MIG/TIG & MMA (ARC/STICK) INVERTER WELDER 200A

MODEL NO: **MIG200I.V2**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.


Refer to instructions


Wear a welding mask


Wear protective gloves


Wear safety footwear


Wear protective clothing


Electrical shock hazard


Hot surfaces


DO NOT use in the vicinity of a pacemaker


Arc rays can burn eyes and injure skin


WARNING! Keep away from rain


WARNING! Electric shock hazard


Welding sparks can cause explosions or fire


Breathing welding fumes can be hazardous to your health

1. SAFETY

1.1. ELECTRICAL SAFETY

❑ **WARNING!** It is the user's responsibility to check the following:
✓ Check all electrical equipment and appliances to ensure that they are safe before using.
✓ Inspect power supply leads, plugs and all electrical connections for wear and damage.
✓ Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply.
× **DO NOT** use worn or damaged cables, plugs or connectors.
✓ Ensure that any faulty item is repaired or replaced immediately by a Sealey qualified technician.
✓ If the cable or plug is damaged during use, switch off the electricity supply and remove from use.
✓ Sealey recommend that an RCD (Residual Current Device) is used with all electrical products.
IMPORTANT: Ensure that the voltage rating on the appliance suits the power supply.
× **DO NOT** pull or carry the appliance by the power cable.
× **DO NOT** pull the plug from the socket by the cable.
❑ **WARNING!** Unplug the welder from the mains power supply before performing maintenance or service.
❑ **WARNING!** Risk of electric shock: Electric shock from welding electrode can kill. **DO NOT** weld in the rain or snow. Wear dry insulating gloves. **DO NOT** touch electrode with bare hands. **DO NOT** wear wet or damaged gloves. Protect yourself from electric shock by insulating yourself from workpiece. **DO NOT** open the equipment enclosure.
✓ This unit must be connected to a suitable supply by qualified personnel in accordance with relevant national and local regulations.

1.2. USE OF PROTECTIVE ACCESSORIES

The arc and its reflecting radiation damage unprotected eyes. Always protect your eyes and face with an appropriate welding mask. The arc and welding spatters burn unprotected skin. Sparks and hot metal can also burn. When welding, always use dry, insulating, protective gloves, footwear and clothing.

1.3. SAFE USE OF THE WELDING GUN

Parts of the machine, such as the end of the filler wire and welding gun become burning hot during use. The wire is also sharp and moves quickly, so be careful when threading it to place. **NEVER** carry the machine on your shoulder during welding, but place it on an even surface. **DO NOT** keep the machine near or on hot objects, as the plastic cover may melt. **DO NOT** move the shielding gas bottle when the control valve is in place. Fix the gas bottle securely in an upright position to a separate wall rack or bottle cart. Always close the gas bottle after use.

1.4. FIRE SAFETY

Welding is always classified as hot work, so pay attention to fire safety regulations. Protect the environment from welding spatters. Remove inflammable material, such as burning fluids, from the vicinity of the welding site and supply the site with adequate firefighting equipment. Take into account dangers caused by special workplaces, such as fire risk and danger of explosion, when welding container-like pieces. **NOTE:** Fire caused by sparks may brake out even after several hours.
❑ **WARNING!** Welding in inflammable and explosive atmospheres is strictly forbidden!

1.5. SUPPLY VOLTAGE

DO NOT take the welding machine inside a work piece, for example into a container or a car. **DO NOT** place the welding machine on a wet surface. Change faulty cables immediately for they are life-threatening and may cause a fire. Ensure that cables are not squeezed or in contact with sharp edges.

1.6. WELDING CIRCUIT
Insulate yourself from the welding circuit by using dry and undamaged protective clothing. **DO NOT** work on a wet surface. **DO NOT** use damaged welding cables. **DO NOT** place the welding gun or earthing clamp on the welding machine or other electrical device.

1.7. WELDING FUMES
Make sure ventilation is sufficient. Take special precautions when welding metals containing lead, cadmium, zinc, mercury or beryllium. Supply of sufficient clean air can also be ensured with the use of a fresh air mask.

