

INSTRUCTIONS

**ELECTRIC DIMENSION
AND VARIETY SAW
Type ET/E**

PLEASE HAND TO THE MACHINE OPERATOR

MACHINE TEST NO.....

Robinson

WOODWORKING MACHINERY

THOMAS ROBINSON & SON LTD. ROCHDALE ENGLAND

Telephone: Rochdale 47811 (8 LINES)

London Office: AFRICA HOUSE, KINGSWAY W.C.2. Tel: Temple Bar 2356

RECOMMENDED LUBRICANTS

FOR ROBINSON WOODWORKING MACHINES

<u>Make</u>	<u>Application</u>		
	<u>Gear Boxes</u>	<u>Hydraulics*</u>	<u>Plain Bearings</u>
Shell-Mex & B.P. Ltd.	Vitrea Oil 69	Tellus Oil 27	Unedo Grease 1 or Alvania Grease 3.
Esso Petroleum Co. Ltd.	Esstic 50	Esstic 42	Cazar K2 Grease
Castrol Limited	Perfecto T. T.	Hyspin 70	Spheerol L or Spheerol AP. 3 Grease
Mobil Oil Co. Ltd.	Vactra Extra Heavy	DTE Oil Light	Mobilgrease AA No. 2
Sternol Ltd.	-	-	Sternoline

<u>Make</u>	<u>Application</u>		
	<u>Open Gears</u>	<u>General Oil can use</u>	<u>Ball & Roller Bearings</u>
Shell-Mex & B.P. Ltd.	Cardium Compound 'D'	Carnea Oil 41	Alvania Grease 2.
Esso Petroleum Co. Ltd.	Surett 800	Coray 55	T. S. D. 807
Castrol Limited	Grippa 33/5	Perfecto TT	A. P. 2.
Mobil Oil Co. Ltd.	Mobil Dorcia 150	Rubrex 500	Mobilux Grease No. 2

NOTE: The Skefko Ball Bearing Co. Ltd. approve Alvania Grease 2 and Mobilux No. 2, but are unable to comment on the suitability of the others for Ball and Roller Bearings.

NOTE: The recommended oil for hydraulics applies only to Robinson-built units. For units of proprietary manufacture see the

ELECTRIC DIMENSION AND VARIETY SAW, type ET/E

INSTRUCTIONS

INSTALLATION

For every machine despatched from our Works we supply a print to enable our clients to make the necessary preparations for the installation of the machine prior to its delivery. The print gives full particulars of the space occupied, positions of fixing bolts, and the foundation we recommend.

If the machine is to be fixed on a wood floor the latter should be of substantial construction. When levelling the machine place hardwood packings under the feet.

If the machine is to be fixed on concrete proceed as follows:-

(a) Prepare the foundation as directed on the foundation drawing of the machine, leaving holes 4"^{*} square to receive the fixing bolts. These holes may be formed by boxes made of thin timber, which can be easily removed when the concrete has set. (* 102 mm.)

(b) Raise the machine so that the fixing bolts can be suspended through the holes provided in the feet.

(c) Lower the machine into position and level it by means of metal packings placed on each side of the bolt holes.

(d) See that moving parts are free, i. e. rolling table, vertical and tilting adjustments of saw spindle.

(e) Place shuttering of suitable depth around machine feet and run in sufficient grout to hold bolts and support feet.

(f) Do not attempt to tighten bolts or work machine until grout is thoroughly hard.

IMPORTANT: Do not attempt to fix the bolts before the machine is placed in position. After the machine has been running some little time, make sure that all the nuts are tight.

LUBRICATION

See the ball bearing instruction plate fixed to the machine.

The saw spindle is mounted in ball bearings which leave our Works charged with grease.

Lubricant. It is necessary to use lubricant specially prepared for ball bearings, a sample tin of which is supplied with each machine. This grease is free from acid, alkali and resin, and is supplied in 7 lb. tins. We recommend the exclusive use of ROBINSON ball bearing grease for all ball bearings.

Recharging with fresh lubricant. The lubricators fitted allow grease to be applied directly to the bearings by means of a grease gun. Great care should be taken not to charge the bearings too tightly with lubricant as this may result in heating up.

Points of lubrication for the saw spindle are indicated at 'B' on illustration No. 8.

To gain access to the front point it is necessary to draw out the rolling table and remove the saw.

In addition, adjusting screws, slides and other working parts should be frequently wiped with a well oiled rag, which will give sufficient lubrication

without forming oil traps for sawdust.

WORKING INSTRUCTIONS

Clean off all rust preventative with which the bright parts of the machine have been coated.

Mounting the saw. See illustrations Nos. 1 and 2.

Release the palm grip locks and draw out the front rolling table. Holding the saw spindle stationary by applying the brake with a knee, as shown, remove the nut (left hand thread) with the aid of the ring spanner supplied. The front saw washer can then be removed and the saw placed on the spindle. Replace the washer and nut and tighten up. The riving knife can now be adjusted, if necessary, to give the correct clearance from the saw teeth. Having done this push back the rolling table and tighten the palm grip locks.

Adjusting the saw for height and tilt. See illustration No. 1

The maximum projection of the saw above table level is $5\frac{1}{4}$ " with an 18" diameter saw and $4\frac{1}{4}$ " with a 16" diameter saw. See also page 13.

Turn the handwheel clockwise to raise the saw and anticlockwise to lower it. Lock and unlock with the centre palm grip lock.

Tilt the saw from square to 45° to the right by turning the handwheel clockwise. To bring the saw square with the table from a tilted position turn the handwheel in an anti-clockwise direction. Lock and unlock with the centre palm grip lock. The tilt angle of the saw can be read off the scale and is the angle of the saw to the perpendicular, not to the table level.

Adjusting the saw guard. See illustrations 3, 4 and 5.

To raise or lower the guard hold the knob on the end of the horizontal bar with the left hand, grasp the handwheel with the right hand, press it inwards and turn as shown in illustration 4. When released the handwheel will spring back and engage with the locking pin.

To lift the guard clear of its working position grasp the knob and tilt the horizontal bar until the catch engages the pin. To restore the guard to its working position tilt the bar upwards again until the catch disengages the pin, then carefully lower. **DO NOT DROP.**

The guard can be adjusted horizontally along the bar and is locked in position by lever (illustration 3). This locking lever should not be released when the guard is being raised or lowered.

The rolling table. See illustrations Nos. 1 and 6

By means of a spring-loaded taper plunger-lock the rolling table can be fixed stationary in either a normal position or back position. The normal position locates it lineable with the main table; the back position increases the cross-cutting capacity when using the sliding mitre gauge.

Before the table can be used in its rolling capacity the plunger-lock must be disengaged. To do this pull down the palm grip and give it a quarter turn. The table will then be free to travel between its extreme positions which are located by fixed stops.

For fast production on small repetition work a rubber rebound stop is provided to assist the return of the sliding table. By depressing the screw

head on top of the stud and turning through 180° it is made effective as a dead stop. The stop bracket in conjunction with which the buffer stop works can be adjusted to any required position on the bar and locked in position by lever.

Main tilting fence. See illustrations Nos. 1 and 9.

The removable front plate is for use when ripping. It is adjustable to suit various positions and diameters of saws and can be tilted to 45° along with the main fence and lowered to the table top. The curved nose of the plate should be set level with the bottom of the saw gullets to prevent the timber binding and nipping the saw. The plate can also be used as a length gauge for cross-cutting.

When tilting the fence first release the fence lock and when the required angle has been obtained re-lock. The thumb wheel at the back of the fence plate can then be released and the front plate brought down to table level and locked there.

Rapid adjustment across the table is effected by releasing the locking handwheel and pushing the fence bodily to the required position where it should be re-locked. Any subsequent fine adjustment can be done by releasing the locking screw and turning the adjacent screw palm grip. Re-lock for use.

