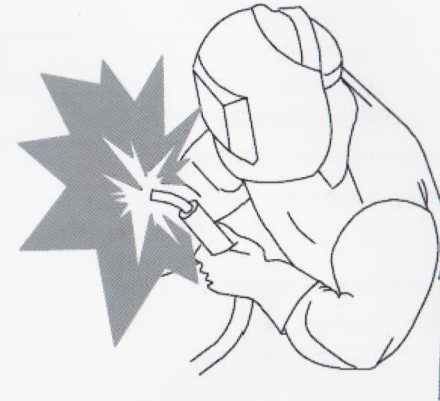


Instruction Manual



MINI-100H/120H/140H/160H/180H/200H
MINI-100HP/120HP/140HP/160HP/180HP/200HP
MINI-100HT/120HT/140HT/160HT/180HT/200HT
INVERTER WELDING MACHINE

WARNING:

- Please read the instruction manual carefully before using!
- This equipment must be operated by the professionals!
- It will cause fault and reduce life when wrong used!

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Safety Caution !



On the process of welding, there will be any possibility of injury, so please take protection into consideration during operation. More detail please review the Operator Safety Guide, which complies with the preventive requirements of the manufacturer.

Electric shock — May cause death!!

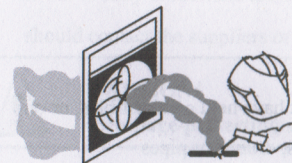


- Set the earth fitting according to applying standard.
- It is forbidden to touch the electric parts and electrode when the skin is naked, wearing wet gloves or clothes.
- Make sure you are insulated from the ground and the workshop.
- Make sure you are in safe position.

Gas ----- harmful to health.



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



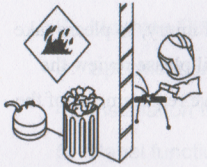
Use enough forced ventilation or local exhaust (forced suction) at the arc to remove the fumes from your breathing area.

Arc radiation — Harmful to your eye 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 spectator.

Fire

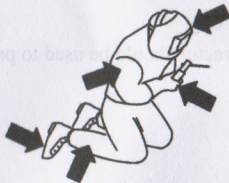


Do not weld near the flammable material: atmosphere, dust, gas, or liquid.

Noise — extreme noise harmful to ear!



- Use ear protector or others methods to protect ear.
- Warn that noise harmful to hearing of others around.



- Wear approved safety glasses with side shields under your welding helmet or face shield and at all times in the work area.
- Wear complete body protection. Wear oil-free protective clothing such as leather gloves, heavy shirt, cuffless pants, and high boots.

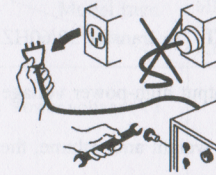


Do not weld on containers that have held combustibles, or on closed containers such as tanks, drums, or pipes

(Lifting devices)

Small and light welder can be held by hand, and heavier one can be moved by its wheels. The package of welder is carton box and wooden case. There are no lifting devices on the welder; the user needs to use the forklift to take it to the right place and keep them unpacked. Make sure that all the accessories are disassembled. To avoid standing below the machine when transport, it is strictly prohibited to crane fast moving.

Don't put the machine placed 35 degree in slope



Do not touch the electrical parts while it is working. Do not use AC weld outside in damp, wet, or confined spaces, and keep it working in safety place. Use AC output ONLY if required for the welding process. If AC output is required, use remote output control if present on unit.

Keep a safety distance from electric shock by insulating yourself between work piece and ground.

Use non-flammable, dry insulating material if possible, or use dry rubber mats, dry wood or plywood, or other dry insulating material big enough to cover your full area between the work piece and ground, and watch for fire.

Disconnect input plug or power before working on machine.

Malfunction — When trouble, count on the professionals!

- If trouble in installation and operation, please follow this manual instruction to check up.
- If 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!!!

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About the machine (Machine description)

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

Inverter welding power source utilizes high-power component **IGBT** to transfer 50/60HZ frequency up to 38KHZ, then reduce the voltage and commutate, and output high-power voltage via PWM technology. Because of the great reduce of 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.

The 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 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.

Thanks for purchasing the product and hope for your precious advice. We will dedicate to produce the best products and offer the best service.

