



[www.hydrabond.com](http://www.hydrabond.com)

Input Power

120V, 20 A, 50/60 Hz, single -phase

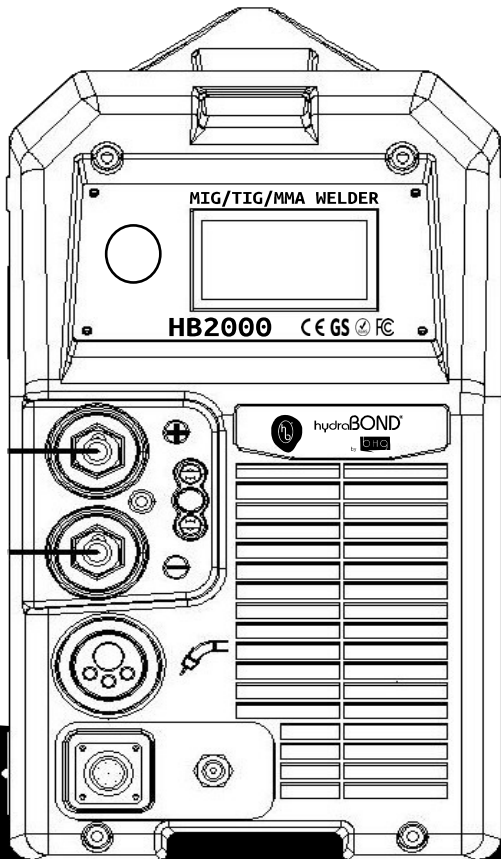
230V, 18 A, 50/60 Hz, single -phase

Multiprocess Welding

**+** Processes!

- MIG (GMAW)
- Flux-Cored (FCAW)
- DC TIG (GTAW)
- DC Stick (SMAW)

Arc Welding, Power Source, Wire Feeder



hydraBOND®

HB2000<sub>by</sub> OHQ

# Owner's Manual

**IMPORTANT:** Read this Owner's Manual Completely before attempting to use this equipment. Save this manual and keep it handy for quick reference. Pay particular attention to the safety instructions we have provided for your protection. Contact your distributor if you do not fully understand this manual.



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### IMPORTANT!!!

READ THIS MANUAL CAREFULLY BEFORE INSTALLING, USING OR PERFORMING ANY FORM OF MAINTENANCE ON THE MACHINE, PAYING SPECIAL ATTENTION TO THE SAFETY REGULATIONS. CONTACT YOUR DISTRIBUTOR IF YOU DO NOT FULLY UNDERSTAND THESE INSTRUCTIONS.

### INTRODUCTION

This equipment must be used solely for welding operations.

We urge you to pay especially close attention to the chapter on safety precautions.

This manual must be carefully stored in a place familiar to everyone involved with the machine. It must be consulted whenever doubts arise and accompany the machine throughout its operative lifespan. It shall also serve as a reference for ordering spare parts.



#### **WARNING!**

In the arc welding and cutting process, may take damages for your body and others, please make necessary protection.

Details please refer to the operation safety guidelines that comply with the requirements of the manufacturer accident prevention.

## SUMMARY SAFETY PRECAUTIONS

### ELECTRIC SHOCK



• **Disconnect the power cord from the mains before working on the cables or opening the machine.**

- Never touch live parts
- Never use the machine without the safety guards.
- Insulate yourself from the part to be cut/welded and from the earth by wearing insulating gloves and clothing.
- Keep all clothing (gloves, shoes, headgear) and your body dry at all times.
- Do not work in damp or humid environments
- Should you notice even the slightest sensation of electric shock, stop cutting/welding immediately. Do not use the equipment again until the problem has been identified and resolved.
- Include an automatic wall switch of adequate capacity placed near the equipment, to allow it to be shut off immediately in case of emergency.
- Inspect the power cord, torch cable, grounding cable and the torch itself often. Never use the machine if any of these parts are damaged.
- Make sure the power supply line is fitted with an efficient grounding socket.
- Plasma cutting equipment requires dangerous voltages to strike the arc (approximately 250/350 V DC). It is therefore recommended to take the following precautions during use.
- Never disable the safety devices on the torch and machine.
- If using the system for plasma cutting, always turn off the machine before replacing the nozzle, isolating diffuser, electrode or nozzle holder.
- **Only screw the nozzle holder onto the head with the electrode, the isolating diffuser and the nozzle mounted. If these parts are not present, the machine will not function properly and operator safety will be endangered.**

### RADIATION



• The ultraviolet radiation emitted by the arc may harm eyes and burn the skin; it is therefore recommended to wear the appropriate safety garments and masks.

- Protect anyone around the cutting/welding area. The arc is hazardous to a distance of up to 15 meters.
  - Never look at the arc with your bare eyes!
  - Prepare the cutting/welding area to reduce the reflection and transmission of ultraviolet radiation by painting the walls and other exposed surfaces black to decrease reflections, and installing protective screens or curtains to reduce transmitting ultraviolet rays.
  - Do not wear contact lenses! The intense heat issued by the arc could melt them to the cornea.
- The shields and helmet masks provided are in compliance with the European directive 89/686/CEE and satisfy European requirements and standards. For your protection, read all of the enclosed information carefully before using the screens and masks. This information forms an integral part of directive 89/686/CEE, enclosed in paragraph 1.4.
- Make sure that the shield filter strength is appropriate to the tasks to be carried out. This filter strength is indicated by a progressive number that must be chosen based on the task to be carried out.

The HB2000 multifunction welding unit (PFC)

### FUMES



Cutting and welding produce hazardous fumes and metal dust that may be hazardous to your health. Therefore:

- Work only in adequately ventilated areas.
- Keep your head away from fumes.
- Use adequate ventilation systems in closed areas.
- Use approved respirators if the ventilation is not deemed adequate.
- Clean the material to be cut/welded if any solvents or halogen degreasers are present that may create toxic gases during cutting/welding. Some chlorinated solvents may decompose in the presence of the radiation emitted by the arc, and generate phosgene gases.
- Never cut/weld where solvent fumes are present or if the radiant energy can penetrate atmospheres containing even the slightest traces of trichloroethylene or perchloroethylene.
- Never cut/weld coated metals or those containing lead, graphite, cadmium, zinc, chrome, mercury or beryllium if you are not using an adequate respirator.
- The electric arc generates ozone. Prolonged exposure to atmospheres containing high concentrations of ozone may cause headaches, nasal, throat, and eye irritation, serious congestion and chest pains.
- **IMPORTANT: NEVER USE OXYGEN FOR VENTILATION PURPOSES.**

### FIRE



Avoid producing fire due to sparks and hot scraps or incandescent pieces.

- Make sure that appropriate fire-fighting devices are available near the cutting/welding area.
- Remove all flammable and combustible materials from the cutting/welding area and its vicinity (at least 10 meters).
- Do not cut/weld on fuel and lubricate containers, even if empty. They must be cleaned thoroughly before being cut/welded.
- Let the cut/welded material cool before touching it or placing it in contact with combustible or flammable material.
- Do not operate in atmospheres having high concentrations of combustible fumes or flammable gases and dusts.
- Always check the work area half an hour after cutting to make sure no fires have started.
- Never keep combustible items such as cigarette lighters or matches in your pocket.

### EXPLOSIONS



- Never cut/weld above or near containers under pressure.
  - Never cut/weld in atmospheres containing explosive dust, gases or fumes.
- Plasma cutting machines run on compressed air. Take the appropriate precautions if the air is drawn from cylinders. Welding/cutting machines use gases such as CO<sub>2</sub>, ARGON, or blends of ARGON + CO<sub>2</sub> to protect the arc; you must therefore take the utmost care with:

### PACEMAKERS

Magnetic fields caused by high currents may affect the operation of pacemakers. Wearers of any vital electronic equipment (pacemakers) must consult their physician before performing arc welding, cutting, descaling or spot welding.

visit our webpage at [www.hydrabond.com](http://www.hydrabond.com)

## SUMMARY SAFETY PRECAUTIONS - continued

### FUMES



Cutting and welding produce hazardous fumes and metal dust that may be hazardous to your health.

Therefore:

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- Keep your head away from fumes.
- Use adequate ventilation systems in closed areas.
- Use approved respirators if the ventilation is not deemed adequate.
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- Never cut/weld where solvent fumes are present or if the radiant energy can penetrate atmospheres containing even the slightest traces of trichloroethylene or perchloroethylene.
- Never cut/weld coated metals or those containing lead, graphite, cadmium, zinc, chrome, mercury or beryllium if you are not using an adequate respirator.
- The electric arc generates ozone. Prolonged exposure to atmospheres containing high concentrations of ozone may cause headaches, nasal, throat, and eye irritation, serious congestion and chest pains.
- **IMPORTANT: NEVER USE OXYGEN FOR VENTILATION PURPOSES.**

### BURNS

- Protect your skin against burns from the ultraviolet radiation emitted by the arc, sparks and scraps of molten metal by wearing fireproof clothing that covers all exposed body surfaces.
- Wear protective welder's garments/gloves, headgear and high-top shoes with reinforced toes. Button your shirt collar and pocket flaps, and wear trousers without cuffs to prevent scraps and sparks from falling in them.
- Avoid oily or greasy garments. A single spark could set them on fire.
- Incandescent metal parts such as pieces of electrode and the workpiece must always be handled with gloves.
- First aid equipment and a qualified person must be available for each working shift, unless there are health facilities nearby for the emergency treatment of eye or skin burns.
- Use earplugs when working overhead or in a small space. Use a helmet when others are working above you.
- People getting ready to weld/cut must not use flammable hair products.
- Wait for the torch to cool, then turn the machine off before touching the front part of the torch.
- Plasma cutting machines have a pilot arc, thus the arc strikes as soon as the torch trigger is pressed, even when the earth cable is disconnected. You must therefore avoid aiming the jet towards your body or towards the people present in the cutting area.
- When you are finished cutting, always hang the torch on the hook provided and turn off the machine to avoid accidentally striking the plasma arc.

### NOISE



This machine does not in itself produce noise above 80 dB. The plasma cutting/welding procedure may produce noise levels above that limit; users must therefore take all precautions required by law.

### FIRE



Avoid producing fire due to sparks and hot scraps or incandescent pieces.

- Make sure that appropriate fire-fighting devices are available near the cutting/welding area.
- Remove all flammable and combustible materials from the cutting/welding area and its vicinity (at least 10 meters).
- Do not cut/weld on fuel and lubricate containers, even if empty. They must be cleaned thoroughly before being cut/welded.
- Let the cut/welded material cool before touching it or placing it in contact with combustible or flammable material.
- Do not operate in atmospheres having high concentrations of combustible fumes or flammable gases and dusts.
- Always check the work area half an hour after cutting to make sure no fires have started.
- Never keep combustible items such as cigarette lighters or matches in your pocket.

### Cylinders

- Large gas leaks may dangerously affect the concentration of oxygen.
- Never connect the cylinder directly to the machine: use a pressure regulator.
- The intake pressure must never exceed 6 bar (0.6 MPa) for plasma cutting machines, and 4 bar (0.4 MPa) for cutting/welding machines.
- Always observe current regulations when handling or using cylinders under pressure.
- Never use cylinders that leak or have been physically damaged.
- Always fasten the cylinders in place.
- Never move cylinders without protecting the valve.
- Use only cylinders whose contents have been clearly identified.
- Never use oil or grease to lubricate cylinder valves.
- Never place the plasma or welding arc in electrical contact with the cylinder.
- Never expose the cylinders to excessive heat (greater than 50°C), sparks, molten scraps or flames.
- Never tamper with the cylinder valves.
- Never try to release jammed valves with hammers, wrenches or other means.
- Never erase or alter the name, number or other markings on the cylinders. This is both illegal and dangerous.
- Never lift the cylinders off the ground by grasping the valve or cap, or by using chains, harnesses or magnets.
- Refill the cylinders at authorized centers only.
- The cylinder fittings must never be changed or switched.

