

ENGLISH

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***USE AND MAINTENANCE
MANUAL***

**ATTENTION**

This use and maintenance manual is an important part of the machines in question.

The assistance and maintenance personnel must keep said manual at disposal, as well as that for the engine and alternator and all other documentation about the machine.

We advise you to pay attention to the pages concerning the security.



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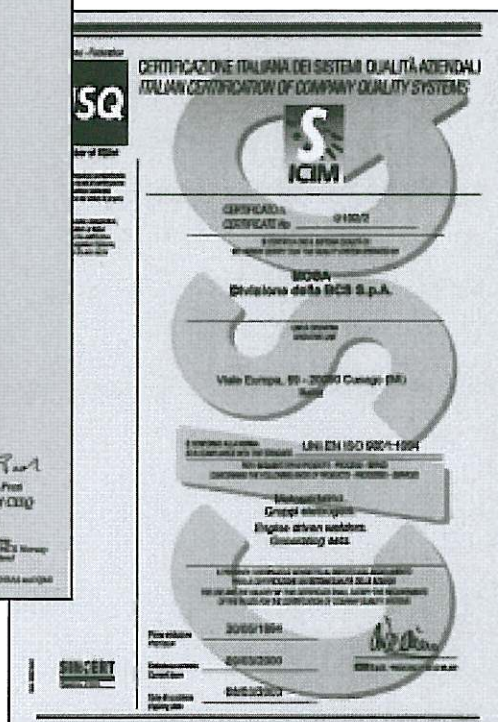
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MOSA

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MOSA dichiara sotto la propria responsabilità che la macchina:
MOSA déclare, sous sa propre responsabilité, que la machine:
MOSA declares, under its own responsibility, that the machine:
MOSA erklärt, daß die Maschine:
MOSA verklaard, onder haar eigen verantwoordelijkheid, dat de machine:
MOSA declara bajo su responsabilidad que la máquina:

Modello/Model/Modél/Model/Modellus:

N.º di serie/Nr. de série/Serial No./Sérienn/Serien/Nr.º de série:

é conforme con quanto previsto dalle Direttive Comunitarie e relative modifiche:
et en conformité avec ce qui est prévu par les Directives Communautaires et relatives modifications:
conforms with the Community Directive and related modifications:
Mit den Vorschriften der Gemeinschaft und deren Ergänzungen übereinstimmt:
in overeenkomst met de inhoud van gemeenschappelijkheden gerelateerde modificaties:
cumple con los requisitos de la Directiva Comunitaria y sus modificaciones:

CEE 89/392 (89/368 - 92/44 - 93/58)
CEE 73/23 (93/68)
CEE 89/336 (82/31 - 93/68)

per la verifica sono state considerate le seguenti norme armonizzate, direttive CEE, Norme nazionali e internazionali:
pour la vérification de la conformité ont été considérées les normes harmonisées suivantes: directives CEE, normes nationales et internationales:

to check the conformity, the following harmonized norms EEC directives, national and international norms, have been consulted:

zur Prüfung hat man die folgenden übereinstimmenden nationalen und internationalen Normen herangezogen:
ter verificatie van de overeenkomst, zijn de volgende geharmoniseerde normen EEG-richtlijnen, nationaal en internationaal, geconsulteerd:


para su verificación se han tenido en cuenta las Normas armonizadas, Directivas CEE, Normas nacionales e internacionales:

Norme armonizzate - normes harmonisées - harmonized norms - übereinstimmende Normen - geharmoniseerde normen - Normas armonizadas:

EN 292-1 - EN 50439-1 - EN 80204-1
EN 60974-1 - EN 500199 (Solo per modelli - Seulement pour les modèles - Only for models - nur für die Modelle - Alleen voor de modellen - Solo para modelos: MS/TS)
EN 50061-2 - EN 50082-2

Altre norme - autres normes - other norms - andere Normen - andere normen - otras normas:

84/53/CEE (Solo per modelli - Seulement pour les modèles - Only for model - nur für die Modelle - Alleen voor de modellen - Sólo para modelos: GE)
84/53/CEE (Solo per modelli - Seulement pour les modèles - Only for model - nur für die Modelle - Alleen voor de modellen - Sólo para modelos: MS/TS)



Ing. Benito Marelli
Direttore Generale

Cusago,

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INTRODUCTION

Dear Customer,
We wish to thank you for having bought from MOSA a high quality set.

Our sections for Technical Service and Spare Parts will work at best to help you if it were necessary.

To this purpose we advise you, for all control and overhaul operations, to turn to the nearest authorized Service Centre, where you will obtain a prompt and specialized intervention.

 In case you do not profit on these Services and some parts are replaced, please ask and be sure that are used exclusively original MOSA parts; this to guarantee that the performances and the initial safety prescribed by the rules in force are re-established.

 The use of **non original spare parts will cancel immediately** any guarantee and Technical Service obligation from MOSA.

NOTES ABOUT THE MANUAL

Before actioning the machine please read this manual attentively. Follow the instructions contained in it, in this way you will avoid inconveniences due to negligence, mistakes or incorrect maintenance. The manual is for qualified personnel, who knows the rules: about safety and health, installation and use of sets movable as well as fixed.

You must remember that, in case you have difficulties for use or installation or others, our Technical Service is always at your disposal for explanations or interventions.

The manual for Use Maintenance is an integrant part of the product. It must be kept with care during all the life of the product.

In case the machine and/or the set should be yielded to another user, this manual must also be given to him.

Do not damage it, do not take parts away, do not tear pages and keep it in places protected from dampness and heat.

You must take into account that some figures contained in it want only to identify the described parts and therefore might not correspond to the machine in your possession.

INFORMATION OF GENERAL TYPE


In the envelope given together with the machine and/or set you will find: the manual for Use Maintenance, the manual for use of the engine, the guarantee (in the countries where it is prescribed by law).

Our products have been designed for the use of generation for welding, electric and hydraulic system; ANY OTHER DIFFERENT USE NOT INCLUDED IN THE ONE INDICATED, relieves MOSA from the risks which could happen or, anyway, from that which was agreed when selling the machine; MOSA excludes any responsibility for damages to the machine, to the things or to persons in this case.

Our products are made in conformity with the safety norms in force, for which it is advisable to use all these devices or information so that the use does not bring damage to persons or things.

While working it is advisable to keep to the personal safety norms in force in the countries to which the product is destined (clothing, work tools, etc.).

Do not modify for any motive parts of the machine (fastenings, holes, electric or mechanical devices, others..) if not duly authorized in writing by MOSA: the responsibility coming from any potential intervention will fall on the executioner as in fact he becomes maker of the machine.

 **Notice:** this manual does not engage MOSA, who keeps the faculty, apart from the essential characteristics of the model here described and illustrated, to bring improvements and modifications to parts and accessories, without putting this manual uptodate immediately.




SYMBOLS IN THIS MANUAL

- The symbols contained in the manual have the purpose to draw the attention of the User to avoid inconveniences or dangers to the persons as well as to the things or to the machine in your possession.

These symbols are besides to draw your attention to show a correct use and obtain a good operation of the machine or of the used set.

