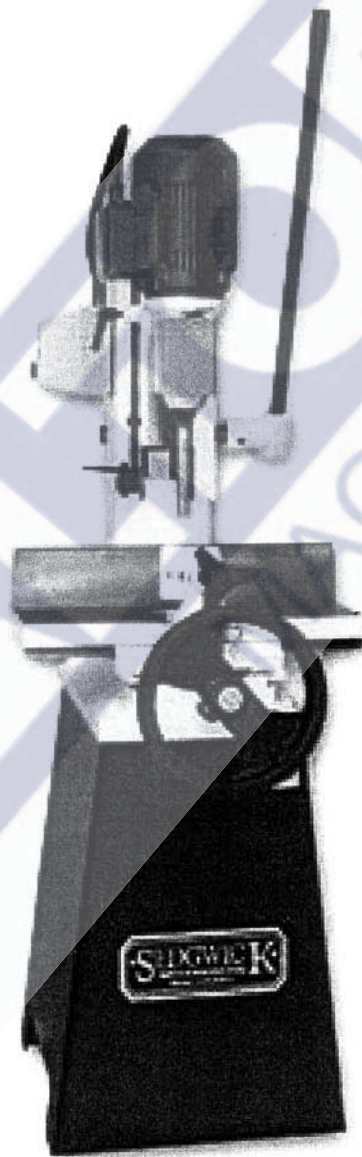




571  
HOLLOW CHISEL MORTICER  
OPERATION AND MAINTENANCE  
INSTRUCTIONS



M. SEDGWICK & COMPANY LIMITED  
Stanningley Field Close, Leeds, U.K. LS13 4QG  
Tel. +(44) 113 257 0637 Fax. +(44) 113 239 3412

MACHINE SERIAL NO. **571Z**

# List of Contents

		Page No.
<b>Design And Purpose</b>	Machine Specification	3
	Illustration	4
<b>Installation</b>	Handling Instructions	5
	Foundation Drawings	5
	Installation Instructions	6
	Recommended Fuse and Cable Sizes	6
	Wiring Diagrams	7
<b>Operating Instructions</b>	The Lever	8
	Chisel Head	8
	Table Clamp	8
	Table Movement	8
	Mortise Depth	8
	Mortise Length	9
	Setting Up For Hollow Chisel Mortising	9
	Mortising Hard And Soft Woods	10
	Diagnosing Faults In Mortising	11
<b>Limitations Of Use And Safe Working Practices</b>	Operator Training	11
<b>Health And Safety Advice</b>	Dust	12
	Noise	13
	Recorded Noise Levels	13
<b>Maintenance</b>	Lubrication	14
	Fault Finding Checklist	15
	Parts Diagram	16
	Parts List	16
		17

## CE Declaration of Conformity 93/44/EEC

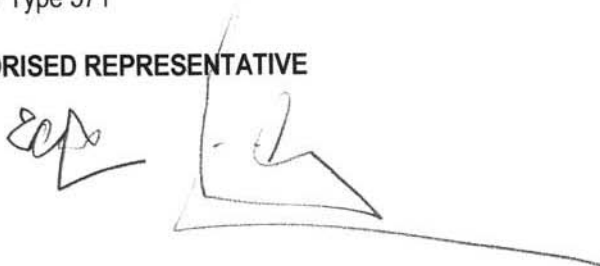
### MANUFACTURER'S NAME AND ADDRESS:

M. Sedgwick & Company Limited  
Swinnow Lane  
Leeds  
LS13 4QG  
England

### THE FOLLOWING MACHINE HAS BEEN MANUFACTURED IN ACCORDANCE WITH COUNCIL DIRECTIVES:

Hollow Chisel Morticer Type 571

### SIGNATURE OF AUTHORISED REPRESENTATIVE



## Forward

This Instruction Manual is designed for you in accordance with The Supply Of Machinery (Safety) Regulations 1992, and the Supply of Machinery (Safety) (Amended) Regulations 1994, which implement the European Machinery Directive 89/392/EEC. We strongly recommend that in order to ensure good safe working practise you read it prior to commencing either installation or operation of the machine. Your supplier will be pleased to provide any further advice or assistance that you might require.

## Design and Purpose

The Sedgwick Hollow Chisel Morticer Type 571 is a hand fed machine used for producing square cornered mortice holes of various lengths and widths.

