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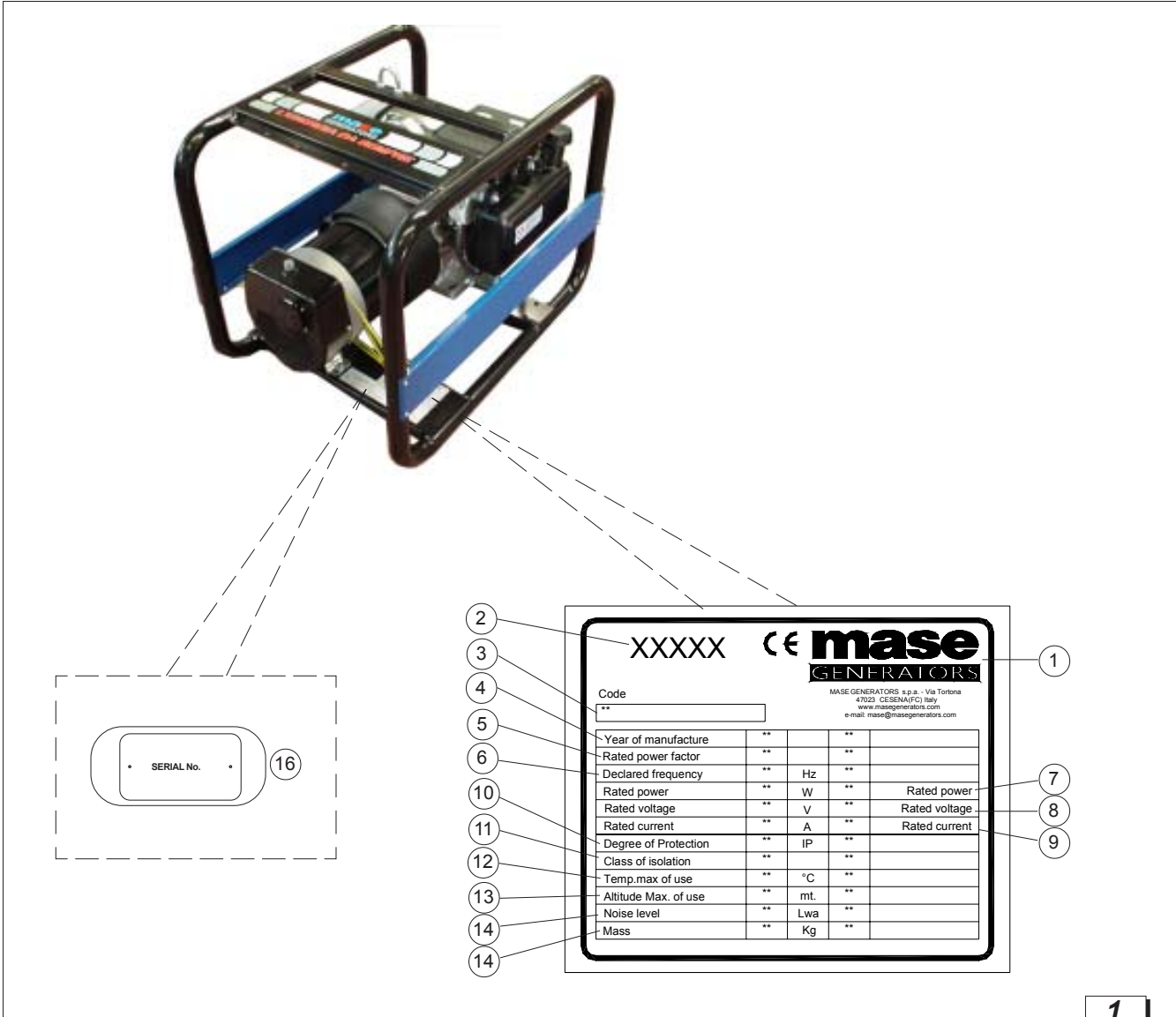
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GENERATORS

EA 25 H



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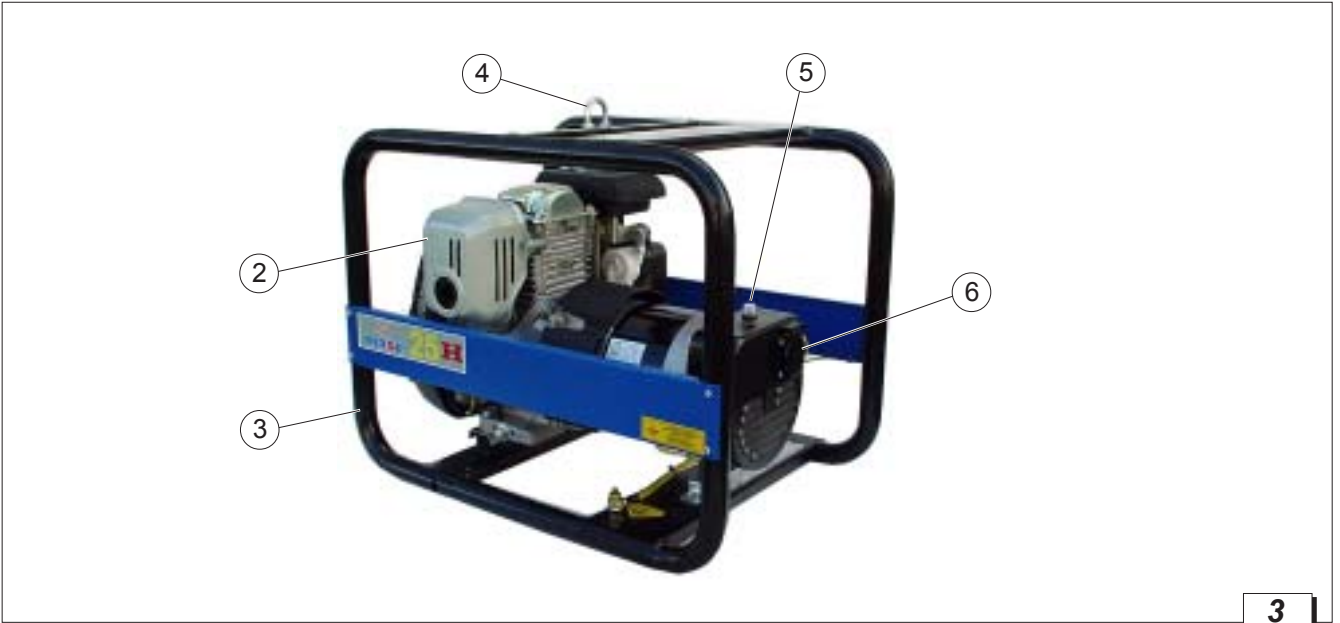
**MANUALE DI USO E MANUTENZIONE
USE AND MAINTENANCE MANUAL
GEBRAUCHSANWEISUNG UND WARTUNGSVORSCHRIFTEN
MANUEL D'INSTRUCTIONS ET D'ENTRETIEN
MANUAL USO Y MANTENIMIENTO**



