

Thank you for purchasing a Sealey quality 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. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.

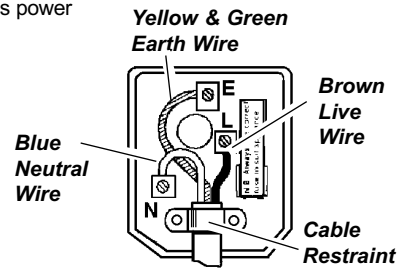
1. SAFETY INSTRUCTIONS

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 that they are safe to use. 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 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 that 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 for wear and damage and all electrical 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'.**



FUSE RATING
THIS PRODUCT MUST BE FITTED WITH A
5 AMP FUSE

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

- Double insulated products are fitted with live (BROWN) and neutral (BLUE) wires only. Double insulated products are always 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 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 an 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 cores of the cable is important and should be no less than 1.5mm². However, 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.

1.2. GENERAL SAFETY

- WARNING!** Disconnect the bandsaw from the power source before servicing, changing accessories or performing any other maintenance.
- Familiarise yourself with applications, limitations and hazards of the product.
- Maintain the bandsaw in top condition. Keep it clean and keep blades sharp for best and safest performance.
- Use original Sealey spare parts only. Unapproved parts may be dangerous and will invalidate the warranty.
- Keep all guards and fixing screws in place, tight and in working order. Check regularly for damaged parts. A guard or any other part that is damaged should be repaired or replaced before the saw is next used. Check also for proper alignment of moving parts, loose mountings, or any other condition that could affect the operation of the saw.
- Ensure that the space allocated for use and maintenance of the bandsaw is adequate, free from unrelated materials and has good lighting.
- Remove any adjusting keys and wrenches from the saw before operating.
- Wear approved eye and ear protection when operating the bandsaw. If dust is produced, wear an approved face or dust mask.
- Keep correct footing and balance at all times.
- Always secure the workpiece with the vice.
- Keep children and unauthorised persons away from the work area, especially when the saw is in operation.
- Ensure that large or oversize workpieces are supported at table height. Ensure that you use a suitable support for any workpiece that does not have a flat surface. Be cautious when cutting workpieces which are irregular in cross-section as the saw blade could be pinched.
- WARNING!** Round bars and tubing have a tendency to roll while being cut, causing the blade to "bite". **DO NOT** cut such items without clamping or blocking the workpiece.
- WARNING!** Never force the blade through the workpiece.
- The bandsaw is designed for light metal cutting work in engineering workshops, garages, metal fabricators, etc. **DO NOT** attempt to use it for any other purpose.

- ❑ **WARNING!** The SM658 bandsaw **MUST NOT** be used to cut **non-metallic materials** (including wood). To do so will invalidate your insurance cover and warranty and may cause damage and/or personal injury.
- ✗ Do not wear loose or ill-fitting clothing. Remove ties, watches, rings and other jewellery. Tie up, or adequately cover, long hair.
- ✗ Do not start the bandsaw until the workpiece is secure and the blade has been lowered to just above the workpiece.
- ✗ Do not use the bandsaw with the blade guard or pulley cover removed.
- ✗ Do not use damaged or deformed bandsaw blades.
- ✓ Turn the saw off **before** raising the blade.
- ✗ Do not run the saw with the blade in the raised position - unless set-up for vertical cutting.
- ✗ Do not use the bandsaw in wet or damp locations.
- ✗ Do not use the bandsaw in areas where fumes from paint, solvents, or other flammable liquids pose a potential hazard. Keep all flammable materials (including wipers or cleaning rags) away from the saw and dispose of according to local regulations.
- ✗ Do not stand on the saw.
- ✗ Do not leave the bandsaw running unattended. Turn power switch 'Off' and do not leave the area until the blade has come to a complete stop.
- ✗ Do not use whilst under the influence of drugs, alcohol or intoxicating medication. Do not use the bandsaw if you are tired.

