

NEW MAGIC WELD

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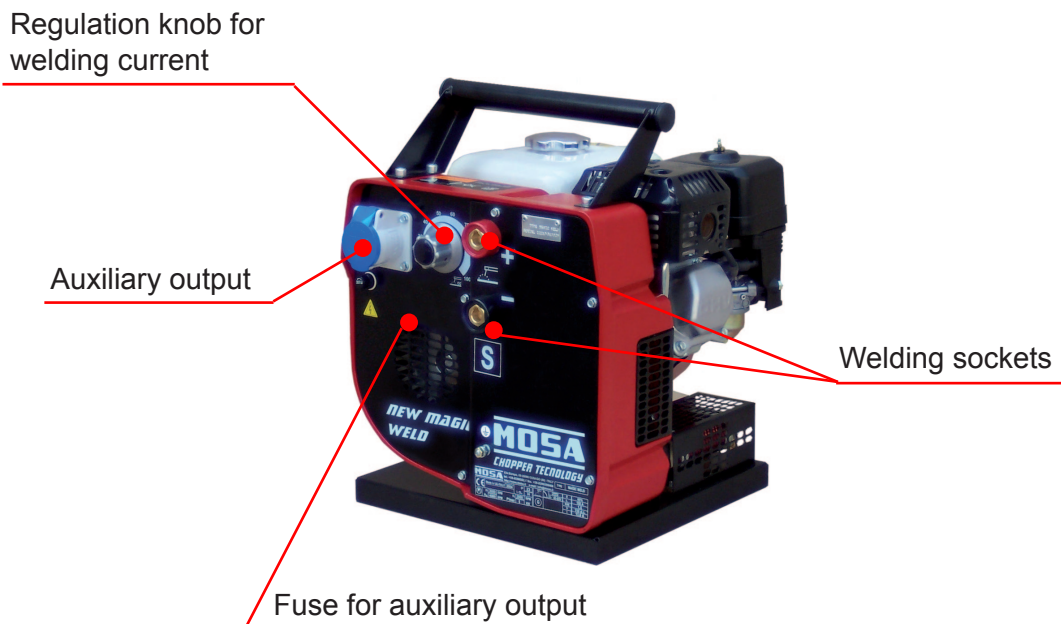
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ENGLISH

The Engine Driven Welder is a block with an engine, an aluminium casting and a front panel. Inside the casting there are all electrical components of the machine: a permanent magnet alternator, a high frequency chopper diode bridge, an electronic control board and an electromagnet.

Main features:

- D.C. welding current 150A @ 60%
- Continuous regulation of the welding current with "Chopper Technology"
- Suitable for basic and rutile electrodes. A reactance for cellulose electrodes is available as an option
- Antistick function (small arc force)
- Continuous auxiliary output 1600 W/ 230 Vdc (max. power 2000 W)
- Auto idle function
- Weight 34 Kg.



Electrical components of the machine:

- Permanent magnet alternator: the alternator has 2 galvanically separated windings, one for welding and the other for the auxiliary output.
- Auto idle solenoid: an electromagnet inside the aluminium casting is supplied at no load only and forces the engine speed at minimum (2000 rpm). When the load is present, welding or auxiliary output, the electromagnet is not supplied any more and the engine speed goes to the maximum (4000 rpm rated open circuit).
- High frequency chopper diode bridge: it regulates the welding current using the "Chopper Technology", which chops the welding D.C. current at high frequency.
- Hall sensor: it measures with high precision the welding current and it's completely isolated from the welding circuit.
- Reactance for cellulose electrodes (optional).
- PWM control board: this single board controls the welding process, the auxiliary current and the electromagnet for the engine accelerator. Three integrated circuits PWM type (Pulse Width Modulation) have been used. The use of these PWM's not only for the welding control but also for the supply control of the electromagnet reduces to the minimum the wasted power on the electromagnet.
- D.C. chopped auxiliary output: the auxiliary output is chopped every 50 msec. in order to prevent damages to switches of hand tools due to arcing. This special D.C. auxiliary is suitable not only for universal hand tools with brushes, but also for those with electronic speed control. In this case the limit is that these tools can run at the maximum speed only, without possibility of speed regulation.



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

M 01	QUALITY SYSTEM
M 1.01	COPYRIGHT
M 1.1	NOTES
M 1.4	CE MARK
M 2	ADVICE
M 2.1	SYMBOLS
M 2.2	ADVICE ENGINE DRIVEN WELDER
M 2.3	SYMBOLS - ABBREVIATIONS LEGEND
M 2.6	INSTALLATION AND ADVICE
M 2.7	INSTALLATION
M 3	UNPACKING AND TRANSPORT
M 25	SET-UP FOR OPERATION
M 26	ENGINE STARTING
M 27	STOPPING THE ENGINE
M 31	CONTROLS
M 34...	USE AS A WELDER
M 37	USE AS A GENERATOR
M 40.2...	TROUBLE-SHOOTING
M 43	MAINTENANCE
M 45	STORAGE - CUST OFF
M 51	TECHNICAL DATA
M 55	RECOMMENDED ELECTRODES
M 53	DIMENSIONS
M 60	ELECTRICAL SYSTEM LEGENDE
M 61-.....	ELECTRICAL SYSTEM
R1	SPARE PARTS LIST
AG...	SPARE PARTS
R1.1	REQUEST FOR ORDER SPARE PARTS



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.

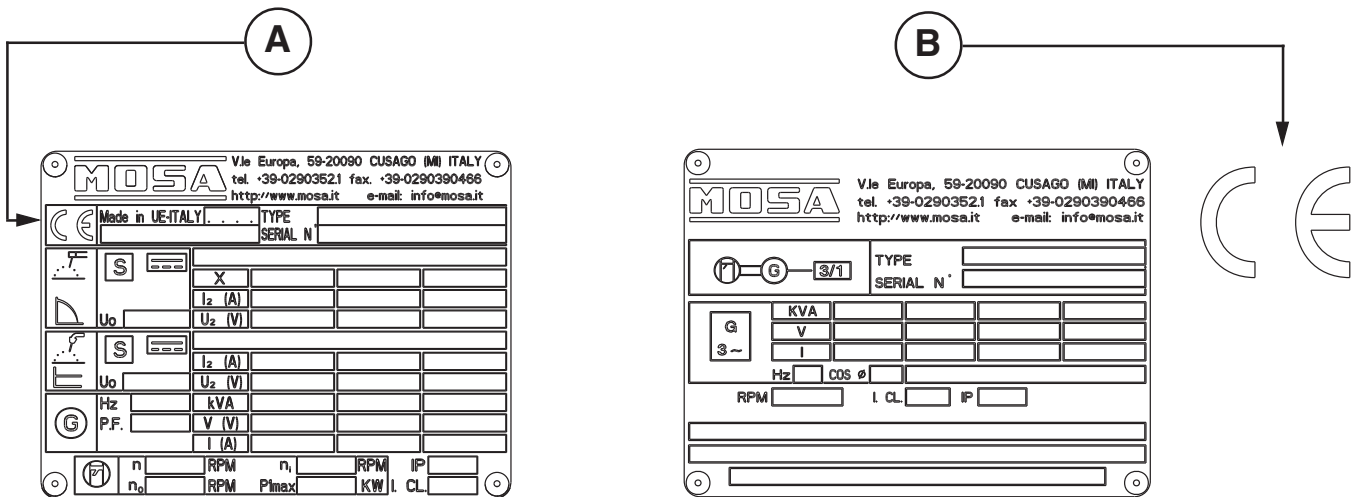
- ☞ **Notice:** *this manual does not engage MOSA, who keeps the faculty, apart the essential characteristics of the model here described and illustrated, to bring betterments and modifications to parts and accessories, without putting this manual uptodate immediately.*



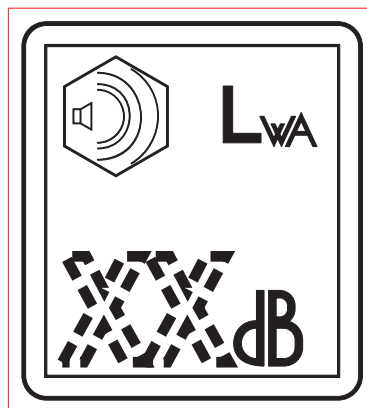
Any of our product is labelled with CE marking attesting its conformity to appliable directives and also the fulfillment of safety requirements of the product itself; the list of these directives is part of the declaration of conformity included in any machine standard equipment. Here below the adopted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

Technical data **NEW MAGIC WELD**
D.C. WELDING

Current range, continuous	30 - 150A
Open circuit voltage	40-65V
Duty cycle	150 A - 60%

D.C. GENERATION

Single-phase output (max)	2 kW / 230 V / 8.7 A
Single-phase output (continuous)	1.6 kW / 230 V / 6.9 A
Single-phase output (max) (optional)	1.5 kW / 110 V / 13.6 A
Single-phase output (continuous) (optional)	1.2 kW / 110 V / 10.9 A

ALTERNATOR

Self-excited, self-regulated, brushless

Type	permanent magnet, three-phase
Insulating class	H

ENGINE

Mark / Model	HONDA / GX 200
Type / Cooling system	Gasoline 4-stroke / Air
Cylinders / Displacement	1 / 196 cm ³
Output max	5 kW (6.8 HP)
Speed	4000 rpm
Fuel consumption	313 g/kWh
Engine oil capacity	0.6 l
Starter	recoil

GENERAL SPECIFICATIONS

Tank capacity	3.6 l
Running time (at duty cycle 60%)	3.5 h
Protection	IP 23
Dimensions max. on base LxHxh *	430x375x470
Weight (dry) *	34 Kg
Noise level	99 LWA (74 dB (A) - 7 m)

* Dimensions and weight are inclusive of all parts.

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)

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

 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.

- 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.

 **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**

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

 **ATTENTION**



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.

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.

This symbol is used to draw your attention to the fact that the welder is being used correctly and that the machine or equipment used operates perfectly.



STOP - Read absolutely and be duly attentive



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.



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



ACCES FORBIDDEN to non authorized people.

Use only with safety clothing -



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

Use with safe materials only -



Never use water to put out fires on electrical equipment

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.

Do not refuel -



Do not refuel when the engine is hot.



Switch off the engine prior to refuelling.

Fire -



Fuel can cause fires.

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.

Exhaust gases -



Exhaust gases from the engine can kill.

Petrol vapours -



Petrol vapours cause fires and can seriously damage your health.

Moving parts -



Moving parts are dangerous. Avoid touching any moving parts with your hands or fingers. Never wear loose clothing which may get trapped by moving parts.

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.

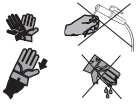


DANGEROUS

Arc welders can be dangerous. Protect yourself and others from any possible risks which may cause death or serious injury.



- 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.



- Do not wind cables around the body.
- Always wear dry, insulating gloves, without holes, and body protection.

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



- Telephonic wirings and/or of communication, check wirings and so on, in the immediate vicinity.
- Radio and television receptors and transmitters.
- Computer and other checking devices.
- Critical devices for safety and/or for industrial checks.
- Peapop who, for instance, use pace-maker, hearing-aid for deaf or something and else.
- Devices used for rating and measuring.
- 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.
- The daily duration of the welding time.
- It is forbidden to weld in rooms containing explosive gases.



- 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.
- Protect face and eyes (protective mask with suitable dark lens and side screens),
























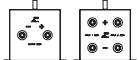
- ears and body (non-flammable protective clothers).
- Avoid inhaling fumes by providing a ventilation system or, if not possible, use an approved air breather



- Do not work in closed areas where there is no fresh air flow.
- Do not use the welder to defrost (thaw) pipes.
- Use ear protections if the noise level is high.

