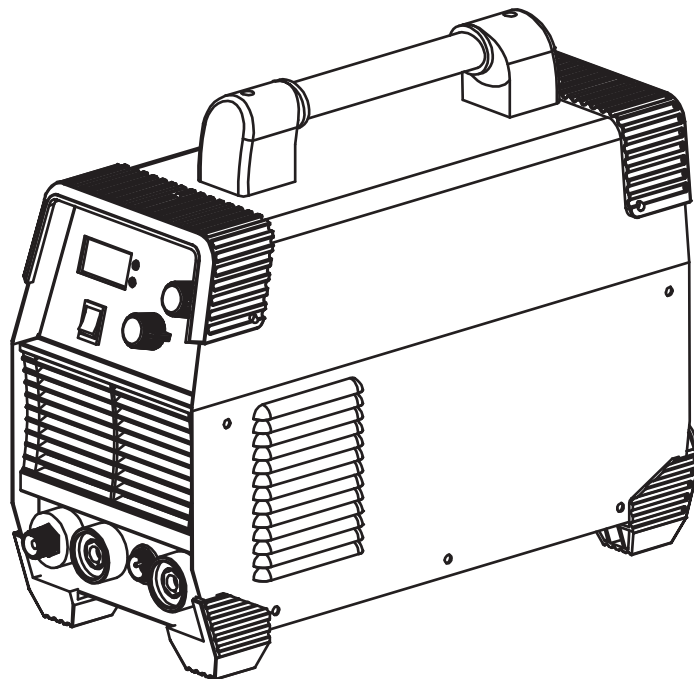


DC INVERTER TIG WELDER



OWNER'S MANUAL



SAVE THIS MANUAL FOR FUTURE REFERENCE

IMPORRANT SAFETY INSTRUCTIONS ARE INCLUDED IN THIS MANUAL

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Safety tips !



It may cause injury to you and others during the welding, please take good protection before welding.
For the details, please read the operator's guide.

Electric-shock: it would be fatal !

- Set the ground cable to the standard.
- No touching electric parts with the naked skin, wet hands or wet groves.
- Make sure that you and working place are under the insulated circumstances.
- Make sure that your working is in safety.

Smoke—may be harmful to your health.

- Keep your head away from the smoke.
- When welding, please keep the fresh air and avoid breathing in the smoke.

Arc-emission---may be harmful to your eyes and skin

- Wear suitable welding mask and clothes to protect your eyes and skin.
- Use suitable screen or curtain to keep the look-ups from the emission .
- The welding splash may cause fire, please ensure that there is no flammable things nearby the working place.

Noises—too much noise may be harmful to your hearing.

- Please wear something to protect your ears from the noises.
- Warn the look-ups of the hidden harm the noise may cause.

Break-down: ask the professional for help

- If you have any problems in setting up or operating, please first consult this manual.
- If you still can not understand after reading this manual, please contact your supplier or manufacturer to get professional help.



Warning !

Use electric leakage protection when using this machine!!!

About the machine

Products introduction.

★Advanced IGBT technology.

△High inverter frequency, reduce the weight and size of the machine obviously.

△Reduce the miss of copper and iron and improve the efficient obviously. Energy saving.

△Frequency of switch is out of the Audio frequency, almost eliminate the noise.

★Advanced control mode.

△Advanced control strategy. Improved the function of the machine obviously. Satisfied the welding technology.

△Widely adapt to acid and alkali welding rod.

△With the feature of easy argon arc starting, little spark,stable current etc.

★Futures of the MMA series welding machines.

△Efficient,energy saving,stable arc,easily control welding pool, high no-load voltage and well power compensation, widely used, can be used in high places and field working, decorations of indoor and outdoor. Comparing with the same products, it has some excellent features such as small volume,light,easy installation and operation.

★Beautiful shape and design.

△Very beautiful stream-lined structure.

△The former and back panel is made of hi-strength plastic, which make sure the machine work properly on the circumstances of impact and falling.

△Excellent insulating property.

Welcome to use our machine,and give us your valuable advice!



Warning !

This equipment is mainly used in the industry filed. It may Cause radio interference, preventive action should be taken by the operator.

