

INSTRUCTIONS FOR

GASLESS

MIG WELDERS

Models:

**PMG100,
PMG110,
PMG135XT,
PMG155XT.**



Models: PMG100, PMG110, PMG135XT, & PMG155XT.

Thank you for purchasing a Sealey Welder. 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 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 professional 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 a business premises, to be tested by a qualified Electrician at least once a year by using a Portable Appliance Tester (PAT).

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, especially power connections, to ensure that none are 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 13Amp plug may require a fuse smaller than 13Amps for certain products (*subject to 1.1.10. below*) see fuse rating at right.

1.1.7. DO NOT pull or carry the powered appliance by its power supply lead. Products such as welders must not be pulled or carried by their output cables.

1.1.8. DO NOT pull power plugs from sockets by the power cable.

1.1.9. 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 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'.

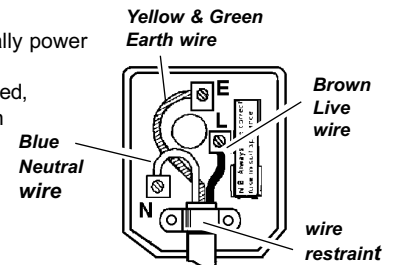
c) Connect the BLUE neutral wire to the neutral terminal 'N'.

After wiring, check there are no bare wires, that all wires have been correctly connected and that the wire restraint is tight.

Double insulated products are often fitted with live (BROWN) and neutral (BLUE) wires only. Double insulated products are marked with this symbol . **To re-wire, connect the brown & blue wires as indicated above. DO NOT connect the brown or blue to the earth terminal.**

1.1.10. Some products require more than a 13Amp electrical supply. In such a case, **NO** plug will be fitted. **You must** contact a qualified Electrician to ensure a 30 amp fused supply is available. We recommend you discuss the installation of a industrial round pin plug & 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. We recommend that at least 1.5mm² section cable but to be absolutely sure that the capacity of the cable reel is suitable for this product and for others that may be used in the other output sockets, we recommend the use of 2.5mm² section cable.



FUSE RATING

THIS PRODUCT MUST BE FITTED WITH A:

13 Amp FUSE

1.2 GENERAL SAFETY

▲ DANGER!: unplug the welder from the mains power supply before performing maintenance or service.

- ✓ 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. (*Non recommended 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.
- ✓ Locate welder in adequate working area for its function. Ensure area has adequate ventilation as welding fumes are harmful.
- ✓ Keep working area clean and 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 operating the welder.
- ✓ Avoid unintentional contact with workpiece. Accidental or uncontrolled use of the torch may be dangerous and will wear the nozzle.
- ✓ Keep persons away from the working area. Any persons working within the area must wear protective head shield and gloves.
- ✓ Operators must receive adequate training before using the welder. The welder must only be operated under supervision.
- ✓ Stand correctly keeping a good footing and balance, and ensure the floor is not slippery, and wear non-slip shoes.
- ✓ Turn voltage switch to "0" (off) when not in use.
- x DO NOT operate the welder if it or its cables are damaged.
- x DO NOT attempt to fit any non genuine torches, components, or parts to the welder unit.
- x DO NOT get welder wet or use in damp or wet locations or areas where there is condensation.
- x DO NOT weld without a welding safety head shield.
- ▲ **DANGER! DO NOT weld near inflammable materials, solids, liquids, or gases.**
- x 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.
- x DO NOT stand welder on a metal workbench, car bodywork or similar object.
- x DO NOT touch any live metal parts of the torch or electrode while the machine is switched on.
- x DO NOT pull welder by the cable, or torch, and DO NOT bend or strain cables, protect from sharp or abrasive items, and DO NOT stand on cables or leads. Protect from heat. Long lengths of slack must be gathered & neatly coiled. DO NOT place cables where they endanger others.
- x DO NOT touch the workpiece close to the weld as it will be very hot. Allow to cool.
- x DO NOT touch the torch immediately after use. Allow the torch to cool.
- x DO NOT operate welder while under the influence of drugs, alcohol or intoxicating medication, or if fatigued.
- ✓ When not in use store the welder in a safe, dry, childproof area.