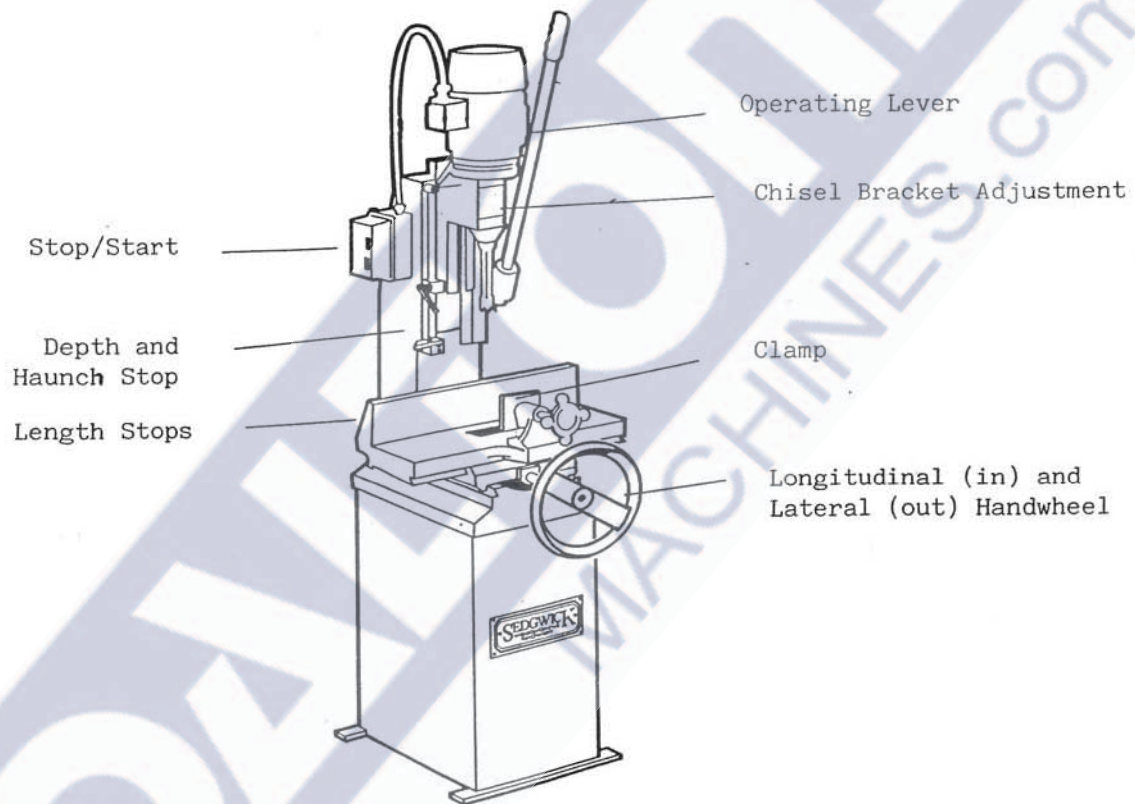
## Machine Specification

MOTOR CAPACITY	1.1 kW
MAXIMUM CHISEL SIZE - IN HARDWOOD	19mm
IN SOFTWOOD	25mm
TIMBER CAPACITY	255x180mm
STROKE OF CHISEL HEAD	125mm
TABLE MOVEMENT -LONGITUDINAL	400mm
-LATERAL	90mm
DEPTH STOP	STD
HAUNCH STOP	STD
LENGTH STOPS	STD
NETT WEIGHT	160 Kg

