MULTI PROCESS 200A INVERTER WELDER & 40A PLASMA CUTTER

MODEL NO: **IMIG200P**

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 instruction manual


Wear a welding mask


Wear protective gloves


Warning! electrical shock hazard


Warning! keep away from rain


Caution required


Arc rays can burn eyes and injure skin


Electric shock from welding electrodes can kill


Breathing welding fumes can be hazardous to your health


Electromagnetic fields can cause pacemaker malfunction


Welding sparks can cause explosions or fire

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 is replaced immediately by a qualified electrician.

✓ If the cable or plug is damaged during use, switch off the electricity supply and remove from use.

✓ Ensure that repairs are carried out by a Sealey qualified electrician.

✓ 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 to be used and that the plug is fitted with the correct fuse.

× **DO NOT** pull or carry the appliance by the power cable.

× **DO NOT** pull the plug from the socket by the cable.

This product comes without a plug. ***You must*** contact a qualified electrician to ensure an adequate supply is available.

Cable extension reels. When a cable extension reel is used it should be fully unwound before connection. A cable reel with an RCD fitted is recommended since any product which is plugged into the cable reel will be protected. The section of the cores of the cable is important. 2.5mm² section is a minimum, but to be absolutely sure that the capacity of the cable reel is suitable for this product and for others that may be used in the other output sockets, we recommend the use of 2.5mm² section cable.

❑ **WARNING!** Be very cautious if using a generator to power the welder. The generator must be self-regulating and stable with regard to voltage, wave form and frequency. The output must be greater than the power consumption of the welder. If any of these requirements is not met the electronics within the welder may be affected.

NOTE: The use of an unregulated generator may be dangerous and will invalidate the warranty on the welder.

❑ **WARNING!** The welder may produce voltage surges in the mains supply which can damage other sensitive equipment (e.g. computers). To prevent this happening, it is recommended that the welder is connected to a power supply that does not feed any sensitive equipment.

To achieve maximum output IMIG200P will require a 32A fused supply. We recommend you discuss the installation of an industrial round pin plug and socket with a competent electrician.

1.2. GENERAL SAFETY

✓ Read and understand all instructions. Failure to follow all instructions listed below may result in serious injury.

▲ **CAUTION: DO NOT** allow persons to operate or assemble this welder without professional training, have read this manual and have developed a thorough understanding of how the welder works and its safe operation for both operator and any bystanders.

❑ **WARNING:** The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be applied by the fully trained operator.

✓ Only carry unit using integrated handle on body. When not in use store in original packaging in clean dry environment.

1.2.1. WELDING ENVIRONMENT

✓ Keep the environment you will be welding in free from flammable materials.

✓ Always keep a fire extinguisher accessible to your welding environment.

✓ Always have a qualified person install and operate this equipment.

✓ Make sure the area is clean, dry and ventilated. **DO NOT** operate the welder in humid, wet or poorly ventilated areas.

- ✓ Always have your welder maintained by a qualified technician in accordance with local, state and national codes.
- ✓ Always be aware of your work environment. Be sure to keep other people, especially children, away from you while welding.
- ✓ Keep harmful arc rays shielded from the view of others.
- ✓ Mount the welder on a level, secure bench or cart that will keep the welder secure and prevent it from tipping over or falling.

1.2.2. **WELDER CONDITION**

- ✓ Check ground cable, power cord and welding cable to be sure the insulation is not damaged. Always replace or repair damaged components before using the welder.
- ✓ Check all components to ensure they are clean and in good operating condition before use.

1.2.3. **SAFE USE OF YOUR WELDER**

- × **DO NOT** operate the welder if the output cable, electrode, torch, wire or wire feed system is wet. **DO NOT** immerse them in water. These components and the welder must be completely dry before attempting to use them.
- ✓ Follow the instructions in this manual.
- ✓ Keep welder in the off position when not in use.
- ✓ Connect ground lead as close to the area being welded as possible to ensure a good ground.
- × **DO NOT** allow any body part to come in contact with the welding wire if you are in contact with the material being welded, ground or electrode from another welder.
- × **DO NOT** weld if you are in an awkward position. Always have a secure stance while welding to prevent accidents. Wear a safety harness if working above ground.
- × **DO NOT** drape cables over or around your body.
- ✓ Wear a full coverage helmet with appropriate shade and safety glasses while welding.
- ✓ Wear proper gloves and protective clothing to prevent your skin from being exposed to hot metals, UV and IR rays.
- × **DO NOT** overuse or overheat your welder. Allow proper cooling time between duty cycles.
- ✓ Keep hands and fingers away from moving parts and stay away from the drive rolls.
- × **DO NOT** point torch at any body part of yourself or anyone else.
- ✓ Always use this welder in the rated duty cycle to prevent excessive heat and failure.

1.2.4. **SPECIFIC AREAS OF DANGER, CAUTION OR WARNING**

1.2.4.1. **ELECTRIC SHOCK**

- ✓ Electric arc welders can produce a shock that can cause injury or death. Touching electrically live parts can cause fatal shocks and severe burns. While welding, all metal components connected to the wire are electrically hot. Poor ground connections are a hazard, so secure the ground lead before welding.
- ✓ Wear dry protective apparel: coat, shirt, gloves and insulated footwear.
- ✓ Insulate yourself from the work piece. Avoid contacting the work piece or ground.
- × **DO NOT** attempt to repair or maintain the welder while the power is on.
- ✓ Inspect all cables and cords for any exposed wire and replace immediately if found. Use only recommended replacement cables and cords.
- × **DO NOT** touch the welding wire and the ground or grounded work piece at the same time.
- × **DO NOT** use a welder to thaw frozen pipes.

1.2.4.2. **FUMES AND GASES**

- ✓ Fumes emitted from the welding process displace clean air and can result in injury or death.
- × **DO NOT** breathe in fumes emitted by the welding process. Make sure your breathing air is clean and safe.
- ✓ Work only in a well-ventilated area or use a ventilation device to remove welding fumes from the environment where you will be working.
- × **DO NOT** weld on coated materials (galvanized, cadmium plated or containing zinc, mercury or barium). They will emit harmful fumes that are dangerous to breathe. If necessary use a ventilator, respirator with air supply or remove the coating from the material in the weld area.
- ✓ The fumes emitted from some metals when heated are extremely toxic. Refer to the material safety data sheet for the manufacturer's instructions.
- × **DO NOT** weld near materials that will emit toxic fumes when heated. Vapours from cleaners, sprays and degreasers can be highly toxic when heated.