 Conformity CE	 EEC Sound power conformity	 EN 60974-1 conformity	 Single-phase 1~	 Users' manual	 Information	 Various news
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Equipment and optional

Engine	 Gasoline engine	 Air cooling	 Manual recoil	 Engine shut down (oil)		
Genera- tion	 Permanent magnet alternator	 Fuse	 1~ CEE Socket 230/110/48V EEC	 1~ Schuko Socket 230V Schuko	 Ground con- nection point	 A.C.
Welding control	 Arc control	 Welding with covered electrode	 Welding cur- rent electr. regulation	 D.C.	 Plus	 Minus
Various	 Standard equipment	 Options on request	 Maintenance Time	 Central lifting eye		
Optionals	 Welding cables	 PAR 600				

°C: temperature Celsius grades

A: Ampere

B: petrol

C.A.(c.a.): alternating current

C.C.(c.c.): direct current

cc: cm³ (volume)

CE: European norm conformity

CF: special for pipe welding

D: GFI

F: Fuse

g/kwh: grams/kilowatt hour (engine consumption)

GMP: permanent magnet alternator

Hz: frequency

I: single-phase auxiliary generation (symbol 1~)

IP: protection grads for electric devices against access to dangerous parts according to the IEC 529 norm (Internal Protection)

kg: kilogram (mass)

K: welding cables set

kVA: kilovolt ampere

kW: kilowatt (engine power)

kWh: kilowatt hour (energy)

Lwa: maximum acoustic (power level) according to the regulations in force

mm: millimeter (length) (measure)

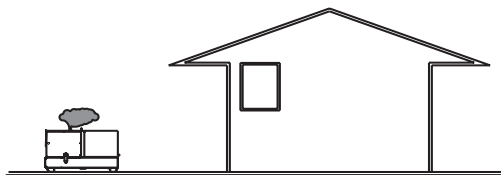
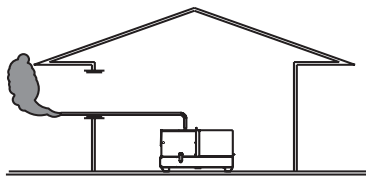
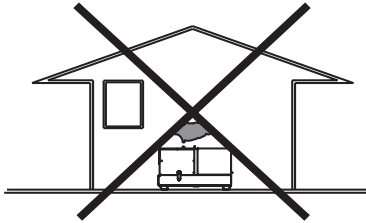
S: symbol of EN 60974-1

T: thermic switch

V: Volt

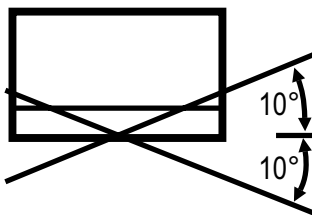
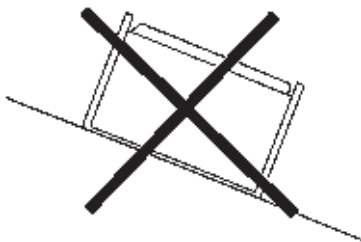
INSTALLATION AND ADVICE BEFORE USE

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

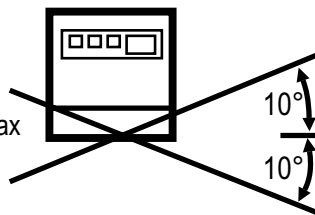


POSITION

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



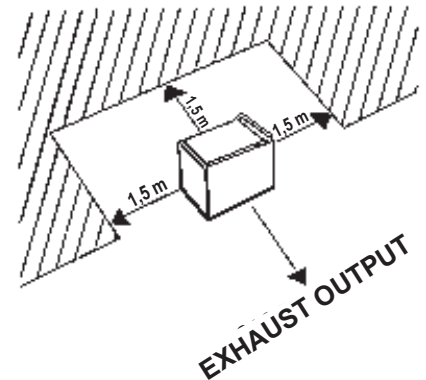
$\alpha = 20^\circ \text{ max}$



$\beta = 20^\circ \text{ max}$

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 AND/OR EQUIPMENTS

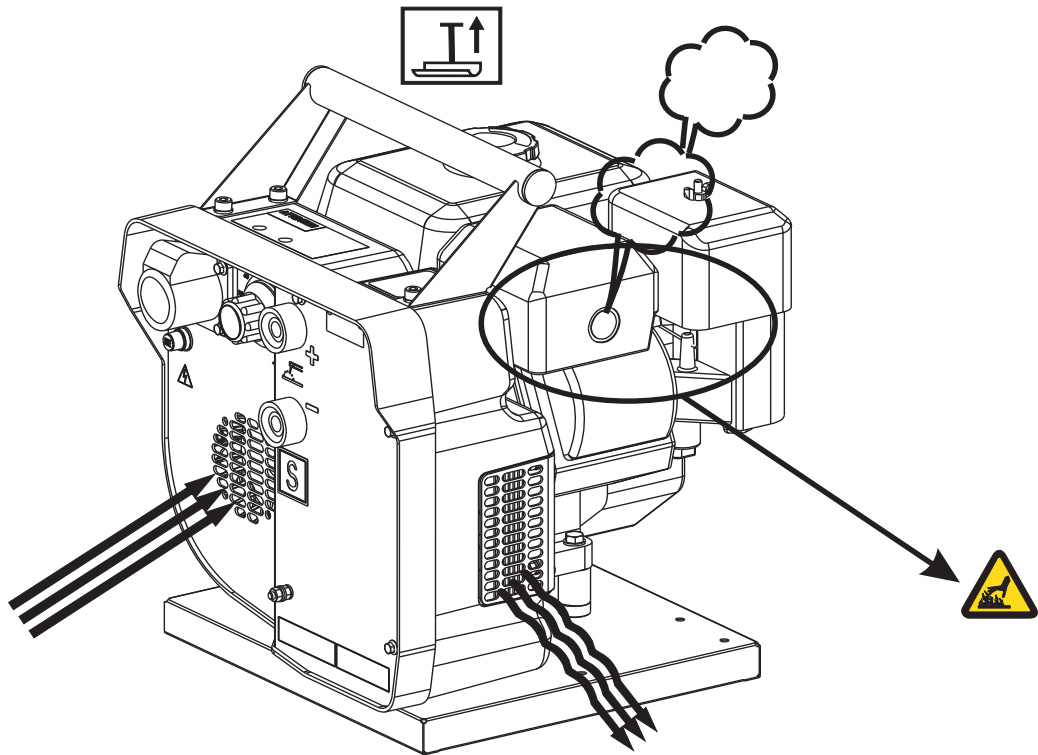
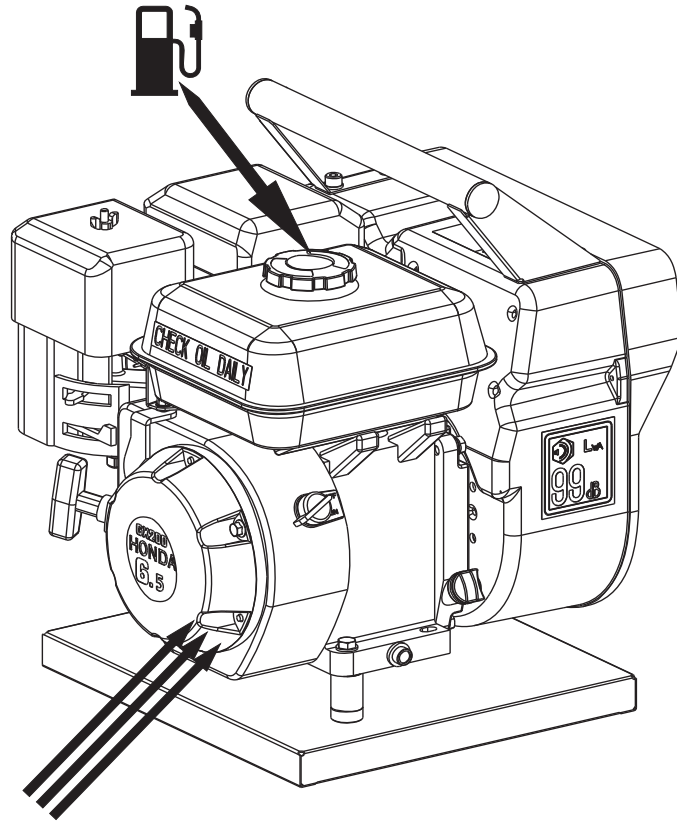


ATTENTION



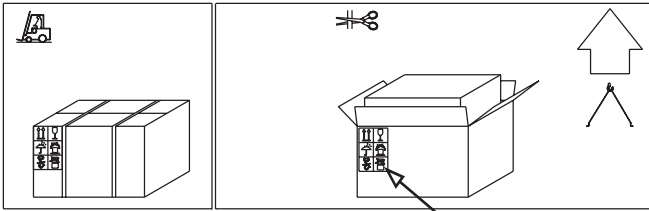
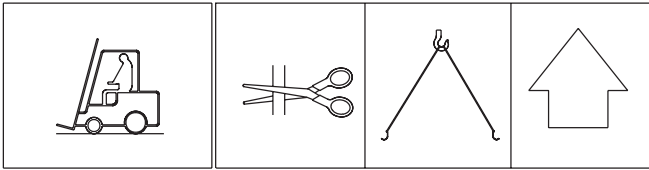
For a safer use from the operator **DO NOT** fit the machine in locations with high risk of flood

Please do not use the machine in weather conditions which are beyond IP protection shown both in the data plate and on page named "technical data" in this same manual.





NOTE

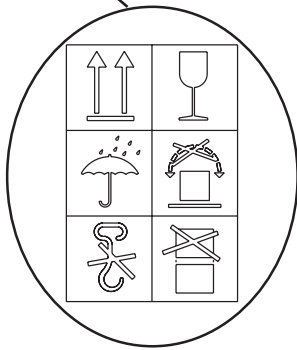


Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with it's packaging, and conforms to local rules and regulations. When receiving the goods make sure that the product has not suffered damage during the transport, that there has not been rough handling or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

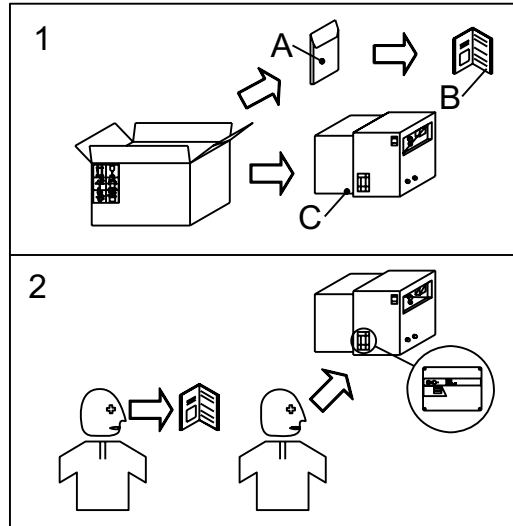
In case you find damages, rough handling or absence of parts (envelopes, manuals, etc.), we advise you to inform immediately our Technical Service.