Parameter graphic

Model Parameter	TIG-200	TIG-250	TIG-315
Input Voltage (V)	AC 220V±15%	AC 220V±15%	AC 380V±15%
Rectifying Way	IGBT	IGBT	IGBT
No-Load Voltage (V)	52	52	65
Output Current Adjustment (A) TIG	15-190A	15-190A	15-230A
Output Current Adjustment (A) MMA	30-180A	30-180A	30-220A
Rate Output Current(A) /Voltage(V) TIG	180A/17.2V	190A/17.6V	230A/19.2V
Rate Output Current(A) /Voltage(V) MMA	170A/26.8V	180A/27.2V	220A/28.8V
Gas Delay Adjustment (S)	0~5	0~5	0~5
Duty cycle (%)	60	60	60
ARC starting Way	Hi-frequency	Hi-frequency	Hi-frequency
Efficiency (%)	85	85	85
Power Factor	0.7	0.7	0.75
Insulation Level	H	H	H
Protection level	IP21S	IP21S	IP21S
Net Weight (kg)	9.5	10.5	14
Dimension (mm)	450*270*345	450*270*345	505*270*410

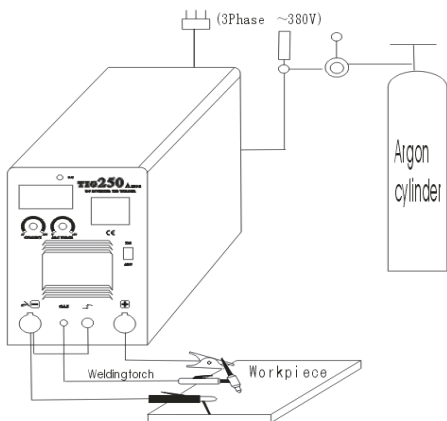
Installation Statements

This machine have the function of voltage compensation. It can work properly when the power change around 15% of the rated voltage.

In order to reduce the descent of voltage when using long wires, we advise you to use large cross-section wire. If the wire is too long,it may cause affection on the arc and other functions, so we advise you to use the recommended length of wire.

- 1.Make sure the vent opening is not covered and blocked.
- 2.Connecting the shell to the ground reliably with the wire which is the crossing-section more than 6mm^2 . Method:connect the grounding point at the back of the machine to the ground,or make sure the grounding point of the power is grounded reliably. In order to be more save,you can use those two methods at the same time.
- 3.Connect the welding clamp and earth wire correctly according to the picture below. Firstly make sure the wire connected to the welding clamp and the high speed plug reliably,then connect the high speed plug to the negative pole "-" socket . Turn the plug tightly clockwise.
- 4.when Using ARC function, you should Connect the high speed plug of return circuit to the positive pole "+" socket, Turn the plug tightly clock-wised,clip the work-piece with the clamp on the other side.
- 5.when Using TIG function, you should connect the integrated Gas and Current plug on the welding Gun to the interface on the front panel, Turn the plug tightly clock-wised. And the switchable plug on the welding gun must be plugged into the corresponding position tightly on the front panel.Please refer to the below picture.

(Installation chart for TIG250)



6.Be careful with the pole of the power! there are two ways to connect DC welding machine :straight polarity and reverse polarity;

Straight polarity:connect the weld holder to the negative pole,work-piece to the positive pole.

Reverse polarity:connect the weld holder to the positive pole,work-piece to the negative pole.

Select the way according to process requirements, if you select the connecting way incorrectly,it will cause unstable arc,big spark,stick welding etc. Once these phenomenon happened,please change the connecting pole.

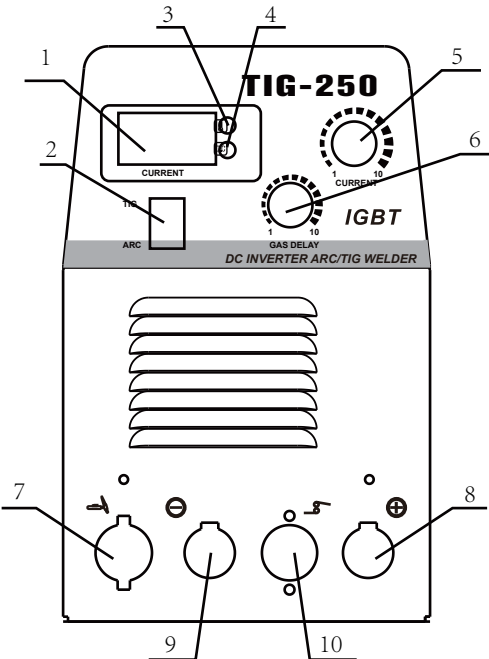
7.Connecting the corresponding distribution box according to the input voltage of the welding machine.Never input incorrect voltage.make sure the error of the voltage within bounds.



If the work-piece is too far away from the welding machine(50-100m),the secondary line (the weld wire and the earth wire) is much more longer. Under this circumstance,choose larger-cross section wire to reduce the voltage drop.

