

CT 230 SX PLUS

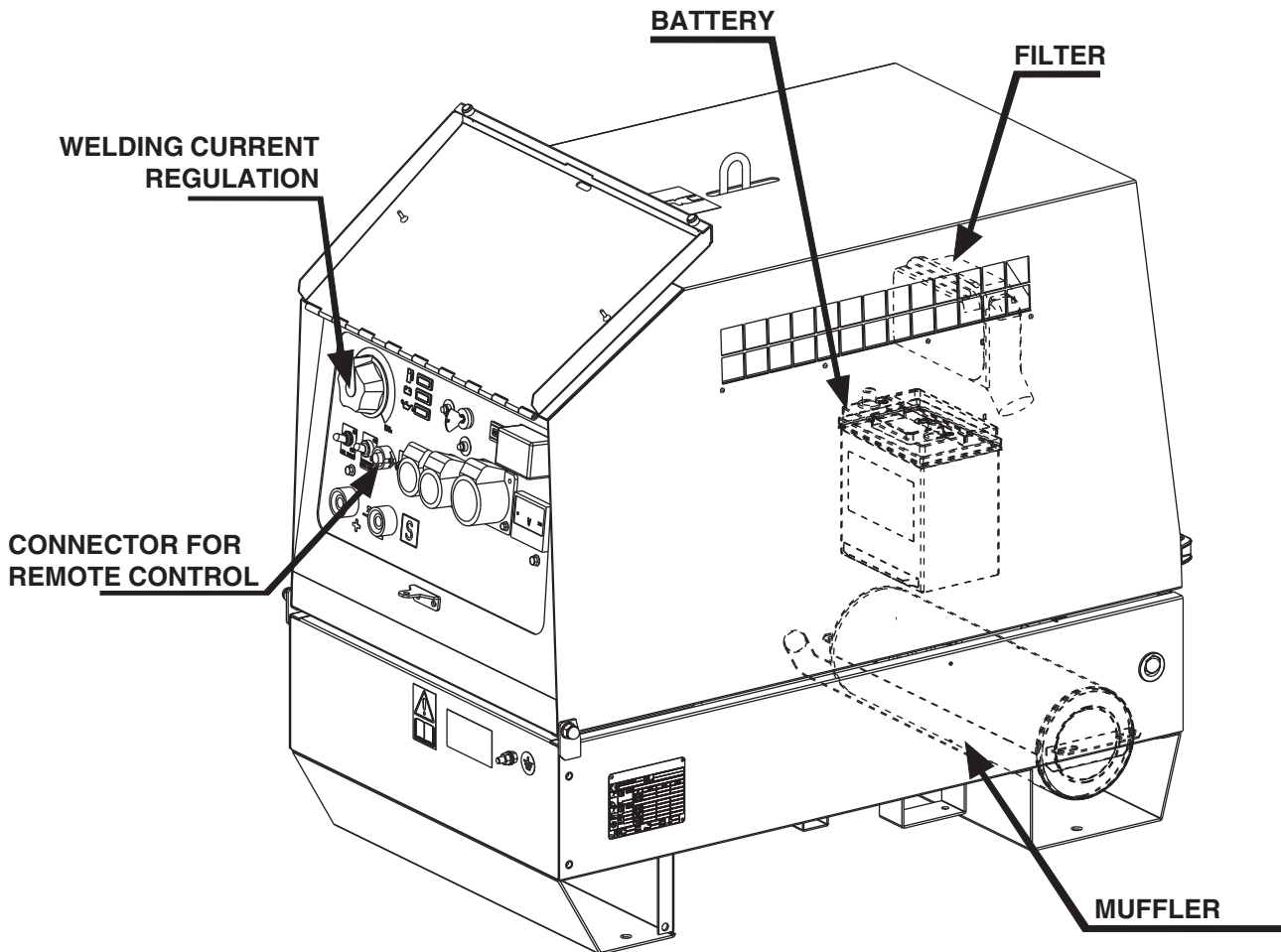
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USE AND MAINTENANCE MANUAL SPARE PARTS CATALOG

Main characteristics of the unit:

- Control of current with CHOPPER technology at high frequency
- Check the maximum engine power
- Maximum welding current 210A/20V
- Arc force for cellulosic electrodes
- 6 kVA of power in three-phase generation 400 V / 50 Hz
- Yanmar Diesel engine L 100 N more silenced
- Tank of 23l with autonomy of 20 h
- Noise level at 7m 67dBA
- Dimensions / weight: 1050x650x920 / 247 Kg



The unit is composed of: a structured base which includes a tank, an engine/alternator unit fixed on the base by 3 elastic dampers, a roll-bar, with hook for an easy and sure lifting, a chest hinged to the base for a quick access to the engine, to the air filter and to the battery. The set is completed by a frontal panel where there is the possibility to start the engine, adjust welding parameters and obtain full AUX power.



UNI EN ISO 9001 : 2000

ISO 9001:2000 - Cert. 0192

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

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

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

The advantages for MOSA clients are:

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

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

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ATTENTION

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

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

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



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INFORMATION

Dear Customer,
We wish to thank you for having bought from MOSA a high quality set.

Our sections for Technical Service and Spare Parts will work at best to help you if it were necessary.

To this purpose we advise you, for all control and overhaul operations, to turn to the nearest authorized Service Centre, where you will obtain a prompt and specialized intervention.

- ☞ In case you do not profit on these Services and some parts are replaced, please ask and be sure that are used exclusively original MOSA parts; this to guarantee that the performances and the initial safety prescribed by the norms in force are re-established.
- ☞ **The use of non original spare parts will cancel immediately any guarantee and Technical Service obligation from MOSA.**

NOTES ABOUT THE MANUAL

Before actioning the machine please read this manual attentively. Follow the instructions contained in it, in this way you will avoid inconveniences due to negligence, mistakes or incorrect maintenance. The manual is for qualified personnel, who knows the rules: about safety and health, installation and use of sets movable as well as fixed.

You must remember that, in case you have difficulties for use or installation or others, our Technical Service is always at your disposal for explanations or interventions.

The manual for Use Maintenance and Spare Parts is an integrant part of the product. It must be kept with care during all the life of the product.

In case the machine and/or the set should be yielded to another user, this manual must also given to him.

Do not damage it, do not take parts away, do not tear pages and keep it in places protected from dampness and heat.

You must take into account that some figures contained in it want only to identify the described parts and therefore might not correspond to the machine in your possession.

INFORMATION OF GENERAL TYPE

In the envelope given together with the machine and/or set you will find: the manual for Use Maintenance and Spare Parts, the manual for use of the engine and the tools (if included in the equipment), the guarantee (in the countries where it is prescribed by law).

Our products have been designed for the use of generation for welding, electric and hydraulic system; ANY OTHER DIFFERENT USE NOT INCLUDED IN THE ONE INDICATED, relieves MOSA from the risks which could happen or, anyway, from that which was agreed when selling the machine; MOSA excludes any responsibility for damages to the machine, to the things or to persons in this case.

Our products are made in conformity with the safety norms in force, for which it is advisable to use all these devices or information so that the use does not bring damage to persons or things.

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

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

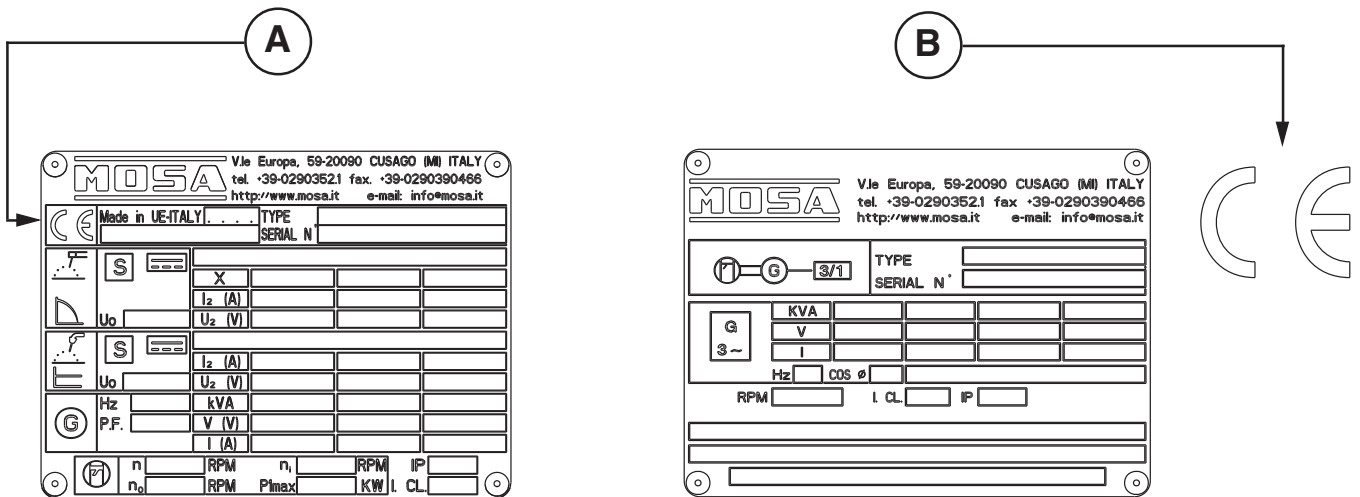
- ☞ **Notice:** *this manual does not engage MOSA, who keeps the faculty, apart the essential characteristics of the model here described and illustrated, to bring betterments and modifications to parts and accessories, without putting this manual uptodate immediately.*



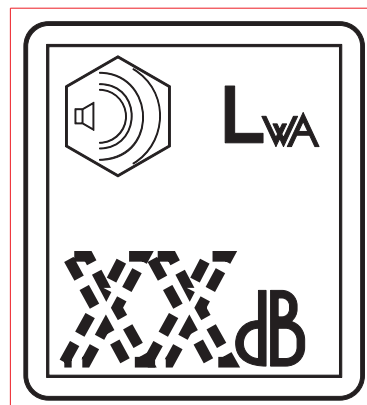
Any of our product is labelled with CE marking attesting its conformity to appliable directives and also the fulfillment of safety requirements of the product itself; the list of these directives is part of the declaration of conformity included in any machine standard equipment. Here below the adopted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



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



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



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

The CT 230 engine driven welder is a unit which ensures the function as:

- a) a current source for are welding
- b) a current source for the auxiliary generation

Unit meant for industrial and professional use, powered by an endothermic engine; it is composed of various main parts such as: engine, alternator, electric and electronic controls, the fairing or a protective structure.

The assembling is made on a steel structure, on which are provided elastic support which must damp the vibrations and also eliminate sounds which would produce noise.

Technical data
CT 230 SX
D.C. WELDING C.C.

Duty cycle	210A/35% -180A/60% - 140A/100%
Current range, continuous	20 - 210A
Open circuit voltage	65V

GENERATOR

Three-phase generation	6 kVA / 400 V / 8.7 A
Single-phase generation	5 kVA / 230 V / 21.7 A
Single-phase generation	2 kVA / 48 V / 41.6 A
Frequency	50 Hz
Cos φ	0.9

ALTERNATOR

Self-excited, self-regulated

Type	three-phase, asynchronous
Insulating class	H

ENGINE

Mark / Model	Yanmar / L 100 N
Type / Cooling system	Diesel 4-Stroke / air
Cylinders / Displacement	1 / 435 cm ³
Output max	6.5 kW (8.8 HP)
Speed	3000 rpm
Fuel consumption	254 g/kWh
Engine oil capacity	1.6 l
Starter	Electric

GENERAL SPECIFICATIONS

Tank capacity	23 l
Running time (at duty cycle 60%)	20 h
Protection	IP 23
Dimensions / max. Lxwxh (mm) *	1050x650x920
Weight *	247Kg
Measured acoustic power	92 LWA (67 dB(A) - 7 m)
Guaranteed acoustic power	93 LWA (68 dB(A) - 7 m)



* Dimensions and weight are inclusive of all parts without wheels and towbar (CTM).

POWER

Declared power according to ISO 3046-1 (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_{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 (L_p) - 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_p) at different distances from a machine with Acoustic Noise Level (L_{WA}) of 95 dB(A)

L_p a 1 meter = 95 dB(A) - 8 dB(A) = 87 dB(A)

L_p a 7 meters = 95 dB(A) - 25 dB(A) = 70 dB(A)

L_p a 4 meters = 95 dB(A) - 20 dB(A) = 75 dB(A)

L_p 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 (for all MOSA models)



STOP - Read absolutely and be duly attentive



Read and pay due attention



GENERAL ADVICE - If the advice is not respected damage can happen to persons or things.



HIGH VOLTAGE - Attention High Voltage. There can be parts in voltage, dangerous to touch. The non observance of the advice implies life danger.



FIRE - Danger of flame or fire. If the advice is not respected fires can happen.



HEAT - Hot surfaces. If the advice is not respected burns or damage to things can be caused.



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



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



SMOKING - The cigarette can cause fire or explosion. If the advice is not respected fires or explosions can be caused.



ACIDS - Danger of corrosion. If the advice is not respected the acids can cause corrosions with damage to persons or things.



WRENCH - Use of the tools. If the advice is not respected damage can be caused to things and even to persons.



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



ACCES FORBIDDEN to non authorizad 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.



The installation and the general advice concerning the operations, are finalized to the correct use of the machine, in the place where it is used as generator group and/or welder.

ENGINE	Stop engine when fueling	CHECKING BOARD	Do not touch electric devices if you are barefoot or with wet clothes.
	Do not smoke, avoid flames, sparks or electric tools when fueling.		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.

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

WARNING					CAUTION		DANGEROUS

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

The operator of the welder is responsible for the security of the people who work with the welder and for those in the vicinity.

The security measures must satisfy the rules and regulations for engine driven welders.

The information given below is in addition to the local security norms.

Estimate possible electromagnetic problems in the work area taking into account the following indications.

1. Telephonic wirings and/or of communication, check wirings and so on, in the immediate vicinity.
2. Radio and television receptors and transmitters.
3. Computer and other checking devices.
4. Critical devices for safety and/or for industrial checks.
5. People who, for instance, use pace-maker, hearing-aid for deaf or something and else.
6. Devices used for rating and measuring.
7. The immunity of other devices in the operation area of the welder. Make sure that other used devices are compatible. If it is the case, provide other additional measures of protection.
8. The daily duration of the welding time.



Make sure that the area is safe before starting any welding operation.

- ⚡ Do not touch any bare wires, leads or contacts as they may be live and there is danger of electric shock which can cause death or serious burns. The electrode and welding cables, etc. are live when the unit is operating.
- ⚡ Do not touch any electrical parts or the electrode while standing in water or with wet hands, feet or clothes.
- ⚡ Insulate yourself from the work surface while welding. Use carpets or other insulating materials to avoid physical contact with the work surface and the floor.
- ⚡ Always wear dry, insulating gloves, without holes, and body protection.
- ⚡ Do not wind cables around the body.
- ⚡ Use ear protections if the noise level is high.
- ⚡ Keep flammable material away from the welding area.
- ⚡ Do not weld on containers which contain flammable material.
- ⚡ Do not weld near refuelling areas.
- ⚡ Do not weld on easily flammable surfaces.
- ⚡ Do not use the welder to defrost (thaw) pipes.
- ⚡ Remove the electrode from the electrode holder, when not welding.
- ⚡ Avoid inhaling fumes by providing a ventilation system or, if not possible, use an approved air breather.
- ⚡ Do not work in closed areas where there is no fresh air flow.
- ⚡ Protect face and eyes (protective mask with suitable dark lens and side screens), ears and body (non-flammable protective clothers).



