

RECORDED MACHINE DETAILS

MODEL

SERIAL NO.

DATE of PURCHASE

VOLTAGE

PHASE

CYCLES

QUOTE THIS INFORMATION
WHEN REQUESTING SERVICE
OR SPARES.

DISTRIBUTOR

STARTRITE

&

Models

K210 & K260

UNIVERSAL WOODWORKERS

HANDBOOK

30E

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WHEN ORDERING PARTS, PLEASE STATE :

1. Quantity required.
2. Part number and page number.
3. Power supply for electrical components.
4. Machine model and serial number.

NOTE : Illustrations may vary in detail according to model.

SPECIFICATION: K210

SURFACE PLANER

Table size	210 x 1225 mm (8.1/4" x 48")
Cutterblock speed	6000 r.p.m.
Cutterblock diameter	60 mm (2.5/16")
No.of cutters	2
Size of cutters	210 x 25 x 3 mm
Motor - 3 Phase	1.5kW - 2 H.P.
Motor - 1 Phase	1.5kW - 2 H.P.

THICKNESSER

Table size	210 x 440 mm (8.1/4" x 17.1/4")
Max.Planing thickness	155 mm(6")
Feed speed	6m/min. 20ft/min.

SAW

Table size	825 x 420 mm(32.1/2" x 16.1/2")
Spindle diameter	(1")
Max.saw diameter	230 mm (9")
Min.saw diameter	140 mm (5.1/2")
Sawblade thickness	2 mm
Blade above table	85 mm (3.1/4")
Sawblade speed	3250 r.p.m.
Motor - 3 Phase	1.5kW - 2H.P.
Motor - 1 Phase	1.4kW - 1.3H.P.

SLIDING TABLE

Table size	370 x 240 mm (14.1/2" x 9.1/2")
Max.cross - cut	450 mm (17.3/4")

SPINDLE MOULDER

Spindle diameter	1.1/4"
Rise & Fall	110 mm(4.1/4")
Spindle Speed	6000 r.p.m.
Motor - 3 Phase	1.5kW - 2H.P.
Motor - 1 Phase	1.5kW - 2H.P.

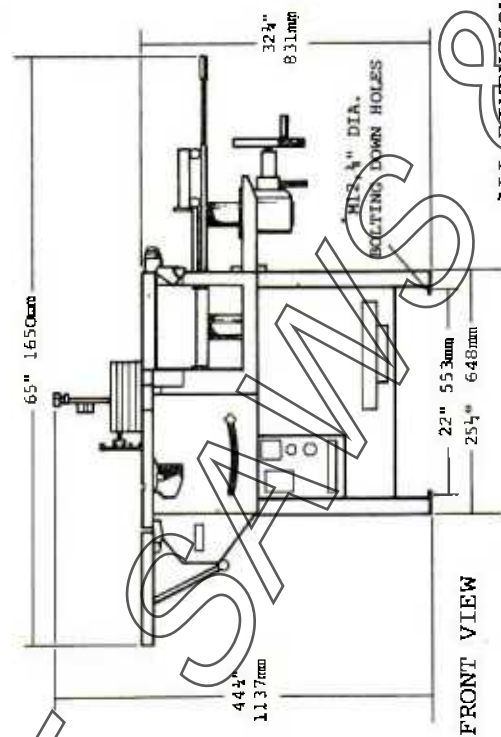
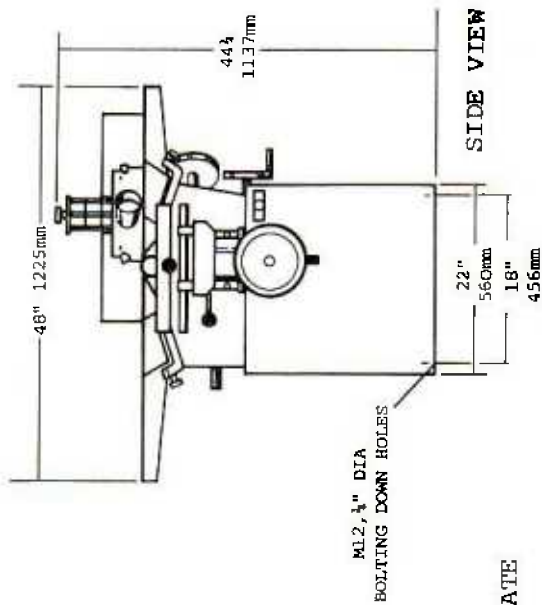
MORTICER

Table size	160 x 350 mm (6.1/4" x 13.3/4")
Longitudinal stroke	130 mm (5")
Traverse stroke	130 mm (5")
Vertical adjustment	80 mm (3.1/8")
Chuck capacity	0.16mm (5/8")

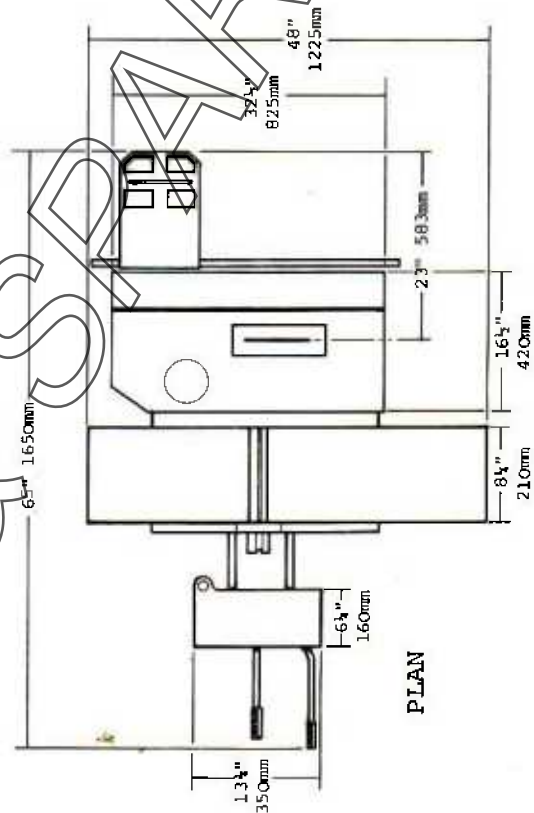
OVERALL DIMENSIONS:

NET WEIGHT :	1650 x 1225 mm (65" x 48")
	270 Kg. 595 lbs

ALL DIMENSIONS ARE APPROXIMATE



ALL DIMENSIONS ARE APPROXIMATE



FOUNDATION PLAN OF MODEL K210 UNIVERSAL WOODWORKER

SPECIFICATION: K260

SURFACE PLANER

Table size	260 x 1225 mm (10.1/4" x 48")
Cutterblock speed	6000 r.p.m.
Cutterblock diameter	60 mm (2.5/16")
No. of cutters	2
Size of cutters	260 x 25 x 3 mm
Motor - 3 Phase	2.2kW - 3 H.P.
Motor - 1 Phase	1.5kW - 2 H.P.

THICKNESSER

Table size	260 x 440 mm (10.1/4" x 17.1/4")
Max. Planing thickness	180 mm (7")
Feed speed	6m/min. 20 ft/min.

SAW

Table size	825 x 420 mm (32.1/2" x 16.1/2")
Spindle diameter	(1")
Max. saw diameter	230 mm (9")
Min. saw diameter	140 mm (5.1/2")
Sawblade thickness	2 mm
Blade above table	85 mm (3.1/4")
Sawblade speed	3250 r.p.m.
Motor - 3 Phase	1.5KW 2H.P.
Motor - 1 Phase	1.4kW - 1 3/4 H.P.

SLIDING TABLE

Table Size	370 x 240 mm (14.1/2" x 9.1/2")
Max. cross cut	450 mm (17.3/4")

SPINDLE MOULDER

Spindle diameter	1.1/4"
Rise & Fall	110 mm (4.1/4")
Spindle speed	6000 r.p.m.
Motor - 3 Phase	2.2KW 3H.P.
Motor - 1 Phase	1.5kW - 2 H.P.

