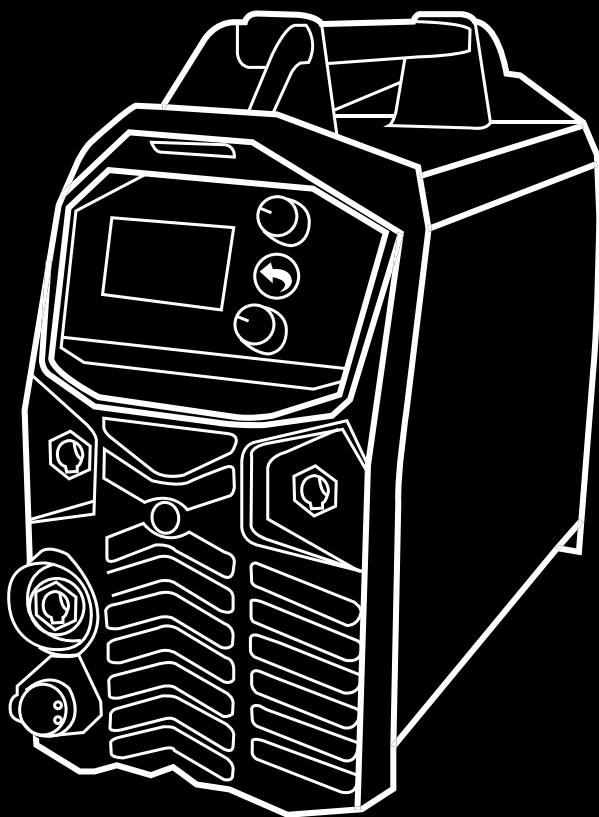


LAUNCHEurope

MIG 218 XP

OPERATING MANUAL



SAFETY RULES

These general safety norms cover both arc welding machines and plasma cutting machines unless otherwise noted.

The equipment must only be used for the purpose it was designed for. Using it in any other way could result in damage or injury and in breach of the safety rules. Only suitably trained and competent persons should use the equipment. Operators should respect the safety of other persons.

Prevention against electric shock

The equipment should be installed by a qualified person and in accordance with current standards in operation. It is the user's responsibility to ensure that the equipment is connected to a suitable power supply. Consult with your utility supplier if required.

If earth grounding of the work piece is required, ground it directly with a separate cable.

Do not use the equipment with the covers removed.

Do not touch live electrical parts or parts which are electrically charged. Turn off all equipment when not in use.

Cables (both primary supply and welding) should be regularly checked for damage and overheating. Do not use worn, damaged, under sized, or poorly jointed cables.

Ensure that you wear the correct protective clothing, gloves, head and eye protection.

Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work ground.

Never touch the electrode if you are in contact with the work ground, or another electrode from a different machine.

Do not wrap cables over your body.

Ensure that you take additional safety precautions when you are welding in electrically hazardous conditions such as damp environments, wearing wet clothing, and metal structures. Try to avoid welding in cramped or restricted positions.

Ensure that the equipment is well maintained. Repair or replace damaged or defective parts immediately. Carry out any regular maintenance in accordance with the manufacturer's instructions.

Safety against fumes and welding gases

Locate the equipment in a well-ventilated position.

Keep your head out of the fumes. Do not breathe the fumes.

Ensure the welding zone is in a well-ventilated area. If this is not possible provision should be made for suitable fume extraction.

If ventilation is poor, wear an approved respirator. Read and understand the Material Safety Data Sheets (MSDS's) and the manufacturer's instructions for metals, consumable, coatings, cleaners, and de-greasers. Do not weld in locations near any de-greasing, cleaning, or spraying operations. Be aware that heat and rays of the arc can react with vapours to form highly toxic and irritating gases.



Do not weld on coated metals, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings on many metals can give off toxic fumes if welded.

Prevention against burns and radiation

Arc 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 lens to protect your face and eyes when welding or watching

Wear approved safety glasses with side shields under your helmet. Never use broken or faulty welding helmets.

