

INSTRUCTION MANUAL
FOR
PLANER THICKNESSERS
TYPE MB & CP

DECLARATION OF CONFORMITY 93/44/EEC

MANUFACTURER'S NAME AND ADDRESS:

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PRODUCT DESCRIPTION & TYPES

Planer Thicknessers type MB & CP

NAME AND ADDRESS OF EC TYPE EXAMINATION BODY

A.E.A. Technology
Risley
Warrington
WA3 6AT
ENGLAND

CERTIFICATE NUMBER

0466/94/7-5

SIGNATURE OF AUTHORISED REPRESENTATIVE



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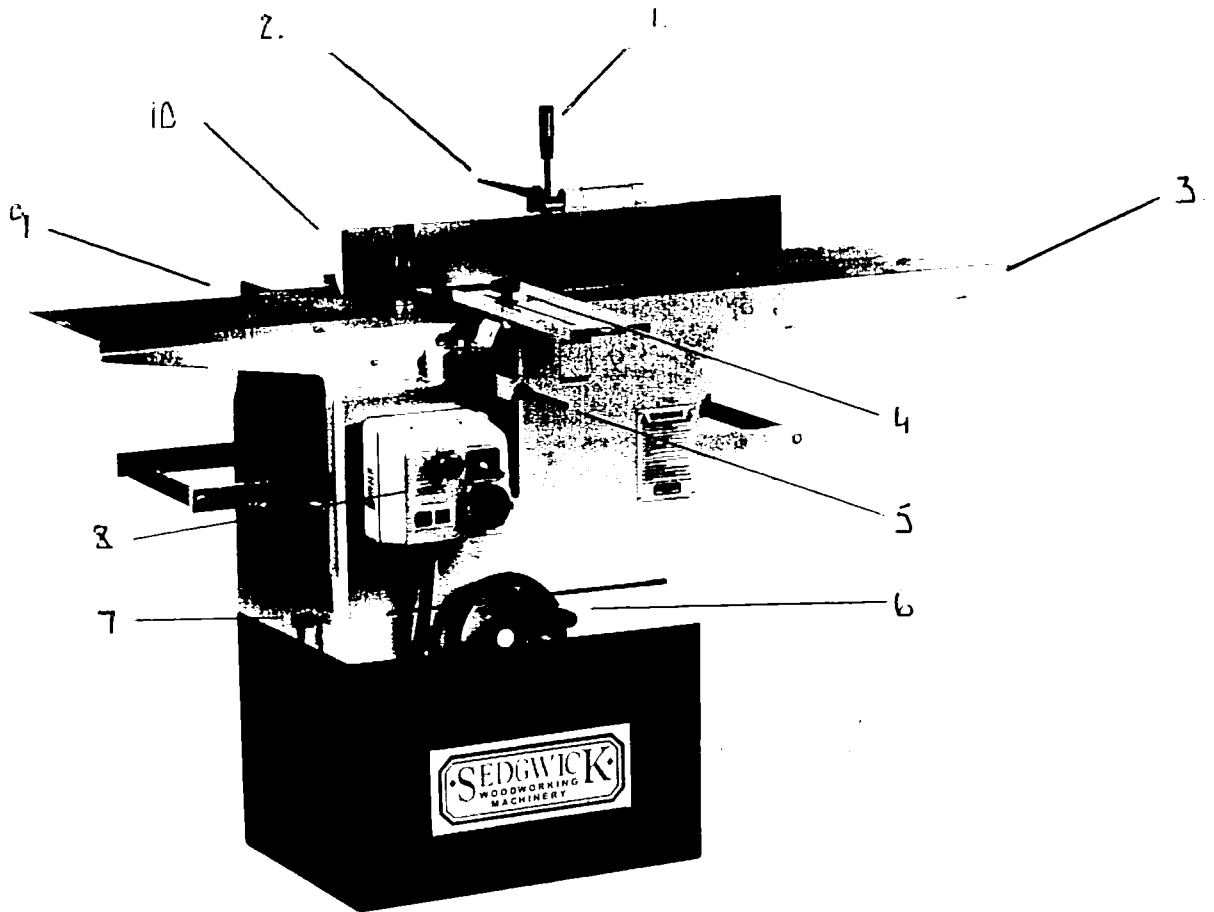
SPECIFICATION

MACHINE	MB	CP
MOTOR RATING 3 PHASE 1 PHASE	3.0 kw 2.2 kw	4.0 kw 3.0 kw
FEED MOTOR RATING	0.375 kw	0.375 kw
SURFACE CAPACITY	308 mm	410 mm
THICKNESSING WIDTH	308 mm	410 mm
THICKNESSING DEPTH	230 mm	230 mm
REBATING DEPTH	16 mm	16 mm
SURFACE TABLE LENGTH	1500 mm	1700 mm
INFEED TABLE LENGTH	850 mm	850 mm
SURFACE TABLE HEIGHT	885 mm	885 mm
THICKNESSING TABLE LENGTH	600 mm	600 mm
TABLE LENGTH OVER EXTENSION ROLLERS	1000 mm	1000 mm
CUTTERBLOCK DIAMETER	102 mm	102 mm
CUTTERBLOCK KNIVES	3	3
FEED ROLLER DIAMETER	51 mm	51 mm
FEED SPEEDS 3 PHASE 1 PHASE	4.5 and 7 m/min 6 m/min	4.5 and 7 m/min 6 m/min
FENCE SIZE	750 x 120 mm	900 x 140 mm

SHIPPING DETAILS

DIMENSIONS LxWxH	1700 x 950 x 1215	1950 x 1050 x 1225
GROSS WEIGHT WITH CASE	390 KG 500 KG	430 KG 560 KG

ILLUSTRATION



1. FENCE CANT LOCK
2. FENCE LATERAL LOCK
3. SURFACE TABLE RISE AND FALL HANDLE
4. CUTTERBLOCK GUARD HORIZONTAL LOCK
5. CUTTERBLOCK GUARD VERTICAL LOCK
6. THICKNESSING TABLE RISE AND FALL
7. THICKNESSING TABLE VERTICAL LOCK
8. CUTTERBLOCK MOTOR AND FEED GEAR ELECTRICAL CONTROL PANEL
9. REAR MACHINE GUARD
10. REAR CUTTERBLOCK GUARD

DESIGN AND PURPOSE

The Sedgwick Planer Thicknesser Type MB / CP is a dual purpose machine designed to plane wood and similar materials by means of a horizontally rotating cutterblock. When surfacing, the workpiece is passed over the top of the cutterblock and the lower surface is planed. The infeed table of the surface planing unit is adjustable in height. When planing material to a set thickness, the wood is passed underneath the cutterblock, supported by the thickening table, and the top surface is planed.

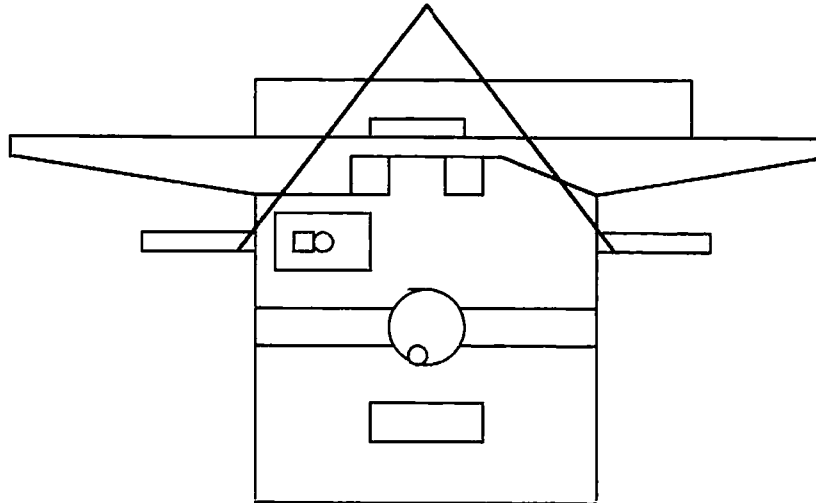
The following operations can also be performed on the machine, and guidelines on how these should be performed safely are provided in this manual: flattening, edging, chamfering, bevelling, and rebating.

INSTALLING YOUR *SEDGWICK* PLANER THICKNESSER

HANDLING THE MACHINE

Always use a sling within the safe working load of the machine weight. Machine weights are provided on the machine specification sheet. Before lifting place a piece of wood of sufficient length to lock up against the cutterblock and both feed rollers on the thickening bed. Wind the bed up using the Thickening Rise And Fall Handwheel until the wood is locked firmly in position. Sling underneath the machine's feed table extension roller arms.