MORTICER

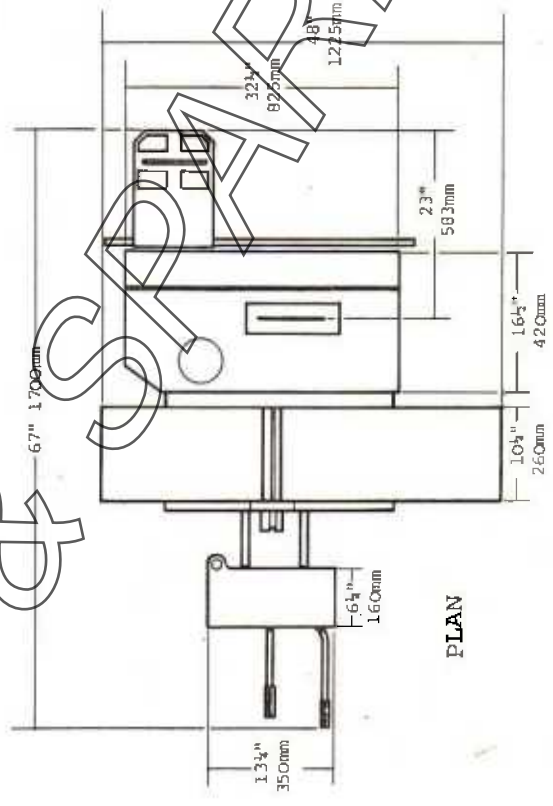
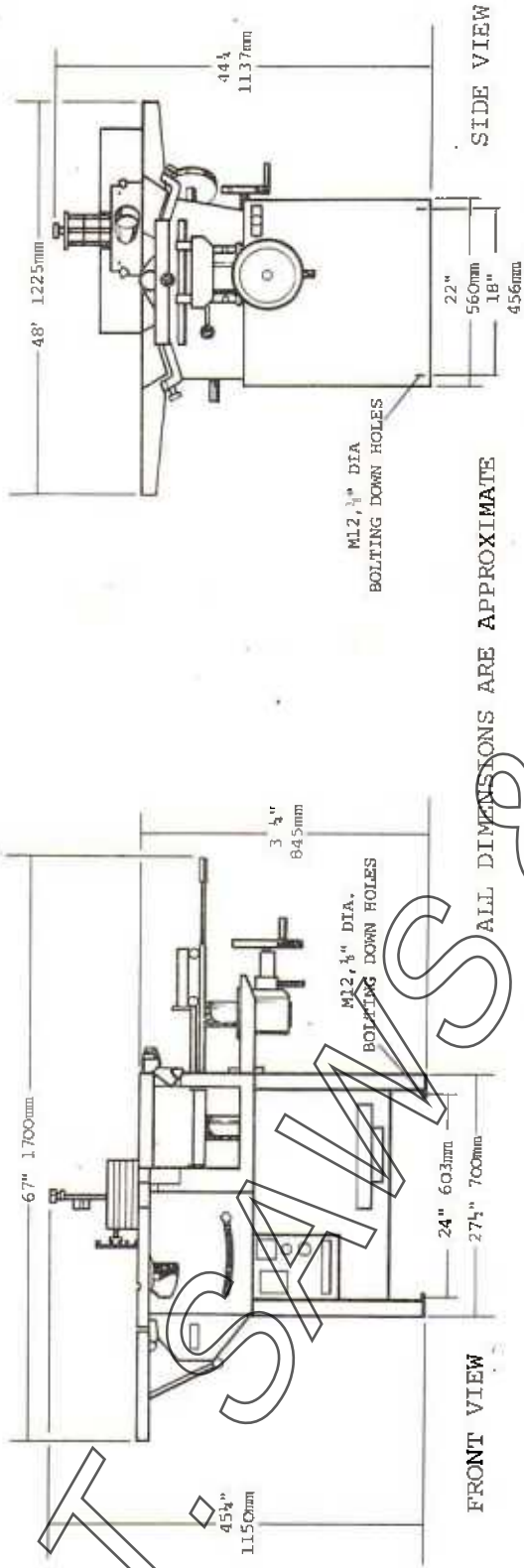
Table size	160 x 350 mm (6.1/4" x 13.3/4")
Longitudinal stroke	130 mm (5")
Traverse stroke	130 mm (5")
Vertical adjustment	80 mm (3.1/8")
Chuck capacity	16 mm (5/8")

OVERALL DIMENSIONS

NET WEIGHT	1700 x 1225 mm (67" x 48")
------------	----------------------------

300 Kg. 660lbs

ALL DIMENSIONS ARE APPROXIMATE.



FOUNDATION PLAN OF MODEL K260 UNIVERSAL WOODWORKER

OPERATING SAFETY PRECAUTIONS.

BEFORE ATTEMPTING TO OPERATE THE MACHINE BECOME FAMILIAR WITH THE CONTROLS AND OPERATING INSTRUCTIONS.

NO PERSON SHOULD OPERATE THIS MACHINE WITHOUT SUFFICIENT TRAINING AS TO ITS SAFE AND PROPER OPERATION, OR WITHOUT SUPERVISION AS MAY BE NECESSARY (Para. 2 No.903 Woodworking Machinery Regulations 1974).

Before starting the machine, check that it is safe to do so, ensuring that the knives are correctly set and securely fastened and all necessary adjustments have been completed and all guards are positioned and securely fixed.

Never make any adjustments while the machine is running. Make sure the machine has been completely switched off and isolated.

Keep hands well away from the rotating cutterblock and all moving parts.

For short lengths and ends of material to be machined, use a push-block or stick to feed with. (Should be made from straight grained hardwood, notched at feed end to grip material and shaped at other end to form a comfortable handgrip).

Never operate machine with loose cuffs, exposed bandages etc. which may become entangled in moving parts. Should a necktie be worn, prevent ends from hanging loose.

Use only tooling that is suitable for the machine and is in good condition for the work in hand. Tooling that is blunt is unsafe to use and should be re-ground or replaced.

When machining long lengths of material, roller supports or trestles should be used to support overhanging weight of material.

Always keep working area around the machine free from waste chippings and other obstructions.

When leaving machine unattended, make sure that the starter and isolators (if fitted) are in the 'OFF' position.

Care has been taken in the design and construction of this machine to minimise the noise generated by the moving parts. Under some conditions the operator may be subjected to sound levels in excess of 90 dB(A) due to the noise generated in the cutting operation in addition to the background noise.

The Woodworking Machinery Regulations 1974 require that where any employed person is likely to be exposed continuously for 8 hours to a sound level of 90 dB(A) or to an equivalent or greater exposure to sound, such measures as are reasonably practicable shall be taken to reduce this exposure.

If continuous operation is likely for periods approaching 8 hours then an approved ear protection device should be worn.

