AL



1. It is absolutely essential that you know the safe and proper use of the power tool or appliance that you intend to use. All operators must read, understand and follow the tool/appliance owners manual.
2. Do not operate in rain, in wet or damp conditions, or with wet hands. The operator may suffer severe electric shock if the generator is wet due to rain or snow.
3. Contact with water will cause electric shock. Do not touch with wet hands.
4. Always unplug when not in use.

I

ON

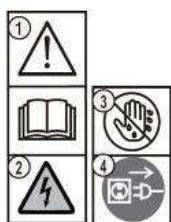
O

OFF

GEEL 5-7 CE



GEEL 5-7 AL



1. It is absolutely essential that you know the safe and proper use of the power tool or appliance that you intend to use. All operators must read, understand and follow the tool/appliance owners manual.
2. Do not operate in rain, in wet or damp conditions, or with wet hands. The operator may suffer severe electric shock if the generator is wet due to rain or snow.
3. Contact with water will cause electric shock. Do not touch with wet hands.
4. Always unplug when not in use.

I

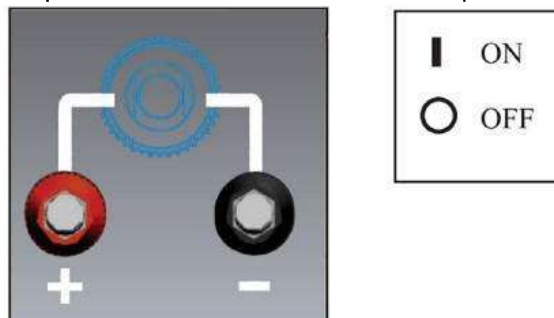
ON

O

OFF

5.9 DC OVERCURRENT PROTECTOR

The DC overcurrent protector (a) will automatically shut off when the DC circuit is overloaded or poor connection occurs. If the indicator inside the DC overcurrent protector (a) button pops out, it shows that the DC overcurrent protector (a) has switched off. Wait a few minutes and then push the button in to return to "ON" position.

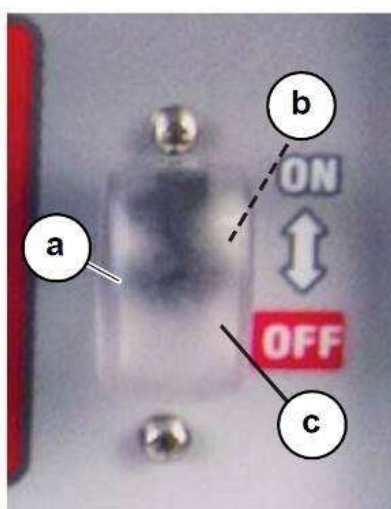


5.10 CIRCUIT BREAKER

The generator is also protected by a 13-Amp circuit breaker (a) located on the control panel.

The overload current will automatically switch OFF (c) circuit breaker to avoid short circuiting of the load or overload. If the circuit breaker is switched OFF (c) automatically, check load before switching the circuit breaker ON (b) again. Check the appliances and tools attached to the generator for defects and make sure their power requirements do not exceed the power rating of the generator or the current limit of the receptacles.

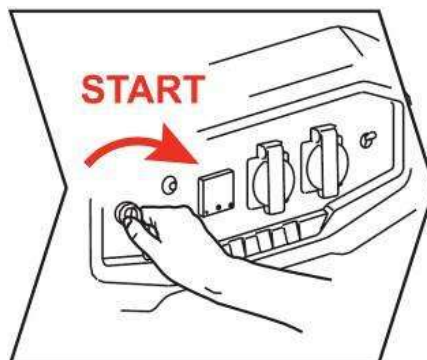
When the circuit breaker opens, the breaker button will pop out. To reset circuit breaker, push button in.



5.11 GENERATOR CONTROL

Procedure

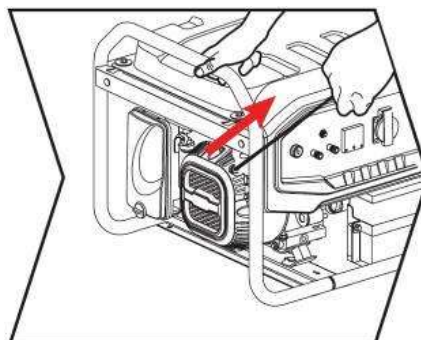
To start generator, turn the engine switch on the control panel to ON. Or press it to START if it's electrical start state, then generator unit can be started. In order to extend the service life of the storage battery, do not press on the switch for more than 3 seconds and the interval between two pressings should be longer than 10 seconds.



