



USER`S MANUAL

MMA 120/160/200/250

SAFETY CAUTION!



On the process of welding or cutting, there will be possibility of injury. Please take protection into consideration during operation. For more details please review the Operator Safety Guide, which complies with the preventive requirements of the manufacturer

Electric shock——may lead to death !!

- Set the earth fitting according to applying standard.
- It is forbidden to touch the electric parts and electrode when the skin is bare, wearing wet gloves or clothes.
- Make sure you are insulated from the ground and the workshop.
- Make sure you are in safe position.

Gas——may be harmful to health!

- Keep your head out of the gas.
- When operating with arc welding, air extractor should be used to avoid breathing gas.

Arc radiation——harmful to your eyes and burn your skin.

- Use suitable helmet and light filter, wear protective garment to protect eye and body.
- Use suitable helmet or curtain to protect looker-on.

Fire

- Welding spark may cause fire, make sure there is no tinder stuff around the welding area.

Noise——extreme noise will be harmful to hearing.

- Use ear protector or others means to protect ear.
- Warn that noise is harmful to hearing if there is looker-on around.

Malfunction——when trouble happens, contact the professionals

- If trouble happens during installation and operation, please follow this manual instruction to check up.
- If you fail to fully understand the manual, or fail to solve the problem with the instruction, you should contact the suppliers or our service center for professional help.



CAUTION!

Creepage-protecting switch should be added when using the machine!!!

ABOUT THE MACHINE

The welding machine is a rectifier adopting the most advanced inverter technology.

The development of inverter gas-shielded welding equipment profits from the development of the inverter power supply theory and components. Inverter gas-shielded welding power source utilizes high-power component IGBT to transfer 50/60Hz frequency up to 30KHz, then reduce the voltage and commutate, and output high-power voltage via PWM technology. Because of the great reduce of the main transformer's weight and volume; the efficiency increases by 30%. The appearance of inverter welding equipment is considered to be a revolution for welding industry.

The welding power source can offer stronger, more concentrated and more stable arc. When stick and work piece get short, its response will be quicker. It means that it is easier to design into welding machine with different dynamic characteristics, and it even can be adjusted for specialty to make arc softer or harder.

MMA welding machine has the following characteristics: effective, power saving, compact, stable arc, good welding pool, high no-load voltage, good capacity of force compensation and multi-use. It can weld stainless steel, alloy steel, carbon steel, copper and other color metal. It can apply to electrode of different specifications and materials, including acidity, alkalescence, and fibre. It can apply in high altitude, the open air and inside and outside decoration. Compared with the same products of home and abroad, it is compact in volume, light in weight, easy to install and operate.



CAUTION!

The machine is mainly used in industry. It will produce radio wave, so the worker should make fully preparation for protection.

PARAMETERS

Model Parameters	MMA 120	MMA 160	MMA 200	MMA 250
Power voltage (V)	1phase AC230V ±15%	1phase AC230V ±15%	1phase AC230V ±15%	1 phase AC230V ±15%
Frequency (Hz)	50/60	50/60	50/60	50/60
Rated input current (A)	11.8	16.8	16.8	18.2
No-load voltage (V)	56	65	65	65
Output current (A)	20-120	20-160	20-200	20-250
Rated output voltage (V)	25.6	26.4	28	30
Force range (A)	----	----	----	0-100
Duty cycle (%)	45	45	45	45
No-load loss (W)	40	40	40	60
Efficiency (%)	80	80	80	80
Power factor	0.90	0.90	0.90	0.90
Insulation grade	H	H	H	H
Housing protection grade	IP21S	IP21S	IP21S	IP21S

INSTALLATION

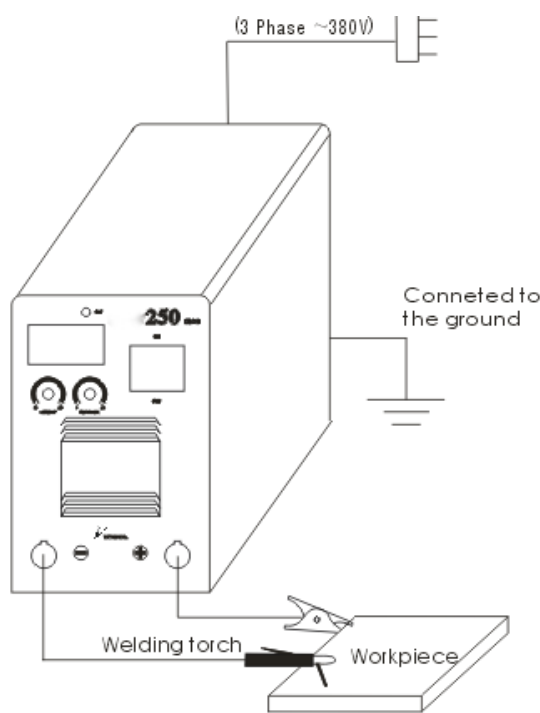
The machine is equipped with power voltage compensation equipment. When the power voltage fluctuation between $\pm 15\%$ of rated voltage, it still can work normally.

