



(0116) 276 9111

www.wadkinbursgreen.co.uk

OPERATING INSTRUCTIONS MAINTENANCE AND PARTS LIST BOOK

AIR OPERATED SINGLE UNIVERSAL RADIAL SAW TYPE 14" BRA/AIR

INSTRUCTION BOOK No. B500

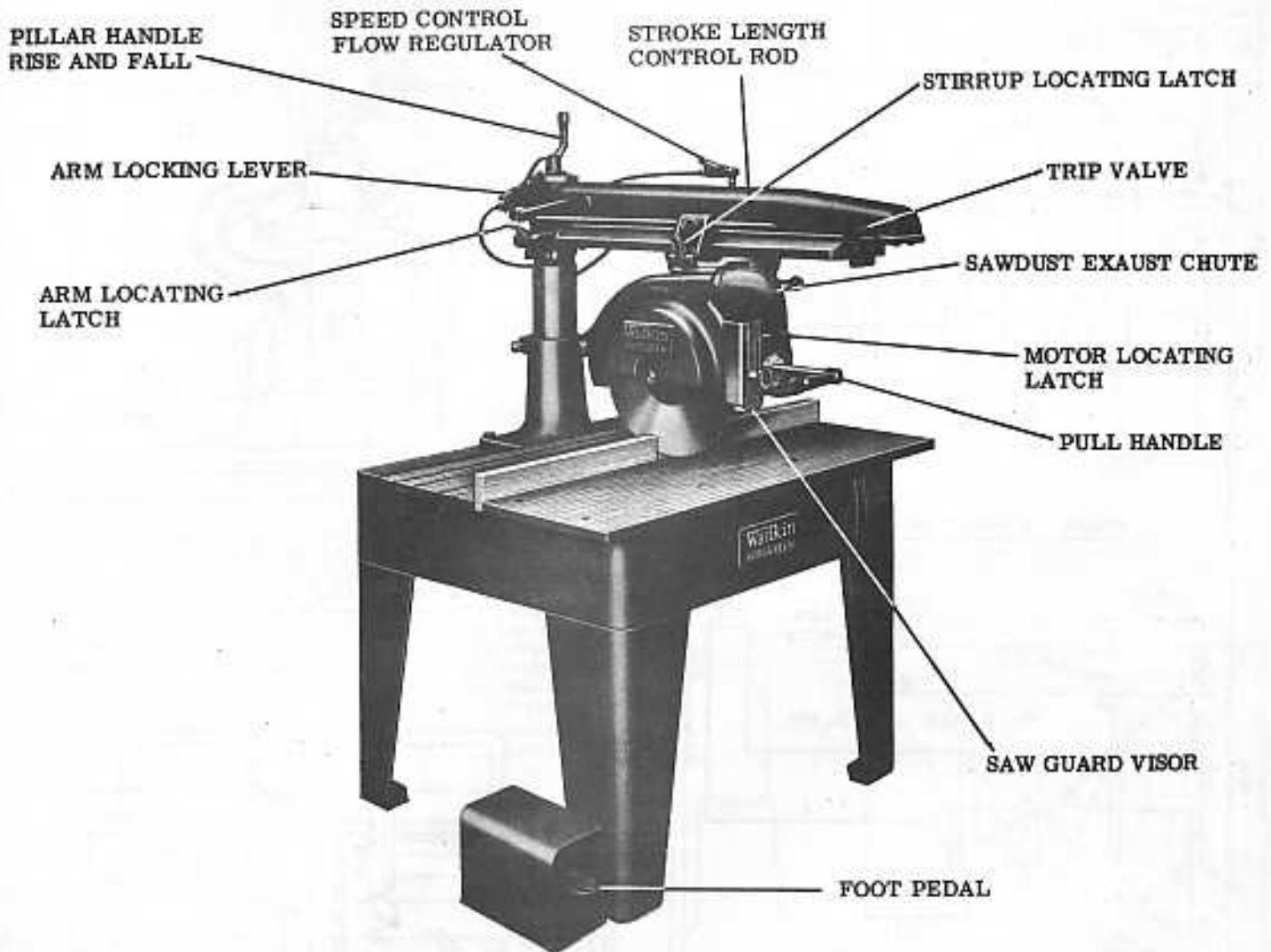
IT IS DESIRABLE THAT THIS BOOK BE GIVEN TO THE OPERATOR OF THE MACHINE

USER PLEASE INSERT SERIAL

NUMBER OF MACHINE

MODIFICATIONS ARE MADE TO THESE BOOKS FROM TIME TO TIME
AND IT IS IMPORTANT THEREFORE THAT ONLY THE BOOK SENT
WITH THE MACHINE SHOULD BE USED AS A WORKING MANUAL

AIR OPERATED SINGLE UNIVERSAL RADIAL SAW TYPE - 14" BRA/AIR



SPECIFICATION

Maximum diameter of saw	14"	356mm
Width will crosscut with standard arm at 90°	14" x 4½"	356mm x 114mm
	17" x 1"	432mm x 25mm
Width will crosscut with standard arm at 45°	10" x 4½"	250mm x 114mm
	13" x 1"	330mm x 25mm
To order machine can be fitted with longer arm to give additional 5" (127mm) length cut		
Maximum depth of cut	4½"	114mm
Maximum width of grooving head	1½"	32mm
Maximum ripping capacity	27"	690mm
Height of work table	32"	815mm
Diameter of saw spindle	1"	25.4mm
Horsepower of motor (Standard)	3	3
Horsepower of motor (Extra)	5	5
Speed of motor, 50 cycles	3,000rpm	
60 cycles	3,600rpm	
Maximum overall height	6' 0"	1,828mm
Approximate speed of cutting stroke	15' to 50' per min.	4.5m to 15m per min
Approximate speed of return stroke	50' per min	15m per min
Maximum working air pressure	60lbs. per. sq. in	4kg per. sq. mm
Net weight	504lb	230kg
Gross weight	784lb	355kg
Shipping dimensions	96cu. ft.	2.7m ³

Size of compressor required. To delivery 10cu. ft. of free air/min
(= 283m³ of free air/min)

Maximum pressure from compressor 150 lb per. sq. in. 11kg. per. sq. cm

2.

INSTALLATION

Remove protective coating from bright parts by applying a cloth soaked in paraffin, turpentine or some other solvent.

When the machine is boxed for export the carriage and motor unit is removed from the arm, the arm is removed from the pillar, the pillar and foot assembly is removed from the base along with the legs. All these items are packed individually in the case. Remove and assemble as shown in Fig. 1.

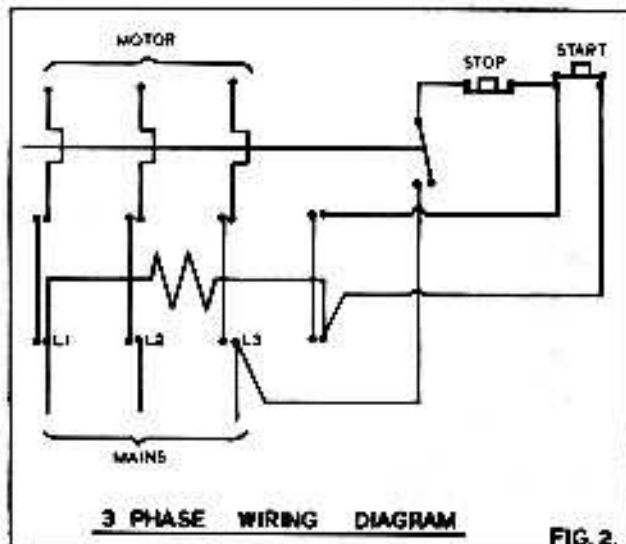


FIG. 2.

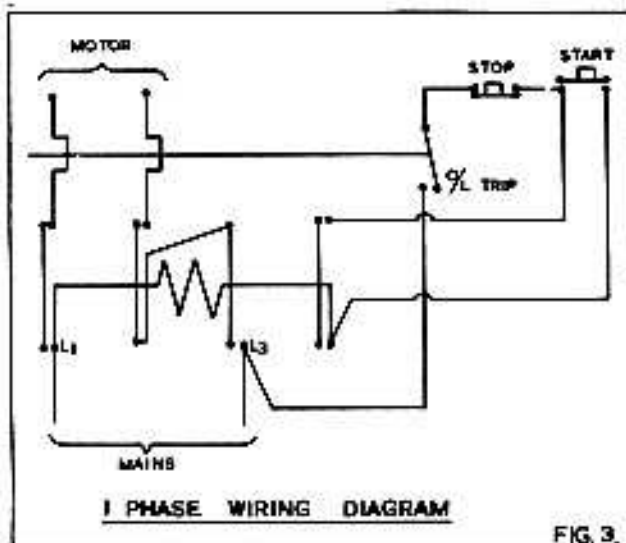


FIG. 3.

WIRING DETAILS

The motor and control gear have been wired in before despatch. All that is required is to connect the power supply to the starter.

Points to note when connecting to power supply:-

1. Check the voltage, phase and frequency correspond to those on the motor plate, also the correct coils and heaters are fitted to the starter.
2. It is important that the correct cable is used to give the correct voltage to the starter, as running at low voltage will damage the motor.
3. Check the main line fuses are of the correct capacity. See list below.
4. Connect the line leads to the appropriate terminals. See Fig. 2 for 3 phase supply and Fig. 3 for 1 phase supply.
5. Check all connections are sound.
6. Check the rotation of the motor for correct direction. If this is incorrect for 3 phase supply reverse any two of the line lead connections.

VOLTAGE	PHASE	H.P.	S.W.G. TINNED COPPER WIRE	AMPS
220	3	3	21	29
380/420	3	3	24	17
550	3	3 & 5	24	17
220	3	5	19	36
380/420	3	5	22	24
200/220	1	3	17	60
220/250	1	3	18	45

LUBRICATION

It is advisable to keep all bright parts covered with a thin film of oil to prevent rusting.

The slide rods and rollers should also be kept clear of any sawdust and shavings for ease of operation.

TYPE OF OIL RECOMMENDED POWER SW. 125
TYPE OF GREASE RECOMMENDED SHELL ALVANIA 3.

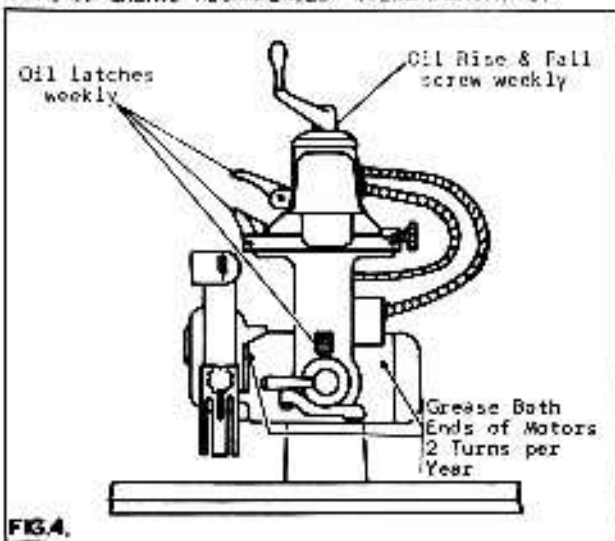


FIG. 4.

FOUNDATION

See fig. 5 for bolt positions and clearance required. When installing, the machine must be levelled up by means of packing pieces under the feet. The machine table should be slightly high at the front end. This will ensure that the saw unit remains in the back position when not in use.

This does not affect the accuracy of the machine. Foundation bolts are not supplied with the machine except by special order.

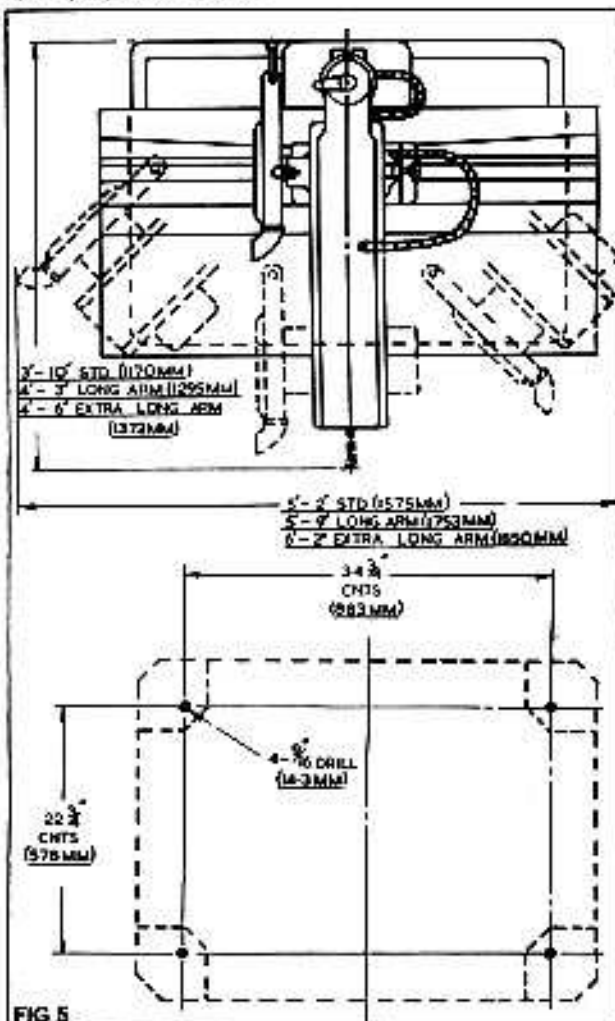


FIG. 5.

All adjustments and alignments listed below have been carefully set and checked and the whole machine thoroughly tested before despatch from the works. Should any adjustment be necessary proceed in accordance with the relative instructions given.

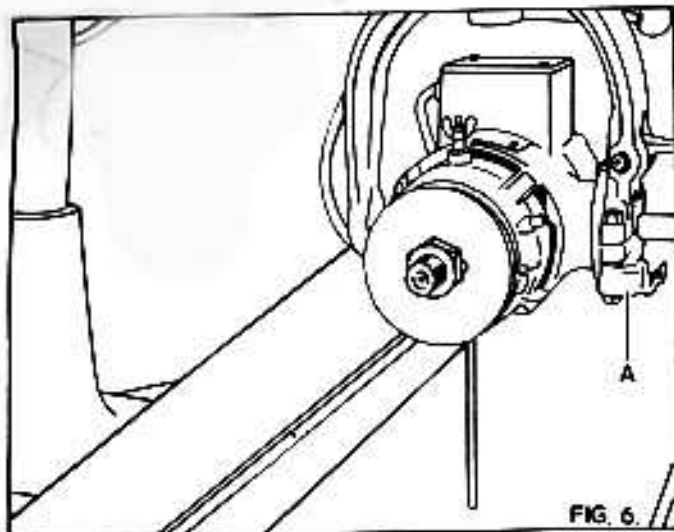


FIG. 6.

LEVELLING TABLE

To check the table for alignment to the arm the undermentioned procedure should be followed:-

1. Remove the sawguard and blade from the motor.
2. Ensure the motor locating latch "A" in Fig. 9, the stirrup locating latch "B" and the carriage locking screw "C" in Fig. 16 is securely locked.
3. Secure a small dia. rod between saw flanges as shown in Fig. 6 then raise or lower arm until end of the rod almost touches table.
4. Lift arm locating latch "C" in Fig. 9 and swing arm to extreme ends of the table checking that clearance between rod and table remains constant.
5. Should the table need adjustment remove table packing pieces and fence, adjust table supports by loosening hexagon head bolts and moving up or down whichever is required. When set tighten all bolts.
6. Replace fence in position required and replace packing pieces and wedges.

SAWBLADE ALIGNMENTS

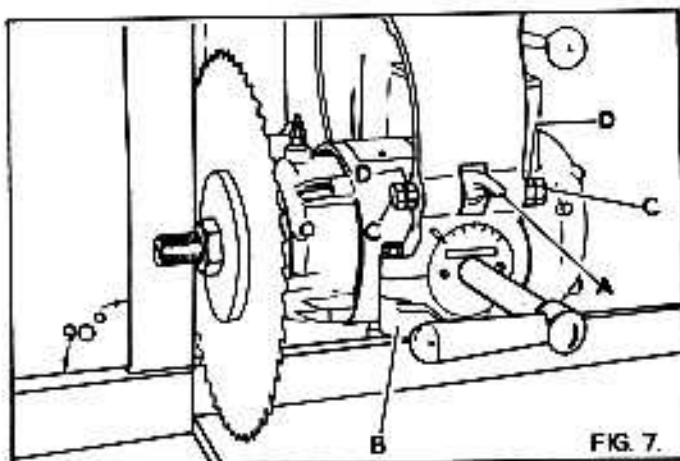


FIG. 7.

1. Saw square to table

To check this alignment, place a steel square against the saw as shown in Fig. 7. If adjustment is necessary, disengage the motor locating latch "A", loosen motor pivot locking handle "B" and adjust sawblade until square. Lock in this position with lever "B", then adjust aerotight hexagon nuts "C" and hexagon locknuts "D" until latch "A" locates accurately in the motor locating ring.

