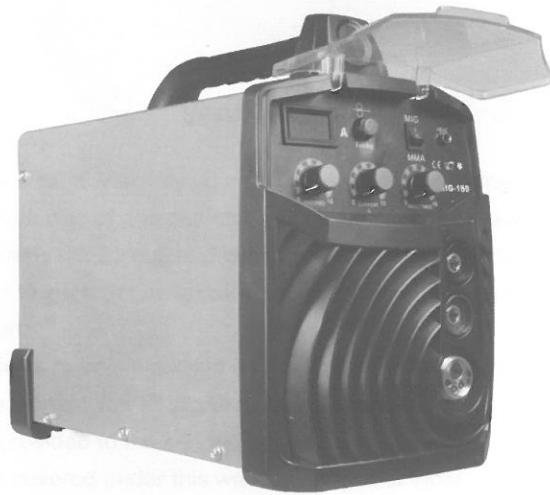


USER MANUAL

MIG/MMA Welding Machine



SAFETY INSTRUCTIONS

WARNING: - Medical Conditions

If you have a medical condition and/or are on medication that can/will impair your sight and/or stability and/or if you have a pacemaker or implanted defibrillator, DO NOT operate or be in close proximity of a welding machine, whilst in operation. Consult your Doctor/Physician before you use a Welding machine.

WARRANTY

We had a limited warranty on all new welding and cutting equipment that it will be free of any defects in workmanship and material.

This warranty will be null and void if the equipment has been subjected to improper installation, negligence, abuse and/or incorrect application.

The products have a standard warranty of 12 months after date of purchase: Retain your till slip/invoice to validate any claims. A copy must be provided to the service provider; always retain the original. Items not covered under this warranty: Contact Tips/Nozzles/Wire/Earth Clamps and Cables; these items are subjected to fair wear and tear.

All other items/components are covered by the warranty and will be repaired or replaced at the discretion of our appointed Agent/s.

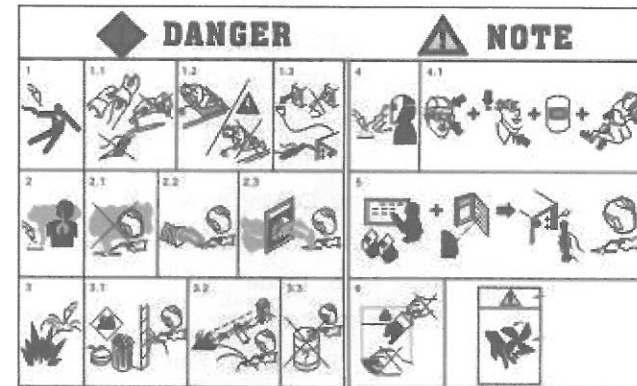
SPECIFICATION

	MIG-180		MIG-200		MIG-250		MIG-300	
Main Voltage (V)	1PH 220V-240V±10% 50/60HZ		1PH 220V-240V±10% 50/60HZ		1PH 220V-240V±10% 50/60HZ		1PH 220V-240V±10% 50/60HZ	
	MMA	MIG	MMA	MIG	MMA	MIG	MMA	MIG
Rated Input Capacity(KVA)	5.2	5.8	6.5	6.8	8.3	8.5	10.7	11
No Load Voltage	62	62	62	62	62	62	62	62
Welding Current (A)	20-160	30-180	20-170	30-200	30-220	50-250	30-270	50-300
Rated Load Voltage(V)	20.8-26.4	15.5-23	20.8-26.8	15.5-24	20.8-28.8	15.5-26.5	20.8-30.8	15.5-29
Duty Cycle % (35°C)	35		35		35		35	
Efficiency %	85		85		85		85	
Power Factor $\phi\cos$	>0.93		>0.93		>0.93		>0.93	
Wire Φ mm	0.8-1.0		0.8-1.0		0.8-1.0		0.8-1.0	
Insulation Class	F		F		F		F	
Protection Degree	IP21S		IP21S		IP21S		IP21S	
Weight (kg)	13		14		15		16	
Dimension (mm)	540×340×380		540×340×380		540×340×380		540×340×380	

DUTY CYCLE

The rated duty cycle refers to the amount of continuous welding you can do within a period of time: It is normally measured in cycle's blocks of 10 minutes: If the machine has a duty cycle of 60%: it can be used for a period of 6 minutes and must be allowed to cool for 4 minutes. Outside temperature is a factor in determining duty cycle when manufactured: example is 35% Duty cycle at 35°C.

