



INSTRUCTIONS FOR: MIG WELDER

MODEL NO:

MIGHTYMIG 150





INSTRUCTIONS FOR: GAS/NO GAS MIG WELDER MODEL NO: **MIGHTYMIG150**

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: BEFORE USING THIS PRODUCT, PLEASE READ THE INSTRUCTIONS CAREFULLY. MAKE CAREFUL NOTE OF SAFETY INSTRUCTIONS, WARNINGS AND CAUTIONS. THIS PRODUCT SHOULD ONLY BE USED FOR ITS INTENDED PURPOSE. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. RETAIN THESE INSTRUCTIONS FOR FUTURE USE.

1. SAFETY INSTRUCTIONS

1.1. ELECTRICAL SAFETY

WARNING! It is the user's responsibility to read, understand and comply with the following:

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 dealer. You must also read and understand the following instructions concerning electrical safety.

- 1.1.1 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 least once a year.
- 1.1.2 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.**
- 1.1.3 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).
- 1.1.4 Ensure that cables are always protected against short circuit and overload.
- 1.1.5 Regularly inspect power supply leads, plugs and all electrical connections for wear and damage and especially power connections, to ensure that none is loose.
- 1.1.6 **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.
- 1.1.7 DO NOT pull or carry the powered appliance by its power supply lead.
- 1.1.8 DO NOT pull power plugs from sockets by the power cable.
- 1.1.9 DO NOT use worn or damage leads, plugs or connections. Immediately replace or have repaired by a qualified electrician. A U.K. 3 pin plug with ASTA/BS approval is fitted. In case of damage, cut off and fit a new plug according to the following instructions (discard old plug safely).

(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 'E'.**
- b) **Connect the brown live wire to live terminal 'L'.**
- c) **Connect the blue neutral wire to the neutral terminal 'N'.**
- 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.**

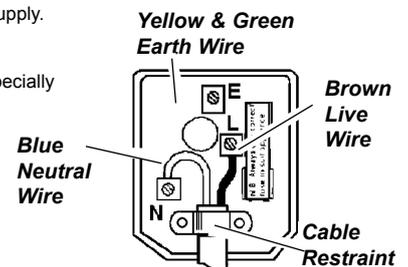
- 1.1.10 Some products require more than a 13 amp electrical supply. In such a case, NO plug will be fitted. You must contact a qualified electrician to ensure that a 30 amp fused supply is available. We recommend you discuss the installation of a industrial round pin plug and socket with your electrician.
- 1.1.11 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

1.2 GENERAL SAFETY

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

OPERATORS MUST RECEIVE ADEQUATE TRAINING BEFORE USING THE WELDER.

- ✓ Keep the welder and cables in good working order and 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, available from your Sealey dealer.
- ✓ Locate 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 the working 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 the workpiece is correctly secured before welding.
- ✓ Avoid unintentional contact with the 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 a protective head shield and gloves.
- ✓ Stand correctly keeping a good footing and balance, ensure the floor is not slippery and wear non-slip shoes.
- * **DO NOT** operate the welder if it or the cables are damaged and **DO NOT** attempt to fit any unapproved torches or other components to the welder.
- * **DO NOT** get welder wet or use in damp or wet locations or areas where there is condensation.
- DANGER!** **DO NOT** weld near flammable solids, liquids or gases and **DO NOT** weld containers or pipes which have held flammable materials. **Avoid welding materials which have been cleaned with chlorinated solvents or welding near such solvents.**
- * **DO NOT** stand welder on a metal workbench, car bodywork or similar.
- * **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. Protect cables from sharp or abrasive items, **DO NOT** bend, strain or stand on cables or leads. Protect from heat. Long lengths of slack must be gathered and neatly coiled. **DO NOT** place cables where they endanger others.
- * **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.



**FUSE RATING
13 AMP**

1.3 GAS SAFETY

- ✓ Store gas cylinders in a vertical position only and ensure the storage area is correctly secured.
- ✗ **DO NOT** store gas cylinders in areas where the temperature may exceed 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 labels on a cylinder. 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.

