

GE 10000 BES/GS

GE 10000 DS/GS

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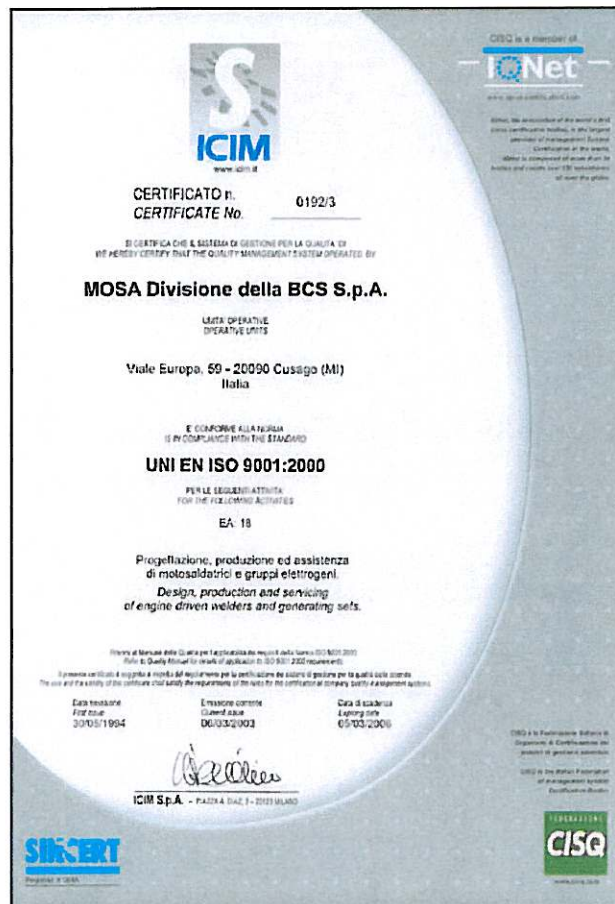
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ENGLISH



UNI EN ISO 9001 : 2000

ISO 9001:2000 - Cert. 0192/3

MOSA has certified its quality system according to UNI EN ISO 9001:2000 to ensure a constant, high quality of its products. This certification covers the design, production and servicing of engine driven welders and generating sets.

The certifying institute, ICIM, which is a member of the International Certification Network IQNet, awarded the official approval to MOSA after an examination of its operations at the head office and plant in Cusago (MI), Italy.

This certification is not a point of arrival but a pledge on the part of the entire company to maintain a level of quality of both its products and services which will continue to satisfy the needs of its clients, as well as to improve the transparency and the communications regarding all the company's activities in accordance with the official procedures and in harmony with the MOSA Manual of Quality.

The advantages for MOSA clients are:

- Constant quality of products and services at the high level which the client expects;
- Continuous efforts to improve the products and their performance at competitive conditions;
- Competent support in the solution of problems;
- Information and training in the correct application and use of the products to assure the security of the operator and protect the environment;
- Regular inspections by ICIM to confirm that the requirements of the company's quality system and ISO 9001 are being respected.

All these advantages are guaranteed by the CERTIFICATE OF QUALITY SYSTEM No.0192 issued by ICIM S.p.A. - Milano (Italy) - www.icim.it

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**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 (if the machine is synchronous) and all other documentation about the machine.

We advise you to pay attention to the pages concerning the security (see page M1.1).



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INFORMATION

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 norms 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 and Spare Parts 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 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 and Spare Parts, the manual for use of the engine and the tools (if included in the equipment), 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 the essential characteristics of the model here described and illustrated, to bring betterments and modifications to parts and accessories, without putting this manual uptodate immediately.***



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ISO 9001:2000 - Cert. 0192/3

DICHIARAZIONE DI CONFORMITA'



Déclaration de Conformité – Declaration of Conformity – Konformitätserklärung
Conformiteitsverklaring – Declaración de Conformidad

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 Aggregate:
MOSA verklaard, onder haar eigen verantwoordelijkheid, dat de machine:
MOSA declara bajo su responsabilidad que la máquina:

Modello/Modèle/Model/Modell/Model/Modelo: _____

Codice/ Code/ Code/ Kode/ Code/ Código: _____

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

98/37/CE - 73/23/CE - 89/336/CE - 2000/14/CE

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

to check the conformity, the following harmonized norms, 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, nationaal en internationaal,
geconsulteerd:

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

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

EN 292-1 EN 292-2

EN 60204-1

EN 50199 EN 60974-1 (Solo per modelli - Seulement pour les modèles - Only for models - nur für die
Modelle - Alleen voor de modellen - Sólo para modelos: **TS**)

EN 50081-2 EN 50082-2

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

ISO 8528 (Solo per modelli - Seulement pour les modèles - Only for models - nur für die
Modelle - Alleen voor de modellen - Sólo para modelos: **GE**)

[Signature]

Ing. Benso Marelli
Direttore Generale

Cusago, _____

MM 085.2.doc




The CE mark (European Community) certifies that the product complies with the essential safety requirements provided by the applicable COMMUNITY DIRECTIVES. In the Conformity Declaration are reported the HARMONIZED NORMS and not, used for the checking.

SYMBOLS IN THIS MANUAL

- The symbols used in this manual are designed to call your attention to important aspects of the operation of the machine as well as potential hazards and dangers for persons and things.

IMPORTANT ADVICE

- Advice to the User about the safety:

 N.B.: 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 is understood, that local dispositions and/or laws must be respected.

WARNING



Situations of danger - no harm to persons or things

Do not use without protective devices provided

Removing or disabling protective devices on the machine is prohibited.

Do not use the machine if it is not in good technical condition

The machine must be in good working order before being used. Defects, especially those which regard the safety of the machine, must be repaired before using the machine.

SAFETY PRECAUTIONS



DANGEROUS

This heading warns of an immediate danger for persons as well for things. Not following the advice can result in serious injury or death.



WARNING

This heading warns of situations which could result in injury for persons or damage to things.



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



ATTENTION

These headings refer to information which will assist you in the correct use of the machine and/or accessories.

SYMBOLS (for all MOSA models)


STOP - Read absolutely and be duly attentive



Read and pay 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.



EXPLOSION - Explosive material or danger of explosion. in general. If the advice is not respected there can be explosions.



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



SMOKING - The cigarette 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.



PRESSION - Danger of burns caused by the expulsion of hot liquids under pressure.



ACCES FORBIDDEN to non authorized people.

PROHIBITIONS No harm for persons

Use only with safety clothing -


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

Use only with safety clothing -


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

Use only with safety protections -


It is a must to use protection means suitable for the different welding works.

Use with only safety material -


It is prohibited to use water to quench 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.

No welding -


It is forbidden to weld in rooms containing explosive gases.

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, specifically suitable


It is advisable to use protections suitable for the different welding 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 protections suitable for the different daily checking works and/or of maintenance.

<p>°C: temperature Celsius grades</p> <p>10: 10 kVA synchronous (wording example)</p> <p>10000: 10 kVA asynchronous (wording example)</p> <p>A: Ampere</p> <p>A: ADIM engine</p> <p>atm: pressure</p> <p>B: petrol</p> <p>BAT: battery</p> <p>BC: base current</p> <p>C.A.(c.a.): alternating current</p> <p>C.B.: battery charger</p> <p>C.C.(c.c.): direct current</p> <p>cc: cm³ (volume)</p> <p>CE: European norm conformity</p> <p>CF: special for pipe welding</p> <p>CTL: slow touring trolley</p> <p>CTM CTV: fast touring trolley: hand touring trolley</p> <p>D: diesel</p> <p>D: GFI</p> <p>D: Deutz engine</p> <p>E: electric start</p> <p>EAS: automatic intervention panel for generating sets for connection to the mains</p> <p>EL: electronic regulation, allows to use welder and generating set simultaneously</p> <p>EP1: automatic accelerator according to requested power, engine protection, low oil pressure, high temperature with engine stop, trouble warning lights</p> <p>EP2: engine protection, low oil pressure, high temperature with engine stop, trouble warning lights</p> <p>EP4: engine protection, low oil pressure, high temperature with engine stop, no battery charge, belt broken, low fuel level with engine stop, trouble warning lights</p> <p>EP5: engine protection, low oil pressure, high temperature with engine stop, no battery charge, belt broken, low fuel level with engine stop, overspeed, trouble warning lights</p> <p>ES: oil/temperature engine protection device</p> <p>EV: electrovalve</p> <p>g/kwh: grams/kilowatt hour (engine consumption)</p> <p>GA: asynchronous alternator</p> <p>GE: generating set</p> <p>GHF: high frequency alternator</p> <p>GS: synchronous alternator</p> <p>h: hour meter (symbol)</p> <p>H: Hatz engine</p> <p>H: Honda engine</p> <p>HI: hydraulic central</p> <p>Hz: frequency</p> <p>I: single-phase auxiliary generation (symbol 1~)</p> <p>IP: protection grade for electric devices against access to dangerous parts according to the IEC 529 norm (Internal Protection)</p> <p>kg: kilogram (mass)</p> <p>K: welding cables set</p> <p>kVA: kilovolt ampere</p> <p>kW: kilowatt (engine power)</p> <p>kWh: kilowatt hour (energy)</p> <p>l: liters (capacity)</p>	<p>L: Lombardini engine</p> <p>Lwa: maximum acoustic (power level) according to the regulations in force</p> <p>mm: millimeter (length) (measure)</p> <p>m: meter (length)</p> <p>mA: milliampere</p> <p>MS-MSG: MOSA engine driven welder with high frequency alternator</p> <p>MT: magnetothermic switch</p> <p>MT: grounding kit</p> <p>MTD: magnetothermic switch / GFI</p> <p>OH: heater (engine oil) for generating sets</p> <p>P: plus</p> <p>PAC: power electric frame</p> <p>PAR: device for double</p> <p>PB: battery holder</p> <p>PL: „pipe line“ welding</p> <p>PS: exhaust pipe extension</p> <p>PW: welder for polyethylene and propylene pipes</p> <p>QEA: automatic electric panel</p> <p>QEM: manual electric panel</p> <p>R: Ruggerini engine</p> <p>RVT: voltage electronic regulator</p> <p>S: symbol of EN 60974-1</p> <p>S: Suzuki engine</p> <p>SKID: unit assembled on a base with no protection (no fairing)</p> <p>S-SC: silenced (faired) - silenced compact (faired)</p> <p>SX-SXC: supersilenced (faired and sound proof) - supersilenced compact (faired and super sound proof)</p> <p>T: thermic switch</p> <p>TC-TCM-TCPL: remote control</p> <p>TS: welder with asynchronous alternator</p> <p>V: Volt</p> <p>Y: Yanmar engine</p> <p>Y: three-phase auxiliary generation (symbol 3~)</p>
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 Conformity CE	 EEC Sound power conformity	 EN 60974-1 conformity	 Triphase 3 ~	 Singlephase 1 ~	 Users' manual	 Information	 Various news
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Equipment and optional

Engine	 Gasoline engine	 Diesel engine	 Air cooling	 Water cooling	 Manual recoil	 Electric start	 Battery 12 V			
Engine protection	 Engine protection	 Engine protection	 Engine protection	 Engine protection	 Engine protection	 Engine protection	 Siren	 Engine shut down (oil)	 Engine speed	
Engine alarms	 Oil level indicator	 Battery charger indicator	 Fuel level gauge/low fuel	 Low fuel indicator	 Oil temperature	 Warning light for preheating glow plugs	 Air filter blockage	 Belt breakage	 Over speed	 Control unit QEA
Generation	 Asynchronous alternator	 Synchronous alternator	 Generator high frequency	 Voltmeter	 Frequency-meter	 Ammeter	 Compound	 Voltmeter phase selector	 Electronic Voltage regulator	 Switch
Electric protection	 Circuit breaker/ Ground fault interrupter	 Circuit breaker	 Ground fault interrupter	 Thermal shut off	 Fuse	 Isolation monitoring				
Generation use	 Terminal strip	 3 ~ CEE Socket 400/230V EEC	 1 ~ CEE Socket 230/110/48V EEC	 1 ~ Schuko Socket 230V Schuko	 Socket 48V EEC	 Battery charger	 Engine booster			
Welding control	 Arc control	 Welding with covered electrode	 Welding current electr. regulation	 Base current diode bridge	 Polarity inverter	 CC/CV selector				
Various devices	 Hour counter	 Ready for TC	 Ground connection point	 Emergency stop button	 Central lifting eye					
Various	 Standard equipment	 Options on request				 D.C.	 A.C.	 Plus	 Minus	 Maintenance Time
Optionals	 Trolley	 Site tow	 Welding cables	 Remote control						

 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 and/or welder.


ENGINE	Stop engine when fueling	CHECKING BOARD	Do not touch electric devices if you are barefoot or with wet clothes.
	Do not smoke, avoid flames, sparks or electric tools when fueling.		
	Unscrew the cap slowly to let out the fuel vapours.		Always keep off leaning surfaces during work operations
	Slowly unscrew the cooling liquid tap if the liquid must be topped up.		
	The vapor and the heated cooling liquid under pressure can burn face, eyes, skin.		Static electricity can damage the parts on the circuit.
	Do not fill tank completely.		
	Wipe up spilled fuel before starting engine.		An electric shock can kill
	Shut off fuel of tank when moving machine (where it is assembled).		
	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

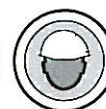


 **FIRE PREVENTION.** In case the working zone, for whatsoever cause goes on fire with flames liable to cause severe wounds or death, follow the first aid as described by the ruling norms or local ones.

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		 DANGEROUS
							
							

 WARNING	THE MACHINE MUST NOT BE USED IN AREAS WITH EXPLOSIVE ATMOSPHERE
--	--



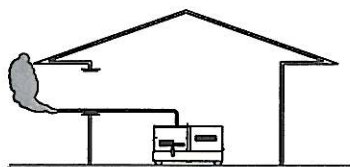
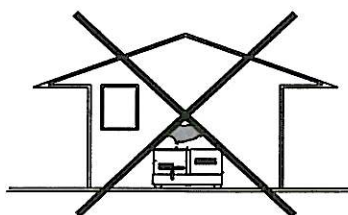
INSTALLATION AND ADVICE BEFORE USE

GASOLINE ENGINES

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

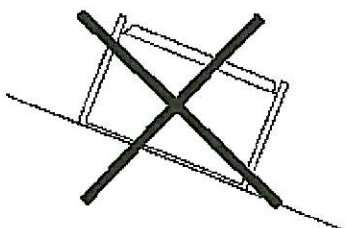
DIESEL ENGINES

- Use in open space, air swept or vent exhaust gases far from the work area.