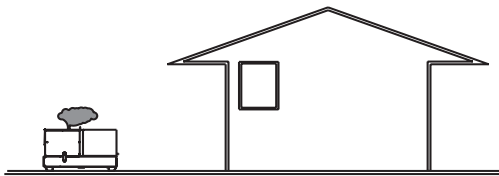
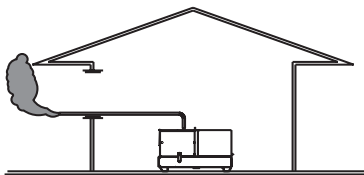
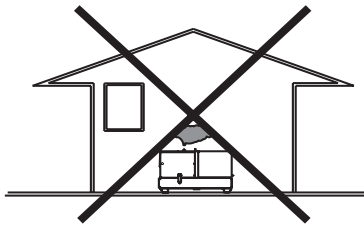
INSTALLATION AND ADVICE BEFORE USE

GASOLINE ENGINES

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

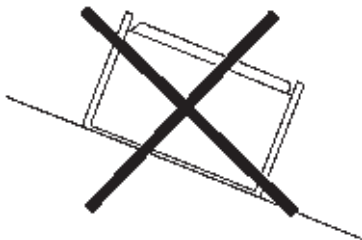
DIESEL ENGINES

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

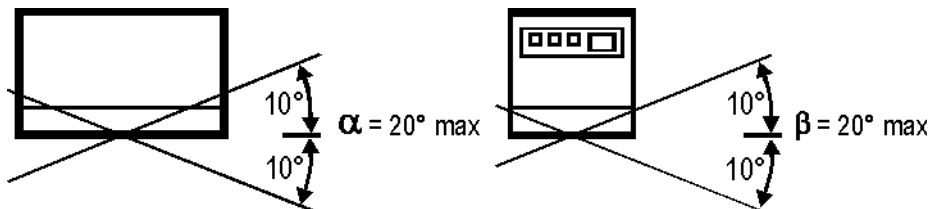


POSITION

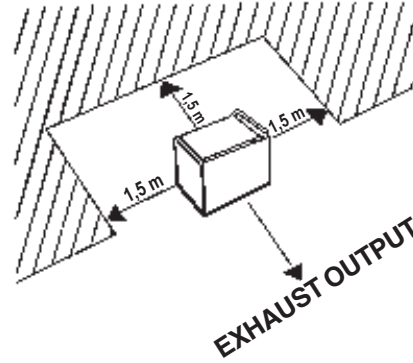
Place the machine on a level surface at a distance of at least 1,5 m from buildings or other plants.



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.



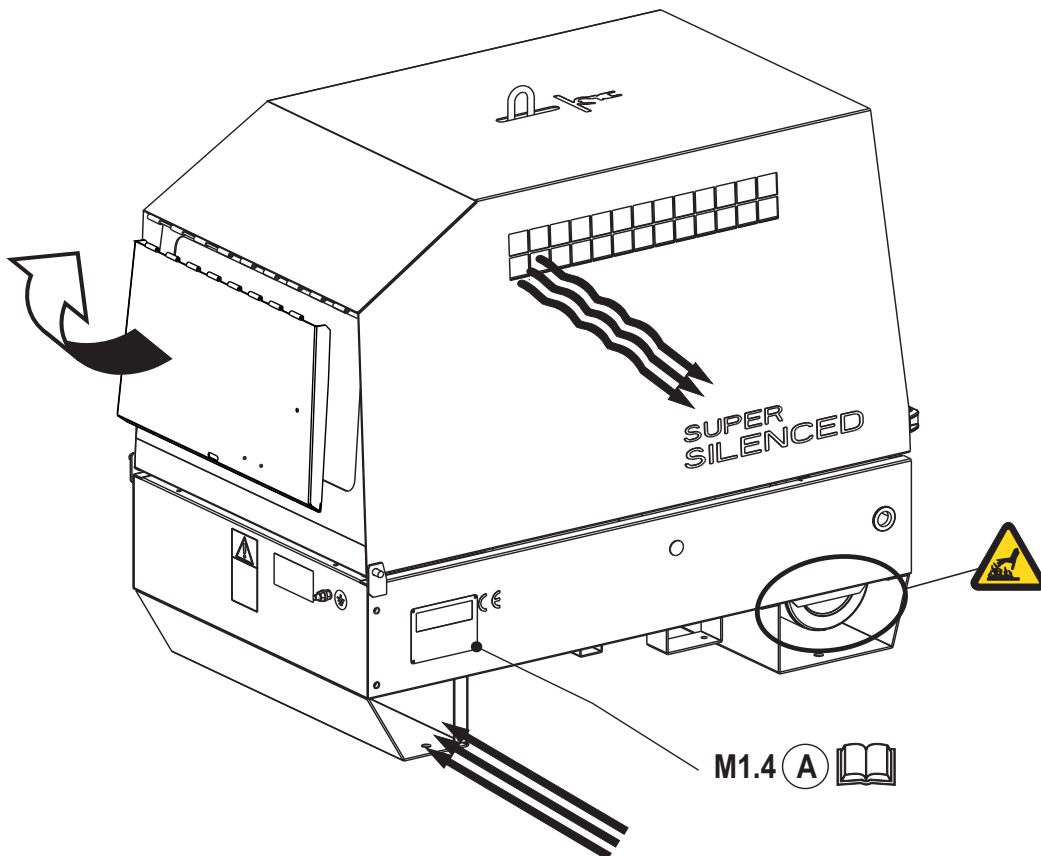
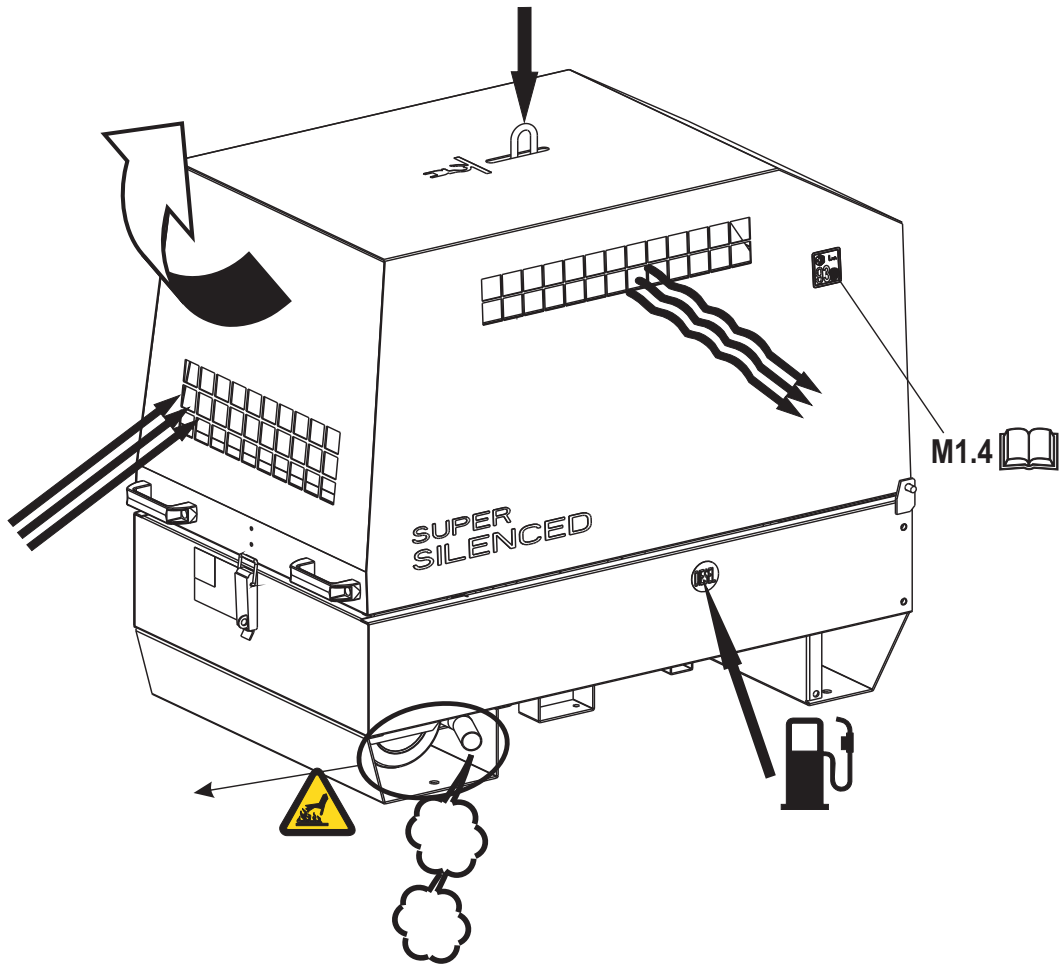
☞ Make sure that the machine does not move during the work: **block** it possibly with tools and/or devices made to this purpose.

MOVES OF THE MACHINE

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

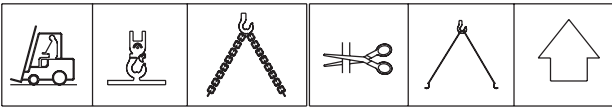
PLACE OF THE MACHINE

	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



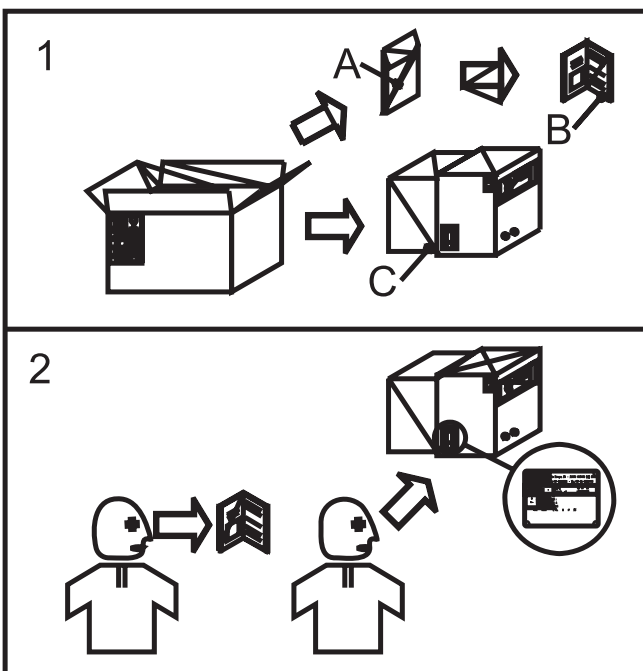
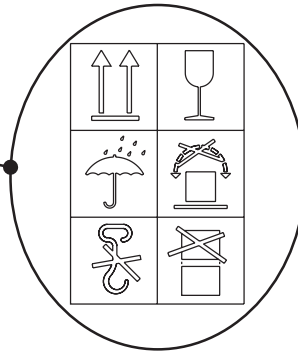
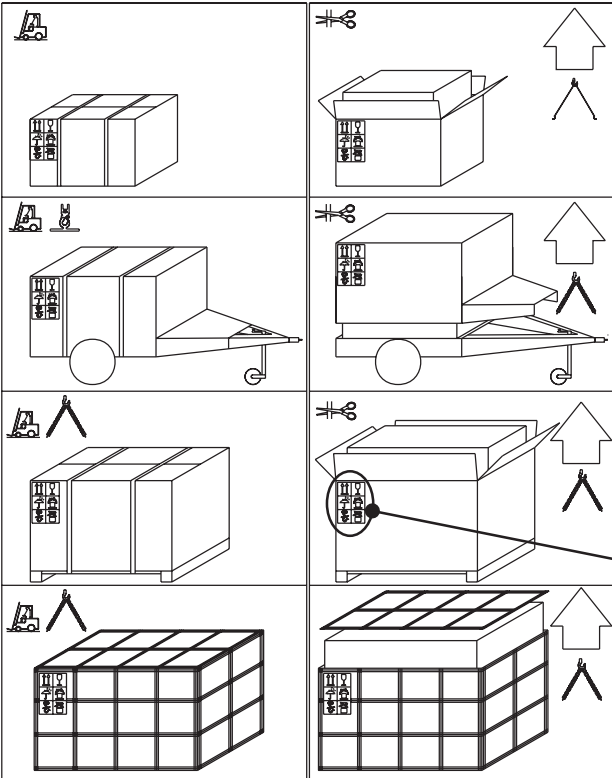
Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with its packaging, and conforms to local rules and regulations.

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**

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

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

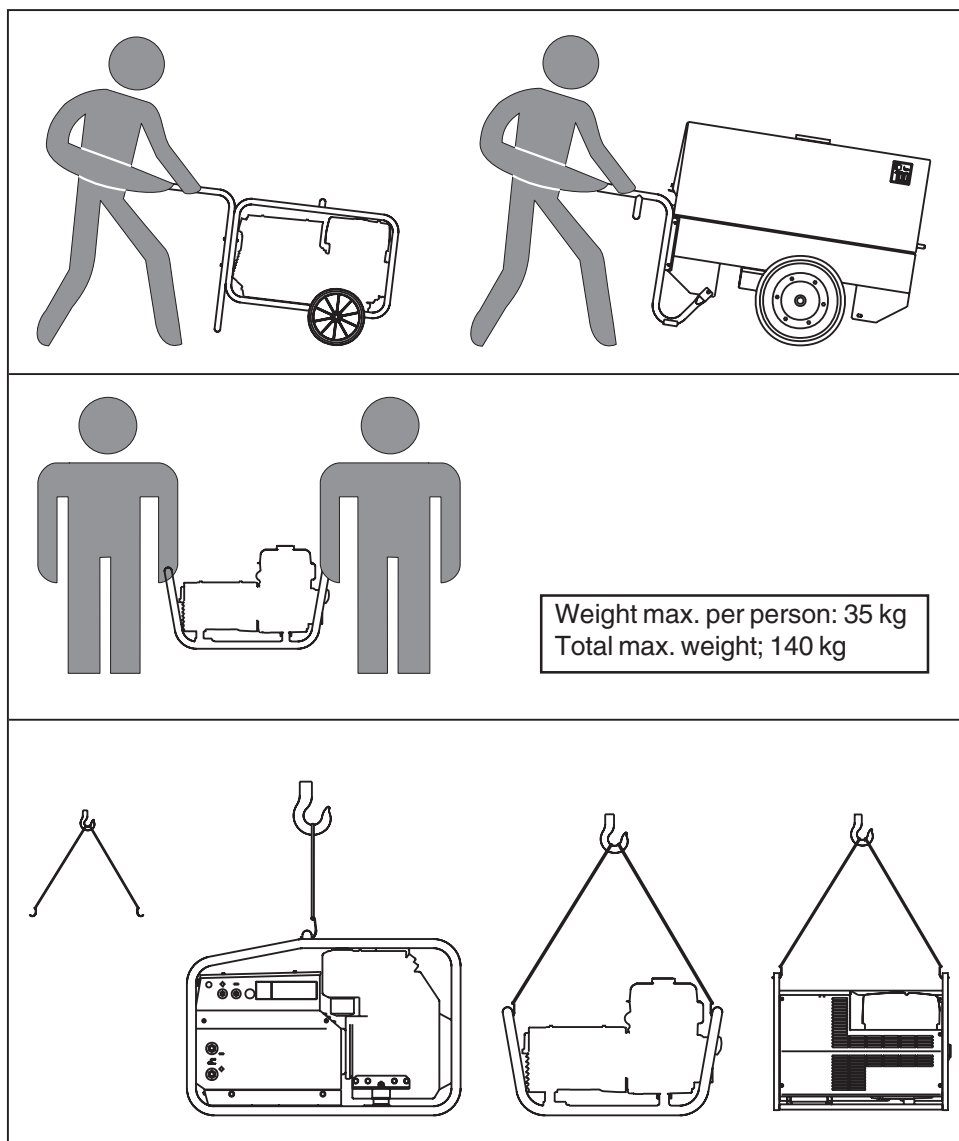
Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with it's packaging, and conform to local rules and regulations.

