INSTRUCTIONS FOR:

STEEL BLADED CUT-OFF SAW

MODEL No: **SM2254**

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 AND CAUTIONS. USE THIS 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. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

1. SAFETY INSTRUCTIONS

1.1. **ELECTRICAL SAFETY**

❒ **WARNING!** It is the responsibility of the owner and the operator to read, understand and comply with the following:
You must check all electrical products, before use, to ensure that they are safe. You must inspect power cables, plugs, sockets and any other connectors for wear or damage. You must ensure that the risk of electric shock is minimised by the installation of appropriate safety devices. A Residual Current Circuit Breaker (RCCB) should be incorporated in the main distribution board. We also recommend that a Residual Current Device (RCD) is used. It is particularly important to use an RCD with portable products that are plugged into a supply which is not protected by an RCCB. If in any 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 that all portable electrical appliances, if used on business premises, are 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 those appliances and the safety of the appliance operators. If in any doubt about electrical safety, contact a qualified electrician.

1.1.3. Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply. See 1.1.1. and 1.1.2. and use a Portable Appliance Tester.

1.1.4. Ensure that cables are always protected against short circuit and overload.

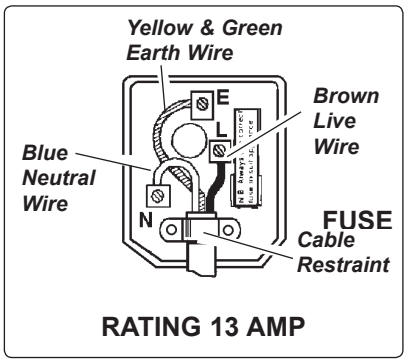
1.1.5. Regularly inspect power supply cables and plugs for wear or damage and check all connections to ensure that none is loose.

1.1.6. Important: Ensure that the voltage marked on the appliance matches the power supply to be used and that the plug is fitted with the correct fuse - see fuse rating at right.

1.1.7. DO NOT pull or carry the appliance by the power cable.

1.1.8. DO NOT pull the plug from the socket by the cable.

1.1.9. DO NOT use worn or damaged cables, plugs or connectors. Immediately have any faulty item repaired or replaced by a qualified electrician. When a BS 1363/A UK 3 pin plug is damaged, cut the cable just above the plug and dispose of the plug safely.
Fit a new plug according to the following instructions (UK only).
a) Connect the GREEN/YELLOW earth wire to the earth terminal 'E'.
b) Connect the BROWN live wire to the 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 outer insulation extends beyond the cable restraint and that the restraint is tight.
Double insulated products, which are always marked with this symbol ⧈, are fitted with live (brown) and neutral (blue) wires only. To rewire, connect the wires as indicated to the right -
DO NOT connect either wire to the earth terminal.



RATING 13 AMP

1.1.10. Products which require more than 13 amps are supplied without a plug. In this case you must contact a qualified electrician to ensure that a suitably rated supply is available. We recommend that you discuss the installation of an industrial round pin plug and socket with your electrician.

1.1.11. If an extension reel is used it should be fully unwound before connection. A reel with an RCD fitted is preferred since any appliance plugged into it will be protected. The cable core section is important and should be at least 1.5mm², but to be absolutely sure that the capacity of the reel is suitable for this product and for others which may be used in the other output sockets, we recommend the use of 2.5mm² section cable.

