GE 7000 - 7500 HSX

0 9 0 8

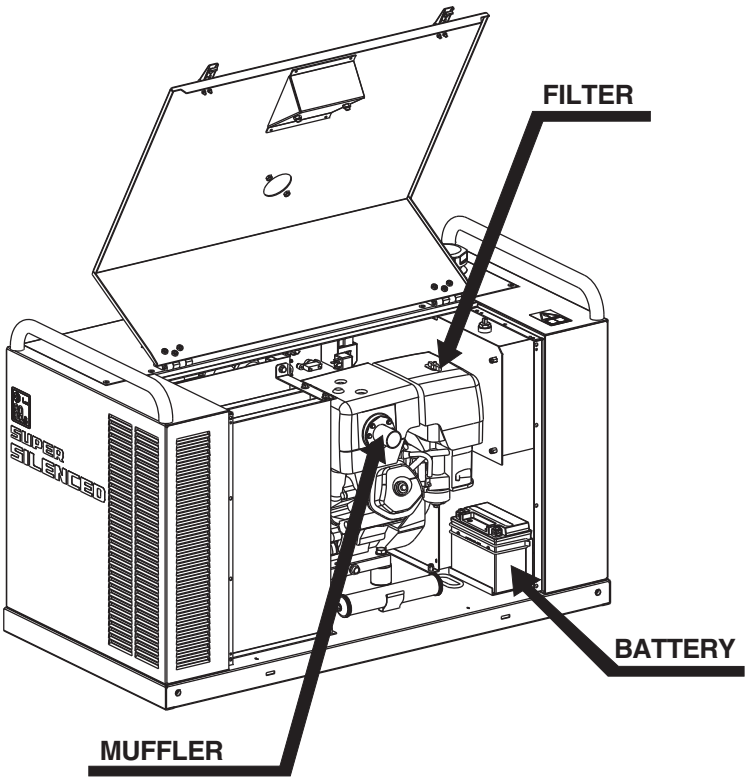
357709003 - GB

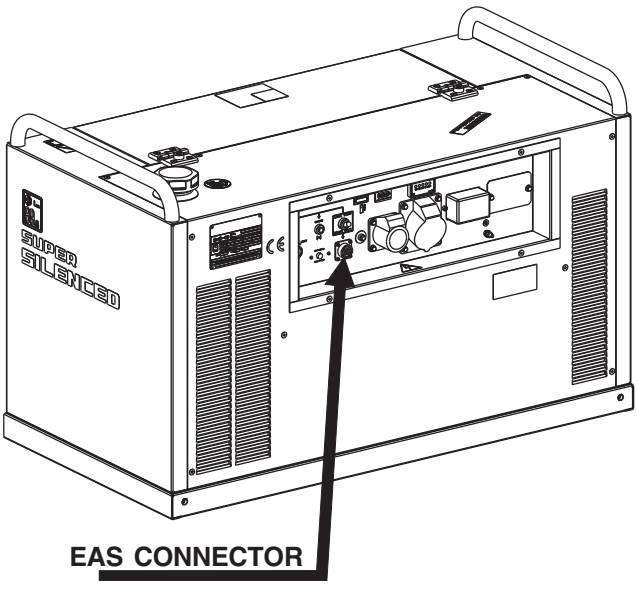
USE AND MAINTENANCE MANUAL
SPARE PARTS CATALOGS

01/09/08 35770M00
preparato da UPT
approvato da DITE

Main Characteristics of the unit GE 7000 HSX:
- Single-phase electric power max 6 kW / 230 V / 50 Hz.
- Gasoline engine Honda GX 390
- Synchronous alternator brushless
- Tank of 20 l with autonomy of di 8 h
- Dimensions / weight: 1060x570x665, 155 Kg
- Noise level at 7m 64 dB(A)
- Prepared for automatic start unit
- Prepared for remote start/stop.

Main Characteristics of the unit GE 7500 HSX:
- Three-phase electric power max 6 kW / 400 V / 50 Hz.
- Single-phase power 4 kW / 230 V / 50 Hz.
- Gasoline engine Honda GX 390
- Synchronous alternator
- Tank of 20 l with autonomy of di 8 h
- Dimensions / weight: 1060x570x665, 165 Kg
- Noise level at 7m 64 dB(A)
- Prepared for automatic start unit
- Prepared for remote start/stop.





The unit has a complete canopy and a mechanical, thermal and electrical protection against the direct contacts.
The front panel has been totally built in to protect the sockets against accidental drop impacts.
Two handles, which have been built in the canopy, allow the handling of the unit.

IQNet

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and its partner
CISQ/ICIM
hereby certify that the organization

BCS S.p.A.

Head Office and Operative Unit: **Viale Mazzini, 161 - I-20081 Abbiategrasso (MI)**
(BCS – FERRARI – PASQUALI Trade Marks)
Operative Units
Via Valbrina, 17/19 - I-42045 Luzzara (RE) - (BCS – FERRARI – PASQUALI Trade Marks)
Viale Europa, 59 - I-20090 Cusago (MI) - (Mosa Trade Mark)

for the following field of activities

Design, production and servicing of tractors, agricultural and green maintenance machines.
Design, production and servicing of engine driven welders and generating sets.

has implemented and maintains a

Quality Management System

which fulfills the requirements of the following standard

ISO 9001:2000

Issued on: **2006-03-06**
Validity date: **2009-03-05**
Registration Number: IT-3722

IQNet — *Fabio Roversi* *President of IQNet*

CISQ — *Gianrenzo Prati* *President of CISQ*

IQNet Partners*:
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CISQ is a member of IQNet

ICIM
www.icim.it

CERTIFICATO n. 0192/4
CERTIFICATE No.

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

BCS S.p.A.

UNITA' OPERATIVE
OPERATIVE UNITS

Sede e Unità Operativa
Viale Mazzini, 161 - 20081 Abbiategrasso (MI)
(marchi BCS – FERRARI – PASQUALI)
Unità Operative
Via Valbrina, 17/19 - 42045 Luzzara (RE)
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Viale Europa, 59 - 20090 Cusago (MI)
(marchio MOSA)
Italia

E' CONFORME ALLA NORMA
IS IN COMPLIANCE WITH THE STANDARD

UNI EN ISO 9001:2000

PER LE SEGUENTI ATTIVITA'
FOR THE FOLLOWING ACTIVITIES

EA: 18

Progettazione, produzione ed assistenza di trattori, macchine per agricoltura e manutenzione del verde. Progettazione, produzione ed assistenza di motosaldatrici e gruppi elettrogeni.

Design, production and servicing of tractors, agricultural and green maintenance machines. Design, production and servicing of engine driven welders and generating sets.

Riferirsi al Manuale della Qualità per l'applicabilità dei requisiti della Norma ISO 9001:2000.
Refer to Quality Manual for details of application to ISO 9001:2000 requirements.

Il presente certificato è soggetto al rispetto del regolamento per la certificazione dei sistemi di gestione per la qualità della azienda.
The use and the validity of this certificate shall satisfy the requirements of the rules for the certification of company quality management systems.

Data emissione *First issue*	Emissione corrente *Current issue*	Data di scadenza *Expiring date*
30/05/1994	06/03/2006	05/03/2009

ICIM S.p.A. – PIAZZA A. DIAZ, 2 – 20123 MILANO

SINCERT

CISQ è la Federazione Italiana di Organismi di Certificazione dei sistemi di gestione aziendale
CISQ is the Italian Federation of management system Certification Bodies

FEDERAZIONE CISQ

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ICIM CISQ IQNet
ISO 9001:2000 - Cert. 0192

UNI EN ISO 9001 : 2000

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 actives 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

⚠ ATTENTION

This use and maintenance manual is an important part of the machines in question.
The assistance and maintenance personel 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).

MOSA

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.

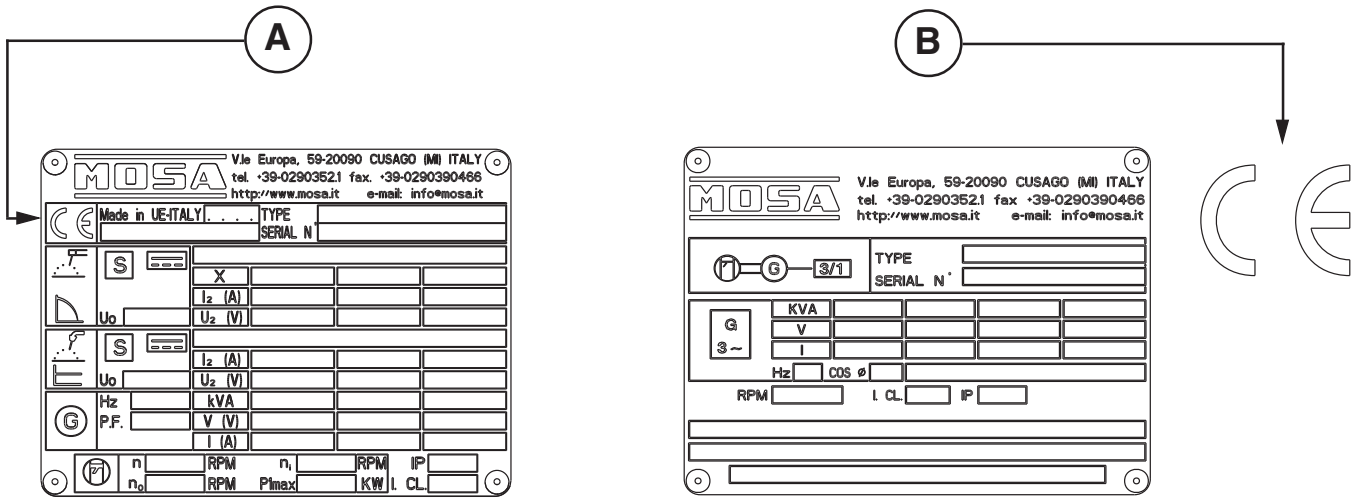
While working it is advisable to keep to the personal safety norms in force in the countries to which the product is destined (clothing, work tools, etc.).

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.

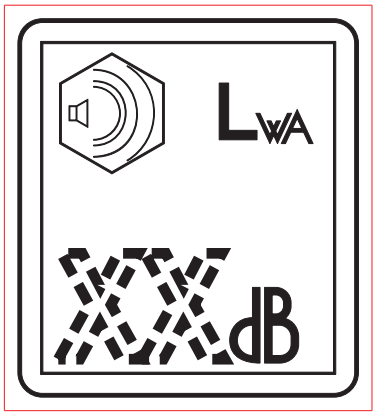
☞ ***Notice:** this manual does not engage MOSA, who keeps the faculty, apart the essential characteristics of the model here described and illustrated, to bring betterments and modifications to parts and accessories, without putting this manual uptodate immediately.*

Any of our product is labelled with CE marking attesting its conformity to appliable directives and also the fulfillment of safety requirements of the product itself; the list of these directives is part of the declaration of conformity included in any machine standard equipment.
Here below the adopted symbol:

CE marking is clearly readable and unerasable and it can be either part of the data-plate (A) or placed as a sticker near the data-plate (B)



Furthermore, on each model it is shown the noise level value; the symbol used is the following:



The indication is shown in a clear, readable and indeleble way on a sticker.

The generating set GE 7000-7500 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 7000 HSX	GE 7500 HSX
GENERATORE		
Three-phase output max (stand-by)	-	7.5 kVA (6 kW) / 400 V / 10.8 (8.7) A
Three-phase output continuous (P.R.P.)	-	6.5 kVA (5.2 kW) / 400 V / 9.4 A
Single-phase output max (stand-by)	6.7 kVA (6 kW) / 230 V / 29.1 (26.1) A	-
Single-phase output max (P.R.P.)	5.5 kVA (5 kW) / 230 V / 23.9 A	4 kVA (4 kW) / 230 V / 17.4 A
Frequency	50 Hz	50 Hz
Cos φ	0.9	0.8
ALTERNATOR	self-excited, self-regulated, brushless	self-excited, self-regulated, with brush
Type	synchronous, single-phase	synchronous, three-phase
Insulating class	H	H
ENGINE		
Mark / Model	HONDA / GX 390	
Type / Cooling system	gasoline 4-Stroke/ air	
Cylinders / Displacement	1 / 389 cm^3	
Output max	7.7 kW (10.3 HP)	
Speed	3000 rpm	
Fuel consumption	2.5 l/h	
Engine oil capacity	1.1 l	
Starter	Electric	
GENERAL SPECIFICATIONS		
Battery	12V - 12 Ah	
Tank capacity	20 l	
Running time (75%)	8 h	
Protection	IP 23	
Dimensions max. on base Lxwxh (mm) *	1060x570x665	
Weight (dry) *	155 Kg	165 Kg
Measured acoustic power	88 LWA (63 dB(A) - 7 m)	
Guaranteed acoustic power	89 LWA (64 dB(A) - 7 m)	

* Dimensions and weight are inclusive of all parts.

OUTPUT

Declared power according to ISO 8528-1 (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.
In an **approximative** way one reduces: of 1% every 100 m altitude and of 2.5% for every 5°C above 25°C.

ACOUSTIC POWER LEVEL

ATTENTION: The concrete risk due to the machine depends on the conditions in which it is used. Therefore, it is up to the end-user and under his direct responsibility to make a correct evaluation of the same risk and to adopt specific precautions (for instance, adopting a I.P.D. -Individual Protection Device)

Acoustic Noise Level (L_{WA}) - Measure Unit dB(A): it stands for acoustic noise released in a certain delay of time. This is not submitted to the distance of measurement.

Acoustic Pressure (Lp) - Measure Unit dB(A): it measures the pressure originated by sound waves emission. Its value changes in proportion to the distance of measurement.

The here below table shows examples of acoustic pressure (Lp) at different distances from a machine with Acoustic Noise Level (L_{WA}) of 95 dB(A)

Lp a 1 meter = 95 dB(A) - 8 dB(A) = 87 dB(A)
Lp a 4 meters = 95 dB(A) - 20 dB(A) = 75 dB(A)
Lp a 7 meters = 95 dB(A) - 25 dB(A) = 70 dB(A)
Lp a 10 meters = 95 dB(A) - 28 dB(A) = 67 dB(A)

PLEASE NOTE: the symbol LWA 2000/14/CE when with acoustic noise values, indicates that the device respects noise emission limits according to 2000/14/CE directive.

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 assis 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 authorizad* peaple.

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.

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.