1.3. IF USING GAS

- ✓ Ensure you understand the properties and associated hazards before using a gas.
- ✓ Check and spray the gas cup and contact tip regularly with anti-spatter spray available from your Sealey dealer.
- ✓ Store gas cylinders in a vertical position only and ensure the storage area is correctly secured.
- x DO NOT store gas cylinders in areas where temperature exceeds 50°C.
- x DO NOT attempt to repair or modify any part of a gas cylinder or valve, and DO NOT puncture or damage a cylinder.
- x DO NOT obscure or remove any official labels from a cylinder and always check the gas identity before use.
- x DO NOT use direct heat on a cylinder. Always keep gas cylinders cool.
- x DO NOT get a gas cylinder oily or greasy.
- x DO NOT lift a cylinder by its cap, guard or valve. Always keep caps and guards in place and close valve when not in use.

2. INTRODUCTION & DESCRIPTION

IMPORTANT: These instructions contain information you require to prepare your machine for welding, together with maintenance and a trouble shooting section.

If you have no previous experience the instructions are not intended to show you how to become a welder. Should you have no experience, we recommend that you seek training from an expert source. Mig welding is relatively easy to command, but does require a steady hand and time practising under supervision with scrap metal as it is only with continued practice that you will achieve the desired results.

Dualmig machines weld without gas by using a flux cored wire that creates its own gas shroud as it welds. By using flux core wire there is no need to use a shielding gas, as the flux in the wire does the same job as the gas, (Gas protects the molten pool from the atmosphere. Without the gas (or flux) the weld would oxidise and result in a porous weld). Gasless welding is used to weld mild steel, and has the advantage of keeping costs down as you do not need to purchase and store gas. You can also weld where wind, breeze or draughts prevail.

The units have integral wire feed which prevents dust and dirt getting to the wire. They are delivered with a 0.9mm flux cord wire by which only mild steel and low alloy steel can be welded.

NOTE: To weld stainless steel and aluminium machine models PMG110, PMG135XT and PMG155XT must be converted to gas. Model PMG100 is for non gas operation only.

3. SPECIFICATIONS

Model No:	PMG100	PMG110	PMG135XT	PMG155XT
Welding Current:	.55-90A	.55-90A	.50-130A	.50-150A
No Gas/Gas Operation:	.No Gas only	.Dual Operation	.Dual Operation	.Dual Operation
Duty Cycle:	.20% @ 55A	.20% @ 55A	.100% @ 35A	.100% @ 45A
	.10% @ 80A	.10% @ 80A	.20% @ 90A	.60% @ 55A
			.15% @ 105A	.15% @ 115A
Penetration steel:	.2mm	.2 - 2.75mm	.2.5 - 3.0mm	.3.5mm
Penetration aluminium:	-	.3.5mm	.4mm	.4.5mm
Cooling System:	.Air Cooled	.Air Cooled	.Forced Air	.Forced Air
Torch:	.Live	.Non Live	.Non Live	.Non Live
Power Input:	.230V 1ph	.230V 1ph	.230V 1ph	.230V 1ph
Power Efficiency:	.2.8 kVA	.2.9 kVA	.4.1 kVA	.4.3 kVA
Conversion Kit:	.N/A	.GM/CK	.GM/CK	.GM/CK
Flux cored Wire (0.9 kg x Ø0.9mm):	TG100/1	TG100/1	TG100/1	TG100/1
Spare Tips (Pack of 5):	TG100/2	TG100/2	TG100/2	TG100/2

4. ASSEMBLY

⚠ WARNING! ENSURE THE WELDER IS DISCONNECTED FROM THE MAINS POWER SUPPLY UNTIL YOU ARE TOLD OTHERWISE.