Do not walk or stand under the machine during lifting.



INSTALLATION

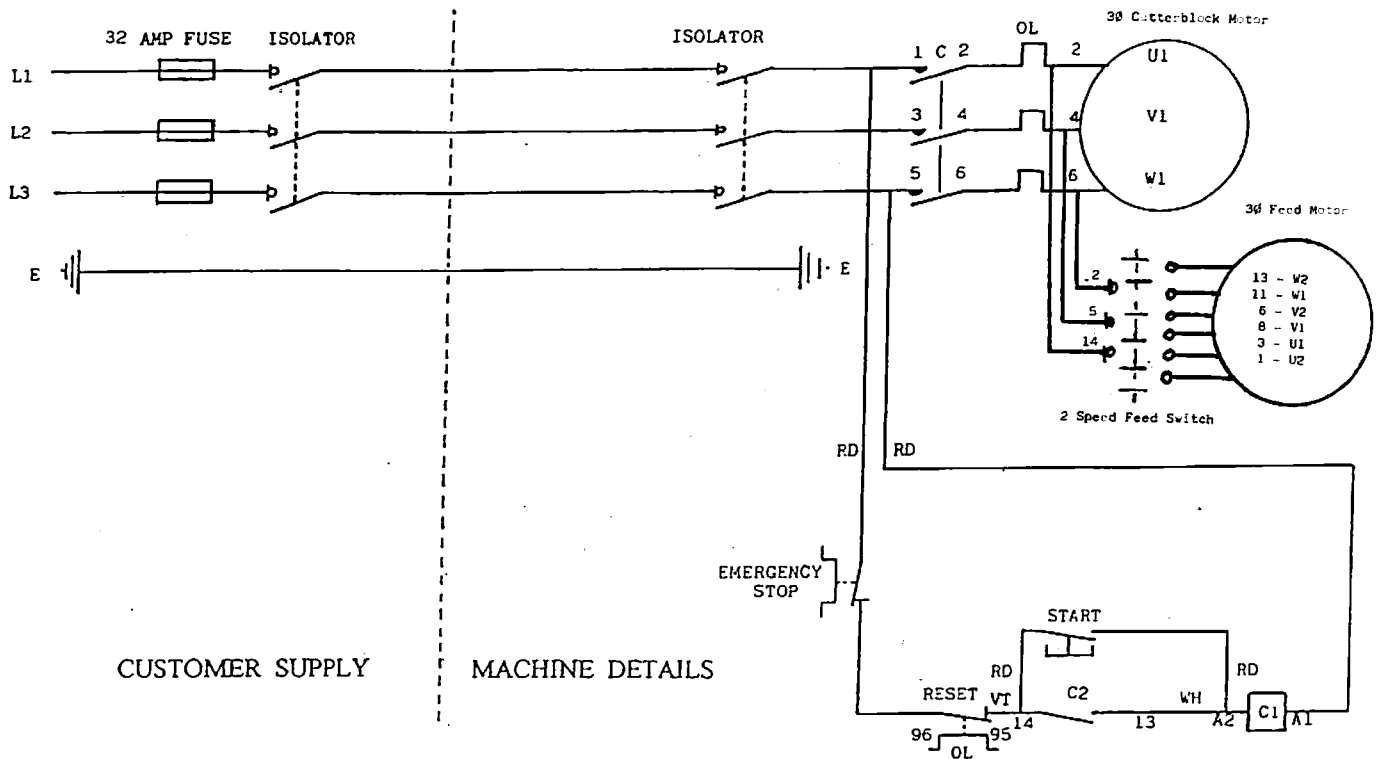
1. For the machine to cut in an accurate and efficient manner it is essential that it be installed on a firm foundation. Holes for M10 foundation bolts are provided in the machine base. Level the table tops by packing under the feet of the base as required.
2. There should be provided around every woodworking machine sufficient clear and unobstructed space to enable, in so far as is thereby practicable, the work being done at the machine to be done without risk of injury to persons employed.
3. The surrounding floor space should be maintained in good and level condition and, as far as reasonably practicable, free from chips and other loose material and shall not be allowed to become slippery.
4. Remove the protective grease using turpentine or paraffin and lightly oil cleaned surfaces to prevent rusting.
5. Electrical wiring should be carried out by a competent electrician following the directions given below.
 - The motor, cutterblock/ feed control panel, and isolator have been wired in at the factory and tested before despatch. All that is required is to connect the power supply to the isolator.
 - Check that the supply details on the motor name-plate 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 cutterblock which should be clockwise when viewed from the starter side of the machine.

ELECTRICAL

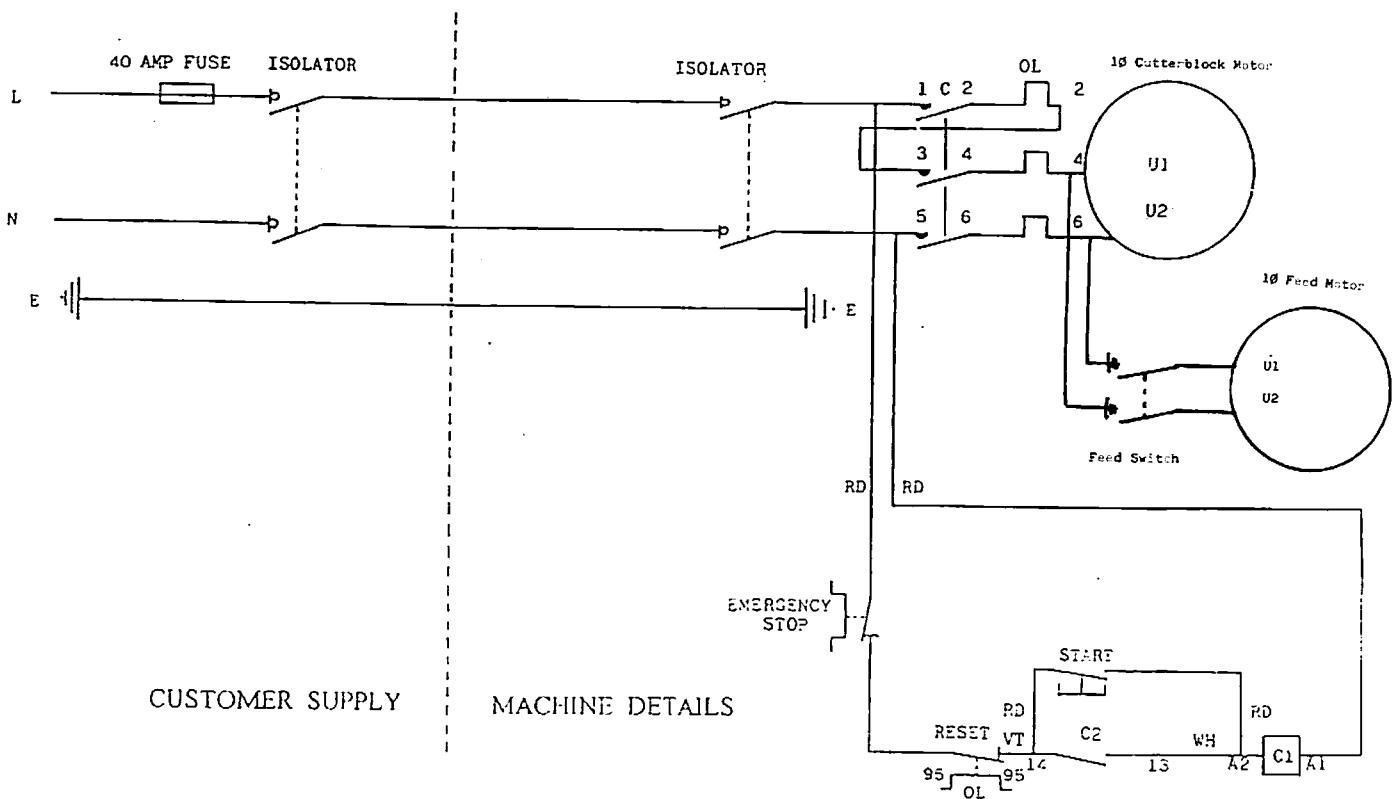
MACHINE TYPE	RECOMMENDED FUSE SIZE	RECOMMENDED CABLE SIZE
MB Three Phase	32 amps	2.5 mm
MB Single Phase	40 amps	4 mm
CP Three Phase	32 amps	2.5 mm
CP Single Phase	40 amps	4 mm

