

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.

1.1. 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 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 for wear and damage, and 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 outer insulation extends beyond the cable restraint and that the restraint is tight.**

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

1.1.10. **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 reel is important. Use 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.

1.2. General Safety

⚠ **WARNING!** Disconnect the mortiser from the mains power before changing accessories, servicing or performing any maintenance.

✓ Locate the mortiser in a suitable working area. Fasten the mortiser to a strong flat working surface. Keep area clean and tidy and free from unrelated materials and ensure there is adequate lighting.

✓ Maintain the mortiser in good condition (use an authorised service agent).

✓ Replace or repair damaged parts. *Use genuine parts only. Non-authorised parts may be dangerous and will invalidate the warranty.*

✓ Keep the mortiser clean for best and safest performance and check moving parts alignment regularly.

✓ Keep mortiser tool bits clean and sharp and ensure bit is secured correctly in the mortiser chuck. If worn or damaged replace immediately.

✓ Remove adjusting keys and wrenches from the mortiser and its vicinity before turning it on.

✓ Wear approved eye safety protection.

✓ Handle loose chisels and drill bits with gloves or cloth as they are very sharp, but **DO** remove gloves and/or cloth before operating the mortiser. Keep your hands and fingers away from the mortiser tool bit and chisel when operating.

✓ Remove ill fitting clothing. Remove ties, watches, rings and other loose jewellery, and contain long hair.

✓ Maintain correct balance and footing. Ensure the floor is not slippery and wear non-slip shoes.

✓ Secure work piece by resting against the back stop and top holding clamp.

✓ Ensure there are no foreign objects in the workpiece i.e. nails or screws.

✓ Use the depth stop for accuracy and to avoid drilling into the work table, and avoid unintentional starting.

x **DO NOT** start the mortiser with the tool bit resting against the workpiece. Always bring the operating chisel to the workpiece.

x **DO NOT** assemble a workpiece on the mortiser whilst the cutting tool is working.

x **DO NOT** use the mortiser for a task it is not designed to perform.

x **DO NOT** allow untrained persons to operate the mortiser and keep children and unauthorised persons away from the working area.

x **DO NOT** get the mortiser wet or use in damp or wet locations or areas where there is condensation.

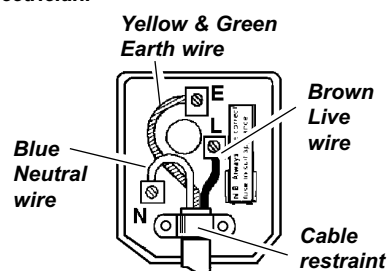
x **DO NOT** use mortiser where there are flammable liquids, solids or gases such as paint solvents, waste wiping or cleaning rags etc.

x **DO NOT** operate the mortiser if any parts are damaged or missing as this may cause failure and/or possible personal injury.

x **DO NOT** leave the mortiser operating unattended.

x **DO NOT** operate the mortiser when you are tired, under the influence of alcohol, drugs or intoxicating medication.

✓ When not in use switch off the mortiser and remove plug from the power supply.



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

2. APPLICATION & SPECIFICATION

The SM94/C is a bench mounted mortising machine suitable for cutting mortises for joints and also for locks and dead-bolts. The mortiser is complete with a work table and clamp assembly and three mortising chisels.

Motor550W, 230V.
 Chisel Size1/4", 3/8", 1/2"
 Chuck Sizes10 & 13mm
 Head Stroke76mm
 Chisel End-table125mm

Throat Depth94mm
 Hold Down Capacity100mm
 Table size150 x 334mm
 Dimensions H (less handle) x W x L525 x 340 x 256mm
 Weight26kg

3. CONTENT & ASSEMBLY

3.1. CONTENTS

Unpack the product and check contents. Should there be any damaged or missing parts contact your supplier immediately.