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



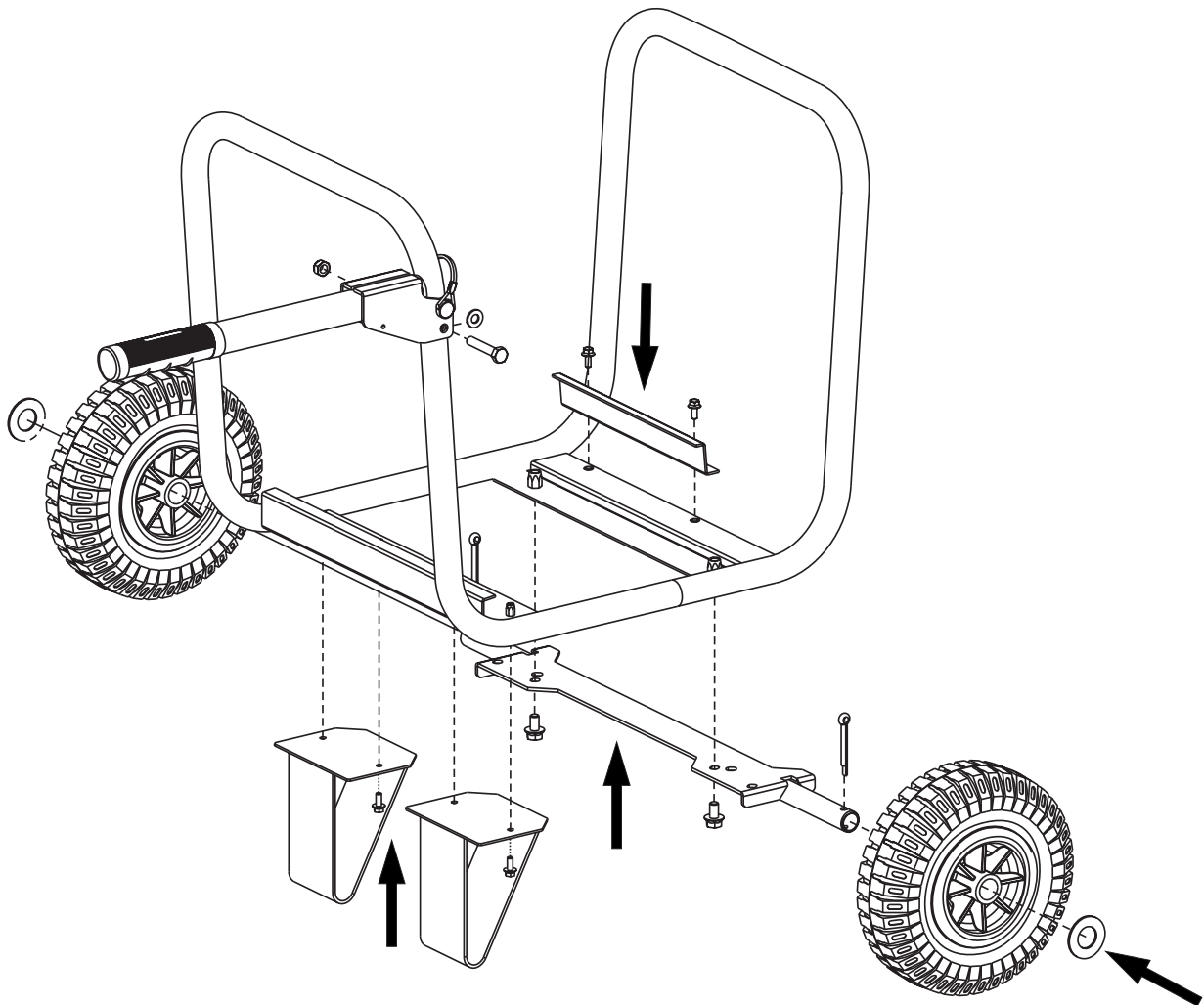
- 1) Take the machine (C) out of the shipment packing. Take out of the envelope (A) the user's manual (B).
- 2) Fit the handle as shown in the instructions (fitting: screws and spanner are supplied).
- 3) Read: the user's manual (B), the plates fixed on the machine, the data plate.



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



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.






LUBRICANT

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

RECOMMENDED OIL

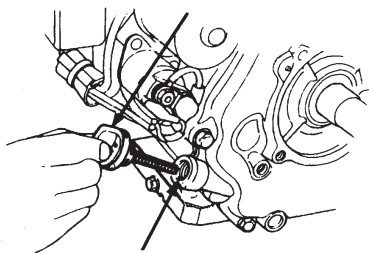
MOSA recommends selecting **AGIP** engine oil. Refer to the label on the motor for the recommended products.

  motosaldatrici gruppi elettrogeni	
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)

To check the oil level:

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

Oil fill tap / dip-stick



Upper oil level

MOTORS WITH OIL ALERT DEVICE

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



FUEL



ATTENTION



Gasoline is highly flammable. Refuel with motor shut off in a flat surfaced well-ventilated area. Do not refuel in the presence of flames. Avoid spilling fuel.



Any eventual spilled fuel and fumes are flammable. Clean any dispersions of fuel before starting up the motor.



Fill the tank with gasoline for automobiles (preferably lead free or with low lead content in order to reduce deposits in the combustion chamber to a minimum).

For further details on the type of gasoline to use, see the motor operating manual supplied.

Do not fill the tank completely; leave a space of approx. 10 mm between the fuel level and the wall of the tank to allow for expansion.



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.



WARNING

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.

Do not use without protective devices provided

Removing or disabling protective devices on the machine is prohibited.





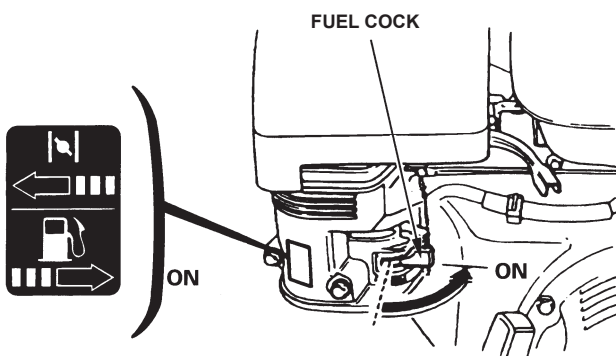
check daily



NOTE

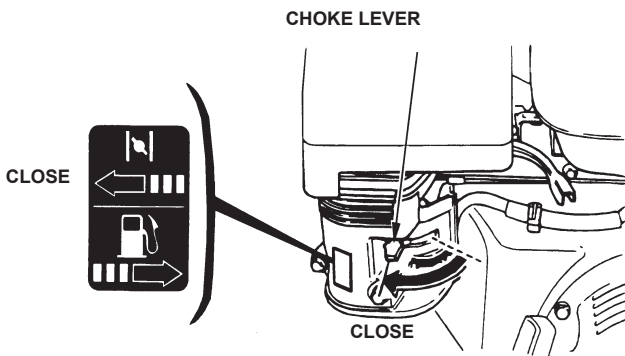
Do not alter the primary conditions of regulation and do not touch the sealed parts.

1. Turn the fuel cock (87) to ON.

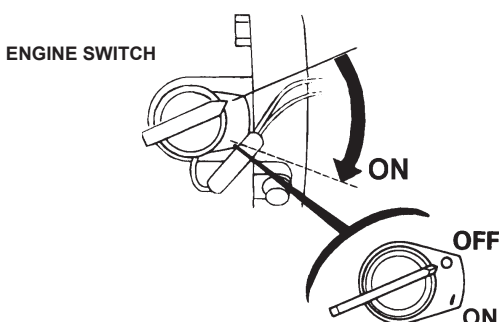


2. Switch the choke control (66) to CLOSE

N.B.: Do not use the air valve if the motor is hot or the air temperature is too high.



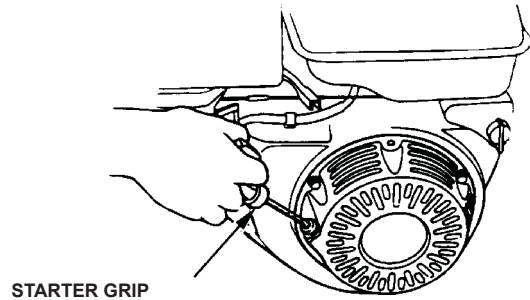
3. Turn the engine switch (28) to the ON position



Lightly pull the start-up knob (73) until meeting resistance, then pull decisively.

ATTENTION:

Allow the start-up knob to re-enter slowly, avoiding having it knock against the motor and thereby damaging the start-up system.



4. When the engine is started the machine reaches maximum engine speed immediately (4000 rpm) for 6/7 seconds, after which the engine speed automatically decreases to minimum (2000 rpm). The minimum is set by the solenoid which acts on the accelerator lever.

5. The engine reaches maximum speed only when current is drawn in welding or auxiliary power mode.

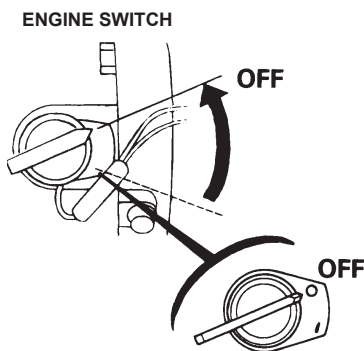
☞ Before stopping the engine **it is compulsory:**

- Disconnect or close any power load connected to the system's auxiliary generation.
- Interrupt welding.

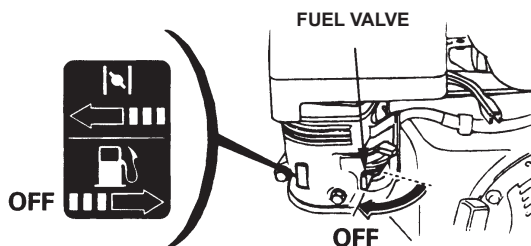


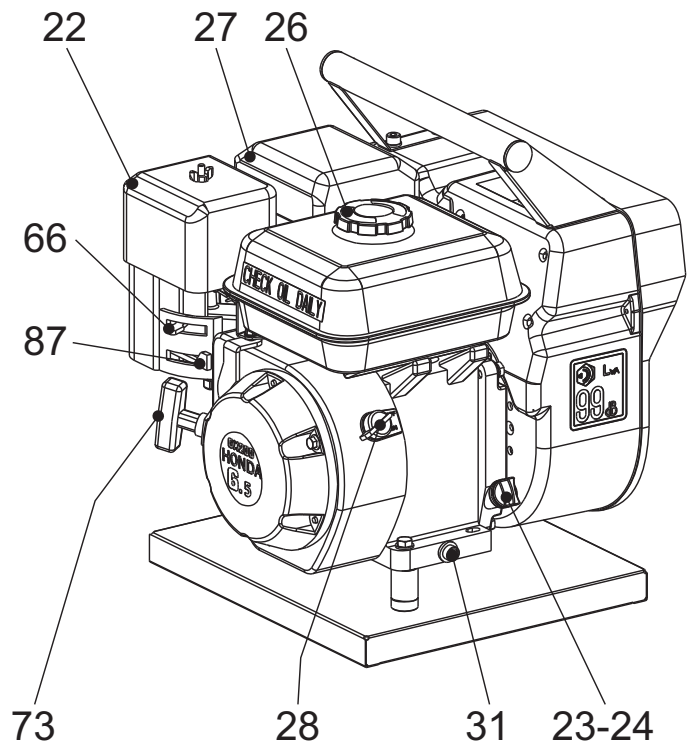
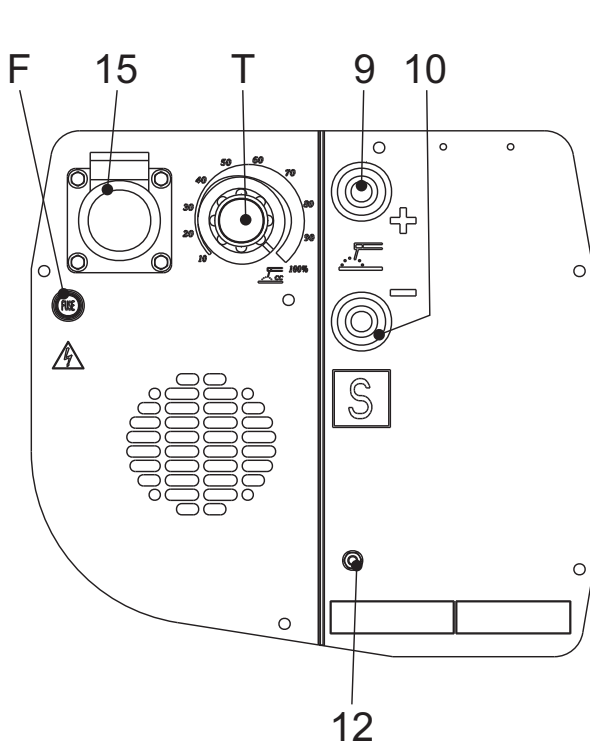
To shut down the motor:

For shut down the motor in case of emergency, turn the motor switch (28) to OFF.
In normal conditions, wait for the engine to reach minimum speed automatically 6/7 seconds after the load has been excluded. Turn the engine in these conditions for a few minutes so that it can cool down and then turn the engine switch (28) to OFF.