WIRING DIAGRAMS

THREE PHASE SUPPLY DETAILS

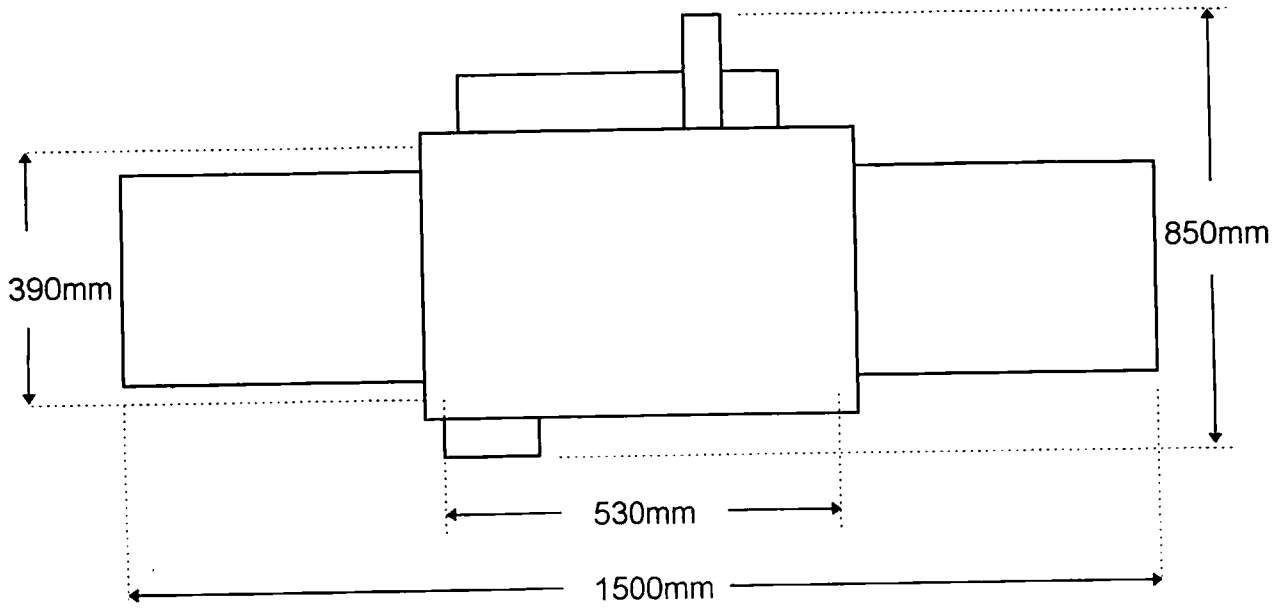


SINGLE PHASE SUPPLY DETAILS

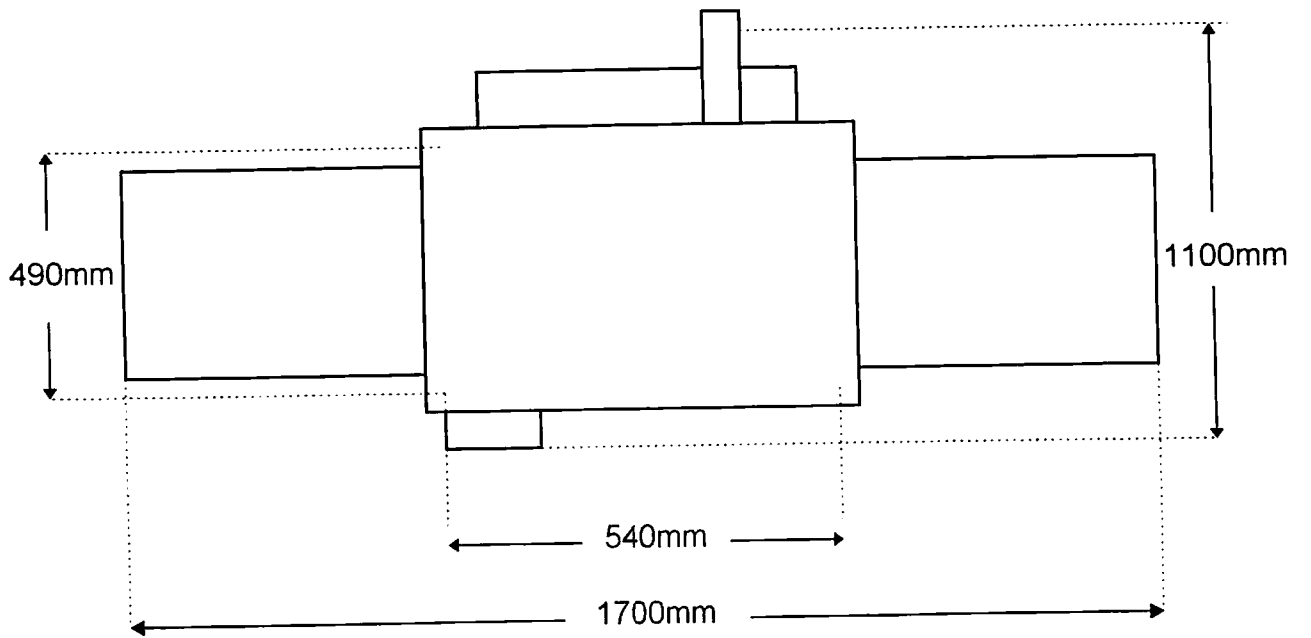


FOUNDATION DRAWINGS

SEDGWICK MB



SEDGWICK CP

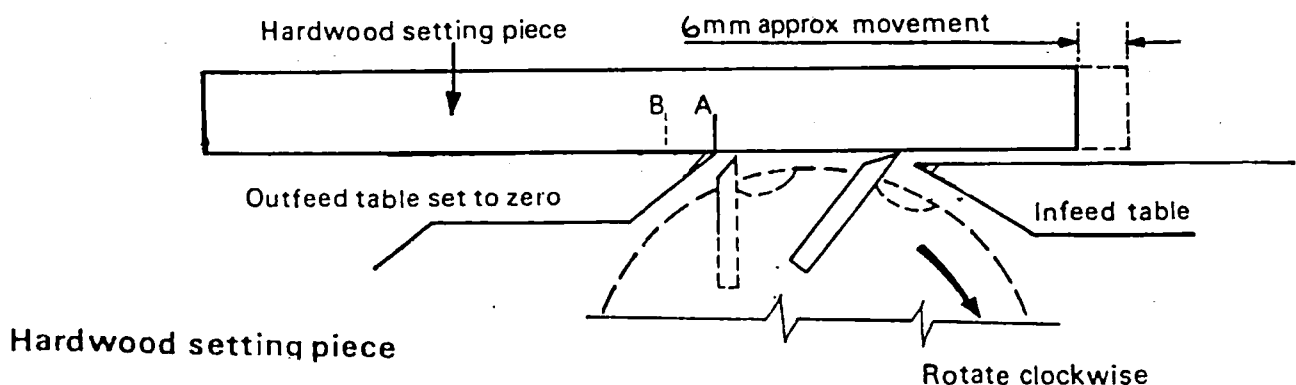


OPERATING INSTRUCTIONS

THE CUTTERBLOCK

The cutterblock knives are set correctly in the cutterblock before despatch and it is essential that replacement knives are set in exactly the same position. To maintain the quality of finish the knives must be kept sharp and set properly. Sharp knives will reduce the risk of snatching of the timber and therefore injury. The sharpening of the knives should be done professionally and honing/ hand sharpening should be avoided. To replace the knives on a Sedgwick cutterblock the following guidelines should be followed:

1. When you change the cutters, first isolate the machine, but also put up a notice saying "cutters being changed", in case you have to leave the machine for any reason and someone else might try to use it not knowing the cutterblock screws are loose.
2. Remove the fence and guard and store them safely.
3. Lower the infeed table using the surface table rise and fall handle.
4. Clean the grub screws thoroughly and remove the knives using the allen keys provided
5. Clean the slot and chip breaker of any resin etc. with a solvent.
6. New cutters must be in perfect balance, and should be parallel.
7. Cutter edges must be straight, neither convex or concave, and free of cracks or chips.
8. Replace sharpened knives setting them deep enough in the milled groove so that they do not project above the lip of the outfeed table. Ensure that the knife protrudes 2mm width-ways from the end of the block on the rebate side of the machine. Gently grip the knife with the two outermost grub screws.
9. Raise the knives using the two allen screws in the bottom of the slot. Adjust them so that the cutting edge is just proud of the outfeed table as illustrated overleaf.
10. To perform the old fashioned test illustrated for the correct setting of the knives a piece of wood should be placed above the cutterblock and the cutterblock turned manually in its direction of cut. When the blade being set comes into contact with the piece it should carry the piece forward 6mm. Clearly, if the wood is carried forward more than 6mm then the knives are set too high, if less then they are set too low.
11. When set correctly, tighten working from the centre screws outwards. Recheck knife settings after tightening.
12. Reposition the table, fence and guards.
13. Remove all tools from the machine area.
14. Test the operation of the planer with a trial piece of timber.