To allow the fence to be swiveled up to 30° either way first release the swivel lock and lift the locating plunger. The swivel lock will securely hold the fence at any desired angle between 0° and 30° . The locating plunger ensures correct setting of the fence to the saw when returned to

the normal position.

The precision rule set in the table enables the front face of the fence plate to be accurately aligned for cutting to size.

Controls. See illustrations Nos. 7 and 8

An isolator switch is fitted to ensure maximum safety when setting up or carrying out routine maintenance. To start the machine turn the switch to the 'ON' position and then press the "Start" button. To stop the machine, lift the brake lever and hold until the spindle ceases to rotate. This lever simultaneously operates the 'Stop' button (located inside and behind the 'Start' button) and a mechanical brake acting on the motor spindle. The inspection cover gives access to the 'Stop' and 'Brake' operating levers for adjustment and periodic oiling.

To adjust the brake easy access to the locknut and screw on the brake cable, located at the fan end of the motor, can be obtained through the panel holes in the rear of the machine frame.

In an emergency, the machine can be brought to rest by operating the 'Stop' lever with the knee whilst still retaining a firm grip on the workpiece with both hands. See illustration No. 12.

Graduated mitring and cross-cutting gauge. See illustrations Nos. 6, 13 and 15.

To mount the gauge, first remove the dovetail-shaped filling-in slip in the table on that side of the saw on which it is desired to work. The slip is held in position by a screw at each end. If these screws are turned into the table top the slip can be removed and the screws will not

get lost. Then insert the fence slide in the slot and adjust as required.

The gauge can be swivelled from a normal position, square with the saw, up to 80° either way and is secured by a palm grip lock. The dovetail slide on which it is mounted can be locked in the required position in the groove by a knurled thumbscrew. A gauge bar, 2'0" (610 mm.) long, carries two turnover stops suitable for repetition work.

Straight, bevelled and compound angles can be produced quickly and efficiently with this gauge, working either to the left or to the right of the saw.

When the gauge is fitted to the left of the saw, i. e. on the rolling table, either of the following alternative methods of operation can be employed:-

- (a) Lock the gauge to the table with the knurled thumbscrew.

Withdraw the rolling table plunger lock, thus allowing the table to move. Proceed to cut by pushing the table past the saw.

- (b) Hold the rolling table stationary by means of the plunger lock.

Proceed to cut by pushing the gauge along the table past the saw, using the dovetail groove as a slide. A greater saw-to-gauge distance can be effected by engaging the table plunger lock in the forward slot.

When the gauge is used to the right of the saw, i. e. on the main table, only above method (b) can be used and there is no alternative position for increasing the saw-to-gauge distance.

Double mitring gauge (special order only), See illustration No. 9

The gauge is located and secured to the table by two screwed studs. The stud with the knurled handwheel top forms the fulcrum pin for both quadrants. A palm grip lock operates the stud for locking the front quadrant of the gauge to the table. The graduated scale registers the included angle of the working faces. The two quadrants, when set at the required angle, are locked together by turning the small palm grip lock.

A gauge bar 3'0" (914 mm) long, will accommodate the two turnover stops supplied with the single type gauge and can be used on either quadrant.

Double mitring or mitring and cross-cutting to length of work pieces, also the production of straight, bevelled or compound angled joints can be carried out quickly and efficiently with the aid of this gauge.

Mounted to the left of the saw, i. e. on the rolling table only, cutting is effected by withdrawing the table plunger lock and pushing the table past the saw.

By using the gauge bar (2'0" (610 mm) long) of the single mitre gauge, complete with a turnover stop on one quadrant, and the normal gauge bar (3'0" (914 mm) long) with a turnover stop on the other quadrant a considerable number of consecutive operations can be carried out with the minimum of handling from stockpile to worktable.

Trenching. See illustrations Nos. 10 and 16.

Trenching should be done with an expanding trenching head, the use of which offers the following advantages:- Constant cutting diameter - infinitely variable setting for width - cheap and easily replaceable cutters -

the fitting of simple mould cutters if desired - accuracy of finished product and high degree of safety.

To mount a trenching head it is necessary first to remove the saw nut, the front saw collar, the saw, the rear saw collar and the two spacing collars behind it. The trenching head is adjustably mounted on a sleeve which is bored to fit the saw spindle and is secured by a nut specially supplied for the purpose.

Dado saws can be accommodated direct on the spindle or as packaged units i. e. on sleeves, bored to fit the spindle. They are mounted on the saw spindle in a similar manner to trenching heads.

The rolling table should be drawn out to the required extent and a wood well-hole plate fitted between it and the main table.

For trenching an odd job a rip saw may be used and the trench formed by successive rip cuts, the fence being adjusted the width of one saw kerf for each cut.

For angle trenching, tilt the spindle as required.

Cutting half-round grooves. See illustration No. 11

Half-round grooves can be cut as shown by passing the stock obliquely over a rip saw. Set the fence, with the front plate removed, at an angle with the saw, and use it as a guide. Adjust the saw so that it projects about $\frac{1}{8}$ " (3 mm) above the table top. Make the first cut, holding the stock firmly to the table and up to the fence. Raise the saw slightly and pass the stock over it again. Repeat this process until the desired size of groove has been obtained. The greater the angle of the fence to the saw, of course, the

wider will be the groove in relation to its depth.

Front extension table. See illustration No. 14

When supplied this is secured to and will fully adjust and traverse with the rolling table. It is easily detached when not required. The fence will swivel up to 45° for mitre cutting. It is graduated in $\frac{1}{4}$ " (6 mm.) divisions and fitted with a turnover stop. To swivel the fence first release the T clamping bolt and palm grip locks on the centre rail, then adjust to required angle and relock before use.

The extension table can be used for accurate cross-cutting, bevel or mitre cutting of long timbers, panels, sheets, etc.

To trim off panels wider than the maximum distance from the saw to the main table fence:- (a) Hold the rolling and extension tables stationary by means of the plunger lock. (b) Remove the swivelling bar fence from these tables. (c) In the tee-slot of the centre rail of the extension table firmly fix a wood fence of length and projection to suit the work to be done. (d) Adjust the fence to the position required by sliding the centre rail along its supporting bars. Lock in the position required.

Working thus on the left-hand side of the saw advantage can be taken of the increased saw-to-fence capacity which this set-up offers.

Customers faced with out-of-the-ordinary problems or with the cutting of materials other than wood will receive our recommendations if complete details i. e. drawings or sample pieces are submitted to our technical department for examination.

CAPACITY CHART

Bore of saw (no peg hole)	1 $\frac{1}{4}$ " (31 mm)	
Standard saw diameter for normal 50 cycle supply (3000 R. P. M. motor)	18" (457 mm)	
Standard saw diameter for normal 60 cycle supply (3600 R. P. M. motor)	16" (406 mm)	
Maximum depth of cut with 18" diameter saw.	5 $\frac{1}{4}$ " (133 mm)	
Maximum depth of cut with 16" diameter saw	4 $\frac{1}{4}$ " (108 mm)	
Maximum width will crosscut in 3/16" thick material using extension table.	42" (1067 mm)	
Maximum distance saw to saw guard pillar	21" (533 mm)	
Maximum distance saw to ripping fence.	30" (762 mm)	
Saw tilts from square to	45 ^o	
Maximum thickness which can be cut with an 18" diameter saw tilted to 45 ^o	3.5/8" (92 mm)	
Maximum thickness which can be cut with a 16" diameter saw tilted to 45 ^o .	3" (76 mm)	
Will crosscut using graduated mitring and crosscutting fence to left of saw on rolling table, timber of width and thickness.	(33 $\frac{3}{4}$ " x 5" (39 $\frac{1}{2}$ " x 3/16"	857 mm. x 127 mm. 1004 mm. x 5 mm.
Will crosscut using graduated mitring and crosscutting fence to right of saw on main table, timber of width and thickness.	(13" x 5" (19" x 3/16"	330 mm. x 127 mm. 483 mm. x 5 mm.
Will crosscut using double mitring fence on rolling table, timber of width and thickness.	21 $\frac{1}{2}$ " x 5" position (1) 31 $\frac{1}{2}$ " x 3/16"	546 mm. x 127 mm. 800 mm. x 5 mm.