4.1. Wheel Assembly Models PMG135XT & PMG155XT only.

- 4.1.1. Take the rear axle and fit a wheel to one end by placing and secure with a circlip.
- 4.1.2. Pass axle through the tube under gas cylinder carrier, then fit the other washer, wheel, washer, circlip.

4.2. Fitting a reel of wire

Your machine will accept up to 5kg spools of wire without modification.

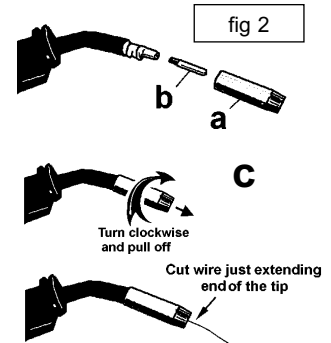
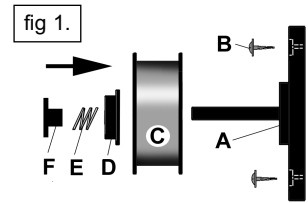
- 4.2.1. Align spindle (fig 1 A) with holes in internal side panel and secure with two self tapping screws (B). Place spool (C) onto spindle ensuring the spool rotates clockwise, with wire drawing off reel from the top (see fig 3 below), followed by plastic reel ring nut (D), reel spring (E), and secure with handwheel (F).
- 4.2.2. Undo the wire lock screw and lift the wire feed lever up to the right (fig 3).
- 4.2.3. Straighten about 40-50mm of spool wire (*do not allow wire to uncoil*), and gently push wire through the plastic guide and across the 6 or 9mm roller groove (fig 4, also refer to part 9.3), and through to the torch.
- 4.2.4. Carefully return the tension arm and secure wire with the wire lock screw.
- 4.2.5. Remove gas cup (fig 2) and contact tip (b) from end of torch as follows:
 - a) Take torch in left hand with the torch tip facing to the right.
 - b) Grasp gas cup firmly in your right hand.
 - c) Turn gas cup **clockwise only (c)** and pull cup out to the right.

⚠ WARNING! do not turn gas cup anti-clockwise, as this will damage the internal spring.

 - d) Unscrew the copper contact tip (*right hand thread*) to remove.
- 4.2.6. Check welder is switched off "0", (fig 5) and that the earth clamp is away from the torch tip. Connect the welder to the mains power supply and set the voltage switch to one.
- 4.2.7. Set the wire speed knob to position 5 or 6. (fig 5. the higher the number the faster the speed) Keeping the torch cable as straight as possible and press the torch switch. The wire will feed through the torch.
- 4.2.8. When wire has fed through, switch welder off, unplug from mains.
 - a) Take torch in left hand and screw contact tip back into place.
 - b) Grasp gas cup in right hand, push onto torch head and turn **clockwise only**.

⚠ WARNING! do not turn gas cup anti-clockwise, as this will damage the internal spring.

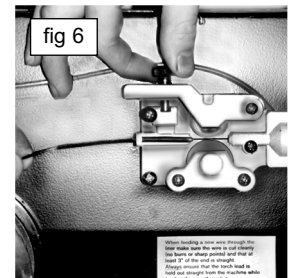
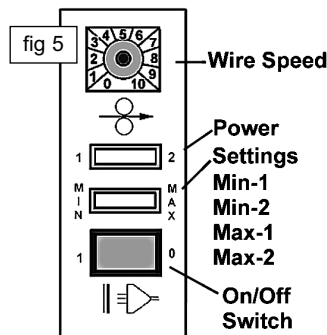
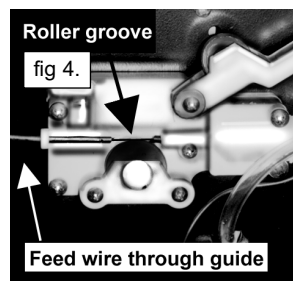
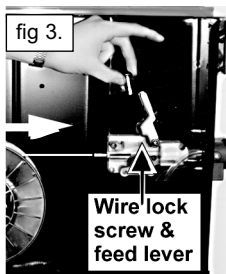
 - c) Cut wire so that it is just protruding 1/4" from the cup.



