



**GE 6000 - 6500 DES/GS-L  
GE 6000 DES/GS L - AVR**

1012

256369003 - GB

**USE AND MAINTENANCE MANUAL  
SPARE PARTS CATALOG**



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GB  
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DESCRIPTION OF THE MACHINE

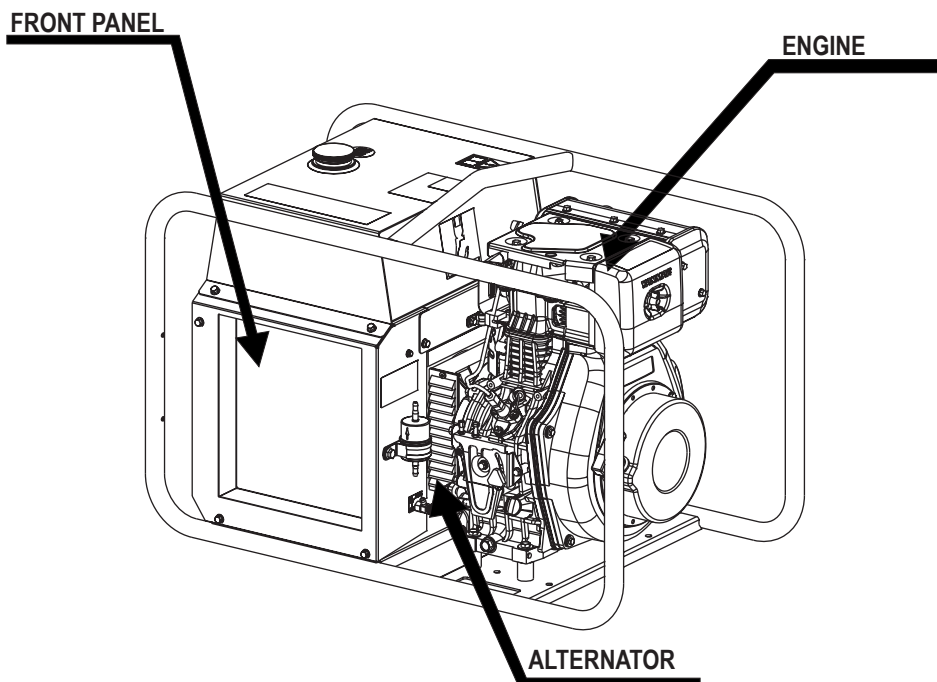
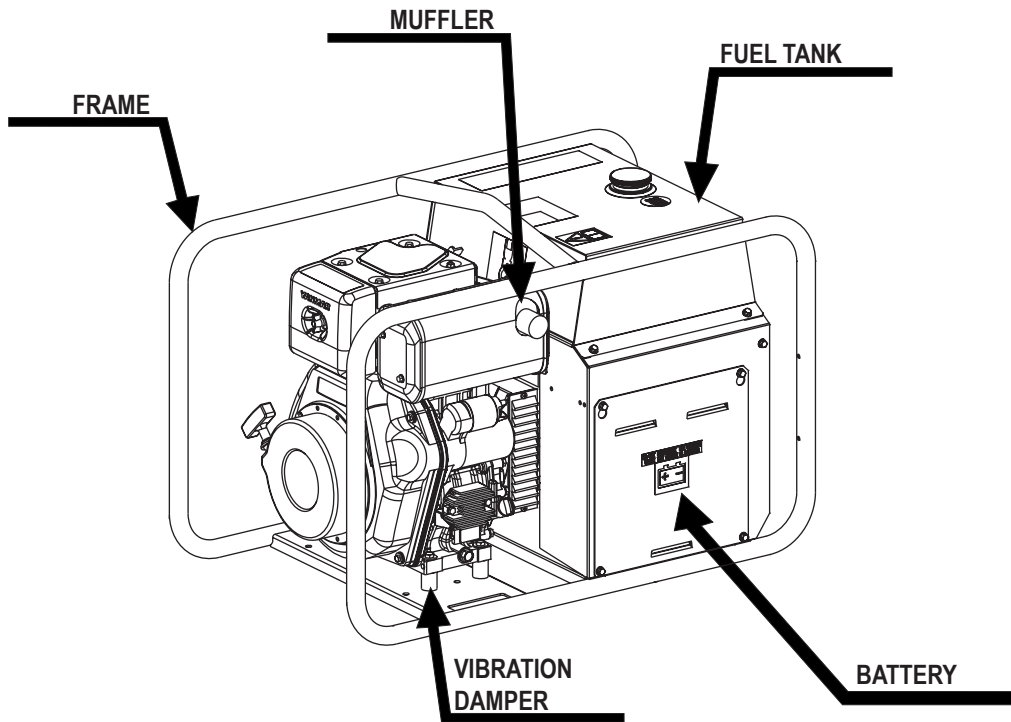
GE 6000 - 6500 DES/GS-L  
GE 6000 DES/GS-L AVR

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

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.

The unit has a protective closed frame which protects it against unintentional impacts during the handling and /or transport, the front panel is completely wrapped by the structure so that the components are protected. The fuel tank and battery starter complete the main parts of the machine.







**UNI EN ISO 9001 : 2008**

ISO 9001:2008 - Cert. 0192

MOSA has certified its quality system according to UNI EN ISO 9001:2008 to ensure a constant, high quality of its products. This certification covers the design, production and servicing of engine driven welders and generating sets.

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

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

The advantages for MOSA clients are:

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

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

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## ATTENTION

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

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

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



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## INFORMATION

Dear Customer,  
We wish to thank you for having bought 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 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.***

## 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 the manufacturer from the risks which could happen or, anyway, from that which was agreed when selling the machine. The manufacturer 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: 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 the manufacturer, 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 applicable 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:

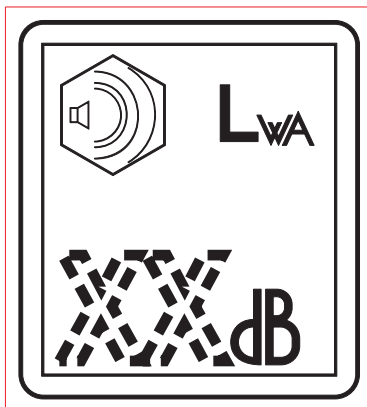


CE marking is clearly readable and unerasable and it can be either part of the data-plate.

		Made in UE-ITALY . . . . .		TYPE	
		SERIAL N°			
	X				
	I <sub>2</sub> (A)				
	U <sub>0</sub>				
	U <sub>2</sub> (V)				
	I <sub>2</sub> (A)				
	U <sub>0</sub>				
	Hz	kVA			
	P.F.	V (V)			
	n	RPM	n <sub>1</sub>	RPM	IP
	n <sub>0</sub>	RPM	P <sub>max</sub>	KW	I. CL.

		Made in UE-ITALY . . . . .		TYPE	
		Generating Set ISO 8528		SERIAL N°	
KVA					
V					
I					
Hz		P.F.		LTP POWER IN ACCORDANCE WITH ISO 8528	
RPM		I. CL.		IP	
ALTIT.	100 m	TEMP.	25 °C	MASS	

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 9001:2008 - Cert. 0192

## DICHIARAZIONE DI CONFORMITA'



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:

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 gemeenschapsrichtlijnen gerelateerde modificaties:  
comple con los requisitos 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 - Consigliere Delegato / COO; V.le Europa 59, 20090 Cusago (MI) – Italy**

Cusago,

  
Ing. Benso Marelli  
Consigliere Delegato  
COO

  <b>Technical data</b> 	<b>GE 6000 - 6500 DES/GS-L</b> <b>GE 6000 DES/GS-L AVR</b>	<b>M</b> <b>1.5</b> REV.0-10/12
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## Technical data

### GE 6000 DES/GS-L GE 6000 DES/GS L - AVR

### GE 6500 DES/GS-L

#### A.C. GENERATOR

*Stand-by three-phase power	-	6.5 kVA (5.2 kW) / 400 V / 9.4 A
*PRP three-phase power	-	5.7 kVA (4.6 kW) / 400 V / 8.2 A
*Stand-by single-phase power	5.7 kVA (5.1 kW) / 230 V / 24.8 A	-
*PRP single-phase power	5 kVA (4.5 kW) / 230 V / 21.7 A	4 kVA / 230 V / 17.4 A
Frequency	50 Hz	50 Hz
Power factor (cos φ)	0.9	0.8
* Output powers according to ISO 8528-1		

#### ALTERNATOR

	Self-excited, self-regulated, brushless	Self-excited, self-regulated
Type	single-phase, synchronous	three-phase, synchronous
Insulating class	H	H

#### ENGINE

Mark / Model	YANMAR / L 100 N
Type / Cooling system	Diesel 4-stroke / air
Cylinders / Displacement	1 / 435 cm <sup>3</sup>
*Stand-by net power	6.5 kW (8.8 HP)
*PRP net power	5.7 kW (7.7 HP)
Speed	3000 rpm
Fuel consumption	1.2 l/h
Engine oil capacity	1.6 l
Starter	electric

\* Output powers according to ISO 3046-1

#### GENERAL SPECIFICATIONS

Tank capacity	18 l	
Running time	14 h	
Protection	IP 23	
*Dimensions / max. Lxwxh (mm)	910x530x620	
*Weight	120 Kg	126 Kg
**Acoustic power L <sub>WA</sub> (pressure L <sub>pA</sub> )	99 dB(A) (74 dB(A) @ 7 m)	99 dB(A) (74 dB(A) @ 7 m)

\* Dimensions and weight without trolley / trailer. \*\*For indoor use

## OUTPUT

Declared power according to ISO 8528-1 (temperature 25°C, 30% relative humidity, altitude 100 m above sea level).

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<sub>WA</sub>) - 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 (L<sub>p</sub>) - 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 (L<sub>p</sub>) at different distances from a machine with Acoustic Noise Level (L<sub>WA</sub>) of 95 dB(A)

L<sub>p</sub> a 1 meter = 95 dB(A) - 8 dB(A) = 87 dB(A)

L<sub>p</sub> a 7 meters = 95 dB(A) - 25 dB(A) = 70 dB(A)

L<sub>p</sub> a 4 meters = 95 dB(A) - 20 dB(A) = 75 dB(A)

L<sub>p</sub> a 10 meters = 95 dB(A) - 28 dB(A) = 67 dB(A)

**PLEASE NOTE:** the symbol  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 assist 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 people.