WARNING LABELS



Attention! Before using, please read the manual instruction carefully

PACKING LIST

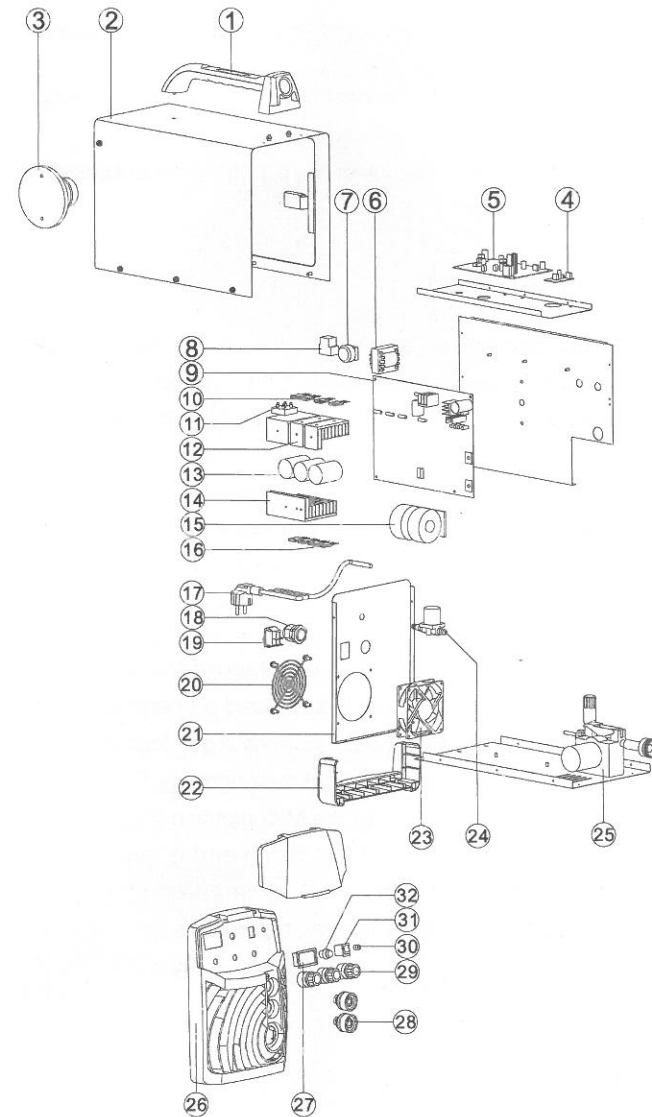
- | | |
|---------------------|-----------------------------|
| 1. MIG180 Welder | 2. Torch Gun Cable Assembly |
| 3. Earth Clamp | 4. Clamp Set |
| 5. Hand Held Shield | 6. Wire Brush/Hammer |
| 7. Instructions | |

COMPONENTS AND CONTROLS

- | | |
|----------------------|---------------------|
| 1. Handle | 2. Steel cover A |
| 3. Wire spool | 4. PC board A |
| 5. PC board B | 6. PC board C |
| 7. Transformer A | 8. Transformer B |
| 9. Relay | 10. IGBT |
| 11. Rectifier bridge | 12. Cooling fin A |
| 13. Capacitor | 14. Cooling fin B |
| 15. Main Transformer | 16. Diode |
| 17. Power cable | 18. Connector |
| 19. Switch A | 20. Cover of Fan |
| 21. Steel cover B | 22. Plastic A |
| 23. Fan | 24. Valve |
| 25. Wire feeder | 26. Plastic B |
| 27. Led | 28. Quick connector |
| 29. Potentiometer | 30. Light |

Switch B

32. Switch C



CONNECTING TO POWER SOURCE (Single Phase 220-240V)

The MIG is fitted with a plug; Connect directly to your power supply; Ensure the circuit breaker is adequate/ preferably 30A.

IMPORTANT! Connect to the power supply only after successful installation/ready for use

OVERLOAD PROTECTION

The MIG is equipped with a Temperature Controller and Overload Protection if the duty cycle is exceeded. If overloaded, it will trip cutting the power supply to the motor whilst running the fan to cool down the motor.

