DURALLOY®

DA501MMIGDP

OWNER'S MANUAL

CONTENTS

Hereby we state that we provide one year of guarantee for this welding machine since the date of purchase.

Please read and understand this instruction manual carefully before the installation and operation of this machine.

The contents of this manual may be revised without prior notice.

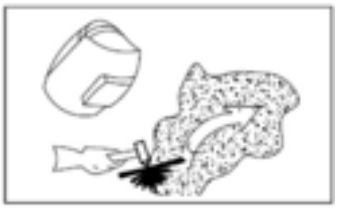
1. SAFETY

Welding and cutting is dangerous to the operator, people in or near the working area, and the surrounding, if the machine is not correctly operated. Therefore, the performance of welding cutting must only be under the strict and comprehensive observance of all relevant safety regulations. Please read and understand this instruction manual carefully before the installation and operation.

The switching of function modes is possibly damaging to the machine, while the welding operation is performed.
Do disconnect the electrode-holder cable with the machine, before the performance of welding.
A safety switch is necessary to prevent the machine from electric-leakage.
Welding tools should be of high quality.
Operators should be qualified.

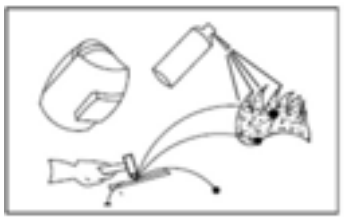
Electric shock: It could be fatal!
Connect the earth cable according to standard regulation.
Avoid all contact with live electrical parts of the welding circuit, electrodes and wires with bare hands. It is necessary for the operator to wear dry welding gloves while he performs the welding task.
The operator should keep the working piece insulating from himself/herself.

Smoke and gas generated while welding or cutting: harmful to people's health.
Avoid breathing the smoke and gas generated while welding or cutting.
Keep the working area well ventilated.



Arc rays: harmful to people's eyes and skin.
Wear welding helmet, anti-radiation glass and work clothes while the welding operation is performed.
Measures also should be taken to protect people in or near the working area

Fire hazard
The welding splash may cause fire, thus remove flammable material away from the working place.
Have a fire extinguisher nearby, and have a trained person ready to use it.



Noise: possibly harmful to peoples' hearing.
Noise is generated while welding/cutting, wear approved ear protection if noise level is high.

Machine fault:
Consult this instruction manual.
Contact your local dealer or supplier for further advice.

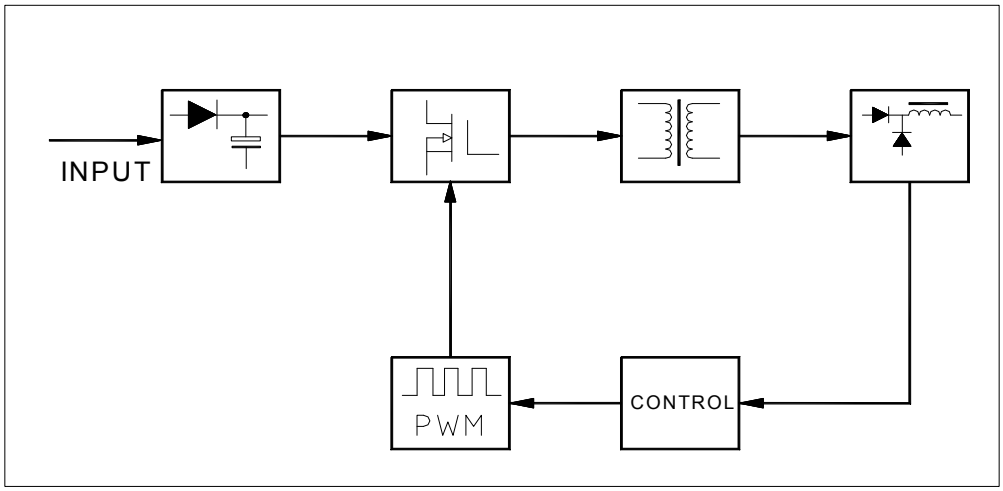
2. GENERAL DESCRIPTION

This welding machine is composed of the inverter MIG welder power supply with invariable voltage output external characteristics manufactured with advanced IGBT inverter technology designed by our company.

With high-power component IGBT, the inverter converts the DC voltage, which is rectified from input 50Hz/60Hz AC voltage, to high frequency 20KHz AC voltage; as a consequence, the voltage is transformed and rectified. The features of this machine are as follows:

- IGBT inverter technology, current control, high quality, stable performance;
- Closed feedback circuit, invariable voltage output, great ability of balance voltage up to ±10%;
- Electron reactor control, stable welding, little splash, deep molten pool, excellent welding bead shaping;
- Fit for welding the thin plate which over 0.8mm
- Slow wire feeding during arc starting, remove the melting ball after welding，reliable arc starting;

Block Diagram



3. MAIN PARAMETER

MODEL	DA501MMIGDP		
Power Supply Voltage(V)	3X400±10%		
Rated Input Capacity(KVA)	24.3	25	19
Rated Input Current(A)	37/37	38/38	29/29
Output Current Range(A)	50-500	10-500	10-500
Function	MIG	MMA	TIG
Duty Cycle(40℃ 10min)	100% 500A	100% 500A	100% 500A
No Load Voltage(V)	80		
Efficiency(%)	86.6	87.4	84.3
Power Factor	0.93	0.93	0.93
IP	21S		
Insulation Class	H		
Cooling Way	FAN & AIR		
Dimension(MM)	1060X610X1440		
Wire Diameter(MM)	0.8-1.0-1.2-1.6	Ø2.5,Ø3.2,Ø4.0,Ø5.0	
Net Weight(KG)	116		

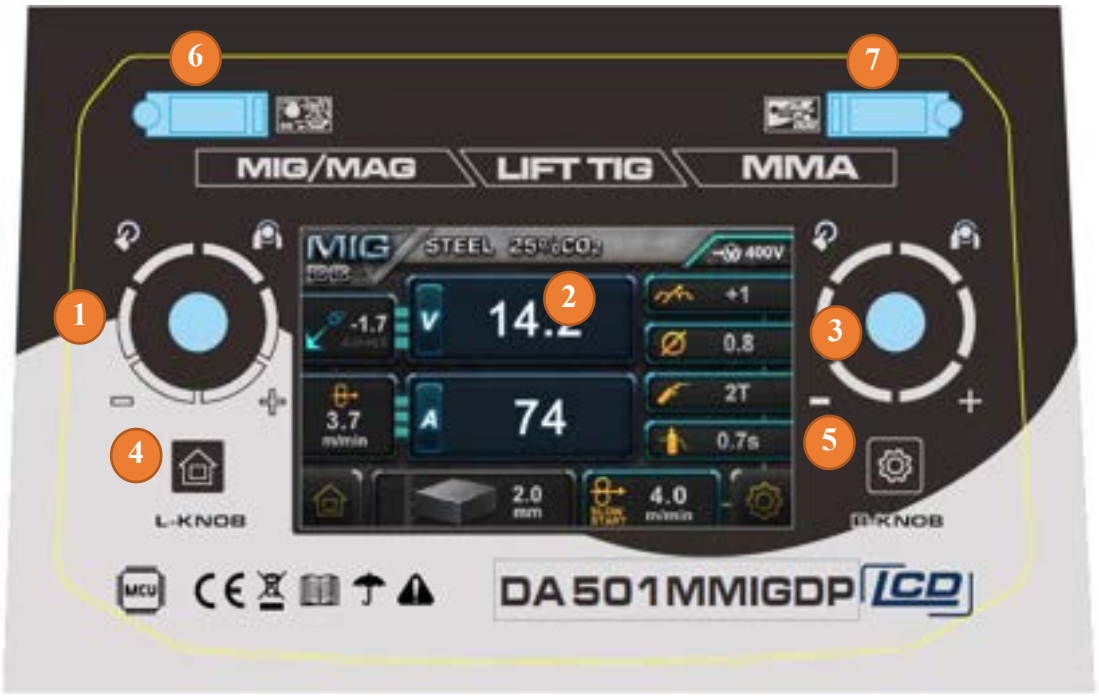
4. INSTALLATION AND STRUCTURE

4.1 Front Panel Instruction

4.1.1 Wire Feeder Front Panel Sticker Instruction

① Mode Select the interface mode
② WIRE CHECK
③ GAS CHECK
④ Function button
⑤ Liquid crystal display
⑥ Knob parameter adjustment
⑦ European-style port
⑧ Water inlet
⑨ Water outlet

4.2.1 Power Source Front Panel Sticker Instruction



① Mode, voltage adjustment and confirmation buttons
② Liquid crystal display
③ Function mode and confirm button
④ Mode selection interface Enter button
⑤ Function parameter switch button
⑥ Program upgrade connector for Main board
⑦ Program upgrade connector for Panel board