When the machine is used with long cables, in order to prevent voltage from going down, bigger section cable is suggested. If the cable is too long, it may affect the performance of the power system. So we suggest you use cables of configured length.

1. Make sure the intake of the machine is not blocked or covered, otherwise the cooling system could not work.
2. Use inducting cable whose section is not less than 6 mm^2 to connect the machine to the ground. The way is from the ground-connecting screw at the back to the earth device.
3. Correctly connect the arc torch or holder according to the sketch. Make sure the cable, holder and fastening plug have been connected with the ground. Put the fastening plug into the fastening socket at the “-” polarity and fasten it clockwise.
4. Put the fastening plug of the cable to fastening socket of “+” terminal at the front panel, fasten it clockwise, and the earth clamp at the other terminal clamps the work piece.

5. Please pay attention to the connecting terminal, DC welding machine has two connecting ways: positive connection and negative connection. Positive connection: holder connects with “-” terminal, while work piece with the “+” terminal. Negative connection: work piece with the “-” terminal, holder with the “+” terminal. Choose suitable way according to the working situation. If unsuitable choice, it will cause unstable arc, more spatters and conglutination. If such problems occur, please change the polarity of the fastening plug.

6. According to input voltage grade, connect power cable with power supply box of relevant voltage grade. Make sure no mistake is made and make sure the voltage difference is among permission range. After the above job, installment is finished and welding is available.




If distance of work piece and machine is too far (50-100m), and the cables (torch cable and earth cable) are too long, please choose cable of bigger section to minimize the reduction of the voltage.

OPERATION

1. Open the power switch, the screen will show set current volume and ventilator is beginning to revolve.
2. Adjust knobs of welding current and arc-striking push, make welding function complies with demands.
3. Generally, welding current is adequate to welding electrode according with as following:

Specification	φ 2.5	φ 3.2	φ 4.0	φ 5.0
Current	70-100A	110-140A	170-220A	230-280A

4. Knob of arc-striking drive is use to adjust welding function, specially in low current arrange, that is cooperated with knob of welding current adjustment, they may adjust current of arc striking and be out of control of knob of welding current adjustment .So machine can grain powerful energy and push current can achieve effect that may .
5. VRD equipment is installed in the machine. When the switch of back panel is put "ON" position, the VRD indictor is lit , and when the switch is put "OFF" position, the VRD indicator is off, then the no-load voltage is 67V.swich of VRD is put inside the machine, with the "on" condition. the no-load voltage changes to be less than 15V, which is safe for people.
6. The welding machine has been coordinated with remote control device:
 - 1) Check the switch position of remote control device before operation .If the switch is on “OFF” Position then is out of remote control. Switch is on “ON” position then is using remote control device.
 - 2) Insert plug of remote control in socket of remote control correctly and tighten firmly in order to prevent poor contact.
 - 3) If remote control device is not used, make sure the switch is on “OFF” position, or welding current will not be able to be adjusted on panel.



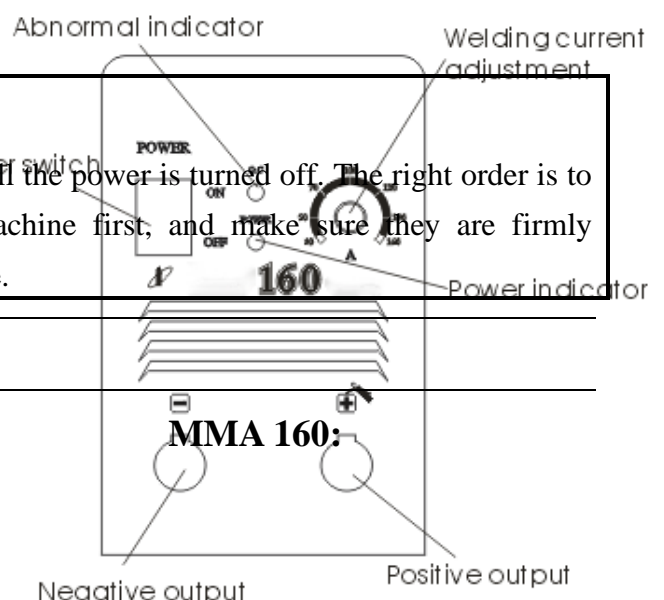
warning!

Before connecting operation please make sure all the power is turned off. The right order is to connect the welding cable and ground cable to the machine first, and make sure they are firmly connected and then put the power plug to the power source.