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

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

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

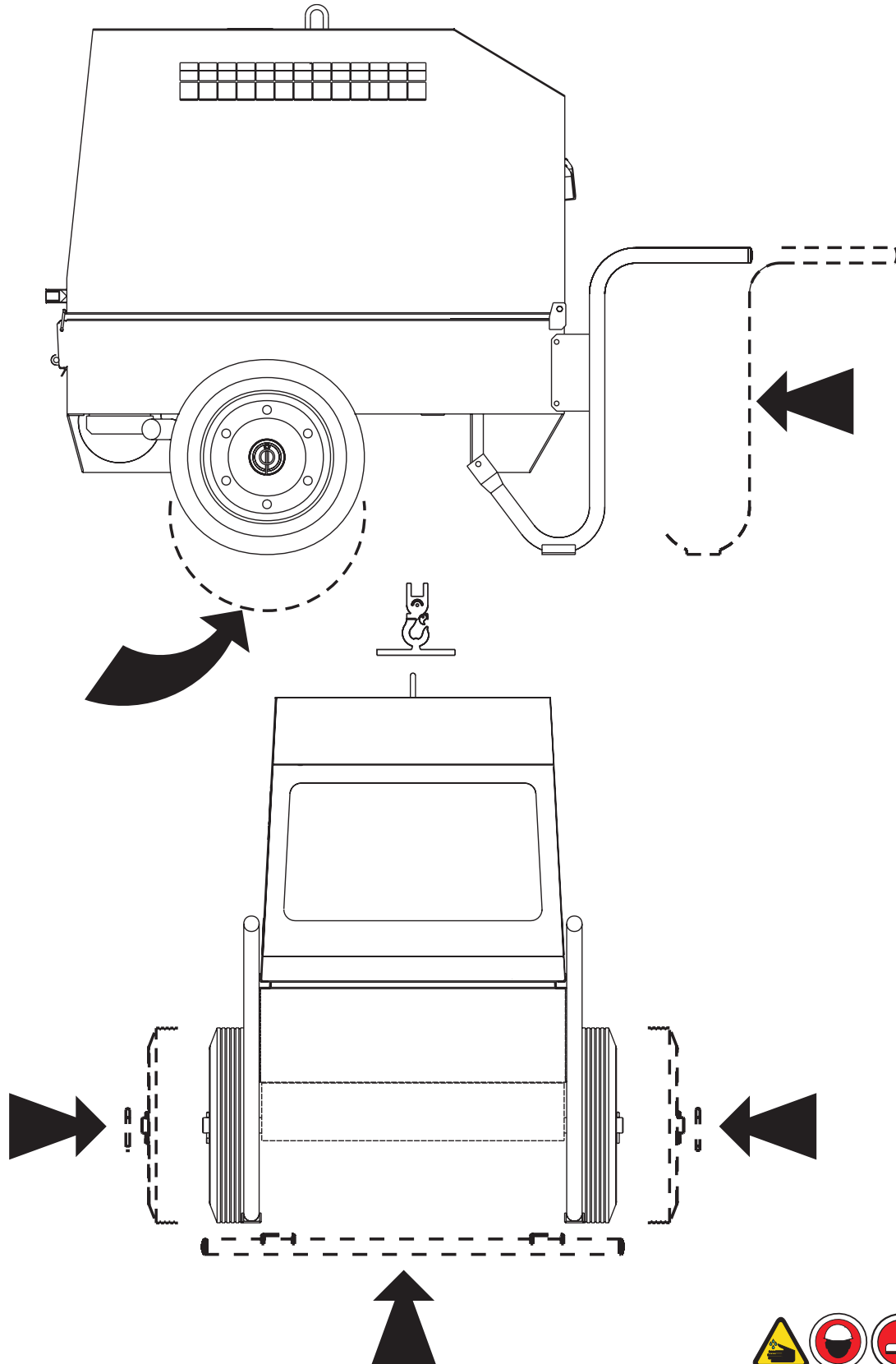
If you did not keep to the instructions, you could damage the structure of the machine.



**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.

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





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	
AGIP SUPERDIESEL 15W/40 API CF4-SG	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 ₂ 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

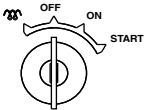


NOTE

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 –



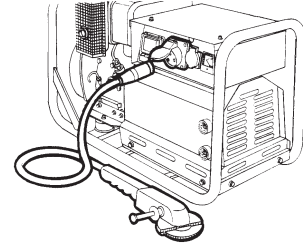
Introduce the key (Q1), turn it clockwise completely, leaving it as soon as the engine starts.

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

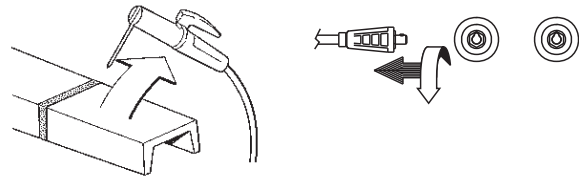
STOPPING THE ENGINE

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

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

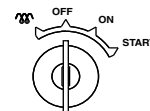


- stop to draw power from the welding sockets



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

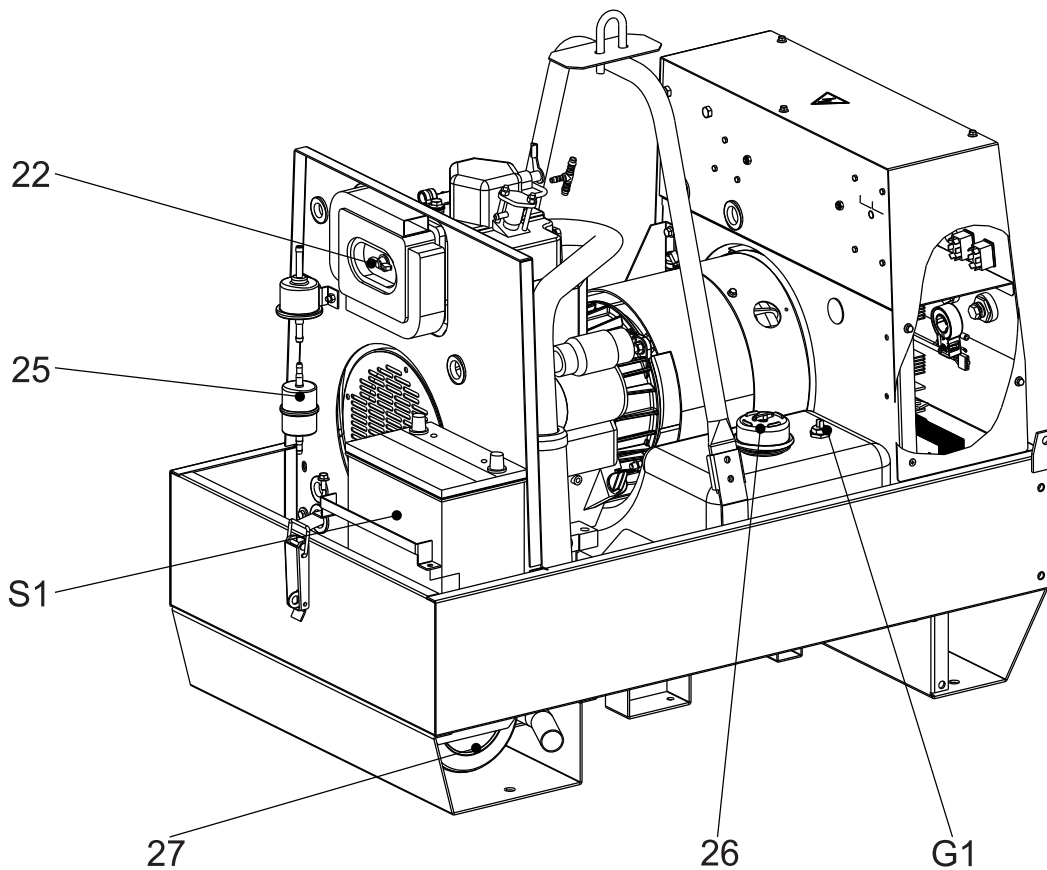
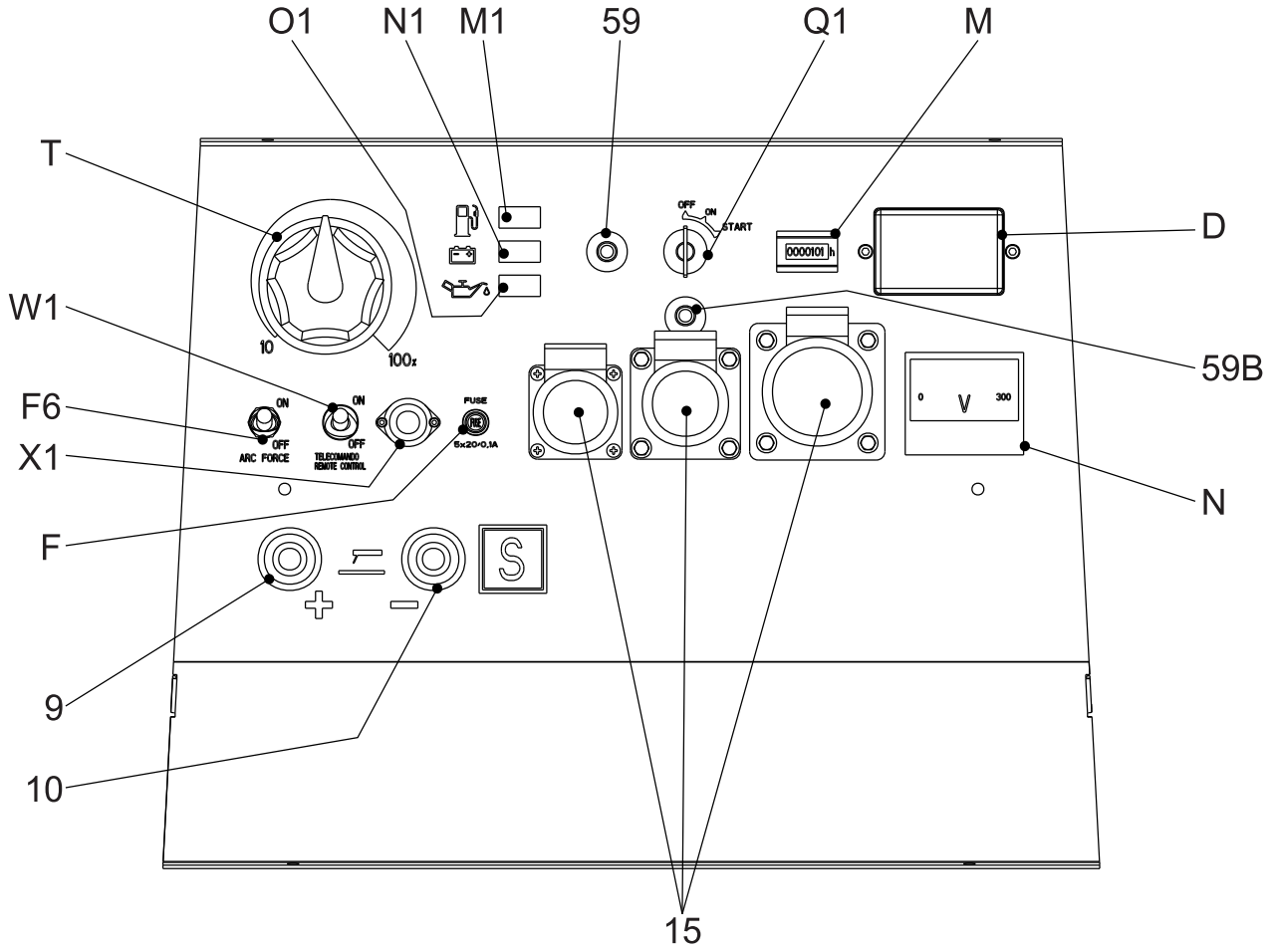
If the engine fails to start, do not insist for at least 15 seconds. Space the further operations waiting for at least 4 minutes.



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





This symbol (Norm EN 60974-1 security standards for arc welders) signifies that the welder can be used in areas with increased risk of electrical shock.



ATTENTION

The sockets, after the machine is started (see pages M21), also with no cables, are anyway under voltage.



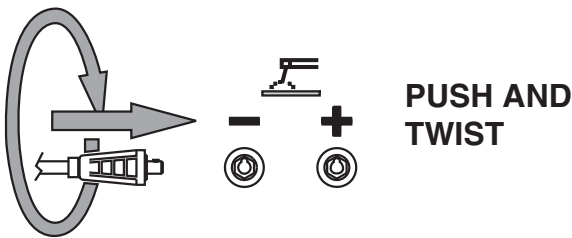
ATTENTION

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

Check at the beginning of any work the electric parameters and/or the control placed on the front.

Make sure the unit is properly grounded (12) (where it is assembled).
- See page M 20.

Fully insert the welding cable plugs into the corresponding sockets turning them clockwise to lock them in position.

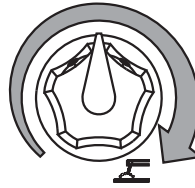


☞ Make sure that the ground clamp ,whose cable must be connected to the + or - terminal, depending on the type of electrode, makes a good connection and is near to the welding position.
Pay attention to the two polarities of the welding circuit, which must not come in electric contact between themselves.



REMOTE CONTROL TC...
See page M 38

WELDING CURRENT REGULATOR



Position welding current adjusting knob (T) in correspondance of the chasen current value, so as to obtain the necessary amperage, taking into account the diameter and the type of the electrode.
For technical data see page M52



FUSE

Protection fuse (when assembled):the fuse protects the electronic welding PCB in case the remote control is short circuited.

ARC FORCE

When “Arc Force” is “ON” an extra strong penetration is added this is necessary for cellulosic and basic stick.



ATTENTION

To reduce the risk of electromagnetic interferences, use the minimum lenght of welding cables and keep them near and down (ex. on the floor).
The welding operations must take place far from any sensitive electronic device.Make sure that the unit is earthed. (see M20). In case the interference should last, adapt further disposition,such as: move the unit, use screened cables, line filters, screen the entire work area.
In case the above mentioned operations are non sufficient, please contact our Technical Assistance Service.



CAUTION

With a welding cable length up to 20 m is suggested a section of 35 mm²; with longer cables a bigger section is required.



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



WARNING

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



WARNING

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

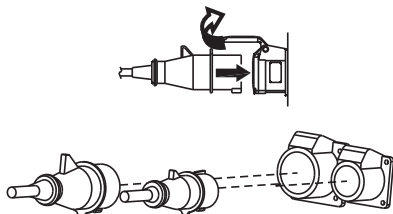
☞ At the beginning of every work, check the electric parameters and/or the controls placed on the front.

Make sure that the ground connection (12) is efficient (keep to installation local rules and/or to national laws), in order to integrate or ensure the working of various electric protection devices referring to the several distribution system TT/TN/IT, operation unnecessary for machine with isometer.
- See page M 20-21.

Check the voltmeter (N) shows the voltage three or single-phase has to be drawn.

Nominal voltage	Indicative no-load voltage
230V	+10%
400V	+10%

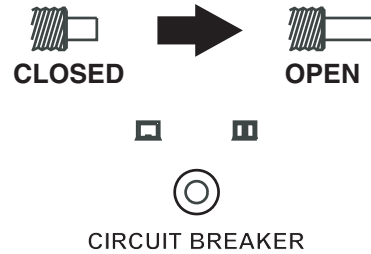
Connect up the machine, using proper plugs and cables in good condition to the AC socket (15) to draw single or three-phase power, or, by cables with adequate section, to the terminal board, placed inside the derivation box (Q3).



Using several sockets at the same time, the maximum power possible is that indicated on the data plate.
The max. continuous power of the generating set or the load current must not be exceeded.

THERMOPROTECTION

If you overload the genset the thermoprotection will automatically switch off.
If the thermoprotection is released, disconnect all the connected loads.



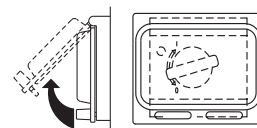
Reset the thermoprotection pressing the central pole.
When reset, connect the loads again.
In case the protection should act furtherly, check: the connections, the wires or others, and if necessary call the Assistance Service.



Avoid to hold the central pole of the thermoprotection pressed for a long time.

Otherwise, in case of trouble, it will not click, **damaging** the generating set.