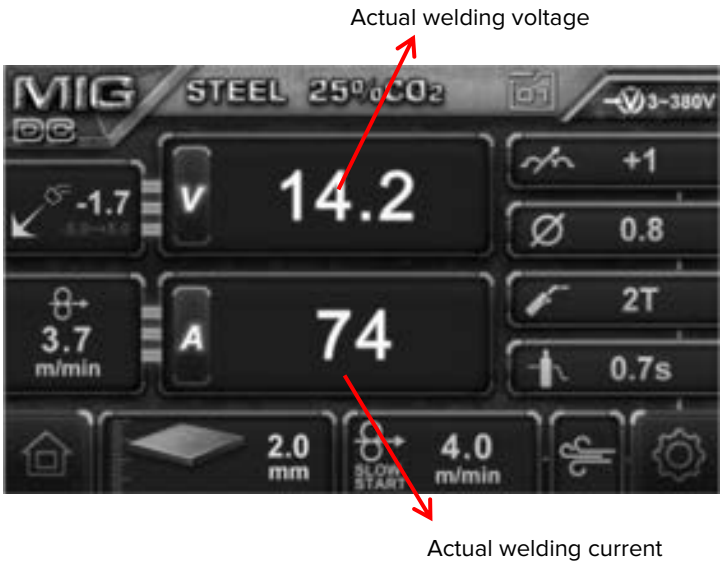
5. WELDING FUNCTION AND OPERATION

5.1 Controls for DC Normal MIG welding

Note： Please operate refer Figure1 on Page6

- Turn on the machine at the power switch. Wait 5 seconds for the digital control program to load. Press the left button to enter the mode section, select DC MIG mode through the left knob, press the left knob to confirm the selection. Enter the DC mode selection interface, by turning the left knob 1 select different modes, carbon steel CO2100%, carbon steel mixture, manual, no air.

- The multifunction digital display will show two numbers. On the top is the preset welding voltage, on the bottom is the preset wire feeding speed. These values are adjusted by rotating the Left knob. Wire feeder speed(welding current) is adjusted by rotating the Right knob Because of the synergic digital programming, both the voltage and the wire speed will adjust together.



Welding Voltage and Current

- Press the Right Button again to return to the main wires peed/voltage adjustment screen.
- During welding the screen display will change to show the actual welding voltage and welding current as picture show

Voltage fine adjustment

- To adjust the voltage independently, Rotate Left Knob to adjust the welding voltage. This will change and give the display screen as below.
- Then use the Left knob to adjust the welding voltage -5 - +5V from the standard synergic setting. This will not change the wire speed. It is recommended for ease of use that the wire feed target speed is adjusted first and then the voltage setting fine- tuned if necessary.

Inductance adjustment

- Press the Right button again to adjust the inductance of the welding arc. Use the Right Knob (3) to adjust the inductance from -10 (less inductance) to +10 (more inductance).

Caution: A quick note regarding inductance – this effectively adjusts the intensity of the welding arc.inductance makes the arc 'softer', with less weld spatter. Higher inductance gives a stronger driving arc which can increase penetration. Optimum inductance settings are affected by many welding variables such as: material type, shielding gas joint type, welding amperage, wire size. welding amperage, wire size. The default value of inductance is 0, it is recommended to keep this value unless the operator is an experienced welder.

Wire Diameter ：

- Wire diameter selection-Press the right button,enter the wire diameter selection.Turn the right knob to select the wire diameter.

- **2T/4T function**:
- press the Right Button ,2T/4T Selection Switch to move between 2T and 4T modes. 4T operation means the trigger is pulled once to start welding and pulled again to stop. This is useful for long weld joints. 2T mode, the trigger must be depressed and held during welding.

Post-flow time

- Press the right button, to adjust the post-flow time. Turn the right knob to adjust post time.

Slow wire-feeding

- Press the right button,turn the right knob to adjust the slow wire-feeding.

Water-cooling, air-cooling, switched

- Press the right button to enter the water cooling and air cooling introduction page.

Water Cooling

- Check the water tank and make sure the water level between MIN&MAX.
- Turn on the power switch behind the water tank.
- Choose proper

Air Cooling

- Choose proper

Shutdown Of Water Tank Delay

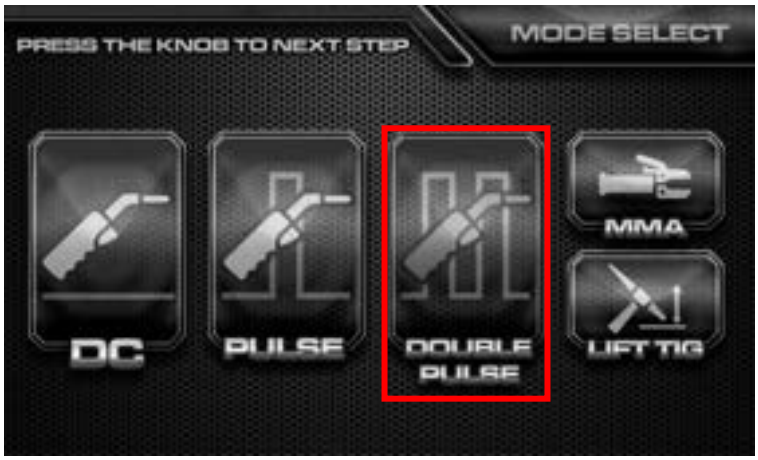
- Turning the knob can adjust the shutdown time of the water tank, which is divided into Thirty seconds, one minute, two minutes, three minutes, four minutes, five minutes, these five modes.

5.2 Controls for Single & Double Pulse MIG welding

Note：Please operate refer Figure1 on Page6

5.2.1 Controls for Double Pulse MIG

Note: In Double pulse MIG mode, Voltage fine adjustment, Welding voltage and current adjustment, Inductance/ Wire diameter/ 2T&4T adjustment same as 5.1 DC MIG mode.



Press the Left button to mode section, and select the Double pulse MIG mode by Left knob , and press the Left knob to confirm the selection.

Pulse Frequency (from 1.0 to 2.5)

Press the right knob, and turn the right knob to adjust the pulse frequency. After pulse frequency selected,press the right knob to confirm the setting.

"W" Pulse Width (from 20 to 80)

Press the right knob to enter the pulse width adjustment, turn the right knob to select pulse width, and press the right knob to storage it.

Pulse width is to adjust the duration of pulse welding current, the wider the pulse width, the weld bead is wide and deep, vice versa is narrow and shallow

"A" Base Current (from 20 to 99)

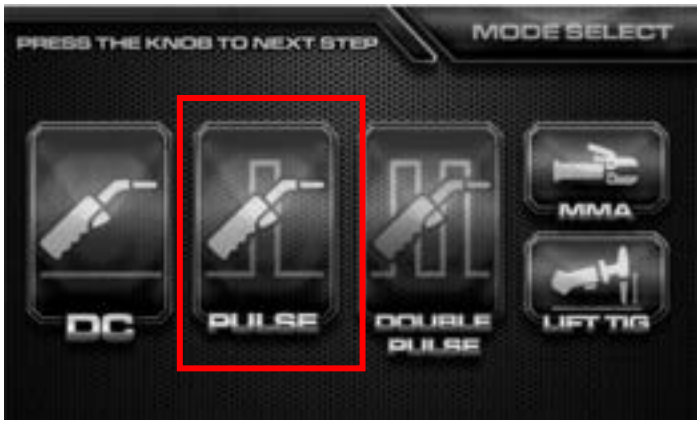
Press the right knob to enter the pulse base current adjustment turn the right knob to adjust the base current , and press the right knob to storage it.

Welding Basic Current adjustment, Basic current = Peak current Basic value(%).

Note: Pulse Frequency / Pluse Width / Base current only available for DOUBLE PULSE mode.

5.2.2 Controls for Single Pulse MIG

Note: In Single pulse MIG mode, Voltage fine adjustment, Welding voltage and current adjustment, Inductance/ Wire diameter/ 2T&4T adjustment same as 5.1 DC MIG mode.



Press the Left button to mode section, and select the Single pulse MIG mode by Left knob , and press the Left knob to confirm the selection.

Cool Pulse

Single pulse frequency is automatically matched and adjusted (pulse frequency is proportional to current). When the wire feeding speed is less than 2.5m/min in single pulse mode,welder will enter COOL PULSE mode automatically. Welding material use in single pulse mode is suitable for cold pulse welding.

NOTE, COOL PULSE welding only appear under the single pulse mode

5.3.1 MMA/STICK mode operation

Welding current adjustment

- When welding the display will change to show actual welding volts and amperage.。
- Turn the right knob to adjust the welding current

Hot start 0-10

- Press the right button to enter Hot Start adjustment. Twist the right knob to adjust the HOT START range

ARC force 0-10

- Press the right button to enter Arc Force adjustment. Twist the right knob to adjust the ARC FORCE range

VRD

- VRD stands for Voltage Reduction Device. The open circuit voltage at the output terminals of an MMA welding power source is high enough to potentially cause an electric shock to a person if they come into contact with the live terminals.
- VRD is a safety system that reduces this open circuit voltage to a level where the risk of electric shock is minimized. It does, however, make striking of the arc more difficult. Press the Right button to switch VRD on/off.