1.8. MACHINE USE
If you use non-recommended filler wire, make sure that the feed roll groove, welding gun contact tip and machine polarity are suited for the used wire size and type.

1.9. BEFORE IMPLEMENTATION
The products are packed to durable packages especially designed for them. However, always make sure before use that products have not been damaged during transportation. Also check that you have received the products you ordered and the instruction manuals needed.

1.10. TRANSPORTATION
The machine should be transported in an upright position. **NOTE:** always move the welding machine by lifting it from the handle. **NEVER** pull it from the welding gun or other cables. Gas bottles should be disconnected before transportation. Follow correct manual handling practice at all times.

1.11. ENVIRONMENT
The machine is suitable for both indoor and outdoor use, but it should be protected from snow, heavy rain and sunshine. Extra caution must be taken if working from an elevated position. Store the machine in a dry and clean environment and protect it from sand and dust during use and storage. The recommended operating temperature range is -20°C to +40°C. Place the machine in such a way that it does not come in contact with hot surfaces, sparks and spatters. Make sure the air flow in the machine is unrestricted.

1.12. MAINS SUPPLY
Welding equipment should be connected to the main supply according to the manufacturer's recommendations. If interference occurs, it may be necessary to take additional precautions such as filtering of the main supply. Consideration should be given to shielding the supply cable of permanently installed welding equipment in metallic conduit or equivalent. Shielding should be electrically continuous throughout its length. The shielding should be connected to the welding power source so that good electrical contact is maintained between the conduit and the welding power source enclosure.

1.13. WELDING CABLES
The welding cables should be kept as short as possible and should be positioned close together, running at or close to the floor level.

1.14. EARTHING OF THE WORK PIECE
Where the work piece is not bonded to earth for electrical safety, nor connected to earth because of its size and position, e.g. ship's hull or building steel work, a connection bonding the work piece to earth may reduce emissions in some but not all instances. Care should be taken to prevent the earthing of the work piece increasing the risk of injury to users, or damage to other electrical equipment. Where necessary, the connection of the work piece to earth should be made by direct connection to the work piece. But in some countries where direct connection is not permitted, the bonding should be achieved by suitable capacitance selected according to national regulations.

1.15. THERMAL PROTECTION
Should the welder become overheated due to prolonged use, beyond the stated duty cycle, the thermal protection will cause the welder to cut out and the light on the front panel will illuminate. Wait for the welder to cool down at which time it will reconnect automatically.

- ❑ **WARNING! DO NOT** use a welding power source to thaw pipes.
- ❑ **WARNING! DO NOT** place the welding power source on a tilted plane as this may lead to the unit toppling over.

2. INTRODUCTION

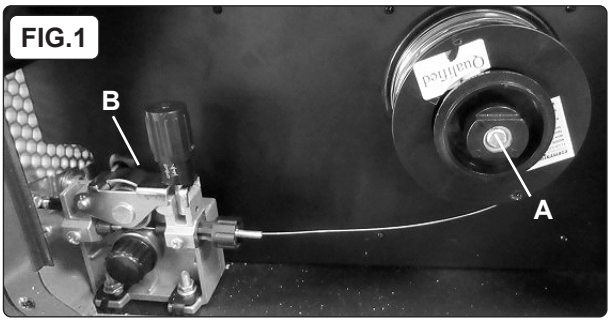
IGBT Inverter fan-cooled DC power supply for MIG/TIG and MMA/ARC welding applications up to 200A. LCD Display shows real time monitoring of welding parameters for precise control. Ultra-compact and lightweight weighing just 13.2kg and supplied with carry handle making this unit highly portable allowing the welder to be taken to the job at hand. Featuring hot start, anti-stick, forced air cooling and thermal cut out protection. Unit can MIG weld using 5kg Ø0.8/Ø0.9/Ø1mm solid wire and flux cored MIG wire, MMA/ARC weld Ø1.6 up to Ø4mm electrode. Supplied with fixed non-live MIG torch 2.8m, 1.4m earth cable/clamp, 1.6m electrode holder. Duty Cycle - MIG - 60% @ 200A, TIG - @ 60% 170A, MMA/ARC - 60% @ 170A.

