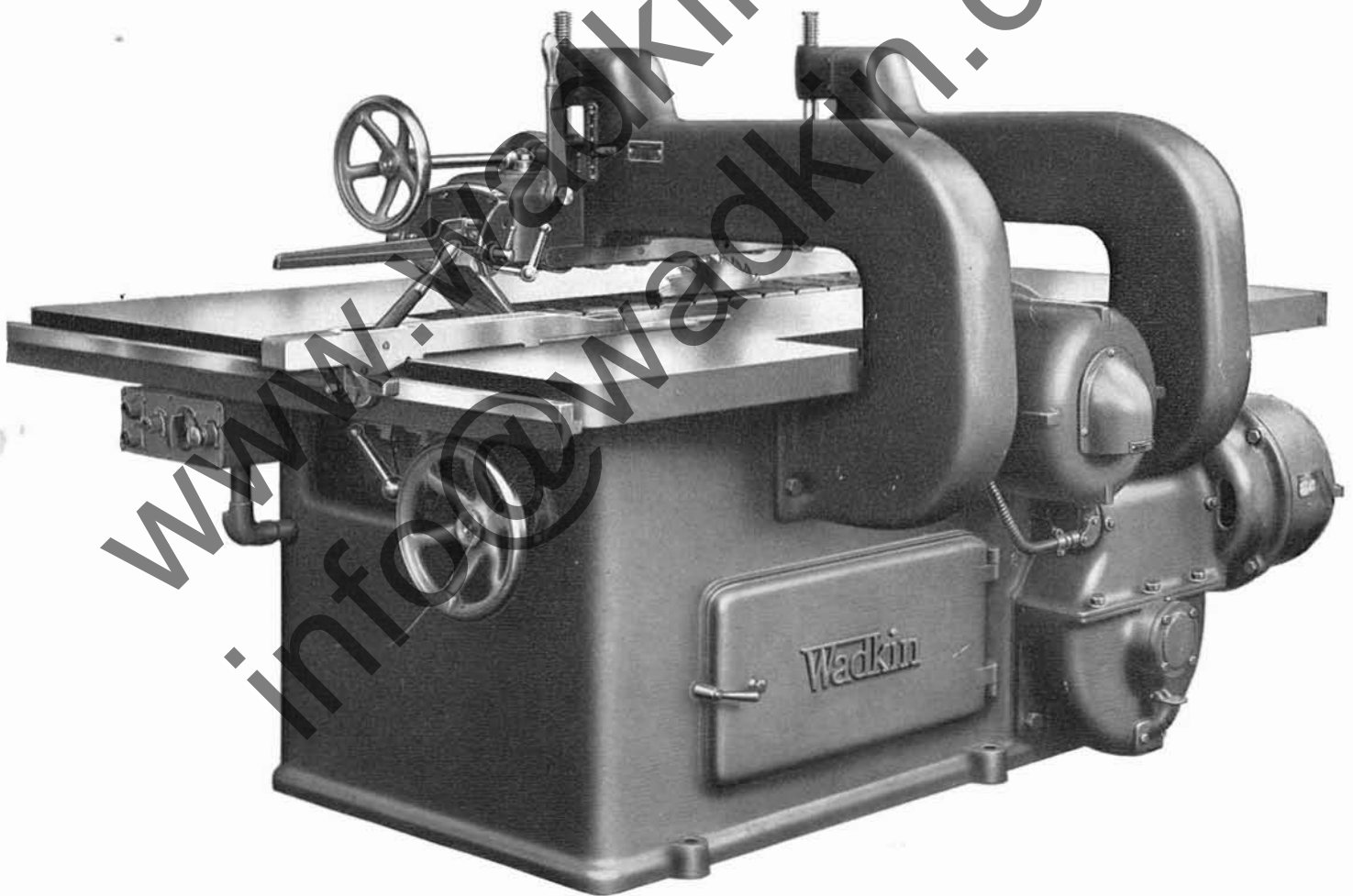


# Wadkin

## Straight Line Edger and Power Rip Saw, P.U.A.

(British Standard Classification 12. 131. 351)



# Wadkin

## Straight Line Edger and Power Rip Saw Type P.U.A.

The value of this machine in modern woodworking practice lies in its ability to deal with all kinds of edging or ripping at a high rate of output, and to edge the stock so accurately that when glue joints are called for, the timber can be taken straight to the glue clamps without further machining.