### Pressure regulators

- Keep pressure regulators in good condition.
- Never use a regulator that leaks or appears physically damaged.
- Never use oil or grease to lubricate a regulator.

### Air/gas hoses

- Replace any hoses that appear damaged.
- Keep hoses stretched taut to avoid creasing.
- Keep any excess hose coiled and away from the work area to prevent it from being damaged.

**Malfunction** – If you encounter difficulties, seek professional for help!

- If you meet difficulties during the installation and operation, please check through the manual.
- If you still don't understand after reading the manual, or can't solve the problems according to the manual, please contact with the supplier or our service center immediately and seek professional help.

**HB2000 multifunction welding unit (PFC)** are inverter welders which adopt the latest insulated gate bipolar transistor (IGBT) technology. The working principle is to use the big mains switch device single tube IGBT (inverter frequency can be up to 50 KHz), will naked 50 Hz / 60 Hz power frequency rectified into DC then inverter again for high frequency and step-down rectifier, through the pulse width modulation (PWM) technology for welding output with high power DC power supply.

As a result of the switch power inverter technology, the weight of the welding machine and volume dropped substantially, the conversion efficiency increased by more than 30%.

**HB2000 multifunction welding unit (PFC)** will do the best to fill your gas shielded welding demand and increases

the welding function of MMA and TIG. Using digital liquid crystal display (LCD) panel, it realize the wire feeding speed and independent adjustment of welding voltage, easily adjust the welding parameters. During using gas shielded welding, it adopt unique electronic reactor circuit, precisely control the short-circuit transition and mixed transition of welding process, make it has the excellent welding characteristics. Compared with silicon controlled welding machine and tapped welding machine, it has the following advantages: wire feeding speed stable, light and energy saving, no electromagnetic noise. Also has little splash, good arc force, molten pool and high duty cycle characters.

**The HB2000 multifunction welding unit (PFC)** equipment is portable multi-function machine, suitable for home users and professional users. It has high efficiency, electricity saving and other advantages, is suitable for various kinds requirements of metal welding.

Welcome to use our products, and put forward valuable suggestions, we are committed to serve you best products and services.



**WARNING!**

This welding machine is mainly used for industrial applications in a controlled environment, it may cause radio interference, the user should take sufficient protection and the necessary measures.

### 3 TECHNICAL PARAMETERS

Model	HB2000 multifunction welding unit (PFC)					
	MMA	TIG	MIG	MMA	TIG	MIG
Power voltage ( V )	Single phase AC110/120			Single phase AC230/240		
Frequency ( Hz )	50/60			50/60		
No load voltage ( V )	67			67		
Rated current range (A)	10-125	10-140	10-140	10-200	10-200	10-200
Rated input current (A)	21.3	16.2	20.7	18.1	12.9	15.4
Output voltage (V)	20.4-25	10.4-15.6	10-23	20.4-28	10.4-18	10-26
Duty cycle ( % ) 40°C 10min	35%	40%	35%	35%	40%	35%
Efficiency	0.8	0.8	0.8	0.8	0.8	0.8
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Wire feeder type			AIO			AIO
Speed of Wire feeder (m/min ) (Inches /minute)			2.7-14.4 <b>106-566"</b>			2.7-14.4 <b>106-566"</b>
Electrode diameter ( mm ) inches			0.6/0.8/1.0 <b>.023/.030/.40 "</b>			0.6/0.8/1.0 <b>.023/.030/.40 "</b>
Insulation class	F			F		
Protection class	IP23S			IP23S		
Thickness of Plate ( mm ) Gauge	0.8↑ <b>20</b>			0.8↑ <b>20</b>		
Weight ( Kg ) (lbs)	15 kg <b>33 lbs</b>			15 kg <b>33 lbs</b>		
Dimensions ( mm ) ( inches)	439×214×405 mm ( 17.29"x8.43"x15.9")			439×214×405 mm ( 17.29"x8.43"x15.9")		

## 4 INSTALLATION INSTRUCTIONS

### PLACEMENT

Install the control panel, following the corresponding instructions. The welding machine must be placed in a sufficiently ventilated, non-dusty area, taking care not to obstruct the air entering or leaving the cooling slots.

**WARNING: REDUCED AIR FLOW** causes the internal parts to overheat and may damage them.

- Keep at least 200 mm of free space all around the machine.
- Never connect any filtering device to the air intake passages of this welding machine. Use of any type of filtering device shall immediately void the warranty.

Only skilled personnel should install the machine.

The electrical installation must be carried out according to the appropriate regulations. Connections must be carried out according to current regulations, and in full observance of safety laws (standard CEI 26-10 - CENELEC HD 427) (e.g. cable cross-sections, fuses, PE connection). More detailed information is included in the documentation.

### GENERAL NOTES

Before using this welding machine, carefully read the standards CEI 26/9 - CENELEC HD 407 and CEI 26.11 - CENELEC HD 433. Also make sure the insulation of the cables, electrode clamps, sockets and plugs are intact, and that the size and length of the welding cables are compatible with the current used.

#### Duty cycle percentage

The duty cycle expresses the percentage of 10 minutes during which the welding machine may run at a certain current without overheating.

**MMA** Suitable for welding with covered electrodes.

**TIG** Suitable for TIG welding.

**MIG** Suitable for MIG welding.

Our welding machine is equipped with the network voltage compensation device, when the network voltage changes in the range of 15%, it still can continue to work.

When using a long cable, in order to reduce voltage drop, suggest choosing larger cross-section cable; if the connection cable is too long, may make greater effect on arc start and other functions. So we suggest you use the recommended length.

1. Confirm the air-vent of welding machine is not covered and blocked, lest the cooling system failure.
2. Connect the case with wires; the conductive sectional area of wire should not less than 6 mm<sup>2</sup>. The Method is connecting from the back of the grounding screw with ground device, or confirms power socket is single-handed with grounding. In order to ensure the safety, you also can use two methods at the same time.

#### Installation steps:

##### A. The correct installation method of gas shielded welding (MIG), as the chart 1

- 1) Make the cylinder that equipped with carbon dioxide gas pressure flow meter and the inlet hole behind the machine closely docking by gas tube.
- 2) Insert the quick plug of earth wire into the corresponding socket of front panel.
- 3) Install the wire tray into the frame shaft of wire machine; the hole of wire tray should aim at the fixed blot of

frame shaft.

- 4) Choose different wire feeding trough based on the electrode diameter.
- 5) Loosen nuts of pressure wire wheel, send the wire into the slot by filar guide tube, adjust the wire wheel to clamp the wire, and ensure the welding wire won't slip, but the pressure can not be too big, prevent the wire deformation effecting feeding wire.
- 6) The welding wire tray releases the welding wire by clockwise move. In order to prevent welding wire loose, usually cross the new welding wire tray head in fixed holes. To prevent the bending wires are locked, please cut this part when using.
- 7) Insert the welding gun in the output socket and tighten, and cross the wire into the gun.

**B. The correct installation method of argon arc welding (LIFT TIG), as chart 2:**

- 1) Make the cylinder that equipped with argon gas pressure flow meter and the inlet hole behind the machine closely docking by gas tube.
- 2) Insert the quick plug of TIG gun in the corresponding "-"polarity socket of front panel, and screw as clockwise.
- 3) Insert aviation plug in the corresponding interface of the panel and tighten the screw.
- 4) Insert the quick plug of earth clamp in the corresponding "+"polarity socket of front panel and screw as clockwise, use the other end of the earth clamps clamp the workpiece.

**C. The correct installation method of STICK, as chart 3:**

- 1) First confirm that cable and the electrode holder and quick plug are connected, then insert quick plug in "-"polarity fast socket, and screw as clockwise.
- 2) Insert quick plug of loop cable in "+" polarity fast socket, and screw as clockwise, the other end of the ground clamps clamp workpiece.
- 3) Pay attention to the polarity of the wiring, the connection modes of DC welder have two kinds: negative polarity and positive polarity connect methods. Negative polarity: Welding clamps connect positive polarity and workpiece connect negative polarity; Positive polarity: workpiece connect positive polarity and Welding clamps connect negative polarity.
- 4) It depends on the welding requirements, if you make improper selection, the arc will be unstable, big splash and article stick. Encounter the situation you can swipe the quick plug to change polarity. When using Alkaline welding rod welding, you should adopt DC reverse connect method; And for Acid electrode welding, you should adopt when DC straight connect method.
- 5) According to the input voltage and current (see technology parameter table) use proper power cables to connect the distribution box the corresponding capacity, do not connect wrong voltage, and ensure that the power supply voltage error within permitted range.





**WARNING!**

**This step must be operated by electrician!**

Only skilled personnel should install the machine.

Connections must be carried out according to current regulations, and in full observance of safety laws (standard CEI 26-10 - CENELEC HD 427)