- | | | |
|-----------------------|-------------------------|--|
| 1. Wood working table | 8. Adjustment screw | 2nd Drill chuck (not illustrated) |
| 2. Table screws | 9. Clamp post | Hex keys (not illustrated) |
| 3. Locking lever | 10. Clamp | Drill bits (not illustrated) |
| 4. Locking collar | 11. Operating handle | Chuck clamp spindle (may be located in head bushing) |
| 5. Guide plate & arm | 12. Drill & tool holder | Damper strut |
| 6. Spring | 13. Chisel bushing | |
| 7. Adjustment stop | | |

3.2. ASSEMBLY

WARNING! DO NOT plug the mortiser into the mains power supply until completely assembled and these instruction tell you to do so.
DO NOT allow brake fluids, petroleum, penetrating oils etc. to come into contact with plastic parts of mortiser as damage may result.

3.2.1. Press fit damper strut ends to ball ended screws on base and head (fig.A-1). To do this, support the weight of the head and undo the depth stop clamp (fig.9) which is supporting it. Raise the head on the guide pillars to its maximum height. Slide the clamp up the pillar to support the head again and tighten the clamp. Take the damper strut with the cylinder uppermost and lightly tap the strut ends so that they snap onto the ball ended screws situated on the left hand side of the head and the base of the left hand pillar (fig2-3).

3.2.2 Fix wooden table (fig 2.1) to base with screws (fig 2.2).

3.2.4 Pass locking collar (fig 2.4) onto the guide arm (5) and follow with spring (6).

3.2.5 Push the guide arm (5) through the guide housing at point (C).

3.2.6 Take the fine adjustment head stop and rotate the knob so that approximately one third of the adjustment screw has passed through the stop body. Push the assembly (fig 3.7) onto the extending guide arm until the end of the adjustment screw locates into the hole in the housing base. Tighten the grub screw in the stop body down onto the guide arm.

3.2.3 Screw the locking lever assembly (fig 1.3) into the guide housing situated between the two pillars. (fig 2.B). The lever should be facing backwards and be positioned up against the left hand pillar. Hold the assembly in position with a chubby screwdriver inserted into the screw slot. Maintaining downward pressure on the screw, lift the lever to release the locking mechanism and screw the screw down into the guide housing until it makes contact with the guide arm. Back the screw off by a 1/4 turn and release the lever. When the lever is moved to the right it should lock the guide arm before coming into contact with the right hand pillar.

3.2.7 Pass clamp post (fig 4.9) through clamp (10) and push the other end of post into the guide head at point (C). Use appropriate hex keys to lock all components in position.

3.2.8 Take the operating arm fixing bolt (fig.5-9) and slide the small spring (fig.5-10) over the bolt. Insert the bolt through the arm pivot and screw it into the operating spindle until the two sets of castellations are engaged. It should now be possible to pull the arm pivot to the right to disengage the castellations and re-engage them so that the arm is at a different angle.

3.2.9 Bolt the drill and tool holder (12) to the side of the main head.

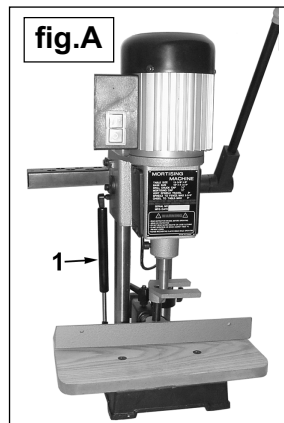
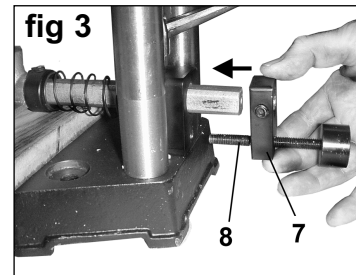
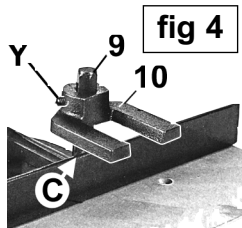
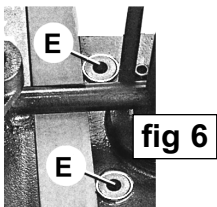
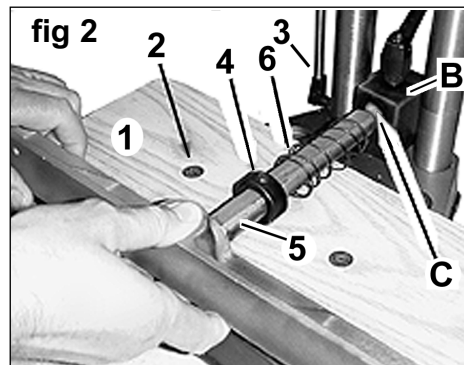
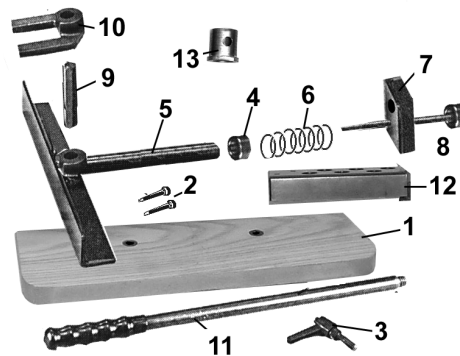