Always ensure there are adequate protective screens or barriers to protect others from flash, glare and sparks from the welding area. Ensure that there are adequate warnings that welding or cutting is taking place.

Wear suitable protective flame resistant clothing. The sparks and spatter from welding, hot work pieces, and hot equipment can cause fires and burns

Welding on closed containers, such as tanks, drums, or pipes, can cause them to explode. Accidental contact of electrode to metal objects can cause arcs, explosion, overheating, or fire. Check and be sure the area is safe and clear of inflammable material before carrying out any welding.

Protection against noise

Some welding and cutting operations may produce noise. Wear safety ear protection to protect your hearing.

Protection from moving parts

When the machine is in operation, keep away from moving parts such as motors and fans. Moving parts, such as the fan, may cut fingers and hands and snag garments.

Protections and coverings may be removed for maintenance and controls only by qualified personnel, after first disconnecting the power supply cable.

Replace the coverings and protections and close all doors when the intervention is finished, and before starting the equipment.

Take care to avoid getting fingers trapped when loading and feeding wire during set up and operation. When feeding wire be careful to avoid pointing it at other people or toward your body.

Always ensure machine covers and protective devices are in operation.

Precautions against fire and explosion

Avoid causing fires due to sparks and hot waste or molten metal

Ensure that appropriate fire safety devices are available near the cutting / welding area.

Remove all flammable and combustible materials from the cutting / welding zone and surrounding areas Do not cut/weld fuel and lubricant containers, even if empty. These

must be carefully cleaned before they can be cut/welded.

Always allow the cut/welded material to cool before touching it or placing it in contact with combustible or flammable material.

Do not work in atmospheres with high concentrations of combustible fumes, flammable gases and dust. Always check the work area half an hour after cutting to make sure that no fires have begun.

Risks due to magnetic fields

The magnetic fields created by high currents may affect the operation of pacemakers or electronically controlled medical equipment.

Wearers of vital electronic equipment should consult their physician before beginning any arc welding, cutting, gouging or spot welding operations.

Do not go near welding equipment with any sensitive electronic equipment as the magnetic fields may cause damage.

RF Declaration

Equipment that complies with directive 2004/108/EC concerning electromagnetic compatibility (EMC) and the technical requirements of EN60974-10 is designed for use in industrial buildings and not those for domestic use where electricity is provided via the low voltage public distribution system. Difficulties may arise in assuring class A electromagnetic compatibility for systems installed in domestic locations due to conducted and radiated emissions.

In the case of electromagnetic problems, it is the responsibility of the user to resolve the situation. It may be necessary to shield the equipment and fit suitable filters on the mains supply.

LF Declaration

Consult the data plate on the equipment for the power supply requirements.

Due to the elevated absorbance of the primary current from the power supply network, high power systems affect the quality of power provided by the network. Consequently, connection restrictions or maximum impedance requirements permitted by the network at the public network connection point must be applied to these systems.

In this case the installer or the user is responsible for ensuring the equipment can be connected, consulting the electricity provider if necessary.

Materials and their disposal

The equipment is manufactured with materials, which do not contain any toxic or poisonous materials dangerous to the operator.

When the equipment is scrapped, it should be dismantled separating components according to the type of materials.

Do not dispose of the equipment with normal waste. The European Directive 2002/96/EC on Waste Electrical and Electronic Equipment states the electrical equipment



that has reached its end of life must be collected separately and returned to an environmentally compatible recycling facility.

Handling of Compressed gas cylinders and regulators

All cylinders and pressure regulators used in welding operations should be handled with care. Never allow the electrode, electrode holder or any other electrically “hot” parts to touch a cylinder. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.

Always secure the cylinder safely. Never deface or alter any cylinder.



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1. PREFACE

1.1 General

Congratulations on choosing Mig 218 XP welding machine. Used correctly, our products can significantly increase the productivity of your welding, and provide years of economical service.

This operating manual contains important information on the use, maintenance and safety of our product. Please read the manual carefully before using the equipment for the first time.

For your own safety and that of your working environment, pay particular attention to the safety instructions in the manual.