**PROHIBITIONS** No harm for persons

**Use only with safety clothing -**



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

**Use only with safety clothing -**



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

**Use only with safety protections -**



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

**Use with only safety material -**



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

**Use only with non inserted voltage -**



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

**No smoking -**



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

**No welding -**



It is forbidden to weld in rooms containing explosive gases.

**ADVICE** No harm for persons and things

**Use only with safety tools, adapted to the specific use -**

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

**Use only with safety protections, specifically suitable**



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

**Use only with safety protections -**



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

**Use only with safety protections -**



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

**Use only with safety protections -**



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



**INSTALLATION AND ADVICE BEFORE USE**

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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.

<b>ENGINE</b>	Stop engine when fueling	<b>CHECKING BOARD</b>	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 damage 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 should be sprayed by accident, from corrosive liquids a/o hot toxic gas or whatever event which may cause serious injuries or death, predispose the first aid in accordance with the ruling labour accident standards or of local instructions.

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



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

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

<b>WARNING</b>					<b>CAUTION</b>		<b>DANGEROUS</b>

<b>WARNING</b>	<b>THE MACHINE <u>MUST NOT BE USED</u> IN AREAS WITH EXPLOSIVE ATMOSPHERE</b>
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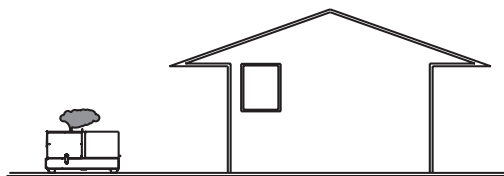
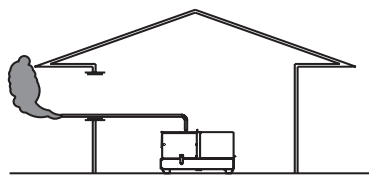
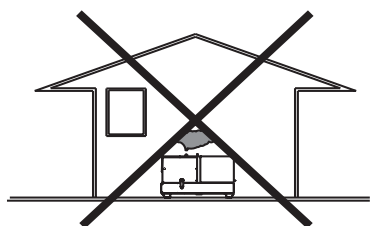
## INSTALLATION AND ADVICE BEFORE USE

### GASOLINE ENGINES

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

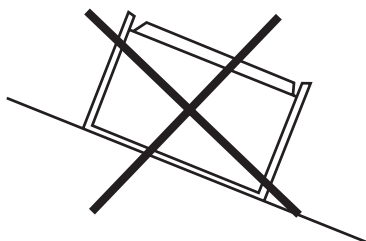
### DIESEL ENGINES

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

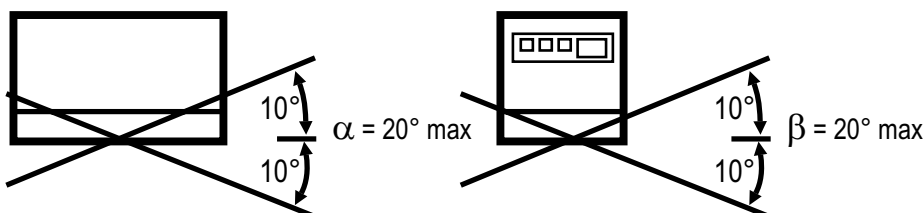


### POSITION

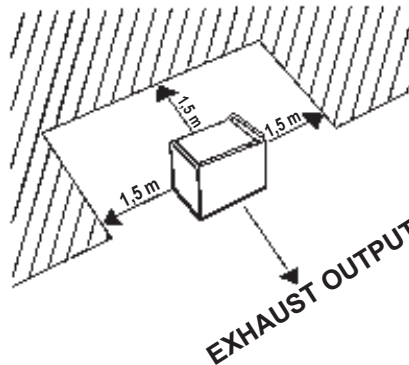
Place the machine on a level surface at a distance of at least 1,5 m from buildings or other plants.



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

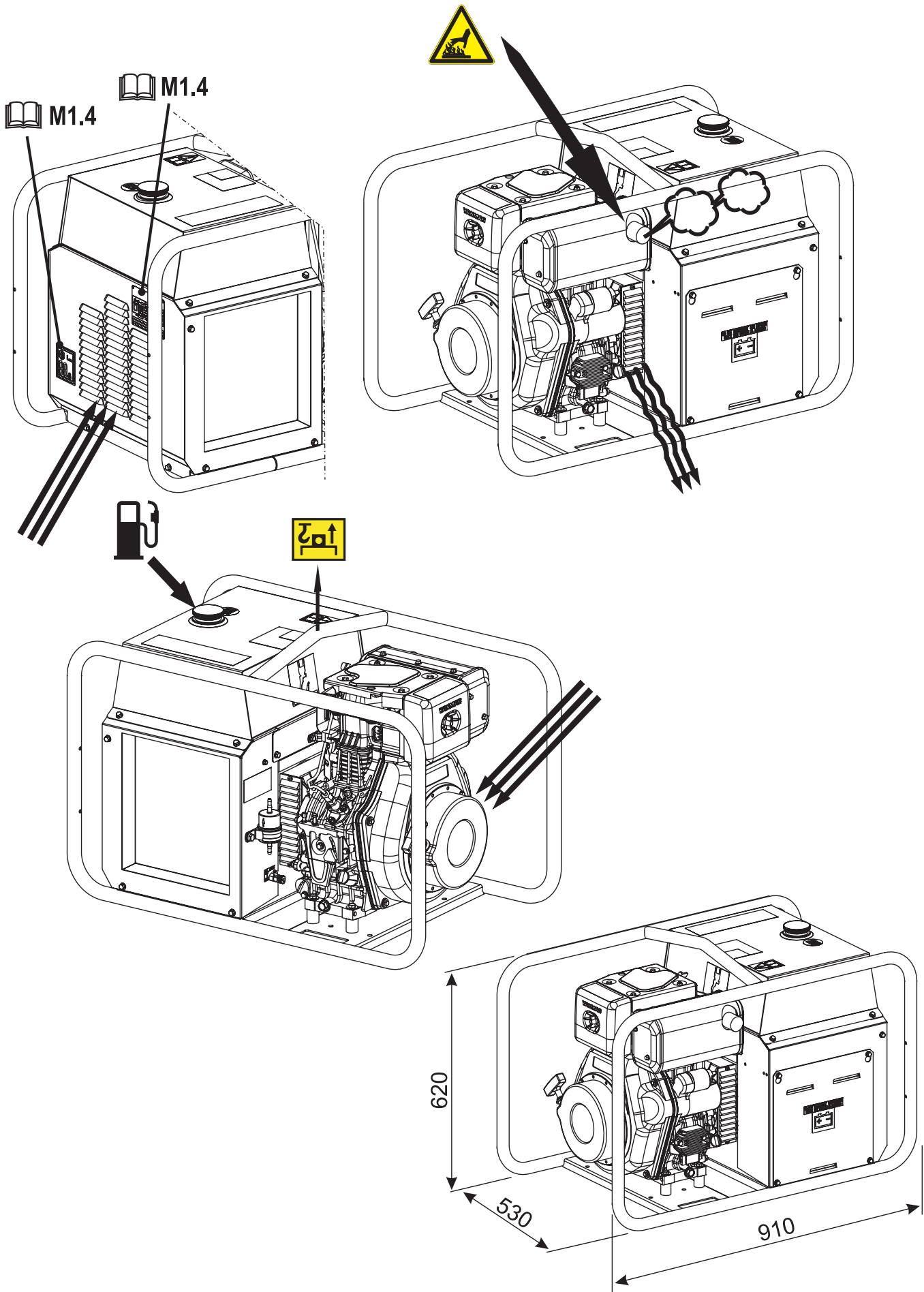


## ATTENTION



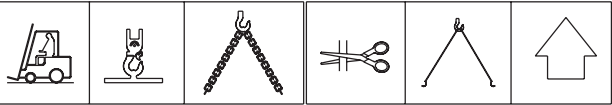
For a safer use from the operator **DO NOT** fit the machine in locations with high risk of flood.

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.

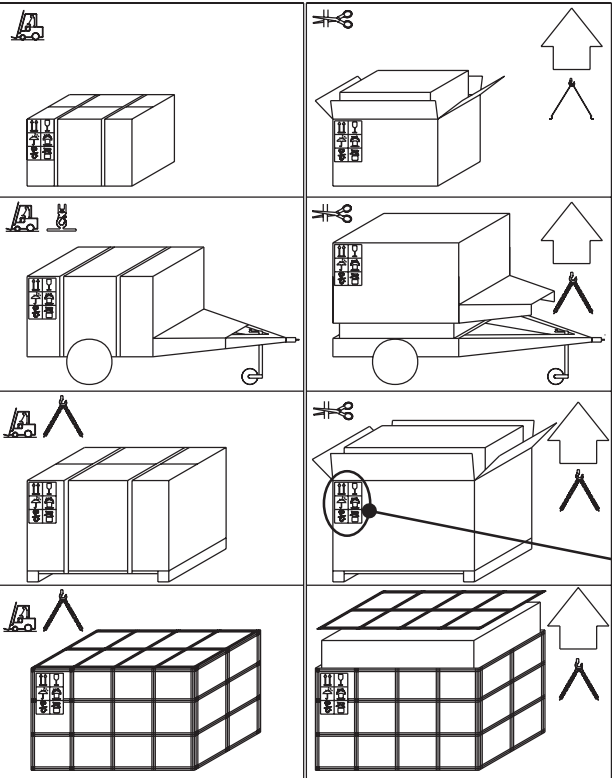




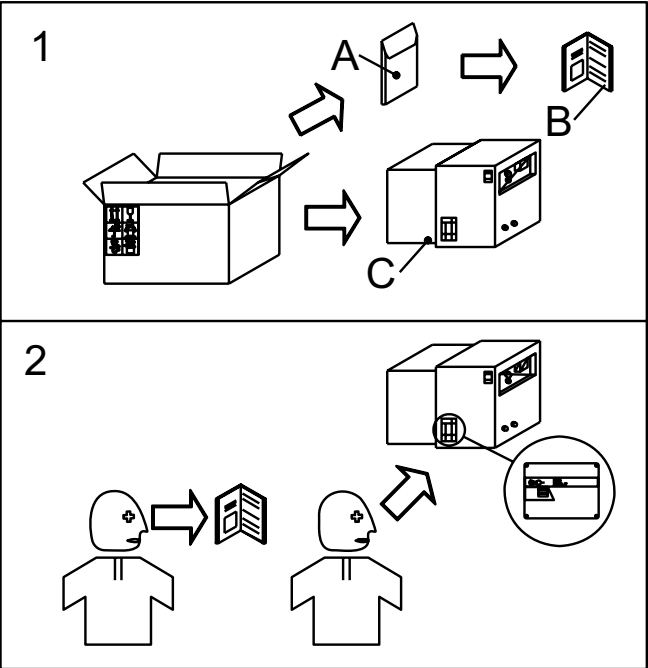
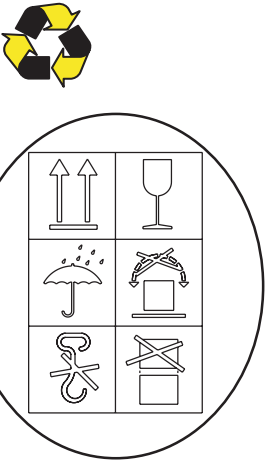
 **NOTE**



Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with its packaging, and conforms to local rules and regulations. When receiving the goods make sure that the product has not suffered damage during the transport, that there has not been rough handling or taking away of parts contained inside the packing or in the set. In case you find damages, rough handling or absence of parts (envelopes, manuals, etc.), we advise you to inform immediately our Technical Service.