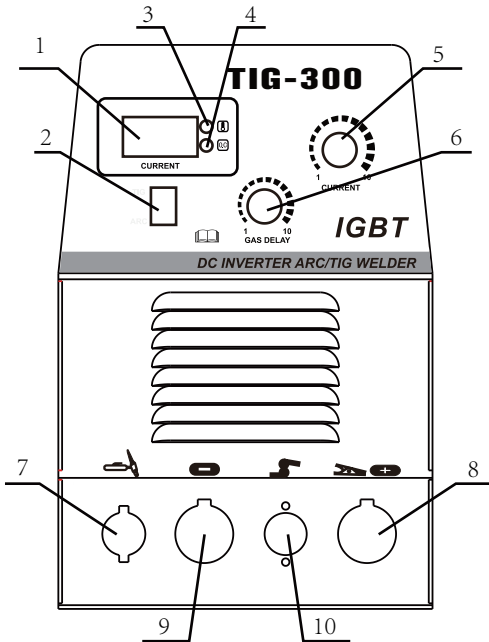
Operation

TIG200-/TIG-250 Panel shows



1	Current control button
2	Hand welding/argon arc selector switch
3	Overheat indicator light
4	Overcurrent indicator light
5	Welding current regulation
6	Thrust current regulation
7	Gas-electric integrated output terminal
8	Positive output terminal
9	Negative output end
10	Aviation socket

TIG-300 Panel shows



1	Current control button
2	Hand welding/argon arc selector switch
3	Overheat indicator light
4	Overcurrent indicator light
5	Welding current regulation
6	Thrust current regulation
7	Gas-electric integrated output terminal
8	Positive output terminal
9	Negative output end
10	Aviation socket

TIG Functions

1. Turn the power button on the front panel to the "on" position, the power indicator will be on, and the cooling fan will start to rotate.
2. Open the valve of the argon cylinder and adjust the gas flow to the rated standard (refer to the flow meter).
3. Press the switch on the torch and the solenoid valve will start. You will hear the sound of high-frequency spark discharge in the welding machine. At the same time, argon will flow out of the torch nozzle. Note: when welding for the first time, you need to press and hold the switch for several seconds before welding, until all the air in the air circuit is discharged, then welding can be started. After you stop welding, argon will still flow out in a few seconds, which is specially designed to ensure that the solder joints are still protected before cooling. Therefore, when using, the welding gun must be kept at the welding position for a period of time after the arc is extinguished.
4. According to the requirements of workpiece and welding, adjust the current attenuation time and adjust the twist.
5. Set the corresponding welding current according to the thickness of the welding workpiece.
6. Keep a distance of 2-4mm between the tungsten electrode and the welding workpiece, press the torch control switch, and a high-frequency discharge will be generated between the welding gun electrode and the workpiece; after the arc is ignited, the high-frequency arc starting spark in the welding machine will disappear immediately, and the welding will start.

ARC/MMA Functions

1. Turn the button to the position "on", the watch shows the current, the electric fan in the machine begins to work at the same time.
1. Use the suitable current and force according to the thickness of the work-piece, the diameter of the welding rod and the process requirements.
2. Clip the welding rod with the welding clamp, then the machine is in the state of MMA readiness for action.



Warning!

All of those operations should be taken on the condition of power off. The right order is: connect the welding wire and earth wire to the machine first, make sure they are reliable not loose, contact the power at last.

Attentions and preventive measures



1.Circumstances

- 1)The welding operation should be on a relative dry environment.The air humidity should not more than 90%.
- 2)The temperature should be during -10℃ to 40℃.
- 3)Avoid operating the machine in the rain or sunshine, avoid water entering the machine.
- 4)Do not operate machine in dust environment or aggressive gas environment.
- 5)Avoid shielding gas welding operation in the environment of strong air flow.

2.Safety

1. Make sure the working area is adequately ventilated .

Welding machine is light and its structure is compact .The electromagnetic fields generated by the high currents .So natural wind is not satisfy in cooling down components .there is axial-flow fan in inter-machine in order to force to cool down it .

2. No over-load !

Limited to welding current strictly according to max allowable current of all kinds of duty cycles . Do not exceed load working in order to prevent from shorting use lifetime of welding machine even burning up machine .

3. No over-voltage !

Power voltage of welding machine is listed on the main technical data-sheets .With the normal condition , automatic compensation circuit of voltage may ensure that welding current will not exceed to allowable volume . If power voltage is exceeded to the allowable volume, that may be damaged to components. Please more careful .

- 4 . There is a grounding screw behind machine and marked with ground. Before using, please must be connected reliably by cable with cross- section is more than 6 square millimeter, which release the static and prevent the accident happening.