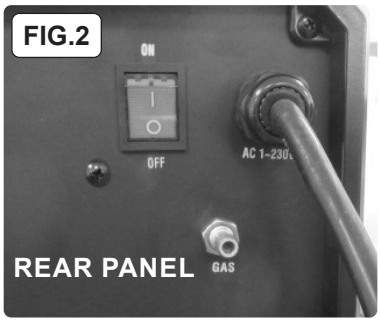
3. SPECIFICATION

Model No:	MIG200I.V2
Electrical Class:	Class I
Nett Weight:	13.2kg
Power Supply Cable Length:	2m
Welding Current	50-200A
Duty Cycle MIG:	200A @ 60%, 155A @ 100%
Duty Cycle TIG:	180A @ 60%, 140A @ 100%
Duty Cycle MMA:	180A @ 60%, 140A @ 100%
Wire Capacity:	5kg
Electrode Capacity:	Ø1.6 up to Ø4mm
Absorbed Power:	6.5kva
Gas Type:	CO2, Argon, CO2/Argon Mix
Supply:	230V
Plug Type:	Bare Wire
Power Supply Cable Length:	2m
IP Rating:	IP21S
Insulation Class:	H
EMC Classification:	Class A
Static Characteristic:	Drooping
Pollution Degree:	3
Efficiency of the Product:	85%

4. CONTENTS

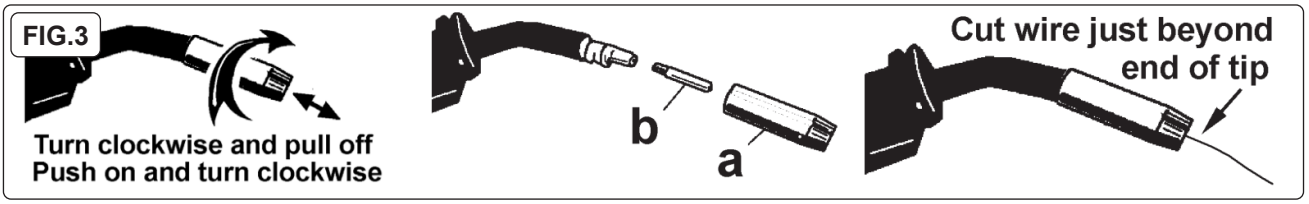
5. ASSEMBLY





5.1. FITTING A REEL OF WIRE (FIG.1)

5.1.1. Open side door.
5.1.2. Undo spindle knob (A) anticlockwise. Fit wire so it will feed from bottom of the reel as shown.
5.1.3. Release pressure roller (B).
5.1.4. Select correct wire feed roller for wire size.
5.1.5. Straighten end of wire and gently push into wire guide.
5.1.6. Close pressure roller (B).
5.1.7. See 5.3 for setting wire tension.
5.1.8. Select wire diameter on the main display (see 6.3).



5.2. FEED THE WIRE THROUGH TO THE TORCH (FIG.3)

5.2.1. Remove gas cup (a) and contact tip (b) from end of torch as follows:
a) Take torch in left hand with the torch tip facing to the right.
b) Grasp gas cup firmly in your right hand.
c) Turn gas cup clockwise only and pull cup out to the right.

❑ **WARNING! DO NOT** turn gas cup anti-clockwise, as this will damage the internal spring.

d) Unscrew the copper contact tip (fig.3.b) (right hand thread) to remove.

5.2.2. Check welder is switched OFF and that the earth clamp is away from the torch tip. Connect the welder to the mains power supply and set the voltage switch to MIN.
5.2.3. Keeping the torch cable as straight as possible, press the torch switch. The wire will feed through the torch.
5.2.4. When wire has fed through, switch welder off, unplug from mains.
a) Take torch in left hand, slide the contact tip over the wire and screw it back into place.
b) Grasp gas cup in right hand, push onto torch head and turn clockwise only.