Points to check on the cutterblock are

1. Excessive wear of the block surface due to honing or grinding cutters in situ.
2. Damage or distortion to the block.
3. Nuts and threads on studs are stretched, or have damaged threads. Bolt heads or nuts have rounded corners.
4. The condition of the bearings - check for movement and listen for noisy bearings.

MACHINE SETTING

Always isolate the machine before setting up or making any alterations. Ensure that the cutterblock and cutters are clean and free from grease, rust preventative, rust and wood residue etc. Check visually for any cracks etc. in the cutters and replace any suspect components. Check the knives for tightness on a daily basis.

TOOL HANDLING

Care should be exercised when handling cutter blades, wherever practicable use a tool carrier or wear protective gloves.

DEPTH OF CUT

When surfacing, the depth of cut is set by dropping the infeed table the required amount, which is read off the vernier scale. The outfeed table is set level with the cutting circle of the cutterblock.

The amount of cut is determined by the sawn finish and the straightness of the timber. For normal working it is good practice to set the amount of cut to 1.5mm. When planing rough sawn or bowed timber the amount of cut can be increased to 3mm, so as to obtain a clean finish with one pass over the cutters.

When thicknessing, the depth of cut is altered by raising or lowering the thicknessing bed. Never try to remove too much at one pass. 3mm should be the maximum. Removing very small amounts can leave ridge marks across the timber, made by the infeed roller.

FEED SPEED SELECTION

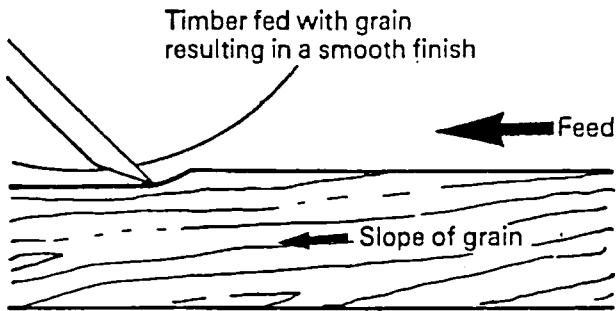
The thicknessing feed speed is selected by switching the rotary switch on the main starter. Anticlockwise is off, clockwise switches the feed on. Three phase machines have two speeds i.e. OFF, 1, and 2. A slow speed will give closely spaced cutter marks, and a faster feed speed will give wider spaced cutter marks, i.e. with a larger pitch. The feed motor will not operate unless the cutterblock is running. Avoid changing feed speed when cutting is in progress.

PREPARATION OF THE WORKPIECE

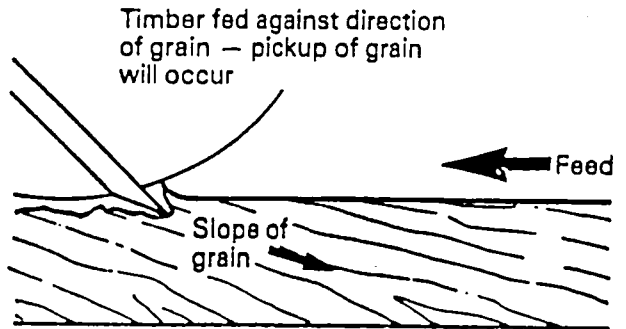
In preparation for all processes, examine the workpiece carefully for faults which may affect the machining process, particularly foreign bodies such as nails, staples etc. There are many different kinds of timber, with many different working characteristics. A skilful wood machinist must consider the grain direction, the shape of the timber, whether it is bowed or twisted, and the positions of defects such as knots, wavy edges etc. He should also consider any other peculiar characteristics of the material such as, salicaceous or

calceous deposits, which could cause severe blunting and chipping of the cutters, resulting in more frequent changing. If a number of abrasive pieces are to be planed, use the ends of the cutter rather than the middle if possible. The timber should be fed in with consideration to the grain direction as follows:

Correct



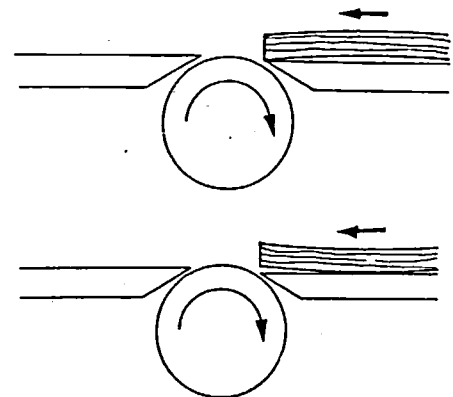
Incorrect



PLANING BOWED BOARDS

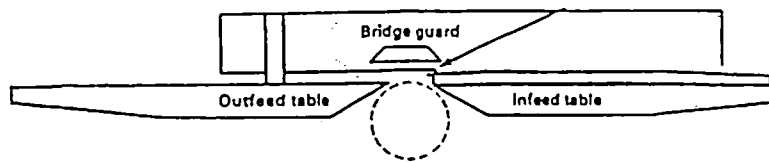
Slightly bowed boards may be planed by the method shown below, but care must be taken to ensure two point contact on the infeed table to avoid throwback. Badly bowed boards should not be planed in this method and should be cut up for jobs requiring shorter lengths.

Always plane the board hollow side down, as shown

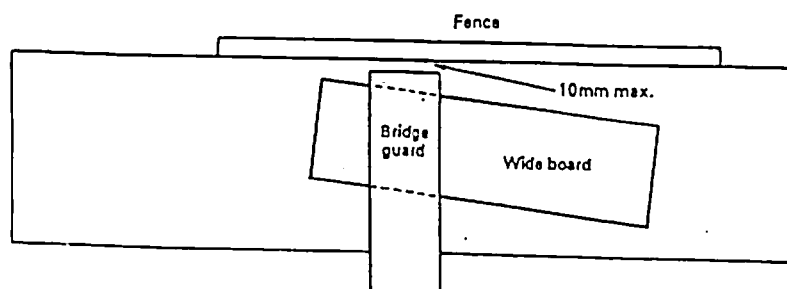


Working round side down causes timber to rock, thus making it very difficult to obtain a straight parallel face.

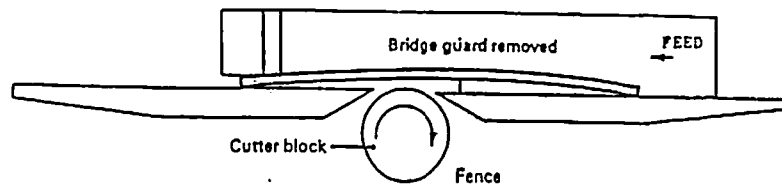
The bridge guard must always be in position when planing bowed boards, as shown:



Wide boards should be fed at an angle to reduce initial impact and the risk of throwback.



As it is illegal to operate the surface planer without the bridge guard, the long accepted way of placing the front portion of timber on the outfeed table and taking several cuts off the other end then reversing the timber should not be used.



ILLEGAL PRACTICE

GUARDING

note: All guards should be checked at the beginning of each working shift for damage distortion etc.,

THE BRIDGE GUARD

The yellow pillar mounted guard at the front of the machine is known as the bridge guard. It is designed for use when surfacing, and it is important that all operators are familiar with its use. Investigations show clearly that most accidents occur because the guard is not properly adjusted or, in most cases, is not mounted on the machine.

The guard is provided with two hand locking arrangements, one for the vertical plane and one for the horizontal. The former is positioned on the front frame of the machine, the latter on the guard's mounting block. The pillar mounting is grooved to receive the 8mm vertical adjustment locking lever, and the guard has been set in the factory so that when this is the case the guard then sits centrally over the axis of the cutterblock.