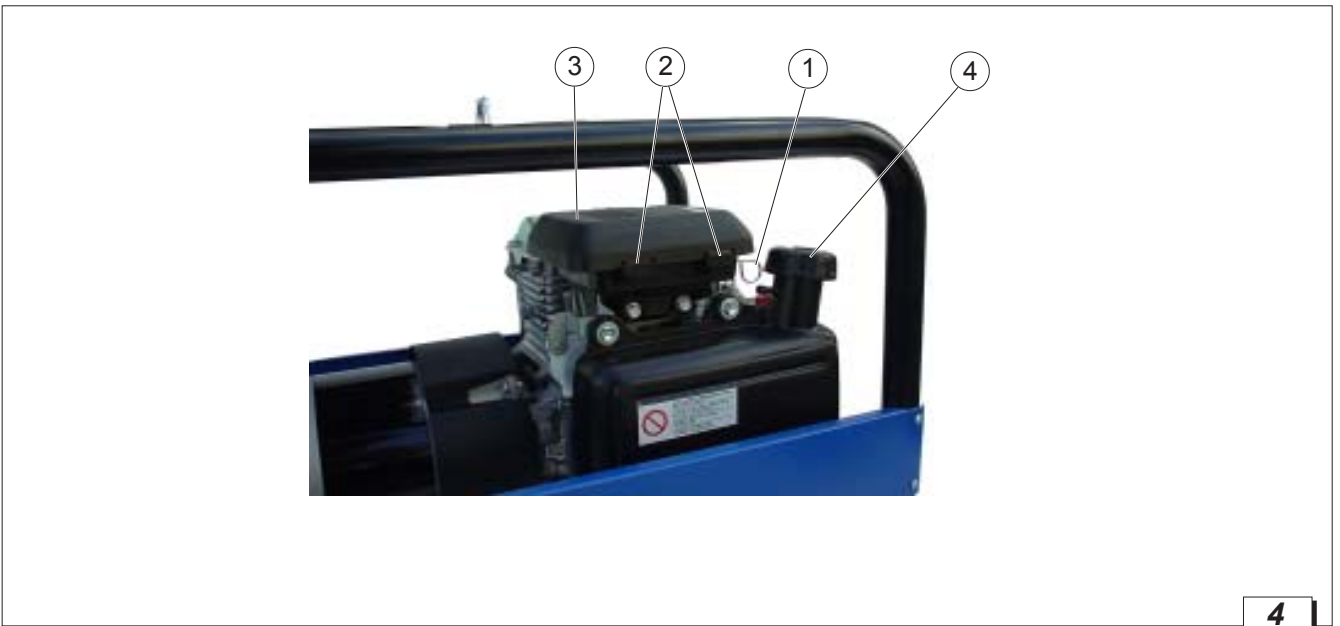
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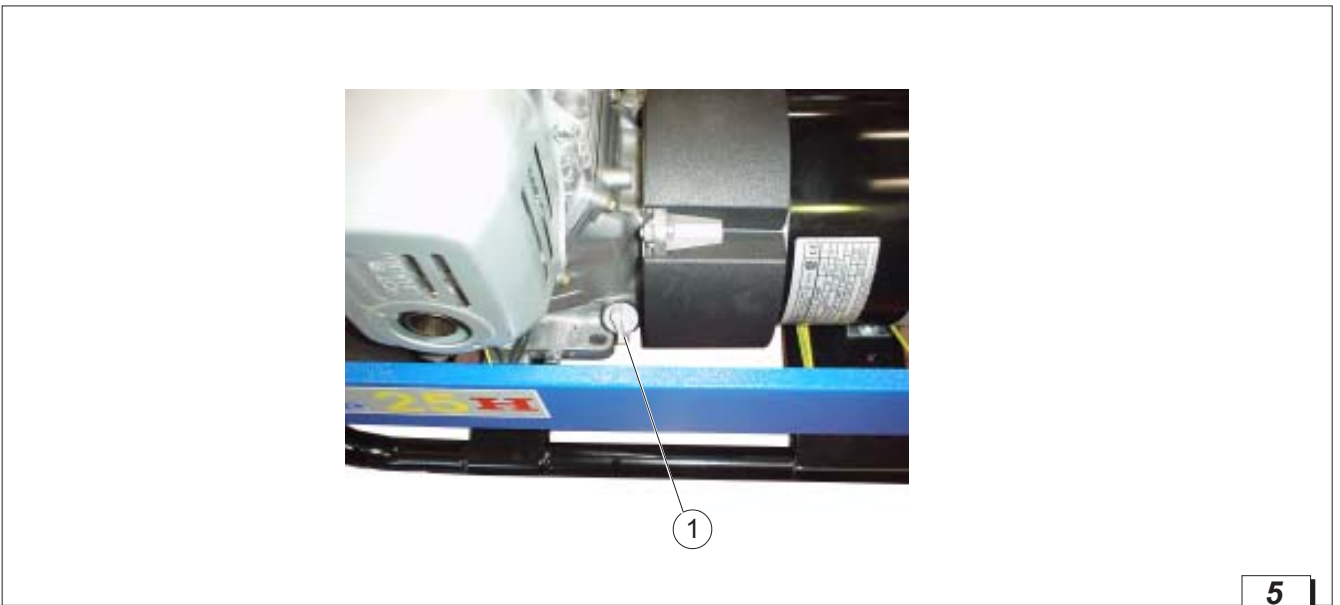
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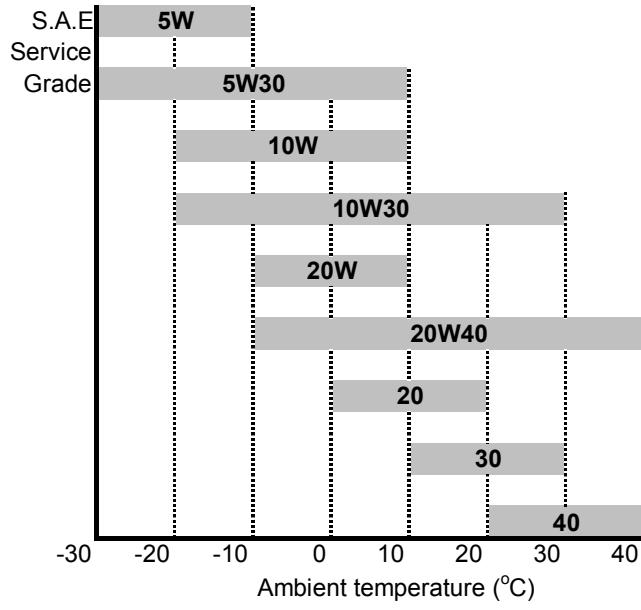