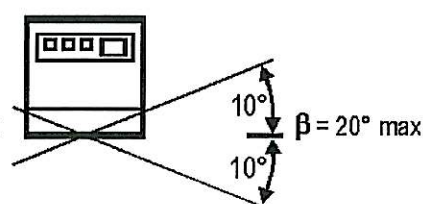
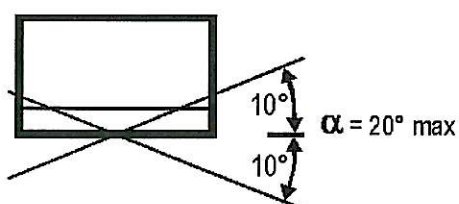


POSITION

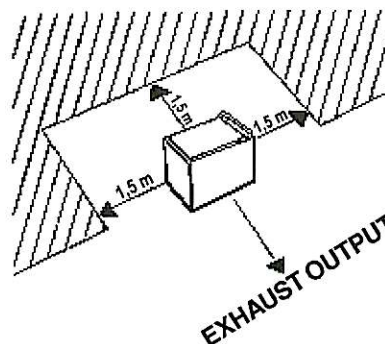
Place the machine on a level surface at a distance of at least 1,5 m from buildings or other plants.



Maximum leaning of the machine (in case of dislevel)



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



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:

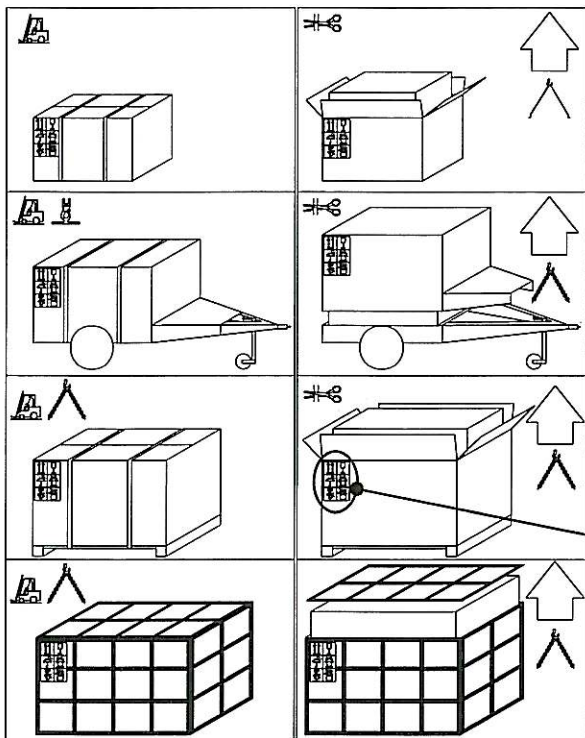
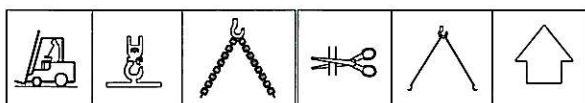
- in the bad weather
- in flooded places.

Protect all the electric parts at risk, because water infiltrations could cause short circuits with damages at persons and/or things.

The protection degree of the machine is put on the data plate and in this manual at page "Technical Data".



NOTE



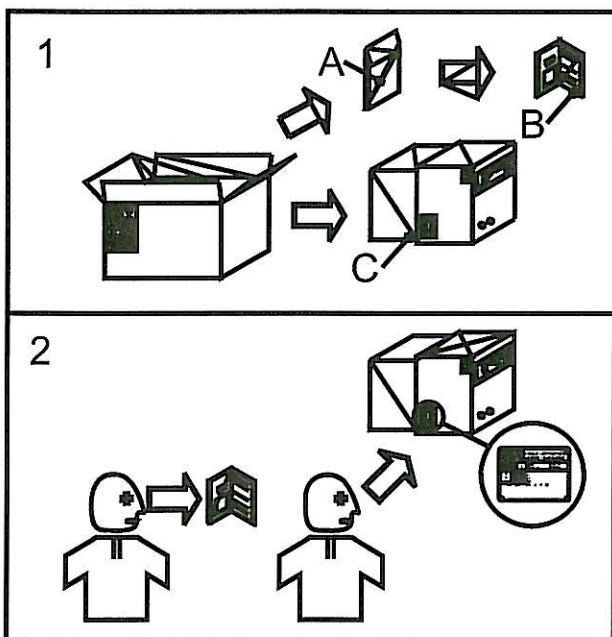
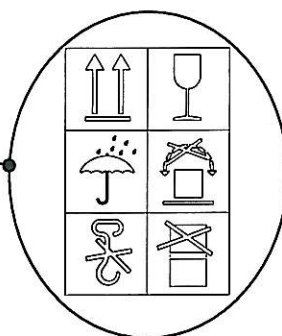
Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with its packaging, and conforms to local rules and regulations.

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.



**NOTE**

In case you should transport or move the machine, keep to the instructions as per the figures.

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

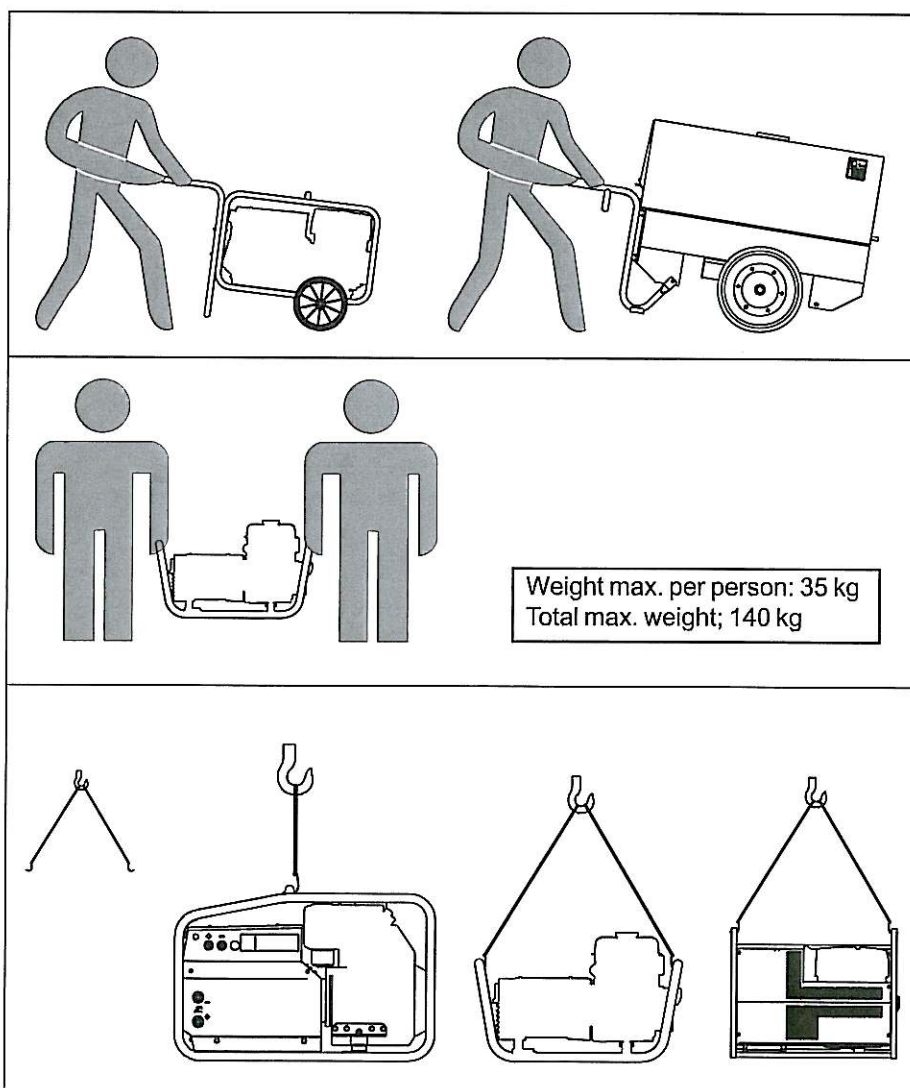
Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with it's packaging, and conform to local rules and regulations.

Only authorized persons involved in the transport of the machine should be in the area of movement.

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

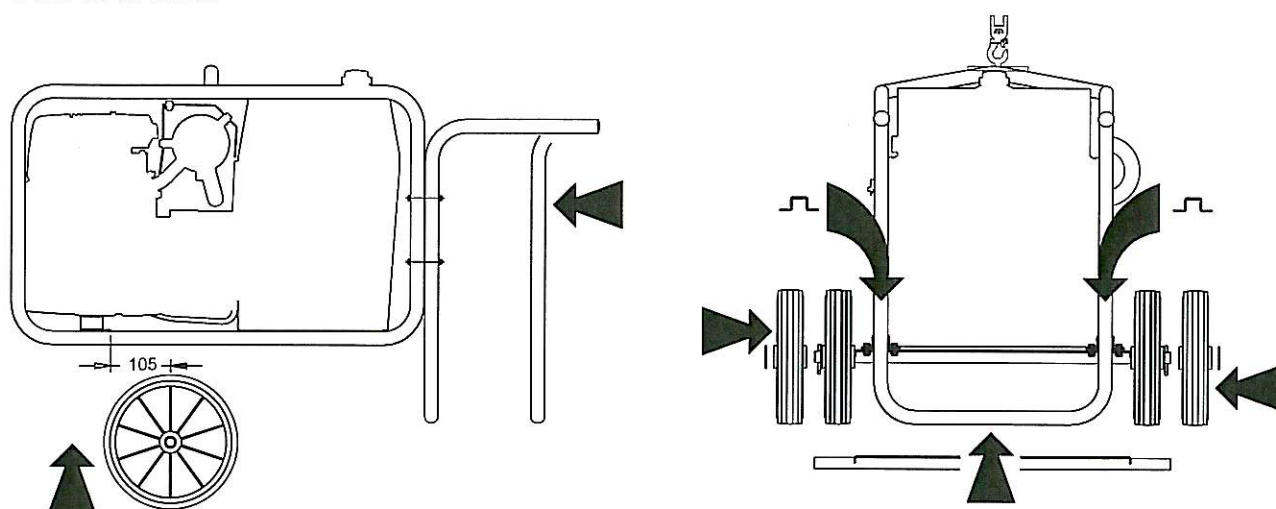
IT IS STRICTLY FORBIDDEN TO DRAG THE MACHINE MANUALLY OR TOW IT BY ANY VEHICLE (model with no CTM accessory).

If you did not keep to the instructions, you could damage the structure of the machine.

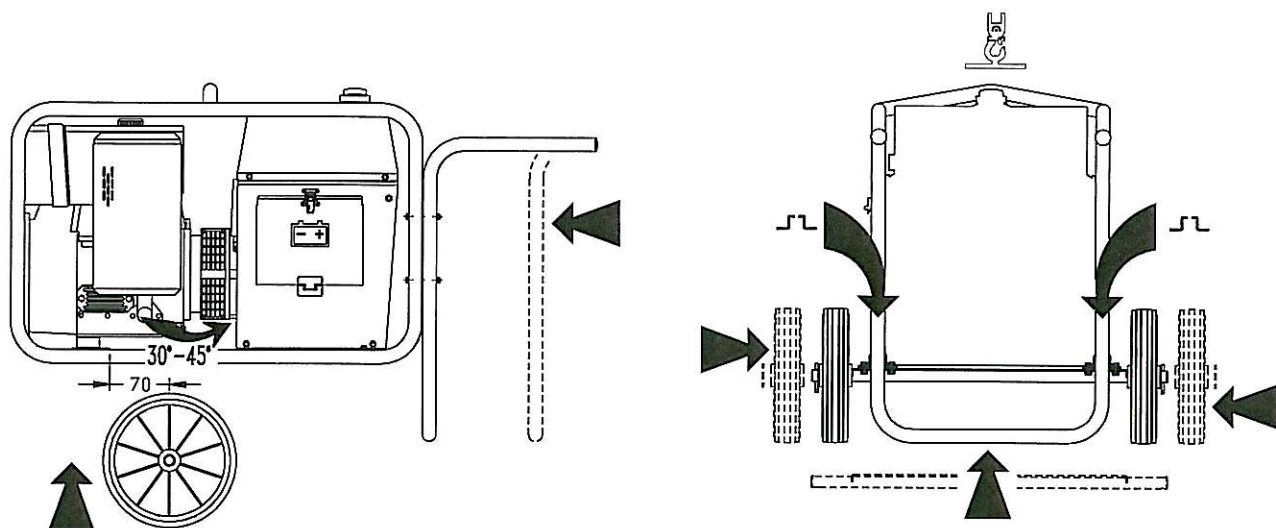


Note: Lift the machine and assemble the parts as shown in the drawing

CTM 10 BES/GS



CTM 10 DS/GS



ATTENTION

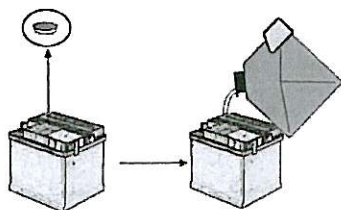
The CTM accessory cannot be removed from the machine and used separately (actioned manually or following vehicles) for the transport of loads or anyway for used different from the machine movements.





BATTERY

Take the battery out of the machine.



Fill the battery (S1) to the maximum level with electrolyte. Wait for about 30 minutes and top up with electrolyte.

In case of spilled acid, rinse with water before putting the battery back into the machine and reconnecting cables.

NOTE: Before starting the engine read the instructions in the owner's manual for the engine



FUEL

Fill the tank with good quality diesel fuel.

ATTENTION: Diesel fuel is highly inflammable; before filling the tank, stop the engine. Do not fuel in the presence of open flames.



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.



If fuel is spilled on the engine, clean it immediately before starting up the engine.



COOLING LIQUID (Water-cooled engines only)

Pour the cooling liquid through the hole (24B) at the top of the radiator until it reaches the opening.



LUBRIFICANT



Check the level of the engine oil using the oil dipstick. The level should be between the minimum and maximum marks. If necessary, add more oil.

If the air filter is of the oil bath type, fill it with the same oil up to the level indicated on the filter.

RECOMMENDED SAE VISCOSITY GRADES

For the type and viscosity of oil refer to owner's manual for the engine (supplied with the machine).

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 <input type="checkbox"/>
AGIP SUPERMOTOROIL 20W/50 API CC-SF	OLIO MOTORE BENZINA GASOLINE ENGINE OIL <input type="checkbox"/>
AGIP ANTIFREEZE EXTRA INIBITE ETHYLENE GLYCOL (50% + 50% H ₂ O)	CIRCUITO DI RAFFREDDAMENTO COOLING CIRCUIT (CUNA NC 956-16 ED 97) <input type="checkbox"/>



CLEANING OF DRY AIR FILTER

See page M43.



GROUND CONNECTION

A good ground is obligatory for all models with GFI (ground fault interrupter) / ELCB (earth leakage circuit breaker). These protective devices will not protect the operator unless there is a good ground.

Use a good quality ground cable and connect it to the grounding point of the machine (12). Follow all local rules and/or regulations in force.

Machines with Isometer protection do not need to be grounded.

Once the above operations have been completed,



**ENGINE WITH PREHEATING GLOW PLUGS**

Turn the starter key (Q1) on the position „preheating glow plugs“ (the glow plugs light will be on I4), when the light is off, turn the starter key completely clockwise until the engine begins to fire.

Let the engine run for some minutes before drawing the load.