1.2. GENERAL SAFETY

❒ **WARNING!** Disconnect the saw from the mains power, and ensure the cutting blade is at a complete standstill before attempting to change accessories, service or perform any maintenance.
✓ Maintain the saw in good condition (use an authorised service agent).
✓ Replace or repair damaged parts. *Use recommended parts only. Unauthorised parts may be dangerous and will invalidate the warranty.*
✓ Locate the saw in a suitable work area. Ensure the surface is flat and firm. Keep area clean and tidy and free from unrelated materials, and ensure there is adequate lighting.
✓ Keep the saw clean for best and safest performance and check moving parts alignment regularly.
❒ ***WARNING!*** *Before each use check that blade is secure and that it is not worn or damaged. If worn or damaged replace immediately.*
❒ **WARNING!** Keep guard and holding screws in place, tight and in good working order. Check regularly for damaged parts. A guard, or any other part, that is damaged must be repaired or replaced with a new one, before the saw is used. The safety guard is a mandatory fitting where saw is used on premises covered by the Health & Safety at Work Act.
✓ Remove adjusting keys and wrenches from the saw and its vicinity before turning it on.
❒ **WARNING!** Wear approved safety eye protection, ear defenders, gauntlets and, if dust is generated, respiratory protection.
✓ Remove ill fitting clothing. Remove ties, watches, rings and other loose jewellery and contain long hair.
✓ Keep hands and body clear of the work table when operating the saw and position your body in line with the blade whilst cutting.
✓ Maintain correct balance and footing. Ensure the floor is not slippery and wear non-slip shoes.
✓ Always clamp workpiece in the base vice. NEVER hold a workpiece by hand.
✓ Keep children and unauthorised persons away from the working area.
✓ Avoid subjecting blade to excessive strain, always ease blade down against workpiece (a harsh downward impact may break the blade or teeth). Do not apply undue force on the handle in order to cut workpiece. Maintain a controlled cutting speed through the workpiece.

❒ **WARNING!** DO NOT switch the saw on whilst the blade is in contact with the workpiece. Bring the rotating blade to the workpiece. and avoid un-intentional starting of the saw.
✗ DO NOT hold the workpiece by hand. Use base vice to secure the workpiece.
✗ DO NOT use the saw for a task it is not designed to perform.
✗ DO NOT allow untrained persons to operate the saw.
✗ DO NOT get the saw wet or use in damp or wet locations or areas where there is condensation.
❒ **WARNING!** DO NOT use saw where there are flammable liquids, solids or gases such as petrol, paint solvents, waste wiping rags etc.
✗ DO NOT operate the saw if any parts are missing or damaged as this may cause failure and/or personal injury.
✗ DO NOT remove the safety guard whilst in use.
✗ DO NOT attempt to remove a workpiece until the blade has stopped rotating.
✗ DO NOT touch the workpiece close to the cut as it will be very hot. Allow to cool.
✗ DO NOT leave the saw operating unattended.
✗ DO NOT operate the saw when you are tired or under the influence of alcohol, drugs or intoxicating medication.
✓ When not in use switch the saw off and isolate from the power supply. Store in a safe, dry, childproof area.

2. APPLICATION & SPECIFICATIONS

The SM2254 is a circular saw designed to cut ferrous metal - including structural steel - bars and pipes. It **should not** be used to cut any other materials. Blade guard, bar stop, integral workpiece vice and coolant system are included.

Specifications:

Blade sizes	See Blade Chart
Max.cutting capacity	See Blade Chart
Max. vice opening	80mm
Motor (Input/Output)	230V 50Hz, 4.5Amps / 750Watts
Blade speed	52rpm
Mitre cuts	0-45º
Coolant	Water + Sealey SCO/5L soluble oil (minimum 10% oil)
Coolant capacity	2.0ltr
Oil (gear box)	Mobil Glycole 30 or equivalent
Oil capacity	0.4ltr
Weight	60Kg
Sound pressure level- average	65dB(A)
- peak	70dB(A)

"B" toothing:
Normal large toothing with or without shaving breaking incision

"C (HZ)" toothing:
Large toothing with roughing tooth with rake on both sides, alternating with a finishing tooth without rake.

Blade Chart

Workpiece		SM 2254	
Tube		Max blade dia. 225mm	
Dia. mm	Wall mm	Tooth pitch mm	Shape
10 - 80	<2	4-6	B shaped
10 - 80	2 - 5	8	C solid
20 - 80	5 - 10	8	C solid
20 - 80	>10	8	C solid
Solid bar			
<20		8	C solid
20-50		10	C solid