Fig.6

PRELIMINARY PRESCRIPTIONS

CAMPO D'IMPIEGO:

THE GENERATOR GROUP IS PROPER FOR TO PRODUCE IN WAY AUTONOMOUS ELECTRIC ENERGY IN THE LIMITS OF TENSION AND WATT DECLARED BY THE BUILDER



Carefully consult this manual before using or carrying out any operation on the generator.

FAILURE TO RESPECT THE SPECIFICATIONS CONTAINED IN THIS USE AND MAINTENANCE MANUAL WILL RESULT IN FORFEITURE OF THE GUARANTEE ON THE PRODUCT.

This manual was drawn up by the manufacturer and forms an integral part of the generator equipment, definition used as indicated in Directive 89/392 EEC; the information contained in the manual is addressed to all the persons involved in the operating life cycle of the generator, and is necessary to inform both those who effectively carry out the different operations and those who coordinate the activities, to arrange the necessary logistics and to regulate access to the place where the generator will be installed and operated.

This manual was drawn up by the manufacturer with the purpose of providing essential information and instructions for proper use and maintenance in conditions of safety. It constitutes an integral part of the generator equipment and must carefully be protected from any agent which may damage it for the entire life cycle of the generator. The manual must accompany the generator if transferred to another user or owner.

The manual defines the purpose for which the generator was constructed and contains all the information necessary to guarantee safe and proper use.

Constant observance of the instructions contained in this manual guarantees the safety of the operator, protection against damage to persons or things, operating economy and a longer life of the generator.

The drawings are provided by way of example. Even if the generator in your possession differs from the illustrations contained in this manual in elements of little significance, for example the colour, the safety of the generator and the information provided are nevertheless guaranteed.

To facilitate consultation, it has been divided into sections identifying the main concepts; for a quick look at the topics, consult the index.


Ongoing improvement and development of the product may have led to modifications to the generator which are not included in this publication.


Whenever a problem concerning the generator or this publication arises, consult with Mase Generators SPA for the latest information available.


1. GENERAL SAFETY WARNINGS

1.1 Symbology / Definitions in the manual

Those parts of the text not to be ignored are highlighted in bold type preceded by a symbol, as illustrated and defined below.

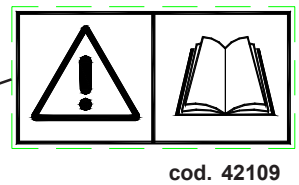
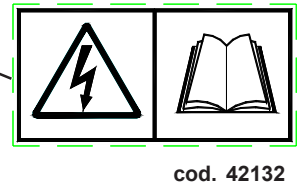
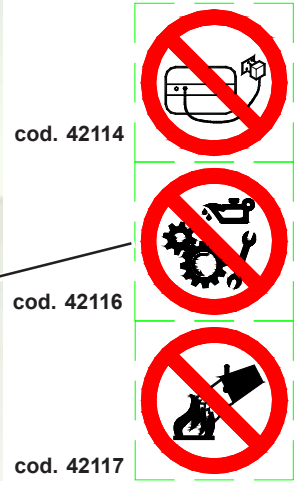
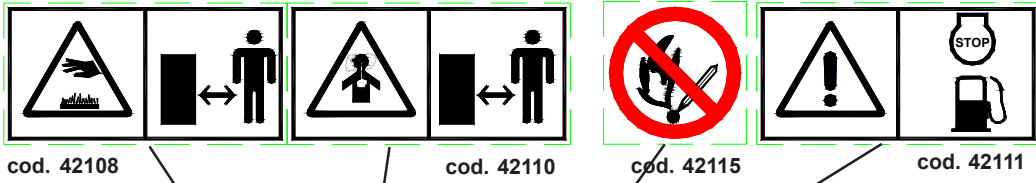
 **DANGER** Indicates that particular attention must be paid in order to prevent running serious risks which could lead to death or possible harm to the health of personnel.

 **WARNING** A condition which may occur during the lifetime of a product, system or plant considered at risk regarding damage to persons, property, the environment or economic loss.

 **CAUTION** Indicates that particular attention must be paid in order to prevent serious consequences which could result in damage to tangible goods, such as the resources or the product.

 **INFORMATION** Instructions of particular importance.

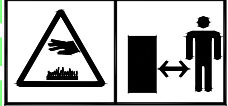
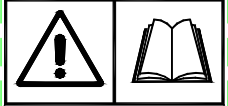
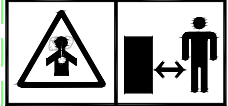
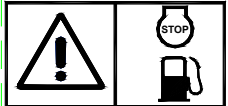

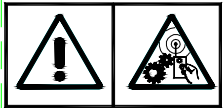

1.2 Simbology on electrogen group

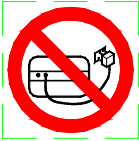





1.2.1 Meaning of safety labels

• These labels warn the user of any danger which may cause serious injury. Carefully read the meaning and the precautions described in this manual

• If the label detaches or becomes illegible, replace it with a new one which can be requested from an authorised Mase dealer.