Recoil Starter

To start the engine pull the starter grip lightly until resistance is felt then pull briskly.

Notice: Do not allow the starter grip (a) to snap back against the engine. Return it gently to prevent damage to the starter.

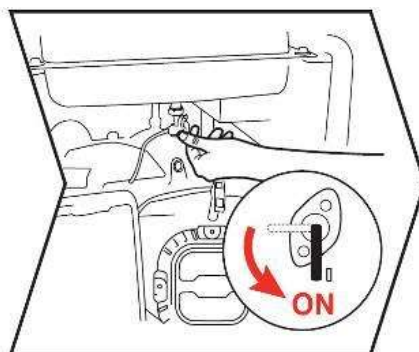


WARNING

It may be causing the dangers of injury by the sudden change of rotation direction of the engine during operating the recoil starter.

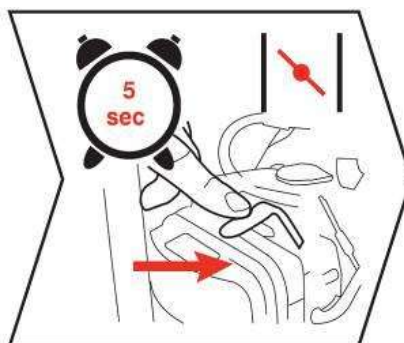
Fuel Valve

The fuel valve controls fuel flowing from the fuel tank to carburetor. Be sure to return the lever to OFF after stopping the engine



Choke lever

The choke lever is used to provide an enriched fuel mixture when starting a cold engine. After starting, let the machine run without load for 5 seconds and then turn ON the choke valve switch



Oil alert system

The oil alert system is especially designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. When the oil level in the crankcase fall down below the safe limit, the oil alert system will automatically shut down the engine(though the generator switch still remains in the ON position), so that the engine can't be damage due to the insufficient amount of oil.

5.12 BEFORE STARTING THE GENERATOR

Remember

Read and understand the safety and operating instructions at the beginning of this manual.

Check

- ◆ Oil level in the engine
- ◆ Fuel level
- ◆ Condition of the air cleaner
- ◆ Tightness of the external fasteners
- ◆ Condition of the fuel lines

5.13 BATTERY

Check

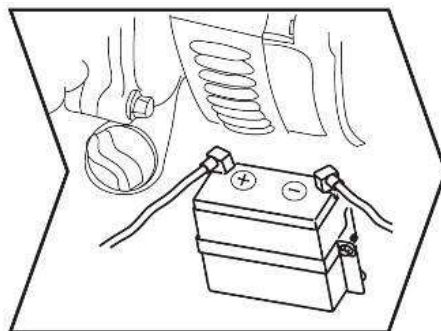
Connect the storage battery wire to the storage battery, red for positive electrode and green for the negative electrode, and make sure screwing the nut tightly. After connection, metal parts of two pieces of wire shall keep at least 15mm safety distance, and be protected by rubber cover.

NOTICE: Don't connect the battery positive and negative poles reversely (pay attention to leads mark). When connecting, first disconnect the negative pole, then positive poles, if not, serious damage may be caused to the generator set and battery



If improper operation is performed, the battery may be explosive and may potentially hurt persons nearby.

- ◆ The battery will release the explosive gas, please keep the fire far away from it. Keep a good air ventilation condition when battery is being charged or used
- Be careful not to spill or overflow when refilling electrolyte.