3. CONTENTS & ASSEMBLY

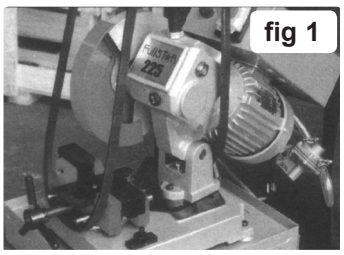


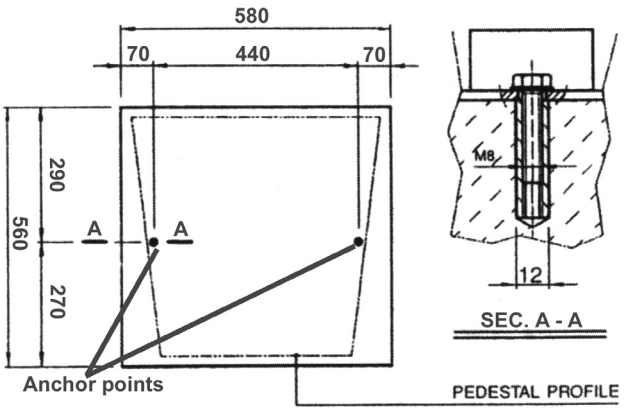
fig 1

❒ **WARNING!** For safe handling and movement use a lift truck or crane. Slings should be positioned as shown in fig 1.

3.1. Unpack the product and check that all components and tools are present and undamaged. If any problem is noted contact your supplier immediately.

3.2. Set the saw on a flat, stable work bench, or surface strong enough to support the saw and any workpiece.
Mount the unit to the working surface, as shown in fig.2, using screws and expansion plugs. Ensure that it is sitting level.
Saw can be positioned directly on a cement floor using screws & expansion plugs or tie rods sunk in cement.
Be sure to maintain a safe distance between the saw and any walls/machinery. A minimum of 800mm clearance is required at the rear.

fig 2



3.3. Assembling loose parts/accessories.

3.3.1. Screw the head lever into position (make secure, but do not overtighten).

3.3.2. Fit the bar holding rod (see parts diagram, item 6).

3.3.3. Fix the pedestal firmly onto the base.

3.4. Fitting/replacing a blade.

▲ ***DANGER! The use of damaged blades is dangerous and may cause personal injury.***

❒ ***WARNING! Ensure the saw is isolated from the mains power supply before attempting to change the blade.***

Before using a saw blade check that it is undamaged, undistorted and the teeth are sharp.

3.4.1. Release the mobile guard and turn it back (fig.3).

3.4.2. Grip a block of wood in the vice and lower the old/damaged blade (if present) on it.

3.4.3. Insert the key provided and remove the screw (fig 4) by turning in a clockwise direction (it has a left-handed thread) then slip off the flange that holds the blade.

3.4.4. Fit the new blade, being sure to check the cutting direction of the teeth, then replace the flange , the screw and the mobile guard.

3.5. Fill coolant tank (fig 5A). See Section 2 Specifications for coolant type. Confirm tap (fig 5B) is open.

3.6. Check sight-glass and visually confirm that there is oil in the gearbox (fig 11C).

3.7. Pull control lever forward as far as possible, to lower blade, and confirm that blade is clear of saw base in this position. If blade is touching base then adjust abutment screw (fig 6A) to achieve clearance. Note: Fig.6 shows typical abutment screw location which vary slightly between models.

3.8. Raise blade as far as possible and confirm that rear of motor is clear of base. If motor is touching base then adjust abutment screw (fig 6B) to achieve clearance.

3.9. Confirm all tools have been removed from saw, main switch is 'Off' and blade guard is in position.

fig 3

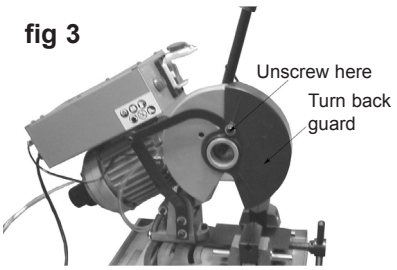


fig 4

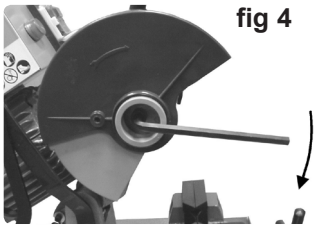


fig 6

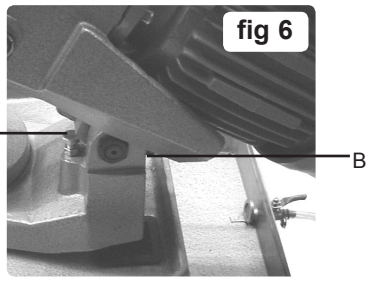
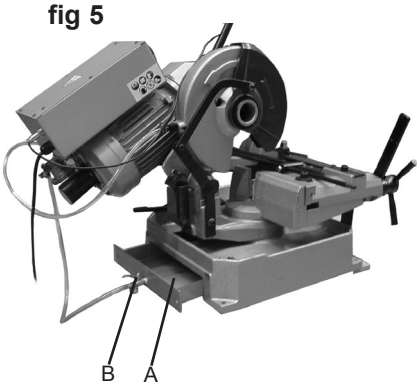


fig 5



4. OPERATING INSTRUCTIONS

❒ **WARNING!** ***Before using saw ensure you wear approved safety goggles, ear defenders, appropriate dust mask if saw generates dust and safety gloves, and that all other safety instructions in chapter 1 are followed carefully. Do not operate the saw if you suspect any part of it is overly worn, damaged or malfunctioning in any way.***