Danger Symbols	Meaning
	<ul style="list-style-type: none"> · Caution to avoid burns, do not touch during operation. The exhaust manifold and the engine, pay attention to the labels on the generator. · Leave the engine to cool down before storing it indoors
	<ul style="list-style-type: none"> · Read and understand the Use and Maintenance Manual before starting the generator. · The Mase generator has been designed so as to guarantee safe and reliable operation provided that the instructions are followed. Otherwise, personal injury or damage to the equipment may result.
	<ul style="list-style-type: none"> · The exhaust gases contain toxic carbon monoxide. · Never operate the generator in a closed space. · Provide for adequate ventilation. If installed indoors, scrupulously observe the ventilation regulations.
	<ul style="list-style-type: none"> · The fuels are highly flammable and in certain conditions also explosive. · Fill up in a well-ventilated area with the engine off · Do not smoke or create sparks while filling up · Immediately clean off any fuel leaks.
	<p>Danger of electric discharge: consult the manual</p>
	<p>Danger of sudden starting of the remote starting device. Before carrying out any operation on the generator deactivate the remote starting device</p>
Obligation Symbols	Meaning
	<p>Obligation to connect the generator to earth</p>

Prohibition Symbols	Meaning
	<p>The connections to an emergency electric network must be carried out by specialised electricians in compliance with the relevant regulations in force. Improper connections may cause current feedback from the generator to the electrical lines connected. These current feedbacks may cause electroconduction to the people working for the electricity company or who come into contact with the lines during the failure. Moreover, once the line has been restored, the generator may explode, burn or cause fires in the electrical system of the facility.</p>
	<p>No smoking or use of open flames</p>
	<p>Do not clean, lubricate, repair or adjust moving parts.</p>
	<p>Do not extinguish fires with water, use homologated extinguishers.</p>

1.3 General danger information

- It is recommended to learn how to stop and operate all the controls.
 - Do not allow unqualified personnel to use the generator.
 - Even though the generator is protected, do not stand near it.
 - Do not remove the labels for any reason and request replacement if necessary.
- Before starting the Generator or before starting any lubrication or maintenance operation, it is essential that the personnel responsible has read and understood all the WARNINGS, CAUTION and DANGER notices in this manual and in the additional technical documentation provided.
- Before any operation on the generator, ensure that the primary engine is not running and that no parts are moving, and post a sign saying DO NOT SWITCH ON or similar at the start switch or the controls before carrying out the maintenance or repair work on the generator.
- Nevertheless, the manufacturer cannot foresee all the possible circumstances which may lead to potential risks in the effective conditions of use of the Generator.
Any operations and/or procedures for maintenance not expressly recommended or indicated in the user manuals must always be notified to and approved by the manufacturer.
In the event that a procedure not specifically recommended needs to be applied, the user is responsible for assuring that such procedure is safe and does not cause harm to persons.
- The manufacturer declines all responsibility for damage to persons or things deriving from inobservance of the safety regulations.
- Carefully examine the safety warning plates on the generator and respect the relevant instructions.



1.3.1 Danger of entanglement

- Do not remove the original protections from any of the exposed rotating parts, hot surfaces, air intakes, belts and live parts.
- Do not carry out any maintenance operation with the generator running.
- Do not wear flapping garments, such as scarves, foulards, bracelets, etc. and all garments must be tied with elastic at the edges.
- Do not clean or carry out maintenance on moving parts



1.3.2 Danger of burns

- Do not permit unskilled persons or without adequate training to use the generator.
- Do not permit children or animals to approach the generator when it is in operation.
- Never touch the exhaust, the relevant protection or the engine body when the generator is running or still hot.
- Do not lean against or sit on the generator for any reason whatsoever.
- Identify the position of the fire extinguishers or other protection and emergency devices and learn their functioning.
- Identify any sources of danger such as fuel, engine oil or acid solution leaks, condensate in the drip caps, high voltage, high pressure.
- Do not cause short-circuits by placing keys or tools on the batteries or on the cable fittings.
- The battery fluid contains sulphuric acid which is extremely corrosive and harmful to the skin. Always wear protective gloves and be extremely careful to avoid spillage when pouring the acid. In the event of contact, wash the affected part thoroughly with running water and consult a physician, in particular when the eyes are involved.



1.3.3 Danger of harm to hearing

- Do not stand near the generator for long periods without protective earmuffs since hearing may be reduced.



1.3.4 Danger of intoxication

- The exhaust gases contain toxic carbon monoxide.
- Never use the generator in tunnels or in any place with poor ventilation. If indoor use is inevitable, it is essential to provide for proper and efficient ventilation in order to prevent intoxication of persons or animals.
- Check that the engine exhaust is free and that the pipes allow evacuation of the exhaust fumes.
- Check that the exhaust gases are discharged to the outside in a safe position away from doors, windows and air intakes.



1.3.5 Danger of fire or explosion

- Always turn off the engine before refuelling.
- Do not smoke during refuelling.
- Refuelling must be carried out with extreme care, ensuring that fuel does not overflow from the engine tank respecting the maximum level.
- In the event of fuel spillage from the tank, thoroughly dry and clean the parts involved.
- Check that there are no fuel leaks and that the pipes are undamaged.
- When refuelling has been completed, tightly close the filler cap.
- Keep flammable liquids, matches and other explosive and/or flammable products away from the generator, since the temperature near the exhaust is high during operation.
- Never leave flammable liquids or cloths soaked in flammable liquids in proximity of electrical equipment (including lamps) or parts of the electrical system.
- The batteries develop hydrogen, a highly explosive gas. It is recommended not to smoke nor cause sparks in the vicinity, in particular during charging.
- Do not obstruct the cooling air inlets/outlets.
- In the event of fire, use a homologated fire extinguisher and never use water.



1.3.6 Danger if failing to use personal protection devices

- The persons responsible for handling must always wear protective gloves and safety shoes.
- Wear safety shoes and overalls.
- If the generator needs to be lifted from the ground, the operators must wear a protective helmet.
- Immediately change wet overalls.
- Use protective gloves.



1.3.7 Danger caused by the engine starting

- Do not leave disassembled parts, tools or anything else not forming part of the system on or near the engine.
- Install the protections necessary for safety on the parts completing the system.
- Operate the generator on a flat surface as far as possible. For continuous operation, the maximum permitted engine inclination is 20 degrees. Greater inclination of the generator might cause the fuel to leak out or cause problems with engine oil pressure.
- To prevent the risk of fire and for proper ventilation, position the generator at least 1m (3 ft) from buildings or other equipment during operation.
- Check the oil level by means of the dipstick.
- Check that all the electrical utilities are off so that the generator is not started on load.
- Check perfect functioning of the devices which stop the generator in the event of failure due to low oil level.
- Identify the position of the emergency stop buttons, switches and other emergency systems on the generator.
- Learn the special emergency procedures relative to the installation in question.