Whilst a large proportion of the economies of the machine undoubtedly come from its speed of working as compared with the ordinary rip saw benches, and also from the saving in material, due to the ability to merely skim the edge of the wood instead of cutting a strip to waste, the ultimate worth of the machine is governed by the degree of accuracy attainable.

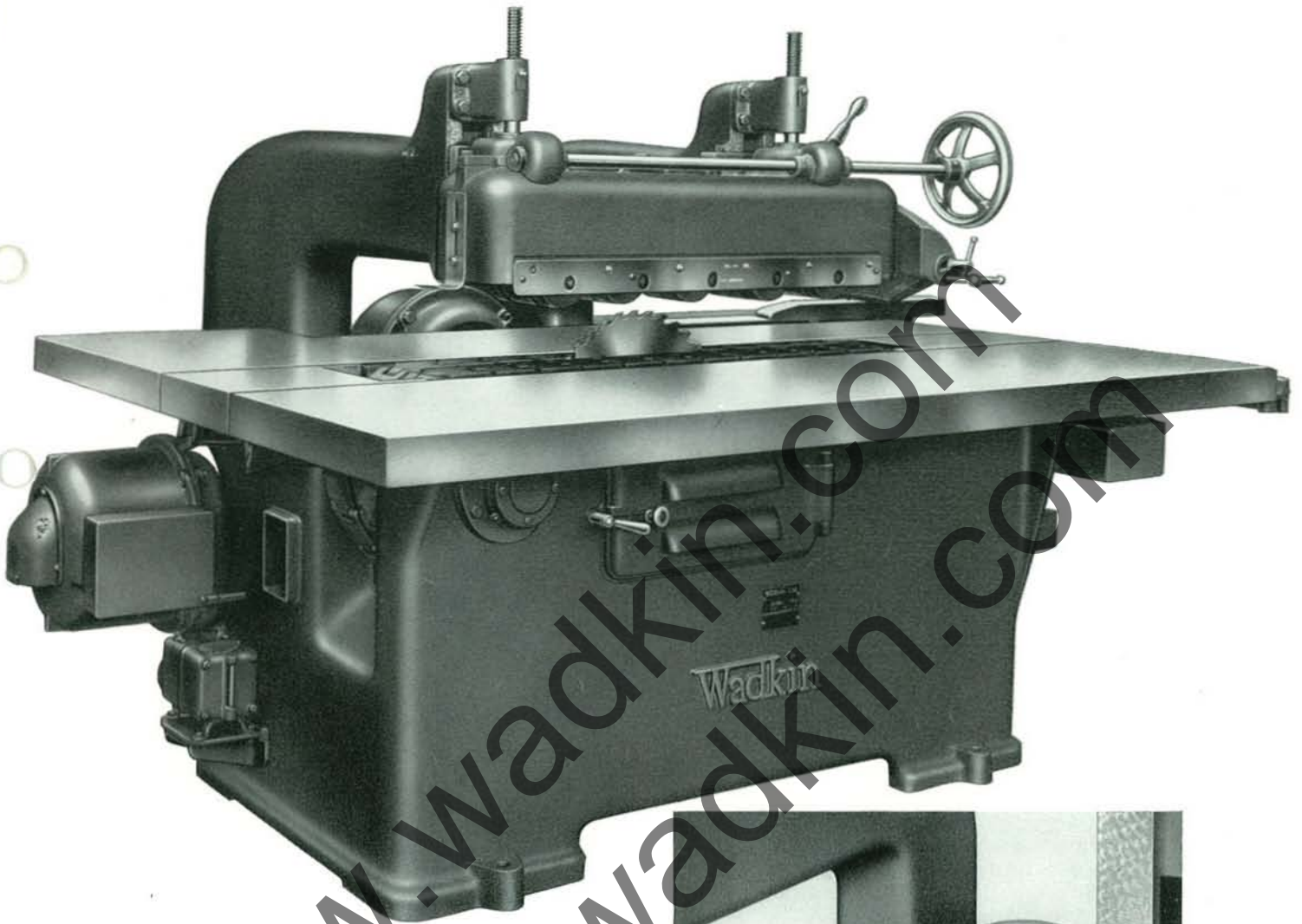
It is in this respect that the Wadkin principle of construction with the saw rigidly mounted in the

heavy main frame instead of being suspended in a more or less unstable and complicated mass of mechanism over the table, will be found to possess a definite superiority and remove the doubts existing in many quarters as to the capabilities of the straight line edger for making glue joints.