GENERAL LAYOUT FOR MACHINE ASSEMBLY

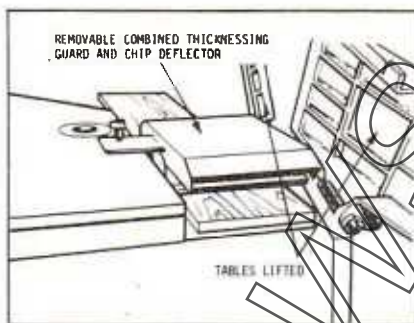
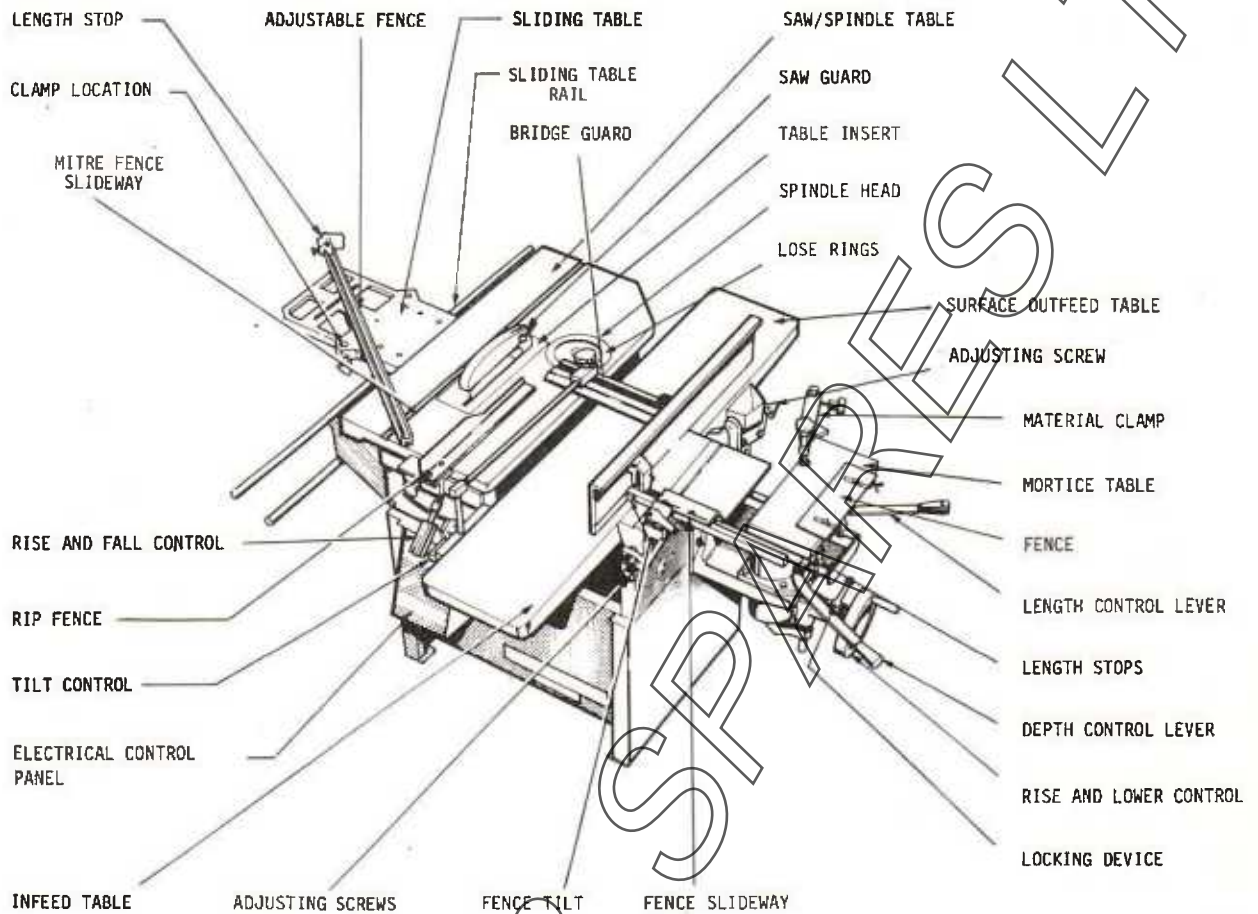


Diagram showing components used for Thicknessing operation

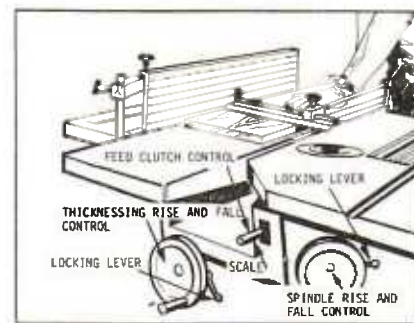


Diagram showing components used for Surfacing operation

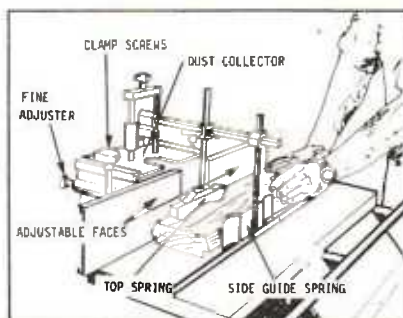


Diagram showing components used for Morticing operation.

INSTALLATION.

After carefully removing packaging or case from machine move to a suitable working area having the following facilities. (NOTE. When moving DO NOT lift or move by the surfacer tables as this may cause misalignment of the tables.)

1. Site the machine with adequate working space around it, so as to ensure safety and operation without obstruction.
2. Choose the best possible position that offers the minimum risk of the operators attention being distracted whilst machine is operating.
3. Take advantage of any natural light available and supply adequate artificial lighting over the whole working area when necessary.
4. The floor around the machine should have a level, non-slip surface free of any obstruction which may create a danger.
5. The Machine should be fixed securely to the floor as required by Government Woodworking Regulation 903 of 1974. Part VIII Para. 42 (2). Bolt fixing holes will be found in the base of machine. Before anchoring down place packing under feet where necessary to ensure stability.

PRE-CONNECTION SAFETY CHECK.

DO NOT attempt to connect machine to electrical supply until the following safety checks are carried out:-

1. Ensure circular sawblade is fully tightened by the retaining nut. Make sure that the sawblade can be raised, lowered and fully tilted to any angle without fouling the table or other mechanical parts.
2. Check that the planer knife securing screws are fully tightened and Knives set correctly. Rotate cutterblock fully to ensure knives will not foul surface tables adjusted at all height positions.
3. Rotate spindle moulder head by hand to see that it will free run without obstruction.
4. Should mortice chuck be used, ensure that it is securely fitted by screwing on until fully tightened.
5. Lower sawblade and spindle moulder head below table surface. Fit planer bridge guard and chuck guard if chuck is already fitted.

After carrying out the above safety checks your machine can now be safely connected to the electrical power supply.

Electrical supply connections should be carried out by a competent person. If in doubt on any point the services of a qualified electrician should be obtained.

Before connection check that the machine is suitable for the electrical supply available and that the pre-connection safety check as page 10, has been carried out.

Recommended cable from supply having a fuse rating of 15/20 amps should be of 1mm for 3 phase models and 2.5mm for single phase. These recommendations are given for guidance only as local regulation and/or operating conditions may require special installations of solid or flexible conduit cable covering and the fitting of an independent isolator.

For connection of supply cable to machine the electrical control panel should be removed by the 2 securing screws. Care should be taken at this point not to dislodge any internal wiring. Pass supply cable through cable entry gland which will be found on the underside of the control panel and connect to terminals as diagram below:-

IMPORTANT - THIS MACHINE MUST BE EFFECTIVELY EARTHED IN ALL CASES

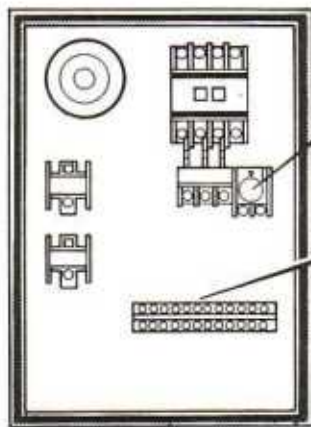


Fig.1.

Overload setting



Fig.2. For 3 phase connect Terminals L1,L2,L3 & Earth to the connecting block.(see Fig.2)

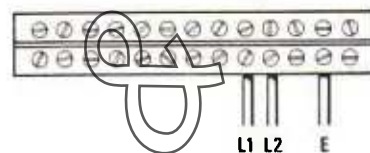


Fig.3. For 1 phase connect terminals L1,L2 & Earth to the connecting block.(see Fig.3)

NOTE: Cable should pass under machine out of operators way, then to supply point.

Having now made the necessary connections the control panel can be re-fitted for running test to be carried out.

After switching on main fuse or isolator the starting procedure can commence. A polarity check should be made at this point on three phase models only. To obtain correct rotation the mode selection switch (see Fig.4.) should be directed to spindle moulder position. It will then be possible to start by pressing the green starter button. For correct rotation of all three motors it is only necessary to check that the spindle head rotates in an anti-clockwise direction. This being so other motors will automatically be correctly rotating.

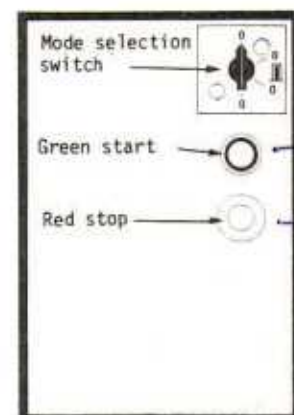


Fig.4.

Should incorrect rotation be obtained it will be necessary to inter-change any 2 of the supply leads. **IMPORTANT** Do not carry out this polarity test in the saw or planer mode as if incorrectly rotated the sawblade retaining nut or mortice chuck may run off the spindle shafts. Note: Single phase machines will automatically rotate in the correct direction so the polarity test will not apply.

