



INSTRUCTIONS FOR:
HOLLOW CHISEL MORTISER
 Model No: **SM94/C**

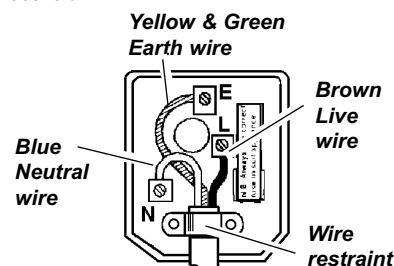
Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

⚠ 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 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 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 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.
- 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).



FUSE RATING
 THIS PRODUCT MUST BE FITTED
 WITH A: **5 Amp FUSE**

- (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 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. **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.

1.2. General Safety

- ⚠ **WARNING!** Disconnect the mortiser from the mains power before changing accessories, servicing or performing any maintenance.
- ✓ Locate the mortiser in an adequate working area for its function. Fasten the mortiser to a strong flat working surface. Keep area clean and tidy and free from unrelated materials before turning the mortiser on, 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 object 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.
- ✗ DO NOT start the mortiser with the tool bit resting against the workpiece. Always bring the chisel to the workpiece.
- ✗ DO NOT assemble a workpiece on the mortiser whilst the cutting tool is working.
- ✗ DO NOT force the mortiser to achieve a task it was not designed to perform.
- ✗ DO NOT allow untrained persons to operate the mortiser and keep children and unauthorised persons away from the working area.
- ✗ DO NOT get the mortiser wet or use in damp or wet locations or areas where there is condensation.
- ✗ DO NOT use mortiser where there is flammable liquids, solids or gases such as paint solvents, including waste wiping or cleaning rags etc.
- ✗ DO NOT operate the mortiser if any parts are damaged or missing as this may cause failure or possible personal injury.
- ✗ DO NOT leave the mortiser operating whilst unattended.
- ✗ DO NOT operate the mortiser when you are tired, under the influence of alcohol, drugs or intoxicating medication.
- ✓ When not in use switch the mortiser off, remove plug from the power supply.

2. APPLICATION & SPECIFICATIONS

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.

Motor50hz,375W, 230V.
 Chisel size1/4", 3/8", 1/2"
 Chuck size10mm
 Head Stroke127mm
 Chisel end table115mm
 Max Chisel capacity1/2"

Fuse5Amp
 Speed2800RPM
 Hold down capacity105mm
 Table size150 X 345mm
 Overall dims H without handle/W/D . .590x320x270mm
 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.

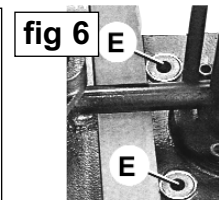
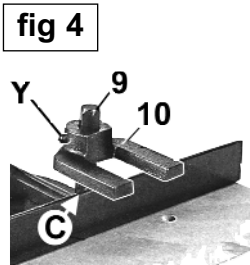
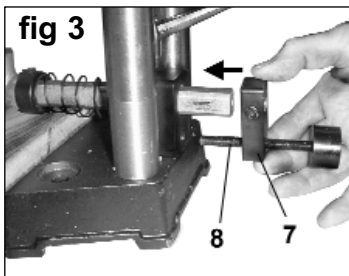
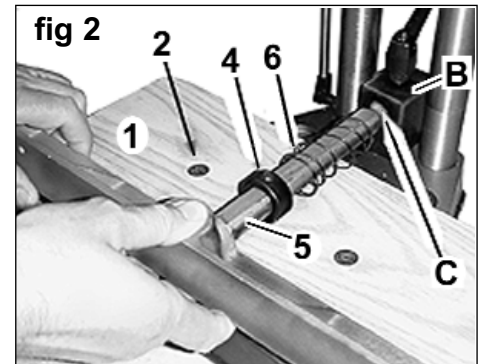
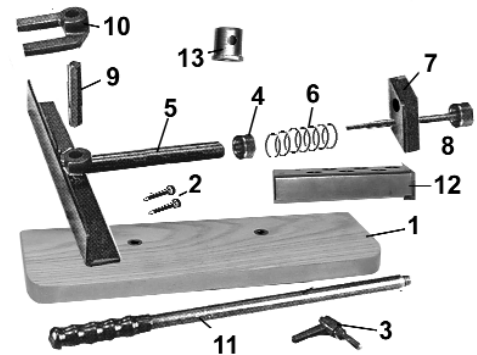
- | | | |
|-----------------------|-------------------------|--|
| 1. Wood working table | 7. Adjustment stop | 13. Chisel bushing |
| 2. Table screws | 8. Adjustment screw | 2nd Drill check (not illustrated) |
| 3. Locking lever | 9. Clamp post | Hex keys (not illustrated) |
| 4. Locking collar | 10.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