SPECIFICATIONS

Model Item	MINI-100H MINI-100HP MINI-100HT	MINI-120H MINI-120HP MINI-120HT	MINI-140H MINI-140HP MINI-140HT	MINI-160H MINI-160HP MINI-160HT	MINI-180H MINI-180HP MINI-180HT	MINI-200H MINI-200HP MINI-200HT
Power voltage (V)	AC220V ±15%	AC220V ±15%	AC220V ±15%	AC220V ±15%	AC220V ±15%	AC220V ±15%
Frequency (HZ)	50/60	50/60	50/60	50/60	50/60	50/60
Rated input current (A)	18.7	23.1	27.8	32.8	38.1	43.5
No-load voltage (V)	60	60	60	60	60	60
Output current range (A)	30-100	30-120	30-140	30-160	30-180	30-200
Duty cycle (%)	40	60	60	60	40	30
Efficiency (%)	80	80	80	80	80	80
Power factor	0.73	0.73	0.73	0.73	0.73	0.73
Insulation class	F	F	F	F	F	F
Protect class	IP21	IP21	IP21	IP21	IP21	IP21

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Installation Instructions

The induction power is equipped with power voltage compensation function. When rated output voltage moves within +/-15%, it still can work normally.

When use long cable , you must choose bigger section cable to prevent the voltage drop; If cable is too long, it may heavily influence the performance of the arc striking and the other power system. So we suggest u use our recommend length.

1. Make sure the intake is not blocked or covered to prevent the cooling system couldn't work.
2. Choose the cable which section is not less than 4mm² to connect the housing to the ground.
3. Correctly connect the electrode holder and earth clamp as the following sketch
4. Pay attention to the polarity, DC welder have 2 connecting ways : positive connection and negative connection .Positive connection: holder connects with “-” polarity .While work piece connects with “+”.Negative connection depends on different work piece and technical requirement. If unsuitable choice, it will cause unstable arc, more spatters and conglutination. If such problems occur, please change the polarity of the fastening plug.
5. Connect the power line to the distribution box according to the input voltage classes of the welding machine, don't connect the wrong voltage. And u must confirm that the input voltage within bounds .

MINI-200 INSTALL SKETCH



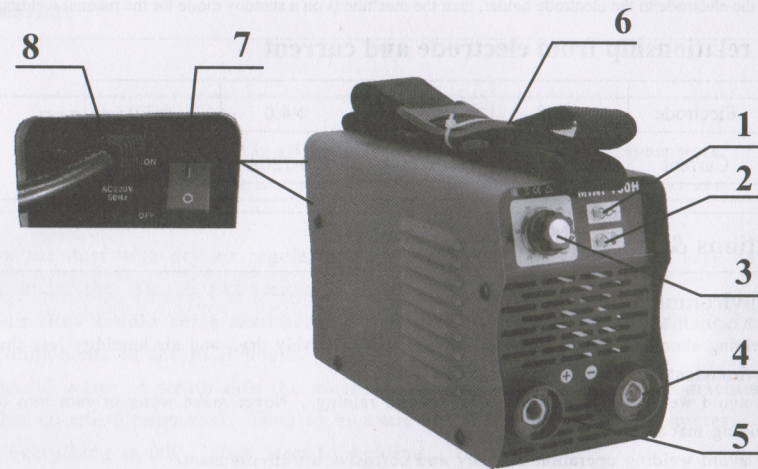
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If the distance of work piece and welder is too far (50-100m), and the cables (torch cable and earth cable) are too long, please choose cable for bigger section to minimize the reduction of the voltage

Panel function description

MINI series panel function description



1	Power
2	O.C
3	Potentiator
4	output end negative pole
5	output end positive pole
6	Belt
7	Input cable and infix reed
8	Power switch

Turn the switch to "ON" on the back panel , the power light will be on , at the same time the cooling fan is running then you can confirm the welder is been turned on .

1. Adjust the welding current and thrust current according to the thickness of the welding work piece, the diameter of the electrode and the requirement of the station and workmanship.

2. Clip the electrode to the electrode holder, then the machine is on a standby mode for the manual welding .

The relationship from electrode and current

Electrode	φ 2.5	φ 3.2	φ 4.0	φ 5.0
Current	70-100A	110-160A	170-220A	230-280A

Cautions & Preventive Actions

1、 Environment

- 1) Welding should be done under an environment relatively dry, and air humidity less than 90%.
- 2) Environment temperature from -10℃to 40 ℃.
- 3) To avoid welding under strong sunshine and raining , Never make water or rain into the welding machine
- 4) To avoid welding operation in dusty and corrosive air environment.
- 5) To avoid welding in strong air flowing environment.

2、 Safety Cautions

This welding machine fitted with over voltage , over current, over heat protection. The machine will stop work when voltage, output current , or temperature inside over the rated limit. But after it recover to the regular working situation, it will work normally. If overtimes to use the machine under non-standard (e. g. : Over voltage) will shorten the life of the machine even to break the machine . So please make cautions as following :

1) Make sure a good air flow.

As it is a DIY machine ,there will be high current during welding , in-fitted fan meets the request of the cooling the machine . Operator need to make sure the fan works well and keep space less than 0.3m with around objects.

2) Prohibit Overload

Keep the welding current less than the max overload current. Over current will shorten the life of the machine even to make the machine broken.

