

SEALEY

200A MIG, TIG & MMA INVERTER WELDER WITH LCD SCREEN

MODEL NO: INVMIG200LCD.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 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 read, understand and comply with the following:

- 1.1.1. You must check all electrical equipment and appliances to ensure they are safe before using. You must inspect power supply leads, plugs and all electrical connections for wear and damage. You must ensure the risk of electric shock is minimised by the installation of appropriate safety devices. An RCCB (Residual Current Circuit Breaker) should be incorporated in the main distribution board. We also recommend that an RCD (Residual Current Device) is used with all electrical products. It is particularly important to use an RCD together with portable products that are plugged into an electrical supply not protected by an RCCB. If in doubt consult a qualified electrician. You may obtain a Residual Current Device by contacting your Sealey stockist. You must also read and understand the following instructions concerning electrical safety.
- 1.1.2. The Electricity At Work Act 1989 requires all portable electrical appliances, if used on business premises, to be tested by a qualified electrician, using a Portable Appliance Tester (PAT), at regular intervals.
- 1.1.3. The Health & Safety at Work Act 1974 makes owners of electrical appliances responsible for the safe condition of the appliance, and the safety of the appliance operator. If in any doubt about electrical safety, contact a qualified electrician.
- 1.1.4. Ensure the insulation on all cables and the product itself is safe before connecting to the mains power supply. See 1.1.1. & 1.1.2. above and use a Portable Appliance Tester (PAT).
- 1.1.5. Ensure that cables are always protected against short circuit and overload.
- 1.1.6. Regularly inspect power supply leads, plugs and all electrical connections for wear and damage. Inspect power connections to ensure that none is loose.

Important: Ensure the voltage marked on the product is the same as the electrical power supply to be used and check that plugs are fitted with the correct capacity fuse. A 13 amp plug may require a fuse smaller than 13 amps for certain products, see fuse rating at right.

- ✗ **DO NOT** pull or carry the powered appliance by its power supply lead.
- ✗ **DO NOT** pull power plugs from sockets by the power cable.
- ✗ **DO NOT** use worn or damaged leads, plugs or connections. Immediately replace or have repaired by a qualified electrician. A U.K. 3 pin plug must be fitted according to the following instructions. (UK only - see diagram at right).

Ensure the unit is correctly earthed via a three-pin plug.

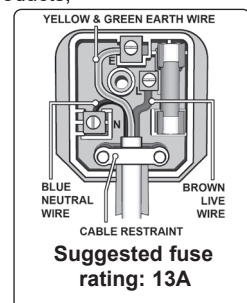
- a) Connect the green/yellow earth wire to the earth terminal.
- b) Connect the brown live wire to live terminal.
- c) Connect the blue neutral wire to the neutral terminal.

d) After wiring, check that there are no bare wires, that all wires have been correctly connected, that the cable external insulation extends beyond the cable restraint and that the restraint is tight.

- 1.1.7. 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 cable on the cable reel is important and should be at least 1.5mm², but to be absolutely sure that the capacity of the cable 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 INVMIG200LCD 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 until they have read this manual and have developed a thorough understanding of how the welder works.
 - ❑ **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 supplied by the operator.
 - ✓ **SAVE THESE INSTRUCTIONS**
- 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 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. **ELECTRICAL 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.
 - ✓ Always attach ground clamp to the work piece or work table as close to the weld area as possible.
 - ✗ **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

3 in 1 welder - uses state-of-the-art inverter technology to achieve MIG/TIG/MMA (Arc). Inverter technology offers many advantages over traditional transformer type welders, giving greater duty cycles and more power factor efficiency. Fan Cooled DC power supply for MIG and TIG, suitable to weld steel, stainless steel, copper, nickel, titanium, and their alloys. Also suitable for MMA (Arc) welding - a variety of rods including rutile, basic and stainless from Ø1.6 to Ø4mm. Fully functional - LCD front panel with easy to follow set-up. First, select type of welding, you will be advised the gas mixture and polarity recommended. Input electrode or wire thickness, completing the set-up with the material thickness, you are then ready to start welding. Up to four set-ups can be saved on the machine for fast loading. Switchable between MIG, TIG* or MMA* welding modes (*optional torches required). Supplied with 3m MIG torch, 3m 16mm² earth cable, both with 35-70 quick connectors, 4m gas hose and regulator.

