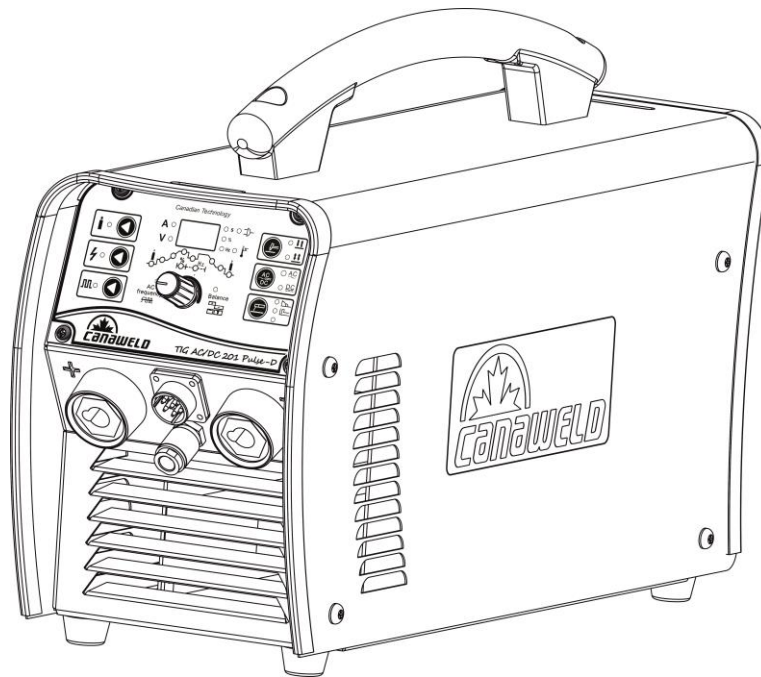




User Manual

Model: TIG AC DC 201 pulse D



Thank You From Canaweld

Thank you for choosing a Canaweld machine, with 30+ years of welding equipment manufacturing experience overseas, you can feel confident that you have made the right choice.

Canaweld Inc. was started in Canada to manufacture the highest quality welding and cutting equipment for the North American market. All of our machines are electronically and weld tested before they leave our factory to ensure the equipment you purchased is ready to work.

Our engineers are continuously working on new equipment to release new models on a regular basis as well as to upgrade our existing line of machines. Canaweld, is in partnership with some of the best European welding and cutting equipment manufacturers, to distribute their machines to the North American market. Our business relationships have been created to offer our customers a wider range of machines - only the best available for every industry.

This user manual should be read carefully to fully understand the machine you have purchased and how to maintain it in the best operating condition.

For more information on our full line of products please visit our website or contact a dealer in your local area, our dealer list can be found on our website – www.canaweld.com

If you require more information on how to use the equipment, please visit our website at www.canaweld.com and view our tutorials section to find the correct one for your machine.

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TIG AC/DC 201 Pulse D - WELDER PACKAGE



1



2



3



4



5



6



7

Name	Product Number	Quantity
1. Machine	PLB2380148	1
2. Work/Ground Clamp Set	ALP198449	1
3. Electrode Holder Set	ALP2280095	1
4. TIG Torch – Electronic 12 ft	CW-SG26FX-1K-12SL-GS4	1
5. Gas Flow Regulator	LV150	1
6. Gas Hose	TLJ1080188	1
7. Machine Bag	TGJ2780145	1

SECTION 1- SAFETY CAUTIONS & SYMBOLS



CAUTION: READ USER MANUAL

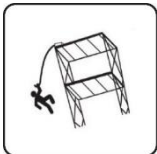
Indicates any section that the user must read the manual to fully understand the machine's characteristics to avoid any hazardous situation.



ELECTRIC SHOCK

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on.

- Do not touch live electrical parts.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not remove any machine covers while the machine is powered.



WELDING WORKPLACE

Be mindful of working in cramped positions, scaffolds, or any location where you can fall and become injured.

- Wear a safety harness if working above floor level.
- Do not work in wet areas, or while wearing wet clothing.



WELDED PARTS

Immediately after welding, all welded parts will be a very high temperature which will cause burns to any exposed skin that makes contact.

- Do not touch parts after welding. Allow for cooling period before picking up.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.



WELDING FUMES

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes stream while welding. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation at the welding point to remove welding fumes and gases.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Material Safety Data Sheets (MSDSs) and the manufacturer's instructions for metals, consumables, coatings, cleaners, and degreasers.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Always have a trained watchperson nearby.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.



WELDING RAYS

Rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin.

- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes from welding rays.
Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.
- Wear protective clothing made from durable, flame-resistant material (leather, heavy cotton, or wool) and to cover any exposed skin, arms, neck area.



WELDING FIRES

Welding creates heat and can lead to fires, as well certain welding forms create sparks which could also ignite surrounding items and create a fire. The flying sparks, hot workpiece, and hot equipment can cause fires and burns.

- Remove all flammables within 35 ft. (10.7 m) of the welding arc. If this is not possible, cover them with approved covers.
- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Watch for fire, and keep a fire extinguisher nearby.



GASES

Dangerous gases can be produced during welding, breathing these gases in can be hazardous to your health.

- Shut off shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.



EMF- ELECTRIC MAGNETIC FIELDS

During welding, electric magnetic fields are created and can produce malfunctions in electrical components within the area.

- EMF created by welders may affect wearers of Pacemakers and other Implanted Medical Devices should keep away.
- Implanted Medical Device wearers should consult their doctor and the device manufacturer before going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations.



EXCESSIVE NOISE

Be mindful if your working area creates excessive noise.

- Wear approved ear protection if noise level is high.
- Any workers close by the area will also be effected by the noise and may also require hearing protection.



GAS CYLINDER/LINE DAMAGE

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

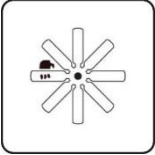
- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Protect all gas lines from sparks, slag and open flames.
- Make sure to open the cylinder valve carefully and then open the regulator valve in order to protect the regulator from any possible damage.
- Open the cylinder valve slowly. Then slowly open regulator valve to avoid damage to the regulator.



ESD- ELECTRIC STATIC DISCHARGE

An electric static charge can be created during welding and discharged immediately after into any items touched by the welder after welding.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.



MOVING PARTS

A number of moving parts may be in typical welding machines such as rollers and fans.