4.3. Setting wire tension.

IMPORTANT: You must set the correct tension, too little or too much tension will cause problematic wire feed and result in poor welding.

- 4.3.1. For 0.6mm wire in mild steel the wire lock screw must be tightened fully and undone approximately two to three complete turns (fig 6).
- 4.3.2. Tension between rollers is checked by slowing down the wire between your fingers. If top feed roller skids the tension is correct. Use as low a tension as possible, too high a tension will deform wire and result in a blown fuse.



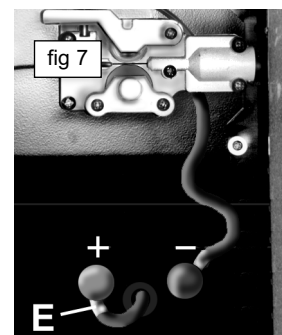
5. GASLESS OPERATING

⚠ WARNING! ENSURE YOU HAVE READ, UNDERSTOOD AND APPLY SAFETY INSTRUCTIONS BEFORE OPERATING THE MACHINE. MAKE SURE THE MACHINE IS SWITCHED OFF AT THE MAINS. IF WELDING A VEHICLE, DISCONNECT THE BATTERY OR FIT AN ELECTRONIC CIRCUIT PROTECTOR.

- 5.1. Ensure the welder is disconnected from the main power supply, open the side panel and check the Earth clamp wire is connected to the POSITIVE (+) terminal, and the power (torch) lead is connected to the NEGATIVE (-) terminal (fig 7).
- 5.2. Connecting the Earth Clamp.

To ensure a complete circuit, the earth clamp must be securely attached to work piece that is to be welded.

 - a) Obtain Best connection by grinding the point of contact on the workpiece before connecting clamp to the workpiece.
 - b) The weld area must also be free of paint, rust, grease, etc.
 - c) If welding a vehicle, disconnect or fit a "Electronic Circuit Protector" to battery available from your Sealey dealer.
- 5.3. Wire feed switch controls the speed of wire feed. In principle, the lower the amperage number, the slower the wire speed required.
- 5.4. Power settings are Min & 1 = low, Min/2, Max/1, to Max/2 = high, (fig 5) and set the wire speed accordingly. Wire from the spool is automatically fed through an insulated liner in the torch to the tip. The torch assembly consists of a switch, liner, gas HOSE, (of course, no gas will be omitted with a gasless operation), and control cable. The 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 onto the work.



6. CONVERSION TO MIG (GAS) WELDING

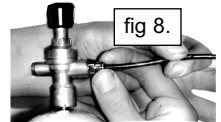
For welding Stainless Steel or Aluminum, (with the exception of model PMG100), your gasless mig welder can be converted to a conventional mig welder. To convert to gas, just order a reel of regular wire, a bottle of gas and a conversion kit. Kit contains regulator plus tips and nozzles.

6.1. WELDER CONVERSION

- 6.1.1. Ensure the welder is disconnected from the mains power supply and open the side panel. Re-connect the power leads as follows. Remove the Earth clamp cable from the POSITIVE (+) terminal (fig 7. E) and the power (torch) cable from the NEGATIVE (-) terminal. Connect the Earth to the NEGATIVE terminal and the power (torch) cable to the POSITIVE terminal.
- 6.1.2. Remove flux cored wire and fit steel wire (0.6 or 0.8mm) and turn wire feed roller to the appropriate size (fig 4), and tension as in 4.3.