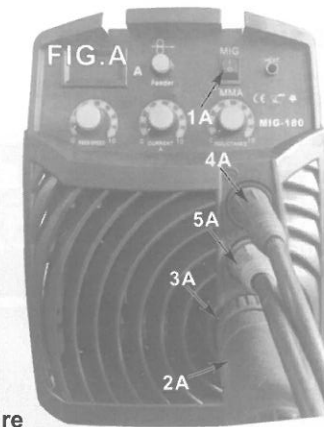
INSTALLATION

Installing the Welding Gun

1. Slide the body of the welding gun through the front of the machine (Fig.2A) Ensure it is secured properly to the drive assembly: if not assembled properly a gas leak may occur.
2. Finger tighten the torch (do not over-tighten)(Fig.3A)
3. Turn the selector switch to the MIG position (Fig.1A)

NOTE: Make sure that the torch end is securely positioned to ensure no gas leakage/could result in gas not passing through to the torch end.

Installing the Earth Clamp and Change Polarity

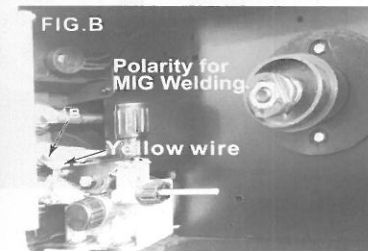
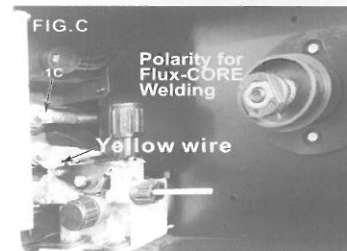


Solid Wire

1. Attach the Earth Clamp to the front of the machine, and secure, tighten properly. (Fig.4A)
2. The MIG-180 is pre-set for solid wire. The yellow wire is connected to positive connector (+) (Fig.1B)

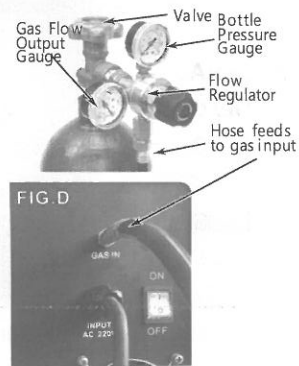
Flux-CORE Wire

1. The MIG-180 is pre-set for solid wire welding; to use Flux-CORE the polarity must be changed
2. Remove the Earth Clamp to the front of the machine, and secure, tighten properly. (Fig.5A)
3. Move the yellow wire to negative connector (-) (Fig.1C).



CONNECTING TO GAS SUPPLY

1. The Shielding Gas Bottle and Regulator are not included: Gas is required for solid wire. It is recommended that you use a mixed of Argon Gas 75% and 25% CO² for Steel using solid wire.
2. Aluminium welding recommended gas mix: 100% Argon Gas
3. Stainless Steel recommended gas mix: 90% He /75% Ar/ 2.5% CO²
4. Secure the Gas bottle to either a cart or immovable object to avoid tipping/falling over.
5. Secure the Regulator to the Gas bottle with a wrench: Insert the large bass connector to the bottle; ensure it is secured properly with no leaks/ if in doubt, please use a gas type sealing tape
6. Connect the out out-let to the MIG welder position on the rear of the machine
7. Check the Gas line for any signs of leaking. Whilst in operation (welding) the valve on the bottle should always be fully opened

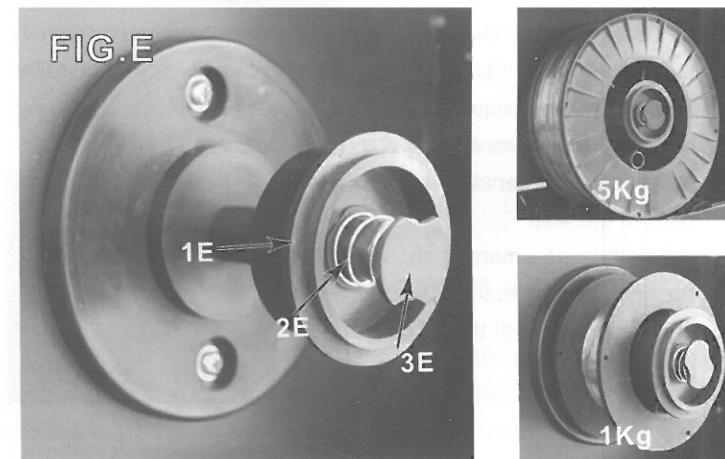


INSTALLING THE WIRE SPOOL

The MIG can accommodate both 1KG and 5KG wire spools: 0.8mm and 1.0mm wire.