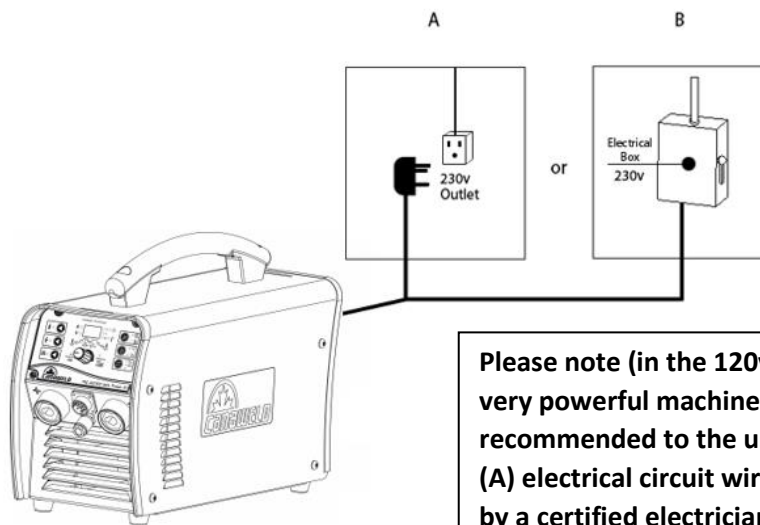
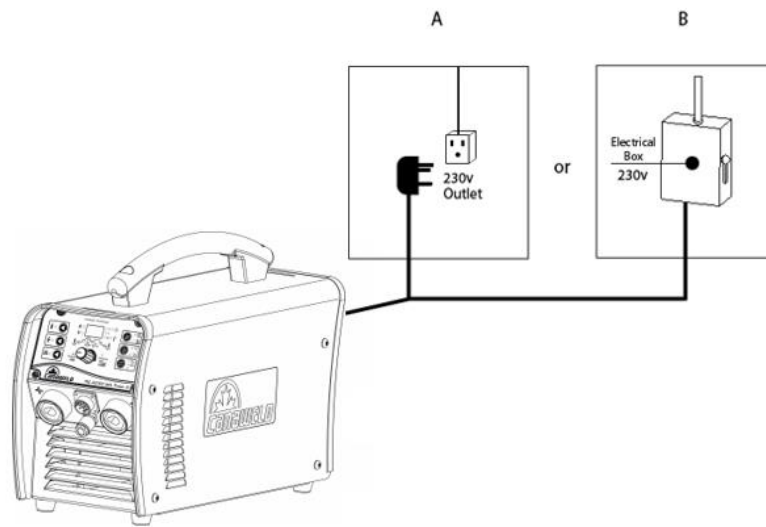
- Keep hands away from moving parts such as fans.
- Keep all doors, panels, covers, and guards closed and securely in place.
- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.
- Secure any loose clothing and hair and keep away from moving parts.

SECTION 2- INSTALLATION AND OVERVIEW

INSTALLATION

ELECTRICAL

- The serial number and rating information is located on the bottom of the machine. Use the rating labels to determine input power requirements and rated output.
- Check whether the voltage value variations are within the acceptable working range with a multi-meter.
- **(A)** The input cable of the machine is ready to be plugged into a 230 V $\pm 10\%$ compatible connector / socket or **(B)** you can remove the installed plug and have the input cable “hard” wired into the appropriate building electrical panel.
- **(C)** The machine is designed to operate on a 120V $\pm 10\%$ voltage, a compatible connector can be fitted to the input cable **(D)** or it can be hard wired into the electrical panel.
- Electrical installation must meet all national and Local Codes– has only a qualified electrician does the installation.



Please note (in the 120v setting): This welder is a very powerful machine. It is strongly recommended to the user to have a separate 30 (A) electrical circuit wired to the welder location by a certified electrician.

OVERVIEW

PRODUCT & DESIGN

The working principle of TIG AC DC 201 pulse D welding machines is shown as the following figure. single-phase 110/220V work frequency AC is rectified into DC (about 380V), then is converted to medium frequency AC (about 44K Hz) by inverter device (IGBT module), after reducing voltage by medium transformer (the main transformer) and rectifying by medium frequency rectifier (fast recovery diodes), then is outputted DC or AC by selecting IGBT module. The circuit adopts current feedback control technology to insure current output stably. Meanwhile, the welding current parameter can be adjusted continuously and stepless to meet with the requirements of welding craft.

TIG AC DC 201 pulse D welding machine adopts the latest pulse width modulation (PWM) technology and insulated gate bipolar transistor (IGBT) power module, which can change work frequency to medium frequency so as to replace the traditional hulking work frequency transformer with the cabinet medium frequency transformer. Thus, it is characterized with portable, small size, light weight, low consumption and etc.

FUNCTION

- **MCU control system , responds immediately to any changes.**
- **The newest PFC technology , power factor more than 0.98**
- **High frequency and high voltage for arc igniting to ensure the success ratio of igniting arc, the reverse polarity ignition ensures good ignition behavior in TIG-AC welding.**
- **Avoid AC arc-break with special means, even if arc-break occurs the HF will keep the arc stable.**
- **TIG/DC operation,If the tungsten electrode touches the workpiece when welding, the current will drop to short-circuit current to protect tungsten.**
- **Intelligent protection: over-voltage, over-current, over-heat, when the problems listed before occurred, the alarm lamp on the front panel will be on and the output current will be cut off. It can self-protect and prolong the using life.**
- **Double purposes: AC inverter TIG/MMA and DC inverter TIG/MMA, Excellent performance on Al-alloy, carbon steel stainless steel ,titanium.**

According to choosing the front panel functions, the following six welding ways can be realized.

- DC MMA
- DC TIG
- AC MMA
- AC TIG

SECTION 3- OPERATION OF EQUIPMENT

Power supply input connection

TIG AC DC 201 pulse D welding machines' power supply connects to single-phase 95- 270V

When the power supply voltage is over the safe work voltage, there are over voltage and under voltage protection inside the welder, the alarm light will on, at the same time, the current output will be cut off.