For more information on our products, contact us, consult an authorised dealer, or visit our website.

The specifications presented in this manual are subject to change without prior notice.

Important notes

Items in the manual that require particular attention in order to minimise damage and personal harm are indicated with the '**NOTE!**' notation. Read these sections carefully and follow their instructions.

Disclaimer

While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions.

We reserve the right to change the specification of the product described at any time without prior notice.

1.2 Introduction

The Mig 218 XP power source is a generation of inverter-based portable MIG/MMA/TIG Welding machine with Synergic Programs for solid welding wires. It is a Multi-process power source designed for demanding professional use in Steels, Stainless, Cast Iron, Bronze, Aluminum welding. Easy step-less adjustment of voltage and wire feed coupled with integrated digital meters allows easy setting of welding parameters. The machine features four Synergic Mild Steel welding programs designed for ease of use with your selected gas mixture. The operator selects the gas mixture and wire diameter they are using then simply start welding. Once this is done the operator can make fine adjustments to the voltage for even greater control of the weld pool.

The added Lift-Arc DC TIG capability delivers perfect arc ignition every time and

a remarkably smooth stable arc produces high quality TIG welds. TIG functionality includes adjustable Down Slope & Post Gas as well as being gas solenoid-valve equipped.

The stick welding (MMA) capability delivers easy electrode welding with high quality results, including cast Iron, stainless and low hydrogen. An additional feature is the Spool gun ready function that allows the simple connection of the Spool Gun for the use of thin or softer wires that don't have the column strength to feed through standard MIG torches, such as aluminum wire. This is an industrial quality machine that is extremely lightweight and portable. Being single phase gives great versatility. Ideal for general engineers, maintenance workshop, rural workshop, panel beaters and home workshop. Designed and built to our specification.

Features

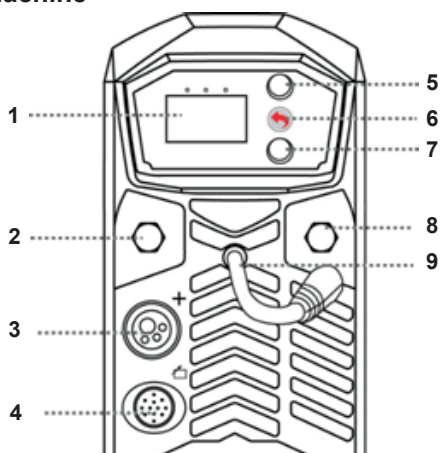
- Innovative IGBT Inverter Technology
- MIG/MAG with Gas and Gasless wire function
 - a. Synergic programs for Aluminum, Mild Steel, Stainless Steel,
 - b. Soft Start - Self Adaptive Crater Fill
 - c. Wire Inch
- DC TIG
- Stick Electrode (MMA) Function
- Gas Check / Inch Wire
- LCD Display
- Euro MIG torch connection
- Tolerant to variable power supply
- Suitable for 0.6 to 1.0 mm wires
- Spool gun interface
- Internal wire feeder, gear driven for up to 200mm Ø spool

1.3 Technical Specifications

Power Supply / Phases (V-Ph)	Mig 218 XP
Duty Cycle@40°C	AC230V±15% 50/60HZ
	20% @ 200 Amps MIG
	35% @ 200 Amps TIG
Output Current Range MIG	20% @ 170 Amps MMA
Output Current Range TIG	20A/15V-200A/24V
Output Current Range MMA	10A/10.4V-200A/18V
Rated Power MIG	10A/20.4V - 170A/26.8V

Power factor	8 KVA
I Max MIG	0.7
TIG	35.2 Amps
MMA	26.5 Amps
I eff MIG TIG	33.5 Amps
MMA	15.7 Amps
Wire Feeder Type	15.7 Amps
Protection Class	15 Amps
Insulation Class	Gear Driven 2 Roll
Dimensions Power Source (LxWxH)	IP 21S
Weight Power Source	F
Dimension	540 x 195 x 380 mm
Gewicht	13 KGS