This guard should be maintained through regular cleaning and lubrication, and if it becomes distorted through misuse then it should be replaced.

THE CUTTERGUARD

To the rear of the fence is mounted a hinged guard which is known as the cutterblock guard. This is designed to guard that part of the cutterblock which is on the side of the fence remote from the bridge guard. There is no need for its removal from the fence.

THE REAR DRIVE GUARD

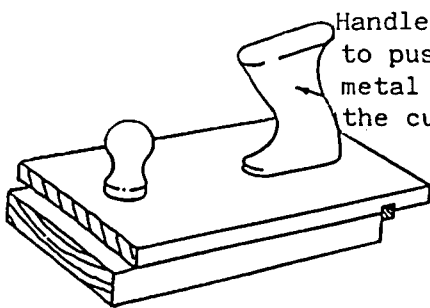
The rear drive guard should only be removed for maintenance and cleaning.

THE ANTI-KICKBACK FINGERS

The anti-kickback fingers provided with this machine must be maintained in good condition if they are to be effective. They must be examined every working shift to check the condition of the contact face of the fingers for impact damage and to ensure that the fingers fall freely under their own weight.

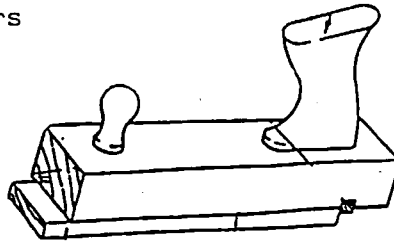
PUSH BLOCKS AND PUSH STICKS

In some operations push blocks should be used especially when planing short pieces of timber, where it is necessary to pass the workpiece between the edge of the bridge guard and fence. They should be constructed so as to give the machinist a firm grip and so reduce the risk of his hands coming into contact with the cutters. A push block will reduce the risk of a short workpiece dipping as it passes the lip of the feed table and thus making such abrupt contact with the cutters that a throwback will be almost inevitable.



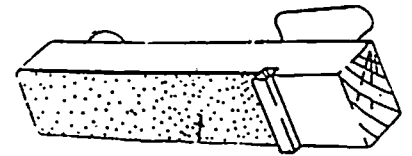
Handle - doweled and glued to pushblock therefore no metal contact possible with the cutters

Hardwood strip housed and glued into body of pushblock



Narrow pushblock for short narrow thin material

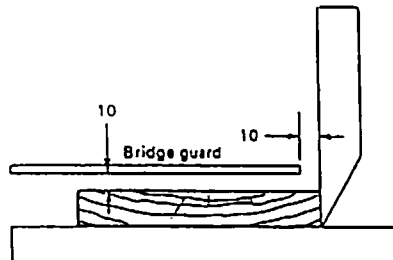
Abrasive paper glued to base to give better frictional grip and prevent the workpiece moving sideways



WORK TYPES

FLATTING

When flattening, the wood is passed below the bridge guard, which should be within 10mm (3/8 inch) of the timber and 10mm of the fence, as shown below:



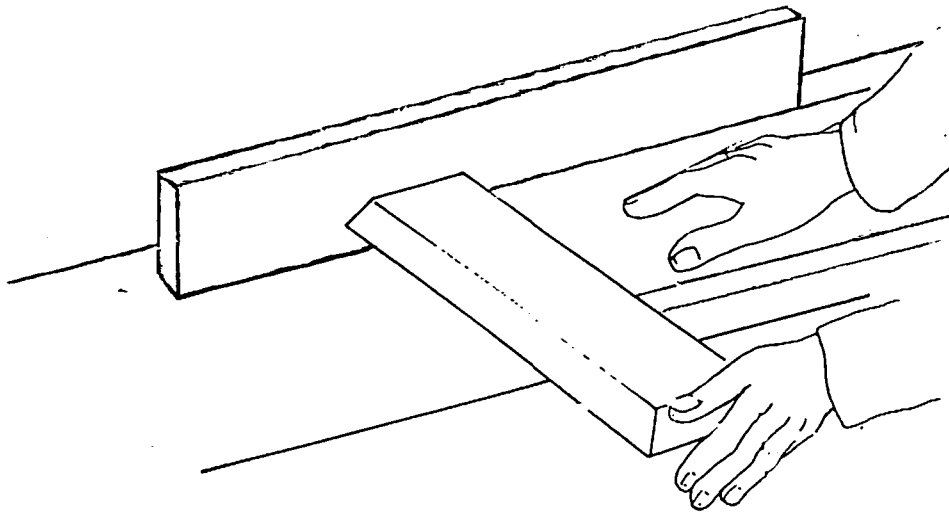
Workpieces longer than the in and out-feed surfacing tables should be supported, e.g. by extension tables or roller supports. Unless very thick material is being planed, flattening should be the safest of operations on a hand fed planer, provided that all necessary precautions are taken. In an attempt to justify the incorrect use of the bridge guard (many wrongly pass the timber between the end of the guard and the fence) machinists often assert that the left hand has to jump the guard as the wood is passed over the cutters, the consequent interruption in the progress of the cut preventing the production of accurate work. It is also claimed that the left hand must exert pressure on the wood immediately over the cutterblock. Only in the case of flattening short pieces of wood might it be necessary to pass the wood between the end of the bridge guard and the fence in order to maintain adequate control. In this event, the wood should be fed up and over the cutters

by means of a push block as described in the relevant section of this manual. Small pieces are the most difficult to control, so consider, do you really need to face and edge them?

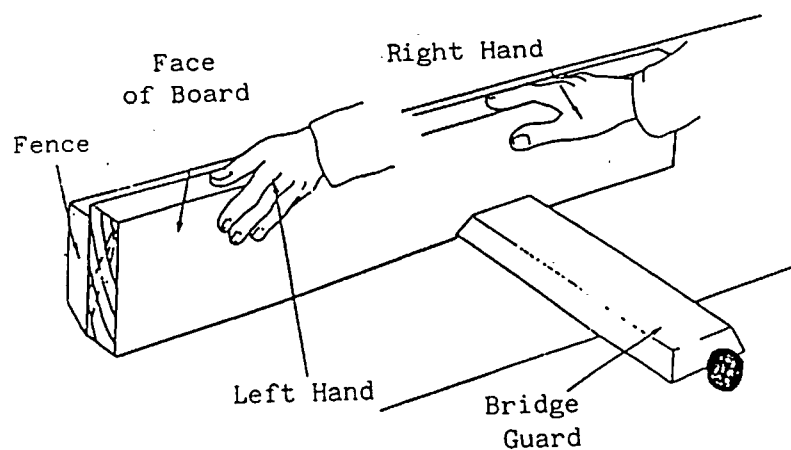
The HSE has published guidelines on the ergonomically correct use of hand fed planers, some of which is reproduced here:

Hand positioning

Preparatory: Using the left hand, with the guard resting on the outfeed table, adjust the guard horizontally up to the fence and then lift the guard to just accommodate the thickness of the workpiece. Push the workpiece with the right hand only a little under the guard and let the latter rest upon the workpiece. This stage should not be carried out while the cutterblock is in motion.



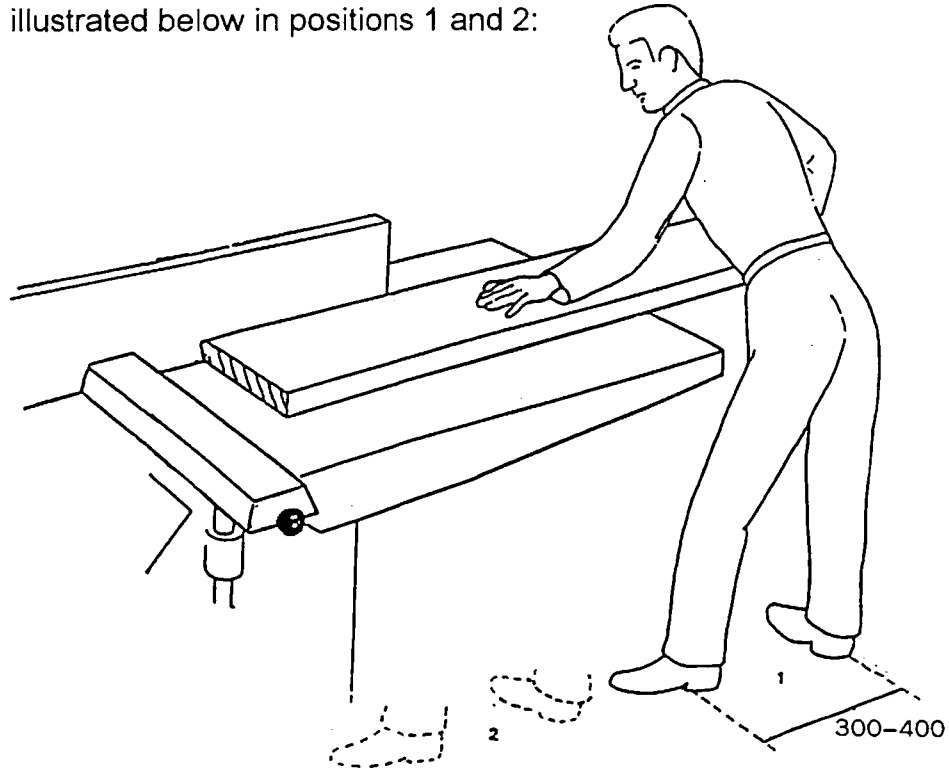
The work should be fed by the right hand, and if the knives are sharp and the tables are properly set the main functions of the left hand are to assist feeding by drawing the wood along the delivery table towards the end of the cut, and to remove the planed piece.