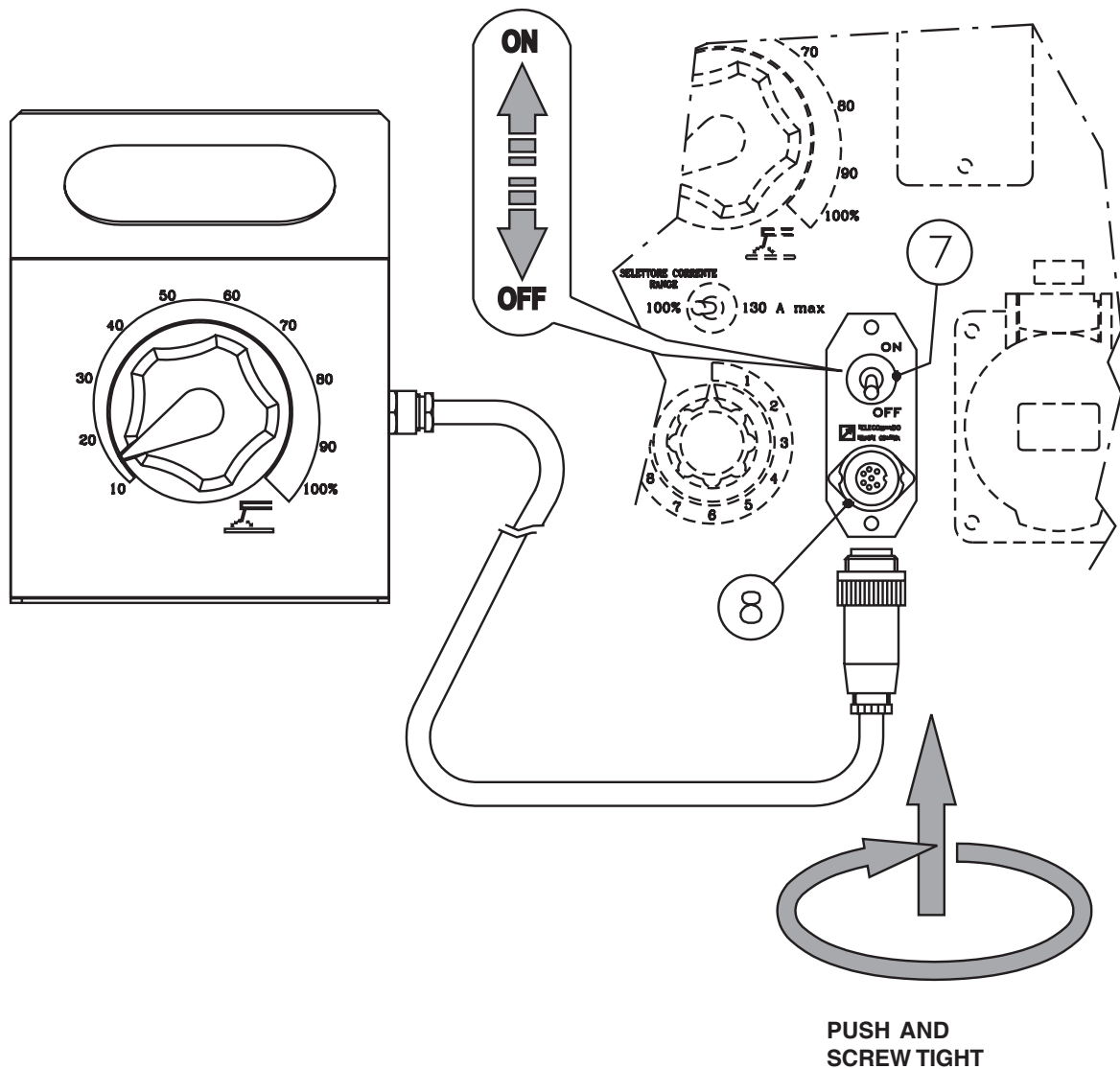
GROUND FAULT INTERRUPTER (GFI)



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

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





The remote control device for regulating the welding current is connected to the front panel by means of a multipole connector.

To regulate the current from the TC2 / TC2/50, move the switch (7), located above the multipole connector (8), to "ON" position.

Position welding current adjusting (T) knob at the necessary current value for the diameter and type of electrode.

- See page M51 -

ENGINE PROTECTION (ES - EV)

The devices ES or EV ensure the protection of the engine in case of low oil pressure or engine high temperature.

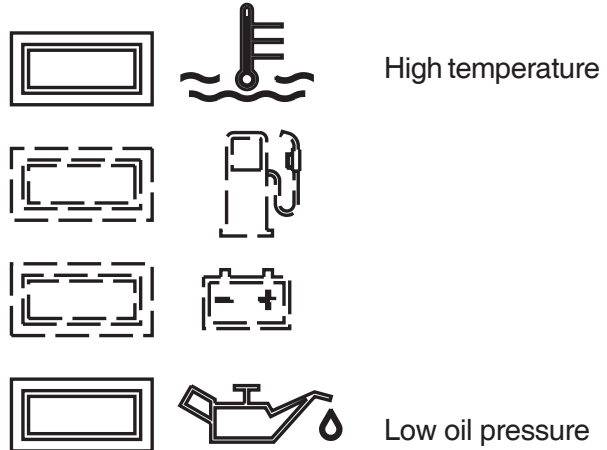
The system consist of electronic card of control and check, and of an engine stop device: solenoid (**ElettroStop**), electrovalve (**ElettroValvola**)

The device enter in operation when the engine starts and, in case of low oil pressure and high temperature, will stop the machine and show the cause of the stop with the warning light of high temperature or low oil pressure.

In case of low oil pressure, check the level and if it is correct, call the Service Station. In case of high temperature, make sure that there are no leaves and/or pieces of material obstructing the air ducts.

N.B.: if the unit is used as a generator in hot climates and with loads near to the maximum, the protection device can be triggered off, please reduce the load of the engine.

Once the cause of the problem is removed, to reset the protection, it is enough to report the ignition key (Q1) on "OFF" position and start the engine again.

**NOTE**

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

PROBLEM	POSSIBLE CAUSE	WHAT TO DO
No welding current but auxiliary output is OK	1) Defective diode bridge 2) Problem with welding current control (PCB)	1) Check the diodes of the bridge 2) Is the remote control switch in the internal position? 3) Check the diodes and SCR's of the bridge. 4) Check the transformer which supplies power to the welding control PCB. If it is OK replace the PCB
Weld poorly	1) Defective diode bridge 2) Problem with welding current control (PCB)	1) Check the open circuit welding voltage. If it is OK the diode bridge is OK. If it is 1/3 or 2/3 of the nominal value check the diodes or the SCR's. 2) If the diode bridge is OK replace the PCB.
Intermittently welds poorly	1) Bad connections to welding current PCB 2) Problem with welding current control PCB	1) Check that the pins of the green connectors are clean and making good contact. Check that shunt connections are tight. 2) Replace the welding current control PCB
No welding output and no auxiliary power output	1) Short circuit in wiring 2) Defective condenser 3) Defective stator 4) Short circuited diode bridge	1) Check the wiring inside the welder for a short circuit between cables or to ground. 2) If the wiring is OK, short circuit the condenser to be sure that it is discharged, disconnect all wires from condenser and, using an ohmmeter, check that the condenser is not short circuited. 3) If the condenser box is OK, disconnect all leads from the stator except for those going to the condenser box and check the output from the alternator. If there is no output from the welding winding and the auxiliary winding, replace the stator. 4) If there is output from all windings reconnect the diode bridge and check if there is welding current. If not the diode bridge is defective. If there is welding current connect the auxiliary power leads one at a time until there is no output; at this point, the short circuit is in that line.

[.] only for models with electronic control of welding current.



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.

ENGINE and ALTERNATOR

PLEASE REFER TO THE SPECIFIC MANUALS PROVIDED.

VENTILATION

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

ELECTRICAL PANELS

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

DECALS AND LABELS

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

STRENUOUS OPERATING CONDITIONS

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

BATTERY WITHOUT MAINTENANCE DO NOT OPEN THE BATTERY

The battery is charged automatically from the battery charger circuit 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



IMPORTANT



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




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.



In case the machine should not be used for more than 30 days, make sure that the room in which it is stored presents a suitable shelter from heat sources, weather changes or anything which can cause rust, corrosion or damages to the machine.

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

GASOLINE ENGINE

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

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

Pour about 10 cc of oil into the spark plug hole and screw the spark plug, after having rotated the crankshaft several times.

Rotate the crankshaft slowly until you feel a certain compression, then leave it.

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

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

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

DIESEL ENGINE

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

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

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

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

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



IMPORTANT



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



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

As cust off we intend all operations to be made, at utilizer's care, at the end of the use of the machine. This comprises the dismantling of the machine, the subdivision of the several components for a further reutilization or for getting rid of them, the eventual packing and transportation of the eliminated parts up to their delivery to the store, or to the bureau 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: MOSA is involved with custing off the machine **only** for the second hand ones, when not reparable.

This, of course, after authorization.

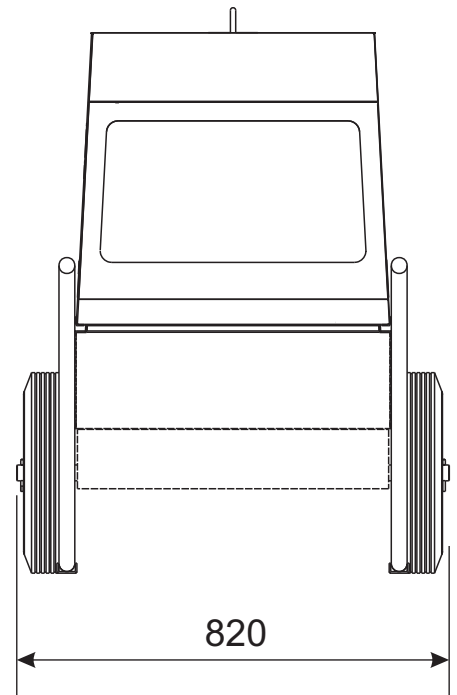
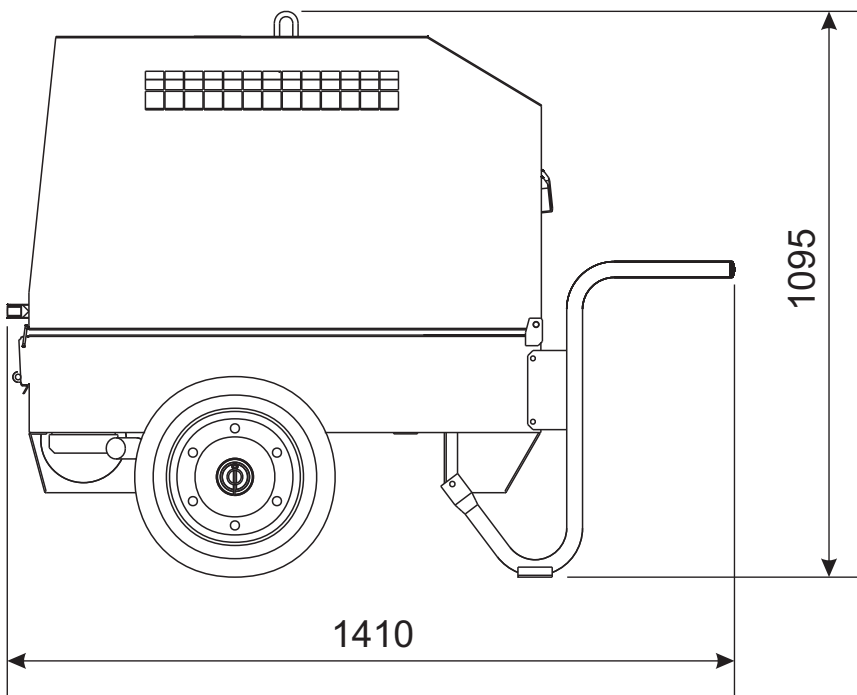
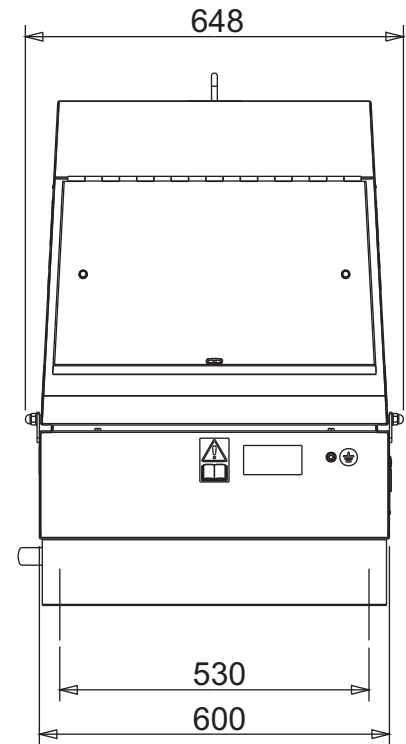
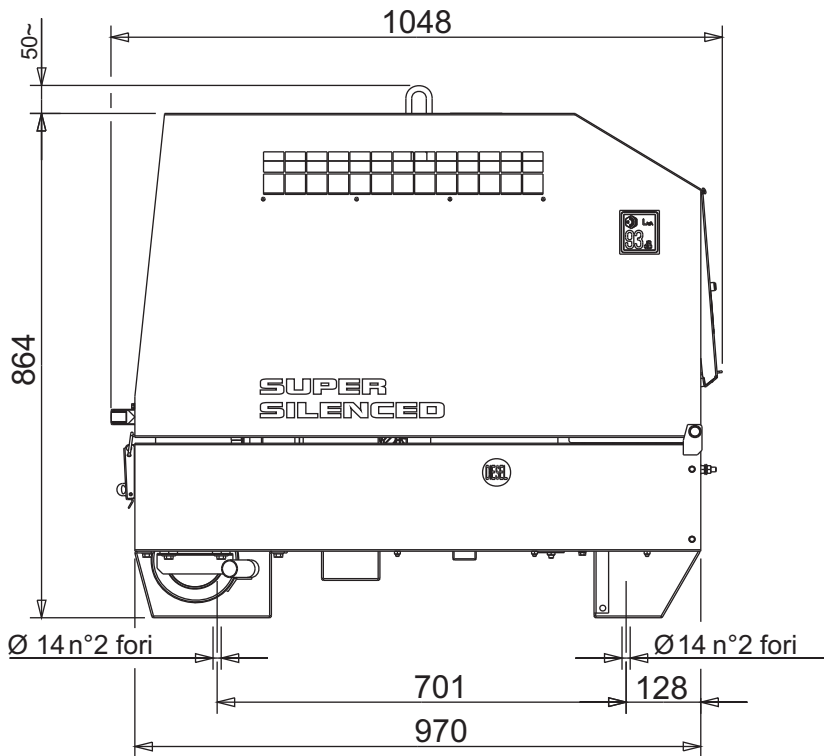
In case of necessity for first aid and fire prevention, see page M2.5.



IMPORTANT



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



The information here below are to be intended only as indicative since the above norm is much larger. For further details please see the specific norms and/or the manufacturers of the product to be used in the welding process.

RUTILE ELECTRODES: E 6013

Easily removable fluid slag, suitable for welding in all position.
 Rutile electrodes weld in d.c. with both polarities (electrode holder at + or -) and in a.c..
 Suitable for soft steels R-38/45 kg/mm². Also for soft steels of lower quality.

BASIC ELECTRODES: E 7015

Basic electrodes weld only in d.c. with inverse polarity (+ on the electrode holder) ; there are also types for a.c.
 Suitable for impure carbon steels. Weld in all position.

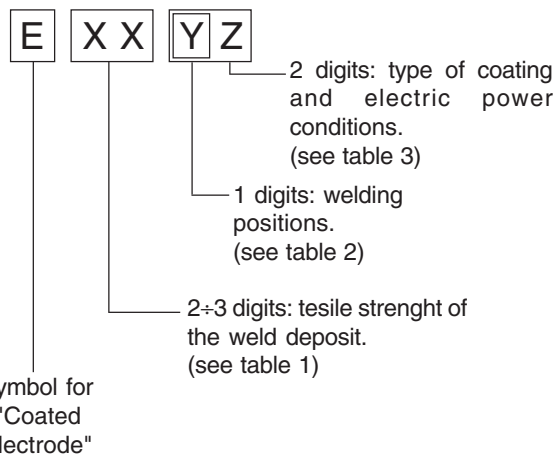
HIGH YIELD BASIC ELECTRODES: E 7018

The iron contained in the coating increases the quality of metal added. Good mechanical properties. Weld in all position.
 Electrode holder at + (inverse polarity). Weld deposit of nice aspect, also vertical. Workable; high yield.
 Suitable for steels with high contents of sulphur (impurities).