3) Prohibit Over voltage

If voltage over the allowed value, may cause machine to break,operator should have good understanding and take preventive measures.

4) Every machine fitted with an earth connecting screw marking with a label. Choose a wire more than 6mm² to do the earth connection before operation.

5) The machine will stop if over duty cycle during welding,this caused by thermal control and the indicator on the front panel will light . At this moment , you don't need to turn off the machine, keep the machine work and fan inside will make the machine cooling . The machine work again after the indicator turn off .

Maintenance

WARNING:

Make sure the machine is off when you make the maintenance, repair work.

Make sure the machine is unplugged in to the power before opening the case.


1. Blow the dust with dry air regularly. Operator need remove the dust very day if welding under the smoke and serious polluted environment .
2. The air flow should be in reasonable pressure , too strong flow will damage some small components of the PCB board.
3. To avoid water or steam into the machine. Operator needs to dry the machine when this situation happened. Then to measure the insulation with multimeter. Ensure everything is OK , then start to welding.
4. Packing up the machine to relatively dry environment if not using frequently.

Overhaul precautions



WARNING

Blind experiments and imprudent overhaul may lead to the expansion of the area of the fault,cause difficulties to the formal overhaul. The equipment in an energized state machine within the exposed part with can lead to dangerous voltage, any direct or indirect contact may lead to electric shock accidents, serious electrical shock will result in death!!!

 **Note: During the warranty period, the user repairs without authorization or error repair, the free repair warranty provided by the suppliers will be invalidated.**

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Trouble shooting

The trouble you meet here may have connections with spare parts, welding materials, environment and supply power ,please take measures to avoid those things as below:

A、 Hard to start arc , easy to break arc :

1. Make sure the welding electrode good quality.
2. The electrode without drying process may cause arc unstable ,bad welding quality .
3. The output voltage will decrease when using longer output cables. It's suggested to use shorter output cables.

B、 Output current can not meet the rated value:

Unrated power supply will cause output value not match the rated value data.

C、 The current not stable during welding process.

This situation may caused by the following:

1. The supply voltage not stable.
2. Disturbed by the supply voltage.

D、 More sparks :

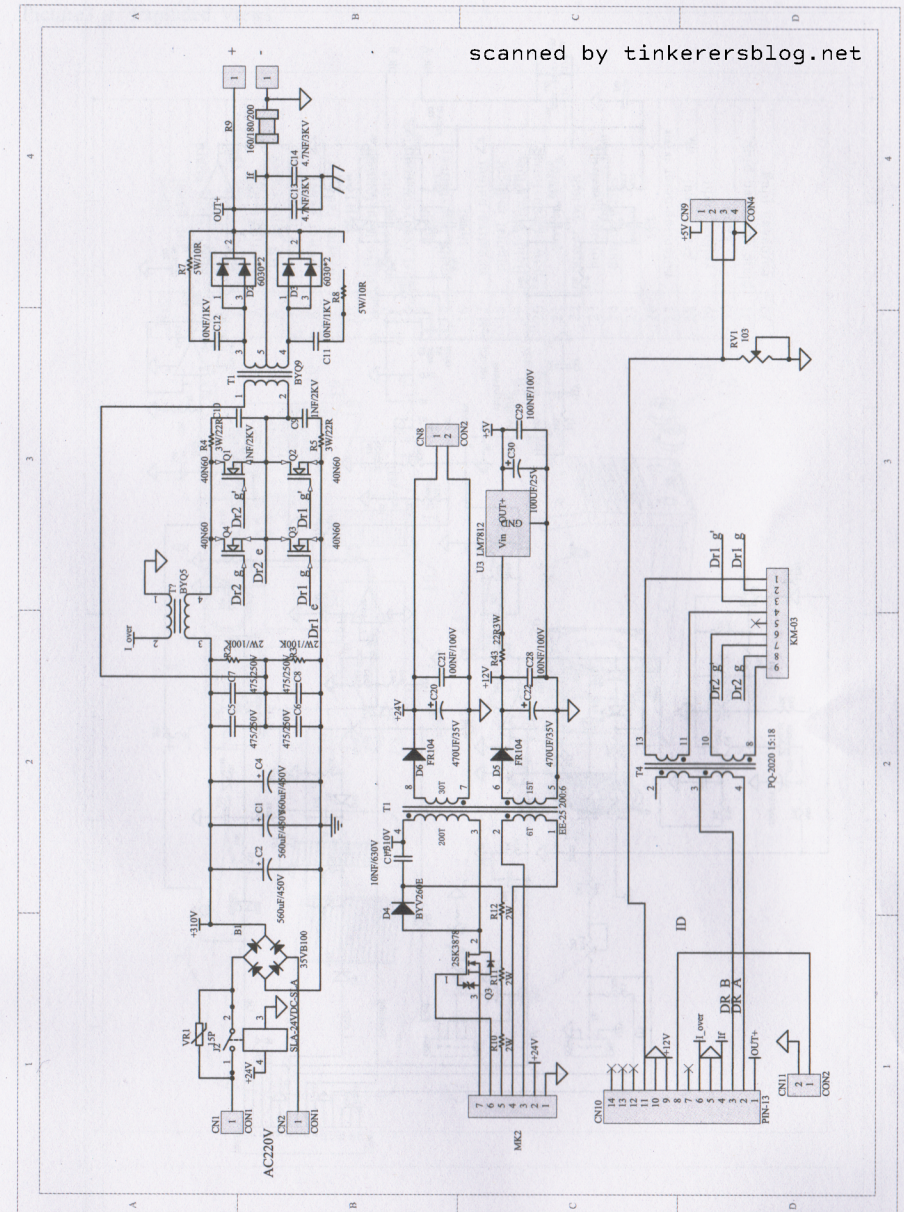
1. Using small electrode with high current adjusted .
2. The output polarity reversed . Under normal conditions , electrode holder connect to negative , and the work peace to positive.