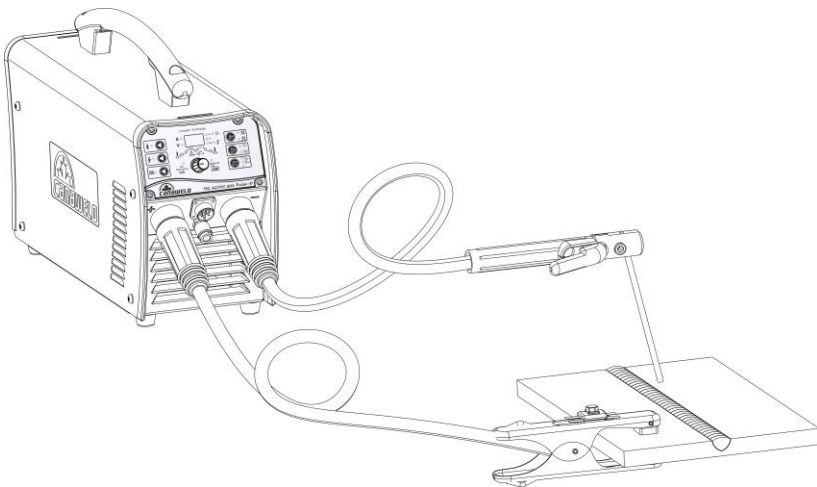
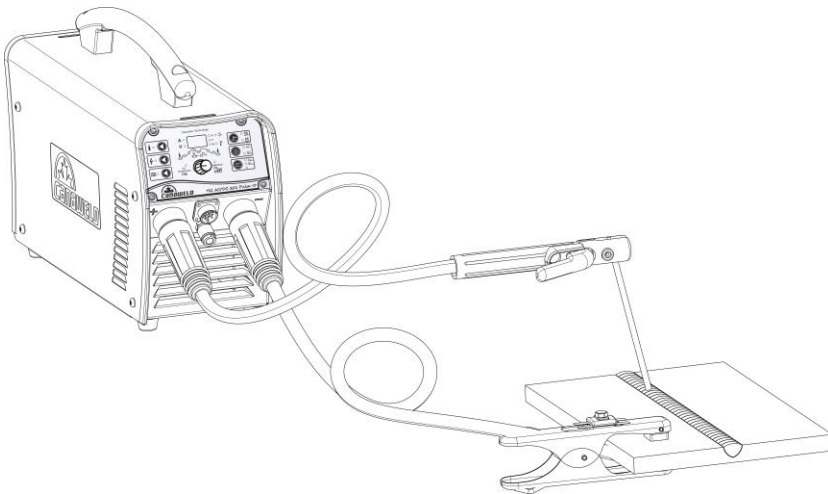
If the power supply voltage continually goes beyond the safe work voltage range, it will shorten the welder life-span. The below measures can be used:

- Change the power supply input net. Such as, connect the welder with the stable power supply voltage of distributor;
- Induce the machines using power supply in the same time;
- Set the voltage stabilization device in the front of power cable input.

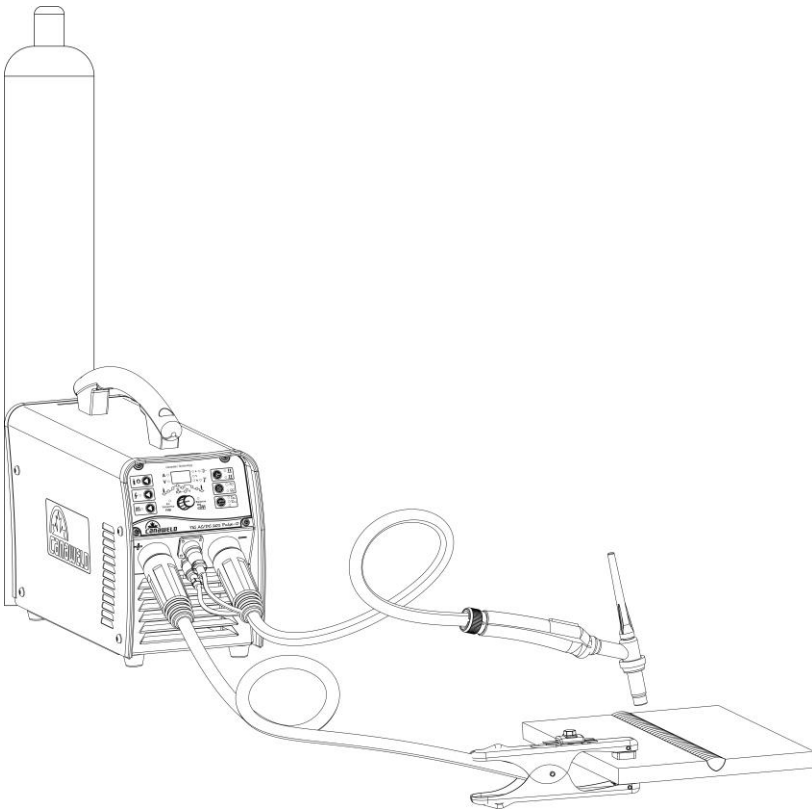
POLARITY CONNECTION (STICK PROCESS)

MMA (DC): Choosing the connection of DCEN or DCEP according to the different electrodes. Please refer to the electrode manual.

MMA (AC): No requirements for polarity connection.

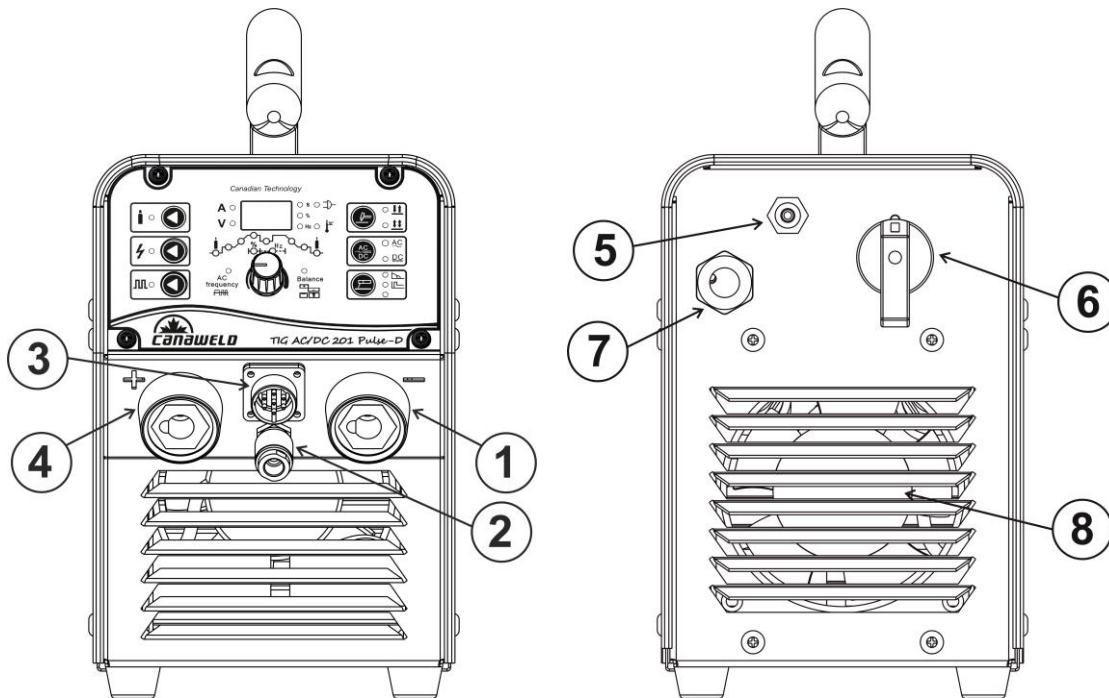


Assembling the equipment (TIG)