CELLULOSIC ELECTRODES: E 6010

Cellulosic electrodes weld only in d.c. with polarity + electrode holder - ground clamp.
 Special for steels run on pipes with R max 55 kg/mm². Weld in all position. volatile slag.

ELECTRODES IDENTIFICATION ACCORDING TO A.W.S. STANDARDS



Number	Strength	
	K.s.l.	Kg/mm ²
60	60.000	42
70	70.000	49
80	80.000	56
90	90.000	63
100	100.000	70
110	110.000	77
120	120.000	84

Table 1

1	for all positions
2	for plane and vertical
3	for plane position only

Table 2

N°	Descrizione
10	Cellulose electrodes for d.c.
11	Cellulose electrodes for a.c.
12	Rutile electrode for d.c.
13	Rutile electrode for a.c.
14	High yield rutile electrodes
15	Basic electrodes for d.c.
16	Basic electrodes for a.c.
18	High yield basic electrodes for d.c. (inverse polarity)
20	Acid electrodes for flat or front position welding for d.c. (- pole) and for a.c.
24	High yield rutile electrodes for flat or front plane position welding for d.c. and a.c.
27	High yield acid electrodes for flat or front plane position welding for d.c. (- pole) and a.c..
28	High yield basic electrodes for flat or front plane position welding for d.c. (inverse polarity)
30	Extra high yield acid electrodes, extra high penetration if required, for flat position welding only for d.c. (- pole) and a.c.

Table 3

Legenda schema elettrico

A : Alternatore
 C : Condensatore
 F : Fusibile
 G : Presa 400V trifase
 H : Presa 230V monofase
 M : Contaore
 N : Voltmetro
 R : Unità controllo saldatura
 T : Regolatore corrente saldatura
 W : Reattore c.c.
 Y : Ponte diodi saldatura
 G1 : Trasmettitore livello carburante
 H1 : Termostato
 L1 : Pressostato
 N1 : Spia carica batteria
 O1 : Spia pressostato
 R1 : Motorino avviamento
 S1 : Batteria
 W1 : Commutatore TC
 X1 : Presa comando a distanza
 Z1 : Elettrovalvola
 O2 : Presa 42V norme CEE
 P4 : Protezione termica
 F6 : Selettore Arc-Force
 H6 : Elettropompa carburante 12V c.c.
 W6 : Sensore di hall

Electrical system legende

A: Alternator
 C: Capacitor
 F: Fuse
 G: 400V 3-phase socket
 H: 230V 1phase socket
 M: Hour-counter
 N: Voltmeter
 R: Welding control PCB
 T: Welding current regulator
 W: D.C. inductor
 Y: Welding diode bridge
 G1: Fuel level transmitter
 H1: Oil or water thermostat
 L1: Oil pressure switch
 N1: Battery charge warning light
 O1: Oil pressure warning light
 R1: Starter motor
 S1: Battery
 W1: Remote control switch
 X1: Remote control and/or wire feeder socket
 Z1: Solenoid valve
 O2: 42V EEC socket
 P4: Circuit breaker
 F6: Arc-Force selector
 H6: Fuel electro pump 12V c.c.
 W6: Hall sensor

Legende des schemas electriques

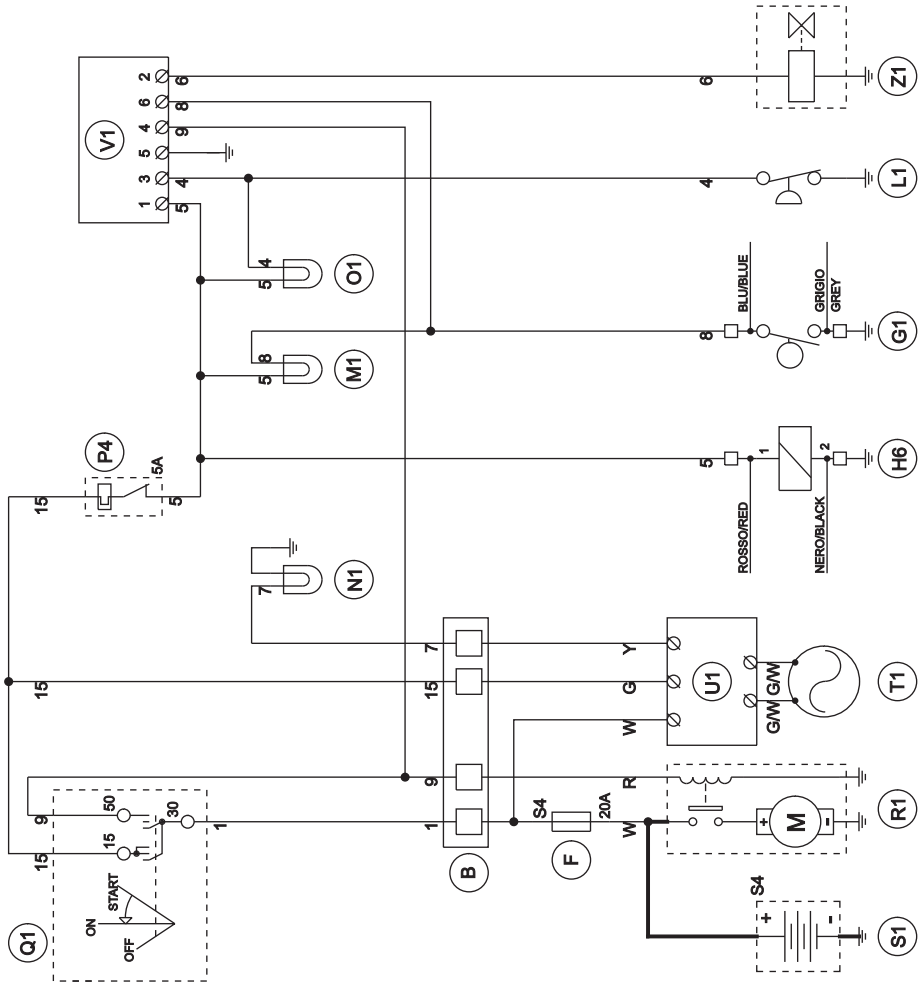
A : Alternateur
 C : Condensateurs
 F : Fisible
 G : Prise 400V triphasé
 H : Prise 230V monophasé
 M : Compte-heures
 N : Voltmètre
 R : Unite contrôle soudage
 T : Régulateur courant de soudage
 W : Réactance c.c.
 Y : Pont diodes soudage
 G1 : Niveau carburant
 H1 : Thermostat huile
 L1 : Pressostat huile
 N1 : Voyant charge batterie
 O1 : Voyant pressostat
 R1 : Moteur de démarrage
 S1 : Batterie
 W1 : Commutateur télécommande
 X1 : Prise télécommande et/ou tire-fil
 Z1 : Electrosoupape
 O2 : Prise CEE 42V
 P4 : Protection thermique
 F6 : Selecteur Arc-Force
 H6 : Electropompe carburant
 W6 : Senseur de hall

Stromlaufplan-Referenzliste

A Generator
 C Kondensatorbox
 F Sicherung
 G Steckdose 400V 3-phasig
 H Steckdose 230V 1-phasig
 M Stundenzähler
 N Voltmeter
 R Steuerplatine Schweißstrom
 T Schweißstromregler
 W DC-Drossel
 Y Diodenbrücke Schweißstrom
 G1 Füllstandssensor Kraftstoff
 H1 Thermostat Öl oder Wasser
 L1 Öldruckschalter
 N1 Warnleuchte Batterieladung
 O1 Warnleuchte Öldruck
 R1 Anlasser
 S1 Batterie
 W1 Umschalter Fernbedienung
 X1 Steckdose Fernbedienung
 Z1 Magnetventil
 O2 Steckdose 42V, CEE
 P4 Thermosicherung
 F6 Schalter Arc-Force
 H6 Kraftstoffpumpe 12V
 W6 Hall-Sensor

Leyenda esquema eléctrico

A :Alternador
 C :Condensador
 F :Fusible
 G :Toma 400V trifásica
 H :Toma 230V monofásica
 M :Cuentahoras
 N :Voltímetro
 R :Unidad control soldadura
 T :Regulador corriente soldadura
 W :Reactor c.c.
 Y :Puente diodos soldadura
 G1 :Captador nivel carburante
 H1 :Termostato
 L1 :Presostato
 N1 :Piloto carga batería
 O1 :Piloto presostato
 R1 :Motor arranque
 S1 :Batería
 W1 :Conmutador TC
 X1 :Toma mando a distancia
 Z1 :Electroválvula
 O2 :Toma 42V normas CEE
 P4 :Protección térmica
 F6 :Selector Arc-Force
 H6 :Electrobomba carburante 12 V c.c.
 W6 :Sensor de entrada



STARTER KEY

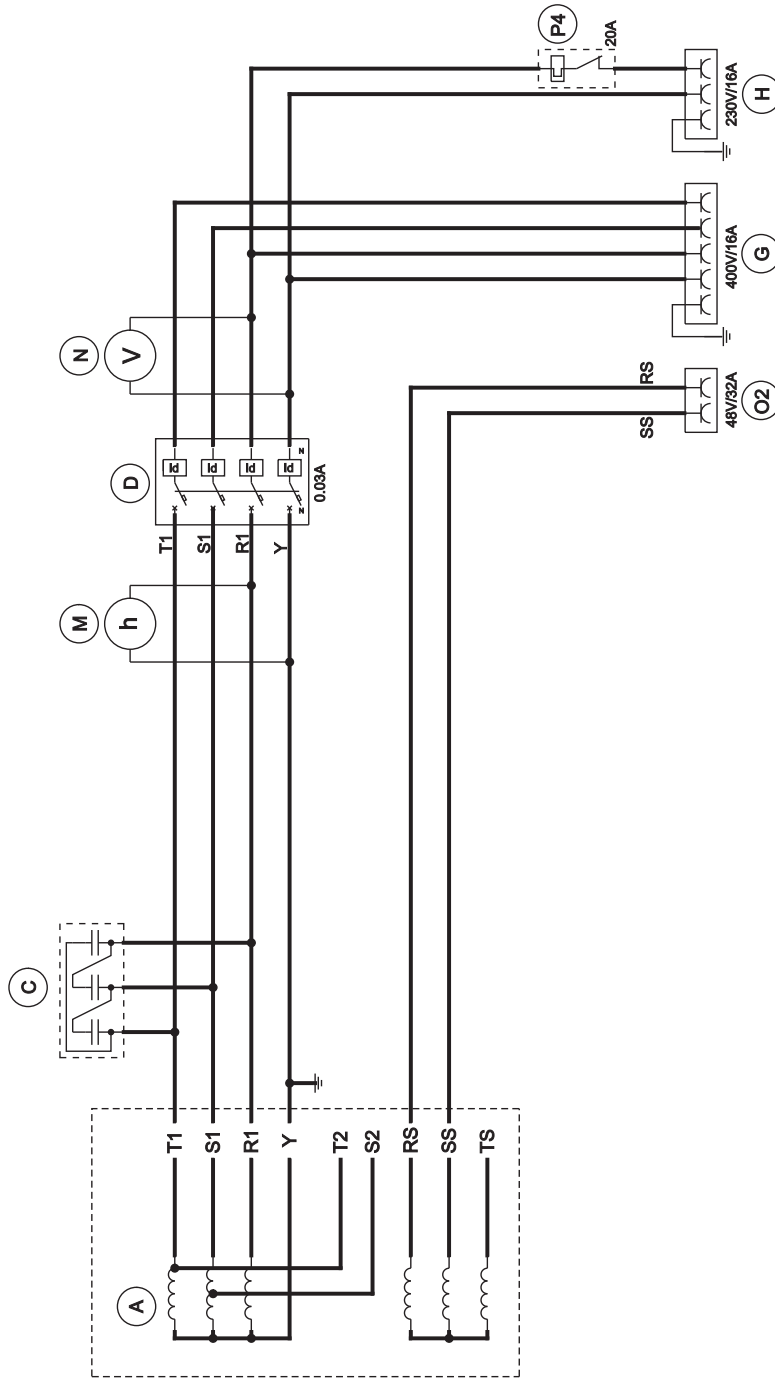
30	15	30
OFF	ON	ST
ON	OFF	ST
OFF	ON	ST

**LEGENDA COLORI
KEY COLOR**

R	ROSSO/RED
G/W	VERDE/BIANCO GREEN/WHITE
G	VERDE/GREEN
W	BIANCO/WHITE
Y	GIALLO/YELLOW

A		Modificato schema con nuovo motore completo di avvog. carica batteria.		23.02.2006	N.L.
Exp.	Modifica	Data	Dis.		
Exp.	Modification	Date	Desi.		
MOSA		Da Pag.	Denominazione:	Progetto:	Pag.n° di n°
20090-CUSAGO (MI)-ITALY		From Page	Denomination:	Project:	Page n° of n°
http://www.mosa.it		To Page	Engine Yanmar L100-AE (EV)	37285.prg	2 4
		Macchina:	Disegnatore:	Dis. n°:	Approvato:
		Machine:	Designer:	Dwg. n°:	Approved:
		CT 230 SX	Leporace N.	37280.S.010-A	37280

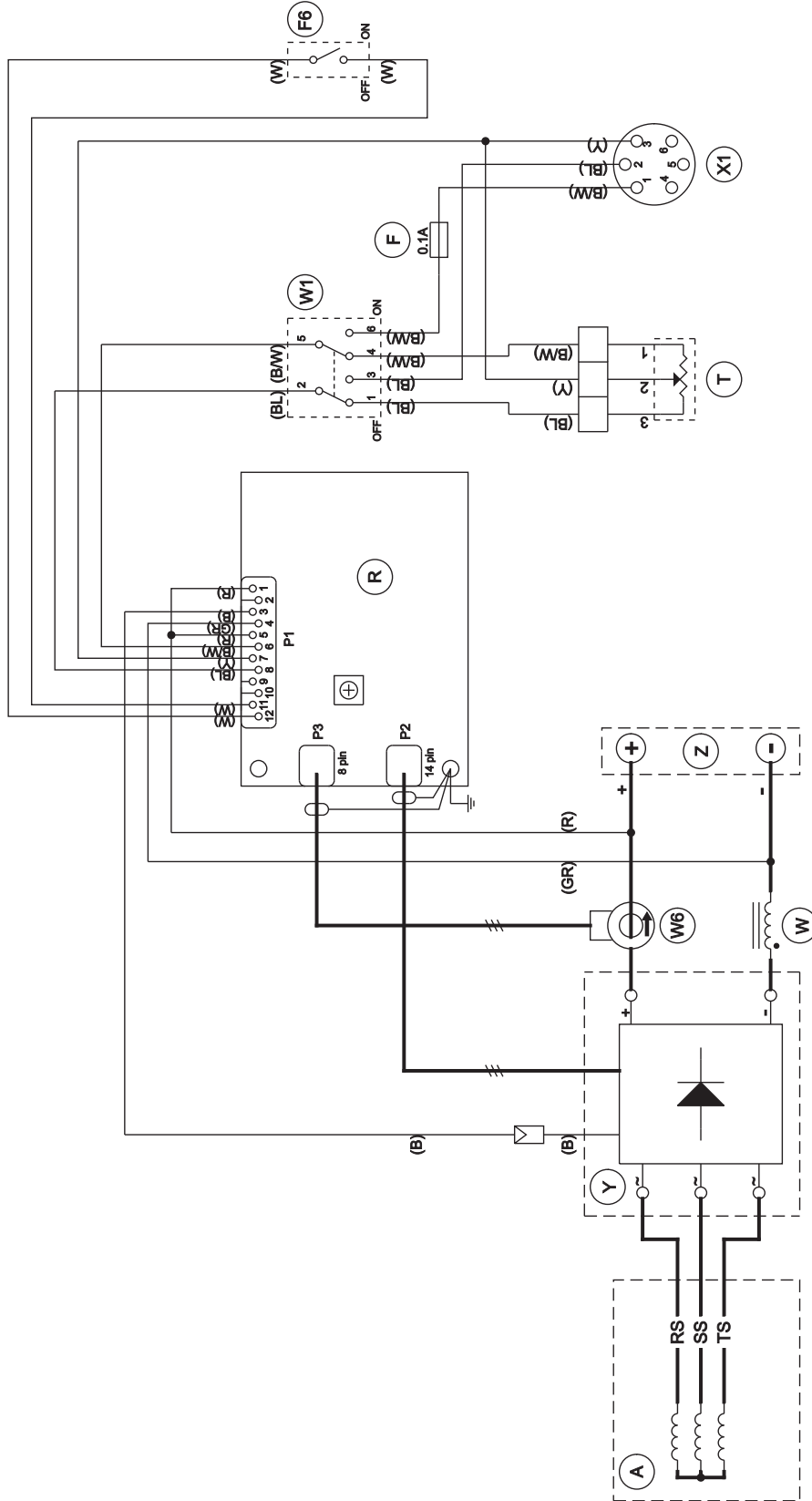
La MOSA si riserva a termini di legge la proprietà del presente disegno con divieto di riprodurlo o comunicato a terzi senza sua autorizzazione.



