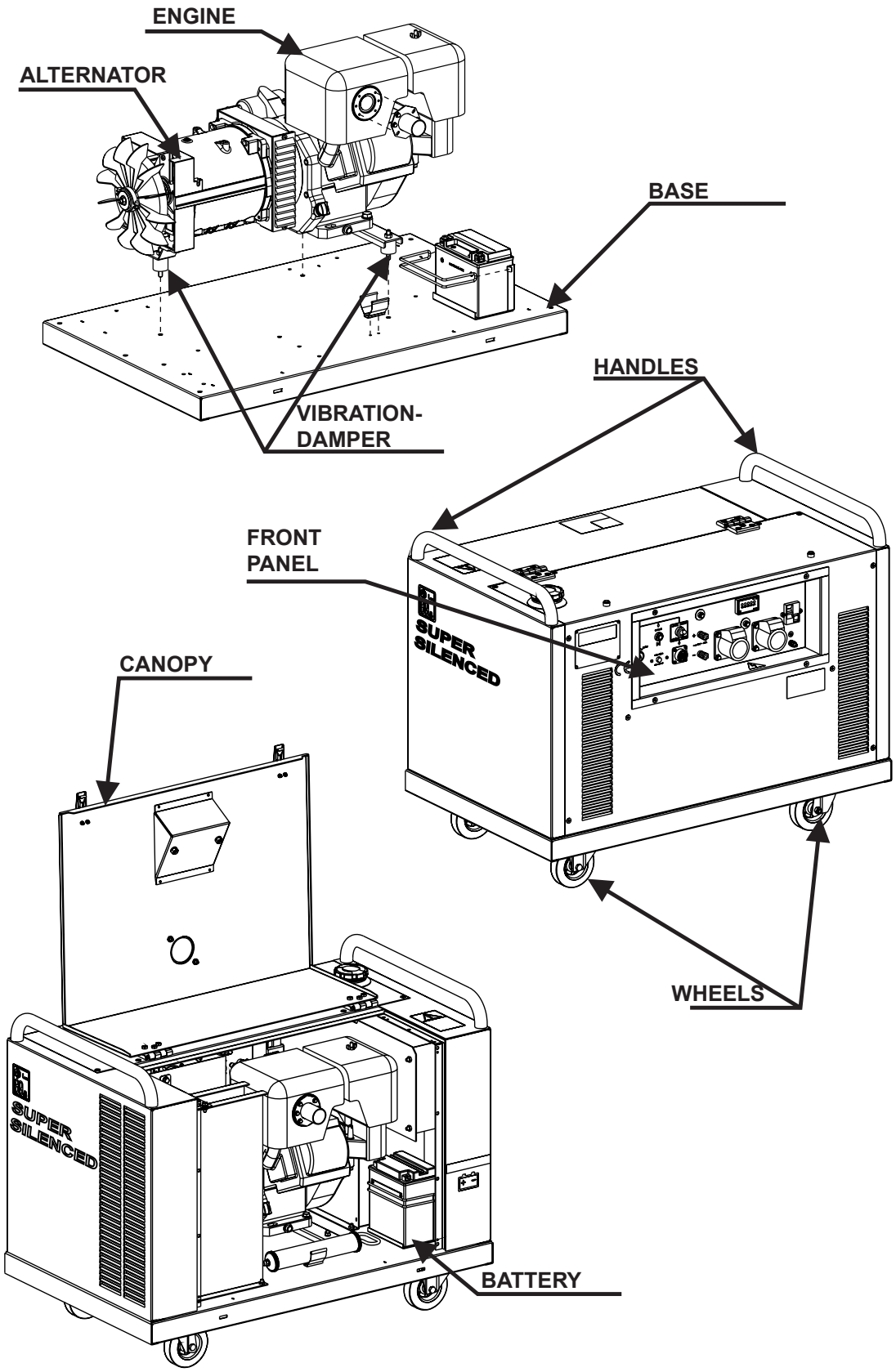
GE 4500 HSX

0 7 1 1 **354559003 - GB**

ENGLISH

© MOSA 04/06/04 35455M00
preparato da UPT
approvato da DITE

The generating set GE 4500 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.



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)**
***Operative Units*: Via Valbrina, 17/19 - I-42045 Luzzara (RE)**
Viale Europa, 59 - I-20090 Cusago (MI)

for the following field of activities

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

has implemented and maintains a

Quality Management System

which fulfills the requirements of the following standard

ISO 9001:2008

Issued on: 2010-10-19
Validity date: 2012-03-05
Registration Number: IT-3722

Michael Drechsel
President of IQNET

Gianrenzo Prati
President of CISQ

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IQNet, the association of the world's first class certification bodies, is the largest provider of management System Certification in the world. IQNet is composed of more than 30 bodies and counts over 150 subsidiaries all over the globe.

ICIM
www.icim.it

CERTIFICATO n. 0192/5
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)
Unità Operative
Via Valbrina, 17/19 - 42045 Luzzara (RE)
Viale Europa, 59 - 20090 Cusago (MI)
Italia

E' CONFORME ALLA NORMA
IS IN COMPLIANCE WITH THE STANDARD

UNI EN ISO 9001:2008

PER LE SEGUENTI ATTIVITA'
FOR THE FOLLOWING ACTIVITIES

EA: 18

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

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

Riferirsi al Manuale della Qualità per l'applicabilità dei requisiti della norma di riferimento.
Refer to Quality Manual for details of application to reference standard requirements.
Il presente certificato è soggetto al rispetto del regolamento per la certificazione dei sistemi di gestione per la qualità delle aziende.
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	Emissione corrente	Data di scadenza
First issue	*Current issue*	*Expiring date*
30/05/1994	19/10/2010	05/03/2012

ICIM S.p.A.
Piazza Don Enrico Mapelli, 75 - 20099 Sesto San Giovanni (MI)

Il presente documento annulla e sostituisce il certificato di pari numero emesso in data 06/03/2009

ACCREDIA L'ENTE ITALIANO DI ACCREDITAMENTO
Membro degli accordi di Mutuo Riconoscimento EA e IAF
Signatory of EA and IAF Mutual Recognition Agreement

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
www.cisq.com

ICIM CISQ IQNet
ISO 9001:2008 - Cert. 0192

UNI EN ISO 9001 : 2008

MOSA has certified its quality system according to UNI EN ISO 9001:2008 to ensure a constant, highquality of its products. This certification covers thedesign, production and servicing of engine drivenwelders and generating sets.

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

This certification is not a point of arrival but a pledgeon the part of the entire company to maintain a levelof quality of both its products and services whichwill continue to satisfy the needs of its clients, aswell as to improve the transparency and thecommunications regarding all the company's activesin accordance with the official procedures and inharmony with the MOSA Manual of Quality.

The advantages for MOSA clients are:

·Constant quality of products and services at thehigh level which the client expects;

· Continuous efforts to improve the products andtheir performance at competitive conditions;

· Competent support in the solution of problems;

· Information and training in the correct applicationand use of the products to assure the security ofthe operator and protect the environment;

· Regular inspections by ICIM to confirm that therequirements of the company's quality systemand 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

M 0	DESCRIPTION OF THE MACHINE
M 1.01	COPYRIGHT
M 1.1	NOTES
M 1.4	CE MARK
M 1.4.1	DECLARATION OF CONFORMITY
M 1.5	TECHNICAL SPECIFICATIONS
M 2	SYMBOLS USED AND SAFETY PRECAUTIONS
M 2.5	INSTALLATION AND ADVICE BEFORE USE
M 2.6	INSTALLATION WARNINGS
M 2.7	INSTALLATION AND DIMENSIONS
M 3	PACKING
M 4.1	TRANSPORT AND HANDLING
M 25	SET-UP FOR OPERATION
M 26	START-UP
M 27	SHUTTING DOWN THE MOTOR
M 31	CONTROLS
M 37...	USING THE GENERATOR
M 38.5	REMOTE CONTROL
M 40.2...	TROUBLE SHOOTING
M 43…	MACHINE MAINTENANCE
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M 61-…..	ELECTRICAL SYSTEM
R 1	SPARE PARTS TABLES
GA ...	SPARE PARTS

⚠ 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

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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.

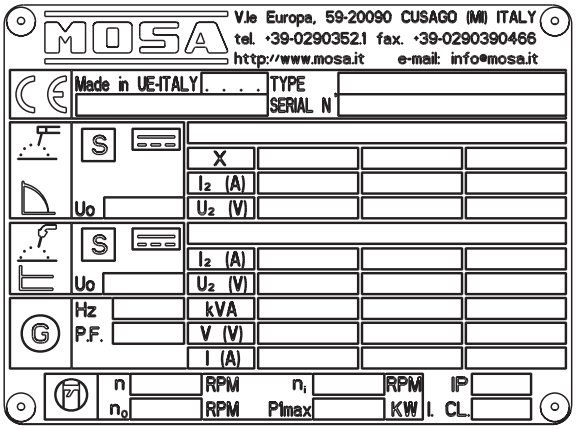
While working it is advisable to keep to the personal safety norms in force in the countries to which the product is destined (clothing, work tools, etc.).

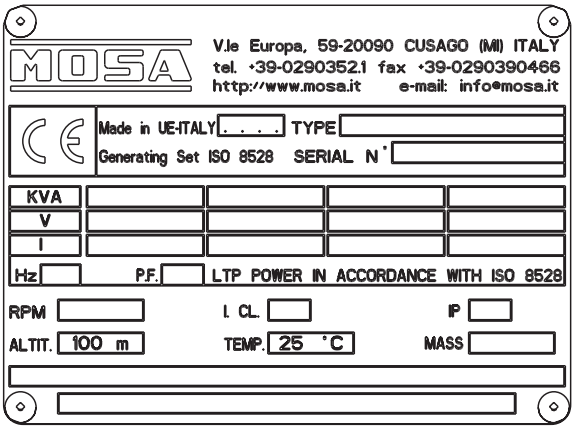
Do not modify for any motive parts of the machine (fastenings, holes, electric or mechanical devices, others..) if not duly authorized in writing by MOSA: the responsibility coming from any potential intervention will fall on the executioner as in fact he becomes maker of the machine.

☞ ***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.*

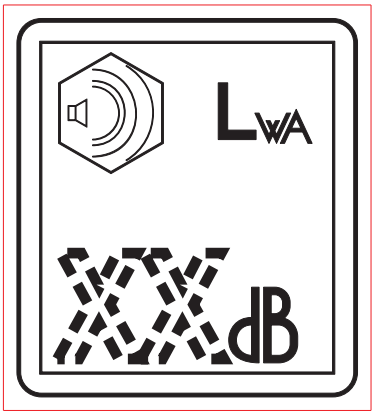
Any of our product is labelled with CE marking attesting its conformity to appliable directives and also the fulfillment of safety requirements of the product itself; the list of these directives is part of the declaration of conformity included in any machine standard equipment.
Here below the adopted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

CE marking is clearly readable and unerasable and it can be either part of the data-plate.





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.

BCS S.p.A.
Sede legale:
Via Marradi 1
20123 Milano - Italia

Stabilimento di Cusago, 20090 (MI) - Italia
V.le Europa 59
Tel.: +39 02 903521
Fax: +39 02 90390466

ISO 9001:2000 - Cert. 0192

DICHIARAZIONE DI CONFORMITA'

CE

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

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

GRUPPO ELETTROGENO DI SALDATURA / WELDING GENERATOR ☐

GRUPPO ELETTROGENO / POWER GENERATOR ☐

Marchio / Brand : _MOSA_____

Modello / Model : _____

Matricola / Serial number : _____

FAC SIMILE

è conforme con quanto previsto dalle Direttive 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 gemeenschapsrichtlijnemen gerelateerde modificaties:
comple con los requisítos de la Directiva Comunitaria y sus anexos:

2006/42/CE - 2006/95/CE - 2004/108/CE

Nome e indirizzo della persona autorizzata a costituire il fascicolo tecnico :
Nom et adresse de la personne autorisée à composer le Dossier Technique :
Person authorized to compile the technical file and address :
Name und Adresse der zur Ausfüllung der technischen Akten ermächtigten Person :
Persoon bevoegd om het technische document , en bedrijf gegevens in te vullen
Nombre y dirección de la persona autorizada a componer el expediente técnico :

ing. Benso Marelli - Amministratore Delegato / CEO; V.le Europa 59, 20090 Cusago (MI) - Italy

Cusago,

Ing. Benso Marelli
Amministratore Delegato
CEO

Technical data	GE 4500 HSX
GENERATOR	
*Stand-by single-phase output	4.9 kVA (4.4 kW) / 230 V / 21.3 A
*PRP single-phase output	4 kVA (3.6 kW) / 230 V / 17.4 A
Frequency	50 Hz
Cos φ	0.9
Battery charger	12 Vc.c. - 10A
* Output powers according to ISO 8528-1	
ALTERNATOR	self-excited, self-regulated, brushless
Type	synchronous, single-phase
Insulating class	H
ENGINE	
Mark / Model	HONDA / GX 270
Type / Cooling system	gasoline 4-Stroke / air
Cylinder / Displacement	1 / 270 cm^3
*Stand-by net power	5.7 kW (7.7 HP)
*PRP net power	4.6 kW (6.2 HP)
Speed	3000 rpm
Fuel consumption (75% of PRP)	1.6 l/h
Engine oil capacity	1.1 l
Starter	Electric
* Powers according to SAE J1349	
GENERAL SPECIFICATIONS	
Tank capacity	13 l
Running time (75% of PRP)	8 h
Protection	IP 23
*Dimensions / max. Lxwxh (mm)	900x570x720 (230V version)
*Dimensions / max. Lxwxh (mm)	900x570x770 (230/115V version)
*Weight (dry)	130 Kg (230V version) - 135 Kg (230/115V version)
Measured acoustic power Lwa (pressure LpA)	86 dB(A) (61 dB(A) @ 7 m)
Guaranteed acoustic power LwA (pressure LpA)	88 dB(A) (63 dB(A) @ 7 m) LWA 2000 / 14 / CE
* 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 PRP) = 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 PRP.
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 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

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 <u>No harm for persons and things</u>

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.