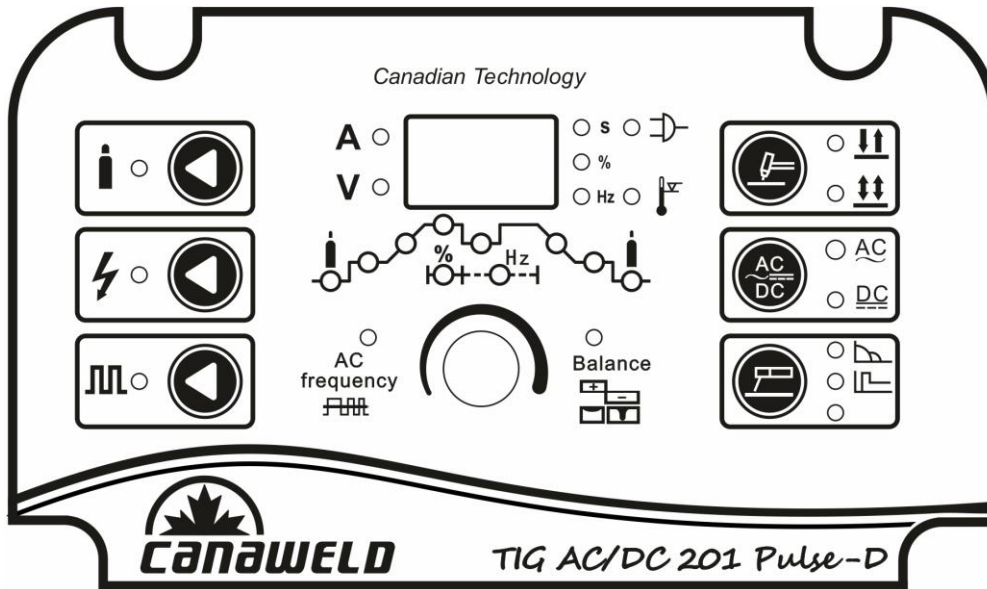
- Workpiece is connected to the positive electrode of welding machine, and welding torch is connected to the negative electrode, which is called DC POSITIVE CONNECTION; otherwise, that is called DC NEGATIVE CONNECTION. Generally, it is usually operated in DC POSITIVE CONNECTION in TIG welding mode.
- The control cable of torch switch consists of 2 wires, pedal control of 3 wires and the aero socket has 14 leads.
- Consumable parts for TIG torch, such as tungsten electrode、tip、gas nozzle、electrode shield(short/long) , please enquire us by mail or phone according to the accessory codes.
- When WSE-200PFC welding machine is operated in HF ignition method, the ignition spark can cause interferences in equipment near the welding machine. Be sure to take specially safety precautions or shielding measures.

OPERATION



- 1 **Negative output** negative polarity output.
- 2 **gas connector** Is connected to the gas input pipe of torch.
- 3 **Aero socket** Is connected to torch switch control wire. (It has 9 leads and lead 1- lead 2 are connected to torch switch control wire) .
- 4 **Positive output** positive polarity output.
- 5 **Shield gas input joint** To connect one head of the gas hose while the other head of which is connected to argon gas cylinder.
- 6 **Power source switch** Switch to "ON", the welder is turned on, while switch to "OFF", the welder is turned off.
- 7 **Power source input** To connect power source.
- 8 **Fan** When the electric welding machine is over-heat, the fan operates. It is used for cooling the components and parts inside the welder

Control panel



Overview

The key feature of the control panel is the logical way in which the controls are arranged. All the main parameters needed for day-to-day working can easily be

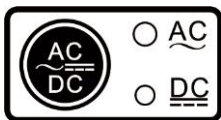
-selected with the keys

-altered with the adjusting dial

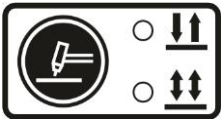
-shown on the display during welding.

The illustration below shows an overview of the main settings needed for day-to-day working, using the TIG AC DC 201 pulse D control panel as an example. You will find a detailed description of these settings in the following section.


(1) AC/DC selecting key




(2) Mode selecting key



(3) Power/ Alarm indicator

 Light up if the power switch on

 If the welder overheat, over-voltage or over-current. At the same time, display Err 001.

(4) Welding current adjust

Before the start of welding, you can use this potentiometer adjust welding current

(5) Welding current display

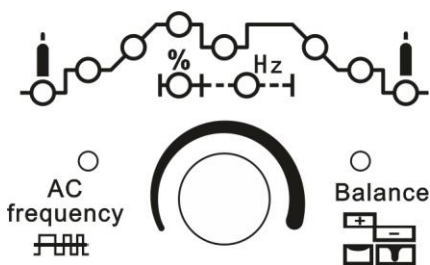
Display the pre-set or the actual welding current value.

Before the start of welding, it shows the pre-set current value

After the start of welding, it shows the present actual value of the welding current.

(6) Adjusting dial

If the parameter indicator lights up, then the selected parameter can be altered on adjusting dial.



Available parameters where 2T and 4T mode have been selected:

Gas pre-flow time

Unit S

Setting range 0.1—10

Factory setting 0.3

Starting current (only with 4T)

Unit A

Setting range 5—100%of main current (DC) ; 10—100%of main current (AC)

Factory setting 5

Upslope time

Unit S

Setting range 0—10

Factory setting 0

Welding current

Unit A

TIG AC DC 201 pulse D 5—200 (DC) ; 10—200 (AC)

Base current

Unit A

TIG AC DC 201 pulse D 5—200 (DC) ; 10—200 (AC)

Important! Only selectable when “pulse key” has been pressed.

Ratio of pulse duration to base current duration

Unit %

Setting range 5—100

Factory setting 5

Important! Only selectable when “pulse key” has been pressed.

Pulse frequency

Unit Hz

Setting range 0.5—200

Factory setting 0.5

Important! Only selectable when “pulse key” has been pressed.

Downslope time

Unit S

Setting range 0—10

Factory setting 0

Crater arc current (only with 4T)

Unit S

Setting range 5—100% of main current I_w (DC) ; 10—100% of main current I_w (AC)

Factory setting 5

Gas post-flow time

Unit S

Setting range 1—10.0

Factory setting 3

AC frequency (only with TIG-AC)

Unit Hz

Setting range 50—250 ($I_w < 70A$)

50—200 ($70A \leq I_w < 100A$)

50—150 ($100A \leq I_w < 140A$)

50—120 ($140A \leq I_w < 170A$)

50—100 ($170A \leq I_w$)

Balance (only with TIG-AC)

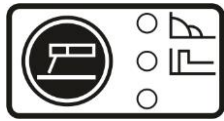
Balance adjustment is mainly used to set the adjustment of eliminating metal-oxide (such as Aluminum, Magnesium and its alloy) while AC output.