5.14 STARTING THE GENERATOR

Procedure

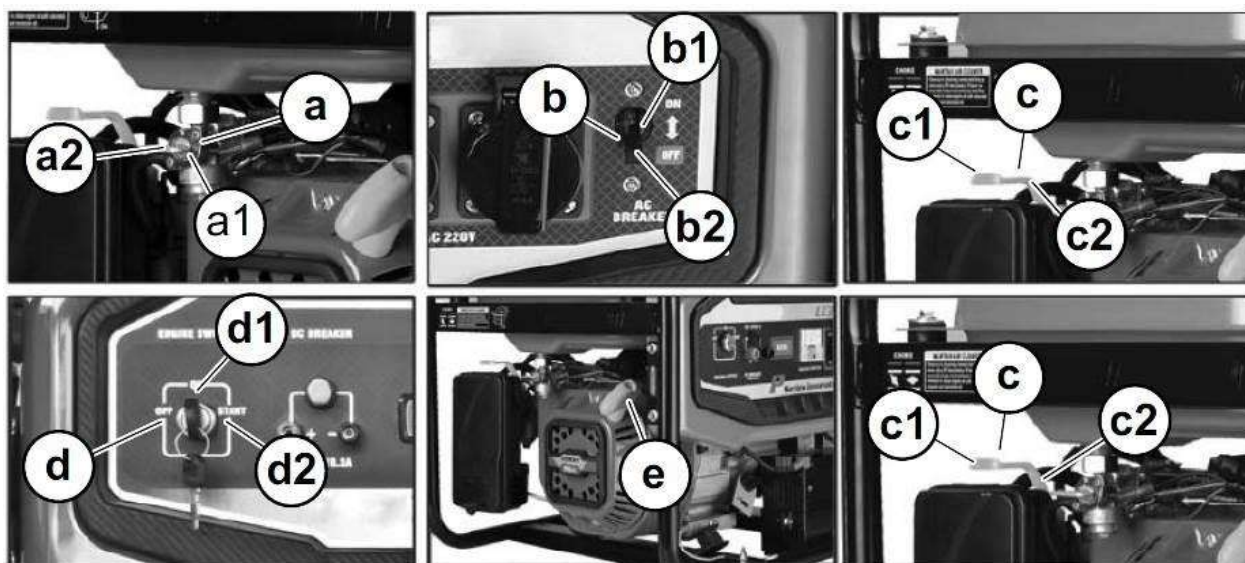
Perform the procedure below to start the machine.

1. Remove all the loads from the output side.
2. Turn the fuel valve **(a)** to the "ON" (OPEN) position **(a1)**.
3. Turn the AC circuit breaker **(b)** to the OFF position **(b2)**.
4. Turn the choke lever **(c)** to the OFF (CLOSE) position **(c2)**.

NOTICE: Don't close the choke when starting the engine in a warm state.

5. Turn the generator **(d)** switch to the ON position **(d1)**.
6. Pull the starter grip **(e)** until the resistance is felt, then pull it out briskly.
7. Turn the choke lever **(c)** to the ON position (OPEN) position **(c1)** after the engine is warm.
8. Don't use electrical apparatus before setting the AC circuit breaker **(b)** to the ON position **(b1)**.

NOTICE: Turn the generator switch to electric starting position and hold for not longer than 5 seconds, or damage will be caused to the starting motor. If starting fails, release the switch and wait for 10 seconds before operating it again. If the speed of the starting motor drops fast after running for a period of time, it means the battery should be recharged.



5.15 STOPPING THE GENERATOR

Procedure

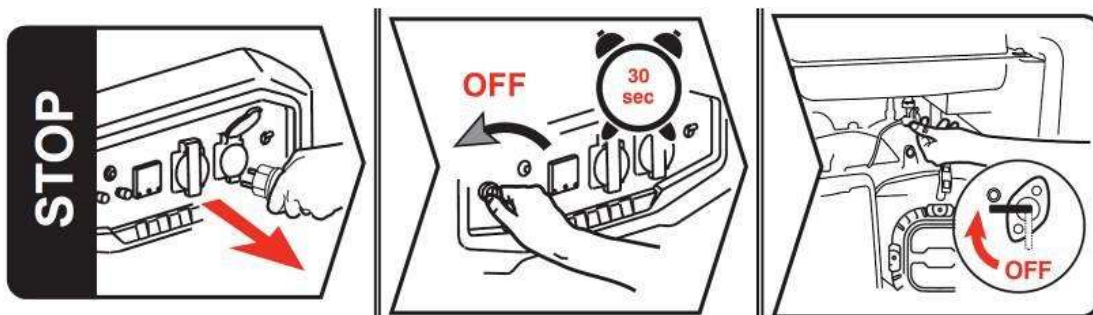
Perform the following procedure to stop the machine.

1. Disconnect the electrical equipment from the control panel of the generator.
2. After 30 seconds of no-load running, turn OFF the engine switch and the generator unit will be shut down immediately.
3. Turn OFF the fuel valve lever after the shutdown of the unit).



WARNING

The surface temperature of the generator unit is still high after shutdown, and it cannot be moved or operated before cooling down in order to avoid scalding.



5.16 EMERGENCY SHUTDOWN PROCEDURE

Procedure

If a breakdown/accident occurs while the machine is operating, perform the following tasks.

1. Stop the engine.
2. Turn off the fuel supply.
3. Disconnect the tools from the machine.
4. Allow the machine to cool.
5. Contact the rental yard or machine owner for further instructions.

6 MAINTENANCE

6.1 MAINTAINING THE EMISSION CONTROL SYSTEM

Normal maintenance, replacement, or repair of emission control devices and systems may be performed by any repair establishment or individual; however, warranty repairs must be performed by a dealer/service center authorized by ENAR. The use of service parts that are not equivalent in performance and durability to authorized parts may impair the effectiveness of the emission control system and may have a bearing on the outcome of a warranty claim.