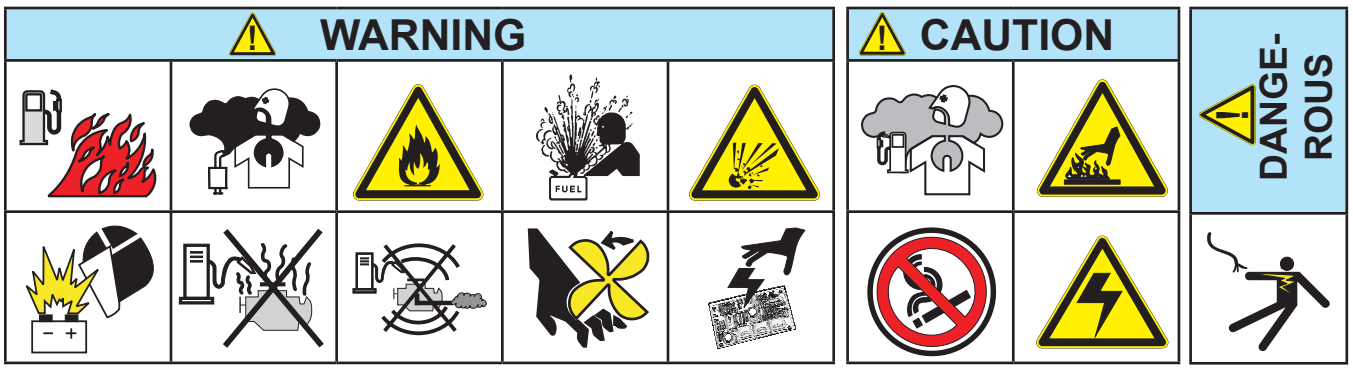
ENGINE	CHECKING BOARD
Stop engine when fueling	Do not touch electric devices if you are barefoot or with wet clothes.
Do not smoke, avoid flames, sparks or electric tools when fueling.	Always keep off leaning surfaces during work operations.
Unscrew the cap slowly to let out the fuel vapours.	Static 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.

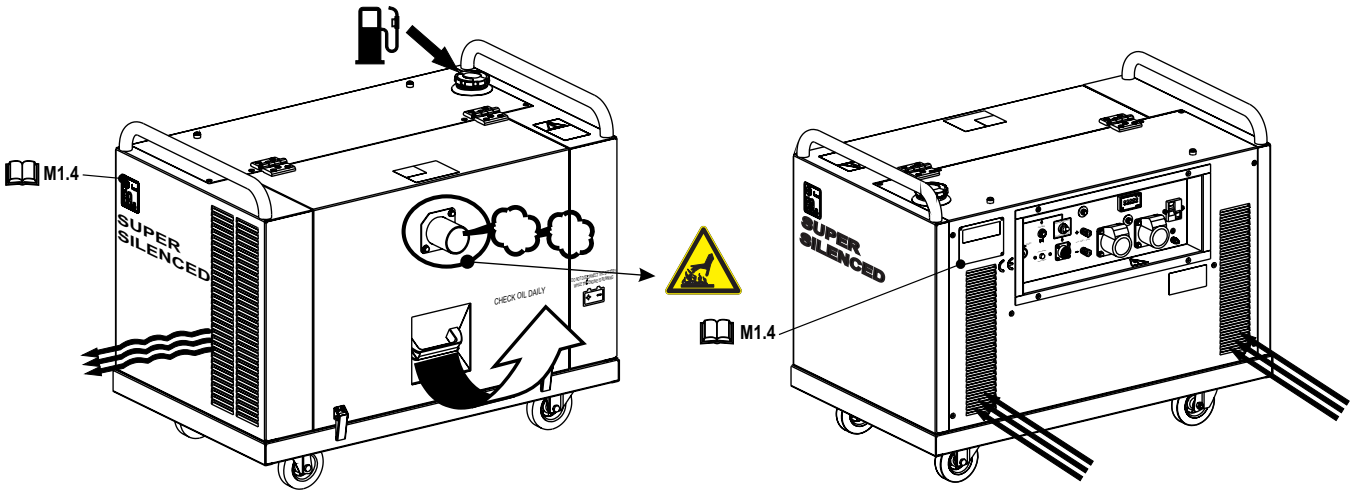
Skin contact	Wash with water and soap
Eyes contact	Irrigate with plenty of water, if the irritation persists contact a specialist
Ingestion	Do not induce vomit as to avoid the intake of vomit into the lungs, send for a doctor
Suction of liquids from lungs	If you suppose that vomit has entered the lungs (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

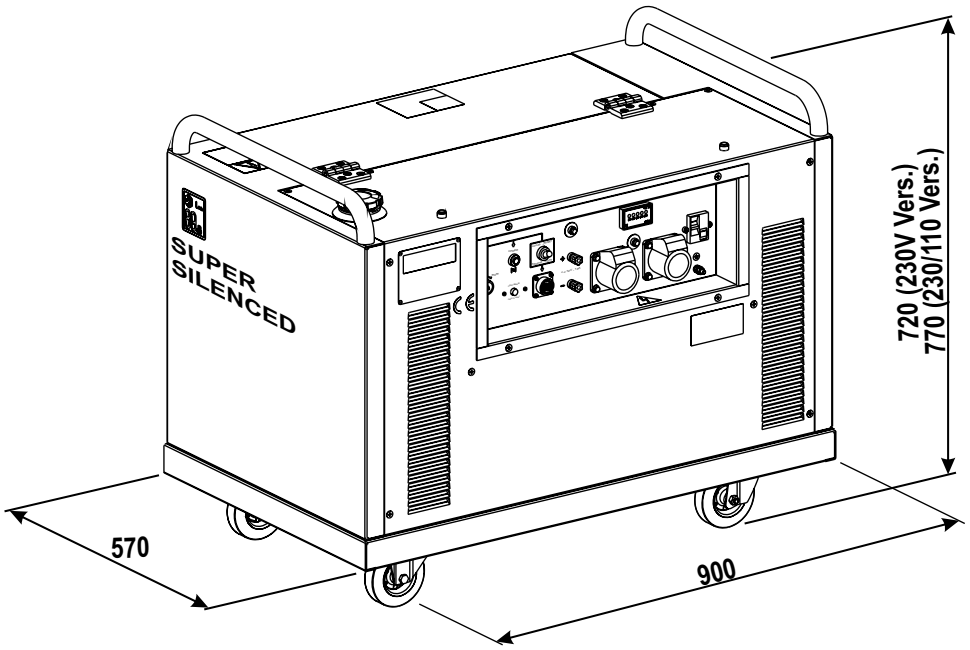
☞ **FIRE PREVENTION.** In case the working zone,for whatsoever cause goes on fire with flames liable to cause severe wounds or death, follow the first aid as described by the ruling norms or local ones.

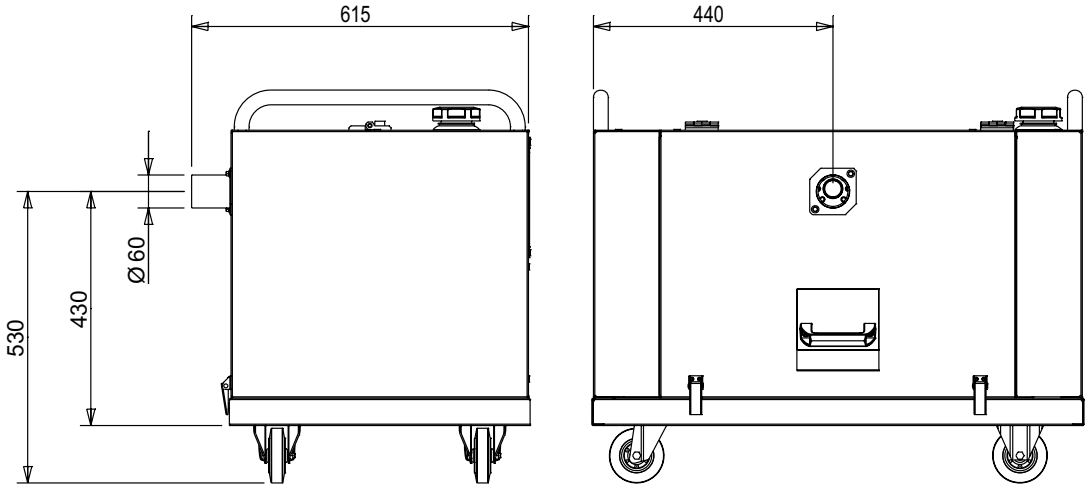
EXTINCTION MEANS	
Appropriated	Carbonate anhydride (or carbon dioxyde) powder, foam, nebulized water
Not to be used	Avoid the use of water jets
Other indications	Cover eventual shedding not on fire with foam or sand, use water jets to cool off the surfaces close to the fire
Particular protection	Wear 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***


M1.4
SUPER SILENCED
CHECK OIL DAILY
M1.4
SUPER SILENCED


SUPER SILENCED
720 (230V Vers.)
770 (230/110 Vers.)
570
900


615
440
Ø 60
430
530

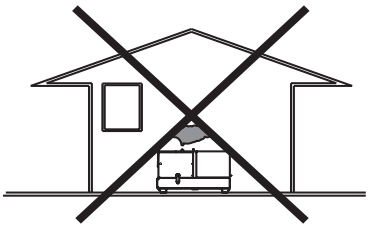
INSTALLATION AND ADVICE BEFORE USE

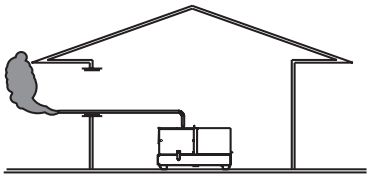
GASOLINE ENGINES

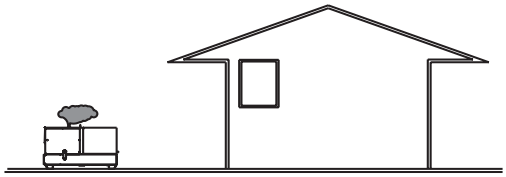
☞ Use in open space, air swept or vent exhaust gases, which contain the deathly carbone oxyde, far from the work area.

DIESEL ENGINES

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

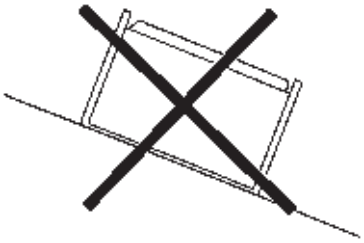




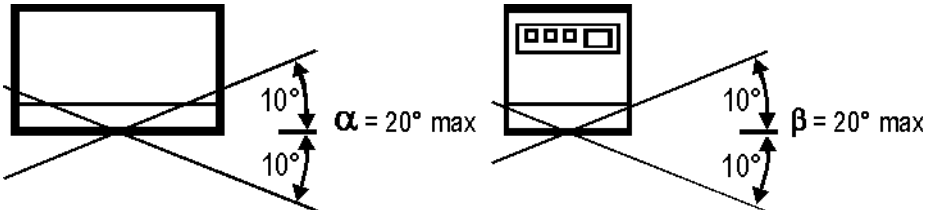


POSITION

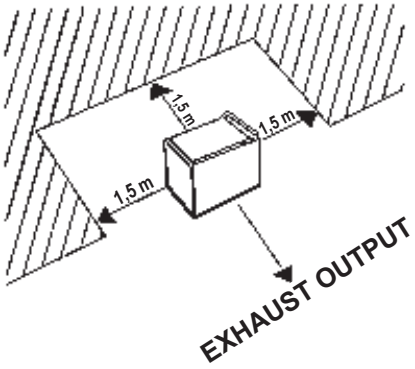
Place the machine on a level surface at a distance of at least 1,5 m from buildings or other plants.