Unit %

Setting range 15—50

Factory setting 15

(7) Rod electrode(MMA) welding key



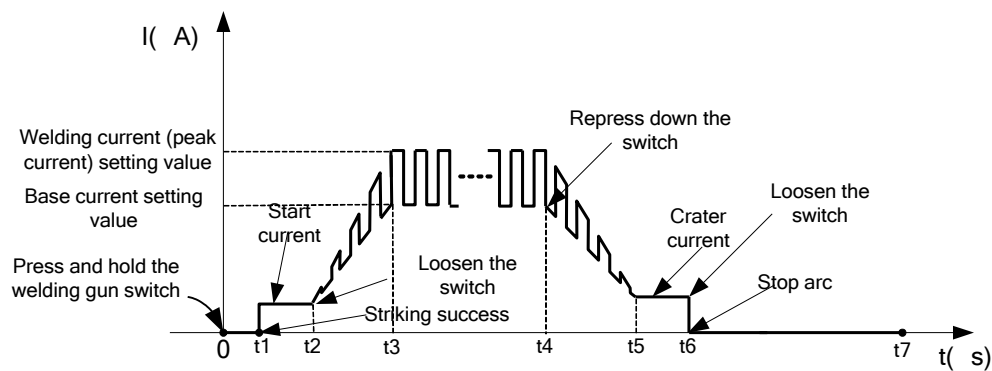
Parameter	Setting range
Arc force	0-10
Hot start	0-10
Arc length	0-10

TIG Welding Operation

TIG welding (4T operation)

The start current and crater current can be pre-set. This function can compensate the possible crater that appears at the beginning and end of the welding. Thus, 4T is suitable for the welding of medium thickness plates.

Pulsed TIG long welding (4T) :



Introduction :

- 0 : Press and hold the gun switch, Electromagnetic gas valve is turned on. The shielding gas starts to flow;
- 0 ~ t1 : Pre flow time, adjustment range of pre flow time :0.1~10.0S;
- t1 : Striking success, adjustment range of start current: 5~200A;
- t2 : Loosen the gun switch, the output current slopes up from start current; if the output pulse function is turned on, the output current is pulsed;
- t2 ~ t3 : Output current slopes up to the setting current value; adjustment range of up slope time 0~10.0S ;
- t3 ~ t4 : Welding process. During this period, the gun switch is loosened;

Note: If the output pulse function is turned on, the output current is pulsed. If the output pulse function is turned off, the output current is DC current;

- t4 : Repress down the gun switch, the output current slopes down to crater current; if the output pulse function is turned on, the slope down current is pulsed;
- t4 ~ t5 : Down slope time, adjustment rang of down slope time: 0~10.0S;
- t5 ~ t6 : Crater current holds time; adjustment range of crater current: 5~200A;
- t6 : Loosen the gun switch, stop arc, and keep on argon flowing;

- $t_6 \sim t_7$: Post flow time, adjustment range of post flow time: 1.0 ~ 10.0S;
- t_7 : Electromagnetic valve is closed and stop argon flowing. Welding is finished.

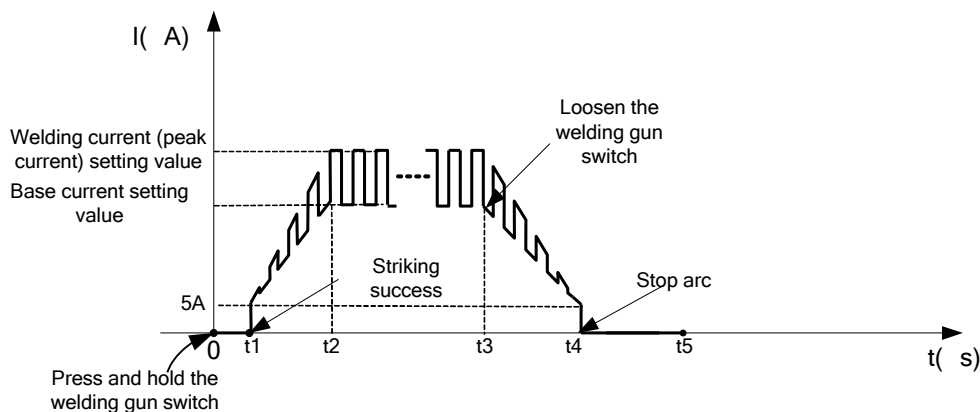
Remarks: Repeat welding function :

In 4T mode, when you press the second time to stop the arc, if your press in a very short time, the output current will reduce to half firstly, then the customer can weld in small current as you want without ignite again, if you press the trigger again for stop the arc; But if press in more than 0.5 seconds, the arc will stop at your second press.

TIG welding (2T operation)

This function without the adjustment of start current and crater current is suitable for the Re-tack welding, transient welding, thin plate welding and so on.

Pulsed TIG short welding (2T) :



Introduction :

- 0 : Press and hold the gun switch, Electromagnetic gas valve is turned on. The shielding gas starts to flow;
- 0 ~ t_1 : Pre flow time, adjustment range of pre flow time :0.1~10.0S;
- $t_1 \sim t_2$: Striking success, the output current slopes up to the setting current from minimum current (5A); if the output pulse function is turned on, the slope up current is pulsed;
- $t_2 \sim t_3$: During the whole welding process, the gun switch is pressed and held without releasing;
Note: If the output pulse function is turned on, the output current is pulsed. If the output pulse function is turned off, the output current is DC current;
- t_3 : Loosen the gun switch, the output current slopes down; if the output pulse function is turned on, the slope down current is pulsed;
- $t_3 \sim t_4$: The output current slopes down to minimum current (5A), stop arc; adjustment range of down slope time: 0~10S;
- $t_4 \sim t_5$: Post flow time, adjustment range of post flow time: 0.1 ~ 10.0S;
- t_5 : Electromagnetic valve is closed and stop argon flowing. Welding is finished.

Short circuit protect function :

① TIG /DC/LIFT : If the tungsten electrode touches the workpiece when welding, the current will drop to 20A, which can reduce the tungsten spoilage farthestly, prolong the using life of the tungsten electrode, and prevent tungsten clipping.

② TIG /DC/HF : If the tungsten electrode touches the workpiece when welding, the current will drop to 0 within 1s, which can reduce the tungsten spoilage farthestly, prolong the using life of the tungsten electrode, and prevent tungsten clipping.

③ MMA operation : if the electrode touches workpiece over two seconds, the welding current will drop to the 0 automatically to protect the electrode.

Prevent arc-break function : TIG operation, Avoid arc-break with special means, even if arc-break occurs the HF will keep the arc stable

④ TIG : If the TIG torch is pressed quickly, the welding current will drop a half, then if the TIG torch is pressed quickly again, the welding current will get back.