3. SPECIFICATION

Model No: INVMIG200LCD.V2
 MIG:..... 20% @ 200A, 100% @ 89A
 TIG:..... 20% @ 180A, 100% @ 80A
 MMA (Arc):..... 20% @ 180A, 100% @ 80A
 Wire Capacity:..... 5kg
 Electrode Capacity:..... 1.6 - 4mm
 Absorbed Power: 8.6kW
 Supply: 230V **
 Insulation: IP21S
 Protection:..... F
 MIG Torch:Euro Non-Live BINZEL® MB15*
 MMA Accessory Kit (Optional):.....MMA01
 TIG Accessory Kit (Optional):.....TIG10S
 * included as standard
 ** To achieve maximum power a 32A supply may be required.



4. FEATURES

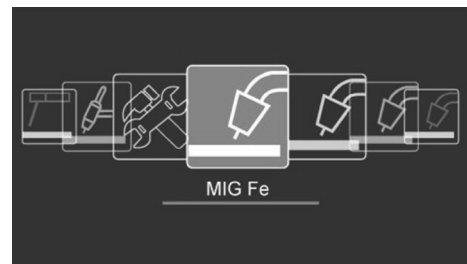
1. LCD: Shows all process from function selection to welding.
2. Gas-check button: press the button and the gas supply system works.
3. Wire-check button: press the button and the wire supply system works.
4. Multi-function adjusting knob: For function selection
Allows user to adjust the current and wire feeding speed accurately.
5. Home Key: Keep pressing home key, return to home page.
6. Return: Return to the previous step.
7. Auxiliary knob: Allows user to adjust the voltage accurately.



4.1. INTERFACE DESCRIPTION

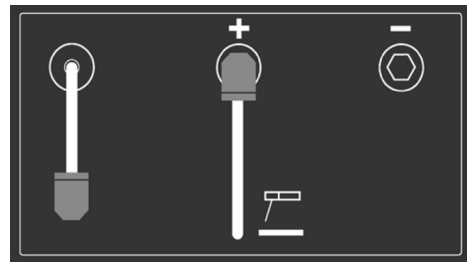
4.1.1. Multi-function selection:

Total 9 functions, 8 welding functions and 1 setting.
Turn multi-function knob for selection, press to confirm.



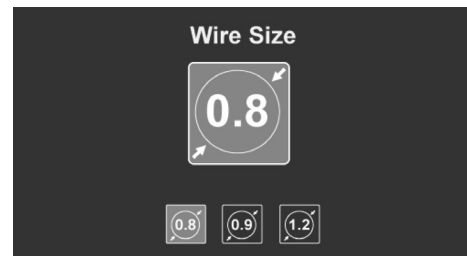
4.1.2. Output setup:

Shows output connection under different welding modes, press multi-function knob to confirm.



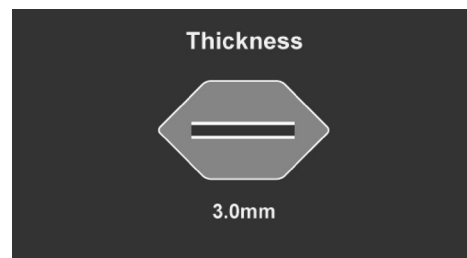
4.1.3. Electrode/ Wire diameter selection:

Turn multi-function knob to select different electrode/wire diameter, press to confirm.



4.1.4. Material thickness:

Adjusting multi-function knob to select different material thickness, press to confirm.