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



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



### NOTE

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

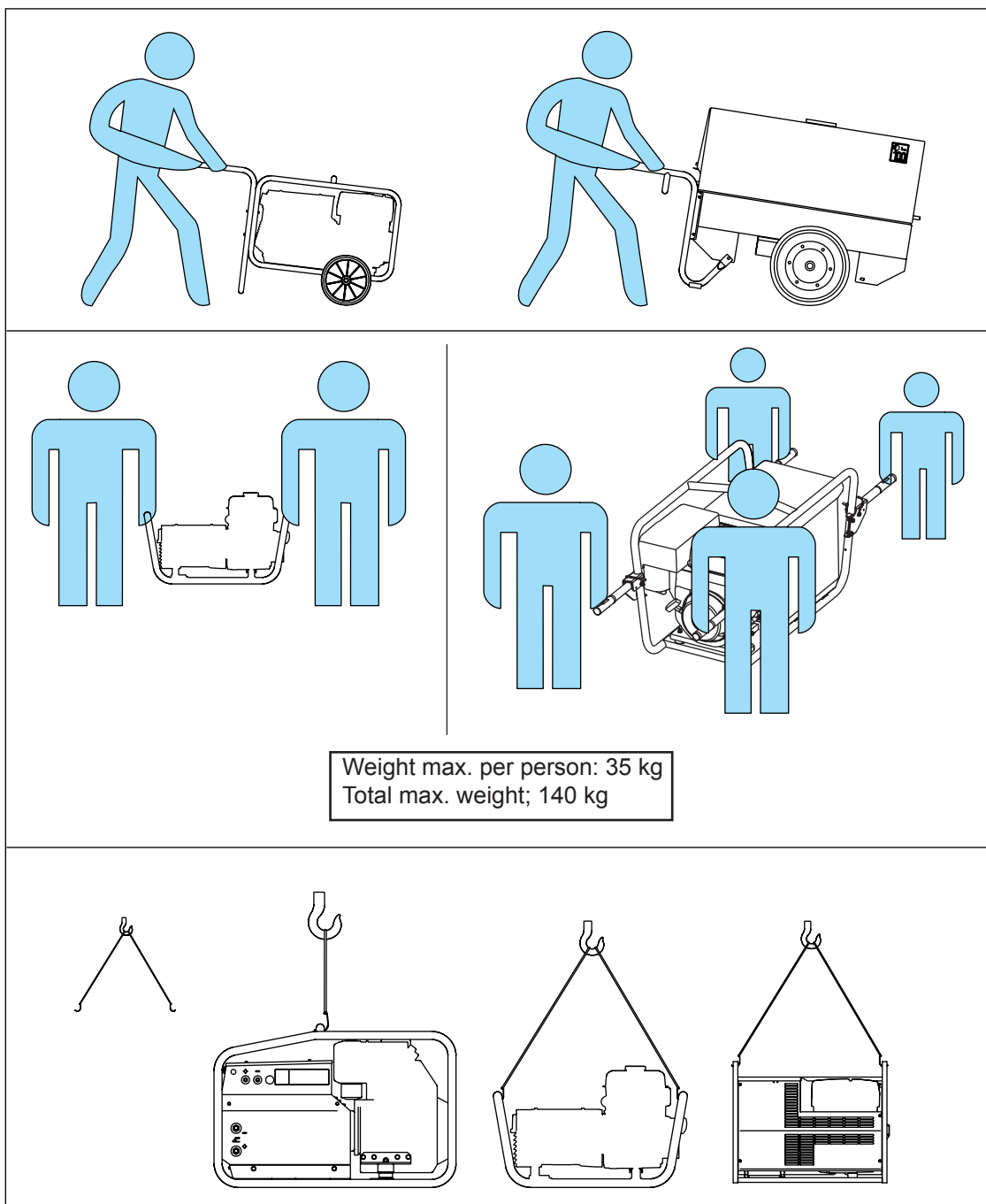
Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with its packaging, and conform to local rules and regulations.

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

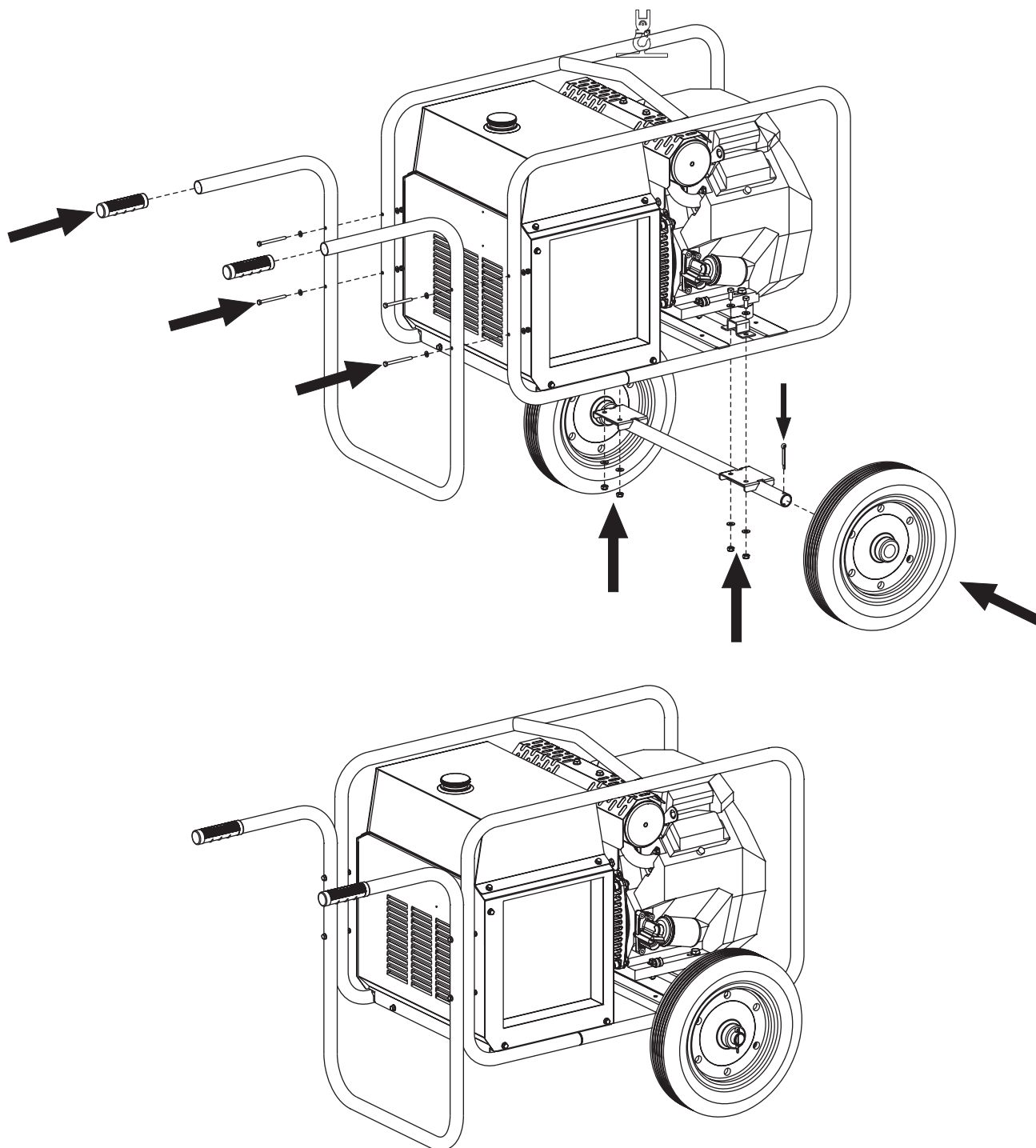
**DO NOT LOAD OTHER PARTS WHICH CAN MODIFY WEIGHT AND BARICENTER POSITION.**

**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



Connect the cable + (positive) to the pole + (positive) of the battery (after having taken away the protection), by properly tightening the clamp.

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

**DO NOT OPEN THE BATTERY.**



### LUBRICANT

#### RECOMMENDED OIL

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

 PRODOTTI RACCOMANDATI RECOMMENDED PRODUCTS	
<b>AGIP SIGMA TURBO PLUS 15W/40</b> API CG4 - ACEA E3	OLIO MOTORE DIESEL DIESEL ENGINE OIL
<b>AGIP SUPERMOTOROIL 20W/50</b> API CC-SF	OLIO MOTORE BENZINA GASOLINE ENGINE OIL
<b>AGIP ANTIFREEZE EXTRA</b> INIBITE ETHYLENE GLYCOL (50% + 50% + H <sub>2</sub> O)	CIRCUITO DI RAFFREDDAMENTO COOLING CIRCUIT (CUNA NC 956-16 ED 97)

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

### REFUELLING AND CONTROL:

Carry out refuelling and controls with motor at level position.

1. Remove the oil-fill tap (24)
2. Pour oil and replace the tap
3. Check the oil level using the dipstick (23); the oil level must be comprised between the minimum and maximum indicators.



### ATTENTION

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



### DRY 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.



### OIL BATH AIR FILTER

Fill the air filter using the same engine oil up to the level indicated on the filter.



### FUEL



### ATTENTION



Do not smoke or use open flames during refuelling operations, in order to avoid explosions or fire hazards.

Fuel fumes are highly toxic; carry out operations outdoors only, or in a well-ventilated environment.



Avoid accidentally spilling fuel. Clean any eventual leaks before starting up motor.

Refill the tank with good quality diesel fuel, such as automobile type diesel fuel, for example.

For further details on the type of diesel fuel 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.