Turn the fuel valve to the OFF position.





Pos.	Descrizione	Description	Description	Descripción
9	Prese di saldatura (+)	Welding sockets (+)	Prises de soudage (+)	Tomas de soldadura (+)
10	Prese di saldatura (-)	Welding sockets (-)	Prises de soudage (-)	Tomas de soldadura (-)
12	Presa di messa a terra	Earth terminal	Prise de mise à terre	Toma de puesta a tierra
15	Presa di corrente in c.c.	d.c. socket	Prises de courant en c.c.	Toma de corriente en c.c
22	Filtro aria motore	Engine air filter	Filtre air moteur	Filtro aire motor
23	Asta livello olio motore	Oil level dipstick	Jauge niveau huile moteur	Aguja nivel aceite motor
24	Tappo caricamento olio motore	Engine oil reservoir cap	Bouchon remplissage huile moteur	Tapón llenado aceite motor
26	Tappo serbatoio	Fuel tank cap	Bouchon réservoir	Tapón depósito
27	Silenziatore di scarico	Muffler	Silencieux d'échappement	Silenciador de descarga
28	Comando stop	Stop control	Commande stop	Mando stop
31	Tappo scarico olio motore	Oil drain tap	Bouchon décharge huile moteur	Tapón vaciado aceite motor
66	Comando choke	Choke button	Bouton Choke	Pulsador Choke
73	Comando manuale avviamento	Starting push button	Commande manuelle démarrage	Mando manual arranque
87	Rubinetto carburante	Fuel cock	Robinet de l'essence	Grifo de combustible
F	Fusibile	Fuse	Fusible	Fisible
T	Regolatore corrente di saldatura	Welding current regulator	Régulateur courant soudage	Regulador corr. de soldadura



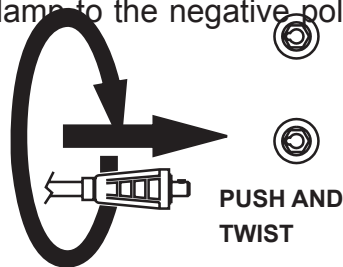
WARNING

Areas for which access by non-authorized personnel is **forbidden** are:

- the control panel (at the front) - the endo-thermic motor discharge.

CONNECT WELDING CABLES

Insert the welding cable plugs completely in the sockets, turning clockwise to lock them in place. Connect the earth clamp to the negative pole



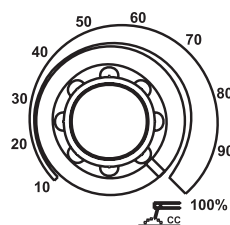
and the electrode holder to the positive.

☞ Pay attention to the two polarities on the welding circuit, which must not come into electrical contact with each other.

- Carefully tighten the output cables to the bushings; if loose, they can cause problems of overheating and damage the bushings, cables, etc.
- Make certain the grounding pincer is connected as near as possible to the work station.

ADJUSTING THE WELDING CURRENT

The welding current is regulated by turning knob "T" continuously. If set to the minimum (turned fully in an anticlockwise direction) it provides a current of approximately 30 A; if set to the maximum (turned fully in a clockwise direction) it gives a maximum current of approximately 150A.



RECOMMENDED ELECTRODES

All the electrodes on the market can be used, however for cellulose electrodes we recommend Magic Weld with added reactor.



ATTENTION

To reduce the risk of electromagnetic interference, keep the welding cable length short and keep them on or near the ground. If possible, welding operations should not be done near sensitive electronic devices. If interference continues to occur, adopt additional measures: shift the group, use shielded cables, line filters, shield the entire work area.

If the above solutions do not suffice, consult our Technical Servicing Department.

AUTO IDLE

Operation

When the engine is switched on it immediately reaches a maximum speed of 4000 rpm for approximately 6/7 seconds for easy start up, after which it automatically decreases and idles at 2000 rpm. It remains at this speed until current is drawn when set to weld or auxiliary power. When set to weld mode the machine reaches maximum engine speed as soon as there is minimum contact between the tip of the electrode and the piece to be welded and also when set to generation drawing a minimum of 250 – 300 W. The machine returns to minimum 6/7 seconds later if power is not drawn during welding or generation.

Checking and adjusting idling speed

- Check idling speed when COLD;
- When the engine is switched on it reaches maximum speed; after 6/7 seconds it decreases automatically to idle. Check the speed when the engine idles;
- The idling speed corresponds to 33-35 Vdc (only for Italy 42-45 Vdc) at the welding sockets or the equivalent at 2000-2200 rpm.

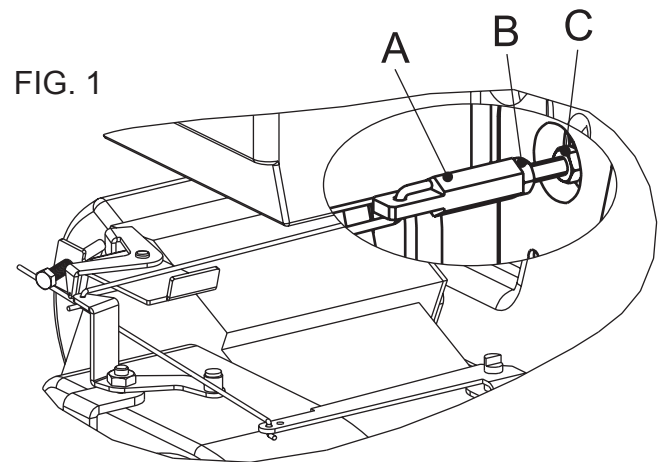
Minimum welding voltage TOO LOW

- From Fig. 1 proceed as follows:
 - when the machine idles (engine cold)
 - Keep pin A locked (8 mm spanner) and unscrew nut B (7 mm spanner)
 - Again with pin A locked, turn nut C clockwise (7 mm spanner) 1 - 3 mm: The more it is extended the more the idle speed increases
 - Tighten nut B on pin A and check the idling speed.

Minimum welding voltage TOO HIGH

- From Fig. 1 proceed as follows:
 - When the machine idles (engine cold)
 - Keep pin A locked (8 mm spanner) and unscrew nut B 1-3 mm (7 mm spanner)
 - Again with pin A locked, turn nut C anticlockwise (7 mm spanner) until nut B touches pin A
 - Tighten nut B against pin A and check that the idling speed is correct.

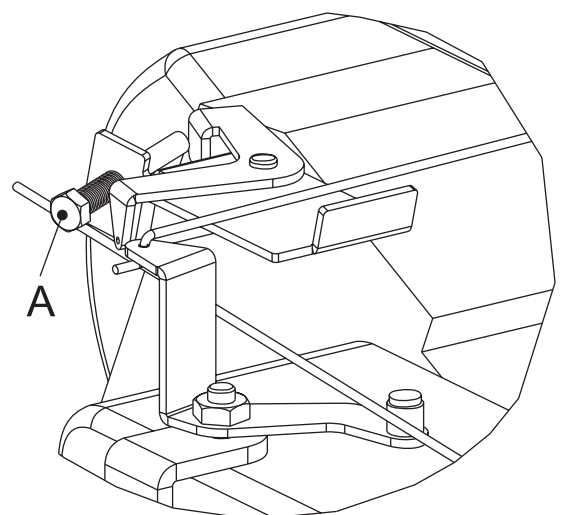
Adjusting the maximum engine speed

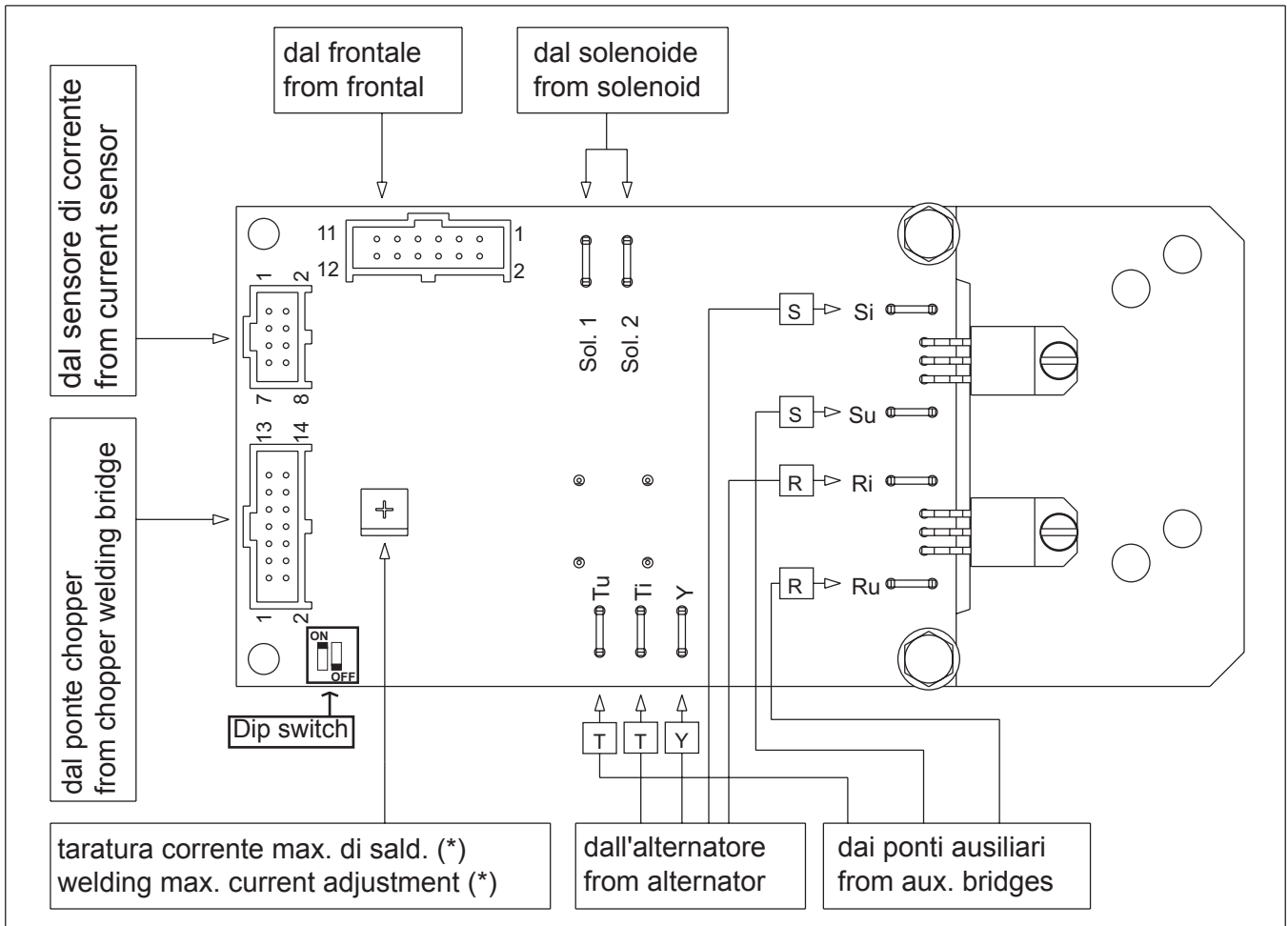


To check that the maximum engine speed is correct simply measure the welding voltage (under no-load conditions) at maximum engine speed which must be 49-51 V (only for Italy 66-68 Vdc).