2. Line of travel to fence

To check this alignment place a pencil between the saw flanges, as shown in Fig. 8, and scribe a line on the table. Check this is at 90° to the fence by means of a steel square. If adjustment is necessary, loosen arm locking lever "A", in Fig. 8, and disengage the pillar locating latch "B", adjust arm until square, lock in position; then adjust aerotight hexagon nuts "C" and hexagon locknuts "D" until the latch "B" locates accurately in the pillar.

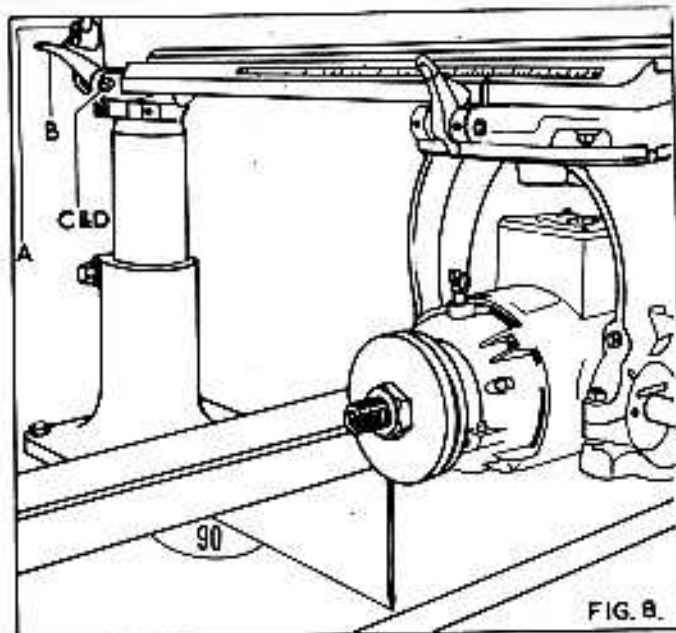


FIG. 8.

3. Sawblade in relation to fence.

To check this alignment place a steel rule or some other similar straight edge between the saw flanges as shown in Fig. 9 and a steel square against the fence. Rotate the steel rule from front to rear. If adjustment is necessary loosen stirrup locking handle "D", and disengage the stirrup locating latch "B", set correctly, then relack in position with lever "D". Adjust the aerotight nuts "E" and hexagon locknuts "F" until the latch "B" locates accurately in the slot in the stirrup.

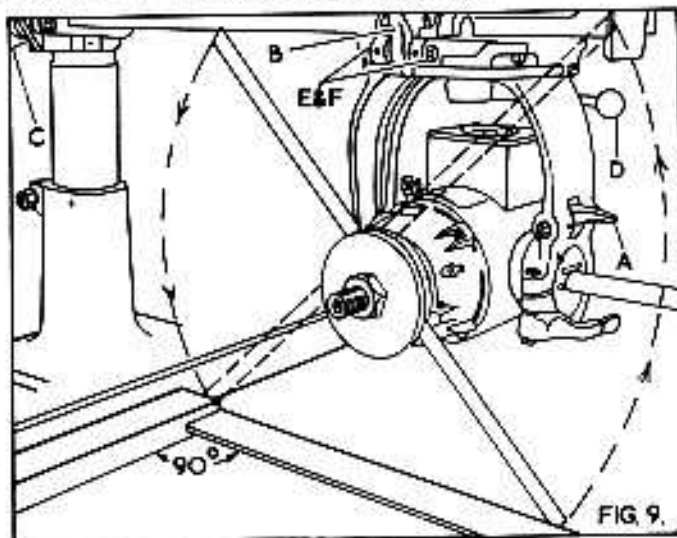


FIG. 9.

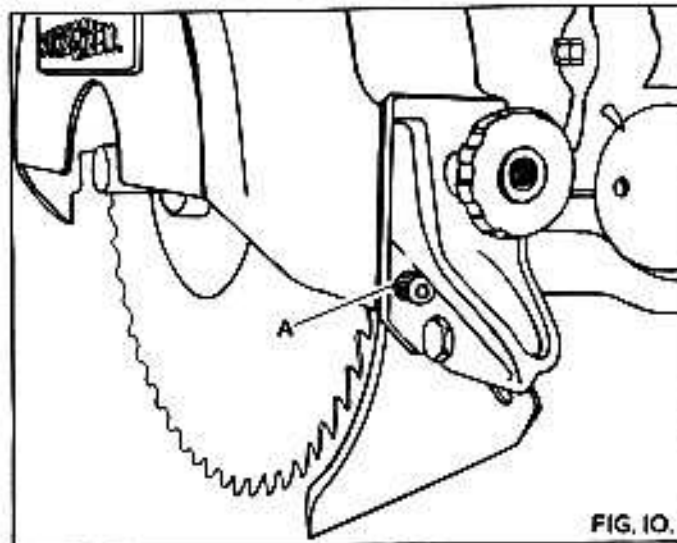


FIG. 10.

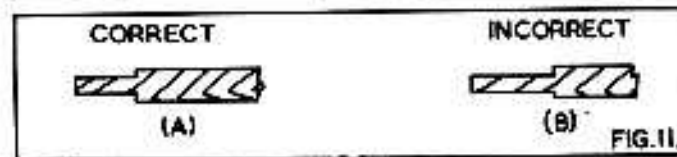


FIG. 11.

RIVING KNIFE ALIGNMENT

The riving knife should be central between the set of the saw. Should the riving knife be incorrectly positioned loosen the two socket head cap screws "A" in Fig. 10. Place a steel rule or some other straight edge along the riving knife and set central to saw. With the riving knife in this position re-tighten the two socket head cap screws "A".

To check this setting feed a short piece of timber from the rear, along both sides of the riving knife. If the riving knife is correctly set the blade should cut an equal shoulder as shown in Fig. 11 (a) not an unequal shoulder as shown in Fig. 11 (b).

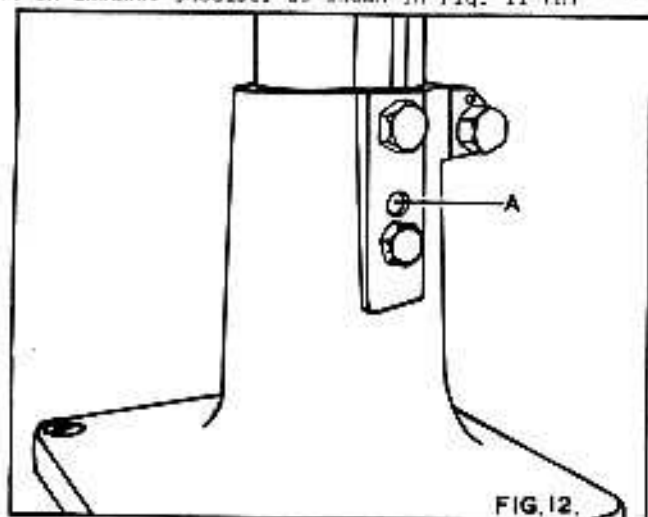


FIG. 12.

COLLIM. ADJUSTMENTS

Movement in the arm may be traced to the pillar. To take up any play which may develop adjust the special socket head cap screw "A" in Fig. 12. After adjustment the pillar rise and fall should be checked to ensure the movement is not too tight.

SAW GUARD

The guard gives maximum protection for all operations. The guard is fitted with an anti-kick back device as shown in Fig. 13 and riving knife for ripping. The riving knife is easily detachable and can be replaced by a sheet steel visor when used for crosscutting. The visor is adjustable throughout the full depth of cut of the machine.

An adjustable rubber dust exhaust is fitted to the guard to direct the sawdust away from the operator.



FIG. 13.

HOW TO ADJUST KICK BACK FINGERS

The anti-kick back fingers are fitted to the saw guard and they are adjustable throughout the full depth of cut of the machine.

To set kick back fingers correctly:-

1. Place timber to be ripped in kick back fingers as shown in Fig. 13.
 2. Loosen handwheel "A" then lower the fingers until they come in contact with the timber. Press bracket a further $\frac{1}{8}$ " (3mm) hold in that position, re-lock handwheel "A".
 3. To remove timber press the point of kick back fingers at "B" towards the table and withdraw the timber.
- The timber can now be ripped without any danger of it being kicked back at the operator.

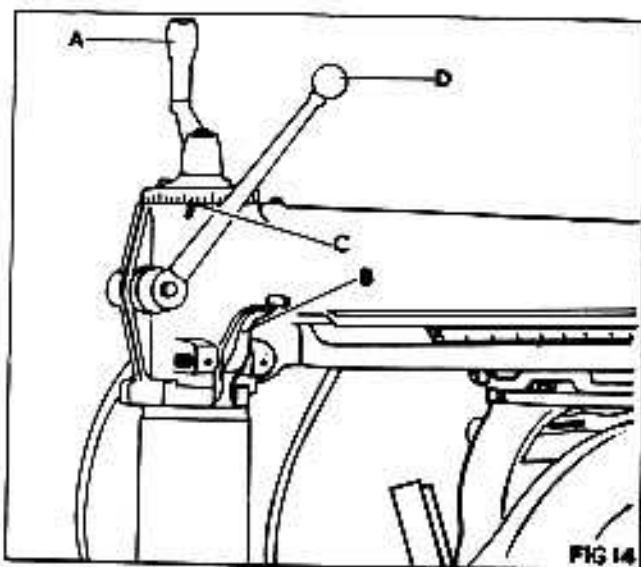


FIG. 14.

RISE AND FALL OF THE ARM

The arm rise and fall is by means of the handle "A" in Fig. 14. The handle turns a screw in a brass nut which is anchored to the foot. The total travel of the arm is 14" (356mm).

SWIVEL OF THE ARM

The arm swings 45° each way to the fence with the principle angles located by a tapered latch "B" in Fig. 14. The angles to the fence line are indicated by a pointer on the arm bearing cap at "C".

A powerful lock is provided and can be applied by lever "D".

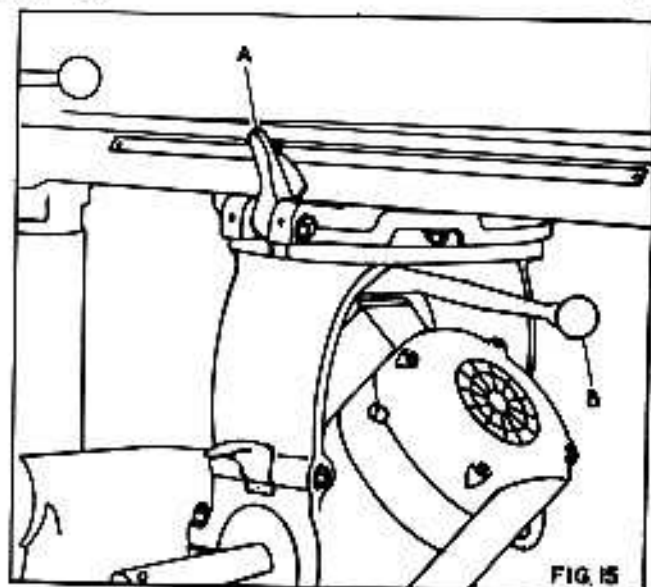


FIG. 15

CARRIAGE AND MOTOR UNIT

The carriage is mounted on four sealed for life ball bearing rollers grooved to coincide with the circular slideways on the arm. The carriage can be locked in any position along the arm by means of the handwheel on the right of the carriage.

The stirrup is fastened to the carriage by a central pin which enables the motor to swivel through 360°. The principle angles are located by a tapered latch "A" in Fig. 15.

The stirrup can be locked at any angle by the lever "B".

FITTING SAWBLADES

To fit sawblades the undermentioned procedure should be followed:-

1. Remove the sawguard complete from the motor.
2. Fit long arm hexagon wrench into spindle end and remove the spindle locknut, left hand thread, and remove front saw flange.
3. Fit saw to spindle taking care to ensure the teeth are pointing in the correct direction, also the saw flanges and saw are clean and free from any dirt or sawdust.
4. Replace saw spindle nut and sawguard.

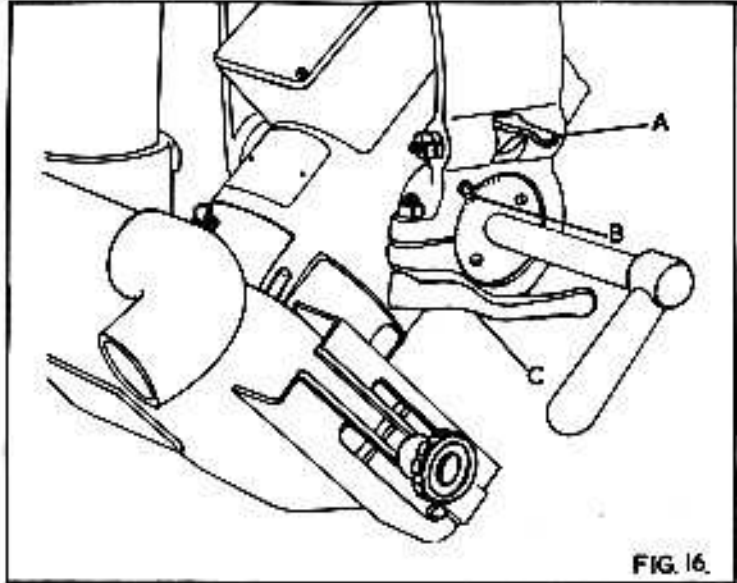


FIG. 16.

The motor swivels within the stirrup through 90°. The principle angles are located by a tapered latch "A" in Fig. 16.
 The angle of cant is clearly shown on a graduated scale by the pointer "B".
 The motor can be locked at any angle by the locking lever "C".

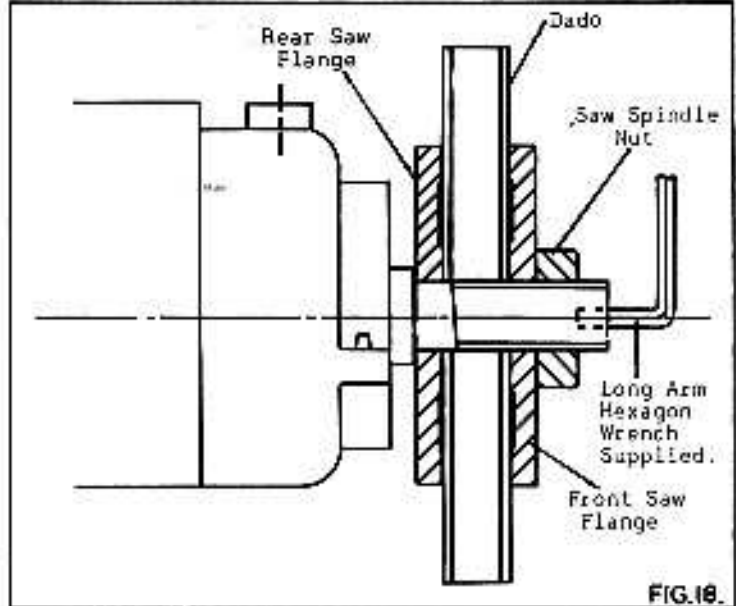


FIG. 18.

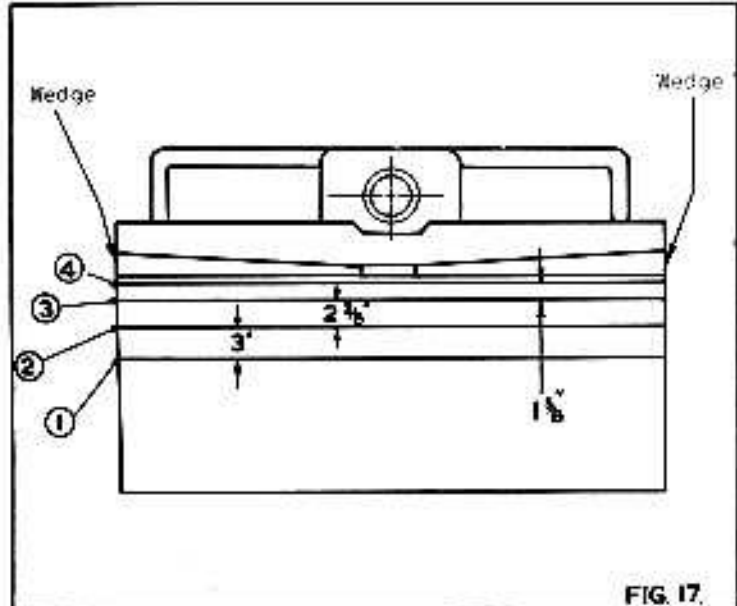


FIG. 17.

WOOD TABLE

The wood table is made in such a way to give four fence positions. The fence can easily be moved from one position to another by knocking out the wedges and placing the table strips to suit whichever fence position is required.

POSITION 1.

This enables a maximum timber size of 14" wide x 4 1/2" deep (356mm x 114mm) to be crosscut with the arm at 90°.

POSITION 2.

This enables a maximum timber size of 17" wide x 1" deep (432mm x 25mm) to crosscut with the arm at 90°.

POSITION 3.

This is the most convenient fence position when cutting compound angles with the arm swung to the left of the operator.

There is a rule fitted to each side of the arm for use when ripping. The fence positions, so that these rules show the correct sizes, are as follows:-

1. When ripping from the right hand side of the machine the rule nearest the operator will read correctly with the fence in position 4.
2. When ripping from the left hand side of the machine the rule nearest the operator will read correctly with the fence in position 1.