1.4 Overview of machine

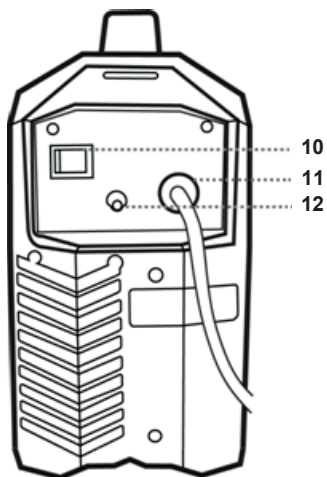


Front View

1. LCD Display
2. Positive output “+”
3. Euro Mig & TIG Torch Connector
4. Spool Gun control socket
5. Wire Speed / Amps/Thickness Adjustment Knob
6. Return/Home button(long push)

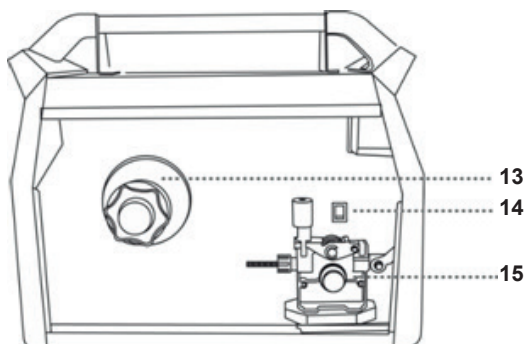


- 7. Voltage (Arc Length) / Inching Knob (Push)
- 8. Negative output“-”
- 9. Polarity changeover cable



Rear View

- 10. Power switch
- 11. Input cable
- 12. Gas inlet



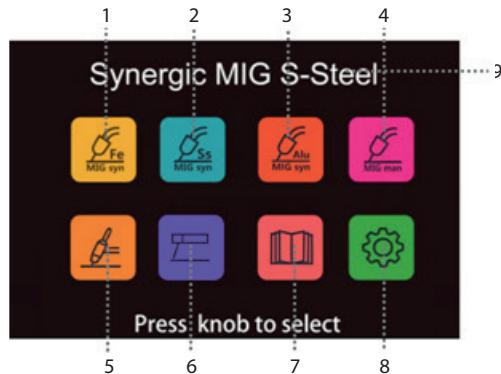
Inside View

- 13. Spool Hub
- 14. Standard /Spool gun Switch
- 15. Wire Feed Assembly



Control Panel

1. Menu Navigation(Rotate and push to select menu option) Current (Wire feed speed) selection (Default)
2. Return/Home button (long push)
3. Voltage selection/Wire inch(Push)



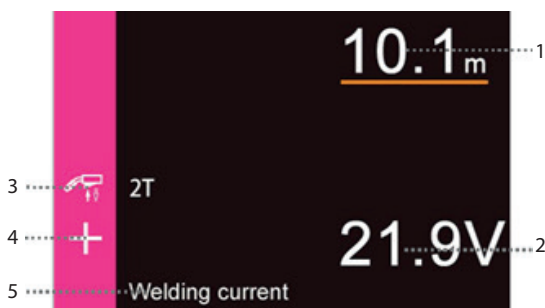
Main Menu

1. Synergic MIG Steel Welding
2. Synergic MIG Stainless Steel Welding
3. Synergic MIG Aluminum Welding
4. Manual MIG Welding
5. TIG Welding
6. MMA welding
7. Information
8. Setting
9. Selection Dialogue Information



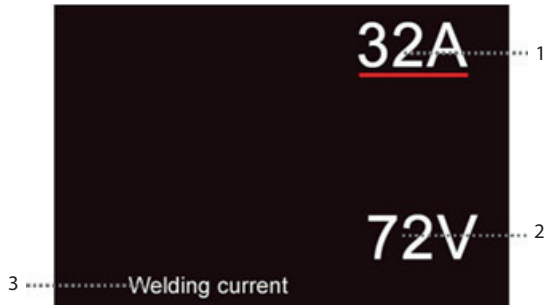
Synergic MIG Mode

1. Current
2. Thickness
3. Voltage
4. Arc length
5. Wire Diameter
6. Material/Gas
7. Welding Process
8. Trigger Mode
9. More set up
10. Selection Dialogue Information