## Shipping Details

DIMENSIONS (L x W x H)	735x630x1520mm
GROSS WEIGHT	221 Kg

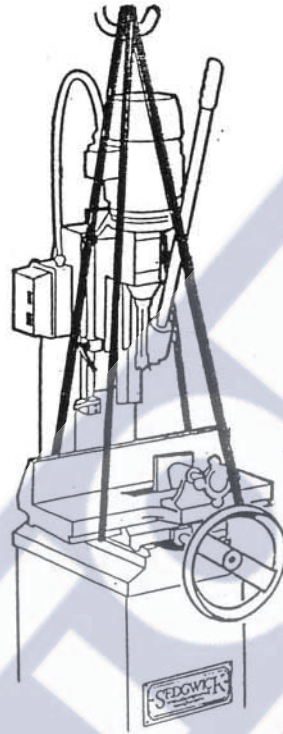
## Illustration



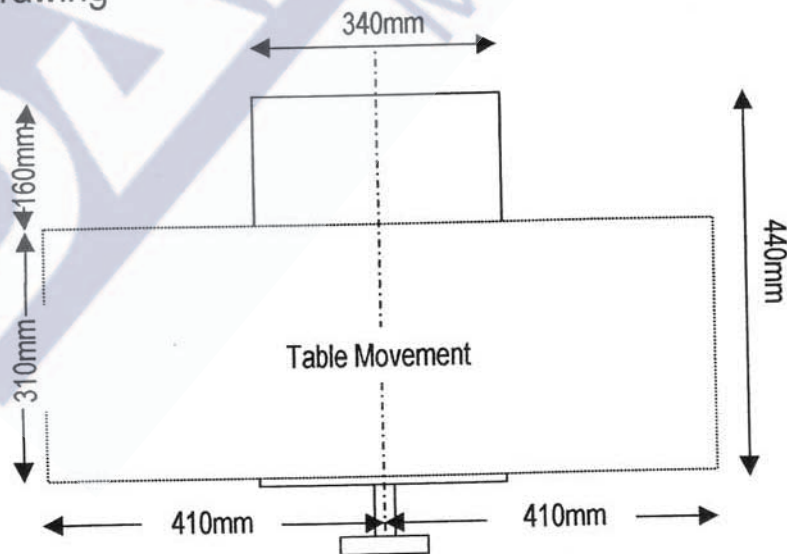


## Handling

Always use a sling within the safe working load of the machine weight. Machine weights are provided above.  
Sling underneath the machine's table, ensuring it does not catch the starter, handwheel etc.  
Do not walk or stand under the machine during lifting.



## Foundation Drawing



## Positioning

First ensure that there is an ample power supply available, together with good lighting and ventilation. Second ensure that there is sufficient unobstructed space around the machine to enable the work being done at it to be done without risk of injury to persons employed.

The chosen floor space should be in good and level condition to enable the machine to be anchored at four points. Holes for M10 foundation bolts (not supplied) are provided at either corner of the fabricated stand. Score marks through these holes, drag the machine out of the way, and drill the necessary holes and insert fixing plugs. Finally, make sure the machine is not rocking. Pack under the feet of the stand if it is. This will keep the morticer from rocking and generating vibration during the cut.

## Installation

1. Remove the protective rust preventative using turpentine or paraffin. Do not use any solvent, petrol or gas oil, which might dull or oxidise the paintwork. Lightly oil cleaned surfaces to prevent rusting.
2. The counterbalance weight is fitted to the machine inside the stand and is locked in position to prevent transit damage. When the machine is in its final operating position remove the screw at the rear of the stand to enable the weight to drop into its operating position.
3. Take the oil nipples from the toolkit and insert them into the two M8 tapped holes at the centre of the rear of the column.

## Electrical Installation

Electrical wiring should be carried out by a competent electrician following the directions given below. Reference should be made to the appropriate wiring installation rules, e.g. in the UK the 16<sup>th</sup> edition of the IEE Wiring Regulations for Electrical Installation (BS7671).

- The motor and starter have been wired in at the factory and tested before despatch. All that is required is to connect the power supply to the starter from your isolator.
- Check that the supply details on the motor nameplate correspond with the site supply.
- It is important that the correct cable size is used to avoid a voltage drop at the motor terminals. If the motor is operated on a voltage outside, plus or minus 6% of the spot voltage, then premature failure will occur.
- Do not wire single-phase machines into a 13-amp plug socket.
- It is important to check rotation of the motor which should be clockwise when viewed from above the machine.

Should you encounter problems on start up please refer to the trouble-shooting checklist provided in the Maintenance Instructions.

M/c Ref.	Supply	Starter Ref.	Motor Ref.	Rated Output	Rated Current	Req. Fuse	Cable Size
571-3	415-3-50	DZ0057	AM 80Z BA2	1.1 Kw 1.5Hp	2.5 Amps	10 Amps	2.5 mm
571-1	240-1-50	DZ0056	AMM 80Z BA2	1.1 Kw 1.5Hp	6.6 Amps	20 Amps	2.5 mm