6.2 ENGINE MAINTENANCE

The chart below lists basic machine and engine maintenance. Refer to your engine operator's manual for additional information on engine maintenance.

Refer to the engine owner's manual for additional information.

	Daily before starting	After first 20hr or 1 month	Every 50hr or 3 months	Every 100hr or 6 months	Every 300hr or 1 year
Check the fuel level.	•				
Check the engine oil level.	•				
Inspect the fuel lines.	•				
Inspect the air filter. Replace as needed.	•				
Clean the air cleaner element. ¹			•		
Change the engine oil		•		•	
Clean the engine cooling fins. ¹				•	
Clean the sediment cup or fuel filter.				•	
Check and clean the spark plug.				•	
Check and adjust the valve clearance.					•

Note:

The installation and major repair work shall be carried out only by specifically trained person.

6.3 ENGINE OIL

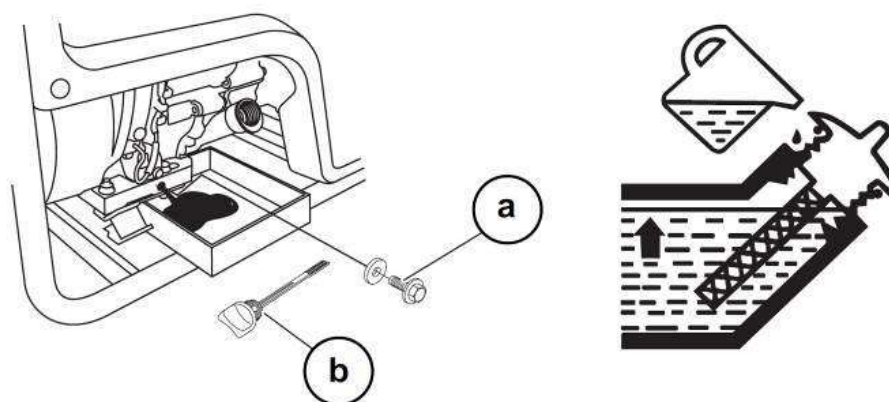
Procedure

Perform the procedure below to change the engine oil.

1. Drain the oil while the engine is still warm.
2. Turn off the oil filler cap and drain plug **(a)** to drain engine oil thoroughly. reinstall the drain plug **(a)** and screw in securely.

Note: *In the interest of environmental protection, place a plastic sheet and a container under the machine to collect any liquid that drains off. Dispose of this liquid in accordance with environmental protection legislation.*

3. Fill the specified engine oil up to the lower level mark **(b)**.
4. Reinstall the oil filler cap.



WARNING

Most used oil contains small amounts of materials that can cause cancer and other health problems if inhaled, ingested, or left in contact with skin for prolonged periods of time.

- ◆ Take steps to avoid inhaling or ingesting used engine oil.
- ◆ Wash skin thoroughly after exposure to used engine oil.

6.4 SERVICING THE AIR CLEANER

A dirty air cleaner can restrict air flowing into the carburetor. To keep the carburetor in good working conditions, please service the air cleaner periodically. If operating the engine in extremely dust area, the job should be done more often.

NOTICE: NEVER run the engine without the air cleaner. Severe engine damage will occur.



WARNING:

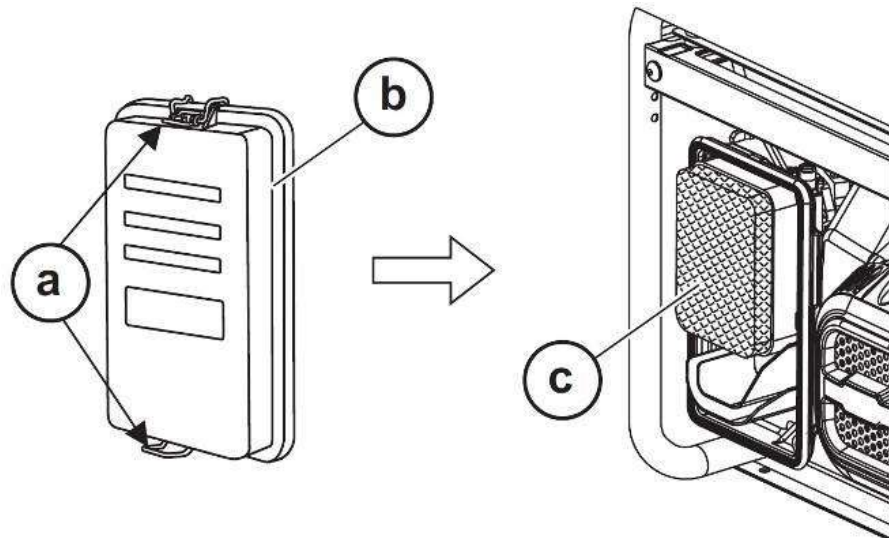
Explosion and fire hazards.