12 in. (305 mm.) diameter EXPANDING TRENCHING AND GROOVING CUTTERHEADS		
will groove	Width	Max. Depth
	$\frac{3}{8}$ in. to $\frac{3}{4}$ in. 10 mm. to 19 mm. $\frac{1}{2}$ in. to 1 in. 13 mm. to 25 mm. 5/8 in. to $1\frac{1}{4}$ in. 16 mm. to 31 mm.	1 in. 25 mm.
	$\frac{3}{4}$ in. to $1\frac{1}{2}$ in. 19 mm. to 38 mm. 1 in. to 2 in. 25 mm. to 51 mm. $1\frac{1}{2}$ in. to 3 in. 38 mm. to 76 mm. 2 in. to 4 in. 51 mm. to 102 mm.	$2\frac{1}{4}$ in. 57 mm.

DADO SAWS		
	WIDTH OF GROOVE	
	18 in. (457 mm.) dia. set	12 in. (305 mm.) dia. set
For use direct on spindle	$\frac{1}{8}$ in. to 1 in. 3 mm. to 25 mm.	$\frac{1}{8}$ in. to 2 in. 3 mm. to 51 mm.
Packaged Saws	$\frac{1}{8}$ in. to 1 in. 3 mm. to 25 mm.	$\frac{1}{8}$ in. to 2 in. 3 mm. to 51 mm. $\frac{1}{8}$ in. to 3 in. 3 mm. to 76 mm. $\frac{1}{8}$ in. to 4 in. 3 mm. to 102 mm.

Height of table from floor level	34" 864 mm.
Size of table length x width	44" x 40" 1118 mm. x 1016 mm.
Width of rolling section of table.	16" 406 mm.
Rolling table with traverse	47" 1194 mm.
Table gap will open to	7" 178 mm.
Main fence tilts up to	45°
Main fence swivels either way	30°
Horsepower of motor	7½
Speed of saw spindle in R. P. M. on 50 cycles	3,000
Rim speed of 18" (457 mm.) dia. saw at 3,000 R. P. M.	14,000 ft/min. 4,267 metres/min.
Speed of saw spindle in R. P. M. on 60 cycles	3,600
Rim speed of 16" (406 mm.) dia. saw at 3,600 R. P. M.	15,000 ft/min. 4,572 metres/min.

SPARE PARTS LIST

<u>DESCRIPTION</u>	<u>REF. NO.</u>
Spindle ball bearing (Saw End)	SKF. 1309, 45 mm. bore
Spindle ball bearing (Fan End)	SKF. 1206 30 mm. bore
Thrust bearing (Rise and Fall Screw)	SKF. 08, 1" (25 mm) bore
Thrust bearing (Tilting Screw)	SKF. 010, 1 $\frac{1}{4}$ " (31 mm) bore
Bevel Pinion 19T (Tilting)	Part No. F.S. 2280
Bevel Wheel 38T (Tilting)	Part No. F.S. 2281
Spiral Gear 9T (Rise and Fall)	Part No. F.S. 4464
Spiral Gear 18T (Rise and Fall)	Part No. F.S. 4465
*	
Graphited Bush 2. 7/8" long (Bevel Gear Bkt.) (* 73 mm.)	Part No. F.S. 4511
Graphited Bush 3 $\frac{3}{4}$ " long (95 mm.) (Bevel Gear Bkt.)	Part No. F.S. 4512
Saw Washers (5" (127 mm.) diameter)	Part No. 3/71377
Distance Pieces $\frac{1}{4}$ " (6 mm.), 9/16" (15 mm.) (Saw Spindle)	Part No. 6/71690
Differential Rollers (Rolling Table)	Part No. F.S. 454
Brake Cable	Part No. 4/71379
Ferodo Brake Lining, $\frac{3}{4}$ " (19 mm.) wide, 3/16" (5 mm.) thick, 3 $\frac{1}{4}$ " (82 mm.) long.	

PLEASE NOTE when ordering saws for this machine, state R. P. M. of spindle as well as diameter of saw applicable, to ensure that saws with the correct tension will be supplied.

QUOTE TEST NUMBER ON ALL CORRESPONDENCE, SPARES, ORDERS, ETC. RELATING TO THIS MACHINE.

MAINTENANCE INSTRUCTIONS

Should it be necessary to examine the rotor or spindle bearings - remove the wire gauze cover and fan-securing screw - release the bearing end cover at the saw end and then the spindle assembly can be withdrawn complete from the motor - saw end first.

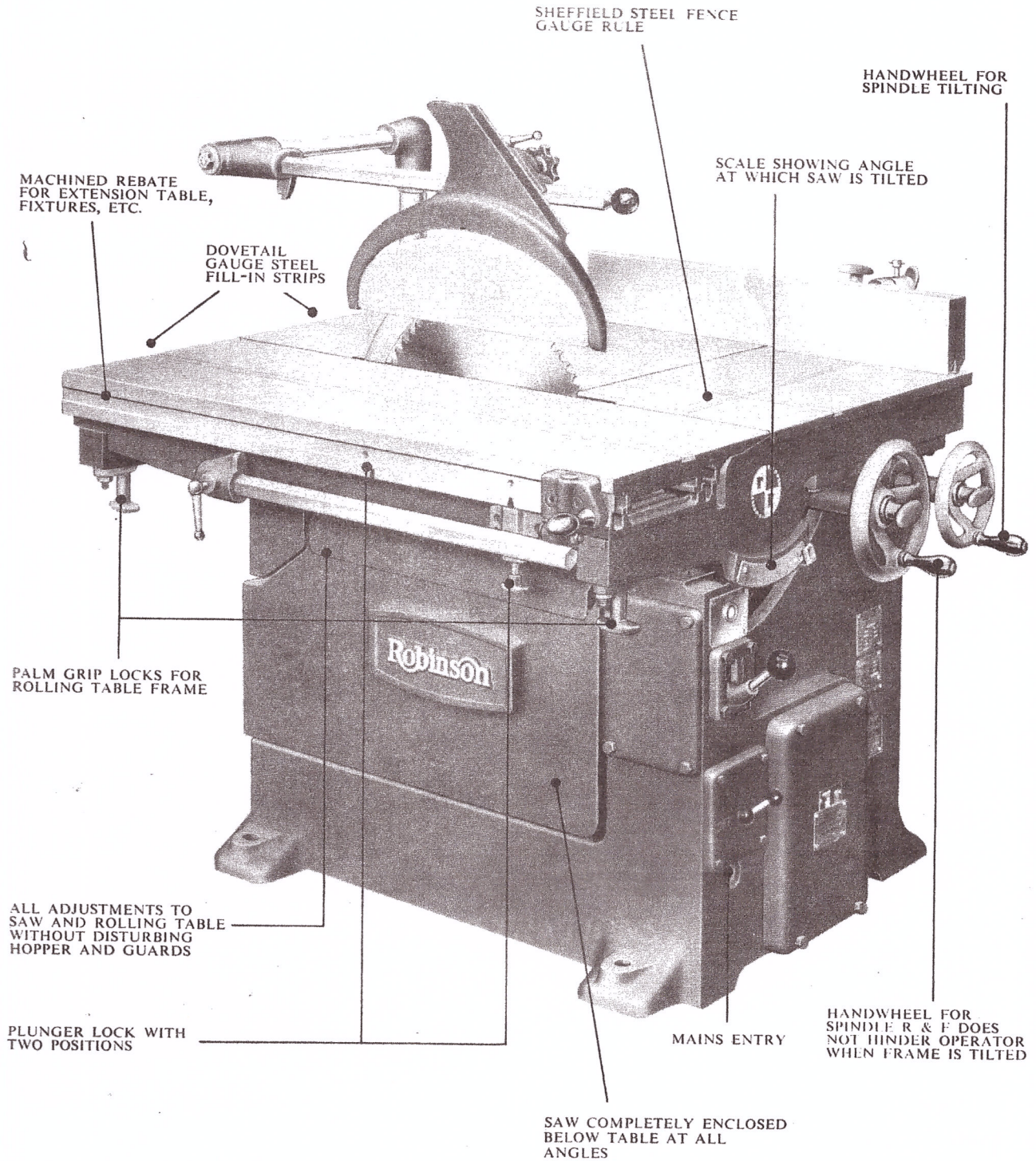
To remove motor - disconnect electrical wiring - lift tables off pillar (four screws fasten table to pillar) - place support or crane sling round motor - remove dowel screw (X) illustration No. 16 for adjusting nut - saddle and motor can now be lifted clear of the machine.