When flattening a workpiece of more than 75mm thickness the bridge guard must be lowered on the table and adjusted horizontally to the workpiece. The workpiece should be straightened, with flat hands beside the guard, along the fence.

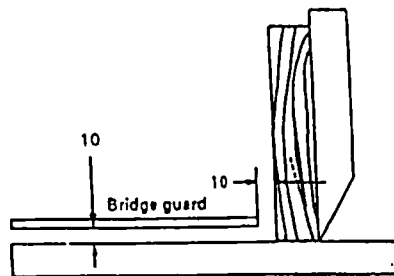
Foot positioning

It is important that a good firm and balanced base is made and maintained by the feet during planing. The feet should move forward with the work piece giving good control of the work piece as illustrated below in positions 1 and 2:

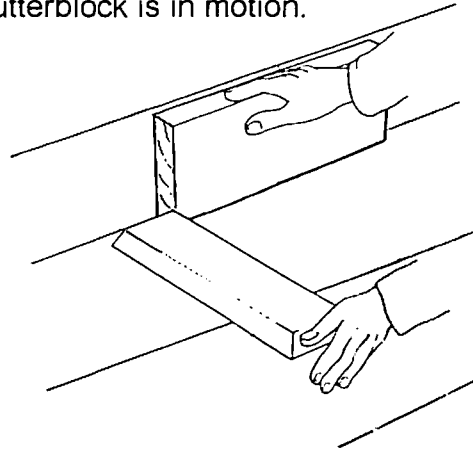


EDGING

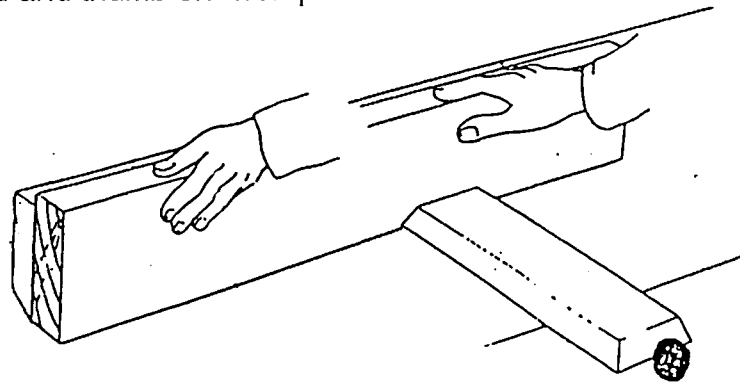
When edging, the wood is passed between the end of the bridge guard and the fence. The bridge guard should be adjusted both horizontally and vertically to leave only 10mm from both the feed table and the workpiece, as shown below:



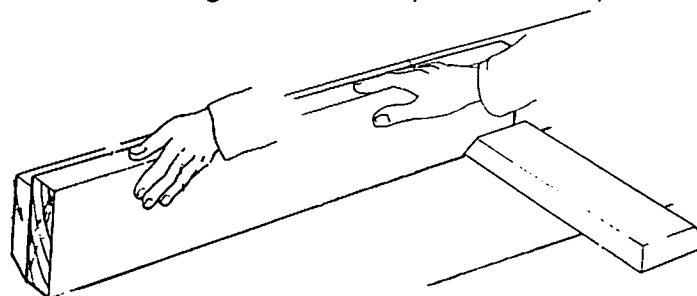
When edge planing, follow these guidelines regarding the correct positioning of hands :
Preparatory: Place the workpiece against the fence and move it with the right hand forward to about the front edge of the infeed table lip. With the left hand bring the guard up to the workpiece. The guard should be positioned as previously shown. This stage should not be carried out while the cutterblock is in motion.



During operation the workpiece is pressed up against the fence and the outfeed table by the left hand, fist closed (thumb on workpiece). This will produce an edge that is square to the face of the timber. The workpiece is moved forward regularly by the right hand, again with the fist closed and thumb on workpiece.



When edging a workpiece of more than 75mm thickness, move the piece forward with both hands. In doing so, the left hand, fist closed, presses the workpiece against the fence and the outfeed table. The right hand lies upon the workpiece.



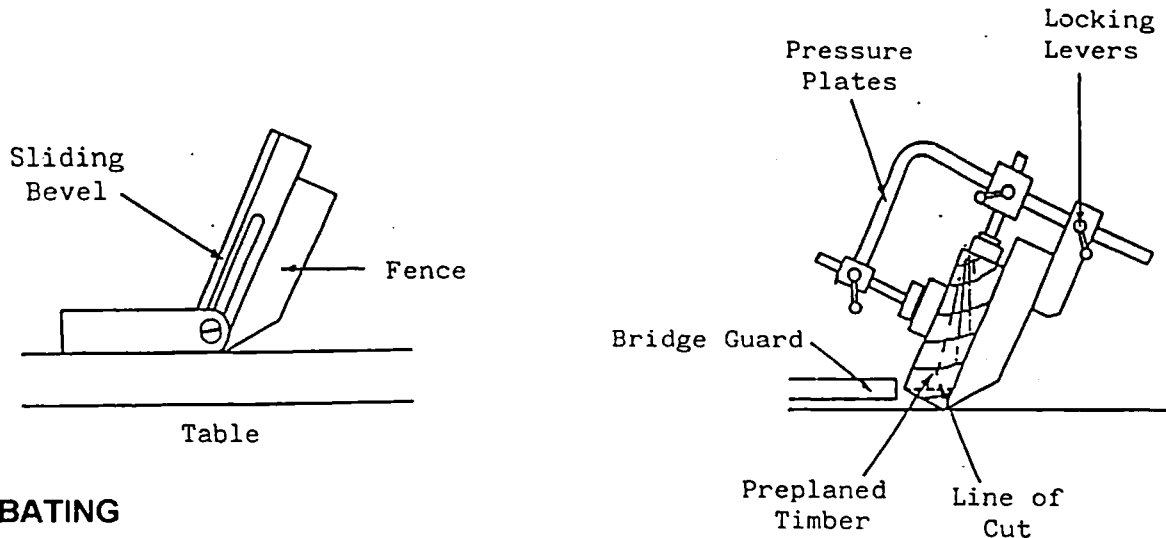
Edge planing of plywood, chipboard and blockwood

Plywood and chipboard have a severe blunting effect on cutters due to the abrasive nature of the glue line. For this reason, when edge planing, keep well over to the far side of the cutter, leaving the rest of the cutter for other work. Plywood, chipboard and the like

are best cut on a dimension saw using a tungsten tipped blade, which gives an excellent finish. Another alternative is to place the material on a vertical spindle moulder, using tungsten tipped cutters.

BEVELLING OR CHAMFERING

This can be achieved by angling the fence with the aid of a sliding bevel to the angle required. This operation can be done as for edge planing, but the use of the shaw guards provided will prevent the workpiece from slipping. The workpiece is fed through the tunnel formed by the Shaw Guards. The size and angle of bevel will determine whether it can be worked at one pass, or whether a second or third cut is required for safety in working.



REBATING

Provided that it is not a stopped rebate, this operation can be done on the Sedgwick planer range provided it is effectively guarded. The Shaw Guards must be used to ensure this operation can be done safely.