IMPORTANT ADVICE

- Advice to the User about the safety:

 NB: the information contained in the manual can be changed without notice.

Potential damages caused in relation to the use of these instructions will not be considered because these are only indicative.

Remember that the non observance of the indications reported by us might cause damage to persons or things.

It remains understood, anyway, that the local dispositions and/or laws in force must be respected.



WARNING

Situations of danger - no harm to persons or things

Use only with safety installations

The non observance, the displacement or the putting out of work of the installations, of the safety and control functions are prohibited.

Use only in perfect technical conditions

The machines or the sets must be used in perfect technical conditions. Defects, which can alter the safety, must be removed at once. Do not install machines or sets near a heat source, in risky zones with danger of explosion or fire.

If possible repair the machines or sets in dry areas, far from water, protecting them besides from humidity.

SAFETY PRECAUTIONS



WARNING

To this advice can appear a danger for persons as well as for things: for the former danger of death or serious wounds, for the latter material danger; take therefore the due precautions.



CAUTION

To this advice can appear a danger for persons as well as for things, for which can appear situations bringing material damage to things.



IMPORTANT










NOTE



MAKE SURE

This information is given for the correct use of the machines and/or accessories in relation to these so as not to cause damage due to inadapted use.

SYMBOLS AND CURRENT DEFINITIONS

VARIOUS	 CE Conformity	 Manual recoil	 Engine shut down (oil)	 Ground connection point				 Users' manual	 Information	 Maintenance Time
---------	---	---	--	--	--	--	--	---	--	--



STOP - Read absolutely and be duly attentive.



Read and take due attention.



GENERAL ADVICE - If the advice is not respected damage can happen to persons or things.



HIGH VOLTAGE - Attention High Voltage. There can be parts in voltage, dangerous to touch. The non observance of the advice implies life danger.



FIRE - Danger of flame or fire. If the advice is not respected fires can happen.



HEAT - Hot surfaces. If the advice is not respected burns or damage to things can be caused.



WATER - Danger of shortcircuit. If the advice is not respected fires or damage to persons can be caused.



SMOKING - Cigarettes can cause fire or explosion. If the advice is not respected fires or explosions can be caused.



ACIDS - Danger of corrosion. If the advice is not respected the acids can cause corrosions with damage to persons or things.



WRENCH - Use of the tools. If the advice is not respected damage can be caused to things and even to persons.

PROHIBITIONS No harm for persons

Use only with safety clothing -



It is compulsory to use the personal protection means given as equipment.

Use with only safety material -



It is prohibited to use water to estinguish fires on the electric machines.

Use only with non inserted voltage -



It is prohibited to make interventions before having disinserted the voltage.

No smoking -



It is prohibited to smoke while filling the tank with fuel.

ADVICE No harm for persons and things

Use only with safety tools, adapted to the specific use.

It is advisable to use tools adapted to the various maintenance works.

Use only with safety protections -



It is advisable to use protections suitable for the different daily checking works.

Use only with safety protections -





It is advisable to use all protections while shifting the machine.

Use only with safety protections -




it is advisable to use safety protections suitable for the several Daily checks a/o maintenance.

  The installation and the general advice concerning the operations, are finalized to the correct use of the machine, in the place where it is used as generator group. The generator has been designed to guarantee safety and reliability when used according to the instructions.

ENGINE


- ⇒ Stop engine when fueling.
- ⇒ Do not smoke, avoid flames, sparks or electric tools when fueling.
- ⇒ Unscrew the cap slowly to let out the fuel vapours.
- ⇒ Do not fill tank completely.
- ⇒ Wipe up spilled fuel before starting engine.
- ⇒ Shut off fuel of tank when moving machine.
- ⇒ Avoid spilling fuel on hot engine.
- ⇒ Sparks may cause the explosion of battery vapours.



 **FIRST AID.** In case the operator should be sprayed by accident, from corrosive liquids a/o hot toxic gas or whatever event which may cause serious injuries or death, predispose the first aid in accordance with the ruling labour accident standards or of local instructions.


Skin contact	Wash with water and soap
Eyes contact	Irrigate with plenty of water, if the irritation persists contact a specialist
Ingestion	Do not induce vomit as to avoid the intake of vomit into the lungs, send for a doctor
Suction of liquids from lungs	If you suppose that vomit has entered the lungs (as in case of spontaneous vomit) take the subject to the hospital with the utmost urgency
Inhalation	In case of exposure to high concentration of vapours take immediately to a non polluted zone the person involved



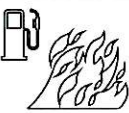

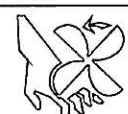
 **FIRE PREVENTION.** In case the working zone, for whatsoever cause goes on fire with flames liable to cause severe wounds or death, follow the first aid as described by the ruling norms or local ones


EXTINCTION MEANS

Appropriated	Carbonate anhydride (or carbon dioxide) powder, foam, nebulized water
Not to be used	Avoid the use of water jets
Other indications	Cover eventual shedding not on fire with foam or sand, use water jets to cool off the surfaces close to the fire
Particular protection	Wear an autorespiratory mask when heavy smoke is present
Useful warnings	Avoid, by appropriate means to have oil sprays over metallic hot surfaces or over electric contacts (switches, plugs, etc.). In case of oil sprinkling from pressure circuits, keep in mind that the inflammability point is very low.








WARNING



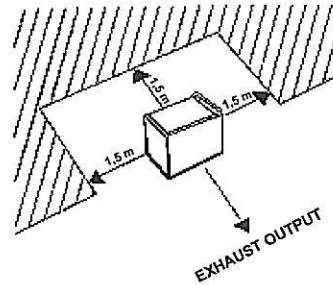
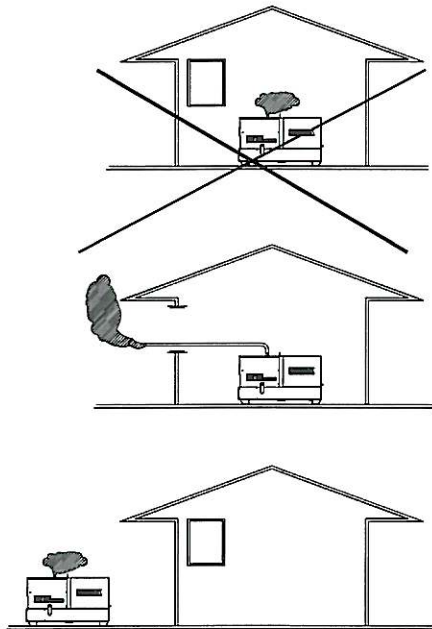
CAUTION

 <h2 style="margin: 0;">WARNING</h2>	<p>THE MACHINE <u>MUST NOT BE USED</u> IN AMBIENTS WITH EXPLOSIVE ATMOSPHERE</p>
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ENGINE

- Use in open space, air swept or vent exhaust gases, which contain the deathly carbone oxyde, far from the work area.



☞ Make sure that the machine does not move during the work: **block** it possibly with tools and/or devices made to this purpose

MOVES OF THE MACHINE

At any move check that the engine is **off**, that there are no connections with cables which impede the moves.