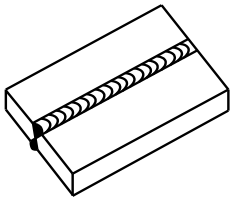
Notices:

- Check the condition of welding and connection units firstly, otherwise there will be malfunction such as ignition spark gas leakage out of control and so on.
- Check that whether there is enough Argon gas in the shield gas cylinder, you can test the electromagnetic gas valve through the switch on the front panel.
- Do not let the torch aim at your hand or else of your body. When you press the torch switch, the arc is ignited with a high-frequency, high-voltage spark, and the ignition spark can cause interferences in equipment.
- The flow rate is set according to the welding power used in the job. Turn the regulation screw to adjust the gas flow which is shown on the gas hose pressure meter or the gas bottle pressure meter.
- The spark ignition works better if you keep the 3mm distance from the workpiece to the tungsten electrode during the ignition.

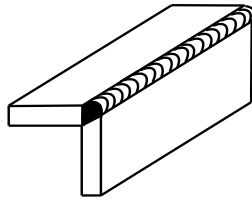
Note: When select AC output, the current and the wave form are as same as the above, but output polarity changes alternately.

Welding Parameters

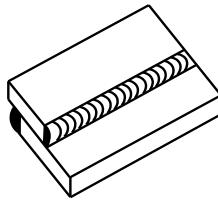
1. JOINT FORMS IN TIG/MMA



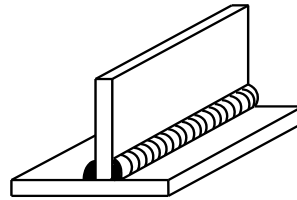
a butt joint



b lap joint



c corner joint



d T joint

The explanation of welding quality

The corresponding relationship between gas nozzle diameter and electrode diameter

Gas nozzle diameter/mm	Electrode diameter/mm
6.4	0.5
8	1.0
9.5	1.6 or 2.4
11.1	3.2

Notice: the above parameters originate from Welding Dictionary

The relation of welding area color & protect effect of stainless steel

Welding area color	golden	blue	red-grey	grey	black
Protect effect	best	better	good	bad	worst

The relation of welding area color & protect effect of Ti-alloy

Welding area color	bright argent	orange-yellow	blue-purple	caseous	white powder of titanium oxide
Protect effect	best	better	good	bad	worst

TIG Parameters Matching

tungsten electrode diameter /mm	sharpened of the electrode diameter/mm	angle of cone (°)	background current/A
1.0	0.125	12	2 ~ 15
1.0	0.25	20	5 ~ 30
1.6	0.5	25	8 ~ 50
1.6	0.8	30	10 ~ 70
2.4	0.8	35	12 ~ 90
2.4	1.1	45	15 ~ 150
3.2	1.1	60	20 ~ 200

TIG of stainless steel (single run welding)

Workpiece thickness /mm	Joint form	tungsten electrode diameter/mm	welding wire diameter/mm	Argon gas flow rate/ L·min ⁻¹	welding current (DCEP)	Welding speed/ cm·min ⁻¹
0.8	Butt joint	1.0	1.6	5	20 ~ 50	66
1.0	Butt joint	1.6	1.6	5	50 ~ 80	56
1.5	Butt joint	1.6	1.6	7	65 ~ 105	30
1.5	Corner joint	1.6	1.6	7	75 ~ 125	25
2.4	Butt joint	1.6	2.4	7	85 ~ 125	30
2.4	Corner joint	1.6	2.4	7	95 ~ 135	25
3.2	Butt joint	1.6	2.4	7	100 ~ 135	30
3.2	Corner joint	1.6	2.4	7	115 ~ 145	25
4.8	Butt joint	2.4	3.2	8	150 ~ 225	25
4.8	Corner joint	3.2	3.2	9	175 ~ 250	20

Parameters of piping back sealing welding for mild steel

Piping diameter/mm	Tungsten electrode diameter/mm	Gas nozzle diameter/mm	Welding wire diameter/mm	Welding current/A	Arc voltage/V	Argon flow rate / L·min ⁻¹	Welding rate / cm·min ⁻¹
38	2.0	8	2	75 ~ 90	11 ~ 13	6 ~ 8	4 ~ 5
42	2.0	8	2	75 ~ 95	11 ~ 13	6 ~ 8	4 ~ 5
60	2.0	8	2	75 ~ 100	11 ~ 13	7 ~ 9	4 ~ 5
76	2.5	8 ~ 10	2.5	80 ~ 105	14 ~ 16	8 ~ 10	4 ~ 5
108	2.5	8 ~ 10	2.5	90 ~ 110	14 ~ 16	9 ~ 11	5 ~ 6
133	2.5	8 ~ 10	2.5	90 ~ 115	14 ~ 16	10 ~ 12	5 ~ 6
159	2.5	8 ~ 10	2.5	95 ~ 120	14 ~ 16	11 ~ 13	5 ~ 6
219	2.5	8 ~ 10	2.5	100 ~ 120	14 ~ 16	12 ~ 14	5 ~ 6
273	2.5	8 ~ 10	2.5	110 ~ 125	14 ~ 16	12 ~ 14	5 ~ 6
325	2.5	8 ~ 10	2.5	120 ~ 140	14 ~ 16	12 ~ 14	5 ~ 6

Notice: the above parameters originate from Welding Dictionary》 P167, Volume 1 of Edition 2.

Parameters of AC TIG for Aluminum and its alloy

Sheet thickness /mm	Welding wire diameter /mm	Tungsten electrode diameter /mm	Pre-heat Temperature /°C	Weldi ng curren t /A	Argon flow rate /L· min ⁻¹	Gas nozzle diameter /mm	Remark
1	1.6	2	—	45 ~ 60	7 ~ 9	8	Flange welding
1.5	1.6 ~ 2.0	2	—	50 ~ 80	7 ~ 9	8	Flange or butt welding by one side
2	2 ~ 2.5	2 ~ 3	—	90 ~ 120	8 ~ 12	8 ~ 12	Butt welding
3	2 ~ 3	3	—	150 ~ 180	8 ~ 12	8 ~ 12	V-groove butt welding
4	3	4	—	180 ~ 200	10 ~ 15	8 ~ 12	
5	3 ~ 4	4	—	180 ~ 240	10 ~ 15	10 ~ 12	
6	4	5	—	240 ~ 280	16 ~ 20	14 ~ 16	
8	4 ~ 5	5	100	260 ~ 320	16 ~ 20	14 ~ 16	

SECTION 4- MAINTENANCE & BASIC TROUBLESHOOTING

MAINTENANCE



Please disconnect power to machine before performing maintenance.