2. INTRODUCTION & SPECIFICATION

2.1. Introduction

The SM658 complies with requirements of the Machinery Safety Directive 98/37/EC and is fully CE approved. The bandsaw has a heavy-duty cast base and a swivel arm with a fully guarded blade for horizontal and vertical cutting of light metals. A magnetic no-load voltage switch prevents the motor from re-starting in the event of a power failure or a blade jam. An oil-bath gear box and sealed-for-life drive bearings give fast and smooth operation. Fully adjustable precision blade guides provide accuracy and long blade life. The saw may be bench mounted or fitted to the optional stand, Model No. SM658/ST, which is available from your Sealey agent.

2.2. Specification

Capacity 90° round.....	Ø100mm	Blade Size	12.7 x 0.64 x 1728mm
Capacity 90° square/rectangle	120 x 190mm	Blade Speeds	0.3, 0.5, 0.8mtr/sec
Capacity 45° round.....	Ø100mm	Motor Power.....	375 watt (1/2hp)
Capacity 45° square/rectangle	105 x 76mm	Power Supply.....	230V/1ph
		Weight.....	65kg

3. ASSEMBLY AND SETUP

3.1. Assembly

Note: Numbers in brackets refer to Parts Diagram Items.

3.1.1. Remove the unit from packing and check that all items in the following list are present and undamaged:

Saw Assembly	Pulley Cover	Stock Stop & Locking Screw	Vertical Cutting Table
Drive Belt	Base Pads x 4	Stock Stop Rod	

3.1.2. Screw the four pads (13) into the base (37).

3.1.3. Remove transit chain (51), retain for future use.

3.1.4. Fit the pulley cover (111) to the body frame (81) using two screws (1) and washers (3) provided.

3.1.5. Fit the drive belt (112) see para.3.3.

3.1.6. Adjust motor position to obtain correct belt tension by tightening tension screw (46), then close pulley cover.

3.1.7. Slide stock stop rod (21) into base, tighten set screw (74) to retain and fit stock stop (19). Lock in position with screw (20).

3.1.8. Adjust abutment screw (53) so that, with body frame down, blade cutting edge is below surface of vice base but body frame is clear of base. Tighten lock nut (80).

3.1.9. If bandsaw is to be used on a bench ensure that it is near enough to the right hand end of the bench to give clearance under motor to allow body frame (81) to be raised to the vertical position.

3.2. Blade selection

The charts at the right show the recommended setup for various metals and cut lengths. Blades are available from your Sealey dealer in four tooth pitches: 6, 10, 14 and 24 tpi (see parts list).

3.3. Adjusting blade speed

Adjust the blade speed to suit the metal to be cut. The recommended pulley selections are shown in the chart to the right.

3.3.1. Disconnect saw from power supply and open the pulley cover (111).

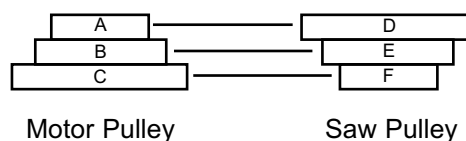
3.3.2. Loosen tension screw (46) on the motor plate to slacken the belt.

3.3.3. Move the belt to the required pulley grooves (see chart).

3.3.4. Tension belt by tightening screw (46) and close the pulley cover.

Cutting Chart for Flat and Round Bar				
Recommended blade teeth per inch (tpi) for nominal cut length				
Cut length	Under 8mm	4-13mm	6-16mm	8-22mm
Tpi	32	24	18	14
Cut length	10-35mm	17-40mm	25-50mm	38-75mm
Tpi	10	8	6	4
Cut length	50-100mm	75-150mm	114-225mm	>200mm
Tpi	3	2	1.25	0.75

Recommended Pulley Selection for Various Metals			
Material	Motor Pulley	Saw Pulley	Blade Speed
Tool, stainless or alloy steel. Bearing bronze.	Small (A)	Large (D)	0.3m/sec
Low to medium carbon steel.	Medium (B)	Medium (E)	0.5m/sec
Aluminium. Copper. Brass.	Large (C)	Small (F)	0.8m/sec