PLACE OF THE MACHINE

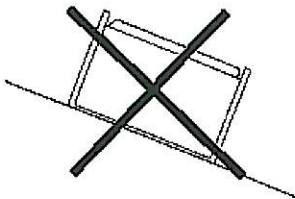
In spots where it often rains and/or there are flooded areas, do **not** put the machine:



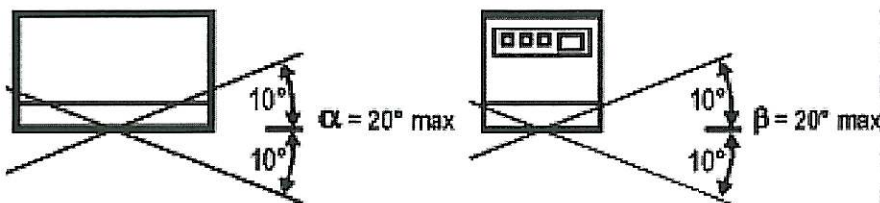
- in the bad weather
- in flooded places.

POSITION

Place the machine on a level surface at a distance of at least 1,5 m from buildings or other plants.



Maximum leaning of the machine (in case of the floor is out of level)



☞ Check that the air jets changed completely and the hot air sent out does not come back inside the set so as to cause a dangerous temperature increase.

When the generator is in operation keep away children and pets

☞ If not used correctly the generator is a potential source of electric shocks, do not touch it with humid hands.

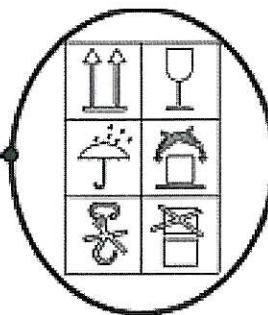
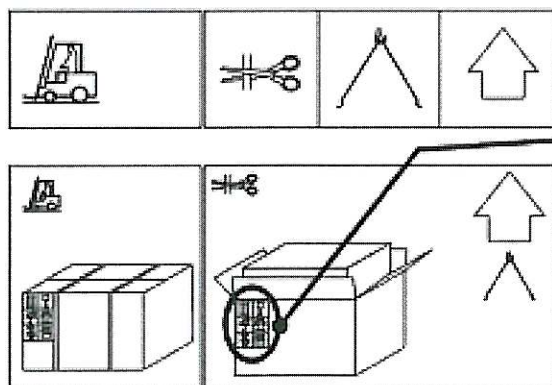


NOTE

When receiving the goods make sure that the product has not suffered damage during the transport, that there has not been rough handling or taking away of parts contained inside the packing or in the set. In case you find damages, rough handling or absence of parts (envelopes, manuals, etc.), we advise you to inform immediately our Technical Service.

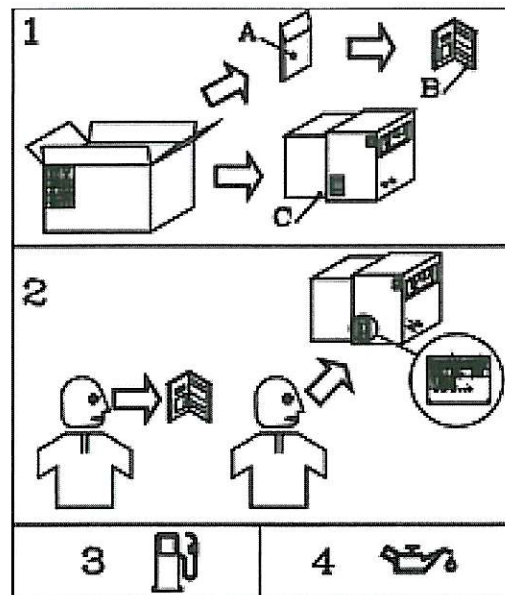


For eliminating the packing materials, the User must keep to the norms in force in his country.



- 1) Take the machine (C) out of the shipment packing. Take out of the envelope (A) the user's manual (B).
- 2) Read: the user's manual (B), the plates fixed on the machine, the data plate.
- 3) Fill the tank with fuel.
- 4) Introduce the engine oil (see engine manual).

NB.: for points 3)-4) keep to the instructions page M9.



To transport or to displace the generator keep strictly to the instructions evidenced in the pictures shown herebelow.

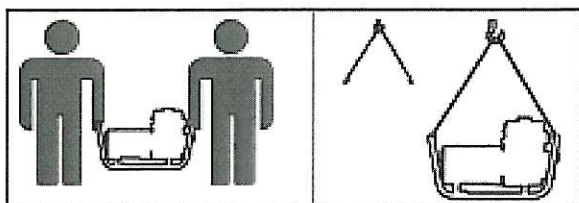
Make the transportation when the machine has **no** petrol in its tank and **no** oil in the engine.

Be sure that the transportation means are adequate to the size and to the weight of the machine.

DO NOT LOAD OTHER PARTS WHICH CAN MODIFY WEIGHT AND BARICENTER POSITION.

IT IS STRICTLY FORBIDDEN TO DRAG THE MACHINE MANUALLY OR TOW IT BY ANY VEHICLE.

In case the above instructions are not strictly observed, the structure of the machine can be severely damaged.





LUBRICANT



Check the level of the engine oil using the appropriate oil dipstick: the level should be between the minimum and maximum marks.

If necessary, add more oil through the appropriate inlet.

OIL AND COOLING LIQUID RECOMMENDED

MOSA advises to choose **AGIP** for the type of oil and cooling liquid.

Please keep to the label put on the engine for the recommended products.



PRODOTTI RACCOMANDATI RECOMMENDED PRODUCTS	
AGIP SUPERDIESEL 15W/40 API CF4-SG	OLIO MOTORE DIESEL DIESEL ENGINE OIL
AGIP SUPERMOTOR OIL 20W/50 API CC-SF	OLIO MOTORE BENZINA GASOLINE ENGINE OIL
AGIP ANTIFREEZE EXTRA INIBITE ETHYLENE GLYCOL (50% + 50% H ₂ O)	CIRCUITO DI RAFFREDDAMENTO COOLING CIRCUIT (CUNA NC 956-16 ED 97)

NOTE:
Before starting and switching off, see instructions in the engine owner's manual herewith attached.



FUEL

Check the level of fuel in the tank and, if necessary, add more standard gasoline of any type you can buy (e.g. 84-96 ON).

If during the filling of the tank some gasoline is accidentally spilled around the engine chassis, clean it immediately before starting up the engine.



- ⇒ Use only automotive fuel new and clean.
- ⇒ Do not use oil-petrol mixture or contaminated petrol.
- ⇒ Avoid any dirt or water to enter the fuel tank.

After refuelling close tightly the fuel inlet plug.

OIL ALERT

The OIL ALERT device will stop the engine in case of no oil or insufficient amount of oil in the engine. In case one tries to start the engine with oil below the minimum level, the warning light (when assembled) will light and the device will not allow starting.



EARTH TERMINAL

It is obligatory to connect the ground connection point (12) by means of a sure efficient cable (please follow the installation local rules and/or regulations in force) in order to integrate or ensure the working of various electric protection devices referring to the several distribution systems TT/TN/IT.