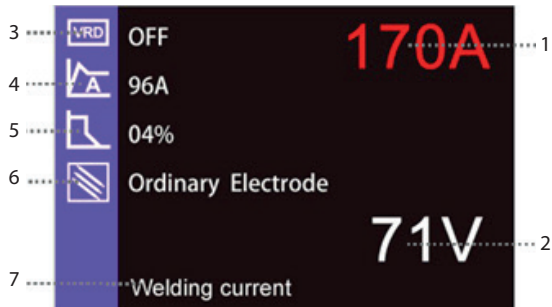
Manual MIG Mode

1. Current
2. Voltage
3. Trigger Mode
4. More set up
5. Selection Dialogue Information



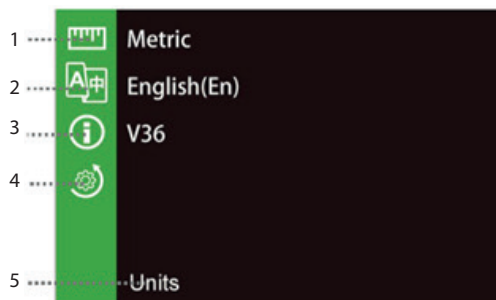
TIG Mode

1. Current
2. Voltage
3. Selection Dialogue Info



MMA Mode

1. Current
2. Voltage
3. VRD(Optional)
4. Hot Start
5. Arc Force
6. Electrode Type(Optional)
7. Selection dialogue info



Setting

1. Unit
2. Language
3. Software Information
4. Factory Reset
5. Selection Dialogue info



Icon Reference Guide

	Synergic MIG Steel Welding		Burn Back time
	Synergic MIG Stainless Steel Welding		Preflow time
	Synergic MIG Aluminum Welding		Postflow time
	Manual MIG Welding		Inductance
	TIG Welding		Creep Start
	MMA Welding		2 Step
	Machine Information		4 Step
	Setting		Special 2 Step
	Wire Diameter		Special 4 Step
	Material/Gas		Spot Welding
	Welding Process		Continuous Spot Welding
	Trigger Mode		Spot ON Time
	Advanced Setting		Continuous Spot Welding ON Time



	DC Welding		Continuous Spot OFF Time
	Single Pulse Welding		Wire feeding Speed
	Double Pulse Welding		More Setting
	Fast MIG Welding		VRD (Voltage Reduction Device)
	Synergic DC Fast Welding		Hot Start
	Synergic Pulse Fast Welding		Arc Force
	Synergic Double Pulse Fast Welding		Electrode Type
	Synergic Cold Fast Welding		Unit
	Synergic Root Fast Welding		Language
	Synergic Speed Up Fast Welding		Factory Reset
	Information		



2. INSTALLATION

Unpacking

Check the packaging for any signs of damage.

Carefully remove the machine and retain the packaging until the installation is complete.

Location

The machine should be located in a suitable position and environment. Care should be taken to avoid moisture, dust, steam, oil or corrosive gases. Place on a secure level surface and ensure that there is adequate clearance around the machine to ensure natural airflow.

Input connection

Before connecting the machine you should ensure that the correct supply is available. Details of the machine requirements can be found on the data plate of the machine or in the technical parameters shown in the manual.