4.1. Securing workpiece.

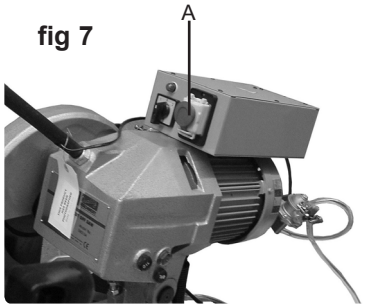
4.1.1. Ensure the saw is switched off at the main switch and then secure workpiece in the base vice, tightening via the handwheel. We recommend that you place a block of wood (slightly narrower than the work piece) in the vice below the item to be cut to act as a support.

4.1.2. When cutting a long workpiece use additional supports along the length.

4.2. The 'On' and 'Off' switch.

With saw connected to mains power supply, ensure that the machine is not in emergency stop condition and if it is, release the emergency stop button (fig 7A) by pushing the red button upwards and releasing the catch. Start saw by depressing the button located in the handle of the head control arm. Check to ensure that sufficient coolant/lubricant is being delivered. Release the handle button to stop saw during normal operation. If malfunction occurs/appears imminent, press the red emergency stop button to halt machine operation immediately.

fig 7



4.3. Operating.

❒ **WARNING!** *DO NOT switch the saw on whilst the blade is in contact with the workpiece. Bring the rotating blade to the workpiece.*

4.3.1. The blade must be running at maximum speed and coolant flowing before attempting to lower the cutting edge onto workpiece.

4.3.2. Lower the blade slowly and smoothly towards the workpiece (avoid jerky movements).

4.3.3. Exert adequate downward pressure on the handle to allow cutting according to the type and size of the material you are working with. Avoid subjecting the blade to excessive strain, always ease the blade down against workpiece (a harsh downward impact may break the blade or damage the teeth).

Do not apply undue force on the handle in order to cut workpiece. Maintain a controlled cutting speed through the workpiece.

4.3.4. When starting to cut with a new blade, the first 2-3 cuts must be made exerting only slight pressure on the handle, so that the time taken to complete the cut is approximately double that taken during normal operation.

4.4. Completing the cut.

4.4.1. When cutting is completed, carefully raise the blade to its full extent.

4.4.2. Release the button and wait until the blade has fully stopped before attempting to remove the workpiece.

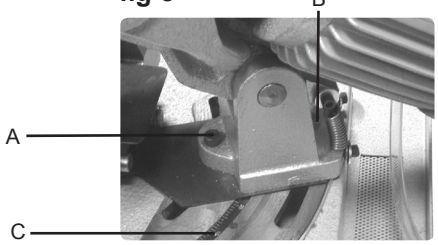
4.5. Mitre cutting.

To cut the workpiece at an angle the saw head must be adjusted.

4.5.1. Loosen the screws holding the head unit to the pedestal (fig 8A & 8B).

4.5.2. Slide the head unit (which rotates about a pivot point set beneath the vice) to the required angle, reading the graduated scale from the right hand base of the head (fig 8C).

fig 8



5. MAINTENANCE

❒ **WARNING!** Ensure the saw is isolated from the mains power supply before attempting any maintenance.

5.1. Daily maintenance.

5.1.1. General cleaning of the saw to remove accumulated shavings/filings.
5.1.2. Top up the level of lubricating coolant in the coolant tank (fig 5).
5.1.3. Check the blade for wear.
5.1.4. Lift the head to a high position to avoid stress on the return spring.
5.1.5. Check the guards and emergency stop for signs of wear/malfunction.