In rigid environmental temperature conditions, use special winterized diesel fuels or specific additives in order to avoid the formation of paraffin.



### 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 daily

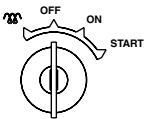


### NOTE

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

### STARTING THE ENGINE

Insert the electric protection device (D) lever towards above, see page M37 –



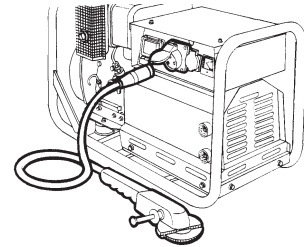
Introduce the key (Q1), turn it clockwise completely, leaving it as soon as the engine starts.

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

### STOPPING THE ENGINE

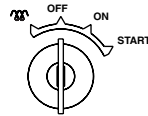
Before stopping the engine **it is compulsory** to effect the following operations:

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



Make sure that the unit is not supplying any power.

Disconnect the electrical protection device (D) lever downward.



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

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



### CAUTION

If the engine fails to start, do not insist for at least 15 seconds.  
*Space the further operations waiting for at least 4 minutes.*



### CAUTION

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

4A	Hydraulic oil level light	B4	Exclusion indicating light PTO HI	W5	Battery voltmeter
9	Welding socket ( + )	B5	Auxiliary current push button	X1	Remote control socket
10	Welding socket ( - )	C2	Fuel level light	Y3	Button indicating light 20 l/1' PTO HI
12	Earth terminal	C3	E.A.S. PCB	Y5	Commutator/switch, serial/parallel
15	A.C. socket	C6	Control unit for generating sets QEA	Z2	Thermal-magnetic circuit breaker
16	Accelerator lever	D	Ground fault interrupter ( 30 mA )	Z3	Selection push button 20 l/1' PTO HI
17	Feed pump	D1	Engine control unit and economiser EP1	Z5	Water temperature indicator
19	48V D.C. socket	D2	Ammeter		
22	Engine air filter	E2	Frequency meter		
23	Oil level dipstick	E6	Frequency rpm regulator		
24	Engine oil reservoir cap	E7	Voltmeter regulator		
24A	Hydraulic oil reservoir cap	F	Fuse		
24B	Water filling cap	F3	Stop switch		
25	Fuel prefilter	F5	Warning light, high temperature		
26	Fuel tank cap	F6	Arc-Force selector		
27	Muffler	G1	Fuel level transmitter		
28	Stop control	H2	Voltage commutator		
29	Engine protection cover	H6	Fuel electro pump		
30	Engine cooling/alternator fan belt	H8	Engine control unit EP7		
31	Oil drain tap	I2	48V A.C. socket		
31A	Hydraulic oil drain tap	I3	Welding scale switch		
31B	Water drain tap	I4	Preheating indicator		
31C	Exhaust tap for tank fuel	I5	Y/▲ switch		
32	Button	I6	Start Local/Remote selector		
33	Start button	I8	AUTOIDLE switch		
34	Booster socket 12V	L	A.C. output indicator		
34A	Booster socket 24V	L5	Emergency button		
35	Battery charge fuse	L6	Choke button		
36	Space for remote control	M	Hour counter		
37	Remote control	M1	Warning level light		
42	Space for E.A.S.	M2	Contactora		
42A	Space for PAC	M5	Engine control unit EP5		
47	Fuel pump	M6	CC/CV switch		
49	Electric start socket	N	Voltmeter		
54	Reset button PTO HI	N1	Battery charge warning light		
55	Quick coupling m. PTO HI	N2	Thermal-magnetic circuit breaker/ Ground fault interrupter		
55A	Quick coupling f. PTO HI	N5	Pre-heat push-button		
56	Hydraulic oil filter	N6	Connector - wire feeder		
59	Battery charger thermal switch	O1	Oil pressure warning light/Oil alert		
59A	Engine thermal switch	P	Welding arc regulator		
59B	Aux current thermal switch	P8	Water in fuel		
59C	Supply thermal switch wire feeder-42V	Q1	Starter key		
59D	Pre-heater (spark plug) thermal switch	Q3	Derivation box		
59E	Supply thermal switch oil/water heater	Q4	Battery charge sockets		
59F	Electropump thermal switch	Q7	Welding selector mode		
63	No load voltage control	R3	Siren		
66	Choke control	S	Welding ammeter		
67A	Auxiliary / welding current control	S1	Battery		
68	Cellulosic electrodes control	S3	Engine control unit EP4		
69A	Voltmeter relay	S6	Wire feeder supply switch		
70	Warning lights	S7	Plug 230V singlephase		
71	Selecting knob	T	Welding current regulator		
72	Load commut. push button	T4	Dirty air filter warning light/indicator		
73	Starting push button	T5	Earth leakage relay		
74	Operating mode selector	T7	Analogic instrument V/Hz		
75	Power on warning light	U	Current transformer		
76	Display	U3	R.P.M. adjuster		
79	Wire connection unit	U4	Polarity inverter remote control		
86	Selector	U5	Release coil		
86A	Setting confirmation	U7	Engine control unit EP6		
87	Fuel valve	V	Welding voltage voltmeter		
88	Oil syringe	V4	Polarity inverter control		
A3	Insulation monitoring	V5	Oil pressure indicator		
A4	Button indicating light 30 l/1' PTO HI	W1	Remote control switch		
B2	Engine control unit EP2	W3	Selection push button 30 l/1' PTO HI		
B3	E.A.S. connector				

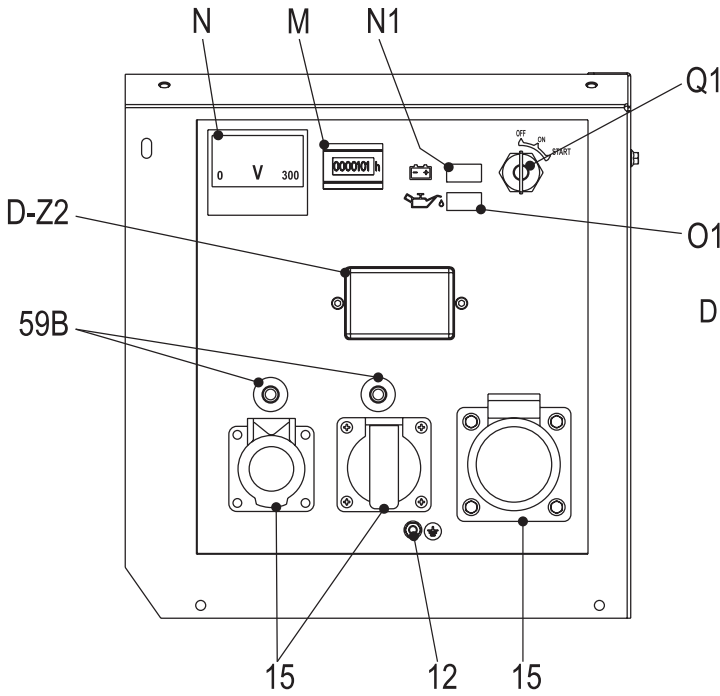
- (I) Comandi
- (GB) Controls
- (F) Commandes

- (D) Bedienelemente
- (E) Mandos
- (NL)

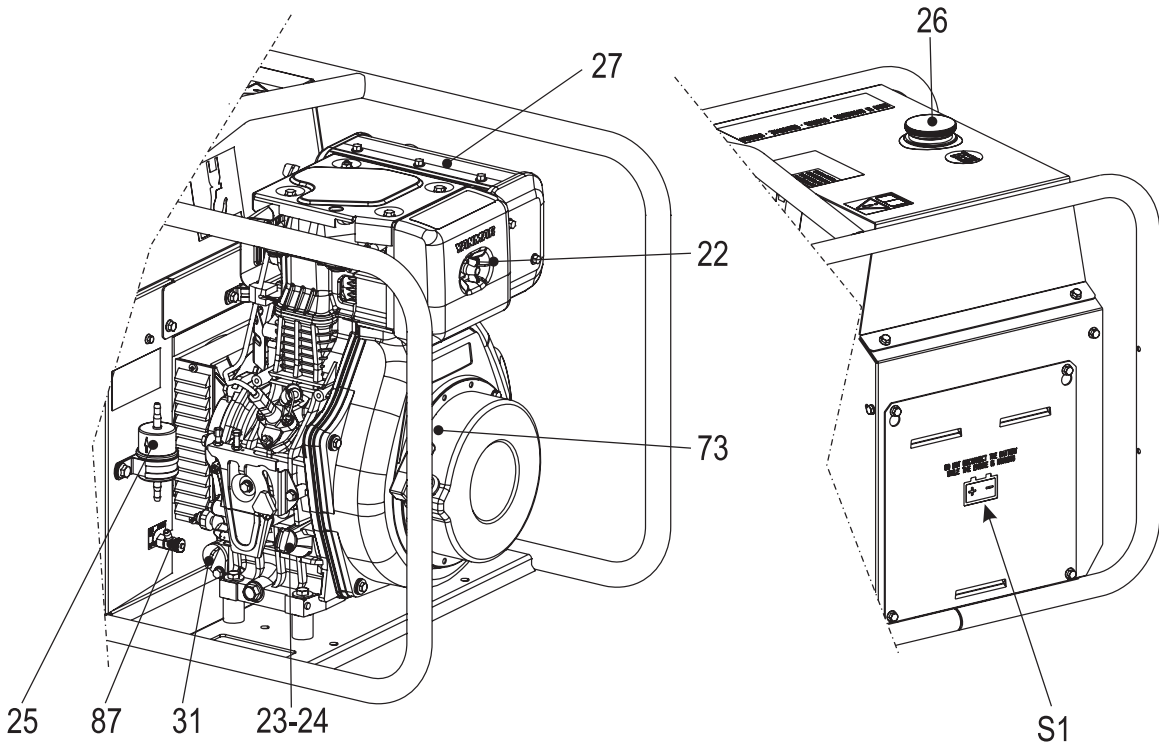
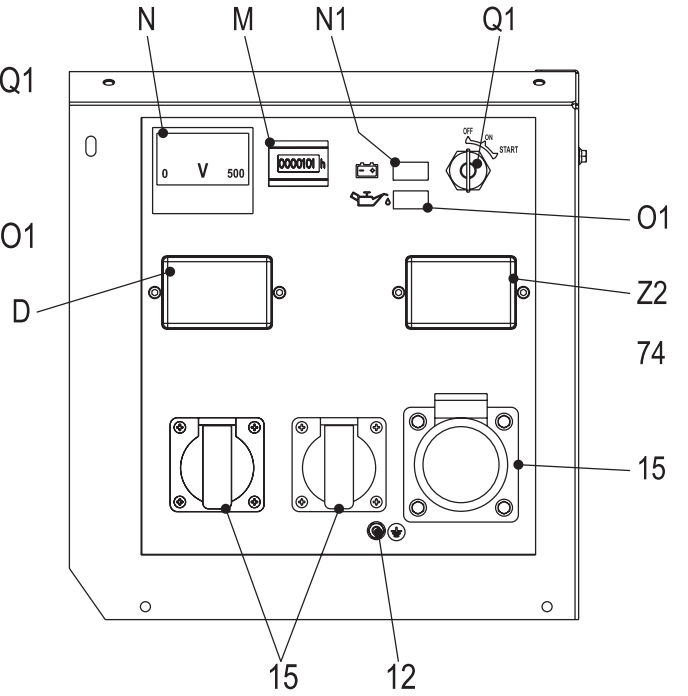
GE 6000 - 6500 DES/GS-L  
 GE 6000 DES/GS L - AVR

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GE 6000 DES/GS-L  
 GE 6000 DES/GS-L AVR



GE 6500 DES/GS-L





## 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.**



## WARNING

For the canopy generator sets provided with doors, the following instruction shall be observed. During the normal operation, the doors of the engine compartment and/or the electrical box shall be kept closed, locked up if possible, as they must be considered in all respects as protection barriers. The access to the internal parts shall occur for maintenance purposes only, by qualified personnel and, in any case, when the engine is stopped.