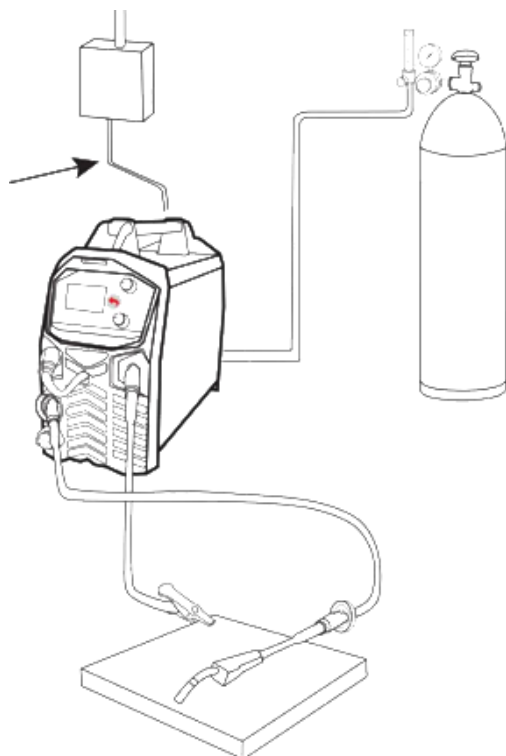
The equipment should be connected by a suitably qualified competent person. Always ensure the equipment has a proper grounding.

Never connect the machine to the mains supply with the panels removed.

Output connections

Electrode polarity

In general when using manual arc welding electrodes the electrode holder is connected the positive terminal and the work return to the negative terminal. Always consult the electrode manufacturer's data sheet if you have any doubts.

MIG Welding

Insert the welding torch into the “Euro connector for torch in MIG” output socket on the front panel of the machine, and tighten it.

Install the wire spool on the spindle adapter.

Connect the cylinder equipped with the gas regulator to the gas inlet on the back panel of the machine with a gas hose.

Insert the cable plug with work clamp into the “-” output terminal on the front panel of the welding machine, and tighten it clockwise.

Insert the quick plug of the gas / no gas selector into the “+” output terminal of the welding machine, and tighten it clockwise.

Ensuring that the groove size in the feeding position on the drive roll matches the contact tip size of the welding torch and the wire size being used. Release the pressure arm of the wire feeder to thread the wire through the guide tube, and into the drive roll groove. Adjust the pressure arm, ensuring no sliding of the wire. Too high pressure will lead to wire distortion, which will affect wire feeding. Press the wire inch button to thread the wire out of the torch contact tip.

Gas less Self Shielded Welding



Insert the welding torch into the "Euro connector for torch in MIG" output socket on the front panel of the machine, and tighten it.

Insert the cable plug with work clamp into the "+" output terminal on the front panel of the welding machine, and tighten it clockwise. Insert the quick plug of the gas / no gas selector into the "-" output terminal on the middle plate of the welding machine, and tighten it clockwise.

Install the wire spool on the spindle adapter, ensuring that the groove size in the feeding position on the drive roll matches the contact tip size of the welding torch and the wire size being used. Release the pressure arm of the wire feeder to thread the wire through the guide tube, and into the drive roll groove. Adjust the pressure arm, ensuring no sliding of the wire. Too high pressure will lead to wire distortion, which will affect wire feeding. Press the wire inch button to thread the wire out of the torch contact tip.

TIG Welding

1. For the TIG torch with Dinse connection

- Insert the cable plug with the earth clamp into the “+” socket on the front panel of the welding machine, and tighten it clockwise.
- Insert the cables plug of the TIG torch into the “-” socket on the front panel of the machine or insert the Europe plug of the TIG torch into the Europe socket (for the torch with Europe connector) and tighten clockwise.
- Connect the gas hose to the regulator / flow meter located on the shield gas cylinder and connect the other end to the machine.
- Open the valve on the TIG torch slowly and set the flow rate for 12 l/min. Select TIG function on the front panel.
- “Scratch” the electrode on the work piece to start the arc.

2. For the TIG Torch with Europe connection.

- Connect the TIG torch to the Euro connection on the front of the machine and tighten it. Insert the earth cable plug into the Positive socket on the front of the machine and tighten it.
- Insert the weld power cable plug into the Negative socket on the front of the machine and tighten it. Connect the gas line of the TIG torch to regulator and connect the regulator to the gas cylinder.
- Connect the gas line to the machine via the quick push lock connector located on the rear panel. Open the gas valve cylinder slowly and set the flow rate for 12 l/min.
- Select TIG function on the front panel.

MMA welding

Insert the cable plug with electrode holder into the “+” socket on the front panel of the welding machine, and tighten it clockwise.