❑ **WARNING! DO NOT** turn gas cup anti-clockwise, as this will damage internal spring.

c) Cut wire so that it is just protruding from the cup.

5.3. SETTING WIRE TENSION

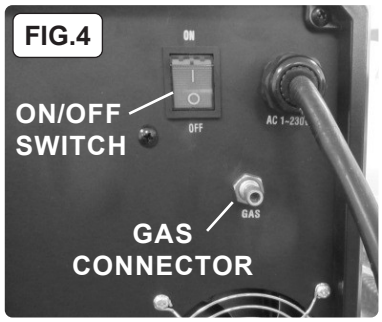
You must set the correct tension, too little or too much tension will cause problematic wire feed and result in a poor weld. Correct tension between the rollers is checked by slowing down the wire between gloved fingers. If the pressure roller skids the tension Is correct. Try to use the lowest tension possible as too high a tension will deform the wire.

6. OPERATION

❑ **WARNING!** Ensure that the inverter is not plugged into the mains power supply before connecting or disconnecting cables. For electrical installation, see Safety Instructions. Failure to follow the electrical safety instructions may affect the operating performance and could damage the built-in safety system which, in turn, could result in personal injury or fatality and will invalidate the warranty.

6.1. CONNECTING THE CABLES

Connect the electrode holder to the positive polarity and the earth clamp to the negative polarity, which is commonly used for STICK welding on most materials, such as low carbon steel and low alloy steel.

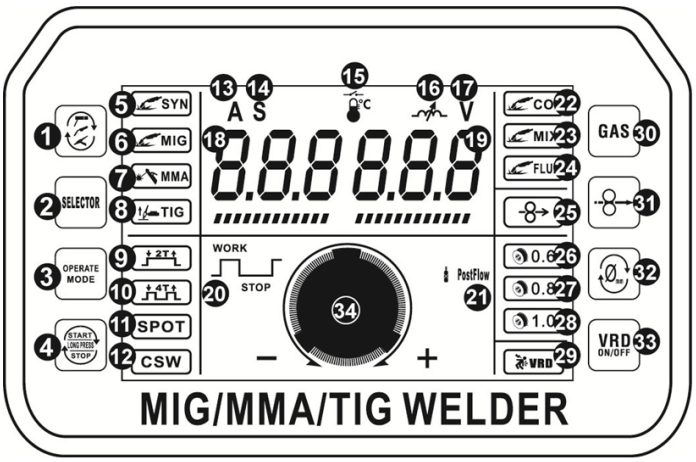


6.2. ON/OFF (FIG.4)

Turn the unit on via the ON/OFF switch located on the back of the unit. The fan will begin to run. Set the function as required. Ensure welding current is adequate for the thickness of the work piece.

6.3. DISPLAY OVERVIEW

Familiarize yourself with the location and purpose of the controls on this unit before attempting to operate. When using the MIG welding process (solid wire) a shielding gas is required. Familiarize yourself with the location of the back panel gas connector (fig.4) before attempting to operate.



1. Function select button	10. 4T function	19. Voltage display	28. 1.0 wire
2. Parameter selection	11. Spot welding	20. Interval time regulation	29. VRD function is displayed
3. 2T/4T function selection	12. CSW welding	21. Post-gas	30. Gas selection
4. SPOT/CSW selection	13. Current control display	22. CO2 gas	31. Fast wire feed option
5. SYN MIG function	14. Time adjustment display	23. Mixed gas	32. Wire selection
6. MIG function	15. Overheat protection display	24. FLUX MIG	33. VRD
7. MMA function	16. Inductance control display	25. Quick wire feed	34. Control knob
8. TIG function	17. Voltage regulation display	26. 0.6 wire	
9. 2T function	18. Current display/Wire feed display	27. 0.8 wire	

6.4. MMA SETUP

Press the button labelled with icon 1 to activate the function represented by icon 7, MMA. Use knob 34 to adjust current level represented by icon 18. Additionally, you can use the control labelled with icon 33 to turn on or off the VRD function represented by icon 29.