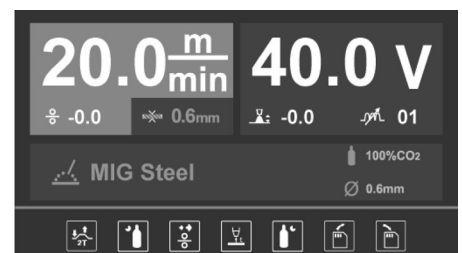
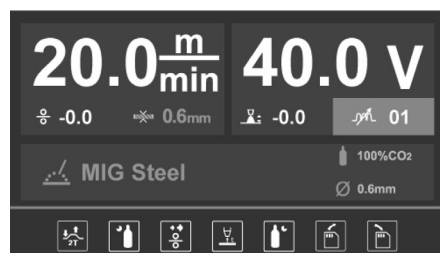
4.1.5. Welding display:

Shows all selected parameters.

A. With MIG welding selected, user can set wire feeding speed and voltage.
Turn Multi-function knob to set electro-inductance,
Press the knob to progress basic parameter setting.

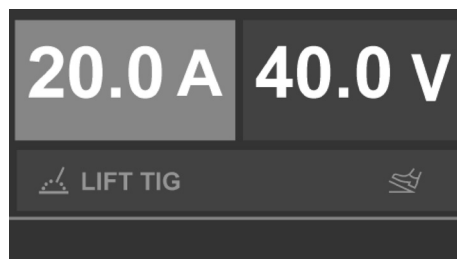
Note:

i: Basic parameter settings are: gas pre flow, slow wire feeding, gas post flow, operating, load and save function.

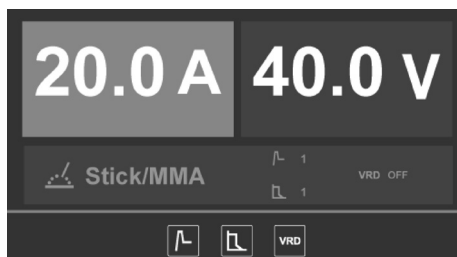


There is also spool gun function under AI welding.
 Note ii: Green highlighted parameters are the recommended ones.

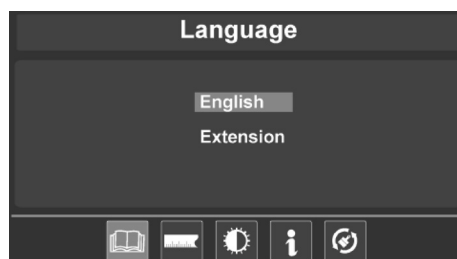
B. TIG welding, user can set current parameter.



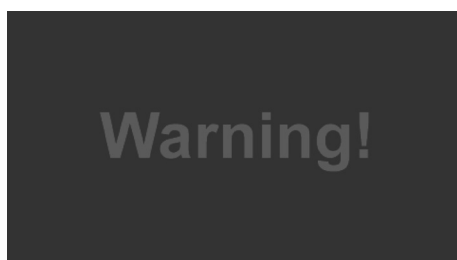
C. Stick welding, user can set current, arc force parameter and hot start.



4.1.6. **Select Interface use to select:** language, units, light settings, information and recover settings.



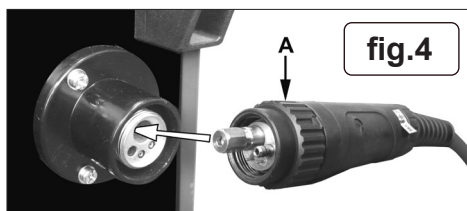
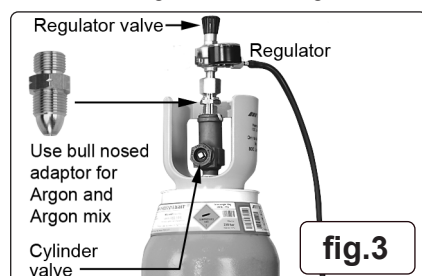
4.1.7. **Alarm interface:** shows the machine is overloaded and the internal temperature is too high. Weld output will turn off automatically but the fan will still be working. When the internal temperature is decreased, the alarm interface will turn off and the machine will be ready to weld.