STARTING AND STOPPING MACHINE

To start the machine the selection switch can be directed to each mode, followed by pressing green starter button to start the appropriate motor. It is good practice to stop all motors by rotating mode selection switch to a zero off position which will automatically disengage the magnetic contactor, as will the red stop button. By using this practice it will be necessary to select the correct mode before re-starting machine.

FOR EMERGENCY STOP: Either of the stop buttons on control panel or on the right hand side of mortice unit should be used to stop all motors.

NOTE: Unless after emergency stop the same mode is required do not start machine by green start button until correct mode has been selected.

ELECTRICAL SAFETY DEVICES

Both single and three phase model machines are protected by having fitted in the control panel a magnetic contactor which will automatically disengage and stop the motor in operation should a power failure take place. When power has been restored it will be necessary to re-start by the green start button to obtain same mode as when power failure took place.

Also incorporated in the control panel is an overload unit which is factory set to the full load amps of motors. To prevent overloading should the trip's cut out during operational use, the machine will stop automatically. Allow 30/60 seconds for the overload coils to cool before re-starting by pressing green start button to obtain same mode as when overload took place. NOTE: Care should be taken that overloading is not repeated. Checks should be made on sharpness of tooling, rate of feed speed and cutting load.

OPERATING PREPARATION

As with all combination machines there are many fittings, fences, guards handscrews, tools and keys of which only a few will be required at one time. The others should be readily available for quick change over during operation.

With this in mind we would suggest that a free standing or wall mounted panel having the necessary hooks or pins to hold the various items should be positioned adjacent to the machine.

Having now completed all the installation, safety and preparation procedure the machine can now be put into operation.

Keep all machine work tables free from fittings, fences and guards at all times. Only fit equipment necessary for the operation in hand. (see under separate operational headings).

OPERATING CIRCULAR SAWBENCH

As already mentioned the machines working tables should be free of all equipment but it would be advisable to keep a bridge guard fitted over planer cutterblock at all times where possible. This safety precaution is taken in case the planer should be switched on inadvertently. See 1, Fig. 5.

RIP SAWING

The rip fence should be positioned on slide rail (see 2, Fig. 5) before raising sawblade. Un-screwing handgrip (see 3, Fig. 5) and pushing down lever will raise sawblade to required height. Lock in position by re-tightening handgrip.

For angle work un-screw handgrip (see 4, Fig. 5) set lever control to required angle against graduated scale then re-tighten handgrip.

It is good practice when rip sawing that the material should, where possible, have a flat face and edge to enable the material to feed freely over tables and against fence. See Figs 6, 7 & 8 for examples of using saw.

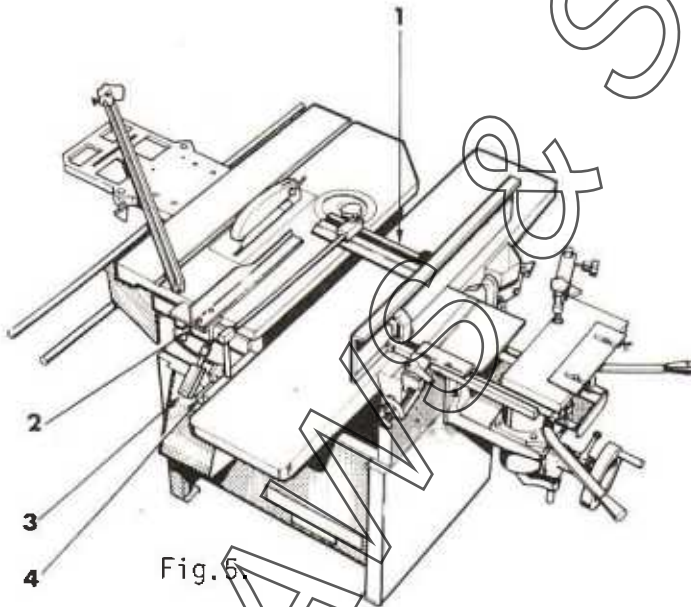


Fig. 6.

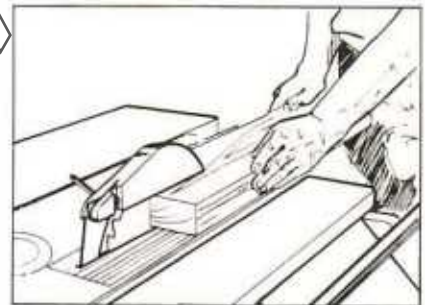


Fig. 6. Straight Cutting



Fig. 7. Cutting a Compound Edge

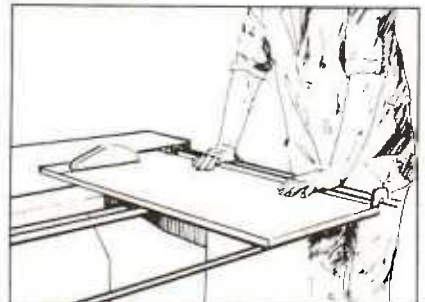


Fig. 8. Guide & Support for Large Sheet Material

IMPORTANT: The Woodworking Machinery Regulation Para 19 (2) states that a push stick must be used (and kept available at all times) when feeding between sawblade and fence on material of 300 mm or less and on the last 300 mm of any length of cut over 300 mm Para 20 (1-3) states that a person other than the operator assisting with the take off of material at the delivery end of machine must be kept at a safe distance of 1200 mm from the up running part of sawblade. If applicable a take off table having a width the same as sawtable and a length to meet the requirement shown should be made.

See Fig.9.

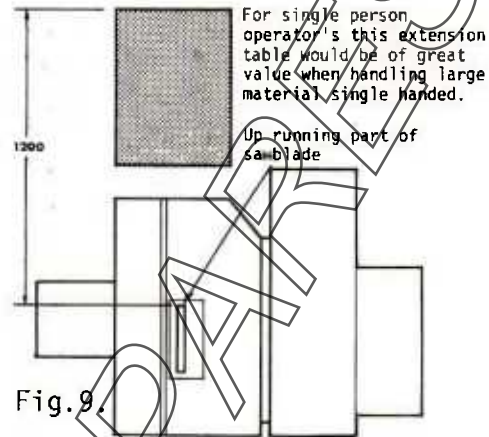


Fig.9.

CROSSCUTTING

For small cross and mitre cutting the mitre fence (see 1, Fig.10) can be used after removal of rip fence which should not be used as a length gauge. For panel work, large cross and mitre cutting, the sliding table (see 2, Fig.10) should be fitted to the guide rail after first removing end stop pin which should be replaced immediately after.

To set fence for square and mitre cutting the mitre fence (see 1, Fig.10), may be used to obtain correct angle.

For repetitioning length cutting the length stop (see 4, Fig.10) should be set at the length required from sawblade.

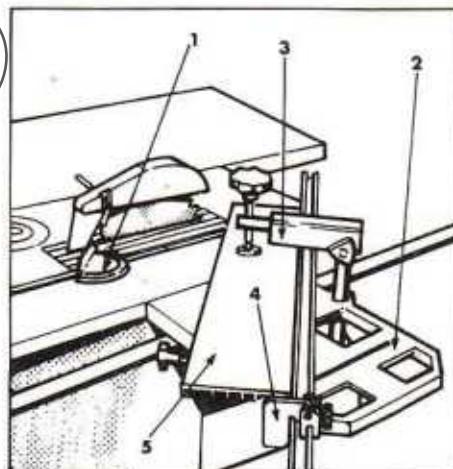


Fig.10

Should the material be un-balanced on sliding table due to size or weight it can be clamped by using the clamp which can be removed from the morticing unit. For fixing position (See 3, Fig. 10)

For extra support on short lengths of material requiring the use of clamp the sliding sub-table may be fitted (See 5, Fig. 10)

In all cases of sawing the guard and riving knife must never be removed. For correct setting (See Fig. 11) Below.

Only sawblades having a plate thickness of 10% less than the 2 mm thick riving knife should be used, ie, 1.8 mm.

Thicker sawblades will require a special riving knife.

Set within 12 mm from material.



Fig. 11.

Guard must be kept parallel and root of sawtooth covered at all times.