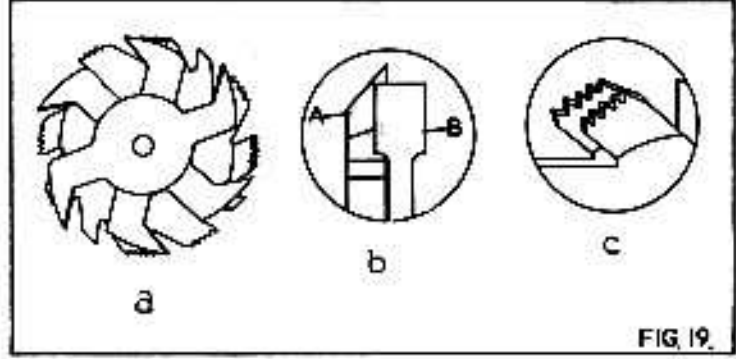


FIG. 19.

HOW TO FIT DADO

A dado head is made up of two outside saws and 5 inner cutters. Various combinations of saw and cutters are used to cut grooves from 1/8" to 1" wide (3mm to 25mm). Inner cutters are heavily swaged and must be arranged so that the heavy portion falls in the gullets of the outside saw as shown in Fig. 19 (a), Fig. 19 (b) shows how the saws and cutters overlap "A" being the saw and "B" being the inside cutter. A 1/4" (6mm) groove is cut by using the two outside saws fitting the ground teeth directly opposite as shown in Fig. 19 (c) in order to allow clearance for the slight set of the saw teeth.

The dado is secured on the spindle between the standard saw flanges as shown in Fig. 18. To fit dado head remove the sawguard and front saw flange, also remove the driving peg from the rear saw flange. Fit the outer saws and required inner cutters onto the spindle and lock in position, then replace sawguard

HOW TO FIT ROUTING ADAPTOR

This adaptor screws onto the spindle which is left hand thread. The sawguard and flanges should be removed and the adaptor screwed onto spindle as shown in Fig. 20.

The adaptor will take left hand router cutters and boring bits with 1/2" dia. shanks.

HOW TO FIT MOULDING CUTTERBLOCKS

The cutterblocks are mounted on the end of the spindle as shown in Fig. 21.

To mount cutterblocks remove the sawguard and saw flanges. Fit the 1 1/2" (28.5mm) long distance piece supplied onto the spindle then the cutterblock. The special locknut and spanner, type QT.37, should be used to lock the block in position.

The special guard can be supplied for use with these blocks.

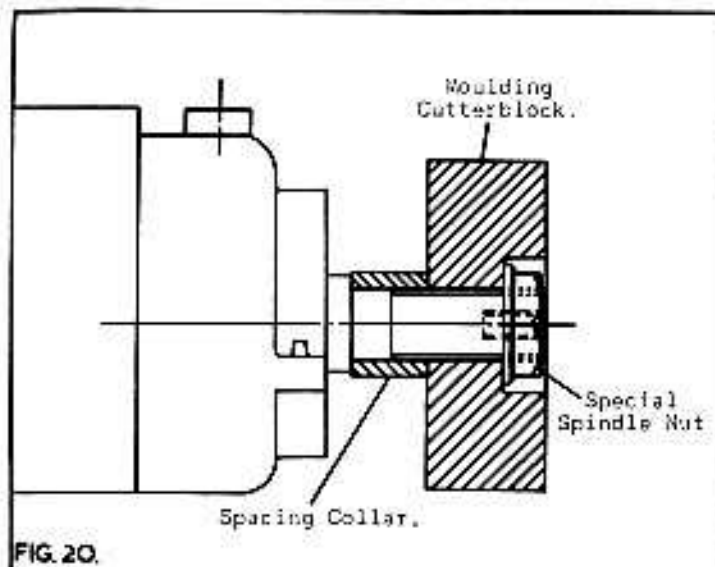


FIG. 20.

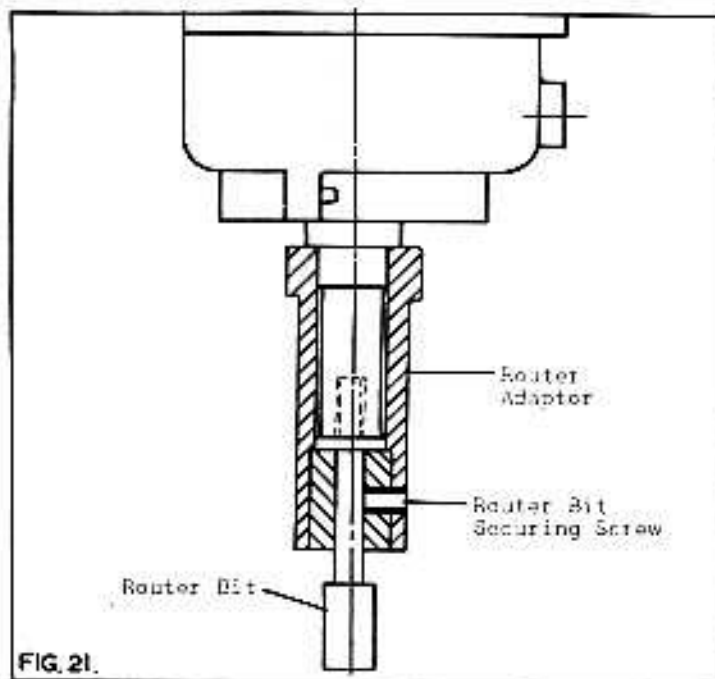


FIG. 21.

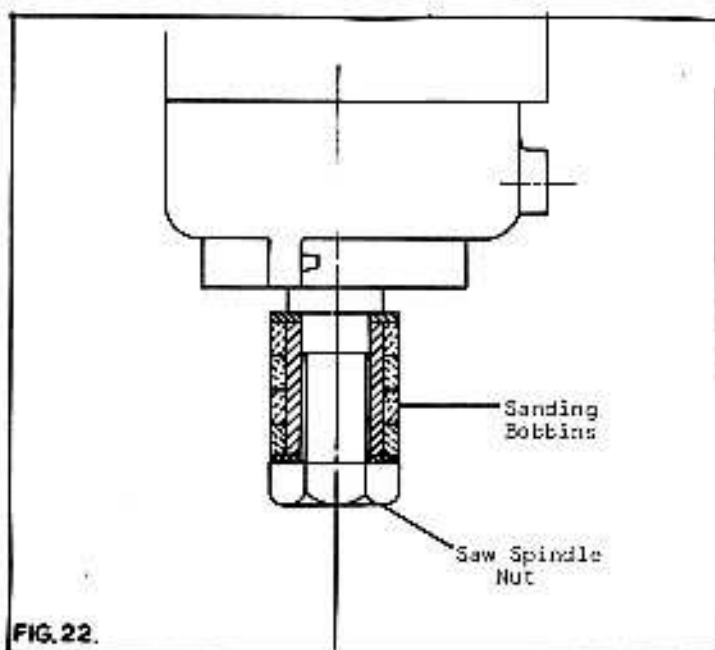


FIG. 22.

HOW TO FIT SANDING BOBBINS

The sanding bobbins consist of four rubber sections each $\frac{1}{2}$ " (12.5mm) thick mounted on a sleeve with a steel flange at each end.

Before mounting the bobbins onto the spindle, the sawguard and saw flanges should be removed and the bobbins fit onto spindle as shown in Fig. 22 and locked onto the spindle with the standard arbor nut, left hand thread.

SAW MAINTENANCE

Efficient operation of a circular saw depends on true running of the saw spindle and the collars being perfectly square on the faces with the axis of the spindle, it must run at the correct peripheral speed to ensure straight cutting. The Bursgreen radial arm saw embodies all these requirements and provided the saw is maintained in a sharp condition with the teeth correctly sharpened and set, efficient service will be given.

Before putting a new saw to use, it is essential that it is "ranged down" on the teeth to ensure each tooth is cutting and to maintain true running.

RANGING

Ranging down should be done on a new saw or any saw after the 4th or 5th re-sharpening.

Feed a square edged abrasive block, in wooden holder, lightly against the saw teeth whilst running. The saw should then be removed and the tops of the teeth filed to remove the ranging marks on the points.

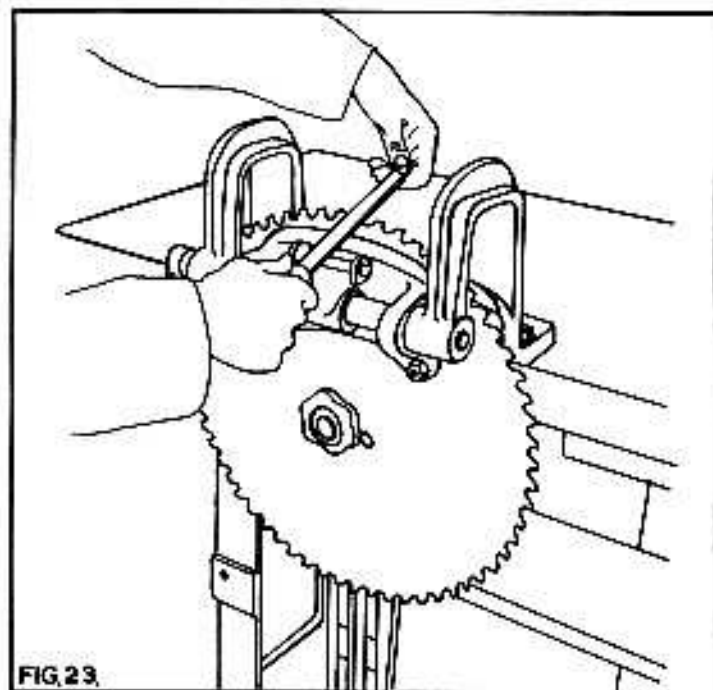


FIG. 23.

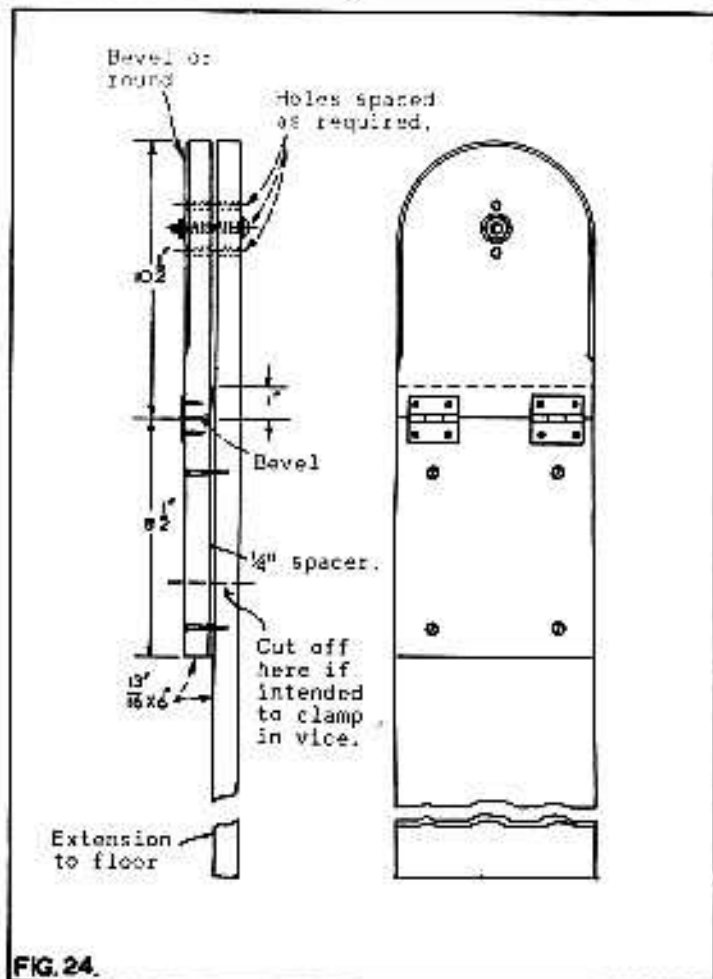
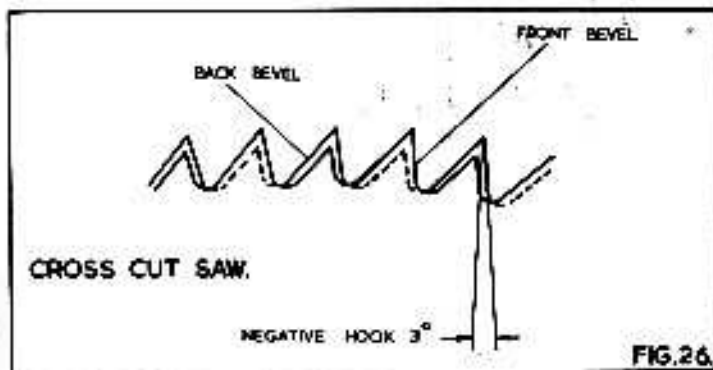
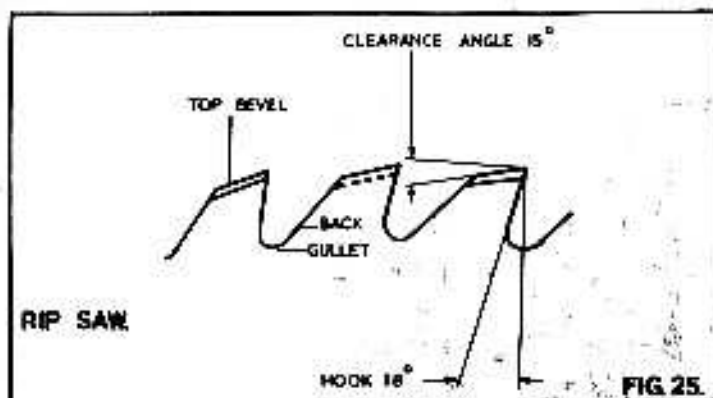


FIG. 24.



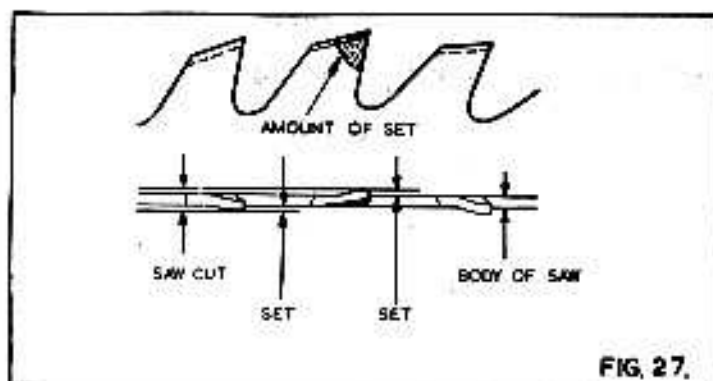
SAW SHARPENING

Do not run a saw when blunt, remove and re-sharpen. Hold a saw rigid in a vice as shown in Fig. 23 or a simple saw vice as shown in Fig. 24 which can be readily made and proceed to sharpen saw.

With rip saw teeth, chisel edges and square faces are needed see Fig. 25. Sharpen by giving each tooth an equal number of strokes with a flat faced saw file with rounded edges. At the same time file the gullet, taking care to keep the gullet well rounded.

With a crosscut saw, saw points are needed with back and front bevels, as shown in Fig. 26.

In the course of repeated filing the teeth lose the original shape and the gullets shallow. To restore the shape of each tooth, essential for satisfactory performance, it is necessary to grind the saw on a saw sharpening machine. These machines are usually of the automatic type and feeds each tooth, giving equal spacing or pitch.