Notice: the group **is not** fitted with differential switch, the available current sockets are to be used **exclusively** to make a safe connection to the

distribution panel provided with all the necessary protections foreseen by ruling laws.

The unit can be started only when the above operations have been correctly performed.

Warning: do not start the engine if not fitted with the air filter, contaminating dust particles or filth may enter the engine through the carburettor thus damaging the engine itself.



Check daily

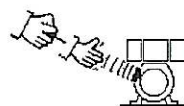
Open the gasoline cock; use the starter if the engine is cold and the temperature is low.



Hold the starting handle firmly.



Pull the rope hard and fast. Pull it all the way out. Use two hands if necessary.



Then return it slowly.

Once the engine is started, with the starter off, let it turn for a few minutes before drawing the load. Move the accelerator lever to the **Position I** (GE 2200).



IMPORTANT

RUNNING-IN During the first 50 hours of operation, do not use more than 60% of the maximum output power of the unit and check the oil level frequently, in any case please stick to the rules given in the engine use manual.

Before stopping the engine **it is compulsory** to effect the following operations:

- stop to draw single-phase current from the auxiliary sockets.

Make sure that the machine is not delivering any power.

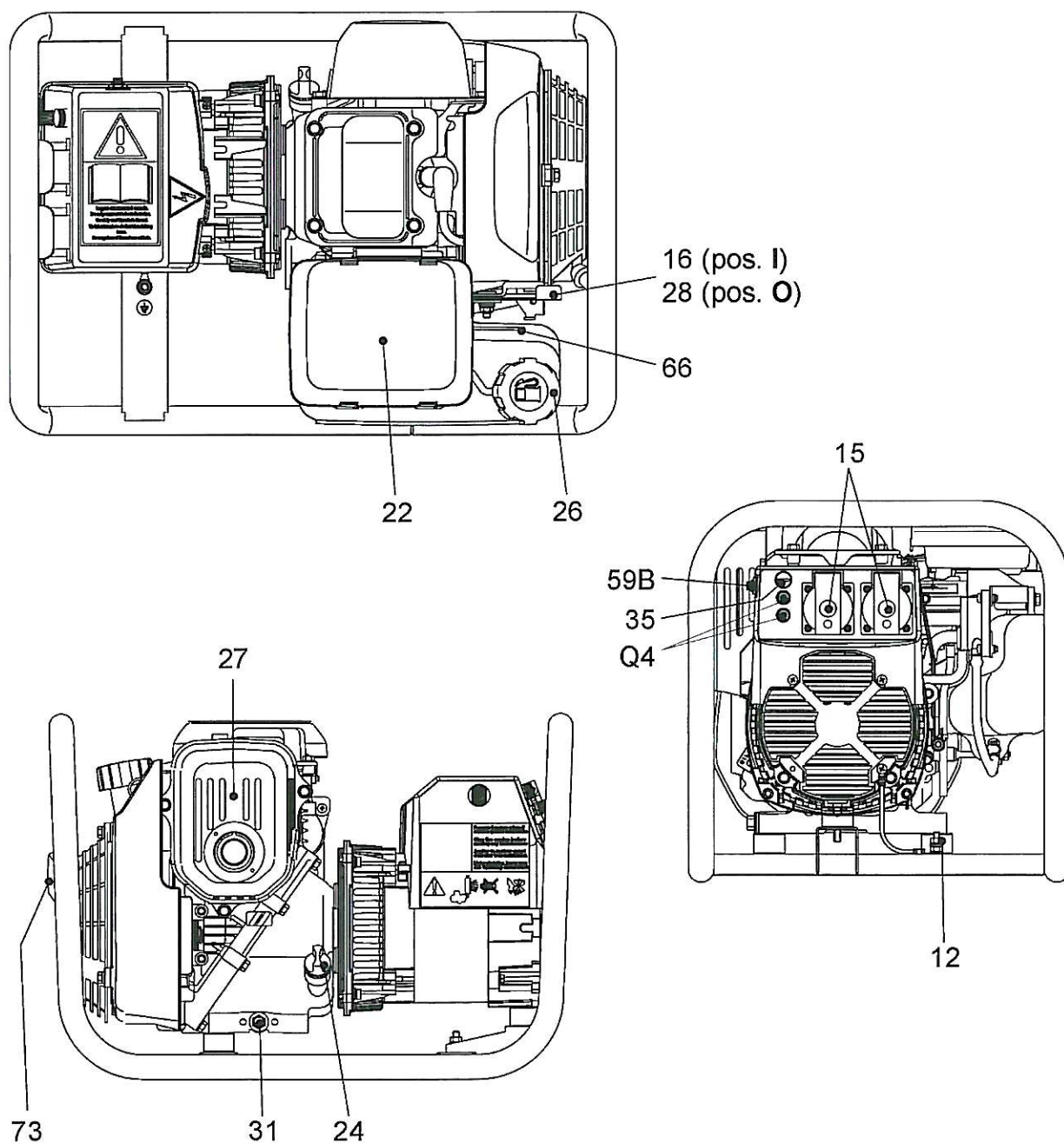
Wait for a few minutes to allow the machine to cool off, take however into consideration the prescriptions given in the engine use manual.

- Close the petrol cock. Rotate the stop lever till the stopping of the engine (GE 3200).
- Move the accelerator lever to the **Position O** (GE 2200).



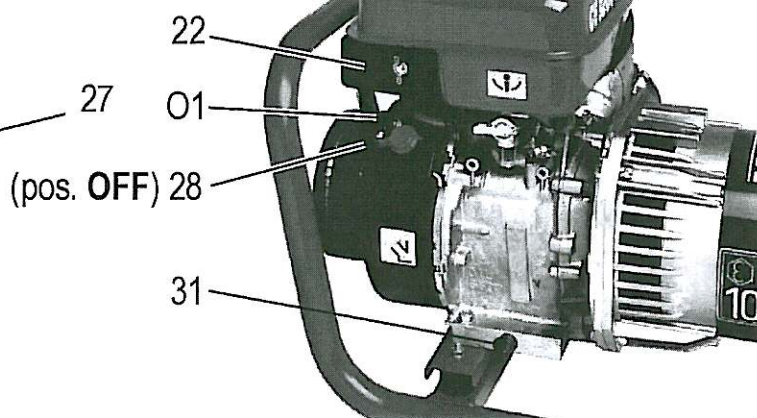
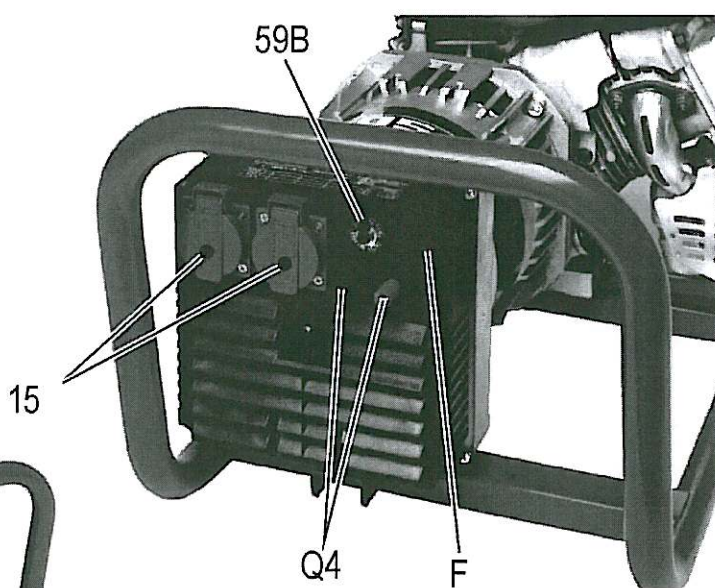
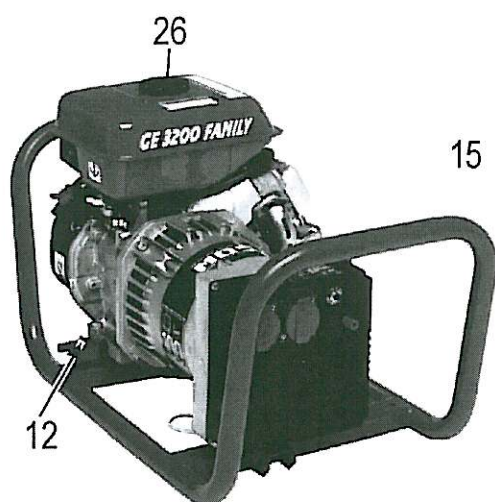
LEGENDE:

- | | | | |
|----|--------------------------|-----|------------------------------|
| 12 | Earth terminal | 28 | Stop control |
| 15 | A.C. socket | 31 | Oil drain tap |
| 16 | Accelerator lever | 59B | Aux current circuit breaker. |
| 22 | Engine air filter | 66 | Choke control |
| 24 | Engine oil reservoir cap | 73 | Starting push button |
| 26 | Fuel tank cap | F | Fuse |
| 27 | Muffler | Q4 | Battery charge sockets |



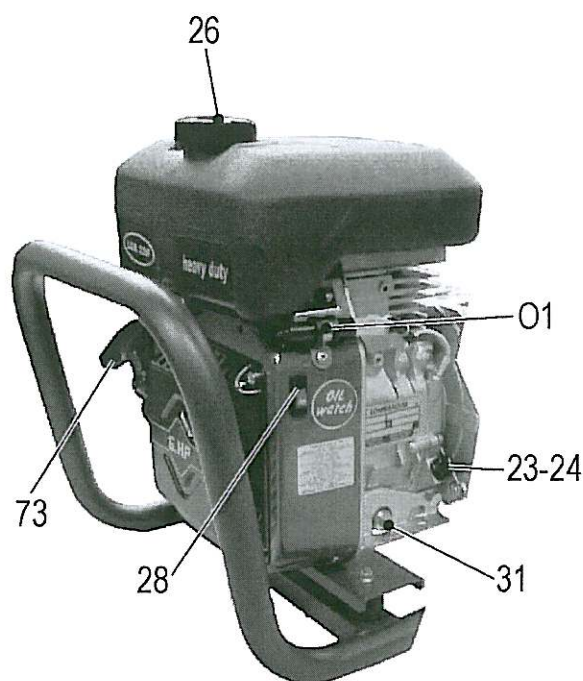
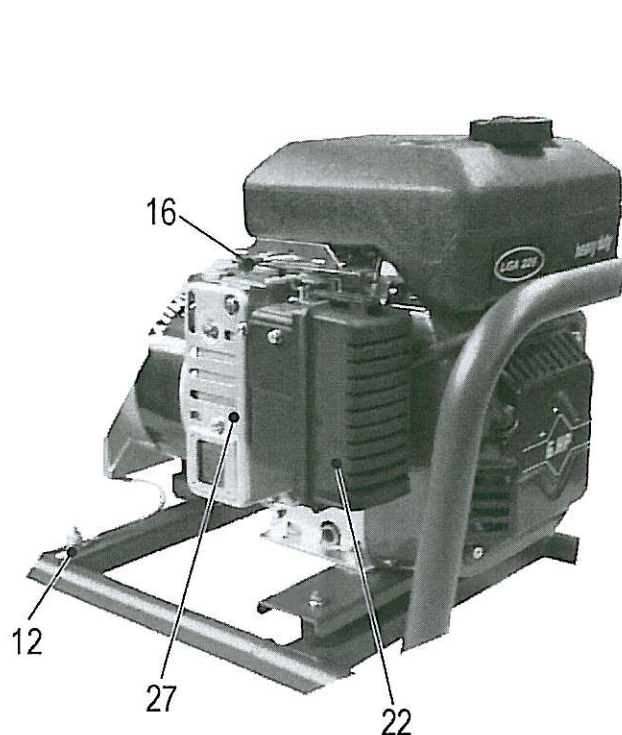
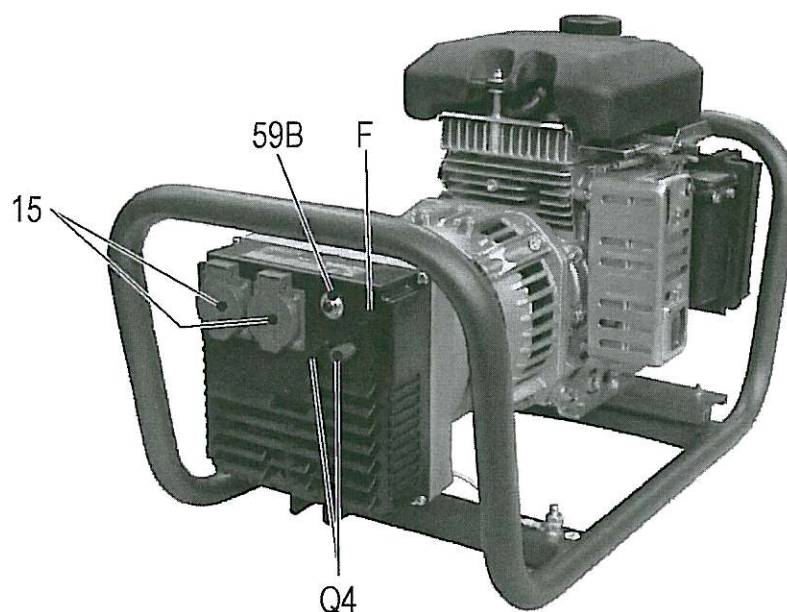
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| 23 | Oil level dipstick | F | Fuse |
| 24 | Engine oil reservoir cap | O1 | Oil pressure warning light/Oil alert |
| 26 | Fuel tank cap | Q4 | Battery charge sockets |
| 27 | Muffler | | |



LEGENDE:

- | | | | |
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| 12 | Earth terminal | 28 | Stop control |
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It is strictly forbidden to connect the group to the public mains a/o to another source of electric power.

In case such connection is made there may be a return of current, from the generator to the line being used thus causing electric shocks to workers of the electric company, or whoever else working on the line during a temporary stop.



WARNING

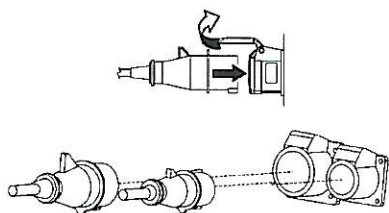
Sockets are not **self-locked**: tension is available immediately after starting also with no plug.