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 ( $\cos \varphi$ ).

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 (THREEPHASE)

##### GENERATORS WITH CONDENSER SETTING (SINGLEPHASE)

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  $\pm 5\%$  with balanced loads and with a rotation speed variation of 4%. Particularly, with resistive loads ( $\cos \varphi = 1$ ), 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  $\pm 1,5\%$ , 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  $\pm 1\%$ . 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  $\pm 0.25\%$ , and the frequency is maintained constant in operation from no-load to load (isochronal operation).

### POWER FACTOR - $\cos \varphi$

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  $\cos \varphi = 0,8$ ; 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  $\cos \varphi$ .

For  $\cos \varphi$  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  $I_n$ ). 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

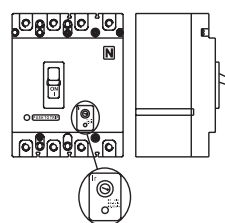
Power to monophasic utilities by means of three-phase generators requires some operating limitations.

- 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 monophasic sockets, use these sockets for connecting the loads. In other cases, always use the "R" phase and Neutral.

### ELECTRIC PROTECTIONS

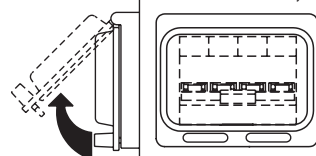
#### THERMAL-MAGNETIC SWITCH

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.

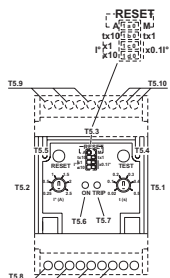
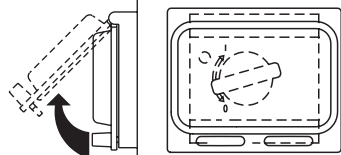
In case of an intervention on the part of the thermal magnetic protection device, check that the total absorption does not exceed the electricity-generating group's nominal current.



### 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.



### 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.



## ATTENTION

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



The engine is equipped with system which shuts down the engine in the event the oil pressure is too low. Low oil pressure is also indicated by the red warning lamp on the engine starter box.



There is also a red battery charger warning lamp on the engine starter box which lights up if the battery is not being charged.



There is a thermal protection device to protect the battery in case there is too much charging current.



The thermal protection is reset by pressing the button.






If the thermic protection should continue to intervene, check:

- the battery charger and its connections
- the charge condition of the battery.

Once the cause of the problem has been removed, stop the engine by turning the starter key to the "OFF" position and restart the engine. In this way the protection will be assured.

The above mentioned devices function when the ignition is turned on.

 <b>WARNING</b>		
	<ul style="list-style-type: none"> <li>• Have <b>qualified</b> personnel do maintenance and troubleshooting work.</li> <li>• Stop the engine before doing any work inside the machine. If for any reason the machine must be operated while working inside, <b>pay attention</b> moving parts, hot parts (exhaust manifold and muffler, etc.) electrical parts which may be unprotected when the machine is open.</li> <li>• Remove guards only when necessary to perform maintenance, and replace them when the maintenance requiring their removal is complete.</li> <li>• Use suitable tools and clothes.</li> <li>• Do not modify the components if not authorized.</li> </ul> <p>- See pag. M1.1 -</p>	
<b>MOVING PARTS can injure</b>		<b>HOT surface can hurt you</b>

**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 manufacturer.

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.

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 supplied 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


 <b>IMPORTANT</b>
<div style="display: flex; align-items: center;">  <p>In the maintenance operations avoid that polluting substances, liquids, exhausted oils, etc. bring damage to people or things or can cause negative effects to surroundings, health or safety respecting completely the laws and/or dispositions in force in the place.</p> </div>

**ENGINE and ALTERNATOR**

**PLEASE REFER TO THE SPECIFIC MANUALS PROVIDED.**

Every engine and alternator manufacturer has



 <b>NOTE</b>
<p>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.</p>




## 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 a dry place.

### DIESEL ENGINE

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

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

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

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

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



## IMPORTANT



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

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

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

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.

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

<p>(I) <b>Legenda schema elettrico</b></p> <p>(GB) <b>Electrical system legende</b></p> <p>(F) <b>Legende des schemas electriques</b></p>	<p>(D) <b>Stromlaufplan - Referenzliste</b></p> <p>(E) <b>Leyenda esquema eléctrico</b></p> <p>(NL)</p>	<p><b>GE 6000 - 6500 DES/GS-L</b></p> <p><b>GE 6000 DES/GS L - AVR</b></p>	<p><b>M</b></p> <p><b>60</b></p> <p>REV.0-10/12</p>
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A : Alternatore  
B : Supporto connessione cavi  
C : Condensatore  
D : Interruttore differenziale  
G : Presa 400V trifase  
H : Presa 230V monofase  
M : Contaore  
N : Voltmetro

A: Alternator  
B: Wire connection unit  
C: Capacitor  
D: G.F.I.  
G: 400V 3-phase socket  
H: 230V 1phase socket  
M: Hour-counter  
N: Voltmeter

A : Alternateur  
B : Connexion câbles  
C : Condensateurs  
D : Interrupteur différentiel  
G : Prise 400V triphasé  
H : Prise 230V monophasé  
M : Compte-heures  
N : Voltmètre

L1 : Pressostato  
N1 : Spia carica batteria  
O1 : Spia pressostato  
R1 : Motorino avviamento  
S1 : Batteria  
U1 : Regolatore tensione batteria  
Z1 : Elettrovalvola

L1: Oil pressure switch  
N1: Battery charge warning light  
O1: Oil pressure warning light  
R1: Starter motor  
S1: Battery  
U1: Battery charge voltage regulator  
Z1: Solenoid valve

L1 : Pressostat huile  
N1 : Voyant charge batterie  
O1 : Voyant pressostat  
R1 : Moteur de démarrage  
S1 : Batterie  
U1 : Régulateur tension batterie  
Z1 : Electrosoupape

Z2 : Interruttore magnetotermico

Z2: Thermal magnetic circuit breaker

Z2 : Interrupteur magnétothermique

N3 : Relè

N3: Relay

N3 : Relais

P4 : Protezione termica

P4: Circuit breaker

P4 : Protection thermique

A Generator  
B Klemmleiste  
C Kondensatorbox  
D FI-Schalter (GFI)  
G Steckdose 400V 3-phasig  
H Steckdose 230V 1-phasig  
M Stundenzähler  
N Voltmeter

A :Alternador  
B :Soporte conexión cables  
C :Condensador  
D :Interruptor diferencial  
G :Toma 400V trifásica  
H :Toma 230V monofásica  
M :Cuentahoras  
N :Voltímetro

L1 Öldruckschalter  
N1 Warnleuchte Batterieladung  
O1 Warnleuchte Öldruck  
R1 Anlasser  
S1 Batterie  
U1 Laderegler Batterie  
Z1 Magnetventil

L1 :Presostato  
N1 :Piloto carga batería  
O1 :Piloto presostato  
R1 :Motor arranque  
S1 :Batería  
U1 :Regulador tensión batería  
Z1 :Electroválvula

Z2 Thermomagnetschalter (Si-Automat)

Z2 :Interruptor magnetotérmico

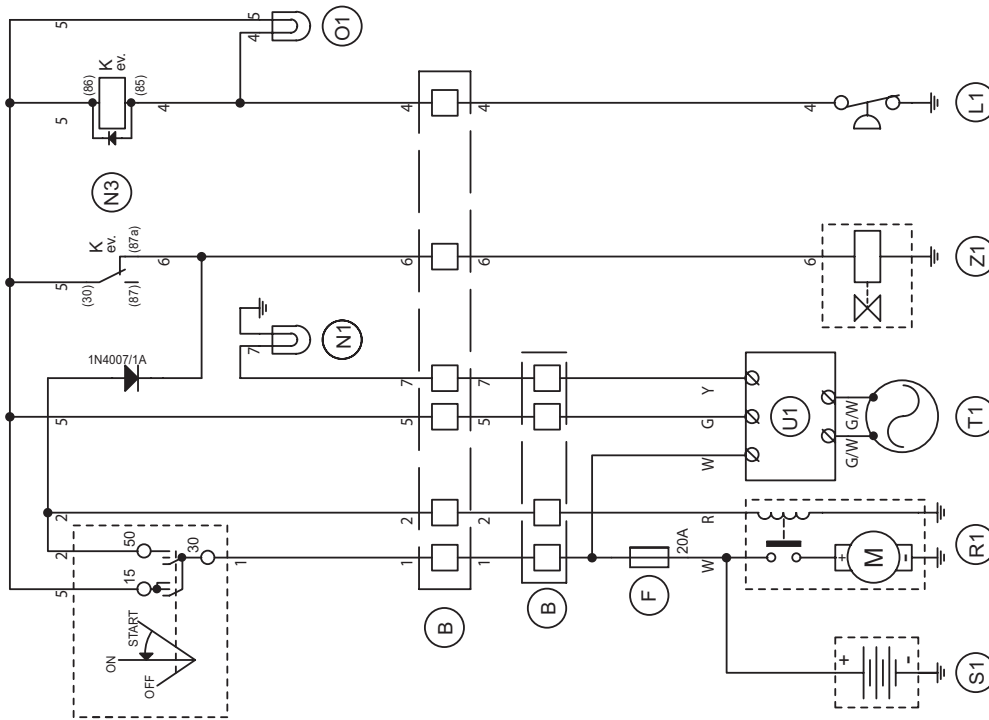
N3 Relais

N3 :Relé

P4 Thermosicherung

P4 :Protección térmica





STARTER KEY	
30	50
OFF	ON
ST	

Exp. Esp.	Modifica Modification	02.10.2006	N.L.
		Data Date	Dis. n° Appr. Page n° of n°
	Denominazione: Denomination: Engine Yanmar L100AE (EV)	Progetto: Project: 25615-prg	2 3
	Macchina: Machine: Leporace N.	Dis. n°: Dwg. n°: 25607.S.010-A	Approvato: Approved: <i>Ruse</i>
		Date: 14.07.2000	