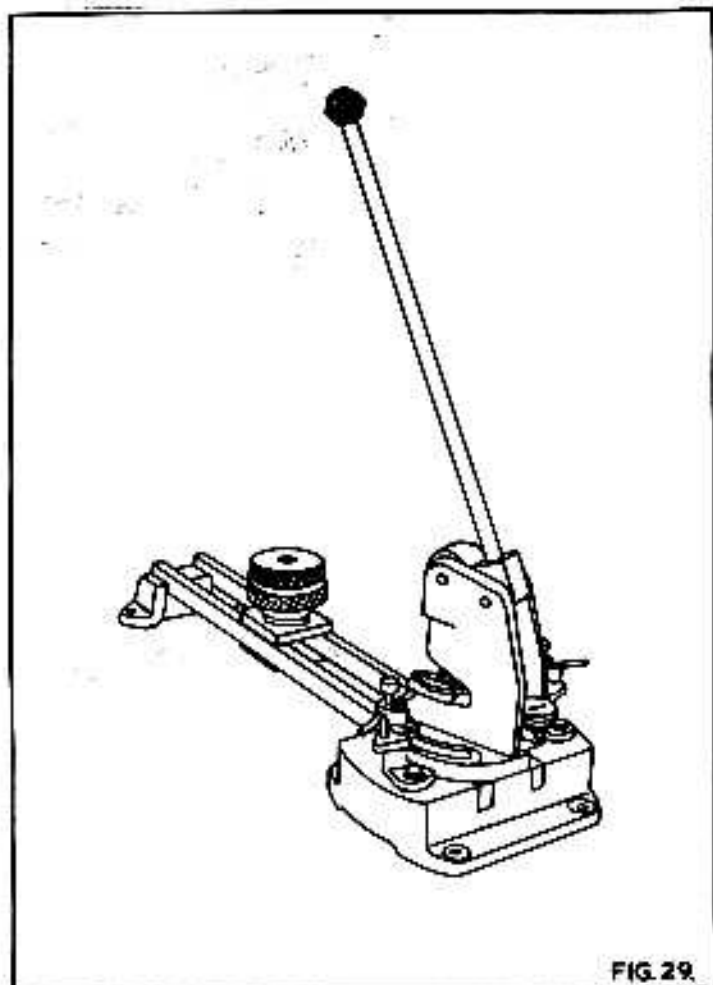
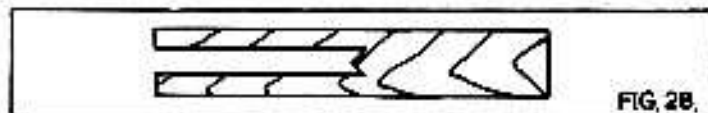


SETTING

The amount of set to the teeth should be sufficient to give clearance to the body of the saw so that there is freedom from friction between saw and timber. It is generally accepted that the teeth are "spring set" i.e. the tips of alternative teeth are bent to the right and left as shown in Fig. 27. For good sawing the amount of set on each side of the saw must be identical otherwise the saw will run to one side. To check the set, cut into a piece of wood of few inches when a small even triangle should be seen, Fig. 28.

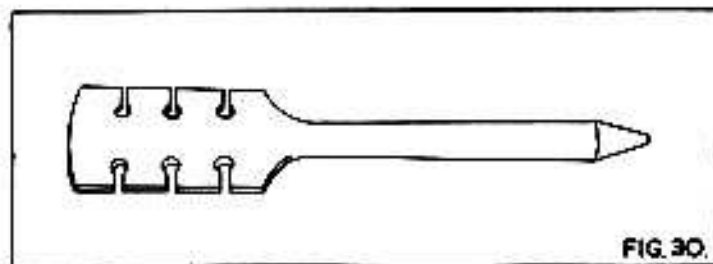
The exact amount of set each side varies with the timber being cut, usually .010" to .015" (.03mm to .04mm)

For clean cutting, just sufficient set should be allowed to prevent bending and heating. More set is required for wet, woolly timber than for dry, close grained timber and the amount of set is greater for crosscutting saws than those for ripping.



MACHINE SETTING

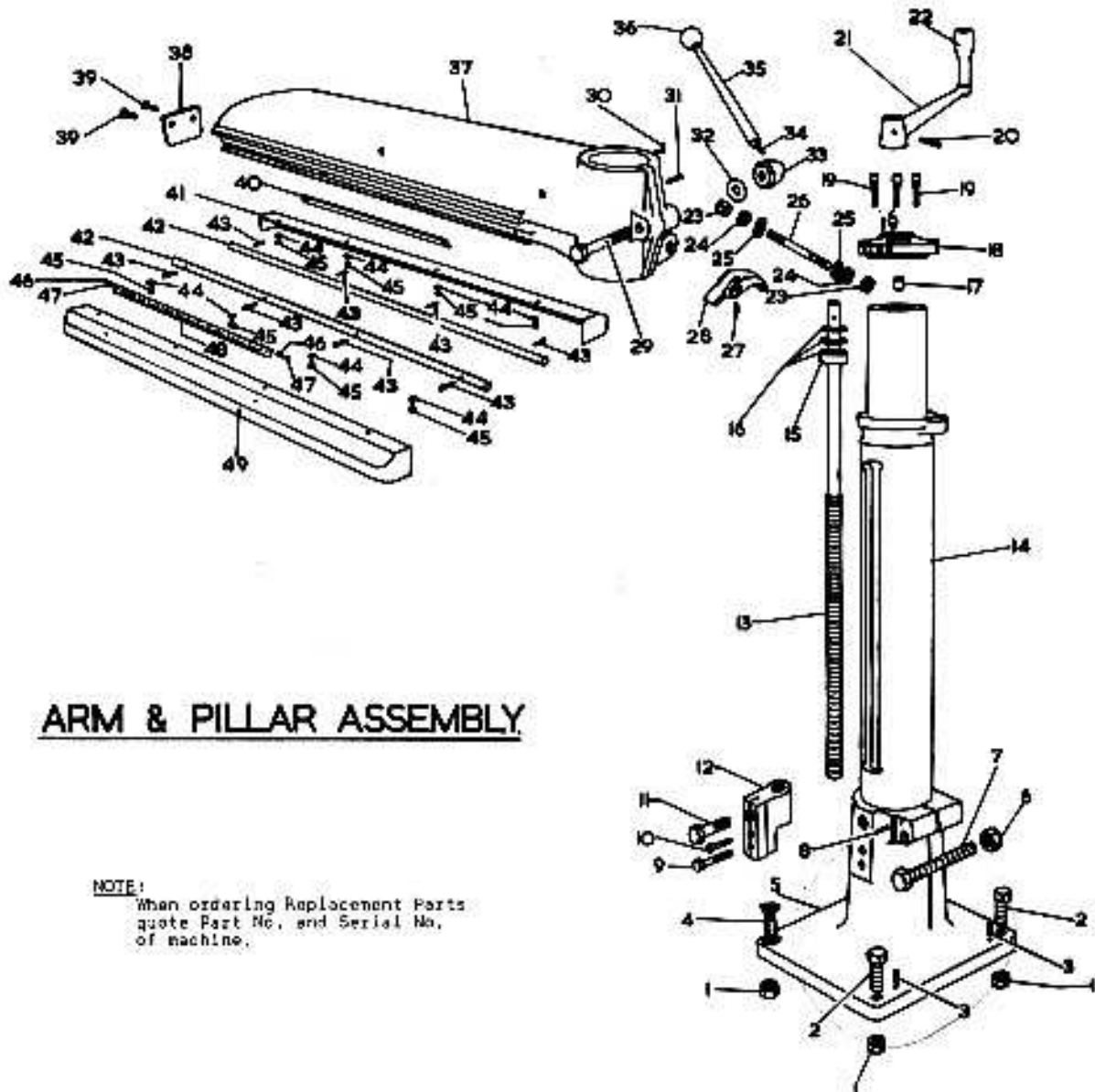
We can supply a small machine for efficiently setting the teeth as illustrated in Fig. 29 and will deal with saws 8" to 36" (202 mm to 910 mm) diameter. The micrometer dial indicates accurate reading of the amount of set in thousandths of an inch.



HAND SETTING

Where the number of saws does not warrant a machine being installed the saws are set by hand using a tool shown in Fig. 30. This tool is provided with six notches to take saws 8 to 14 quare thick.

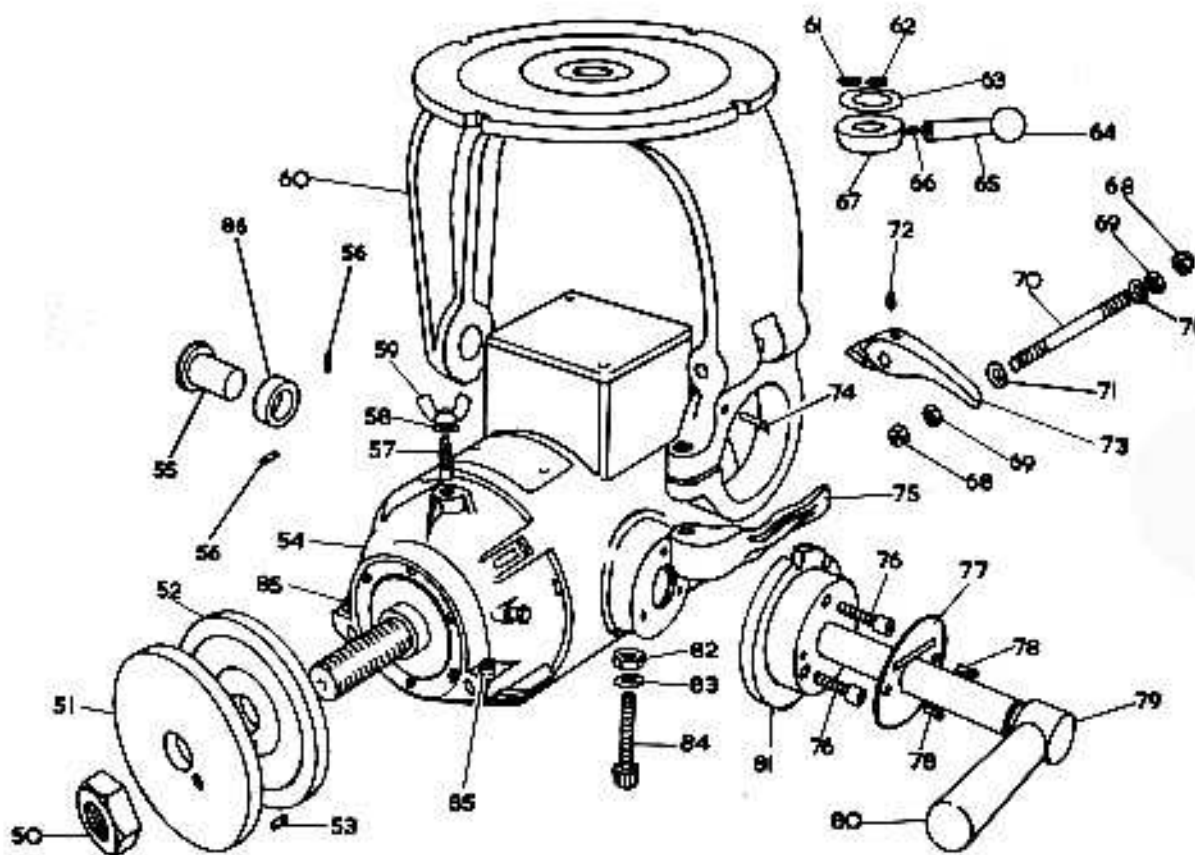
For this process of setting, the saw is securely clamped in a vice.



ARM & PILLAR ASSEMBLY

NOTE:
When ordering Replacement Parts
quote Part No. and Serial No.
of machine.

Ref. No.	Part No.	No. off	Description	Ref. No.	Part No.	No. off	Description
1.		4	$\frac{3}{8}$ " whit. nut.	29.	A-1027/155	1	Arm locking bolt.
2.		2	$\frac{3}{8}$ " whit. x 2" long hexagon head bolt.	30.	A-1027/68	1	Pointer (15/16" long).
3.		2	$\frac{1}{8}$ " dia. x 1" long fluted dowel.	31.	A-1027/46	1	Arm locking handle stop.
4.		2	$\frac{3}{8}$ " whit. x 2" long counter-sunk socket head screw.	32.		1	$\frac{1}{2}$ " washer.
5.	D-1027/3	1	Foot.	33.	A-1027/57	1	Arm locking handle nut.
6.		1	$\frac{3}{8}$ " whit. acerlight nut.	34.		1	$\frac{3}{8}$ " whit. x 1" long socket head grub screw.
7.		1	$\frac{3}{8}$ " whit. x 5" long hexagon head bolt.	35.	B-1027/46	1	Arm locking handle.
8.		1	$\frac{1}{4}$ " whit. x $\frac{3}{4}$ " long socket head grub screw.	36.	Fatt.No.28	1	$\frac{1}{4}$ " dia. plastic ball. $\frac{3}{8}$ " whit.
9.		1	$\frac{1}{2}$ " whit. x 2" long hexagon head bolt.	37.	E-1027/1	1	Long arm (22" x 1" capacity).
10.	A-1027/41	1	Rise and fall nut adjusting screw.		E-1027/36	1	Standard arm (17" x 1" capacity).
11.	A-1027/40	1	Rise and fall nut locking screw.		E-1027/142	1	Special long arm (25" x 1" capacity).
12.	B-1027/5	1	Rise and fall nut.	38.	A-1027/6	1	Arm end plate.
13.	B-1027/15	1	Rise and fall screw.	39.		2	$\frac{3}{8}$ " whit x $\frac{3}{4}$ " long socket head cap screw
14.	D-1027/2	1	Pillar.	40.	B-1027/37	1	Left hand arm rule (standard) (0" - 18").
15.	B-1036/40	1	Collar for rise and fall screw.		B-1027/56	1	Left hand arm rule (metric) (0mm - 466mm).
16.	$\frac{1}{8}$ "	1	Thrust race.	41.	B-1027/20	1	Shield for rollers (left hand).
17.		1	$\frac{3}{8}$ " bore x $\frac{3}{8}$ " outside dia. x $\frac{3}{4}$ " long olive bush.	42.	B-1027/39	2	Arm slide rods (standard and long arm).
18.	B-1027/4	1	Rise and fall handle bearing.		B-1027/143	2	Arm slide rods (special long arm).
19.		3	$\frac{3}{16}$ " whit. x $1\frac{1}{2}$ " long socket head cap screw.	43.	OK.76	8	2 B.A. Cheese head screw.
20.		1	$\frac{3}{16}$ " dia. x $1\frac{1}{4}$ " long groverlok spring dowel.	44.		8	$\frac{1}{8}$ " washer.
21.	B-1027/45	1	Rise and fall handle.	45.		8	$\frac{3}{8}$ " whit. x $\frac{3}{8}$ " long round head screw.
22.	Fatt.No.4	1	3" plastic handle.	46.	No. 4	4	$\frac{1}{8}$ " long self tapping screw.
23.		2	$\frac{3}{8}$ " whit. thin acerlight nut.	47.		4	$\frac{1}{8}$ " brass washer.
24.		2	$\frac{3}{8}$ " whit. locknut.	48.	B-1027/37	1	Right hand rule (standard) (0" - 14").
25.	A-1027/169	2	Fibre washer for pillar latch.		B-1027/56	1	Right hand rule (metric) (0mm - 355mm).
26.	A-1027/172	1	Pivot pin for pillar latch.	49.	C-1027/20	1	Shield for rollers (right hand).
27.		1	$\frac{1}{8}$ " gas x $\frac{1}{2}$ " long socket head grub screw.				
28.	B-1027/12	1	Pillar locating latch.				

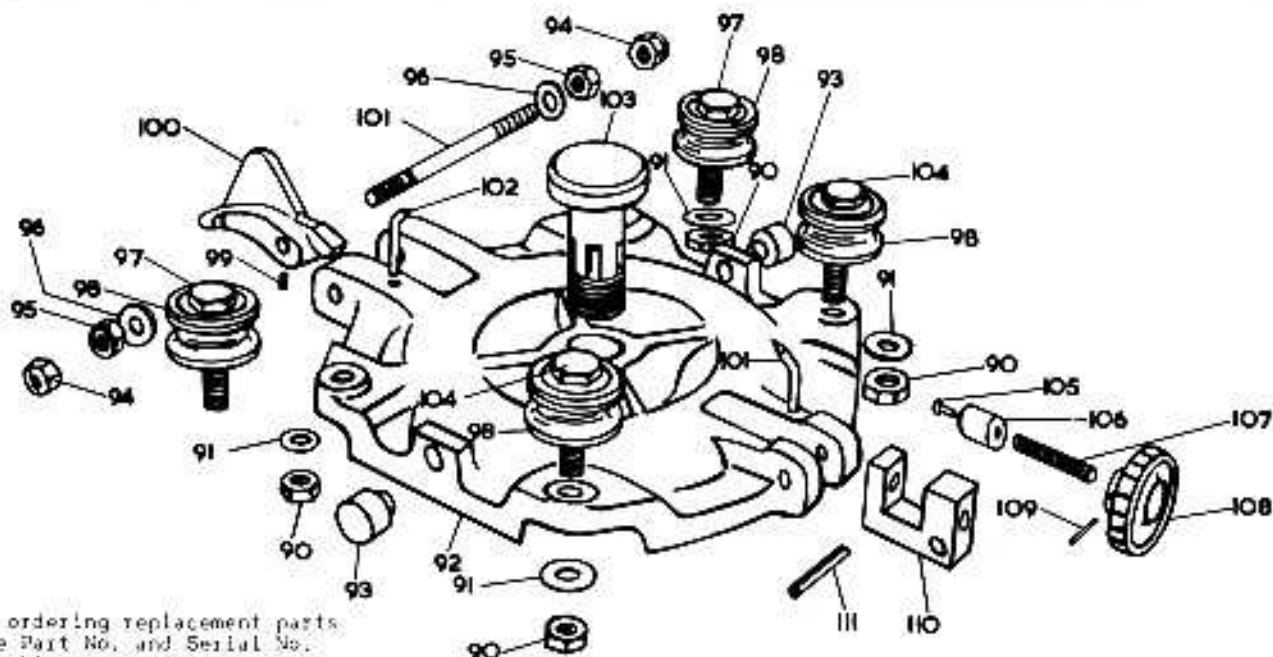


STIRRUP ASSEMBLY

NOTE:

When ordering replacement parts quote Part No. and Serial No. of machine.