WARNING

Keep out from exhaust system: temperature is **very** high and it may burn.

Load connections have to be made by qualified personnel respecting electric safety rules.



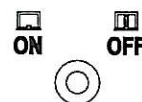
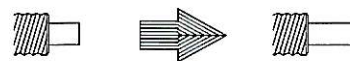
Make sure the unit is properly grounded (12)
- See page M 9 -.

Connect up the machine, using proper plugs and cables in good condition to the AC socket (15) to draw single-phase power.

THERMOPROTECTION

If you overload the genset the thermoprotection will automatically switch off.

If the thermoprotection is released, disconnect all the connected loads.



CIRCUIT BREAKER

Avoid to hold the central pole of the thermoprotection pressed for a long time.

Otherwise, in case of trouble, it will not click, **damaging** the generating set.



Reset the thermoprotection pressing the central pole.

When reset, connect the loads again.

In case the protection should act furtherly, check: the connections, the wires or others, and if necessary call the Assistance Service.

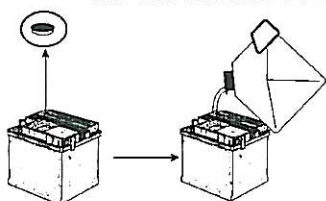


CAUTION

- ⇒ Starting power of electric motors is higher than nominal.
- ⇒ Not overload the sockets.
- ⇒ Do not connect genset to domestic lines: you may damage genset and domestic tools.
- ⇒ Do not modify or use genset for improper use.
- ⇒ Do not connect genset in between.
- ⇒ If necessary to extend the length of cables, use IEC 245 or equivalent.
- ⇒ Follow data plate specifications before connecting genset to load.



PROCEDURE FOR RECHARGING A BATTERY



Take off the Breather caps of the battery.

Check the electrolyte level in all the elements of the battery.

If necessary, add up distilled water to have the liquid at the recommended level.

Put back the breather caps of the battery.



WARNING



Sulfuric acid is corrosive.
Protect hands, eyes and clothes
Take the battery out of the machine for filling.
Warranty **VOIDED** for damages due to spilled acid.

Use a densimeter to determine the charge state of the battery.

SPECIFIC WEIGHT	CHARGE PERCENTAGE
1.265	100%
1.230	75%
1.200	50%
1.170	25%



WARNING

- Do not try to start the engine, of a motor car, when the generator is still connected to the battery.
- The generator may be damaged.
- Connect the positive terminal of the battery to the positive re-charge cable.
Do not invert the cables otherwise severe damages may occur to either the generator or the battery.

When the battery is out of the machine (the car) take the following steps. A spark close to the battery might cause an explosion.

To reduce this risk :

- Check the polarity of the battery.
The positive pole (Pos +) of the battery has usually a diameter larger than that of the negative (Neg -).
- Connect an insulated cable having a section of 13 sq.mm. and a minimum length of 600 mm. to the negative pole (Neg-).

- Connect the positive (Red) re-charge cable to the positive pole of the battery (Pos +).
- Go away as far as possible from the battery with the final free cable, then connect the negative (Black) to the terminal of the free cable.
- Do not stay in front of the battery when making the final connection.
- Connect the re-charge cables in the appropriate place of the generator.
- Start the engine.
- When disconnecting the re-charge cables, operate always in the opposite sequence of the connecting procedure and eliminate the first connection staying at a fairly reasonable distance from the battery.

SUGGESTION FOR THE USE

The terminal in cc. can be used to charge 12V car type batteries only.



CAUTION

- It is dangerous to work near a lead battery.
- The batteries produce explosive gas; sparks, flames, cigarettes, are to be kept far from them. Make sure that when they are being recharged there is adequate ventilation around the battery.
- It is **not** allowed to supply a low voltage electric system.
- It is **not** allowed to charge dry batteries.

To reduce the risk of battery explosions follow the following instructions and those appearing on the label applied onto the battery.

The battery contains sulphuric acid (electrolyte). The contact with eyes and skin may cause severe lesions. Wear protective garments and eye protections.

- If the electrolyte comes in contact with the skin, wash with plenty of water.
- If the electrolyte comes in contact with the skin, wash with plenty of water. If it comes in contact with the eyes wash with fluent water for at least 15 minutes and rush for a doctor.


The electrolyte is poisonous.

- if swallowed drink plenty of water or milk, then milk of magnesia or vegetable oil and call for a doctor. Keep away from children.



IMPORTANT

- Never position the generator directly above or under the battery being charged; gas or liquids of the battery may corrode and damage the generator. Position the generator as far as possible from the battery, considering the length of the cc. cables.
- Consider all precautions evidenced by the battery manufacturer such as remove or not the cells breather caps, and the recommended voltages while the battery is being recharged.

 **NOTE:** An overload of cc. current on the circuit will disconnect the safety switch of the cc. circuit (the reset button will stick out a little) If this happens, look for a possible short circuit and the connections. Wait for some minutes before pushing back the safety switch button (to restore the function).

1. Do not stay in front of the battery when making the first connection.
2. Connect the recharge cables to the proper area of the generator.
3. Start the engine.
4. When disconnecting the recharge cables act always in a sequence contrary to that followed when the connection has been made and eliminate the first connection keeping yourself at a convenient distance.

When the battery is mounted on a motorcar follow these instructions:

1. Make sure that all accessories of the machine are disconnected to avoid generation of sparks.
2. Position the cc. cables, in such a way as to reduce the risk of damages, from doors, bonnet and motor moving parts.
3. Do not touch fans, belts, pulleys and other parts liable to hurt the operator.
4. Check the polarity of the battery poles .The positive pole (Pos +) has, normally, a diameter larger than the negative one (Neg -).
5. Determine which battery pole is connected to the chassis. If it is the negative one (as in most of the cars) go to point 6.
If it is connected with the positive pole refer to point 7.
6. For the vehicles having the negative connected to the chassis, connect the positive cable (Red) to the positive pole (Pos +).

Then connect the negative one (Black) to the chassis or to the motorblock, far from the battery.
Do not connect the cable to the carburettor, to fuel hoses or to the metallic parts of the chassis or to the engine block.



CAUTION

To avoid sparks generation close to the battery, first connect the cable to the battery and then to the generator. Disconnect the cable from the generator first.

7. For vehicles having the positive connected with the chassis, connect the negative cable (Black) of the recharge, to the negative pole of the battery (Neg - N).
Connect then the positive cable (Red) to the chassis or to the engine block, far from the battery. Do not connect the cable to the carburettor, to fuel hoses or to metallic parts of the car connect to a heavy part of the chassis or to the engine block.
8. Connect the recharge cables to the proper parts of the generator.
9. Start the engine.
10. When disconnecting the recharge cable, remove the socket from the generator, remove the cables from the chassis and then from the terminals of the battery.



CAUTION

- Before connecting the recharge cables of a battery installed on a motor car, disconnect the earth cables of the motorcar battery.
- Reconnect the earth cable of the battery after having removed the recharge cables.