6.5. TIG SETUP

Press the button labelled with icon 1 to activate the function represented by icon 8, TIG. Use knob 34 to adjust the current level represented by icon 18.

6.6. SYN MIG SETUP

Press the button labelled with icon 1 to activate the function represented by icon 5, SYN. By pressing the function button labelled with icon 2, you can selectively activate the functions represented by icons 13, 14, 16, 17, 20, and 21. Use knob 34 to adjust the values of these functions.

When icons 13 and 17 are simultaneously activated by pressing the function button labelled with icon 2, use knob 34 to adjust the current and voltage.

When icon 17 is individually activated by pressing the function button labelled with icon 2, use knob 34 to adjust the voltage.

When icon 16 is individually activated by pressing the function button labelled with icon 2, use knob 34 to adjust the inductance from 0 to 10.

When icons 14 and 21 are simultaneously activated by pressing the function button labelled with icon 2, use knob 34 to adjust the post-gas time from 0 to 2 seconds.

By pressing the button labelled with icon 4, you can activate the functions represented by icons 11 and 12 for spot welding and continuous spot welding. In spot welding mode, only the 2T function can be selected. In continuous spot welding mode, you can choose between the 2T and 4T functions.

By pressing the button labelled with icon 3, you can activate the functions represented by icons 9 and 10 for 2T and 4T operations. When the 2T function is selected, pressing the button labelled with icon 2 to activate icons 14 and 20 allows you to adjust the spot welding time from 0 to 5 seconds. When the 4T function is selected, pressing the button labelled with icon 2 to activate icons 14 and 20 allows you to separately adjust the spot welding time and interval time from 0 to 5 seconds.

By pressing the button labelled with icon 30, you can activate the functions represented by icons 22, 23, and 24 to select the gas you wish to use.

By pressing and holding the button labelled with icon 31, you can activate the fast wire feed function represented by icon 25.

By pressing the button labelled with icon 32, you can activate the functions represented by icons 26, 27, and 28 to select the welding wire you require.

6.7. MIG SETUP

Press the button labelled with icon 1 to activate the function represented by icon 6, MIG.

By pressing the function button labelled with icon 2, you can selectively activate the functions represented by icons 13, 14, 16, 17, 20, and 21. Use knob 34 to adjust the values of these functions.

When icon 13 is individually activated by pressing the function button labelled with icon 2, use knob 34 to adjust the current.

When icon 17 is individually activated by pressing the function button labelled with icon 2, use knob 34 to adjust the voltage.

When icon 16 is individually activated by pressing the function button labelled with icon 2, use knob 34 to adjust the inductance from 0 to 10.

When icons 14 and 21 are simultaneously activated by pressing the function button labelled with icon 2, use knob 34 to adjust the post-gas time from 0 to 2 seconds.

By pressing the button labelled with icon 4, you can activate the functions represented by icons 11 and 12 for spot welding and continuous spot welding. In spot welding mode, only the 2T function can be selected. In continuous spot welding mode, you can choose between the 2T and 4T functions.

By pressing the button labelled with icon 3, you can activate the functions represented by icons 9 and 10 for 2T and 4T operations. When the 2T function is selected, pressing the button labelled with icon 2 to activate icons 14 and 20 allows you to adjust the spot welding time from 0 to 5 seconds.

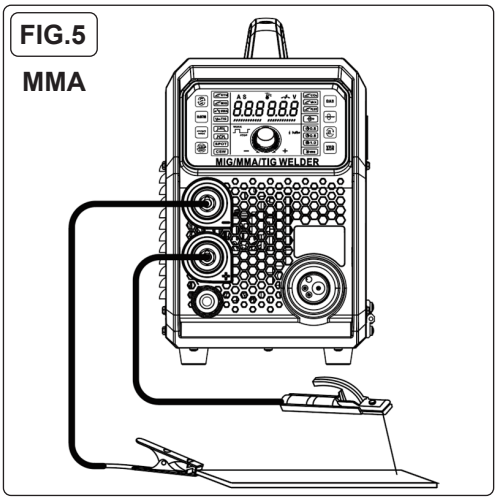
When the 4T function is selected, pressing the button labelled with icon 2 to activate icons 14 and 20 allows you to separately adjust the spot welding time and interval time from 0 to 5 seconds.