2. INTRODUCTION & SPECIFICATION

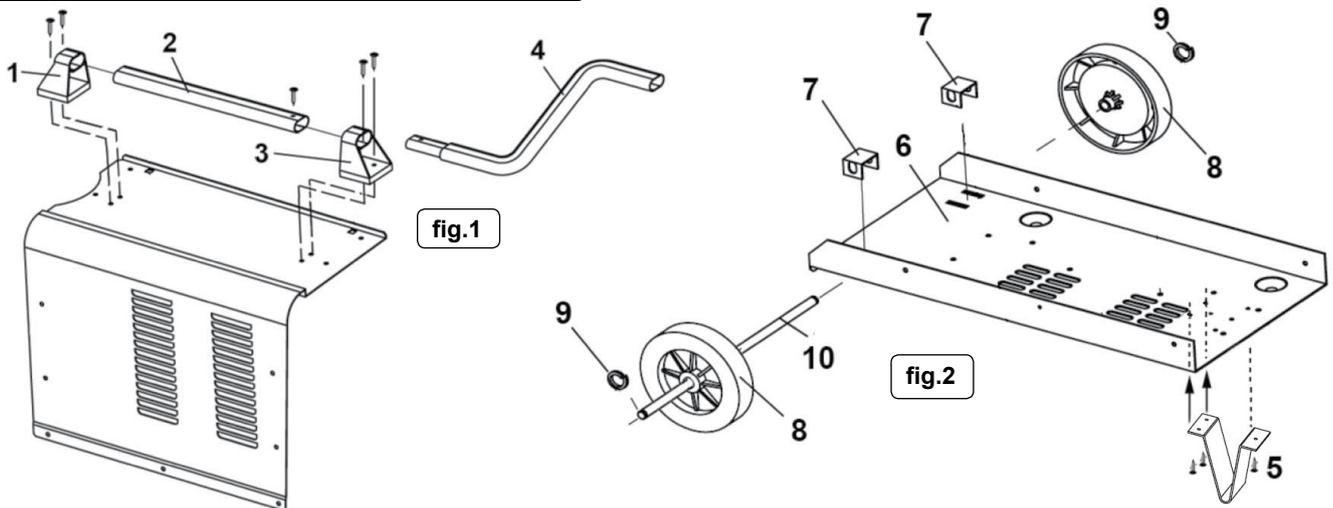
IMPORTANT: THESE INSTRUCTIONS CONTAIN THE INFORMATION YOU REQUIRE TO PREPARE YOUR MACHINE FOR WELDING, TOGETHER WITH A MAINTENANCE AND A TROUBLESHOOTING SECTION. **THE INSTRUCTIONS ARE NOT INTENDED TO TEACH YOU HOW TO WELD. IF YOU HAVE NO EXPERIENCE, WE RECOMMEND THAT YOU SEEK TRAINING FROM AN EXPERT 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.**

INTRODUCTION: Our professional range of MIGHTYMIG welders all feature a heavy-duty high output transformer and forced air cooling to maximise duty cycle performance. MIGHTYMIG150 is supplied with a comfort grip non-live torch, 1.8mtr earth cable, 1mtr gas hose, 0.45kg flux cored wire and 1.0mm contact tip. This unit is supplied set up in the gasless mode but can be switched easily to use with gas by a simple change of polarity, and the purchase of a gas conversion kit.

Model No.	Mightymig150
Welding Current.	30-150A
Wire Capacity.	0.9kg
Duty Cycle.	100% @ 30A, 15% @ 105A
Cooling System.	Forced Air
Gas Type.	CO ₂ /Argon mix & Argon & CO ₂
Torch.	Non-live

Power Input.	230V 1ph
Absorbed power.	4.5kW
Case size.	Medium
Weight.	26kg
Flux cored wire (0.9kg x Ø0.9mm).	TG100/1
Replacement tips (pack of 5).	TG100/3
Gas conversion kit.	120.802032

3. ASSEMBLY



3.1 Assembly of wheels: (See fig.2)

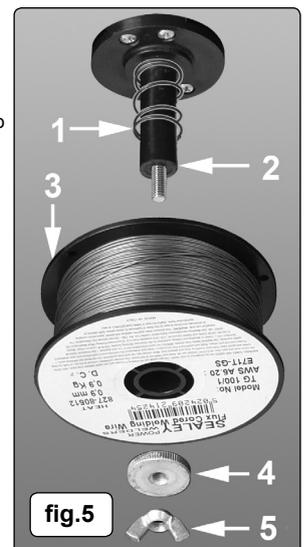
- 3.1.1 Drop the axle brackets (7) through the slots in the rear of the bottom tray (6).
- 3.1.2 Attach a circlip (9) to one end of the axle (10) and slide a wheel (8) onto the axle and right up to the circlip.
- 3.1.3 Pass the axle (10) under the tray (6) and through the two protruding brackets (7) until the first assembled wheel is up against the side of the tray.
- 3.1.4 Slide the other wheel (8) onto the other end of the axle (10) and secure it by attaching a circlip (9) to the end of the axle.