6.2. CONNECTING THE GAS CYLINDER

- 6.2.1. Fit chrome plated wire carrier to the back of machine by pressing together and releasing it into the slots provided.
- 6.2.2. Screw the flow regulator to the cylinder (**finger tight only**). Once the flow regulator has pierced the cylinder, (note to detect sound of gas escaping), screw flow regulator one full turn which is sufficient to seal the cylinder.
⚠ WARNING! excessive tightening of the flow regulator will compress the rubber washer at the bottom of the flow regulator thus allowing the gas to slowly escape without being immediately detected.
- 6.2.3. To release the gas hose, press the collet on the quick coupler and pull the hose (fig 8).
- 6.2.4. With the set on, turn the top knob halfway for 2 litres/minute, and all the way for maximum of 4 litres/minute.
- 6.2.5. Always remove the flow regulator after use if the machine is to be stored for any length of time.



6.3. GAS TYPES AND THEIR USE.

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 Argon/CO₂ mixture.
To weld aluminium use: ✓ Argon gas, ✓ 0.8mm Contact Tip, ✓ 0.8mm Aluminium Wire, (MIG/2/KAL08).

6.4. OTHER

You can use large industrial cylinders if preferred, (the machine is no longer portable). To do so, contact your local Sealey dealer to obtain an industrial regulator and cylinder adaptor kit.

7. MIG/MAG GAS WELDING PRINCIPLES

7.1. Mig/Mag welding. (See fig 5 & 9). A spool of welding wire is placed on spool holder and automatically fed through an insulated liner in the torch to its tip. The torch consist 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. Four power settings increases or decreases the Amperage transferred to electrode. Settings are Min & 1 = low, then Min/2, Max/1, to Max/2 = high. Wire speed must be adjusted according to power 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 the arc welding process is shielded from oxidising air contamination. The shielding gas also assists heating of the weld. The torch is connected to the positive side of a DC rectifier, and negative clamp is attached to the workpiece.

7.2. Spot Welding.

Remove the gas cup and fit a spot welding gas cup. Turn the power and wire speed to the highest setting allowed by your machine. Drill a small hole in the top workpiece. Push the spot gas cup onto the material to be welded. The castellations on the cup keep it the correct distance from the weld pool and allow you to push the two pieces being welded together. Press the torch trigger and hold it for 1 to 3 seconds. Depending on the metal thickness, the wire will feed through during the allotted time and create the weld.

7.3. Preparation for Welding.

WARNING! ENSURE THE MACHINE IS SWITCHED OFF AT THE MAINS. IF WELDING A VEHICLE, DISCONNECT THE BATTERY OR FIT AN ELECTRONIC CIRCUIT PROTECTOR. ENSURE YOU READ AND UNDERSTAND ELECTRICAL SAFETY INSTRUCTIONS IN CHAPTER 1.

7.3.1. Connecting the Earth Clamp.

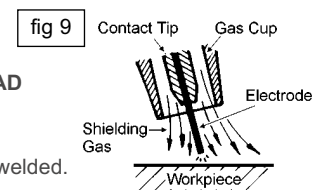
To ensure a complete circuit, the earth clamp must be securely attached to the work piece that is to be welded.

- a) Best connection is obtained by grinding the point of contact on the workpiece before connecting clamp to the workpiece.
- b) The weld area must also be free of paint, rust, grease, etc.
- c) If welding a vehicle, disconnected vehicle battery or fit an "Electronic Circuit Protector" to battery. (Available from Sealey dealer).

7.3.2. Wire feed switch controls the speed of the wire feed. In principle, the lower the amperage number the slower the wire speed.

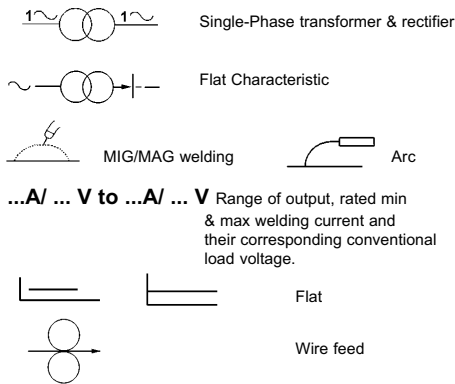
7.3.3. The following table is an estimated duration of disposable cylinders based on a flow rate of 2 litres per minute. Actual duration will be dependant upon various job conditions including the operators welding technique, all times are therefore approximate.