5.3.2 Lift TIG operation

Note： Please operate refer Figure1 on Page5

Press the Left button to mode section, and select the mode by Left knob , and press the Left knob to confirm the LIFT TIG selection.

Welding current adjustment

- When welding the display will change to show actual welding volts and amperage.
- Trun the right knob to adjust the welding current

5.4 Functional Parameter Custom Storage

Press the Left button to mode section, and select the mode by Left knob , and press the Left knob to confirm the JOB Setting selection.

Select any one of JOB 01 ~ JOB 06 to save the current function. After entering the save channel for the first time, the first step: select the function to be saved; the second step: enter the function, set parameters, press the left button, save and exit.

5.5 Wire Feed Rate (metric system / British system) unit switch

Enter the gas protection welding mode, long press the button in the lower left corner to hold 3S, and enter the unit switching interface

5.6 Error Code WARNING! & Operation

Alerts: OVER TEMPERATURE!

When welder operates at full load maximum current for a long time, a OVER TEMPERATURE will appear . This means that the temperature inside the machine has exceeded the standard temperature. Please stop welding immediately, but do not turn off the power and let the fan continue to operate and let the welder cooling. Welding can be resumed after the welding temperature drops below the standard temperature and there is no warning display of OVER TEMPERATURE.

Alerts: OVER CURRENT!

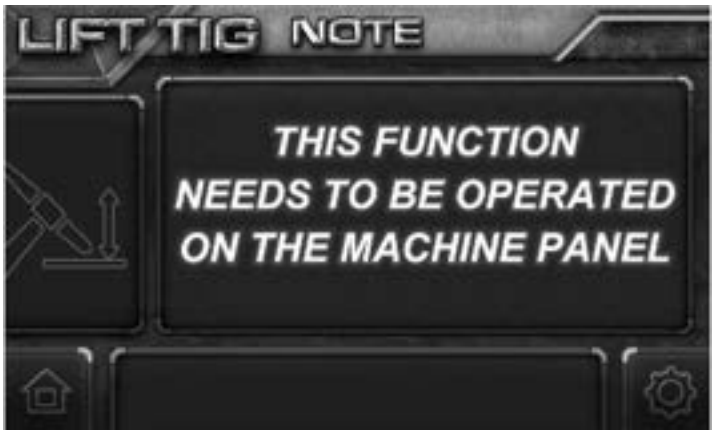
When the IGBT current exceeds the safety value when the welding machine is running, the welding machine will enter the OVER CURRENT protection to prevent the damage of IGBT. Please stop welding immediately, turn off the welder for 10-30s and then restart it.If the OVER CURRENT warning still appear, need to be repaired by professional maintenance personnel.

Alerts: WATER SHORTAGE ALERT!

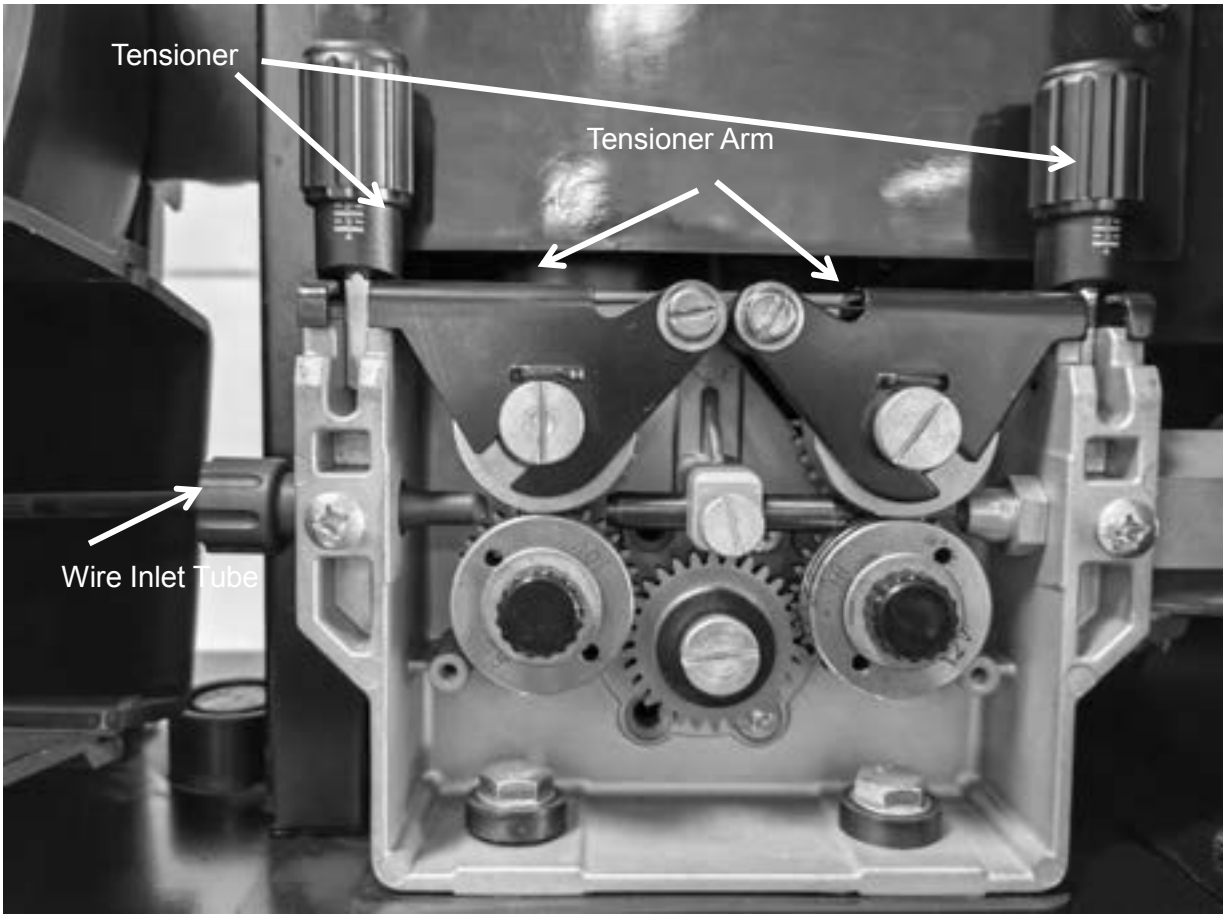
When the welding machine is conducting water-cooled welding, there will be WATER SHORTAGE ALERT, please stop welding immediately. At this time, first confirm whether the pump, valve and control system work normally, then check the water level sensor or manually measure the water level to ensure that the water level is in the normal interval, and finally check whether there is leakage or blockage in the pipeline and interface. If not, it is recommended to contact water or equipment maintenance personnel.

5.7 Wire feeder panel prompts

This prompt page appears during manual welding and argon arc welding on the slave (feeder) to remind the connection and adjust the parameters in this mode.



5.8 Welding wire reel installation



- Open the wire tray cover,install the wire reel on the holder of wire feeding machine, the hole of wire reel should align with fixed pin on the holder.
- Loose tensioner arm,choose different wire feeding groove according to the wire dimension. (Note: aluminum welding chooses U-shape groove, other welding wire choose the V-shape groove)
- Loose the nut of wire pressing roller, thread the welding wire from the spool through the wire input guide tube, through the roller groove and into the outlet guide tube. Note: adjust the tensioner and impact the wire, to make sure the wire will not slide. Avoid the wire deformation due to the oversize pressure
- Release the wire by rotating the wire reel anticlockwise. In order to avoid wire loose, the new wire reel will fix the top of wire on the edge of wire reel. Please cut off this top of wire.
- choose different wire feeding groove position according to the wire diameter.
- Press "wire check" button to lead out the wire.

⚠ Warning!