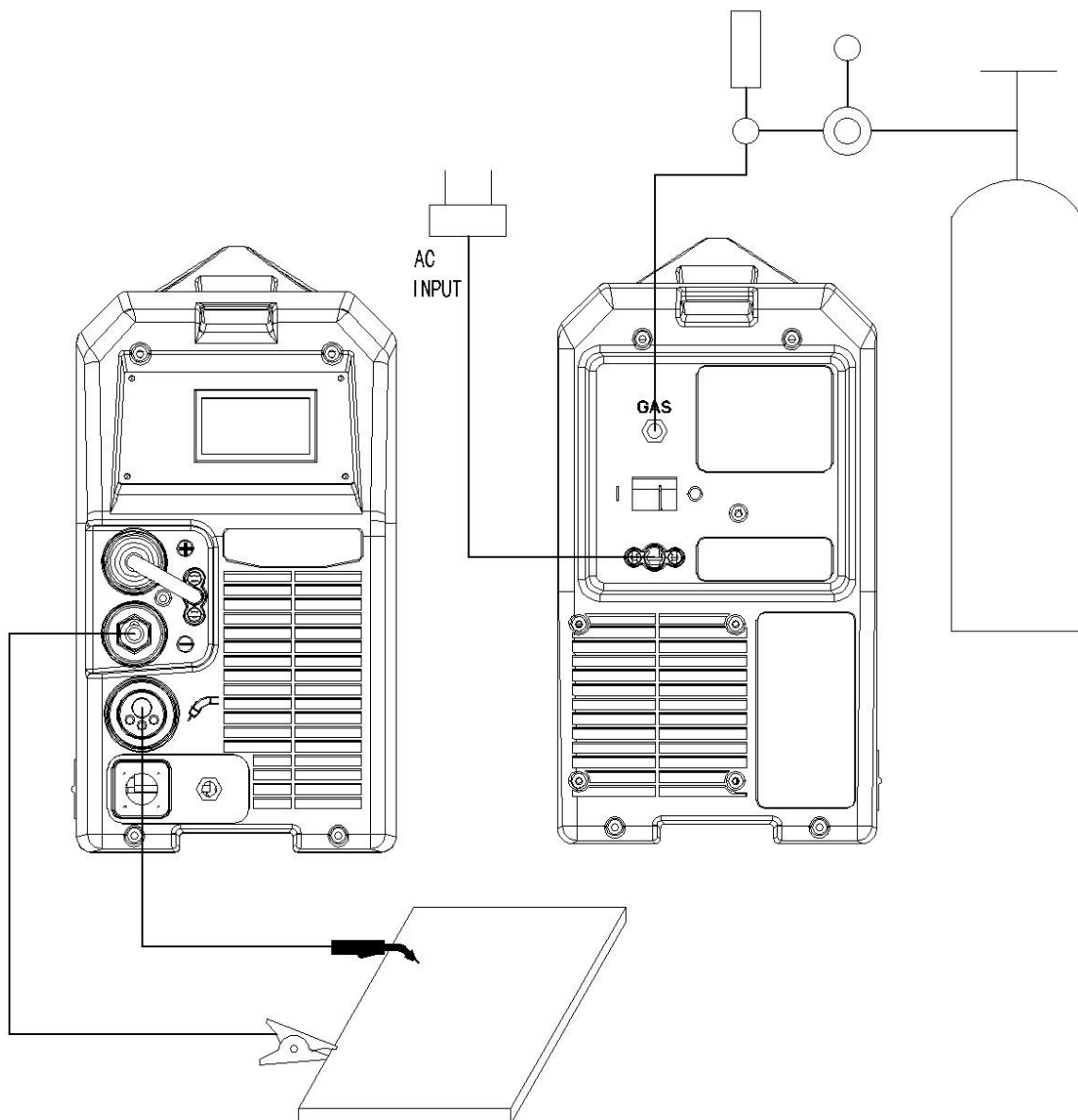


Chart 1-1 MIG Installation sheet



**WARNING!**

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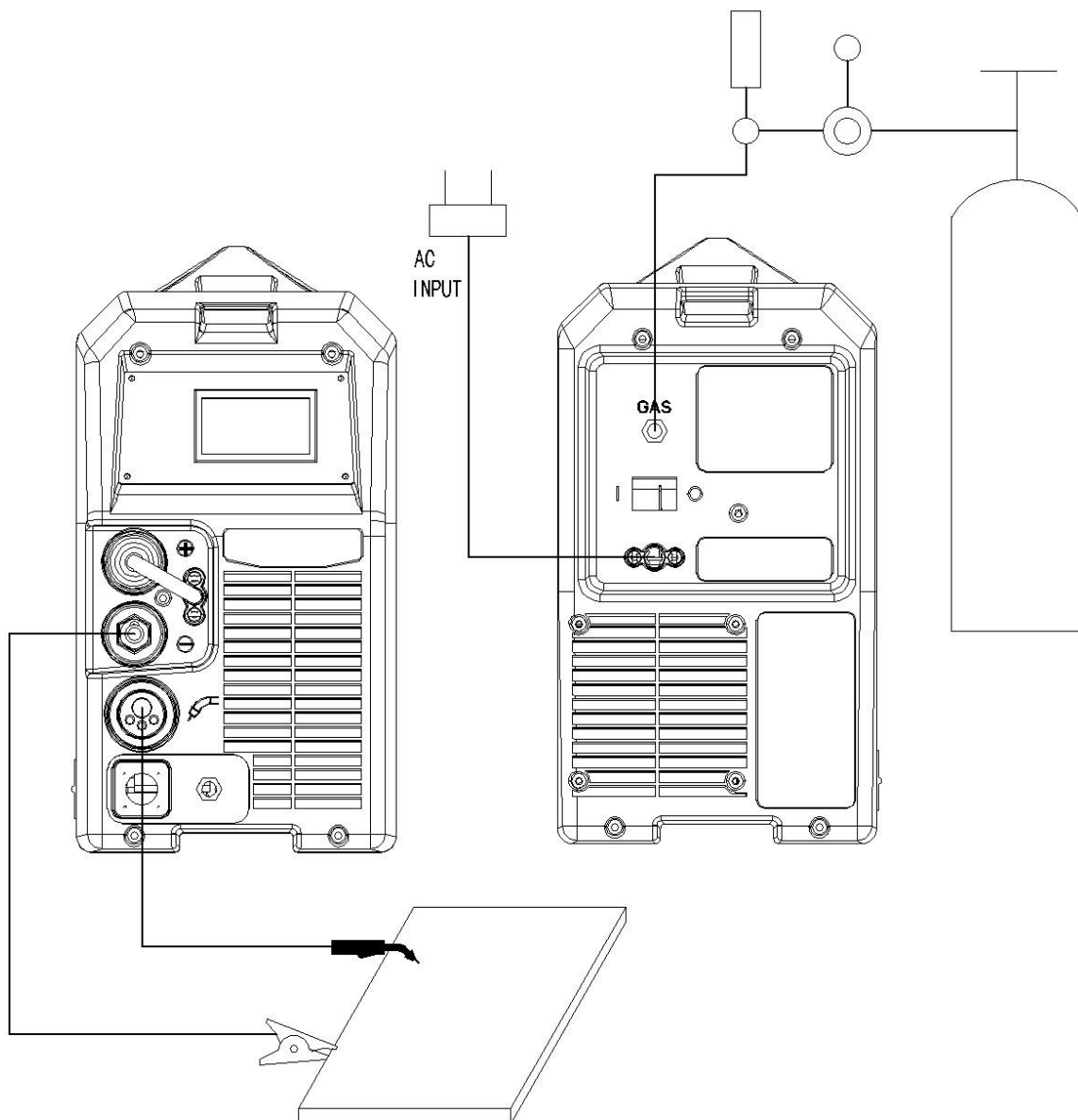