3.2 Assembly of front foot: (See fig.2)

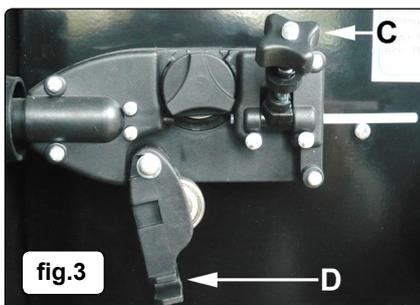
- 3.2.1 Place the foot (5) onto the underside of the tray (6) ensuring that the three holes on the foot align with the holes in the tray. Fix the foot in place with three self tapping screws.

3.3 Assembly of handle: (See fig.1)

- 3.3.1 Attach the rear handle bracket (1) to the top of the casing using two self tapping screws. Slide the straight handle (2) into the bracket (1) and slide the other bracket (3) onto the front end of the handle. Secure bracket (3) with two self tapping screws. Insert the handle extension (4) into the front end of the handle and secure it with a self tapping screw.



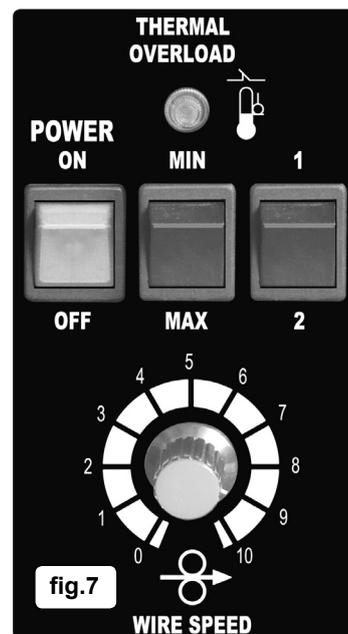
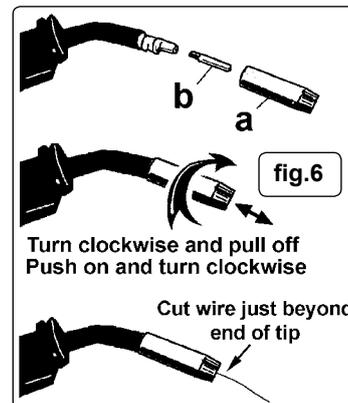
4. PREPARATION



4.1 Fitting a reel of wire:

- 4.1.1 Lift the black catch on the side of the welder and open the side compartment to gain access to the wire feed unit mechanism and the wire spool holder. See fig.3. The welder is supplied with a mini spool containing 0.45kg of flux cored wire.
- 4.1.2 Referring to fig.5, rotate the butterfly nut (5) anti-clockwise and remove it from the threaded spindle together with the pressure disc (4). Leave the spring (1) on the spindle (2).
- 4.1.3 Place the wire reel (3) over the spindle and down onto the spring ensuring that the wire will withdraw from the top of the spool in a forwards direction towards the wire feed unit.

