



OWNER'S MANUAL

TIG-200

CONTENTS

1. Contents	1
2. Safety warning	2
3. Machine description	3
4. Technical parameters table	4
5. Installation instruction	5
6. Panel function instruction	6
7. Operation instruction	8
8. Notes or preventive measures	9
9. Questions to be run into during welding	10
10. Maintenance	11

SAFETY WARNING



On the process of welding or cutting, there will be possibility of injury, so 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.
- Forbidden to touch the bare electric parts and electrode with uncovered skin, wet gloves or clothes.
- Make sure you are insulated from the ground and the work piece.
- Make sure you are in safe position.

Gases and fumes—May be harmful to health!

- Keep your head out of the gases and fumes.
- When arc welding, ventilators or air extractors should be used to avoid breathing gases.

Arc rays—Harmful to your eyes, burn your skin.

- Wear suitable protective mask, light filter and protective garment to protect eyes and body.
- Prepare suitable protective mask or curtain to protect looker-on.

Fire

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

Noise—Excessive noises will be harmful to hearing .

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

Malfunction—When trouble happens, contact with authorized 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 the service center for professional help.



WARNING!

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

MACHINE DESCRIPTION

Welding machine is a rectifier adopting the most advanced inverter technology.

The development of welding equipment benefits from the appearance of the inverter power supply theory and components. Inverter arc welding power source utilizes high-power component MOSFET to transfer 50/60Hz frequency up to 100KHz, 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.

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.

TIG welding machine is easy for arc initiation and has the functions of arc initiation current, arc stop current, welding current, basic value current, current ascending time, current descending time, gas delay time, continuous adjustment. What's more, pulse frequency and pulse duty can also be adjusted independently. It has the characteristics of automatic control of arc initiation, arc stop and stable arc, which make the best result for shape and inner quality of the welding surface. Its exclusive design is specially suitable for bicycle industry.

The machine can be for multi-use, and can weld stainless steel, carbon steel, copper and other color metal, and also can use for traditional electric welding. Its transfer efficiency is above 85%.

Thanks for purchasing our products and looking forward to your precious advice, we will try our best to perfect our products and service



WARNING!

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

TECHNICAL PARAMETERS TABLE

Model Parameters	TIG-200
Power voltage(V)	1 phaseAC230V ±15%
frequency (Hz)	50/60
Rated input current (A)	16
No-load volt. (V)	55
Output current. (A)	10~200
Rated working volt. (V)	20
Duty cycle (%)	45
No-load loss (W)	60
Arcing way	HF
Efficiency (%)	80
Power factor	0.90
Insulation grade	H
Housing protection grade	IP21S
Dimensions (mm)	500×280×310

INSTALLATION INSTRUCTION

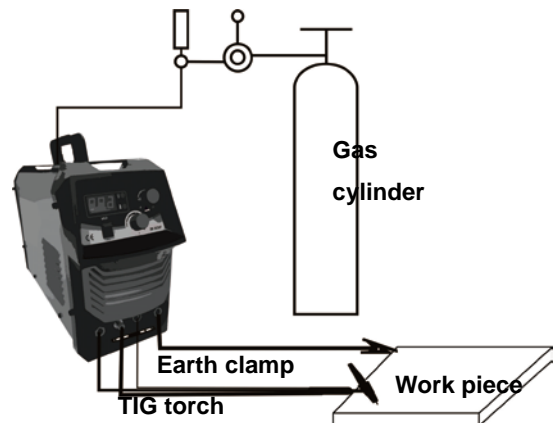
The machine is equipped with power voltage compensation equipment. When power voltage fluctuates

between $\pm 15\%$ of rated voltage, it still can work normally.

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

1. Make sure intake of the machine not blocked or covered, lest cooling system could not work.
2. Make good connection of shielded gas source. Gas supply passage includes cylinder, argon decompress flow meter and pipe. Connecting part of pipe should used hoop or other things to fasten, lest argon leaks out and air gets in.
3. Use inducting cable whose section is not less than 6 mm^2 to connect the housing to the ground. The way is from the ground-connecting screw at the back to the earth device.
4. Correctly connect the arc torch or holder according to the sketch. When use MMA welding: Make sure the cable, holder and fastening plug have been connected with the ground. Put the fastening plug into the fastening socket at the “-” terminal and fasten it clockwise. When use pulse arc welding: Put the gas-electricity plug of the welding gun to the joint at the front panel, and fasten clockwise. Put the air switch on the gun to the relevant joint at the front panel, and fasten the screw.
5. Put the fastening plug of the cable to fastening socket of “+” polarity at the front panel, fasten it clockwise, and the earth clamp at the other terminal clamps the work piece.
6. According to input voltage grade, connect power cable with power supply box of relevant voltage grade. Make sure so mistake and make sure the voltage difference among permission range. After the above job, installation is finished and welding is available.