- ◆ Never use gasoline or other types of low flash point solvents for cleaning the air filter. Use only compressed air, mild detergent, and warm water.

Procedure

Perform the procedure below to service the air cleaner.

1. Remove the clip (a) of the air cleaner cover (b) and take the element (c) out.
2. Wash the foam element (c) with detergent and warm water (or non-flammable or high flash-point cleansing solvents) and dry up.
3. Clean the air cleaner cover and inner surface with wet cloth, be careful not to allow the dust entering into the carburetor.
4. Reinstall the element and put the air cleaner cover on.



6.5 CLEANING AND CHECKING THE SPARK PLUG

Requirements

- Engine stopped and cool to the touch
- Spark plug wrench
- Spark plug gap tool
- Wire brush
- Replacement spark plug as needed (see Technical Data).

Contact the rental yard or machine owner for further instructions.



WARNING

Burn hazard. The engine and muffler become very hot during operation and require cool-down time after the engine is stopped

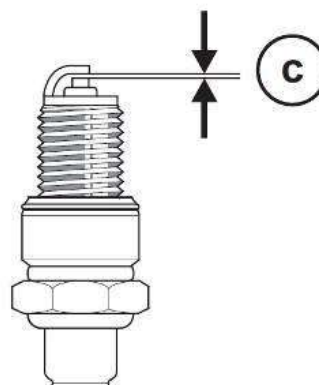
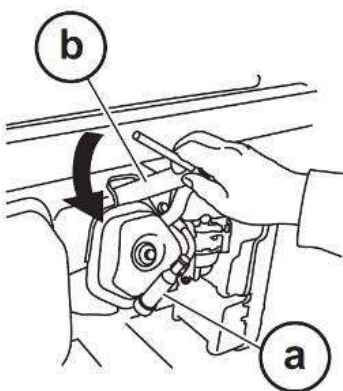
- ◆ Do not touch the engine, muffler, or spark plug until the machine is cool.

Procedure

Perform the procedure below to clean and check the spark plug.

1. Remove the spark plug cap (a).
2. Clear away dirt around the spark plug base.
3. Dismantle the spark plug with a spark plug wrench (b).
4. Visually check the spark plug. Clean with a steel brush. If the insulator is damaged, replace the spark plug instead.
5. Measure the spark plug clearance with a feeler. The clearance should be 0.7 - 0.8 mm. If adjustment is necessary, bend the side electrode carefully.
6. Check if the spark plug gasket is in good conditions. In order to screw thread misplace, screw in by hand.
7. Screw on the spark plug to the bottom first by hand and then screw in by a spark plug wrench and compress the gasket.
8. If a new spark plug is used, more 1/2 turns after compressing the gasket.
9. If reinstalling the used spark plug, just more twist 1/8 - 1/4 turns.

NOTICE: A loose spark plug can become very hot and may cause engine damage.



Result

The spark plug has now been cleaned and checked.

6.6 STORAGE

Before storing the generator for a long period of time days.

1. Close the fuel valve and remove and empty the sediment cup or fuel strainer.
2. Disconnect the fuel line from the carburetor. Place the open end of the fuel line into a suitable container and open the fuel valve to drain the fuel from the tank.



WARNING:

Gasoline is extremely flammable. Drain the fuel tank in a well-ventilated area. Do not drain the fuel tank in an area with flames or sparks.

3. Loosen the drain screw on the carburetor and drain any remaining fuel from the carburetor.
4. Change the engine oil.
5. Remove the spark plug and pour approximately 30 ml (1 ounce) of clean engine oil into the cylinder. Crank the engine a few turns to distribute the oil to the inside of the cylinder walls.
6. Pull the starter rope slowly until resistance is felt and leave the handle in this position. This ensures that the intake and exhaust valves are closed.
7. Store the generator in a clean, dry area.