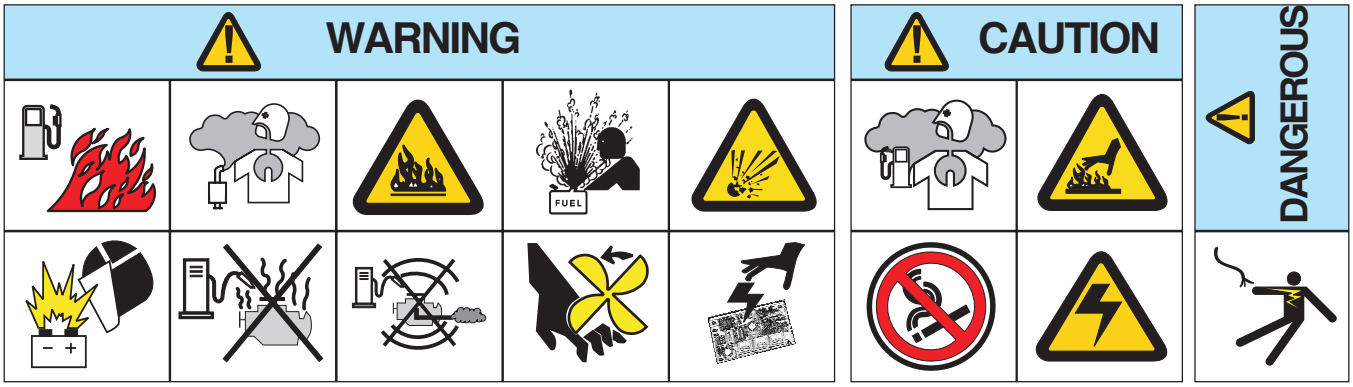
ENGINE	CHECKING BOARD
Stop engine when fueling	Do not touch electric devices if you are barefoot or with wet clothes.
Do not smoke, avoid flames, sparks or electric tools when fueling.	Always keep off leaning surfaces during work operations
Unscrew the cap slowly to let out the fuel vapours.	Static electricity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



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

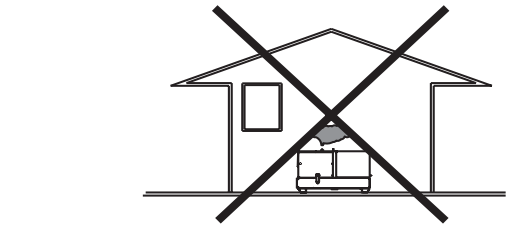
INSTALLATION AND ADVICE BEFORE USE

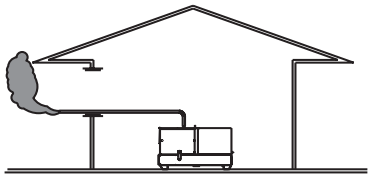
GASOLINE ENGINES

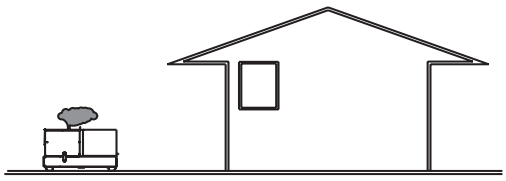
- Use in open space, air swept or vent exhaust gases, which contain the deathly carbone oxyde, far from the work area.

DIESEL ENGINES

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

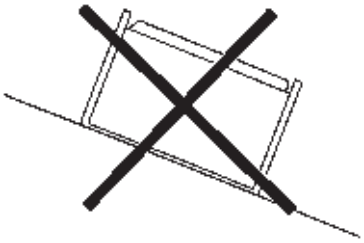




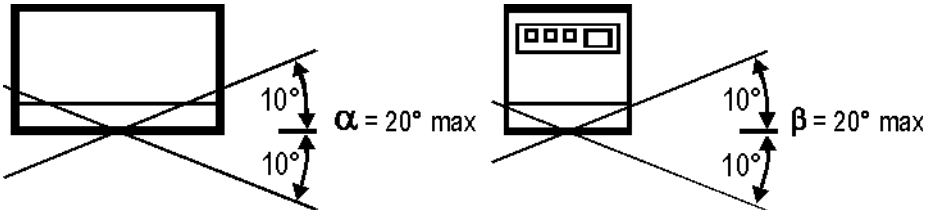


POSITION

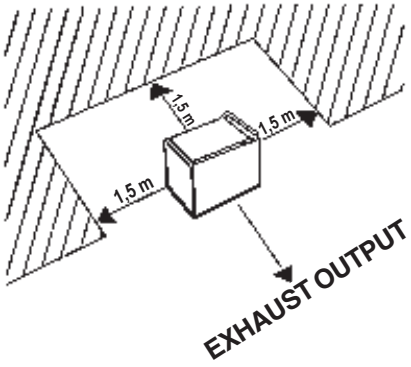
Place the machine on a level surface at a distance of at least 1,5 m from buildings or other plants.



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.

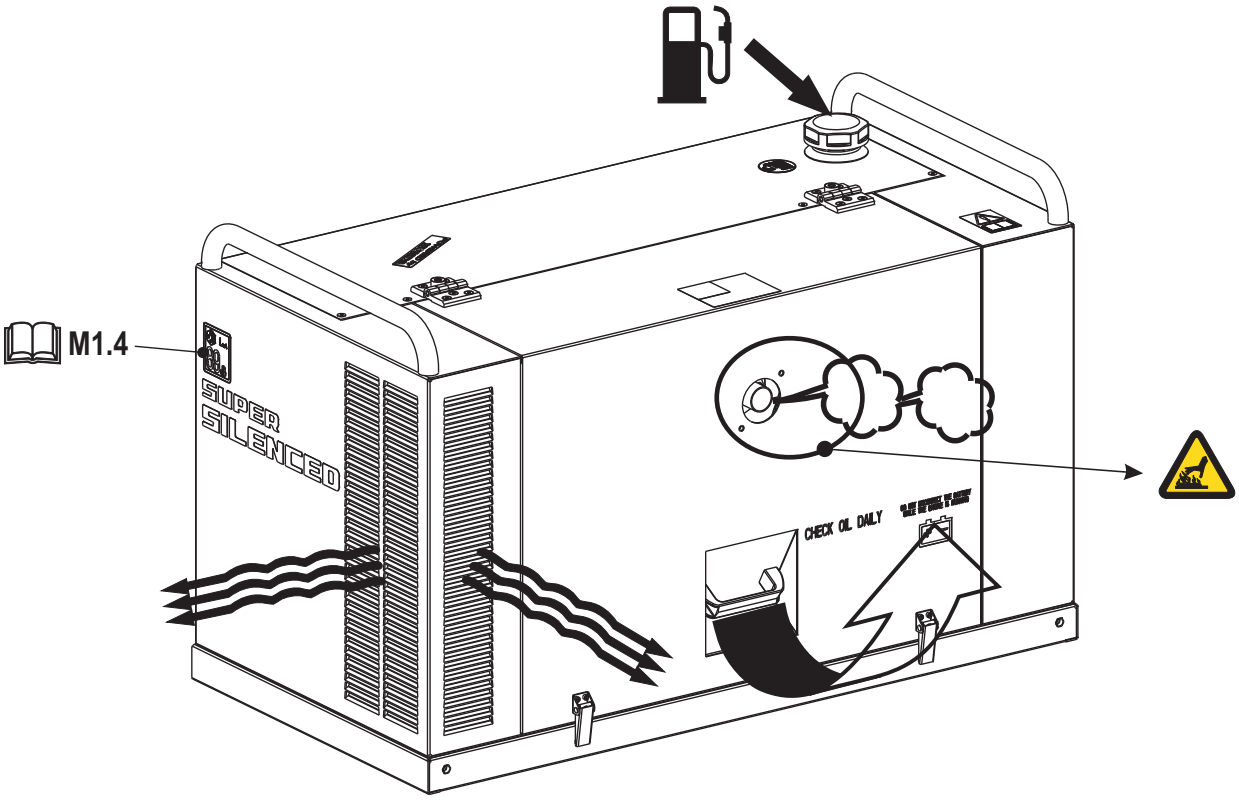
MOVES OF THE MACHINE

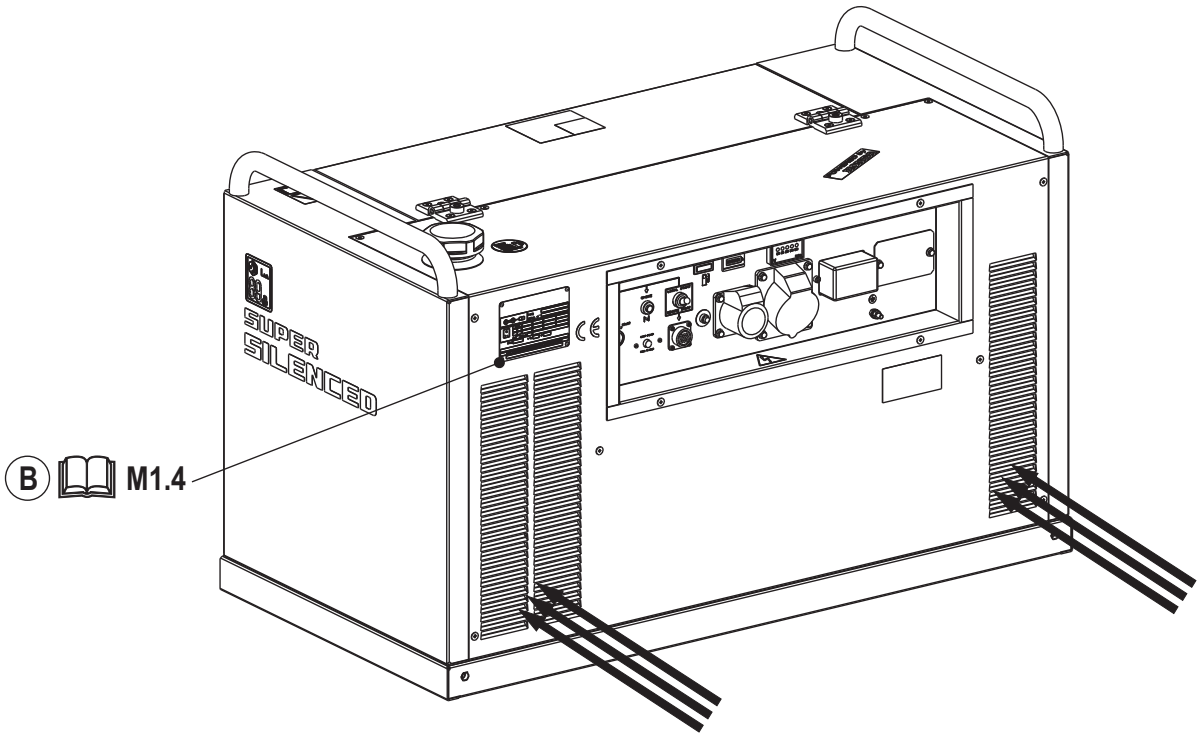
☞ At any move check that the engine is **off**, that there are no connections with cables which impede the moves.

PLACE OF THE MACHINE

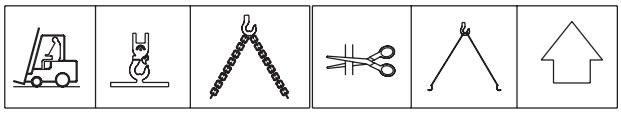
ATTENTION

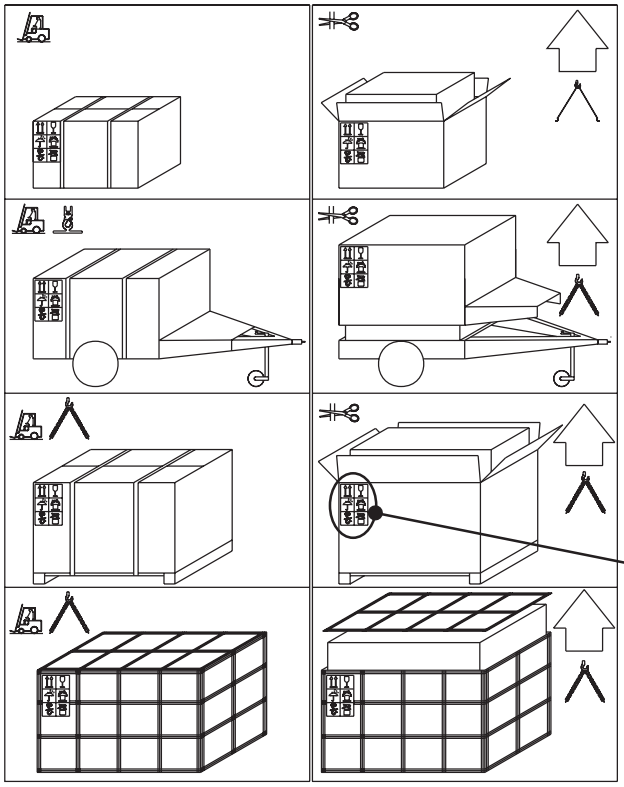
For a safer use from the operator **DO NOT** fit the machine in locations with high risk of flood.
Please do not use the machine in weather conditions which are beyond IP protection shown both in the data plate and on page named "technical data" in this same manual.


M1.4
SUPER SILENCED
CHECK OIL DAILY


B
M1.4
SUPER SILENCED

NOTE



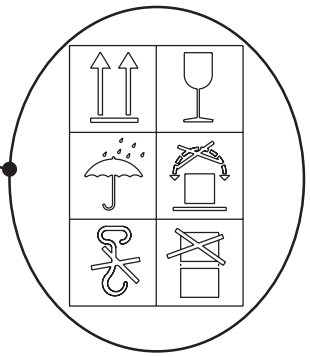


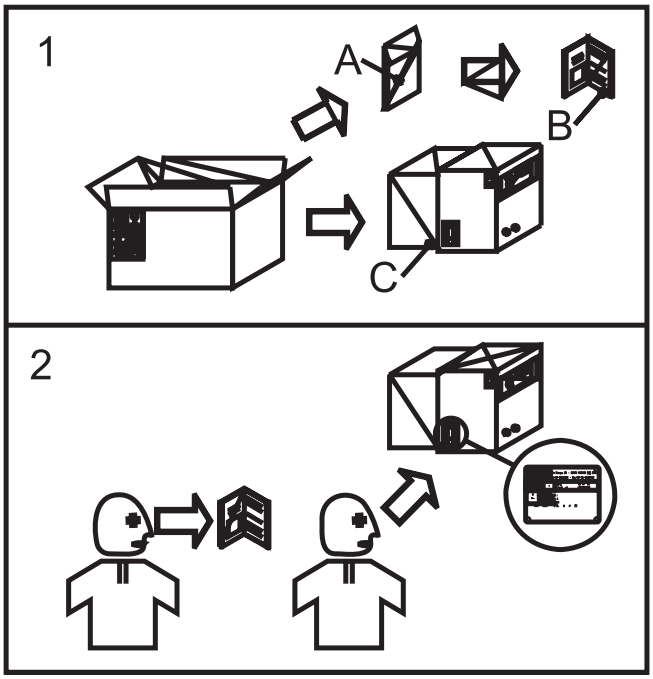
☞ Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with it's packaging, and conforms to local rules and regulations.

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.