Insert the cable plug of the work return lead into the “-” socket on the front panel of the welding machine, and tighten it clockwise.



3. OPERATION

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the area.

MIG/MAG

Connect the MIG torch leads as detailed above. Ensure that a suitable inert gas supply is connected. Switch the power switch on the back panel to "ON", the machine is started with the power LED on and the fan working.

Switch the MMA/MIG switch to MIG mode. Select pull position if using a remote torch. Open the gas valve of the cylinder, and adjust the gas regulator to obtain the desired flow rate.

Adjust the "voltage control knob in MIG" and "wire feed speed control knob in MIG" on the front panel of the machine to get the correct welding voltage and welding current. Operate the torch trigger, and welding can be carried out.

Where required adjust the burn-back time potentiometer (above the feed unit inside the machine) to get the proper electrode stick-out.

One second after the arc stops, the gas supply will be cut off.

Gas selection

Metal inert gas welding (MIG): Uses Argon (Ar), Helium (He) or Ar-He mixtures as the shield gas, and it mainly used for welding aluminium and its alloys.

Metal active gas welding (MAG): Uses Argon (Ar) mixed with a certain amount of CO₂ / O₂ as the shield gas, and it usually used in short circuit transfer and spray transfer. It can be applicable to flat position welding, vertical position welding, overhead position welding and all-position welding, and it mainly used for welding carbon steel, high strength low alloy steel and stainless steel. Welding robots mostly use the MAG process.

CO₂ (carbon dioxide) gas shielded arc welding (CO₂ welding): It uses CO₂ as the shield gas, and is usually used in globular transfer and short circuit transfer to implement welding. It can be used to weld in different positions. As compared with other welding methods, CO₂ welding has many advantages, though it produces more spatters, CO₂ welding is widely used for general metal structure welding.

1. Welding current setting

Set the welding current after the above preparation. Short circuiting transfer is mainly fit for electrode wires of diameter 0.6~1.2mm. As a guide for short circuit welding set the welding current according to the table below.

2. Welding speed selecting

The welding quality and productivity should be taken into consideration for the selecting of welding speed. In the case that the welding speed increases, it weakens the protection effect and quickens the cooling. As a consequence, it is not good for weld bead shaping. In the event that the speed is too slow, the workpiece will be burned through, and a good weld bead will be unavailable. In practical operation, the welding speed should not exceed 50cm/min.

Wire Diameter(mm)	Welding Current Range(A)	Optimal Current(A)
0.8	50~120	70~100
1.0	70~180	80~120
1.2	80~350	100~200

3. Wire Stick-out

The increase of the stick-out can improve the productivity, but too long stick-out may lead to excessive spatter, wire breaking and unstable welding. Generally, the stick-out

should be 10 times as the welding wire diameter.

4. Shield gas flow selection

The protection effect is the primary consideration. Besides, the protection effect of inner-angle welding is better than that of external-angle welding, so the gas flow in inner-angle welding should be lower. Less or no shield gas is needed in FCAW. Refer to the table below for the recommended gas flow rates.

Welding Mode	Welding with thin wire	Welding with thick wire	Welding with thick wire under high current
Gas Flow(L/m)	5~15	15~20	20~2

Gas less MIG

The operation method is the same to MIG operation except that there are no gas options.

MMA

After connecting the welding leads as detailed you will need to switch the power switch on the back panel to "ON"

Select MMA by switching to the MMA welding mode. There is voltage output at both output terminals. Set the amperage on the machine suitable for the electrode being used. Ensure you check that you have the electrode polarity correct. Please see below a guide to amperages required.

Electrode Diameter(mm)	Welding Current(A)	Electrode Diameter(mm)	Welding Current(A)
1.0	20~60	3.2	108~148
1.6	40~84	4.0	140~180
2.0	60~100	5.0	180~220
2.5	80~120		

4. TROUBLE SHOOTING

In the event of a failure of the machine, contact an authorised service agent. The following operation requires sufficient professional knowledge on electric aspects and comprehensive safety knowledge. Make sure the input cable of the machine is disconnected from the electricity supply and wait for 5 minutes before removing the machine covers. Before taking your unit for servicing, check the list below.