1.2.4.3. **UV AND IR ARC RAYS**

- ✓ The welding arc produces ultraviolet (UV) and infrared (IR) rays that can cause injury to your eyes and skin. **DO NOT** look at the welding arc without proper eye protection.
- ✓ Always use a helmet that covers your full face from the neck to top of head and to the back of each ear.
- ✓ Use a lens that meets ANSI standards and safety glasses.
- ✓ Cover all bare skin areas exposed to the arc with protective clothing and shoes.
  Flame-retardant cloth or leather shirts, coats, pants or coveralls are available for protection.
- ✓ Use screens or other barriers to protect other people from the arc rays emitted from your welding.
- ✓ Warn people in your welding area when you are going to strike an arc so they can protect themselves.

1.2.4.4. **FIRE HAZARDS**

- × **DO NOT** weld on containers or pipes that contain or have had flammable, gaseous or liquid combustibles in them. Welding creates sparks and heat that can ignite flammable and explosive materials.
- × **DO NOT** operate any electric arc welder in areas where flammable or explosive materials are present.
- ✓ Remove all flammable materials within 10m of the welding arc. If removal is not possible, tightly cover them with fireproof covers.
- ✓ Take precautions to ensure that flying sparks **DO NOT** cause fires or explosions in hidden areas, cracks or areas you cannot see.
- ✓ Keep a fire extinguisher close in the case of fire.
- ✓ Wear garments that are oil-free with no pockets or cuffs that will collect sparks.
- × **DO NOT** have on your person any items that are combustible, such as lighters or matches.
- ✓ Keep work lead connected as close to the weld area as possible to prevent any unknown, unintended paths of electrical current from causing electrical shock and fire hazards.
- ✓ To prevent any unintended arcs, cut wire back to ¼" stick out after welding.

1.2.4.5. **HOT MATERIALS**

- ✓ Welded materials are hot and can cause severe burns if handled improperly. **DO NOT** touch welded materials with bare hands.
- × **DO NOT** touch MIG gun nozzle after welding until it has had time to cool down.

1.2.4.6. **SPARKS/FLYING DEBRIS**

- ✓ Welding creates hot sparks that can cause injury. Chipping slag off welds creates flying debris.
- ✓ Wear protective apparel at all times: Wear approved safety glasses or shield, welder's hat and ear plugs to keep sparks out of ears and hair.

1.2.4.7. **ELECTROMAGNETIC FIELD**

- ✓ Electromagnetic fields can interfere with various electrical and electronic devices such as pacemakers. Consult your doctor before using any electric arc welder or cutting device
- ✓ Keep people with pacemakers away from your welding area when welding.
- × **DO NOT** wrap cable around your body while welding.
- ✓ Wrap MIG gun and ground cable together whenever possible.
- ✓ Keep MIG gun and ground cables on the same side of your body.

1.2.4.8. **GAS CYLINDER**

- ✓ High pressure cylinders can explode if damaged, treat them carefully.
- ✓ Never expose cylinders to high heat, sparks, open flames, mechanical shocks or arcs.
- × **DO NOT** touch cylinder with MIG gun.
- × **DO NOT** weld on the cylinder
- ✓ Always secure cylinder upright to a cart or stationary object.
- ✓ Keep cylinders away from welding or electrical circuits.
- ✓ Use the proper regulators, gas hose and fittings for the specific application.
- × **DO NOT** look into the valve when opening it.
- ✓ Use protective cylinder cap whenever possible

2. INTRODUCTION

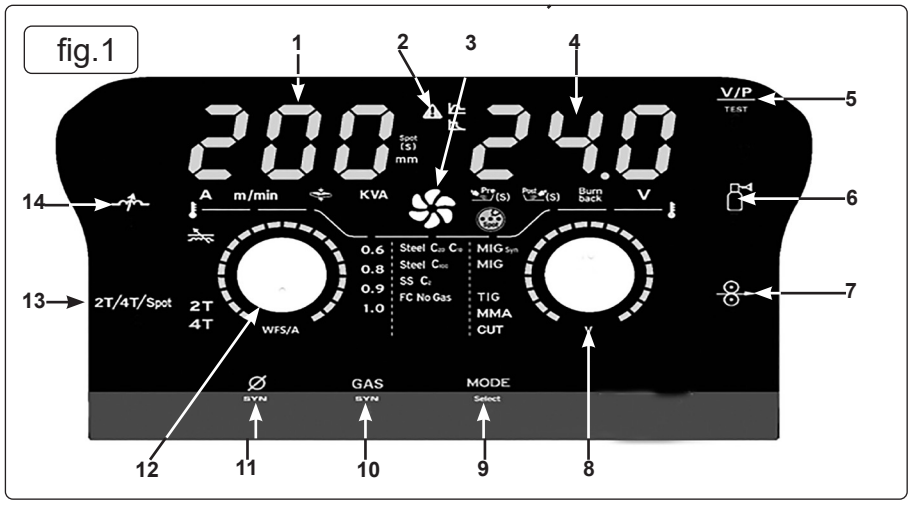
IGBT Inverter multi process welding machine suitable for MIG, TIG, MMA/ARC applications up to 200A as well Plasma cutting at 40A. Gas and Gasless unit which can MIG weld using both Solid wire Ø0.6-1mm and Flux cored wire Ø0.8-1mm at 5kg. Electrode Capacity of Ø1.6 - 5mm. Max cutting capacity of 12mm and clean cutting at 8mm. Featuring hot start, anti-stick, forced air cooling and thermal cut out protection. 2T/4T torch trigger function allowing greater precision during longer welds. Easy to read digital amp and volumeter display. Supplied with 1.5m earth clamp, 2m electrode holder, 3m MIG torch, 2.5m cutting torch.

