

# SEALEY

## 150A GAS/GASLESS MIG WELDER

MODEL NO: **SUPERMIG150.V5**

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 eye protection



Wear protective gloves



Wear safety footwear



Wear protective clothing



Arc rays can burn eyes and injure skin.



Electric shock from welding electrodes can kill.



Hot surfaces



Breathing welding fumes can be hazardous to your health.



Electromagnetic fields can cause pacemaker malfunction.



Welding sparks can cause explosions or fire.



Warning! Keep away from rain



Warning! Electricity Shock hazard

## 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 mains power supply.
- ✗ **DO NOT** pull or carry the appliance by the power cable.
- ✗ **DO NOT** pull the plug from the socket by the cable.
- ✓ This is a single phase machine and must be run from a minimum of 16amp supply.

#### 1.1.1. To achieve maximum output these models will require a 30Amp fused supply. We recommend you discuss the installation of an industrial round pin plug and socket with your electrician.

#### 1.1.2. 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 cross-section of the cable on the cable reel must be suitable for the unit and never lower than the cross-section of the mains cable supplied with the unit.

### 1.2. GENERAL SAFETY

- ▲ **DANGER! Unplug the welder from the mains power supply before performing maintenance or service.**
- ✗ **WARNING! DO NOT** place the welding power source on a tilted plane as this may lead to the unit toppling over.
- ✗ Welding power sources are not suitable for use in rain or snow.
- ✗ The output is rated at an ambient temperature of 20°C and the welding time may be reduced at higher temperatures
- ✗ 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.
- ✗ Risk induced by welding fumes: Breathing welding fumes can be hazardous to your health. Keep your head out of the fumes. Use equipment in an open area. Use ventilating fan to remove fumes.
- ✗ Risk induced by welding sparks: Welding sparks can cause explosion or fire. Keep flammables away from welding. **DO NOT** weld near flammables. Welding sparks can cause fires. Have a fire extinguisher nearby and have a watchperson ready to use it. **DO NOT** weld on drums or any closed containers.
- ✗ Risk induced by the arc: Arc rays can burn eyes and injure skin. Wear hat and safety glasses. Use ear protection and button shirt collar.
- ✗ Use welding helmet with correct shade of filter. Wear complete body protection.
- ✗ Risk induced by electromagnetic fields: Welding current produces electromagnetic field. **DO NOT** use with medical implants. Never coil welding cables around your body. Route the welding cables together.
- ✓ Keep the welder and cables in good condition. Take immediate action to repair or replace damaged parts.
- ✓ Use genuine parts and accessories only. Unapproved parts may be dangerous and will invalidate the warranty.
- ✓ Use an air hose to regularly blow out any dirt from the liner and keep the welder clean for best and safest performance.
- ✓ Check and spray the gas cup and contact tip regularly with anti-spatter spray which is available from your Sealey stockist.