1.3.8 Danger of electromagnetic radiation

- Do not allow access to persons wearing a pacemaker because of possible electromagnetic interference with the device.



1.3.9 Danger of electrocution

- When using the generator always bear in mind that in wet or very humid places and in confined conduction spaces it is obligatory to comply with Articles 313 and 318 of Presidential Decree No. 547 27/04/55, as well as Chap. 11 Section IV of the CEI 64-8 regulation.
 - Immediately change wet overalls.
 - Insulate all the connectors and detached wires.
 - Do not leave the power terminal board of the generator uncovered; check that the electrical power and auxiliary service connections have been made properly.
 - Do not power loads with a voltage different from that delivered by the generator
 - Do not spray water directly onto the electrical parts
 - Do not clean the internal electrical parts with compressed air, since short-circuits or other faults may occur.
- Do not tamper with the active protections, thermal switches and differential magnetothermal switches.
- In the event of malfunctioning, do not remove the panel to attempt repairing it. Contact Mase specialised personnel.
 - Do not access the generator with wet hands, since it is a potential source of electric shock if improperly used.
 - Take the necessary precautions to prevent the danger of electrocution; check that the earthing system has been installed and constructed in accordance with regulations.
 - For the safety of the users, the earth connection of the generator must always be carried out paying particular attention to the cable cross-section used. For the connection of the earth cable use the dedicated terminal on the generator. For the earth connection follow the indications in the table to select the cable cross-section to use depending on the generator power. The generator must be connected to earth using a copper cable with a minimum cross-section of 6 mm².

Pwer kVA	1÷10	10÷20	20÷40	40÷60	60÷80
Section mm ²	6	10	25	35	50

The manufacturer is not responsible for any damage caused by failure to earth the system.



1.3.10 Danger resulting from bad storage

- Packed and unpacked generators must be stored in a cool and dry place and never exposed to bad weather.
- Avoid stacking packed generators to prevent them from falling causing damage to persons and/or things.

2. GENERAL INFORMATION

The generator was designed, constructed and tested to meet the current European and national regulations and to reduce the electrical risks to a minimum in compliance with the following regulations:

EEC 73/23 directive: low voltage
EEC 89/392 machine directive

2.1 Reference documents

The instructions for use provided with each generator are made up of a set of documents of which this manual represents the General Part. Normally, the following documents are provided.

- a **CE** Declaration of Conformity.
- b Instruction manual for use and maintenance of the generators (this manual).
- c Engine use and maintenance manual.
- d Alternator use and maintenance manual (in case of alternators not manufactured by Mase).
- e List of **Mase** Service Centres.
- f Mase **Warranty certificate**.
- g Warranty card.

2.2 Facsimile of CE declaration of conformity

The generators constructed by **Mase**, intended for countries in the European Community, are in conformity with the applicable **EEC** Directives and are furnished with an **EC** Declaration of Conformity (Fig. B).

2.3 Marking

The generator identification plate carries all the identification data in conformity with accordance with the provisions for **CE** Marking for those cases where required. Below is a facsimile of the identification plate fixed on the control panel of each generator (Fig. A).

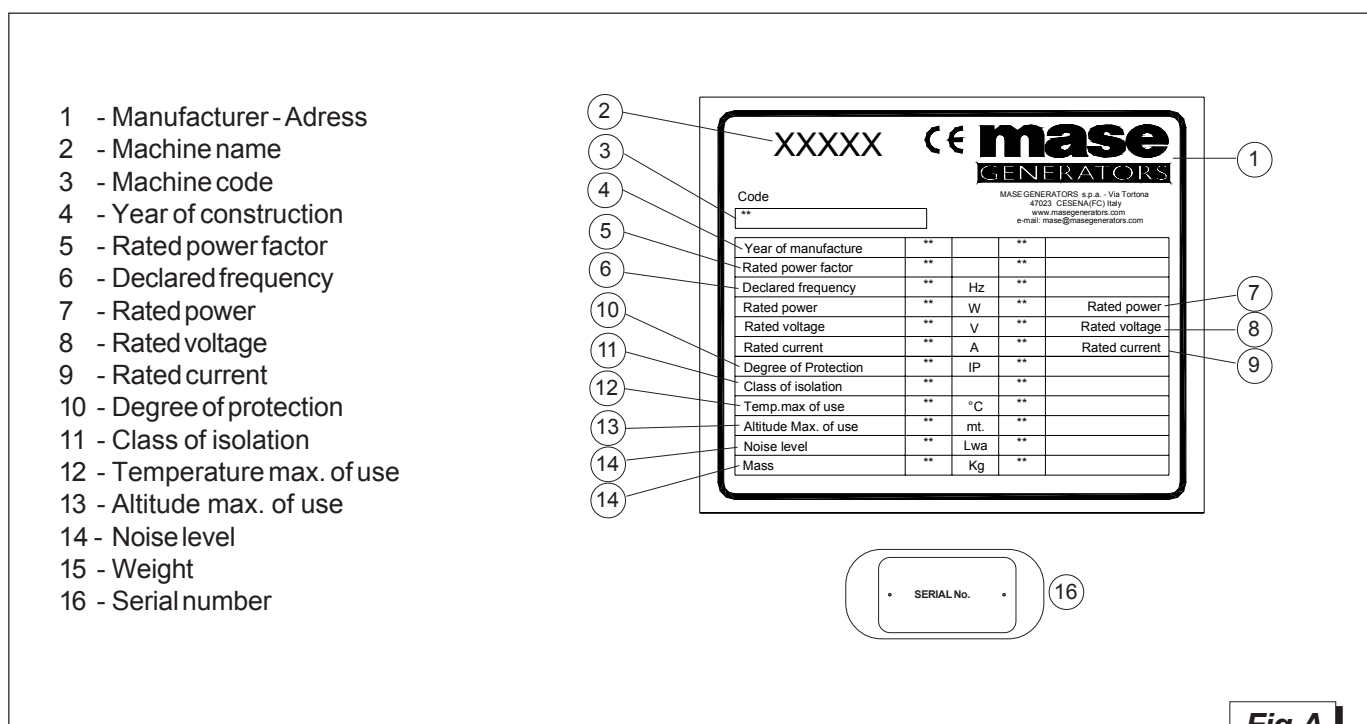


Fig. A

NR.000000

**mase GENERATORS S.p.A.**

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Fax +39 (0) 547 317555

DICHIARAZIONE CE DI CONFORMITÀ
EC DECLARATION OF CONFORMITY

Fabbricante/Manufacturer: **mase** GENERATORS S.p.A.