Turn screw (A) to adjust the engine speed Fig. 2. Turning the screw clockwise increases the idling speed, screwing it anticlockwise decreases the maximum engine speed.

FIG. 2





*) Tutte le volte che viene sostituita o la scheda o il sensore di corrente è necessario procedere ad una verifica della massima corrente di saldatura e eventualmente procedere ad una sua taratura nel seguente modo:

- Lasciare fissato il frontale solo con la vite centrale inferiore e non stringerla in modo che il frontale nella sua parte superiore rimanga staccato di circa 7-8 cm.
- Ruotare il trimmer sulla scheda tutto in senso antiorario.
- Porre i dip switch secondo la figura **Dip switch**
- Verificare che al minimo del potenziometro corrisponda il minimo della manopola.
- Porre la manopola di saldatura al minimo e avviare il motore. Lasciare che la macchina vada al minimo poi fare un corto circuito tra il + e - tramite i cavi di saldatura.
- Ruotare la manopola di saldatura al massimo.
- Ruotare lentamente il trimmer in senso orario affinché la corrente di saldatura arrivi a 140A.

*) Every time either the board or the current sensor is changed, it is necessary to check the max. welding current and, if it is the case, to set it as follows:

- Keep the front panel fixed with its lower central screw and don't tight it, so that the front panel in its upper part can have a gap of 7-8 cm.
- Rotate the trimmer on the board fully anticlockwise.
- Put the dip switch as drawing **Dip switch**
- Check that to the minimum of the potentiometer corresponds the minimum of the knob.
- Put the welding knob to the minimum and start the engine.
- Let the machine idle, then shortcircuit between the + and - welding sockets through the welding cables.
- Rotate the welding knob to the maximum.
- Slowly rotate the trimmer clockwise so that the welding current reaches 140 A.

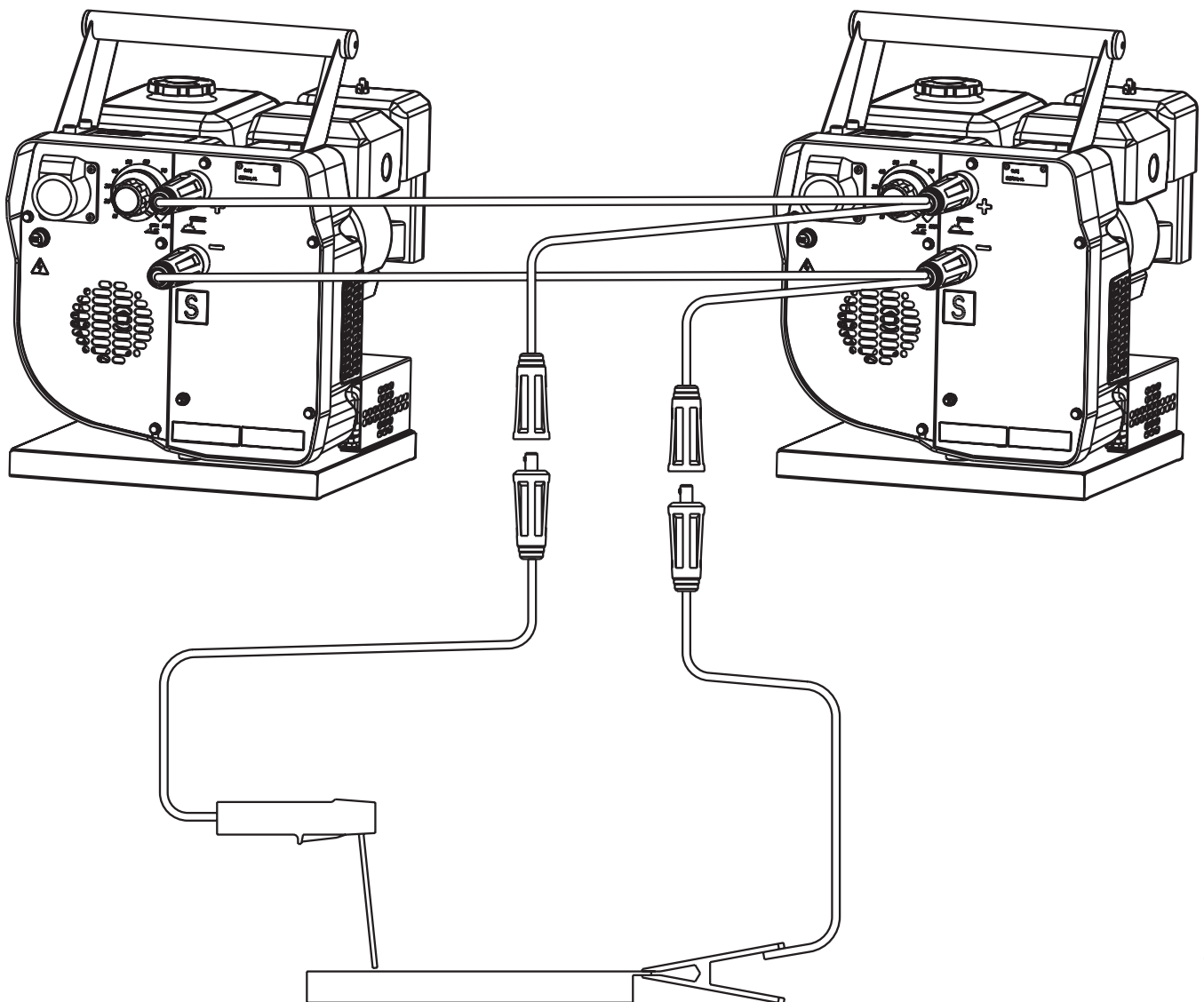
How to put two machines in parallel:

from the front panels of the machines connect the two positives welding sockets(+) between themselves and the two negative welding sockets between themselves.
To effect the connection ask for the accessory K2X150.

ATTENTION: use fit cables and tight at the connection point.

How to proceed:

- start the machine putting the two welding handles (T) in the wanted position (half of the total current);
- put in parallel with the right cables;
- proceed with welding.





WARNING

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

Areas for which access by non-authorized personnel is **forbidden** are:

- the control panel (at the front) - the endo-thermic motor discharge.

GENERATION IN C.C. (CONTINUOUS CURRENT WITH MICRO-INTERRUPTION)

Machines with three pin outlets for auxiliary supply have, at each outlet, isolated active and neutral sockets, and an earth socket. Only the earth socket is bonded to the frame of the machine.

For your safety, all auxiliary equipment, extension cords, appliance cords, plugs, plug sockets and appliances should be in good condition and correctly wired and connected. All earthing wires, where used, must be continuous. Extension cords with three wires should be used except for double insulated appliances.

The frame of the unit should not be connected to the general mass of earth by an earth spike or by any other means, but should be isolated from earth.

Note: in line with current practice, a floating auxiliary power system is used. The auxiliary power windings are not connected to the frame, hence a "residual current device" is not required.

- If the generator is used to feed more complex circuits, or used in special environments, for example: building sites, **it is obligatory** to interpose between the socket and the loads a small distribution panel complete with electrical safeties foreseen by regulatory norms in force in matters of electrical installation.



Problem	Possible cause	Solution
The motor does not start up, or starts up and then stops immediately	1) Engine switch (28) at position OFF 2) Lack of or insufficient oil in the motor 3) Faulty motor stopping device (oil-alert) 4) Lack of fuel in tank or fuel tap closed 5) Dirty or faulty spark plug 6) Cold motor 7) Other causes	1) Position switch to ON 2) Refill or top off 3) Replace 4) Refill the tank. Open the fuel tap 5) Clean or check and eventually replace 6) Hold down the CHOKE button, after start-up, for a longer period of time 7) Consult the motor Operating Manual.
No current under no-load conditions in weld mode No current under no-load	1) Chopper welding bridge broken 2) Faulty circuit 3) Faulty alternator	1) Use a multimeter to test that there are 3 Kohms between pins 1-2; if NOT replace the bridge 2) Replace 3) Disconnect the welding and auxiliary power cables. Use a voltmeter to check that there is 48 Vac at the outputs in weld and approximately 170 Vac in the 230 V version and 90 Vac in the 110 V version. Carry out the check when the engine idles (disconnect one of the two wires to the solenoid)
conditions in auxiliary power mode Incorrect minimum voltage	1) Fuse open 2) Auxiliary power diode bridge broken 3) Faulty circuit 4) Faulty alternator	1) replace the fuse 10A retarded for version 230V 15A retarded for version 110V 2) Use a multimeter to check the 2 single phase diode bridges on the auxiliary power 3) Replace 4) Disconnect the welding and auxiliary power cables. Use a voltmeter to check that there is 48 Vac at the outputs in weld and approximately 170 Vac in the 230 V version and 90 Vac in the 110 V version. Carry out the check when the engine idles (disconnect one of the two wires to the solenoid).
under no-load conditions	1) Incorrect solenoid adjustment	1) Adjust the solenoid as shown on page M34.

Problem	Possible cause	Solution
Incorrect maximum voltage under no-load conditions	1) Incorrect maximum engine speed	1) Adjust the maximum engine speed as shown on page M34.
Engine always at idle speed	1) Faulty circuit	1) Replace
Engine always at maximum speed	1) faulty circuit 2) Faulty solenoid 1) Engine	1) Dirty petrol filter, dirty air filter, dirty carburetor. See engine instruction booklet.
Insufficient power during welding or generation	1) alternator windings not insulated from earth	1) Disconnect all the outputs; 3 for welding, 4 for auxiliary power. 2) Check that the resistance of the solenoid winding is approximately 10 ohm.
Irregular or inconsistent welding current	2) welding chopper bridge not insulated from earth 3) power cables not insulated from earth 4) faulty circuit	welding which go to the chopper bridge and 4 for auxiliary power which go to the circuit board. Use a multimeter to check the insulation of the alternator; 2) disconnect the 3 welding cables, the + and - for welding, the black wire and the connector which go to the circuit board, Use a multimeter to check that the bridge is insulated from the earth. 3) check that the cables inside the aluminium casting, are properly insulated; 4) Replace

RESISTENCE OF WINDING AT 20°C

	Ω (ohm)	NOTE
Output in weld mode Between green / black cable Between green / red cable Between black / red cable	0,030 0,030 0,030	All cables of the same colour are connected in parallel
Auxiliary power outputs 230 Vdc Between the black cables: R / S Between the black cables: R / T Between the black cables: S / T	1,2 1,2 1,2	Cable Y is connected to the centro stella of the three phase circuit
Auxiliary power outputs 110Vdc Between the black cables: R / S Between the black cables: R / T Between the black cables: S / T	1,0 1,0 1,0	Cable Y is connected to cable T

 **ATTENTION**



MOVING PARTS can injure

- Maintenance and repair work should only be done by **qualified** personnel.
- Stop the engine before doing any work on the machine. If for any reason the machine must be operated while working on it, **be careful not to touch** rotating parts, hot surfaces, live wires, etc. which may be unprotected.
- Remove protective guards only when necessary to perform maintenance and replace them immediately after the maintenance is completed.
- Use suitable tools and wear suitable clothes.
- Do not modify the machine without prior authorization



HOT surface can hurt you

MAINTENANCE OF THE MACHINE

Maintenance refers to all operations regarding the control and replacement of mechanical and electrical parts subject to wear. In addition it refers to the control and topping up or replacement of fluids such as fuel, oil and the regular cleaning of the machine.