- Check periodically whether cable connection is in good condition (esp. plugs). Tighten any loose connections. If there is oxidization, remove it with sandpaper and then reconnect.
- Clean the dust inside the machine periodically with dry and clean compressed air. If welding environment has heavy smoke and pollution, machine should be cleaned daily. The pressure of the compressed air should be at a low pressure in order to avoid the small parts inside the machine being damaged.
- Avoid water and vapor entering the machine. If this occurs, dry machine internals and check the insulation of the equipment (including that between the connections and that between the connection and the enclosure). Only when there is no moisture present, can the machine be used.
- Check all cables periodically, to be sure they are in good condition with no worn spots or cracks in outer insulation. If there is any dilapidation, rewrap it or replace all damaged cables.
- Put the machine into clean packing and in a dry location if it is not to be used for an extended period of time.
- If machine is in an environment that is in or near chemicals, cover machine when not in use.
- Check gas hose periodically, to ensure it is in good condition and has no cracks, if any damage/wear is visible replace hose.

BASIC TROUBLESHOOTING

S/N	Troubles	Reasons	Solution
1	Turn on the power source, and fan works, but the power pilot lamp is not on.	The power light damaged or connection is not good	Check and repair Pr7
		The transformer of power is broken	Repair or change the transformer
		Control PCB failures	Repair or change the control Pr4
2	Turn on the power source, and the power lamp is on, but fan doesn't work	There is something in the fan	Clear out
		The start capacitor of fan damaged	Change capacitor
		The fan motor damaged	Change fan
3	Turn on the power source, the power lamp is not on, and fan doesn't work	No power supply input	Check whether there is power supply
		The fuse inside the machine damaged	Change it (3A)
4	The number on the display is not intact.	The LED in the display is broken	Change the LED
5		The max value is not accordant (refer to §3.1)	Adjust potentiometer Imin on the power board.

S/N	Troubles		Reasons	Solution
	The max and min value displayed doesn't accord with the set value.		The min value is not accordant (refer to §3.1)	Adjust potentiometer I _{max} in the current meter.
6	No no-load voltage output (MMA)		The machine is damaged	Check the main circuit and the Pr4.
7	Arc can not be ignited (TIG)	There is spark on the HF igniting board.	The welding cable is not connected with the two output of the welder.	Connect the welding cable to the welder's output.
			The welding cable damaged.	Repair or change it.
			The earth cable connected unstably.	Check the earth cable.
			The welding cable is too long.	Use an appropriate welding cable.
			There is oil or dust on the workpiece.	Check and remove it.
	There is not spark on the HF igniting board.	The HF igniting board does not work.	Repair or change Pr8	
		The malfunction of the welding gun switch.	Check the welding gun switch, control cable and aero socket.	
8	No gas flow (TIG)		Gas cylinder is close or gas pressure is low	Open or change the gas cylinder
			Something in the valve	Remove it
			Electromagnetic valve is damaged	Change it
9	Gas always flows		The gas-test on the front panel is on	The gas-test on the front panel is off
			Something in the valve	Remove it
			Electromagnetic valve is damaged	Change it
			The adjustment knob of pre-gas time on the front panel is damaged	Repair or change it
10	The welding current can not be adjusted		The welding current potentiometer on the front panel connection is not good or damaged	Repair or change the potentiometer
11	No AC output while selecting "AC"		The power PCB is in trouble.	Repair or change it.
			The AC drive PCB damaged.	Change it.
			The AC IGBT module damaged.	Change it.
12	The welding current displayed isn't accordant with the actual value.		The min value displayed isn't accordant with the actual value. (Please refer to §3.1)	Adjust potentiometer I _{min} on the power board.
			The max value displayed isn't accordant with the actual value. (Please refer to §3.1)	Adjust potentiometer I _{max} on the power board.
13	The penetration of molten pool is not enough.		The welding current is adjusted too low	Increase the welding current
			The arc is too long in the welding process	Use 2T operation

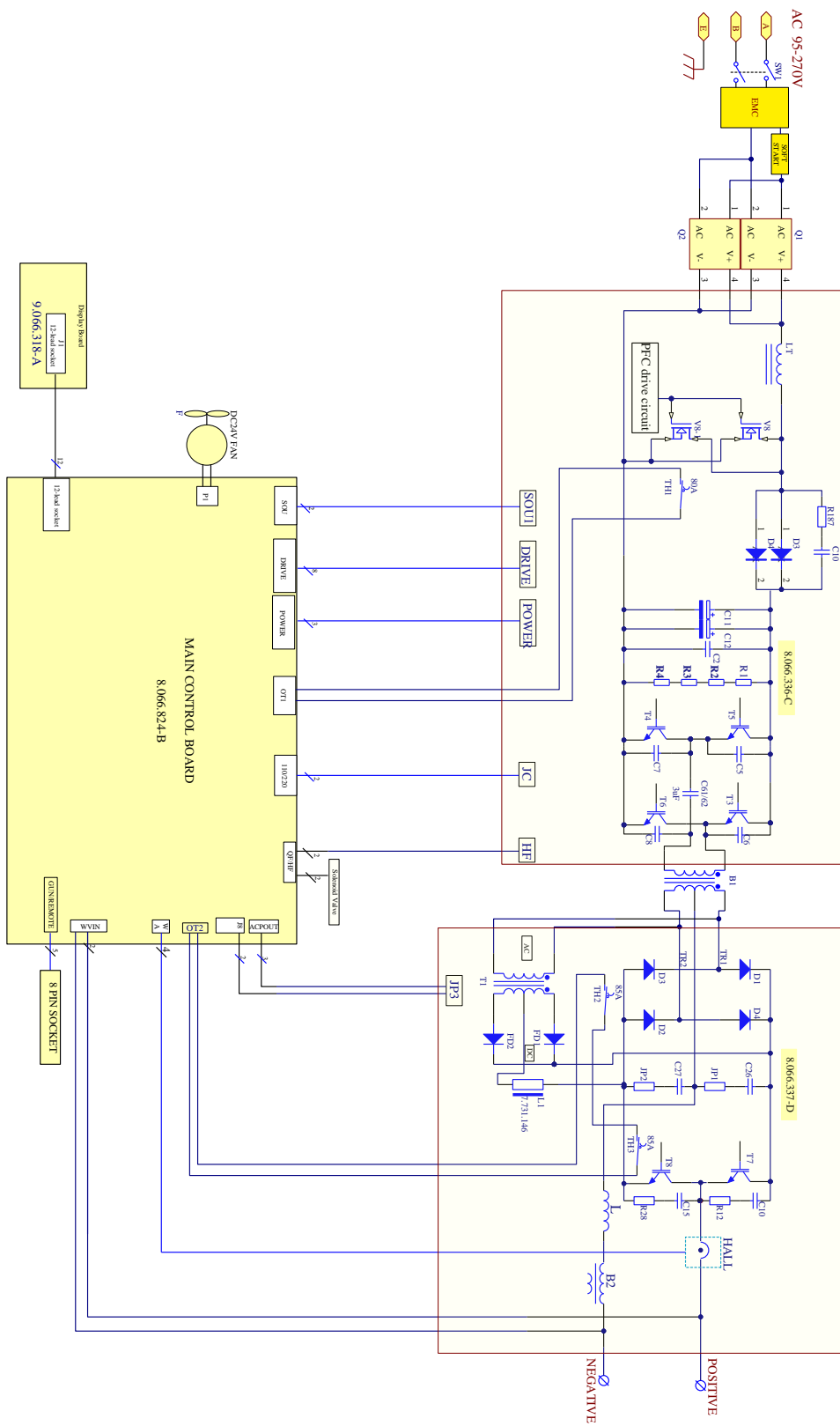
S/N	Troubles	Reasons		Solution
14	The alarm lamp on the front panel is on	Over heat protection	Two much welding current	Reduce the welding current output
			Working time too long	Reduce the duty cycle (work intermittently)
		Over-voltage protection	Power supply fluctuates	Using the stable power supply
		Low-voltage protection	Power supply fluctuates	Using the stable power supply
			Too many machines using power supply in the same time	Reduce the machines using power supply in the same time
Over-current protection	Unusual current in the main circuit	Check and repair the main circuit and drive Pr6		