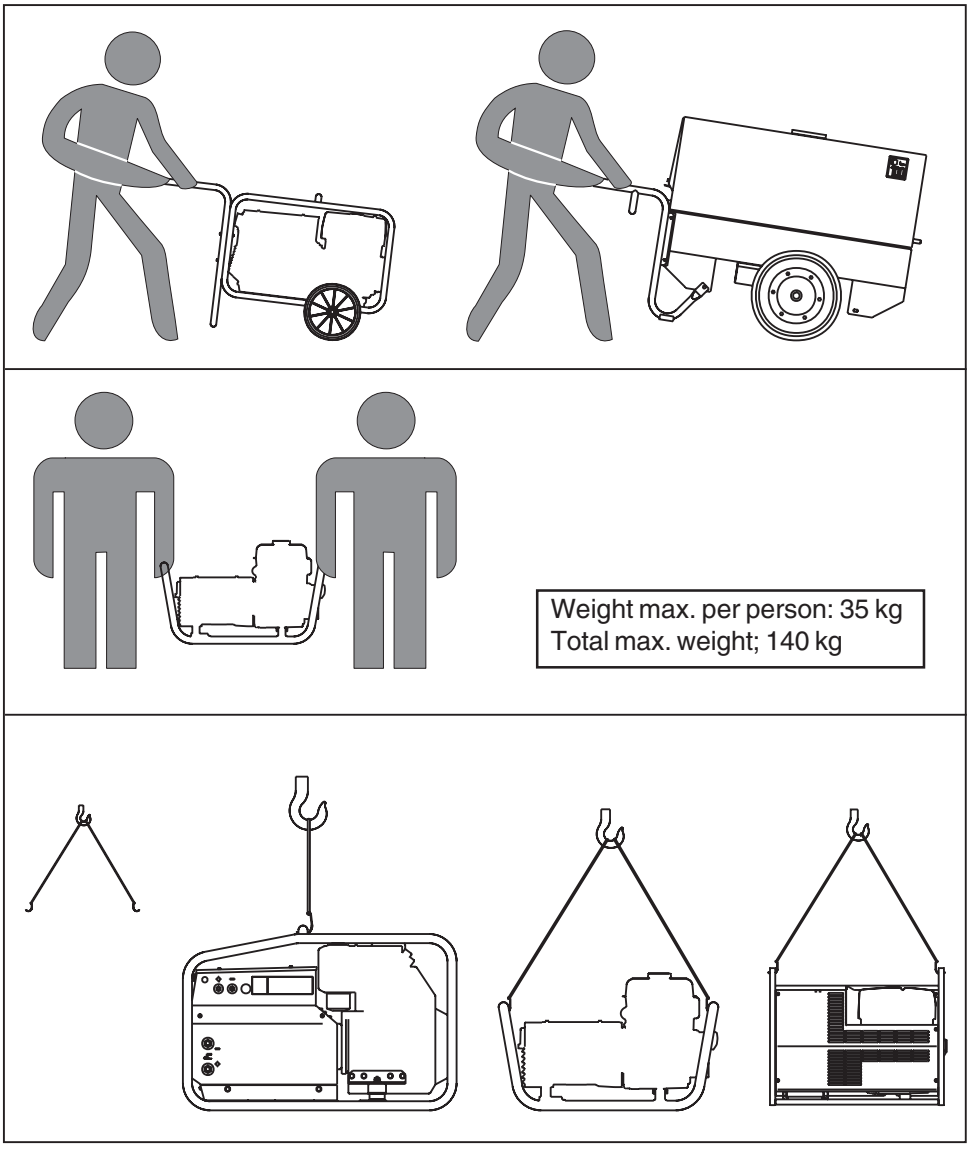


1) Take the machine (C) out of the shipment packing. Take out of the envelope (A) the user's manual (B).
2) Read: the user's manual (B), the plates fixed on the machine, the data plate.

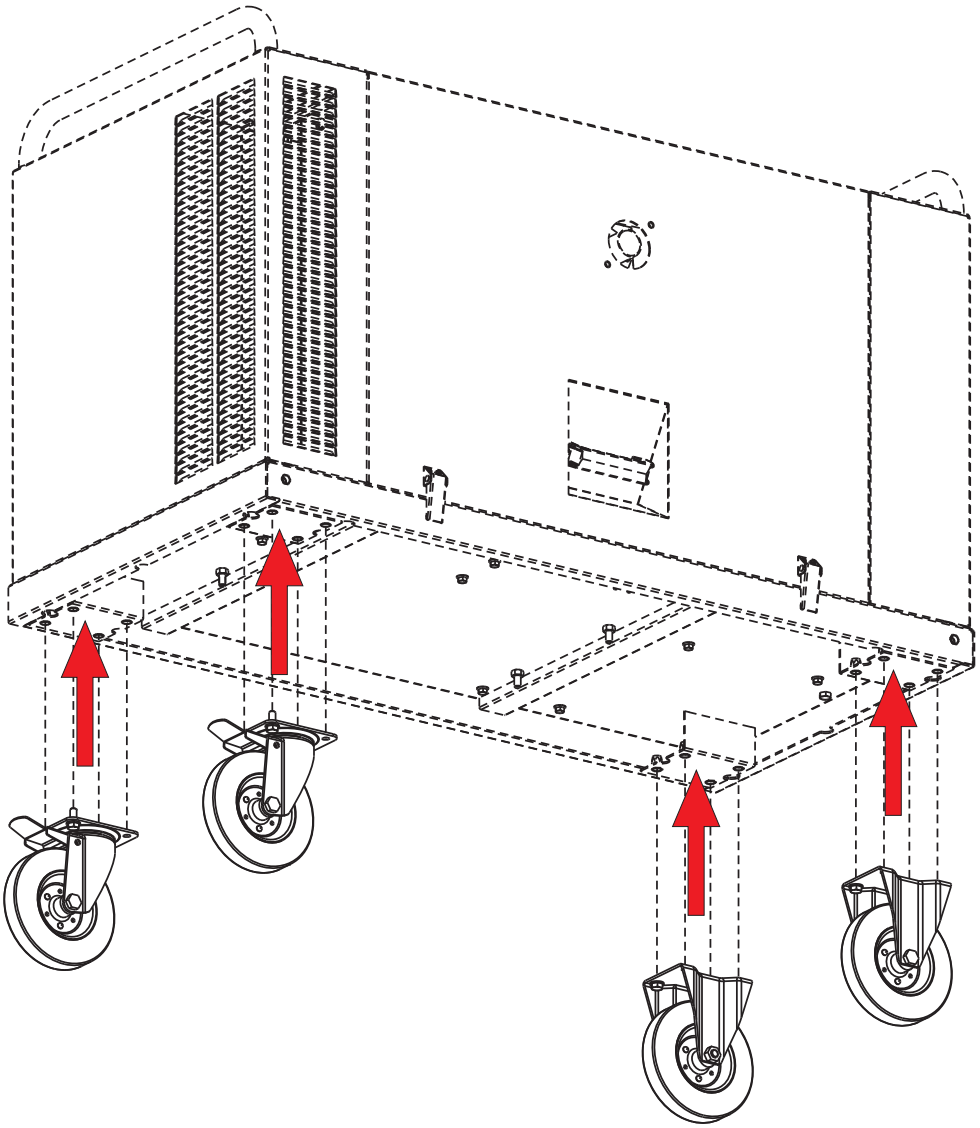
NOTE

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 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



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 WITHOUT MAINTENANCE

The included battery must be activated.
To activate it (fill the included acid) please follow the instructions shown on the manual attached to the battery. When battery is activated, **DON'T** add any other liquid.

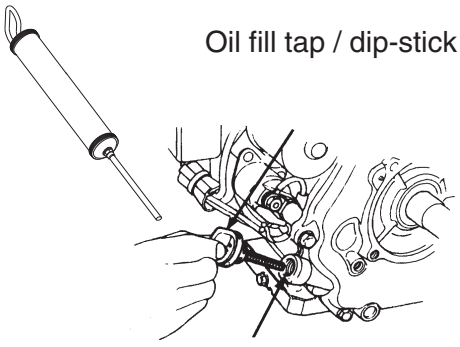
LUBRICANT

Please refer to the motor operating manual for the recommended viscosity.

RECOMMENDED OIL

MOSA recommends selecting **AGIP** engine oil.
Refer to the label on the motor for the recommended products.

To check the oil level:
1. Remove the oil-fill tap (24) and clean the dip-stick (23).
2. Insert the dip-stick into the oil filler without screwing it in.
3. If the oil level is low, fill with recommended oil up to the top of the oil filler using the syringe supplied.



ATTENTION

It is dangerous to fill the motor with too much oil, as its combustion can provoke a sudden increase in rotation speed.

MOTORS WITH OIL ALERT DEVICE

The "Oil Alert" system is designed to prevent damage to the motor due to an insufficient quantity of oil in the cup. This system automatically shuts off the motor before the oil level falls below the safety limit. If the motor does not start up again after shutting itself off, check the oil level.

AIR FILTER

Check that the dry air filter is correctly installed and that there are no leaks around the filter which could lead to infiltrations of non-filtered air to the inside of the motor.

FUEL

WARNING

Gasoline is highly flammable. Refuel with motor shut off in a flat surfaced well-ventilated area. Do not refuel in the presence of flames. Avoid spilling fuel.
Any eventual spilled fuel and fumes are flammable. Clean any dispersions of fuel before starting up the motor.

Fill the tank with gasoline for automobiles (preferably lead free or with low lead content in order to reduce deposits in the combustion chamber to a minimum).
Stop the generating set as soon as possible whenever the low fuel level warning light (M1) is lighted (if mounted on the group) and make the refueling.
If the engine doesn't start after the stop, and the warning light is lighted during the starting, it means that there is a lack of fuel in the tank.
For further details on the type of gasoline to use, see the motor operating manual supplied.
Do not fill the tank completely; leave a space of approx. 10 mm between the fuel level and the wall of the tank to allow for expansion.

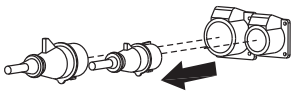
GROUNDING CONNECTION

The grounding connection to an earthed installation **is obligatory** for all models equipped with a differential switch (circuit breaker). In these groups the generator star point is generally connected to the machine's earthing; by employing the TN or TT distribution system, the differential switch guarantees protection against indirect contacts.
In the case of powering complex installations requiring or employing additional electrical protection devices, the coordination between the protection devices must be verified.
For the grounding connection, use the terminal (12); comply to local and/or current regulations in force for electrical installations and safety.

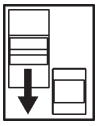
check before each start-up

START-UP FROM "LOCAL/START" FRONT PANEL

1. Position the LOCAL START / REMOTE START (I6) selector on LOCAL START;
2. make sure the load plugs are disconnected

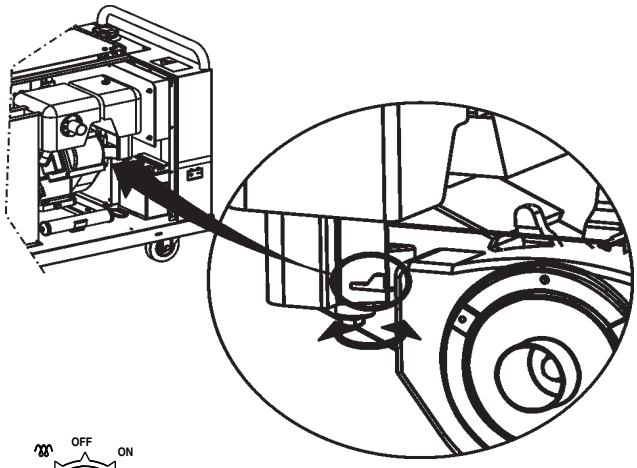


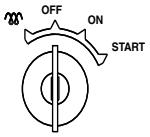
or the G.F.I. switch (D) is not inserted



(intervention/insertion lever facing down), so as to ensure the motor's start-up without any loads inserted;

3. open the gasoline tap (87) by turning it towards the inside;





4. turn the start-up key (Q1) to the ON position;

5. press the CHOKE button (L6) and simultaneously turn the key to the START position, holding it until the motor has started;

6. leave the key in the ON position, then wait a few moments before releasing the choke button; if the motor tends to shut itself off press the choke button once again until the motor has properly started up.

☞ Do not use the CHOKE button if the motor is hot or if the ambient temperature is sufficiently high.

☞ ***In case of unsuccessful start-up, do not insist for longer than 5 seconds. Wait 10 seconds before attempting another start-up .***

REMOTE START

The unit can also be started by means of the remote TCM 5 control device, or through the EAS automatic intervention panel.

1. Position the LOCAL START / REMOTE START (I6) selector on REMOTE START;
2. Connect to the EAS (B3) connector the TCM 5 or the EAS panel.

Start-up with TCM 5

Use the controls located on the TCM 5 in the same manner as described for start-up from the front panel.

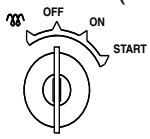
Start-up with EAS

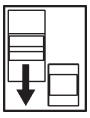
The EAS panel will automatically manage the start-up.
See operating manual for EAS panel.

⚠ 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.

SHUT-DOWN FROM FRONT PANEL

1. Position the LOCAL START /REMOTE START (I6) selector on LOCAL START;
2. 

to shut down the motor in an emergency situation, turn the key (Q1) to the OFF position;
3. to stop the motor under normal conditions, proceed as follows:
   3a. interrupt the power source, switching off  all tools connected. If a tool does not feature a power switch, lower the G.F.I. switch lever (D);
   3b. allow the motor to run without any load for a few minutes;
   3c. turn the key (Q1) to the OFF position.

SHUT-DOWN FROM REMOTE

WARNING

The start-up selector (I6) LOCAL START / REMOTE START enables the start-up and stop controls for the selected position.

From the REMOTE START position, the start-up key on the front panel is completely disabled; to stop the generator, use the controls on the TCM or EAS panel.

The unit can also be shut down by means of the TCM 5 remote control or EAS panel.

- Check that the EAS (B3) connector is connected to the cable from the TCM 5 or EAS panel.
- Verify or position the LOCAL START / REMOT START (I6) selector on REMOTE START.

SHUT-DOWN with TCM 5

Follow the operating procedures for shut-down under normal or emergency conditions, as described in the paragraph SHUT-DOWN FROM FRONT PANEL, using the key (Q1) on the TCM 5.