3. SPECIFICATION

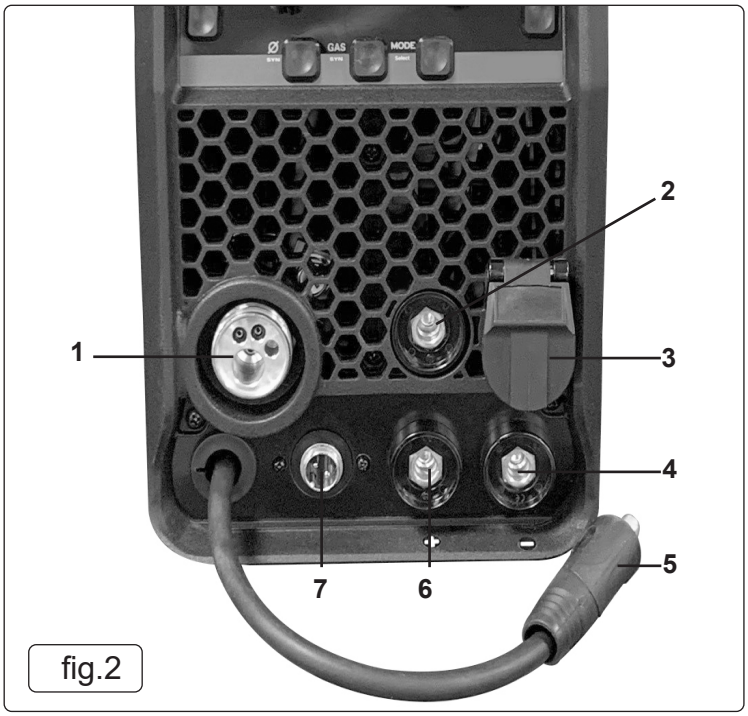
Model No.:	IMIG200P
Nett Weight:	14.6 kg
Plug Type:	Bare Wire
Power Supply Cable Length:	2m
Welding Current:	20-200A
Plasma Output:	15-40A
Duty Cycle:	MIG - 20% @ 200A, TIG - 20% @ 200A, MMA - 20% @200A
Wire Capacity:	5kg
Electrode Capacity:	1-6-5.0mm
Absorbed Power:	9.5kW
Supply:	230V
IP Rating:	IP21S
Air Pressure:	87psi
Max Cutting thickness:	12mm
Clean Cutting Thickness:	8mm
Electrical Class:	Class 1
Idle State Power Consumption:	32Watts
Pollution Degree:	3
Static Characteristics:	Drooping
Power Source Efficiency:	84.86%
Insulation Class:	F
EMC Classification:	Class A
Plasma Cutting Torch:	SG55 60A@60% 6mm²*4m
Output Current and Plasma Gas Range:	15A-40A
Environmental conditions/Range:	-10°C to 50 °C

4. CONTENTS

5. CONTROLS



Key for Figure 1		
No.	Name	Purpose
1	Display 1	Display current, wire speed, material thickness, and KVA.
2	Warning LED	Alert to display abnormality error code.
3	Cooling indicator	Display working status of fan.
4	Display 2	Display output voltage, hot start and arc force.
5	V/P knob	Test value of input voltage or input power.
6	Gas check knob	Check input gas flow.
7	Feed “inching” knob	Feed for MIGsyn and MIG mode.
8	Mode 1	1: Select output voltage, hot start and arc force functions
		2: Adjust value of output voltage, hot start and arc force.
9	Mode knob	Select MIGsyn, MIG, CUT, LIFT TIG, and MMA mode.0
10	SYN knob	Select material and gas when selecting MIGsyn mode.
11	Wire diameter knob	Select wire diameter when in MIGsyn mode.
12	Mode 2	1: Select output current, wire speed, material thickness and KVA functions.
		2: Adjust value of output current, wire speed, material thickness and inductance.
13	2T/4T knob	Select 2T/4T
14	Inductance	Inductance control



Key for Figure 2	
Item	Description
1	MIG Torch Euro Connector
2	Plasma Cutting Earth Clamp
3	TIG / Air Connection
4	Negative (-) Socket
5	Polarity Selector
6	Positive (+) Socket
7	TIG Connection

5.1. OPERATIONAL DATA

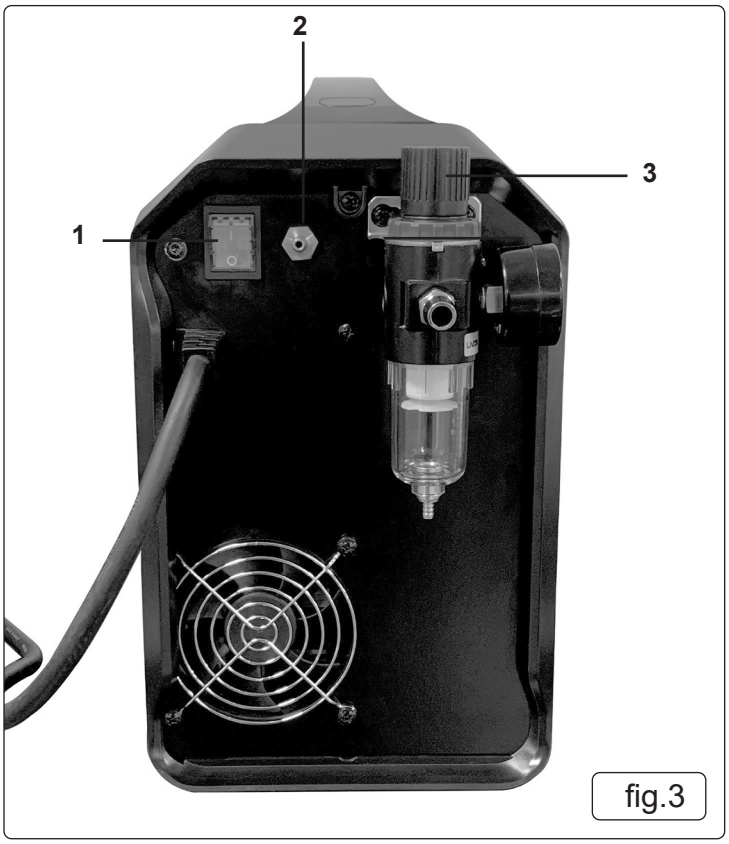


fig.3

Key for Figure 3	
Item	Description
1	On / Off Switch
2	Gas Inlet
3	Air Regulator

MMA - PLATE, ELECTRODE AND CURRRENT RELATIONSHIP		
Plate thickness/mm	Electrode diameter/mm	Current/Amps
<2	1.6	25-40
2	2	40-60
3	3.2	100-30
4-5	3.2	100-30
	4.0	160-180
6-12	4.0	160-180
	5.0	200-270
>13	4.0	160-180
	5.0	200-270
	6.0	260-300