- **Before changing the feed roller or wire spool, ensure that the mains power is switched off**
- **The use of excessive feed tension will cause rapid and premature wear of the drive roller, the support bearing and the drive motor.**

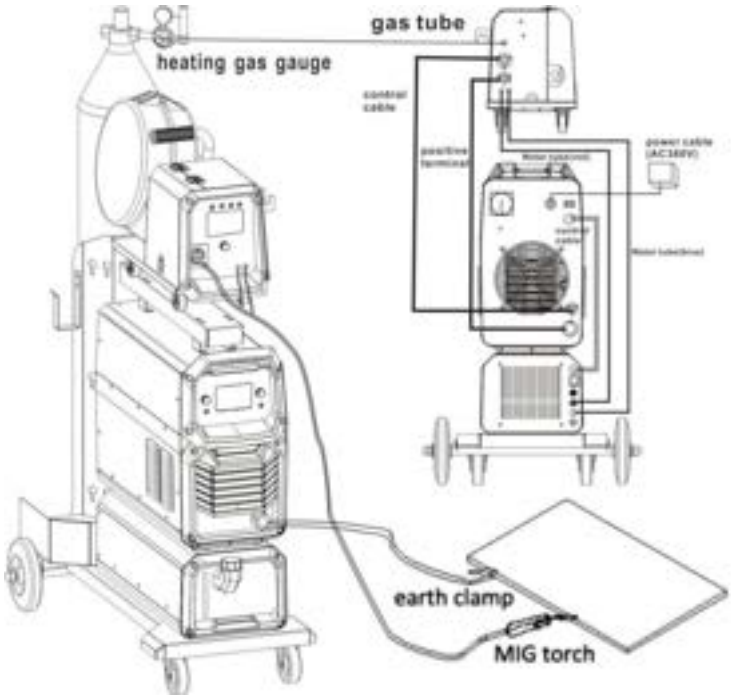
5.9 Welding Set Up & Operation

NOTE:

Please connect the power line of the welder to the input voltage consistent with the parameters on the machine nameplate

Setup operation as below,please operate refer

5.6.1 Setup for gas shielded MIG welding operation

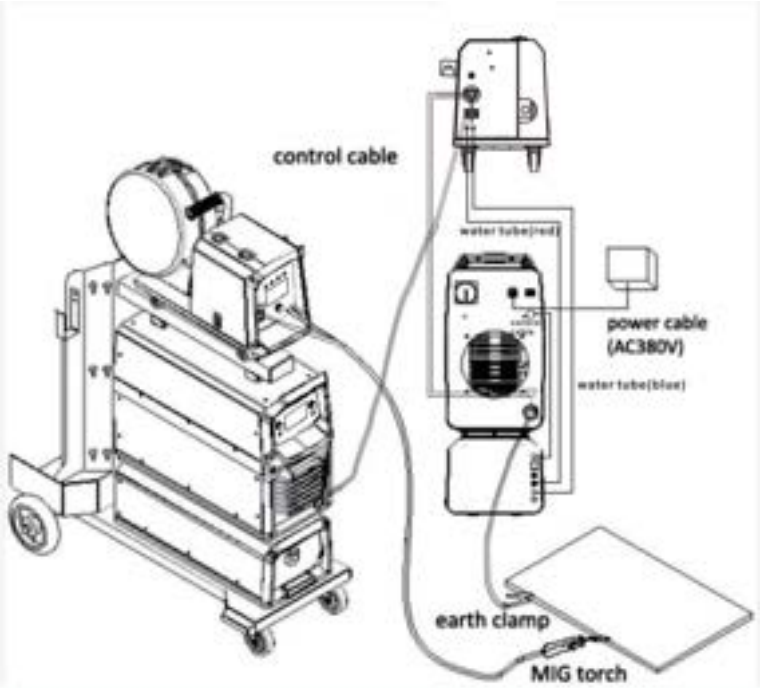


In this figure, AC 380V is only an example. Please Connect the input voltage consistent with the nameplate parameters.

- Connect the gas bottle (equipped with the CO2 flow gauge) and the gas inlet with gas tube.
- Connect the terminal of the earth clamp with the negative output, another side is clamped on the workpiece
- Connect the MIG torch with the output terminal on the wire feeding machine, insert the welding wire through the MIG torch manually.
- Connect the wire feeding machine input cable with the positive terminal of power source. The control cable of wire feeding machine should be connected with the control connector of power source.

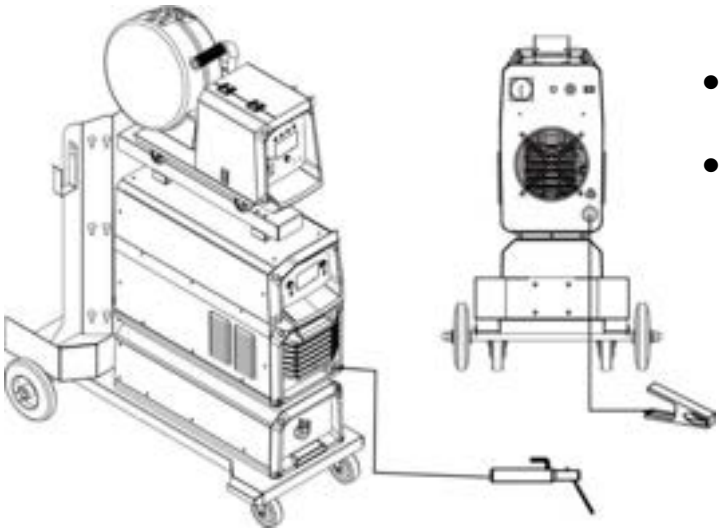
Warning!-Gas shielded MIG welding requires a shielding gas supply, gas regulator and gas shielded MIG wire. These accessories are not supplied standard with the MIG machine. Please contact your local dealers for details

5.9.2 Setup for gasless MIG welding operation

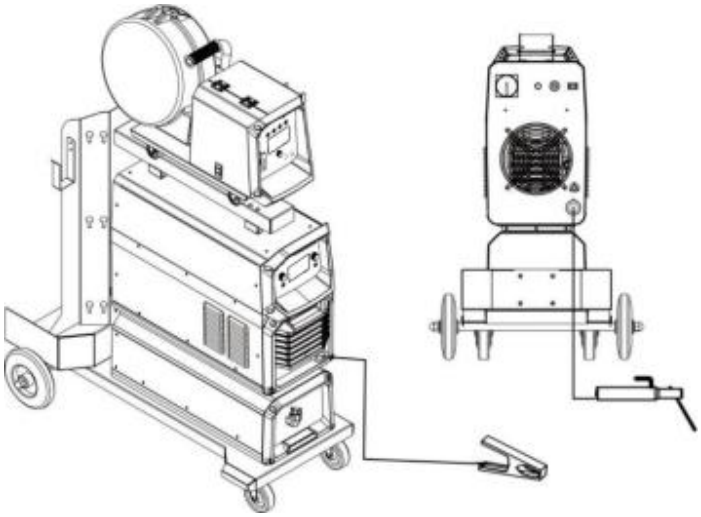


- Connect the MIG Torch Euro Connector to the torch socket on the front of the wire feeding machine . Secure by firmly hand tightening the threaded collar on the MIG Torch Euro Connector clockwise.
- Check that the correct flux cored, gasless wire, matching drive roller and welding tip are fitted
- Connect Torch Connection Power Lead to the negative (-) welding output terminal
- Connect Earth Lead Quick Connector to the positive (+) output welding terminal .
- Connect Earth Clamp to the work piece. Contact with workpiece must be strong contact with clean, bare metal, with no corrosion, paint or scale at the contact point.

5.9.3 Setup for MMA welding operation



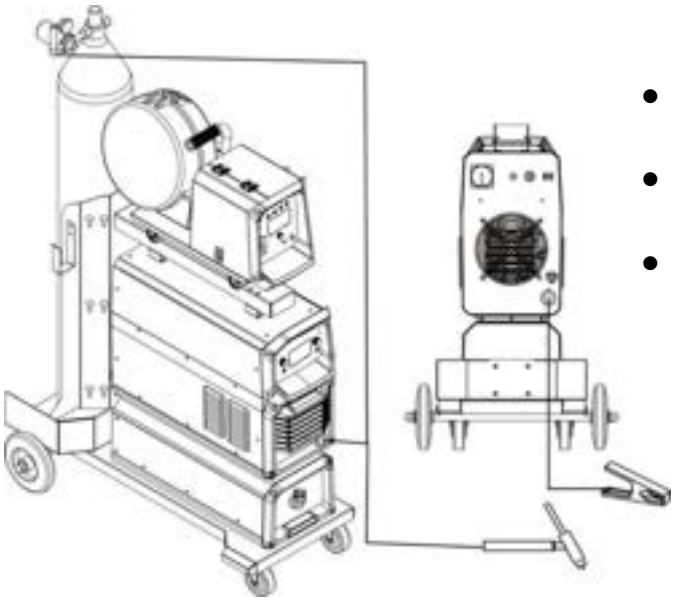
- Connect Electrode holder Quick Connector to the negative (-) welding output terminal
- Connect Earth Lead Quick Connector to the positive (+) output welding terminal See picture below



- Connect Electrode holder Quick Connector to the negative (+) welding output terminal
- Connect Earth Lead Quick Connector to the positive (-) output welding terminal See picture below

Warning! - MMA/Stick Welding requires an MMA lead set.