ENGINES WITH R.P.M. ELECTRONIC ADJUSTER (ONLY FOR GENERATING SET)

Turn the starter key (Q1) completely clockwise until the engine begins to fire.

☞ Wait for the AUTOMATIC preheating time before drawing the load

OCCASIONAL USE OF THE ENGINE

Using the engine in special conditions which need an immediate intervention, such as emergency plants, etc., use advise to use our Engine Assistance Centres for specific interventions or our Technical Assistance Service.

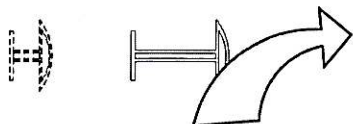
**CAUTION**

If the engine fails to start, do not insist for at least 15 seconds.

Space the further operations waiting for at least 4 minutes.

**CAUTION****MACHINE WITH EMERGENCY BUTTON**

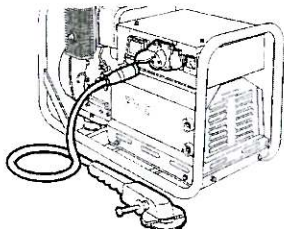
Before starting the engine, make sure that the emergency button (32B) is off (turn the button clockwise for this operation)

**CAUTION*****RUNNING-IN***

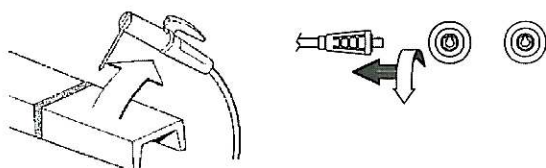
During the first 50 hours of operation, do not use more than 60% of the maximum output power of the unit and check the oil level frequently, please follow the instructions on the engine use and maintenance manual..

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

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



- stop to draw power from the welding sockets (only for TS models).



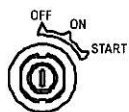
ENGINES WITH ACCELERATOR LEVER

➡ Make sure that the unit is not supplying any power.

Disconnect the electrical protection device (D-Z2-N2) lever downward.

Set the accelerator lever or the switch (16) to minimum position and wait for a few minutes to allow the engine to cool, anyway follow the instructions contained in the engine manual.

Pull the stop lever (28) until the engine stops (where it is assembled).



Remove the key (Q1) turning it counter clockwise, OFF position, then take it out.

➡ **NB.: for safety reason the key must be kept by qualified personnel.**

ENGINES WITHOUT ACCELERATOR LEVER

Make sure that the unit is not supplying any power.

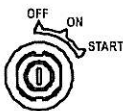
Disconnect the electrical protection device (D-Z2-N2) lever downward.

Let the engine idle for a few minutes.

Press the pushbutton (F3) until the engine stops

(where it is assembled).

Shut the fuel cock (where it is assembled).



Remove the key (Q1) turning it counter clockwise, OFF position, then take it out.

➡ **NB.: for safety reason the key must be kept by qualified personnel.**

ENGINES WITH R.P.M. ELECTRONIC ADJUSTER (ONLY FOR GENERATING SET)

Make sure that the unit is not supplying any power.

Disconnect the electrical protection device (D-Z2-N2) lever downward.

Let the engine idle for a few minutes.

Press the pushbutton (F3) until the engine stops (where it is assembled).



Remove the key (Q1) turning it counter clockwise, OFF position, then take it out.

➡ **NB.: for safety reason the key must be kept by qualified personnel.**

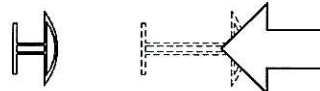


CAUTION

MACHINE WITH EMERGENCY BUTTON

Pressing it, it allows to stop the engine in any condition (32B) (when assembled).

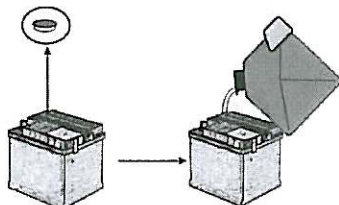
To re-establish it, see page M21...





BATTERY

Take up the battery out of the machine.



Fill the battery (S1) with electrolyte up to the maximum level. Wait for about 30 minutes and top up with electrolyte.

In case acid is spilled, rinse with much water before reassembling the battery, reconnect the cables.



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.



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

Fill the air filter using the same oil up to the level indicated on the filter (machine with **oil bath** air filter).

OIL RECOMMENDED

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

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 <input type="checkbox"/>
AGIP SUPERMOTOROIL 20W/50 API CC-SF	OLIO MOTORE BENZINA GASOLINE ENGINE OIL <input type="checkbox"/>
AGIP ANTIFREEZE EXTRA INIBITE ETHYLENE GLYCOL (50% + 50% H ₂ O)	CIRCUITO DI RAFFREDDAMENTO COOLING CIRCUIT (CUNA NC 956-16 ED 97) <input type="checkbox"/>



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.

ENGINE WITH OIL ALERT DEVICE

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.



CLEANING OF DRY AIR FILTER

See page M43.



GROUND CONNECTION

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 TN.

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





Check daily



NOTE

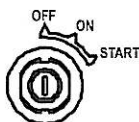
Do not alter the primary conditions of regulation and do not touch the sealed parts.

ENGINES WITH ELECTRIC START

Insert the electric protection device (D-Z2-N2) lever towards above and, where mounted, check the isolation monitor (A3) see page M37 -

Check the battery connection with the respective terminals (+) (-).

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



Introduce the key (Q1), turn it clockwise completely, leaving it as soon as the engine starts and/or the push button (32) (models without key) leaving it as soon as the engine starts.

NB.: for safety reason the key must be kept by qualified personnel.

Once the engine is started, with the starter off, let it turn for a few minutes before drawing the load.

Accelerate the machine by means of the right lever (16), when it is assembled.

ENGINE WITH NO ELECTRIC START

Insert the electric protection device (D-Z2-N2) lever towards above and, where mounted, check the isolation monitor (A3) see page M37-

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 returning it slowly.

Once the engine is started, with the starter off, let it turn for a few minutes before drawing the load.

Accelerate the machine by means of the right lever (16), when it is assembled.

EMERGENCY START (with rope)

In the versions with electric start, in case of need, it is possible to start the engine with the rope.



CAUTION

If the engine fails to start, do not insist for at least 15 seconds.

Space the further operations waiting for at least 4 minutes.



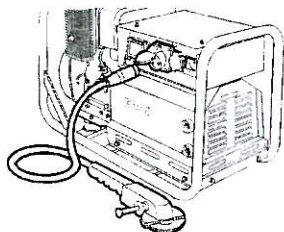
CAUTION

RUNNING-IN

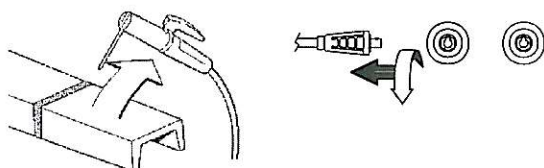
During the first 50 hours of operation, do not use more than 60% of the maximum output power of the unit and check the oil level frequently., in any case please stick to the rules given in the engine use manual.

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

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



- stop to draw power from the welding sockets (only for TS models).

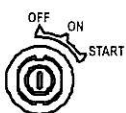


ENGINES WITH ELECTRIC START

☞ Make sure that the machine is not under load.

Wait for a few minutes to allow the engine to cool down, anyway follow the instructions contained in the engine manual.

Shut the gasoline cock.



Take out the key (Q1), turning it counter clockwise (when assembled) or pressing the stop button (32) until the engine stops.

☞ **NB.: for safety reason the key must be kept by qualified personel.**

ENGINES WITHOUT ELECTRIC START

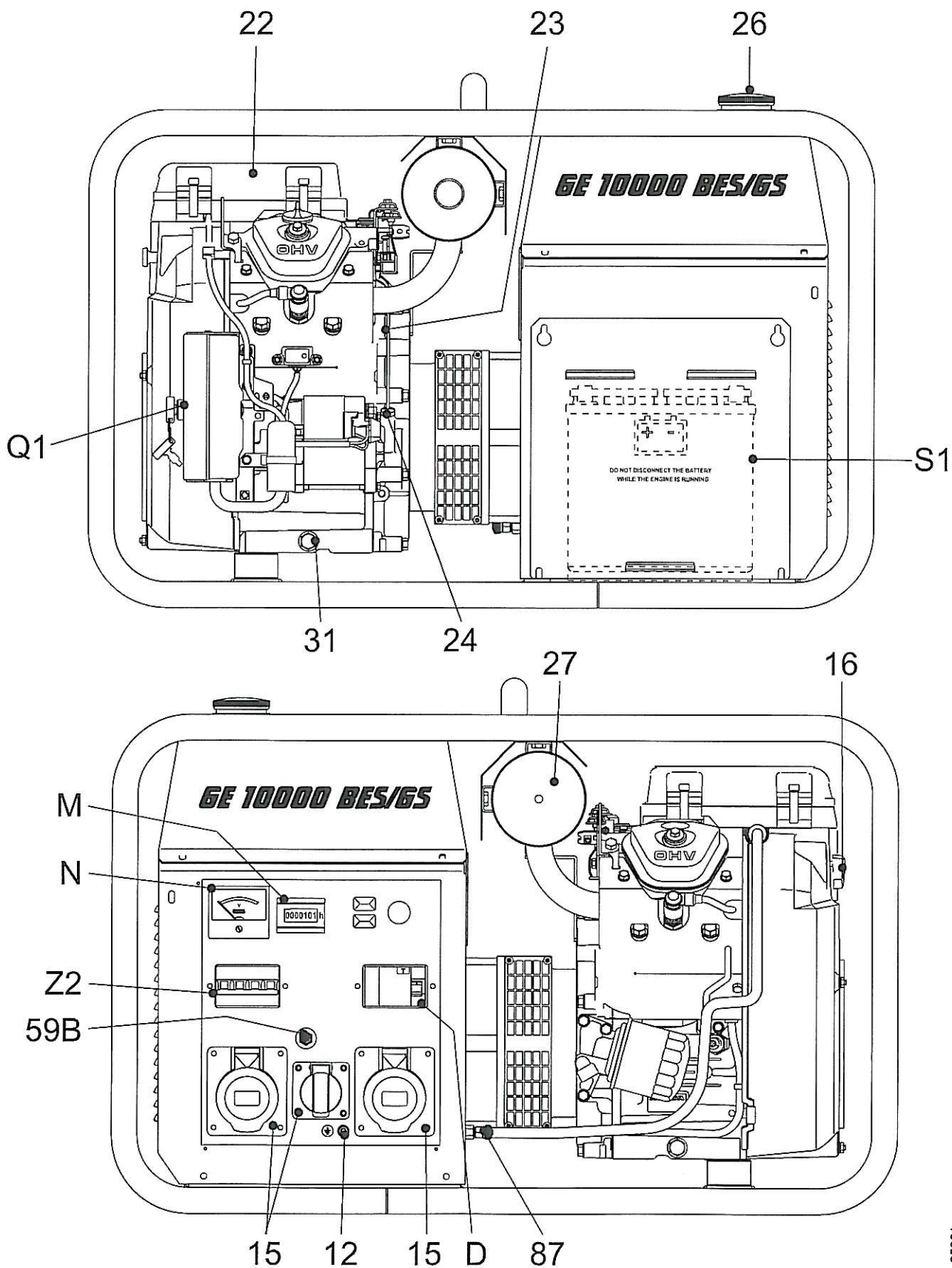
☞ Make sure that the machine is not under load.

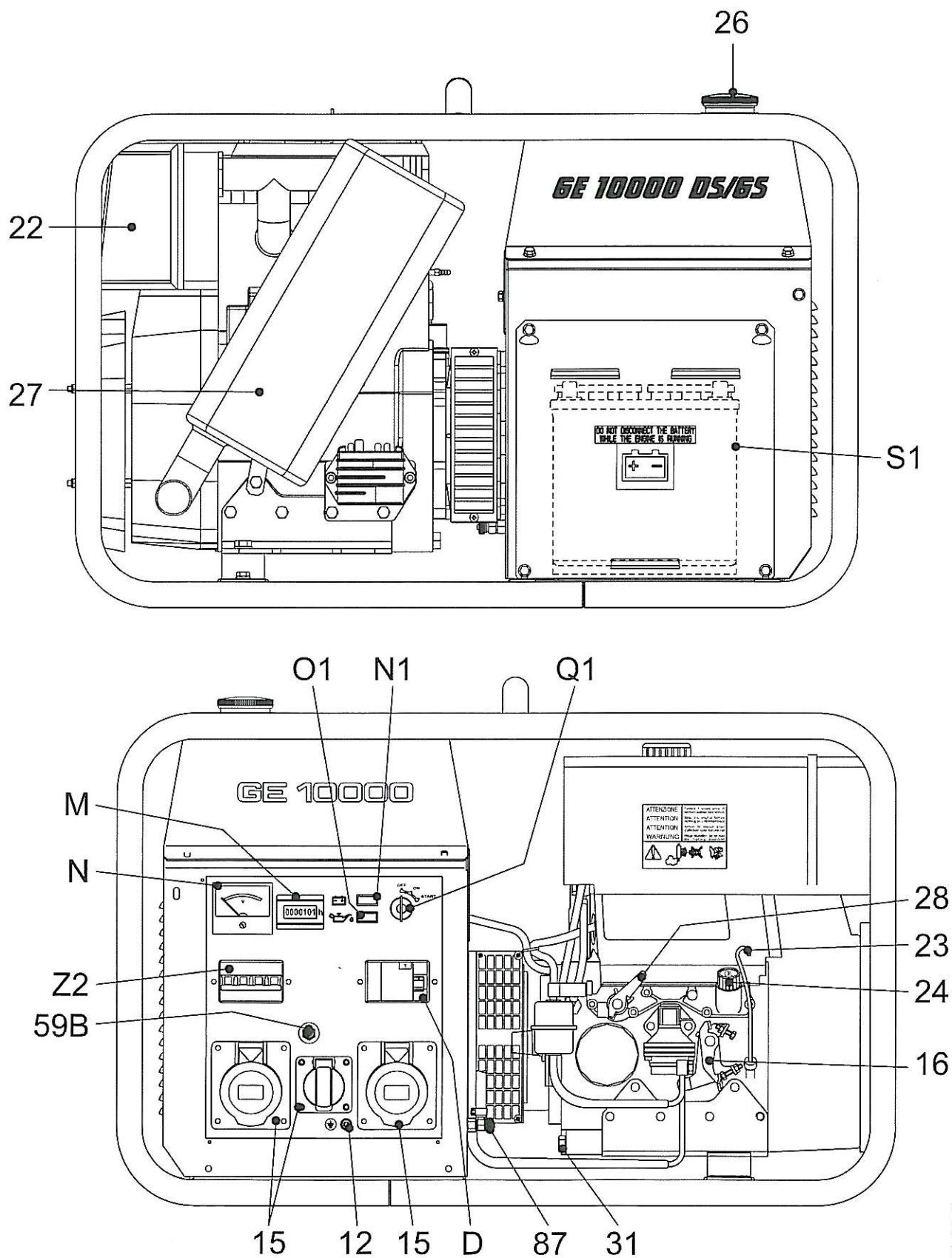
Wait for a few minutes to allow the engine to cool down, take however into consideration the prescriptions given in the engine use manual.