NO BLADE LESS THAN 140 MM DIAMETER MUST BE USED

After completion of work in hand on the circular saw all guards, fences and fittings should be removed. Lowering sawblade and riving knife below table will allow next operation to be commenced.

OPERATING SPINDLE MOULDER

For maximum safety when moulding the cutterblock, where possible, should be fitted and used in an undercutting position which will entail removal of the table insert rings. This will allow the cutterblock to be partly placed below table height. (see Fig.12)

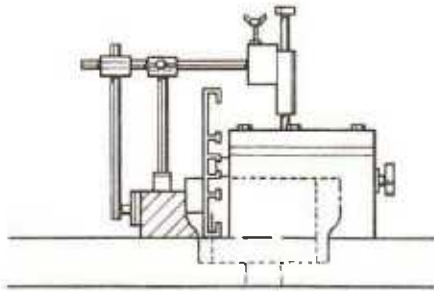


Fig.12

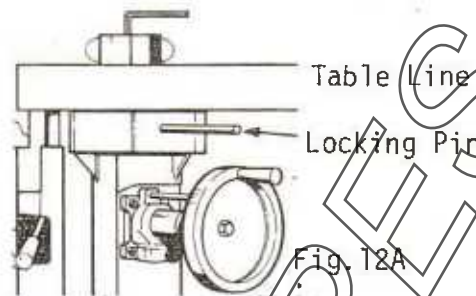


Fig.12A

To fix cutterblock the spindle head can be locked in position by the locking pin supplied through the pot casting into the collar of spindle head. After releasing the spindle head retaining screw with the 10 mm hexagon wrench, remove sufficient collars to allow cutterblock (which should be mounted in the lowest possible position) to be clamped tightly. For the mounting of cutters and size of cutterblock please refer to supplier instructions. See Fig.12A

IMPORTANT: Only cutterblocks suitable for running up to 6000 r.p.m. should be used. This information is normally stamped on most cutterblocks.

Having now set the cutterblock in position the fence assembly can be fitted to table with the two clamp screws provided. (See Fig.13, below)

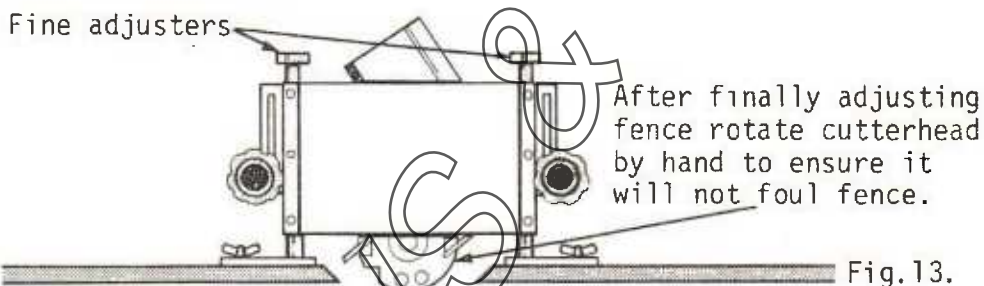


Fig.13.

After clamping fence assembly roughly in correct position, fine adjustment controlling amount of cut can be made to the fence faces by turning the fine adjusting screws.

The fence faces should always be set as close as possible in order to just clear the cutters.

At this stage your set-up should now look as diagram below. (Fig.14)

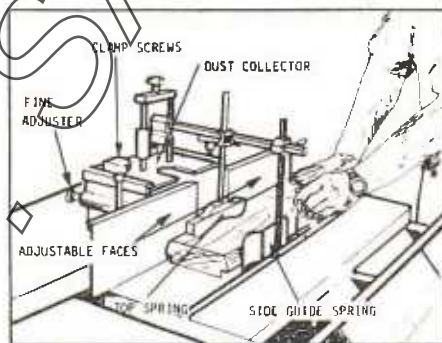


Fig.14.

Always fit hold down and side safety springs as shown which will hold material firmly on table and against fence with maximum safety. (see Fig.14)

Where possible avoid overcutting which requires having cutterblock mounted above the material as this requires extra safety precautions to be taken, such as the fitting of false fence faces. For this operator the table insert rings should not be removed.

For middle cutting the cutterblock should be positioned in line with material. Should the complete edge of material be removed to obtain mould required the rear fence face must be adjusted to allow material to follow off. See Fig.15 below.

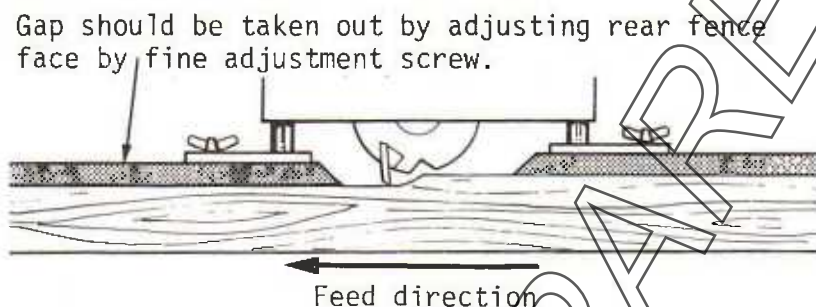
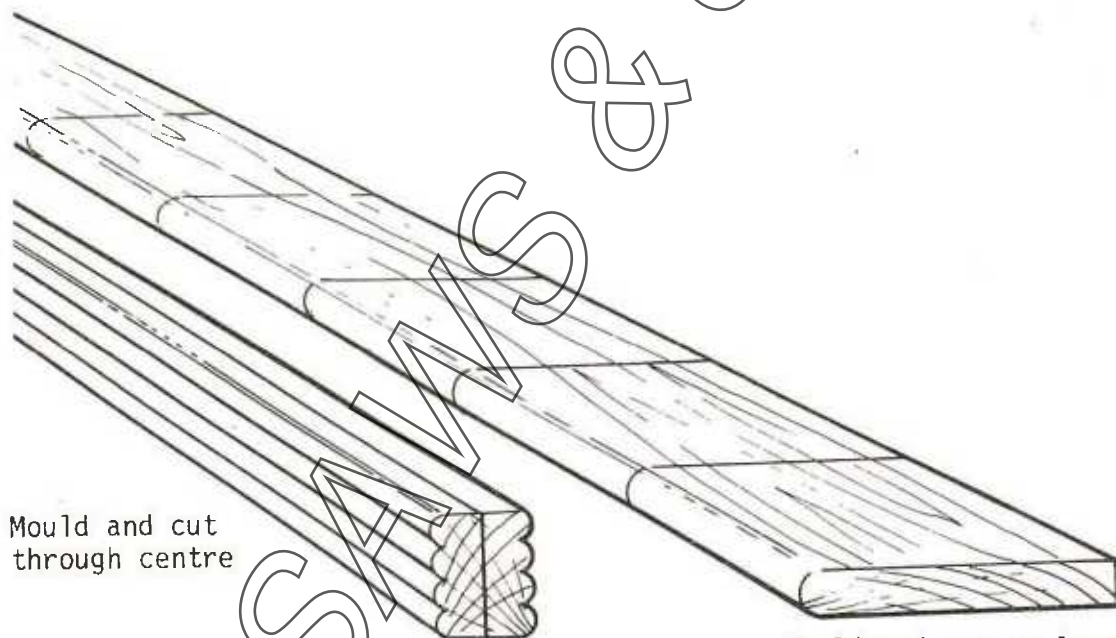


Fig.15.

For moulding of short lengths or thin material mould in multiples before cutting to size. See examples below



Mould and cut through centre

Mould and cut to length.

Where above is not possible a jig or fixture to hold material firmly and safely should be used.

As with sawing, use push stick when within 300 mm from cutting area.

OPERATING SURFACE PLANER

To prepare for operation check that the knives are fully tightened by the retaining screws using the 7 mm spanner provided. The outfeed surface table should then be set and locked to the height of blades when in the uppermost position.

The infeed table should be adjusted to suit amount of cut required. See Fig.16 below.