A Eliminato avvolgimento carica batteria.		23.02.2006		N.L.	
Exp.	Modifica	Data	Dis.	Appr.	
	Modification	Date	Desi.	Abbr.	
Da Pag. From Page	Denominazione: Denomination:	Progetto: Project:	Pag.n° di n°	Pag.n° of n°	
Alia Pag. To Page	Aux. (400T/230M/48M) DT	37285.prg	3	4	
Macchine: Machine:	Disegnatore: Designer:	Data: Date:	Dis. n°: Dwg. n°:	Approvato: Approved:	
CT 230 SX	Leporace N.	13.12.2004	37285.S.020-A		

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

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



LEGENDA COLORI	KEY COLOR
(B)	NERO/BLACK
(R)	ROSSO/RED
(Y)	GIALLO/YELLOW
(BL)	BLU/BLUE
(GR)	VERDE/GREEN
(W)	BIANCO/WHITE
(BW)	BIANO/NERO
(W)	WHITE/BLACK

A		Aggiunto reattore (W).		30.03.2005		N.L.	
Esp. Exp.	Modifica Modification	Data Date	Dis. Desi.	Abbr. Abbr.	Pag. n° di n°	Page n° of n°	Dis. n°
	Denominazione: Denomination:		Projecto: Project:		4	4	37285
	Da Pag. From Page		37285-prg				
	Alia Pag. To Page						
	Macchine: Machine:	Data: Date:					
	CT 230 SX	13.12.2004					
		37285.S.065-A					
La MOSA si riserva a termini di legge la proprietà del presente disegno con divieto di riprodurre o comunicare a terzi senza sua autorizzazione.							

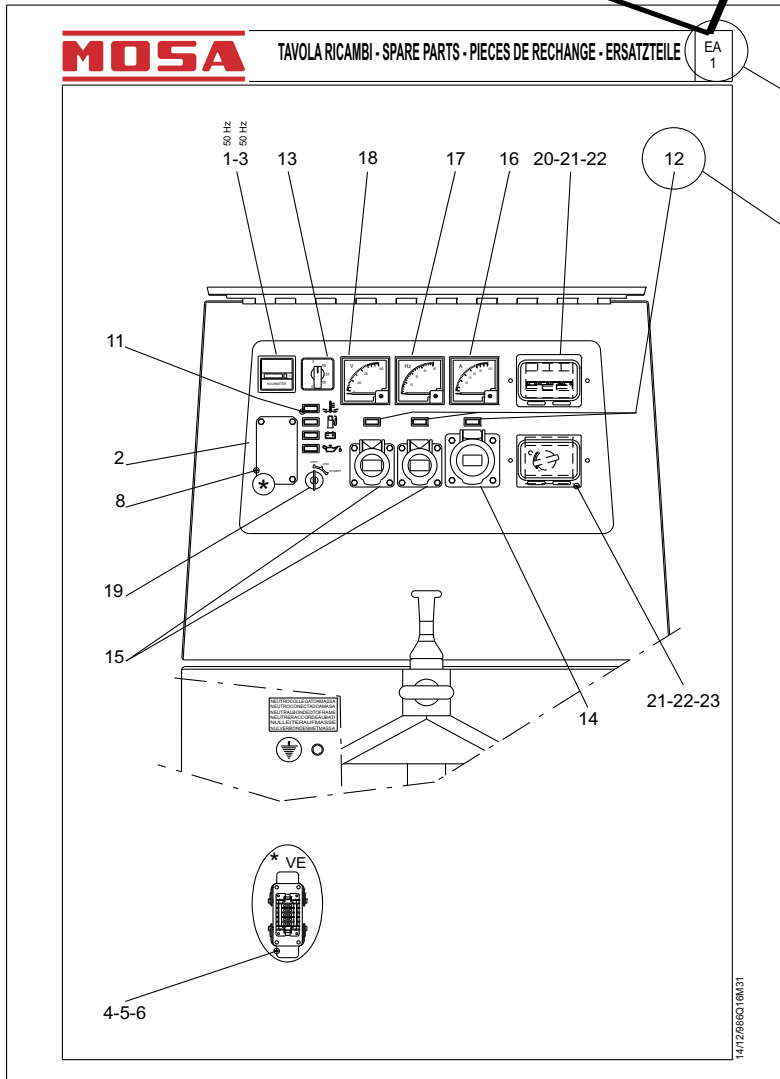
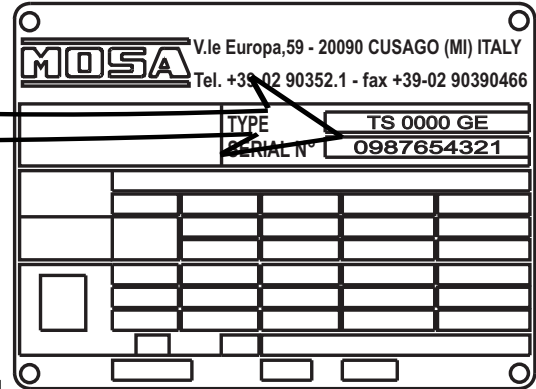
MOSA guarantees that any request for spare parts will be satisfied.

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

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

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

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



ABBREVIATIONS AND SYMBOLS:

(EV) When ordering, specify the engine type and the auxiliary voltage

(ER) Engine with recoil starter only

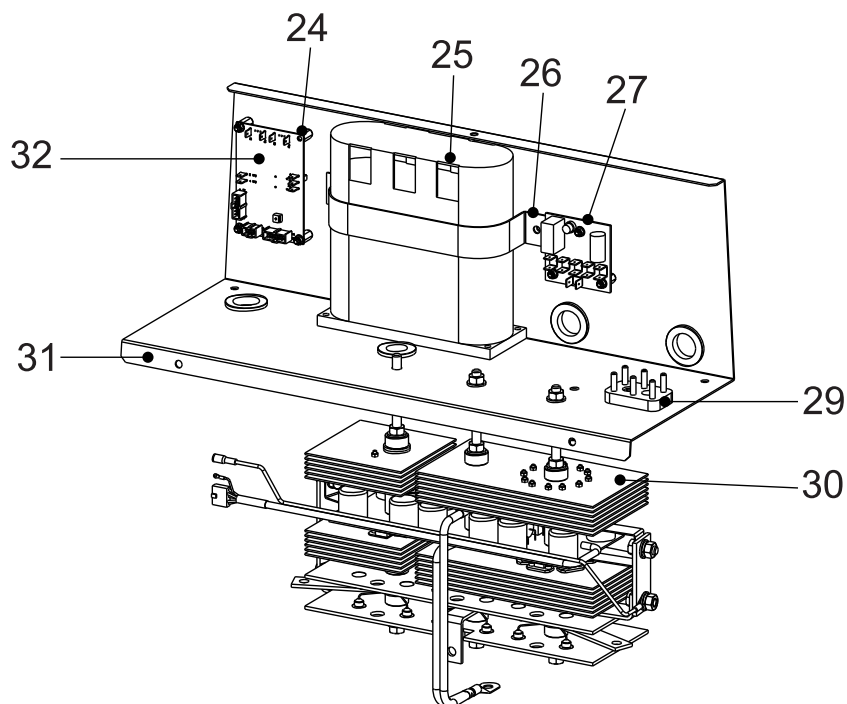
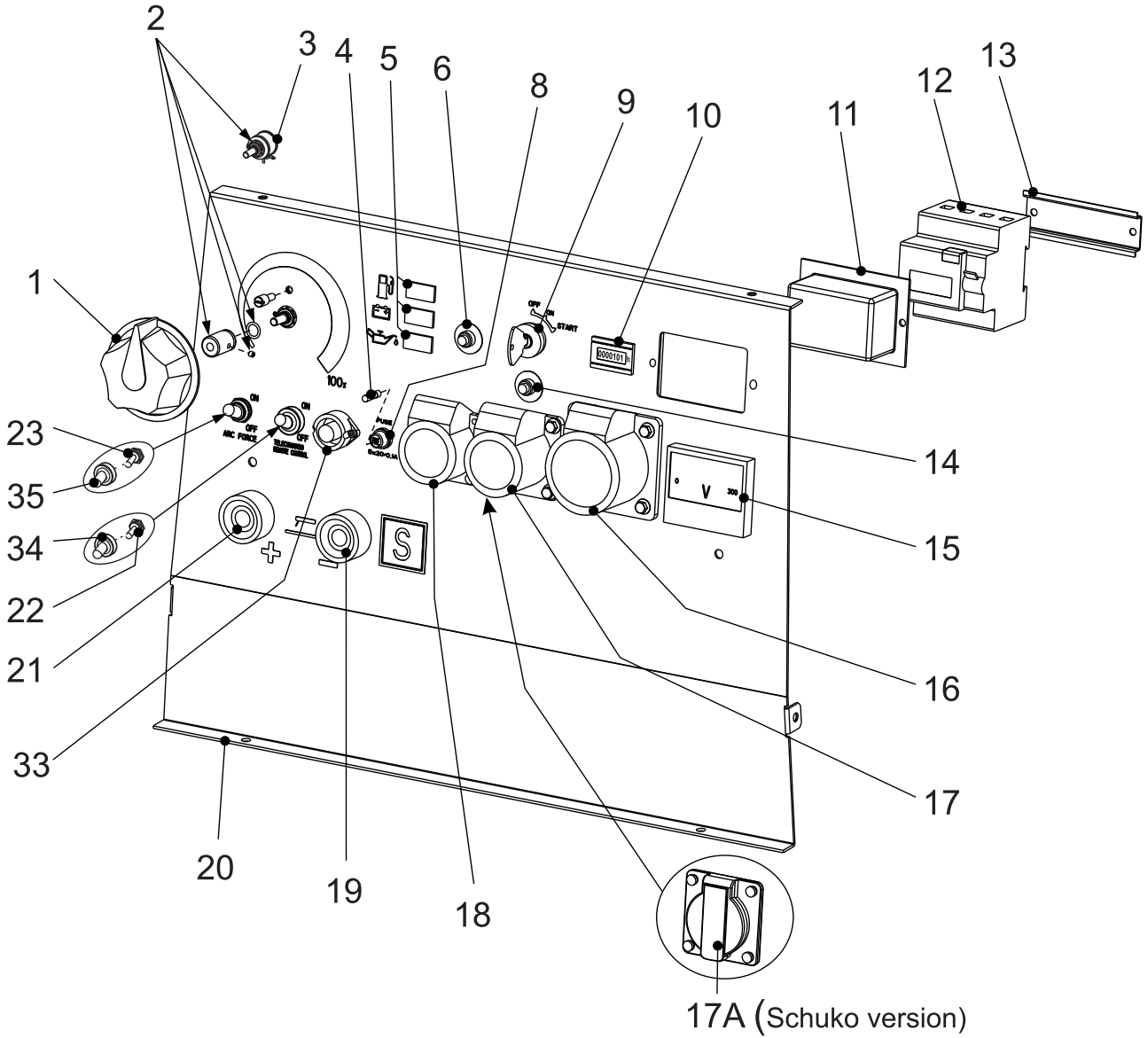
(ES) Engine with electric starter only

(VE) E.A.S version only.

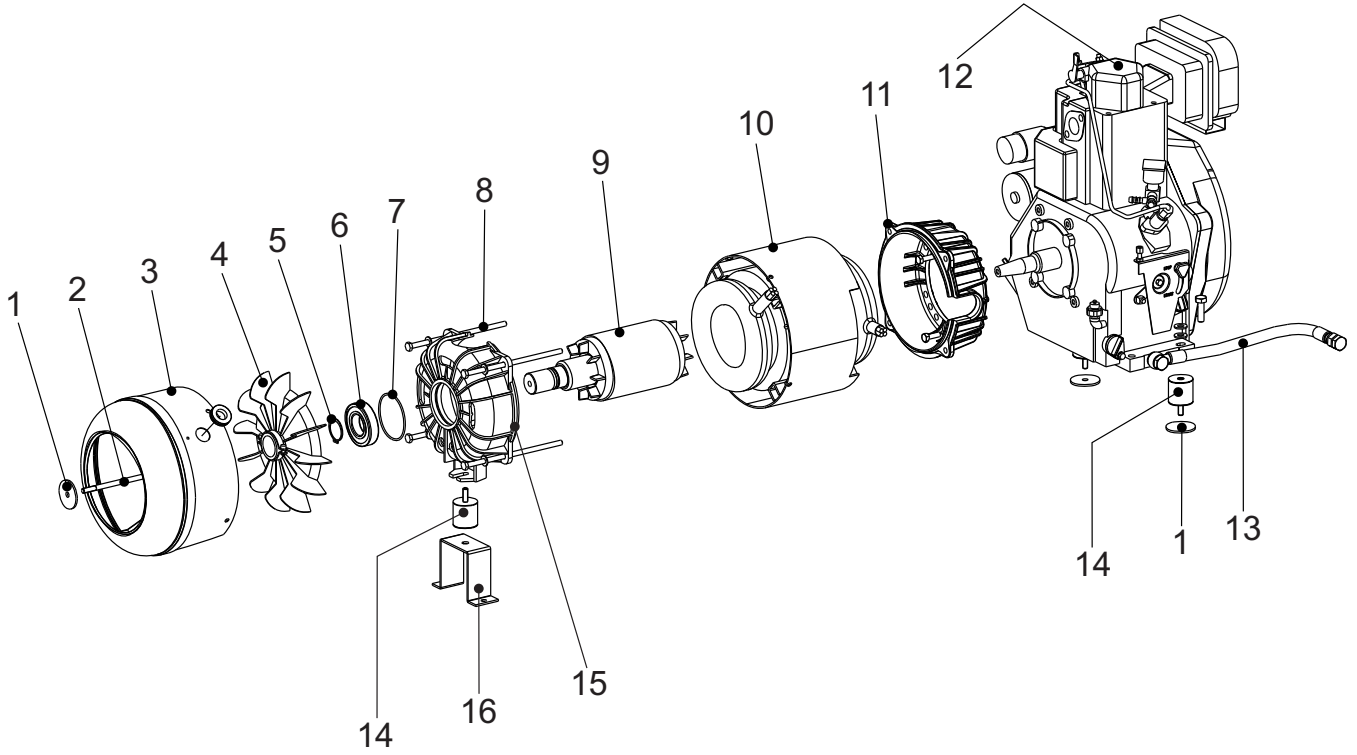
(QM) When ordering, specify the length in meters