7 TROUBLESHOOTING

PROBLEM / SYMPTOM	REASON / REMEDY
If engine doesn't start, check that:	▪ Engine switch is on "Start". ▪ Fuel valves under fuel tank and on engine are open. ▪ Fuel tank has fuel. ▪ Choke lever is in correct position. Choke should be closed when starting a cold engine. ▪ All loads are disconnected from generator. ▪ Spark plug is in good condition. ▪ Spark plug cap is tight. ▪ Engine oil level is adequate
If engine starts but there is no power at receptacles, check that:	▪ Circuit breaker is closed. ▪ Connector from generator to control panel is tight.
If engine starts but runs erratically, check that:	▪ Hose routing from the fuel tank to the engine is correct. For proper operation, the hose must run through the bushing in the lifting bracket. Refer to the Parts Book for illustration.

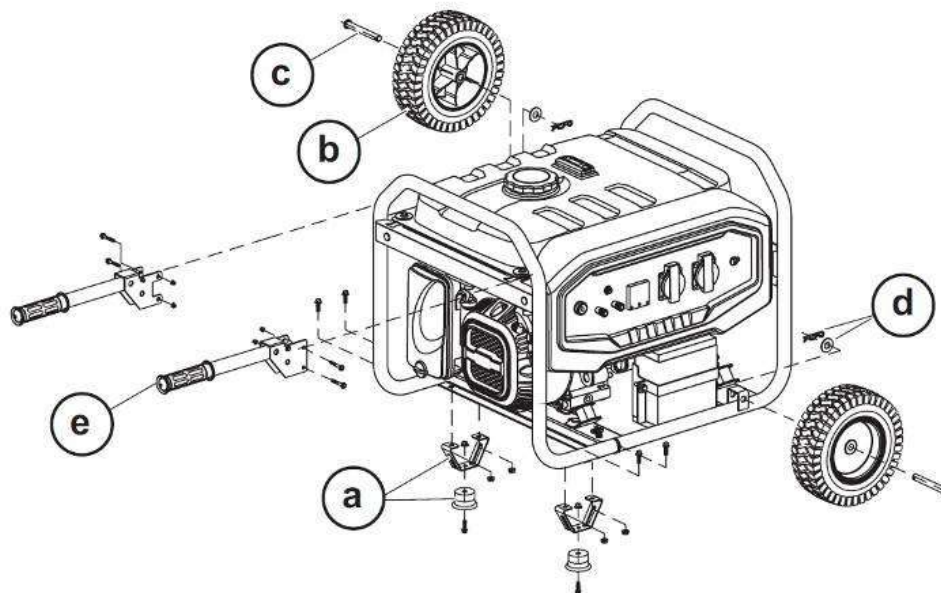
Note:

The installation and major repair work shall be carried out only by specifically trained person.

8 ACCESSORIES

8.1 WHEEL KIT ASSEMBLY INSTRUCTION

Wheel Kit for GEEL5 and GEEL7



Procedure

Generator is supplied with a wheel kit. When you install the wheel kit on your machine, please follow the instructions step by step. If you will not be using the wheel kit, please skip this section.

1. Secure the support (a) to the generator cradle with bolts and nuts.
2. Attach the wheels (b) to the shaft (c), then secure wheels with pins and washers (d).
3. Then position the handle (e) on the other side of the cradle with bolts and nuts.



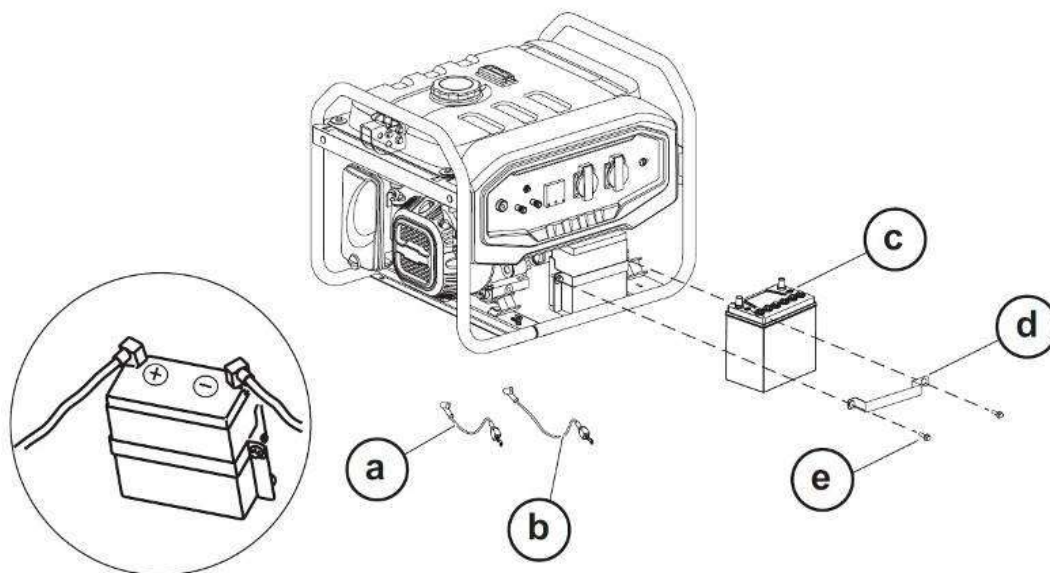
WARNING:

- ◆ Drain the engine oil and fuel tank in a well ventilated area before the installation of wheel kit in the machine.