Chart 1-1 MIG Installation sheet

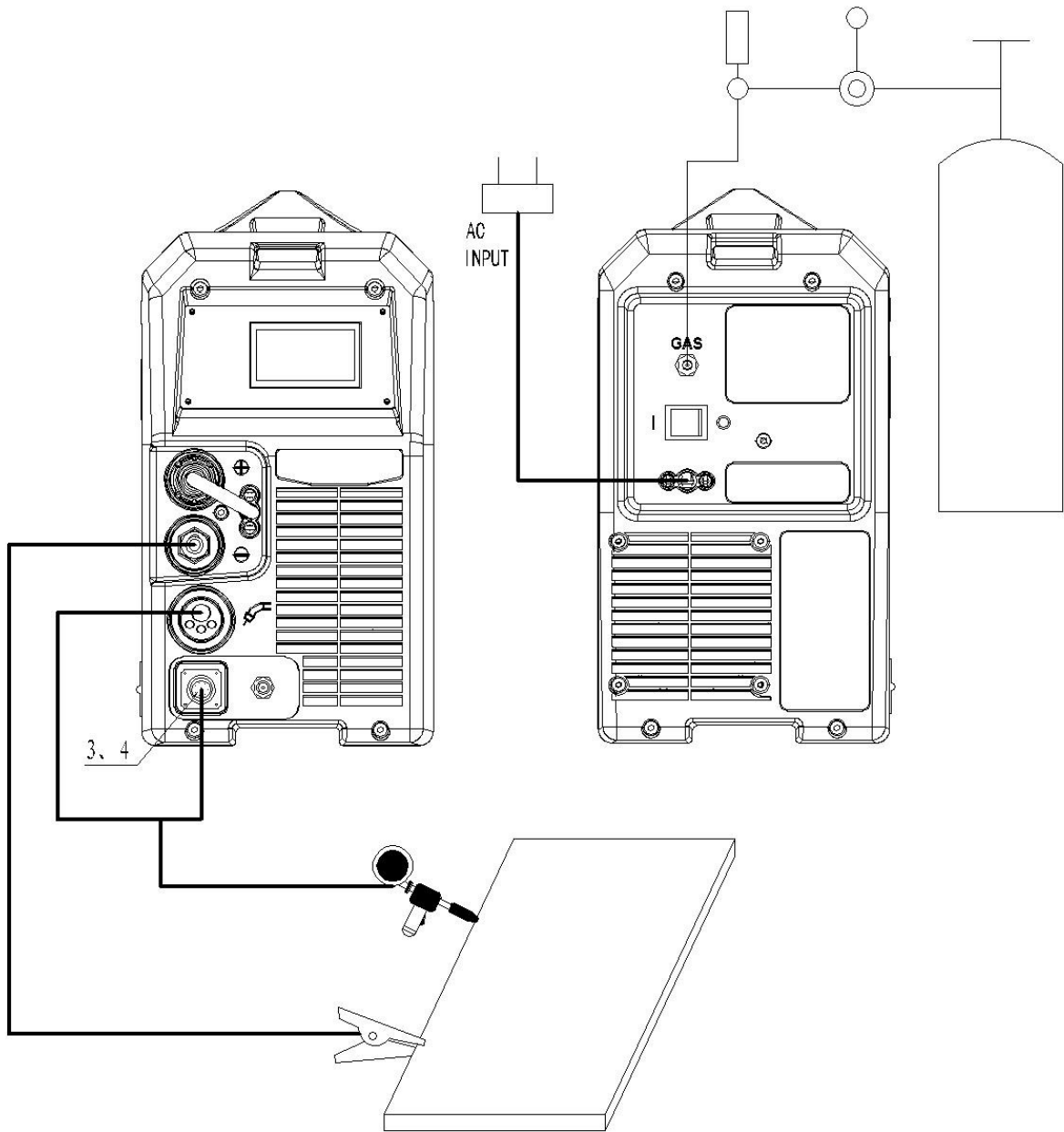


Chart 2-2 MIG Installation sheet

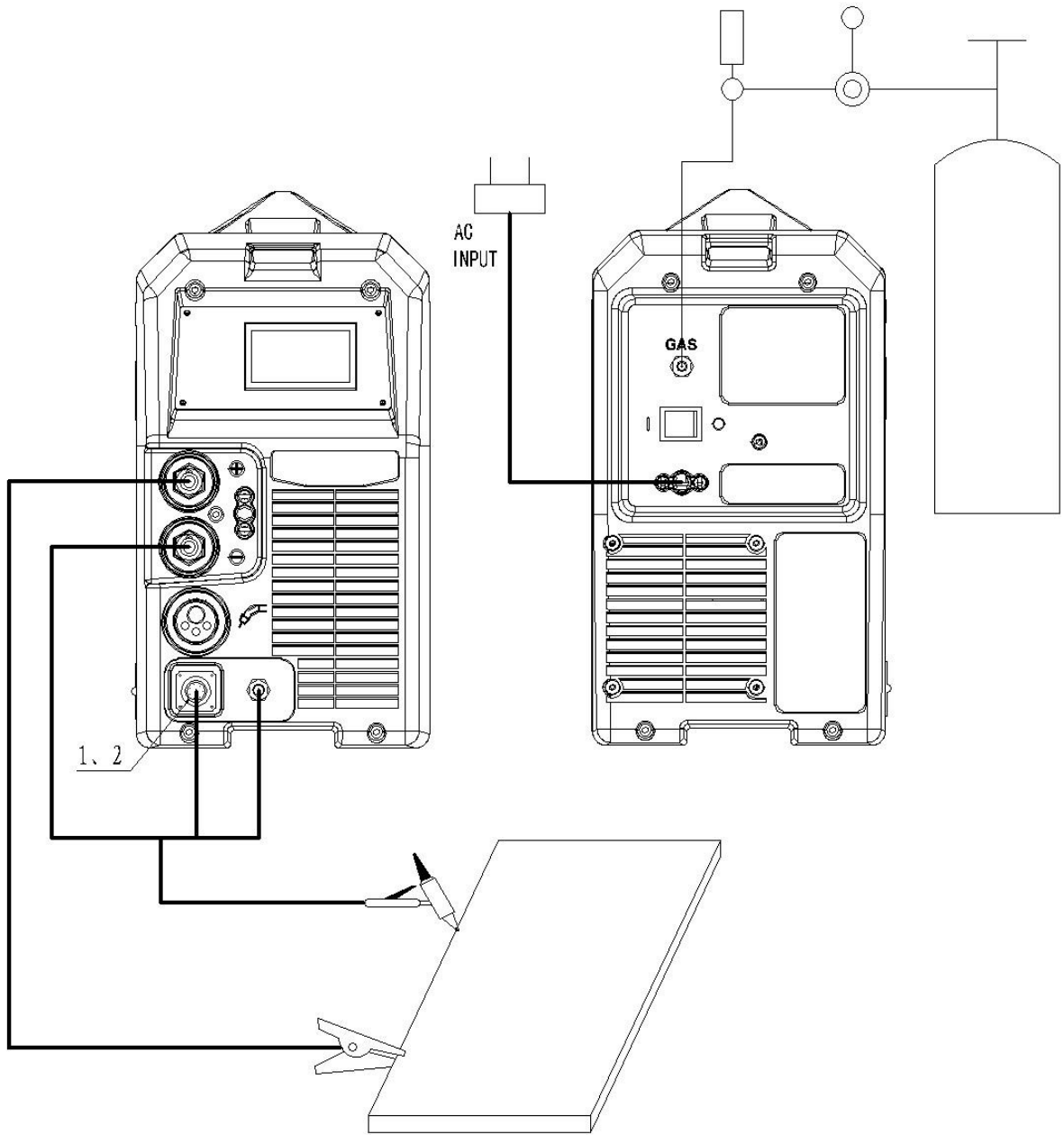


Chart 3 TIG Installation sheet

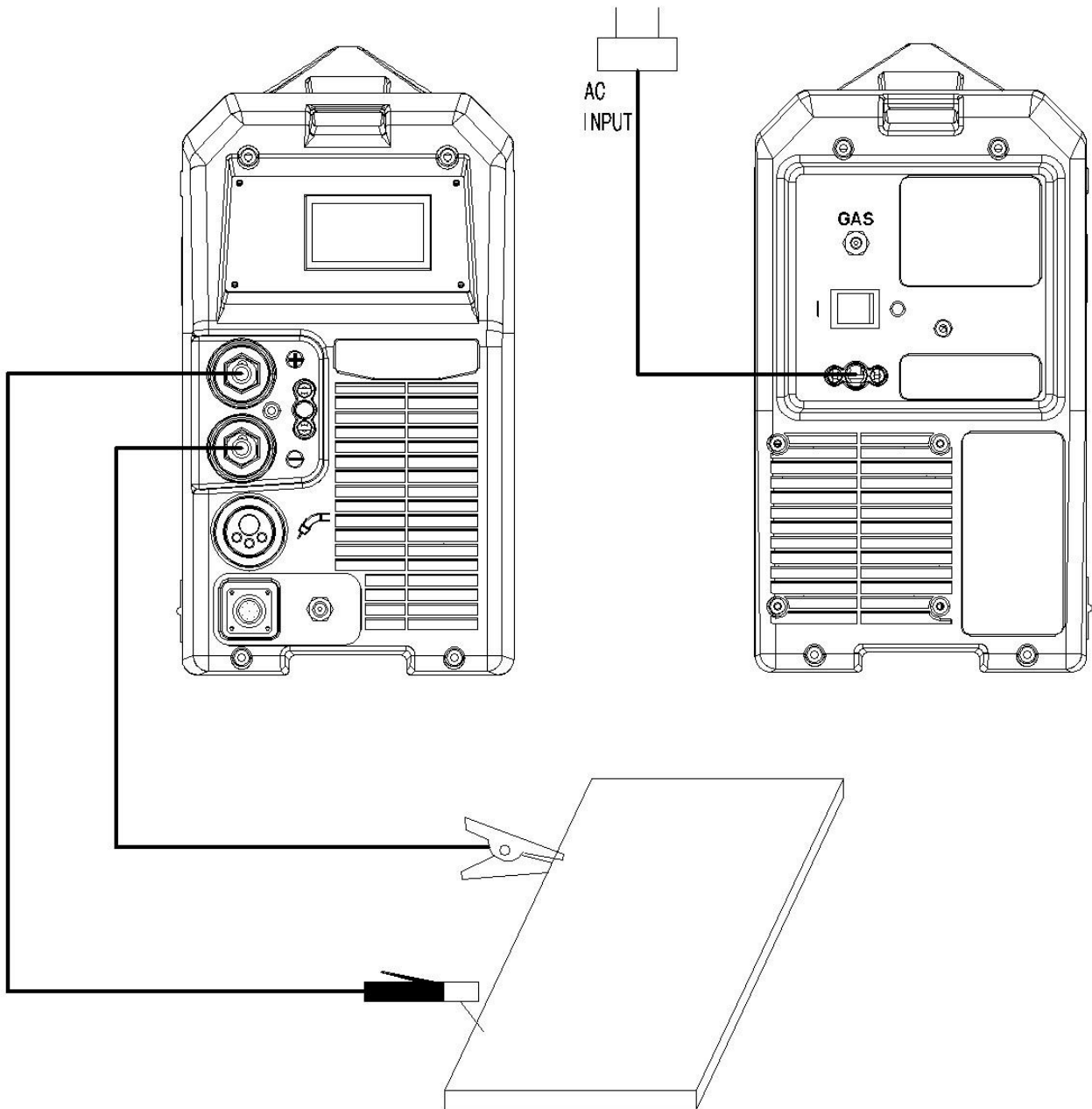
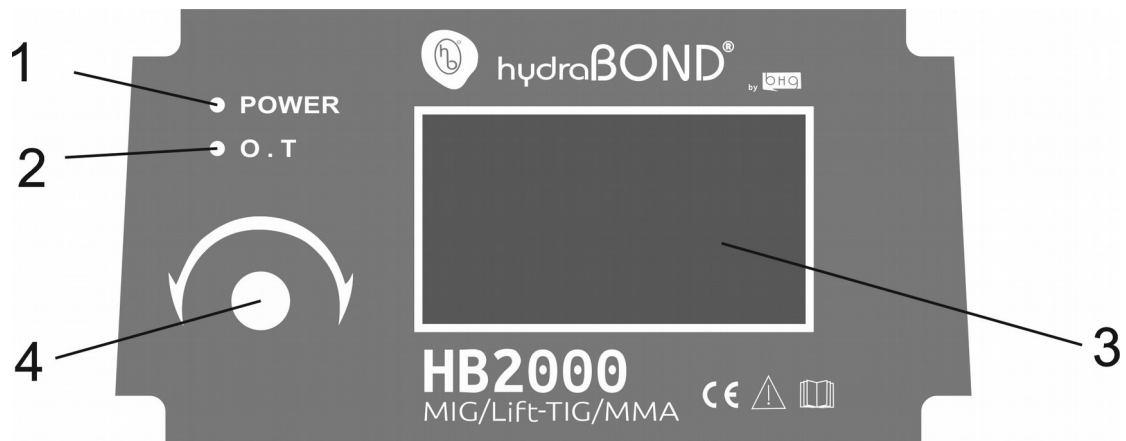


Chart 4 MMA Installation sheet

## 5 PANEL FUNCTION



### ▣ Analysis of Panel function :

1. When power on, the green pilot lamp lit indicates that the machine is on.
  2. On protection status, the yellow pilot lamp lit indicates the overheating protection of the machine has been activated. The welder can't be use and it can work until the lamp is crush out.
  3. Multi-function data display window.
  4. Multi-function data adjustment knob
- Down means choose or confirm.
  - Left-right rotating can control the cursor of multi-function data display window and change the size of the settings.

## 6 EXPLANATION OF PANEL FUNCTION

### Operation Instruction :

1. Switch the welding machine power on and will display welcome screen, the front panel display will show my company's LOGO and turn into welding standby mode after five seconds, as the chart 4:



Chart 5

2. In complete boot display and wait for five (5) seconds, it will enter into welding wait states, as below.

At the time, the welding mode and set parameters will be the last adjustment and preservation. As chart 5:

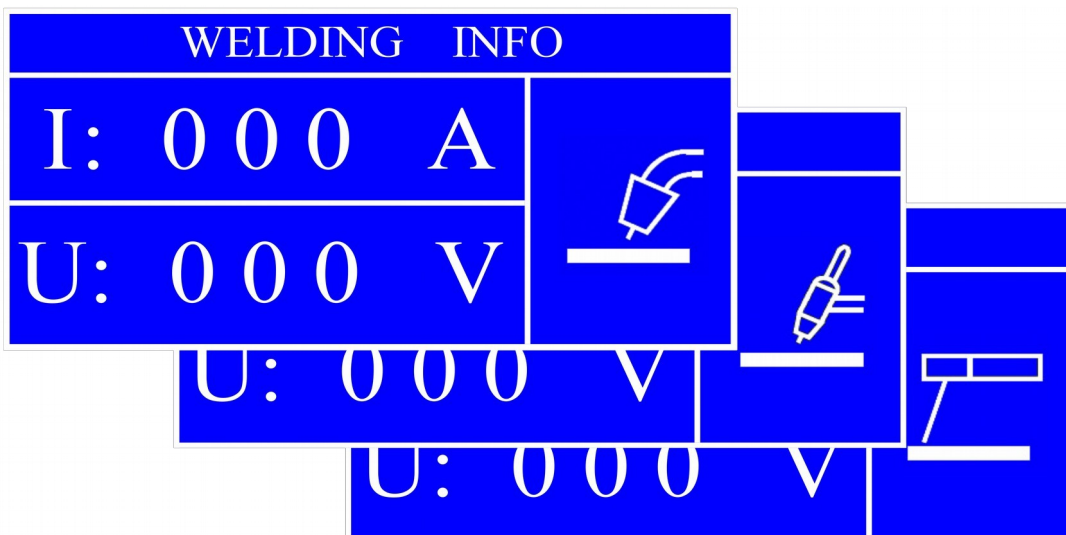


Chart 6

Under welding wait state, rotating or press the multi-function adjustment knob, will enter into the selection interface of welding function mode.