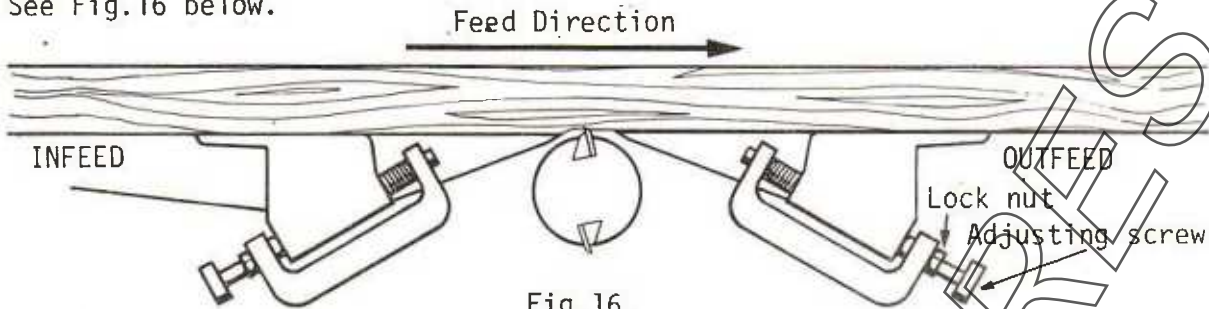


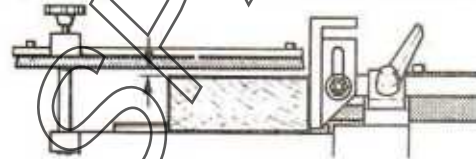
Fig.16.

The fence should now be fitted to the fence bracket and should always be used when squaring or bevelling operations are required. Never use the surface planer unless the self following rear of fence guard is in position and correctly adjusted.

For correct positioning of bridge type safety guard, see below under separate headings.

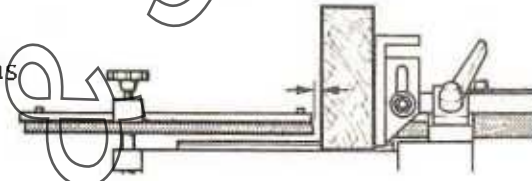
SURFACING:

Keep guard within 10mm above material and as close as possible to fence.



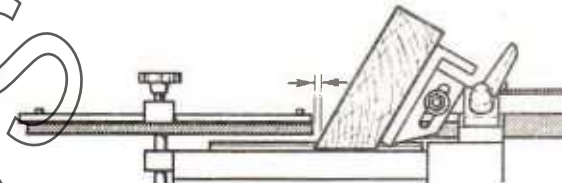
EDGING:

Keep guard within 10mm from material and as close as possible to table.



BEVELLING:

Keep guard as close as possible to both table and material.



For best results when hand feeding pass material over cutterblock at round 5/6 metres - 16/20 feet per minute. Keep cutters razor sharp by honing with stone frequently. When necessary, have re-ground.

When replacing knives they should be set to the same height as the outfeed table when in the uppermost position.

After completion of work in hand remove fence assembly. Bridge guard should only be removed if the following operation is thickening.

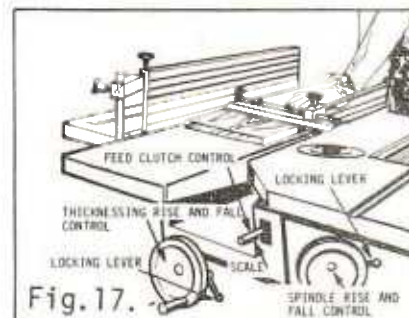


Diagram showing components used for Surfacing operation

OPERATING THICKNESSER

To prepare for thickening both surface tables must be released by the spring retainers (1) and lifted to the vertical position as Fig.18 below

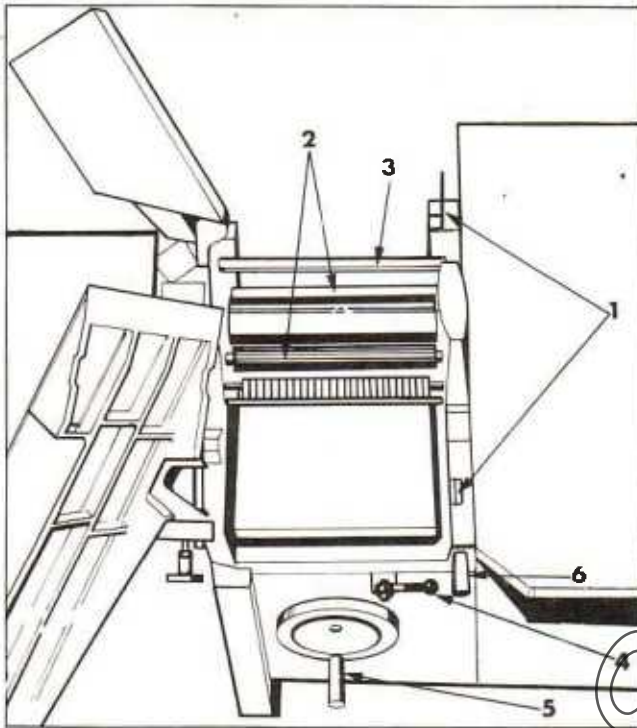


Fig.18.

Check at this stage that the feed rollers (2) are clean and free from dust and resin. The anti kick-back pawls should be checked for free movement.

Fit the combined guard and chip deflector into the lug mounted on top of mortice chuck guard and with the handscrew provided securely fix to the saw/spindle table. See Fig.19.

After releasing table lock (4) the table can be set to the thickness required against scale by rotating handwheel (5). Re-lock when correct thickness is obtained.

Depending on knife condition, type and width of material cut, removal up to 3 mm may be made in one pass. Should the cutting tone change during operation the table should be lowered for a lighter cut. The material can then be passed through the thicknesser again until the correct thickness is obtained.

After starting thickening motor the clutch lever control (6) should be engaged to start the feed rollers. If for any reason it is required to stop the feed during operation the clutch lever control can be disengaged.

NOTE: Long lengths of material will require supporting by hand, roller or trestle during the commencement and finishing of operation.

On completion of work in hand disengage clutch lever control and lower thickness table to lowest position. Remove the guard and chip deflector, lower surface tables to normal working position and re-fit bridge type safety guard.

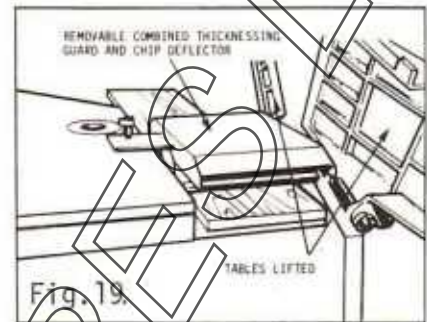


Diagram showing components used for thickening operation

OPERATING MORTICER

IMPORTANT: Before using morticer the bridge type safety guard must be fitted and completely cover the cutterblock.

To set mortice unit ready for operation the guide fence having two locations should be fitted to suit workpiece. Position (A) should be used for wide board, panels, doors, etc., and position (B) for normal timbers. Guide will give best support in this position which should be used where possible. See Fig.20

Length of mortice can be set by adjustable length stops (5,9). Depth of mortice should be measured between table carriage and adjustable depth stop (6) when material contacts mortice cutter. See Fig.21

For correct working height the table can be raised or lowered by the handwheel (8) after releasing lock (7). Re-lock when table is correctly positioned. Fig.21

After fixing the size of mortice cutter required securely in the mortice chuck the material should then be positioned on work table and fastened by the clamp screw (10) against the guide. See Fig.21

Having set the length and depth stops to the size required the morticer can be put into operation by setting the selection switch to the planer mode position and pressing the green start button.

For best results when morticing the following procedure should be adopted.