A careful perusal of the fundamental principles of the Wadkin design, as detailed below, will convince you that the machine is both in theory and practice far better adapted for its work than any other type, whilst the excellence of the mechanical and electrical specification provides complete assurance that the machine will retain its capacity for accurate cutting through many years of hard and continuous service.

### Features

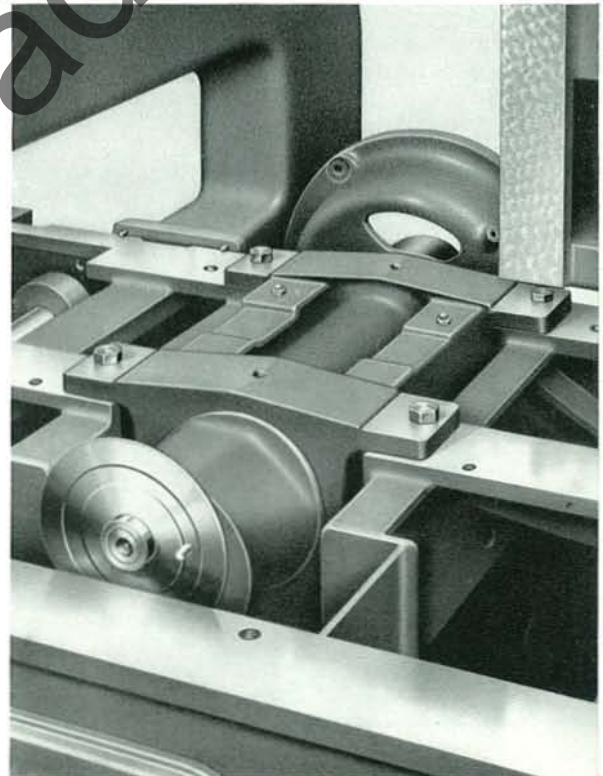
- 1. The undercut saw is free from vibration as the saw spindle is supported by the heavy main frame casting. The rigid mounting makes it impossible for the saw to get out of alignment with the feed chain.*
- 2. The undercut saw is the natural way of cutting timber and in line with recognised practice.*
- 3. The undercut saw tends to keep the timber down on the table during the cut, whereas the overhead saw has a tendency to lift it from the table.*
- 4. The undercut saw helps to pull the wood through, and eliminates the chatter and jumping of the stock against the top pressure rolls, a common cause of wavy cutting and saw trouble.*
- 5. In the Wadkin design, the chain is the only feeding medium, which permits of an even distribution of the pressure rolls along the entire length of the chain and eliminates the need for synchronising the speed of the chain with the speed of the top feed rolls, a serious difficulty with the overhead saw.*
- 6. The chain runs on automatically lubricated multiple vee grooves extending across the full width of the chain, and giving a bearing surface at least three times that on any other machine.*



### The Saw Spindle

The saw spindle is made from nickel chrome steel, and is unusually large, having a diameter of 2½" between the bearings. It is mounted in ball bearings and carried in a circular eccentric sleeve by a yoke bolted to the main frame casting under the table and close up to the saw. This method of mounting gives perfect support to the saw spindle under all conditions, whilst extra large saw flanges prevent any vibration on the saw plate itself. The saw may be conveniently removed as shown in the illustration on page 4.

The raising and lowering of the saw is effected by rotating the eccentric saw spindle sleeve in its housing, by means of a worm and worm wheel motion controlled by handwheel. A suitable locking lever is provided. This arrangement makes it impossible for the saw to get out of alignment with the feed chain.



*Shows table and roller pressures removed to illustrate the rigid method of mounting the saw spindle.*



## Specification

### The Chain Feed

The chain feed is driven by a four-speed motor giving four rates of feed, controlled by speed selector switch at the feed-in end of the machine. The motor is built on to the spindle of the reduction gearing, which consists of worm and worm wheel running in an oil bath in a totally enclosed casing. All belts and gear changes are therefore eliminated.

A heavy silent roller chain transmits the power smoothly and steadily to the chain feed driving shaft.

All spindles run in ball and roller bearings.