8.2 BATTERY ASSEMBLY INSTRUCTION

Some of the units, which are of the electrical starting type, need to be equipped with external storage battery bracket. Please conduct the installation according to the following drawing.



Procedure

Perform the procedure below when installing the battery.

1. Install the positive terminal (a) and the negative terminal (b) to the generator unit.
2. Mount the storage battery (c) to the generator bracket.
3. Lock the storage battery with battery bracket (d) and tighten the bolts (e) to install the the battery properly.

NOTE: Connect the storage battery wires and connect the negative one first. The connected terminals may be different as the models of the storage batteries are different. Some storage batteries need to be filled with electrolyte before installation. Please read the specification of the storage battery carefully.

9 TECHNICAL DATA

MACHINE	GEEL 3	GEEL 5	GEEL 7
Electrical phase	~1, single phase		
Maximum output power	3.0 KW	5.5 KW	6.5 KW
Rated output power	2.8 KW	5.0 KW	6.0 KW
Rated voltage	230 V, 125/250 V		
Rated current	7.0 A	12.2 A	21.7 A
Frequency	50 ~ 60 Hz		
Power factor	1 cos φ		
Alternator type	Carbon brush Sync. w/AVR		
IP rating	IP 23M		
Engine	ENAR Motor G210FA	ENAR Motor LC188FD	ENAR Motor LC190FD
Rated power // Rated speed	4.4 KW // 3600rpm	8.2 KW // 3600rpm	9.0 KW // 3600rpm
Starting system	Manual recoil	Manual recoil + E start	
Fuel type	Unleaded gasoline		
Dimension	590 x 475 x 462mm	681 x 546 x 550mm	681 x 546 x 550mm
Net weight	49 Kg	81 Kg	85 Kg
DC output	12 V, 8.3A		
Lifting point	- NA	- NA	Equiped
Transporte wheels	- NA	Equiped	Equiped
Labeling	ISO labeling (pictogram)		
Compliance	CE, Euro stage-V emisión, ISO 8528-13		

SOUND MEASUREMENTS

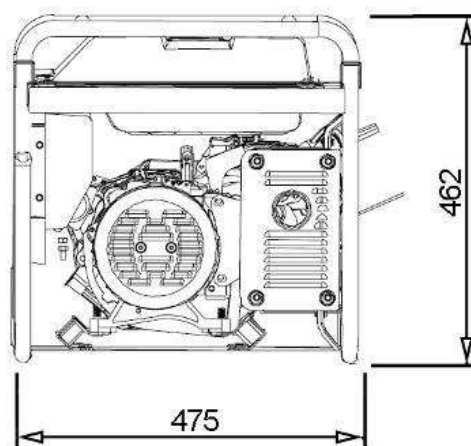
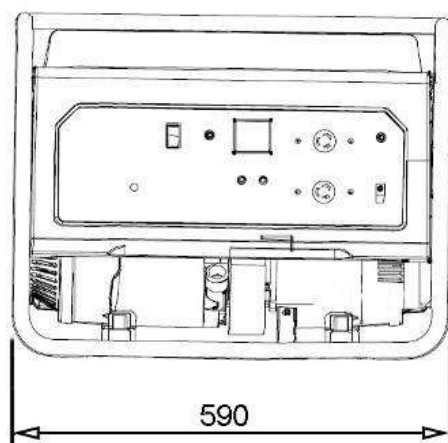
The required sound specification, sound specification in accordance with 2000/14/EC is:

- ♦ The guaranteed sound power level (L_{WA}) = 96 dB(A) (GEEL 3) // 97 dB(A) (GEEL 5 / 7).
- ♦ The measured sound power level (L_{WA}) = 94 dB(A) (GEEL 3) // 95 dB(A) (GEEL 5 / 7).