5.9.4 Setup for TIG welding operation



- Connect Lift TIG torch Quick Connector to the negative (-) output welding terminal 将 LIFT TIG
- Connect Earth Lead Quick Connectorto the positive (+) welding output terminal
- Connect the air hose of Lift tig torch with the Argon meter connector. See picture below

Direct Current Straight Polarity (DCSP)

- **Direct Current Straight Polarity (DCSP)**

Torch is connected with the negative (-)terminal of the power source and work-piece is connected with the positive(+)terminal.

- **Direct Current Reverse Polarity (DCRP)**

Work-piece is connected with the negative (-)terminal of the power source and torch is connected with the positive(+) terminal.

- Generally, it is usually operated in Direct Current Straight Polarity (DCSP) in TIG welding mode.

Warning! - TIG operation requires an argon gas supply, TIG torch, consumables and gas regulator. These accessories are not included standard with the MIG machine; contact your supplier for further details.

5.10.1 Gas bottle Installation .

Connection of Shield Gas

Connect the CO2 hose, which come from the wire feeder to the copper nozzle of gas bottle. The gas supply system includes the gas bottle, the air regulator and the gas hose, the heater cable should be inserted into the AC36V socket of machine's back, and use the hose clamp to tighten it to prevent leaking or air-in, so that the welding spot is protected.

Please note:

1) Avoid the sun shine on the gas cylinder to eliminate the possible explosion of gas cylinder due to the increasing pressure of gas resulted from the heat.

2) Fixed connector avoid leakage of shielding gas affects the performance of arc welding.8).

3) It is extremely forbidden to knock at gas cylinder and lay the cylinder horizontally.

4) Ensure no person is up against the regulator, before the gas release or shut the gas output.

5) The gas output volume meter should be installed vertically to ensure the precisely measuring.

6)Before the installation of gas regulator, release and shut the gas for several time in order to remove the possible dust on the sieve to avail the gas output.

Warning!-Since the arc of MIG welding is much strong than that of MMA welding, please wear welding helmet and protective clothing.

5.10.2The welding material,wire diameter, process and gas selection

MIG-500P LCD			
Material	Wire diameter	Process	Gas
Carbon steel	0.8/0.9/1.0/1.2/1.6	Constant voltage	100% CO2
Carbon steel	0.8/0.9/1.0/1.2/1.6	Constant voltage/NO gas	80% Ar+20% CO_2 mixed gas/ NO gas

Note: Since the arc of MIG welding is much strong than that of MMA welding, please wear welding helmet and protective clothing.

6. WELDING PARAMETERS TABLE

The option of the welding current and welding voltage directly influences the welding stability, welding quality and productivity. In order to obtain the good welding quality, the welding current and welding voltage should be set optimally. Generally, the setting of weld condition should be according to the welding diameter and the melting form as well as the production requirement.
The following parameter is available for reference.

6.1 setting the welding current

The selection of welding current, voltage and ARC will influence the stability, welding quality and the productivity during the welding process. In order to keep a good welding quality, the welding current should match the voltage and the ARC well. Select the wire diameter according to the globular transfer and the production requirement.

Refer to the below list, choose the common welding current, ARC and voltage.

Range of welding current and voltage in CO_2 welding

Wire ϕ (mm)	Short circuit transition		Granular transition	
	Current (A)	Voltage (V)	Current (A)	Voltage (V)
0.6	40~70	17~19	160~400	25~38
0.8	60~100	18~19	200~500	26~40
1.0	80~120	18~21	200~600	27~40
1.2	100~150	19~23	300~700	28~42
1.6	140~200	20~24	500~800	32~44

6.2-The option of the welding speed

The welding quality and productivity should be taken into consideration for the option of welding speed. In case that the welding speed increases, it weakens the protection efficiency and speeds up the cooling process. As a consequence, it is not optimal for the seaming. If the speed is too slow, the work piece will be easily damaged, and the seaming is not ideal. In practical operation, the welding speed should not exceed 30m/hour.

6.3 he length of wire stretching out

The increase of the length of the solder length, the melting depth, the melting of the wire and the increase of the productivity; But the dry elongation passes large, the welding wire is easy to fuse, the splash is serious, make the welding process unsteady. Generally, take the diameter of the wire 10-15 times long.

6.4 The setting of the C02 flow volume

The protection efficiency is the primary consideration. Besides, inner-angle welding has better protection efficiency than external-angel welding. For the main parameter, refer to the following figure.

Option of $C0_2$ flow volume

Welding mode	Thin wire $C0_2$ welding	Thick wire $C0_2$ welding	Thick wire, big current $C0_2$ welding
CO_2 (L/min)	5 ~ 15	15 ~ 25	25 ~ 50

6.5 Parameter for butt-welding (Please refer to the following figure)

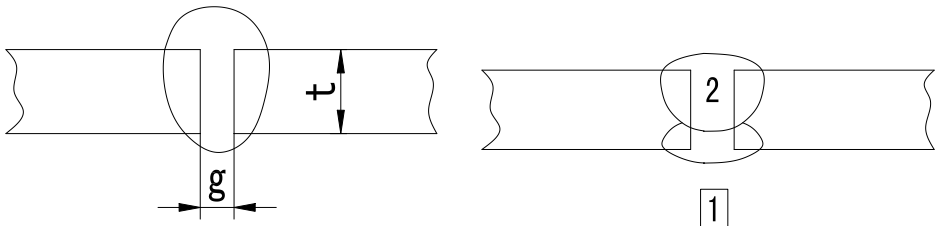


Plate thickness T (mm)	Gap g (mm)	Wire Φ (mm)	Welding current (A)	Welding voltage (V)	Welding speed (cm/min)	Gas volume (L/min)
0.8	0	0.8~0.9	60~70	16~16.5	50~60	10
1.0	0	0.8~0.9	75~85	17~17.5	50~60	10~15
1.2	0	1.0	70~80	17~18	45~55	10
1.6	0	1.0	80~100	18~19	45~55	10~15
2.0	0~0.5	1.0	100~110	19~20	40~55	10~15
2.3	0.5~1.0	1.0 or 1.2	110~130	19~20	50~55	10~15
3.2	1.0~1.2	1.0 or 1.2	130~150	19~21	40~50	10~15
4.5	1.2~1.5	1.2	150~170	21~23	40~50	10~15

6.6 Parameter for flat fillet welding (Please refer to the following figure.)

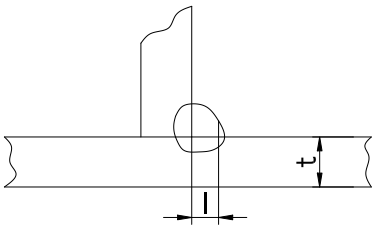


Plate thickness t (mm)	Corn size l (mm)	Wire Φ (mm)	Welding current (A)	Welding voltage (V)	Welding speed (cm/min)	Gas volume (L/min)
1.0	2.5~3.0	0.8~0.9	70~80	17~18	50~60	10~15
1.2	2.5~3.0	1.0	70~100	18~19	50~60	10~15
1.6	2.5~3.0	1.0 ~ 1.2	90~120	18~20	50~60	10~15
2.0	3.0~3.5	1.0 ~ 1.2	100~130	19~20	50~60	10~20
2.3	2.5~3.0	1.0 ~ 1.2	120~140	19~21	50~60	10~20
3.2	3.0~4.0	1.0 ~ 1.2	130~170	19~21	45~55	10~20
4.5	4.0~4.5	1.2	190~230	22~24	45~55	10~20

6.7 Parameter for fillet welding in the vertical position (Please refer to the following figure.)

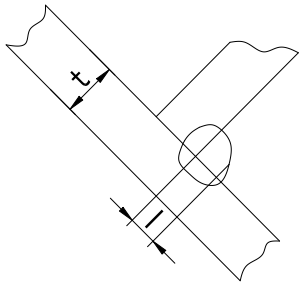
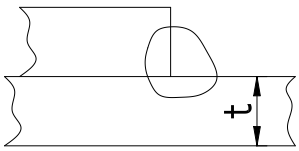
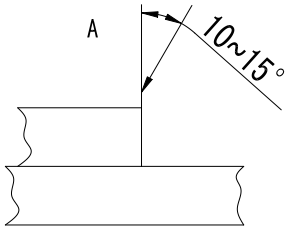


Plate thickness t (mm)	Corn size l (mm)	Wire Φ (mm)	Welding current (A)	Welding voltage (V)	Welding speed (cm/min)	Gas volume (L/min)
1.2	2.5~3.0	1.0	70~100	18~19	50~60	10~15
1.6	2.5~3.0	1.0 ~ 1.2	90~120	18~20	50~60	10~15
2.0	3.0~3.5	1.0 ~ 1.2	100~130	19~20	50~60	10~20
2.3	3.0~3.5	1.0 ~ 1.2	120~140	19~21	50~60	10~20
3.2	3.0~4.0	1.0 ~ 1.2	130~170	22~22	45~55	10~20
4.5	4.0~4.5	1.2	200~250	23~26	45~55	10~20