4. OPERATION

- ❑ **WARNING! Before operating the bandsaw ensure that you read, understand and apply the safety instructions in Section 1.**
NOTE: Before operating the bandsaw certain checks and adjustments will need to be carried out. It is very important that these instructions are followed carefully in order that the saw is set up safely and correctly.
 - ❑ **WARNING! The bandsaw is designed for the horizontal and vertical cutting of light metal in engineering workshops, garages, metal fabricators, etc. The SM658 must not be used to cut any other materials (including wood). To do so will invalidate your insurance cover and your warranty and may cause damage and/or personal injury.**
- Note:** The harder the material being cut, the slower the cutting speed should be. The use of a cutting oil is recommended with the higher blade speeds.
- ### 4.1. Horizontal Cutting
- 4.1.1. Ensure that the saw is disconnected from the power supply.
 - 4.1.2. Adjust the blade speed to suit the workpiece material (see para. 3.3).
 - 4.1.3. Raise the body frame (81) as far as possible and lock in position with support plate (18).
 - 4.1.4. Adjust the stock stop to the desired length.
 - 4.1.5. Raise handle of quick grip vice (114) to unlock and slide back vice jaw (115). Insert workpiece against fixed jaw. Slide vice jaw (115) up to workpiece and firmly press down vice handle to clamp it securely.
 - 4.1.6. If an angled cut is required slacken lever screw (6). Rotate mitre plate (7) and body frame (81) to angle required and tighten lever screw (6).
 - 4.1.7. Adjust the two blade guides, by slackening the clamp screws (56 & 66), so that they are close to the workpiece but will not foul it.
 - 4.1.8. Gently lower the body frame until the blade is just above the workpiece. Connect the saw to the power supply and start the saw. **DO NOT** turn on bandsaw until workpiece is secured and blade has been lowered to just above workpiece.
 - 4.1.9. Bring the blade into contact with the workpiece and then release the body frame. If the blade jams and the saw does not automatically shut off, immediately disconnect it from the power supply. Refer to the 'Troubleshooting' section for common problems.
 - 4.1.10. When sawing is completed disconnect from the power supply, raise blade and remove workpiece.
Never raise blade when bandsaw is running and never run bandsaw when blade is raised, unless it has been prepared for vertical cutting.
- ### 4.2. Vertical Cutting
- 4.2.1. Ensure that the saw is disconnected from the power supply and then adjust the blade speed to suit the workpiece material (see para.3.3).
 - 4.2.2. Raise the saw arm to the vertical position and lock with support plate (18).
 - 4.2.3. Remove the two screws (68) from the end face of the lower blade guide, remove blade guard (26) and replace with table (55). Retain table by replacing screws (68).
 - 4.2.4. Adjust upper and lower blade guides so that no more blade is exposed than is required to cut the workpiece. **Note:** The upper blade guide bracket (57) has three threaded holes for lock screw (56) and the lower blade guide bracket (65) has two threaded holes for lock screw (66), giving a wide range of adjustment. In particular this allows the upper guide to be positioned very close to the table for safety when cutting thin workpieces.
 - 4.2.5. When cutting keep hands well clear of the blade and always use a push stick for small workpieces.
 - 4.2.6. When cutting is complete **immediately** switch off saw.
- ❑ **WARNING! Refit blade guard (26) before using saw for horizontal cutting.**
- Note:** The SM658 bandsaw **MUST NOT** be used for cutting wood. To do so will invalidate your insurance cover and warranty and may cause damage and/or personal injury.

5. ADJUSTMENTS

- ❑ **WARNING! BEFORE MAKING ANY ADJUSTMENTS, DISCONNECT SAW FROM POWER SUPPLY.**

5.1. Blade tension

- 5.1.1. Disconnect the bandsaw from the power supply and then remove blade cover.
- 5.1.2. Adjust the blade tension with knob (fig.1.A) so that light thumb pressure on the blade midway between the blade wheels produces a deflection of approximately 1mm. Do not overtighten.
- 5.1.3. Replace blade cover, reconnect to power source and run for two to three minutes to seat the blade.
- 5.1.4. Disconnect saw from the power source, remove blade cover and recheck tension. Replace blade cover.