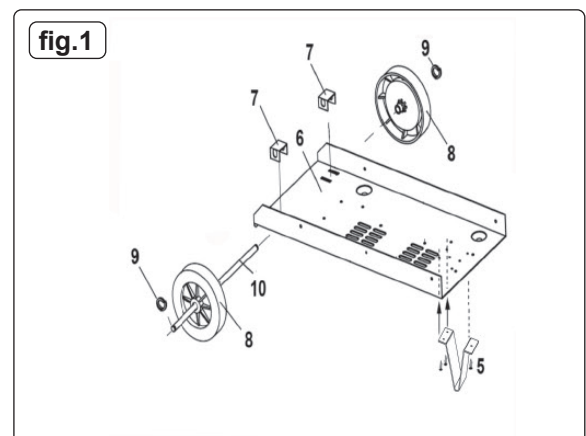
- ✓ Locate the welder in a suitable work area. Ensure that the area has adequate ventilation as welding fumes are harmful.
  - ✓ Keep work area clean, tidy and free from unrelated materials. Also ensure that the work area has adequate lighting and that a fire extinguisher is at hand.
  - ❑ **WARNING! Use welding head shield to protect eyes and avoid exposing skin to ultraviolet rays given off by electric arc. Wear safety welding gauntlets.**
  - ✓ Remove ill fitting clothing, remove ties, watches, rings and other loose jewellery and contain long hair.
  - ✓ Ensure that the workpiece is correctly secured before operating the welder.
  - ✓ Avoid unintentional contact with workpiece. Accidental or uncontrolled use of the torch may be dangerous and will wear the nozzle.
  - ✓ Keep unauthorised persons away from the work area. Any persons working within the area must wear protective head shield and gloves.
  - ✓ Operators must receive adequate training before using the welder.
  - ✓ Stand correctly, keeping a good footing and balance, and ensure that the floor is not slippery. Wear non-slip shoes.
  - ✓ Turn voltage switch to OFF when not in use.
  - ✗ **DO NOT** operate the welder if it or its cables are damaged and **DO NOT** attempt to fit any unapproved torch or other parts to the welder unit.
  - ✗ **DO NOT** get welder wet or use in damp or wet locations or areas where there is condensation.
  - ▲ **DANGER! DO NOT weld near inflammable materials, solids, liquids, or gases, and DO NOT weld containers or pipes which have held flammable materials or gases, liquids or solids. Avoid operating on materials cleaned with chlorinated solvents or near such solvents. DO NOT use power source for pipe thawing.**
  - ✗ **DO NOT** stand welder on a metal workbench, car bodywork or similar object.
  - ✗ **DO NOT** touch any live metal parts of the torch or electrode while the machine is switched on.
  - ✗ **DO NOT** pull the welder by the cable or the torch and **DO NOT** bend or strain cables. Protect cables from sharp or abrasive items and **DO NOT** stand on them. Protect from heat. Long lengths of slack must be gathered and neatly coiled. **DO NOT** place cables where they could endanger other people.
  - ✗ **DO NOT** touch the torch or workpiece immediately after welding as they will be very hot. Allow to cool.
  - ✗ **DO NOT** operate welder while under the influence of drugs, alcohol or intoxicating medication, or if tired.
  - ✓ When not in use store the welder in a safe, dry, childproof area.
- 1.3. **GAS SAFETY**
- ✓ Store gas cylinders in a vertical position only and ensure that the storage area is correctly secured.
  - ✗ **DO NOT** store gas cylinders in areas where temperature exceeds 50°C. **DO NOT** use direct heat on a cylinder. Always keep gas cylinders cool.
  - ✗ **DO NOT** attempt to repair or modify any part of a gas cylinder or valve and **DO NOT** puncture or damage a cylinder.
  - ✗ **DO NOT** obscure or remove any official cylinder labels. Always check the gas identity before use. Avoid getting gas cylinders oily or greasy.
  - ✗ **DO NOT** lift a cylinder by the cap, guard or valve. Always keep caps and guards in place and close valve when not in use.
- Forced Air Cooling System allows high duty cycle. Latest design chassis remains stable when used with medium size industrial gas cylinders. Professional contour grip, heat proof non-live torch ensures no sparks until you press the trigger. Proven wire feed system for trouble-free welding. Welds stainless and aluminium.
- IMPORTANT:** These instructions contain the information you require to prepare your machine for welding, together with a maintenance and a troubleshooting section. The 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. MIG welding is relatively easy, but does require a steady hand and supervised practice on scrap metal, as it is only with continued practice that you will achieve the desired results.

## 2. INTRODUCTION

Features heavy-duty high output transformer and forced-air cooling to ensure the highest level of performance. Contoured grip, non-live torch ensures a steadier weld bead. Proven wire feed system for trouble-free welding. Welds stainless and aluminium. Includes industrial gas regulator, 1.8m earth cable with clamp, 1.0mm non contact tip, spool of flux core wire, 1m gas hose and hose clamp (x2). Unit is suitable for both gas/gasless welding with a simple change of polarity. For use with CO<sub>2</sub>, Argon or CO<sub>2</sub>/Argon mix.

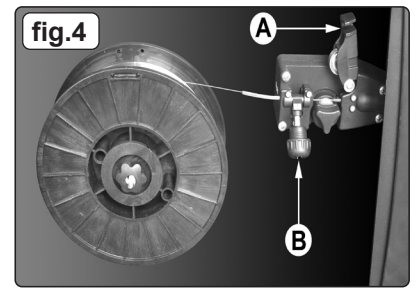
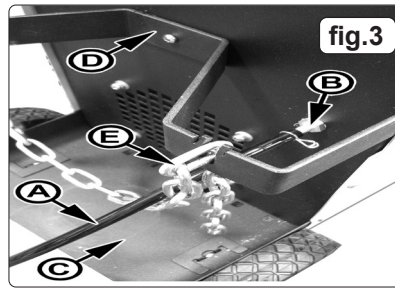
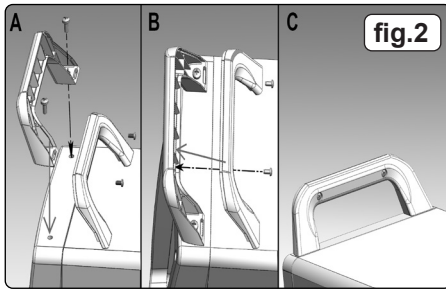
## 3. SPECIFICATION

Model No: ..... Supermig150.V5  
 Absorbed power: ..... 4.37kW  
 Case size: ..... Compact  
 Cooling System: ..... Forced Air  
 Duty Cycle: ..... 100% @ 47A, 60% @ 60A, 20% @ 105A  
 Gas type: ..... CO<sub>2</sub>, Argon, CO<sub>2</sub> / Argon Mix  
 Nett Weight: ..... 25.4kg  
 Power Supply Cable Length: ..... 2m  
 Pressure rate: ..... 0.5Mpa-0.13L/MIN  
 Supply: ..... 230V-16A\*  
 Torch: ..... 2m Non-Live  
 Welding current: ..... 30-150A  
 Wire Capacity: ..... 0.7-5kg  
 Flux cored wire (0.9kg x Ø0.9mm): ..... TG100/1  
 Replacement tips 1mm (Pack of 5): ..... TG100/2  
**NOTE:** To achieve maximum power a 32A supply may be required.