Ref.No.	Part No.	No.off	Description	Ref.No.	Part No.	No.off	Description
50.	A-1027/21	1	Saw spindle nut.	65	B-1027/46	1	Stirrup locking handle,
51.	B-1027/22	1	Saw flange (front with 11/22" hole).	66.		1	3/8" whit. x 1" long socket head grub screw.
52.	B-1027/22	1	Saw flange (back with 5/16" whit. hole)	67.	A-1027/19	1	Stirrup pivot locknut.
53.	A-1027/58	1	Driving peg.	68.		2	1/4" whit. thin acrotight nut,
54.		1	Brook motor, type WS.105, 3HP, 3 phase supply, 3000 rpm, 50 cycles, 3600 rpm. 60 cycles.	69.		2	1/4" whit. locknut.
		1	Brook motor, type WS.105, 3HP, 1 phase supply.	70.	A-1027/173	1	Pivot pin for motor latch, (4 1/2" long).
		1	Brook motor, type WS.1075, 5HP, 3 phase supply.	71.	A-1027/170	2	Fibre washer for motor latch, 1/2" whit. x 3/8" long socket head grub screw.
55.	A-1038/75	1	Motor pivot shaft.	72.		1	Motor locating latch.
56.		2	5/16" whit x 3/8" long socket head grub screw.	73.	B-1027/26	1	Pointer (15/16" long).
57.	A-1027/67	1	Saw guard locking stud.	74.	A-1027/68	1	Motor pivot locking handle.
58.		1	3/8" washer.	75.	B-1027/47	3	5/16" whit. x 1 1/2" long socket head capscrew.
59.		1	3/8" whit. wingnut.	76.		1	Nanoplate.
60.	E-1027/8	1	Stirrup.	77.	A-S-127	2	3/16" whit. x 1/2" long round head screw.
61.		1	1/4" whit. x 1/2" long socket head grub screw.	78.		1	Pull handle.
62.		1	1/4" whit. x 3/8" long socket head grub screw.	79.	B-1027/50	1	4" long plastic handle.
63.	A-1027/55	1	Washer for stirrup pivot screw.	80.	Patt.No.10,	1	Motor locating ring.
64.	Patt.No.28	1	1 1/4" dia. plastic ball, 3/8" whit.	81.	B-1027/25	1	3/8" whit. nut.
				82.		1	3/8" brass washer.
				83.		1	3/8" whit. x 2 3/4" long socket head capscrew.
				84.		1	3/8" whit. x 3/8" long socket head capscrew.
				85.		2	3/8" whit. x 3/8" long socket head capscrew.
				86.	A-1038/76	1	Motor pivot distance piece

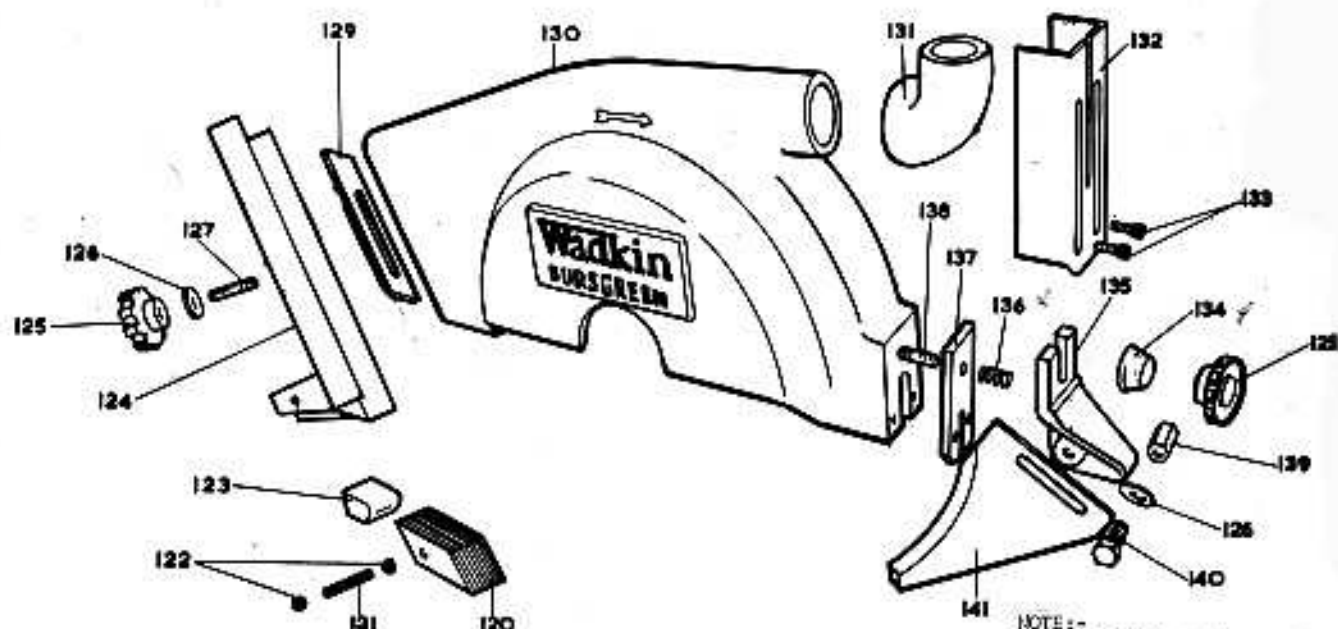


NOTE:-

When ordering replacement parts quote Part No. and Serial No. of machine.

ROLLER BRACKET ASSEMBLY

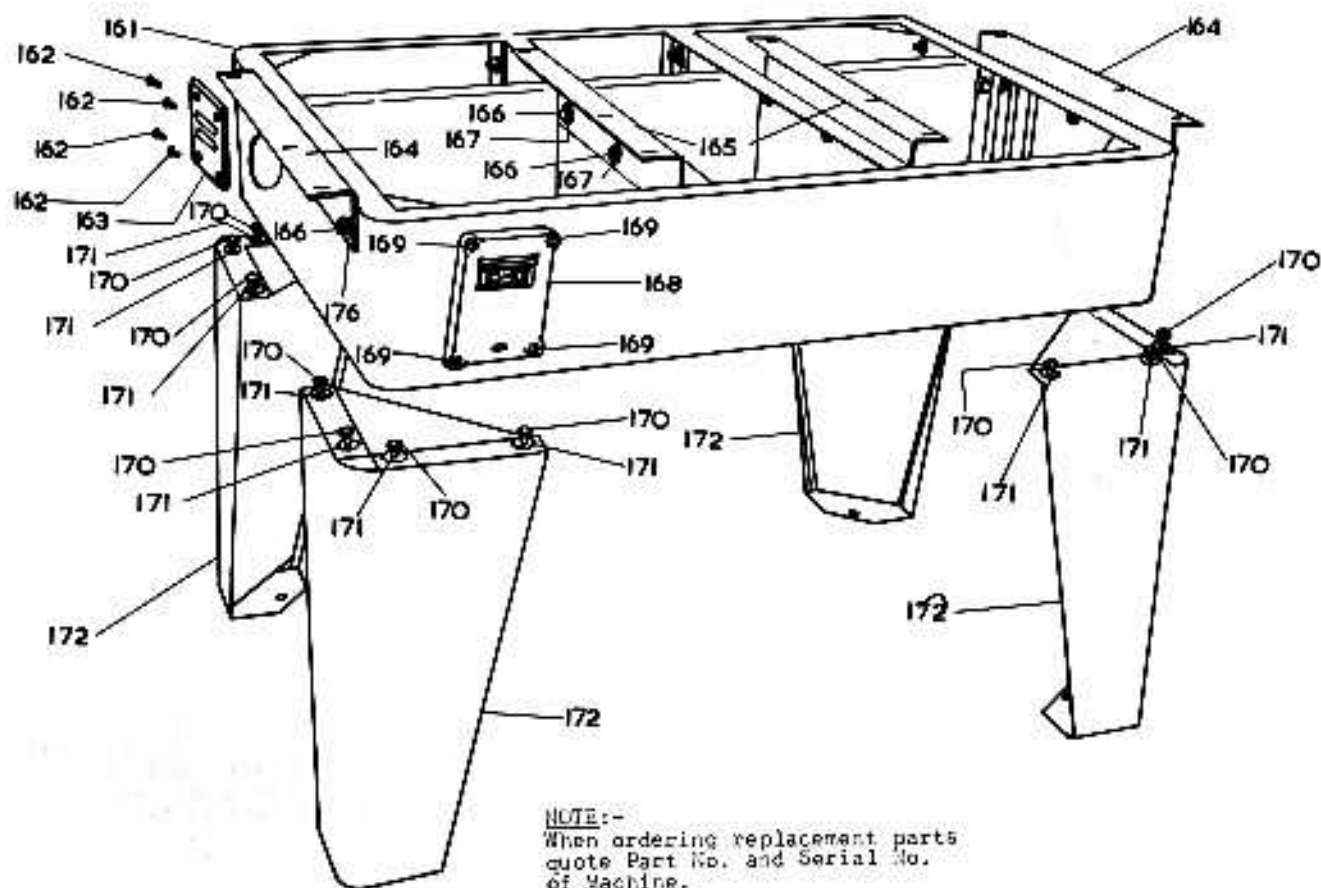
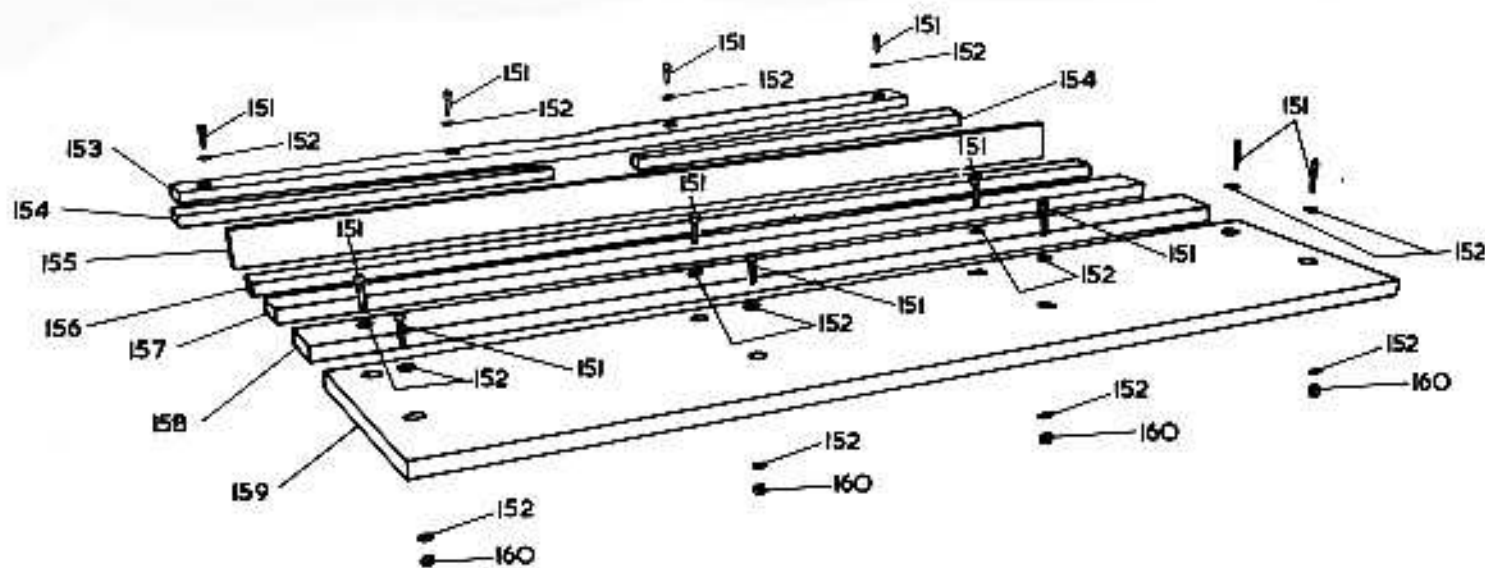
Ref.No.	Part No.	No.off	Description	Ref.No.	Part No.	No.off	Description
90.		4	$\frac{3}{8}$ " whit. nut.	103.	B-1027/38	1	Stirrup pivot screw.
91.		4	$\frac{3}{8}$ " washer.	104.	A-1027/35	2	Plain pin for roller.
92.	D-1027/7	1	Roller bracket.	105.		1	$\frac{1}{8}$ " dia. x $\frac{1}{2}$ " long fluted rivet.
93.	A-1027/18	2	Rubber stop.	106.	A-1027/42	1	End piece for carriage locking screw.
94.		2	$\frac{1}{2}$ " whit. thin aerotight nut. +	107.	A-1027/43	1	Carriage locking screw.
95.		2	$\frac{1}{2}$ " whit. locknut.	108.	Fatt.No.32	1	$\frac{1}{2}$ " dia. plastic handwheel.
96.	A-1027/170	2	Fibre washer for stirrup latch.	109.		1	$\frac{1}{8}$ " dia. x $\frac{1}{2}$ " long groverlock spring dowel.
97.	A-1027/34	2	Eccentric pin for roller.	110.	B-1027/14	1	Travel lock.
98.	FG. 3400	4	F.B.C. roller bearing.	111.		1	$\frac{3}{16}$ " dia. x $\frac{1}{2}$ " long groverlock spring dowel.
99.		1	$\frac{1}{4}$ " whit. x $\frac{1}{2}$ " long socket head grub screw.				
100.	B-1027/13	1	Stirrup locating latch.				
101.	A-1027/173	1	Pivot pin for stirrup latch.				
102.	A-1027/66	2	Pointer (2" long).				



SAWGUARD ASSEMBLY

NOTE:-
When ordering replacement parts quote Part No. and Serial No. of Machine.

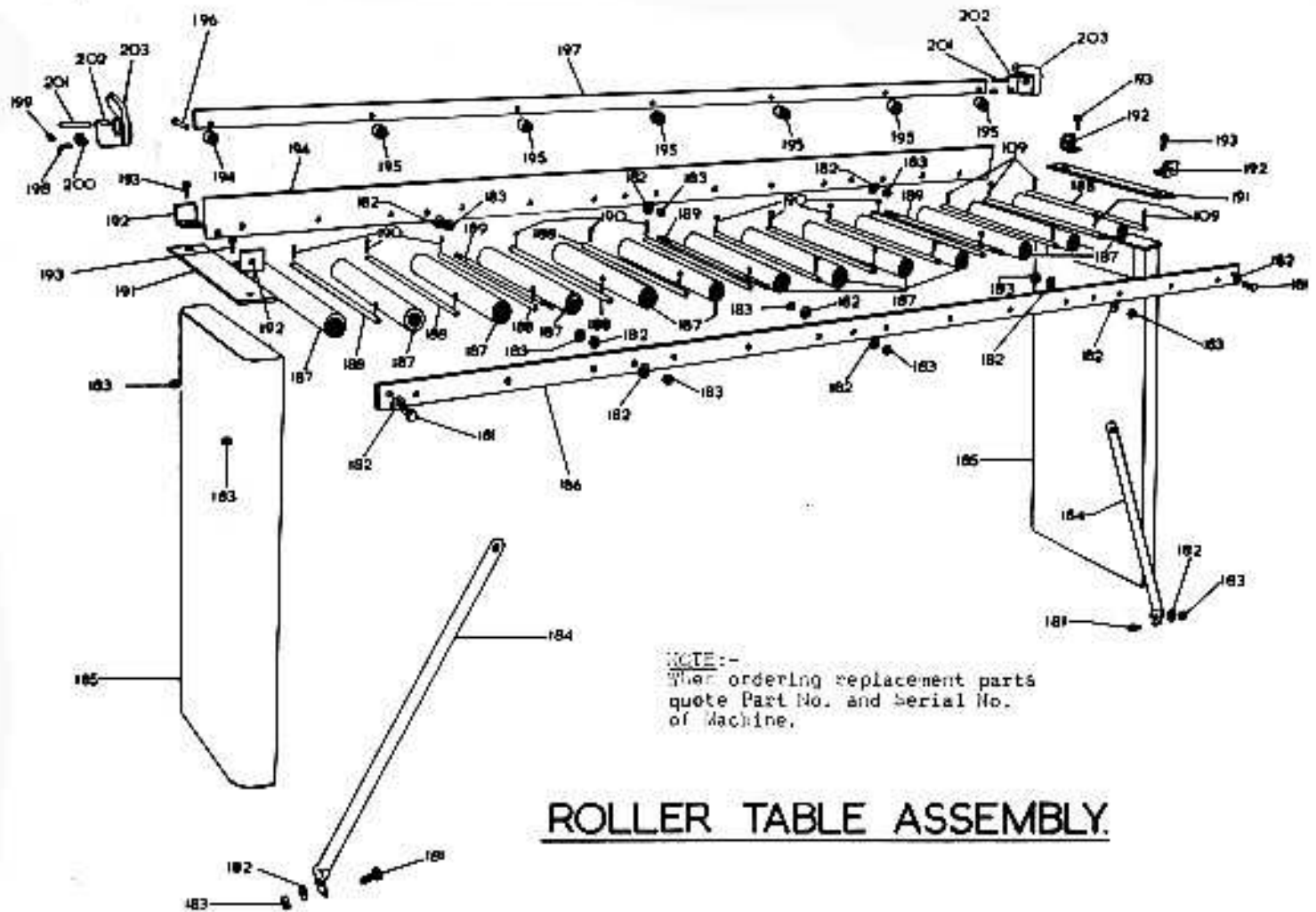
Ref.No.	Part No.	No.off	Description	Ref.No.	Part No.	No.off	Description
120	A-1027/33	13	Kick back finger	121	B-1038/19	1	Chip chute
121	A-1027/262	1	Pin for kick back bracket	122	B-1027/17	1	Saw guard visor
122	5115-18	2	Salter push on retainer	123		2	$\frac{5}{16}$ " whit x $\frac{3}{8}$ " long socket head capscrew
123	A-1027/59	1	Kick back finger pressure pad	124	A-1027/51	1	Hiving knife distance piece
124	B-1051/3	1	Kick back bracket	125	B-1027/16	1	Hiving knife bracket
125	Fatt.No.32	2	$\frac{1}{2}$ " dia. plastic handwheel	126	A-1027/30	1	Hiving knife spring
126		2	$\frac{3}{8}$ " whit T.B.T.	127	A-1027/28	1	Hiving knife locating plate
127		1	$\frac{1}{2}$ " washer	128		1	$\frac{3}{8}$ " whit x $\frac{2}{8}$ " long stud
128	A-1027/233	1	Cover for kick back bracket	129	A-1027/29	1	Hiving knife nut
130	E-1027/9	1	Saw guard	130		1	$\frac{3}{8}$ " whit x 1" long hexagon head bolt
				131	B-1027/23	1	Hiving knife



NOTE:-
When ordering replacement parts
quote Part No. and Serial No.
of Machine.