TIG200 INSTALLATION :



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 FUNCTION INSTRUCTION

TIG-200 PANEL INSTRUCTION:



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

OPERATION INSTRUCTION

TIG WELDING DESCRIPTION

1. Turn on the power switch at the back panel, digital current meter is normal, fan begins to wheel.
2. Open the valve of argon cylinder, adjust the volume of flow meter and make it is adequate to welding.
3. Press switch of torch, electromagnetic valve is started. Sound of HF arc striking can be heard, at the same time argon is flowing from torch burner. NOTES: When welding is first operated, user must press switch of torch several seconds and begin to weld until all of air is be drained out. When welding is over, argon will still flow out in several seconds in order to protect welding spot before cooled down. So torch must be kept welding place some time before arc has been extinguished.
4. According to requirement to choose "Pulse choosing switch", "Down position" is no pulse; "Middle position" is IF pulse; "Upper position" is low frequency (0.5—2Hz), and adjust the "Pulse adjustment knob" to suitable pulse frequency.
5. According to the thickness and processing techniques of workpiece under welding, adjust current down slope time turnbutton .
6. Set suitable welding current and make sure welding current is adequate to thickness of work piece and process demand.
7. It is 2-4 mm from welding tungsten electrode to work piece, press control knob of torch, burn and strike arc, sound of HF arc-striking will be diminished, The welding machine can be operated now.

STICKING DESCRIPTION

1. Open power switch of front panel, fan is beginning to work.
2. Make sure function switch of front panel is on "down" position that is sticking. Impulse changeover switch and knob of current down-slope time will not work.
3. Make sure welding current is adequate to thickness of work piece.



WARNING:

During welding, it is forbidden to pull off any plug or cable in use, or it will lead to life-threatening danger and sever damage of the 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 and current and heat. When voltage and output current and temperature of machine are exceeding the rate standard, welding machine will stop working automatically. Because that will be damage to 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 block 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 in 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.

QUESTIONS TO BE RUN INTO DURING WELDING

Fittings, welding materials, environment factor, supply powers maybe have something to do with welding. User must try to improve welding environment.

A. Black welding spot

—Welding spot is not prevented from oxidizing .User may check as following :

1. Make sure the valve of argon cylinder is opened and its pressure is enough. argon cylinder must be filled up to enough pressure again if pressure of cylinder is be low 0.5Mpa .
2. Check if the flow meter is opened and has enough flow.User can choose different flow according to welding current in order to save gas.But too small flow maybe cause black welding spot because preventive gas is too short to cover welding spot.We suggest that flow of argon must be kept min 5L/min.
3. Check if torch is in block.
4. If gas circuit is not air-tight or gas is not pure can lower welding quality.
5. If air is flowing powerfully in welding environment,that can lower welding quality.

B. Arc-striking is difficult and easy to pause

1. Make sure quality of tungsten electrode is high .
2. Grind end of the tungsten electrode to taper,.If tungsten electrode is not grinded,that will be difficult to strike arc and cause unstable arc.

C. Output current not to rated value:

When power voltage departs from the rated value, it will make the output current not matched with rated value; When voltage is lower than rated value, the max output may lower than rated value.

D. Current is not stabilizing when machine is been operating:

It has something with factors as following :

1. Electric wire net voltage has been changed .
2. There is harmful interference from electric wire net or other equipment .

E. When use MMA welding,too much spatter.

1. Maybe current is too big and stick's diameter is too small;
2. Output terminal polarity connection is wrong, it should apply the opposite polarity at the normal technics, which means that the stick should be connected with the negative polarity of power source, and work piece should be connected with the positive polarity. So please change the polarity.

MAINTENANCE



CAUTION:

Before Maintenance and checking, power must be turned off, and before opening the housing,

make sure the power plug is pulled off..

1. Remove dust by dry and clean compressed air regularly, if welding machine is operating in environment where is polluted with smokes and pollution air, the machine need remove dust each month.
2. Pressure of compressed air must be inside the reasonable arrangement in order to prevent damaging to small components of inner-machine.
3. Check inner circuit of welding machine regularly and make sure the cable circuit is connected correctly and connectors are connected tightly (especially insert connector and components). If scale and loose are found, please give a good polish to them, then connect them again tightly.
4. Avoid water and steam enter into inner-machine,if them enter into machine,please dry inner-machine then check insulation of machine.
5. If welding machine will not be operated long time,it must be put into packing box and store in dry environment.

NOTES BEFORE CHECKING



WARNING

Blind experiment and careless repair may lead to more problem of the machine that will make formal check and repair more difficult. When the machine is electrified, the naked parts contain life-threatening voltage. Any direct and indirect touch will cause electric shock, and severe electric shock will lead to death.