## 4. ASSEMBLY

- 4.1. Assemble the wheels as follows. Slide the rear axle through the loops on the underside of the rear tray. Slide a wheel onto each end of the axle and retain with the washers and split pins provided. Attach the front foot to the underside of the welder using the screws provided. (see fig.1).
- 4.2. Take the front half of the handle moulding and align the two mounting holes in it with the fixing holes in the top surface of the welder front moulding (see fig.2A). Secure the handle with the two bolts provided (see fig.2B). Place the rear part of the handle moulding into the back of the front half and snap it into place. Insert the two self tapping screws provided into the holes in the back of the handle and drive them fully home but do not overtighten them (see fig.2C).

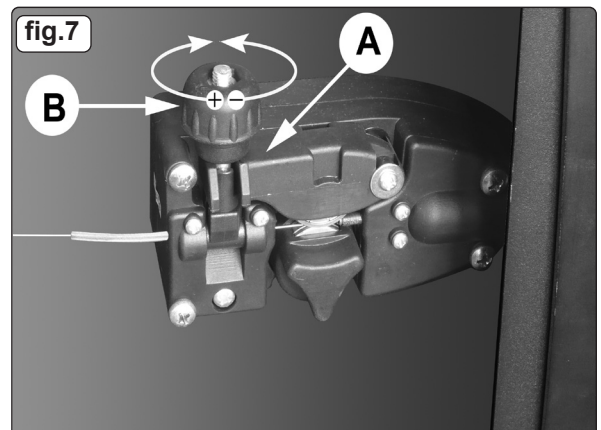
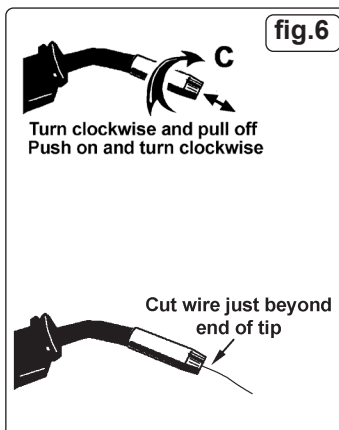
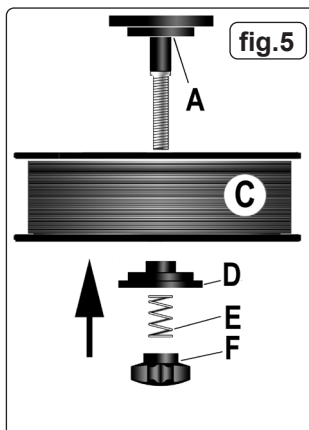


### 4.3. CONNECTING THE GAS CYLINDER (SEE SECTION 7)

- 4.3.1. Place the lower end of the gas cylinder on to the rear tray, between the two wheels. See fig.3-C. Allow the upper part of the cylinder to rest into the metal support. See fig.3-D. Secure the cylinder by hooking either end of the chain E through the metal support as shown in fig.3.
- 4.3.2. When using Argon or Argon mixtures, you will need to use the "bull nose adaptor". Fit the bull nose adaptor to the cylinder with a spanner. (If you intend to use CO<sub>2</sub> gas the regulator will fit directly onto the cylinder).
- 4.3.3. Fit the gas regulator on to the bull nose adaptor as shown in fig.12.
- 4.3.4. Push the black gas tube provided (see fig.3-A) onto the gas inlet nozzle and retain it with the wire clip provided as shown in fig.3-B. Push the other end of the tube onto the gas outlet nozzle on the regulator and retain it with the other wire clip provided. See fig.12.
- 4.3.5. When you are ready to weld 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.

### 4.4. FITTING A REEL OF WIRE

- 4.4.1. Open the side compartment on the welder. (Which will accept spools of up to 5kg without modification).