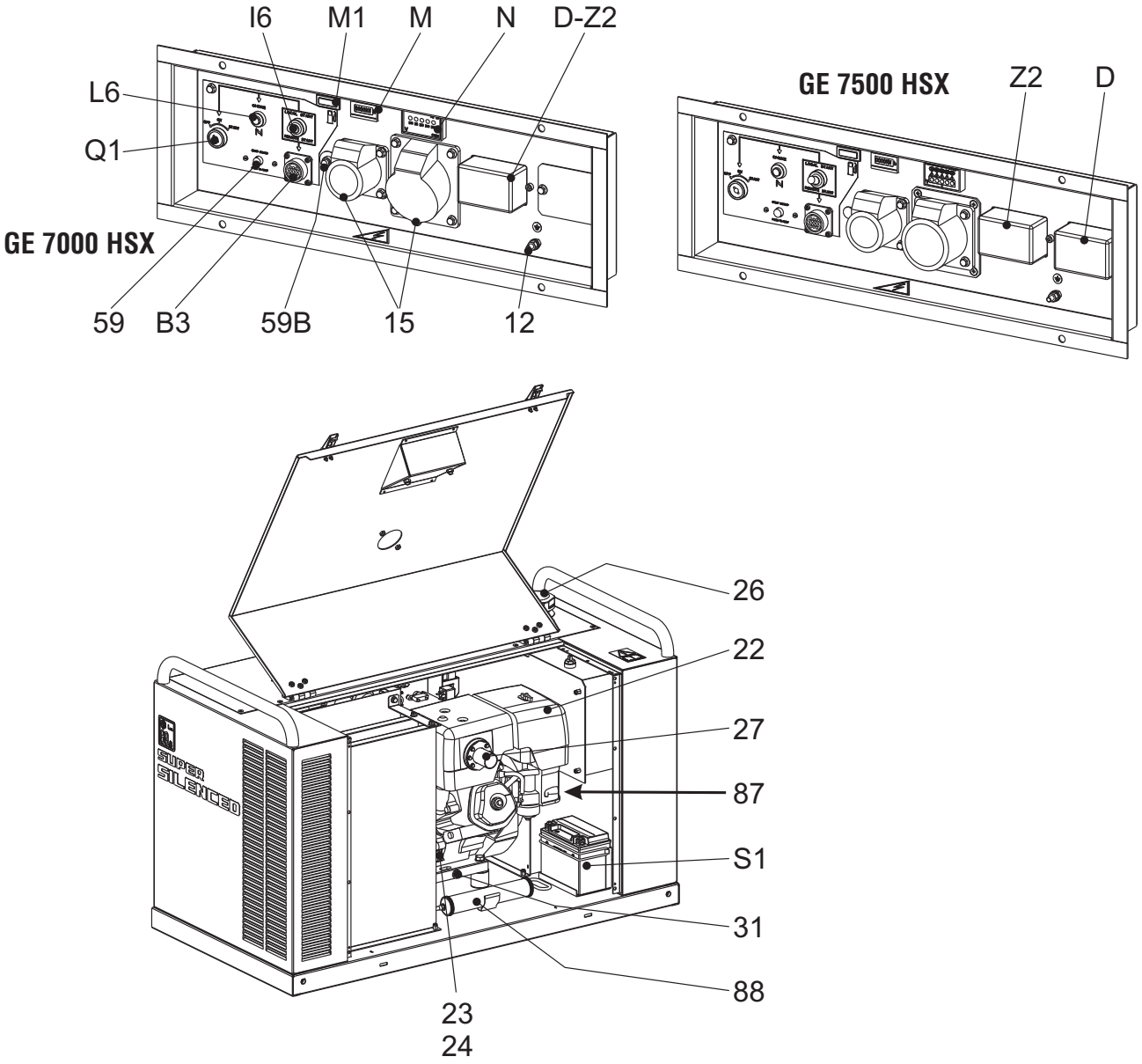
SHUT-DOWN with EAS

Shut-down is controlled automatically.
See operating manual for the EAS panel.

At the end of each use of the generator, close the gasoline tap (87).

In case of an extended period of inactivity of the generator, switch off the motor by closing the gasoline tap (87); this precautionary measure serves to avoid probable deposits in the carburettor.

☞ **NB.: as a safety measure the start-up key must be entrusted to qualified personnel.**



Pos.	Descrizione	Description	Description	Descripción
12	Presa di messa a terra	Earth terminal	Prise de mise à terre	Toma de puesta a tierra
15	Presa di corrente in c.a.	A.C. socket	Prises de courant en c.a.	Toma de corriente en c.a
22	Filtro aria motore	Engine air filter	Filtre air moteur	Filtro aire motor
23	Asta livello olio motore	Oil level dipstick	Jauge niveau huile moteur	Aguja nivel aceite motor
24	Tappo caricamento olio motore	Engine oil reservoir cap	Bouchon remplissage huile moteur	Tapón llenado aceite motor
26	Tappo serbatoio	Fuel tank cap	Bouchon réservoir	Tapón depósito
27	Silenziatore di scarico	Muffler	Silencieux d'échappement	Silenciador de descarga
31	Tappo scarico olio motore	Oil drain tap	Bouchon décharge huile moteur	Tapón vaciado aceite motor
59	Protezione termica c.b	Battery charger thermal switch	Protection thermique c.b.	Protección térmica c.b..
59B	Protezione termica corrente aux	Aux current thermal switch	Protection thermique courant aux.	Protección térmica corr. aux
87	Rubinetto carburante	Fuel cock	Robinet de l'essence	Grifo de combustible
88	Siringa olio	Oil syringe	Siringue huile	Jeringa aceite
B3	Connettore E.A.S.	E.A.S. connector	Connecteur E.A.S.	Conector E.A.S.
D	Interruttore differenziale (30mA)	G.F.I.	Interrupteur différentiel	Interruptor diferencial (30 mA)
I6	Selettore Start Local/Remote	Start Local/Remote selector	Selecteur Start Local/Remote	Selector Start Local/Remote
L6	Pulsante choke	Choke button	Bouton Choke	Pulsador Choke
M	Contaore	Hour counter	Compte-heures	Cuentahoras
M1	Spia riserva carburante	Fuel warning light	Voyant réserve carburant	Piloto reserva carburante
N	Voltmetro	Voltmeter	Voltmètre	Voltímetro
Q1	Chiave di avviamento	Starter key	Clé de démarrage	Llave de arranque
S1	Batteria	Battery	Batterie	Batería
Z2	Interruttore magnetotermico	Thermal magnetic circuit breaker	Interrupteur magnétothermique	Interruptor magnetotérmico

WARNING

It is absolutely forbidden to connect the unit to the public mains and/or another electrical power source .

Access forbidden to area adjacent to electricity-generating group for all non-authorized personnel.

The electricity-generating groups are to be considered electrical energy producing stations.
The dangers of electrical energy must be considered together with those related to the presence of chemical substances (fuels, oils, etc.), rotating parts and waste products (fumes, discharge gases, heat, etc.).

GENERATION IN AC (ALTERNATING CURRENT)

Before each work session check the efficiency of the ground connection for the electricity-generating group if the distribution system adopted requires it, such as, for example, the TT and TN systems.

Check that the electrical specifications for the units to be powered - voltage, power, frequency - are compatible with those of the generator. Values that are too high or too low for voltage and frequency can damage electrical equipment irreparably.
In some cases, for the powering of three-phase loads, it is necessary to ensure that the cyclic direction of the phases corresponds to the installation's requirements.

Connect the electric devices to be powered to the AC sockets, using suitable plugs and cables in prime condition.

Before starting up the group, make certain no dangerous situations exist on the installation to be powered.
Check that the thermal-magnetic switch (Z2) is in the OFF position (input lever in downward position).

Start up the electricity-generating group, positioning the thermal-magnetic switch (Z2) and differential switch (D) to ON (input lever in upward position).
Before powering on the utilities, check that the voltmeter (N) and frequency meter (E2) indicate nominal values; in addition, check on the voltmeter change-over switch (H2) (where it is assembled) that the three line voltages are the same.
☞ In the absence of a load, the values for voltage and frequency can be greater than their nominal values. See sections on VOLTAGE and FREQUENCY.

OPERATING CONDITIONS

POWER

The electrical power expressed in kVA on an electricity-generating group is the available output power to the reference environmental conditions and nominal values for: voltage, frequency, power factors (cos φ).

There are various types of power: PRIME POWER (PRP), STAND-BY POWER established by ISO 8528-1 and 3046/1 Norms, and their definitions are listed in the manual's TECHNICAL SPECIFICATIONS page.

☞ During the use of the electricity-generating group **NEVER EXCEED** the power indications, paying careful attention when several loads are powered simultaneously.

VOLTAGE

GENERATORS WITH COMPOUND SETTING.

In these types of generators, the no-load voltage is generally greater than 3–5% with respect to its nominal value; f.e. for nominal voltage, threephase 400Vac or singlephase 230Vac, the no-load voltage can be comprised between 410-420V (threephase) and 235-245V (singlephase). The precision of the load voltage is maintained within ±5% with balanced loads and with a rotation speed variation of 4%. Particularly, with resistive loads (cos φ = 1), a voltage over-elevation occurs which, with the machine cold and at full load, can even attain +10 %, a value which in any case is halved after the first 10-15 minutes of operation.
The insertion and release of the full load, under constant rotation speed, provokes a transitory voltage variation that is less than 10%; the voltage returns to its nominal value within 0.1 seconds.

GENERATORS WITH ELECTRONIC SETTING (A.V.R.).

In these types of generators, the voltage precision is maintained within ±1,5%, with speed variations comprised from -10% to +30%, and with balanced loads. The voltage is the same both with no-load and with load; the insertion and release of the full load provokes a transitory voltage variation that is less than 15%; the voltage returns to its nominal value within 0.2–0.3 seconds.

FREQUENCY

The frequency is a parameter that is directly dependent on the motor's rotation speed. Depending on the type of alternator, 2 or 4 pole, we will have a frequency of 50/60 Hz with a rotation speed of 3000/3600 or 1500/1800 revolutions per minute.
The frequency, and therefore the number of motor revolutions, is maintained constant by the motor's speed regulation system.
Generally, this regulator is of a mechanical type and presents a droop from no-load to nominal load which is less than 5 % (static or droop), while under static conditions precision is maintained within ±1%.Therefore, for generators at 50Hz the no-load frequency can be 52–52.5 Hz, while for generators at 60Hz the no-load frequency can be 62.5-63Hz.

In some motors or for special requirements the speed regulator is electronic; in these cases, precision under static operating conditions attains ±0.25%, and the frequency is maintained constant in operation from no-load to load (isochronal operation).

POWER FACTOR - COS φ

The power factor is a value which depends on the load's electrical specifications; it indicates the ratio between the Active Power (kW) and Apparent Power (kVA). The apparent power is the total power necessary for the load, achieved from the sum of the active power supplied by the motor (after the alternator has transformed the mechanical power into electrical power), and the Reactive Power (kVAR) supplied by the alternator. The nominal value for the power factor is cos φ = 0,8; for different values comprised between 0.8 and 1 it is important during usage not to exceed the declared active power (kW), so as to not overload the electricity-generating group motor; the apparent power (kVA) will diminish proportionally to the increase of cos φ.
For cos φ values of less than 0.8 the alternator must be downgraded, since at equal apparent power the alternator should supply a greater reactive power. For reduction coefficients, contact the Technical Service Department.

START-UP OF ASYNCHRONOUS MOTORS

The start-up of asynchronous motors from an electricity-generating group can prove critical because of high start-up currents the asynchronous motor requires (I start-up = up to 8 times the nominal current In.). The start-up current must not exceed the alternator's admissible overload current for brief periods, generally in the order of 250–300% for 10–15 seconds.
To avoid a group oversize, we recommend following these precautionary measures:

- in the case of a start-up of several motors, subdivide the motors into groups and set up their start-up at intervals of 30–60 seconds.
- when the operating machine coupled to the motor allows it, see to a start-up with reduced voltage, star point/triangle start-up or with autotransformer, or use a soft-start system.

In all cases, when the user circuit requires the start-up of an asynchronous motor, it is necessary to check that there are no utilities inserted into the installation, which in the case of a voltage droop can cause more or less serious disservices (opening of contact points, temporary lack of power to control and command systems, etc.).

SINGLE-PHASE LOADS

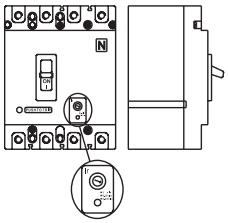
Power to monophase utilities by means of three-phase generators requires some operating limitations.

- In single-phase operation, the declared voltage tolerance can no longer be maintained by the regulator (compound or electronic regulator), since the system becomes highly unbalanced. **The voltage variation on the phases not affected by the power can prove dangerous; we recommend sectioning the other loads eventually connected**.
- The maximum power which can be drawn between Neutral and Phase (start connection) is generally 1/3 of the nominal three-phase power; some types of alternators even allow for 40%. Between two Phases (triangle connection) the maximum power cannot exceed 2/3 of the declared three-phase power.
- In electricity-generating groups equipped with monophase sockets, use these sockets for connecting the loads. In other cases, always use the "R" phase and Neutral.

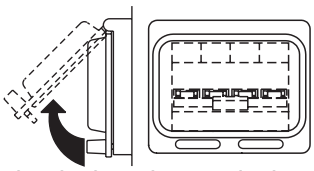
ELECTRIC PROTECTIONS

THERMAL-MAGNETIC SWITCH

The electricity-generating group is protected against short-circuits and against overloads by a thermal-magnetic switch (Z2) situated upstream from the installation. Operating currents, both thermic and magnetic, can be fixed or adjustable in relation to the switch model.
☞ In models with adjustable operating current **do not modify** the settings, since doing so can compromise the installation's protection or the electricity-generating group's output characteristics. For eventual variations, contact our Technical Service Department.



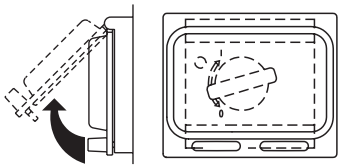
The intervention of the protection feature against overloads is not instantaneous, but follows a current overload/time outline; the greater the overload the less the intervention.
Furthermore, keep in mind that the nominal operating current refers to an operating temperature of 30°C, so that each variation of 10°C roughly corresponds to a variation of 5% on the value of nominal current.

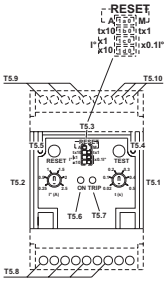


In case of an intervention on the part of the thermal magnetic protection device, check that the total absorption does not exceed the electricity-generating group's nominal current.

DIFFERENTIAL SWITCH

The differential switch or differential relay guarantee protection against indirect contacts due to malfunction currents towards the ground. When the device detects a malfunction current that is higher than the nominal current or the set current, it intervenes by cutting off





power to the circuit connected.

In the case of an intervention by the differential switch, check that there are no sheathing defects in the installation: connection cables, sockets and plugs, utilities connected.

☞ Before each work session, check the operation of the differential protection device by pressing the test key. The electricity-generating group must be in operation, and the lever on the differential switch must be in the ON position.

THERMIC PROTECTION

Generally present to protect against overloads on an individual power socket c.a.

When the nominal operating current has been exceeded, the protection device intervenes by cutting off power to the socket.

The intervention of the protection device against overloads is not instantaneous, but follows a current overload/time outline; the greater the overload the less the intervention.

In case of an intervention, check that the current absorbed by the load does not exceed the protection's nominal operating current.

Allow the protection to cool off for a few minutes before resetting by pressing the central pole.

ATTENTION

Do not keep the central pole on the thermic protection forcefully pressed to prevent its intervention.

USAGE WITH EAS AUTOMATIC START-UP PANEL

The electricity-generating group in combination with the EAS automatic start-up panel forms a unit for distributing electrical energy within a few seconds of a power failure from the commercial electrical power line.

Below is some general operating information; refer to the automatic panel's specific manual for details on installation, command, control and signalling operations.

- ❑ Perform connections on the installation in safety conditions. Position the automatic panel in RESET or LOCKED mode.
- ❑ Carry out the first start-up in MANUAL mode.
  Check that the generator's LOCAL START / REMOTE START switch (I6) is in the REMOTE position.
  Check that the generator switches are enabled (input lever in upward position).
  Position the EAS panel in manual mode by pressing MAN. key, and only after having checked that there are no dangerous situations, press the START key to start the electricity-generating group.
- ❑ During the operation of the generator, all controls and signals from both the automatic panel and group are enabled; it is therefore possible to control its operation from both positions.
  In case of an alarm with a shutdown of the motor (low pressure, high temperature, etc.), the automatic panel will indicate the malfunction that has caused the stoppage, while the generator's front panel will be disabled and will no longer supply any information.