Symptom Solution.

The overheat LED is on.

1. Check the welding current and welding time. Refer to the manual, and operate according to the specifications.!
2. Check the running status of the fan when welding. If the fan does not work, check if the power supply of the fan is 230V: If the power supply is normal, check the fan; if the power supply is abnormal, check the connecting cable of the power supply.!
3. Replace the thermal switch if it is damaged or faulty.

The power LED is off, and there is no output current.

1. Check if the fan works. If it does not work, it indicates that the power supply is not present. Check any fuses cables and supply switches!
2. If the fan works, it indicates that the PCB inside the machine may be defective.

There is no response when operating the torch trigger, and the protection LED is off.

1. Check if the torch trigger is working.!
2. Check if the welding torch is well connected to the Euro connector, and check the connections of the Euro connector. !
3. The PCB inside the machine may be defective.

The wire feeder feeds wire when operating the torch trigger, gas feeds, but there is no output current, and the protection LED is off.

1. Check if the work return connected to the workpiece is in good condition.!
2. Check if the quick plug is connected to correct quick socket.!
3. Check if the euro connector is intact.!
4. Check the welding torch for damage.!
5. The PCB inside the machine may be defective.

There is output current when operating the torch trigger to feed gas, but the wire feeder does not feed wire.

1. Check the wire feeder for clogging or damage.!
2. Check the contact tip of welding torch for clogging or damage.!
3. The PCB inside the machine may be defective.



Welding can be carried out when pushing the torch trigger, but the voltage cannot be adjusted.

1. Check if the voltage feedback wire inside the machine is in good condition.!
2. PCB inside the machine may be defective.

Welding current is unstable.

1. Check the pressure arm on the wire feeder for proper pressure.!
2. Check if the drive roll matches the wire size being used.!
3. Check the contact tip of the welding torch for wear. Replace it and tighten it if necessary.!
4. Check the welding wire for good quality.!
5. Check the torch.!
6. Check if the quick plug is loose.

Weld bead is not well shielded.

1. Do not move the welding torch away immediately when stopping welding, so that the shielded gas can protect the weld bead.!
2. Prolong the post-flow time of the shielded gas.



5. MAINTENANCE

The utilisation level of the power source and its working environment should be taken into consideration in planning the frequency of maintenance of the machine. Appropriate use and preventive maintenance guarantee the trouble-free use of the equipment. This allows you to avoid interruptions in use and increases the productivity of the machine.

5.1 Cables

Check the condition of welding and mains cables daily. Do not use damaged cables. Also make sure that all extension cables used in the mains connection are in proper condition and compliant with regulations.

NOTE! The mains cables may be repaired and installed only by electrical contractors and installers authorised to perform such operations.

5.2 Power source

Before cleaning the interior of the machine, you need to remove the case by unscrewing the mounting screws at the top and sides of the machine.

NOTE! To prevent damage, wait approximately two minutes after disconnecting the mains cable before removing the machine's case. Perform the following cleaning and maintenance at least every six months:

1. Clean the interior of the machine and the fan grill's net of any dust and stains – for example, with a soft brush and vacuum cleaner.
 - Do not use pressurised air. The stain may become compressed into the grooves of the coolers.
 - Do not use a pressure-washing device.
2. Check the electrical connections of the machine. Clean any oxidised connections, and tighten the loosened ones.
 - Check for the right tension before you start repairing the connections.

NOTE! Remember that the machine may be repaired only by an electrical contractor or installer authorised to perform such operations.

5.3 Regular maintenance

Authorised service agents perform regular maintenance by agreement. Tasks included in regular maintenance:

- Cleaning of equipment.
- Inspection and maintenance of the welding gun.
- Checking of connectors, switches, and control knobs.



- Checking of electrical connections.
- Checking of the mains cable and plug.
- Replacement of damaged or worn parts.
- Calibration testing, with adjustment of the functions and operational values of the machine, if necessary.

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