PANEL INSTRUCTION

MMA120:

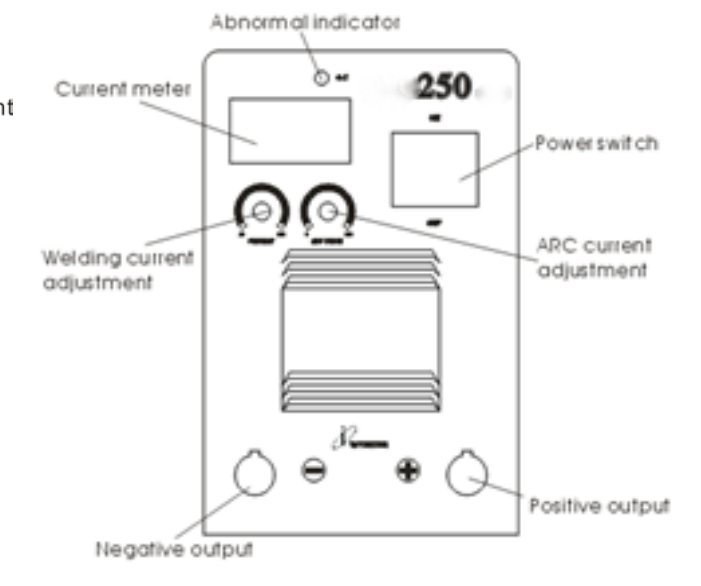
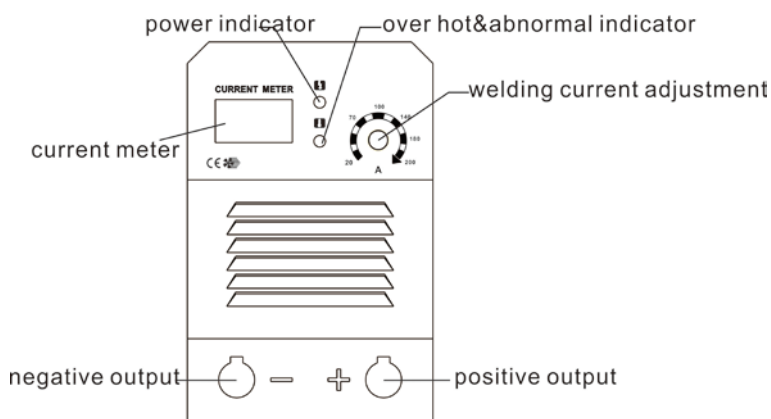
Abnormal indicator Welding current adjustment



MMA-120

MMA 200

MMA250:



The panel picture above is for reference only. If any difference with the real machine, please follow with the real machine.

NOTES OR PREVENTIVE MEASURES



1、 Environment

1) The machine can perform in environment where conditions are dry with a dampness lever of max

90%.

- 2) Ambient temperature is between -10 to 40 degrees centigrade.
- 3) Avoid welding in sunshine or drippings.
- 4) Do not use the machine in environment where condition is polluted with conductive dust on the air or corrosiveness gas on the air.
- 5) Avoid gas welding in the environment of strong airflow.

2、 Safety norms

The welding machine has installed protection circuit of over voltage 、 over current and over heat. When voltage and output current and temperature of machine are exceeding the rated standard, welding machine will stop working automatically. Because that will be damageing to the welding machine, user must pay attention as following.

1) **The working area is adequately ventilated !**

The welding machine is powerful machine, when it is being operated, it generated by high currents, and natural wind will not satisfy machine cool demands. So there is a fan in inter-machine to cool down machine. Make sure the intake is not in blocked or covered, it is 0.3 meter from welding machine to objects of environment. User should make sure the working area is adequately ventilated. It is important for the performance and the longevity of the machine.

2) **Do not over load !**

The operator should remember to watch the max duty current (Response to the selected duty cycle). Keep welding current is not exceed max duty cycle current. Over-load current will damage and burn up machine.

3) **No over voltage !**

Power voltage can be found in diagram of main technical data. Automatic compensation circuit of voltage will assure that welding current keep in allowable arrangement. If power voltage is exceeding allowance arrangement limited, it is damaged to components of machine. The operator should understand the situation and take preventive measures.

4) There is a grounding screw behind welding machine, there is grounding marker on it Mantle must be grounded reliable with cable which section is over 6 square millimeter I order to prevent from static electricity and leaking.

5) If welding time is exceeded duty cycle limited, welding machine will stop working for protection. Because machine is overheated, temperature control switch is on “ON” position and the indicator light is red. In this situation, you don’t have to pull the plug, in order to let the fan cool the machine. When the indicator light is off, and the temperature goes down to the standard range, it can weld again.