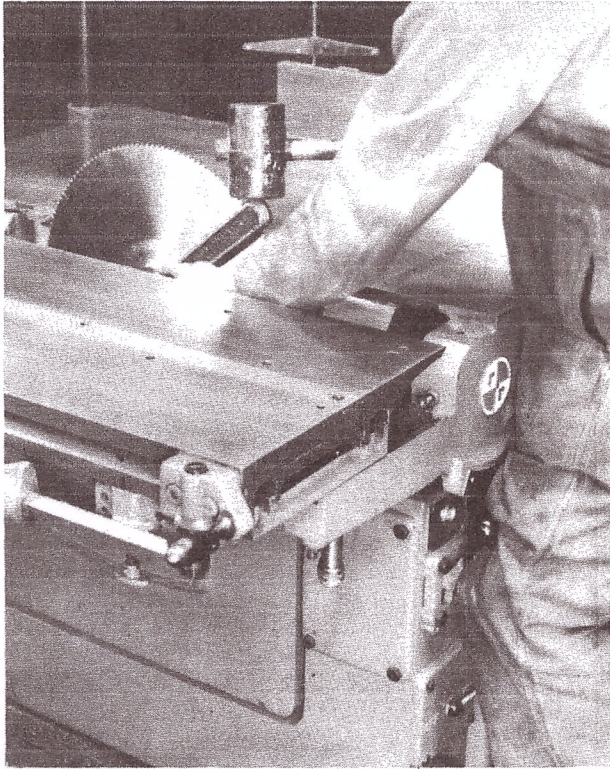
It is recommended that the following booklet should be read in conjunction with this handbook:-

"SAFETY HINTS ON THE USE OF WOODWORKING MACHINERY"
obtainable from H.M. Stationary Office, York House, Kingsway,
London, W.C.2., branch offices, or any bookseller, price 9d. net.

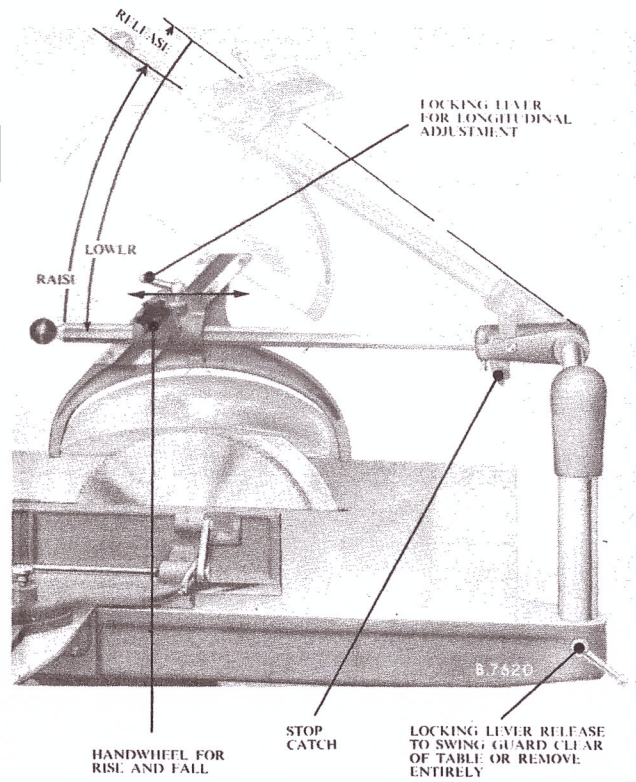
Follow the instructions given in this booklet, but never forget that equally important is operator intelligence.