5. If it is over the duty cycle when working, the machine will stop working and enter the state of protection. On this situation, the overheat temperature control switch would be started and make the machine stop working. The red light is on at the front panel,but still keep the fan running to make the machine cooling.when the red light is off,the temperature will be back to the standard range,then it can work again.

The might happen problem during welding.

This phenomenon listed below are related to the accessory ,the welding material,environment factor,power supply.please try to change the environment to stop those problem from happening.

A.Difficult arc starting, and easy to arc breaking.

- 1.Make sure the welding rod is in high quality. Bad quality welding rod can not reach the requirement of high quality welding.
- 2.The welding rod which is not drying treatment also not easy to start arc, and it may cause unstable arc.
- 3.It will cause the voltage drop if you use a longer wire,so we advise you to use shorten the length of the wire.

B.Output current can not reach the rated value.

The power voltage deviate from the rated value will cause the output current different from the adjusting

value;when the power voltage is lower than the rated value, the output current may also lower than the rated value.

C. The current is not stable when welding.

This may be related to those factors:

- 1.The voltage of power system is changed.
- 2.The interference from the power system and other electric equipment.

D.Large spark.

- 1.The current is adjusted too big, and the diameter of the rod is too small.
- 2.The pole of the output was reverse connection .Normally,connect the welding pole to the negative pole of the power, the work-piece connected to positive pole.please change the pole of power .

Maintenance

- 1).Clear the dust at regular intervals with clean and dry compressed air; if the working condition have heavy smoke and pollution , the welding machine should be cleaned once a month.
- 2).The compressed air should be reduced to the required pressure lest the little parts in the welding machine be damaged.
- 3).Check whether the inner gas-electricity connection is well (esp. the plugs) , and tighten the loose connection; if there is oxidization ,remove it with sand paper and then re-connect.
- 4).To avoid water and rain , if there is ,dry it in time, and check the insulation with megameter (including that between the connection and that between the case and the connection) .Only when there is no abnormal phenomena can make the welding continued.
- 5).If the machine is not used for long time , put it into the original packing in dry condition.

Trouble shooting



Attention:the operator must have electrical Professional knowledge and safety knowledge,the operator should have the certifications to prove his knowledge and ability.Before overhaul, we advise you to contact us and get permission from us.

Trouble shooting

2、 TIG200,250,300 Trouble and Remedy.

Power indicator and the fan is not working, there is no welding output .	1.Make sure Air switch is closed and completed. 2.Make sure electrify wire net(which is connected to input cable) is working. 3.The thermal impedance is broken 4.Power supply meets the trouble. 5.The assisted power supply meets trouble.
Fan is working, but the indication light doesn't work, no	1、 Check the any of cables are touching failed or not . 2、 If the control circuitry has problem,please contact the dealer.

rustle when hi-frequency working and no arc started.	3、 The control cables on the welding gun are broken.
Fan is working ,welding current is not stable or out of potential control of the potentiometer.	<ol style="list-style-type: none"> 1. The welding gun's cable is broken. 2. Check the ground cable is broken or untouched the accessories or not. 3. The positive output port or power output port are loosen.
Fan is working, abnormal indicator light is not on ,no rustle when hi-frequency working,but arc started.	<ol style="list-style-type: none"> 1. The primary line of the arc striking transformer is in poor contact with the arc striking plate, and it shall be tightened again. 2. If the discharge nozzle is oxidized or remote, handle the oxide film on the surface of the discharge nozzle or adjust the distance of the discharge nozzle to about 1mm. 3. The change-over switch of manual welding / argon welding is damaged and replaced. 4. If some parts of high frequency arc striking circuit are damaged, find and replace them.
Fan is working and abnormal indicator is not on ,but there is no welding output .	<ol style="list-style-type: none"> 1. Maybe over-current protection is working ,please turn off the machine and wait until the abnormal indicator is off , reboot the machine . 2. Maybe overheated protection is working ,wait for 5-10minutes.the machine will recover. 3. Maybe there is something wrong with the inverter circuit: 1)Please pull out the power plug of main transformer(near the fan VH-07) which is on MOS board then open the machine again. (1) If the abnormal indicator is still on ,some of MOS board is damaged ,please check and replace it . (2) If the abnormal indicator is not on : <ol style="list-style-type: none"> a. Maybe transformer of middle board is damaged ,measure primary inductance volume and Q volume of main transformer by inductance bridge . b. Maybe some of secondary rectifier tube of transformer is broken ,check and replace rectifier tube . 4.Maybe feedback circuit is in fault .
Welding current is not large enough, current regulation is out of control.	<ol style="list-style-type: none"> 1. If the secondary line is too long or too thin, shorten or increase the cross-sectional area as much as possible. 2. The potentiometer for current regulation may also be damaged.

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