- a) **Refillable cylinder:** CO₂ Model No 300grams = 1 hour approx. (Refill service via local dealers).
- b) **Disposable cylinders:** CO₂ 300grams = 1 - 1/4hours. 600grams = 2 hours. (When comparing price, always check fill weights).
Argon 300grams = 1 hour
CO₂/Argon 300grams = 1 hour



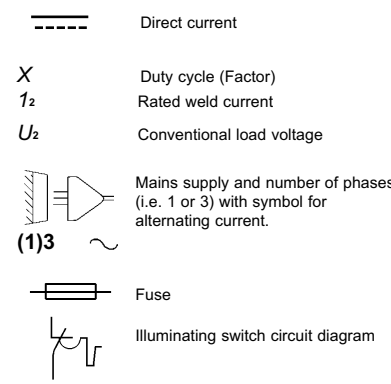
MEANINGS OF MARKINGS, AND SYMBOLS

(Symbols may vary depending on Mig model).



Rated on-load voltage U_0 in V

a) Peak value in case of direct current;
b) Peak & r.m.s. value in case of alternating current.



Alternating current & the rated frequency in hertz i.e. 50Hz

P_{max} ... kW Maximum power consumption in case of a rotating welding power source. This value will only be given when it is not combined with a prime mover.

U_1 ... V/... Hz Rated values of the supply voltage and the frequency.

I_1 Rated supply current.

IP Degree of protection, i.e. 21 or 23.

Welding power sources which are suitable for supplying power to welding operations carried out in an environment with increased hazard of electric shock.



COS φ Cosine Diameter \varnothing

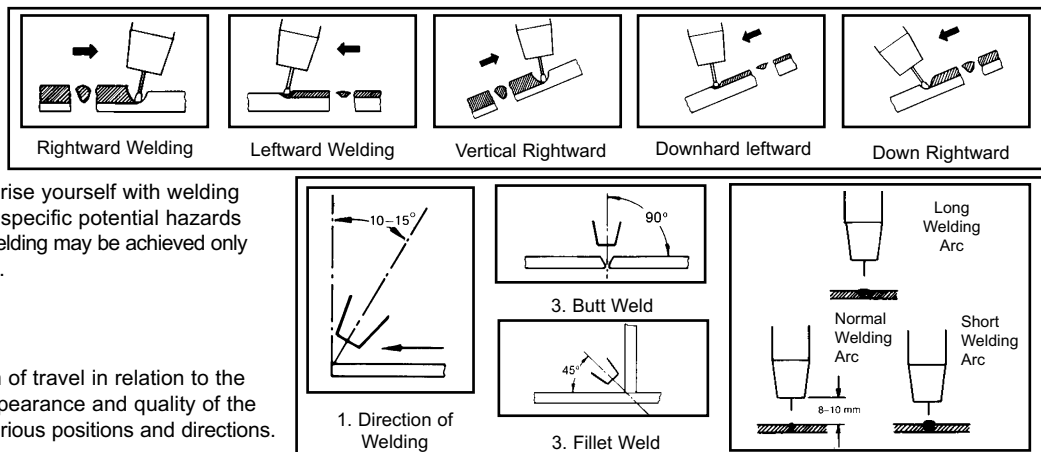
8. WELDING

IMPORTANT.

Should you have no welding experience, we recommend you seek training from an expert source to ensure your personal health & safety. You must familiarise yourself with welding applications and limitations, and specific potential hazards peculiar to welding. Good Mig welding may be achieved only with continued, supervised practice.