TABLE AND BASE ASSEMBLY.

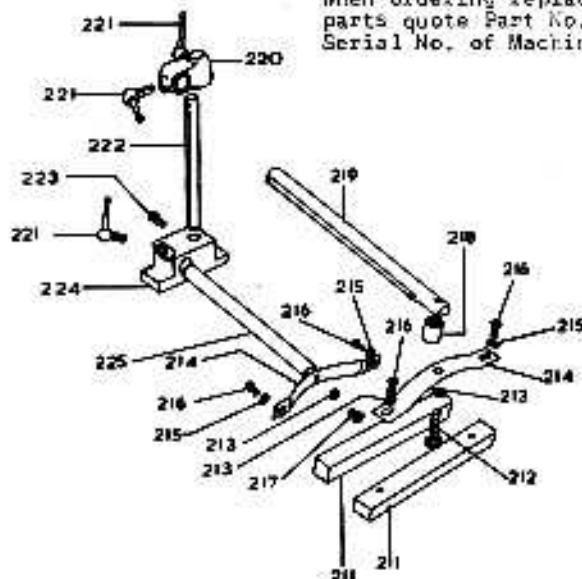
Ref.No.	Part No.	No.off	Description.	Ref.No.	Part No.	No.off	Description
151.		12	1/4" whit. x 1" long cheese head screw.	165.	B-1027/178	1 each	Inner support bracket for table.
152.		24	1/4" washer.	166.		12	5/16" whit. x 1" long hexagon head bolt.
153.	B-1027/194	1	Back support.	167.		12	5/16" washer.
154.	A-1027/198	2	Wedge.	168.	84 ADS/PO	1	MEM starter (3 phase, 50 cycles).
155.	A-1027/199	1	Fence.	AT3		1	Brook starter (1 phase, 50 cycles).
156.	A-1027/199	1	Packing piece for table (1 1/8" wide).	AT3		1	Brook starter (3 and 1 phase 60 cycles).
157.	A-1027/199	1	Packing piece for table (2 1/8" wide).	169.		4	1/4" whit. x 3/8" long cheese head screw.
158.	A-1027/199	1	Packing piece for table (3" wide).	170.		16	3/8" whit. x 3/8" long hexagon head bolt.
159.	B-1027/195	1	Table.	171.		16	3/8" washer.
160		12	1/2" whit. nut.	172.	C-1027/171C&D	4	Leg for base.
161.	C-1027/171A&B	1	Body for base.				
162.		4	1/2" whit. x 1/2" long raised head screw.				
163.	B-1031/53	1	Cover plate for base.				
164.	B-1027/177	1 each	Outer support bracket for table.				



ROLLER TABLE ASSEMBLY.

Ref.No.	Part No.	No.off	Description	Ref.No.	Part No.	No.off	Description
181		8	$\frac{3}{8}$ " whit. x $\frac{1}{2}$ " long hexagon head bolt.	196.		7	$\frac{5}{16}$ " whit. x $1\frac{1}{2}$ " long cheese head screw.
182.		20	$\frac{3}{8}$ " washer.	197.	A-1027/183	1	Stop bar for roller table to right of saw (standard).
183.		20	$\frac{3}{8}$ " whit. nut.		A-1027/184	1	Stop bar for roller table to left of saw (standard).
184.	D-1027/131	4	Support strut for roller table.		A-1027/185	1	Stop bar for roller table to right of saw (metric).
185.	C-1027/130	2	Foot for roller table.		A-1027/186	1	Stop bar for roller table to left of saw (metric).
186.	D-1027/131	1	Front roller plate.				
187.		13	Rollers ($1\frac{1}{2}$ " O.D. x 12" long)				
188.	A-1027/189	13	Roller spindle.	198.	A-1026/54	2	Pointer for turnover stop.
189.	A-1027/134	3	Tie bar.	199.		2	$\frac{1}{2}$ " whit. x $\frac{3}{8}$ " long socket head grub screw.
190.		26	$\frac{1}{8}$ " dia. x 1" long split pin.	200.	B-S-1-B	2	$\frac{3}{8}$ " whit. ball lever screw.
191	A-1027/132	2	Roller tie plate.	201.		2	$\frac{5}{16}$ " dia. x 2" long hardened ground dowel.
192.	A-1027/133	4	Roller plate angle bracket.	202.	A-1027/83	2	Turnover stop holder.
193.		4	$\frac{3}{8}$ " whit. x 1" long hexagon head bolt.	203.	A-1027/84	2	Turnover stop.
194.	D-1027/131	1	Rear roller plate.				
195.	A-1027/135	7	Stop bar distance piece.				

NOTE:-
When ordering replacement parts quote Part No. and Serial No. of Machine.



SHAW GUARD ASSEMBLY.

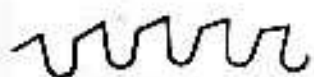
Ref.No.	Part No.	No.off	Description
211.	D-1792/44	2	Wood shims for shaw guard.
212.		1	$\frac{5}{16}$ " whit. x $1\frac{1}{2}$ " long hexagon head bolt.
213.		2	$\frac{5}{16}$ " spring washer.
214.	D-1792/45	2	Shaw guard pressure spring.
215.		4	$\frac{3}{16}$ " washer.
216.		4	No. 8 x $\frac{3}{4}$ " long black japanned round head wood screw.
217.		1	$\frac{5}{16}$ " whit. x $\frac{3}{4}$ " long hexagon head bolt.
218.	A-1027/176	1	Shaw guard top pressure distance piece.
219.	A-1027/175	1	Top pressure bar (12" long).
220.	D-1792/65	1	$\frac{3}{8}$ " x $\frac{3}{8}$ " fibloc.
221.	B-S-1-B	3	$\frac{3}{8}$ " whit. ball lever screw.
222.	A-1027/175	1	Column ($7\frac{1}{2}$ " long).
223.		1	$\frac{3}{8}$ " whit. x $\frac{3}{4}$ " long square head bolt.
224.	A-1027/174	1	Shaw guard support bracket.
225.	A-1027/175	1	Bottom Pressure Bar (10" long)

EXTRAS

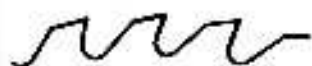
CIRCULAR SAWS



This is our standard range of saws, normally available from stock. Hollow ground saws require no setting, give minimum saw kerf or wastage and ensure exceptionally clean finish.



B.S. 102 Crosscut Sawblade
14" dia. 14 gauge.



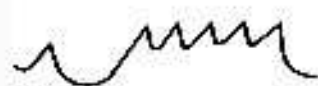
B.S. 84 Rip Sawblade
14" dia. 15 gauge.



B.S. 119 Hollow Ground
Crosscut Blade
14" dia. 12 gauge at tooth.



B.S. 67 Crosscutting or
Ripping Sawblade for
exceptionally smooth finish.
14" dia. 14 gauge.



B.S. 74 Hollow Ground
Plywood Saw.
14" dia. 12 gauge at tooth.



EXPANDING GROOVING SAW OR DADO HEAD

For smooth finish with or across the grain in hard or soft woods. The head consists of two outside saws $\frac{1}{8}$ " (3 mm) thick, 8" (202 mm) diameter and 5 inner cutters of varying thicknesses for cutting grooves $\frac{1}{8}$ " (3 mm) to 1" (25 mm) rising by $\frac{1}{16}$ " (1.5 mm)

EXPANDING GROOVING HEADS

Each half of this head is made in gun metal giving exceptional strength.

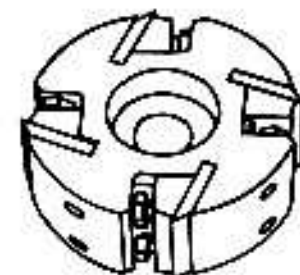
JP. 541

With $8\frac{1}{2}$ " (216mm) cutting circle, for grooves $\frac{3}{8}$ " (9.5mm) to $1\frac{1}{16}$ " (17.5mm) wide, $\frac{9}{16}$ " (14mm) deep.

JP. 543

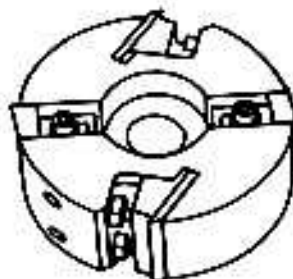
With $8\frac{1}{2}$ " (216mm) cutting circle, for grooves $1\frac{1}{16}$ " (17.5mm) to $1\frac{1}{4}$ " (32mm) wide, 1" (25mm) deep.

CUTTERBLOCKS



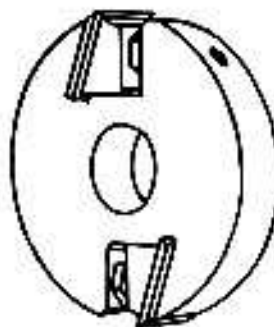
CR. 100

4 knife wedge type, flush mounted $4\frac{1}{2}$ " (124mm) dia, $1\frac{1}{2}$ " (45mm) thick to take $\frac{5}{32}$ " or $\frac{1}{8}$ " (4mm or 6mm) thick cutters.



CR. 105

2 knife wedge type, $4\frac{1}{2}$ " (124mm) x $1\frac{1}{2}$ " (45mm) thick, fitted with spur cutters to take one pair $\frac{5}{32}$ " or $\frac{1}{4}$ " (4mm or 6mm) thick cutters.

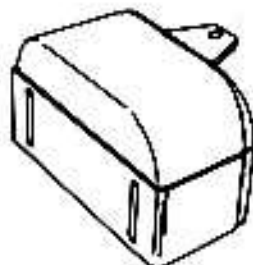


CR. 11B

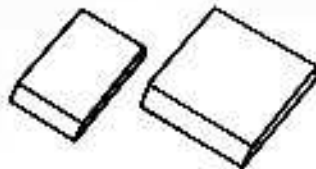
2 knife wedge type, $4\frac{1}{2}$ " x $1\frac{5}{16}$ " (124mm x 24mm) thick to take cutters $\frac{5}{32}$ " or $\frac{1}{4}$ " (4mm or 6mm) thick.

G.T. 37

Spanner and locknut is required for cutterblocks CR. 100 and CR. 105 (one only needed per machine).



Guard for use with the above cutterblocks.



SQUARE EDGE CUTTERS FOR ABOVE CUTTERBLOCKS, TYPE VZ

5/32" x 1 1/2" long.

Solid High Speed Steel.

Width on cut 3/4" 1" 1 1/4" 1 1/2" 1 3/4" 2"

Part No. VZ VZ1 VZ2 VZ3 VZ4 VZ5

Tungsten Carbide Tipped

Width on cut 3/4" 1" 1 1/4" 1 1/2" 1 3/4" 2"

Part No. VZ/T VZ1/T VZ2/T VZ3/T VZ4/T VZ5/T

1/4" thick x 1 1/2" long.

High Speed Steel Welded to Mild Steel

Width on cut 3/4" 1" 1 1/4" 1 1/2" 1 3/4" 2"

Part No. VZ20 VZ21 VZ22 VZ23 VZ24 VZ25

Tungsten Carbide Tipped

Width on cut 3/4" 1" 1 1/4" 1 1/2"

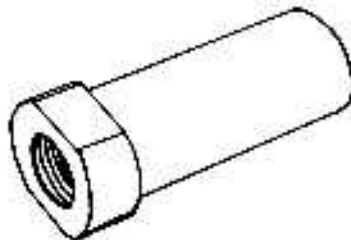
Part No. VZ22/T VZ23/T

Solid High Speed Steel in the bar: 5/32" thick,

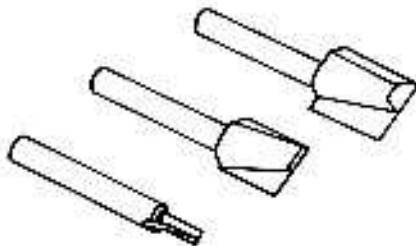
3/4", 1", 1 1/4", 1 1/2", 1 3/4", 2", 2 1/4", 2 3/4", 3" wide.

High Speed Steel Welded to Mild Steel: 1/4" thick,

3/4", 1", 1 1/4", 1 1/2", 2" wide.



Screw on adaptor to take boring bits and router cutters with 1/2" shanks.



LEFT HAND TWO EDGED ROUTER CUTTERS

BRAT 7 1/2" x 1/4" depth of cut.

BRAT 1A 3/8" x 1" " " "

BRAT 1 1/2" x 1 1/4" " " "

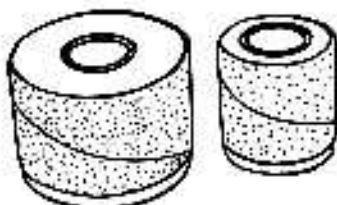
BRAT 2 1/2" x 1 1/4" " " "

BRAT 3 1/2" x 1 1/4" " " "

BRAT 4 1/2" x 1 1/4" " " "

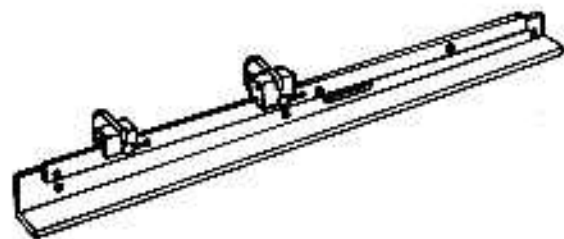
BRAT 5 1" x 1 1/4" " " "

BRAT 6 1 1/4" x 1 1/2" " " "



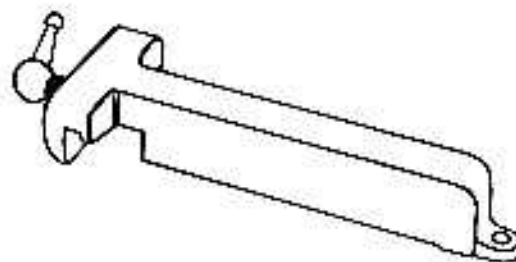
SANDING BOBBINS

These bobbins consist of four circular rubber sections each 1/2" thick mounted on a sleeve, with a steel flange at each end, and carrying spirally wound aluminum oxide cloth belts, grade O-80 or grade 1-50. Two sizes available, 2" diameter x 2" deep, 3" diameter x 2" deep.

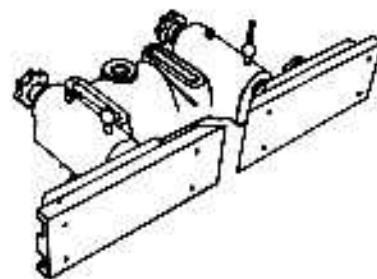


Adjustable metal fence with stop bar for cutting off material up to 3'6" (106mm) long complete with two adjustable turn over stops for repetition work.

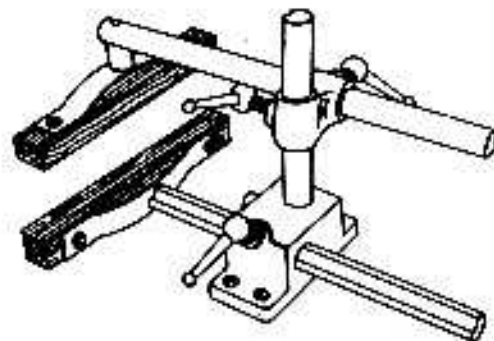
Longer stop bars can be supplied to special order, to give capacities 6ft, 9ft and 12ft. (1,828 mm, 2,743 mm and 3,658 mm). Maximum graduation is 6ft. (1828mm) on any bar supplied.



Adjustable stop for multiple crosscutting designed to drop onto the stop bar shown above.



Mazz shoe fence for use when moulding, routing, etc.