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

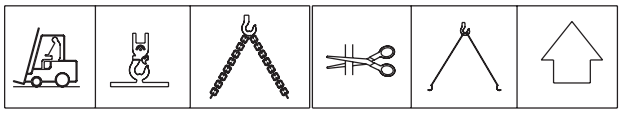
☞ At any move check that the engine is **off**, that there are no connections with cables which impede the moves.

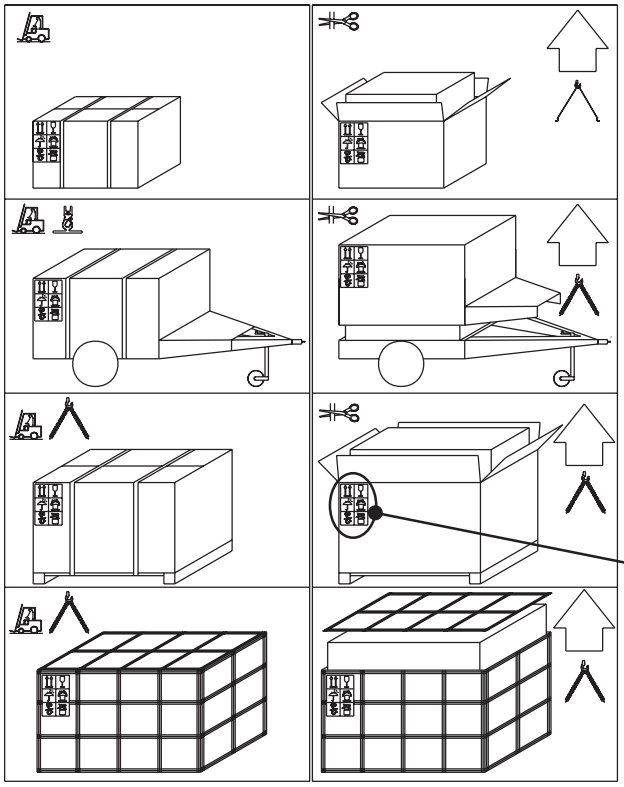
PLACE OF THE MACHINE

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.

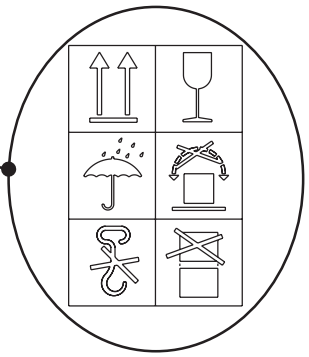
NOTE

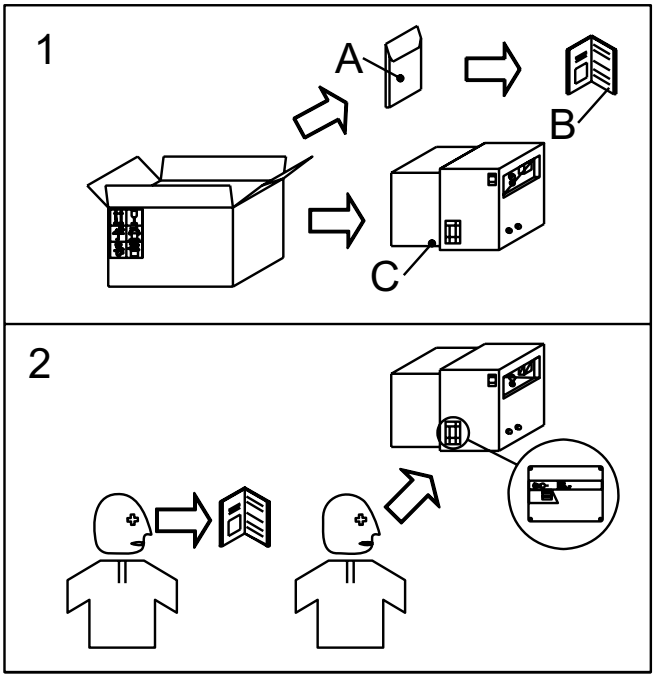




☞ Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with it's packaging, and conforms to local rules and regulations.
When receiving the goods make sure that the product has not suffered damage during the transport, that there has not been rough handling 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.



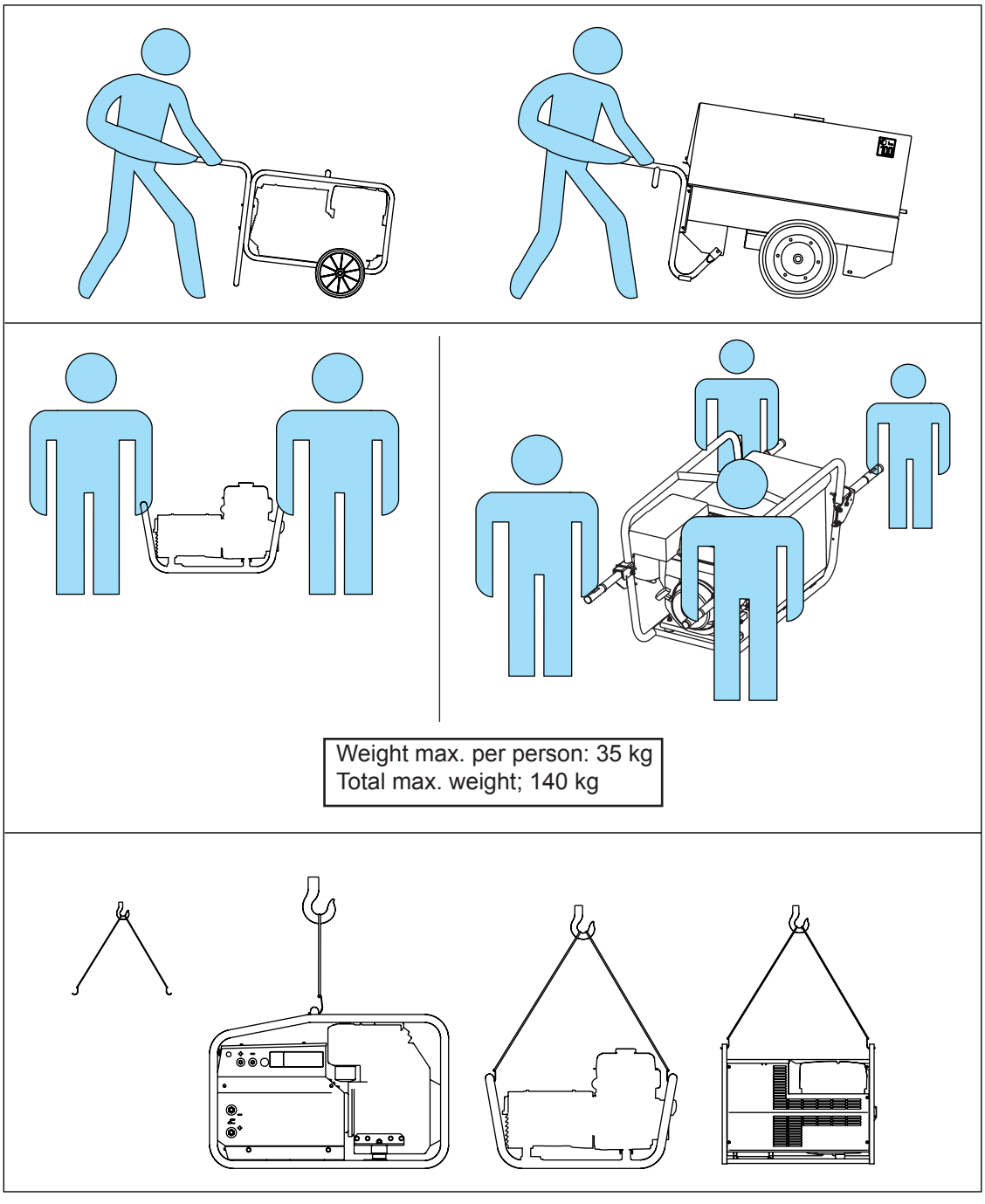


1) Take the machine (C) out of the shipment packing. Take out of the envelope (A) the user's manual (B).
2) Read: the user's manual (B), the plates fixed on the machine, the data plate.

NOTE

Transportation must always take place with the engine off, electrical cables and starting battery disconnected and fuel tank empty.
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.



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

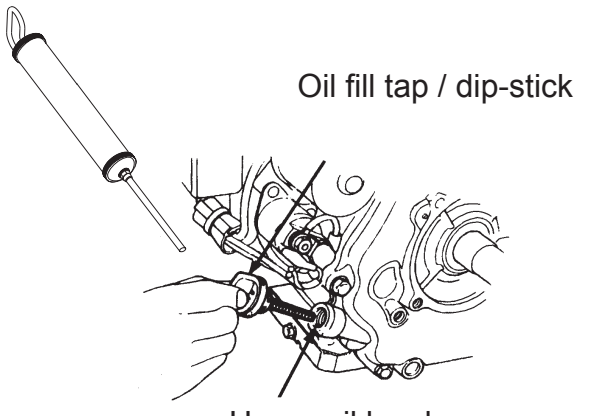
Please refer to the motor operating manual for the recommended viscosity.

RECOMMENDED OIL

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

PRODOTTI RACCOMANDATI RECOMMENDED PRODUCTS	
AGIP SIGMA TURBO PLUS 15W/40 API CG4 - ACEA E3	OLIO MOTORE DIESEL DIESEL ENGINE OIL
AGIP SUPERMOTOROIL 20W/50 API CC-SF	OLIO MOTORE BENZINA GASOLINE ENGINE OIL
AGIP ANTIFREEZE EXTRA INIBITE ETHYLENE GLYCOL (50% + 50% + H_2O)	CIRCUITO DI RAFFREDDAMENTO COOLING CIRCUIT (CUNA NC 956-16 ED 97)

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.



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).

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.

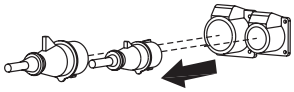
GROUND CONNECTION

Proper grounding is obligatory for all models featuring a ground fault interruptor [G.F.I.] switch. This safety device functions correctly only if the machine is grounded.
☞ Use a good quality grounding cable and connect it to the machine's ground terminal (12). Abide by local norms and/or laws concerning safety and electrical installations.
When these operations have been carried out, the unit can be started up for operation.

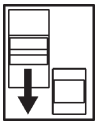
check before each start-up

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

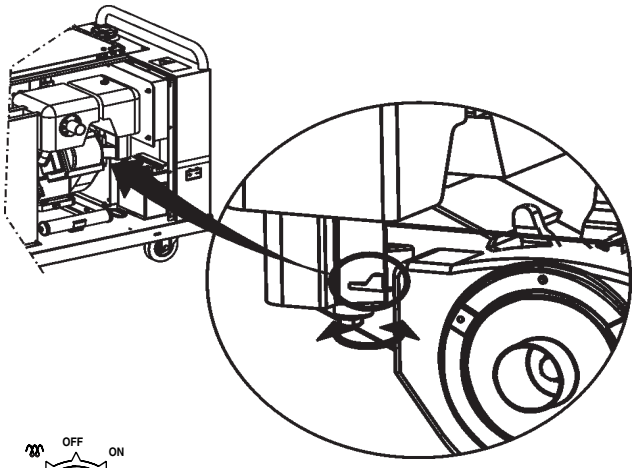


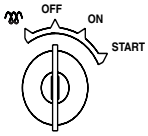
or the G.F.I. switch (D) is not inserted



(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.

NB: it is necessary to unplug the EAS cable from its connector to allow the engine to start.

☞ ***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 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 or the EAS panel.

Start-up with TCM

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

Start-up with EAS

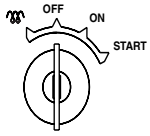
The EAS panel will automatically manage the start-up.
See operating manual for EAS panel.

⚠ 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.

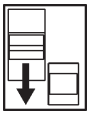
SHUT-DOWN FROM FRONT PANEL

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 remote control or EAS panel.

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

SHUT-DOWN with TCM

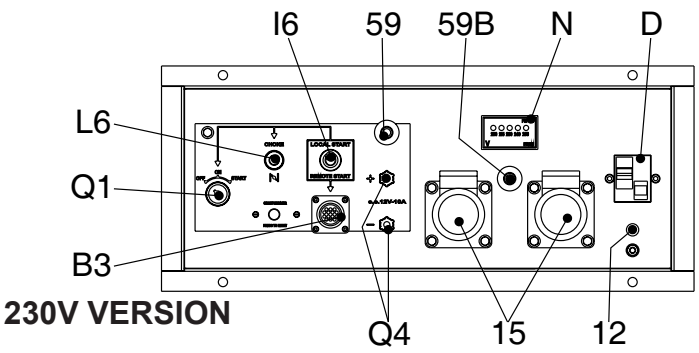
Follow the operating procedures for shut-down under normal or emergency conditions, as described in the paragraph SHUT-DOWN FROM FRONT PANEL, using the key (Q1) on the TCM .