5.2. Blade guide bearing adjustment

Correct guide bearing (fig.2.B) adjustment is important so that the blade runs smoothly and evenly without twisting or snagging. Each of the outer guide bearings is mounted to an adjustable eccentric bush.

- 5.2.1. Disconnect the bandsaw from the power supply and loosen the bearing pivot (62) lock nut (70) while holding the pivot, immediately above the bearing, with an open ended spanner.
- 5.2.2. Turn the pivot to adjust the bearing. The bearing should barely touch the blade (0.001" clearance). Tighten the lock nut when satisfied with the bearing adjustment. Adjust both outer guide bearings.
- 5.2.3. When satisfied that the adjustment is accurate, carefully turn the blade wheels by hand to see if the blade snags or rubs at any point. Readjust bearing(s) if necessary.

5.3. Blade guide adjustment

- 5.3.1. Disconnect the bandsaw from the power supply.
- 5.3.2. Loosen hex bolt (fig.3.E) and pivot blade adjustment bracket (fig.3.F) until blade is perpendicular to vice bed (49). Retighten hex. bolt.

5.4. Replacing the saw blade

We recommend that you keep a small supply of commonly used saw blades to hand. Change saw blades frequently for best results. Ensure you choose a blade with a pitch suitable for workpiece to be cut (see cutting chart, Section 3).

- ❑ **WARNING! Take care when handling saw blades, blade teeth are very sharp.**

- 5.4.1. Loosen the blade tension, move both front guide bearings away from blade (see para. 5.2.) and remove blade cover.
- 5.4.2. Carefully remove old blade and install new one ensuring that tooth direction is consistent with the blade travelling left-to-right in the cutting area.

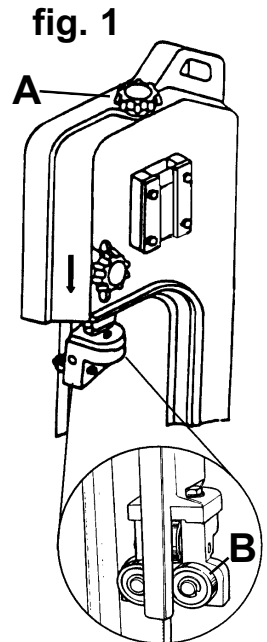


fig. 2

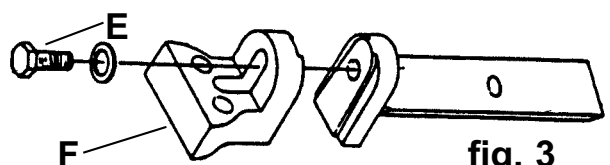


fig. 3

5.4.3. Reset blade tension (see para. 5.1.), check tracking (see para. 5.5.), replace blade cover and adjust guide bearings (see para. 5.2.).

5.5. Blade tracking

Adjustment of the blade tracking is necessary to prevent the blade from twisting or coming off the blade wheels. This adjustment should be made whenever a new blade is fitted (see para. 5.4.).

- 5.5.1. Run saw for a short time and then switch off.
- 5.5.2. Raise body frame (81) and lock with support plate (18), remove blade cover and check blade-to-wheel relationship (tracking). Rear edge of blade should be very close to, but not hard against, the wheel flanges.
- 5.5.3. If inspection indicates that adjustment is required reduce blade tension (see para. 5.1.) and loosen the set screw (74) in drive wheel (71).
- 5.5.4. Move drive wheel in or out on shaft as required to improve tracking and tighten set screw.
- 5.5.5. Having made a small adjustment, tension blade, **replace the blade cover, lower the arm** and run the saw for a short time.
- 5.5.6. Switch saw off and recheck tracking. Repeat adjustment procedure if necessary.

6. MAINTENANCE

- 6.1. Clean saw after each operation and smear unpainted surfaces with oil to prevent rusting.
- 6.2. Annually replace gearbox oil (SAE 90) as follows:
 - 6.2.1. With body frame horizontal remove gearbox cover screws (75), cover (93) and gasket (92).
 - 6.2.2. Place oil container under right hand lower corner of gearbox and then carefully raise body frame fully to drain oil.
 - 6.2.3. Lower body frame, remove any remaining oil from gearbox with clean cloths and then refill with fresh oil. Replace cover and gasket.