5. PREPARATION

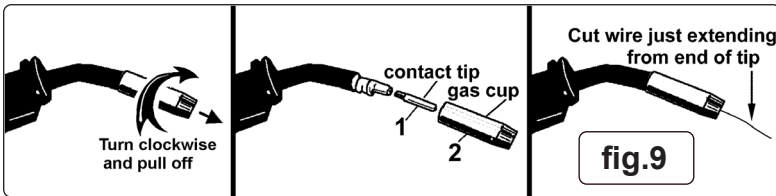
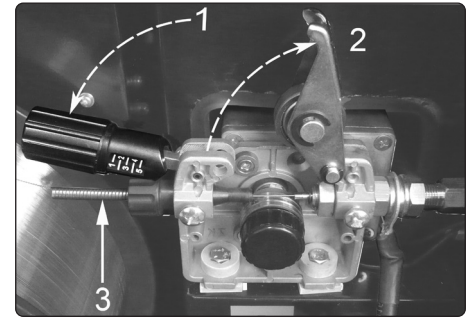
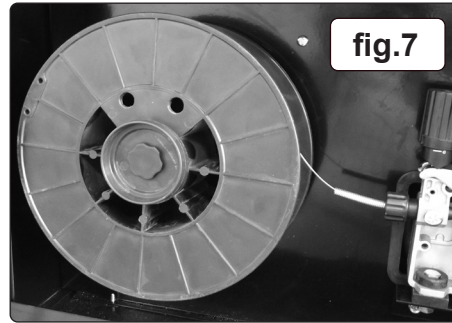
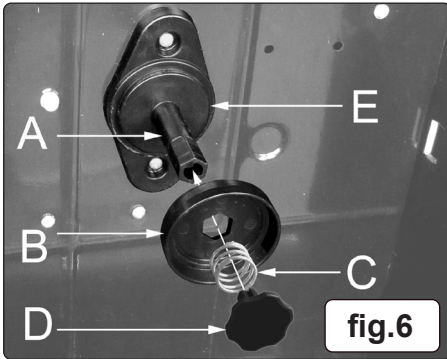
5.1. GAS SUPPLY

- 5.1.1. **ATTACHING THE REGULATOR.** (fig.3) Whichever gas you are using it is advisable to 'crack' the cylinder valve before attaching the regulator. This means opening and closing the valve very quickly in order to blow away any dust and dirt that may have accumulated in the gas outlet. Stand to one side whilst doing this.
- 5.1.2. **CO₂ GAS.** Ensure that the threads on the gas bottle are undamaged and free of oil and grease before attaching the regulator. (Oil or grease in the presence of high pressure gases can be explosive.) Ensure that the regulator has an undamaged gasket fitted. The regulator will screw directly to the threads on the gas bottle. Tighten with a wrench.
- 5.1.3. **ARGON GAS OR ARGON MIXTURES.** Cylinders containing argon gas and argon mixtures have a female thread and will require the use of a Bull Nose Adaptor to attach the regulator to the cylinder as indicated in fig.3. Ensure that the threads on the gas bottle are undamaged and free of oil and grease before attaching the regulator. (Oil or grease in the presence of high pressure gases can be explosive.) Fit the Bull Nose Adaptor to the cylinder first and tighten with a wrench.
- 5.1.4. Slide a hose clip over each end of the gas hose supplied. Push one end of the hose onto the regulator outlet and the other end over the gas inlet spigot on the back of the welder. Tighten the clips to ensure a good seal.
- 5.1.5. Close the regulator valve by turning it anticlockwise before opening the cylinder valve. Stand to one side when opening.
- 5.1.6. Set the regulator flow rate to 5-8 litres/min depending on the material to be welded, and whether there are draughts which are strong enough to disturb the gas flow.