6.8 Parameter for Lap Welding (Please refer to the following figure.)





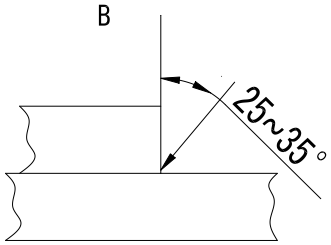


Plate thickness t (mm)	Corn size l (mm)	Wire Φ (mm)	Welding current (A)	Welding voltage (V)	Welding speed (cm/min)	Gas volume (L/min)
0.8	A	0.8~0.9	60~70	16~17	40~45	10~15
1.2	A	1.0	80~100	18~19	45~55	10~15
1.6	A	1.0 ~ 1.2	100~120	18~20	45~55	10~15
2.0	A or B	1.0 ~ 1.2	100~130	18~20	45~55	15~20
2.3	B	1.0 ~ 1.2	120~140	19~21	45~50	15~20
3.2	B	1.0 ~ 1.2	130~160	19~22	45~50	15~20
4.5	B	1.2	150~200	21~24	40~45	15~20

7. CAUTION

7.1. Working environment

1) Welding should be carried out in a relatively dry environment with its humidity of 90% or less.
2) The temperature of the working environment should be within -10°C to 40°C.
3) Avoid welding in the open air unless sheltered from sunlight and rain, and never let rain or water infiltrate the machine.
4) Avoid welding in dusty area or environment with corrosive chemical gas.
5) Avoid gas shielded arc welding in environment with strong airflow.

7.2. Safety tips

Overheating protection circuit is installed in this welding machine. If the overheating generated inside this welding machine, this welding machine will stop automatically. However, inappropriate use will still lead to machine damage, so please note:

7.2.1. Ventilation:

High current passes when welding is carried out, thus natural ventilation cannot satisfy the welding machine's cooling requirement. Maintain good ventilation of the louvers of this welding machine. The minimum distance between this welding machine and any other objects in or near the working area should be 30cm. Good ventilation is of critical importance for the normal performance and service life of this welding machin

7.2.2. No over-load:

Over-load current could obviously shorten the welding equipment's life, or even damage the machine.

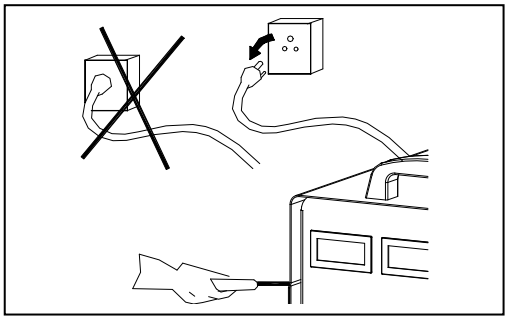
A sudden halt may occur while the welding operation is carried out while this welding machine is of over-load status. Under this circumstance, it is unnecessary to restart this welding machine. Keep the built-in fan working to bring down the temperature inside the welding machine.

7.2.3. Avoid electric shock:

An earth terminal is available for this welding equipment. Connect it with the earth cable to avoid the static and electric shock.

8. MAINTENANCE

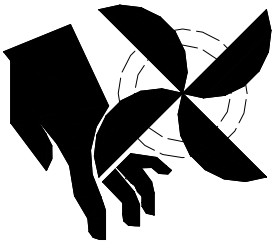
1. Disconnect input plug or power before maintenance or repair on machine.



2. Be sure input ground wire is properly connected to a ground terminal.

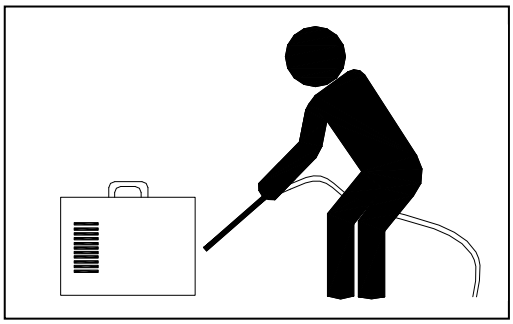
3. Check whether the inner gas-electricity connection is well (esp. the plugs) and tighten the loose connection; if there is oxidization, remove it with sandpaper and then re-connect.

4. Keep hands, hair, loose clothing, and tools away from electrical parts such as fans, wires when the machine is switched on.



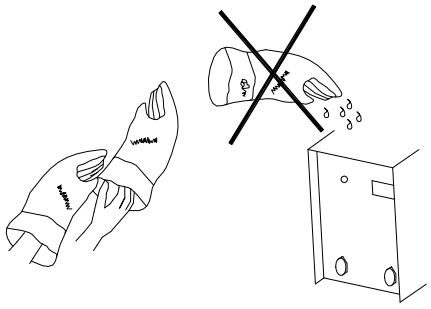
5. Clear the dust at regular intervals with clean and dry compressed air; if the working condition is with heavy smoke and air pollution, the welding machine should be cleaned daily.

6. The compressed air should be reduced to the required pressure lest the little parts in the welding machine be damaged.



7. To avoid water and rain, if there is, dry it in time, and check the insulation with mega-meter (including that between the connection and that between the case and the connection). Only when there is no abnormal phenomenon should the welding continue.

8. If the machine is not used for a long time, put it into the original packing in dry condition.



9. DAILY CHECKING

To make best use of the machine, daily checking is very important. During the daily checking, please check in the order of torch, wire-feeding vehicle, all kinds of PCB, the gas hose, and so on. Remove the dust or replace some parts if necessary. To maintain the purity of the machine, please use original welding parts.

Cautions : Only the qualified technicians are authorized to undertake the repair and check task of this welding equipment in case of machine fault.

9.1. Power supply

Part	Check	Remarks
Control panel	1. Operation, replacement and installation of Switch 2. Switch on the power, and check if the power indicator is on.	
Fan	1. Check if the fan is functioning and the sound generated is normal.	If the fan doesn't work or the sound is abnormal, do inner check.
Power supply	1. Switch on the power supply, and check if abnormal vibration, heating of the case of this equipment, variation of colors of case or buzz presents.	
Other parts	1. Check if gas connection is available, case and other joints are in good connection.	

9.2. Welding torch

Part	Check	Remarks
Nozzle	1. Check if the nozzle is fixed firmly and distortion of the tip exists.	Possible gas leakage occurs due to the unfixed nozzle.
	2. Check if there is spatter sticking on the nozzle.	Spatter possibly leads to the damage of torch. Use anti-spatter to eliminate the spatter.
Contact tip	1. Check if the contact tip is fixed firmly.	Unfixed contract tip possibly leads to unstable arc.
	2. Check if the contact tip is physically complete.	The physically incomplete contact tip possibly leads to unstable arc and arc automatically terminating.
Wire feeding hose	1. Make sure that there is the agreement of wire and wire feed tube.	Disagreement of the diameters of wire and wire feed tube possibly leads to the unstable arc. Replace it/them if necessary.
	2. Make sure that there is no bending or elongation of wire feed tube.	Bending and elongation of wire feed tube possibly leads to the unstable wire feed and arc. Replace it if necessary.
	3. Make sure that there is no dust or spatter accumulated inside the wire feed tube, which makes the wire feed tub blocked.	If there is dust or spatter, remove it.
	4. Check if the wire feed tube and O-shaped seal ring are physically complete.	The Physically incomplete wire feed tube or O-shaped seal ring possibly leads to the excessive spatter. Replace the wire feed tube or O-shaped seal ring if necessary.