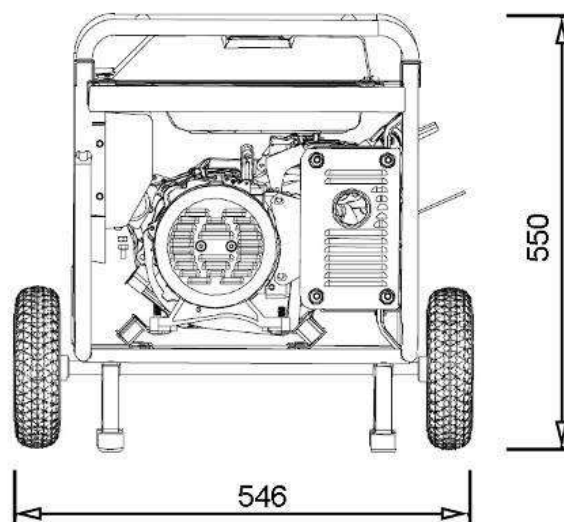
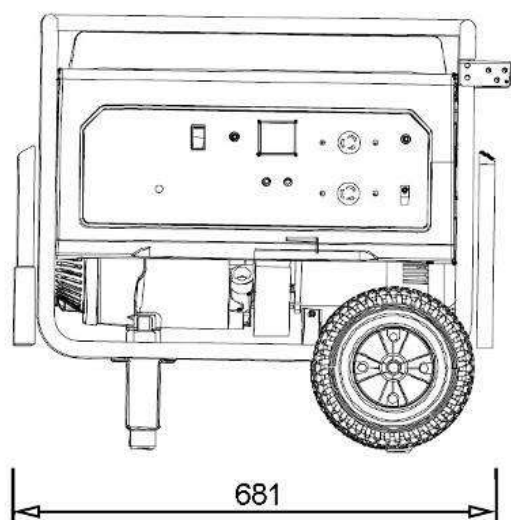
Sound power level is tested in accordance with European Directive 2000/14/EC Noise Emission in the Environment by Equipment for use outdoors.

10 DIMENSIONS

- **GEEL 3**



- **GEEL 5, GEEL 7**



11 INSTRUCTIONS TO ORDER SPARE PARTS

11.1 INSTRUCTIONS TO ORDER SPARE PARTS



1. All spare parts requested must include PART CODE NUMBER AS STATED IN THE PART LIST. We recommend to include ITEM'S MANUFACTURE NUMBER.
2. Let us to know the correct shipping instructions, including the wished route and the address and consignee's complete name.
3. Don't give back any spare part to the manufacturer without written permission. In case of returned spare parts shipping fees will always be paid by the customer..

11.2 INSTRUCTIONS TO REQUEST WARRANTIES



1. The warranty is valid for 1 year after the purchasing date of the machine. The warranty will cover parts with manufacturing defects.
In no case the warranty will cover a malfunction due to improper usage of the equipment.
2. In all warranty requests THE MACHINE MUST BE SENT TO ENARCO, S.A. or to an AUTHORIZED DEALER, always including the complete address and name of the consignee.
3. The Technical Assistance Service will immediately notify the customer if it accepts the warranty claim and, if requested, it will send a technical report.
4. The warranty will be rejected if any equipment has been previously handled by personnel outside of ENARCO, S.A. or not authorized by the manufacturer..

NB: ENARCO, S.A., reserves the right to modify any part of this manual without prior notice.





PARA REALIZAR CUALQUIER CONSULTA SOBRE LOS DESPIECES Y LISTAS DE PIEZAS DE NUESTRAS MÁQUINAS CONSULTE NUESTRA PÁGINA WEB.

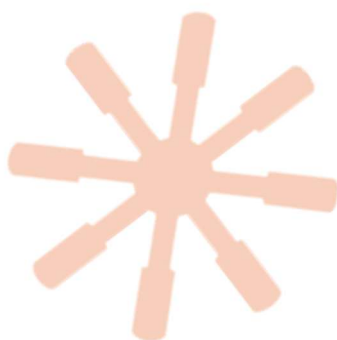
FOR ANY REQUIREMENT ABOUT THE PART LIST OF OUR MACHINES CONSULT OUR WEB PAGE.

POUR CONSULTER TOUS LES RENSEIGNEMENTS DES PIÈCES DETACHEES OU LA LISTE DE NOS MACHINES VOIR NOTRE SITE.

UM DIE VERSCHIEDENE EXPLOSIONSZEICHNUNGEN SO WIE DIE ERSATZTEILLISTEN EINZUSEHEN, BESUCHEN SIE BITTE UNSERE INTERNET-SEITE.

PARA FAZER QUALQUER INQUÉRITO SOBRE AS LISTAS DE PEÇAS E PEÇAS DE NOSSAS MÁQUINAS, CONSULTE A NOSSA PÁGINA WEB

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