⚠ MAKE SURE

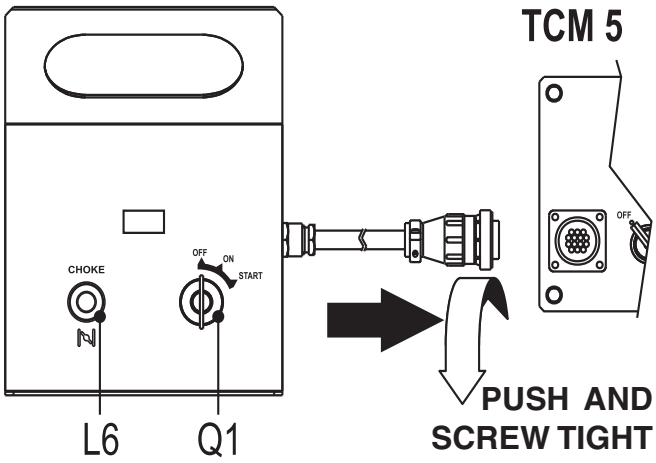
When the TCM 5 5D-6 is used, it is not possible to connect the E.A.S automatic intervention unit.

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 4500-7000-7500 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"

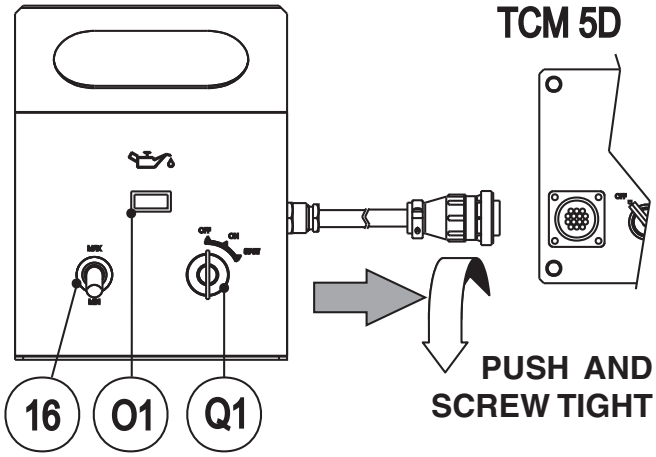


USE OF THE REMOTE CONTROL TCM 5D

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, them turn the key to "OFF" position.



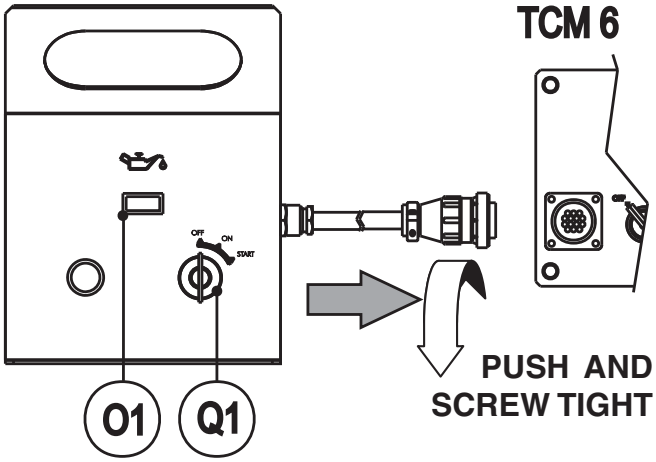
USE OF THE REMOTE CONTROL TCM 6

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	Solution
ENGINE		
The motor does not start up, or starts up and then stops immediately	1) Key and start-up selector in the wrong positions	1) Verify start-up procedure in the Operating Manual
	2) Lack of or insufficient oil in the motor	2) Refill or top off
	3) Faulty motor stopping device (oil-alert)	3) Replace
	4) Lack of fuel in tank or fuel tap closed	4) Refill the tank. Open the fuel tap
	5) Bad gasoline Gasoline oxidizes and deteriorates over time, causing hard starting	5) Drain fuel tank and carburetor. Refuel with fresh gasoline.
	6) Dirty or faulty spark plug	6) Clean or check and eventually replace
	7) Battery not activated, low or faulty	7) Activate, recharge, or replace the battery
	8) Battery cable terminals loose or corroded	8) Tighten and clean. Replace if corroded.
	9) Cold motor	9) Please keep the CHOKE control in “CLOSE” position for a longer time after the starting.
	10) Fuel filter restricted, carburetor malfunction, ignition malfunction, valves stuck, etc.	10) Replace or repair faulty components. Ask for intervention of Service Department
The motor does not accelerate. Inconstant speed. Too little power provided by motor.	1) Check the air filter	1) Clean or replace filter element(s). Refer to engine manual
	2) Bad gasoline	2) Drain fuel tank and carburetor. Refuel with fresh gasoline
	3) Fuel filter restricted, carburetor malfunction, ignition malfunction, valves stuck, etc.	3) Replace or repair faulty components. Ask for intervention of Service Department
GENERATOR		
Absence of output voltage	1) Protection tripped due to overload	1) Check the load connected and diminish
	2) Differential protection device tripped	2) Check on the entire installation: cables, connections, utilities connected have no defective sheathing which may cause incorrect currents to ground
	3) Protection devices defective	3) Replace
	4) Alternator not sparked	4) Carry out external spark test as indicated in alternator manual. Ask for intervention of Service Department
	5) Alternator defective	5) Check winding, diodes, etc. on alternator (Refer to alternator manual) Repair or replace. Ask for intervention of Service Department
No-load voltage too low or too high	1) Incorrect motor running speed	1) Regulate speed to its nominal no-load value
	2) Alternator defective	2) Check winding, diodes, etc. on alternator (Refer to alternator manual). Repair or replace. Ask for intervention of Service Department
Corrected no-load voltage too low with load	1) Incorrect motor running speed due to overload	1) Check the load connected and diminish
	2) Load with cos φ less than the nominal one.	2) Reduce or rephase load
	3) Alternator defective	3) Check winding, diodes, etc. on alternator (Refer to alternator manual) Repair or replace. Ask for intervention of Service Department
Unstable tension	1) Contacts malfunctioning	1) Check electrical connections and tighten
	2) rregular rotation of motor	2) Ask for intervention of Service Department
	3) Alternator defective	3) Check winding, diodes, etc. on alternator (Refer to alternator manual) Repair or replace. Ask for intervention of Service Department

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

NOTE

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.

Maintenance operations also include machine cleaning operations when carried out on a periodic basis outside of the normal work cycle.

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.

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.

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 surroindings, health or safety respecting completely the laws and/ or dispositions in force in the place.

ENGINE and ALTERNATOR

PLEASE REFER TO THE SPECIFIC MANUALS PROVIDED.

VENTILATION
Make certain there are no obstructions (rags, leaves or other) in the air inlet and outlet openings on the machine, alternator and motor.

ELECTRICAL PANELS
Check condition of cables and connections daily.
Clean periodically using a vacuum cleaner, **DO NOT USE COMPRESSED AIR.**

DECALS AND LABELS
*All warning and decals should be checked once a year and **replaced** if missing or unreadable.*

STRENUOUS OPERATING CONDITIONS
Under extreme operating conditions (frequent stops and starts, dusty environment, cold weather,extended periods of no load operation, fuel with over 0.5% sulphur content) do maintenance more frequently.

BATTERY WITHOUT MAINTENANCE
DO NOT OPEN THE BATTERY

The battery is charged automatically from the battery charger circuit suppplied with the engine.

Check the state of the battery from the colour of the warning light which is in the upper part.

- Green colour: battery OK
- Black colour: battery to be recharged
- White colour: battery to be replaced

NOTE

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

ATTENTION

- Maintenance operations on the electricity-generating group prearranged for automatic operation must be carried out with the panel in RESET mode.
- Maintenance operations on the installation's electrical panels must be carried out in complete safety by cutting off all external power sources: ELECTRICAL POWER, GROUP and BATTERY.

For the electricity-generating groups prearranged for automatic operation, in addition to carrying out all periodic maintenance operations foreseen for normal usage, various operations must be carried out that are necessary in relation to the specific type of use. The electricity-generating group in fact must be continuously prepared for operation, even after prolonged periods of inactivity.

MAINTENANCE GENERATING SET WITH AUTOMATIC BOARD

	EVERY WEEK	EVERY MONTH AND/OR AFTER INTERVENTION ON LOAD	EVERY YEAR
1. TEST or AUTOMATIC TEST cycle to keep the generating set constantly operative	NO-LOAD X	WITH LOAD X	
2. Check all levels: engine oil, fuel level, battery electrolyte,, if necessary top it up.	X	X	
3. Control of electrical connections and cleaning of control panel		X	X

☞ **Carry out motor oil change at least once a year, even if the requested number of hours has not been attained.**

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 o 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 bloking of the injection system.

For long periods of inactivity, turn to the after soles 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 surroindings, 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 encharged to the cust off or to the storage office, etc.

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

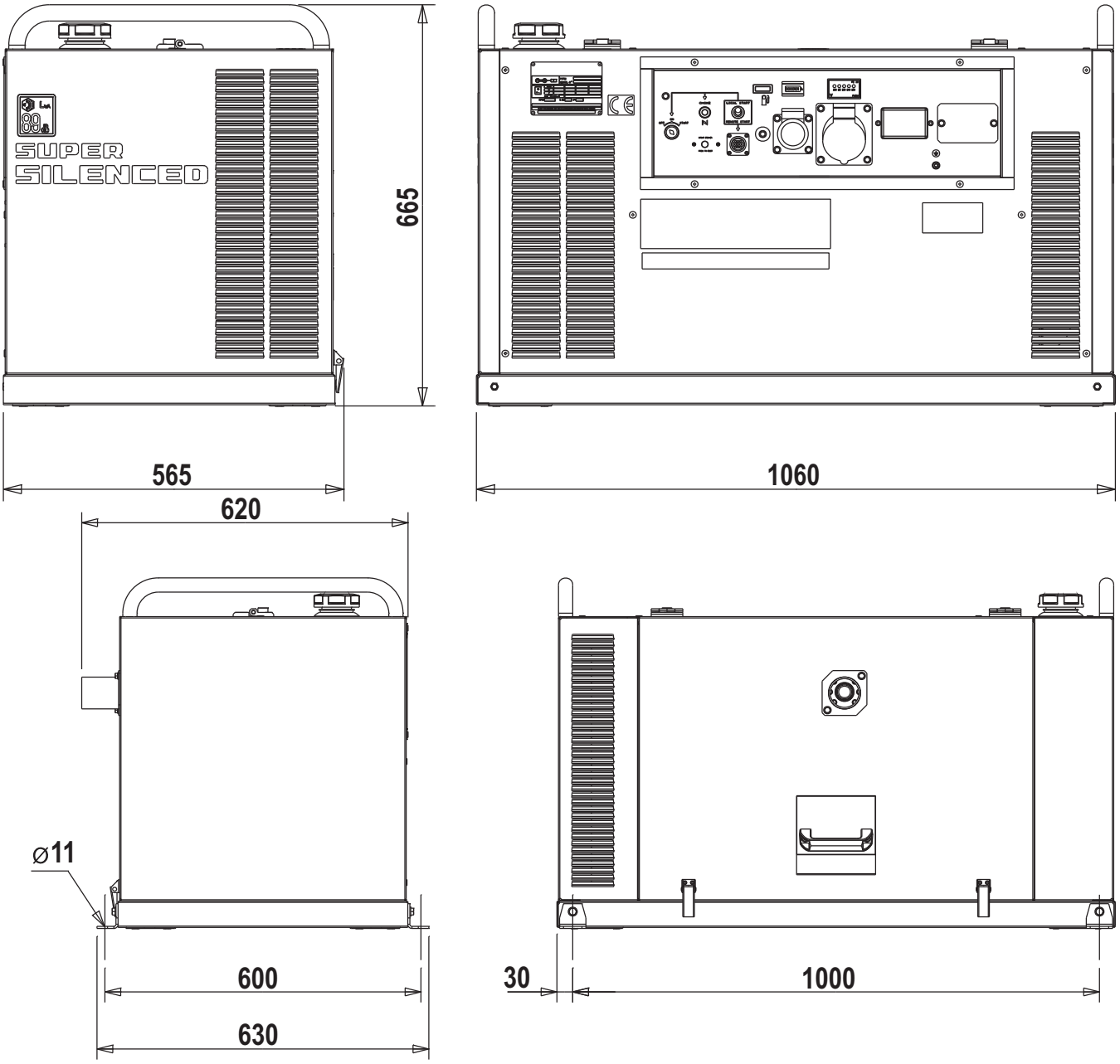
In case the machine should be cust off without any previous disassembly it is however compulsory to remove:
- tank fuel
- engine lubricating oil
- cooling liquid from the engine
- battery

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 surroindings, health or safety respecting completely the laws and/or dispositions in force in the place.


SUPER
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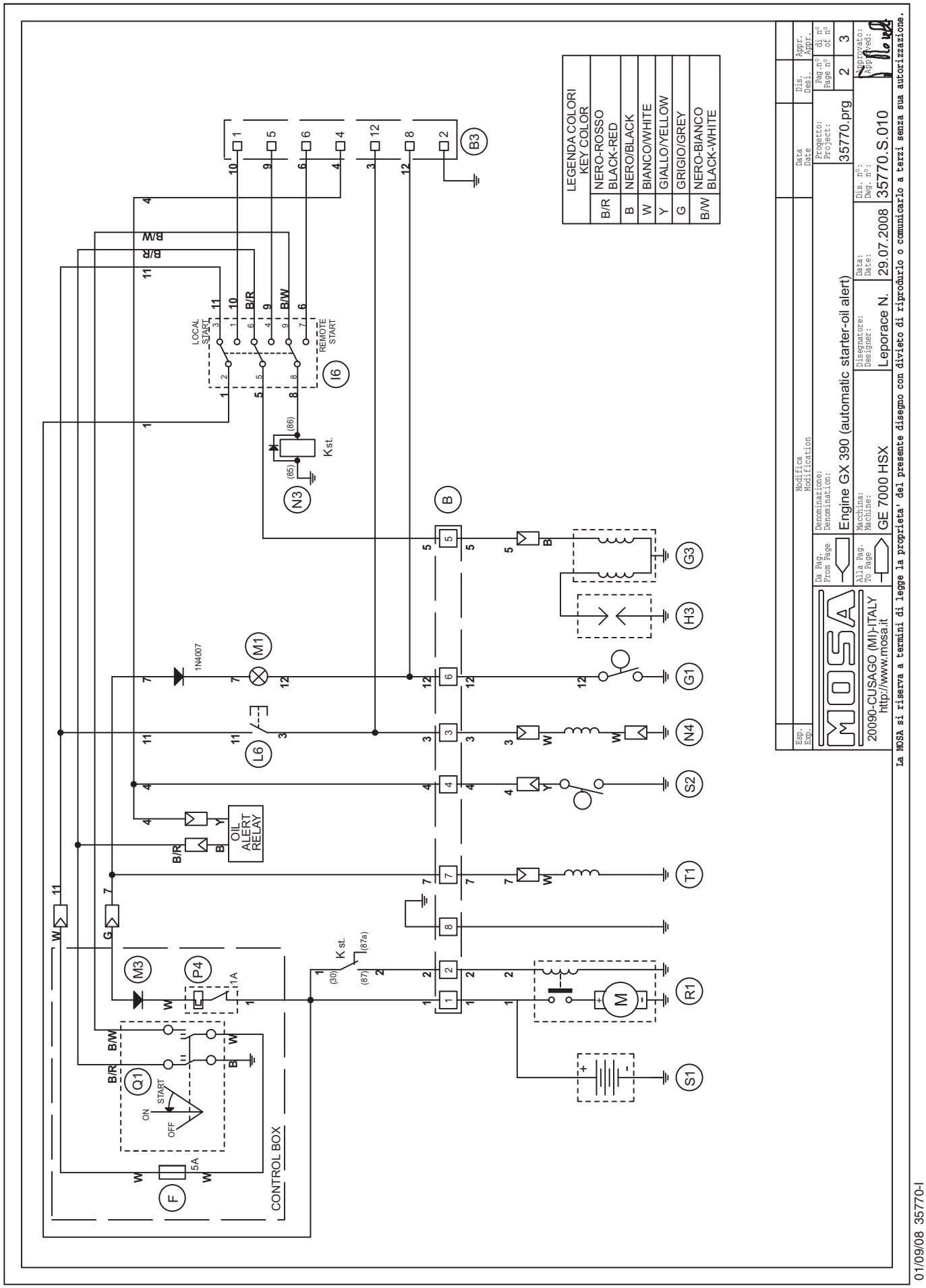
A : Alternatore
B : Supporto connessione cavi
C : Condensatore
D : Interruttore differenziale
F : Fusibile
G : Presa 400V trifase
H : Presa 230V monofase
M : Contaore
N : Voltmetro
G1 : Trasmettitore livello carburante
M1 : Spia riserva carburante
Q1 : Chiave avviamento
R1 : Motorino avviamento
S1 : Batteria
T1 : Alternatore carica batteria
S2 : Trasmettitore livello olio
Z2 : Interruttore magnetotermico
B3 : Connettore E.A.S.
G3 : Bobina accensione
H3 : Candela accensione
M3 : Diodo carica batteria
N3 : Relè
N4 : Elettromagnete aria
P4 : Protezione termica
I6 : Selettore Start Local/Remote
L6 : Pulsante CHOKE