1. Check the cutters

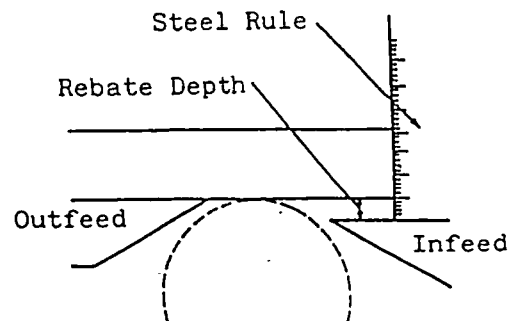
Ensure that the edge of the cutter clears the end of the block and the outfeed table edge.

2. Set the width

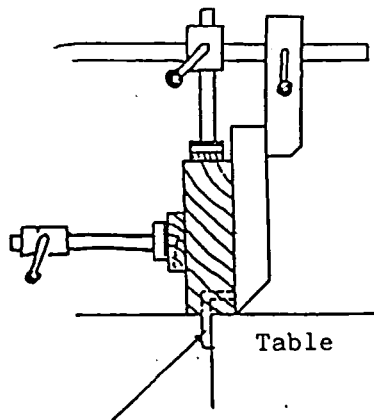
Set the width of rebate by moving the fence to the required position.

3. Set the depth of rebate

The depth of rebate can be set using a steel rule as shown:



The size of rebate will determine whether or not it can be done at one pass. Two or more cuts may be required, but it must be remembered that the maximum depth of cut is 16mm, and rebates in excess of this will have to be done on other machines. Ensure that the shaw guards are positioned as shown over the page.



Edge of planer knife
must clear end of block
and outfeed table edge

DIAGNOSING FAULTS IN PLANING

Fault

The timber rocks, and the edge is rounded in length after being surfaced.

Uneven finish.

A pronounced cuttermark pattern.

The timber 'drops' at the end of the cut and gouges out the end of the timber.
Excessive vibration causing a poor finish.

The edge of the timber is not square to the face.

Timber hits the outfeed table

Timber becomes wedge shaped over full length.

Cause

The cutters are out of alignment with the table.

Chippings lie between the timber and table.
The timber is placed round-edge down.
Dull cutters causing chatter marks on the timber.
An uneven feed rate.

Too fast a feed rate.

The knives are too high above the cutterblock.

Unbalanced cutters or block.

Worn bearings.
The fence is not square.

The cutters are out of line with the table.

Knives are too low in the cutterblock.

Knives are too low in the cutterblock.

Diagnosis

Re-set the cutters and check the edge for straightness, wear or maladjustment of the slides on the table.

Isolate the machine and clear the chippings.
Place the timber hollow edge down.

Re-sharpen the cutters.

Feed the timber into the cutters at the correct rate.
Reduce the feed rate.

Re-set the cutters.

Check the balance of the cutters on a balancing stand, and grind the heavier one so as to balance correctly. Run the block without cutters to see if it still vibrates.

Renew the bearings.
Adjust the fence square to the table.

Re-adjust the cutters.

Re-set the cutters

Re-set the cutters.

LIMITATIONS OF USE AND SAFE WORKING PRACTISES

The following operations shall not be attempted on surface planing and thicknessing machines as they cannot be performed safely:

- stopped work, i.e. any cut which does not involve the full workpiece length,
- planing of badly bowed timber where there is inadequate contact of the timber on the in-feed table,
- planing tapers which involves 'dropping on' where the bridge guard cannot be correctly positioned.

Training and instruction is a central requirement of the Woodworking Machines Regulations 1974. No hand-fed planing 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 planer / thicknesser 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 fence, jigs and safeguards;
- The safe handling of the workpiece when cutting;
- The position of the hands relative to the cutters and the safe stacking of the workpieces 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.

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.

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 operators 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.

THICKNESSING

Most of the accidents caused by the thicknessing operation are due to the timber being thrown back by the knives. This can occur when a heavy cut is being attempted on difficult material, but it happens more commonly when a number of pieces are being thicknessed together. Because of inevitable variations in the thickness of the pieces, the feed roller cannot grip each piece equally, and a thinner piece travelling towards the cutter block between two thicker ones is liable to be ejected violently when it comes into contact with the knives.

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. The minimum recommended air volume required to effectively exhaust these machines @ 20 m/sec.is:

MB 950 Cubic Meters / Hour

CP 1400 Cubic Meters / Hour

The machine is supplied as standard with a 125/ 150mm dia connection point respectively. Reducers are not recommended. Guidance for use of these **dust extraction hoods** is as follows:

When Surfacing

The hood is designed to sit on the thicknessing bed, and should be inserted hollow side upwards with the exhaust outlet pointing towards the operator. The lug on the underside of the hood should locate against the end of the bed, and when the bed is wound up the hood locates on the under side of the outfeed surface table against the depth of cut limiter casting.

When Thicknessing

The fence must be moved to the rear of the surfacing table, and the infeed table lowered slightly. The hood should then be placed centrally over the cutterblock, with the hollow side down and the exhaust outlet pointing towards the operator, and locked in position using the bridge guard.

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:

Woodwaste Control, Unit 6 Soho Mill, Wooburn Green, High Wycombe, BUCKS HP10 0PF. TEL. 01628 528412 FAX. 01628 810218

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 which directly effect the noise level of the machines:

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 Blade	This effects the windage noise and increase roughly in proportion to the width of cut.
	Blade Sharpness	Dull and worn blades exert more force on the timber thus creating more noise.
	Balance	Out of balance blades mean vibration and changes in cutting conditions, resulting in increased noise levels.
Extraction	Air Velocity/ System Design	Resonant conditions can lead to high noise levels, excessive turbulence and chip impact can increase noise levels substantially.

Using correctly designed extraction hoods and a compatible system the compound effect on this machine was to increase the readings by 1dB(A).

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.

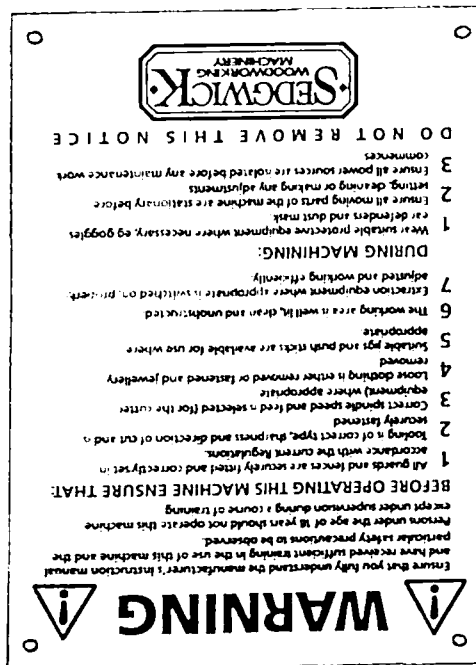
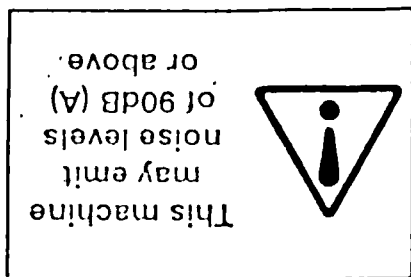
OPERATION	TIMBER	DEPTH OF CUT	NOISE LEVEL dB(A) @ 1M
None	None	No load	77
Surfacing	Softwood 75mm wide	2mm	82
Surfacing	Softwood 300mm wide	2mm	89
Surfacing	Hardwood	2mm	86
Thicknessing	Softwood 77mm wide	2mm	89
Thicknessing	Softwood 300mm wide	2mm	93
Thicknessing	Hardwood 75mm wide	2mm	89

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 workshop, the other sources of dust and noise, 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.

WARNING LABELS

The following warning labels are affixed to the machine. Please ensure that all operators read them carefully.



MAINTENANCE AND LUBRICATION

In order to ensure long life, maximum reliability and optimum performance, the following maintenance and lubrication requirements should be carried out as scheduled, otherwise the machines warranty could be invalidated.

Note. Electrically isolate the machine and ensure that all spindle movement has ceased before carrying out any of the operations.

Daily The machine and the surrounding floor area must be kept clean and free from obstructions. Never sweep sawdust away from the cutterblock while it is in motion. Pay particular attention to the area underneath the feed roller bearing blocks, ensuring that no chippings are trapped there.

Weekly Using a white spirit remove any resin from the feed rollers and thickening bed. Resin build up on feed rollers will, if not cleaned away, cause a tramline effect on work surfaces. On thickness tables this build up can even cause stalling of the drive.