(VS) Special version only

(SR) By request only

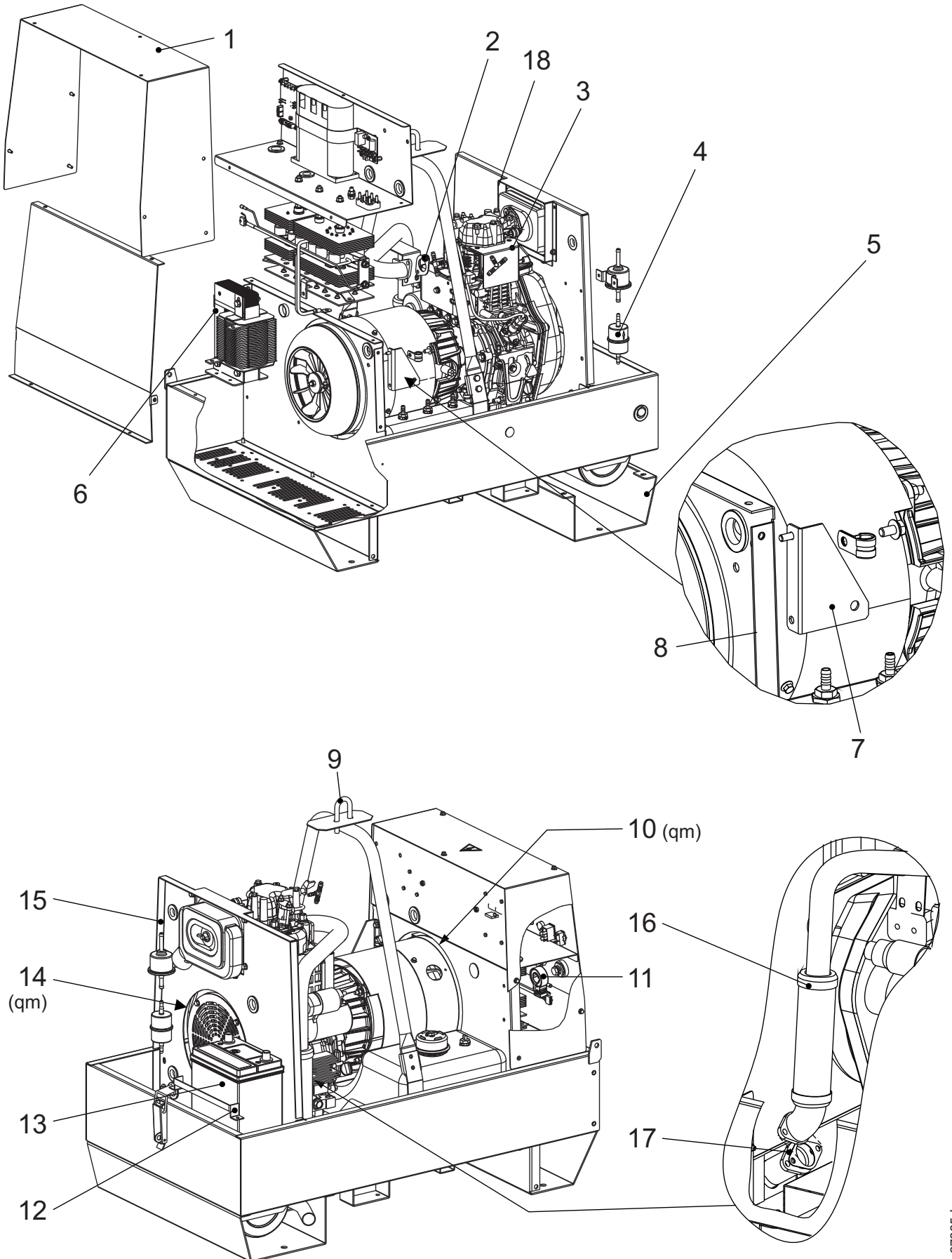


<i>Pos.</i>	<i>Rev.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Note</i>
1		107509702	MANOPOLA REG.CORRENTE SALDAT. / KNOB,WELDING CURRENT REGULAT.	
2		836709715	POTENZIOMETRO / WELDING CURRENT REGULATOR	
3		0000836709701	POTENZIOMETRO / WELDING CURRENT REGULATOR	
4		1291250	FUSIBILE / FUSE	
5		1302040	SPIA ROSSA 12V / RED WARNING LIGHT 12V	
6		352007109	PROTEZIONE TERMICA 5A / THERMOPROTECTION	da/from REV.07/06 Del.26/06 - 01/03/06
6		155307107	DISGIUNTORE TERMICO 15A-250V / THERMAL SWITCH 15A-250V	fino a/up to REV.04/05 Del.26/06 - 01/03/06
7		1291120	FUSIBILE / FUSE	fino a/up to REV.04/05 Del.26/06 - 01/03/06
8		307759045	PORTAFUSIBILE / FUSE HOLDER	
9		107302460	STARTER A CHIAVE / STARTER KEY	
10		105511810	CONTAORE 230V 50Hz IP65 / HOURMETER 230V 50Hz IP65	
11		232027130	CAPPUCCIO PROTEZIONE I.D. / CAP	
12		105111540	Vedi Cod.219937105 / See part no. 219937105	
13		232027036	GUIDA / FIXING GUIDE	
14		306467107	DISGIUNT. TERMICO 20AMP 250 V / THERMOPROTECTION 20AMP 250 V	
15		103011310	VOLTMETRO FONDO SCALA 300V / VOLTMETER 300V	
16		305907270	PRESA CEE 16A 400V 3P+N+T / EEC SOCKET 16A 400V 3P+N+T	
17		307017240	PRESA 220V 16A / EEC SOCKET 16A, 220V 2P+T	
17 A		259107241	PRESA SCHUKO 16A 230V - 2P+T / SOCKET SCHUKO 16A 230V 2P+T	
18		218137280	PRESA CEE 48V 32A / EEC SOCKET 48V 32A	
19		102044400	PRESA DI SALDATURA (-) / WELDING SOCKET (-)	
20		372807020	FRONTALE / FRONT PANEL	
21		102301310	PRESA DI SALDATURA (+) / WELDING SOCKET (+)	
22		102013290	COMMUTATORE / COMMUTATOR	
23		282009741	INTERRUTTORE UNIPOLARE 15A / UNIPOLAR SWITCH	
24		282009807	DISTANZ. ISOLANTE PER SCHEDE / SPACER	
25		305159880	BOX CONDENSATORI / CAPACITOR BOX 3X75	
26		307017037	STAFFA / BRACKET	
27		209719850	SCHEDA EV/ES / PCB EV/ES	
28		256022275	REGOLATORE DI TENSIONE / VOLTAGE REGULATOR	fino a/up to REV.04/05 Del.26/06 - 01/03/06
29		218017226	MORSETTIERA / TERMINAL BOARD	
30		372855400	PONTE CHOPPER 250A / CHOPPER BRIDGE 250A	
31		372858248	PIANALE SCATOLA ELETTRICA / ELECTRIC BOX	
32		372859800	SCHEDA SALDATURA / WELDING CONTROL PCB	fino a/up to REV.1-07/06 Del.147/08 - 29/07/08
32		372869800	SCHEDA SALDATURA / WELDING CONTROL PCB	da/from REV.2-12/08 Del.147/08 - 29/07/08
33		37280C050	GR.CAVI SALDATURA / WELDING CABLES GR.	
34		102042740	CAPPUCCIO / CAP	
35		282009962	CAPPUCCIO ISOLANTE x INTERRUT. / CAP	



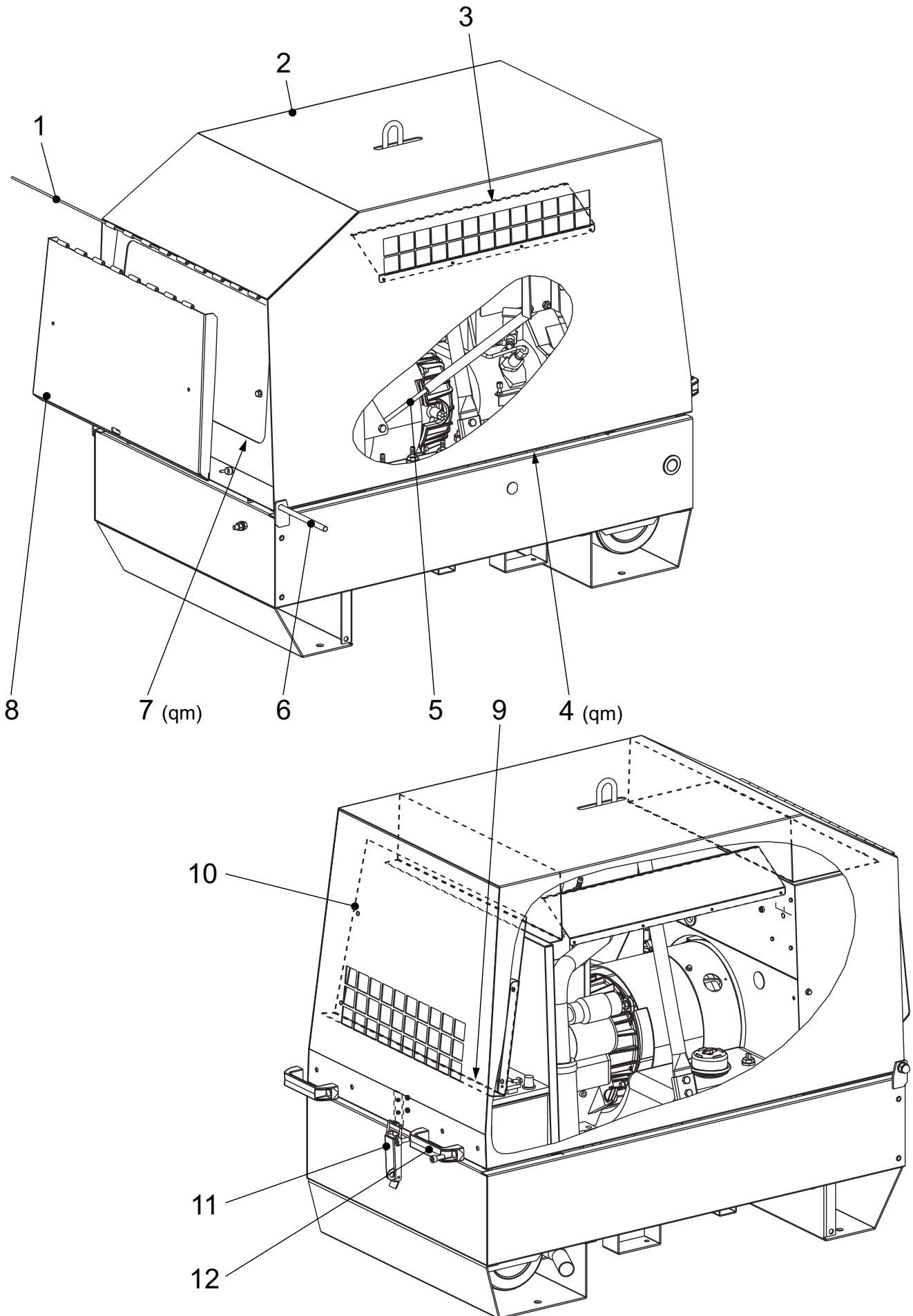
<i>Pos.</i>	<i>Rev.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Note</i>
1		372802038	RONDELLA DI BLOCCAGGIO	
2		372803036	TIRANTE ALBERO ROTORE	
3		272506010	CONVOGLIATORE ARIA	
4		105111290	VENTOLA CON FASCETTA	
5		6050090	ANELLO ELASTICO	
6		1001070	CUSCINETTO	
7		1018100	ANELLO OR	
8		107011280	TIRANTE	
9		372803030	ALBERO CON ROTORE	
10		372803025	STATORE	fino a REV.0-04/05 Del.26/06 - 01/03/06
10		372853025	STATORE AVV.400T230M110CTE 48M	da REV.1-07/06 Del.26/06 - 01/03/06
11		232123040	FLANGIA ATTACCO MOTORE	
12		372802200	MOTORE YANMAR L100AE-DEG	fino a REV.0-04/05 Del.26/06 - 01/03/06
12		HP0152200	MOT. YANMAR L100AE-DEG	da REV.1-07/06 Del.26/06 - 01/03/06
12		356402200	MOT. YANMAR L100N	fino a REV.1-07/06 Del.44/08 - 25/02/08 da REV.2-12/08 Del.44/08 - 25/02/08
13		372802212	TUBO SCARICO OLIO	
14		356321035	ANTIVIBRANTE	
15		105913045	FLANGIA PORTA ALTERNATORE	
16		372803101	SUPPORTO ALTERNATORE	

<i>Pos.</i>	<i>Rev.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Note</i>
1		372802038	STOP WASHER	
2		372803036	SHAFT ENGINE TIE-ROD	
3		272506010	AIR DUCT	
4		105111290	FAN	
5		6050090	RING	
6		1001070	BEARING	
7		1018100	OR RING	
8		107011280	TIE - ROD	
9		372803030	SHAFT WITH ROTOR	
10		372803025	STATOR	up to REV.0-04/05 Del.26/06 - 01/03/06
10		372853025	STATOR	from REV.1-07/06 Del.26/06 - 01/03/06
11		232123040	FLANGE FIXING ENGINE	
12		372802200	YANMAR ENGINE L100AE-DEG	up to REV.0-04/05 Del.26/06 - 01/03/06
12		HP0152200	YANMAR ENGINE L100AE-DEG	from REV.1-07/06 Del.26/06 - 01/03/06 up to REV.1-07/06 Del.44/08 - 25/02/08
12		356402200	YANMAR ENGINE L100N	from REV.2-12/08 Del.44/08 - 25/02/08
13		372802212	OIL EXHAUST PIPE	
14		356321035	VIBRATION DAMPER	
15		105913045	FLANGE, ALTERNATOR HOLDER	
16		372803101	ALTERNATOR SUPPORT	