By pressing the button labelled with icon 30, you can activate the functions represented by icons 22, 23, and 24 to select the gas you wish to use.

By pressing and holding the button labelled with icon 31, you can activate the fast wire feed function represented by icon 25.

By pressing the button labelled with icon 32, you can activate the functions represented by icons 26, 27, and 28 to select the welding wire you require.

IMPORTANT: These instructions are not intended to teach you how to weld. If you have no experience, we recommend that you seek training from an expert source. Welding requires a steady hand and supervised practice on scrap metal, as it is only with continued practice that you will achieve the desired results.



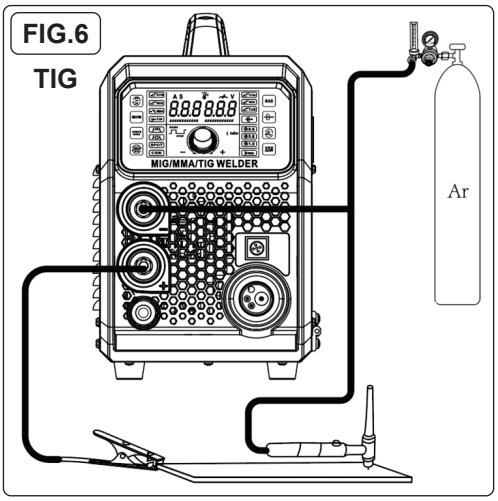
6.8. MMA WELDING DESCRIPTION (FIG.5)

6.8.1. Connect the power cable of the welding machine to a power outlet that meets the voltage requirements, ensuring proper grounding.

6.8.2. Connect the electrode holder cable to the positive (+) or negative (-) output terminal of the welding machine. The specific connection depends on the welding requirements.

6.8.3. Connect the ground clamp cable to the other output terminal of the welding machine. Ensure the ground clamp is securely attached to the workpiece.

6.8.4. Insert the welding electrode into the electrode holder, ensuring good contact.



6.9. TIG WELDING DESCRIPTION (FIG.6)

6.9.1. Set up as per fig.6.

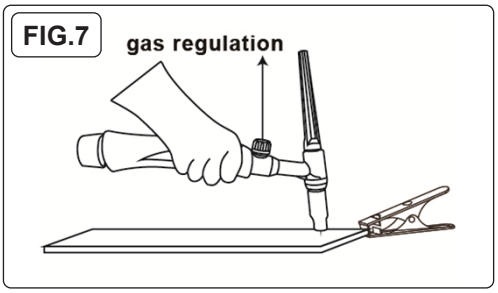
6.9.2. Turn on the power switch at the back panel, digital current meter is normal, fan begins to rotate.

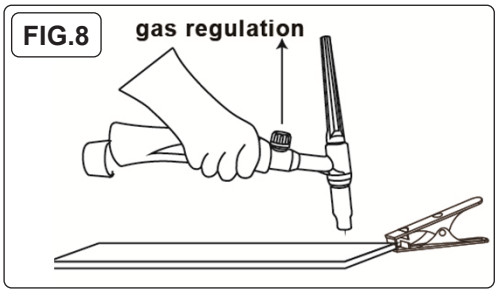
6.9.3. Open the valve of the argon cylinder. Adjust the volume of flow meter and make sure it is adequate for welding.

6.9.4. Turn on the flow switch on the TIG gun, and argon is flowing from torch burner.
NOTE: when welding is over, argon will still flow out in several seconds in order to protect welding spot before cooled down. The torch must be kept welding place some time before arc has been extinguished.