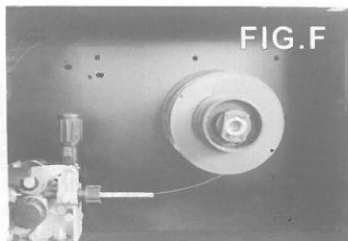
EXTERNAL WIRE FEEDER CAN BE USE FOR 15KG WIRE SPOOL/ OPTIONAL EXTRA

1. Open the side flap of the welder and remove the Plastic Nut (Fig.3E), spring (Fig.2E), and Spacer (Fig.1E)
2. Slide the spool into the shaft and secure.
3. To set the tension, tighten the Plastic Nut until the resistance is to the coil. If set too loose the spool will spin on the shaft and will unspool the wire; If set too tight the feed-roller will struggle with the wire feed: Important you get the feed tension right
4. Use Spool adaptor where required on 1KG/5KG wire spool



WIRE TO TORCH CONECTION

1. Loosen the tensioner knob and lift the rocker arm and feed the wire into the correct groove size (.8mm or 1mm)
2. Always hold the wire firmly; relaxing could result in the wire unravelling.
3. Cut off the front section is curved; wire must be absolutely straight
4. Thread the wire through the tensioner and rocker arm assembly
5. Lock in the Rocker Arm and use the Tensioner to secure
6. Wire can now be feed smoothly into the torch cable
7. Remove the Contact Tip and Nozzle from the MIG Torch (torch model/BW 15 AK)
8. Turn on the Machine and use the wire feed at approximately 50% to feed the wire to the Torch head
9. Point he torch away from you or any other persons/object and depress the trigger to begin feeding the wire.
10. Monitor the feed roller assemblies to ensure correct tension (slipping) and is positioned onto the correct wire groove on roller. Adjust tension if required
11. Repeat the process at 25% wire speed/test
12. Note: too much tension will deform the wire
13. When the wire emerges on the tip of the torch: turn OFF the machine and fit the tip and nozzle



Gas (Shielding) Flow Adjustment

1. The gas flow rate must be adjusted to ensure that the correct amount of shielding gas flows over your weld.
2. Inadequate gas flow will result in porosity in your weld and excessive splatter
3. Too much shielding gas will result in excessive gas loss and will affect your weld.
4. Gas regulators are have two gauges: Flow Rate (left) and Tank Pressure (right)

ASSEMBLY AND SETTING

1. Open the Gas supply fully
2. Adjust the regulator knob to 850L/H (30 CFH).
3. Turn on the welder/depress the trigger: the gas will start flowing: the gauge will indicate the initial flow rate/ it will stabilise thereafter
4. Ideally set the Gas flow to 560L/H (20CFH) while flowing, subject to outside interference such as a strong breeze that would require additional shielding gas to prevent porosity; check the L/H (CFH) reading is the inside scale (red) on the flow gauge
5. **Important!** Securely close the gas when not in operation

DRIVE ROLLER

1. The Drive Roller has two grooves 0.8mm and 1.0mm: The MIG-180 is pre-set at 0.8mm wire
2. Note: The stamped markings on the side of the roller indicate the size of groove on the opposite side of the roller; The groove closest to the motor will be the groove sized used
3. Ensure the roller is positioned correctly for the size wired used