5.2. Weekly maintenance.

5.2.1. More thorough cleaning of the saw to remove accumulated shavings, especially from the lubricant fluid tank.
5.2.2. Clean the lubricant/coolant filter (fig 9A) and the suction area (fig 9B).
5.2.3. Clean and oil the screw and sliding guides of the vice.
5.2.4. Clean the blade housing.
5.2.5. Inspect the blade for any sign of wear/damage. Replace if necessary (see section 3.4. ***Fitting/replacing a blade***).

5.3. Monthly maintenance.

5.3.1. Check tightness of the screws on the motor, the pump, the vice and guards.
5.3.2. Check that the guards are not damaged.
5.3.3. Oil the head hinge pin.

5.4. Six-monthly maintenance.

5.4.1. Change the oil in the reduction unit (Mobil Glycole 30 or equivalent) as follows.
5.4.2. Remove the connecting plug from the electric box (fig 10A) and unscrew the head control arm (fig 11A).
5.4.3. Drain off the old oil from the drain hole (fig 11B).
5.4.4. Pour in new oil through the control arm fixing point - oil level must reach the mark within the glass (fig 11C). Be sure to maintain the head in a horizontal position throughout the procedure.
5.4.5. Reattach the head control arm and the connecting plug.
5.4.6. Switch on the saw and test the operation of the emergency stop button.

5.5. Loose head: Should the hinge become loose, tighten the screws (fig 11D) being sure not to overtighten.

5.6. Lubricating coolant pump.

5.6.1. Should the pump need replacing, detach the coolant tubes and remove the fastening screws.
5.6.2. Replace the pump (see parts list, product no. SM2254.78) taking care to keep the driving stem centred on the drive shaft bearing.
5.6.3. Tighten the fastening screws and reconnect the coolant tubes.

fig 9

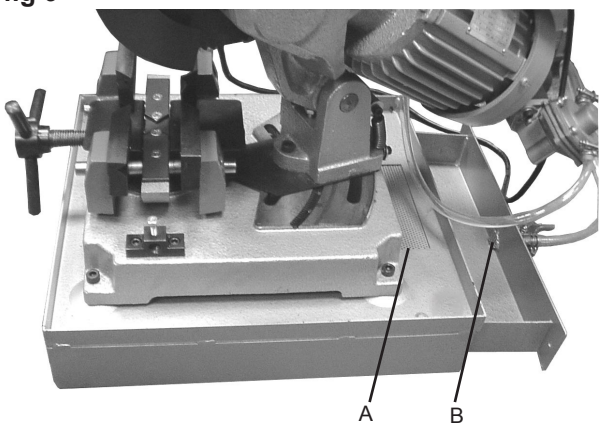


fig 10

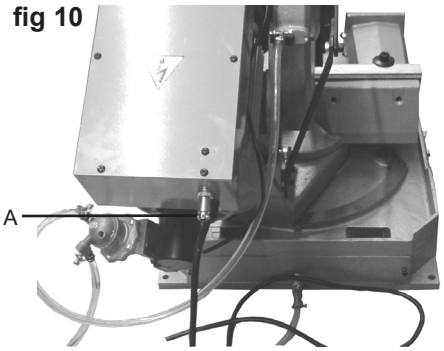
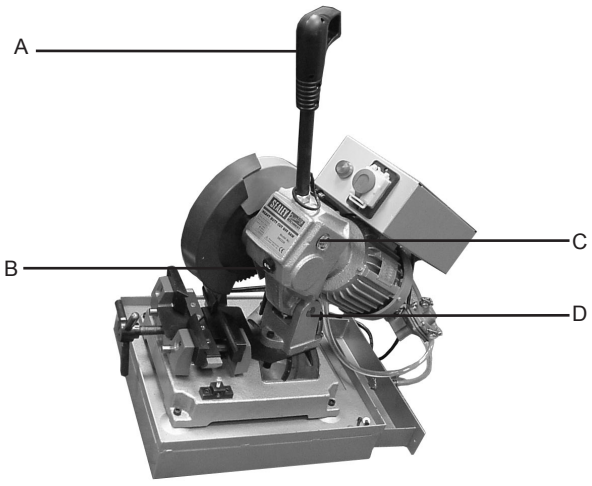