fig 1



Before use, bolt the SM94/C through points 'E' (fig 6) to a stable work bench which is strong enough to take the weight of the mortiser and the workpiece. **WARNING!** Failure to adequately mount the mortiser could result in damage and/or severe personal injury.

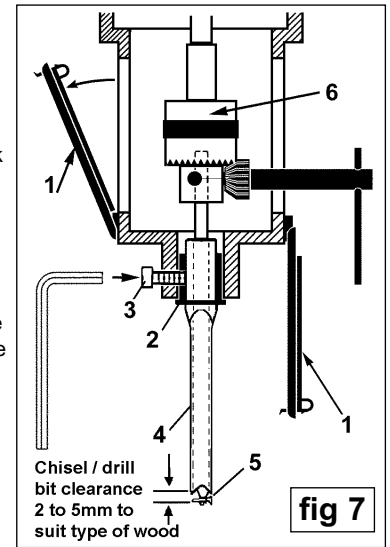
4. INSERTING CHISEL & DRILL BIT

WARNING! Ensure the mortiser is switched off and is unplugged from the mains power supply.

Note: The chuck clamp spindle (fig 14.2) may be locked in chuck and should be removed before attempting to perform the following.

4.1. There are two different sizes of chisel bushings supplied with the mortiser. The smaller of the two (internal diameter 19mm) should be used with the drill and chisel sets provided. Insert the bush into the collar at the base of the main head ensuring that the hole in the side of the bushing is aligned with the socket cap screw (fig7-3) in the left hand side of the collar. Retain the bush by turning the screw inwards but do not let it protrude inside the bush as this will impede the insertion of the chisel.

- ❑ **WARNING!** Use gloves or cloth when handling drill and chisel bits, as the ends are very sharp. Remember to remove gloves and/or cloth before starting the mortiser.
- 4.2 When the chisel/drill bit is correctly set up there should be a clearance of between 2 and 5mm between the end of the chisel and the drill point depending on the type of wood. To do this use the following procedure.
- 4.3 Open head side covers (fig 7.1) to expose the chuck (fig 7.6). Ensure that the jaws in the chuck are fully retracted to allow the drill to fully enter the chuck.
- 4.4 Remove the protective cover from the end of the chisel/drill set and hold a protective pad or small piece of wood on the drill tip. Push the chisel/drill set up into the chisel bush until it stops.
- 4.5 Now rotate the chisel portion so that the opening in the side faces to the left or right. (If the workpiece is to be moved progressively to the right the opening in the side of the chisel should face to the right. If moving the workpiece to the left then face the opening to the left. Do not face the slot to the front or rear because wood chips produced during the cutting process will not be able to escape from the chisel.)
- 4.6 Now lower the chisel by 2 to 5mm depending on the clearance required and temporarily tighten the chisel retaining screw (fig.7-3) using the hex key provided.
- 4.7 Keeping the protective pad on the drill tip, push the drill up into the chisel until it stops then tighten the chuck using the chuck key provided. (fig.7-6)
- 4.8 To finally set the chisel/drill clearance loosen the chuck retaining screw and push the chisel up into the bush until it stops. Close the side covers and remove any protection from the chisel/drill tips.