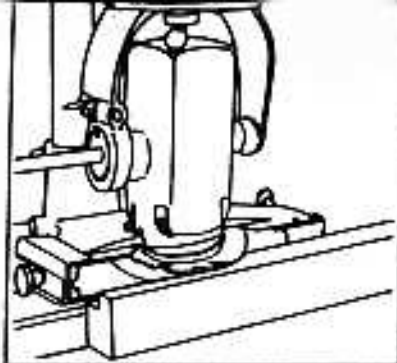


Shaw type guard for use with fences when moulding, etc.

Metal roller table 77" (1955mm) long and 12" (305mm) wide complete with graduated stop bar can be supplied for use on either side of the machine. The illustration on page 16 shows a table fitted to the left of the machine. When ordering please state which side of the machine the table is to be fitted for purpose of the graduated stop bar.

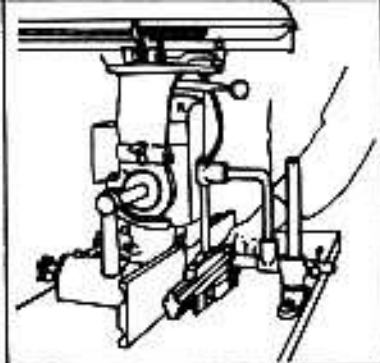
Capacity of table is 8ft. (244mm) to the left of the saw and 9ft. (2740mm) to the right of the saw.

APPLICATIONS

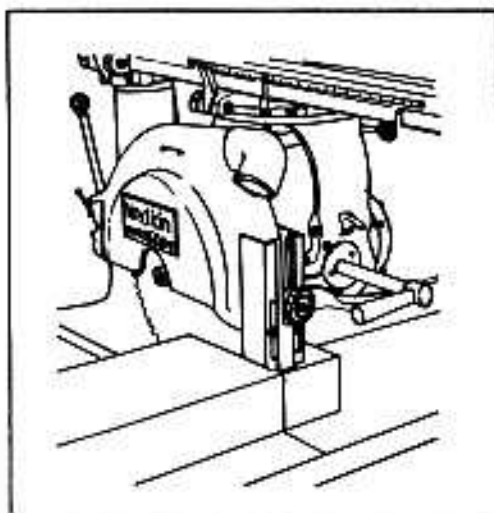


**REBATING
WITH DADO HEAD.**

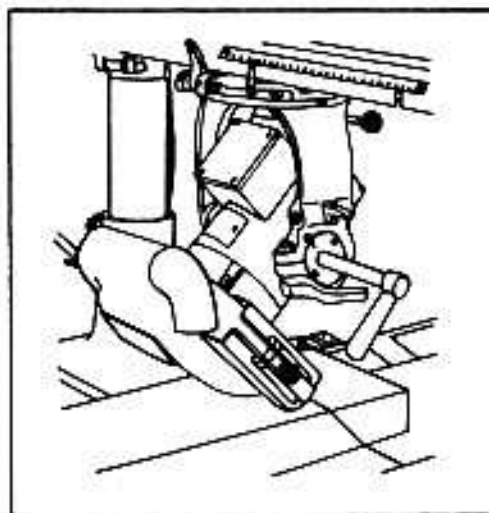
There is a place in every woodworking shop for this versatile machine. The saw unit rotates horizontally through 360° and fits to any angle from horizontal to vertical; it can be locked in any position along the arm which swings 45° either way. Thus by simple, quick and positive movements the saw can be arranged to do crosscutting, bevel crosscutting, mitring, compound angle cutting, ripping and bevel ripping to a maximum of 4 1/4" (114 mm) cut. In addition by fitting dado or trenching heads, cutterblocks, moulding blocks, etc. an almost unlimited variety of operations are possible - even disc and bobbin sanding can be done with this extremely versatile machine.



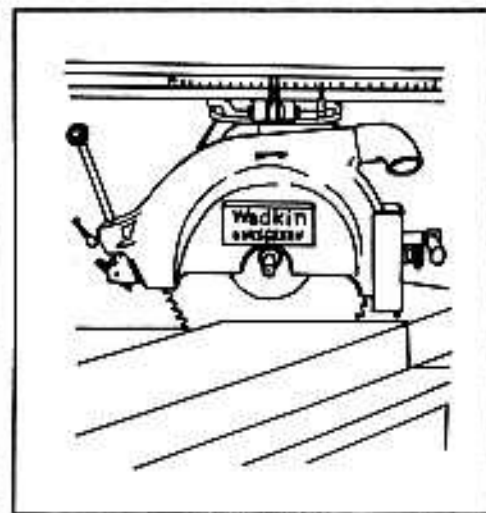
**MOULDING WITH
CIRCULAR CUTTERBLOCK.**



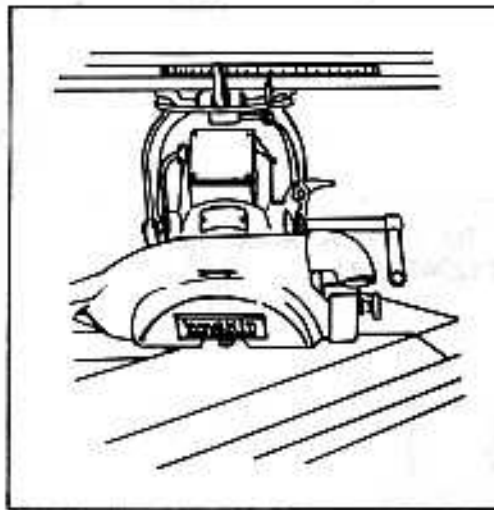
CROSSCUTTING.



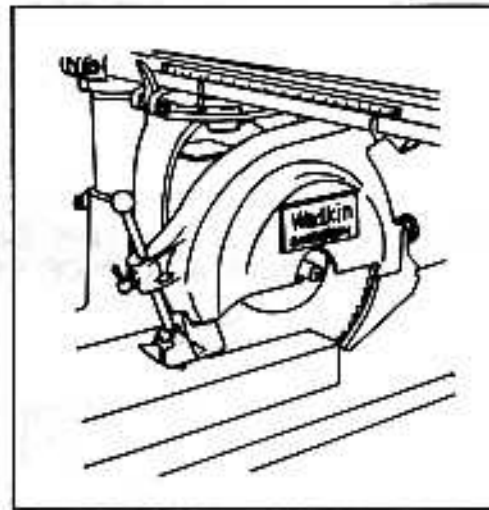
BEVEL CROSSCUTTING.



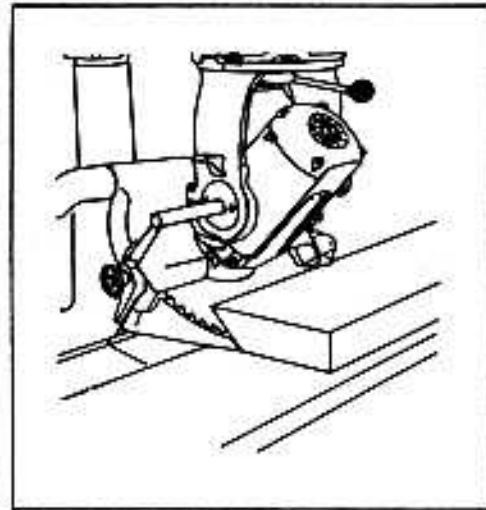
MITRING.



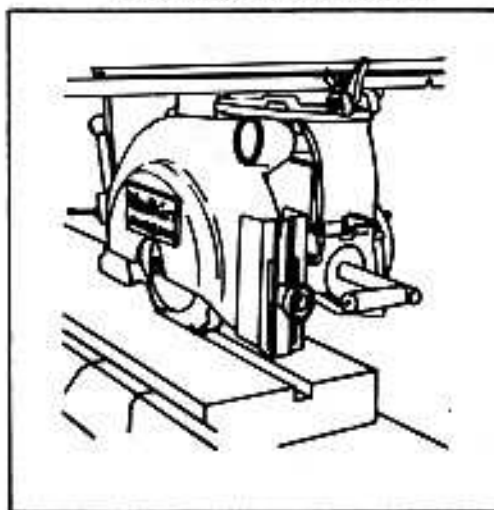
COMPOUND MITRING.



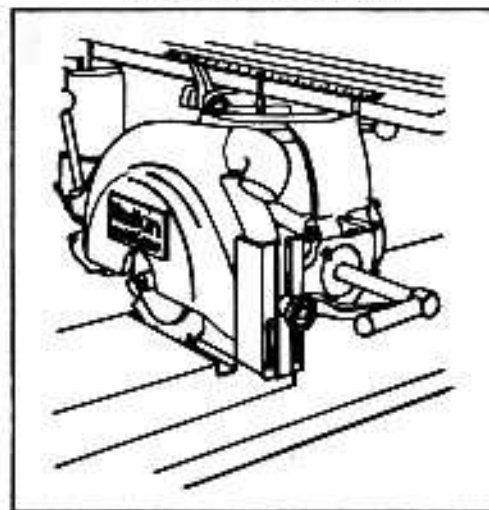
STRAIGHT RIPPING.



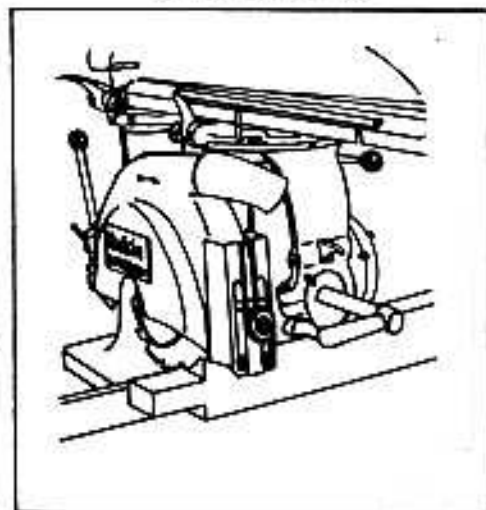
BEVEL RIPPING.



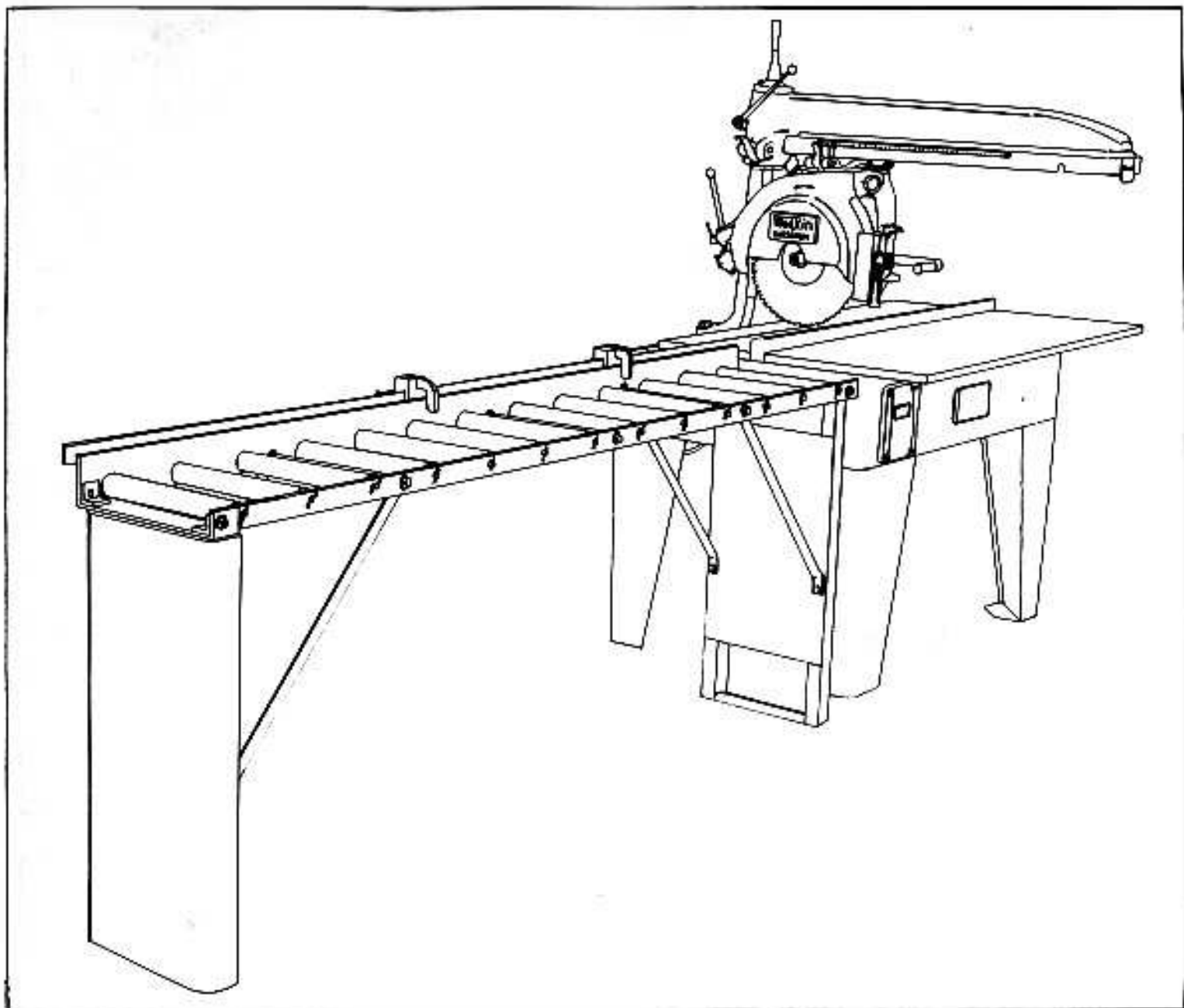
PLOUGHING WITH DADO HEAD.



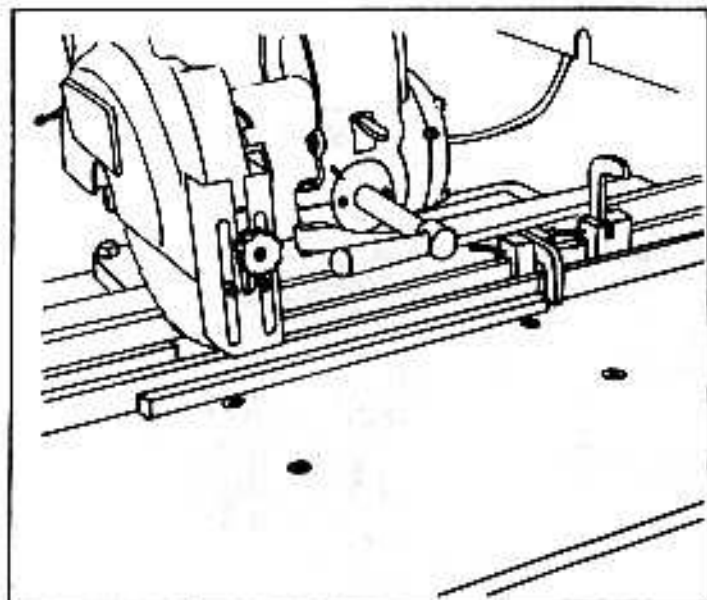
GROOVING WITH DADO HEAD.



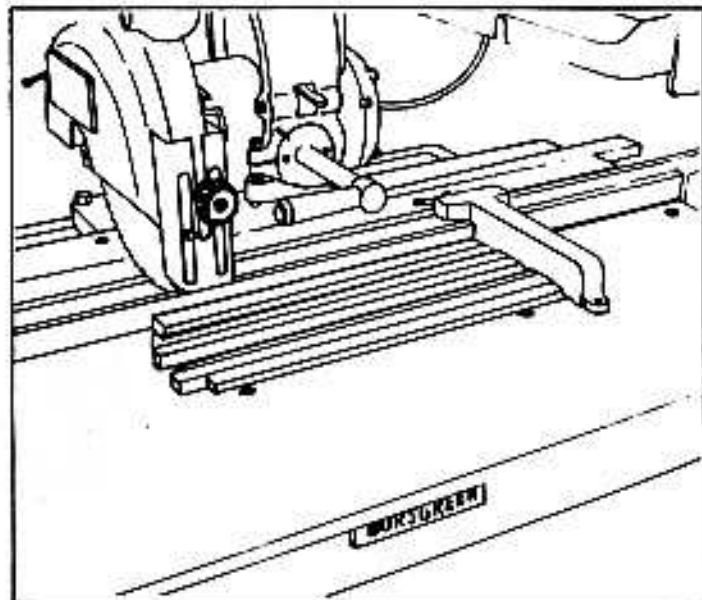
TENONING WITH DADO HEAD.



METAL ROLLER TABLE SHOWN FITTED TO THE LEFT OF THE SAW TO GIVE A MAX^m OF 8FT (2438MM). WHEN FITTED TO THE RIGHT IT GIVES A MAX^m OF 9FT (2743MM).

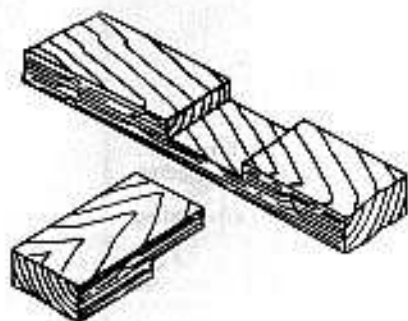


CROSSCUTTING USING TURNOVER STOP & METAL FENCE FOR REPETITION WORK.