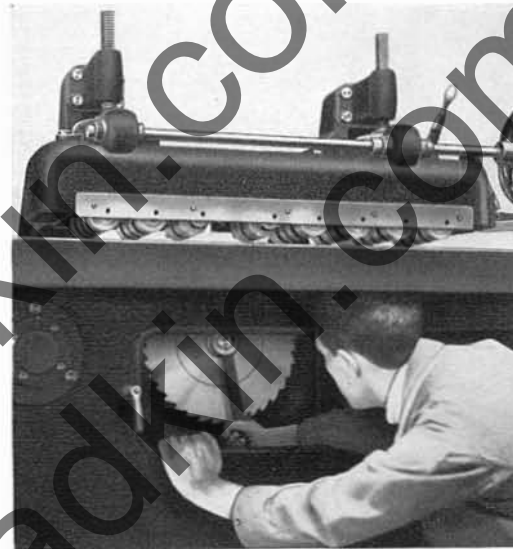
The bearing surfaces between the chain and the bed are automatically lubricated by force feed lubrication from the pump shown on the illustration on page 3.

The chain is provided with a vertical adjustment in relation to the table surface, and the top of the chain is corrugated both ways to give the maximum gripping power.

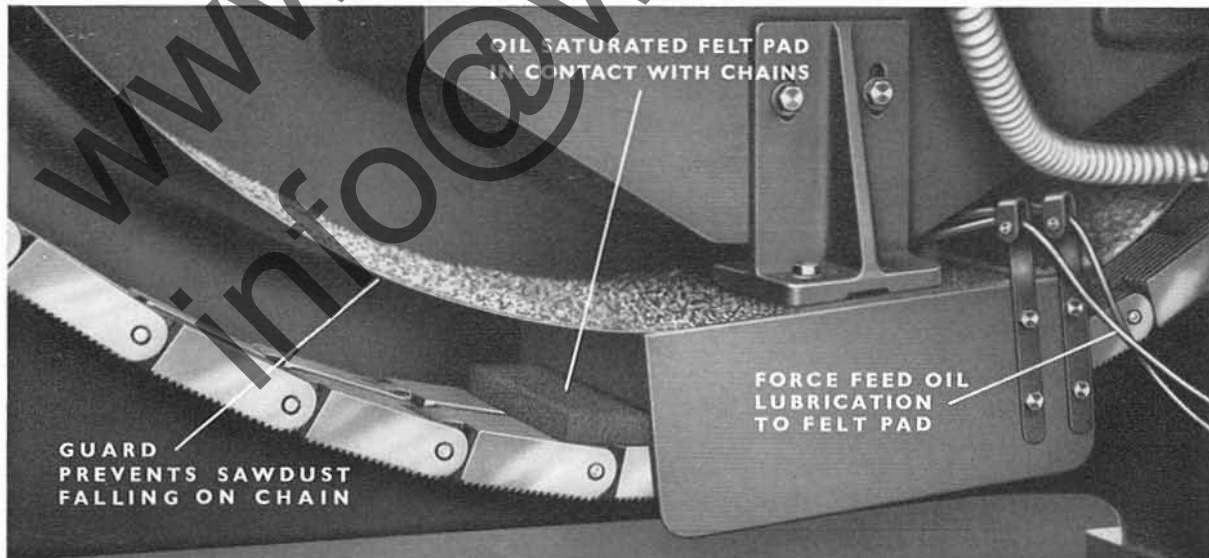
### The Chain

The chain is so constructed and driven that it is impossible for it to get out of alignment with the saw. It is guided in a dead straight path by our unique system of multiple grooves in the track which correspond with grooves on the underside of the chain links. This arrangement gives a bearing surface across the *whole face* of the chain

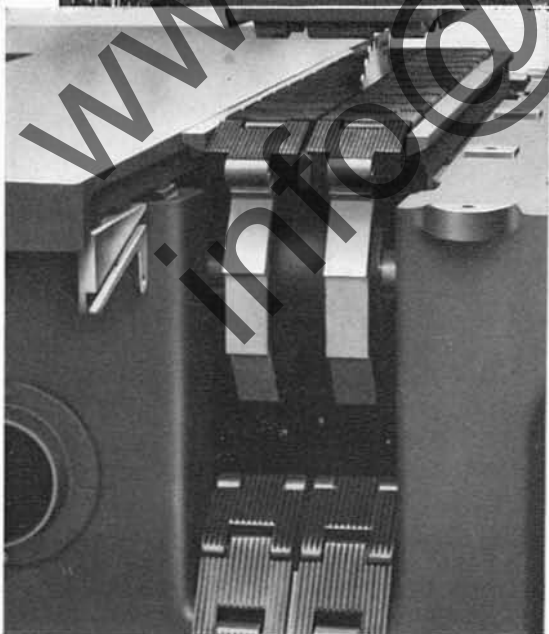
and one which is at least three times that of any other machine. The drive to the chain is by one solid sprocket, which makes it impossible for one section to overrun the other. Both the chain and the chain bed are made of a special nickel cast iron. This is a particularly hard-wearing metal, which, with its fine dense finish and high average hardness, prevents undue wear and ensures permanent accuracy.