By this procedure you will avoid the possibility of a short circuit as well as sparks in case there is an accidental contact between one terminal of the battery and the chassis or the body of the car.



WARNING



**MOVING
PARTS
can injure**

- Have **qualified** personnel do maintenance and troubleshooting work.
- Stop the engine before doing any work inside the machine.
If for any reason the machine must be operated while working inside, **pay attention** to rotating parts and hot surfaces which may be unprotected when the machine is open (exhaust, etc).
- Use suitable tools and clothes.
- Do not modify the components if not authorized.
- See pag. M 3 -



**HOT surface
can
hurt you**

MAINTENANCE

By maintenance at care of the utilizer we intend all the operatios concerning the verification of mechanical parts, electrical parts and of the fluids subject to use or consumption during the normal operation of the machine.

For what concerns the fluids we must consider as maintenance even the periodical change and or the refills eventually necessary.

Among the activities related to maintenance are not to be considered the repairs (or the occasional substitution of worn-out parts and the substitution of electrical or mechanical parts subject to wear during the normal use) made by Authorized Assistance Centers.

Use only original MOSA spare parts.

Make checks and repairs only by MOSA authorized Assistance Centers.

Among the maintenance operations are instead included also the cleaning of the machine if effected out of the normal working cycle.

Verify, daily, the oil level in the engine oil pan.


Make sure there are no obstructions (rags, leaves, or other) inside the air inlet and exhaust hoses, of the alternator or of the engine.

ALTERNATOR

No other further periodical maintenance is necessary, as the alternator has no brushes or slip tings, and the output regulation is entirely electronic. Stick to the recommendations contained in the alternator instruction book.

ENGINE

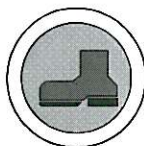
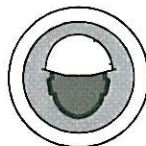
Stick to the engine instruction book.

 **N.B.:** all warning and decals should be checked once a year and replaced if missing or unreadable.

Check periodically the condition of the cables and tighten the connections.

In case the machine should not be used for more than 30 days, make sure that the room in which it is stored presents a suitable shelter from heat sources, weather changes or anything which can cause rust, corrosion or damages to the machine..

See page. M15.



STORAGE

In case the machine should not be used for more than 30 days, make sure that the room in which it is stored presents a suitable shelter from heat sources, weather changes or anything which can cause rust, corrosion or damages to the machine.

ENGINE

Empty the tank: then start the engine until it will stop for total lack of fuel.

Drain the oil from the engine sump and fill it with new oil

Pour about 10 cc of oil into the spark plug hole and screw the spark plug, after having rotated the crankshaft several times.

Rotate the crankshaft slowly until you feel a certain compression, then leave it.

Clean the covers and all the other parts of the machine carefully.

Protect the machine with a plastic hood and store it in a dry place.

In case of necessity for first aid and fire prevention, see page. M6.



IMPORTANT



In the storage and/or cust off operations avoid that polluting substances, liquids, exhausted oils, etc. bring damage to people or things or can cause negative effects to surroundings, health or safety respecting completely the laws and/or dispositions in force in the place.

CUST OFF

As cust off we intend all operations to be made, at utilizer's care, at the end of the use of the machine.

This comprises the dismantling of the machine, the subdivision of the several components for a further reutilization or for getting rid of them, the eventual packing and transportation of the eliminated parts up to their delivery to the store, or to the bureau encharged to the cust off or to the storage office, etc.

The several operations concerning the cust off, involve the manipulation of fluids potentially dangerous such as: lubricating oil and fuel.

The dismantling of metallic parts liable to cause injuries or wounds, must be made wearing heavy gloves and using suitable tools.

The getting rid of the various components of the machine must be made accordingly to rules in force of law a/o local rules.

Particular attention must be paid when getting rid of lubricating oils and inflammable liquids such as fuel.

The machine user is responsible for the observance of the norms concerning the environment conditions with regard to the elimination of the machine being cust off and of all its components.

In case the machine should be cust off without any previous disassembly it is however compulsory to remove:

- fuel tank
- engine lubricating oil

NOTE: MOSA is involved with custing off the machine only for the second hand ones, when not reparable.



The generating set GE 2200 is a unit which transforms the mechanical energy, generated by endothermic engine, into electric energy, through an alternator.

Is meant for semi-professional use, powered by an endothermic engine and composed of various main parts such as: engine, alternator, electric and electronic controls, the fairing or a protective structure.

The assembling is made on a steel structure, on which are provided elastic supports which must damp the vibrations and also eliminate sounds which would produce noise.

ALTERNATOR	Type: Single-phase, synchronous, self-excited, self-regulated			
	Insulation	class	H	
	OUTPUT		T400V	T230V M230V
	Duty cycle	%		100
	Power	KVA		2
	Voltage	V		230
	Current	A		8.7
	Frequency	Hz		50
	Cos	Ø		1
ENGINE	Make		HONDA	
	Model		GC 135 VXE	
	Type		4 - stroke	
	Displacement	cc	135	
	Cylinder	nr.	1	
	Power (**)	kW (HP)	2.8 (3.8)	
	Speed	rpm	3000	
	Cooling system		air	
	Engine oil capacity	l	0.6	
	Starter		recoil	
	Fuel		gasoline	
GENERAL SPECIFICATION	Battery charge	A	10 - 12V	
	Protection	IP	21	
	Dimensions	mm	530x370x370	
	Weight	kg	25 ~	
	Fuel tank capacity	l	1.7	

Note: M = single-phase (**) = Maximum output according to ISO 3046/1

OUTPUT

☞ The output indicated is guaranteed at 20°C and at a pressure of 1 bar (up to 1000 m no correction for atmosphere pressure is required). At high er temperature and above 1000 m altitude the engine output will decrease and the engine may need adjustment for optional performances.

☞ **N.B.:** at high altitudes, the standard mix air-fuel is excessively rich, the efficiency of the engine is reduced and, therefore, the fuel consumption will increase.

Max. acoustic power level admitted according to the EEC norms of 17/09/84 n. 84/536 for generating sets (DM 588/1987)

The machine respects the noise limits, expressed in sound power, given in the a.m. directives.

These limits can be used to judge the sound level produced on site.

For example: the sound power level of 100 LWA.

The sound pressure (noise produced) at 7 meters distance is about 75dBA (the limit value less 25).

To calculate the sound level at other distances use this formula:

$$dBA_x = dBA_y + 10 \log \frac{r_y^2}{r_x^2}$$

At 4 meters the noise level becomes: $75 \text{ dBA} + 10 \log \frac{7^2}{4^2} = 80 \text{ dBA}$

The generating set GE 3200 is a unit which transforms the mechanical energy, generated by endothermic engine, into electric energy, through an alternator.

Is meant for semi-professional use, powered by an endothermic engine and composed of various main parts such as: engine, alternator, electric and electronic controls, the fairing or a protective structure.

The assembling is made on a steel structure, on which are provided elastic supports which must damp the vibrations and also eliminate sounds which would produce noise.