SHUT-DOWN with EAS

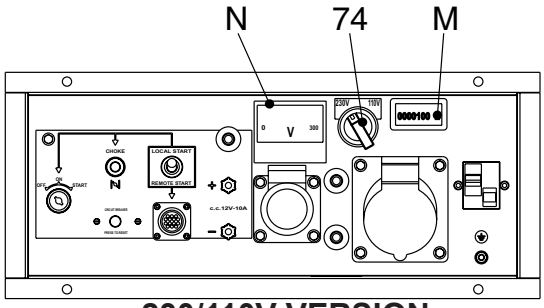
Shut-down is controlled automatically.
See operating manual for the EAS panel.
At the end of each use of the generator, close the gasoline tap (87).

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.

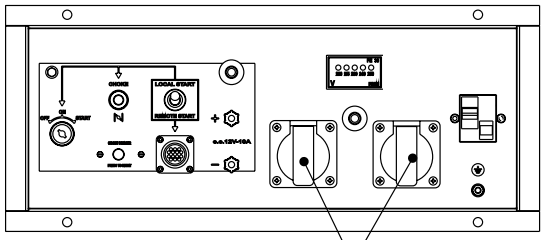
☞ **NB.: as a safety measure the start-up key must be entrusted to qualified personnel.**



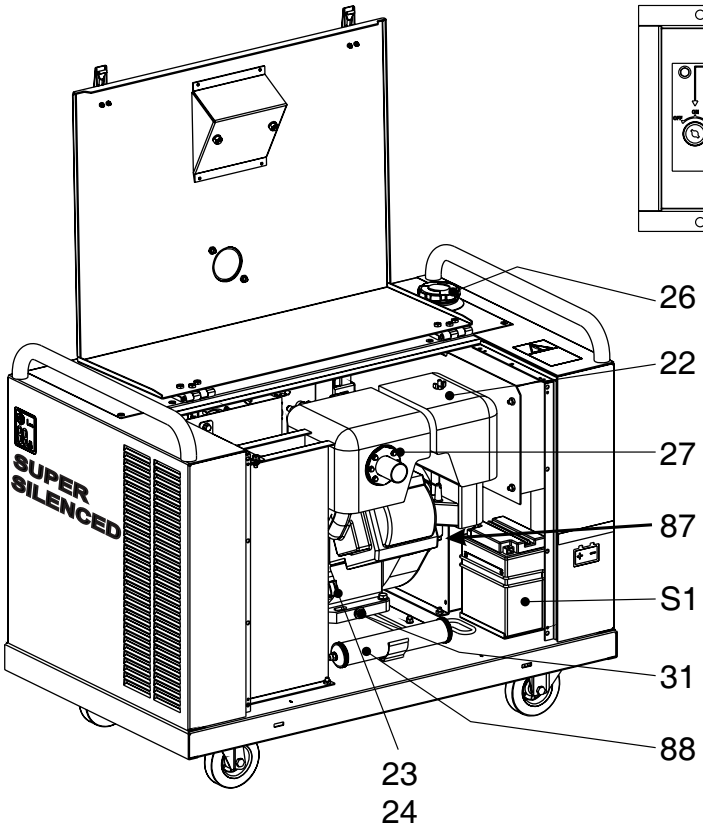
230V VERSION



230/110V VERSION



SCHUKO VERSION



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
74	Commut. sequenza operat./funz.	Operating mode selector	Commut.séquence opérat./fonct.	Conmut.secuencia operat./func.
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	Conraore	Hour counter	Compte-heures	Cuentahoras
N	Voltmetro	Voltmeter	Voltmètre	Voltímetro
Q1	Chiave di avviamento	Starter key	Clé de démarrage	Llave de arranque
Q4	Prese carica batteria	Battery charge sockets	Prises charge batterie	Toma carga batería
S1	Batteria	Battery	Batterie	Batería

WARNING

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

Areas for which access by non-authorized personnel is **forbidden** are:
- the control panel (at the front) - the endothermic motor discharge.

GENERATION IN AC (ALTERNATING CURRENT)

Make certain of the efficiency of the ground connection (12).
- See page M25.

230V version

Position the G.F.I. switch to ON.

☞ Tension is now immediately available to the c.c sockets.

Verify that the LED voltmeter displays the nominal voltage value + 10%
(e.g. nom. V=230V AC - LED on 240/250V AC).

230/110V version

- ***110 V switch position***
  It is available only the 110 V voltage in outlet; from the AC socket (15) it is possible to take the plate nominal power.
- ***Switch 230 V position***
  Both 110 V and 230 V voltages are available from the outlet sockets (15), from the 230 V socket it is possible to take the plate nominal power whereas only the half from the 110 V.
  In case of contemporary use of both generations the total amount of the two powers must not be over the nominal one.
  The GFI is put in protection of the 230 V voltage, before and after every use connect and disconnect the GFI using its lever.

☞ At the start the 110 V voltage is immediately available from the outlet on both switch positions (74); therefore it is advisable to start the set without introducing loads.
- Check that the voltmeter (N) shows the value of the selected voltage, with a tolerance of about + 10%.
- The hormeter will show the working hours of the engine.

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

☞ Verify that the electrical characteristics of the tension/frequency/power device are compatible with those of the generator.
Low frequency and/or voltage can damage some electrical devices irreparably.

Verify that the ground terminal for the plug is properly grounded and connected to the electrical appliance/tool to be powered.

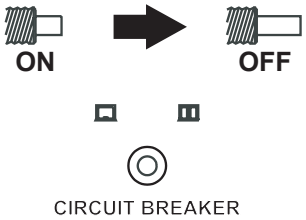
☞ For double insulation devices with the symbol ⧈, the plug's ground terminal must not be grounded.

THERMOPROTECTION

The generator is protected against overloads by the thermoprotection (59B).
When current is exceeded, the protection feature intervenes to cut off tension to the AC sockets.

☞ Notes: the intervention of the thermoprotection feature is not instantaneous, but reacts according to an overcurrent/time characteristic, whereby the greater the overcurrent the quicker the intervention.

In case of intervention by the protection feature, verify that the total power for the loads connected does not exceed the declared rating; decrease if necessary. Disconnect the loads and wait a few minutes to allow the thermo-protection to cool down.



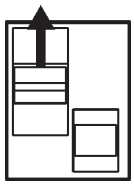
Reset the protection feature by pressing the central pole, then connect the load once again.

If the protection should intervene once more, replace it with another one with matching intervention current specifications and/or contact the Service Department.

☞ Note: do not forcibly press the central pole on the thermoprotection to inhibit its intervention, as this could **damage** the unit's alternator irreparably.

GROUND FAULT INTERRUPTOR SWITCH

The high-sensitivity ground fault interruptor switch [G.F.I.] (30mA) (D), guarantees protection against indirect contacts due to faulty ground currents .
When the G.F.I. switch picks up a faulty ground current that is higher than 30mA, it intervenes by immediately cutting off tension to the AC sockets.



In case of intervention by this protection feature, reset the G.F.I. switch, bringing the lever to the ON position. In case of another intervention, verify that no faulty tools are connected, or replace the G.F.I. switch with another of matching specifications and/or contact the Service Department.

☞ Notes: verify the operation of the G.F.I. switch at least once a month by pressing the TEST button.
The generator must be running and the differential lever in the ON position.

GENERATION IN C.C. (Continuous Current)

Maximum power in c.c.:
P = 120W - V= 12V AC
I = 10A

Generation in c.c. is mainly used to recharge lead batteries.
- Verify that the battery to be charged is not a dry battery, and that it is 12V c.c.
- Position the generator and battery on a flat surface and distant from one another.

WARNING

It is dangerous to handle a lead battery; follow the procedures outlined on page M25.

- Connect the battery recharge cables one at a time, avoiding accidental contacts between them.

☞ Note: use cables with a minimum section of 6 mm^2.
- Start the motor.
- Once recharging is complete, proceed in opposite sequence, switching off the motor and disconnecting the cables, etc.

THERMOPROTECTION

The 12V c.c. output is protected against overloads by the thermoprotection device (59).
When current is exceeded, the protection feature intervenes to cut off tension to the c.c. terminals (Q4).

☞ Notes: the intervention of the thermoprotection feature is not instantaneous, but reacts according to an overcurrent/time characteristic, whereby the greater the overcurrent the quicker the intervention.

In case of intervention by the protection feature, verify that:
- the c.c. terminal /battery connections respect the polarities;
- the battery is not faulty or has a short-circuited element;
- the battery level is not too low, with the consequent recharge current being too high.

Eliminate the cause and wait a few minutes to allow the thermoprotection to cool down.

Reset the protection feature by pressing the central pole. If the protection should intervene once more, replace it with another one with matching intervention current specifications and/or contact the Service Department.

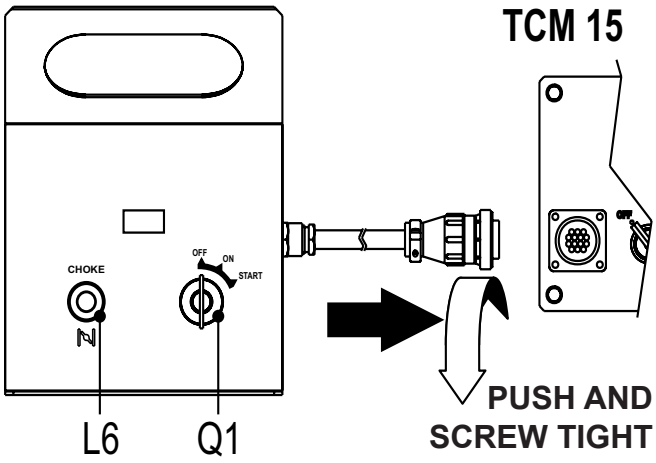
MAKE SURE

When the TCM 15 - 6 is used, it is not possible to connect the E.A.S automatic intervention unit.

USE OF THE REMOTE CONTROL TCM 15

The coupling of the TCM 15 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 15 assures the following fonctions:
- starting (starting key Q1)
- stop (starting key Q1)
- choke control (L6)

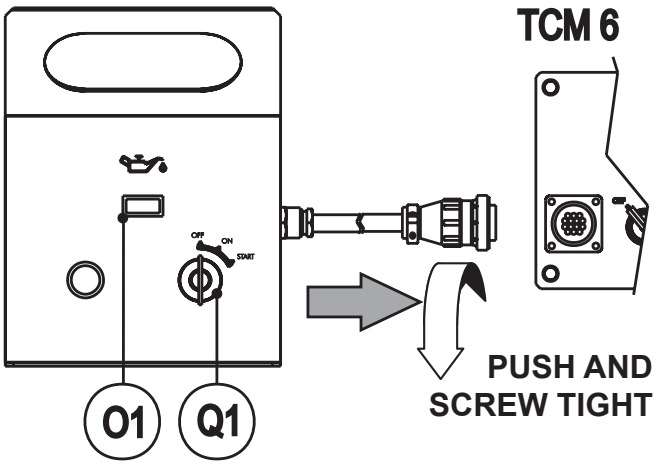


USE OF THE REMOTE CONTROL TCM 6

The coupling of the TCM 6 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 6 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".



N.B.: the position of the selector LOCAL START/ REMOTE START (I6) on the generating sets must be on the position "REMOTE START".

Problem	Possible cause	Solution
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) Dirty or faulty spark plug	5) Clean or check and eventually replace
	6) Battery not activated, low or faulty	6) Activate, recharge, or replace the battery
	7) Faulty start relay	7) Replace
	8) Cold motor	8) Hold down the CHOKE button, after start-up, for a longer period of time
	9) Other causes	9) Consult the motor Operating Manual.
Lack of tension to the AC sockets	1) G.F.I. switch in the OFF position	1) Position to ON
	2) Intervention of G.F.I. switch due to faulty ground current	2) Disconnect load from AC sockets. Position the G.F.I. switch to ON; if the switch intervenes once again, the fault is on board the machine. Contrarily, the cause of the G.F.I. switch intervention is due to a faulty ground current in the load or connection cable. Find and remove the fault.
	3) Faulty G.F.I. switch	3) Replace
Lack of tension to the AC sockets	1) Intervention of circuit breaker (thermoprotection)	1) Check total power supplied by generator; if greater than the power reported on the specification nameplate, decrease the load
	2) Faulty thermoprotection	2) Replace
	3) Faulty alternator	3) Check rotating diode windings, alternator excitation capacitor. See specifc alternator manual.
No-load output voltage too low or too high	1) Incorrect motor speed	1) Set the motor's no-load speed
	2) Faulty alternator	2) Check rotating diode windings, alternator excitation capacitor. See specifc alternator manual.
No-load voltage OK, too low with load	1) Faulty alternator	1) Replace rotating diodes
	2) Overload	2) Check total load and eventually decrease
	3) Number of motor rpm too low	3) Check the fuel supply circuit. See Motor Operating manual.
Lack of tension to the c.c. terminals	1) Thermoprotection intervention	1) Check the load current and eventually decrease it.
	2) Faulty thermoprotection	2) Replace
	3) Faulty diode bridge rectifier	3) Replace
	4) Faulty alternator winding	4) Replace
The battery discharges itself frequently	1) Intervention of battery charge thermoprotection	1) Reset thermoprotection circuit breaker. In case of new intervention, check battery.
	2) Faulty battery charge circuit	2) Check: battery charge winding, battery charge diode, T1 and M3 respectively on electrical diagram. Replace.
	3) If connected to EAS automatic panel.	3) Replace panel (faulty battery charge circuit on EAS panel).