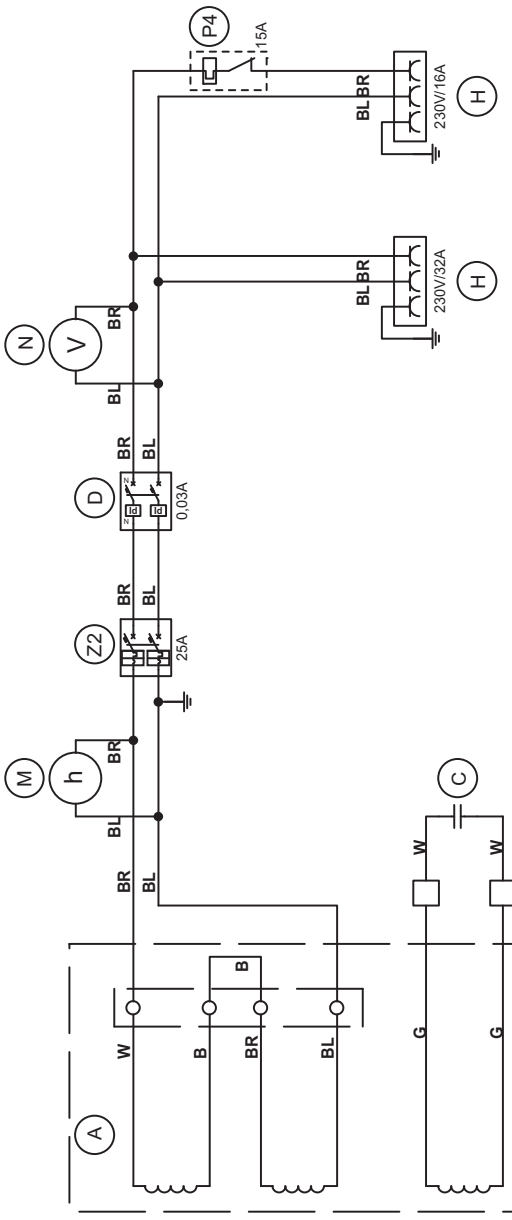
A: Alternator
B: Wire connection unit
C: Capacitor
D: G.F.I.
F: Fuse
G: 400V 3-phase socket
H: 230V 1phase socket
M: Hour-counter
N: Voltmeter
G1: Fuel level transmitter
M1: Fuel warning light
Q1: Starter key
R1: Starter motor
S1: Battery
T1: Battery charge alternator
S2: Oil level transmitter
Z2: Thermal magnetic circuit breaker
B3: E.A.S. connector
G3: Ignition coil
H3: Spark plug
M3: Battery charge diode
N3: Relay
N4: Choke solenoid
P4: Circuit breaker
I6: Start Local/Remote selector
L6: Choke button

A : Alternateur
B : Connexion câbles
C : Condensateurs
D : Interrupteur différentiel
F : Fusible
G : Prise 400V triphasé
H : Prise 230V monophasé
M : Compte-heures
N : Voltmètre
G1 : Niveau carburant
M1 : Voyant réserve carburant
Q1 : Clé de démarrage
R1 : Moteur de démarrage
S1 : Batterie
T1 : Alternateur charge batterie
S2 : Transmetteur niveau huile
Z2 : Interrupteur magnétothermique
B3 : Connecteur E.A.S.
G3 : Bobine allumage
H3 : Bougie allumage
M3 : Diode charge batterie
N3 : Relais
N4 : Electro-aimant air
P4 : Protection thermique
I6 : Selecteur Start Local/Remote
L6 : Bouton Choke

A Generator
B Klemmleiste
C Kondensatorbox
D FI-Schalter (GFI)
F Sicherung
G Steckdose 400V 3-phasig
H Steckdose 230V 1-phasig
M Stundenzähler
N Voltmeter
G1 Füllstandssensor Kraftstoff
M1 Warnleuchte Kraftstoff
Q1 Zündschloss
R1 Anlasser
S1 Batterie
T1 Ladegenerator Batterie
S2 Ölstandssensor
Z2 Thermomagnetschalter (Si-Automat)
B3 Steckdose EAS/Fernstart
G3 Zündspule
H3 Zündkerze
M3 Diode Batterielader
N3 Relais
N4 Elektromagnet Motor-Choke
P4 Thermosicherung
I6 Umschalter Fernstart
L6 Choke-Taste

A :Alternador
B :Soporte conexión cables
C :Condensador
D :Interruptor diferencial
F :Fusible
G :Toma 400V trifásica
H :Toma 230V monofásica
M :Cuentahoras
N :Voltímetro
G1 :Captador nivel carburante
M1 :Piloto reserva carburante
Q1 :Llave arranque
R1 :Motor arranque
S1 :Batería
T1 :Alternador carga batería
S2 :Captador nivel aceite
Z2 :Interruptor magnetotérmico
B3 :Conector E.A.S.
G3 :Bobina encendido
H3 :Bujía encendido
M3 :Diodo carga batería
N3 :Relé
N4 :Electromagnetismo aire
P4 :Protección térmica
I6 :Selector Start Local/Remote
L6 :Pulsador CHOKE (aire)



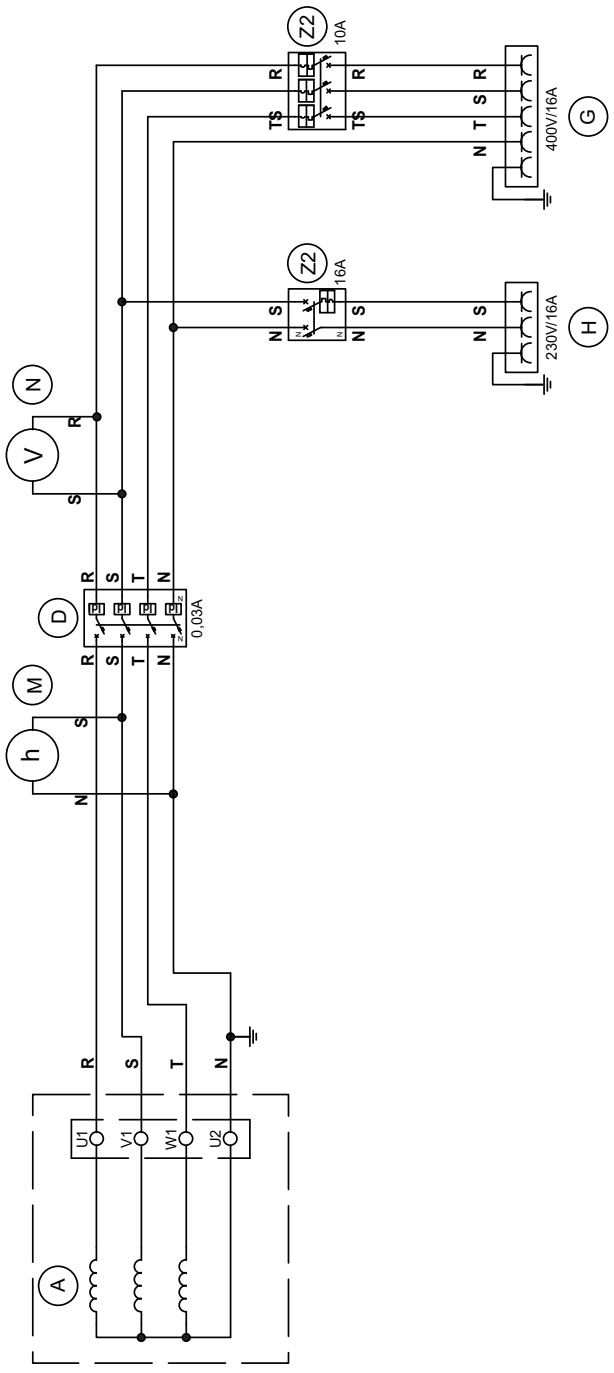


LEGENDA COLORI KEY COLOR	
R	ROSSO/RED
B	NERO/BLACK
BL	BLU/BLUE
G	GRIGIO/GREY
W	BIANCO/WHITE

Esp.: Exp.
Modifica Modification
Data Date
Dis. Desi.
Appr. Appr.

MOSA
20090-CUSAGO (MI)-ITALY
http://www.mosa.it

Da Pag. From Page
Alla Pag. To Page
Denominazione: Denomination: Aux. (230Mx2) DMT
Macchina: Machine: GE 7000 HSX
Disegnatore: Designer: Leporace N.
Data: Date: 29.07.2008
Progetto: Project: 35770.prg
Pag. n° Page n° 3
di n° of n° 3
Dis. n°: Dwg. n°: 35770.S.020
Approvato: Approved:



Esp. Exp.	Modifica Modification				Data Date		Dis. Desi.	Appr. Appr.	
MOSA	Da Pag. From Page	Denominazione: Denomination:	Aux. (400T/230M) DM		Progetto: Project:	35645.prg	Pag.n° Page n°	3	3
20090-CUSAGO (MI)-ITALY http://www.mosa.it	Alla Pag. To Page	Macchina: Machine:	GE 6500 SX/GS	Disegnatore: Designer:	Data: Date:	23.02.2006	Dis. n°: Dwg. n°:	35645.S.020	Approvato: Approved:

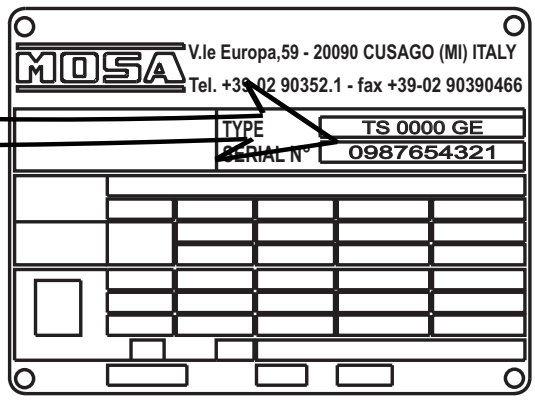
MOSA guarantees that any request for spare parts will be satisfied.

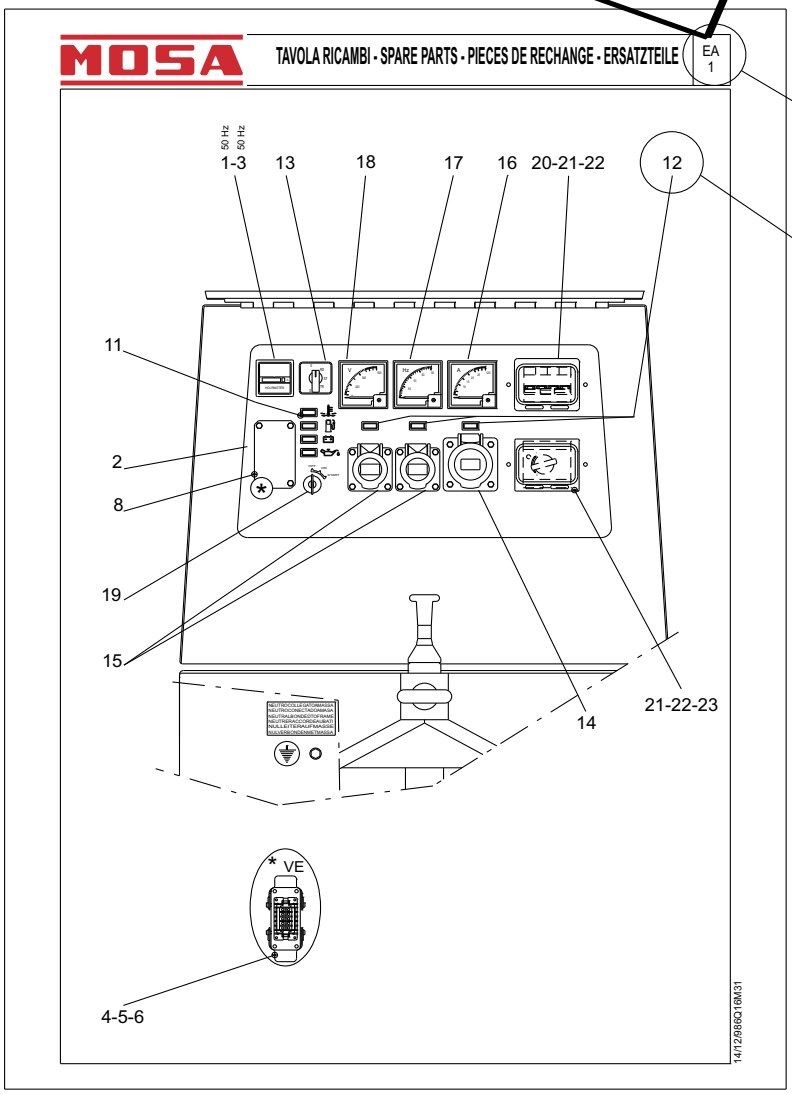
To keep the machine in full working order, when replacement of MOSA spare parts is required, always ask for genuine parts only.