Repairs refers to the substitution of worn or damaged parts and repairs should be carried out by Authorized Service Centres.

Refer to the Engine Manufacturer's Manual for the maintenance instructions for the engine. Periodic maintenance should be performed according to the schedule shown in this manual.

On a regular basis check that there are no obstructions in the aspiration/exhaust ducts of the alternator, the engine or the housing which could restrict the flow of cooling air.

DRY AIR FILTER

Replace the air filter cartridge every 200 hours under normal conditions and every 100 hours in dusty environments.

PERMANENT MAGNET ALTERNATOR

No maintenance is necessary, as the alternator has no brushes or slip rings, and there are no devices for regulation of the output.

WARNING LABELS AND DECALS

Check warning labels and decals once a year and **replaced** if missing or unreadable.

CABLES AND CONNECTIONS

Periodically check the condition of the cables and tighten the connections.

 **IMPORTANT**

When carrying out maintenance operations be careful to avoid polluting the environment with the materials used during maintenance. Follow all local health and safety regulations.



☞ Have **qualified** personnel prepare the machine for the cust-off.

STORAGE

In case the machine will not be used for more than 30 days, it should be stored in a suitable area where it is protected from the elements to prevent rusting, corrosion and other damage to the machine.

ENGINE

Run the engine until it stops from lack of fuel.

For long periods of storage, refer to the engine manufacturer's manual.

Clean the machine carefully.

Cover the machine with a plastic cover and store in a dry place.

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



IMPORTANT

In the storage or 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.



CUST-OFF

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.

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, inflammable liquids such as fuel.

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

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

This, of course, after authorization.



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.

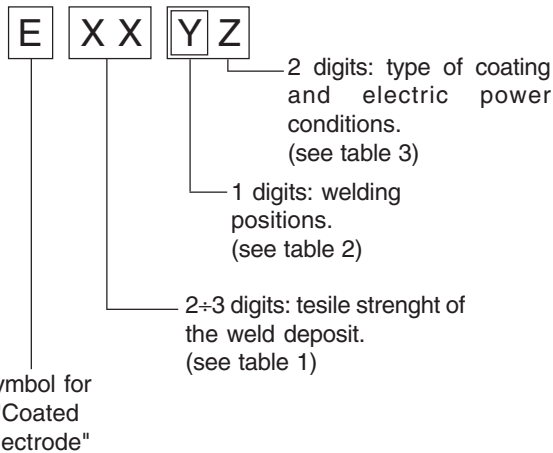
HIGH YIELD BASIC ELECTRODES: E 7018

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

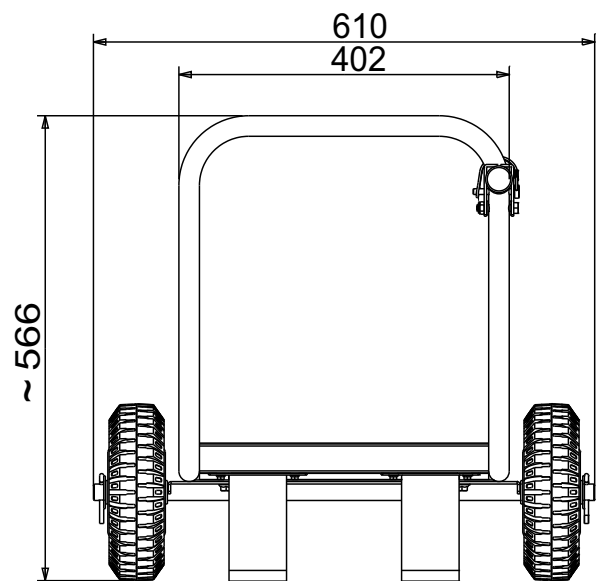
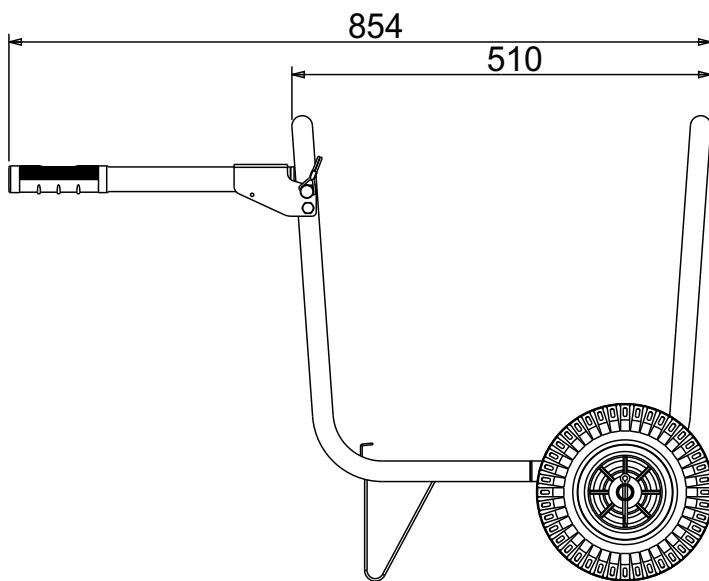
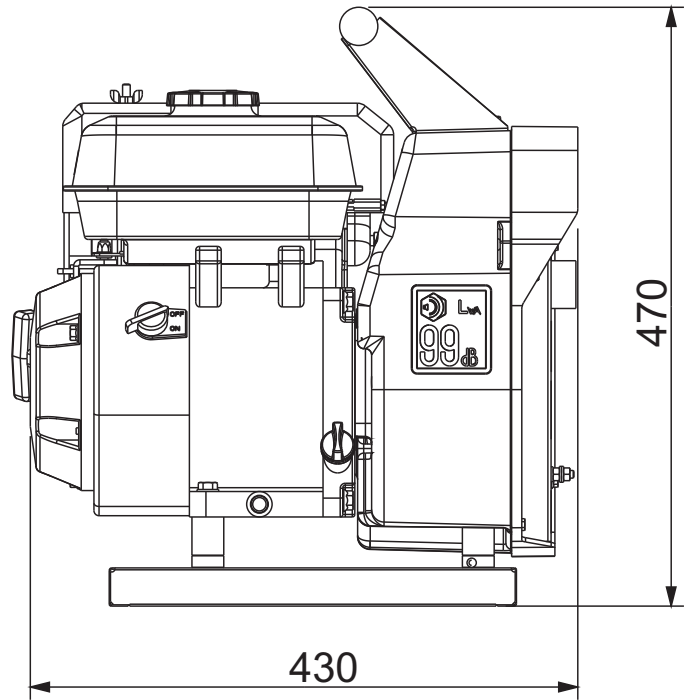
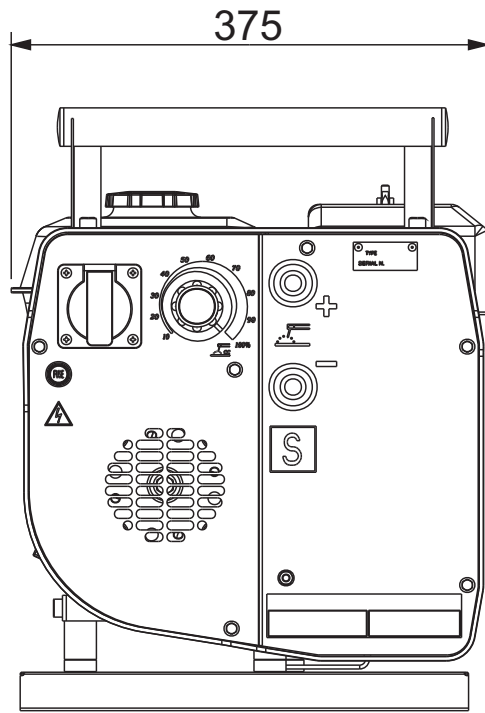
Table 1

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
 F : Fusibile
 H : Presa 230V monofase
 I : Presa 110V monofase
 R : Unità controllo saldatura
 T : Regolatore corrente saldatura
 Y : Ponte diodi saldatura
 F1 : Elettromagnete acceleratore
 S2 : Trasmettitore livello olio
 F3 : Pulsante stop
 G3 : Bobina accensione
 H3 : Candela accensione
 W6 : Sensore di hall

Electrical system legende

A: Alternator
 F: Fuse
 H: 230V 1phase socket
 I: 110V 1-phase socket
 R: Welding control PCB
 T: Welding current regulator
 Y: Welding diode bridge
 F1: Acceleration solenoid
 S2: Oil level transmitter
 F3: Stop push-button
 G3: Ignition coil
 H3: Spark plug
 W6: Hall sensor

Legende des schemas electriques

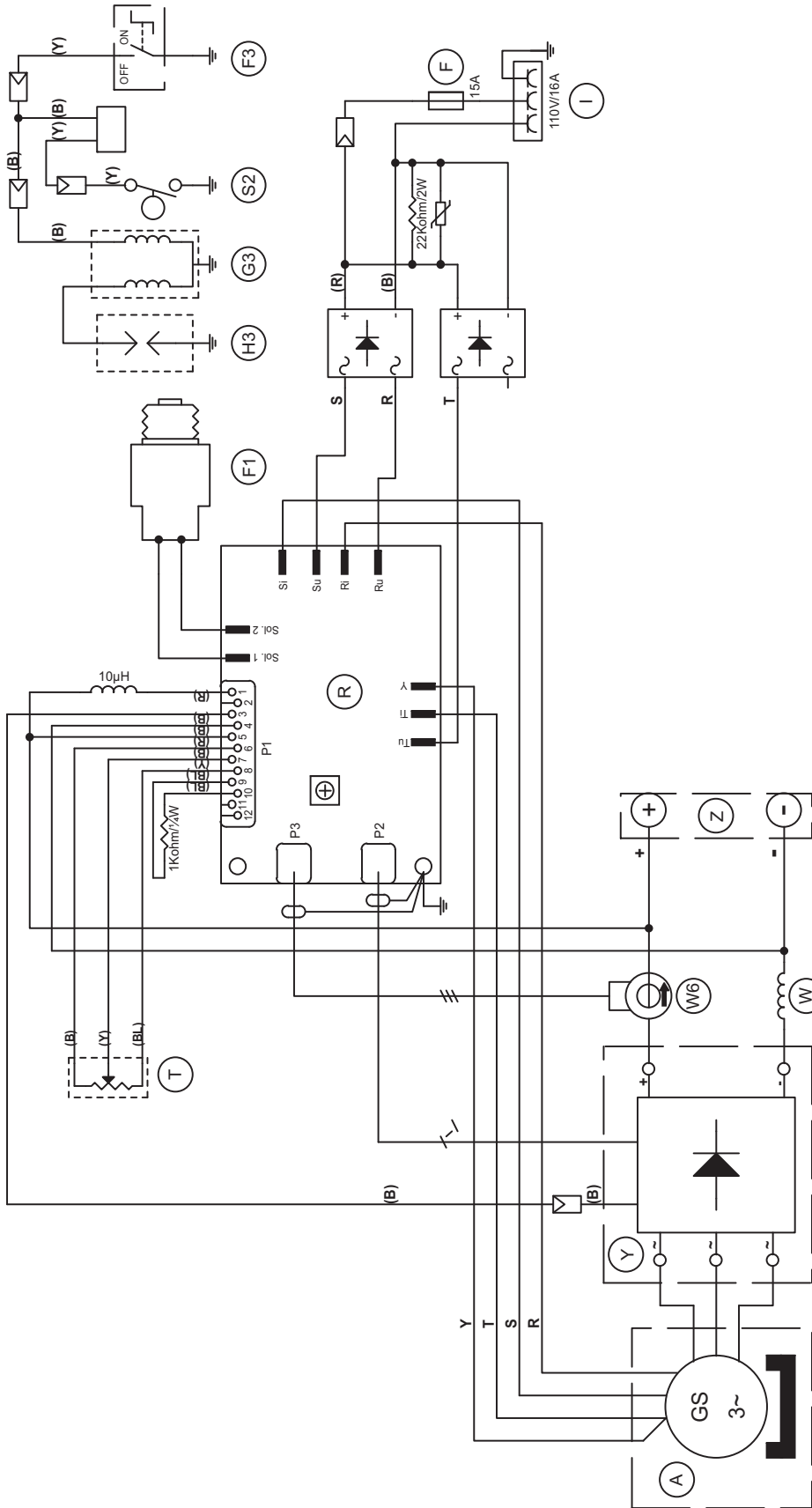
A : Alternateur
 F : Fusible
 H : Prise 230V monophasé
 I : Prise 110V monophasé
 R : Unite contrôle soudage
 T : Régulateur courant de soudage
 Y : Pont diodes soudage
 F1 : Electro-aimant accélérateur
 S2 : Transmetteur niveau huile
 F3 : Bouton stop
 G3 : Bobine allumage
 H3 : Bougie allumage
 W6: Senseur de hall