*Shows the ease of access to the saw*



*Shows methods employed to ensure long wearing life to the feed chains.*



#### The Chain (Contd.)

The above illustration clearly shows the vee grooves in both the chain and bed, which make it impossible for the chains to get out of alignment. Inset illustration shows how the two chains are driven by one solid sprocket, thus preventing one section overrunning the other.



## Specification (Contd.)

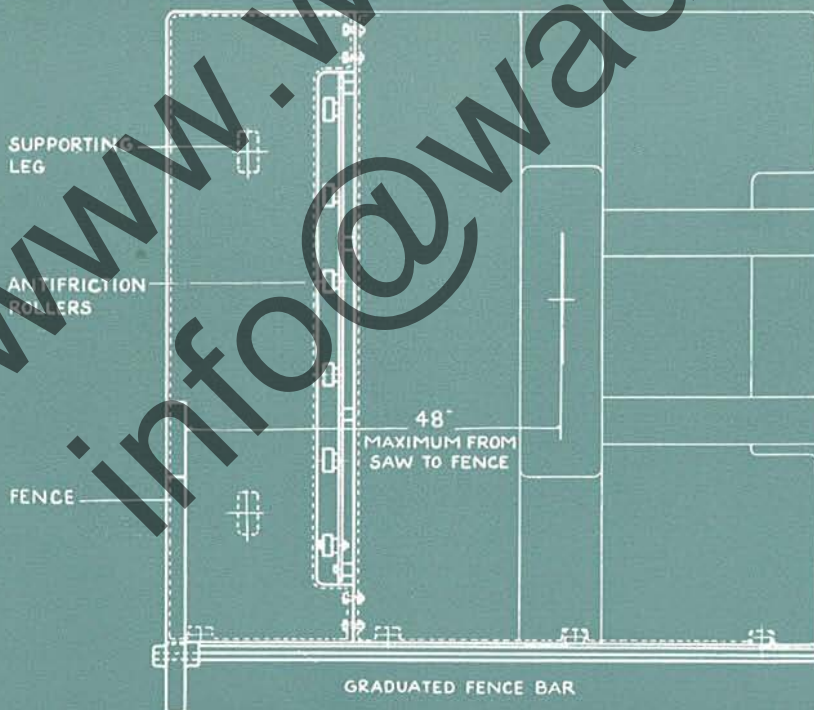
### Overhead Pressure Rollers

The overhead pressure consists of ground rollers controlled by springs. These rollers are fitted on each side of the saw and located along the *entire* length of the chain in order to give a powerful and even pressure during the cutting operation. They are housed in a sturdy casting, the whole being raised and lowered on supporting arms to suit the thickness of the timber being sawn. The raising and lowering motion is effected by screws and handwheel operated from the operator's normal working position. A suitable locking lever is provided.

### The Table

The table is exceptionally wide, the dimensions on both sides of the saw being very much larger than is usually found on this class of machine. A suitable fence is provided, roller mounted for finger light adjustment which can be locked in any desired position on the front or back portion of the table. This can be set accurately to scale and facilitates the quick handling of the work. When feeding short pieces through the machine it is sometimes possible for a wedge-shaped piece to lodge in the table opening where the chain turns downwards at the out-feed end. A counterbalanced safety table is therefore provided the width of the chain, which permits the piece to take a downward course to the floor, after which the safety table returns to its normal position level with the main table.

### Roller Extension Table for wide material





## Specification (Contd.)

### Extension Table

When the machine is to be used continually for cutting wide plywood sheets, laminated boards, etc., the extension table shown in the diagram on page 6 will be found a decided advantage, providing additional support for the board and preventing thin sheets sagging over the table edge. The table is fitted with rollers set at the same height as the feed chain. These rollers assist the feeding of the board and eliminate friction between the stock and surface of the table.

### Guide Finger Lever

A guide finger lever is fitted to the overhead pressure roller housing for giving the line of saw for convenience when edging and cutting out knot holes, etc., on long boards. This finger lever is capable of being adjusted to either the right or the left of saw as may be preferred to suit the work in hand.