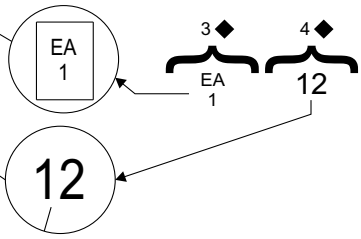
☞ The requested data are to be found on the data plate located on the machine structure, quite visible and easy to consult. ✹

When ordering the spare parts, it is recommended to indicate:

1) ✹ serial number
2) ✹ model of welder and/or generating set
3) ◆ n. table
4) ◆ n. position
5) quantity

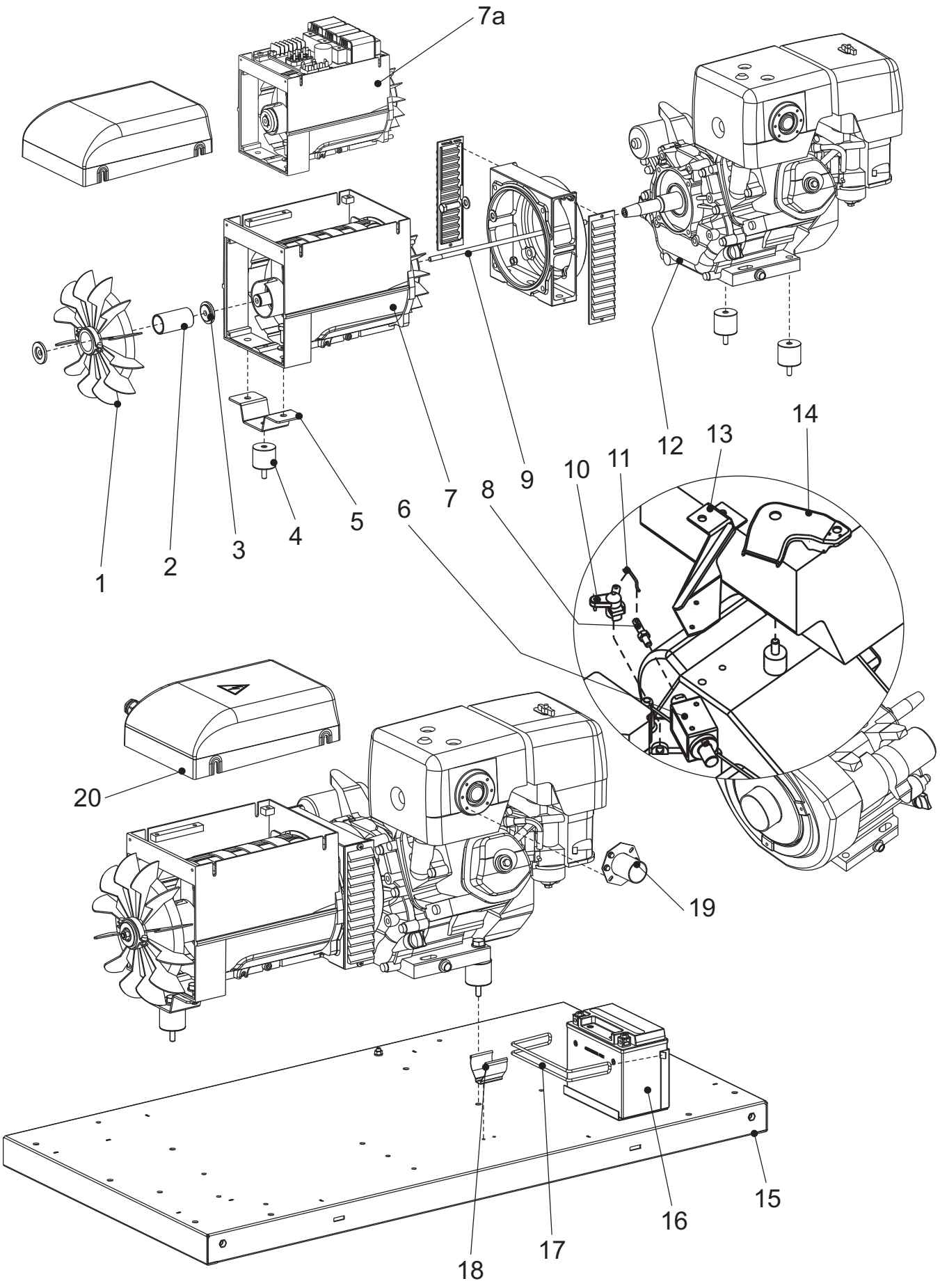






ABBREVIATIONS AND SYMBOLS:

(EV) When ordering, specify the engine type and the auxiliary voltage
(ER) Engine with recoil starter only
(ES) Engine with electric starter only
(VE) E.A.S version only.
(QM) When ordering, specify the length in meters
(VS) Special version only
(SR) By request only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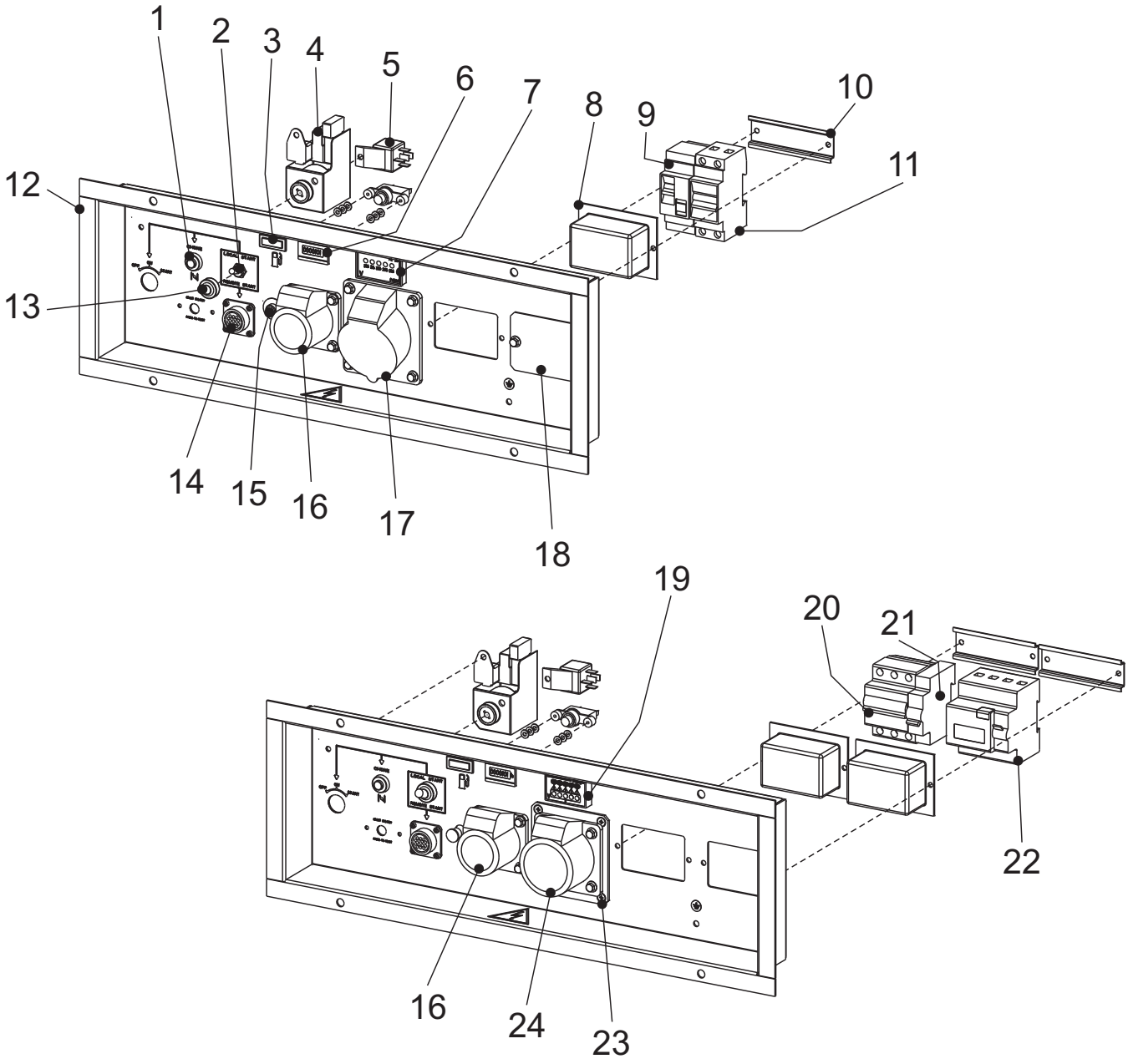
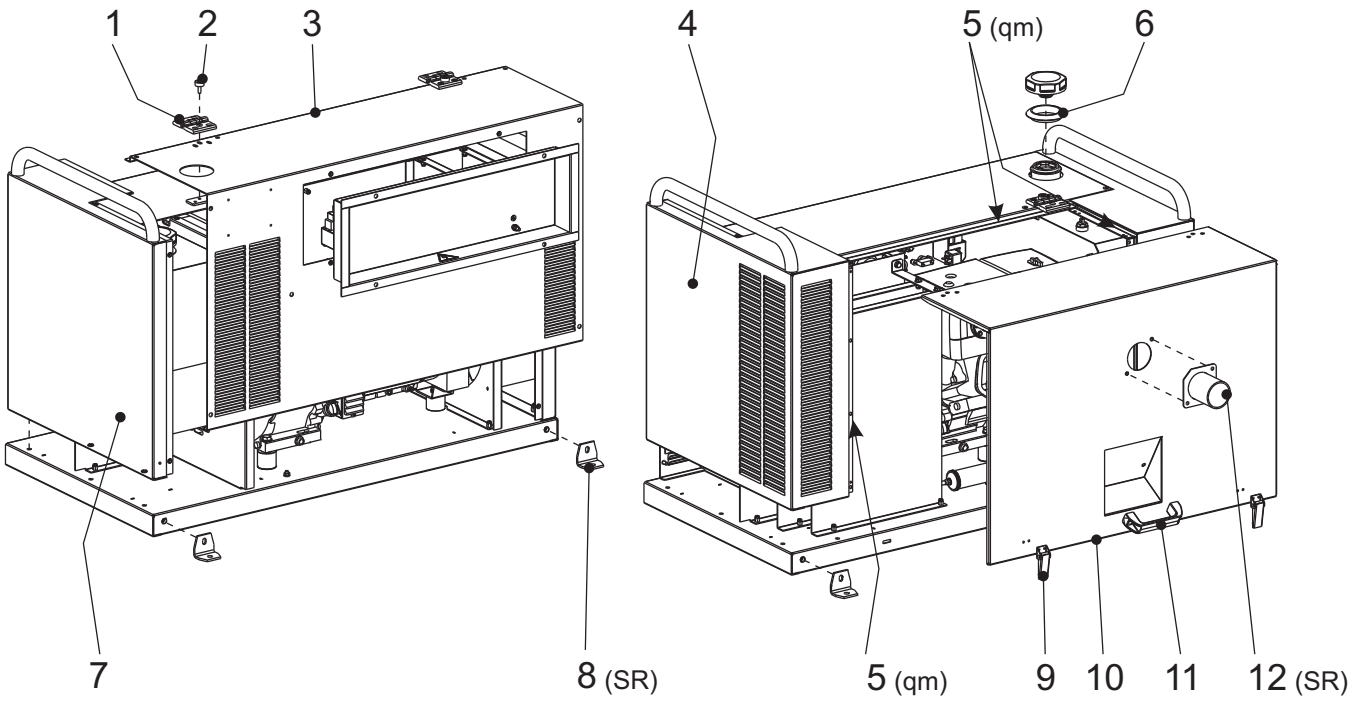
Pos.	Rev.	Cod.	Descr.	Note
1		105111290	VENTOLA CON FASCETTA	
2		356323039	DISTANZIALE FISS. VENTOLA	
3		356403038	RONDELLA DI SICUREZZA	
4		356321035	ANTIVIBRANTE	
5		259123101	STAFFA SUPPORTO ALTERNATORE	
6		306479071	ELETTROMAGNETE COMANDO CHOKE	
7		356403100	ALTERNATORE	GE 7000 HSX
7 a		356453100	ALTERNATORE	GE 7500 HSX
8		306479108	PERNO	
9		356403036	TIRANTE	
10		354509111	LEVA CHOKE	
11		306479056	TIRANTE	
12		357752200	MOTORE HONDA GX390	
13		357709101	STAFFA SUPPORTO SOLENOIDE	
14		357709105	LEVA ACCELERATORE (modificata)	
15		357701050	BASAMENTO	
16		354659150	BATTERIA	
17		306469282	ELASTICO FISSAGGIO BATTERIA	
18		354507037	CLIP D36 L40	
19		354502078	RACCORDO TUBO SCARICO	
20		357703097	CUFFIA SUPERIORE ALTERN. (FOR.)	

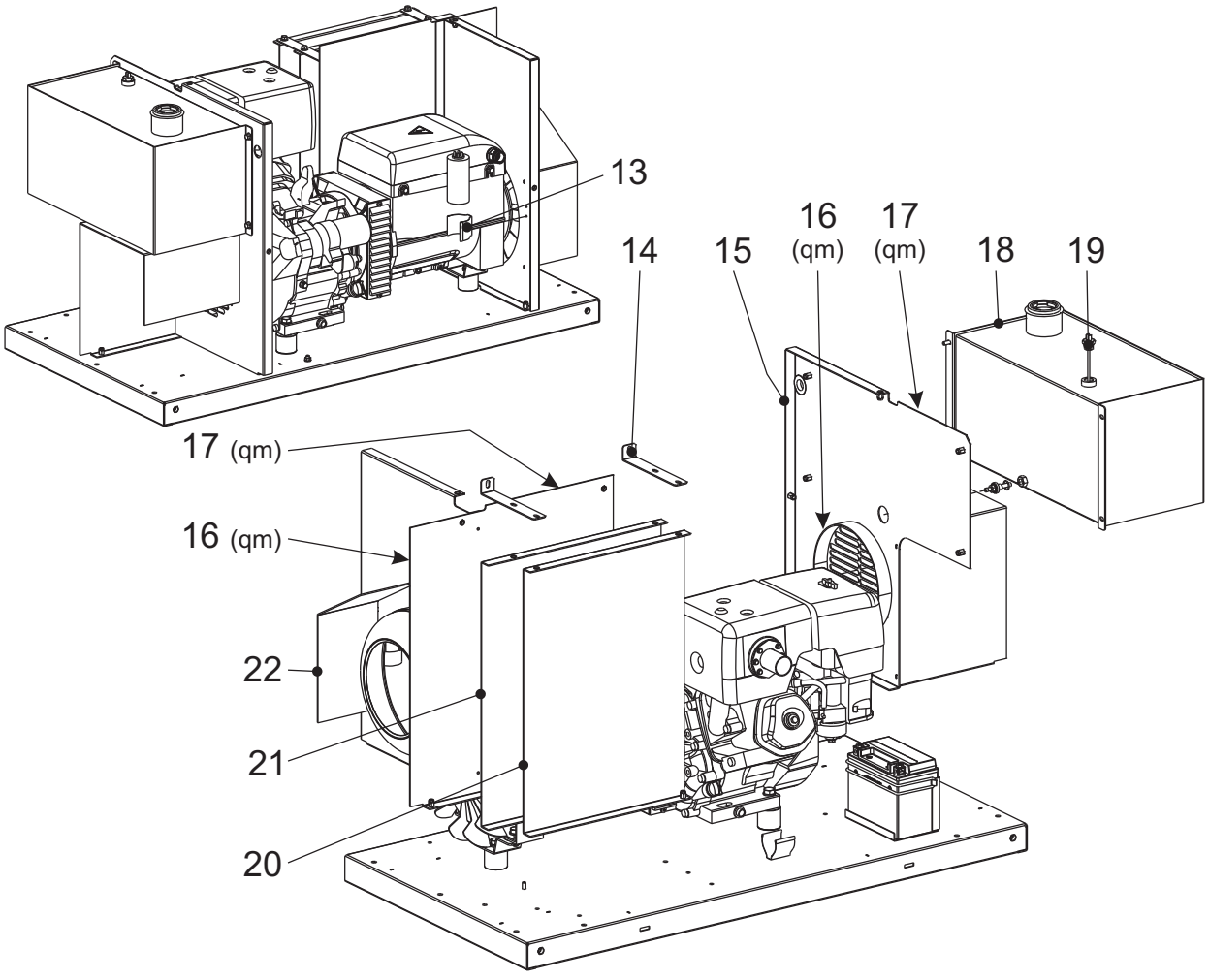
Pos.	Rev.	Cod.	Descr.	Note
1		105111290	FAN	
2		356323039	FIXING FAN SPACER	
3		356403038	LOCKING WASHER	
4		356321035	VIBRATION DAMPER	
5		259123101	ALTERNATOR BRACKET	
6		306479071	ELECTRO MAGNET CHOKE CONTROL	
7		356403100	ALTERNATOR	GE 7000 HSX
7 a		356453100	ALTERNATOR	GE 7500 HSX
8		306479108	PIN	
9		356403036	TIE-ROD	
10		354509111	LEVER	
11		306479056	TIE-ROD	
12		357752200	HONDA ENGINE GX390	
13		357709101	BRACKET ECONOMIZER HOLDER	
14		357709105	MODIFIED ACCELERATOR LEVER	
15		357701050	BASE	
16		354659150	BATTERY	
17		306469282	ELASTIC, FIXING BATTERY	
18		354507037	CLIP D36 L40	
19		354502078	EXHAUST PIPE CONNECTOR	
20		357703097	ALTERNATOR UPPER COVER	