Shut the gasoline cock.

Set the engine switch (32) to the OFF position.

4A	Hydraulic oil level light	C6	Control unit for generating sets QEA
9	Welding socket (+)	D	Ground fault interrupter (30 mA)
10	Welding socket (-)	D1	Engine control unit and economiser EP1
12	Earth terminal	D2	Ammeter
15	A.C. socket	E2	Frequency meter
16	Accelerator lever	F	Fuse
17	Feed pump	F3	Stop switch
19	48V D.C. socket	F5	Warning light, high temperature
22	Engine air filter	F6	Arc-Force selector
23	Oil level dipstick	G1	Fuel level transmitter
24	Engine oil reservoir cap	H2	Voltage commutator
24A	Hydraulic oil reservoir cap	H6	Fuel electro pump
24B	Water filling cap	I2	48V A.C. socket
25	Fuel prefilter	I3	Welding scale switch
26	Fuel tank cap	I4	Preheating indicator
27	Muffler	I5	Y/s switch
28	Stop control	I6	Start Local/Remote selector
29	Engine protection cover	L	A.C. output indicator
30	Engine cooling/alternator fan belt	L5	Emergency button
31	Oil drain tap	L6	Choke button
31A	Hydraulic oil drain tap	M	Hour counter
31B	Water drain tap	M1	Warning level light
31C	Exhaust tap for tank fuel	M2	Contacto
32	Button	M5	Engine control unit EP5
33	Start button	M6	CC/CV switch
34	Booster socket 12V	N	Voltmeter
34A	Booster socket 24V	N1	Battery charge warning light
35	Battery charge fuse	N2	Thermal-magnetic circuit breaker/Ground fault interrupter
36	Space for remote control	N5	Pre-heat push-button
37	Remote control	N6	Connector – wire feeder
42	Space for E.A.S.	O1	Oil pressure warning light/Oil alert
42A	Space for PAC	P	Welding arc regulator
47	Fuel pump	Q1	Starter key
49	Electric start socket	Q3	Derivation box
54	Reset button PTO HI	Q4	Battery charge sockets
55	Quick coupling m. PTO HI	R3	Siren
55A	Quick coupling f. PTO HI	S	Welding ammeter
56	Hydraulic oil filter	S1	Battery
59	Battery charger thermal switch	S3	Engine control unit EP4
59A	Engine thermal switch	S6	Wire feeder supply switch
59B	Aux current thermal switch	T	Welding current regulator
59C	Supply thermal switch wire feeder-42V	T4	Dirty air filter warning light/indicator
63	No load voltage control	T5	Earth leakage relay
66	Choke control	U	Current transformer
67A	Auxiliary / welding current control	U3	R.P.M. adjuster
68	Cellulosic electrodes control	U4	Polarity inverter remote control
69A	Voltmeter relay	U5	Release coil
70	Warning lights	V	Welding voltage voltmeter
71	Selecting knob	V4	Polarity inverter control
72	Load commut. push button	V5	Oil pressure indicator
73	Starting push button	W1	Remote control switch
74	Operating mode selector	W3	Selection push button 30 I/1' PTO HI
75	Power on' warning light	W5	Battery voltmeter
76	Display	X1	Remote control socket
79	Wire connection unit	Y3	Button indicating light 20 I/1' PTO HI
86	Selector	Y5	Commutator/switch, serial/parallel
86A	Setting confirmation	Z2	Thermal-magnetic circuit breaker
87	Fuel valve	Z3	Selection push button 20 I/1' PTO HI
A3	Insulation monitoring	Z5	Water temperature indicator
A4	Button indicating light 30 I/1' PTO HI		
B2	Engine control unit EP2		
B3	E.A.S. connector		
B4	Exclusion indicating light PTO HI		
B5	Auxiliary current push button		
C2	Fuel level light		
C3	E.A.S. PCB		





According to the version of the machine on the front panel there are assembled some instruments:

	warning lights (L) corresponding to the current sockets on the front panel, indicate that the current can be drawn from the sockets when they are lit (15);
	voltmeter (N);
	GFI (D), Thermal magnetic circuit breaker (Z2) (TS...PL: : one for each auxiliary socket) or Thermal magnetic circuit breaker/GFI (N2);
	voltage selector switch (H2);
	insulation monitoring (A3)- See page M 39.10 -;
	hour-counter (M), which indicates the hours of effective operation of the unit;
	fuse (F), which protects the electric circuit of the engine, replacement of which, in case it breaks, must be effected <u>absolutely</u> with the machine stopped. Remove the mechanical protection, then shift down the small lever of the fuse holder placed on the front panel;
	fuel level gauge (M1): when the quantity of fuel in the tank falls below 5 litres a warning light on the instrument panel lights up;
	fuel level indicator (C2);
	preheating glow plugs warning light (I4) for the preheating (for diesel engines it shows the intervention time of the glow plugs);
	dirty air filter warning light (T4);
	ammeter (D2) indicates the drawn current. In case current is drawn simultaneously from several sockets, it shows the current sum. (DO NOT GO OVER THE MAX. CURRENT INDICATED ON THE LABEL);
	star/ triangle switch (I5);
	frequency meter (E2), that indicates the frequency generated and therefore the number of revolutions of the engine: the frequency should be of 52 Hz» or 62 Hz» when the unit is idle and about 50 Hz or 60 Hz at full load (in case that the found value is different make sure that the engine is completely accelerated), (do never use the unit with a frequency lower than 49 Hz or 59 Hz, in this case decrease the load);
	tone horn (R3)) indicates the defects in the engine;

	engine protections: EV - EP1 (D1) (for engine at 3000/3600 rpm.), EP2 (B2 for engine at 1500/1800 rpm), EP4 - EP5 (M5)- See pag. M39 -
	starter key (Q1) and engine stop;
	welding socket (gouging, when assembled, - 9+ - 10-) - See pag. M 34 -;
	Emergency button (L5);
	Control switch for accelerator (only for engine at 3000/3600 rpm) - WE ADVISE TO USE THE SWITCH ONLY IF THE EP1 DEVICE IS BROKEN;
	auxiliary current push button (B5);
	welding current regulator (T) and/or „arc force“ selector (F6) - See pag. M34 -1;
	welding scale switch (I3);
	polarity inverter control (V4);- See pag M34 -1;
	cellulosic electrodes control (68);- See pag M34 -1;
	Protection fuse for welding PCB, welding ammeter (S);
	remote control switch (W1) and remote control socket (X1) - See pag M38 -;
	switch CC/CV (M6)- See pag M34 -1;-

✎ **It is strictly forbidden to connect the group to the public mains a/o to another source of electric power.**



WARNING

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



WARNING

The areas, **access** of which is forbidden to unqualified personel, are:
- the control switchboard (front), the exhaust of the endothermic engine.

✎ At the beginning of every work, check the electric parameters and/or the controls placed on the front.

Make sure the unit is properly grounded (12) (where it is assembled).

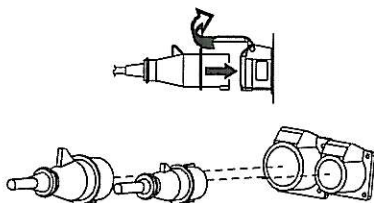
- See page M20, 21, 22, 25, 26, 27 -.

Move the accelerator lever (16) and reach the engine maximum speed, except for the engines with constant rpm; the voltmeter (N) (where it is assembled) shows the single-phase voltage whether three or single-phase current has to be drawn.

Nominal voltage	Indicative no-load voltage	
	asynchronous	synchronous (*)
110V	±10%	±5%
230V	±10%	±5%
230V	±10%	±5%
400V	±10%	±5%

*N.B.: with electronic tens. regul. RVT ±1%

Connect up the machine, using proper plugs and cables in good condition to the AC socket (15) to draw single or three-phase power, or, by cables with adequate section, to the terminal board, placed inside the derivation box (Q3).



The warning light (L), located near the current socket, lights up when the unit can supply alternated current, on condition that the engine is at the maximum rpm.

✎ N.B.: if the warning light does not flash, check the accelerator which must be at its maximum, or the fuse of the relevant socket. (single-phase) or the thermoprotection.

Using several sockets at the same time, the maximum power possible is that indicated on the data plate.

To draw power simultaneously in the TS welder version see page M52.



CAUTION

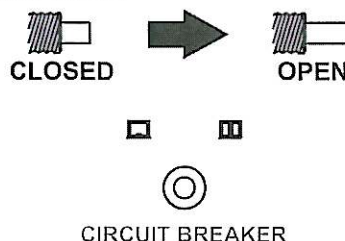
The replacement of the fuse must absolutely be done with the engine off (remove the mechanical protection, then shift down the small lever of the fuse holder placed on the front panel).

The max. continuous power of the generating set or the load current must not be exceeded.

MACHINE WITH THERMOPROTECTION

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

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



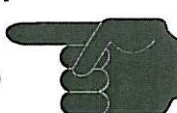
CIRCUIT BREAKER

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.

**PRESS TO
RESET**



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.



TS ... PL VERSION

Start the machine and wait for the end of the preheating time imposed by the EP1, EP2, EP5 engine protection device. - See pages M39... -

Press the „generation possibility“ push button (B5) placed on the front side of machine.

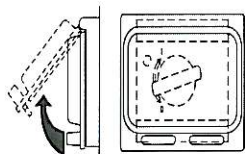
The voltmeter will show the auxiliary voltage which, for machines at 1500/1800 RPM, must be approx. $\approx 230V \pm 10\%$ and for machines at 3000/3600 RPM (engine idling) must be approx. $\approx 180V \pm 10\%$.

Push upwards the lever of magnetothermic switch referring to the socket from which load is to be drawn.

MACHINE WITHOUT PROTECTIVE DEVICE

In case machine is not equipped with protective device of indirect contacts, by means of automatic breaking of supply, it **is necessary** to put between the load and the generation a differential switch or a similar equipment capable, in any case, to observe the regulations in force CEI 64/8 (and/or successive) Part 4 Par. 4.13.1 and harmonized by directive Nr. 72/23/EEC.

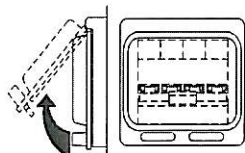
UNIT FITTED WITH GROUND FAULT INTERRUPTER SWITCH (GFI)



Turn on the GFI safety-switch (D) by pushing it upwards.

The GFI is a safety device which protects the circuit in the event of a malfunction. In this case the switch disconnects the three and single-phase circuit when in any part of the electric connections a current leakage of more than 30 mA occurs.

UNIT FITTED WITH THERMAL MAGNETIC BREAKER

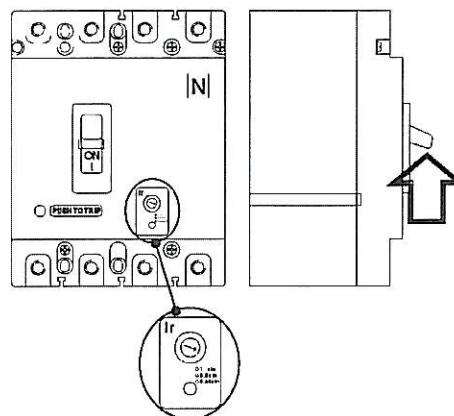


Turn on the thermal magnetic breaker (Z2) by pushing it to the ON position.

The thermal-magnetic breaker is a safety device which protects the circuit in the event of a malfunction. In this case the switch disconnects the three and single-phase circuit when in any part of the electric connections a short circuit or a current absorption occurs above the data specified on the label of the unit.

In the model with setting **DO NOT INTERVENE** on the setting itself. To modify it, please contact our Technical Assistance Service.

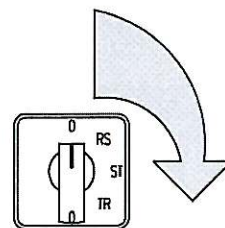
UNIT FITTED WITH GFI SWITCH THERMAL MAGNETIC BREAKER



This switch includes the characteristics of both types of breakers (N2).

UNIT WITH VOLTMETRIC COMMUTATOR (ONLY FOR GENERATING SET)

WARNING: the possible single-phase loads must be correctly divided in the three phases, in order to avoid any possible voltage fall on one phase that results excessively loaded.



Check the voltages on the various phases with the switch located on the front (H2) and check, reading on the voltmeter (N) about the same voltage value

N.B.: in case of overload, it is possible that the engine lowers its speed and the voltage is reduced remarkably. In this case, it is necessary to reduce immediately the load.



CAUTION

For machines at 3000/3600 RPM the EP1 safety device will automatically provide to accelerate engine when load is drawn.

- See page M39.1 -





MAKE SURE

When the TCM 5 5D-6 is used, it is not possible to connect the E.A.S automatic intervention unit.

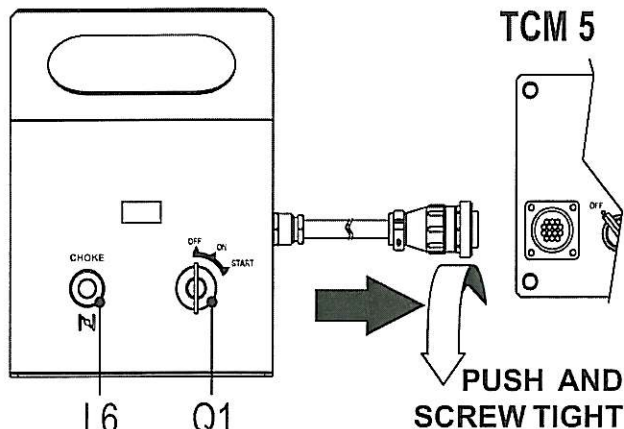
USE OF THE REMOTE CONTROL TCM 5

The coupling of the TCM 5 with the generating set, permits to work far from the set itself.
The remote control is connected to the front plate, with a multiple connector.

The TCM 5 assures the following fonctions:

- starting (starting key Q1)
- stop (starting key Q1)
- choke control (L6)

- 1) the position of the selector LOCAL START/REMOTE START (I6) on the generating sets GE 4500 HSX and GE 4500 SX-EAS must be on the position "REMOTE START".
- 2) The position of the key (Q1) on the generating set GE 4500 SX-EAS must be on the position "ON"



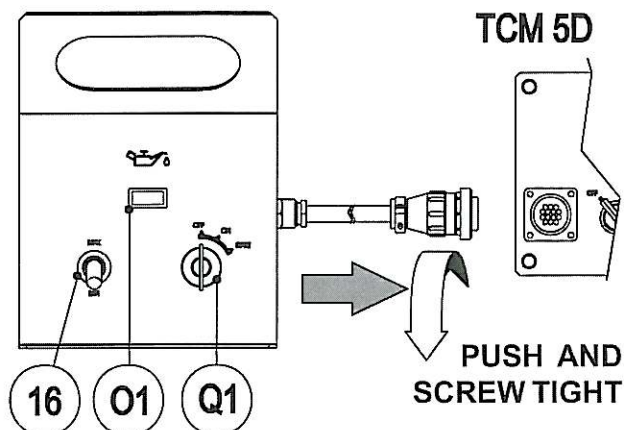
USE OF THE REMOTE CONTROL TCM 5D

The coupling of the TCM 5D with the generating set, ready for remot starting, permits to work far from the set itself.