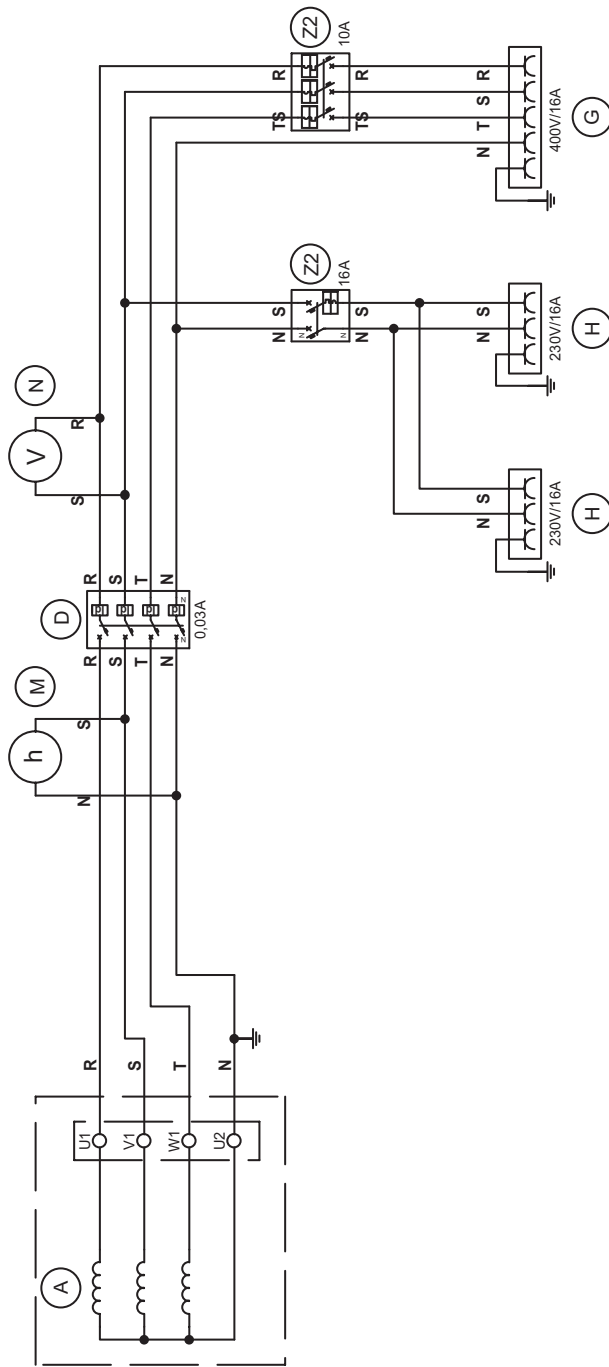
(I) Schema elettrico  
 (GB) Electric diagram  
 (F) Schemas électriques

(D) Stromlaufplan  
 (E) Esquema eléctrico  
 (NL)

GE 6500 DES/GS-L

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A	Eliminato avvolgimento carica batteria.	02.10.2006	N.L.
Esp. Eqp.	Modifica	Data	Dis. Desi.
	Modification	Data	Dis. Desi.
	Denominazione: Denominations:	Project: Project:	Page n° di n°
	Da Pag. From Page	25615.prg	3
	Aux. (400T/230Mx2) DM		
	All a Pag. To Page	Dis. n°: Dwg. n°:	Approvato: Approved:
		14.01.2004	25615.S.020-A
	Disegnatore: Designer:		
	Leoporace N.		

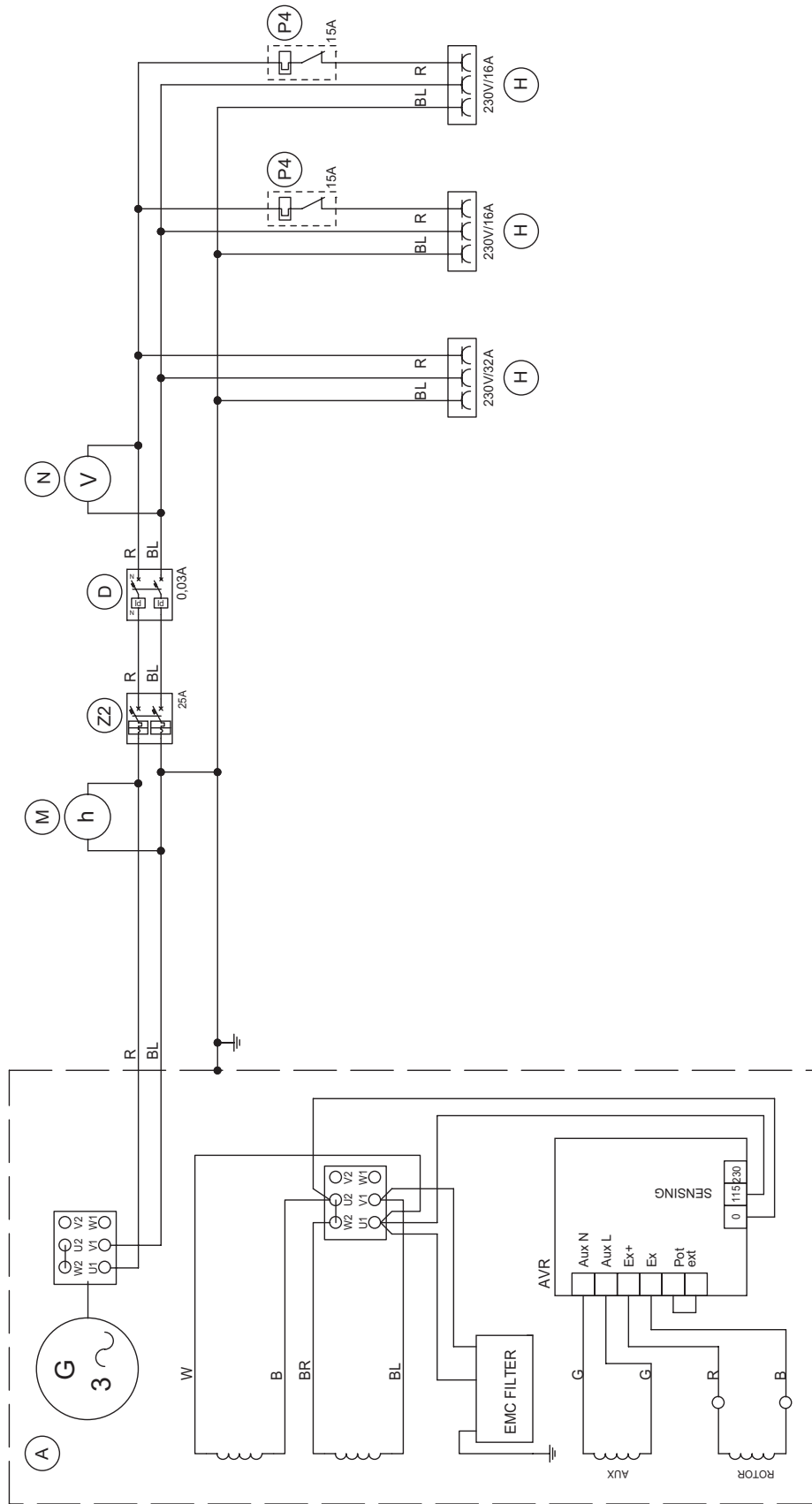
(I) Schema elettrico  
 (GB) Electric diagram  
 (F) Schemas électriques

(D) Stromlaufplan  
 (E) Esquema eléctrico  
 (NL)

GE 6000 DES/GS L - AVR

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

Esp. Exp.		Data Date		Dis. Desi. / Appr. /	
				Progetto: / Page n° / di n°	
				25635.prg 3 3	
				Disegnatore: / Dwg. n° /	
				23.10.2012 25635.S.020	
				Disegnatore: / Designer: /	
				Balducci F.	
				Denominazione: / Denomination: /	
				Aux. (230Mx3) DMT	
				Macchina: / Machine: /	
				Approvato: / Approved: /	