OPERATION

1. For your welding tasks refer to the "Welding Setting" located on the side door of the Spool cabinet
2. Change Polarity when using "Flux-CORE" wire.
3. Connect Earth Clamp securely to work-piece; ensure the work-piece is free of Rust/Paint/Grease/Oils etc; Secure as closely as possible to the weld area
4. Ensure the weld area is free of Rust/Paint/Grease/Oils etc
5. Wear protective clothing and a suitable Welding Helmet
6. Use the ON/OFF switch/button to turn ON the machine
7. Open the Shielding gas supply and adjust the flow accordingly
8. Depress the torch trigger switch; cut away excess wire leaving approximately 6mm wire protruding.
9. Place the welding torch at an angle/about 20°/ from the joint/material to be welded
10. When you depress the torch trigger the arc will begin a molten puddle that will follow the direct of the torch (operator); Monitor the size of the puddle to obtain required speed of weld.
11. If burn-through occurs, you are welding too slow/ or adjustments are required
12. If you are not penetrating the material/ you are welding too fast/ or adjustments are required
13. Release the torch trigger to stop
14. Turn OFF the gas after finishing
15. Various welding techniques can be used subject to material, and type of weld required Butt Weld /Lap Weld/Corner Weld/Plug Weld/Edge Weld/ Tee Weld/Stick Weld etc.

TROUBLE SHOOTING

Problem	Cause	Corrective Action
Burn Through	High Voltage	Adjust voltage output to lower setting.
	Fast Wire Speed	Adjust wire speed to slower setting.
	Slow Gun Travel	Increase your travel speed with the welding gun.

Lack of Penetration	Low Voltage	Adjust voltage output to higher setting.
	Slow Wire Speed	Adjust wire speed to faster setting.
	Fast Gun Travel	Slow your travel speed of the welding gun making sure to pull or drag the molten metal puddle.
	Excessive Wire Stick Out	Move the contact tip on the welding gun closer to the work piece to shorten the length of exposed welding wire.
	Material Too Thick	The MIG175 is rated for a maximum thickness of 1/4", exceeding this will result in poor penetration.
	Poor Material Preparation	If welding heavy gauge metals it may be necessary to increase the welding gap between the two pieces and also bevel the edges on the weld side of the pieces.

Excessive Penetration	High Voltage	Adjust voltage output to lower setting.
	Fast Wire Speed	Adjust wire speed to slower setting.
	Slow Gun Travel	Increase your travel speed with the welding gun.

Warping	Lack of Tack Welds	Tacks weld the pieces in multiple areas to keep the pieces from pulling apart.
	No Clamping	Use welding clamps to secure the pieces in their proper shape.
	Poor Technique	To prevent warping allow the piece to cool after welding small sections at a time. Move your welding areas around by not completely all the welding in one section all at once rather welding a small amount in one area and then move to another to spread out the heat in the piece.

Poor Fusion	Low Voltage	Adjust voltage output to higher setting.
	Slow Wire Speed	Adjust wire speed to faster setting.
	Slow Gun Travel	Increase your travel speed with the welding gun.

Poor Fusion	Dirty Base Metal	Remove all paint, rust, oil, grease, dirt or any other contaminants that may be on the surface of the piece.
	Excessive Wire Stick Out	Move the contact tip on the welding gun closer to the work piece to shorten the length of exposed welding wire.
	Cold Base Metal	If welding on a large piece, particularly cast pieces, which will absorb a lot of heat it may be necessary to pre heat your part with a torch.

Porosity	Poor Shielding Gas	Increase the flow rate of the shielding gas. If the bottle is getting low and porosity is starting to form in the welds, it means that the bottle needs to be refilled. Take note of any cross winds that may be blowing the shielding gas away from the welding zone.
	Wrong Shielding Gas	Make sure that you are using a 75% Argon/ 25% CO2 shield Gas on steel.
	Dirty Base Metal	Remove all paint, rust, oil, grease, dirt or any other contaminants that may be on the surface of the piece.
	Excessive Wire Stick Out	Move the contact tip on the welding gun closer to the work piece to shorten the length of exposed welding wire.

Excessive Spatter	Fast Wire Speed	Adjust wire speed to slower setting
	Dirty Base Metal	Remove all paint, rust, oil, grease, dirt or any other contaminants that may be on the surface of the piece.
	Poor Shielding Gas	Increase the flow rate of the shielding gas. If the bottle is getting low and porosity is starting to form in the welds, it means that the bottle needs to be refilled. Take note of any cross winds that may be blowing the shielding gas away from the welding zone.
	Wrong Shielding Gas	Make sure that you are using a 75% Argon/ 25% CO2 Shield Gas on steel.
	Wrong Welding Wire	Check wire for type and make sure it is appropriate for the material and process being used.
	Excessive Wire Stick Out	Move the contact tip on the welding gun closer to the work piece to shorten the length of exposed welding wire.