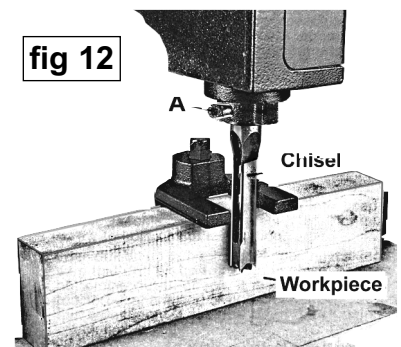
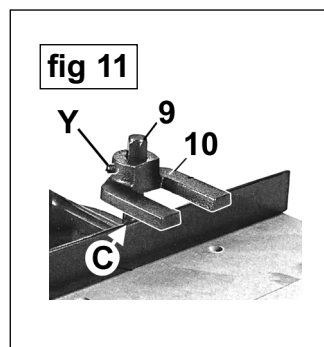
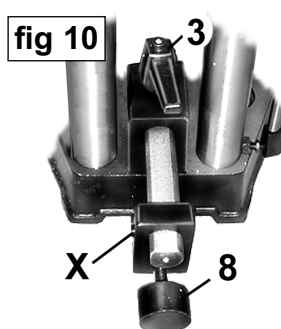
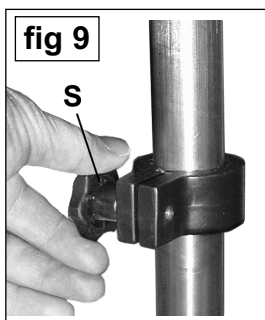
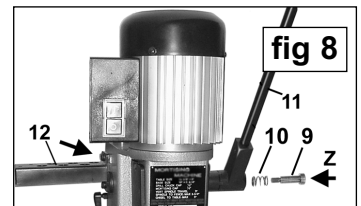


5. CONTROLS AND ADJUSTMENTS

- ❑ **WARNING!** Ensure the mortiser is switched off and is unplugged from the mains power supply.

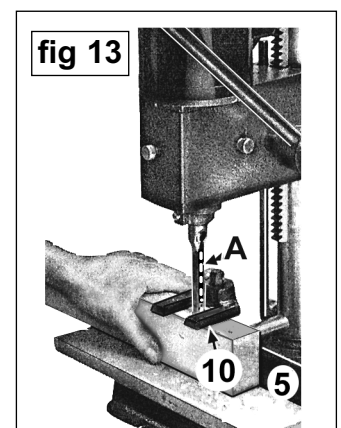
5.1. Raising and lowering the head

- 5.1.1. **Handle.** Use the handle (fig 8.11) to raise and lower the head. This handle may be adjusted for maximum leverage and comfort during operation. To do so, take hold of the main pivot and pull it to the right against the internal spring in order to disengage the castellations. Rotate the arm to the new position required and release it into the nearest set of castellations.
- 5.1.2. **Depth stop adjustment.** The depth stop limits the depth of chisel cut. To adjust the depth stop, loosen lock knob (fig 9.S) and lower the head until the bottom of the chisel is at desired depth. Raise the depth stop until it makes contact with the underside of the head and re-tighten knob (S).
- 5.2. **Back rest.** Ensure the fine adjustment head is secured to the back rest arm with hex screw (fig 10.X). To position back rest, loosen locking handle (3). Position rest by moving it in or out and making any fine adjustments with screw (8). When correctly positioned re-tighten locking handle (3).
- 5.3. **Clamp adjustment.** The clamp (fig 11.10) prevents the workpiece from lifting as the chisel is raised up from the cutting hole. Adjust the clamp so that it rests on the top of the workpiece but will allow the workpiece to slide to the left or right. The clamp may be turned upside down to accommodate thicker workpieces. To adjust the clamp loosen the set screw "Y" and move the clamp up or down accordingly and re-tighten set screw.
- 5.4. **Parallel chisel adjustment.** Adjust the position of the workpiece until it is almost touching the back of the chisel. Loosen the chisel retaining screw (fig 12.A) to allow it to rotate and edge the workpiece up to the back of the chisel to ensure that the chisel is parallel to the surface of the workpiece. Re-tighten the locking screw and reposition the workpiece for cutting.