ILLUSTRATIONS

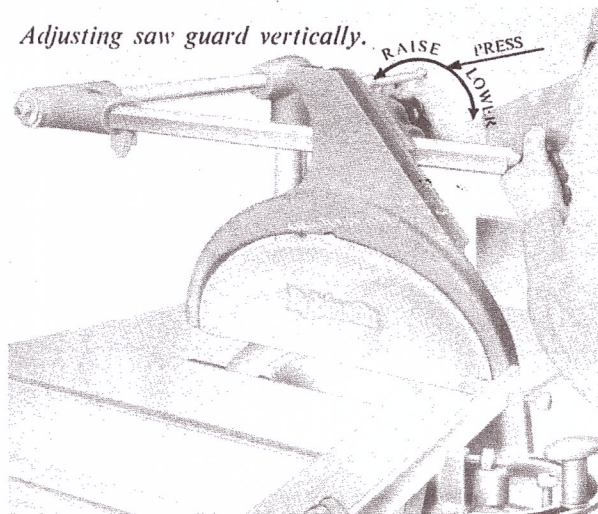




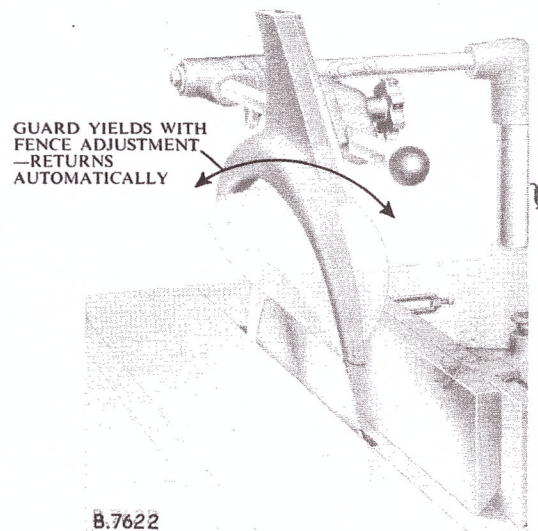
No. 2



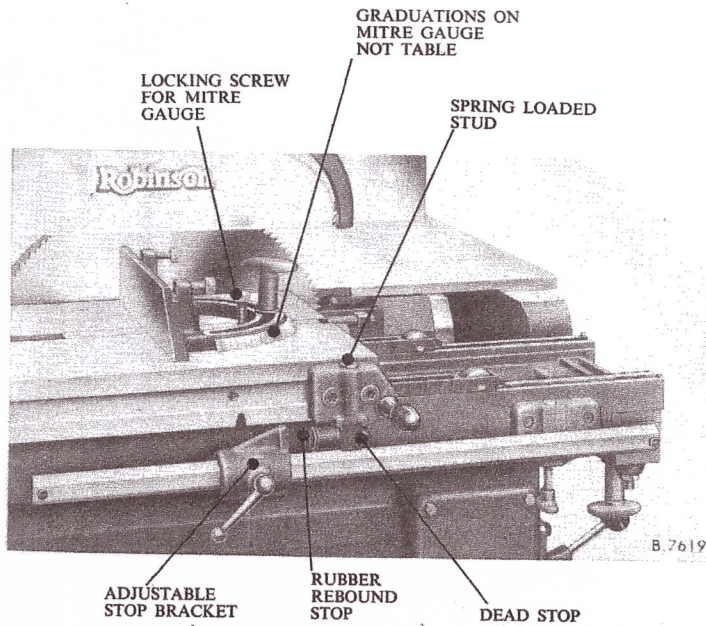
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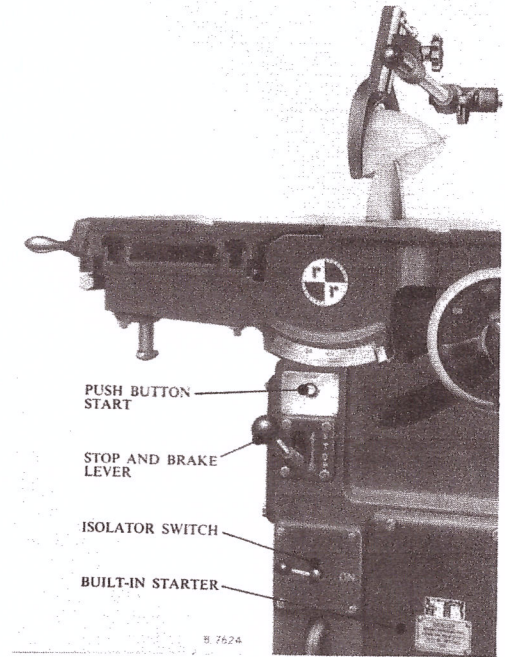
No. 4