- 4.4.2. Referring to fig.5, rotate the pressure knob (F) anti-clockwise and remove it from the threaded spindle together with the spring (E) and the top disc (D). Small reels of wire will run on the spindle itself. The larger 5kg wire reel will run on the larger diameter flange at the base of the reel spindle (A). Place the wire reel (C) onto the spindle ensuring that the wire withdraws from the spool in a forwards direction and on the same side of the compartment as the wire feed unit. Place the plastic top disc (D) over the end of the spindle followed by the reel spring (E). Thread the pressure knob (F) onto the end of the spindle and screw it down clockwise until the spring is partially compressed. The reel take off pressure should be set to provide a mild braking effect to prevent overrun where loose coils of wire form on the reel. Do not over tighten this knob as too much braking will conflict with the wire tension set on the wire drive unit.
- 4.4.3. Referring to fig.4 turn the knob on the wire lock screw (B) anti-clockwise and unlatch it from the pressure roller moulding. Swing the pressure roller moulding (A) away from the drive roller.
- 4.4.4. Straighten 40-50mm of spool wire (do not allow wire to uncoil), and gently push wire through the plastic guide and through the 6 or 8mm feed roller groove and into the torch liner. Refer to section 7.2 on how to reverse the roller for either 6 or 8mm wire.
- 4.4.5. Referring to fig.7, move the pressure roller moulding (A) back round onto the grooved drive wheel and swing the wire lock screw (B) up to lock it in place. See 4.6 regarding wire tension.
- 4.5. **FEEDING THE WIRE THROUGH TO THE TORCH. (SEE FIG.6)**  
Remove gas cup (a) and contact tip (b) 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 cup out to the right.
- ❑ **WARNING! DO NOT** turn gas cup anti-clockwise, as this will damage internal spring.
- Unscrew the copper contact tip (right hand thread) to remove.
- 4.5.1. 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 power switch to A fig.8.

- 4.5.2. Set the wire speed knob to position 5 or 6. Keeping the torch cable as straight as possible and press the torch switch. The wire will feed through the torch.
- 4.5.3. When wire has fed through, switch welder off, unplug from mains.
- Take torch in left hand and screw contact tip back into place.
  - 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.
- Cut wire so that it is just protruding from the cup.
- 4.6. **SETTING WIRE TENSION**
- IMPORTANT:** You must set the correct tension, too little or too much tension will cause problematic wire feed and result in a poor weld.
- 4.6.1. For mild steel 0.6mm wire the wire tension screw must be fully tightened and undone approximately two complete turns (fig.7).
- 4.6.2. Correct tension between the rollers is checked by slowing down the wire between the 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 and may result in blowing a fuse on the printed circuit board. When you have completed welding disconnect the unit from the mains supply and store it in a safe, dry place.
- NOTE:** Damaged torches and cables are not covered under warranty.

## 5. CONTROL PANEL FUNCTION



fig.8

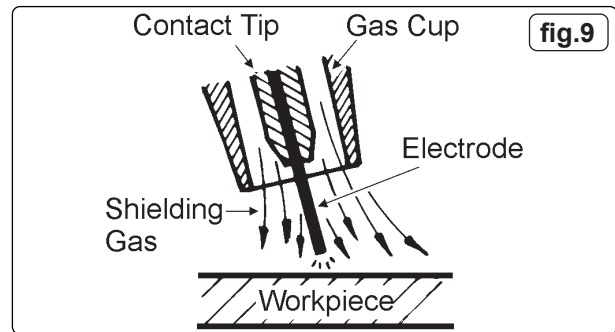


fig.9

- 5.1. **DUTY CYCLE LIGHT (see above On / Off switch fig.8)**
- 5.1.1. If the duty cycle is exceeded as a result of welding too long with a high current the yellow overload light will illuminate and the welder will turn off. When the welder has cooled down (approx. 5 to 10 minutes) the power will be restored and welding can recommence.
- 5.2. **POWER ON/OFF SWITCH (see fig.8)**
- 5.2.1. When the power is ON the green switch will be illuminated. When the welder is no longer required it should be switched to the OFF position and the power plug should be disconnected from the mains supply.
- 5.3. **CURRENT SWITCH Power A-D. (see fig.8)**
- 5.3.1. Use switch to provide 4 increasing power levels as follows: MIN/A, MIN/B, MAX/C, MAX/D.
- 5.4. **WIRE SPEED CONTROL KNOB. (see fig.8)**
- 5.4.1. As a general rule, a higher current requires a higher wire speed.

## 6. GASLESS OPERATION

- ☐ **WARNING! ENSURE THAT YOU READ, UNDERSTAND AND APPLY SAFETY INSTRUCTIONS BEFORE OPERATING. THE WELDER. IF WELDING A VEHICLE, DISCONNECT THE BATTERY OR FIT AN ELECTRONIC CIRCUIT PROTECTOR.**
- 6.1. **POLARITY CHECK**
- 6.1.1. Ensure that the welder is disconnected from the main power supply, open the side panel and check that the polarity is correctly set up for correctly set up for gasless operation The earth clamp wire must be connected to the POSITIVE (+) terminal and the power (torch) lead must be connected to the NEGATIVE (-) terminal as shown in fig.10.
- 6.2. To ensure a complete circuit, the earth clamp must be securely attached to the workpiece.
- The weld area must also be free of paint, rust, grease, etc.
  - Obtain the best connection by grinding the point of contact on the workpiece before connecting the clamp.
- 6.3. If welding a vehicle, disconnect the battery or fit a "Electronic Circuit Protector" (available from your Sealey stockist).
- 6.4. Set up the current switches to give the required power setting and adjust the wire speed accordingly.
- 6.5. During the welding process, wire drawn from the spool is automatically fed through an insulated liner in the torch cable to the torch tip. The torch switch activates the wire feed roller (to stop wire feed release the switch). As wire comes into contact with the workpiece an arc is struck. The arc melts the wire which is deposited into the weld.