The remote control is connected to the front plate, and/or rear plate, with a multiple connector.

The TCM 5D assures the following fonctions:

- starting (starting key Q1)
 - acceleration (selector 16)
 - stop (starting key Q1)
 - indication of oil low pressure (warning light O1)
- To stop the set, move the accelerator lever (16) to the minimum position, then turn the key to "OFF" position.



USE OF THE REMOTE CONTROL TCM 6

The coupling of the TCM 5D with the generating set, ready for remot starting, permits to work far from the set itself.

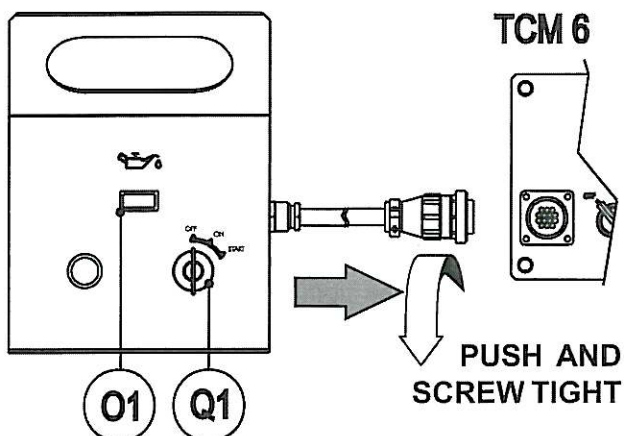
The remote control is connected to the front plate, and/or rear plate, with a multiple connector.

The TCM 5D assures the following fonctions:

- starting (starting key Q1)
- stop (starting key Q1)
- indication of oil low pressure (warning light O1)

To stop the set turn the key to the position."OFF".
O1)

Per l'arresto del motore portare la chiave sulla posizione "OFF".



PROBLEM	POSSIBLE CAUSE	WHAT TO DO
ASYNCHRONOUS ALTERNATORS		
No output	1) GFI or Isometer (if installed) have been activated 2) Thermal protection activated or fuse burned out 3) Overload 4) Bad condenser or stator burned out	1) Reset GFI or Isometer. If they are activated again check the cables and tools attached to the auxiliary sockets for short circuits or grounded leads 2) Reset the thermal protection and check the fuses of the single phase sockets. 3) Disconnect the load and see if the voltage is normal. If so the load caused the generator to lose its excitation. This can occur when the kWatt of the load is larger than that of the generator or, in the case of inductive loads (motors), when the device has a high starting current. In both cases the solution is a larger genset. 4) Disconnect all leads from the stator except for those going to the condenser box. If there is no output from the auxiliary leads check the condenser box. If it is OK replace the stator.
SYNCHRONOUS ALTERNATORS		
No output	1) Overload - circuit breaker activated 2) GFI or Isometer (if installed) have been activated 3) Fuse burned out 4) Stator burned out 5) Carbon brushes worn out	1) Remove the load and insert the circuit breaker. Reconnect the load. If it activates again check the rating of the load and the wiring between load and generator. 2) Remove the load and reset Isometer or GFI. Check without the load. If they activate there is an isolation fault or leakage to ground in the generator or internal wiring. If not, reconnect the load. If they are activated with the load attached there is an isolation fault or leakage to ground in the load or related cables. 3) Check the fuses of the single phase sockets. 4) Disconnect the load and see if the voltage is normal. If there is not output replace the alternator. 5) Check the condition of the brushes (if mounted) and their position.
Mechanical damage	6) Carbon brushes worn out	6) Worn out brushes can damage the brush holder and/or collector.



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** moving parts, hot parts (exhaust manifold and muffler, etc.) electrical parts which may be unprotected when the machine is open.
 - Remove guards only when necessary to perform maintenance, and replace them when the maintenance requiring their removal is complete.
 - Use suitable tools and clothes.
 - Do not modify the components if not authorized.
- See pag. M1.1 -



**HOT surface
can
hurt you**

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.

The routine cleaning of the machine is also considered maintenance.

The repairs **cannot be considered** among the maintenance activities, i.e. the replacement of parts subject to occasional damages and the replacement of electric and mechanic components consumed in normal use, by the Assistance Authorized Center as well as by MOSA.

The replacement of tires (for machines equipped with trolleys) must be considered as repair since it is not delivered as standard equipment any lifting system.

For the maintenance of the gasoline or Diesel engine please refer to the specific manual supplied with the unit.

The periodic maintenance should be performed according to the schedule shown in the engine manual. An optional hour counter (M) is available to simplify the determination of the working hours.

Every day check the oil level in the engine and in the air filter (if at oil bath). Make sure that these are no obstructions in the aspiration/exhaust ducts of the alternator, in the engine or in the cover (pieces of material, leaves or other).

See page M21 and M26.



NOTE

THE ENGINE PROTECTION DO NOT WORK WHEN THE OIL IS OF LOW QUALITY BECAUSE NOT CHARGED REGULARLY AT INTERVALS AS PRESCRIBED IN THE OWNER'S ENGINE MANUAL.



UNITS WITH ELECTRIC STARTER

Check periodically the electrolyte level in the battery, especially after long periods of inactivity.

☞ **ATTENTION:** the battery must have all its elements in good condition and must be filled with electrolyte.

The battery is automatically charged while the engine is running at speed.

☞ **N.B.:** In the models with safety protections, in case the battery is not reloaded, check the thermic protection (59A) reload it if it is the case as well as the fuse (35).

PROCEDURE FOR RECHARGING A BATTERY

Keep to the advice indicated page - M36 -

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.

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%

MODELS WITH DRY AIR FILTER (CLEANING)

Replace the air filter cartridge every 200 hours when using the unit in a clean environment.

In a dusty environment, the filter cartridge must be replaced every 100 hours.

ALTERNATOR (brushless)

No other further periodical maintenance is necessary, as the alternator has no brushes or slip rings, and the output regulation is entirely electronic.

ALTERNATOR (with brushless)

Control the wear and the position of the carbon brushes at regular intervals (refer to the alternator manual supplied with the machine for details).

MODEL WITH COOLING LIQUID

Every day check the cooling liquid level.

Verify each day freezing liquid and check periodically the radiator state (losses obstructions for air circulation etc.)

☞ **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 M45.

In the maintenance 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.

In case of necessity for first aid and of fire prevention, see page. M2.5.



IMPORTANT



In the maintenance 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.



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.

☞ Have **qualified** personnel prepare the machine for storage.

GASOLINE ENGINE

Start the engine: It will run until it stops due to the lack of fuel.

Drain the oil from the engine sump and fill it with new oil (see page M25).

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.

In case the battery, for the electric start, is assembled, disconnect 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.

DIESEL ENGINE

For short periods of time it is advisable, about every 10 days, to make the machine work with load for 15-30 minutes, for a correct distribution of the lubricant, to recharge the battery and to prevent any possible blocking of the injection system.

For long periods of inactivity, turn to the after sales service of the engine manufacturer.

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 of fire prevention, see page. M2.5.



IMPORTANT



In the storage 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.



☞ Have **qualified** personnel disassemble the machine and dispose of the parts, including the oil, fuel, etc., in a correct manner when it is to be taken out of service.

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 entrusted 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 battery electrolyte.

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, battery electrolyte, and inflammable liquids such as fuel, cooling liquid.

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:

- tank fuel
- engine lubricating oil
- cooling liquid from the engine
- battery

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

This, of course, after authorization.

In case of necessity for first aid and fire prevention, see page M2.5.




IMPORTANT



In the 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.



 © MOSA 1.0-04/04	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">I</div> <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">GB</div> <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">F</div> </div> <div> Technical data and machine description </div> </div>	GE 10000 BES/GS GE 10000 DS/GS	M 51
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The generating set GE 10000 is a unit which transforms the mechanical energy, generated by endothermic engine, into electric energy, through an alternator.

Is meant for industrial and professional use, powered by an endothermic engine; it is 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 support which must damp the vibrations and also eliminate sounds which would produce noise.

Technical data	GE 10000 BES/GS	GE 10000 DS/GS
GENERATOR		
Three-phase generation (Stand-by)	11 kVA (8.8 kW) / 400 V / 15.9 A	
Three-phase generation(P.R.P.)	10 kVA (8 kW) / 400 V / 14.4 A	
Single-phase generation	6 kVA / 230 V / 26 A	
Frequency	50 Hz	
Cos φ	0.8	
ALTERNATOR		
Type	Self-excited, self-regulated	
Insulation class	synchronous, three-phase H	
MOTOR		
Make	Honda	Ruggerini
Model	GX 620	MD 190
Type	4-Stroke	4-Stroke
Displacement	614 cm³	851 cm³
Cylinder	2	2
Power	13.3 kW (18 HP)	11.4 kW (15.5 HP)
Speed	3000 rpm	3000 rpm
Fuel consumption	313 g/kWh	230 g/kWh
Cooling system	air	air
Engine oil capacity	1.5 l	1.8 l
Starter	Electric	Electric
Fuel	Gasoline	Diesel
GENERAL SPECIFICATION		
Fuel tank capacity	18 l	18 l
Running time (75%)	6 h	9 h
Protection	IP 23	IP 23
Dimensions on base Lxwxh (mm)*	910x525x620	910x580x620
Weight on base *	135 Kg	153 Kg
Noise level	99 LWA (74 dB(A) - 7 m)	99 LWA (74 dB(A) - 7 m)
* Dimensions and weight are inclusive of all parts		

* Dimensions and weight are inclusive of all parts

Declared power according to ISO 3046/1 (temperature 25°C, 30% relative humidity, altitude 100 m above sea level).
 (*Stand-by) = maximum available power for use at variable loads for a yearly number of hours limited at 500 h. No overload is admitted.

(**Prime power P.R.P.) = maximum available power for use at variable loads for a yearly illimited number of hours. The average power to be taken during a period of 24 h must not be over 80% of the P.R.P. It's admitted overload of 10% each hour every 12 h.

OUTPUT

In an **approximative** way one reduces: of 1% every 100 m altitude and of 2.5% for every 5°C above 25°C.

For possible modifications or changes to be brought on the engines, with climate conditions different from those above mentioned, please call our Assistance Authorized Centers.

ACOUSTIC POWER LEVEL

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:

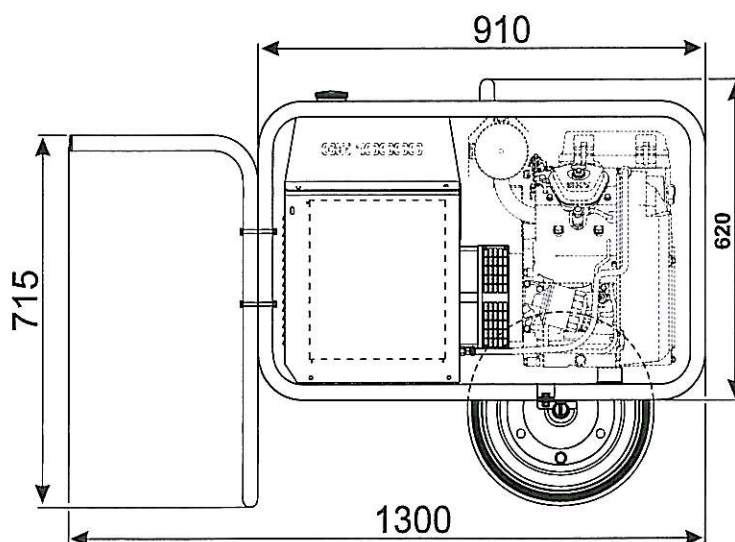
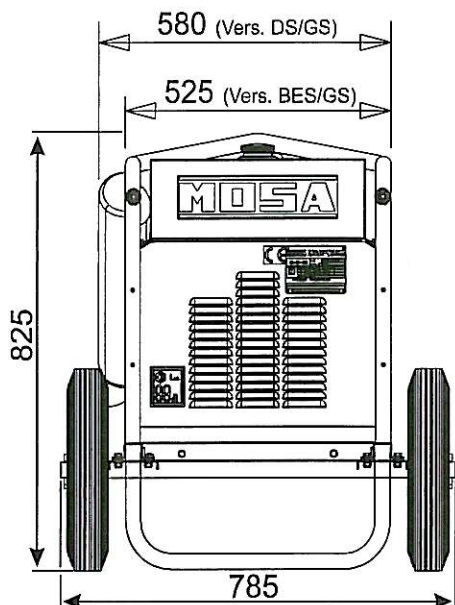
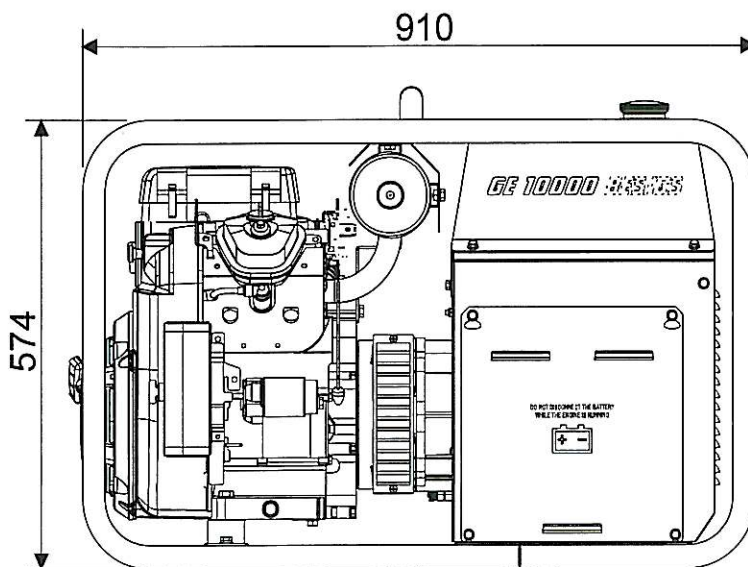
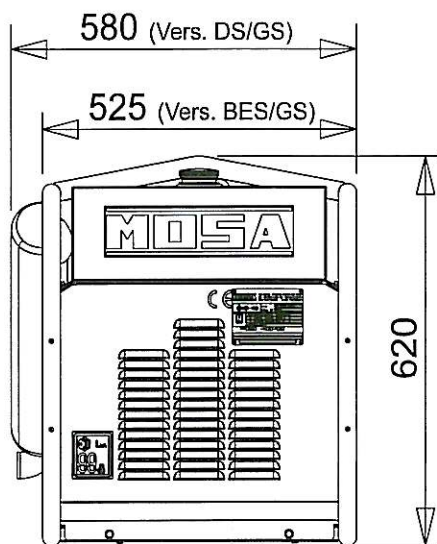
$$dB_{Ax} = dB_{Ay} + 10 \log \frac{r_y^2}{r_x^2}$$