3. Welding function mode select : I-MIG series multi-function machine offers three modes :  
MIG、TIG、MMA。

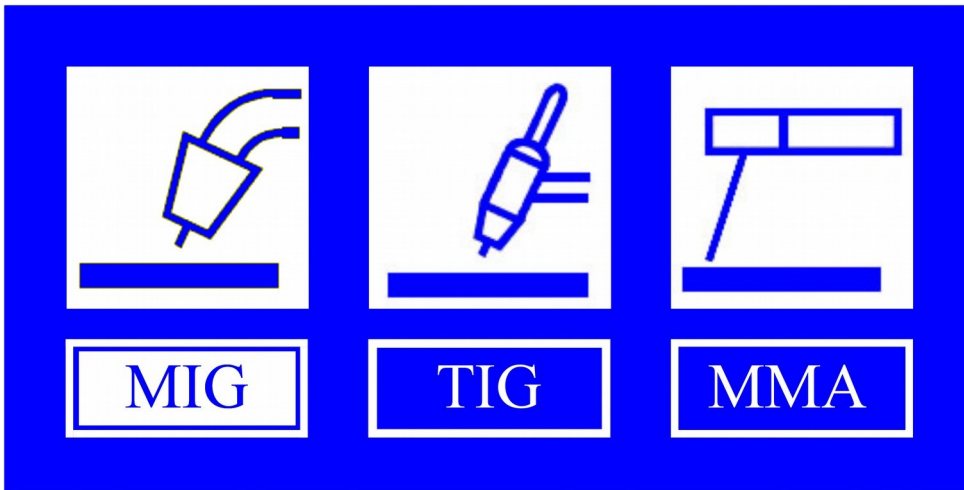
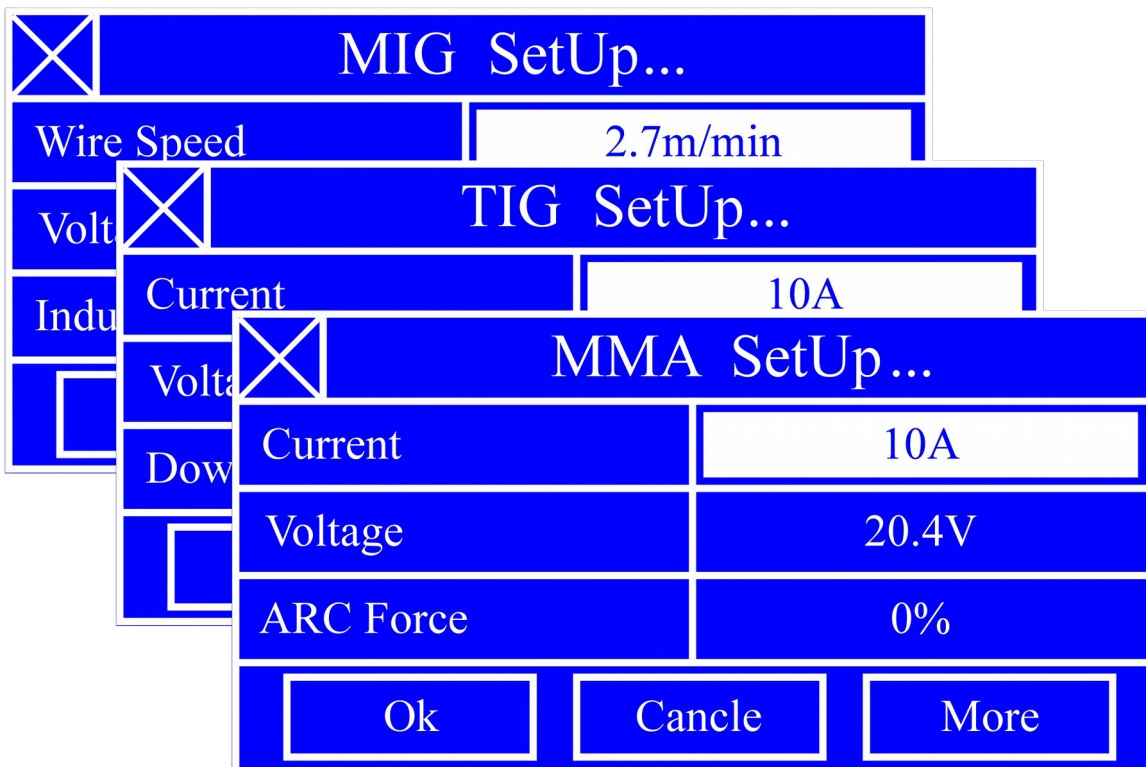


Chart 7 Rotating the multi-function conversion switch , the interface cursor change respectively in the MIG, TIG, MMA button. Press multi-function conversion switch means choosing the corresponding welding function mode. Chart 6 means you've chose MIG welding function mode.

After choosing welding function mode and press the multi-function conversion switch, it will enter into the corresponding function mode's parameter setting interface.

#### Setting welding parameters



In the welding parameters setting interface, rotate multi-function conversion switch, the cursor will be changed in the interface. If you want to modify the specify setting value, just keep the cursor stay in the corresponding setting item and press the multi-function button then modify. Through rotate the button left and right, complete



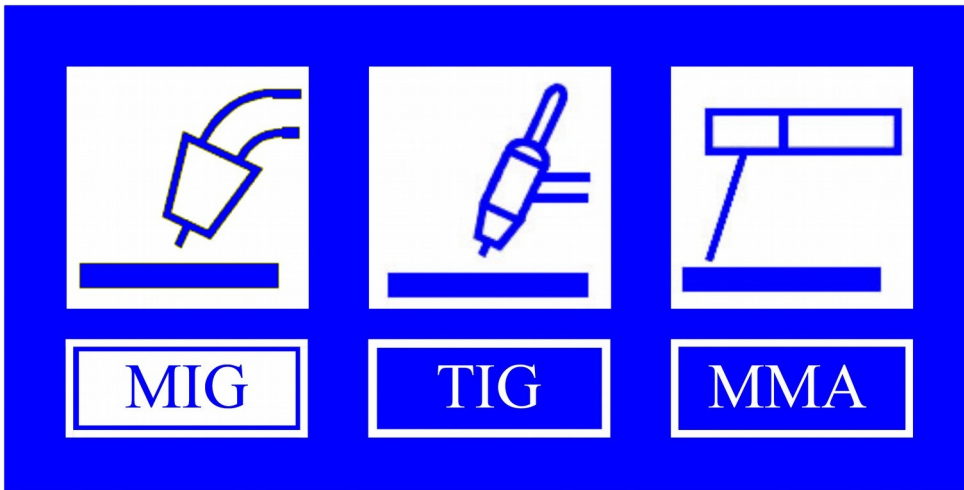
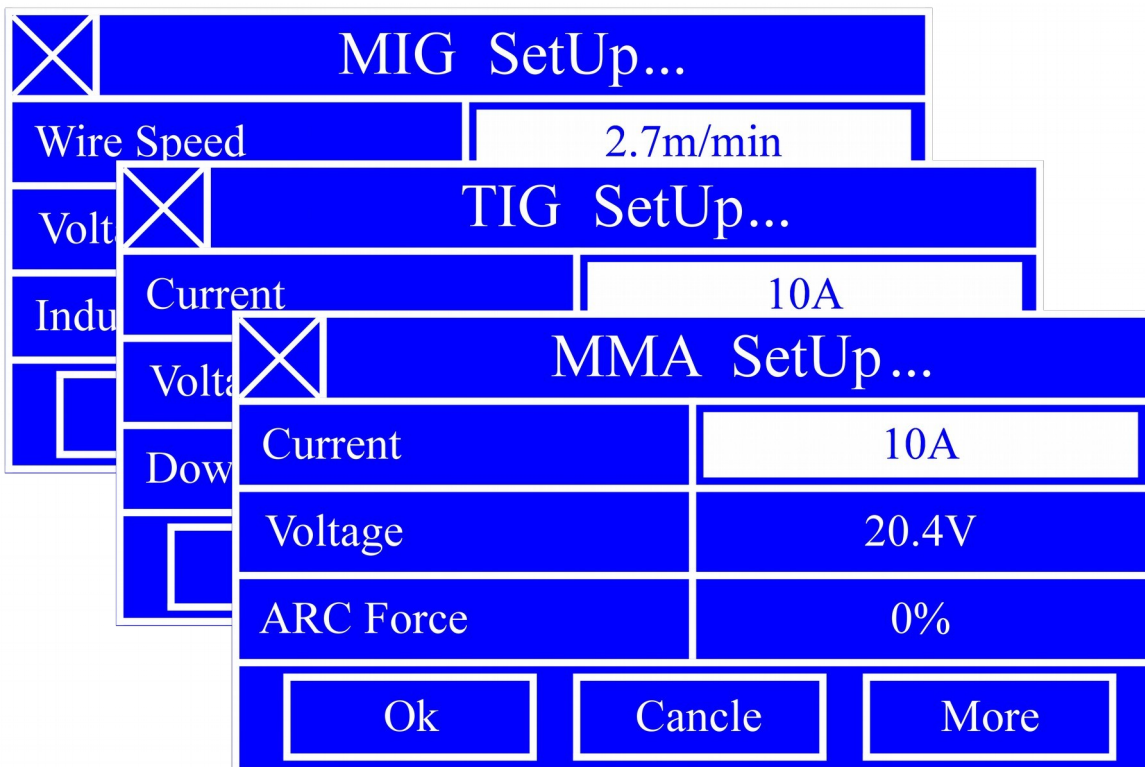


Chart 7 Rotating the multi-function conversion switch , the interface cursor change respectively in the MIG, TIG, MMA button. Press multi-function conversion switch means choosing the corresponding welding function mode. Chart 6 means you've chose MIG welding function mode.

After choosing welding function mode and press the multi-function conversion switch, it will enter into the corresponding function mode's parameter setting interface.

#### Setting welding parameters



In the welding parameters setting interface, rotate multi-function conversion switch, the cursor will be changed in the interface. If you want to modify the specify setting value, just keep the cursor stay in the corresponding setting item and press the multi-function button then modify. Through rotate the button left and right, complete

the required setting value and press the button again and exit, now the executive parameter is the one you just modified.

If you want to save the value for next time after setting, just move the cursor to the “OK” button, and press multi-function conversion switch to finish the data saving.

If you don't want to save the setting value for next, just use the parameter in this welding process, then move the cursor to “Cancel” button, and press multi-function conversion switch, it won't save the value.

If you want to set other parameters under this given function mode, please move the cursor to” More” button, and press multi-function conversion switch, then the displayer will update and show other setting items. Such as chart 7.

The welding parameters setting of MIG.

The setting parameters of MIG welding function including:

① Wire Speed ② Welding Voltage ③ Inductance ) As chart 8

MIG SetUp...		
Wire Speed	2.7m/min	
Voltage	10V	
Inductance	Medium 1	
Ok	Cancel	More

Chart 8

\* The adjusting range of the wire speed depends on different types of machine, it will be some difference.

④ Welding control methods 2T/4T ( Trigger ) ⑤ Pre Gas time ⑥Post Gas time As chart 9

MIG SetUp...	
Trigger	2T
Pre Gas	0.1S
Post Gas	0.1S
<input type="button" value="Ok"/> <input type="button" value="Cancel"/> <input type="button" value="More"/>	

Chart 9

\* In default situation, the pre gas time and post gas time should be 0.1 second, and the max value should be 5 seconds.

⑦ Burn Back ⑧ Gas Test ⑨ Wire Test As chart Chart 10

MIG SetUp	
Burn Back	Medium 1
Gas Test	OFF
Wire Test	OFF
<input type="button" value="Ok"/> <input type="button" value="Cancel"/>	

Chart 10

\* The gas test is mainly to confirm whether the gas circuit is free.

\* The wire test is mainly to confirm whether the machine can proceed wire, and during installing wire, you can select to open wire test to help us.

4. The welding parameters setting of Lift TIG.

The setting parameters including :

① Current ② Down Slope time As chart 11

\* The welding voltage will be changed with the current, under TIG function, can't modify the welding voltage.