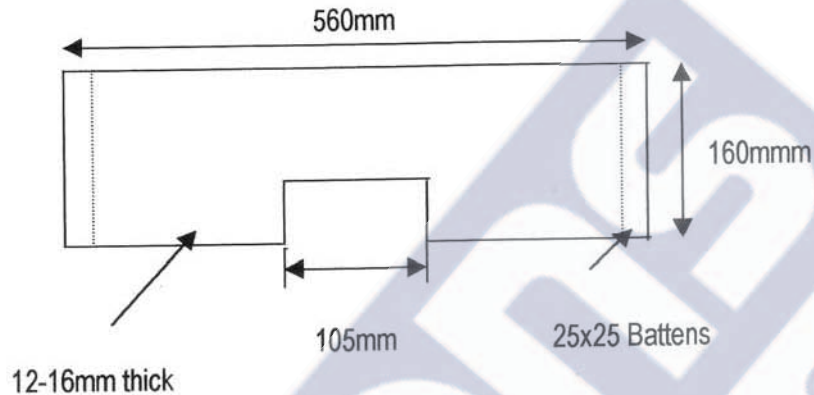




## OPERATING INSTRUCTIONS

### Preparation for Use

Before commencing any work on this machine it is recommended that a wooden sub table is made as illustrated below:



### Controls

#### THE LEVER

The operating lever used to control the movement of the chisel bracket can be adjusted to suit the height of the operator as follows: Loosen the M8 allen screw in the lever boss, slide the bar into the correct position and re-tighten.

#### CHISEL HEAD

The chisel bracket can be adjusted to suit the size of the work piece as follows: Isolate the machine. Open the chuck guard, manually support the chisel bracket, and slacken the 24mm AF hexagon nut inside the head with the spanner provided. Position the chisel bracket to the required height, re-tighten the hex nut and close the chisel guard.

#### TABLE CLAMP

The workpiece clamp can be secured in any of three positions using the spanner provided. Its face is pre-drilled to accept a wooden pad to help prevent possible marking of the workpiece. When clamping timber ensure that the clamp bracket locates in the nearest holes in the table possible to the job, therefore reducing the amount of thread to be used, this also reduces the strain on the clamp mechanism.

#### TABLE MOVEMENT

The table has both longitudinal and lateral movement, controlled by the single handwheel. Push in and turn for lateral adjustment, pull out and turn for longitudinal movement.

#### MORTICE DEPTH

The depth of mortice is controlled by pulling the haunch stop lever towards the operator and adjusting the collar on the stop rod to the required depth.



Note: When cutting a deep mortice it is advisable to take the chisel down in stages of about 25mm, moving the table along for each successive cut. This enables the chisel to clear itself of chips, and avoids subsequent overheating, particularly when cutting hard or green wood. **DO NOT OVERLOAD.** The motor switch is fitted with a thermal overload cut-out, and if the motor is overloaded will automatically switch it off. If this occurs, check the rotating parts are running freely, and lubricate if required. If all is free then it may be necessary to reduce drilling pressure slightly, i.e. operate at a lower rate of feed.

**MORTICE LENGTH** The length of mortice may be controlled using the two length stops on the bar at the rear of the table.  
 Note: Long or heavy timbers should be supported off the table.

## Setting Up For Hollow Chisel Mortising

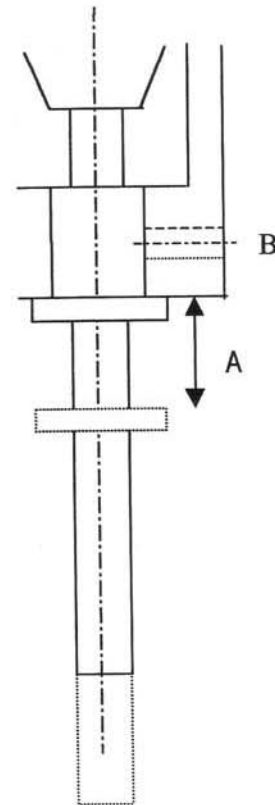
### SEQUENCE:

1. Ensure that the machine is electrically isolated.
2. Select the correct size of chisel and auger, together with chisel bush, spanners and allen key.
3. Check that the chisel and auger have been correctly sharpened and are in good condition, i.e. that the chisel is free from cracks and damaged points, and that the auger and cutting edges are in good condition. Following the guidelines below fit the chisel and auger in the chisel bracket.

- Insert auger (with chisel slotted onto it) into the adjustable chuck to its uppermost limit and tighten in place, the chisel will then rest upon the wings of the auger in position as shown in dotted image.
- Measure dimension 'A' carefully, then remove the auger and shorten its shank end by a distance 1mm less than dimension 'A' measured.
- Insert chisel into the chisel socket until the chisel shoulder butts firmly up to the underface of the chisel socket and lock screw 'B'.
- Insert auger once more to its uppermost limit. Its scribing wings should be found to clear the chisel internal cutting bevel by the distance allowed. Finally, tighten the auger and the machine is then ready for cutting.