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

DIMENSIONI
DIMENSIONS

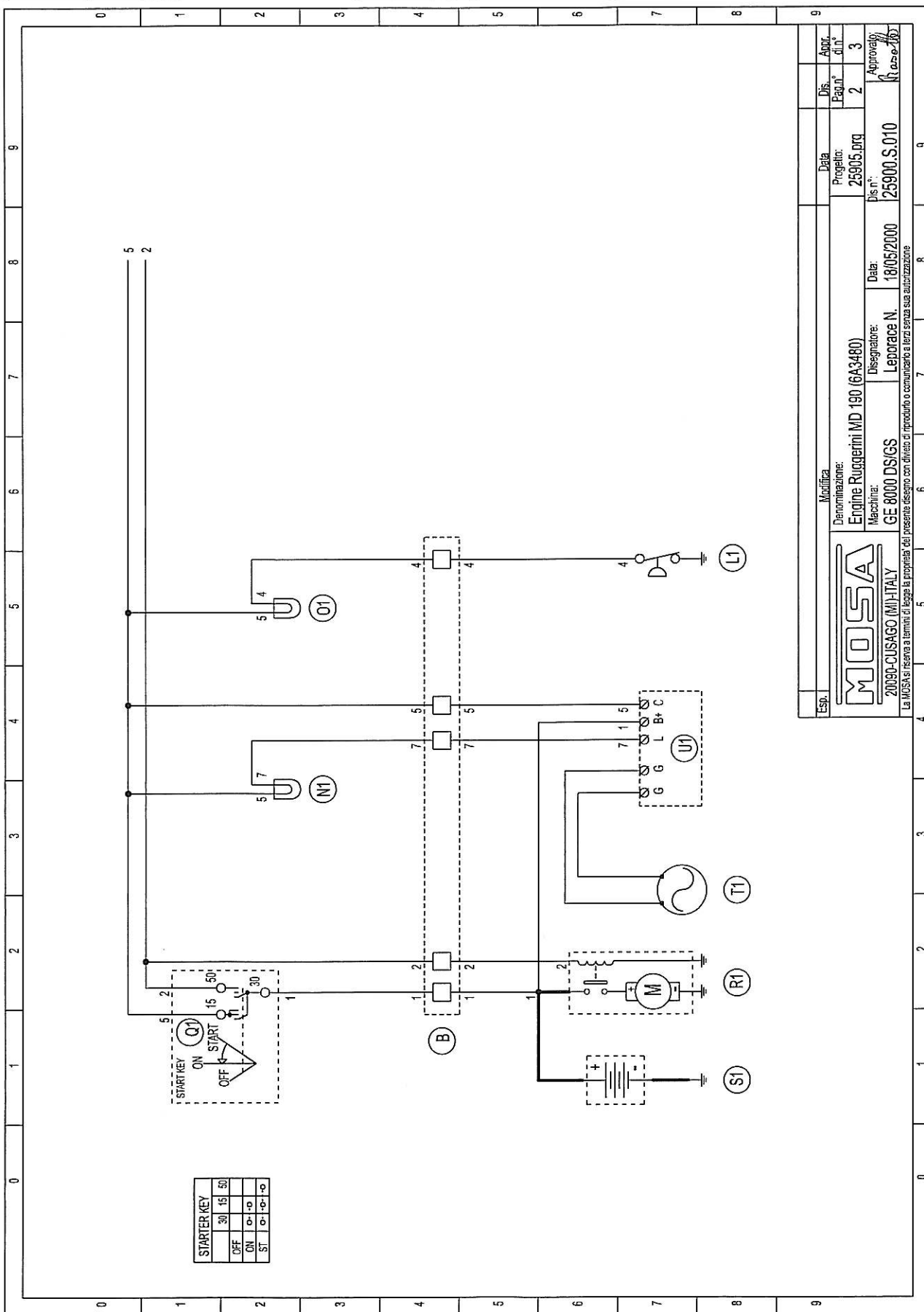
SCHEMI ELETTRICI
ELECTRICAL SYSTEM

RICAMBI
SPARE PARTS



A : Alternatore	A3 : Sorvegliatore d'isolamento	A6 : Interruttore
B : Supporto connessione cavi	B3 : Connettore E.A.S.	B6 : Interruttore alimentazione quadro
C : Condensatore	C3 : Scheda E.A.S.	C6 : Unità logica QEA
D : Interruttore differenziale	D3 : Prese avviatori motore	D6 : Connettore PAC
E : Trasformatore alimentaz. scheda sald.	E3 : Deviatore tensione a vuoto	E6 : Potenzimetro regolatore di giri/frequenza
F : Fusibile	F3 : Pulsante stop	F6 : Selettore Arc-Force
G : Presa 400V trifase	G3 : Bobina accensione	G6 : Dispositivo spunto motore
H : Presa 230V monofase	H3 : Candela accensione	H6 : Elettropompa carburante 12V c.c.
I : Presa 110V monofase	I3 : Commutatore di scala	I6 : Selettore Start Local/Remote
L : Spia per presa	L3 : Pulsante esclusione pressostato	L6 : Pulsante CHOKE
M : Contatore	M3 : Diodo carica batteria	M6 : Selettore modalità saldatura CC/CV
N : Voltmetro	N3 : Relè	N6 : Connettore alimentazione traino filo
P : Regolatore arco saldatura	O3 : Resistore	O6 : Trasformatore trifase 420V/110V
Q : Presa 230V trifase	P3 : Reattanza scintillatore	P6 : Selettore IDLE/RUN
R : Unità controllo saldatura	Q3 : Morsettiera prelievo potenza	Q6 : Strumento analogico Hz/V/A
S : Amperometro corrente saldatura	R3 : Sirena	R6 : Filtro EMC
T : Regolatore corrente saldatura	S3 : Protezione motore E.P.4	S6 : Selettore alimentazione trainafilo
U : Trasformatore amperometrico	T3 : Scheda gestione motore	T6 : Connettore per trainafilo
V : Voltmetro tensione saldatura	U3 : Regolatore elettronico giri	U6 : Scheda DSP CHOPPER
Z : Prese di saldatura	V3 : Scheda controllo PTO HI	V6 : Scheda driver/alimentazione CHOPPER
X : Shunt di misura	Z3 : Pulsante 20 I/1' PTO HI	Z6 : Scheda pulsanti / led
W : Reattore c.c.	W3 : Pulsante 30 I/1' PTO HI	W6 : Sensore di hall
Y : Ponte diodi saldatura	X3 : Pulsante esclusione PTO HI	X6 : Spia riscaldatore acqua
	Y3 : Spia 20 I/1' PTO HI	Y6 : Indicatore carica batteria
A1 : Resistenza scintillatore	A4 : Spia 30 I/1' PTO HI	A7 : Selettore travaso pompa AUT-O-MAN
B1 : Unità scintillatore	B4 : Spia esclusione PTO HI	B7 : Pompa travaso carburante
C1 : Ponte diodi 48V c.c./110V c.c.	C4 : Elettrovalvola 20 I/1' PTO HI	C7 : Controllo gruppo elettrogeno "GECO"
D1 : Protezione motore E.P.1	D4 : Elettrovalvola 30 I/1' PTO HI	D7 : Galleggiante con interruttori di livello
E1 : Elettromagnete arresto motore	E4 : Pressostato olio idraulico	E7 : Potenzimetro regolatore di tensione
F1 : Elettromagnete acceleratore	F4 : Trasmettitore livello olio idraulico	F7 : Commutatore SALD./GEN.
G1 : Trasmettitore livello carburante	G4 : Candele di preriscaldamento	G7 : Reattore trifase
H1 : Termostato	H4 : Centralina di preriscaldamento	H7 : Sezionatore
I1 : Presa 48V c.c.	I4 : Spia di preriscaldamento	I7 : Timer per solenoide stop
L1 : Pressostato	L4 : Filtro R.C.	L7 : Connettore "VODIA"
M1 : Spia riserva carburante	M4 : Scaldiglia con termostato	M7 : Connettore "F" di EDC4
N1 : Spia carica batteria	N4 : Elettromagnete aria	N7 : Selettore OFF-ON-DIAGN.
O1 : Spia pressostato	O4 : Relè passo-passo	O7 : Pulsante DIAGNOSTIC
P1 : Fusibile a lama	P4 : Protezione termica	P7 : Spia DIAGNOSTIC
Q1 : Chiave avviamento	Q4 : Prese carica batteria	Q7 : Selettore modalità saldatura
R1 : Motorino avviamento	R4 : Sensore temp. liquido di raffr.	R7 :
S1 : Batteria	S4 : Sensore intasamento filtro aria	S7 :
T1 : Alternatore carica batteria	T4 : Spia intasamento filtro aria	T7 :
U1 : Regolatore tensione batteria	U4 : Comando invert. polarità a dist.	U7 :
V1 : Unità controllo elettrovalvola	V4 : Comando invertitore polarità	V7 :
Z1 : Elettrovalvola	Z4 : Trasformatore 230/48V	Z7 :
W1 : Commutatore TC	W4 : Invertitore polarità (ponte diodi)	W7 :
X1 : Presa comando a distanza	X4 : Ponte diodi di base	X7 :
Y1 : Spina comando a distanza	Y4 : Unità controllo invert. polarità	Y7 :
A2 : Regolat. corrente sald. a dist.	A5 : Comando ponte diodi di base	A8 :
B2 : Protezione motore E.P.2	B5 : Pulsante abilitaz. generazione	B8 :
C2 : Indicatore livello carburante	C5 : Comando elettr. acceleratore	C8 :
D2 : Amperometro di linea	D5 : Attuatore	D8 :
E2 : Frequenzimetro	E5 : Pick-up	E8 :
F2 : Trasformatore carica batteria	F5 : Spia alta temperatura	F8 :
G2 : Scheda carica batteria	G5 : Commutatore potenza ausiliaria	G8 : Commut. invert. polarità a due scale
H2 : Commutatore voltmetrico	H5 : Ponte diodi 24V	H8 :
I2 : Presa 48V c.a.	I5 : Commutatore Y/s	I8 :
L2 : Relè termico	L5 : Pulsante stop emergenza	L8 :
M2 : Contattore	M5 : Protezione motore EP 5	M8 :
N2 : Interruttore magnet. diff.	N5 : Pulsante preriscaldamento	N8 :
O2 : Presa 42V norme CEE	O5 : Unità comando solenoide	O8 :
P2 : Resistenza differenziale	P5 : Trasmettitore pressione olio	P8 :
Q2 : Protezione motore TEP	Q5 : Trasmettitore temperatura acqua	Q8 :
R2 : Unità controllo solenoidi	R5 : Riscaldatore acqua	R8 :
S2 : Trasmettitore livello olio	S5 : Connettore motore 24 poli	S8 :
T2 : Pulsante stop motore TC1	T5 : Relè differenziale elettronico	T8 :
U2 : Pulsante avviamento motore TC1	U5 : Bobina a lancio di corrente	U8 :
V2 : Presa 24V c.a.	V5 : Indicatore pressione olio	V8 :
Z2 : Interruttore magnetotermico	Z5 : Indicatore temperatura acqua	Z8 :
W2 : Unità di protezione S.C.R.	W5 : Voltmetro batteria	W8 :
X2 : Presa jack per TC	X5 : Contattore invertitore polarità	X8 :
Y2 : Spina jack per TC	Y5 : Commutatore Serie/Parallelo	Y8 :

A: Alternator	A3: Insulation monitoring	A6: Commutator/switch
B: Wire connection unit	B3: E.A.S. connector	B6: Key switch, on/off
C: Capacitor	C3: E.A.S. PCB	C6: QEA control unit
D: G.F.I.	D3: Booster socket	D6: Connector, PAC
E: Welding PCB transformer	E3: Open circuit voltage switch	E6: Frequency rpm regulator
F: Fuse	F3: Stop push-button	F6: Arc-Force selector
G: 400V 3-phase socket	G3: Ignition coil	G6: Device starting motor
H: 230V 1phase socket	H3: Spark plug	H6: Fuel electro pump 12V c.c.
I: 110V 1-phase socket	I3: Range switch	I6: Start Local/Remote selector
L: Socket warning light	L3: Oil shut-down button	L6: Choke button
M: Hour-counter	M3: Battery charge diode	M6: Switch CC/CV
N: Voltmeter	N3: Relay	N6: Connector – wire feeder
P: Welding arc regulator	O3: Resistor	O6: 420V/110V 3-phase transformer
Q: 230V 3-phase socket	P3: Sparkler reactor	P6: Switch IDLE/RUN
R: Welding control PCB	Q3: Output power unit	Q6: Hz/V/A analogic instrument
S: Welding current ammeter	R3: Electric siren	R6: EMC filter
T: Welding current regulator	S3: E.P.4 engine protection	S6: Wire feeder supply switch
U: Current transformer	T3: Engine control PCB	T6: Wire feeder socket
V: Welding voltage voltmeter	U3: R.P.M. electronic regulator	U6: DSP chopper PCB
Z: Welding sockets	V3: PTO HI control PCB	V6: Power chopper supply PCB
X: Shunt	Z3: PTO HI 20 l/min push-button	Z6: Switch and leds PCB
W: D.C. inductor	W3: PTO HI 30 l/min push-button	W6: Hall sensor
Y: Welding diode bridge	X3: PTO HI reset push-button	X6: Water heater indicator
	Y3: PTO HI 20 l/min indicator	Y6: Battery charge indicator
A1: Arc striking resistor	A4: PTO HI 30 l/min indicator	A7: Transfer pump selector AUT-O-MAN
B1: Arc striking circuit	B4: PTO HI reset indicator	B7: Fuel transfer pump
C1: 110V D.C./48V D.C. diode bridge	C4: PTO HI 20 l/min solenoid valve	C7: „GECO“ generating set test
D1: E.P.1 engine protection	D4: PTO HI 30 l/min solenoid valve	D7: Flooting with level switches
E1: Engine stop solenoid	E4: Hydraulic oil pressure switch	E7: Voltmeter regulator
F1: Acceleration solenoid	F4: Hydraulic oil level gauge	F7: WELD/AUX switch
G1: Fuel level transmitter	G4: Preheating glow plugs	G7: Reactor, 3-phase
H1: Oil or water thermostat	H4: Preheating gearbox	H7: Switch disconnecter
I1: 48V D.C. socket	I4: Preheating indicator	I7: Solenoid stop timer
L1: Oil pressure switch	L4: R.C. filter	L7: "VODIA" connector
M1: Fuel warning light	M4: Heater with thermostat	M7: "F" EDC4 connector
N1: Battery charge warning light	N4: Choke solenoid	N7: OFF-ON-DIAGN. selector
O1: Oil pressure warning light	O4: Step relay	O7: DIAGNOSTIC push-button
P1: Fuse	P4: Circuit breaker	P7: DIAGNOSTIC indicator
Q1: Starter key	Q4: Battery charge sockets	Q7: Welding selector mode
R1: Starter motor	R4: Sensor, cooling liquid temperature	R7:
S1: Battery	S4: Sensor, air filter clogging	S7:
T1: Battery charge alternator	T4: Warning light, air filter clogging	T7:
U1: Battery charge voltage regulator	U4: Polarity inverter remote control	U7:
V1: Solenoid valve control PCBT	V4: Polarity inverter switch	V7:
Z1: Solenoid valve	Z4: Transformer 230/48V	Z7:
W1: Remote control switch	W4: Diode bridge, polarity change	W7:
X1: Remote control and/or wire feeder socket	X4: Base current diode bridge	X7:
Y1: Remote control plug	Y4: PCB control unit, polarity inverter	Y7:
A2: Remote control welding regulator	A5: Base current switch	A8:
B2: E.P.2 engine protection	B5: Auxiliary push-button ON/OFF	B8:
C2: Fuel level gauge	C5: Accelerator electronic control	C8:
D2: Ammeter	D5: Actuator	D8:
E2: Frequency meter	E5: Pick-up	E8:
F2: Battery charge transformer	F5: Warning light, high temperature	F8:
G2: Battery charge PCB	G5: Commutator auxiliary power	G8: Polarity inverter two way switch
H2: Voltage selector switch	H5: 24V diode bridge	H8:
I2: 48V a.c. socket	I5: Y/s commutator	I8:
L2: Thermal relay	L5: Emergency stop button	L8:
M2: Contactor	M5: Engine protection EP5	M8:
N2: G.F.I. and circuit breaker	N5: Pre-heat push-button	N8:
O2: 42V EEC socket	O5: Accelerator solenoid PCB	O8:
P2: G.F.I. resistor	P5: Oil pressure switch	P8:
Q2: T.E.P. engine protection	Q5: Water temperature switch	Q8:
R2: Solenoid control PCBT	R5: Water heater	R8:
S2: Oil level transmitter	S5: Engine connector 24 poles	S8:
T2: Engine stop push-button T.C.1	T5: Electronic GFI relays	T8:
U2: Engine start push-button T.C.1	U5: Release coil, circuit breaker	U8:
V2: 24V c.a. socket	V5: Oil pressure indicator	V8:
Z2: Thermal magnetic circuit breaker	Z5: Water temperature indicator	Z8:
W2: S.C.R. protection unit	W5: Battery voltmeter	W8:
X2: Remote control socket	X5: Contactor, polarity change	X8:
Y2: Remote control plug	Y5: Commutator/switch, series/parallel	Y8:



La MOSA è in grado di soddisfare ogni richiesta di pezzi di ricambio.

Se si desidera mantenere in efficienza la macchina, sempre nel caso di riparazione che comportino sostituzioni di pezzi MOSA, si deve pretendere che vengano usati solo parti di ricambio originali.

MOSA guarantees that any request for spare parts will be satisfied.

To keep the machine in full working order, when replacement of MOSA spare parts is required, always ask for genuine parts only.

MOSA est en mesure de satisfaire toute demande de pièces de rechange.

Si l'ont veut garder l'appareil en bonne condition de fonctionnement, dans le cas de réparations qui comportent le remplacement de pièces, on doit exiger que soient employées des pièces d'origine MOSA.

MOSA kann jedes Verlangen von Ersatzteilen befriedigen.

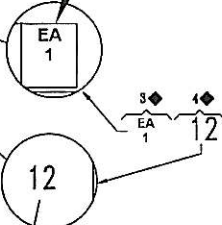
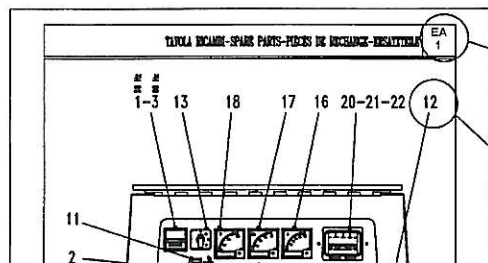
Wenn man die Maschine arbeitsfähig halten will, im Falle von Reparaturen, die den Ersatz von MOSA-Teilen benoetigen, muss man immer originale MOSA Ersatzteile fordern.

MOSA está capacitada para satisfacer cualquier pedido de piezas de recambio.

Si se desea mantener la máquina en un funcionamiento eficaz, se debe usar siempre recambios originales, cuando es preciso sustituir piezas MOSA.

Per ordinare le parti di ricambio indicare - When ordering the spare parts, it is recommended to indicate - Pour commander les pièces de rechange, indiquer - Zur Bestellung der Teile muss man - Para hacer un pedido de piezas de recambio indicar:

- 1) * n. di matricola / serial number / matricule de la machine / Seriennummer / n. de matrícula
- 2) * tipo motosaldatrice e/o gruppo elettrogeno / model of welder and/or generating set / type de motosoudeuse et/ou groupe électrogène / Typ des Schweissgeräts und/oder Stromerzeugers / tipo motosoldadora y/o grupo electrógeno
- 3) ♦ n. tavola / n. table / n. table / taflenummer / n. tabla
- 4) ♦ n. posizione / n. position / n. position / positionnummer / n. posición
- 5) quantitativo / quantity / quantité / Menge / cantidad



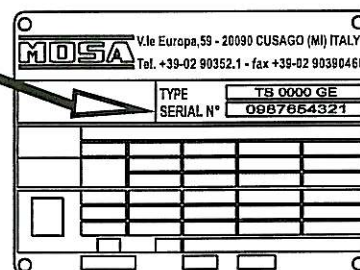
Il dati richiesti si trovano sulla targa dati situata sulla struttura della macchina ben visibile e di facile consultazione.

The requested data are to be found on the data plate located on the machine structure, quite visible and easy to consult.

Les données demandées se trouvent sur la plaque des données, située sur la structure de la machine, bien visible et facile à consulter.

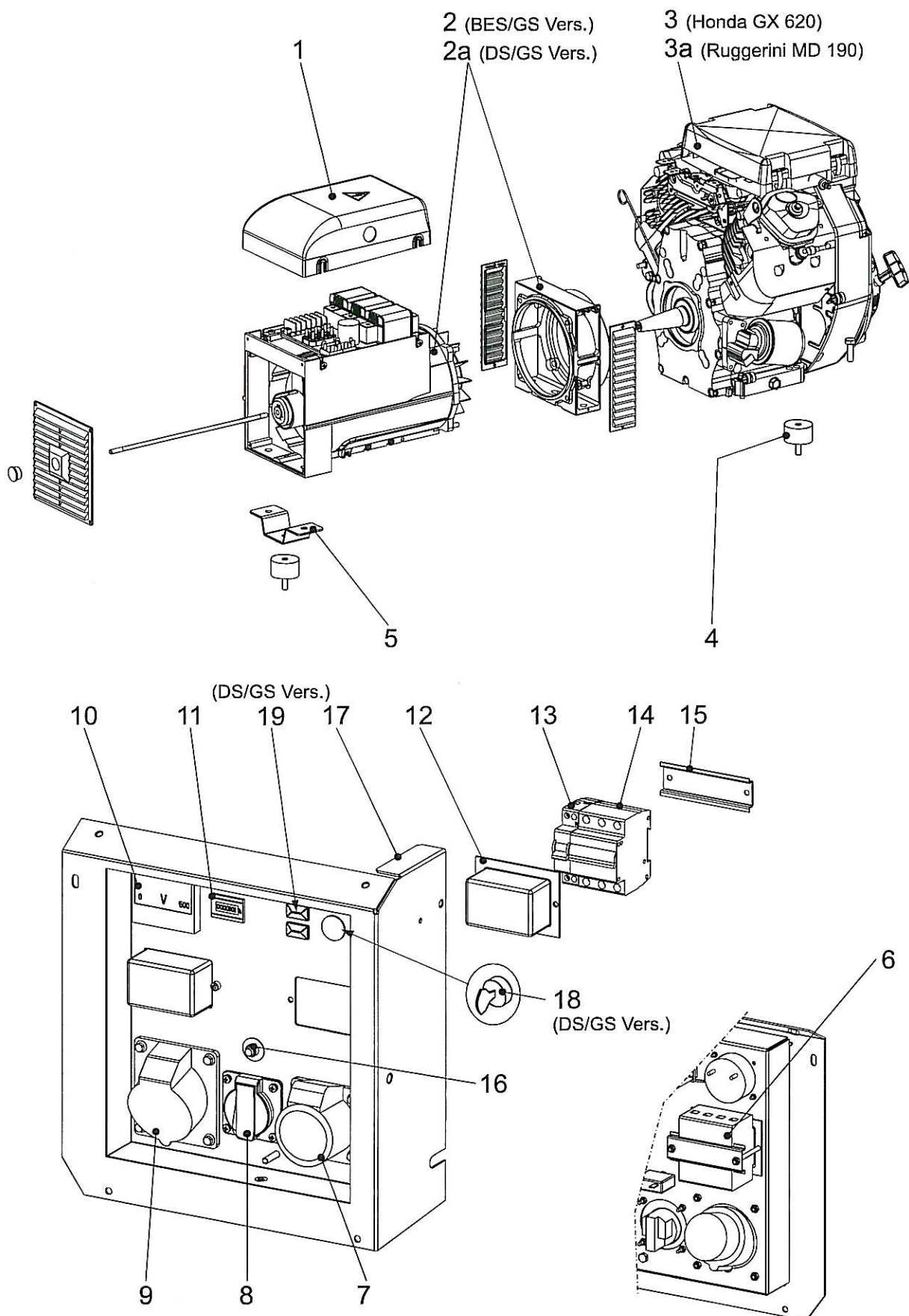
Die verlangten Daten sind auf der Datenplatte, die sichtbar und leicht zu verstehen an der Maschinestruktur gehoert.

Los datos solicitados se hallan en la placa de datos situada en la estructura de la máquina en un lugar visible y de fácil consulta. *



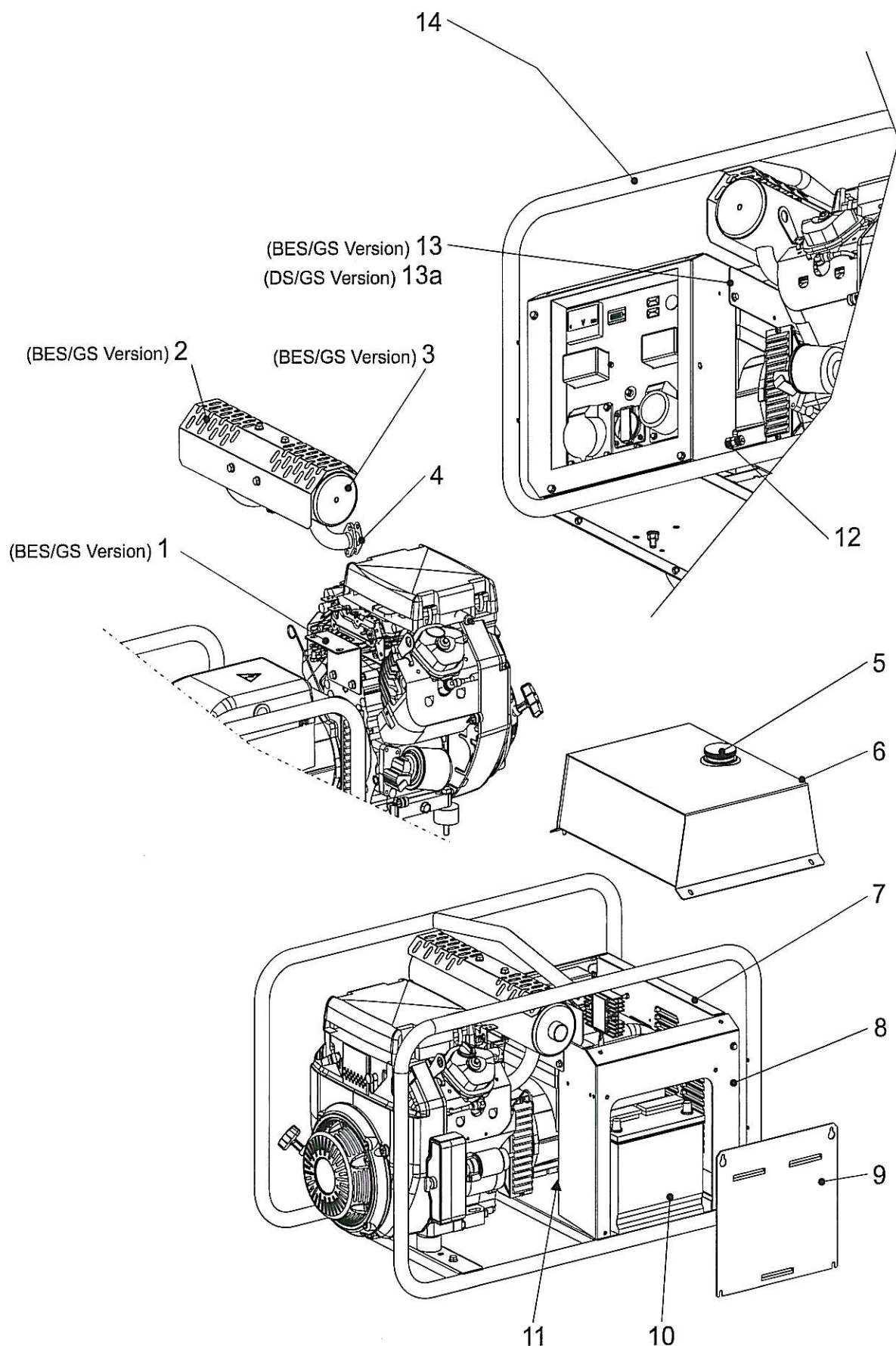
LEGENDA NOTE - ABBREVIATIONS AND SYMBOLS - LEGENDE DES NOTES - NOTENERKLAERUNG - LEYENDA NOTAS:

- (EV) Specificare all'ordine il tipo di motorizzazione e le tensioni ausiliarie - When ordering, specify the engine type and the auxiliary voltage - Type de moteur et/ou tensions auxiliaires doivent être spécifiés à la commande - Motortyp und Hilfsspannungen beim Auftrag angeben - Especificar en el pedido el tipo de motor y las tensiones auxiliares
- (ER) Solo motore con avviamento a strappo - Engine with recoil starter only - Moteur avec démarrage à cordelette seulement - Nur bei Motor mit Reversierstart - Sólo motor con arranque por tirón
- (ES) Solo motore con avviamento elettrico - Engine with electric starter only - Moteur avec démarrage électrique seulement - Nur bei Motor mit Elektrostart - Sólo motor con arranque eléctrico
- (VE) Solo versione E.A.S. - E.A.S version only - Version E.A.S. seulement - Nur bei E.A.S Ausfuehrung - Sólo versión E.A.S.
- (QM) Specificare all'ordine la quantità in m - When ordering, specify the length in meters - A la commande spécifier la longueur en mètres - Beim Auftrag die Laenge in Metern angeben - Especificar en el pedido la cantidad en m
- (VS) Solo versioni speciali - Special version only - Versions spéciales seulement - Nur bei Sonderausfuehrungen - Sólo versiones especiales
- (SR) Solo a richiesta - By request only - Sur demande seulement - Nur auf Wunsch - Sólo bajo pedido