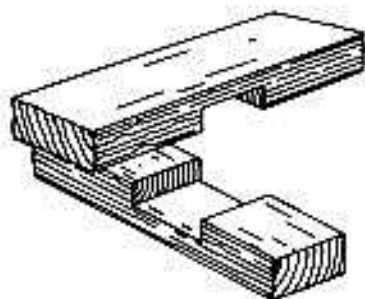


MULTIPLE CROSSCUTTING USING METAL FENCE AND SPECIAL STOP WHICH CAN BE READILY FITTED TO THE STOP BAR.

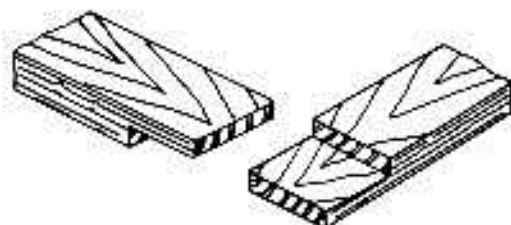
THE ILLUSTRATED JOINTS CAN BE READILY DONE ON THIS MACHINE, SOME MAY REQUIRE SIMPLE JIGS.



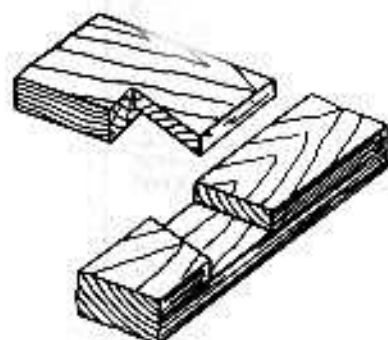
TEE HALF LAP



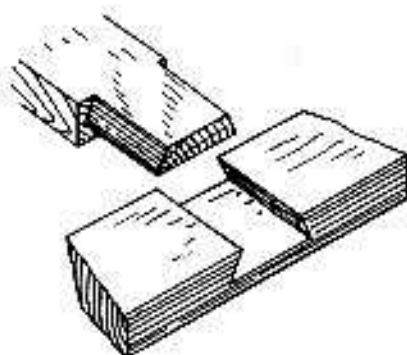
MIDDLE HALF LAP



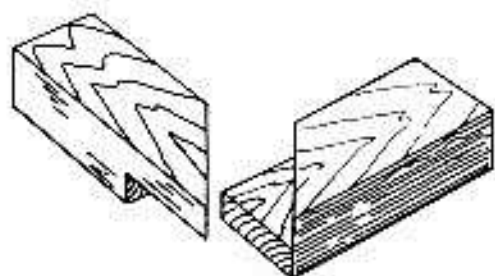
END HALF LAP



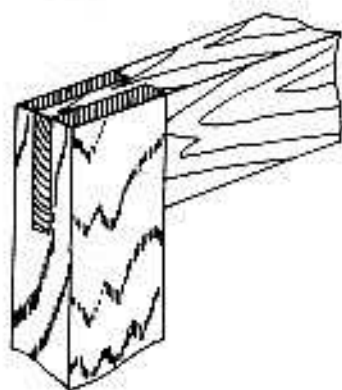
DOVETAIL HALF LAP
(ONE SIDE ONLY).



DOVETAIL HALF LAP



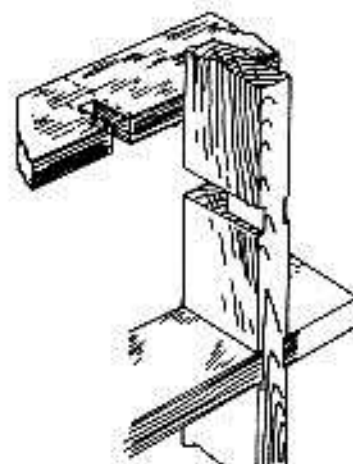
MITRED FACE WITH HALF LAP



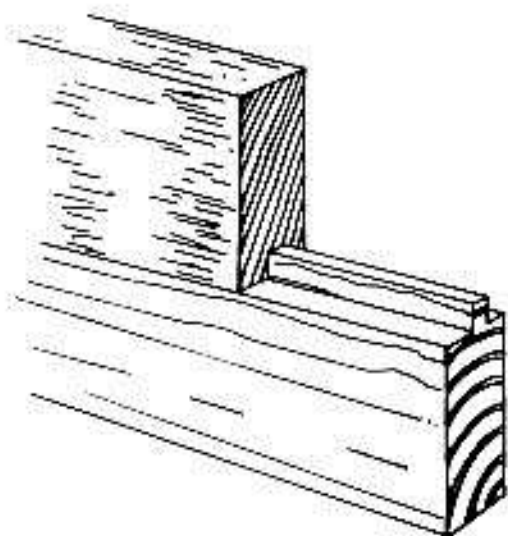
OPEN MORTISE & TENON.



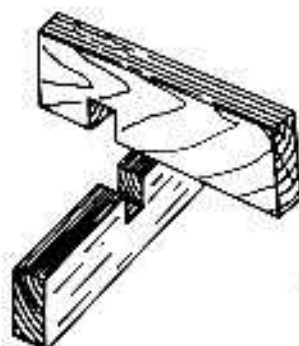
TENONS.



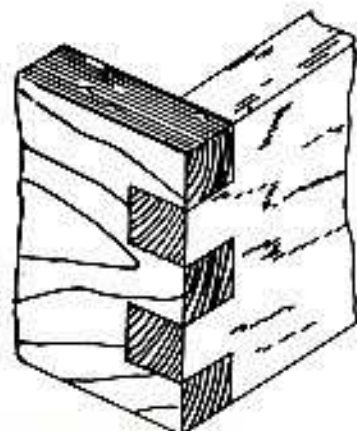
LAPPED JOINT WITH GROOVE
(USEFUL FOR SHELVING).



TONGUE & GROOVE



MIDDLE HALF LAP



BOX JOINT

EXTRA WHEN MACHINE ARRANGED FOR PNEUMATIC CONTROLS

ADJUSTMENTS & CONTROLS

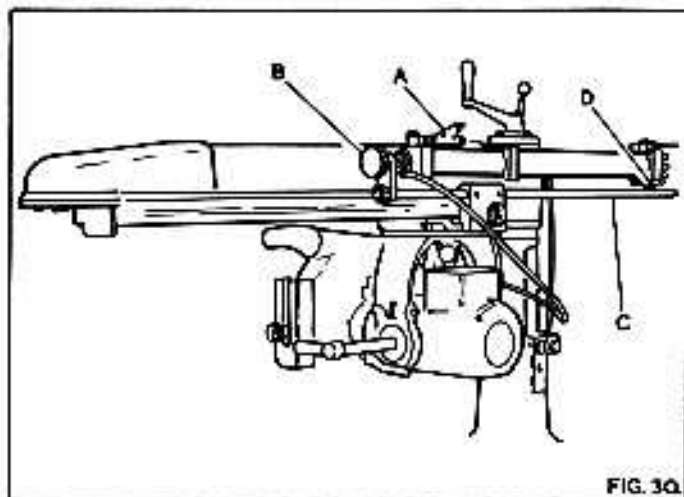


FIG. 30

Speed of Saw Control

To control the forward speed of the saw unit the flow regulator valve "A" as shown in fig. 30, should be adjusted until the required speed is reached. When set lock control knob securely.

Conversion to hand operated Machine

The machine can be quickly converted to be used as a hand operated machine. To convert machine remove knurled knob "B", in fig. 30. This disconnects the saw unit from the air cylinder and all normal hand operations can then be carried out.

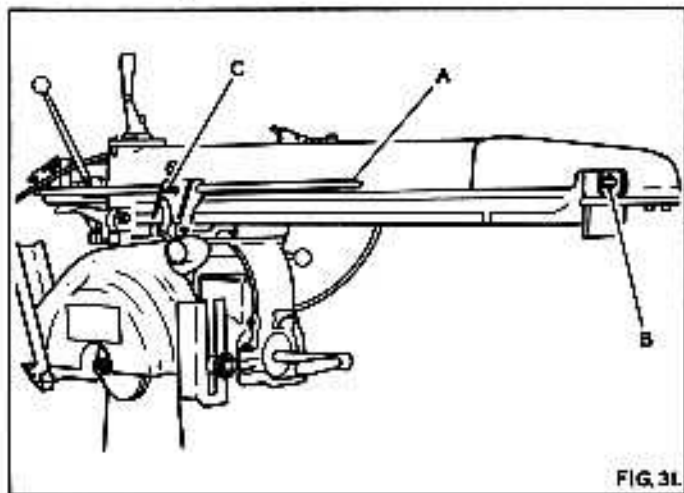


FIG. 31

Length of Stroke Control

The length of travel of the saw unit is controlled by means of the rod "A", in fig. 31 in conjunction with the trip valve "B", mounted at the end of the arm. To adjust the length of travel loosen thumbscrew "C" and adjust as required, when correctly positioned re-lock thumbscrew "C".

Sequence of Operation

The machine operates in the following sequence:

When the foot pedal is depressed the saw unit moves forward along the arm until the stroke control rod "A", in fig. 31 depresses the trip valve "B". When the trip valve has been depressed the saw unit returns to the rear of the arm. Before reaching the rear of the arm, rod "C" in fig. 30 operates the cushion valve "D" and dampens the movement of the saw unit towards the end of the return travel.

The foot pedal is then released and then depressed to repeat the cycle of operation.

It should be noted that should the foot pedal be released when the saw unit is moving forward the head will immediately return to the rear position irrespective whether the trip valve "B" in fig. 31 has been depressed.

Hints on Servicing Martonair Pneumatic Equipment

Valves

Martonair valves require a supply of clean, dry, lubricated air. A filter and lubricator are fitted to this circuit to assist in providing these conditions.

The construction of Martonair valves is simple, and dismantling and re-assembly require no special tools. In general replacement of seals is all that need be undertaken. After removal of the old seals, new seals can be rolled into position in the piston grooves, working up from one end. Reasonable care should be taken when re-assembling valves to ensure that seals are not pinched or damaged and that the valves are kept free from dirt.

Cylinders

Under normal conditions the only servicing which Martonair cylinders require is the replacement of the piston seals and the piston rod packing. The time period between each servicing will be determined by the frequency at which the cylinder operates, and the total number of operations.

Another important factor is the condition of the cylinder bore. When the cylinders are assembled, the internal surfaces are coated with a special assembly compound which adheres to the rubbing surfaces for a considerable time. This together with the lubricator which is fitted as standard ensure that the internal surfaces are kept well lubricated and that friction wear is kept to a minimum.

Martonair cylinders are held by four tie rods, and therefore to replace worn seals the nuts should be removed from one end of the tie rods, and the tie rods withdrawn. When this has been done, the rear end cover can be removed and the cylinder barrel slide off the piston. The external distributor can now be removed. This is a simple matter and all that is required is a manipulation of the fingers.

If a piston rod seal is to be replaced it is advisable, but not strictly essential, to first extract the piston and piston rod assembly from the front end cover. The piston rod seal is held in position by the tie rods. After removing the worn piston rod seal, it should be replaced by a new one, at the same time making sure that the sharp edge is not damaged when threading the seal on to the piston rod. If the piston and piston rod assembly are removed before extracting the seal they should be replaced before fitting a new seal.

Whilst the cylinder is dismantled check condition of the cushion seals and replace if necessary. These take the form of "O" rings in the end cover and can be easily replaced.

When the cylinder is re-assembled after replacing worn seals, care should be taken to ensure that no dirt is allowed to enter the cylinder and that the end covers are in line with each other. The tie rods should be tightened up with an even tension on each rod. It is also advisable to thoroughly lubricate the cylinder before assembly.

In the absence of a preventative maintenance schedule, the necessity for replacing a piston rod seal will be made evident by leakage of air from around the piston rod. All of the seals fitted to Martonair equipment are self adjusting. Thus unlike a packed gland, a leaking piston rod seal cannot be cured by tightening down the piston rod bearings. The seal must be replaced.

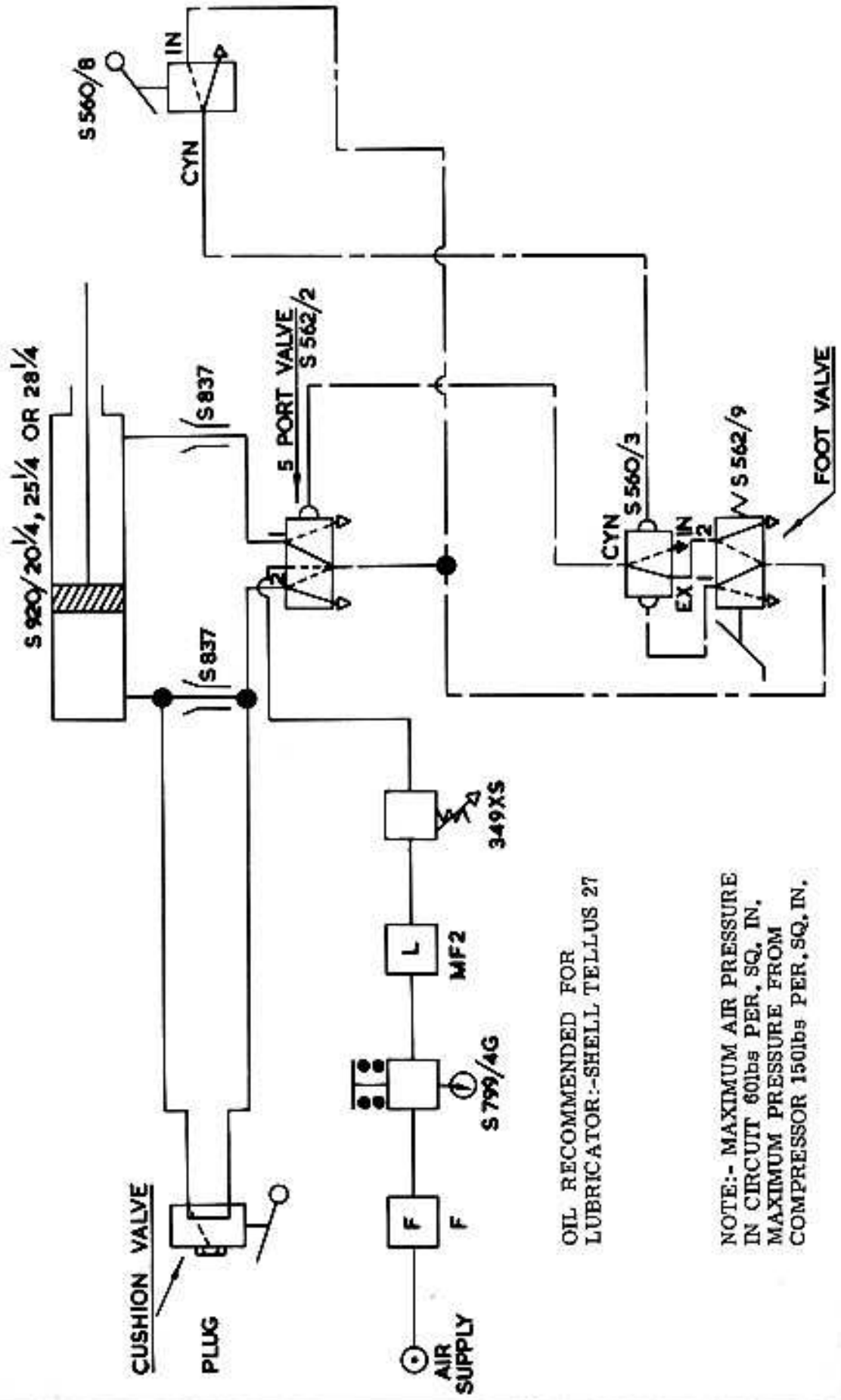
N.B. When the piston seals on a cylinder become worn it is not always easy to recognise the trouble immediately, because the evidence of wear is at the control valve in the form of leakage through one exhaust port. In many cases the symptom leads first to the replacement of the valve seals, and it is only when the escape of air continues that the cylinder comes under suspicion.

In cases where an escape of air from a valve exhaust port occurs a simple test should be made to establish its source before any equipment is dismantled. All that is required is to remove the pipe fitting from the outlet port of the valve which is connected to the exhaust end of the cylinder. If the escape of air comes from the valve it must be the valve which is leaking if the air is coming down the pipe from the cylinder the cylinder piston seals are leaking and must be replaced.

**NOTE :- MAXIMUM AIR PRESSURE
IN CIRCUIT 60LBS PER. SQ. IN.
MAXIMUM PRESSURE IN
COMPRESSOR 150LBS PER. SQ. IN.**

AIR CIRCUIT DIAGRAM FOR UNIVERSAL RADIAL SAW

TYPE :- 14" BRA/AIR



OIL RECOMMENDED FOR LUBRICATOR:-SHELL TELLUS 27

NOTE:- MAXIMUM AIR PRESSURE IN CIRCUIT 60lbs PER. SQ. IN. MAXIMUM PRESSURE FROM COMPRESSOR 150lbs PER. SQ. IN.