Note: the lower point on the bit must clear the bottom point of the chisel and not rub against the chamfer. It is advisable to file a flat on the chisel to enable the locking screw to grip firmly and not burr the shanks, making removal difficult. Always ensure the chip relief in the chisel is left to right and not front to back and always cut away from the relief to ensure good chip ejection.

- The chisel should be mounted with its chip ejector slots facing along the workpiece. Rotate the auger by hand to check that it runs freely without rubbing

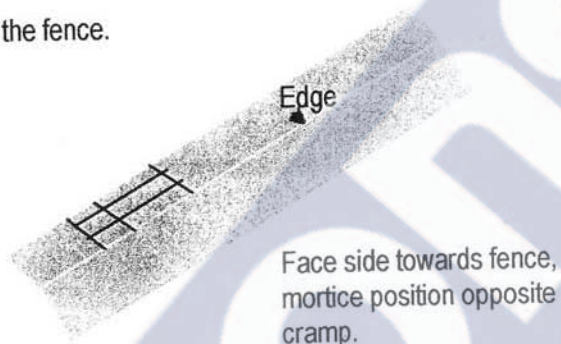


5. Clear all tools from the machine and position the clamp as previously described.  
Move the headstock down to the workpiece, to check the alignment of the chisel with the mortice position.  
Set the depth stop.
6. Return the lever to the rest position. Switch on the isolator.
7. Switch on the machine and cut a trial mortice.
8. Check the mortice for position, depth and finish.

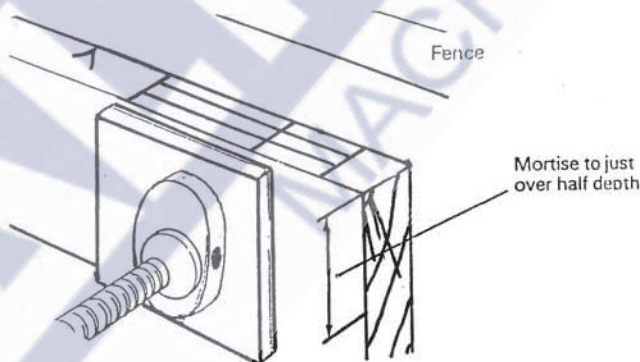
Note. A squirt of oil along the length of the auger will reduce the noise it emits when running.

## Morticing Hard and Soft Woods

1. Keep the face side towards the fence.



2. Position the mortice to be cut opposite the clamp. This prevents the chisel lifting the wood away from the table, which would occur if the mortise were too far away from the clamp.

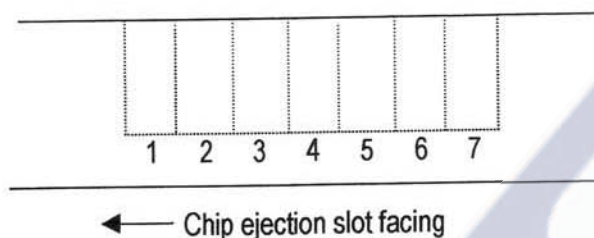


3. Turn the workpiece 'end to end'. This ensures that the face side is kept towards the fence when cutting through mortise.
4. Work from both sides when cutting through mortises, as breakout on the back-edge could occur if the chisel was taken right through. Set the chisel depth stop to enable just about a half of the depth of mortise to be cut from each side.
5. Position the chisel about 25mm above the workpiece when the lever is in the rest position by positioning the chisel bracket. This avoids unnecessary long movements of the headstock lever, and reduces the effort required to produce a mortise.
6. The chuck guard must be in position.



7. Make a gradual cut when using the chisel. Remember that on the first cut all four sides of the chisel are enclosed by the timber, making withdrawal of the chisel from the workpiece difficult.

## Order of Morticing



8. Do not traverse the table when the chisel is in contact with the bottom of the mortise, as this could damage the auger and strain the mortise chisel.

9. In the interests of ease, for an extended life of mortise chisels, and for speedy working, it is preferable to use sharp but shallow strokes on the handle, i.e. about 25mm deep for softwoods, and 12mm deep for hardwoods. This applies particularly to wet or abrasive timber.