TIG - CURRENT SIZE AND TUNGSTEN NEEDLE SIZE		
Tungsten needle diameter/mm	DC output/A	AC output/A
1.0	10-75A	15-55A
1.6	40-130A	60-125A
2.0	75-180A	85-160A
2.4	130-230A	120-210A
3.2	160-310A	150-250A
4.0	275-450A	240-350A

WELDING CURRENT TO WIRE DIAMETER	
Welding Current (AMPS)	Wire Diameter (mm)
10-20	≥1.0
20-50	1.0-1.6
50-100	1.0-2.4
100-200	1.6-3.0
200-300	2.4-4.5
300-400	3.0-6.0
400-500	4.5-8.0

5.2. OPERATIONAL MODE CONNECTIONS (SEE FIG.4)

Mode	Objects	Workpiece polarity	Torch polarity
MMA	Grounding clamp Welding torch	Negative (-)	Positive (+)
TIG	Grounding clamp TIG welding torch	Positive (+)	Negative (-)
MIG/MAG	Grounding clamp MIG welding torch Cylinder	Negative (-)	Positive (+)
PLASMA CUTTING	Grounding clamp Cut torch Air compressor	Positive (+)	Negative (-)
FLUX CORED	Grounding clamp FLUX CORED welding torch	Positive (+)	Negative (-)
	Grounding clamp FLUX CORED welding torch Cylinder	Negative (-)	Positive (+)