Stromlaufplan-Referenzliste

A Generator
 F Sicherung
 H Steckdose 230V 1-phasig
 I Steckdose 110V 1-phasig
 R Steuerplatine Schweißstrom
 T Schweißstromregler
 Y Diodenbrücke Schweißstrom
 F1 Elektromagnet Motordrehzahl
 S2 Ölstandssensor
 F3 Taste Stopp
 G3 Zündspule
 H3 Zündkerze
 W6 Hall-Sensor

Leyenda esquema eléctrico

A :Alternador
 F :Fusible
 H :Toma 230V monofásica
 I :Toma 110V monofásica
 R :Unidad control soldadura
 T :Regulador corriente soldadura
 Y :Puente diodos soldadura
 F1 :Electromagnetismo acelerador
 S2 :Captador nivel aceite
 F3 :Pulsador stop
 G3 :Bobina encendido
 H3 :Bujía encendido
 W6 :Sensor de entrada



F	Aggiunto reattore(W)	27.10.2008	N.L.
E	Aggiunto induttanza 10µH su cavo 1 connettore P1.	23.05.2007	N.L.
D	Aggiunto resistenza 22kOhm/2W in parallelo uscita ponti diodi ausiliaria.	27.06.2006	N.L.
C	Aggiunto resistenza 1kOhm/4W nel pontic ello tra pin 9 e 10 su conn. P1.	03.04.2006	N.L.
B	Aggiunto ponticello tra pin 9 e 10 su c onn. P1 (opzione Arc-Force).	22.03.2006	N.L.
A	Aggiunto soppressore (Zenamic) a pr otezione dei ponti diodi ausiliaria.	18.04.2005	N.L.

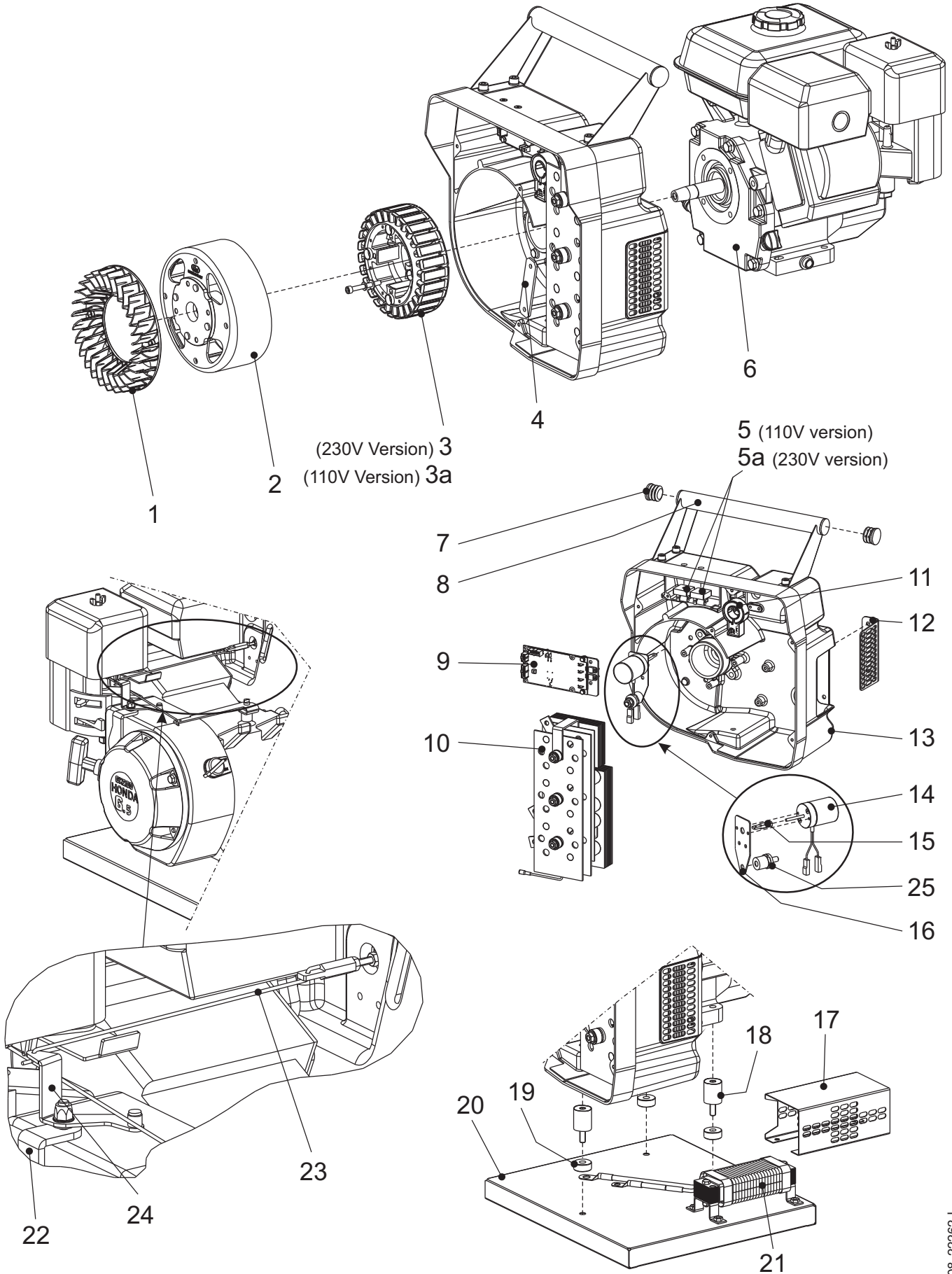
Dis. n°	22263.prg
Dwg. n°	22240.S.060-F
Project:	22263.prg
Project:	22240.S.060-F
Page n°	2
of n°	2

Denominazione:	Wiring Diagram
Macchina:	MAGIC WELD
Disegnatore:	Leporace N.
Data:	02.07.2004

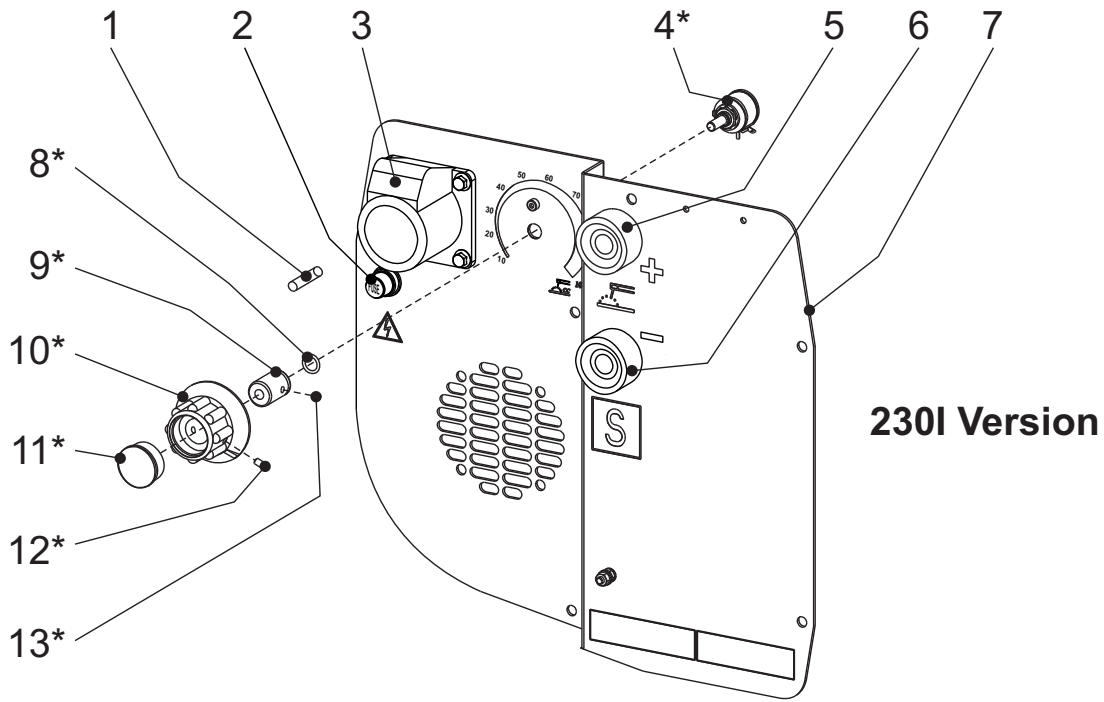
Da Pag.:	1
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Ala Pag.:	1
To Page:	1