## Faults Diagnosis

FAULT	CAUSE	REMEDY
Cuts out of square	Chisel is not square to fence	Square the chisel to the fence
Uneven bottom to mortise	Auger too far in advance of the chisel	Reposition the auger
Chisel end blued and cracked	auger rubbing against the auger edge, causing over heating	Reposition the auger, regrind, or replace the chisel
Chisel becomes hot near centre	Bent auger	Straighten or replace the auger
Chippings build up inside chisel	Bad clearance. The auger spiral does not extend far enough, or resinous timber is gumming up the inside of the chisel	Remove the auger and clean with paraffin periodically

## Limitations of Use and Safe Working Practices

Training and instruction is a central requirement of the Provision of Work Equipment Regulations 1998 (PUWER). No morticing machine can be operated by any person under the age of 18 without them having first completed an approved course of training. The regulation does realise that young persons may need to operate one of these machines as part of a course, and such use is permitted provided that it is carried out under the supervision of a person who has thorough knowledge and experience of the machine and of its safeguarding requirements.

It is essential that all operators of morticing machines are adequately trained in the use, adjustment and operation of the machine, this covers in particular:

- The dangers associated with the operation of the machine;
- The principles of machine operation, correct use and adjustment of the controls;
- The safe handling of the workpiece when cutting;
- The position of the hands relative to the cutters and the safe stacking of the workpiece before and after cutting.



Persons who install this machine for use at work have a duty under the Health and Safety at Work Act 1974 to ensure, as far as is reasonably practicable, that nothing about the way in which it is installed makes it unsafe or a risk to health at any time during setting, use, cleaning, and maintenance. This includes such aspects as correct assembly, electrical installation, construction of enclosures, and the fitting of guards and ventilation equipment. When installing this machine consideration must be given to the provision of adequate lighting and working space.

Repairs and maintenance must only be undertaken by competent technicians. Ensure that all power supplies are isolated before maintenance work begins. Instructions for routine maintenance work are also included in this manual.

## Health and Safety Advice

### Dust

Wood dust can be harmful to health by inhalation and skin contact and concentrations of small dust particles in the air can form an explosive mixture. These concentrations usually occur in dust extraction equipment which may be destroyed unless explosion precautions have been taken in the design and installation of the equipment.

Employers have duties under the Factories Act 1961, The Health And Safety At Work Act 1974 and the Control Of Substances Hazardous To Health Regulations 1988 to control wood dust in the workplace. Employers should carry out an adequate assessment of the possible risks to health associated with wood dust particularly when machining hardwoods, and if necessary seek expert advice as to the method of dust extraction.

Prevention or control of wood dust exposure should as far as is reasonably practicable, be achieved by measure other than the provision of personal protective equipment.

Further information and references to practical guidance are contained in free leaflets from the Health & Safety Executive, alternatively specialist help and information can be obtained from:

#### P&J Dust Extraction

Extraction House, Otterham Quay, Rainham, Kent ME8 8NA  
Tel. 0163 423 3933 Fax. 0163 423 4588

### Noise

Noise levels can vary widely from machine to machine depending on conditions of use. Persons exposed to high noise levels, even for a short time, may experience temporary partial hearing loss and continuous exposure to high levels can result in permanent hearing damage. The Woodworking Machines Regulations require employers to take reasonably practicable measures to reduce noise levels where any person is likely to be exposed to a continuous equivalent noise level of 90 dB(A) or more over an 8 hour working day. Additionally, suitable ear protectors must be provided, maintained and worn.

Machines identified as generating unhealthy noise levels should be appropriately marked with a warning of the need to wear hearing protection and it may be necessary to designate particular areas of the workplace as 'Ear Protection Zones'. Suitable warning signs are specified in the Safety Signs Regulations 1995. It may be necessary to construct a suitable enclosure, in which professional advice should be sought.

Further information and references to practical guidance are contained in free leaflets available from The Health & Safety Executive.

The list below outlines some of the variables that directly effect the noise level of the machine:

VARIABLE	RELEVANT FACTOR	EFFECT
Timber	Species	Hard stiff timber can mean more noise (approx. 2dB(A) difference when cutting oak and pine) & more transmitted noise.
	Width	Wide work pieces radiate noise over a greater area increasing the noise level.
	Thickness	Thin workpieces generally vibrate more increasing the noise level.
	Length	Long workpieces transmit noise away from the cutting area towards the operator.
Tooling	Width of Chisel	Noise increases roughly in proportion to the width of cut.
	Tool Sharpness	Dull and worn cutters tend to chatter.

The following noise levels were recorded at a distance of one metre from the machine (operator side) with a combination block fitted, using varying feed rates and depths of cut.

OPERATION	NOISE LEVEL dB(A) @ 1M
None	67
Cutting	70

The figures quoted for noise are emission levels and not necessarily safe working levels. Whilst there is a correlation between emission levels and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure to the work force include the duration of exposure, the characteristics of the workroom, the other sources of dust and noise, etc., i.e. the number of machines and other adjacent processes. Also the permissible exposure levels can vary from country to country. This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk.