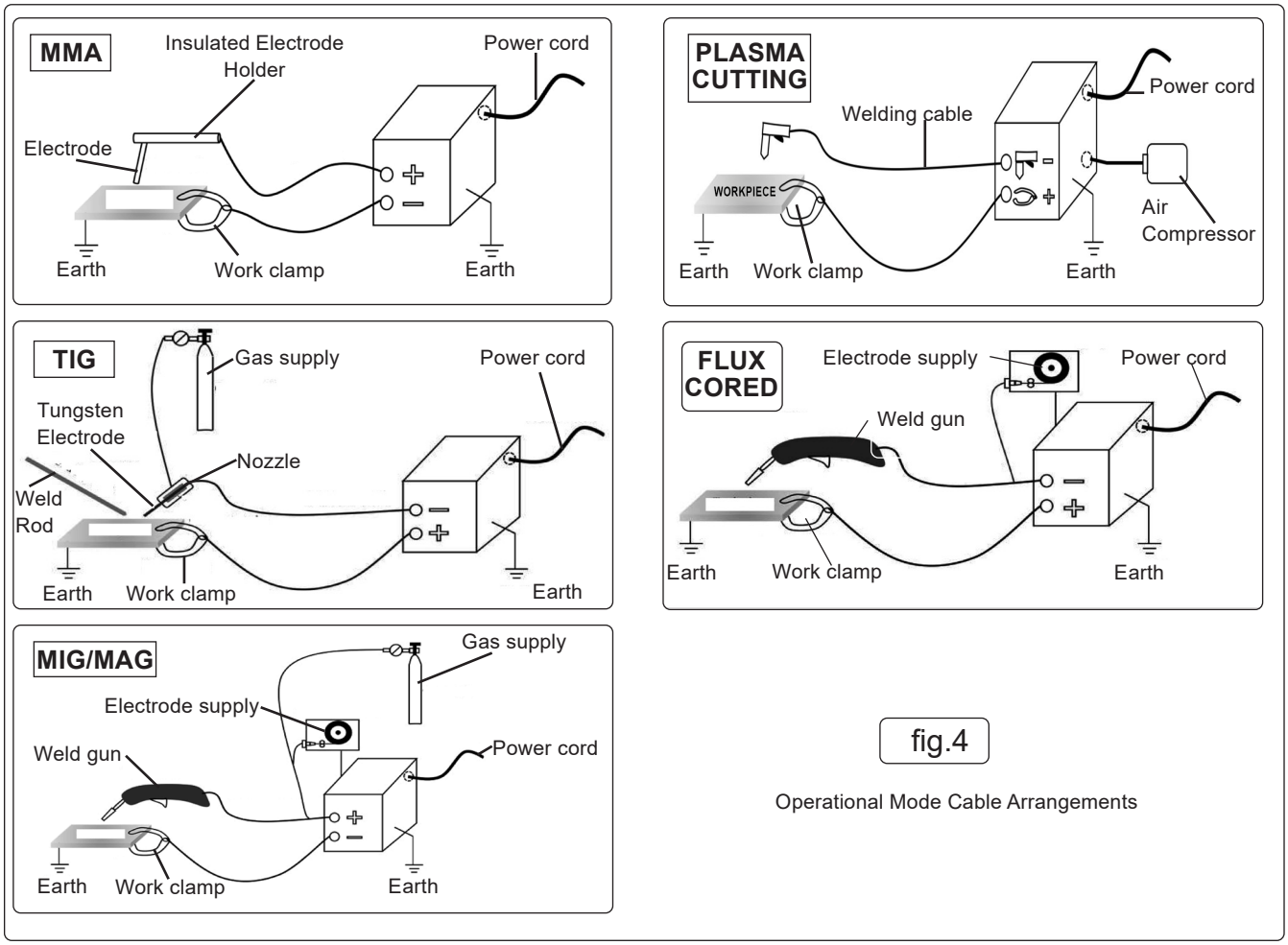


fig.4

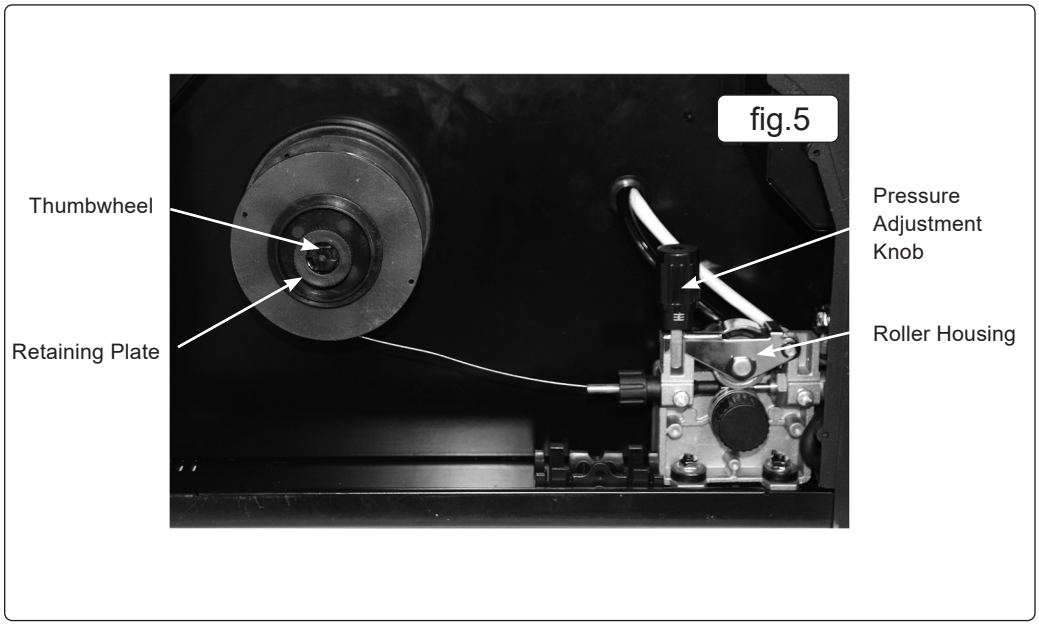
Operational Mode Cable Arrangements

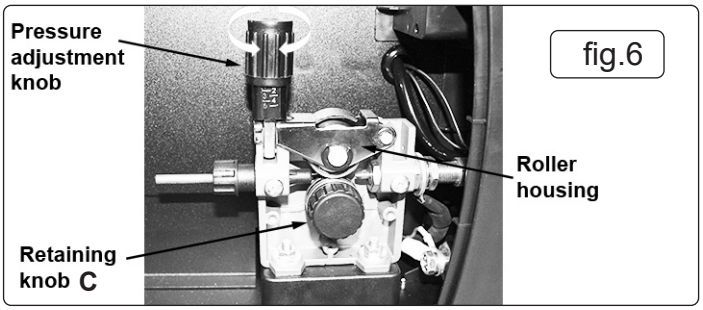
6. TROUBLESHOOTING

FAULT CODES	
Fault	Description
E01/ F01	Overheating
E05/ F05	Torch switch closed before turning on
E09/ F09	The output is short-circuited or the voltage feedback line is abnormal

Mode	Trouble	Solution
ALL	E01/F01 Overheating	Wait for the welder to cool down to return temperature, and then the welder will continue to work.
	E09/F09 Short-circuited	Firmly separate the welding torch from the workpiece and shut down the welding machine if necessary.
	Machine cannot be turned on	Check whether the input line is intact, whether the power is turned on, and whether the input voltage is normal
	Gas leaks	Gas leaks can occur in welding machines, which can lead to poor quality s or welds. Check the gas lines and fittings for leaks, and tighten or replace any faulty connections. It's important to regularly inspect the gas lines and fittings for wear and tear, and replace them if necessary.
	Arc instability	Check the ground connection, adjust the settings according to the type of material being welded, and replace the electrode if necessary.
	The workpiece is welded through	Reduce current.
MMA	Arcing difficulty	Increase the current; Increase HOT START Dried electrode
	Welding rod adhesion	Increase the current; Increase ARC FORCE
	Welding arc break	Shorten the distance between the electrode and the workpiece, do not pull too high.
TIG	The weld color is dark	Accelerate the speed of welding; **DO NOT** remove the torch immediately after welding. Turn up the pre and post gas
	The tungsten needle burns out quickly	Check wiring polarity.
	Irregular weld	Sharpen the tungsten needle.
	Weld failure	Increase current.
MIG/MAG FLUX CORED	Over splash	Increase inductance;
		Check whether the power cable is securely connected;
		Check whether the gas flow is sufficient; The distance between the welding torch and the workpiece should not be too far.
	Arc instability	Check whether the diameter of the conductive nozzle is consistent with the welding wire; Check the nozzle for metal adhesion
	Poor welding	Whether the gas has been turned on; Whether the correct gas is used; Whether the gas flow is sufficient.
PLASMA CUTTING	Poor cutting quality	Check that the cutting pressure is correct; Reduce cutting speed appropriately; Increase current. Workpiece thickness is too large; Increase the output current.

7. PREPARATION





7.1. FITTING A 5KG REEL OF WIRE FIG.5

7.1.1. Ensure that the wire diameter used is matched by the correct groove size in the drive wheel and the correct tip size on the torch as well as the correct torch liner. Failure to do this could cause the wire to slip and/or bind.

7.1.2. Depress thumbwheel and rotate it a quarter turn to remove it along with the compression spring.

7.1.3. Remove retaining plate and slide on wire reel.
NOTE: Ensure that the wire is coming off the bottom of the reel in the direction of the wire drive unit as shown in fig.5.

7.1.4. Replace retaining plate and reaffix the compression spring and thumbwheel.

7.2. TURNING/CHANGING THE DRIVE ROLLER (See fig.6)

7.2.1. Ensure that the wire diameter used, is matched by the correct groove size in the drive roller and the correct tip size on the torch as well as the correct torch liner. Failure to do this could cause the wire to slip and/or bind.

7.2.2. Referring to fig.6, loosen and unscrew the black feed roller retaining knob (C) and put to one side.

7.2.3. The roller carrier is keyed to the main drive shaft and the drive roller is keyed to the carrier. Place a finger onto the end of the drive shaft to prevent the carrier moving and slide the drive roller off the carrier with your other hand.

7.2.4. The size of each wire feed groove is printed on the edge of the roller on the same side as the groove.

7.2.5. Turn the roller over to use the other groove or use a roller with different sized grooves as required. The groove to be used should be positioned furthest away from you to be in line with the drive path.

7.2.6. Check that the key in the carrier is properly seated in its slot. Ensure that the slot on the inside face of the drive roller is aligned with the key and slide the roller back onto the carrier.