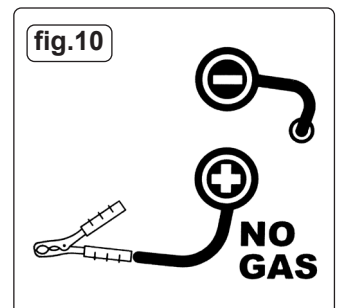


fig.10

## 7. CONVERSION TO MIG WELDING

For welding stainless steel or aluminium, this welder can be converted to a conventional mig welder. To convert to gas, order a reel of regular wire, a bottle of suitable gas, tips and nozzles and a conversion kit. Kit 120.802032 contains a regulator plus connection hoses, hose adaptor and jubilee clips (see fig.12).

### 7.1. CHECK POLARITY

- 7.1.1. Ensure that the welder is disconnected from the mains power supply and open the side panel and check that the polarity is correctly set up for gas operation. The earth clamp wire must be connected to the NEGATIVE (-) terminal and the power (torch) lead must be connected to the POSITIVE (+) terminal as shown in fig.11.

### 7.2. CHECK WIRE FEED ROLLER

- 7.2.1. If necessary, change and/or turn the wire feed roller (See maintenance section10) so that the appropriately sized groove is in line with the drive path i.e. in the groove nearest to you.

### 7.3. FIT REQUIRED WIRE

- 7.3.1. Fit a reel of steel or aluminium wire (either 0.6 or 0.8mm).

### 7.4. SET THE WIRE TENSION AS DESCRIBED IN SECTION 4.6

### 7.5. ATTACHING THE GAS CYLINDER

- 7.5.1. Strap the gas cylinder to the back of the machine. Two chains are provided to hold in place. Thread the chains through the raised metal fixing small cylinders loops on the back of the welder. Stand the gas cylinder on the rear platform and fix the straps around it. Close the flow regulator before screwing it onto the cylinder. Screwing down the regulator will automatically open the cylinder valve. When the sound of gas escaping is heard screw the regulator one further turn only. This will be sufficient to seal the cylinder. (fig.12)

❑ **WARNING!** Excessive tightening of the flow regulator will over-compress the rubber sealing washer and allow the gas to escape slowly without being detected.

### 7.6. CONNECT GAS CYLINDER TO WELDER GAS INPUT. (KIT 120.802032)

- 7.6.1. Push the small adaptor into one end of the larger diameter hose. Push the other end of the hose onto the ribbed gas input connector on the back of the welder. Secure both ends of the hose with the jubilee clips provided. Push one end of the smaller diameter gas hose into the open end of the adaptor and push the other end into the regulator outlet, it will seal automatically. (See fig.12). To release the gas hose, press the collet inwards on the quick couplers and pull the hose out.
- 7.6.2. Turn the gas regulator knob halfway for a 2L/min flow and all way for maximum flow of 4L/Min.
- 7.6.3. Always remove the flow regulator after use if the machine is to be stored for any length of time.

### 7.7. GAS TYPES

- 7.7.1. Welding mild steel with CO<sub>2</sub> gas is appropriate for most welding tasks where spatter and high build up of weld do not pose a problem. To achieve a spatter-free and flat weld however, you must use an CO<sub>2</sub>/Argon mixture.

To weld aluminium use:

Argon gas 0.8mm Contact Tip 0.8mm Aluminium Wire (MIG/2/KAL08)

### 7.8. CYLINDER SIZES

- 7.8.1. The platform at the rear of the welder will support cylinders up to a diameter of 140mm, a height of 500mm and a maximum weight of 10kg. If you wish to use larger cylinders they must be properly secured to a separate welding trolley. An industrial gas cylinder adaptor kit will be required. Contact your local Sealey stockist to order these items. The following is estimated duration of cylinders based on a flow rate of 2 litres per minute. Actual duration will be dependant upon various job conditions including the operator's welding technique. All times are therefore approximate.

Disposable cylinders: CO<sub>2</sub>/100 390g = 1-1/4hours. CO<sub>2</sub>/101 600g = 2 hours.

Argon ARG/100 300g = 1hour. Argon/CO<sub>2</sub> MIX/100 300g = 1 hour.

**NOTE:** When comparing prices, always check fill weights.

### 7.9. MIG/MAG GAS WELDING PRINCIPLES

- 7.9.1. Welding wire is automatically fed through an insulated liner to the tip of the torch. The torch consists of a switch, liner, gas hose, and control cable. The switch activates the wire feed roller and the gas flow. 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 torch end. The current switches (see section 5.3) control the current to the electrode. Wire speed must be adjusted according to current output. The higher the current the faster the wire speed. A gas cup fits over the contact tip to direct gas flow towards the weld, ensuring that the arc welding process is shielded from oxidation. The shielding gas also assists heating of the weld. The torch is connected to the positive side of a DC rectifier, and the negative clamp is attached to the workpiece.