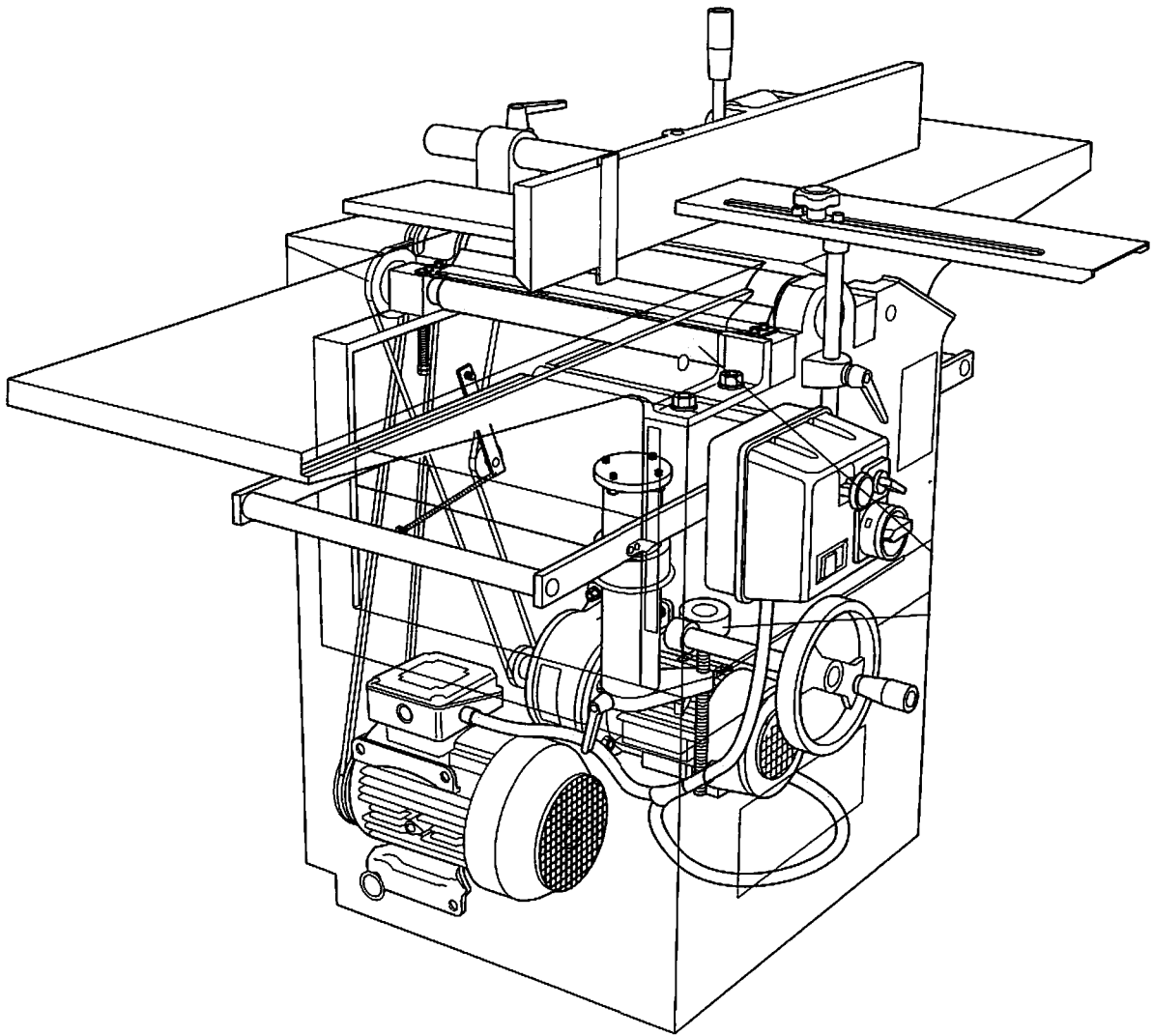
Monthly Lubricate the machine tables and fence, using either furniture wax applied with 0000 steel wool, or an easy glide spray. This will not only make for safer use, it will also improve the quality of the finished cut. Avoid using either candle wax or silicon lubricant.

Remove the rear access panel and check the drive belt for wear and tension. The belt should have a maximum lateral movement of 12mm.

Using a general purpose oil (approximate grade 68) lubricate the following:

1. Drive chain
2. Thickness table rise and fall barrel
3. Thickness table rise and fall screw
4. Thickness table rise and fall gears
5. Surface table screw and slide assembly
6. Fence table bar
7. Fence swivel screw
8. Cutterblock guard vertical shaft

6 Monthly A full service by a qualified engineer.



PARTS LIST

PART NO.	PART DESCRIPTION	NO. PER MACHINE
701	BASE	1
702	RISE & FALL PILLAR	1
703	RISE & FALL NUT	1
704	RISE & FALL SCREW	1
3021	GEAR WHEEL	1
3024	GEAR PINION	1
708	HANDWHEEL SHAFT	1
709	MOTOR MOUNTING	1
720	THICKNESSING TABLE	1
721	THICKNESSING TABLE SUPPORT	1
723	GUIDE BARS	4
724	BEARING BLOCKS	2
725	TABLE ROLLER	1
726	EXTENSION ROLLER	2
830	MOTOR PULLEY	1
731	GEARBOX SPROCKET	1
732	CHAIN SPROCKET	2
833	CUTTERBLOCK PULLEY	1
734	CHAIN TENSION ARM	1
435	CHAIN TENSION SPINDLE	1
736	CHAIN TENSION SPROCKET	1
740/2	FRONT FRAME	1
741	REAR FRAME	1
742	TIE ROD	1
743/2	CUTTERBLOCK	1
744	CUTTERBLOCK WEDGES	3
745	BEARING COVER REAR	1
746	TRUNNION BLOCKS	4
747	BEARING COVER FRONT	1
448	SPRING STUDS	4
748	FEED ROLLER FLUTED	1
749	FEED ROLLER PLAIN	1
760	INFEED TABLE	1
761/2	OUTFEED TABLE	1
763	TABLE RETAINING PLATE	2
764	TABLE SCREW	1
765	SWIVEL BLOCK	1
766	NUT	1
767	TABLE HANDLE	1
768/2	ANTI KICK SHAFT	1
468/2	ANTI KICK FINGERS	13
469/2	SPACERS	12
770	FENCE TABLE BRACKET	1
771	FENCE TABLE BAR	1
772	FENCE SLOTTED BRACKET	1
774	FENCE SWIVEL SHAFT	1
775	FENCE WASHER	1

PARTS LIST CONTINUED

PART NO.	PART DESCRIPTION	NO. PER MACHINE
776	FENCE LOCK NUT	1
331	FENCE LOCKING LEVER	1
778/2	FENCE	1
779/2	FENCE LOOSE PIECE	1
491/2	GUARD VERTICAL SHAFT	1
783	GUARD BRACKET	1
479	SHAW GUARD SHAFT	1
478	SHAW GUARD BRACKET	2
353	SHAW GUARD SHAFT END HOLE	1
354	SHAW GUARD SHAFT SIDE HOLE	1

FAULT FINDING CHECKLIST

PROBLEM	LIKELY CAUSE	CORRECTIVE ACTION
Fails to start	<p>Main supply switched off</p> <p>Overload tripped</p> <p>Fuse blown</p> <p>Loose wire</p> <p>Coil failure</p>	<p>Check main switch</p> <p>Reset overload</p> <p>Check and replace fuses (check all three on three phase)</p> <p>Check all connections</p> <p>Check circuit of hold in coil</p>
Overload trips during starting	<p>Low voltage</p> <p>Low voltage</p> <p>Low voltage</p> <p>Three phase machines only: 1 fuse blown</p> <p>Machine jammed</p>	<p>Check supply voltage both on no load and on moment of switch on. Allowed variation plus/minus 6%</p> <p>Check that correct cable size has been used to install the machine. Change if necessary.</p> <p>Long runs of cable can cause voltage drop. Check that voltage is not outside the minus 6% tolerance. Re-site machine nearer supply or increase the cable size to compensate.</p> <p>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.</p> <p>Check spindle is free to rotate, clean as necessary.</p>
Excessive vibration	<p>Loose tooling</p> <p>Tooling out of balance</p> <p>Loose pulleys</p> <p>Loose guards</p>	<p>Check. Re-tighten.</p> <p>Run machine without tooling to confirm machine is balanced.</p> <p>Check machine pulleys and belts</p> <p>Re-position and re-tighten guards</p>