No. 5



No. 6

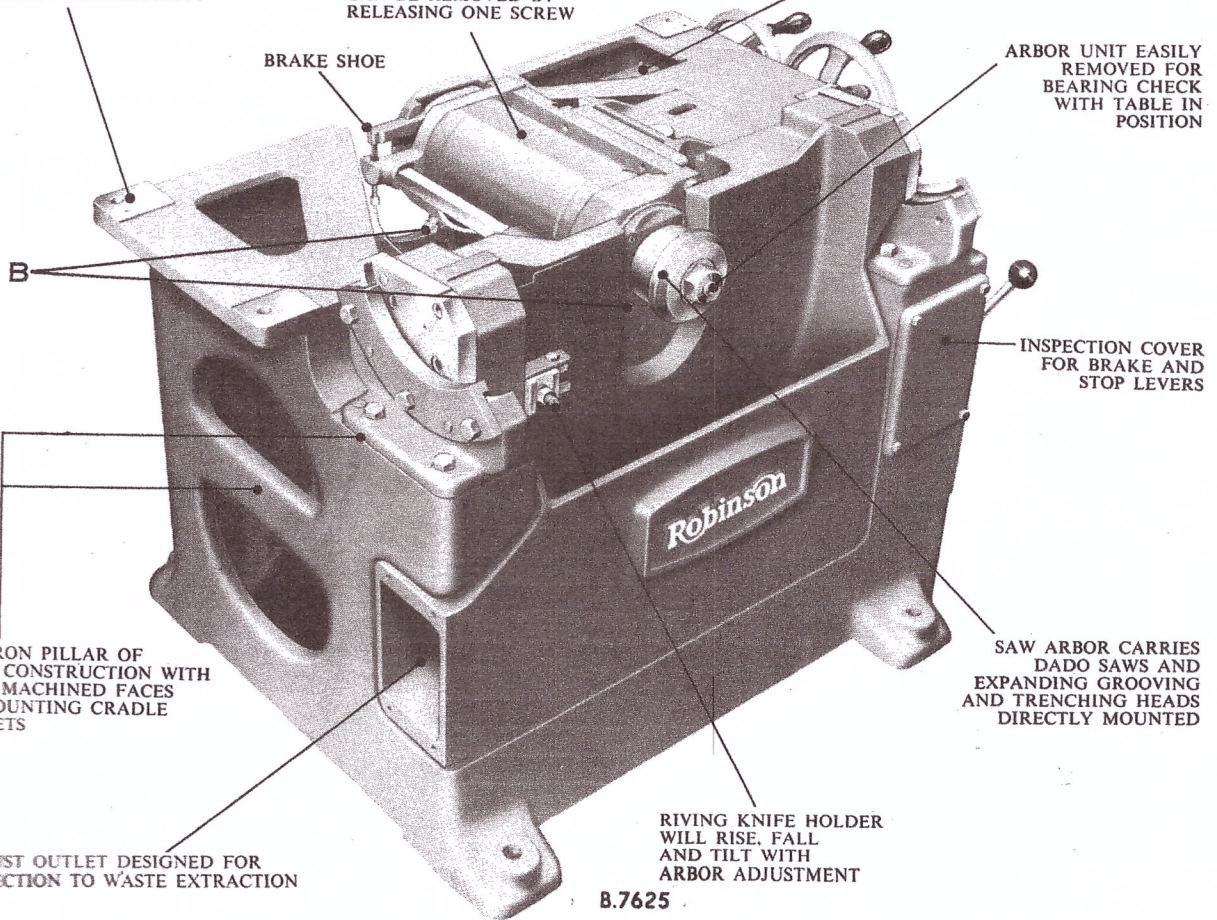


No. 7

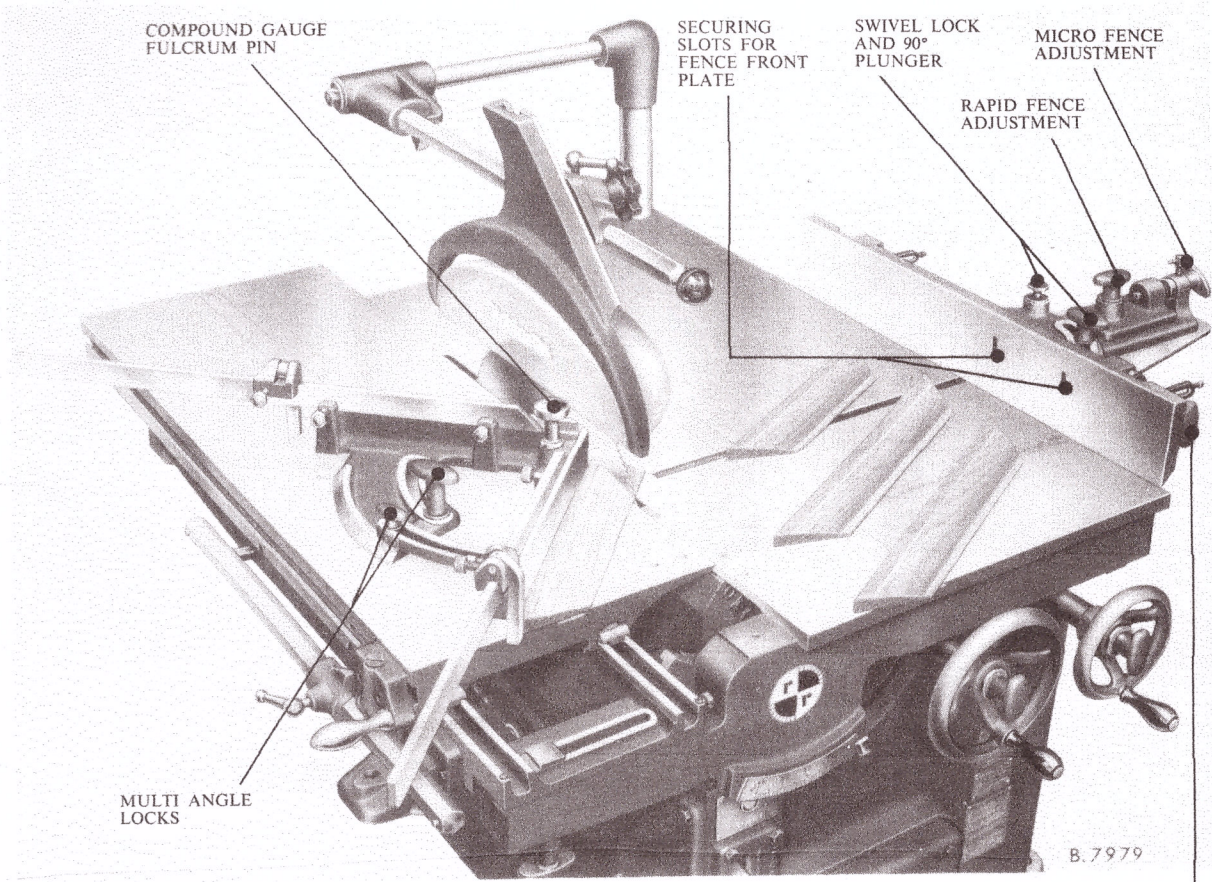
WIDELY SPACED MACHINED FACES TO SUPPORT TABLE DOWELLED FOR ACCURACY

HIGH POWERED T.E. MOTOR INTEGRAL WITH SAW ARBOR CAN BE REMOVED BY RELEASING ONE SCREW