- 4.1.4 Push lightly down on the top of the reel of wire and screw the pressure disc (4) onto the end of the spindle and down onto the top of the wire reel. 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 overtighten the pressure disc as too much braking will conflict with the wire tension set on the wire drive unit. Lock the position of the pressure disc by screwing the butterfly nut (5) down on top of it.
- 4.1.5 Referring to fig.3 turn the knob on the wire lock screw (C) anti-clockwise and lift it up and away from the pressure roller moulding. Swing the pressure roller moulding (D) away from the drive roller.
- 4.1.6 Release the wire from the spool (do not allow wire to uncoil) and straighten 40-50mm of wire and gently push through the flexible plastic guide and through the 0.9mm feed roller groove and into the torch liner. Refer to maintenance section 9.3 on how to reverse or change the roller for driving other wire diameters.
- 4.1.7 Referring to fig.4, move the pressure roller moulding back round onto the grooved drive wheel and swing the wire lock screw back down to lock it in place. See section 4.2 regarding wire tension.
- 4.1.8 **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.
- 4.1.9 Check welder is switched "OFF" and that the earth clamp is away from the torch tip. Connect the welder to the mains power supply and set the current switch to MAX.
- 4.1.10 Set the wire speed knob to position 5 or 6. See fig.7. Switch welder on. Keeping the torch cable as straight as possible and press the torch switch. The wire will feed through the torch.
- 4.1.11 When wire has fed through, switch welder off, **unplug from mains.**
- Take torch in left hand, slide the contact tip over the wire and screw it 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.
- 4.2. **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. Turn the wire lock screw clockwise to increase the tension and anticlockwise to decrease the tension as shown in fig.4.
- 4.2.1 Correct tension between the rollers is checked by slowing down the wire between gloved fingers. If the pressure roller skids the tension is correct. Try to use the lowest tension possible as too high a tension will deform the wire. When you have completed welding allow the welder to cool before storing in a safe, dry place. Note: Damaged torches and cables are not covered under warranty.

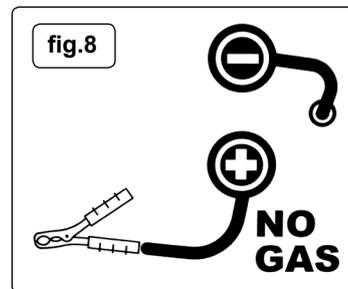


5. CONTROL PANEL

- 5.1 **Thermal overload light.** (see fig.7) 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.7) 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 switches MIN, MAX & 1, 2.** (see fig.7) Used together these two switches provide 4 increasing power levels as follows: MIN/1, MIN/2, MAX/1, MAX/2.
- 5.4 **Wire speed control knob.** (see fig.7) As a general rule, a higher current requires a higher wire speed.

6. GASLESS OPERATION

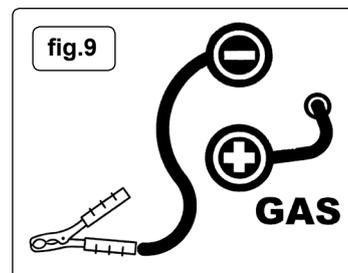
- WARNING! ENSURE THAT YOU READ, UNDERSTAND AND APPLY SAFETY INSTRUCTIONS BEFORE OPERATING THE WELDER. IF WELDING A VEHICLE, DISCONNECT THE BATTERY OR FIT AN ELECTRONIC CIRCUIT PROTECTOR.**
- 6.1 **Polarity check:** Ensure that the welder is disconnected from the main power supply, open the side panel and check that the polarity is correctly set up for 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.8.
- 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 dealer).
- 6.5 Set up the current switches to give the required power setting and adjust the wire speed accordingly.
- 6.6 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.



7. CONVERSION TO MIG (GAS) 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.10).

- 7.1 **Check Polarity:** 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.9.
- 7.2 **Check wire feed roller:** If necessary, change and/or turn the wire feed roller (See maintenance section.9) 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:** Fit a reel of steel or aluminium wire (either 0.6 or 0.8mm).
- 7.4 **Set the wire tension as described in section 4.2.**
- 7.5 **Mount the gas cylinder:** Strap the gas cylinder to the back of the machine. Two nylon straps are provided to hold small cylinders in place. Thread the straps through the raised metal fixing loops on the back of the welder. Stand the gas cylinder on the rear platform and fix the straps around it as shown in fig.10.
- 7.5.1 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.
- 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) 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 fig10. To release the gas hose, press the collet inwards on the quick couplers and pull the hose out.



- 7.6.1 Turn the gas regulator knob halfway for a 2ltr/min flow and all the way for maximum flow of 4ltr/min.
 7.6.2 Always remove the flow regulator after use if the machine is to be stored for any length of time.
 7.7 **Gas types.** Welding mild steel with CO₂ 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 CO₂/Argon mixture. To weld aluminium use:
 □ Argon gas □ 0.8mm Contact Tip □ 0.8mm Aluminium Wire (MIG/2/KAL08)
 7.8 **Cylinder sizes.** 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 dealer to order these items.
 7.8.1 The following table is an 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: CO₂/100 390g = 1-1/4hours. CO₂/101 600g = 2 hours.
 Argon ARG/100 300g = 1hour. Argon/CO₂ MIX/100 300g = 1 hour.
 Note: When comparing prices, always check fill weights.