7. TROUBLESHOOTING

Excessive blade breakage and/or teeth ripping from the blade.	<ol style="list-style-type: none"> 1. Workpiece is loose in the vice. 2. Incorrect speed or feed. 3. Blade is too fine. 4. Workpiece is too course. 5. Incorrect blade tension. 6. Blade is in contact with workpiece before saw is started. 7. Blade is rubbing on the wheel flange. 8. Blade guides are misaligned. 9. Blade is too thick. 	<ol style="list-style-type: none"> 1. Clamp the workpiece securely. 2. Adjust the speed or feed to suit the workpiece. 3. Replace with a coarser blade. 4. Use the saw at slower speed and use a smaller tpi blade. 5. Adjust blade tension so that it does not slip on the wheel. 6. Place blade in contact with the workpiece only after the saw has started. 7. Adjust blade wheel alignment. 8. Adjust blade guide alignment. 9. Use correct thickness blade.
Premature blade dulling.	<ol style="list-style-type: none"> 1. Blade tpi is too high. 2. Incorrect speed - too fast. 3. Inadequate feed pressure. 4. Hard spots or scale on the workpiece. 5. Blade is twisting. 6. Insufficient blade tension. 7. Blade is slipping. 	<ol style="list-style-type: none"> 1. Replace with a smaller tpi blade. 2. Reduce speed. 3. Increase feed pressure. 4. Reduce speed, increase feed pressure. 5. Replace blade and adjust to the correct tension. 6. Increase blade tension. 7. Increase blade tension and reduce speed.
Unusual wear on side or back of blade.	<ol style="list-style-type: none"> 1. Blade guides are worn. 2. Blade guides are misaligned. 3. Blade guide brackets are loose. 	<ol style="list-style-type: none"> 1. Replace blade guides. 2. Adjust guide pivots. 3. Tighten blade guide brackets.
Motor overheating.	<ol style="list-style-type: none"> 1. Blade tension too high. 2. Drive belt tension too high. 3. Blade too coarse or too fine. 4. Gears need lubrication. 5. Blade is binding in the cut. 	<ol style="list-style-type: none"> 1. Reduce blade tension. 2. Reduce drive belt tension. 3. Use a blade more suitable for the workpiece. 4. Lubricate the gears. 5. Decrease feed and speed.
Bad, crooked or rough cuts.	<ol style="list-style-type: none"> 1. Feed pressure too great. 2. Blade guides are misaligned. 3. Inadequate blade tension. 4. Blade is dull. 5. Incorrect speed. 6. Blade guides are spaced out too far. 7. Blade guide assembly is loose. 8. Blade is too coarse. 	<ol style="list-style-type: none"> 1. Reduce feed pressure. 2. Adjust blade guides. 3. Increase blade tension. 4. Replace the blade. 5. Adjust the speed. 6. Adjust guide spacing. 7. Tighten the guide assembly. 8. Use a finer blade.
Blade is twisting.	<ol style="list-style-type: none"> 1. Blade is binding in the cut. 2. Blade tension is too high. 	<ol style="list-style-type: none"> 1. Reduce feed pressure. 2. Decrease blade tension.

8. DECLARATION OF CONFORMITY

<p>Metal Cutting Band Saw Model: SM658 98/37/EC Machinery Directive 89/336/EEC EMC Directive 73/23/EEC Low Voltage Directive</p>	<p>Declaration of Conformity We, the sole importer into the UK, declare that the product listed here is in conformity with the following standards and directives.</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p>Signed by Mark Sweetman</p> </div> <div style="text-align: center;">  <p>11th July 2000</p> </div> </div> <p>The construction file for this product is held by the Manufacturer and may be inspected, by a national authority, upon request to Jack Sealey Ltd. <i>For Jack Sealey Ltd. Sole importer into the UK of Sealey Quality Machinery.</i></p>
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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 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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