Indirizzo /Address : Via Tortona 345, Pievesestina (FC)

Il sottoscritto Luigi Foresti in qualità di direttore tecnico della **mase** GENERATORS S.p.A., dichiara sotto la propria responsabilità che il gruppo elettrogeno modello

The undersigned Luigi Foresti as **mase** GENERATORS S.p.A. technical manager declares, under his sole responsibility, that the generator model.....:

Codice / Code

Descrizione / Model

Matricola / Serial N.

è conforme alle disposizioni delle Direttive di seguito elencate:

CEE 89/392 (come emendata delle Direttive **CEE 91/368** e **CEE 93/44**)

CEE 73/23 modificata da **CEE 93/68**.

corresponds to the requirements of the following EEC Directives:

89/392/EEC (as amended by the Directive **91/368/EEC** and **93/44/EEC**)

73/23/EEC as amended by **93/68/EEC**.

Cesena, / /

Direttore Tecnico
Technical Director

mase GENERATORS S.p.A. Sede legale ed Amm.: 47023 CESENA (FC) ITALY - Via Tortona, 345 - C.F./P.I. 00687150409 Cap. Soc. milioni 2000 di cui 949 versati - Registro Società Tribunale Forlì n. 6818 - CCIAA Forlì n.164063 - c.c.p. n. 11541471 - EXPORT FO n. 006368

2.4 General characteristics

The generators of the **EA** series have been designed to assure professional users maximum efficiency and reliability for any type of work. All the models have been developed for heavy duty, using highly reliable 3000 rpm air-cooled benzine engines and are fitted with low oil pressure protection.

The alternators are type 2-pole, synchronous, self-energized, self-regulating.

2.5 Table of technical characteristics

MODELLO		EA 25H
GENERATOR		Synchronous, self-energised, self-regulating, two-pole
Type		Single-phase
Maximum power	230V	1900 W
Continuous power		1700 W
Maximum power	400V	/
Continuous power		/
Frequency		50 Hz
Power factor Cos Ø		1

ENGINE		
Type		4-stroke, petrol, overhead valves
Model		HONDA GC160
Cooling		Forced air
No. of cylinders		1
Fuel		Unleaded petrol
Power	HP	4,3
Capacity	cm ³	160
Aspiration		Natural
Rotation	Rpm	3000
Tank capacity	lt.	2
Oil sump capacity	lt.	0,6
Autonomy at ¾ load	h.	2
Starting		Pull-start with self-winding cord

GENERATOR		
Dimensions (LxWxH)	mm	595 x 430 x 460
Weight	kg	36
Sound power	Lwa	98

2.6 Generator composition

The generators of the **EA** series are essentially composed of the following components:

- Engine air filter (Fig. 4 Ref. 3)
- Knob for pull-start
- Petrol-powered internal-combustion engine (Fig. 2 Ref. 1)
- Terminal for earth connection of generator(Fig. 2 Ref. 2)
- Alternator unit (Fig. 2 Ref. 3)
- Instrument and outlet panel (Fig. 3 Ref. 1)
- Engine exhaust (Fig. 3 Ref.2)
- Load-bearing chassis (Fig. 3 Ref. 3)
- Lifting hook (Fig. 2 Ref. 4)
- Fuel tank (Fig. 4 Ref. 4)

3. INSTALLATION

3.1 Positioning the generator

The generators of the **EA** series must be positioned horizontally, i.e. placed on a flat surface or made to sit horizontally by placing shims under the support feet.



The engine functions properly if it does not exceed a maximum inclination of 20 °, both on the longitudinal and the transversal axis. Should the engine be operated in conditions at a greater inclination, there is a risk of insufficient lubrication or suction of engine oil from the air filter.

4 . USING THE GENERATOR

4.1 Starting

Before starting the generator, check that:

-the engine stop switch is in position "ON" (Fig. 2 Ref. 4)

If the engine is cold, turn the start lever to bring nearer before trying to start (Fig. 4 Ref. 1)

(if the engine is hot, the start lever need not be turned to the right).

Proceed by resolutely pulling the self-winding cord (Fig. 2 Ref. 1) to start running the engine.

Repeat the operation if the engine does not start after the first attempt.

As soon as the engine has started, return the start lever to its original position.

Before connecting any utility leave the engine to run for a few minutes so that it gradually reaches the operating temperature.

Each generator is equipped with one outlets:

- both single-phase (Fig. 3 Ref. 6)

The power available for the outlets is that indicated on the adhesive label carrying the technical characteristics.

**CAUTION**

To prevent damage to the self-winding cord, never release it suddenly after pulling it to full travel, but guide it back until completely rewound.

**WARNING**

The generator engine has been calibrated, in idle, to 3120 rpm equal to 52.5 Hz, as the engine stabilises at about 3000 rpm equal to 50Hz with a load. For this reason, the accelerator lever must never shift for any reason, since the output voltage, frequency and power values of the generator would be compromised.

The available power is as indicated on the adhesive label carrying the technical characteristics (Fig.A).

**WARNING**

The sum of absorption of all the utilities connected to the generator must never exceed the continuous power value of the generator.

4.2 Protections

The generators of the **EA** series are fitted with a series of protections which protect them from improper use and faults which may compromise integrity of the generator and operators.

- Low oil pressure protection

Trips turning off the generator when the pressure in the lubrication circuit is insufficient; when it trips, no warning light comes on; therefore, if the generator stops, always check the oil level to ensure that this is not the cause of the generator stopping.

Generally, it suffices to fill up with oil in order to restart the generator.



The low oil pressure protection does not give an indication of the oil level. The oil level must periodically be checked in order to prevent damage to the engine.