7.2.7. Screw the black roller retaining knob (C) back into the end of the drive shaft and tighten.

7.3. FEED WIRE THROUGH TO TORCH

7.3.1. Open the wire feed mechanism by pushing the Pressure Adjustment Knob (fig.6) down to the right allowing the Roller Housing (fig.6) to spring up revealing the feed roller. Ensure that the required feed groove (0.6 or 0.8) is in line with the wire path. See Section 7.2 on how to reverse or change the roller.

7.3.2. Release the wire from the reel and cut off any bent portion ensuring that there are no burrs left on the end of the wire. Keep the wire under tension at all times to prevent it uncoiling.

7.3.3. Straighten about 40-50mm of wire and gently push it through the flexible metal sheathed cable, fig.5 and through the 6 or 8mm feed roller groove and on into the torch cable liner.

7.3.4. Push down the pressure roller carrier onto the wire feed roller and hold it down. Lift up the locking/wire tension knob so that it enters the slot in the pressure roller carrier and snaps into the indent in its top surface. See fig. 6.

7.3.5. Rotate the Pressure Adjustment knob (fig.6) to a medium setting i.e. between 2 and 3.

7.3.6. Remove gas cup (fig.7.2) and contact tip (fig.7.1) 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 it off end of torch tip.

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

d) Unscrew copper contact tip (right hand thread) to remove (fig.7).

Check welder is switched off 0, 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 one.

Set the wire speed knob to position 5 or 6. Keep the torch cable as straight as possible and press the torch switch. The wire will feed through the torch.

When the 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 back into place.

b) Grasp gas cup in right hand, push onto torch head and turn clockwise only.

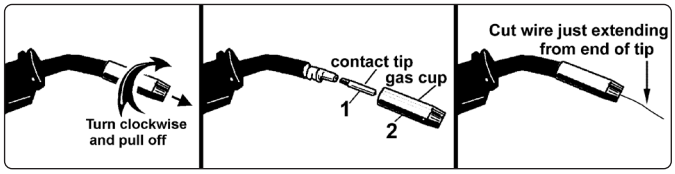


fig.7

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

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

7.4. SETTING WIRE TENSION

7.4.1. Adjust the wire tension by rotating the wire tension knob. Turn clockwise to increase the tension and anticlockwise to decrease the tension. See fig.6.

7.4.2. IMPORTANT: Too little or too much tension will cause problematic wire feed and result in poor welding.

7.4.3. Tension between rollers is checked by slowing down the wire between gloved fingers. If top feed roller skids the tension is correct. Use as low a tension as possible, too high a tension will disfigure wire and result in a blown fuse.

8. PLASMA OPERATION

❑ **WARNING!** Never allow the torch to be aimed at any part of a body.

✓ Make sure to wear full PPE, refer to Safety section, while operating.

✓ Work only in well-ventilated areas. If necessary, use exhaust/ventilation fans to keep fumes or emissions away from the breathing zone.

× **DO NOT** touch the work piece while cutting.

8.1. Check the unit to see if it has been connected correctly and is in good working condition.

8.2. Follow all safety advice in Section 1 concerning Electrical and General Safety.

8.3. Switch on the unit and observe if operation is normal: the fan should start up and the power indication light should be on.

8.4. Pull the trigger: the cutting operation begins after the cutting plasma pilot arc is made.

8.5. CUTTING

8.5.1. **Metal sheet cutting**

Connect the earth cable to the workpiece.

Put the torch's nozzle at the start of the workpiece.

Turn on the torch switch to ignite the plasma pilot.

After the work piece is cut through move the torch along the cutting direction uniformly.

The cutting speed is determined by watching to see if the cut goes all the way through.

If the speed is too fast the workpiece will not be cut all the way through. If the speed is too slow, the quality of the cut will be affected, excessive warping will occur or the arc could stop.

When finished turn off the torch, the plasma pilot arc will stop.

8.5.2. **Metal mesh cutting**

Fix the workpiece and connect the earth cable to the workpiece.

Put the cutting nozzle onto the workpiece, lift up the torch slightly and turn on the switch to cut.

8.5.3. **Cutting action**

Unnecessary igniting of the pilot arc in the air will reduce the life span of the torch's electrode and nozzle.

Start at the edge of the workpiece unless you are piercing the work piece.

Keep a space between the nozzle and the workpiece. Pressing the nozzle on the workpiece could cause the nozzle to stick, reducing the smoothness of the cutting action.

Keep the torch vertical against the workpiece and watch to make sure the arc is moving along the cutting line.

× **DO NOT** rapidly switch the torch trigger on and off this will damage the pilot arc system and the work piece.

9. WELDING OPERATION

9.1. PREPARATION FOR WELDING

IMPORTANT: before you commence, make sure the machine is disconnected from the electric supply. If welding a motor vehicle, disconnect the battery or fit an electronic circuit protector. We recommend strongly the use of Sealey "prosaf/12v or 24v" in order to protect sophisticated electronics. Ensure that you have understood the electrical safety instructions in section 1.

9.1.1. Connecting the Power Input Lead. Connect the power input lead to the positive (+) socket (fig.2) and turn to lock.

9.1.2. Connecting the Earth Lead. Connect the earth lead to the negative (-) socket (fig.2.4) and turn to lock. To ensure a complete circuit, the earth lead must be attached securely to the workpiece that is to be welded.

a) Best connection is obtained by grinding clean the point of contact on the workpiece before connecting the earth clamp.

b) The weld area must also be free of paint, rust, grease, etc.

9.1.3. **MODE** Set the mode selector to MIG/MAG (fig.1).

9.1.4. Voltage Control (fig.1) Set the control to position 1 or 2 for welding up to 2mm thickness. Use settings 3, 4, 5, 6. for thicker welds. The selected voltage is displayed by indicator (fig.1).

9.1.5. Setting the Wire Speed Control (fig.1). In principle, the lower the power required, the slower the wire speed. See setting chart for voltage and corresponding wire speeds. **NOTE:** these settings are only a guide and will vary according to the operator's experience.

9.1.6. Welding mild steel

To weld mild steel you can use CO_2 gas for most tasks where spatter and the high build up of weld **DO NOT** pose a problem. Welding with a long arc reduces penetration and widens the arc.

This in turn results in more spatter. A long welding arc can be appropriate for welding butt joints in thin materials. Welding with a short arc, at the same weld settings, results in greater penetration and a narrower weld and reduces the amount of spatter. To achieve a consistent spatter free and flat weld, you must use an argon/CO_2 mixture.