LEGENDA COLORI	
KEY COLOR	
(B)	NERO/BLACK
(R)	ROSSO/RED
(Y)	GIALLO/YELLOW
(BL)	BLU/BLUE

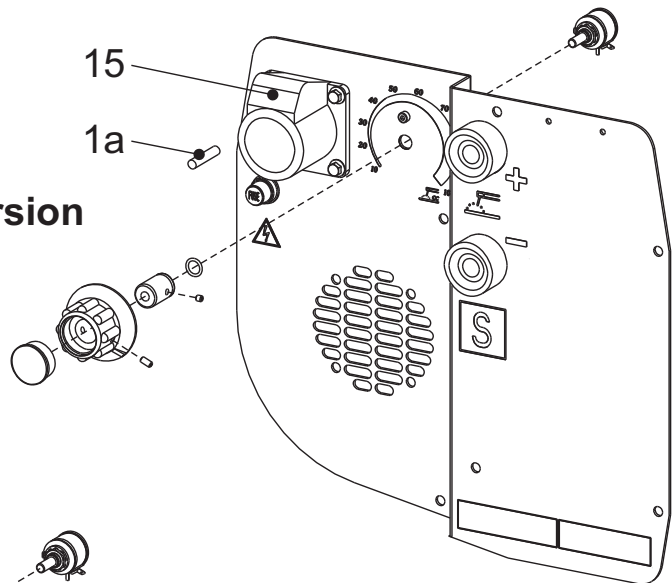
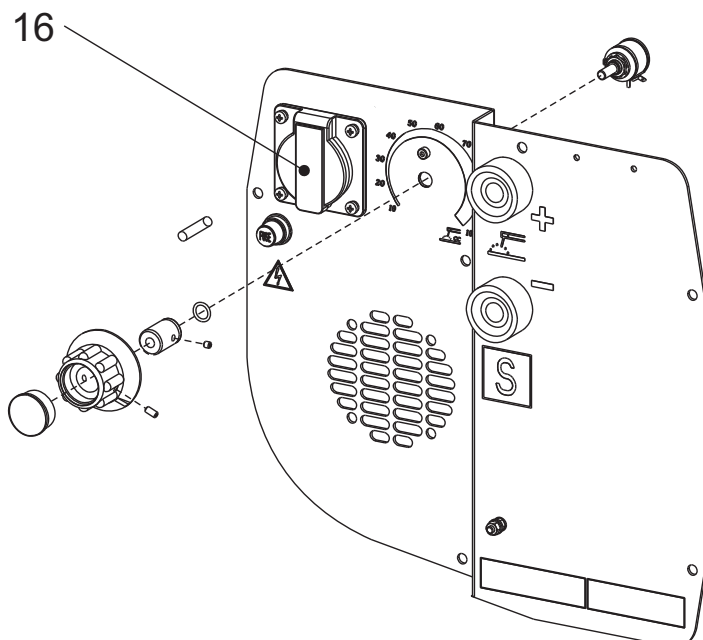
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Pos.	Rev.	Cod.	Descr.	Note
1		222406020	VENTOLA CENTRIFUGA / FAN	
2		222403047	ASSIEME MOZZO/ROTORE / HUB / SHAFT ASSY	
3		222413025	STATORE AVVOLTO 230 VAC / STATOR 230V	Versione 230V / 230V version
3a		222403025	STATORE AVVOLTO 110 VAC / STATOR 110V	Versione 110V / 110V version
4		222418263	PIASTRINA FERMA CAVI	
5		1270040	PONTE DIODI / DIODE BRIDGE 35A800V	Versione 110V / 110V version
5a		1270070	PONTE DIODI / DIODE BRIDGE	Versione 230V / 230V version
6		222422200	MOTORE HONDA GX200T - EPA / HONDA ENGINE GX200T	
7		102011270	TAPPO MANIGLIA / STOPPER, HANDLE	
8		222401226	MANIGLIA DI SOLLEVAMENTO / LIFTING HANDLE	
9		222509800	SCHEDA SALDATURA (MAGIC WELD) / WELDING PCB	
10		222405400	PONTE CHOPPER / WELDING PCB	
11		222405107	SENSORE DI HALL 250A / HALL SENSOR	
12		222408065	GRIGLIA USCITA ARIA / AIR OUTLET GRID	
13		222403040	CARTER ATT. MOTORE/ALTERN. (LAV.) / BOX	
14		222409050	ELETTROMAGNETE ECONOMIZZATORE / ECONOMIZER SOLENOID	
15		222402244	MORSETTO PER FUNE COMANDO / COMMAND WIRE CLAMP	
16		222409101	SUPPORTO ELETTROMAGNETE / SOLENOID BRACKET	
17		222434126	LAMIERA PROTEZIONE REATTORE / REACTOR PROTECTION	
18		222401035	ANTIVIBRANTE D.25x30 / VIBRATION DAMPER	
19		222402038	RONDELLA DISTANZIALE / WASHER	
20		222411050	BASE SUPPORTO MOTORE/ALTERN. / BASE	
21		222434100	REATTORE DI LIVELLO / REACTOR	
22		222402199	SQUAD.SUPP.LEVA COMAN.GAS MOT.(COMPL.) / ENGINE GAS LEVER BRACKET	
23		222408460	FILO RIGIDO COMANDO ACCELER. / ACCELERATOR WIRE	
24		222402230	ASSIEME LEVA COMANDO GAS MOT. / ENGINE GAS LEVER	
25		208029104	COLONNETTA / SPACER	

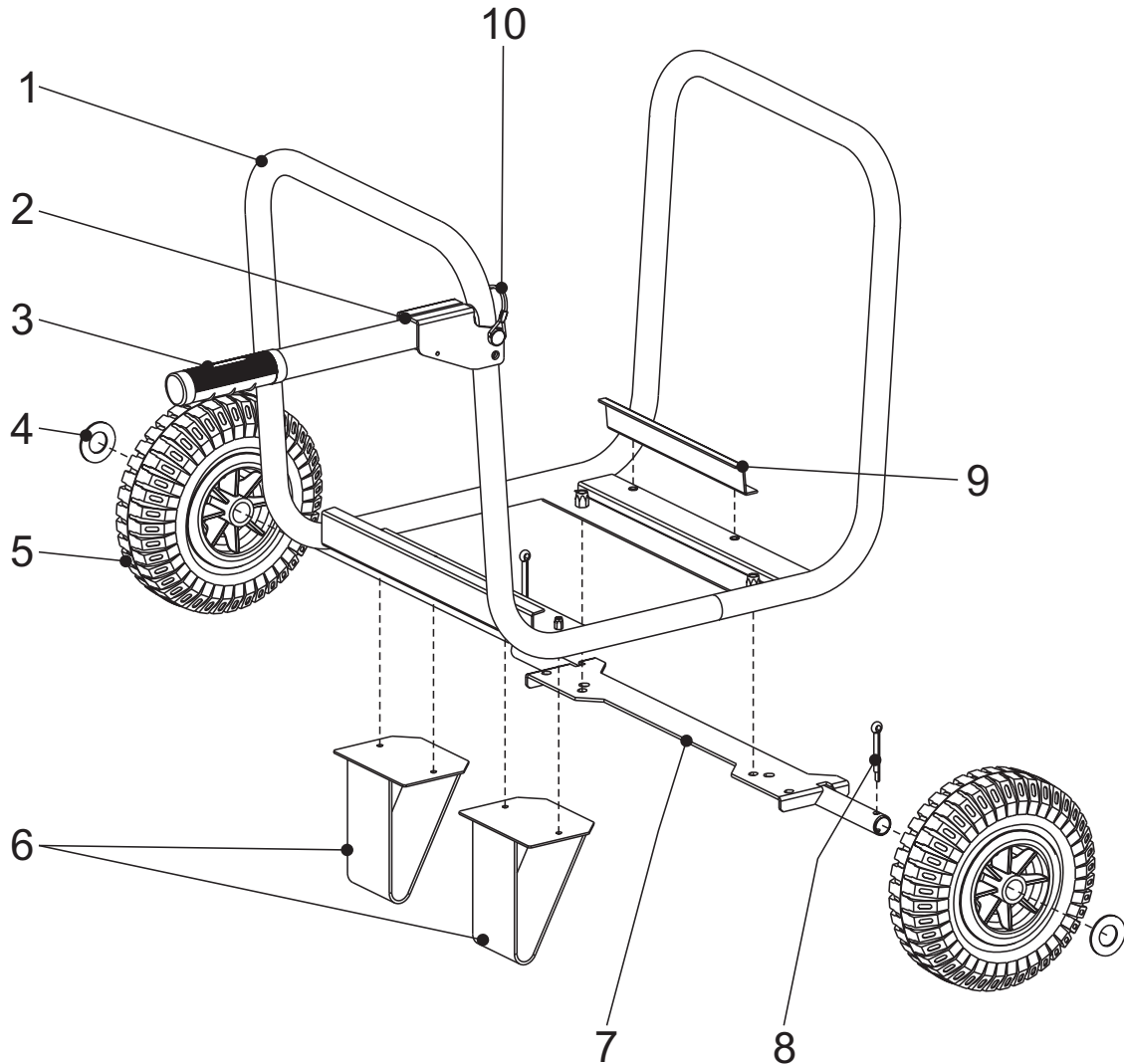


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110I Version**230I Schuko Version**

<i>Pos.</i>	<i>Rev. Cod.</i>	<i>Descr.</i>	<i>Note</i>
1	1291180	FUSIBILE	Versione 230V
1a	1291090	FUSIBILE	Versione 110V
2	103011320	PORTA FUSIBILE	fino a REV.2-11/05 Del. 78/06 del 18/05/06
2	873789045	PORTA FUSIBILE	da REV.3-06/07 Del.78/06 del 18/05/06
3	307017240	PRESA 220V 16A	
4	270009701	POTENZ. LINEARE A FILO 5Kohm	(*)
5	102301310	PRESA DI SALDATURA (+)	
6	102044400	PRESA DI SALDATURA (-)	
7	222427020	FRONTALE	
8	1018090	ANELLO OR	(*)
9	107799349	BUSSOLA MANOP.POT.REG.UN.SALD.	(*)
10	207409751	MANOPOLA REGOLAZ.CORR.SALDAT.	(*)
11	107011870	TAPPO	(*)
12	6060070	GRANO FILETTATO E.I.M4X8	(*)
13	6060050	GRANO M 4X4 UNI 5923 R45H	(*)
14	222440543	KIT MANOPOLA ARCO SALD. COMPL,	(* 4+8÷13)
15	307047250	PRESA 110V 16A	Versione 110V
16	259107241	PRESA SCHUKO 16A 230V - 2P+T	Versione Schuko

<i>Pos.</i>	<i>Rev. Cod.</i>	<i>Descr.</i>	<i>Note</i>
1	1291180	FUSE	230V version
1a	1291090	FUSE	110V version
2	103011320	HOLDER, FUSE	up to REV.2-11/05 Del. 78/06 del 18/05/06
2	873789045	HOLDER, FUSE	from REV.3-06/07 Del.78/06 del 18/05/06
3	307017240	EEC SOCKET 16A, 220V 2P+T	
4	270009701	POTENTIOMETER	(*)
5	102301310	WELDING SOCKET (+)	
6	102044400	WELDING SOCKET (-)	
7	222427020	FRONT PANEL	
8	1018090	O RING	(*)
9	107799349	SLEEVE	(*)
10	207409751	KNOB WELDING CURRENT REGULAT.	(*)
11	107011870	CAP	(*)
12	6060070	DOWEL	(*)
13	6060050	DOWEL	(*)
14	222440543	KIT FOR ARC FORCE KNOB	(*4+8÷13)
15	307047250	SOCKET 110V 16A	110V version
16	259107241	SOCKET SCHUKO 16A 230V 2P+T	Schuko version



Pos.	Rev.	Cod.	Descr.	Descr.	Note
1		222421050	BARELLA	PROTECTIVE FRAME	
2		222421226	MANIGLIA DI SOLLEVAMENTO	LIFTING HANDLE	
3		219861159	MANOPOLA	KNOB	
4		222422038	RONDELLA	WASHER	
5		222421170	RUOTA	WHEEL	
6		222421051	PIEDE DI STAZIONAMENTO	PARKING STAND	
7		222421160	ASSALE	AXLE	
8		6075020	COPIGLIA	PIN, SPLIT	
9		222421356	PIASTRA FISS. BASAMENTO	FIXING PLATE FOR BASE	
10		222429359	SPINA DI SICUREZZA	SAFETY PLUG	

MOSA

GRUPPI ELETTROGENI

MOTOSALDATRICI

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