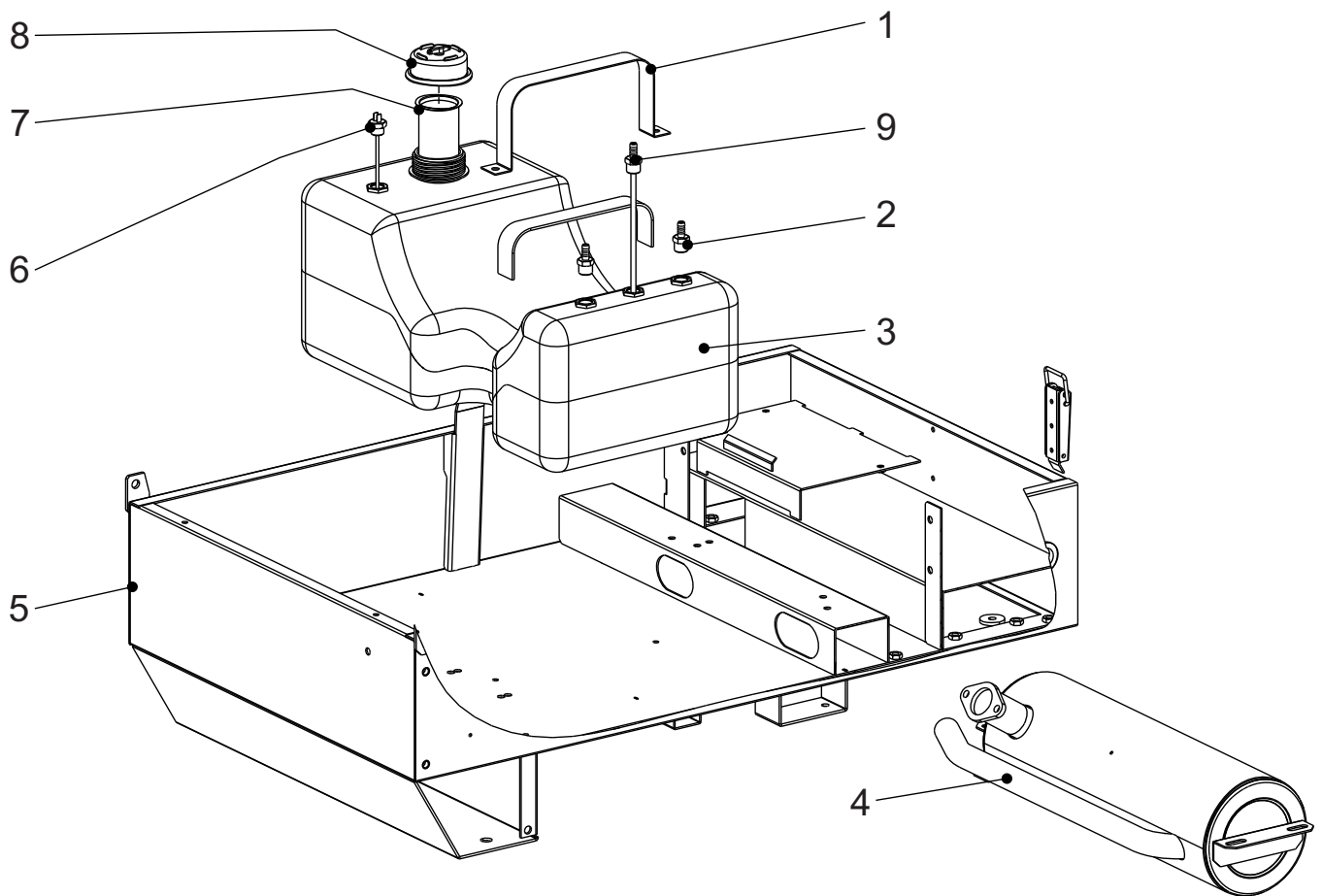
<i>Pos. Rev.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Note</i>
1	372808121	COPERTURA SCATOLA ELETTRICA	
2	372802071	GUARNIZIONE X COLL. SCARICO(FORN. MOTOR.	
3	372802135	DEFLETTORE SCARICO ARIA MOTORE	
4	256602228	FILTRO GASOLIO	
5	372801082	TRAVERSA PROTEZIONE SIL. SCAR.	
6	794004100	REATTORE DI LIVELLO	
7	372801105	STAFFA FISSAGGIO MOLLA A GAS	
8	372808218	PARATIA INFERIORE ALTERNATORE	
9	356721100	ROLL-BAR	
10	102302280	GUARNIZIONE (L=MT.1)	
11	372855107	SENSORE DI HALL 250A	Fino a REV.1-07/06 Del.190/06-13/11/06
11	222405107	SENSORE DI HALL 250A	Da REV.2-11/06 Del.190/06-13/11/06
12	259109154	STAFFA FISSAGGIO BATTERIA	
13	209509150	BATTERIA 45 AH	fino a REV.0-04/05 Del.74/05-15/05/05
13	372859150	BATTERIA	da REV.1-07/06 Del.74/05-15/05/05
14	105112270	GUARNIZIONE (L=MT.1)	
15	356721046	PARATIA	fino a REV.2-11/06 Del.44/08-25/02/08
15	HP0211046	PARATIA	Da REV.3-12/08 Del.44/08-25/02/08
16	356722070	TUBO SCARICO	fino a REV.2-11/06 Del.44/08-25/02/08
16	HP0212070	TUBO SCARICO	Da REV.3-12/08 Del.44/08-25/02/08
17	209502071	GUARNIZIONE SILENZIAT. SCARICO	
18	HP0211242	CORNICE FISS. PROFILATO GOMMA	

<i>Pos. Rev.</i>	<i>Cod.</i>	<i>Descr.</i>	<i>Note</i>
1	372808121	COVER FOR ELECTRICAL BOX	
2	372802071	GASKET FOR EXHAUST MANIFOLD	
3	372802135	DEFLECTOR FOR ENGINE AIR EXHAUST	
4	256602228	FUEL FILTER	
5	372801082	CROSS PROTECTION EXHAUST SILENCER	
6	794004100	REACTANCE	
7	372801105	FIXING BRACKET X SPRING	
8	372808218	ALTERNATOR UNDERWALL	
9	356721100	ROLL-BAR	
10	102302280	GASKET (L=MT.1)	
11	372855107	HALL SENSOR	Up to REV.1-07/06 Del.190/06-13/11/06
11	222405107	HALL SENSOR	From REV.2-11/06 Del. 190/06-13/11/06
12	259109154	BATTERY BRACKET	
13	209509150	BATTERY	Up to REV.04/05 Del.74/05-15/05/05
13	372859150	BATTERY	From REV.07/06 Del.74/05-15/05/05
14	105112270	STRIP, SEALING (L=MT.1)	
15	356721046	INTAKE CHAMBER BULKHEAD	
15	HP0211046	INTAKE CHAMBER BULKHEAD	
16	356722070	EXHAUST PIPE	
16	HP0212070	EXHAUST PIPE	
17	209502071	GASKET FOR EXHAUST	
18	HP0211242	RUBBER FIXING FRAME	



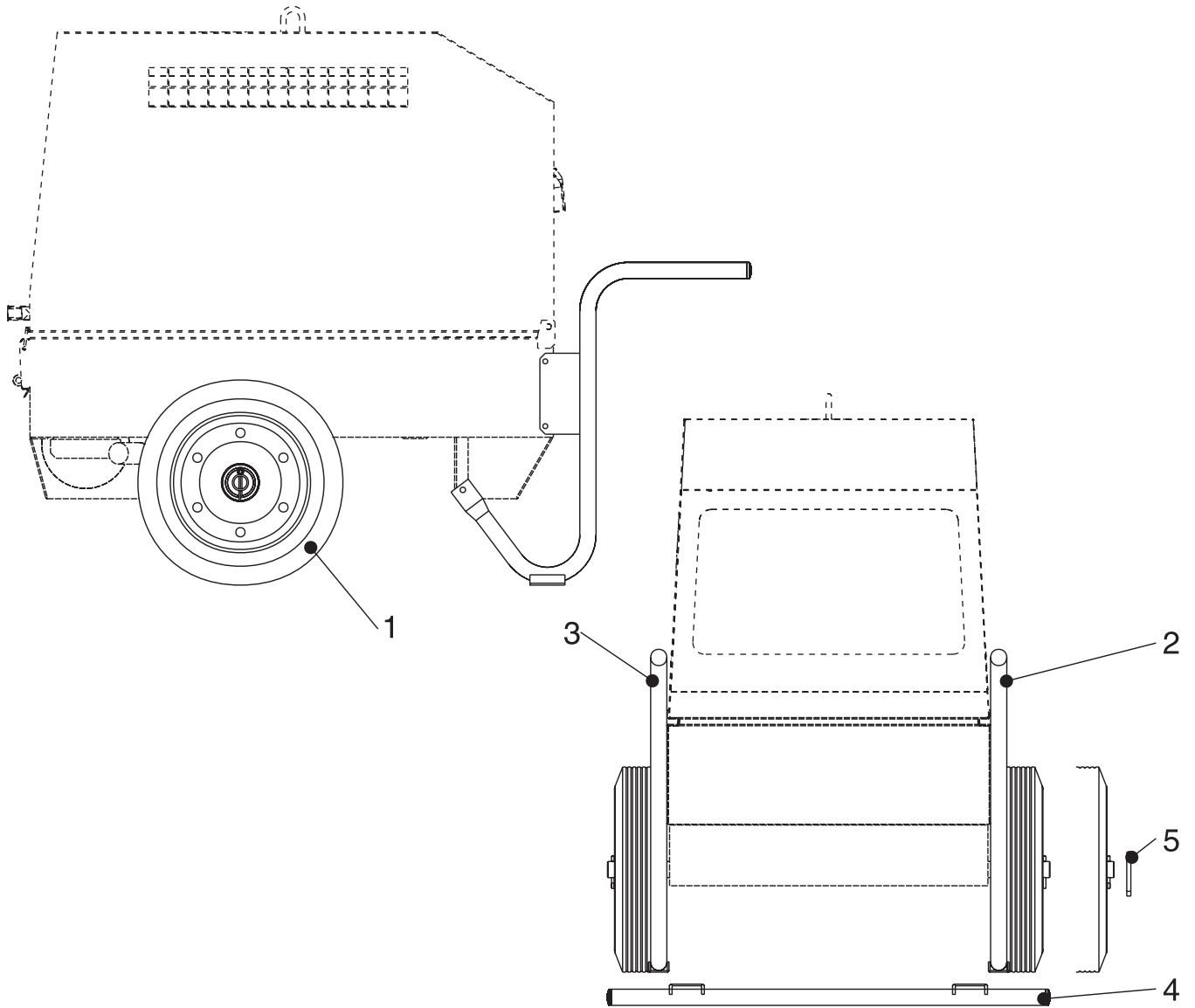
<i>Pos.</i>	<i>Rev. Cod.</i>	<i>Descr.</i>	<i>Note</i>
1	356708270	PERNO PER CERNIERA	
2	356728005	CARENATURA	
3	356728143	DEFLETTORE ARIA PER CAREN.	
4	309509005	GUARNIZIONE	(qm)
5	372808115	MOLLA A GAS	
6	307018024	TIRANTE	
7	105112270	GUARNIZIONE (L=MT.1)	(qm)
8	356708100	COPERCHIO FRONTALE	
9	102302280	GUARNIZIONE (L=MT.1)	(qm)
10	356728200	CASSONETTO ASPIRAZIONE	
11	107300180	CHIUSURA COMPL.A LEVA	
12	343339601	MANIGLIA	

<i>Pos.</i>	<i>Rev. Cod.</i>	<i>Descr.</i>	<i>Note</i>
1	356708270	HINGE PIN	
2	356728005	COVER	
3	356728143	AIR DEFLECTOR FOR COVER	
4	309509005	GASKET	(qm)
5	372808115	GAS SPRING	
6	307018024	TIE-ROD FOR COVER	
7	105112270	STRIP, SEALING (L=MT.1)	(qm)
8	356708100	FRONT COVER	
9	102302280	GASKET (L=MT.1)	(qm)
10	356728200	INDUCTION CASE	
11	107300180	LATCH	
12	343339601	KNOB	

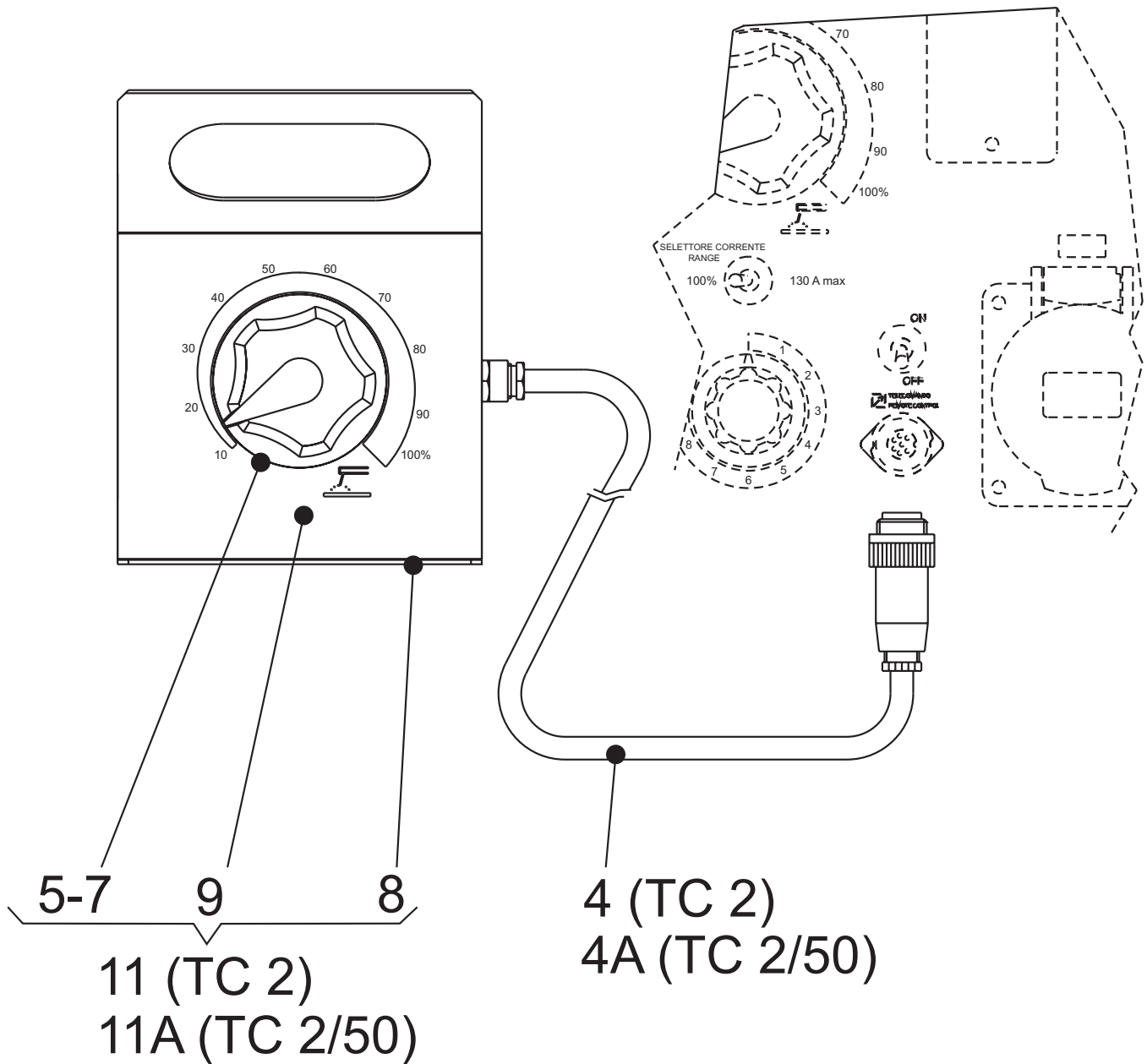


<i>Pos.</i>	<i>Rev. Cod.</i>	<i>Descr.</i>	<i>Note</i>
1	372802139	FASCIA FISSAGGIO SERBATOIO	
2	209702242	RACCORDO	
3	372822020	SERBATOIO CARBURANTE	
4	356722050	SILENZIATORE SCARICO	
5	372801050	BASAMENTO	
6	372809875	INDICATORE RISERVA CARBURANTE	
7	272822228	FILTRO PER SERBATOIO	
8	372802026	TAPPO SERBATOIO CARBURANTE	
9	372821031	TUBO MANDATA CARBURANTE	

<i>Pos.</i>	<i>Rev. Cod.</i>	<i>Descr.</i>	<i>Note</i>
1	372802139	FIXING TANK, BAND	
2	209702242	PIPE FITTING FOR TANK	
3	372822020	FUEL TANK	
4	356722050	EXHAUST MUFFLER	
5	372801050	BASE	
6	372809875	FUEL LEVEL FLOAT	
7	272822228	PREFILTER	
8	372802026	FUEL TANK, CAP	
9	372821031	FUEL OUTLET TANK	



Pos.	Rev.	Cod.	Descr.	Descr.	Note
1		102042490	RUOTA	WHEEL	
2		372801234	MANIGLIA DX DI STAZIONAMENTO	STANDING KNOB	
3		372801235	MANIGLIA SX DI STAZIONAMENTO	STANDING KNOB (LEFT)	
4		372801160	ASSALE	AXLE	
5		6075020	COPIGLIA	PIN, SPLIT	



Pos. Cod.	Descr.	Note
4	209519904 CONNETTORE COMPLETO DI CAVI / CONNECTOR WITH CABLES	TC2 vers.
4a	930609904 CONNETTORE CON CAVI / CONNECTORS WITH CABLES	TC2/50 vers.
5	107509702 MANOPOLA REG. CORRENTE SALDAT. / KNOB, WELDING CURRENT REGULAT.	
7	107509700 POTENZIOMETRO / WELDING CURRENT REGULATOR	Fino a/ Up to REV. 10/99 - Del. 129/06 - 04/09/07
7	836709715 POTENZIOMETRO / WELDING CURRENT REGULATOR	Da/From REV. 07/07- Del. 129/06 - 04/09/07
8	107509900 SCATOLA / CASE, BOTTOM HALF	
9	209519901 COPERCHIO (CD) / COVER	
11	209510018 TC2 COMANDO DISTANZA STD / TC2 STD REMOTE CONTROL	
11a	930600018 TC2/50 COMANDO DISTANZA STD / TC2/50 STD REMOTE CONTROL	