6. OPERATING INSTRUCTIONS

- ❑ **WARNING!** Ensure you read, understand and apply chapter 1 safety instructions before use.
- 6.1. Ensure you have installed the correct chisel and that it is sharp. View fig 13 and note that the chisel opening is to the right (A). This means that after the first incision is made, the workpiece should be moved to the right for subsequent cuts. This will allow waste chips to freely pass through the opening in the chisel.
- 6.2. Set the depth gauge.
- 6.3. Place your workpiece in the mortiser machine adjusting the back stop (5) and clamp (10) accordingly.
- 6.4. Plug the mortiser into the mains power supply. Hold the workpiece firmly against the back stop and switch the mortiser on keeping your hands and fingers away from the cutting tools.
- 6.5. Having set the depth stop, bring the handle down to commence mortise cutting. We recommend that you practice on scrap wood before moving onto an actual workpiece. The rate of chisel penetration must be fast enough to prevent burning the drill and chisel tip, but not too fast as to stall the motor. You may notice smoke coming from the bit or the wood once the chisel has engaged in the workpiece. This is a normal occurrence of hollow chisel mortising caused by chipping friction whereby the wood resins in the stock are burned off. Should this become excessive however, refer to troubleshooting chapter 9.



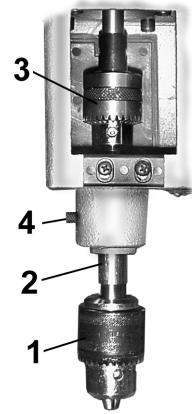
The chisel may also become blue in colour, this is also a normal attribute associated with friction and resin build up on the cutting face of the tool bit. A dull (blunt) chisel may be detected when the amount of pressure required to complete a cut becomes excessive.

6.6. When performing a through mortise, a thin piece of wood must be placed between the workpiece and the table to prevent the underside of the cut from splintering, and to protect the work table. In such a case re-set depth stop accordingly.

6.7. Using the mortiser as a standard pillar drill

Loosen bushing screw and remove the chisel and drill bit from the chuck.
Wedge the chuck clamp spindle (fig 14.2) into the neck of spare drill chuck (1).
Pass the spindle up through the bushing and lock into chuck (3). Ensure locking screw (4) remains to hold the bushing in place, **BUT DO NOT** tighten the screw on the drill spindle which must remain free to turn in the bush. A standard drill bit may be used with chuck (1) for drilling. All locks and guides are used in the same way as mortise drilling.

fig 14



7. MAINTENANCE

- **WARNING!** Ensure the mortiser is switched off and is unplugged from the mains power supply before carrying out any maintenance.
- 7.1. Clean and dust the mortiser, removing all waste materials.
- 7.2. Periodically apply a light coat of wax to base work surface which will help keep it clean and rust free.
- 7.3. Open shaft cover and apply a thin coat of light machine oil to drill bit shaft where it passes through the chisel, but not on the cutting edge. Also lightly oil rack and pinion gear teeth upon which the main column moves up and down.

8. TROUBLESHOOTING

THE PROBLEM	THE CAUSE	THE SOLUTION
Noisy operation	Dry drill bit shaft	Lubricate drill bit shaft
Bit burns or smokes	1. Chips not coming out of hole 2. Dull bit 3. Feed rate too slow	1. Retract bit frequently to clear chips 2. Sharpen or replace bit 3. Feed faster
Excessive drill bit run out, or wobble	1. Bent bit 2. Chuck not correctly installed 3. Bit not correctly installed 4. Worn or loose chuck 5. Worn spindle bearings	1. Replace bit 2. Remove chuck and install correctly 3. Remove bit and install correctly 4. Replace chuck 5. Replace bearings
Drill binds in workpiece	1. Workpiece twisting or moving 2. Excessive feed pressure	1. Support or clamp workpiece 2. Reduce pressure and clamp workpiece

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

Hollow Chisel Mortiser Model SM94/C

- EN55014 Limits & Measurements
- 73/23/EEC Low Voltage Directive
- 89/336/EEC EMC Directive
- 98/37/EC Machinery Directive
- 93/68/EEC CE Marking Directive



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.

Signed by Mark Sweetman



31st July 2002

For Jack Sealey Ltd. Sole importer into the UK of Sealey Quality Machinery.

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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