## Maintenance and Lubrication

**Electrically isolate the machine and ensure that all spindle movement has ceased before carrying out any maintenance operation.**

Since your morticer is constructed of cast iron, which is a porous metal, care should be taken when cleaning. Use mineral spirits and steel wool on all metal parts. Avoid contact with anything moist. Don't set drinks on the tabletop, or leave green wood on it. These will leave permanent marks.

Waxing the table surface will help resist moisture. Avoid products that contain silicone, anti-slip additives, or abrasives.

Clean the interior of the machine stand frequently to prevent the accumulation of chips and sawdust. Once clean, lubricate moving parts using a lubricant that does not pick up a lot of sawdust. Pay particular attention to the slides, operating screws and oil nipples (for the oil nipples use a grease gun filled with oil). Powdered graphite, hard wax or white lithium sprays are ideal. Do not use an oil-based product. These will collect sawdust and congeal into a gummy substance, making working parts hard to operate.

Should, after long use, the tables or headstock develop a degree of side play, this can be rectified by slackening slightly the retaining bolts on the slide concerned, and tapping the slide until side play is eliminated, but taking care not to interfere with normal movement. Tighten retaining bolts firmly after adjustment.

## Warning Of Residual Risks

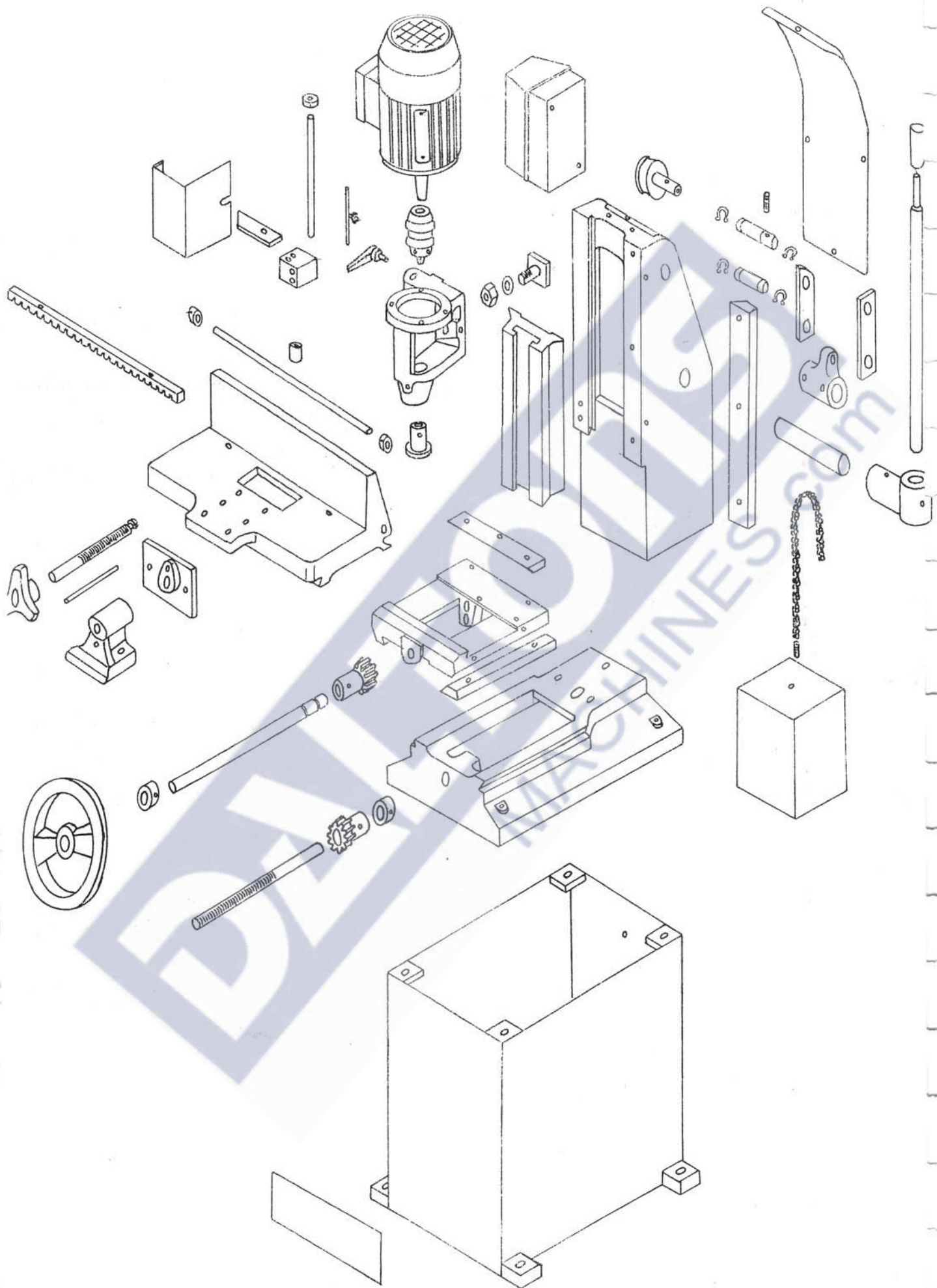
In spite of the fact that all practical measures have been taken to ensure the safety of this machine, its safe use finally depends upon the operator's careful handling. Provided that the operator adheres to his training and follows the instructions in this manual, the likelihood of an accident is very low.