9.3. Wire feeder

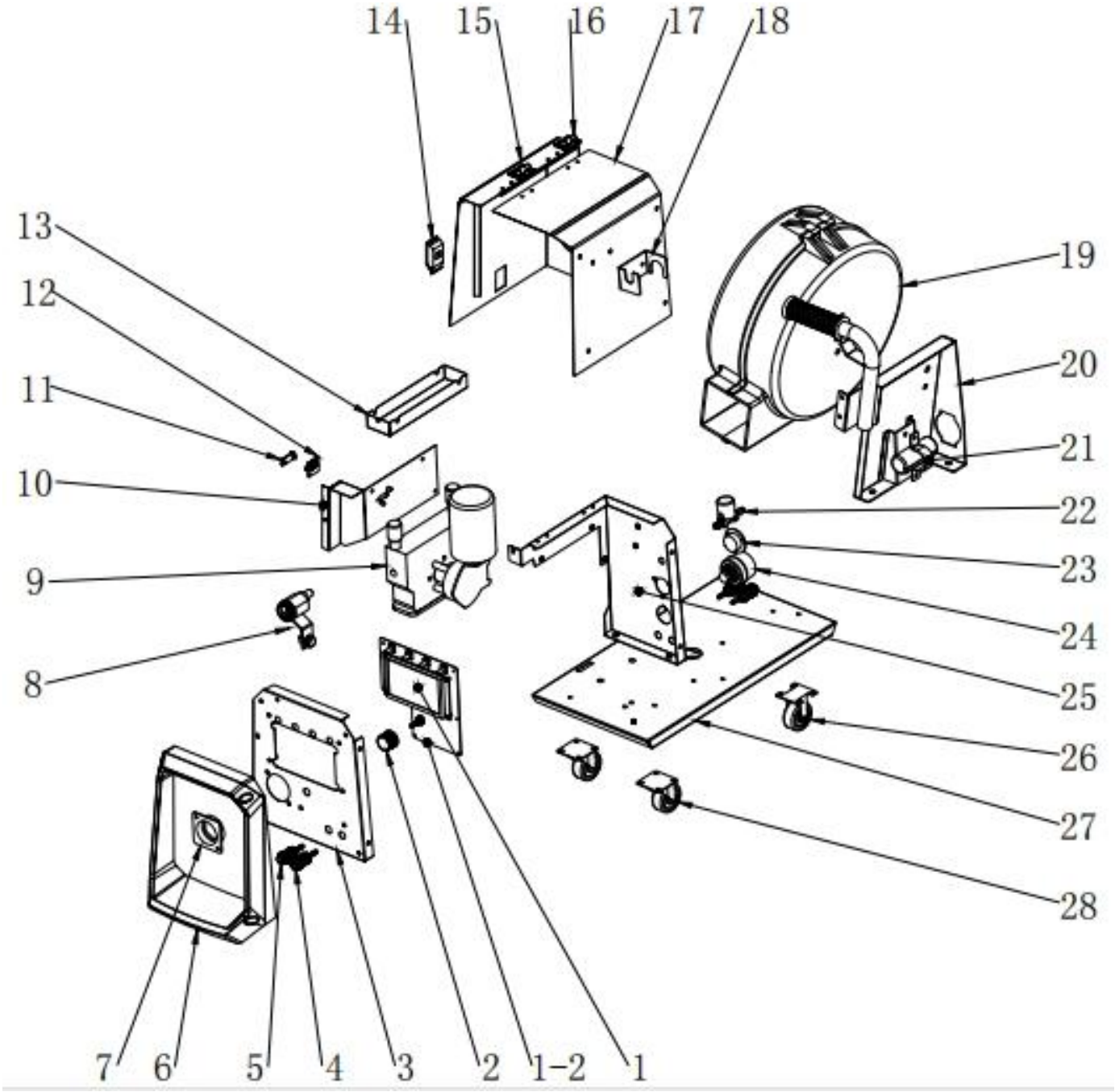
Part	Check	Remarks
Pressure adjusting handle	1. Check if the pressure-adjusting handle is fixed and adjusted to the desired position.	The unfixed pressure-adjusting handle leads to the unstable welding output.
Wire-feeding hose	1. Check if there is dust or spatter inside the hose or beside wire-feeding wheel.	Remove the dust.
	2. Check if there is a diameter agreement of wire and wire-feeding hose.	Non-agreement of the diameter of wire and wire-feeding hose possibly leads to the excessive spatter and unstable arc.
	3. Check if rod and wire feeding groove are concentric.	Unstable arc possibly occurs.
Wire-feeding wheel	1. Check if there is an agreement of wire diameter and wire-feeding wheel.	Non-agreement of wire diameter and wire-feeding wheel possibly leads to the excessive spatter and unstable arc.
	2. Check if the wire groove is blocked.	Replace it if necessary.
Pressure adjusting wheel	1. Check if the pressure adjusting wheel can rotate smoothly, and it's physically complete.	Unstable rotation or physically incompleteness of the wheel possibly leads to unstable wire feeding and arc.

9.4. Cables

Part	Check	Remarks
Torch cable	1. Check if the cable of torch is twisted.	The twisted torch cable leads to unstable wire feeding and arc.
	2. Check if the coupling plug is in loose connection.	
Output cable	1. Check if the cable is physically complete.	Relevant measures should be taken to obtain stable weld and prevent the possible electric shock.
	2. Check if insulation damage or loose connection exists.	
Input cable	1. Check if the cable is physically complete.	
	2. Check if insulation damage or loose connection exists.	
Earth cable	1. Check if the earth cables are well fixed and not short-circuited.	Relevant measures should be taken to prevent the possible electric shock.。
	2. Check if this welding equipment is well grounded.	