- Protection against short-circuit and overload

For protection against short-circuits and overloads, the generators have been fitted, depending on the various versions, with magnetothermal differential / magnetothermal / differential switches which trip, cutting the power, if there is an overload condition on the alternator, or a short-circuit or current leakage to earth.

To restore the thermal switch contact, after having identified and eliminated the cause of the cut-out and waiting for about a minute, press the thermal switch button resetting it to the original position (Fig. 3 Ref. 5).



Danger of electric discharge: consult the manual.

Do never touch the pot or the protection pot so that to avoid scorching.



La somma degli assorbimenti degli utilizzi collegati al gruppo elettrogeno non deve mai superare il valore della potenza continuativa di questo.

4.3 Stopping

Before switching off, disconnect any loads connected to the outlets, close the fuel tap and let the engine idle for about 10 seconds.

To switch off the engine, position the on/off switch to "OFF" (Fig. 2 Ref. 4).

5. CARE AND MAINTENANCE

5.1 Preamble



CAUTION

Any maintenance operation on the generator must be carried out with the engine off and leaving it to cool down sufficiently, and must only be carried out by authorised and suitably trained personnel.

It is recommended to scrupulously follow the instructions in the manual provided by the engine manufacturer with each generator.

It is important to regularly inspect and carry out maintenance on the generator. The frequency of maintenance should be decided on the basis of the number of hours of operation.

5.2 Ordinary engine maintenance

The periodic maintenance operations to be carried out on the engine are indicated in the table at point 5.7. For more detailed information consult the manual provided by the engine manufacturer with each generator.



WARNING

- **Check the oil level with the cap/dipstick. (Fig.5, ref.1).**
The oil level must always be between the MAX and MIN notches on the dipstick.
- **When checking the oil level, ensure that the generator is positioned horizontally.**

5.3 Engine oil change

Check the engine oil level with the dipstick positioned on the oil filler cap (Fig. 5 Ref. 1).

Check the oil only with the engine is positioned on a flat surface and the oil filler cap not screwed down but only resting. If the engine oil level is low, top up using only classified multigrade oils SE, SF, SG, SH in accordance with the API classification system.

To change the engine oil, remove the filler cap and the drain plug (Fig. 2 Ref. 5) and let the oil flow into a collection container. It is recommended to carry out this operation with the oil hot for easier drainage.

Close the drain plug and pour in the necessary quantity of oil to fill the oil sump to the maximum level; oil sump capacity 0.6 l.



INFORMATION

Always check correct viscosity of the engine oil in relation to the range of ambient temperatures in which the generator operates as indicated in the table in Fig.6.



WARNING

Dispose of the used oil in an appropriate manner, since it is a polluting product.
Take the used engine oil to special collection centres for disposal.



CAUTION

Protect hands from contact with oil by wearing gloves.
In the event of accidental contact with engine oil, thoroughly wash the affected part with soap and water.



CAUTION

During oil top-up and refuelling, respect the maximum level indication. An excessive quantity of engine oil may cause damage to the engine.

5.4 Air filter

Check and clean the filtering element according to the following procedures:

- Brush or dust off all the dust, dirt and deposits on the air filter cover.
- To remove air to the cover of the filter unhooking the special fixings (Fig. 4 Ref. 2).
- Immerse the filtering element in a non-inflammable solvent and wash it.
- To remove the solvent, wring out the filtering element without twisting it to prevent breakage.
- Immerse the filtering element in a container of engine oil. Squeeze the filtering element to remove excess oil. Ensure that the filtering element is moistened in oil but not soaked.
- Dry the inside of the air filter with a clean cloth.

FOR FURTHER INFORMATION CONSULT THE ENGINE USE AND MAINTENANCE MANUAL.

WARNING

Replace the air filter for the first time after 50 hours of operation, then every 200 hours of operation. Reduce the intervals if the generator operates in particularly dusty environments.

CAUTION

Never turn on the engine without the air filter, since this would cause serious damage to the engine.

5.5 Fuel filter

For the engine to deliver full power the filter must be clean.

Clean the fuel filter every 200 hours of operation (or every 3 months) and replace it every 400 hours (or every 6 months). Follow the instructions described in the use and maintenance manual of the engine to properly clean and replace the fuel filter.

INFORMATION

Clean the filter with gas-oil

5.6 Period of inactivity

If the generator is not to be used for a long period of time, the following operations must be carried out.

- Remove the spark plug, pour **3-5 cm³** of oil in the spark plug hole on the cylinder head and make a few starting attempts without running the generator, in such a way that the engine turns a few times so that the oil can spread and lubricate the cylinder and the piston; this prevents the formation of rust on the cylinder and the valve. When the operation has been completed, remount the spark plug.
- Completely empty out the fuel tank.
- Change the engine oil.
- Clean the air filter.
- Disconnect the battery cables. We recommend you recharge the battery every month in order to prevent it from going completely flat which, sometimes, compromises its integrity.
- Clean the outside of the generator, removing all dust and impurities.
- Cover the generator with a nylon sheet and store it in horizontal position in a dry and ventilated place.

5.7 Scheduled maintenance table

OPERATION	HOURS
Oil level check	10
Battery fluid check	50
Air filter cleaning	200
Fuel filter cleaning	200
Oil sump replacement	200
Oil filter replacement	400
Air filter replacement	400
Fuel filter replacement	400
Equaliser play adjustment	400
Calibration and cleaning of the injector	400
(*) Change the oil for the first time after 20 hours of operation.	

6. ANOMALIES, CAUSES AND REMEDIES

On starting, the generator does not run and the starter motor does not emit any signal.

- Check that the thermal switch located on the start unit has not tripped. *Check battery connection.*

The starter motor turns but the main engine does not start

- Check that there is fuel in the tank. *Fill up.*
- Check if the electrocock is powered. *Consult a Service Centre (Versions H/A).*
- Check that the fuel cock has not been closed. *Open it.*
- Check if the low oil level protection has been activated; Check the level and if low, add the oil necessary to bring it up to the correct level. *There are no warning lights; always carry out a visual inspection.*

The generator switches off during the operating period

- Check if there is fuel in the tank. *Fill up.*
- Check if the low oil level protection has been activated; Check the level and if low, add the oil necessary to bring it up to the correct level. *There are no warning lights; always carry out a visual inspection.*

The engine runs irregularly

- Check the position of the starter lever. *It must have been re-opened after starting.*
- Check the spark plug condition. *Carry out maintenance or replace it.*
- Check the air filter. *Clean its elements or, if necessary, replace them.*

There is high smoke emission from the exhaust.