BEVEL GEAR BOX FOR TILTING SCREW



No. 8

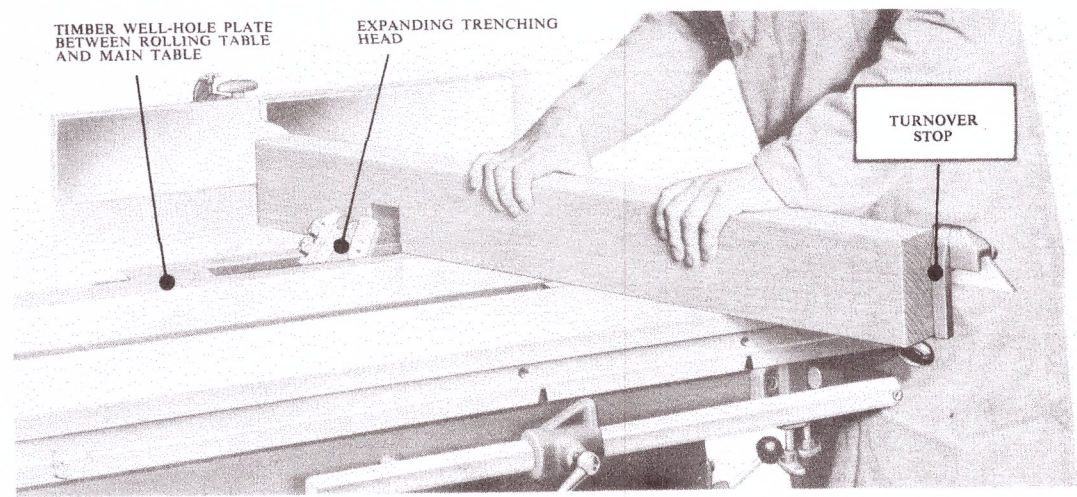


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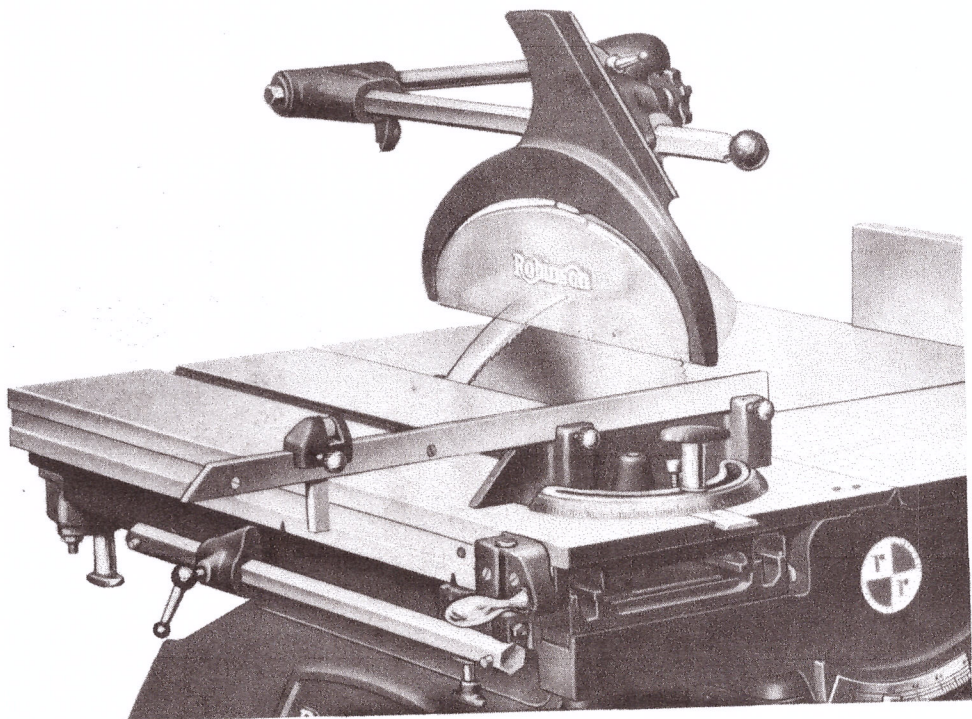
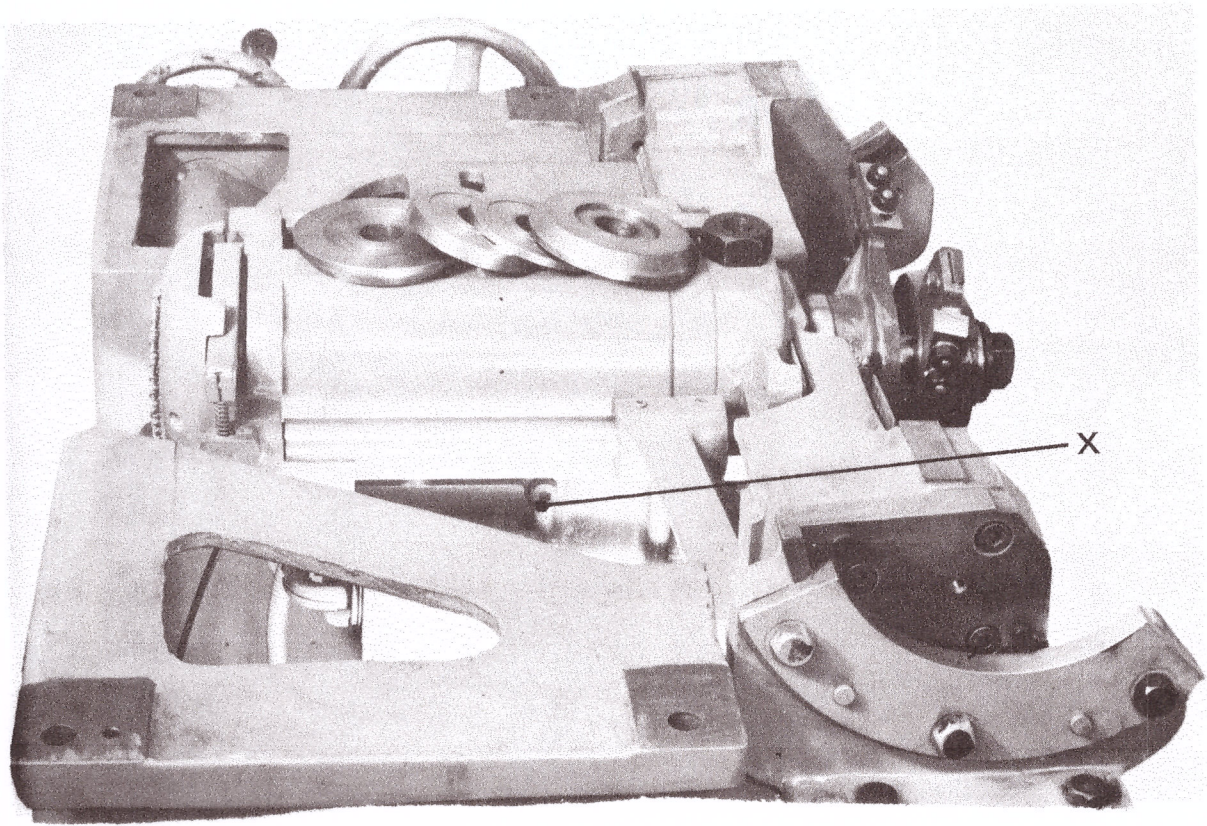
FENCE LOCK.