- 7.9 **Mig/Mag gas welding principles:** 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.

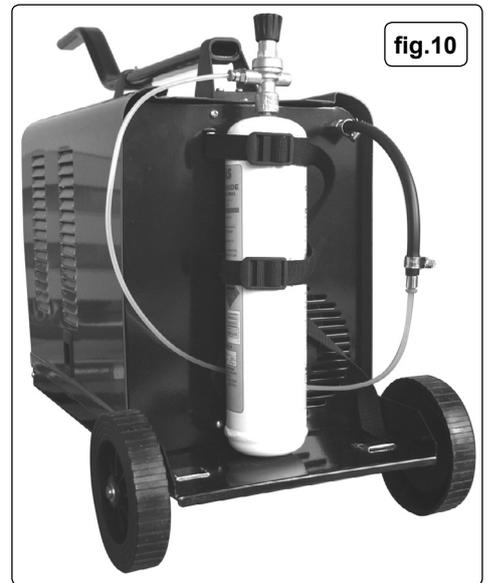


fig.10

8. RATINGS PLATE

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

- 1 - The standard relating to the safety and construction of arc welding and associated equipment.
- 2 - Single phase transformer - rectifier.
- 3 - Welding with a continuous flow of welding wire.
- 4 - Single-phase AC supply.
- 5 - Rating of internal protection provided by casing.
- 6 - Output
 U0: Rated maximum and minimum no load voltage.
 I₂, U₂: Current and corresponding voltage.
 X: Welding ratio based on a 10 minute cycle. 20% indicates 2 minutes welding and 8 minutes rest, 100% indicates continuous welding.
- 8 - Welding current range.
- 7 - Mains Supply U₁: Rated supply voltage and frequency. I_{max}: Maximum current. I_{1eff}: Maximum effective current.
- 9 - Serial Number. Specifically identifies each welder.

②	MIGHTYMIG 150	Serial No.	⑨	
		EN 60974-1: 2005		①
③		Welding Current Range: 30A-150A		
		X	15% 60% 100%	⑧
④	U ₀ = 25-45V	I ₂	105A 50A 30A	⑥
		U ₂	19.2V 16.5V 15.5V	
⑤		U ₁ = 230V	I _{max} = 20 A	⑦
		1 ~ 50Hz	I _{1eff} = 7.9A	
	IP21			

9. MAINTENANCE

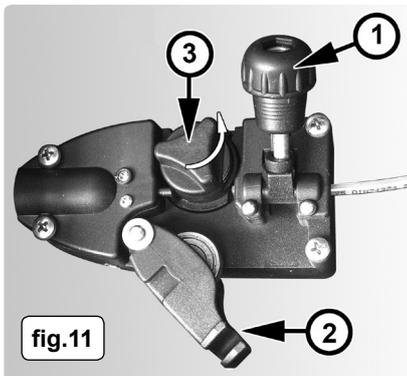


fig.11

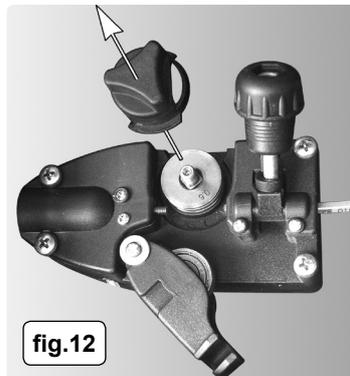


fig.12

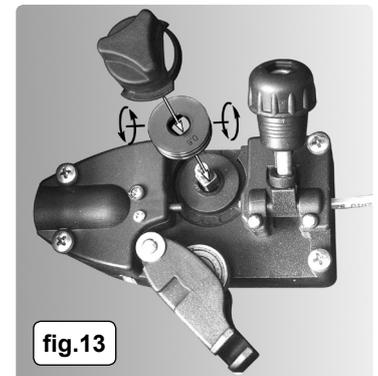


fig.13

▲ **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 Turning feed roller **IMPORTANT:** Turn the feed roller to suit the wire size.