⚠ 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.

Every engine and alternator manufacturer has maintenance intervals and specific checks for each model: it is necessary to consult the specific engine or alternator USER AND MAINTENANCE manual.

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 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: BCS 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.

MOSA
REV.0-06/04

(I) Legenda schema elettrico
(GB) Electrical system legende
(F) Legende des schemas electriques
(D) Stromlaufplan - Referenzliste
(E) Leyenda esquema eléctrico
(NL)

GE 4500 HSX

M 60

A : Alternatore
B : Supporto connessione cavi
C : Condensatore
D : Interruttore differenziale
F : Fusibile
H : Presa 230V monofase
I : Presa 110V monofase
M : Contaore
N : Voltmetro
Q1 : Chiave avviamento
R1 : Motorino avviamento
S1 : Batteria
T1 : Alternatore carica batteria
S2 : Trasmettitore livello olio
B3 : Connettore E.A.S.
G3 : Bobina accensione
H3 : Candela accensione
M3 : Diodo carica batteria
N3 : Relè
N4 : Elettromagnete aria
P4 : Protezione termica
Q4 : Prese carica batteria
Y5 : Commutatore Serie/Parallelo
I6 : Selettore Start Local/Remote
L6 : Pulsante CHOKE

A: Alternator
B: Wire connection unit
C: Capacitor
D: G.F.I.
F: Fuse
H: 230V 1phase socket
I: 110V 1phase socket
M: Hour-counter
N: Voltmeter
Q1: Starter key
R1: Starter motor
S1: Battery
T1: Battery charge alternator
S2: Oil level transmitter
B3: E.A.S. connector
G3: Ignition coil
H3: Spark plug
M3: Battery charge diode
N3: Relay
N4: Choke solenoid
P4: Circuit breaker
Q4: Battery charge sockets
Y5: Commutator/switch, series/parallel
I6: Start Local/Remote selector
L6: Choke button

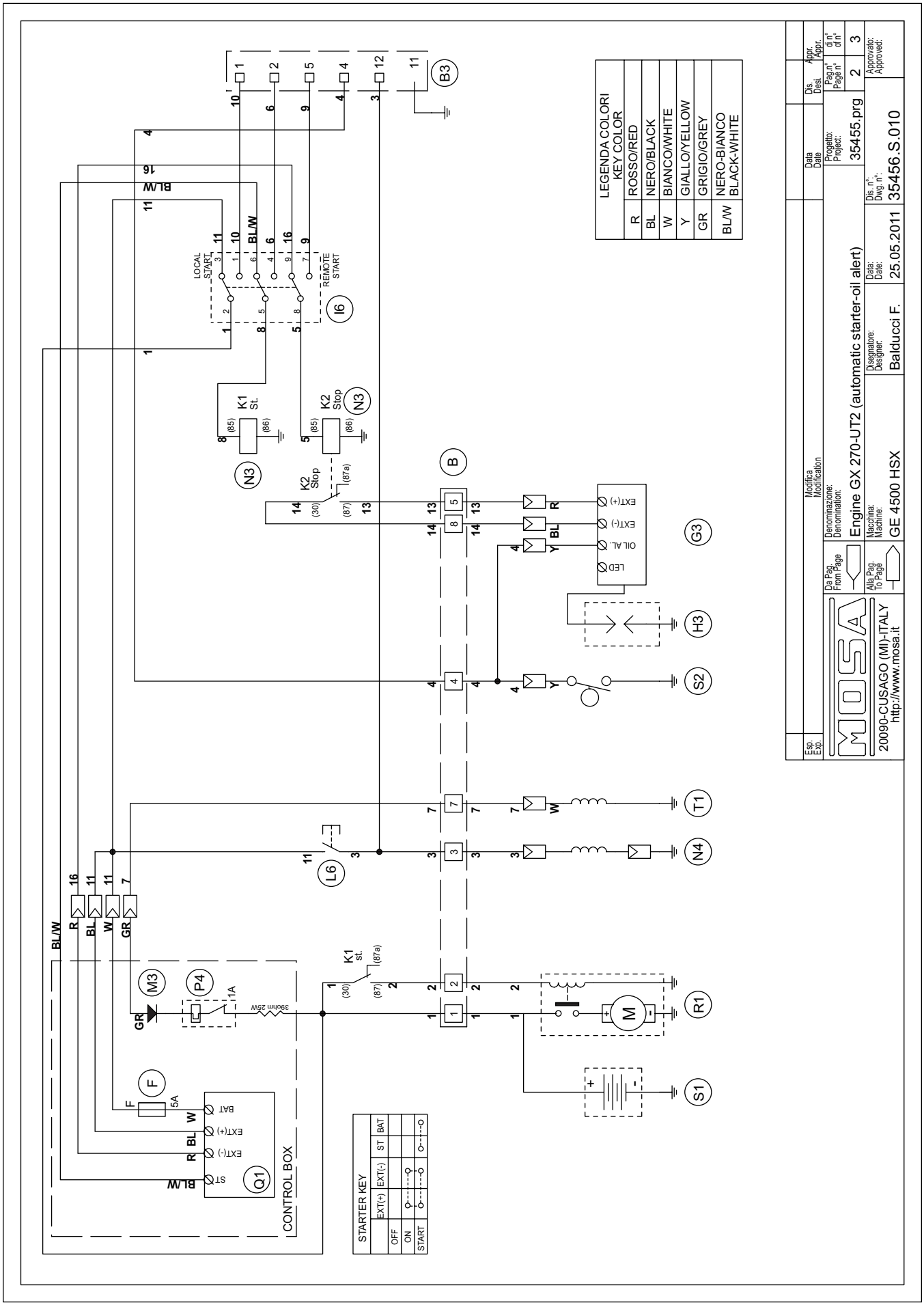
A : Alternateur
B : Connexion câbles
C : Condensateurs
D : Interrupteur différentiel
F : Fusible
H : Prise 230V monophasé
I : Prise 110V monophasé
M : Compte-heures
N : Voltmètre
Q1 : Clé de démarrage
R1 : Moteur de démarrage
S1 : Batterie
T1 : Alternateur charge batterie
S2 : Transmetteur niveau huile
B3 : Connecteur E.A.S.
G3 : Bobine allumage
H3 : Bougie allumage
M3 : Diode charge batterie
N3 : Relais
N4 : Electro-aimant air
P4 : Protection thermique
Q4 : Prises charge batterie
Y5 : Commutateur Série/Parallèle
I6 : Selecteur Start Local/Remote
L6 : Bouton Choke

A Generator
B Klemmleiste
C Kondensatorbox
D FI-Schalter (GFI)
F Sicherung
H Steckdose 230V 1-phasig
I Steckdose 110V 1-phasig
M Stundenzähler
N Voltmeter
Q1 Zündschloss
R1 Anlasser
S1 Batterie
T1 Ladegenerator Batterie
S2 Ölstandssensor
B3 Steckdose EAS/Fernstart
G3 Zündspule
H3 Zündkerze
M3 Diode Batterielader
N3 Relais
N4 Elektromagnet Motor-Choke
P4 Thermosicherung
Q4 Steckdose Batterielader
Y5 Umschalter seriell/parallel
I6 Umschalter Fernstart
L6 Choke-Taste

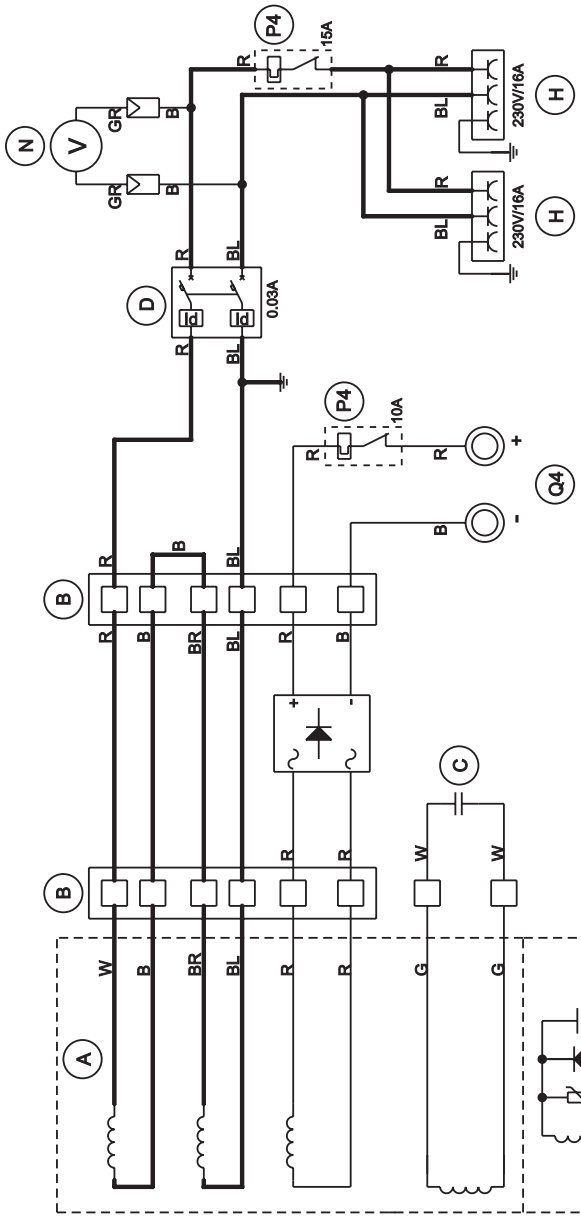
A : Alternador
B : Soporte conexión cables
C : Condensador
D : Interruptor diferencial
F : Fusible
H : Toma 230V monofásica
I : Toma 110V monofásica
M : Cuentahoras
N : Voltímetro
Q1 : Llave arranque
R1 : Motor arranque
S1 : Batería
T1 : Alternador carga batería
S2 : Captador nivel aceite
B3 : Conector E.A.S.
G3 : Bobina encendido
H3 : Bujía encendido
M3 : Diodo carga batería
N3 : Relé
N4 : Electromagnetismo aire
P4 : Protección térmica
Q4 : Tomas carga batería
Y5 : Contactor Serie/Paralelo
I6 : Selector Start Local/Remote
L6 : Pulsador CHOKE (aire)

04/06/04 35455-I

MOSA
REV.1-07/11
(I) Schema elettrico
(GB) Electric diagram
(F) Schemas electriques
(D) Stromlaufplan
(E) Esquema eléctrico
(NL)
GE 4500 HSX
M
61.1