### 7.10. MIG/MAG WELDING

- 7.10.1. Welding wire is automatically fed through an insulated liner to the tip of the torch. The torch consists of a switch, liner, gas hose, and control cable. The switch activates the wire feed roller and the gas flow. Releasing the switch stops wire feed and gas flow. The weld current is transferred to the electrode (the wire) from the contact tip at the torch end. The current to the electrode is set using the two switches on the front of the control panel. Wire speed must be adjusted according to current output using the rotary control below the power switches. The higher the current the faster the wire speed. A gas cup fits over the contact tip to direct gas flow towards the weld. (See fig.9) ensuring that the arc welding process is shielded from oxidation. The shielding gas also assists heating of the weld. The torch is connected to the positive side of a DC rectifier, and the negative clamp is attached to the workpiece.

### 7.11. PREPARATION FOR WELDING: **IMPORTANT! BEFORE YOU COMMENCE, MAKE SURE THE MACHINE IS SWITCHED OFF AT THE MAINS. IF WELDING A VEHICLE, DISCONNECT THE BATTERY OR FIT AN ELECTRONIC CIRCUIT PROTECTOR. ENSURE THAT YOU READ, UNDERSTAND AND APPLY THE SAFETY INSTRUCTIONS IN SECTION 1.**

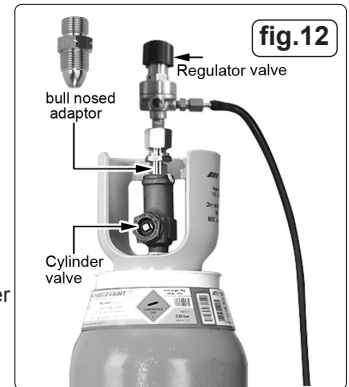
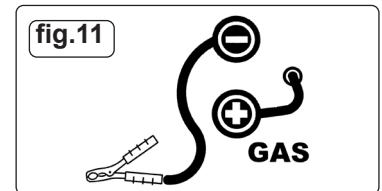
- 7.11.1. To ensure a complete circuit, the negative lead must be securely attached to the workpiece close to the weld area. Best connection is obtained by grinding the point of contact on the workpiece before connecting the clamp.

- 7.11.2. The weld area must be free of paint, rust, grease, etc.

### 7.12. GAS TYPES AND THEIR USE

- 7.12.1. Welding mild steel with CO<sub>2</sub> gas is appropriate for most welding tasks where spatter and high build-up of weld do not pose a problem. To achieve a spatter free and flat weld however, requires an Argon/ CO<sub>2</sub> mixture.

- 7.12.2. To weld aluminium use: ✓ Argon Gas ✓ 0.8mm Contact Tip ✓ 0.8mm Aluminium Wire (MIG/2/KAL08).



### 7.13. 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 amber light on the front panel will illuminate. Wait for fifteen minutes for the welder to cool down at which time it will reconnect automatically.

## 8. RATINGS PLATE (SEE ABOVE)

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

1 - The BS/EU standard relating the safety and to the safety and construction of arc welding and associated equipment.

2 - Inverter-transformer-rectifier symbols

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

$U_0$ : Maximum open-circuit voltage.

$I_2$ ,  $U_2$ : Current and corresponding voltage.

X: Welding ratio based on a ten minute cycle.

20% indicates 2 minutes welding and 8 minutes rest,

100% would indicate continuous welding.

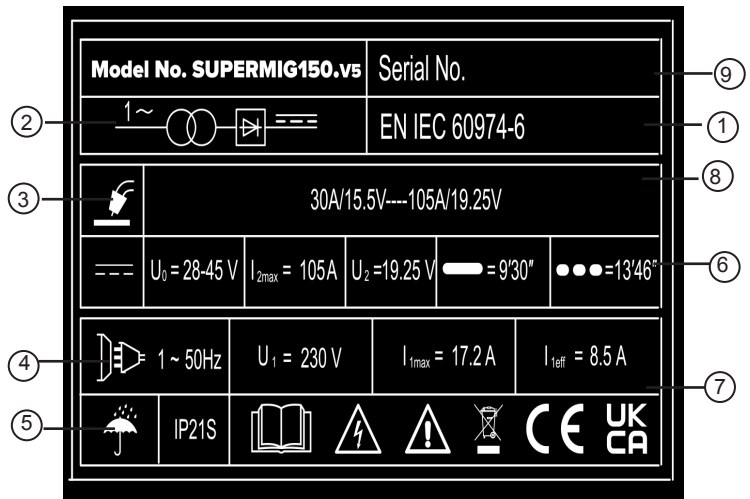
7 - Mains Supply  $U_1$ : Rated supply voltage and frequency.  $I_{1max}$ : Maximum current.  $I_{1eff}$ : Maximum effective current.

8 - A/V - A/V: Welding current adjustment range and corresponding voltages.

9 - Serial Number. Specifically identifies each welder.

10- Symbol for welding power sources which are suitable for supplying power to welding operations carried out in an environment with increased risk of electric shock (if applicable).