TIG SetUp...	
Current	10A
Voltage	10.4V
Down Slope	0.1S
<input type="button" value="Ok"/> <input type="button" value="Cancle"/> <input type="button" value="More"/>	

Chart 11

③ Welding control method 2T/4T ( Trigger ) ④ Pre Gas time ⑤Post Gas time As chart 12

TIG SetUp...	
Trigger	2T
Pre Gas	0.1S
Post Gas	0.1S
<input type="button" value="Ok"/> <input type="button" value="Cancle"/> <input type="button" value="More"/>	

Chart 12

\*In default situation, the pre gas time and post gas time should be 0.1 second, and the max value should be 5 seconds. ⑥ Gas Test As chart 13

TIG SetUp	
Gas Test	OFF
<input type="button" value="Ok"/> <input type="button" value="Cancel"/>	

Chart 13

\*The gas test is mainly to confirm whether the gas circuit is free.º

5. The welding parameters setting of MMA

The setting parameters of MMA including:

①Current ②ARC Force As chart 14

MMA SetUp...	
Current	10A
Voltage	20.4V
ARC Force	0%
Ok      Cancele      More	

Chart 14

\* The welding voltage will be change with current value, and under MMA welding function, can't modify the voltage.

\* The size of Arc force will be changed with the current, and it gets from the percentage of present welding current setting value.      ③Hot Start As chart 15

MMA SetUp	
Hot Start	0A
Ok      Cancel	

Chart 15

## 7 WELDING PARAMETER RECOMMENDATION SHEET

Chart 1 : The welding current reference for different electrode diameter

<b>Electrode Size</b>	φ2.5	φ3.2	φ4.0	φ5.0
<b>Welding current</b>	70-100A	110-140A	170-220A	230-280A

Chart 2 : The welding parameter reference for TIG welding

<b>Stainless Steel TIG standard list</b>					
<b>Plate thickness</b>	<b>Tungsten diameter</b>	<b>Wire diameter</b>	<b>Connection type</b>	<b>Welding current</b>	<b>Gas flow rate</b>
<b>( MM ) Gauge No.</b>	<b>( MM ) inches</b>	<b>( MM ) inches</b>		<b>( A )</b>	<b>( L/MIN )</b>
0.5 <b>25</b>	1.0 .040"	1.0 .040"	Butt joint	35-40	4-6
0.8 <b>20</b>	1.0 .040"	1.0 .040"	Add wire	35-45	4-6
1.0 <b>18</b>	1.6 1/16"	1.6 .045"		40-70	5-8
1.5 <b>16</b>	1.6 1/16"	1.6 .045"		50-85	6-8
2.0 <b>14</b>	2.0-2.5 3/32"- 1/8"	2.0 .045"		80-130	8-10
3.0 <b>11</b>	2.5-3.0 3/32"- 1/8"	2.25 .045"		120-150	10-12

**Chart 3 : The welding parameter reference for MIG welding ( The value listed is general specification in standard conditions ) .**

		Plate thickness	Wire diameter	Gap / welding gun angle	current	voltage	Welding speed	Wire extension	Gas flow rate
		( MM ) Gauge No.	(mm) Inches	(mm) / Angle	(A)	(V)	(cm/mi)	(mm)	(L/min)
L form joint	Low welding speed	0.8 <b>20</b>	0.8,0.9 .030",.035"	0	60 ~ 70	16 ~ 16.5	50 ~ 60	10	10
		1.0 <b>18</b>	0.8,0.9 .030",.035"	0	75 ~ 85	17 ~ 17.5	50 ~ 60	10	10 ~ 15
		1.2 <b>18</b>	0.8,0.9 .030",.035"	0	80 ~ 90	16 ~ 16.5	50 ~ 60	10	10 ~ 15
		1.6 <b>16</b>	0.8,0.9 .030",.035"	0	95 ~ 105	17 ~ 18	45 ~ 50	10	10 ~ 15
		2.0 <b>14</b>	1.0,1.2 .040",.045"	0 ~ 0.5	110 ~ 120	18 ~ 19	45 ~ 50	10	10 ~ 15
		2.3 <b>14</b>	1.0,1.2 .040",.045"	0.5 ~ 1.0	120 ~ 130	19 ~ 19.5	45 ~ 50	10	10 ~ 15
		3.2 <b>11</b>	1.0,1.2 .040",.045"	1.0 ~ 1.2	140 ~ 150	20 ~ 21	45 ~ 50	10 ~ 15	10 ~ 15
		4.5 <b>7</b>	1.0,1.2 .040",.045"	1.0 ~ 1.5	160 ~ 180	22 ~ 23	45 ~ 50	15	15
			1.2 .040",.045"	1.2 ~ 1.6	220 ~ 260	24 ~ 26	45 ~ 50	15	15 ~ 20
			1.2 .040",.045"	1.2 ~ 1.6	220 ~ 260	24 ~ 26	45 ~ 50	15	15 ~ 20
			1.2 .040",.045"	1.2 ~ 1.6	300 ~ 340	32 ~ 34	45 ~ 50	15	15 ~ 20
			1.2 .040",.045"	1.2 ~ 1.6	300 ~ 340	32 ~ 34	45 ~ 50	15	15 ~ 20
L form joint	High welding speed	0.8 <b>20</b>	0.8,0.9 .030",.035"	0	100	17	130	10	15
		1.0 <b>18</b>	0.8,0.9 .030",.035"	0	110	17.5	130	10	15
		1.2 <b>18</b>	0.8,0.9 .030",.035"	0	120	18.5	130	10	15
		1.6 <b>16</b>	1.0,1.2 .040",.045"	0	180	19.5	130	10	15
		2.0 <b>14</b>	1.0,1.2 .040",.045"	0	200	21	100	15	15
		2.3 <b>14</b>	1.0,1.2 .040",.045"	0	220	23	120	15	20
		3.2 <b>11</b>	1.2 .045"	0	260	26	120	15	20

**Chart 3-2 The welding parameter reference for MIG welding ( The value listed is general specification in standard conditions ) .**

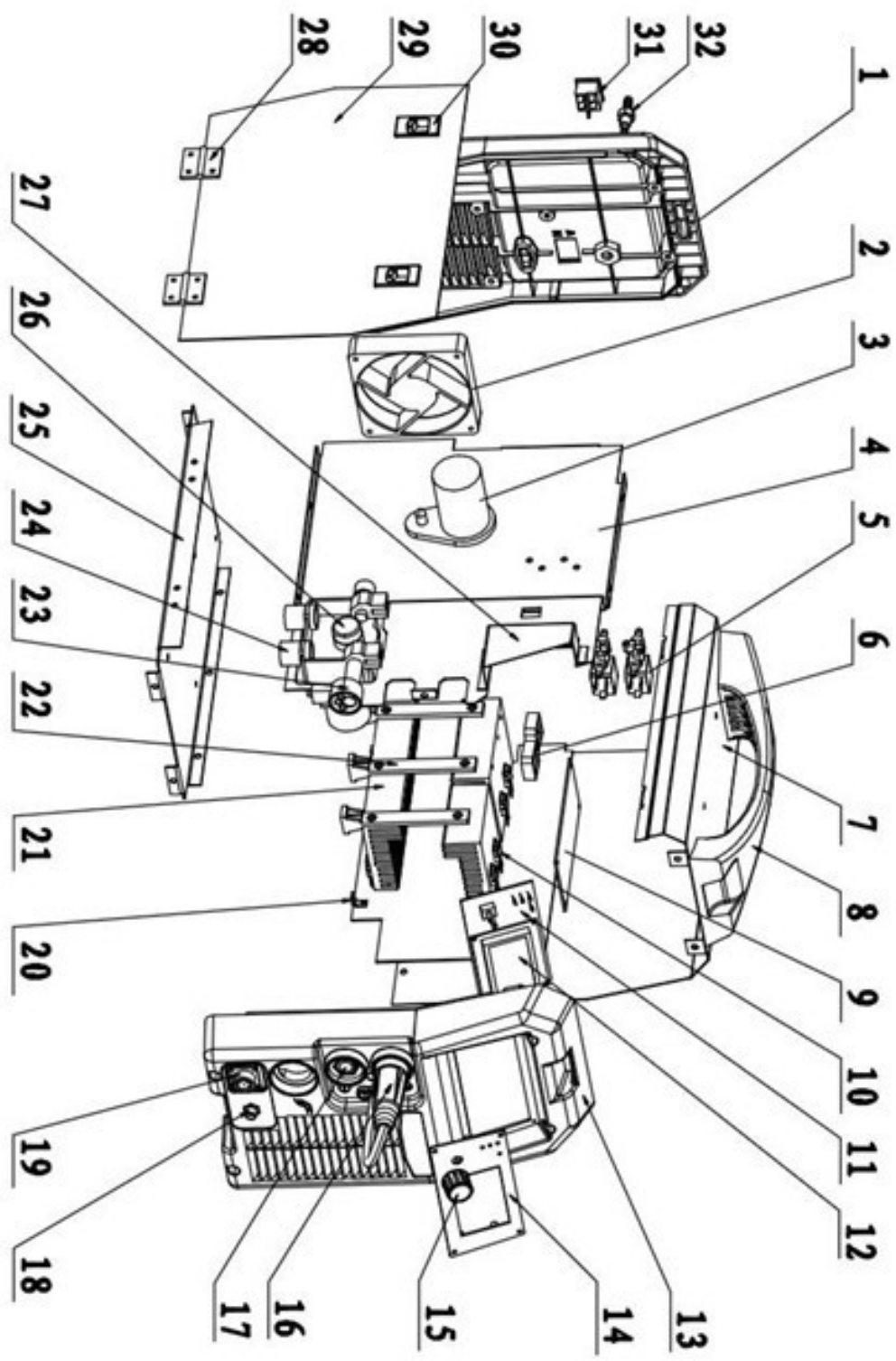
	Plate thickness	Wire diameter	Gap / welding gun angle	current	voltage	Welding speed	Wire extension	Gas flow rate
	( MM ) Gauge No.	(mm) Inches	(mm) / Angle	(A)	(V)	(cm/mi)	(mm)	(L/min)
Corner joint	1.6 <b>16</b>	0.8,0.9 .030",.035"		60 ~ 80	16 ~ 17	40 ~ 50	10	10
	2.3 <b>14</b>	0.8,0.9 .030",.035"		80 ~ 100	19 ~ 20	40 ~ 55	10	10 ~ 15
	3.2 <b>11</b>	1.0,1.2 .040",.045"		120 ~ 160	20 ~ 22	35 ~ 45	10 ~ 15	10 ~ 15
	4.5 <b>7</b>	1.0,1.2 .040",.045"		150 ~ 180	21 ~ 23	30 ~ 40	10 ~ 15	20 ~ 25
Low	1.0 <b>18</b>	0.8,0.9 .030",.035"	45°	70 ~ 80	17 ~ 18	50 ~ 60	10	10 ~ 15
	1.2 <b>18</b>	0.9,1.0 .040",.045"	45°	85 ~ 90	18 ~ 19	50 ~ 60	10	10 ~ 15
	1.6 <b>16</b>	1.0,1.2 .040",.045"	45°	100 ~ 110	19 ~ 20	50 ~ 60	10	10 ~ 15
	2.0 <b>14</b>	1.0,1.2 .040",.045"	45°	115 ~ 125	19 ~ 20	50 ~ 60	10	10 ~ 15
	2.3 <b>14</b>	1.0,1.2 .040",.045"	45°	130 ~ 140	20 ~ 21	50 ~ 60	10	10 ~ 15
	3.2 <b>11</b>	1.0,1.2 .040",.045"	45°	150 ~ 170	21 ~ 22	45 ~ 50	15	15 ~ 20
	4.5 <b>7</b>	1.0,1.2 .040",.045"	45°	140 ~ 200	22 ~ 24	45 ~ 50	15	15 ~ 20
	6.0 <b>6</b>	1.2 .045"	45°	230 ~ 260	24 ~ 27	45 ~ 50	20	15 ~ 20
	8.9 <b>6</b>	1.2,1.6 .040",.045"	50°	270 ~ 380	29 ~ 35	45 ~ 50	25	20 ~ 25
	12 <b>6</b>	1.2,1.6 .040",.045"	50°	400	32 ~ 36	35 ~ 40	25	20 ~ 25
	1.0 <b>18</b>	0.8,0.9 .030",.035"	45°	140	19 ~ 20	160	10	15
	1.2 <b>18</b>	0.8,0.9 .030",.035"	45°	130 ~ 150	19 ~ 20	120	10	15
	1.6 <b>16</b>	1.0,1.2 .040",.045"	45°	180	22 ~ 23	120	10	15 ~ 20
	2.0 <b>14</b>	1.2 .045"	45°	210	24	120	15	20
	2.3 <b>14</b>	1.2 .045"	45°	230	25	110	20	25
	3.2 <b>11</b>	1.2 .045"	45°	270	27	110	20	25
	4.5 <b>7</b>	1.2 .045"	50°	290	30	80	20	25