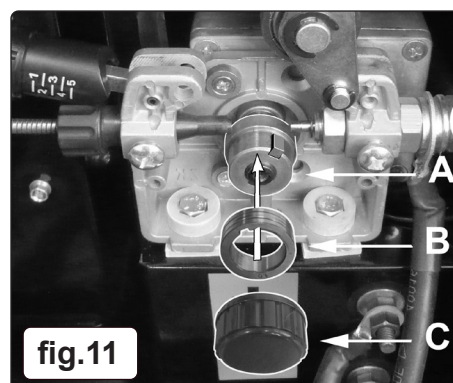
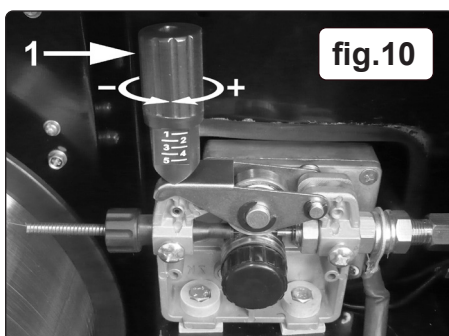


- 5.2. **CONNECTING THE TORCH CABLE TO THE WELDER.** Align the pins on the Euro connector with the socket on the welder front panel as shown in fig.4. Push the connector into the socket and rotate the locking ring (A) clockwise so that it draws the plug into the socket as shown in fig.5.

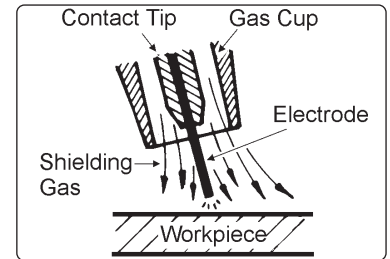
Note: damage to torches and cables is not covered by warranty.



- 5.3. FITTING A REEL OF WIRE (FIG.6).** INVMIG200LCD will accept up to a 5kg reel of wire. 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.
- 5.3.1. Remove the retaining control (D) from the end of the spindle (A) by turning the control 90° anticlockwise and pulling it outwards. Remove the spring (C) and the retaining disc (B) from the end of the spindle also. Slide the reel of wire over the spindle and hold it against the back plate so that the hole in the reel rests on the flange (E). Ensure that the wire is coming off the top of the reel in the direction of the wire drive unit as shown in fig.7.
- 5.3.2. Retain hand pressure on the reel to keep it on the flange and slide the retaining disc (B) over the end of the spindle and into the hole in the reel. Note that the disc (B) has a hexagonal hole in it which fits onto the hexagonal portion of the spindle. Keep the disc under hand pressure to retain the reel. Place the spring (C) over the spigot of the retaining control (D). Match the indented end of the spigot to the hole in the end of the spindle. Push the control spigot into the end of the spindle, against spring pressure and turn it through 90° to lock it in place.
- 5.4. FEEDING WIRE THROUGH TO TORCH.** Open the wire feed mechanism by pushing the locking/wire tension control (fig.8.1) down to the left allowing the pressure roller carrier (fig.8.2) 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 5.6. on how to reverse or change the roller.
- 5.4.1. 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.**
- 5.4.2. Straighten about 40-50mm of wire and push it gently through the flexible metal sheathed cable (fig.8.3) and through the 0.6mm or 0.8mm feed roller groove and on into the torch cable liner.
- 5.4.3. Push down the pressure roller carrier onto the wire feed roller and hold it down. Lift up the locking/wire tension control so that it enters the slot in the pressure roller carrier and snaps into the indent in its top surface (fig.8). Rotate the tension control to a medium setting i.e. between 2 and 3.
- 5.4.4. Remove gas cup (fig.9.2) and contact tip (fig.9.1) from end of torch as follows:
- Take torch in left hand with the torch tip facing to the right.
 - Grasp gas cup firmly in your right hand.
 - 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.
- Unscrew copper contact tip (right hand thread) to remove.
- 5.4.5. Check welder is switched off and that the earth clamp is away from the torch tip.
- 5.4.6. Connect the welder to the mains power supply and select the MIG setting by means of the multi-function control.
- 5.4.7. Set the voltage control (fig.2.3) to minimum .
- 5.4.8. Set the wire speed control (fig.2.2.) to minimum. Keep the torch cable as straight as possible and press the torch switch. The wire will feed through the torch.
- Take torch in left hand, slide the contact tip over the wire and screw back into place.
 - Grasp gas cup in right hand, push onto torch head and turn clockwise only. Do not turn gas cup anti-clockwise, as this will damage the internal spring.
 - Cut wire so that it is just protruding from the cup.