11- Insulation Class.



## 9. MAINTENANCE

▲ **DANGER!** Unplug the welder from the mains power supply before performing maintenance or service.

### 9.1. WIRE FEED UNIT

9.1.1. 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 the weld. Clean the rollers weekly, especially the feed roller groove, removing all dust deposits.

### 9.2. TORCH

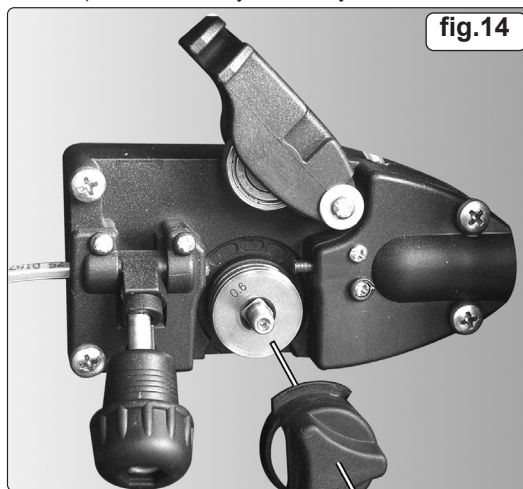
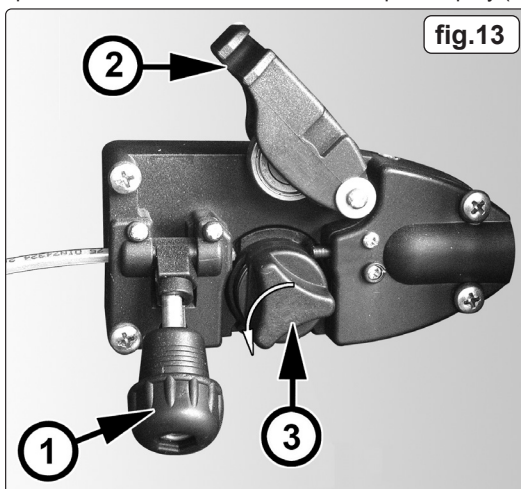
9.2.1. Protect the torch cable assembly from mechanical wear. Clean the liner from the machine forwards by using compressed air. If the liner is blocked it must be replaced.

### 9.3. CONTACT TIP (to remove tip follow steps in section 4.5)

9.3.1. The contact tip is a consumable item and must be replaced when the bore becomes enlarged or oval. The contact tip **MUST** be kept free from spatter to ensure an unimpeded flow of gas.

### 9.4. GAS CUP (to remove cup follow steps in section 4.5)

9.4.1. 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 anti-spatter spray (MIG/722307) available from your Sealey stockist.



### 9.5. TURNING FEED ROLLER **IMPORTANT:** Turn the feed roller to suit the wire size.

9.5.1. There are two grooves on the feed roller, 0.6mm and 0.8mm. Always have the groove that is being used on the outside of the roller (nearest to you). To turn the feed roller first loosen the wire tension knob and move it into its down position (see fig.13.1) then move the tensioning roller assembly to its up position (see fig.13.2). Take hold of the triangular knob on the roller retainer and rotate it 90° anticlockwise to release it as shown in fig.13.3. Now pull the roller retainer off the drive spindle to reveal the roller as shown in fig.14.

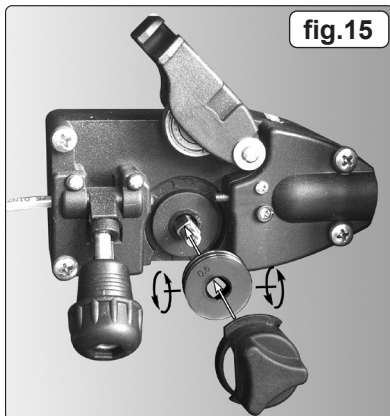


fig.15

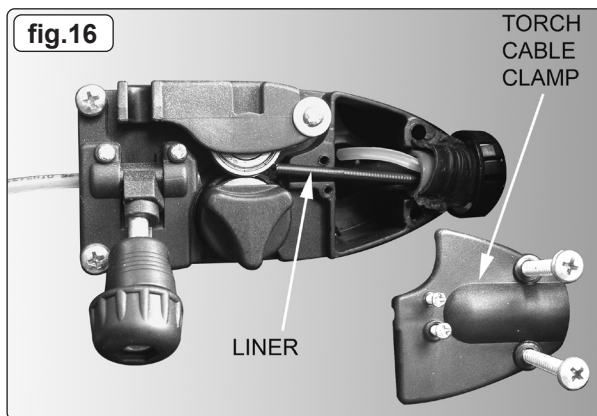


fig.16

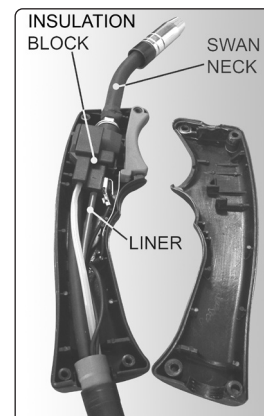


fig.17

9.5.2. Pull the roller off the drive spindle, flip it over and put it back on the drive spindle. (See fig.15) The groove size you require should now be visible on the face of the roller. Push the roller retainer back onto the drive spindle with the opening facing left. Ensure that the flanges at the base of the retainer, seat fully into the circular recess in the main moulding and then rotate the retainer through 90° to lock it in place.