6.9.5. Set suitable welding current and make sure welding current is adequate to the thickness of work piece and process demand.

6.9.6. Touch the tungsten needle to the work piece and then lift up, burn and strike arc. The welding machine can be operated now.





6.10. TIG TORCH USE METHOD (FIG.7 & 8)

6.10.1. Install tungsten needle, needle reach 0.08-0.2inch.

6.10.2. Touch the needle to the workpiece (fig.7).
Lift up the torch, the machine strike arc and can be operated (fig.8).

FIG.9

SOLID WIRE SETUP

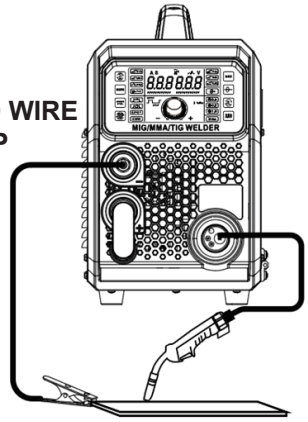
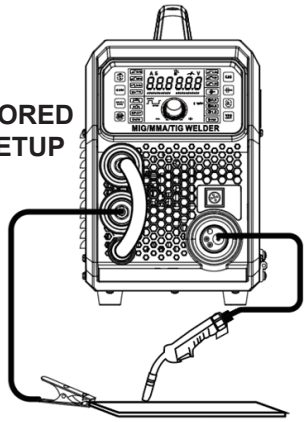


FIG.10

FLUX-CORED WIRE SETUP



6.11. MIG WELDING DESCRIPTION

6.11.1. Solid Wire Setup (fig.9)

This set up is known as DC Electrode Positive (straight polarity). This is commonly used for DC MIG welding. When installing wire, remove contact tip from MIG gun first, after wire is sent out, put the contact tip back (see fig.3).

6.11.2. Flux-cored Wire Setup (fig.10)

This set up is known as DC Electrode Negative (reverse polarity). This is commonly used for DC Flux Core welding. When installing wire, remove contact tip from MIG gun first, after wire is sent out, put the contact tip back (see fig.3).

7. MAINTENANCE

7.1. DAILY MAINTENANCE

❑ **WARNING!** Before removing the welding machine panels switch off the machine and disconnect it from the mains power supply. Wait 10-15 seconds after the unit is switched off for the capacitor to discharge.

❑ **WARNING!** Before carrying out routine maintenance, switch off the welding and disconnect it from the mains power supply.

❑ **WARNING!** If the welding machine is not functioning properly repairs should be carried out only and by authorised service engineers.

✓ Remove welding splatter from the welding gun's tip and check the condition of the parts. Replace any damaged/worn parts immediately.

✓ Check that the insulation tips of the welding gun's neck are undamaged and in its place. Change any damaged parts.

✓ Check the tightness of the welding gun's and earthing cable's connection.

✓ Check the supply voltage and welding cable and replace faulty cables.

✓ Periodically remove the casing and, with a low pressure air flow (max. 1bar or 15psi), remove dust from inside the machine.

× **DO NOT** direct compressed air onto the electronic circuit boards. These should be cleaned with a very soft brush.

✓ Ensure that all electrical connections are tight and check the wiring for damage to the insulation.

✓ Ensure that the casing is correctly replaced and secured before attempting to use the inverter.

✓ Keep the outside of the machine clean by wiping with a soft, dry cloth.

✓ For any other service or maintenance, contact your local Sealey service agent.

✓ Put the machine into the original packing in dry location if it is not to be used for a long time.

❑ **WARNING!** Always allow the welder to cool before storing.

7.2. MAINTENANCE OF THE EQUIPMENT

The equipment should be routinely maintained according to these instructions. All access and service covers should be closed and properly fastened when the welding equipment is in operation. The welding equipment should not be modified in any way except for those changes and adjustments covered in these instructions. In particular, the spark gaps of any arc striking and stabilising devices should be adjusted and maintained according to their instructions.