**Chart 3-3 The welding parameter reference for MIG welding ( The value listed is general specification in standard conditions ) .**

		Plate thickness	Wire diameter	Gap / welding gun angle	current	voltage	Welding speed	Wire extension	Gas flow rate
		( MM ) Gauge No.	(mm) Inches	(mm) / Angle	(A)	(V)	(cm/mi)	(mm)	(L/min)
T Joint	High welding speed	6.0 <b>6</b>	1.2 <b>.045"</b>	50°	310	33	70	25	25
		0.8 <b>20</b>	0.8,0.9 <b>.030",.035"</b>	10°	60 ~ 70	16 ~ 17	40 ~ 45	10	10 ~ 15
T Joint	Low welding speed	1.2 <b>18</b>	0.8,0.9 <b>.030",.035"</b>	30°	80 ~ 90	18 ~ 19	45 ~ 50	10	10 ~ 15
		1.6 <b>16</b>	0.8,0.9 <b>.030",.035"</b>	30°	90 ~ 100	19 ~ 20	45 ~ 50	10	10 ~ 15
		2.3 <b>14</b>	0.8,0.9 <b>.030",.035"</b>	47°	100 ~ 130	20 ~ 21	45 ~ 50	10	10 ~ 15
			1.0,1.2 <b>.040",.045"</b>	47°	120 ~ 150	20 ~ 21	45 ~ 50	10	10 ~ 15
		3.2 <b>11</b>	1.0,1.2 <b>.040",.045"</b>	47°	150 ~ 180	20 ~ 22	35 ~ 45	10 ~ 15	20 ~ 25
		4.5 <b>7</b>	1.2 <b>.045"</b>	47°	200 ~ 250	24 ~ 26	45 ~ 50	10 ~ 15	20 ~ 25
		2.3 - 3.2 <b>14 - 11</b>	1.2 <b>.045"</b>	47°	220	24	150	15	15
			47°	300	26	250	15	15	

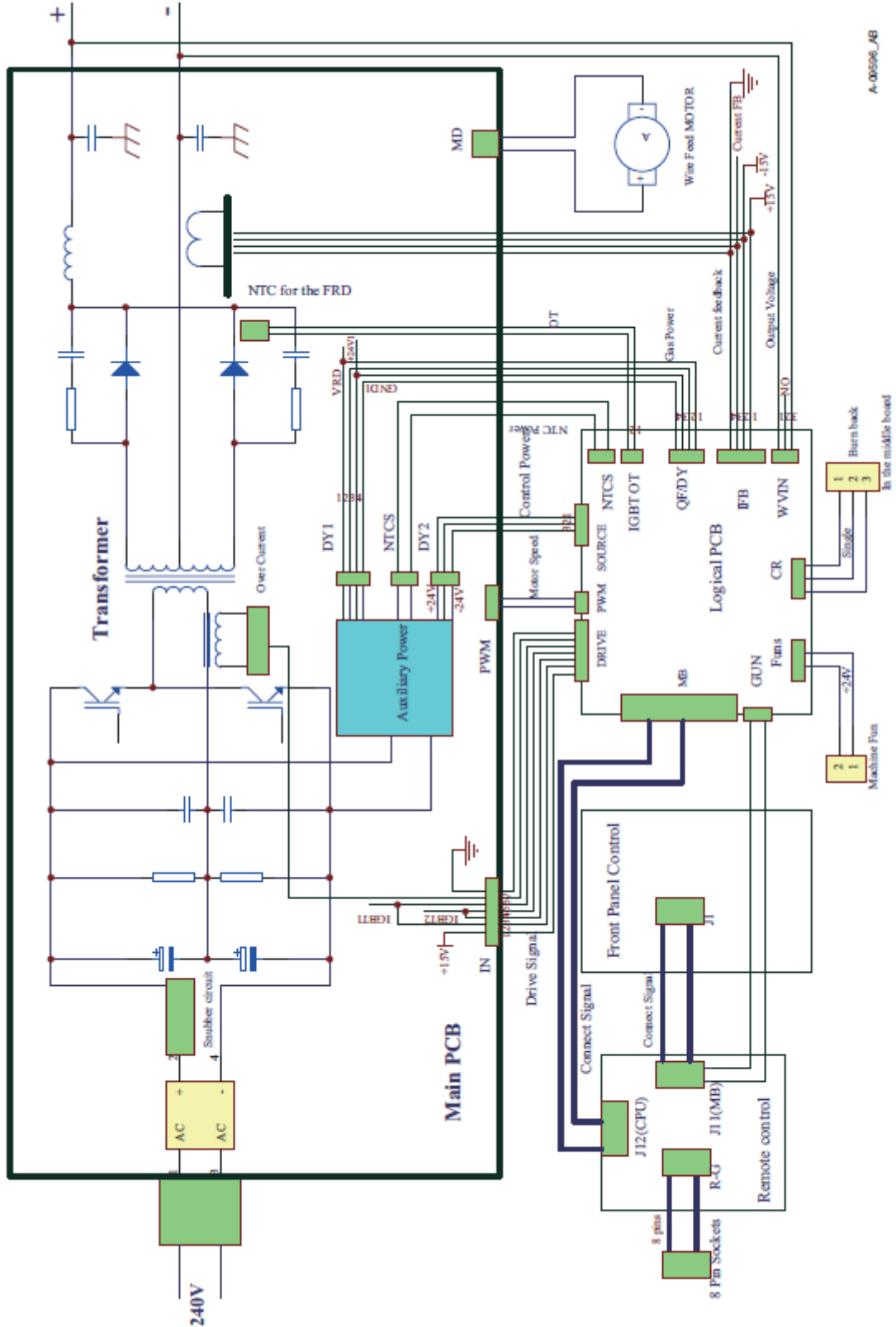
# 8 STRUCTURE DIAGRAM



## 8-1 STRUCTURE CHART AND IMPORTANT DEVICE LIST

Number	Material name	Quantity	Number	Material name	Quantity
1	Plastic rear panel	1	23	B3 Europe joint	1
2	Fan	2	24	Nylon foot pad	1
3	Wire dish shaft	1	25	Plastic baseboard	1
4	Sheet metal clapboard	1	26	Wire feeder	1
5	Electromagnetic valve	1	27	Sheet metal clapboard case	1
6	Rectifier bridge	3	28	Hinge	2
7	Sheet metal clapboard	1	29	Sheet metal cartwheel board	1
8	Plastic handle	1	30	Plastic gate lock	1
9	PCB control panel	1	31	Power switch	2
10	IGBT	1	32	Back air connection	1
11	PCB panel	2			
12	Liquid crystal display	2			
13	Plastic front panel	1			
14	Sheet metal panel	1			
15	Knob	2			
16	Quick plug	2			
17	Quick socket	1			
18	Front air connection	1			
19	Aviation plug	2			
20	Sheet metal support article	1			
21	Radiator	1			
22	Plastic support bar	1			

# 9 HB2000 WIRING DIAGRAM AND MAJOR LOOP CHART



## 10 MAIFUNCTIONANAIYSIS AND TROUBLE-SHOOTING

### 1 Environment

- 1 ) The welding operation should be in a relatively dry environment, relative humidity is below 90 %.
- 2 ) The environment temperature range:-10°C ~ 40°C.
- 3 ) Protect the machine against heavy rain or in hot circumstance against direct sunshine, don't let water or rain ooze in welding machine.
- 4 ) The content of dust, acid, corrosive gas in the surrounding air or substance can not exceed normal standard.
- 5 ) Don't proceed gas shielded welding in strong air flow environment .

### 2 Safety issues

I-MIG series welding machine has been installed in a pressure, flow and overheating protection circuit, when the network voltage, output current and machines temperature is exceeding the set standard, welding machine will automatically stop work; But excessive use (such as voltage is too high) still can lead to the damage of the welding machine, so you need to pay attention to the following items:

#### 1 ) Ensure good ventilation

I-MIG series is small and medium size welding machine, during operation, there will be major current pass, natural ventilation can not meet the cooling requirements of welding machine, so we install a fan in the machine to effectively cooling the welding machine to make it work stable. The operator shall confirm there is sufficient ventilation during welding and at least 30cm free distance between the machine and wall. It's vital to keep the machine in good work status and extend the length of its service life.

#### 2 ) Forbid overload!

The operator should always observe permitted current in biggest load (relative to the selected duty cycle), keep welding current is not exceed the maximum permitted load current.

Current overload will obvious reduce the service life, even burned welding machine. If the welder work exceed the standard duty cycle , it might suddenly into protect state and stop working, this means it's beyond the standard, excessive heat triggered temperature control switch, and make it stop working. At the same time, the overheating signal in the front panel light up. In this case, you don't pull out the power plug to cool the fan for sustainable work. When overheating signal stopped, the temperature drops to the standard range, it could start welding again.

#### 3 ) Forbid over-voltage !

The power supply voltage listed in the "main performance parameters" table, generally, the automatic voltage compensation circuit in the machine will ensure welding current in the permitted scope. If the voltage exceeds the permitted value, it will damage the machine, operator should fully understand the situation, and take corresponding prevention measures.

- 4 ) Each machine's power line has a earth wire, before using, make the earth wire connect, so that the welding machine shell can reliable connect to release the electrostatic or prevent leakage due to possible accident.

## 11 PROBLEMS AND ANALYSIS OF WELDING

The phenomenon listed here may relate to the used accessories, welding materials, environmental factors and power supply situation, please try to improve the environment to avoid it happen.

### **A : Arc start difficult and easy to interrupt**

- 1) Confirm whether the Cable clamp is connected with the workpiece.
- 2) Check each connection whether there is undesirable place.

### **B Under current:**

The power supply voltage deviating from the ratings will lead to output current value does not match the setting value; when the power supply voltage is lower than ratings, the maximum output current may also be lower than the ratings.

### **C : Current is unstable in welding:**

The factors are as follow:

- 1) The network voltage change;
- 2) The serious interference from the network or other equipments.

### **D: Blowhole in welding seam**

- 1) Check whether there is leak place gas supply loop.
- 2) There is oil, dust, rust or paint on the work piece surface.

## 12 DAILY MAINTENANCE



### **WARNING!**

All the maintenance and examination work must be conducted after shutting off the supply power, and ensure unplug the power plug before opening the machine shell.