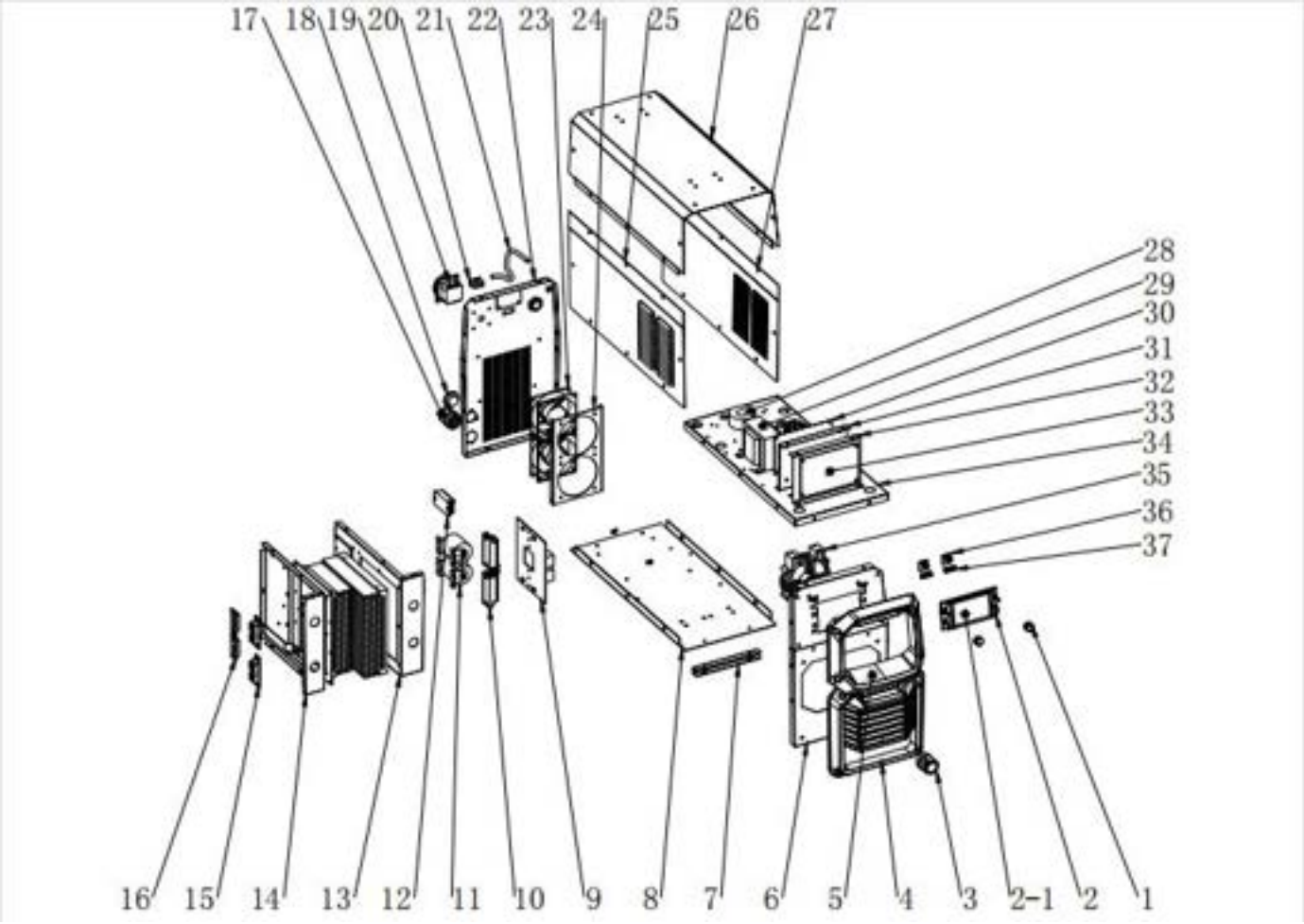
10. EXPLOSION DRAWING

10.1 Explosion drawing of wire feeding machine



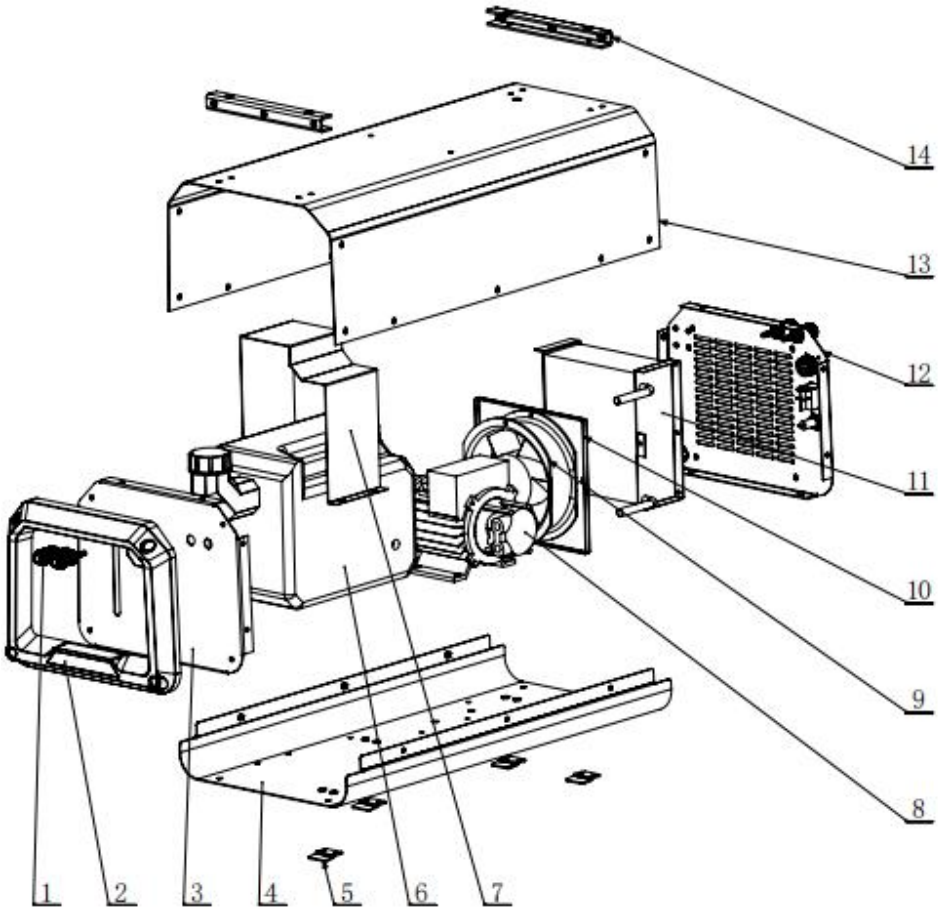
NO	Name	Consumables	NO	Name	Consumables
1	Panel Control PCB board	Yes	15	Side plate	
1-2	Liquid crystal display	Yes	16	Black damped hinge	
2	knob		17	Machine case	
3	Front metal plate		18	MIG torch holder	
4	Inlet \ red \Φ6		19	Wire feeding reel cover	
5	Water outlet \ blue \Φ6		20	Rear panel 1	
6	Front plastic plate		21	Support	
7	Plastic parts		22	Solenoid valve	
8	Euro Torch Connector		23	European style quick socket	
9	Wire feeding motor		24	Eight-core aviation jack	
10	Panel cover		25	Rear Panel 2	
11	Silicone lid		26	Casters/directional wheel	
12	Switch PCB board		27	base	
13	Tool box		28	Casters, universal wheel, 2	
14	Plastic clasp				

10.2 Explosion drawing of power source



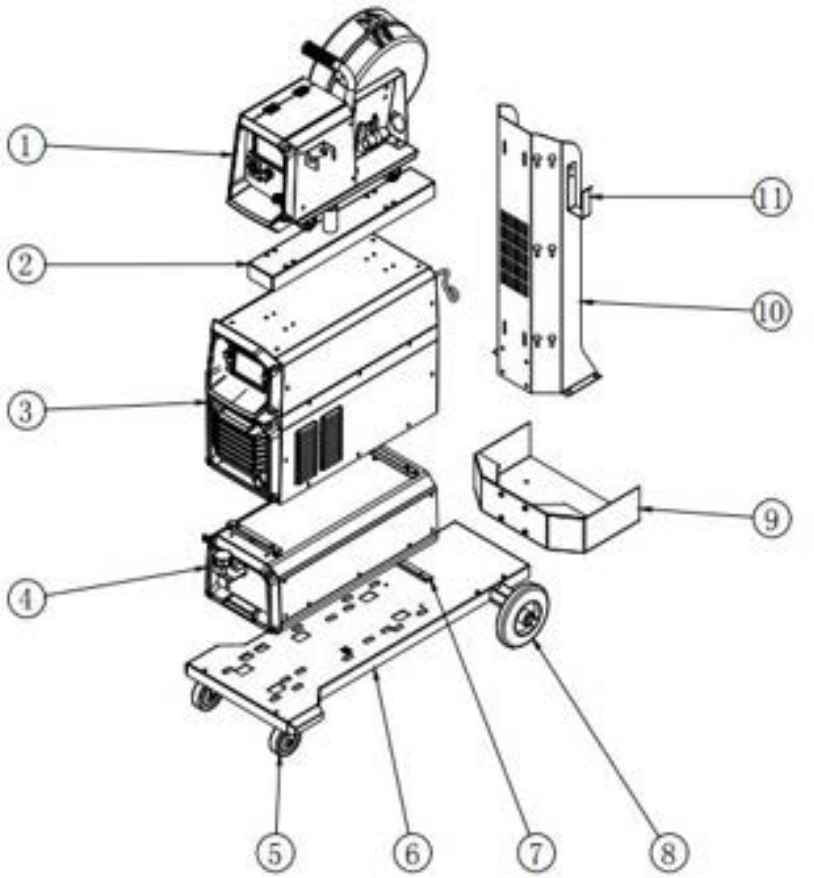
NO	Name	Consumables	NO	Name	Consumables
1	Knob		19	Universal switch	
2	anel Control PCB	Yes	20	36V socket	
2-1	Liquid crystal screen		21	Power cord	
3	European style quick socket		22	Rear metal plate	
4	Front plastic plate(down)		23	Air blower	Yes
5	Front plastic plate(up)		24	Fan support	
6	Front metal plate		25	Right sheet metal	
7	Connecting bracket		26	Top plate gold	
8	Base plate		27	Left sheet metal	
9	Inverter PCB	Yes	28	Common-mode inductance	
10	Output the rectifier module	Yes	29	Power frequency transformer	
11	Filter capacitance		30	Control board PCB	Yes
12	Rectifier module	Yes	31	Baffle bracket 1	
13	Right bulkhead		32	Partition bracket 2	
14	Left bulkhead		33	Auxiliary electric board PCB	Yes
15	IGBT moduleIGBT	Yes	34	bulkhead	
16	Driver board PCB	Yes	35	Principal variation	
17	European style quick socket		36	Switch PCB board	
18	Eight-core aviation jack		37	Silicone lid	

10.3 Explosion drawing of Water tank



NO	Name	Consu mables	NO	Name	Consu mables
1	Pipe joint		8	water pump	
2	Front plastic plate		9	Fan	
3	Front metal plate		10	Fan Support	
4	Base plate		11	Radiator	
5	Support III		12	Rear metal plate	
6	Water tank		13	Machine case	
7	Support		14	Support I	

10.4 Explosion drawing of combined machine



NO	Name	Consumables	NO	Name	Consumables
1	Wire feeding machine		7	Fixed bracket	
2	Beam assembly		8	directional wheel	
3	Power source		9	Rear bracket	
4	Water tank		10	Gas bottle support	
5	universal wheel		11	Hook	
6	Base plate assembly				

11. WARRANTY INFORMATION.

Duralloy Welding Equipment / Plasma cutting range.

3 year Warranty*

Duralloy Industrial Supply warrants the original retail purchaser that the Duralloy Welding and Cutting machines purchased will be free from defects in materials and workmanship for a period of 3 years* from the date of purchase by the customer. If a defect in material or workmanship becomes evident during this period, Duralloy Industrial Supply will at its option;

- Repair the product (or pay for the repair of the product)
- Replace the product

In case of warranty claim the product should be returned to the original place of purchase, with proof of purchase.

Any handling and transport costs (or other expenses) incurred in claiming warranty are not covered by this warranty. The warranty schedule is:

- Duralloy Power source only* - 3 years
- Duralloy Regulator - 3 months
- MIG Torches- 3 months
- TIG Torches - 3 months
- Plasma Torches- 3 months
- Ancillary Equipment- 3 months

The Obligation of Duralloy Industrial Supply under this warranty is limited to the circumstance set out above and is subject to:

- The customer being able to provide proof of purchase of the relevant equipment.
- A defect in either material or workmanship.
- The customer returning the product to Duralloy Industrial supply or an authorized repair agent.
- The product not having been altered or tampered with.
- The product not having been used outside the normal operating parameters of this equipment.
- The product to be in good condition and not damaged which may cause a fault

All goods come with a guarantee that cannot be excluded under the Australian Consumer laws. You as a consumer are entitled to a replacement or a refund for a major failure .You are also entitled to have the goods repaired or replaced if the products fail to be of acceptable quality:

This Warranty Provided by:

Duralloy Industrial Supply - (ABN - 81 831 839 268)

2 Hollylea Road Leumeah NSW 2560

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