8. TROUBLESHOOTING

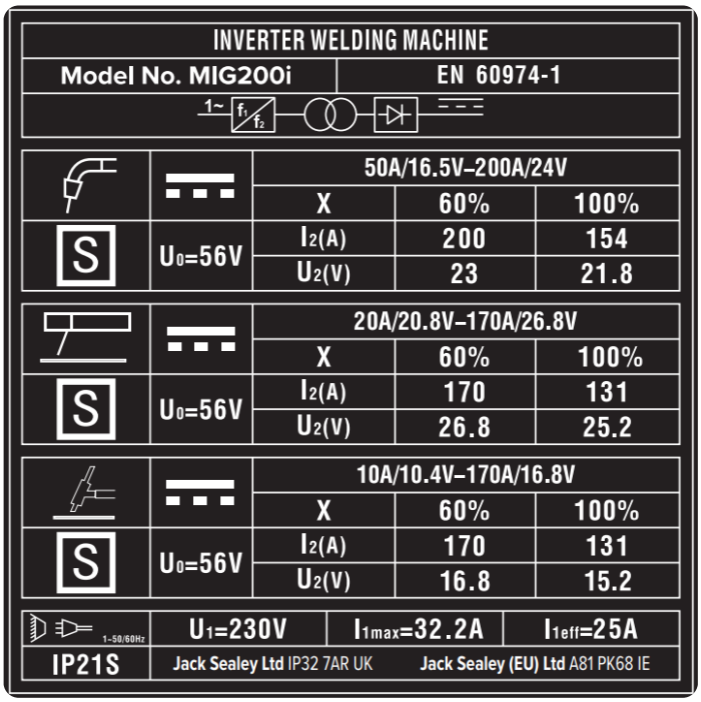
PROBLEM	
The wire does not move or wire feed entangles.	Feed rolls, wire conduit or contact tips are defective: • Check that feed rolls are not too tight or too loose. • Check that the feed roll groove is not too worn. • Check that the wire conduit is not blocked. • Check that there are no spatters on the conduit tip and that the hole is not cramped or worn loose.
Main switch indicator light does not switch on.	The machine has no supply voltage. Check that cooling air can flow without obstructions. Machine's volume-capacity ratio has been exceeded;wait for the indicator light to switch off. The supply voltage is too low or too high.

Machine welds badly.	Welding outcome is influenced by several factors: • Check the trimming settings of welding power control and arc length. • Check that the earthing clamp is fixed properly. • Check fixing point is clean, and both cable and its connections are undamaged. • Check the flow of shielding gas from the tip of the welding gun. • Supply voltage is uneven, too low or too high.
Over-heating indicator light switches on.	The machine has over-heated: • Check that the cooling air can flow without obstructions. • Machine volume-capacity has been exceeded; wait for indicator light to switch off. • Supply voltage is too low or too high.

9. RATING PLATE

On the front panel of the welder is the ratings plate, giving the following data:

1. The BS/EU standard relating to the safety and construction of arc welding and associated equipment.
2. Single phase transformer.
3. Symbol indicates welding with a continuous flow of welding wire.
4. Symbol for Single-phase AC supply.
5. Rating of internal protection provided by casing.
6. Output U_0 Rated minimum and maximum no load voltage.
   I_2, U_2 Current and corresponding voltage.
   X Welding ratio based on a 10 minute cycle.
   20% indicates 2 minutes welding and 8 minutes rest,
   100% would indicate continuous welding.
7. Mains Supply
   U_1 Rated supply voltage and frequency.
   I_1max Maximum current.
   I_1eff Maximum effective current.
8. Welding current range.
9. Serial Number. Specifically identifies each welder.



ENVIRONMENT PROTECTION
Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

REGISTER YOUR PURCHASE HERE

WEEE REGULATIONS
Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice. Please note that other versions of this product are available. If you require documentation for alternative versions, please email or call our technical team on technical@sealey.co.uk or 01284 757505.
Important: No Liability is accepted for incorrect use of this product.
Warranty: Guarantee is 12 months from purchase date, proof of which is required for any claim.

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