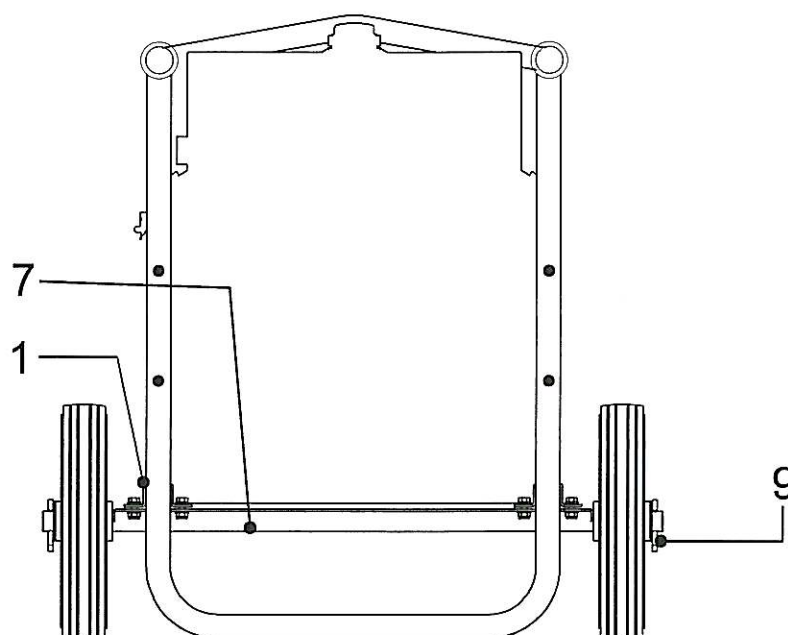
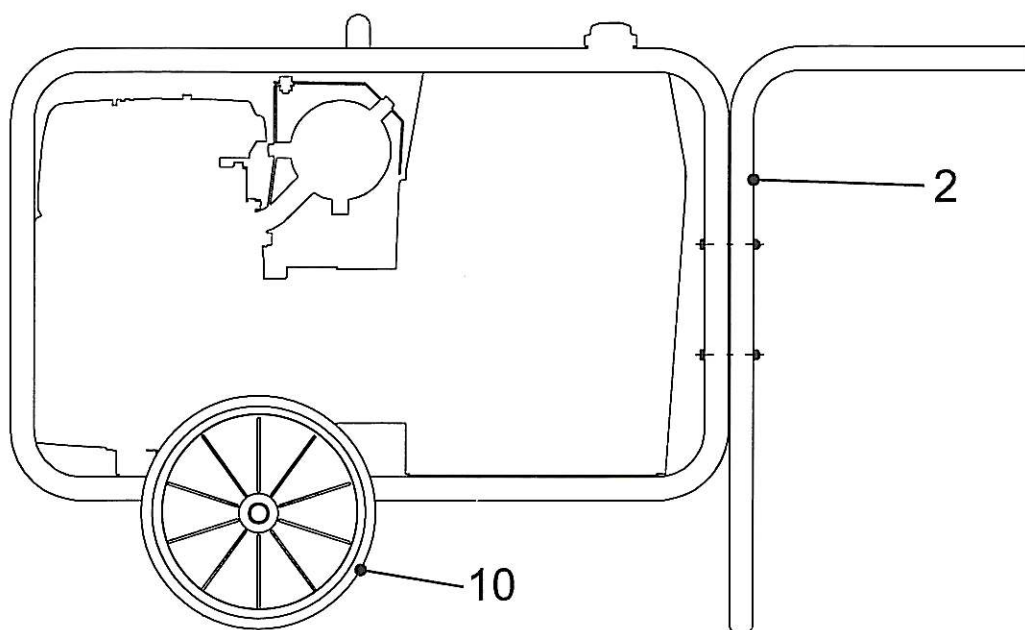
Pos.	Rev.	Cod.	Descr.	Note
1		259123097	CUFFIA SUPERIORE ALTERN.(LAV.)	
2		259123100	ALTERN."SINCRO"	BES/GS
2 a		259013100	ALTERNATORE	DS/GS
3		259112200	MOTORE HONDA GX620 K1 (VXF)	BES/GS
3 a		259002200	MOTORE RUGGERINI MD190	DS/GS
4		256001035	ANTIVIBRANTE	
5		259123101	STAFFA SUPPORTO ALTERNATORE	
6		105111540	Vedi Cod.219937105	
7		305907270	PRESA CEE 16A 400V 3P+N+T	
8		259107241	PRESA SCHUKO 16A 230V - 2P+T	
9		105111520	PRESA CEE 220V MONOF. 2POLI+T	
10		105111550	VOLTMETRO FS 500V	
11		105511810	CONTAORE 230V 50Hz IP65	
12		232027130	CAPPUCCIO PROTEZIONE I.D.	
13		259017325	INT.MAGNETOTERMICO 1P+N 25A	
14		851107325	INTERRUTTORE MAGNETOTERMICO	
15		232027036	GUIDA	
16		155307107	DISGIUNTORE TERMICO 15A-250V	
17		259128003	FIANCATA CARENAT. CON FRONTALE	
18		107302460	STARTER A CHIAVE	DS/GS
19		1302040	SPIA ROSSA 12V	DS/GS

Pos.	Rev.	Cod.	Descr.	Note
1		259123097	FRONT PANEL FOR ALTERNATOR	
2		259123100	ALTERNATOR	BES/GS
2 a		259013100	ALTERNATOR	DS/GS
3		259112200	HONDA ENGINE GX620K1 (VXF)	BES/GS
3 a		259002200	RUGGERINI ENGINE MD190	DS/GS
4		256001035	VIBRATION DAMPER	
5		259123101	ALTERNATOR SUPPORT BRACKET	
6		105111540	See part no. 219937105	
7		305907270	EEC SOCKET 16A 400V 3P+N+T	
8		259107241	SOCKET SCHUKO 16A 230V 2P+T	
9		105111520	EEC SOCKET SINGLE-PH.220V 2P+	
10		105111550	VOLTMETER	
11		105511810	HOURMETER 230V 50Hz IP65	
12		232027130	CAP	
13		259017325	CIRCUIT BREAKER	
14		851107325	CIRCUIT BREAKER	
15		232027036	FIXING GUIDE	
16		155307107	THERMAL SWITCH 15A-250V	
17		259128003	COVER WITH FRONTAL PANEL	
18		107302460	STARTER KEY	DS/GS
19		1302040	RED WARNING LIGHT 12V	DS/GS

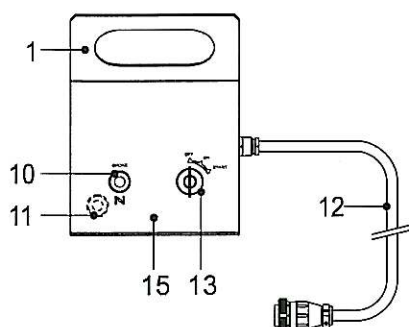
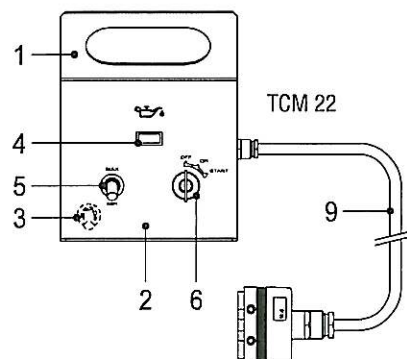
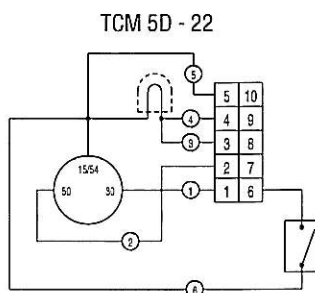
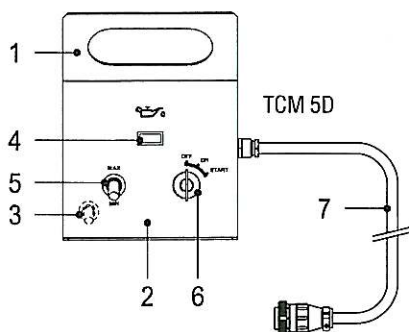


<i>Pos.</i>	<i>Rev.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Note</i>
1		259112062	SQUADRETTA	BES/GS
2		259112058	PROTEZIONE CALORE SILENZIAT.	BES/GS
3		259112050	SILENZIATORE SCARICO	BES/GS
4		259112071	GUARNIZIONE SCARICO(forn.con motore HONDA	
5		259102026	TAPPO SERBATOIO	
6		259102020	SERBATOIO CARBURANTE	
7		256658235	GRIGLIA ASPIRAZ.GENERATORE	
8		259118015	FIANCATA CAREN.LATO BATTERIA	
9		259119162	COPERCHIO ISPEZIONE BATTERIA	
10		372859150	BATTERIA 45 AH	era 209509150 Del.74/05 del 15/07/05
11		107509005	GUARNIZIONE	
12		259102025	RUBINETTO CARBURANTE	
13		256608247	PARATIA CHIUSURA POST.GENERAT.	BES/GS
13 a		256078247	PARATIA CHIUS.POST.GENERATORE	DS/GS
14		259111050	BARELLA	

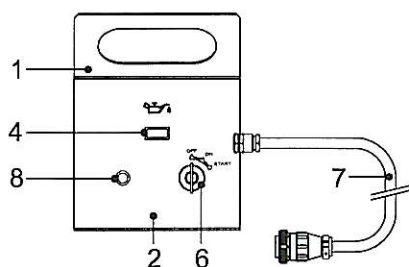
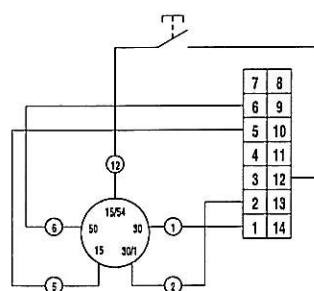
<i>Pos.</i>	<i>Rev.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Note</i>
1		259112062	BRACKET	BES/GS
2		259112058	HEAT PROTECTION X MUFFLER	BES/GS
3		259112050	MUFFLER EXHAUST	BES/GS
4		259112071	GASKET	
5		259102026	TANK CAP	
6		259102020	FUEL TANK	
7		256658235	GRATE AIR INLET	
8		259118015	COVER BATTERY SIDE	
9		259119162	INSPECTION BATTERY COVER	
10		372859150	BATTERY	era 209509150 Del.74/05 del 15/07/05
11		107509005	GASKET	
12		259102025	TAP,FUEL	
13		256608247	GENERATOR REAR COVER	BES/GS
13 a		256078247	ALTERNATOR REAR COVER	DS/GS
14		259111050	FRAME	



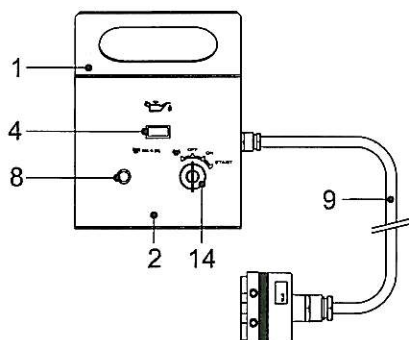
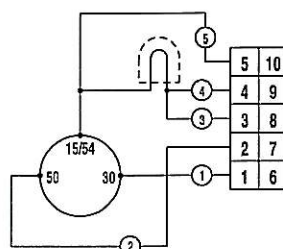
Pos.	Rev.	Cod.	Descr.	Descr.	Note
1		107012150	CAVALLOTTO	U-BOLT	
2		259101051	MANIGLIA/PIEDE DI STAZIONAM.	HANDLE / PARKING STAND	
7		259101160	ASSALE	AXLE	
9		6075020	COPIGLIA	PIN, SPLIT	
10		102042490	RUOTA	WHEEL	



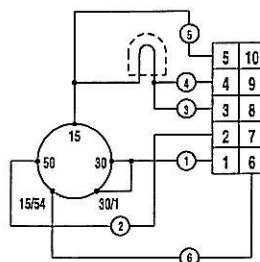
TCM 5



TCM 6



TCM 40



SCHEMA ELETTRICO
 ELECTRICAL DIAGRAM
 ELECTRIQUE SCHEMA
 ELEKTRISCHES SCHEMA
 ELECTRISCH GEDEELTE
 ESQUEMA ELÉCTRICO

Pos.	Rev.	Cod.	Descr.	Descr.	Note
1		107509900	SCATOLA	CASE, BOTTOM HALF	
2		330109901	COPERCHIO PER SCATOLA TCM	TCM COVER	
3		102042740	CAPPUCCIO	CAP	
4		1302040	SPIA 12V	WARNING LIGHT 12V	
5		102013290	COMMUTATORE	COMMUTATOR	
6		107302460	STARTER A CHIAVE	STARTER KEY	
7		33010C060	GRUPPO CAVI TC	TC CABLE KIT	TCM5D-6
8		6062050	TAPPO	CAP	
9		33020C060	GR.CAVI TCM	TCM CABLE KIT	TCM22-40
10	A	101091830	PULSANTE DI STOP	BUTTON, STOP	TCM5
11	A	101091840	CAPPUCCIO	CAP	TCM5
12	A	93015C060	GRUPPO CAVI TCM	TCM CABLE KIT	TCM5
13	A	259107055	STARTER A CHIAVE	KEY STARTER	TCM5
14	A	307457055	INTERRUTT.ACCENSIONE A CHIAVE	STARTER SWITCH	TCM40
15	A	930159901	COPERCHIO PER SCATOLA TCM	TCM COVER	TCM5

Gentile cliente, potrà inviarci la richiesta per l'ordinazione di ricambi originali MOSA compilando questo modulo sia con le nuove tavole ricambi che con le vecchie, a mezzo FAX o per posta.

Dear Customer, You can send us the request for order of MOSA original spare parts, filling in this form, with the new spare parts tables as well as with the old ones, by FAX or mail.



Richiesta da/Request from:..... data/date:.....

firma/signature:.....

Inviatemi i seguenti ricambi della sotto elencata macchina /Please send use us following sapre parts for the machine below:

RICAMBI MOSA / MOSA SPARE PARTS:

modello tipo / model type:

nr. matricola / serial nr:

--	--	--	--	--	--	--	--	--	--

NUOVE TAVOLE/NEW TABLES		
tavola nr. table nr.	posizione position	q.tà q.ty

VECCHIE TAVOLE OLD TABLE	
codice / code	q.tà/q.ty

RICAMBI MOTORE / ENGINE SPARE PARTS:

modello motore / engine model:

matricola motore / engine serial nr.:.....

codice e/o posizione code and/or position	descrizione e/o tavola description and/or table	q.tà q.ty

RICAMBI ALTERNATORE SINCRONO / SYNCHRONOUS ALTERNATOR SPARE PARTS:

modello alternatore / alternator model:.....

matricola alternatore / alternator serial nr.:.....

codice e/o posizione code and/or position	descrizione e/o tavola description and/or table	q.tà q.ty