fig 11



6. TROUBLESHOOTING

FAULT	PROBABLE CAUSE	REMEDY
Tooth breakage	Advance too fast.	Decrease advance, exert less cutting pressure.
	Wrong cutting speed.	Change blade speed and/or diameter.
	Wrong tooth pitch.	Choose a suitable blade.
	Low quality blade.	Use a high quality blade.
	Ineffective gripping of the part in the vice.	Check vice and ensure part is held securely.
	Previously broken tooth left in cut.	Completely remove all foreign objects from the cut.
	Cutting resumed on a groove made previously.	Turn the part and begin the cut elsewhere.
	Insufficient lubricating coolant or wrong emulsion.	Check level in coolant tank. Ensure that there are no blockages preventing the transfer of coolant.
	Sticky accumulation of material on the blade.	Check the mix of lubricating coolant and choose a better quality blade.

FAULT	PROBABLE CAUSE	REMEDY
Premature blade wear	Initial cutting speed too high (see section 4.3.4). Wrong cutting speed. Unsuitable tooth profile/pitch. Low quality blade. Insufficient lubricating coolant.	See section 4.3.4. Change blade speed or diameter. Choose a suitable blade. Use a high quality blade. Check level in coolant tank. Ensure that there are no blockages preventing the transfer of coolant.
Chipped blade	Hardness, shape or flaws in the material. Wrong cutting speed. Wrong tooth pitch. Vibrations. Low quality blade. Incorrect emulsion of the lubricating coolant.	Reduce the cutting pressure and/or the advance speed. Change blade speed or diameter. Choose a suitable blade. Check that part to be cut is gripped securely. Use a high quality blade. Check the percentage of oil in the water.
Blade vibration	Wrong tooth pitch. Unsuitable tooth profile. Ineffective gripping of the part in the vice. Dimensions of the solid section too large with respect to the maximum cutting capacity. Blade diameter too large.	Choose a suitable blade. Choose a suitable blade. Check vice and ensure part is held securely. Adhere to the maximum cutting capacity noted within these instructions. Decrease the blade diameter, adapting it to the dimensions of the part to be cut i.e. such that the cutting part of the blade is not too large for the shape of the part to be cut.
Ridges on the cutting surface	Blade diameter too large. Ineffective gripping of the part in the vice. Advance too fast. Blade teeth are worn. Insufficient lubricating coolant. Toothing does not unload shavings well.	Decrease the blade diameter, adapting it to the dimensions of the part to be cut i.e. such that the cutting part of the blade is not too large for the shape of the part to be cut. Check vice and ensure part is held securely. Decrease advance, exert less cutting pressure. Replace blade. Check level in coolant tank. Ensure that there are no blockages preventing the transfer of coolant. Choose a blade with a larger tooth pitch that allows better unloading of shavings and that holds more lubricating coolant.
Cut is not straight	Advance too fast. Ineffective gripping of the part in the vice. Blade head is not straight. Blade sides are differently sharpened. Blade is thinner than the commercial standard. Dirt on the vice.	Decrease advance, exert less cutting pressure. Check vice and ensure that part is not moving sideways. Adjust the head (according to the graduated scale). Be sure to choose quality blades, paying attention to type and construction characteristics. Carefully clean the vice.
Blade sticks in the cut	Advance too fast. Low cutting speed. Wrong tooth pitch. Sticky accumulation of material on the blade. Insufficient lubricating coolant.	Decrease advance, exert less cutting pressure. Increase speed. Choose a suitable blade. Check the mix of lubricating coolant and choose a better quality blade. Check level in coolant tank. Ensure that there are no blockages preventing the transfer of coolant.
Green pilot light “HL” does not light up	Fused lamp. Power supply. Fuses “L1” and “L2” Short circuits. Emergency stop button depressed. Thermal probe built into the stator winding has tripped due to motor overheating.	Change it. Check: - phases - cables - socket - plug Check fuses. See your authorised dealer for advice. Ensure that it is in the “run” position. Reset and if still inoperative, contact your authorised Sealey dealer for repairs.
Motor stopped with pilot light “HL” lit	Socket and plug connecting the electric box/ microswitch in the head control arm. Microswitch in head control arm. Motor.	Check that plug is correctly inserted. Check operation. Contact your authorised Sealey dealer for replacement/repair. Check that it is not burnt and that it turns freely. Contact your authorised Sealey dealer for replacement.

NOTE: *It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.*
IMPORTANT: No liability is accepted for incorrect use of this product.
WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.
INFORMATION: For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.

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