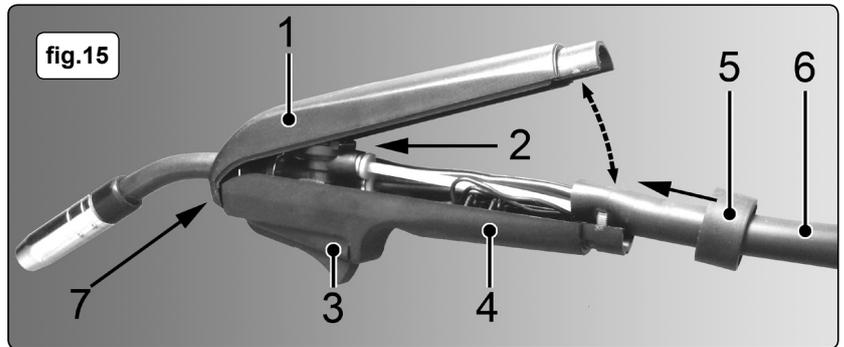
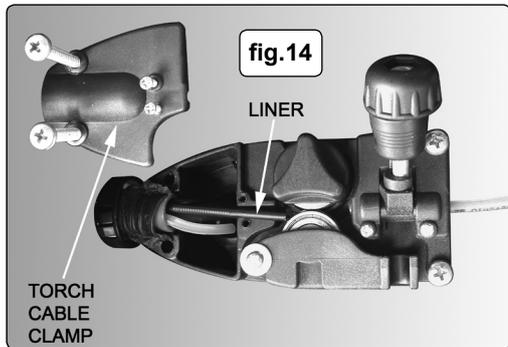
- 9.3.1 There are two grooves on the feed roller, 0.6mm and 0.8mm. Always have the groove that is being used on the outside of the roller (nearest to you). To turn the feed roller first loosen the wire tension knob and move it into its up position (see fig.11-1) then move the tensioning roller assembly to its down position (see fig.11-2). Take hold of the triangular knob on the roller retainer and rotate it 90° anticlockwise to release it as shown in fig.11-3. Now pull the roller retainer off the drive spindle to reveal the roller as shown in fig.12. Pull the roller off the drive spindle, flip it over and put it back on the drive spindle. (See fig.13) The groove size you require should now be visible printed on the face of the roller. Push the roller retainer back onto the drive spindle with the opening facing right. 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.

9.4 Contact tip (to remove tip follow steps in 4.1.8):

- 9.4.1 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.

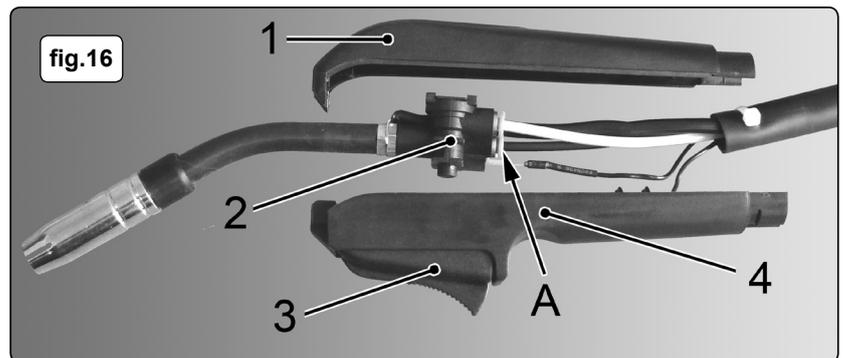
9.5 Gas cup (to remove cup follow steps in 4.1.8):

- 9.5.1 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 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 dealer.



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.14) and take off the clamp.
- 9.6.2 To open the torch case first take hold of the locking ring (fig.15-5) and turn it anticlockwise until it stops and then pull it off the two halves of the torch case and slide it a little way down the torch cable.
- 9.6.3 Lift up the back of the upper torch moulding as shown in fig15-1 and unhook it from the front of the lower moulding (see 7 in fig.15) and lift it off.
- 9.6.4 Move the lower moulding away from the inner torch assembly as shown in fig16-4.
- 9.6.5 Disconnect the black liner from the torch control assembly by pressing the locking ring into the connector and withdrawing the liner. See A in fig.14.
- 9.6.6 With the torch cable as straight as possible pull the liner from the torch cable.
- 9.6.7 Insert the new liner into the torch cable and secure it in the wire drive unit by replacing the torch cable clamp. See fig.14. Insert the other end of the liner through the locking ring and fully into the torch control assembly.
- 9.6.8 Ensure that the switch moulding (fig.16-3) is fully seated down into the lower moulding (4). Place the torch head assembly (2) down into the lower moulding and arrange the inner connections within the moulding. The gas pipe and wire liner will rest into notches on the inner ribs of the moulding. The two thin switch wires should be to the left of the gas pipe and the larger black control cable should be to the right of the wire liner.
- 9.6.9 Hook the upper moulding (1) onto the lower moulding (4) as shown in fig.15-7. Close the upper moulding down onto the lower moulding ensuring that there are no wires trapped between the two halves. The two mouldings should close easily, do not force them shut.
- 9.6.10 Once the mouldings are closed slide the locking ring (fig.15-5) up onto them. Turn the locking ring clockwise to secure the assembly.



7. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
1. Power source stops	Overheating protection activated due to overload	Protection automatically resets when transformer has cooled (about 15 min)
2. No weld current	Rectifier blown	Replace rectifier.
3. No weld current	Bad connection between clamp & 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 torch
4. Feed motor not working, lamp is on	Gear damaged or worn	Replace gears. (Contact service agent)
	Motor defective	Replace motor (Contact service agent)
	PCB fault	Replace PCB
5. Wire does not feed, feed roller rotates	Pressure roller improperly adjusted	Adjust tension.
	Dirt, copper, dust, etc, has collected in torch liner	Clean the liner from the machine forward. Use compressed air. If too much dirt, replace the liner.
	Gas cup (Nozzle) or tip defective	Replace gas cup (nozzle) and/or tip. (Section 4.1.8 to 4.1.11)
	Deformed wire	Check roller tension and adjust it if necessary (Section 4.2)
6. Wire feeds unevenly	Dirt, etc, in liner	Clean the liner from the machine forward. Use compressed air
	Gas cup (Nozzle) or Tip defective	Replace gas cup (nozzle) and/or tip. (Section 4.1.8 to 4.1.11).
	Gas cup (Nozzle) spattered	Clean or replace gas cup (nozzle) (Section 4.1.8 to 4.1.11)
	Feed roller groove clogged	Clean feed roller.
	Feed roller groove deformed	Replace feed roller.
	Pressure roller tension improper	Adjust tension. (Section 4.2)
7. Unstable arc	Incorrect settings	Check settings.
	Impurities in weld area	Clean and/or grind workpiece.
	Worn or defective gas cup (nozzle)	Replace gas cup (nozzle). (Section 4.1.8 to 4.1.11)
8. Porous weld	No gas	Open gas cylinder, regulate gas flow
	Gas cup clogged	Clean or replace cup. (nozzle) (Section 4.1.8 to 4.1.11)
	Draft blowing away shielding gas	Screen off welding site or increase gas flow
	Rusty or dirty joints	Clean and/or grind workpiece. (Section 4.1.1)
	Torch too far from or at wrong angle to work	The distance from gas cup to workpiece should be 8 to 10mm
	Gas leak	Check hoses, connections and torch assembly. Press the gas cup into correct position
	Faulty Electrovalve	Clean out or replace
9. Electrode sticking in gas cup (nozzle)	Worn or defective gas cup (nozzle)	Replace gas cup (nozzle). (Section 4.1.8 to 4.1.11)
	Electrode deformed	Check roller tension. (Section 3.10)
	Wire speed too slow	See recommendations for wire speed
10. Irregular weld head	Torch incorrectly held	Use correct torch angle
	Wire weaving in weld pool	Check roller tension and adjust as needed. (Section 4.2)
11. Weld bead too narrow and raised	Weld current too low	Increase power and wire speed.
	Weld speed too high	Move torch slower and weave a little more
12. Weld bead too wide	Weld current too high	Decrease power and wire speed.
	Weld speed too low	Move torch faster and weave less
	Arc too long	Bring torch closer to workpiece
13. Poor penetration	Weld current too low	Increase power and wire speed.
	Arc too long	Bring torch closer to workpiece
14. Excessive penetration	Weld current too high	Decrease power and wire speed.
	Weld speed too slow	Move torch faster
	Incorrect distance of torch to workpiece	Torch distance should be 8-10mm

Environmental 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 off any fluids (if applicable) into approved containers and dispose of the product and the fluids according to local regulations.



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