- 1) Using the dry compressed air to clear the inside of welding machine, at least once a month.
- 2) For compressed air, you should choose proper press to avoid damaging the components.
- 3) Check the internal electrical connections, confirm them in good state (especially connectors), reinforce the loosen parts. If there is oxidation phenomena, using sand paper to dispose and reconnect.
- 4) Avoid the welder in water or wet, otherwise you should dry it promptly and use mega meter to check, if it is qualified then you can use.
- 5) If the welder is not used for a long time, you should put it in the original box in dry place.
- 6) Grinding the motor by using carbon brush and clean up the armature commutators every 300 hours, and coating with vortex 2 # mos2 lubricating grease on turbine, stem and bearing.

### 13 DEFAULT ANALYSIS AND TROUBLESHOOTING



**WARNING!**

The following operations require the operator must have enough electric professional

knowledge and comprehensive safety common sense, the operator should hold the effective qualification certificate to prove its ability and knowledge of . Before repairing, we suggest you firstly contact with the local dealers, and obtain approval.


Default	Solution
the display light is not on, and fan doesn't work; no welding output	<ol style="list-style-type: none"> <li>1, Confirm the power switch is close.</li> <li>2, The input cable has supply electricity.</li> <li>3, Silicon bridge is damaged or not.</li> <li>4, The panel assistant power part is broken. (and contact the dealer )</li> </ol>
the display light is on, and fan work; no welding output	<ol style="list-style-type: none"> <li>1. Check whether the patch cords are in good connection.</li> <li>2. Whether the output connection is turn off.</li> <li>3. The control wire of welding gun is broken or the micro switch damaged.</li> <li>4. The control circuit is damaged. (and contact the dealer )</li> </ol>
the display light is on, and fan work; Abnormal indicator light	<ol style="list-style-type: none"> <li>1. It may be over-current protection, please switch off the power, and wait for the indicate light off then restart it.</li> <li>2. It may be overheating protection, no need to switch off and just wait for 2 to 3 minutes, and then the machine can be returned to normal.</li> <li>3. It is the inverter circuit faults. (and contact the dealer)</li> </ol>
If it still not work after adjusting and checking, please contact the local dealer.	

Even if there are unusual phenomena happen, such as can't welding, arc weld unstable, and the welding effect is not good, don't make the judgment early.

The welder is normal, but there are some unusual phenomena happen on the unknown reason. For example: the tighten part become loose、forget switch setting、setting wrong、cable break 、gas tube break down and so on. So before you make the decision to repair, please do trial check and you may see some parts are solved.

Below is the initial diagnosis table of welding faults in the sense. Look out the abnormal phenomenon from the top right corner of chart, and if you see a “●”in the form, please check and maintenance according to corresponding matters in the chart.

### 13 DEFAULT ANALYSIS AND TROUBLESHOOTING

	<p><b>WARNING!</b></p> <p>The following operations require the operator must have enough electric professional</p>
---	--

knowledge and comprehensive safety common sense, the operator should hold the effective qualification certificate to prove its ability and knowledge of . Before repairing, we suggest you firstly contact with the local dealers, and obtain approval.

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the display light is on, and fan work; no welding output	<ol style="list-style-type: none"> <li>1. Check whether the patch cords are in good connection.</li> <li>2. Whether the output connection is turn off.</li> <li>3. The control wire of welding gun is broken or the micro switch damaged.</li> <li>4. The control circuit is damaged. (and contact the dealer )</li> </ol>
the display light is on, and fan work; Abnormal indicator light	<ol style="list-style-type: none"> <li>1. It may be over-current protection, please switch off the power, and wait for the indicate light off then restart it.</li> <li>2. It may be overheating protection, no need to switch off and just wait for 2 to 3 minutes, and then the machine can be returned to normal.</li> <li>3. It is the inverter circuit faults. (and contact the dealer)</li> </ol>
If it still not work after adjusting and checking, please contact the local dealer.	

Even if there are unusual phenomena happen, such as can't welding, arc weld unstable, and the welding effect is not good, don't make the judgment early.

The welder is normal, but there are some unusual phenomena happen on the unknown reason. For example: the tighten part become loose、forget switch setting、setting wrong、cable break 、gas tube break down and so on. So before you make the decision to repair, please do trial check and you may see some parts are solved.

Below is the initial diagnosis table of welding faults in the sense. Look out the abnormal phenomenon from the top right corner of chart, and if you see a “●”in the form, please check and maintenance according to corresponding matters in the chart.



Initial diagnosis of welding table1.0

Defect names		No arc	No gas	No wire feed	Arc starting bad	Arc unstable	Weld seam edge unclean	Wire stick with metal	Wire and conductive mouth bonding	Blow-hole
Check points and Maintenance items										
Distribution box ( input protection device )	<input type="checkbox"/> Whether connect	●	●	●	●	●	●			
	<input type="checkbox"/> Fuse burnout									
	<input type="checkbox"/> Connections loose									
Input cable	<input type="checkbox"/> Whether cables break	●	●	●	●	●	●			
	<input type="checkbox"/> Connection parts loose									
	<input type="checkbox"/> Overheating									
Power operation	<input type="checkbox"/> Whether the switch is connected	●	●	●	●	●	●	●	●	
	<input type="checkbox"/> Whether the phase is lack									
Gas cylinder and gas adjustment	<input type="checkbox"/> Open the cap					●				●
	<input type="checkbox"/> Gas residual quantity									
	<input type="checkbox"/> Flow settings									
	<input type="checkbox"/> Connection loose									
Gas hose (all access from high pressure cylinder to the welding gun)	<input type="checkbox"/> Connection loose									●
	<input type="checkbox"/> Gas tube damaged									
Wire feeder	<input type="checkbox"/> Wire steel and tube diameter is not proper			●	●	●	●		●	
	<input type="checkbox"/> Wire steel flaw、 groovy block and lack									
	<input type="checkbox"/> Pressure bar is too tight or loose, there is powder in the entrance of SUS tube									
Welding gun and cable	<input type="checkbox"/> The folding and bending of welding gun cable is too big				●	●	●		●	
	● The adaptability of Conductive mouth, wire tubes, line diameter									
Welding gun	<input type="checkbox"/> The connections of conductive mouth、 nozzle and nozzle joint are loose						●			●
	<input type="checkbox"/> The gun jointing is not tight									

Initial diagnosis of welding table1.1

Defect names		No arc	No gas	No wire feed	Arc starting bad	Arc unstable	Weld seam edge unclean	Wire stick with metal	Wire and conductive mouth bonding	Blow-hole
Check points and Maintenance items										
Gun power cables and switch control cables	<input type="checkbox"/> Break line ( bend fatigue )	•	•	•		•		•		
	<input type="checkbox"/> Hit by heavy goods									
Material surface state and wire extended length	<input type="checkbox"/> Oil 、 dirt、 rust、 paint				•	•	•	•		•
	<input type="checkbox"/> Wire extend too long									
Output cables	<input type="checkbox"/> The base metal connected cable's sectional surface is shortage				•	•	•			
	<input type="checkbox"/> ( + ) 、 ( - ) output connection are loose									
	<input type="checkbox"/> Base metal conduct bad									
Extend cable	<input type="checkbox"/> Cable sectional surface is shortage				•	•	•	•		
	<input type="checkbox"/> Roll 、 fold use									
Welding condition	<input type="checkbox"/> Re-confirm welding current、 voltage、 gun angle、 welding speed and wire extension				•	•	•	•	•	



**WARNING!**

REPAIRING THE WELDING MACHINES Experience has shown that many fatal accidents are caused by poor repairs. That is why it is just as important to fully check a repaired welding machine as a new one. This also protects manufacturers from being held liable for defects for which others are to blame.

- If the repairs are not performed by the manufacturer, repaired welding machine in which any components have been replaced or altered must be marked in such a way as to identify who carried out the repairs.

## 14 DAILY EXAMINATION

### Welding power

Section	Overhaul points	Note
Operation control panel	1. Switch operation, transform and installation.	
	2. Check power indicate lamp's light and off.	
Cooling fan	1. Check wind and sound of the fan are normal.	If the fan is not work and there is No sound, it needs to repair.
Power section	1. When the power is on, check whether it makes Shaking or buzzing.	
	2. When the power is on, check whether it produce Peculiar smell.	
	3. Over-heating, like appearance color changed.	
Periphery	1. Whether the gas pipeline is damaged, and The connection is loosening.	
	2. The shell and other tighten parts are loosen.	

### Welding gun table 1.0

Section	Overhaul points	Note
Nozzle	1. Whether the installation is fixed, The front is transformative.	It's the reason of blowhole.
	2. Whether attach splash.	The reason of gun damaged. ( The efficient way is using spatter compound )
Contact nozzle	1. Whether the installation is fixed	The reason of gun threads damage.
	2. The tip is damaged, the hole is blocked.	The reason of arc unstable or Arc breaks.
Wire hose	1. Check out the size of wire extended parts.	You should replace when it's less than 6MM, otherwise it may cause arc unstable.
	2. Whether the electrode diameter is proper to the pipeline.	It's the reason of arc unstable , please use proper wire tube.
	3. Sectional buckling and extend.	It's the reason of bad wire feeding and arc unstable, please replace in time.
	4. Dirt in wire tube, the plugging of welding wire coating	It's the reason of bad wire feeding and arc unstable, please replace. ( Use kerosene wipe or replace new wire tube.
	5. Damage of wire and O ring.	1. It causes the damage of heat shrink; you need to replace a new wire tube.
2 . For the damage of O ring, you need to replace a new one.		
Gas shunt	Forget insert or the hole is covered, or you bought the components from other manufactures.	It may cause weld default (splash), gun melting, please handle correct.

**Welding gun table 1.1**

Section	Overhaul points	Note
Pressure bar	1. Whether you transfer the pressure bar to the proper pressurized instruction line. ( Attention : Forbid to damage the wires lower thanΦ1.2MM.	Cause wire feed and arc force unstable.
Wire guide tube	1. Whether there has accumulated cut powder, waste chip in the wire pipe entrance and wire wheel.	Sweep way the powder, and find the reason.
	2. Whether the electrode diameter matches the wire inner diameter.	If it is not consistent , may cause arc unstable and produce powder.
	3. Check whether the wire pipe center and wire wheel groove center is consistent ( visual )	It may cause arc unstable and produce powder.
Wire feed roll	1. Whether the wire diameter and wire wheel nominal diameter is consistent.	1. Cause cut powder produce, wire tube blocked and arc unstable.
	2. Check for wire wheel slot jam.	2. If there is abnormal phenomenon, replace a new product.
Pressure roll	Check the rotation stability, damage of welding wire pressurized surface and the surface become narrow.	Lead to wire feed bad, and cause arc unstable.

**Cables**

Section	Overhaul points	Note
Welding gun cable	1. The bending degree of welding gun cable is too big.	1.Cause wire feed bad.
	2. Whether the metal connections of quick plug are loose.	2.The cable bending wire Too big can cause arc unstable.
Output cable	1. The damage of cable insulation parts.	To ensure the personal safety and stability of welding, please adopt proper overhaul ways based on working situation.  Daily maintenance、 simple examination regularly
	2. Cable joints' bare( insulation damage) and loose( the cables of welding power parts and base metal connections)	
Input cable	1. Whether the connections between input and output end of distribution's protection device are fixed.	
	2. Whether the cable connections of insurance device are reliable.	
	3. Whether the cables of welding input power are fixed.	
	4. In the wiring process, whether the insulators of input cables are damaged or show the bare parts.	
Earth cable	1. Whether the earth cables have short-circuited phenomenon and the connections are fixed.	To prevent leakage accident happen, and ensure safety, please keep daily examination.
	2. Whether the base metal cables have short-circuited phenomenon and the connections are fixed.	