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 damaged may result.

- 3.2.1. Fix wooden table (fig 2.1) to base with screw (fig 2.2).
 Screw locking lever (fig 1.3) into guide housing (fig 2.B).
 Pass locking collar (fig 2.4) onto the guide arm (5) and follow with spring (6).
 Push the guide arm (5) through the guide housing at point (C).
 Push the fine adjustment stop head (fig 3.7) onto the extending guide arm and locate the stop adjustment screw (8) into hole in the housing base.
 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.
 Place the operating arm (fig 5.11) in the required working position at point (Z) and fix with hex bolt.
 Bolt the drill and tool holder (12) to the side of elevator housing.

fig 1



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

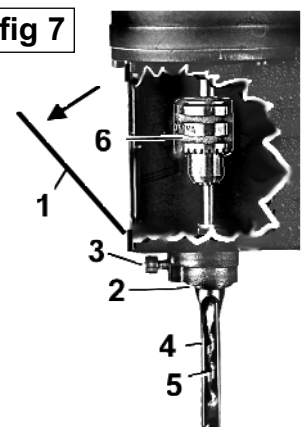
4. INSERTING CHISEL & DRILL BIT

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

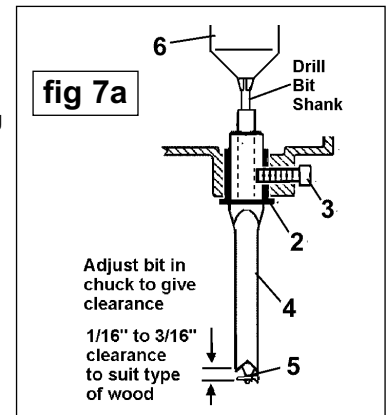
Note: The chuck clamp spindle (fig 14.2) may be locked in chuck and should be removed before attempting to perform the following.

- 4.1. Open head side covers to expose the chuck (fig 7.1). Also refer to figure 7a.
 NOTE: there are two different size chisel bushings (2). Determine which size will fit the chisel to be used and store the remaining one in a safe place for future use.
- 4.2. Insert the chisel bushing up through hole in the head whilst ensuring that the round hole in the side of bushing is aligned with the side screw hole (3). Turn the securing screw (3) to hold the chisel bushing in place.

fig 7



- ❑ **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.
- 4.3. Insert chisel bit (fig 7a.4) up through bushing in head assembly as far as possible, then lower chisel approximately 1/16". Face opening in the side of the chisel to the right or left according to direction the work piece will be moved. DO NOT face the slot to the front or rear, as the opening allows chips to escape from the slot during operation.
- 4.4. Tighten locking screw (3) to hold chisel in position.
- 4.5. Push drill bit (5) up through chisel opening making sure that drill bit bottoms out in chisel before bottoming out in chuck, (it may be necessary to shorten drill shank end to accomplish this adjustment). Lock drill bit in chuck (6) using chuck key supplied.
Note: The chisel is fixed by bush screw, whilst the drill is free to turn with the rotation of chuck.
- 4.6. Now once again loosen the bushing locking screw (3) and push chisel (4) up into the head the last 1/16" left as in step 4.3. above. The flat portion of the drill bit should be adjusted to a minimum of 1/16" away from the bottom of the chisel. For certain types of wood it may be necessary to increase this distance up to a maximum of 3/16" clearance. This assures having proper clearance between the cutting lips of the bit and the points of the chisel.