ALTERNATOR	Type: Single-phase, synchronous, self-excited, self-regulated					
	Insulation		class	H		
	OUTPUT			T400V	T230V	M230V
	Duty cycle	%				100
	Power	KVA				3
	Voltage	V				230
	Current	A				13
	Frequency	Hz				50
	Cos	Ø				0.8
ENGINE			GE 3200 FAMILY		GE 3200 L FAMILY	
	Make		SUZUKI		LOMBARDINI	
	Model		V 160 A		LGA 226	
	Type		4 - stroke		4 - stroke	
	Displacement	cc	162		220	
	Cylinder	nr.	1		1	
	Power (**)	kW (HP)	3.3 (4.5)		3.5 (4.8)	
	Speed	rpm	3000		3000	
	Cooling system		air		air	
	Engine oil capacity	l	0.55		0.6	
	Starter		recoil		recoil	
	Fuel		gasoline		gasoline	
GENERAL SPECIFICATION	Battery charge	A	10 - 12V			
	Protection	IP	21			
	Dimensions	mm	680x390x425		680x390x425	
	Weight	kg	36 ~		36 ~	
	Fuel tank capacity	l	3.9		3.1	

Note: M = single-phase (**) = Maximum output according to ISO 3046/1

OUTPUT

☛ The output indicated is guaranteed at 20°C and at a pressure of 1 bar (up to 1000 m no correction for atmosphere pressure is required). At high er temperature and above 1000 m altitude the engine output will decrease and the engine may need adjustment for optional performances.

☛ **N.B.:** at high altitudes, the standard mix air-fuel is excessively rich, the efficiency of the engine is reduced and, therefore, the fuel consumption will increase.

Max. acoustic power level admitted according to the EEC norms of 17/09/84 n. 84/536 for generating sets (DM 588/1987)

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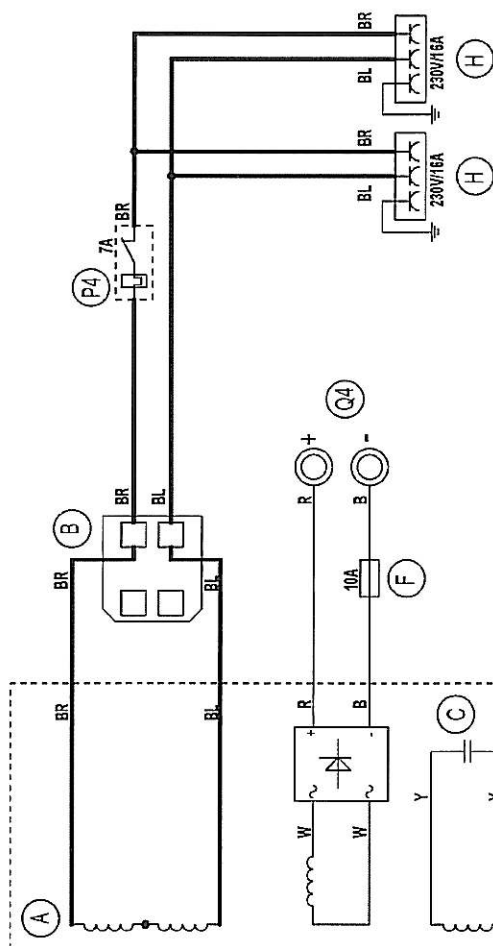
For example: the sound power level of 100 LWA.

The sound pressure (noise produced) at 7 meters distance is about 75dBA (the limit value less 25).

To calculate the sound level at other distances use this formula:

$$dBA_x = dBA_y + 10 \log \frac{r_y^2}{r_x^2}$$

At 4 meters the noise level becomes: 75 dBA + 10 log $\frac{7^2}{4^2}$ = 80 dBA

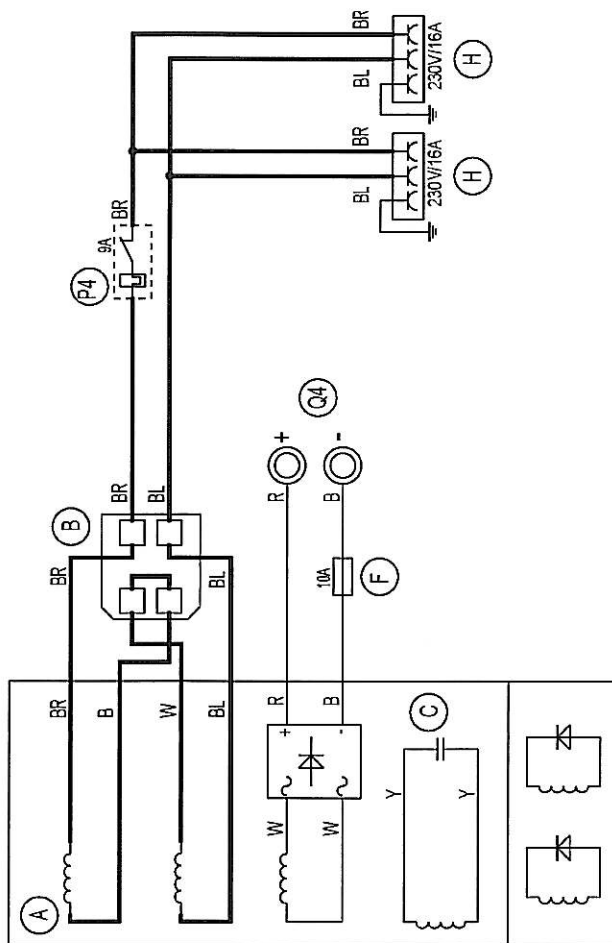


LEGENDA / LEGENDE:

- A : Alternatore / Alternator
B : Supporto connessione cavi / Wire connection unit
C : Condensatore / Capacitor
F : Fusibile / Fuse
H : Presa 230V monofase / 230V 1phase socket
P4: Protezione termica / Circuit breaker
Q4: Prese carica batteria / Battery charge sockets

	LEGENDA COLORI KEY COLOR
R	ROSSO/RED
B	NERO/BLACK
BL	BLU/BLUE
BR	MARRONE/BROWN
GR	VERDE/GREEN
W	BIANCO/WHITE
Y	GIALLO/YELLOW

Modifica	Data		Dis.	Appr.
Denominazione:	Progetto:	Pagn°	2	2
Aux. (230Mx212dc) T	25353. prg			
Macchina:	Disegnatore:	Data:	Dis n°	Approvato:
GE 2200 FAMILY	Leporence N.	30/06/2000	25353.S.020	
20090-CUSAGO (MI)-ITALY				
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LEGENDA / LEGENDE:

- A : Alternatore / Alternator
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- Q4: Prese carica batteria / Battery charge sockets

LEGENDA COLORI KEY COLOR
R
B
BL
BR
GR
W
Y

Esp.	Modifica	Data	Dis.	Apr.
	Denominazione:	Progetto:	25355.prg	2
	Aux. (230Mx2/12Vdc) T	Disegnato:	25355.prg	2
	Macchina:	Data:	27/07/2000	2
	GE 3200 FAMILY	Disegnato:	25355.S.020	2
	20090-CUSAGO (MI)-ITALY	Leporello N.		
	La MOSA si riserva a termini di legge la proprietà del presente disegno con diritto di riproduzione o comunicazione a terzi senza sua autorizzazione.			