- 5.5. SETTING WIRE TENSION.** Adjust the wire tension by rotating the wire tension control. Turn clockwise to increase the tension and anticlockwise to decrease the tension. See fig 10.1.
- IMPORTANT:** Too little or too much tension will cause wire feed problems and result in poor welding.
- 5.5.1. 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 could crush the wire and result in a blown fuse.
- 5.6. TURNING/CHANGING THE DRIVE ROLLER.** (See figs. 8 and 11.) Ensure that the wire diameter (0.6/0.8mm) 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 so could cause the wire to slip and/or bind.
- 5.6.1. Referring to fig.8, open the wire feed mechanism by pushing the locking/wire tension control (1) down to the left allowing the pressure roller carrier (2) to spring up revealing the feed roller.
- 5.6.2. Referring to figure 11, move control (C) and put to one side.
- 5.6.3. The roller carrier (A) is keyed to the main drive shaft and the drive roller (B) is keyed to the carrier, see below. 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.
- 5.6.4. The size of each wire feed groove is printed on the edge of the roller on the same side as the groove.
- 5.6.5. 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.
- 5.6.6. Check that the key in the carrier (A) is seated properly in its slot. Ensure that the slot on the inside face of the drive roller (B) is aligned with the key and slide the roller back onto the carrier.
- 5.6.7. Screw the black roller retaining control (C) back on to the end of the drive shaft and tighten.
- 5.7. CONVERTING TO GASLESS WELDING.**
- 5.7.1. **To weld without gas (using flux cored wire) the power input lead must be connected to the negative (-) terminal and the earthing cable to the positive (+) terminal. Follow the directions given in the Output Setup interface section 4.1.2. for each type of welding.**
- WARNING!** Ensure that the machine is switched off and unplugged from the mains supply before carrying out this task.
- 5.7.2. Disconnect the gas safely.
- 5.7.3. Fit a 1.0mm tip to the torch.
- 5.7.4. Mount the flux cored wire reel and feed it through to the torch.
- 5.7.5. Use the multi-function selection control to navigate to the flux cored wire setting. Press to confirm.