#### 9.6. REPLACING WIRE LINER

9.6.1. A worn or damaged wire liner will seriously affect the performance of the welder and should be immediately replaced. First wind the wire back onto the spool and secure it. Remove the four screws securing the torch cable clamp to the wire feed unit (fig.16) and take off the clamp. Undo the torch case (fig.17) and pull the wire liner from the insulation block. Pull out the liner from the torch cable and insert the new one. Reverse the process to re-assemble. Ensure the liner is fully inserted into the torch insulation block and reassemble the torch. Trim the other end of the liner as close to the feed roller as possible. Replace the torch cable clamp.

#### 9.7. REPLACING GEARS

9.7.1. An inexperienced welder can allow spatter to build up in the tip and shroud. In severe cases this can block the wire feed causing gear damage in the wire drive. To check if the gears are worn depress the button on the torch with the set switched on. If the gears are worn, a grating sound will be heard coming from the wire feed motor and you may also observe the feed roller vibrating instead of rotating smoothly. In this is the case, return the welder to your local Sealey stockist for repair.

## 10. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Weld current interrupted	Overheating protection activated due to overload	Protection automatically resets when transformer has cooled (approx. 15 min).
No weld current, fuse blowing in 13amp plug	Rectifier blown	Replace rectifier.
No weld current	Bad connection between clamp and workpiece	Clean or grind contact surface and weld area.
	Break in earth lead	Repair or replace earth lead.
	Break in torch lead	Repair or replace.
Feed motor not working	Gear damaged or worn	Replace gears (Section 9.7).
	Motor defective	Replace motor (Contact service agent).
Wire does not feed, feed roller rotates	Pressure roller improperly adjusted	Adjust wire tension. (Section 9.6).
	Dirt, copper, dust, etc. have collected in torch liner	Clean the liner from the machine forward. Use compressed air. If too much dirt, replace the liner (Section 9.6).
	Gas cup (nozzle) or tip defective	Replace gas cup (nozzle) and/or tip (Section 9.4).
	Deformed wire	Check roller tension (Section 4.6).
Wire feeds unevenly	Dirt, etc. in liner	Clean the liner from the machine forward using compressed air.
	Gas cup (nozzle) or tip defective	Replace gas cup (nozzle) and/or tip (Section 9.4).
	Gas cup (nozzle) spattered	Clean or replace gas cup (nozzle) (Section 9.4).
	Feed roller groove clogged	Clean feed roller (Section 9.5).
	Feed roller groove deformed	Replace feed roller (Section 9.5).
	Pressure roller tension incorrect	Adjust tension (Section 4.6).
Unstable arc	Incorrect settings	Check settings (Section 4.7).
	Impurities in weld area	Clean and/or grind workpiece (Section 4.9.1).
	Worn or defective gas cup (nozzle)	Replace gas cup (nozzle) (Section 9.4).
Porous weld	No gas	Open gas cylinder, regulate gas flow.
	Gas cup clogged	Clean or replace cup (Section 9.4).
	Draft blowing away shielding gas	Screen off welding site or increase gas flow.
	Rusty/dirty joints	Clean or grind the workpiece (Section 4.2.1).
	Torch too far from, or at wrong angle to, workpiece	Gas cup to workpiece should be 8-10mm. Torch angle approx 75°.
	Gas leak	Check hoses, connections and torch assembly.
Wire sticking in gas cup (nozzle)	Worn or defective gas cup (nozzle)	Replace gas cup (nozzle) (Section 9.4).
	Wire deformed	Check roller tension (Section 4.6).
	Wire speed too slow	Increase wire speed. (Section 5.4).
Irregular weld head	Torch incorrectly held	Use correct torch angle.
	Wire weaving in weld pool	Check roller tension and adjust (Section 4.6).

Weld bead too narrow and raised	Weld current too low	Increase power and wire speed (Section 5.4).
	Weld speed too fast	Move torch slower and weave a little more.
Weld bead too wide	Weld current too low	Increase current and wire speed (Section 5.4).
	Weld speed too slow	Move torch faster and weave less.
Poor penetration	Weld current too low	Increase current and wire speed (Section 5.4).
	Arc too long	Bring torch closer to workpiece.
Excessive penetration	Weld current too high	Decrease current and wire speed (Section 5.4).
	Weld speed too slow	Move torch faster.
	Incorrect distance of torch to workpiece	Torch distance should be 8-10mm.



#### 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.



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#### 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. 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](mailto:technical@sealey.co.uk) or 01284 757505.

**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.

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