04/06/04 35455-I



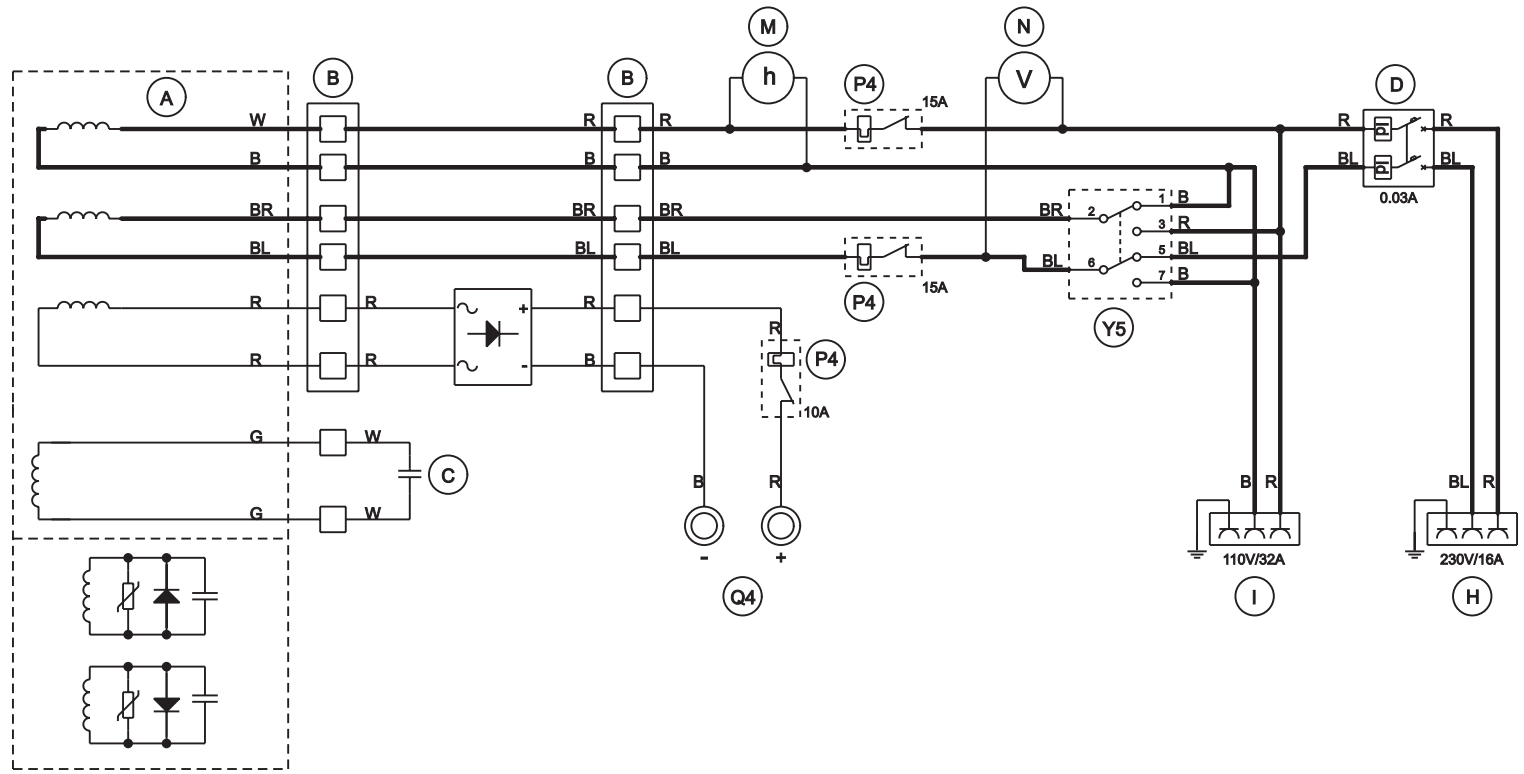
LEGENDA COLORI KEY COLOR	
R	ROSSO/RED
B	NERO/BLACK
BL	BLU/BLUE
BR	MARRONE/BROWM
W	BIANCO/WHITE
GR	VERDE/GREEN
G	GRIGIO/GREY

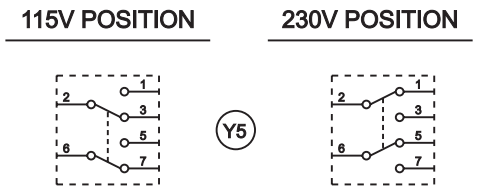
Esp. Exp.
Modifica Modification
Data Date
Dis. Desi.
Appr. Appr.

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

Da Pag. From Page
Alla Pag. To Page
Denominazione: Denomination: Aux. (230Mx2/12Vdc) DT
Macchina: Machine: GE 4500 HSX
Disegnatore: Designer: Leporace N.
Data: Date: 12.02.2004
Progetto: Project: 35455.prg
Pag.n° Page n° 3
di n° of n° 3
Dis. n°: Dwg. n°: 35455.S.020
Approvato: Approved:

La MOSA si riserva a termini di legge la proprieta' del presente disegno con divieto di riprodurlo o comunicarlo a terzi senza sua autorizzazione.





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

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

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

Da Pag. From Page	Denominazione: Denomination:	Progetto: Project:	Pag.n° Page n°	di n° of n°
	Aux. (230M/115M//12Vdc) DT	35457.prg	3	3

Alla Pag. To Page	Macchina: Machine:	Disegnatore: Designer:	Data: Date:	Dis. n°: Dwg. n°:	Approvato: Approved:
	GE 4500 HSX	Leporace N.	12.02.2004	35457.S.020	

La MOSA si riserva a termini di legge la proprieta' del presente disegno con divieto di riprodurlo o comunicarlo a terzi senza sua autorizzazione.

MOSA
REV.0-06/04

I Schema elettrico
GB Electric diagram
F Schemas electriques
D Stromlaufplan
E Esquema eléctrico
NL

GE 4500 HSX

M
61.3

04/06/04 35455-I

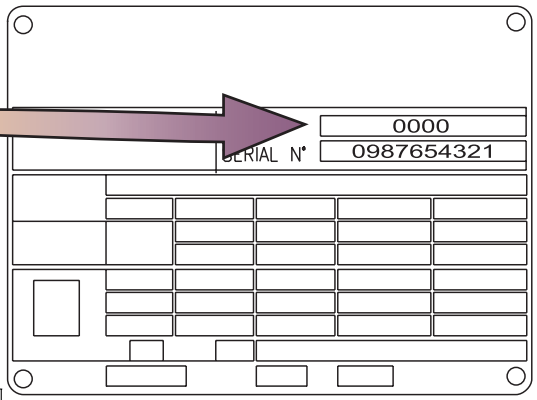
The manufacturer guarantees that any request for spare parts will be satisfied.

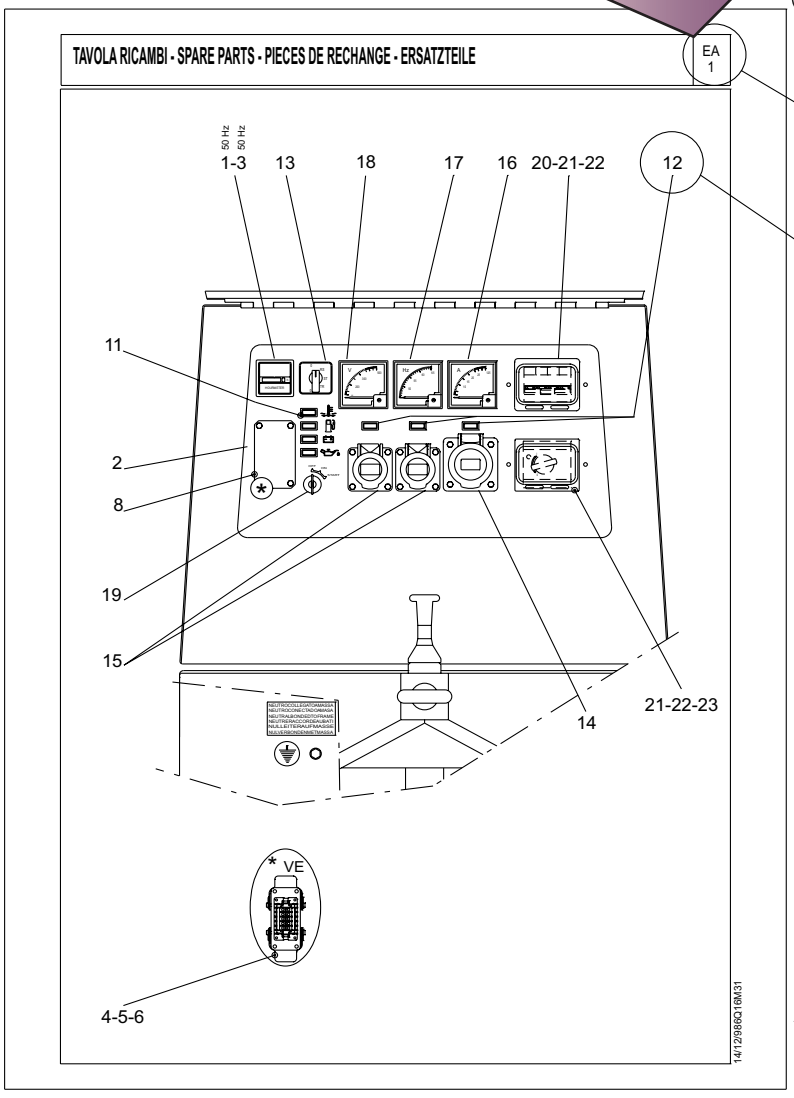
To keep the machine in full working order, when replacement spare parts is required, always ask for genuine parts only.

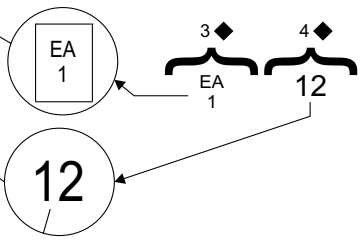
☞ The requested data are to be found on the data plate located on the machine structure, quite visible and easy to consult. ✹

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

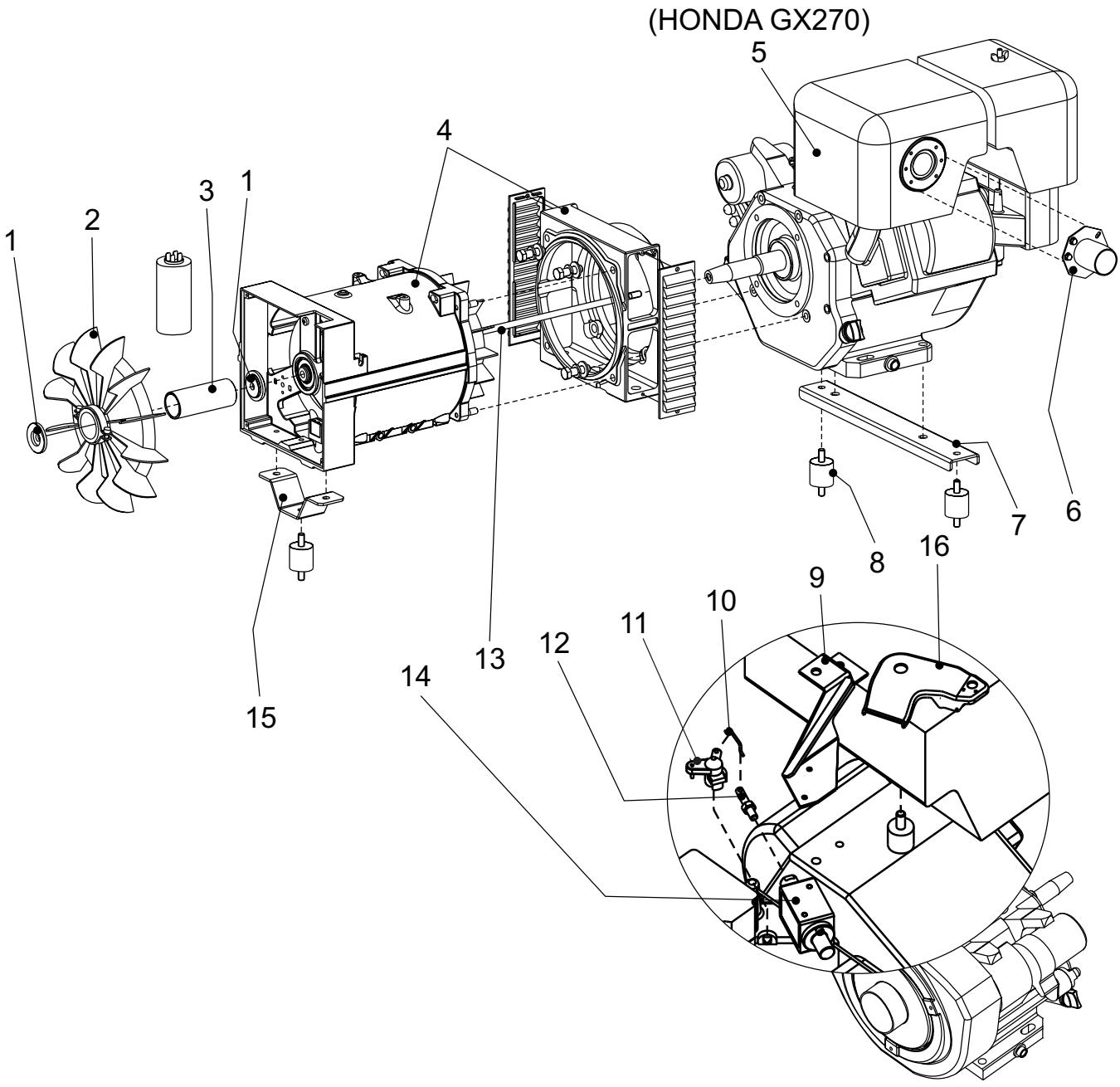






ABBREVIATIONS AND SYMBOLS:

(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


(HONDA GX270)
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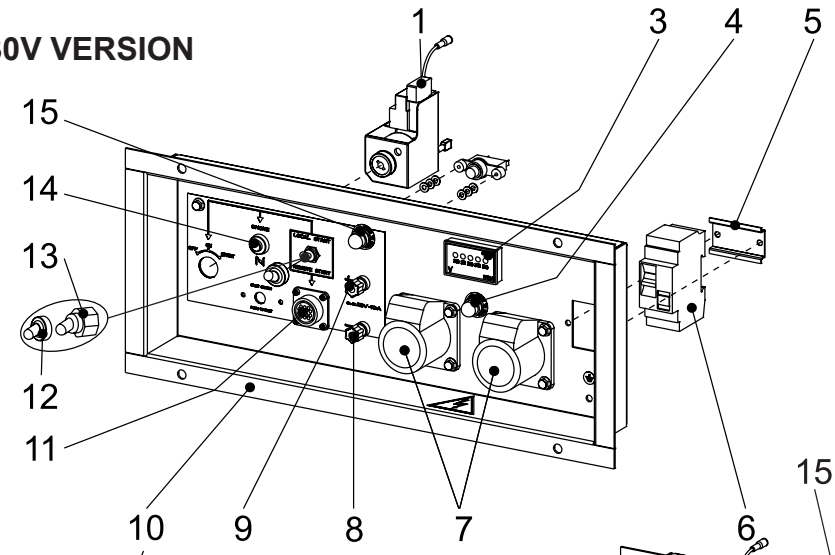
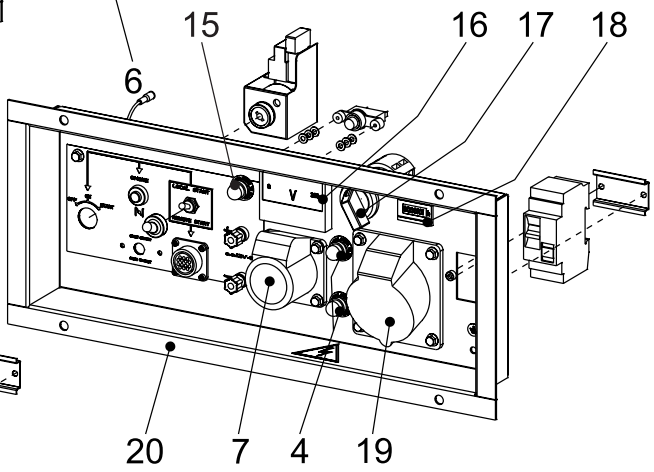
Pos.	Rev.	Cod.	Descr.	Note
1		M354553038	RONDELLA BLOCC. DISTANZ./VENTOLA	
2		M105111290	VENTOLA CON FASCETTA	
3		M354553039	DISTANZ. FISS. VENTOLA	
4		M254003100	ALTERNATORE “SINCRO” ER2CAT4,2KVA-230V	
5		M0000354502200	MOTORE HONDA GX270	Fino a REV.1-05/07 Del.63/11-08/06/11
5		M0000354562200	MOTORE HONDA GX270	Da REV.2-07/11 Del.63/11-08/06/11
6		M354502078	RACCORDO TUBO SCARICO	Fino a REV.1-05/07 Del.63/11-08/06/11
6		M354562078	RACCORDO TUBO SCARICO	Da REV.2-07/11 Del.63/11-08/06/11
7		M254602035	TRAVERSA SUPP. MOTORE	
8		M254601035	ANTIVIBTANTE D30x30	
9		M306479101	STAFFA SUPPORTO SOLENOIDE	
10		M306479056	TIRANTE PER ELETTROMAGNETE	
11		M354509111	LEVA CHOKE	
12		M306479108	PERNO ACCELERATORE	
13		M354553036	TIRANTE	
14		M306479071	ELETTROMAGNETE COMANDO CHOKE	
15		M354553101	STAFFA SUPP. ALTERNATORE	
16		M354509105	LEVA ACCELERATORE (Modificata)	da REV.2-07/11 Del.141/06-05/10/06

Pos.	Rev.	Cod.	Descr.	Note
1		M354553038	WASHER	
2		M105111290	FAN	
3		M354553039	FIXING FAN SPACER	
4		M254003100	ALTERNATOR “SINCRO” ER2CAT4,2KVA-230V	
5		M0000354502200	HONDA ENGINE GX270	Up to REV.1-05/07 Del.63/11-08/06/11
5		M0000354562200	HONDA ENGINE GX270	From REV.2-07/11 Del.63/11-08/06/11
6		M354502078	EXHAUST PIPE CONNECTOR	Up to REV.1-05/07 Del.63/11-08/06/11
6		M354562078	EXHAUST PIPE CONNECTOR	From REV.2-07/11 Del.63/11-08/06/11
7		M254602035	ENGINE BRACKET	
8		M254601035	VIBRATION DAMPER D30x30	
9		M306479101	BRACKET ECONOMIZER HOLDER	
10		M306479056	ROD FOR ELECTRO MAGNET	
11		M354509111	CHOKE LEVER	
12		M306479108	ACCELERATOR PIN	
13		M354553036	CRANK SHAFT TIE-ROD	
14		M306479071	ELECTRO MAGNET CHOKE CONTROL	
15		M354553101	ALTERNATOR BRACKET	
16		M354509105	ACCELERATOR LEVER (Modified)	from REV.2-07/11 Del.141/06-05/10/06