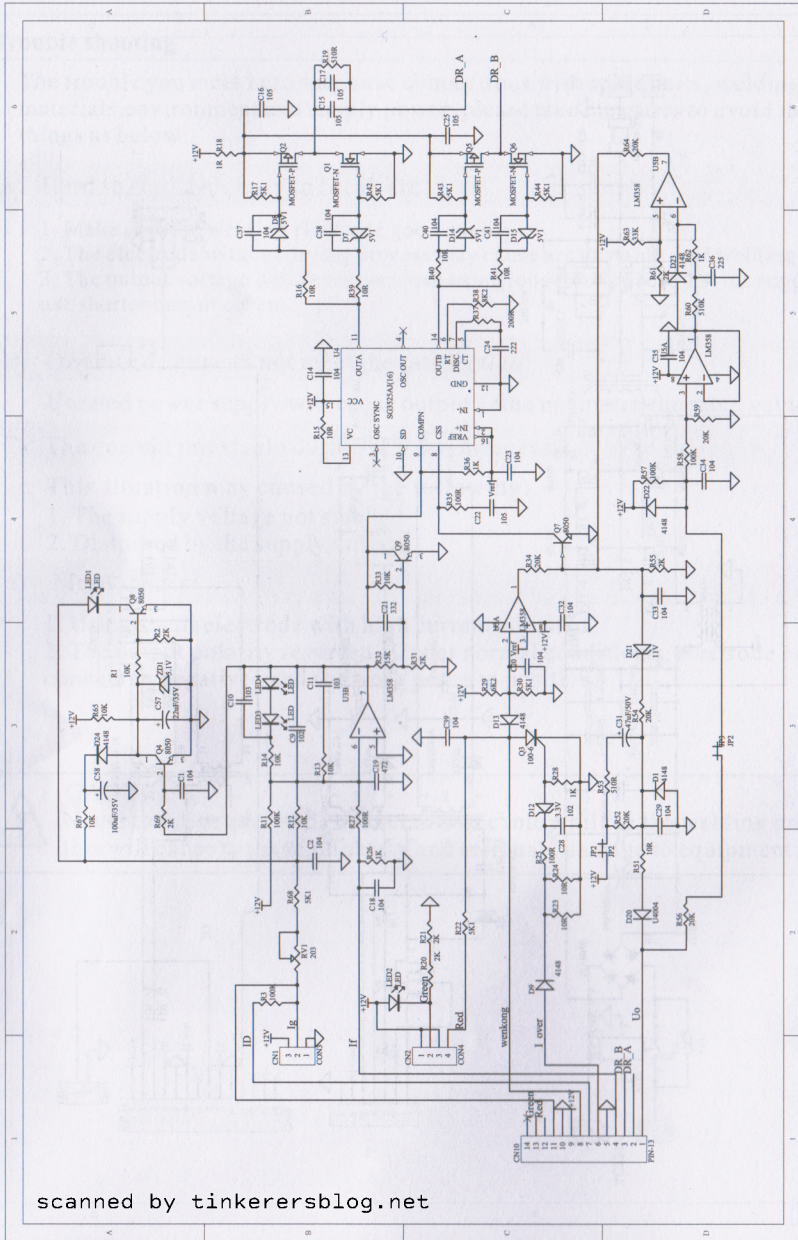
CAUTION:

Never touch or adjust the connection of cable while in the welding process, this will cause to personal safety and seriously damage to equipment.

Picture1: The Schematic of whole machine



Picture 2: The Schematic of control board



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Picture3 : Exploded Views