SECTION 5- ELECTRICAL SPECIFICATIONS

SPECIFICATIONS

Specification								
Parameters	TIG AC/DC 201 Pulse - D							
Rated Input Voltage (V)	1~110±10% 50Hz			1~220±10% 50Hz				
Rated Input Voltage (A)	TIG	STICK		TIG	STICK			
	30.3 (AC)	31.9 (AC)		23.7 (AC)	27.3 (AC)			
	29 (AC)	29.5 (AC)		23.3 (AC)	25.1 (AC)			
No load Voltage (V)	24	52		45	52			
Process	TIG		STICK		TIG		STICK	
Current Type	AC	DC	AC	DC	AC	DC	AC	DC
Welding Current Range and Related Duty Cycle 40 (10 min)	40% 140A	DC 100A 35%		DC 200A 25%		DC 170A 30%		
		AC 100A 40%		AC 200A 30%		AC 170A 35%		
	60% 110A	DC 75A 60%		DC 130A 60%		DC 120A 60%		
		AC 80A 60%		AC 140A 60%		AC 130A 60%		
	100% 85A	DC 60A 100%		DC 100A 100%		DC 90A 100%		
		AC 60A 100%		AC 110A 100%		AC 110A 100%		
Protection Class	IP23							
Insulation Class	F							
Dimension (L x W x H)	(17.7 in x 6.7 in x 10.6 in) / (450 mm x 170 mm x 270 mm)							
Net Weight (lb / Kg)	25 lb / 11.2 Kg							
Canaweld Reserves the right to change the specifications without notice								

Electrical schematic diagram



SECTION 6- WARRANTY & SERVICE

STATEMENT OF LIMITED WARRANTY:

Canaweld Inc. warrants to the end user (purchaser) of all new welding and cutting equipment, and accessories (the "Warranted Goods") that such Warranted Goods will be free of defects in workmanship and material. This warranty is void if Canaweld Inc. or its Authorized Repair Centre finds that the equipment has been subjected to improper installation, improper care or abnormal operations. THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. All statutory warranties are excluded or limited to the maximum extent permitted by law.

WARRANTY PERIOD:

Canaweld Inc. will assume both the parts and labor expense of correcting defects during the warranty period. All warranty periods start from the date of purchase to the original end user provided that the original invoice evidencing the date of purchase is provided. In the event that the original invoice evidencing the date of purchase is not provided, then the warranty period shall start on the date of delivery to the dealer. The warranty period shall extend for three (3) years from the start of the warranty period.

CONDITIONS OF WARRANTY TO OBTAIN WARRANTY COVERAGE:

In order for any repair and/or replacement services of Warranted Goods to be covered pursuant to this warranty, such service must be performed by an Authorized Repair Centre. For assistance in locating an Authorized Repair Centre go to www.canaweld.com. Final determination of warranty on Warranted Goods will be made by Canaweld Inc.

Purchaser must present copy of a copy of the original proof of purchase, i.e. receipt/invoice, to be mailed in along with the completed Warranty/Product Registration form.

Mail the warranty/product registration form and proof of purchase to:

Canaweld Inc.

Attn: Warranty Department
155 Drumlin Circle, Unit 1
Vaughan, Ontario, Canada L4K 3E7

WARRANTY REPAIR:

If the Authorized Repair Centre confirms the existence of a defect covered by this warranty, the defect will be corrected by repair or replacement at Canaweld Inc.'s option. At Canaweld Inc.'s request, the Authorized Repair Centre will return to Canaweld Inc. any equipment/accessories claimed defective under Canaweld Inc.'s warranty. By submitting Warranted Goods to an Authorized Repair Centre, the purchaser confirms that the Authorized Repair Centre is authorized to deliver the Warranted Goods to Canaweld Inc. Repair or replacement is the sole and exclusive remedy available under this limited warranty.

FREIGHT COSTS:

The purchaser is responsible for shipment to and from the Authorized Repair Centre.

WARRANTY LIMITATIONS:

Canaweld Inc. will not accept responsibility or liability for

- repairs made outside of an Authorized Repair Centre;
- failures resulting from any improper use or installation;
- failures resulting from attachments, accessory items and parts not sold or approved by Canaweld Inc.;
- failures resulting from purchaser's delay in delivering the Warranted Goods to an Authorized Repair Centre after being notified of a potential problem with the Warranted Goods;
- damage resulting from normal wear and tear; and

- repairs or replacement of any parts reasonably considered to be consumables, including but not limited to the following TIG torch components: (i) collet and collet body, (ii) gas nozzles, (iii) gas cups, (iv) insulators, (v) back cups, and (vi) gas lenses, and to the following MIG/MAG torch components (vii) gas nozzles, (viii) tips, (ix) gas lenses, (x) liners, and (xi) drive wheels.

Canaweld Inc.'s liability under this warranty shall not exceed the cost of correcting the defect of the Warranted Goods or the cost of replacing them, whichever is less.

Canaweld Inc. will not be liable under this warranty for any loss suffered by the purchaser which:

- in any manner relates to a loss of revenue, profits, opportunity or production, loss or denial of use of any equipment or facility, increased expense of operation, economic loss, loss of goodwill or reputation, delay, business interruption or the cost of repair to or replacement of equipment, facilities or goods and related third party services; or
- in any manner can be construed as indirect, incidental, special, punitive or consequential losses or damages;

This warranty and the rights granted herein are non-transferrable.

This warranty gives the purchaser specific legal rights. The purchaser may also have other rights which vary from country to country.

For Purchasers in Quebec: The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intents à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.



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