Pos.	Rev.	Cod.	Descr.	Note
1		101091830	PULSANTE DI STOP	
2		107509902	COMMUTATORE TRIPOLARE	
3		1302500	SEGNALATORE RETT. 12V DC ROSSO	
4		35450A902	VARIANTE CAVI CHIAVE AVVIAMEN.	
5		306479199	RELE' AVV. ELETTRICO	
6		105511810	CONTAORE 230V 50Hz IP65	
7		270027300	VOLTMETRO DIGITALE	
8		232027130	CAPPUCCIO PROTEZIONE I.D.	
9		220237105	Vedi Cod.256007105	
10		232027036	GUIDA	
11		256707325	INTERRUTTORE MAGNETOTERMICO	
12		357707020	PANNELLO FRONTALE	
13		102042740	CAPPUCCIO	
14		35770C020	GR.CAVI MOTORE	x connetore EAS
15		155307107	DISGIUNTORE TERMICO 15A-250V	
16		307017240	PRESA 220V 16A	
17		105111520	PRESA CEE 220V MONOF. 2POLI+T	
18		357017027	PIASTRINA	
19		256237300	VOLTMETRO DIGITALE	
20		256557325	INTERRUT.MAGNETOTERM. 3P 10A	
21		734507325	INTER.MAGNETOTERMICO 16A 1P+N	
22		105111510	PRESA CEE 380V TRIFASE	
23		734517032	PIASTRINA RIDUZIONE	
24		305907270	PRESA CEE 16A 400V 3P+N+T	

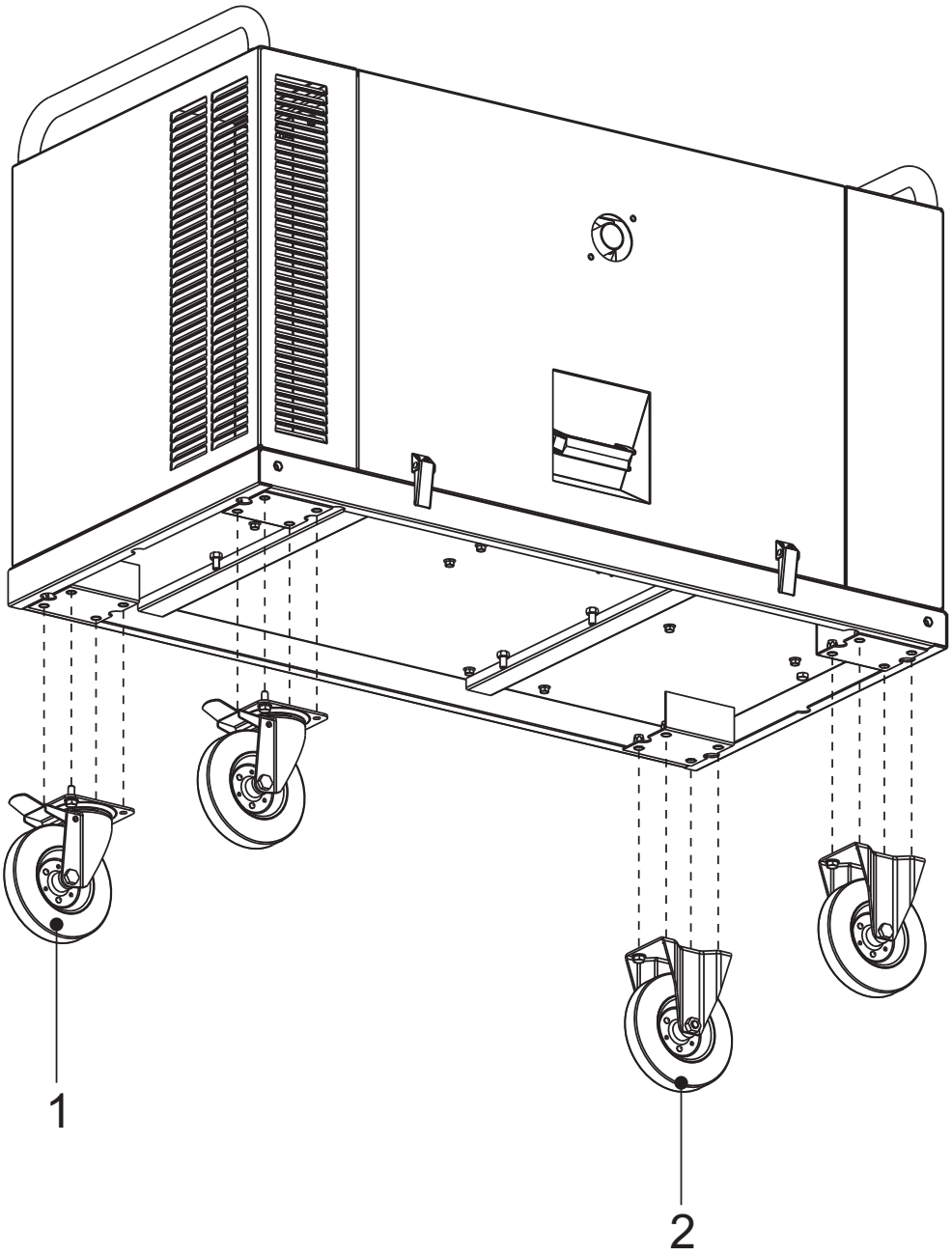
Pos.	Rev.	Cod.	Descr.	Note
1		101091830	BUTTON, STOP	
2		107509902	TRIPOLES SWITCH	
3		1302500	WARNING LIGHT	
4		35450A902	STARTING KEY CABLING	
5		306479199	RELAY, ELECTRIC START	
6		105511810	HOURMETER 230V 50Hz IP65	
7		270027300	DIGITAL VOLTMETER	
8		232027130	CAP	
9		220237105	See Part n°256007105	
10		232027036	FIXING GUIDE	
11		256707325	CIRCUIT BREAKER	
12		357707020	FRONT PANEL	
13		102042740	CAP	
14		35770C020	STARTING KEY CABLING	
15		155307107	THERMAL SWITCH 15A-250V	
16		307017240	EEC SOCKET 16A, 220V 2P+T	
17		105111520	EEC SOCKET SINGLE-PH.220V 2P+	
18		357017027	SMALL PLATE	
19		256237300	DIGITAL VOLTMETER	
20		256557325	CIRCUIT BREAKER 3POLES 10 AMP	
21		734507325	CIRCUIT BREAKER 16A 1P+NEUTRAL	
22		105111510	EEC SOCKET THREE-PHASE 380V	
23		734517032	REDUCTION FOR SOCKET 32A/16A	
24		305907270	EEC SOCKET 16A 400V 3P+N+T	


1
2
3
4
5 (qm)
6
7
8 (SR)
5 (qm)
9
10
11
12 (SR)

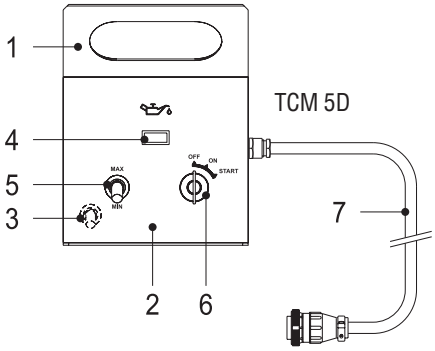

13
14
15
16 (qm)
17 (qm)
18
19
17 (qm)
16 (qm)
22
21
20

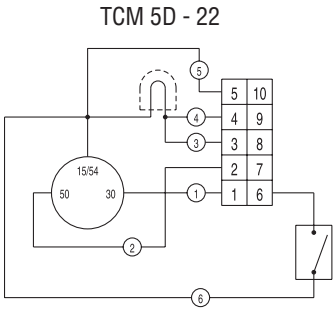
Pos.	Rev.	Cod.	Descr.	Note
1		744508140	CERNIERA PER FIANCATA	
2		354558113	PARACOLPI GOMMA D.19 H=10 M6	
3		357708010	PANNELLO LATO ASPIRAZIONE	
4		357708020	PANNELLO LATO ALTERNATORE	
5		309509005	GUARNIZIONE	qm
6		354502022	GUARNIZ. TUBO RIEMP. SERBATOIO	
7		357708015	PANNELLO LATO MOTORE	
8		357701248	SQUADRETTA BLOCC. MACCHINA	SR
9		354508110	CHIUSURA A LEVA REGOLABILE	
10		357708021	PORTELLO LATO SCARICO	
11		343339601	MANIGLIA	
12		354508186	RACCORDO PROLUNGA x TUBO SCAR.	SR
13		354507037	CLIP D36 L40	
14		354508066	SQUADRETTA FISS.SETTI INSONOR.	
15		357708220	PARATIA ASPIRAZIONE MOTORE	
16		102302280	GUARNIZIONE (L=MT.1)	qm
17		306418310	GUARNIZIONE (L=MT.1)	qm
18		357702020	SERBATOIO CARBURANTE	
19		372809875	INDICATORE RISERVA CARBURANTE	
20		357708067	PARATIA SETTO INSONORIZZANTE	
21		357708167	PARATIA SETTO INSONORIZZANTE	
22		357708219	PARATIA ASPIRAZIONE ALTERNAT.	

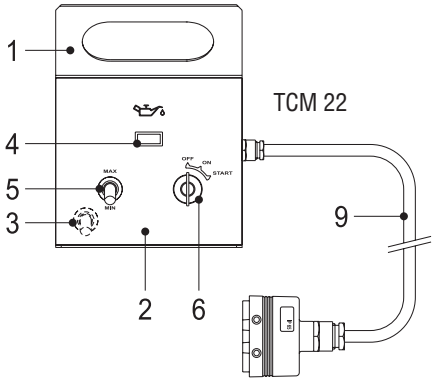
Pos.	Rev.	Cod.	Descr.	Note
1		744508140	LATCH	
2		354558113	PROTECTION RUBBER D.19 H=10 M6	
3		357708010	AIR INTAKE PANEL	
4		357708020	PLATE ALTERNATOR SIDE	
5		309509005	GASKET	qm
6		354502022	GASKET	
7		357708015	COVER, ENGINE SIDE	
8		357701248	BLOCKING ELEMENT	SR
9		354508110	ADJUSTABLE LOCK	
10		357708021	EXHAUST PANEL	
11		343339601	KNOB	
12		354508186	EXHAUST PIPE CONNECTOR	SR
13		354507037	CLIP D36 L40	
14		354508066	NOISE ELEMENT BRACKET	
15		357708220	ENGINE PANEL	
16		102302280	GASKET (L=MT.1)	qm
17		306418310	PROTECTION GASKET (L=MT.1)	qm
18		357702020	ENGINE PANEL	
19		372809875	FUEL LEVEL FLOAT	
20		357708067	NOISE PANEL	
21		357708167	NOISE PANEL	
22		357708219	ALTERNATOR PANEL	

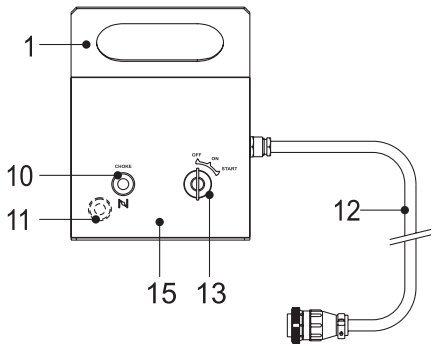


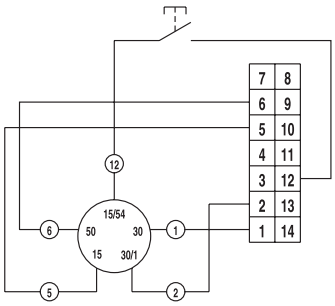
Pos.	Rev.	Cod.	Descr.	Descr.	Note
1		354521270	RUOTA PIENA GIREVOLE	*MOVING WHEEL*	
2		354521170	RUOTA PIENA FISSA	*WHEEL*	

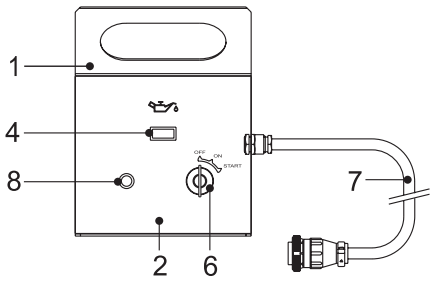


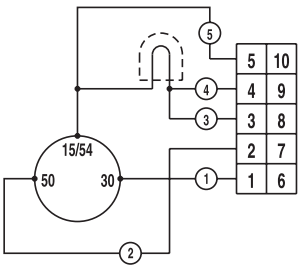




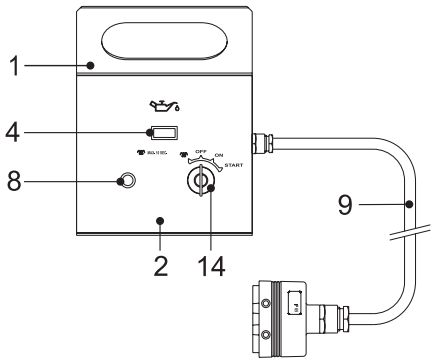


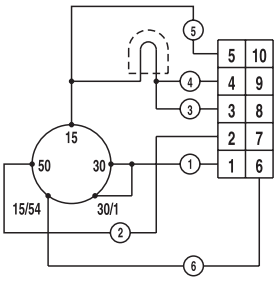






SCHEMA ELETTRICO
ELECTRICAL DIAGRAM
ELECTRIQUE SCHEMA
ELEKTRISCHES SCHEMA
ELECTRISCH GEDEELTE
ESQUEMA ELÉCTRICO





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