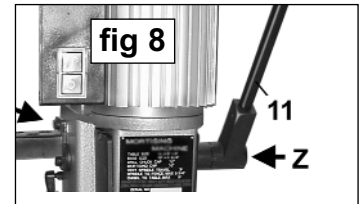
5. CONTROLS AND ADJUSTMENTS

❑ **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 from maximum leverage and comfort during operation. To do so, loosen the hex screw located on the pinion shaft at the base of the handle (Z) just enough to allow interlocking teeth to pass one another. Reposition the handle to desired location, and re-tighten the hex nut.



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

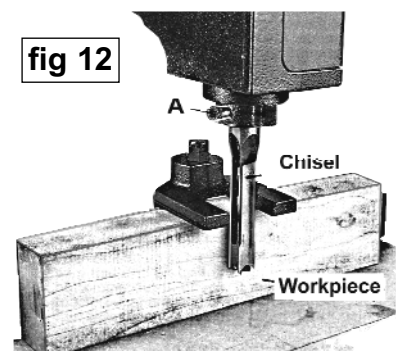
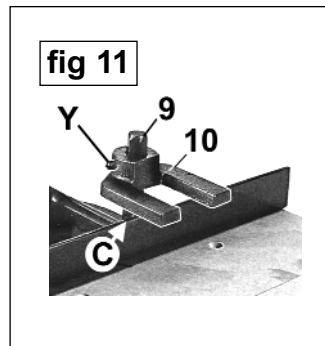
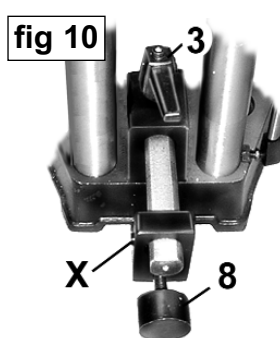
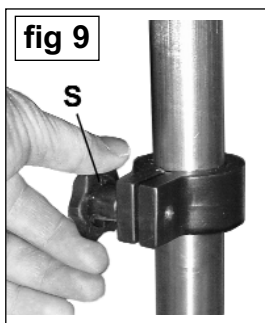
Ensure the fine adjustment head is secured to the back rest arm with hex screw (fig 10.X). To position back rest, loosen locking handle (3). Position rest by moving it in or out and making any fine adjustments with screw (8). When correctly positioned re-tighten locking handle (3)

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.

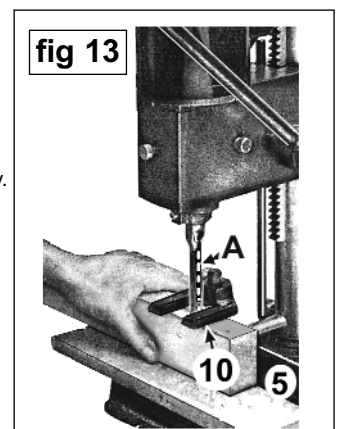
The chisel can be adjusted to ensure it is parallel to the workpiece by loosening the screw (fig 12.A), and moving the chisel until the back surface of the chisel is flat against the workpiece. Re-tighten the locking screw.



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 mortise 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.



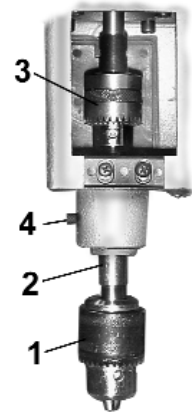
The chisel may also become blue in colour, this is also a normal attribute associated with friction and resin build up on the cutting face of the tool bit. A dull (blunt) chisel may be detected when the amount of pressure required to complete a cut becomes excessive.

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 past 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 check. 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 EEC standards and directives.

Hollow Chisel Mortiser Model SM94/C

EN55014 Limits & Measurements
73/23/EEC Low Voltage Directive.
89/336/EEC EMC Directive (S.I. 1992/2372 & Amendments).
98/37/EC Machinery Directive (S.I. 1992/3073 & Amendments)
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

1st April 2000

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:** Call 01284 757525 for our catalogue & promotions. Leave your full name, address & postcode.



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