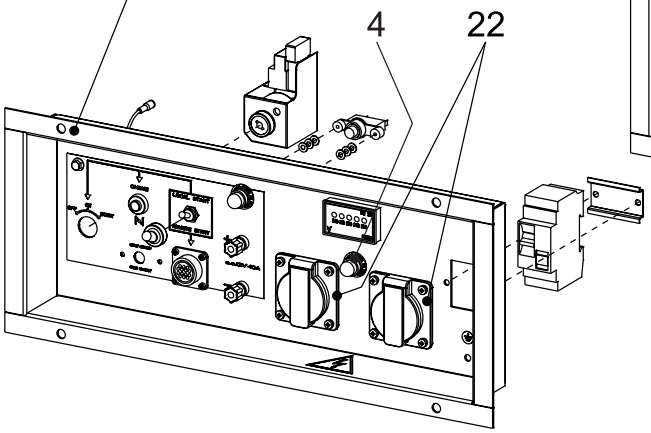
230V VERSION

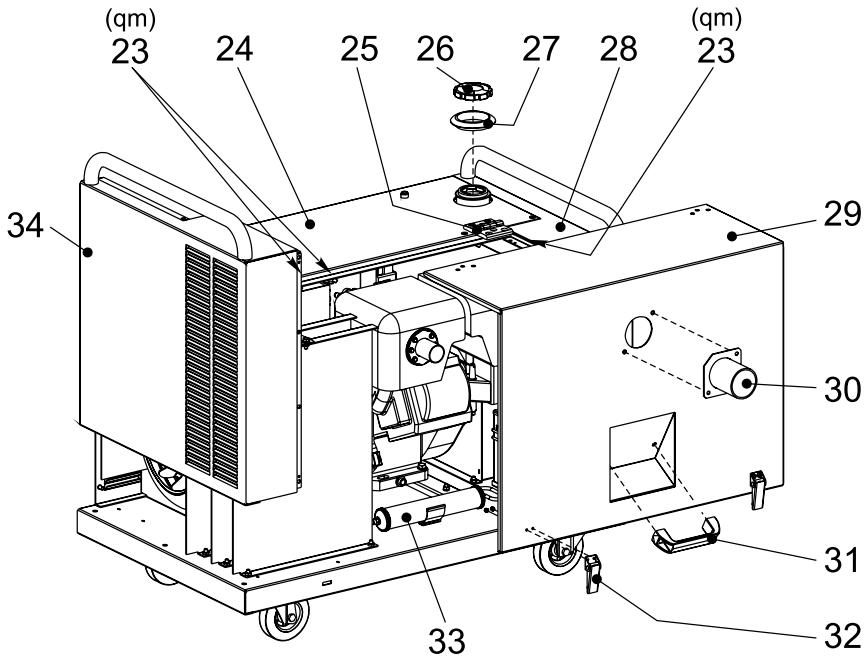


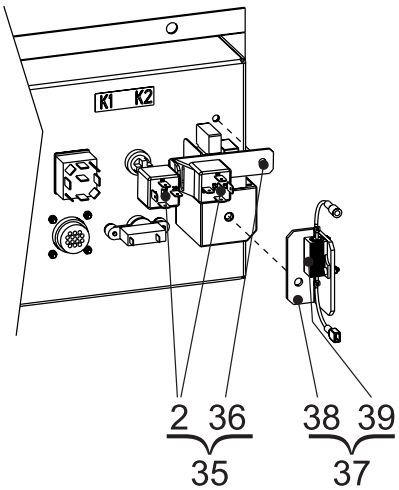
230/110V VERSION



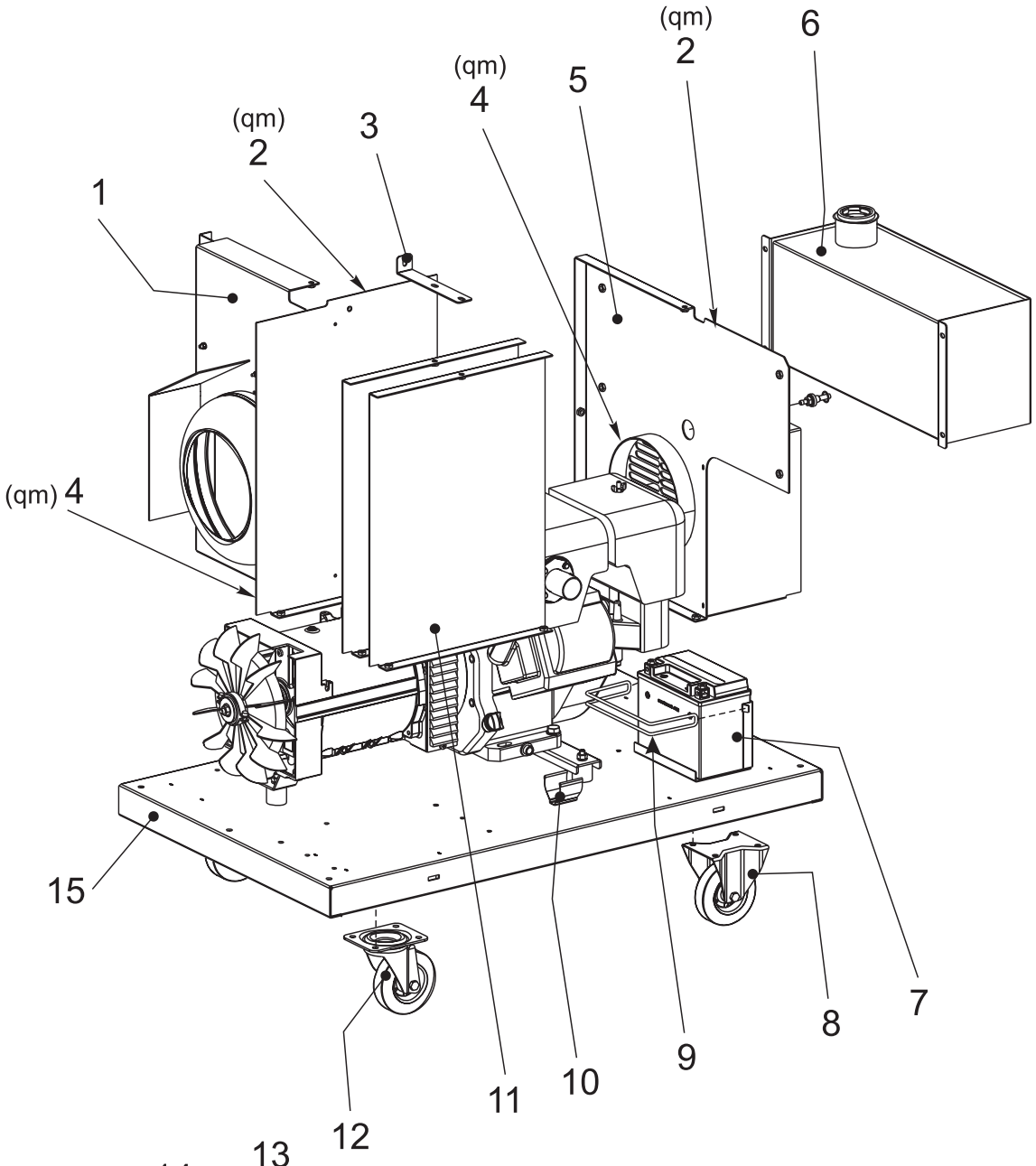
SCHUKO VERSION

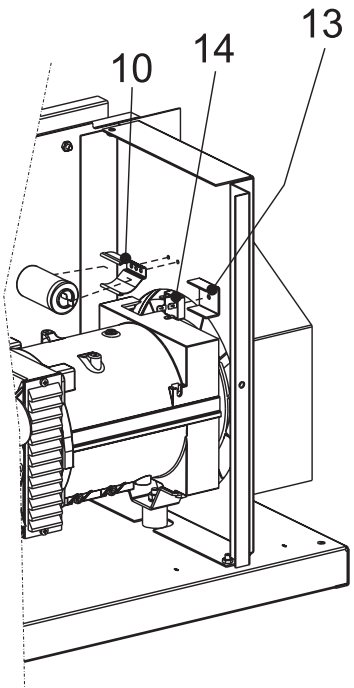




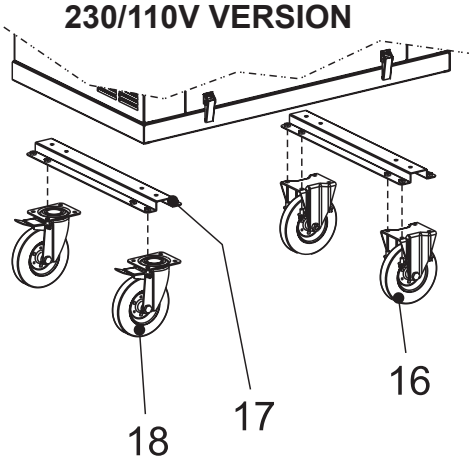


Pos.	Cod.	Descr.	Note
1	M35450A902	VARIANTE CAVI CHIAVE AVVIAMEN. / STARTING KEY CABLING	Fino a/Up to REV.0-06/04 - Del 63/11 - 08/06/11
1	M35456A902	VARIANTE CAVI CHIAVE AVVIAMEN. / STARTING KEY CABLING	Da/From REV.1-07/11 - Del 63/11 - 08/06/11
2	M306479199	RELE' AVV. ELETTRICO / RELAY, ELECTRIC START	
3	M270027300	VOLTMETRO DIGITALE / DIGITAL VOLTMETER	Vers. 230V
4	M155307107	DISGIUNTORE TERMICO / THERMAL SWITCH	Vers. 230V
5	M306417036	GUIDA FISSAGGIO INTERRUTTORE / FIXING GUIDE INTERRUPTOR	
6	M220237105	Vedi Cod.256007105 / See Part n°256007105	
7	M307017240	PRESA 220V 16A / EEC SOCKET 16A, 220V 2P+T	
8	M306417318	PRESA C.B. NERA (-) / BLACK B.C. SOCKET (-)	
9	M306417316	PRESA C.B. ROSSA (+) / RED BATTERY CHARGER SOCKET (+)	
10	M354507020	PANNELLO FRONTALE / FRONTAL PANEL	Vers. 230V
11	M35450C020	GR.CAVI MOTORE / ENGINE CABLES	x connettore EAS - Fino a/Up to REV.0-06/04 - Del 63/11 - 08/06/11
11	M35456C020	GR.CAVI MOTORE / ENGINE CABLES	x connettore EAS - Da/From REV.1-07/11 - Del 63/11 - 08/06/11
12	M102042740	CAPPUCCIO / CAP	
13	M107509902	COMMUTATORE TRIPOLARE / TRIPOLES SWITCH	
14	M101091830	PULSANTE DI STOP / BUTTON, STOP	
15	M306467109	PROTEZIONE TERMICA (C.B.) / THERMOPROTECTION (B.C.)	
16	M103011310	VOLTMETRO / VOLTMETER	Vers. 230/110V
17	M256417315	COMMUTATORE DI LINEA / COMMUTATOR SWITCH 25A 2P	Vers. 230/110V
18	M356317330	CONTAORE QUADRATO 110V 50Hz / HOURMETER 110V 50HZ	Vers. 230/110V
19	M105111530	PRESA CEE 32A 110V / SOCKET, EEC, 32A 110V	Vers. 230/110V
20	M354527020	PANNELLO FRONTALE / FRONT PANEL	Vers. 230/110V
22	M259107241	PRESA SCHUKO / SOCKET SCHUKO 16A 230V 2P+T	Vers. Schuko
23	M309509005	GUARNIZIONE / GASKET	qm
24	M354508010	PANNELLO LATO ASPIRAZIONE / AIR INTAKE PANEL	
25	M744508140	CERNIERA PER FIANCATA / LATCH	
26	M259102026	TAPPO SERBATOIO / TANK CAP	(il tappo originale è fornito con motore)
27	M354502022	GUARNIZ. TUBO RIEMP. SERBATOIO / GASKET	
28	M354508015	PANNELLO LATO MOTORE / COVER, ENGINE SIDE	
29	M354508021	PORTELLO LATO SCARICO / EXHAUST PANEL	Fino a/Up to REV.0-06/04 - Del 63/11 - 08/06/11
29	M354568021	PORTELLO LATO SCARICO / EXHAUST PANEL	Da/From REV.1-07/11 - Del 63/11 - 08/06/11
30	M354508186	RACCORDO PROLUNGA x TUBO SCAR. / EXHAUST PIPE CONNECTOR	
31	M343339601	MANIGLIA / KNOB	
32	M354508110	CHIUSURA A LEVA REGOLABILE / ADJUSTABLE LOCK	
33	M354502310	SIRINGA SCARICO/CARICO OLIO / OIL FILLING	
34	M354508020	PANNELLO LATO ALTERNATORE / PLATE ALTERNATOR SIDE	
35	M000035456A730	ASSIEME RELE' / RELAY ASSEMBLY	Da/From REV.1-07/11 - Del 63/11 - 08/06/11
36	M354567039	SUPPORTO RELE' / RELAY SUPPORT	Da/From REV.1-07/11 - Del 63/11 - 08/06/11
37	M000035456A725	ASSIEME RESISTORE CABLATO / WIRED RESISTOR ASSY	Da/From REV.1-07/11 - Del 63/11 - 08/06/11
38	M354569847	DISSIPATORE / HEAT SINK	Da/From REV.1-07/11 - Del 63/11 - 08/06/11
39	M354569895	RESISTORE CABLATO / WIRED RESISTOR	Da/From REV.1-07/11 - Del 63/11 - 08/06/11



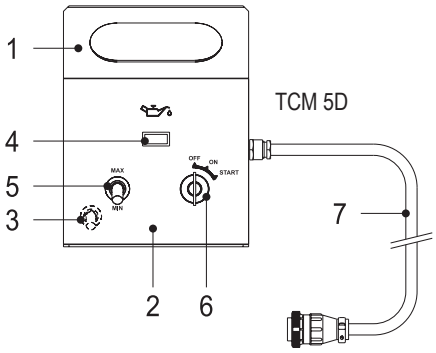


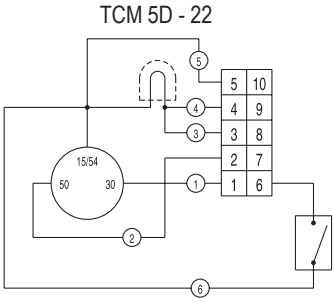
230/110V VERSION

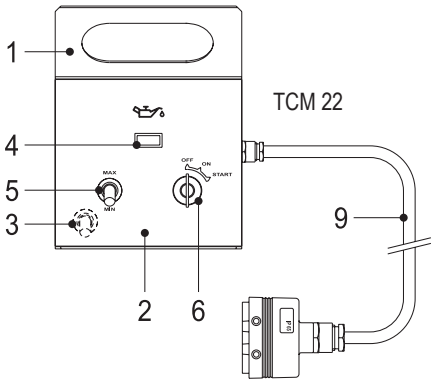


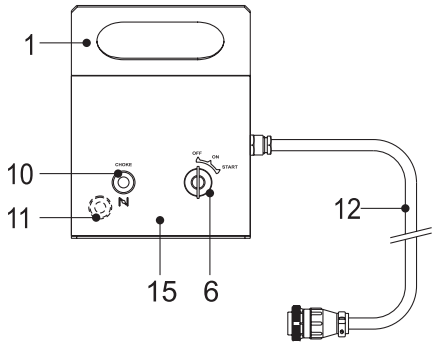
Pos.	Cod.	Descr.	Note
1	354558219	PARATIA ASPIRAZ. ALTERNATORE	
2	306418310	GUARNIZIONE (L=MT.1)	(qm)
3	354508066	SQUADRETTA FISS. SETTI INSONOR.	
4	102302280	GUARNIZIONE (L=MT.1)	(qm)
5	354508220	PARATIA ASPIRAZIONE MOTORE	
6	354502020	SERBATOIO CARBURANTE	
7	306469150	BATTERIA 60A	fino a REV.06/04 - Del.119/06 - 10/7/06
7	354659150	BATTERIA	da REV.09/06 - Del.119/06 - 10/7/06
8	354501170	RUOTA GOMMA PIENA SUPP. FISSO	
9	306469282	ELASTICO FISSAGGIO BATTERIA	
10	354507037	CLIP D36 L40	
11	354508067	PARATIA SETTO INSONORIZZANTE	
12	354501270	RUOTA GOMMA PIENA SUPP. GIREV.	
13	306225030	DISSIPATORE PER PONTE DIODI	
14	1270070	PONTE DIODI 120A	
15	354551050	BASAMENTO	
16	354521170	RUOTA GOMMA PIENA SUPP. FISSO	(230/110V Version)
17	354521099	TRAVERSA SUPP. RUOTE	(230/110V Version)
18	354521270	RUOTA GOMMA PIENA SUPP. GIREV.	(230/110V Version)

Pos.	Cod.	Descr.	Note
1	354558219	ALTERNATOR PANEL	
2	306418310	PROTECTION GASKET (L=MT.1)	(qm)
3	354508066	NOISE ELEMENT BRACKET	
4	102302280	GASKET (L=MT.1)	(qm)
5	354508220	ENGINE PANEL	
6	354502020	FUEL TANK	
7	306469150	BATTERY 60A	up to REV.06/04 - Del.119/06 - 10/7/06
7	354659150	BATTERY	from REV.09/06 - Del.119/06 - 10/7/06
8	354501170	WHEEL	
9	306469282	ELASTIC, FIXING BATTERY	
10	354507037	CLIP D36 L40	
11	354508067	NOISE PANEL	
12	354501270	MOVING WHEEL	
13	306225030	DIODE BRIDGE DISSIPATOR	
14	1270070	DIODE BRIDGE 120A	
15	354551050	BASE	
16	354521170	WHEEL	(230/110V Version)
17	354521099	WHEEL BRACKET	(230/110V Version)
18	354521270	MOVING WHEEL	(230/110V Version)

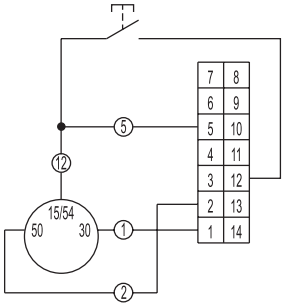


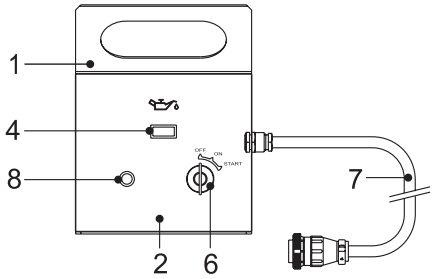




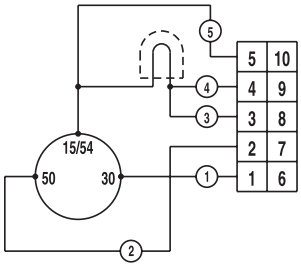


TCM 15

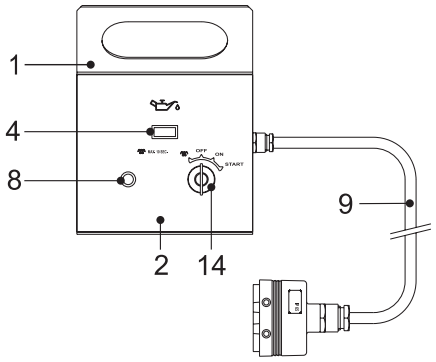




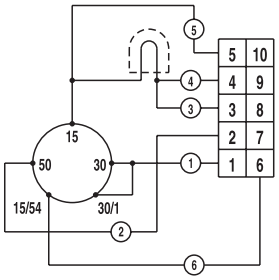
TCM 6



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



TCM 40



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	TCM15
11	A	101091840	CAPPUCCIO	CAP	TCM15
12	A	93016C060	GRUPPO CAVI TCM	TCM CABLE KIT	TCM15
14	A	307457055	INTERRUTT. ACCENSIONE A CHIAVE	STARTER SWITCH	TCM40
15	A	930159901	COPERCHIO PER SCATOLA TCM	TCM COVER	TCM15

GRUPPI ELETTROGENI MOTOSALDATRICI

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