Above: Double mitring gauge with both stop bars in operation.

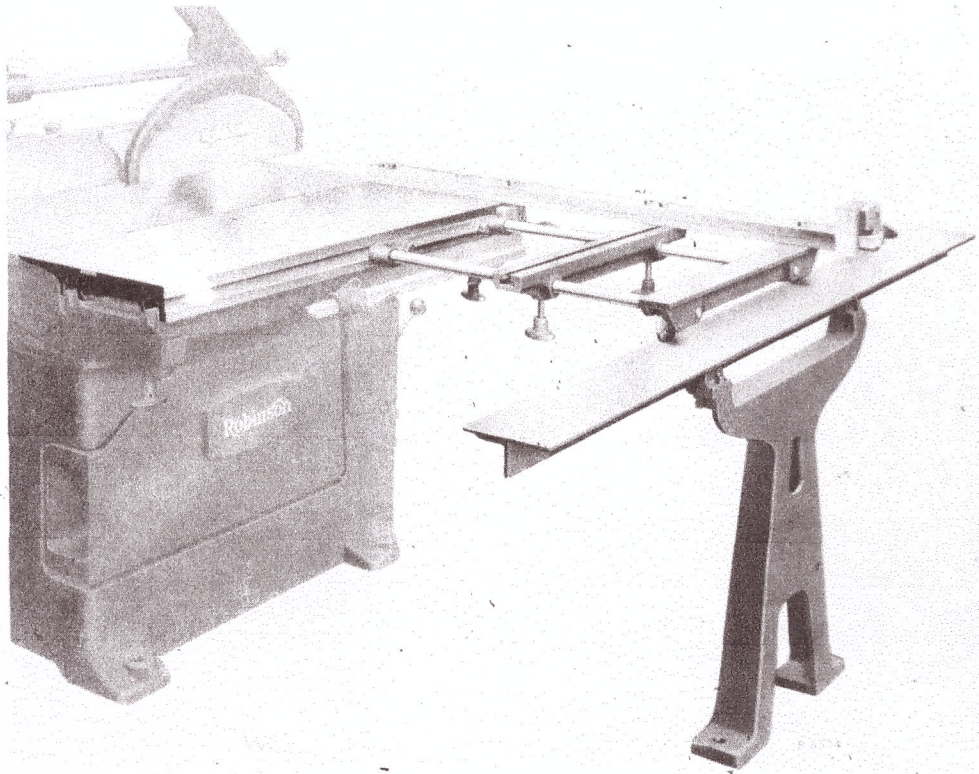
No. 9



No. 10



No. 13



No. 14

SINGLE MITRE GAUGE IN
TABLE-SLOT RIGHT OF SAW

FACING TO SUPPORT TIMBER
WELL-HOLE PLATE USED
WHEN SLIDING TABLE IS
DRAWN OUT TO ACCOMMODATE
GROOVING HEADS

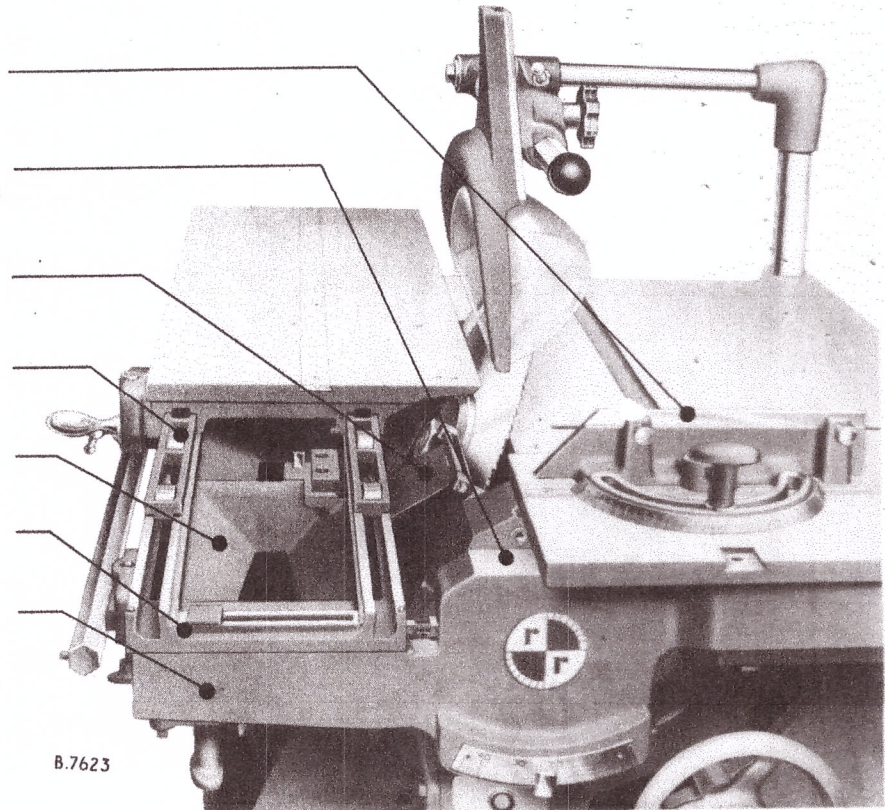
HINGED PLATE STEEL
BAFFLES CLOSE
DUST HOPPER NECK

HARDENED DIFFERENTIAL
ROLLERS IN BRONZE
CAGES

TAPER SIDED ANTI-DUST
PANEL HOLES

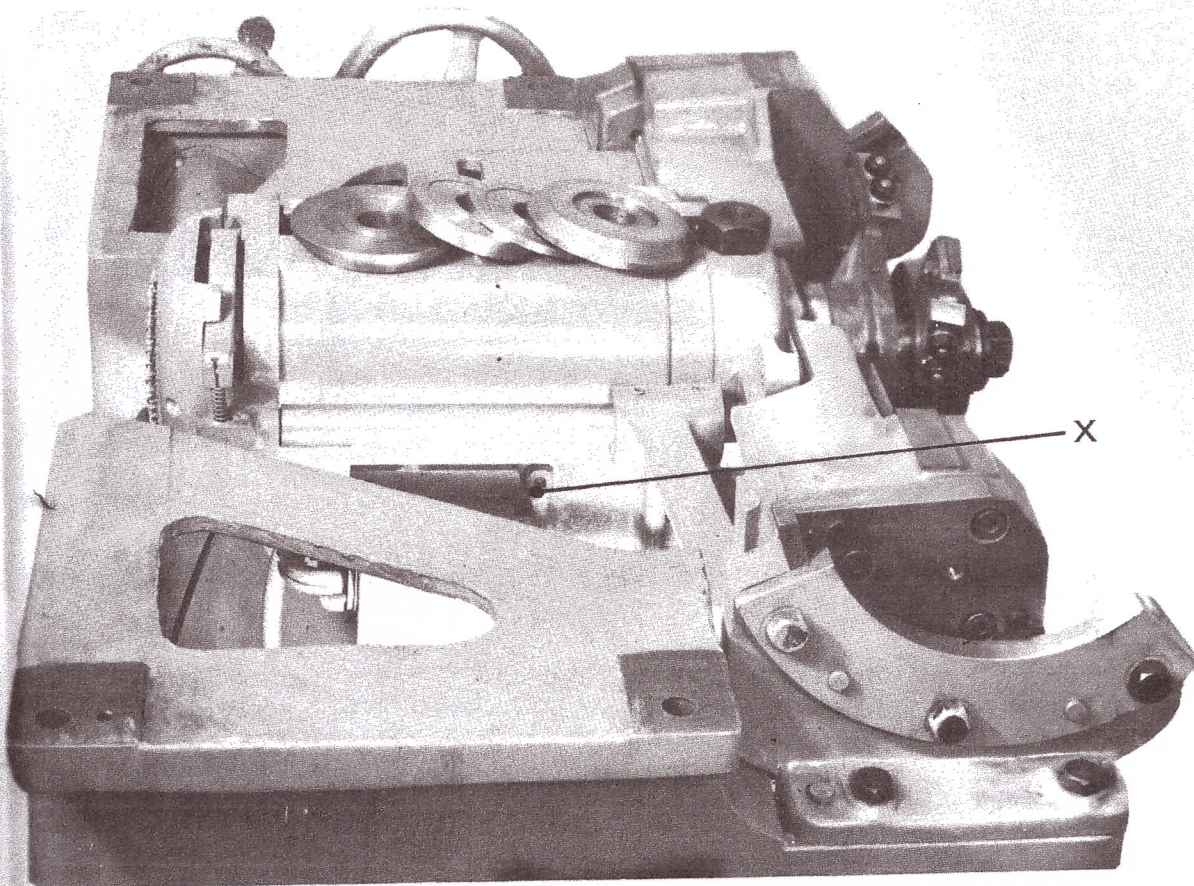
ROLLING TABLE SUPPORTING
FRAME

MAIN TABLE CANTILEVER
ARM



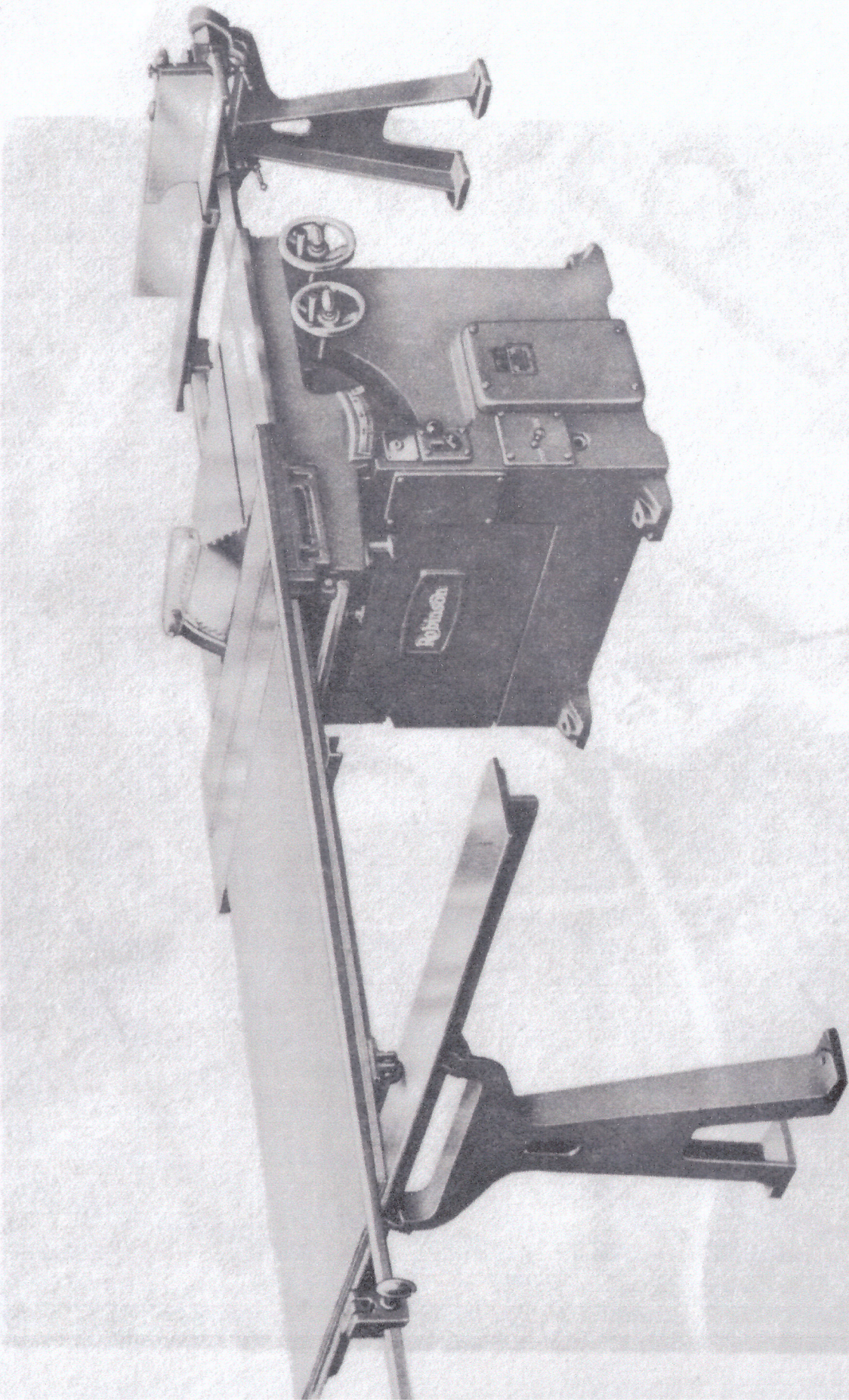
B.7623

No. 15



No. 16

NOTE: The trenching head is adjustably mounted on a sleeve which is bored to fit the saw spindle and is secured by a nut specially supplied for the purpose.



No. 11

SUPPLEMENT

Rear extension table. See illustration No. 17

When supplied will increase the saw to fence capacity of the machine. The extension table is secured by means of palm-grip locks to parallel bars fixed to the main frame and supported on an outriding stand.

An additional saw guard is supplied for fixing to the riving knife when cutting material of such width as requires the removal of the standard saw guard pillar. This guard is held in place by a single pivot screw, and can be turned back out of the way when changing saws. The riving knife should be set in the normal manner and so that the guard, when level, just clears the saw. To set the guard level, adjust the vertical butting screw, as required.

To increase the saw to fence capacity locate and secure the fence to the rear extension table, release the palm-grip locks securing the table and move it bodily to the required position where it should be re-locked. Rapid and fine adjustment can then be made to the fence in the normal manner.

Independent rolling table. See illustration No. 18

Supplied for dealing with exceptionally wide and long sheets. When reverting to using the machine in its conventional capacity the table may be lifted from the rails clear of the machine.

Caution. Additional push button controls are fitted to the rolling table and connected to the control gear via a plug and socket arrangement. Take care to disconnect this before removing the table, and reconnect after

replacing. The rails supporting the rolling table may be left in position where they will not normally interfere with the working of the machine.

Where a 4'0"^{*} front extension table is fitted, this and the outriding support stand, may be left in position when the independent rolling table is in use. Where an 8'0"^{*} extension table is provided it will be necessary to make certain adjustments to the support stands carrying the independent rolling table to allow the extension table to be mounted and supported.

When using the rolling table use the knife-mounted saw guard in place of the standard guard, as described in the preceding section.

* 4'0" = 1219 mm., 8'0" = 2438 mm.