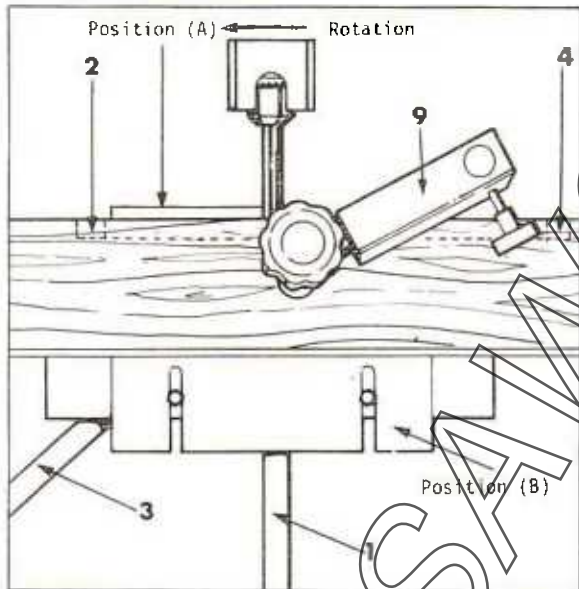


Fig.20

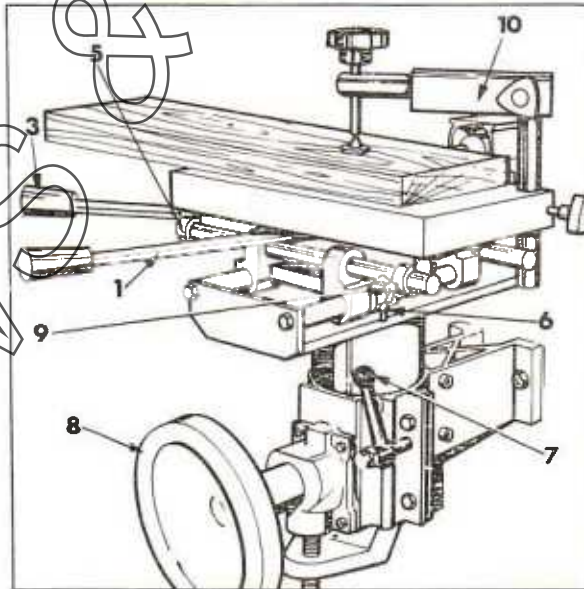


Fig.21

Before entering into cut control lever (1) should be moved to the right until the stop (5) is reached. At this point the material should be fed into the cutter.

by control lever (3) to a depth of $2/3$ mm. The material should then be withdrawn from cutter. The hole bored (2) prior to mortice cutting will eliminate break-out at the end of mortice cut and be machined out during further machining.

The control lever (1) should now be moved across to the stop (9) and material fed into the cutter to a depth of approximately half the size of the cutter in use (4). Hold the depth of cut by control lever (3) and by moving control lever (1) from left to right until stop (5) is reached, after which control lever should be returned to the left without back cutting. This sequence should be repeated until either the depth stop (6) has been reached or the through mortice has been complete.

Should vibration take place during cutting ease off cut accordingly.

For through mortices break out may occur on certain materials unless backed up with a piece of waste material.

As an alternative the mortice can be cut in from both sides of material to join in centre.

On completion of work remove clamp assembly and mortice cutter.

IMPORTANT: The latter should only be fitted when required. Leave on bridge type safety guard ready for next operation.

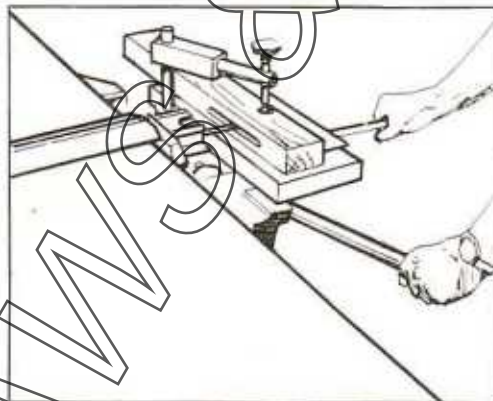


Diagram Showing use of Morticer

MAINTENANCE

At all times make sure that the machine is kept clear of excess sawdust and woodshavings. This is best achieved with a dust collector or alternatively a blower can be used to remove the dust from the inside surfaces of the machine.

All bearings are of the 'Sealed for Life' type requiring no further lubrication. This type of bearing will run from warm to hot according to time of run and air temperature and is quite normal.

Only when required, lightly lubricate the adjusting screws to the surface tables leadscrew and columns to spindle, thicknesser and mortice tables. Lightly oil with cloth thicknesser feed driving chains and slideways for mortice table.

The drive belt to the planer cutterblock is self tensioning and requires no further attention. Both the saw and spindle belts are manually tensioned and should be adjusted in the event of belt-slip.

The drive belts fitted will give the best possible working life but will eventually wear and break. This is normally at some inconvenient time. We would suggest that you should always keep a spare set on stand by.

OPTIONAL EQUIPMENT

230 x 2 mm KERF x 24 Teeth Tungsten Carbide tipped sawblade for good fast feed rip sawing.

As above with 40 teeth for general purpose work.

As above with 54 teeth for plastic faced panels and thin sheet material requiring fine finish.

230 mm dia flat plate rip sawblade set and sharpened ready for use.

As above cross-cut sawblade.

K210 high speed planer knives 210 x 25 x 3 mm
K260 high speed planer knives 260 x 25 x 3 mm

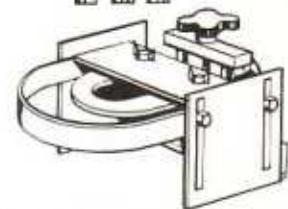
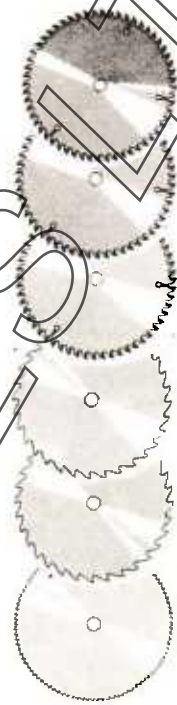
Mortice miller cutters sizes:
1/4, 5/16, 3/8, 1/2 & 5/8 for quick and clean morticing on all material.

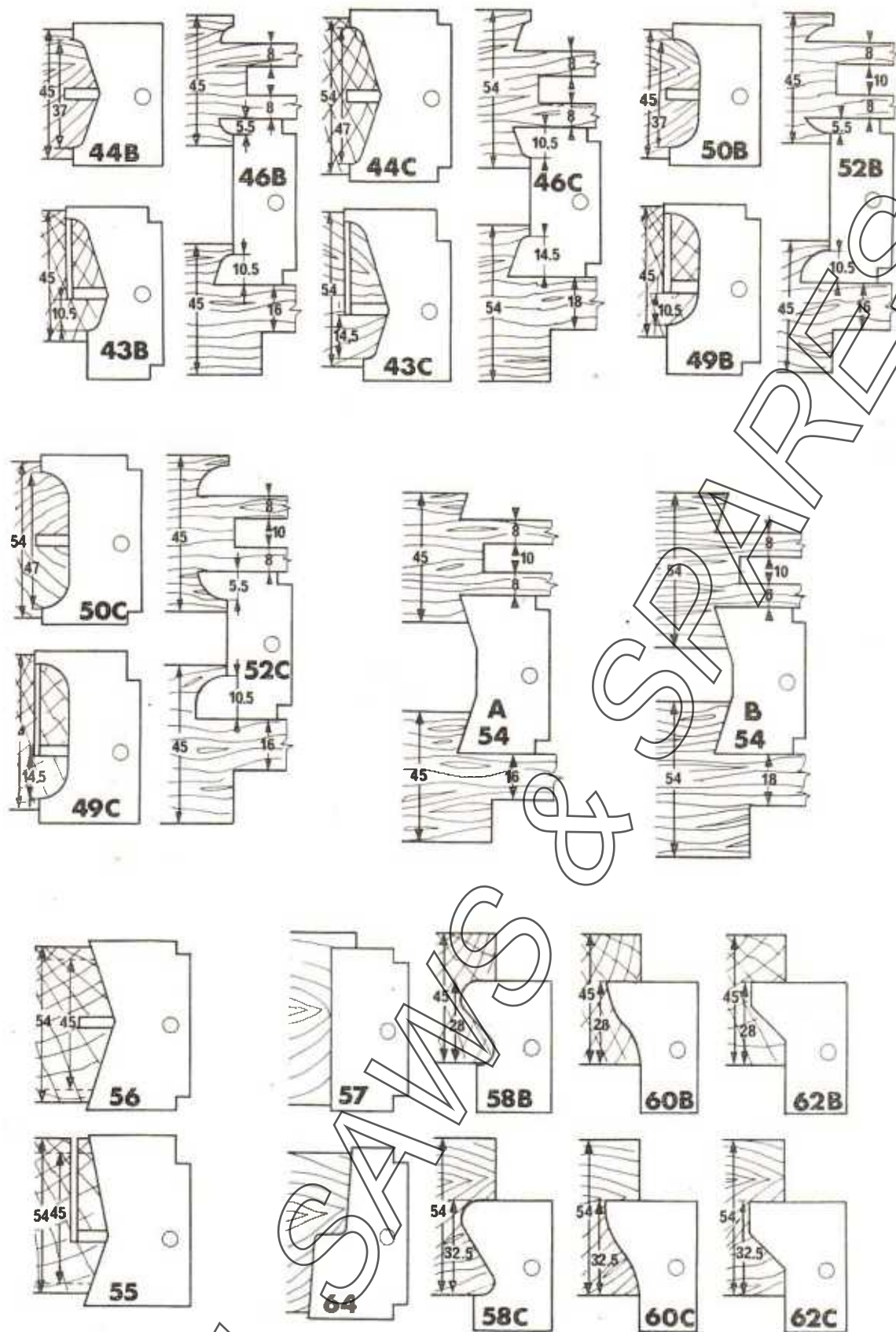
Micro adjustable ring fence
For shaping and profiling of curved work.