Wire: 0.6mm Steel Argon/CO2 Mix						
Voltage Step:	1	2	3	4	5	6
Wire Speed:	5	6	7	8	9	10
Settings shown as Guide Only						

9.1.7. To weld aluminium use:
- Argon gas,
- 0.8mm Contact Tip (MIG927),
- 0.8mm Aluminium Wire, (MIG/2KAL08).

A clean torch liner is essential, as any contamination of the aluminium wire will produce a poor weld.

9.1.8. Overload Protection. Thermostatic overload protection is provided. When an overload has occurred, the alarm indicator (fig.1.2) will illuminate. Leave the unit to cool; the thermostat will reset the unit automatically when the temperature has returned within limits.

9.1.9. Trigger Mode (2T/4T). Using the trigger mode selector (fig.1.13), the trigger can be set to 2 touch or 4 touch. 2 touch operates the welder for as long as the trigger is kept depressed, whereas 4 touch starts the welder operating when the trigger is depressed but will continue operating when released. The welder will switch off when the trigger is depressed for a second time. The 4 touch setting is useful to reduce user fatigue when a long weld is required. **NOTE:** The trigger mode selector only operates in MIG/MAG mode.

10. MMA/ARC WELDING

10.1. For arc welding the selector switch (fig.1) needs to be in the Arc setting and the power input lead disconnected.

❑ **WARNING!** Ensure that the inverter is not plugged into the mains power supply before connecting or disconnecting cables. For electrical installation, see Safety Instructions (Section 1).

❑ **WARNING!** 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.

10.2. WELDING CABLE ELECTRODE HOLDER CONNECTION
Before connecting cables it is important to refer to the electrode manufacturer's instructions on the electrode packaging which will indicate the correct polarity connection for the electrode, together with the most suitable current to use.

10.3. ARC WELDING
When arc welding the electrode holder is normally connected to the "POSITIVE" (+) terminal (fig.2).

10.4. WELDING RETURN CABLE- (WORK CLAMP) CONNECTION
The work clamp cable is connected to the terminal not occupied by the electrode holder cable.
The clamp is connected to the workpiece or a metallic work bench. The connection must be as close to the weld as possible.

❑ **WARNING!** Cable connectors must be turned fully into the sockets to ensure a good electrical contact. Loose connections will cause overheating, rapid deterioration and loss in efficiency. **DO NOT** use welding cables over 10m in length. With the exception of a metallic workbench **DO NOT** connect the return cable to any metallic structure which is not part of the workpiece, as this will jeopardise weld quality and may be dangerous.

10.5. PREPARATION

10.6. The welding current must be regulated according to the diameter of the electrode in use and the type of joint to be welded (see diameter/current chart to the right).Welding current is controlled by the amperage control (fig.1).

10.7. Further consideration must be given to the location of the weld, for example: Welds that are performed on a horizontal surface require a higher voltage than those performed on a vertical or overhead surface.

10.8. The mechanical character of the weld will be determined not only by the current used, but also by the diameter and quality of the electrode, the length of the arc and the speed and position of the user. The condition of the electrode is an important factor and it must never be wet or damp.

10.9. Ensure that the workpiece is correctly secured before operating the inverter.

11. TIG WELDING

11.1. The mode selector should be set to the TIG position (fig.1).

11.2. TIG CONNECTIONS
TIG TORCH CABLE. Connect the torch cable to the negative socket (-) on the front panel (fig.2).
WORK CLAMP CABLE.
Connect the clamp cable to the positive socket (+) on front panel (fig.2). Please note that the way the welding cables are connected to the inverter for ordinary MMA welding may be different from the way the cables are connected for standard TIG welding. Whilst most stick electrodes are connected to the positive terminal certain types need to be connected to the negative terminal. It is therefore essential that the user refers to the manufacturer's instructions for the electrodes to ensure the correct polarity is selected.

11.3. PREPARATION AND CHOICE OF ELECTRODE: In order to produce a good weld it is important to choose an electrode of the correct diameter for the current to be used. For a general guide to the settings to be used with particular diameters of electrodes please refer to the tables below. The electrode will normally protrude from the ceramic nozzle by 2 to 3mm but in order to gain access to inaccessible areas such as internal corners the electrode can be made to protrude by up to 8mm. The chosen electrode should be sharpened axially on a grinding wheel as indicated in the diagram to the right. The tip should be perfectly concentric in order to avoid arc deviations. The condition of the electrode should be regularly inspected to maintain it in peak condition.

11.4. PREPARATION OF THE WORKPIECE. For a good weld it is important that the workpiece is cleaned thoroughly so that no oxides, oil, grease or solvents remain on the surface of the material.

12. MAINTENANCE

❑ **WARNING!** Remove from mains supply before carrying out any inspection or maintenance.

12.1. WIRE FEED UNIT Check the wire feed unit at regular intervals. The feed roller wire guide plays an important part in obtaining consistent results. Poor wire feed affects welding. Clean the rollers weekly, especially the feed roller groove, removing all dust deposits.

12.2. TORCH Protect the torch cable assembly from mechanical wear. Clean the liner from the machine forwards by using compressed air. If the liner is clogged it must be replaced.

12.3. CHANGING FEED ROLLER (See Section 7.)

12.4. CONTACT TIP The contact tip is a consumable item and must be replaced when the hole becomes enlarged or oval. The contact tip MUST be kept free from spatter to ensure an unimpeded flow of gas. Refer to fig.7 and section 7 for removal and replacement.

12.5. **GAS CUP** The gas cup must also be kept clean and free from spatter. Build up of spatter inside the gas cup can cause a short circuit at the contact tip which will result in either the fuse blowing on the printed circuit card, or expensive machine repairs. To keep the contact tip free from spatter, we recommend the use of Sealey anti-spatter spray (MIG/722308) available from your Sealey stockist.

12.6. **REPLACING THE LINER** Wind the wire back on to the spool and secure it. Unscrew the torch from the machine and undo the brass nut. The liner should now be visible. Pull it out and replace with a new one.

12.7. Remove the casing periodically 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.

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

12.9. 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.

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

× **DO NOT** dismantle the machine without permission, it may damage the machine.