For example:

Correct torch angle and direction of travel in relation to the workpiece is essential for the appearance and quality of the weld. Illustrations demonstrate various positions and directions.



Welding with a long arc reduces penetration and widens the arc. This in turn results in more spatter. A long welding arc can be appropriate for welding butt joints in thin materials. Welding with a short arc (at the same weld settings) results in greater penetration and a narrower weld and reduces the amount of spatter. We recommend expert training and supervised practice.

9. MAINTENANCE

9. 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 feeding affects welding. Clean the rollers weekly, especially the feed roller groove, removing all dust deposits.

9. 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.

9. 3. Changing Feed Roller

IMPORTANT: Adjust the feed roller to the corresponding wire size. There are two grooves on the feed roller, 0.6mm and 0.9mm. Always use the groove on the outside of the roller, (the groove nearest to you). To remove the feed roller, undo the two screws and remove the plastic cover (fig 10). Clean and turn, or if damaged change the feed roller and replace the plastic cover accordingly.

9. 4. Contact Tip (to remove tip follow steps in 4.2.5. to 4.2.8.)

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.

9. 5. Gas Cup (to remove cup follow steps in 4.2.5. to 4.2.8.)

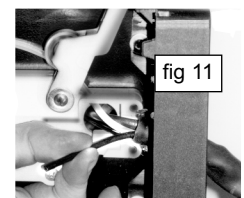
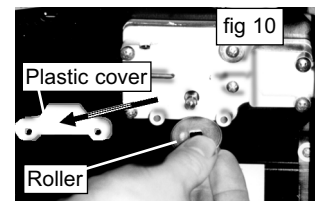
The gas cup must also be kept clean and free from spatter. Build up of spatter inside the gas cup can cause a short circuit at the contact tip which will result in either the fuse blowing on the printed circuit card, or expensive machine repairs. To keep the contact tip free from spatter, we recommend the use of Sealey anti-spatter spray (MIG/722307) available from your Sealey Dealer.

9. 6. Replacing Torch body Models

Remove hook and four screws on handle. Pull apart, pull out torch body. Disconnect gas hose, liner & switch cable. Unscrew swan neck. Fit new body.

9. 7. Replacing the Liner

Wind the wire back on to the spool and secure it. Remove three screws securing torch to machine. Take off plastic cover (fig 11). Undo the torch case and disconnect wire liner from torch head (fig 11). Pull out the liner and insert new one. Reverse the process to re-assemble and trim liner as close to the feed roller as possible.



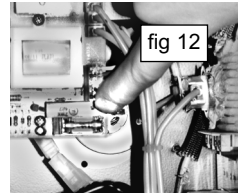
9. 8. Changing gears

An inexperienced welder can allow spatter to build up in the tip and shroud. In severe cases this can block the feed causing gear stripping in the drive motor. 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, you may also observe the feed roller vibrating instead of rotating. Should this be the case, open the gearbox, remove the worn or damaged gears and replace with new ones.

9. 9. Changing Fuses

The fuse is located on the small printed circuit board behind the wire feed roller (fig 12) and is mainly blown for the following reasons:

- ✓ Spatter collecting in the gas cup, causing contact tip to short circuit.
- ✓ Wire tension is too great.
- ✓ A sudden surge of current.



10. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY <i>(Numbers refer to chapter and item heading)</i>
1. Power source stops	Overheating protection activated due to overload	Protection automatically resets when transformer has cooled (about 15 min).
2. No weld current, fuse blowing in 13amp plug	Rectifier blown	Replace rectifier.
3. No weld current	Bad connection between clamp & workpiece Break in earth lead Break in torch lead	Clean or grind contact surface and weld area. Repair or replace earth lead. Repair or replace torch.
4. Feed motor not working, lamp is on	Fuse blown Gear damaged or worn Motor defective	Replace fuse 1.5 amp. (Chapter 9). Replace gears. (Chapter 9). Replace motor (Contact service agent).
5. Wire does not feed, feed roller rotates	Pressure roller improperly adjusted Dirt, copper, dust, etc, have collection in torch liner Gas cup (Nozzle) or tip defective Deformed wire	Adjust tension. Clean the liner from the machine forward. Use compressed air. If too much dirt, replace the liner. (Chapter 9). Replace gas cup (nozzle) and/or tip. (Chapter 9). Check roller tension and adjust it if necessary (Chapter 4).
6. Wire feeds unevenly.	Dirt, etc, in liner Gas cup (Nozzle) or Tip defective Gas cup (Nozzle) spattered Feed roller groove clogged Feed roller groove deformed Pressure roller tension improper	Clean the liner from the machine forward. Use compressed air. Replace gas cup (nozzle) and/or tip. (Chapter 9). Clean or replace gas cup (nozzle) (Chapter 9). Clean feed roller. (Chapter 9). Replace feed roller. (Chapter 9). Adjust tension. (Chapter 4).
7. Unstable arc.	Incorrect settings Impurities in weld area Worn or defective gas cup (nozzle)	Use correct settings. Clean and/or grind workpiece. (Chapter 5). Replace gas cup (nozzle). (Chapter 9).
8. Porous weld	No gas Gas cup clogged Draft blowing away shielding gas Rusty or dirty joints Torch too far from or at wrong angle to work Gas leak	Open gas cylinder, regulate gas flow. Clean or replace cup. (Chapter 9). Screen off welding site or increase gas flow. Clean or grind the workpiece (Chapter 5). The distance from gas cup to workpiece should be 8-10mm and torch angle as (Chapter 8). Check hoses, connections and torch assembly. (Chapter 9). Press the gas cup in correction position.
9. Electrode sticking in gas cup (nozzle)	Worn or defective gas cup (nozzle) Electrode deformed Wire speed too slow	Replace gas cup (nozzle). (Chapter 9). Check roller tension. (Chapter 4). See recommendations for wire speed. (Chapter 5).
10. Irregular weld head	Torch incorrectly held Wire weaving in weld pool	Use correct torch angle. (chapter 8). Check roller tension and adjust as needed. (Chapter 4).
11. Weld bead too narrow and raised	Weld current too high Weld speed too low	Increase power and wire speed. (Chapter 5). Move torch slower and weave a little more.
12. Weld bead too wide	Weld current too high Weld speed too low Arc too long	Decrease power and wire speed. (Chapter 5). Move torch faster and weave less. Bring torch closer to workpiece.
13. Poor penetration	Weld current too high Arc too long	Increase power and wire speed. (Chapter 5). Bring torch closer to workpiece.
14. Excessive penetration	Weld current too high weld speed too slow incorrect distance of torch to workpiece	Decrease power and wire speed. (Chapter 5). Move torch faster. Torch distance should be 8-10mm.
15. Fuse blowing	Tension too great Gas cup contact tip clogged	Release tension. (Chapter 4). Clean gas cup and contact tip. (Chapter 9).

SEALEY POWER WELDERS

Declaration of Conformity We, the sole importer into the UK, declare that the products listed below are in conformity with the following EEC standards and directives.

**Models: GASLESS MIG WELDERS MODELS
PMG100, PMG110, PMG135XT, PMG155XT**

Low Voltage Directive (S.I. 1994/3260) 73.23/EEC

EMC Directive (S.I. 1992/2372 & Amendments).
89/336/EEC



The construction files for these products are held by the Manufacturer and may be inspected on request by contacting Jack Sealey Ltd

Signed by Mark Sweetman

1st January 2000

For Jack Sealey Ltd. Sole importer into the UK of Sealey as Power Welders

NOTE: *It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.*

IMPORTANT: No liability is accepted for incorrect use of this equipment

WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.

INFORMATION: Call us for a copy of our latest catalogue on 01284 757525 and leave your full name and address including your postcode.

SEALEY POWER WELDERS

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