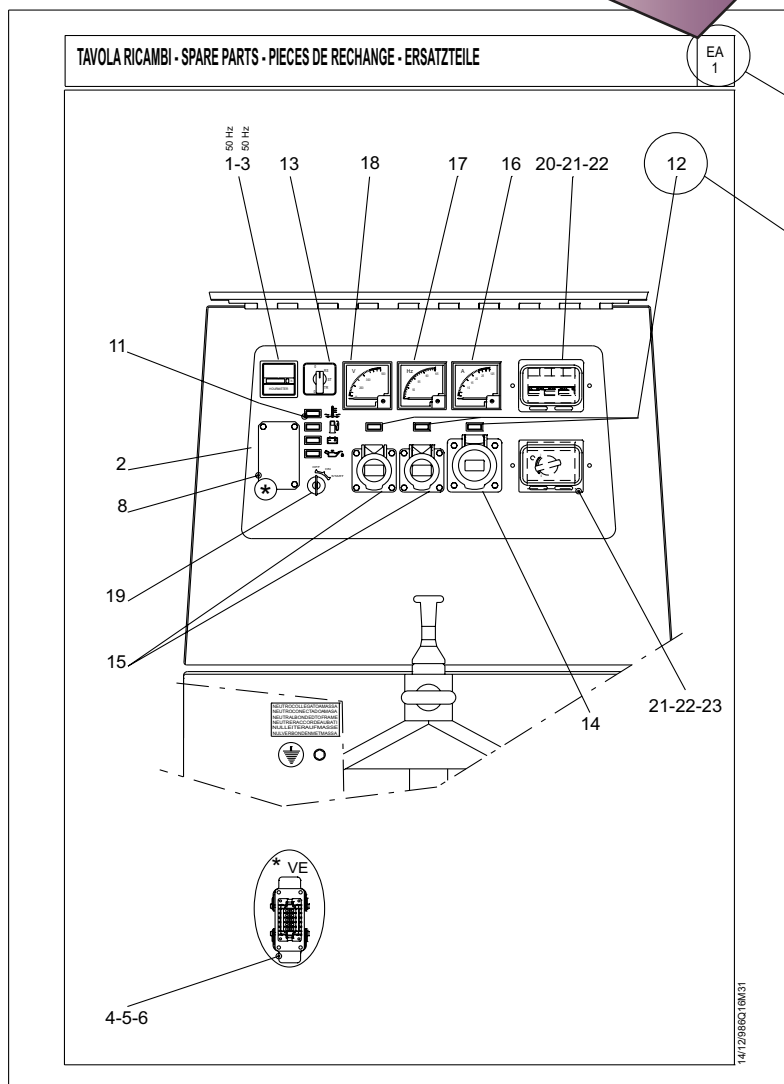
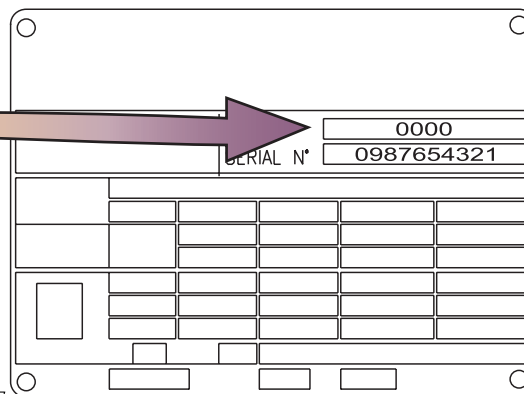
## The manufacturer guarantees that any request for spare parts will be satisfied.

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:

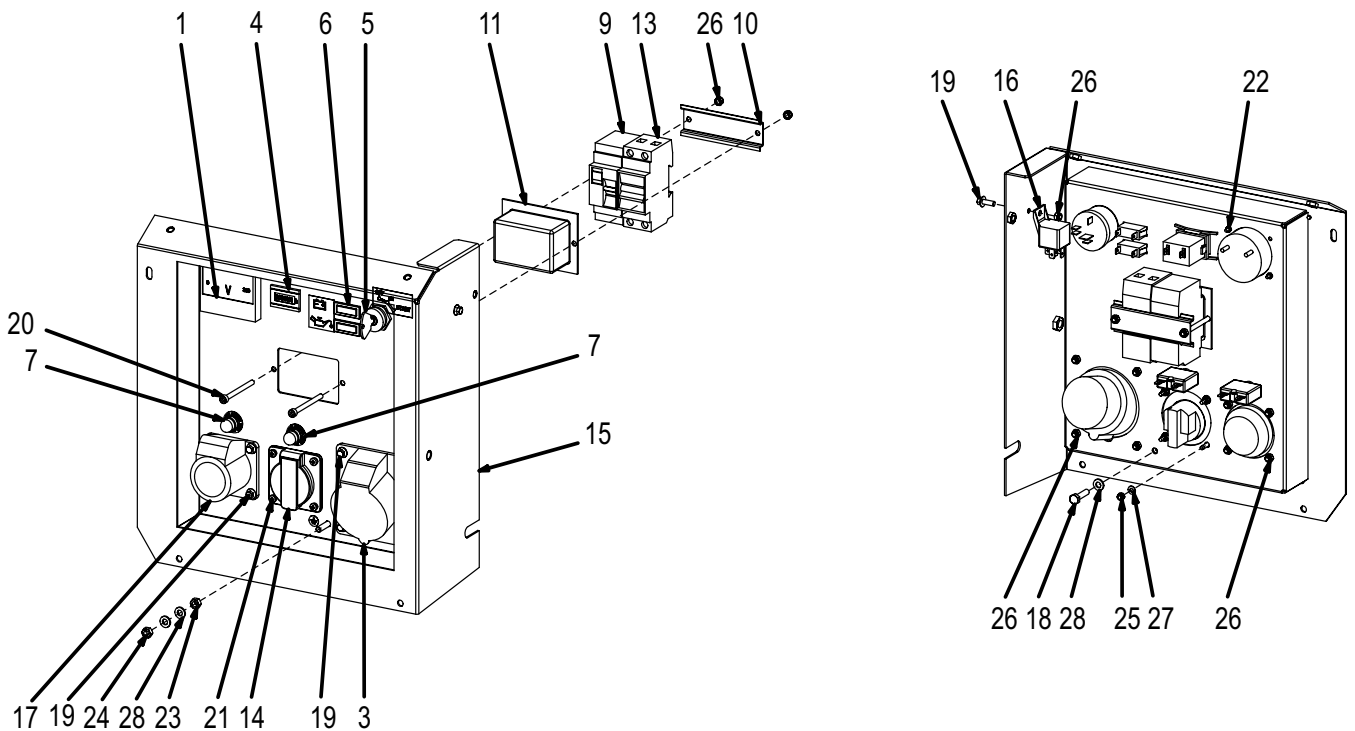
- (EV) When ordering, specify the engine type and the auxiliary voltage
- (ER) Engine with recoil starter only
- (ES) Engine with electric starter only
- (VE) E.A.S version only.
- (QM) When ordering, specify the length in meters
- (VS) Special version only
- (SR) By request only

(I) Ricambi  
 (GB) Spare parts  
 (F) Pièces de rechange

(D) Ersatzteile  
 (E) Tabla de recambios  
 (NL)

GE 6000 DES/GS-L  
 GE 6000 DES/GS L - AVR

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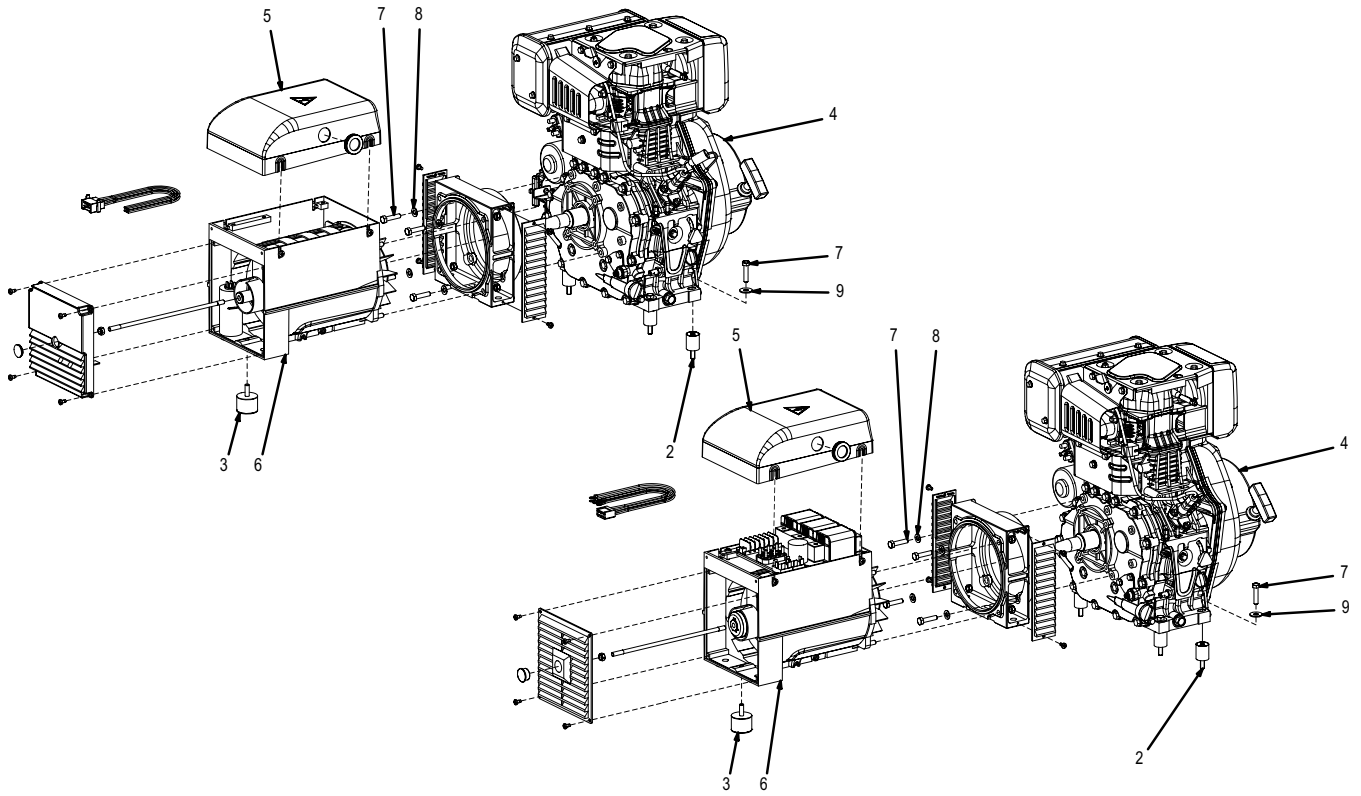
<i>Pos.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Descr.</i>	<i>Note</i>
1	M103011310	VOLTMETRO FONDO SCALA 300V	VOLTMETER 300V	
3	M105111520	PRESA CEE 220V MONOF. 2POLI+T	EEC SOCKET SINGLE-PH.220V 2P+	
4	M105511810	CONTAORE 230V 50Hz IP65	HOURMETER 230V 50Hz IP65	
5	M107302460	STARTER A CHIAVE	STARTER KEY	
6	M1302500	SEGNALATORE RETT. 12V DC ROSSO	WARNING LIGHT, RED 12V	
7	M155307107	DISGIUNTORE TERMICO 15A-250V	THERMAL SWITCH 15A-250V	
9	M220237105	Vedi Cod.256007105	See Part n°256007105	
10	M232027036	GUIDA	FIXING GUIDE	
11	M232027130	CAPPUCCIO PROTEZIONE I.D.	CAP	
13	M256707325	INTERRUTTORE MAGNETOTERMICO	CIRCUIT BREAKER	
14	M259107241	PRESA SCHUKO 16A 230V - 2P+T	SOCKET SCHUKO 16A 230V 2P+T	
15	M259268003	FIANCATA CARENAT. CON FRONTALE	COVER FRONT PANEL SIDE	
16	M306479199	RELE' AVV. ELETTRICO	RELAY, ELECTRIC START	
17	M307017240	PRESA 220V 16A	EEC SOCKET 16A, 220V 2P+T	
18	M6001060	VITE	SCREW	
19	M6005020	VITE	SCREW	
20	M6008260	VITE	SCREW	
21	M6018060	VITE TCC M4x20 UNI7687 5.8 ZN	SCREW	
22	M6022010	DADO	NUT	
23	M6022040	DADO	NUT	
24	M6025120	DADO	NUT	
25	M6028010	DADO	NUT	
26	M6028020	DADO	NUT	
27	M6035020	ROSETTA	WASHER	
28	M6035060	RONDELLA	WASHER	