## Fault Finding Checklist

PROBLEM	LIKELY CAUSE	CORRECTIVE ACTION
Fails to start	Main supply switched off Overload tripped Fuse blown Loose wire Coil failure	Check main switch Reset overload Check and replace fuses (check all three on three phase) Check all connections Check circuit of hold in coil
Overload trips during starting	Low voltage Low voltage Low voltage Three phase machines only: 1 fuse blown Machine jammed	Check supply voltage both on no load and on moment of switch on. Allowed variation plus/minus 6% Check that correct cable size has been used to install the machine. Change if necessary. Long runs of cable can cause voltage drop. Check that voltage is not outside the minus 6% tolerance. Resite machine nearer supply or increase the cable size to compensate. It is possible for 3 phase machines to operate with only 2 phases of the supply. This will create an overload situation and will eventually cause premature failure, this is known as single phasing. Check all fuses. Check spindle is free to rotate, clean as necessary.
Mortice misaligned	Chisel Head slide requires adjustment Cross Slide requires adjustment Table Slide requires adjustment	Adjust slide Adjust slide Adjust slide

If you are still experiencing difficulties then contact your supplier quoting the machine serial number.



## Parts List

500 STAND PTD DK BLUE  
'SEDGWICK' LOGO SCL027  
501 BASE  
502 CROSS SLIDE  
503 TABLE  
504 COLUMN  
505 CHISEL HEAD SLIDE  
506 CHISEL HEAD  
MOTOR 1.1KW 3000RPM FLNG MOUNT 415/3/50 D80  
571-3 STARTER 415/3/50  
MOTOR 1.1KW 3000RPM FLNG MOUNT 230/1/50 D80  
571-1 STARTER 230/1/50  
CHUCK ADJUSTABLE 0-13MM  
CHUCK KEY  
507 CLAMP BRACKET  
508 CLAMP GRIP  
509 CLAMP SCREW  
THREE ARM KNOB DIA 16  
510 CROSS SLIDE SCREW  
511 HANDWHEEL SHAFT  
HANDWHEEL DIA 250  
512 GEARCUT PINION LONG  
513 GEARCUT PINION SHORT  
514 GEARCUT RACK  
515 ANCHOR PINS  
516 CLAMP PAD  
517 CAM LEVER  
518 LINKS  
519 CAM SHAFT  
520 LINK PIN TOP  
521 LINK PIN BOTTOM  
522 COLUMN VEE STRIP  
523 TABLE VEE STRIP  
524 CROSS SLIDE VEE STRIP  
525 LEVER BOSS  
526 BALANCE PULLEY  
527 TEE BOLT  
528 LEVER  
HANDLE 1.580/90 N-16  
529 WEIGHT  
CHAIN 69 PITCHES EX CONN  
CHAIN CONNECTORS  
531 DEPTH STOP SHAFT  
533 DEPTH STOP BLOCK  
535 DEPTH STOP LATCH  
SPRING COMP 8DIA X 25  
STEEL BALL DIA 5/16INS  
LOCKING LEVER M8X20  
536 CHISEL BUSH



540 LENGTH STOP SHAFT  
541 LENGTH STOP  
542 CLAMP PAD STEADY  
543 COLUMN COVER  
544 CHUCK GUARD PTD YELLOW  
SPANNER 24MM SINGLE END  
SPANNER 19MM SINGLE END

## Machine Identification

Your machine has an individual serial number stamped on the top surface of the rear wall of the table. This number can also be found on the front cover of this manual. Always quote your serial number when applying for spare parts etc.