12.11. When moving the machine, make sure the power is off.

× **DO NOT** block the fan of the running machine or touch the fan position. Check the ventilation before each use.

12.12. Always start by reading the manual for your specific welding equipment.

12.13. Regularly clean your welding equipment to remove any dirt, debris, or metal shavings that could clog up the machinery. Use a soft brush or compressed air to clean any cooling fans, vents, or filters.

12.14. Inspect the welding cables regularly for any damage or wear and tear. Replace any cables that show signs of damage, such as fraying, snags or cracks.

12.15. Check the consumables, such as tips, nozzles, and electrodes, regularly for wear and tear. Replace any consumables that are damaged or worn out. Using damaged consumables can negatively affect the quality of your welds.

12.16. Check the gas cylinder regularly for pressure and leaks. Replace the gas cylinder if it is empty or damaged.

12.17. When not in use, store your welding equipment in a clean, dry, and safe location. Keep the equipment covered to protect it from dust, moisture, and other environmental factors.

12.18. Check the welding machine output wiring specifications, firmness, and the cable connection screws for rust and oxidation.

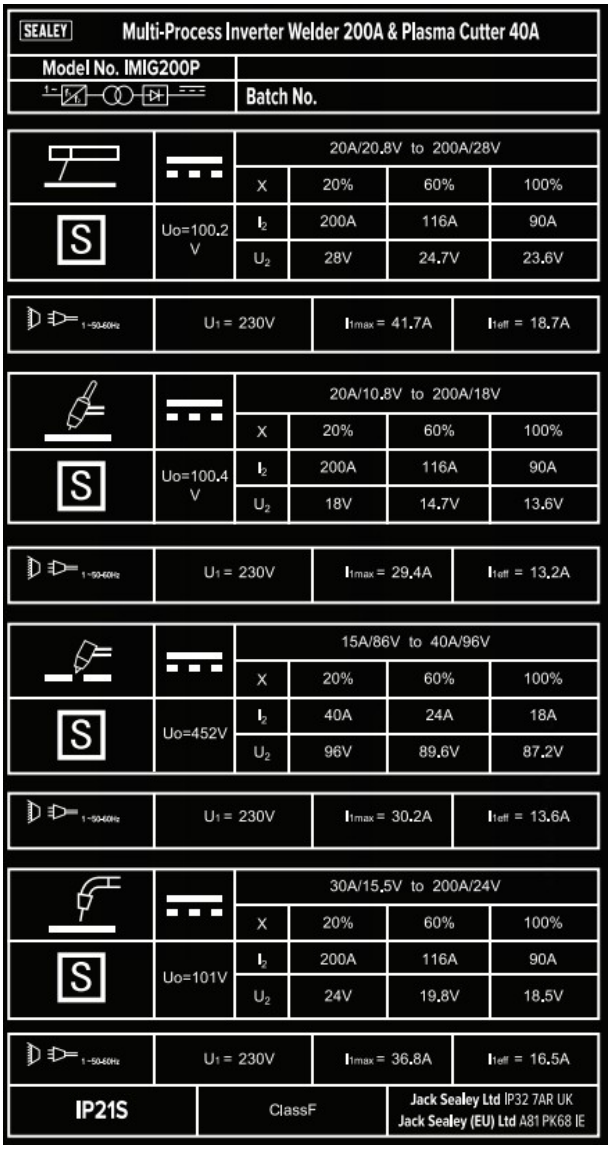
12.19. **DO NOT** short-circuit the conductive nozzle and the workpiece. The short circuit will burn out the conductive nozzle. Once burned out, it needs to be replaced, otherwise it will affect the welding quality.

13. END OF LIFE

13.1. Dispose of all elements of unit in accordance with regulations in force.

14. RATINGS PLATE (SEE BELOW)

The ratings plate on the unit gives the following data:
1 Rating of internal protection provided by casing.
2 Symbol for power supply line: 1= Single-phase AC.
3 Symbol for internal structure of the welding machine.
4 Manufacturers Details and Model No.
5 Manufacturers Serial Number for welding machine identification.
6 MIG Output.
7 MMA Output
8 TIG` Output
9 Power Supply
U_1: Alternating voltage and power supply frequency of welding machine. (allowed limit ± 10%)
$I_{1\,max}$: Maximum current absorbed by the line.
$I_{1\,eff}$: Effective current supplied.
10 Duty Cycle
U_0: Maximum no load voltage.
I_2, U_2: Current and corresponding normalised voltage that the welding machine can supply during welding.
X: Welding ratio based on a 10 minute duty cycle. 20% indicates 2 minutes welding and 8 minutes rest, 100% indicates continuous welding.
11 The EUROPEAN standard relating to the safety and construction of arc welding machines.



SEALEY	Multi-Process Inverter Welder 200A & Plasma Cutter 40A			
Model No. IMIG200P				
1~	Batch No.			
		20A/20.8V to 200A/28V		
		X	20%	60%	100%
S	Uo=100.2 V	I_2	200A	116A	90A
		U_2	28V	24.7V	23.6V
1~50/60Hz	U_1 = 230V	I_{1max} = 41.7A	I_{1eff} = 18.7A		
		20A/10.8V to 200A/18V		
		X	20%	60%	100%
S	Uo=100.4 V	I_2	200A	116A	90A
		U_2	18V	14.7V	13.6V
1~50/60Hz	U_1 = 230V	I_{1max} = 29.4A	I_{1eff} = 13.2A		
		15A/86V to 40A/96V		
		X	20%	60%	100%
S	Uo=452V	I_2	40A	24A	18A
		U_2	96V	89.6V	87.2V
1~50/60Hz	U_1 = 230V	I_{1max} = 30.2A	I_{1eff} = 13.6A		
		30A/15.5V to 200A/24V		
		X	20%	60%	100%
S	Uo=101V	I_2	200A	116A	90A
		U_2	24V	19.8V	18.5V
1~50/60Hz	U_1 = 230V	I_{1max} = 36.8A	I_{1eff} = 16.5A		
IP21S	ClassF	Jack Sealey Ltd IP32 7AR UK Jack Sealey (EU) Ltd A81 PK68 IE			

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.

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.

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.
Important: No Liability is accepted for incorrect use of this product.
Warranty: Guarantee is 36 months from purchase date, proof of which is required for any claim.

REGISTER YOUR PURCHASE HERE

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