- Check the air filter. *Clean its elements or, if necessary, replace them.*
- Check that the oil level does not exceed the **MAX** notch. *Bring it down to the correct level.*

The alternator voltage is too low.

- Check that the engine rpm is **3120** without applied loads. *Consult a Service Centre.*
- Check the state of the air filter. *Clean or replace if necessary.*

Starter battery flat.

- Check the electrolyte level in the battery. *Fill up.*
- Check the battery charging device. *Replace.*
- Check integrity of the battery.

The generator does not deliver power to the outlets but the voltmeter indicates that voltage is present.

- Check that the differential magnetothermal switch, or a magnetothermal switch, is in the **ON** position.

The generator does not deliver power to the outlets and the voltmeter does not indicate that voltage is present.

- Likely alternator fault. *Consult a Service Centre.*

6.1 Parts list

The parts list includes the information necessary to order the spare parts required for preventive or corrective maintenance including those the user is recommended to keep in stock.

6.2 Rules for ordering spare parts

When ordering spare parts, provide the following information:

- 1) Machine model
- 2) Serial number
- 3) Year of construction
- 4) Table number
- 5) Part reference number
- 6) Quantity required
- 7) Inspection method

Place the order for spare parts by filling in the form in all of its parts.

7. TRANSPORT, STORAGE, LIFTING AND HANDLING

7.1 Transport and storage

Packaging: Supplied directly by Mase Generators.

The total weight of the packed generator is given in **Paragraph 2.5 “Table of technical characteristics”**.

It is strictly prohibited to pollute the environment with the packaging

Transport: During transport the generator (with or without packaging) must be protected against atmospheric agents, it must not be turned upside down and must be protected against knocks. The generator must be transported without oil and fuel to prevent leaks during travel.

Storage: The generator must be stored in horizontal position and away from atmospheric agents and humidity.

7.2 Lifting and handling



Always check that the capacity of the lifting means and its accessories is greater than the weight of the generator printed on the identification plate.

Use a lift truck to handle the generator (with capacity greater than the weight of the generator indicated in the table of technical characteristics - Paragraph 2 of the Use and Maintenance Manual), inserting the forks under the base at the lower part of the generator.

For lifting with a crane, hook steel cables or robust chains onto the special points marked with the label “lifting hook” (or an eye-bolt for the smaller generators) taking care not to crush or damage any part, lift the generator without jerking and place it on the ground gradually, then move it carefully (with a lift truck or transpallet) to its working place.

For handling on level ground, a transpallet is sufficient with a suitable capacity according to the table of technical characteristics - Paragraph 2 of the Use and Maintenance Manual.

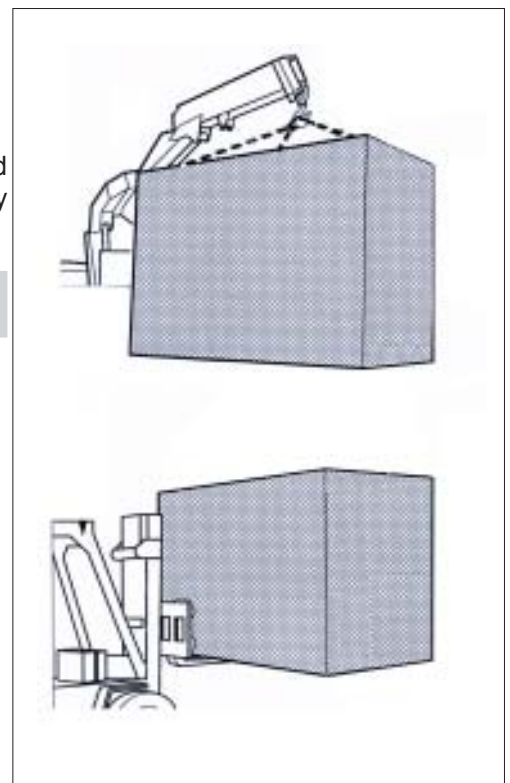
N.B. The centre of gravity of the generator corresponds to about the centre of its geometrical volume.

Trolley:

A trolley is available, complete of wheels and handles, for the moving. It deals with a kit of components that you/they can subsequently be climbed on also to the purchase of the generator group, and you/he/she is normally used from who has the necessity to frequently move it.



On terrestrial in inclination, with the purpose to avoid the spontaneous march of the car to always use corks on both the wheels.



8. GUARANTEE AND RESPONSIBILITY

8.1 Guarantee

- The **MASE** generators and all their components are guaranteed free of defects and are covered by the guarantee for a period of **2 year** from the date of installation.
- Not covered by the guarantee are: failed observance of the installation regulations, damage caused by natural disasters, accidents, defects of the electrical system including the load to which the generator is connected, negligence, improper use or abuse by the operator and damage caused by repairs carried out by unqualified personnel.
- Repairs that cannot be carried out at the place of installation can be carried out at MASE laboratories or at authorised workshops. Transport expenses will be borne by the Customer.
- Under no circumstances does the Customer have the right to claim compensation for damages or side effects caused by use of the machine in a manner not conform to what is described in this manual.

8.2 Limits of responsibility

MASE GENERATORS S.p.A is responsible for anything regarding the safety, reliability and performance of the Generator on the condition that:

- The generator is used by persons trained through the use and maintenance manual.
- The installation is carried out according to MASE instructions.
- The service procedures are carried out exclusively by MASE specialised technical personnel.
- The electrical system and the loads to which the generator is connected is in conformity with the applicable CEI regulations.
- The Generator is installed and used in accordance with the installations provided in this manual.
- Use original spare parts specific to each model.
- Use suitable fuel.

9. DISPOSAL

9.1 Disposal of the waste materials deriving from maintenance and scrapping

- The packaging used for transport is biodegradable and thus easy to dispose of by companies authorised for paper collection.
- The batteries must be disposed of according to the regulations regarding toxic and noxious waste.
- The engine oil and engine oil filters, both after an oil change and when scrapping, must be taken to companies authorised for this collection.
- The electrical components must be taken to companies authorised for the collection of electronic material.
- All the painted metal parts must be taken to companies authorised for the collection of metals.
- Any other material not listed above must be taken to companies authorised for the collection of industrial waste.