(I) Ricambi  
 (GB) Spare parts  
 (F) Pièces de rechange

(D) Ersatzteile  
 (E) Tabla de recambios  
 (NL)

GE 6000 DES/GS-L  
 GE 6000 DES/GS L - AVR

HL  
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 REV.1-10/12



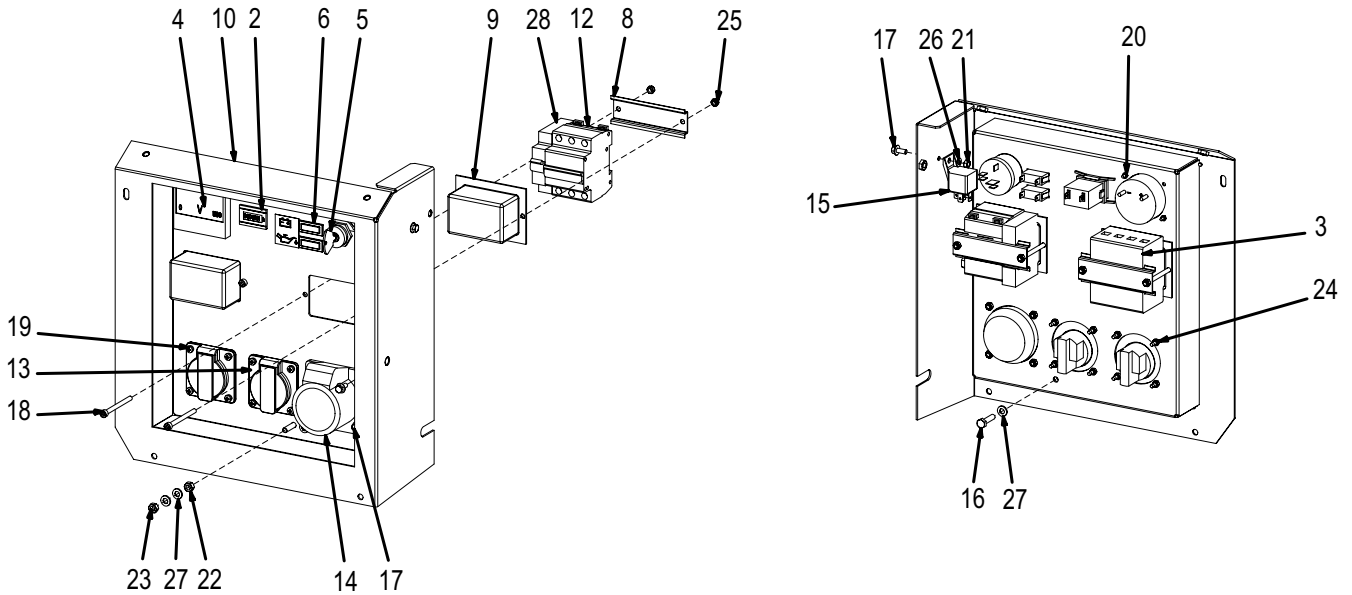
Pos.	Cod.	Descr.	Descr.	Note
2	M222401035	ANTIVIBRANTE	VIBRATION DAMPER	
3	M256011035	ANTIVIBRANTE	VIBRATION DAMPER	
4	M256162200	MOTORE YANMAR	YANMAR ENGINE	
5	M259123097	CUFFIA SUPERIORE ALTERN.(LAV.)	ALTERNATOR UPPER COVER	
6	M356453100	ALTERNATORE	ALTERNATOR	GE 6500 DES/GS-L
6	M356403100	ALTERNATORE	ALTERNATOR	GE 6000 DES/GS-L
6	M356503100	ALTERNATORE	ALTERNATOR	GE 6000 DES/GS L-AVR
7	M6001220	VITE	SCREW	
8	M6035040	RONDELLA	WASHER	
9	M6036040	RONDELLA	WASHER	

(I) Ricambi  
 (GB) Spare parts  
 (F) Pièces de rechange

(D) Ersatzteile  
 (E) Tabla de recambios  
 (NL)

GE 6500 DES/GS-L

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<i>Pos.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Descr.</i>	<i>Note</i>
2	M105511810	CONTAORE 230V 50Hz IP65	HOURMETER 230V 50Hz IP65	
3	M105111540	Vedi Cod.219937105	See part no. 219937105	
4	M105111550	VOLTMETRO FS 500V	VOLTMETER	
5	M107302460	STARTER A CHIAVE	STARTER KEY	
6	M1302500	SEGNALATORE RETT. 12V DC ROSSO	WARNING LIGHT, RED 12V	
8	M232027036	GUIDA	FIXING GUIDE	
9	M232027130	CAPPUCCIO PROTEZIONE I.D.	CAP	
10	M256158003	FIANCATA CARENAT. CON FRONTALE	COVER FRONT PANEL SIDE	
12	M256557325	INTERRUT.MAGNETOTERM. 3P 10A	CIRCUIT BREAKER 3POLES 10 AMP	
13	M259107241	PRESA SCHUKO 16A 230V - 2P+T	SOCKET SCHUKO 16A 230V 2P+T	
14	M305907270	PRESA CEE 16A 400V 3P+N+T	EEC SOCKET 16A 400V 3P+N+T	
15	M306479199	RELE' AVV. ELETTRICO	RELAY, ELECTRIC START	
16	M6001060	VITE	SCREW	
17	M6005020	VITE	SCREW	
18	M6008260	VITE	SCREW	
19	M6018060	VITE TCC M4x20 UNI7687 5.8 ZN	SCREW	
20	M6022010	DADO	NUT	
21	M6022030	DADO	NUT	
22	M6022040	DADO	NUT	
23	M6025120	DADO	NUT	
24	M6028010	DADO	NUT	
25	M6028020	DADO	NUT	
26	M6035030	RONDELLA	WASHER	
27	M6035060	RONDELLA	WASHER	
28	M734507325	INTER.MAGNETOTERMICO 16A 1P+N	CIRCUIT BREAKER 16A 1P+NEUTRAL	

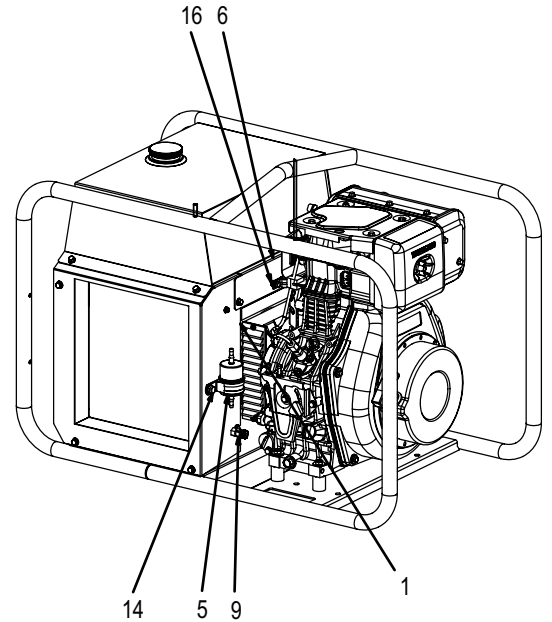
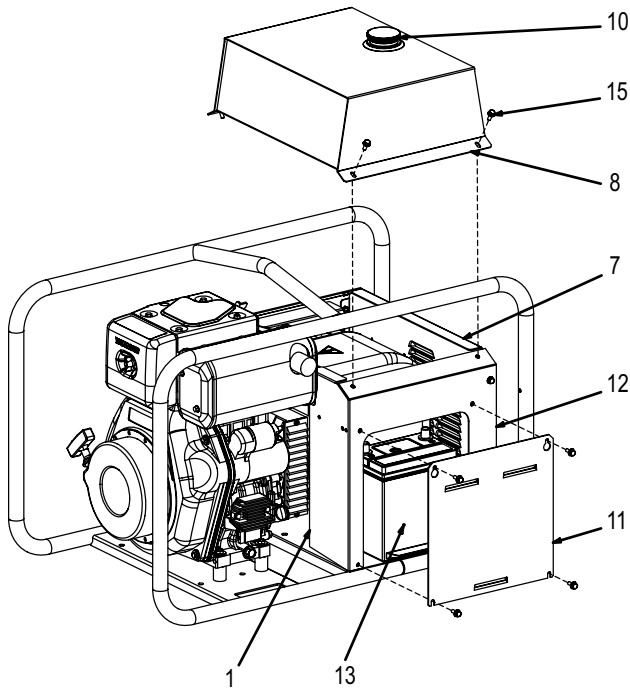


(I) Ricambi  
 (GB) Spare parts  
 (F) Pièces de rechange

(D) Ersatzteile  
 (E) Tabla de recambios  
 (NL)

GE 6000 - 6500 DES/GS-L  
 GE 6000 DES/GS L - AVR

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 REV.1-10/12



<i>Pos.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Descr.</i>	<i>Note</i>
1	M107509005	GUARNIZIONE	GASKET	
5	M256602228	FILTRO GASOLIO	FUEL PRE-FILTER	
6	M256608247	PARATIA CHIUSURA POST.GENERAT.	GENERATOR REAR COVER	
7	M256658235	GRIGLIA ASPIRAZ.GENERATORE	GRATE AIR INLET	
8	M259102020	SERBATOIO CARBURANTE	FUEL TANK	
9	M259102025	RUBINETTO CARBURANTE	TAP,FUEL	
10	M259102026	TAPPO SERBATOIO	TANK CAP	
11	M259119162	COPERCHIO ISPEZIONE BATTERIA	INSPECTION BATTERY COVER	
12	M259118015	FIANCATA CAREN.LATO BATTERIA	COVER BATTERY SIDE	
13	M372859150	BATTERIA	BATTERY	
14	M6005030	VITE	SCREW	
15	M6005040	VITE	SCREW	
16	6022040	DADO	NUT	





# MOSA

GRUPPI ELETTROGENI

MOTOSALDATRICI

[WWW.MOSA.IT](http://WWW.MOSA.IT)

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Fax + 39 - 0290390466



ISO 9001:2008 - Cert. 0192