Tiger cutterhead set complete in wooden case. Comprising of 95 mm dia x 45 mm wide safety type cutterhead, 9 pairs shaped cutters No's 43B, 44B, 46B, 56, 57, 60B, 64, 65 & 73. 2 pairs grooving saw segments sizes 3 & 4 mm 1 set fixing tools.

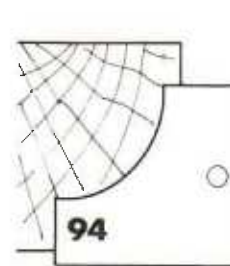
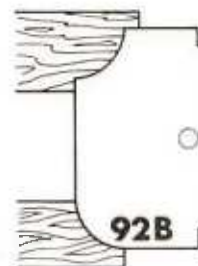
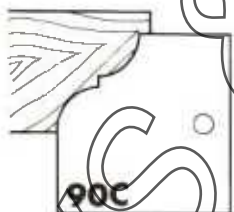
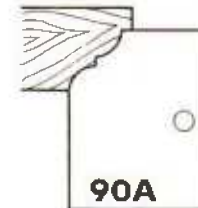
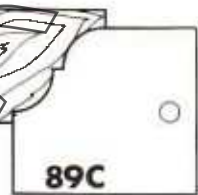
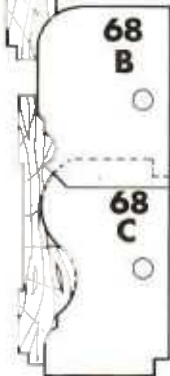
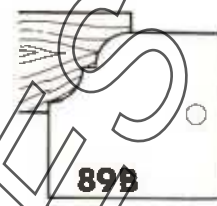
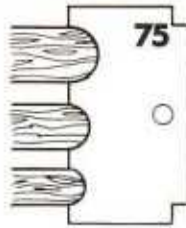
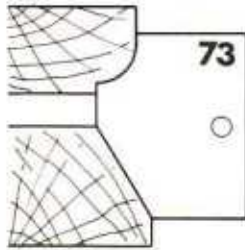
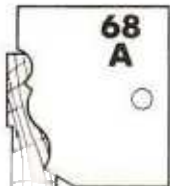
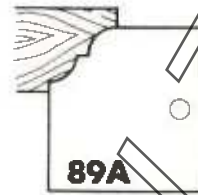
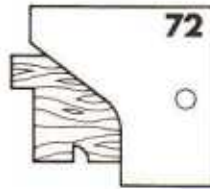
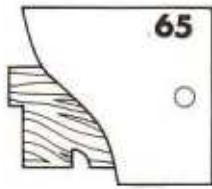
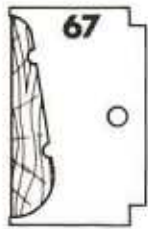
Grooving saw segments sizes 3, 4, & 8 mm for fast clean grooving.

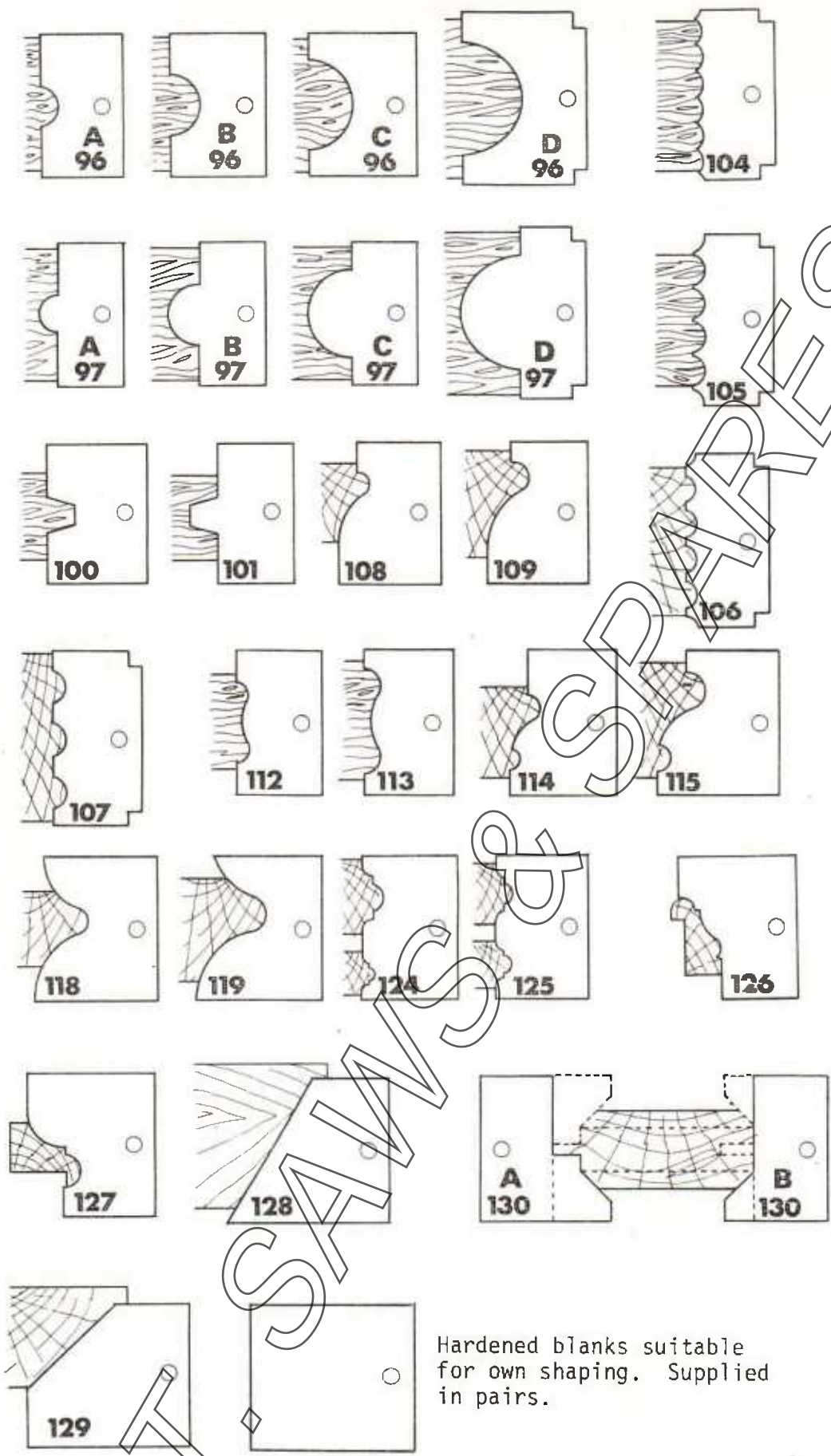
Tiger safety type cutter head only as supplied in set size 95 mm x 45 mm wide, suitable for own selection of cutters.





Illustrations of different shaped tools for cutterblock. When ordering, specify numbers shown. Scale 1:2.





Hardened blanks suitable for own shaping. Supplied in pairs.