6. MIG/MAG WELDING

- 6.1. A spool of welding wire is positioned on the welder's spool holder and automatically fed through an insulated liner in the torch to the tip. The torch assembly consists of a switch, liner, gas hose, and control cable. The switch activates the wire feed roller and the gas flow.
- 6.2. Conversely, releasing the switch stops the wire feed and gas flow. The weld current is transferred to the electrode (the wire) from the contact tip at the end of the torch. A gas cup fits over the contact tip to direct the gas flow towards the weld ensuring that the arc welding process is shielded from oxidising air contaminants. The shielding gas also assists heating of the weld materials. (The welder can also be used in gasless mode using flux cored wire). The torch is connected to the positive side of a DC rectifier, and the negative clamp is attached to the workpiece.
- IMPORTANT: Should you have no welding experience, we recommend you seek training from an expert source to ensure your personal health & safety. Good Mig welding may be achieved only with continued, supervised practice.**
- 6.3. **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 READ & UNDERSTOOD THE ELECTRICAL SAFETY INSTRUCTIONS IN SECTION 1.**
- 6.3.1. Clean the area to be welded: remove any oxidisation, grease and paint, if necessary, grind the area to a bright finish.
- 6.3.2. **Mode:** Select required mode via the multi-function adjustment control.
A second press will show the required earth and torch connections and the recommended gas ratio.
- 6.3.3. Subsequent presses will allow the electrode diameter and material thickness to be entered, using the multi-function control.
- 6.3.4. Having set the material thickness, a further press of the multi-function control will bring up the default welding settings. The voltage and wire speed may be adjusted by use of the right and left adjustment controls.
NOTE: The recommended settings are shown by the green sector of the display. Inappropriate settings are denoted by the voltage and wire feed numerals turning red.
- 6.4. **ALUMINIUM WELDING**
- 6.4.1. 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.
- 6.4.2. Using the multi-function selection control, enter the aluminium welding pages, and follow the on-screen instructions as in 5.1.
- 6.5. **ARC WELDING**
- NOTE:** Arc welding cables are not supplied with this machine. Sealey part no: MMA01 is suitable.
- 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).**
- 6.5.1. Using the multi-function selection control, enter the stick welder pages, and follow the on-screen instructions as in 5.1.
- 6.5.2. Observe the location of the torch and earth cables and connect accordingly.
- 6.5.3. Enter the electrode type (60xx or 70xx), diameter and material thickness when prompted
- 6.5.4. The welding current and gas post flow may be adjusted from the default settings in this mode.

7. TIG WELDING

- 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).

- 7.1. Using the multi-function selection control, enter the TIG welder pages, and follow the on-screen instructions.
- 7.1.1. Observe the location of the torch and earth cables and connect accordingly.
- 7.2. Enter the tungsten electrode diameter and material thickness when prompted.
- 7.3. The welding current may be adjusted in this mode.

8. RATINGS PLATE

The ratings plate on the inverter 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

U₁: Alternating voltage and power supply frequency of welding machine. (allowed limit $\pm 10\%$)

I_{1max}: Maximum current absorbed by the line.

I_{1eff}: Effective current supplied.

10 Duty Cycle

U₀: Maximum no load voltage.

I₂, U₂: 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.

MODEL: ④	NO.: ⑤		EN 60974-1				
③	①①						
⑥	MIG	40 A / 16 V - 200 A / 24 V					
	MMA	10 A / 20.4 V - 180 A / 27.2 V					
⑦	TIG	10 A / 10.4 V - 180 A / 17.2 V					
	X	20 %		100 %			
⑧	MODE	MIG	MMA	TIG	MIG	MMA	TIG
	I ₂	200 A	180 A	180 A	89 A	80 A	80 A
	U ₂	24 V	27.2 V	17.2 V	18.5 V	23.2 V	13.2 V
⑨	②	U ₁ = 230 V (220-240 V)	I _{1max} = 36 A		I _{1eff} = 16 A		
		1 - 50/60Hz	IP21S				
⑩							

9. DUTY CYCLE

When the machine reaches the end of its duty cycle and overheats, the thermostatic switch opens to allow the internal components to cool. This is denoted by the error page illuminating. Allow the machine to cool and resume use when the error warning clears.

10. MAINTENANCE

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

- 10.1. **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.
- 10.2. **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.
- 10.3. **CHANGING FEED ROLLER** (See Section 4.6.)
- 10.4. **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.9 and section 5.4.4 for removal and replacement.
- 10.5. **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.
- 10.6. **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.
- 10.7. 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.
- 10.8. Ensure that all electrical connections are tight and check the wiring for damage to the insulation.
- 10.9. Ensure that the casing is correctly replaced and secured before attempting to use the inverter.
- 10.10. Keep the outside of the machine clean by wiping with a soft, dry cloth.
- 10.11. For any other service or maintenance, contact your local Sealey service agent.



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.



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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