### Finger Guard

A finger guard consisting of  $\frac{1}{8}$ " thick fingers is fitted to the overhead pressure roller beam to prevent splinters being thrown back.

### Saw Jointing Attachment

To obtain perfect sawing at high rates of feed it is essential that the saw blade should be not only sharp, but round and concentric to the saw spindle at running speed. A special fixture is therefore provided for truing up the saws.

### Electric Drive

The motors form an integral part of the machine, and consist of rotor and stator units built on to the saw spindle and feed works spindle respectively. They are housed in frames arranged to give suitable protection against falling dust and chips.

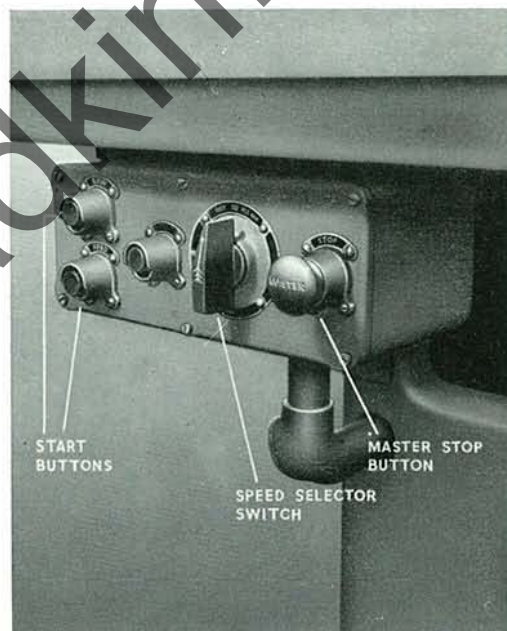
### Control Gear

This consists of an automatic starter for the saw and the feed, operated by push buttons and a speed selector switch at the feed-in end of the machine. A master stop button with large mushroom type head stops both saw and feed and is also arranged to "lock out". This renders the start buttons in-

operative and prevents accidental starting when setting up or at other times. Full positive no-volt protection is provided, together with three adjustable type overloads per motor. A sequence interlock is fitted to prevent the feed running without the saw.

The control gear is contained within the main frame of the machine, so avoiding unsightly projection and damage due to being struck by timber.

The machine is supplied complete with all necessary cabling between the motors and control gear. The cables are run in heavy steel conduits secured to all points of entrance. A short length of flexible tube is used for the saw motor to permit of adjustment required when the saw is raised or lowered.



*Shows the centralised control panel*

### Dust Collecting

It is essential that the machine is connected to an efficient dust collecting system. This is conveniently accomplished by merely connecting up to the exhaust pipe provided at the feed-out end of the machine. The saw runs in a hood solid with the main frame.



### Principal Dimensions and Capacities

Will admit between the saw and the inside of the arms up to	24" × 4" or 30" × 1 $\frac{3}{4}$ "	610 × 100 or 760 × 45 mm.
Maximum diameter of saw	17"	430 mm.
Minimum diameter of saw	10"	255 mm.
Shortest length of cut	12"	305 mm.
Size of table	6' 9" × 4' 11 $\frac{1}{2}$ "	2060 × 1510 mm.
Width of table at right of saw	33"	840 mm.
Width of table at left of saw	26 $\frac{1}{2}$ "	675 mm.
Height of table	35"	890 mm.
Standard rates of feed in feet per minute on 50 cycles supply	50, 75, 100, 150	15, 23, 30, 46 m.
Standard rates of feed in feet per minute on 60 cycles supply	60, 90, 120, 180	18, 27, 37, 55 m.
Diameter of saw spindle	2"	50.8 mm.
Speed of saw spindle in r.p.m. on 50 cycles supply	3,000	
Speed of saw spindle in r.p.m. on 60 cycles supply	3,600	
Horse power of saw motor	15	
<i>Larger motors up to 25 h.p. can be fitted for heavy work.</i>		
Horse power of feed motor	3	4600 <sup>H</sup>
Floor space	7' 9" long, 5' 9" wide	2360 × 1750 mm.
Net weight	45 cwt. (5000 lb.)	2280 kg.
Gross weight	52 $\frac{1}{2}$ cwt. (5800 lb.)	2670 kg.
Shipping dimensions in cubic feet	215	6.1 m <sup>3</sup> .

#### Details included with the machine.

- Two motors with control gear, including selector switch for varying the feed.
- Saw jointing device.
- One set of spanners.
- Fence for table.
- Lubricating pump and tin of ball bearing lubricant.

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