

Wadkin

PANEL PLANING AND THICKNESSING MACHINE, TYPE F. E.

PRINCIPAL DIMENSIONS AND CAPACITIES

	18" MACHINE		24" MACHINE	
	ENGLISH	METRIC	ENGLISH	METRIC
Planing and thicknessing capacity	18" x 10"	457mm x 254mm	24" x 10"	610mm x 254mm
Maximum depth of moulding without removing pressure bars	$\frac{5}{8}$ "	16mm	$\frac{5}{8}$ "	16mm
Maximum depth of moulding with pressure bars removed	$1\frac{1}{4}$ "	32mm	$1\frac{1}{4}$ "	32mm
Length of table	3'7 $\frac{1}{2}$ "	1,105mm	3'7 $\frac{1}{2}$ "	1,105mm
Rates of power feed in feet per minute	25, 35 and 55	7.6, 10.7, 16.8m per min.	25, 35 and 55	7.6, 10.7, 16.8m per min.
Speed of cutterblock in r. p. m. on 50 and 60 cycles	4,500	4,500	4,500	4,500
Diameter of cutting circle	5"	127mm	5"	127mm
Diameter of feed rollers	3 $\frac{1}{8}$ "	79mm	3 $\frac{1}{8}$ "	79mm
Horsepower of motor	5	5	7 $\frac{1}{2}$	7 $\frac{1}{2}$
Speed of motor in r. p. m. on 50 cycles	3,000	3,000	3,000	3,000
Speed of motor in r. p. m. on 60 cycles	3,600	3,600	3,600	3,600
Floor space	4'3" x 4'3"	1295mm x 1295mm	4'9" x 4'3"	1448mm x 1295mm
Net weight in cwts.	22(2464 lbs.)	1118 kilos	25(2800 lbs.)	1270 kilos
Shipping dimensions in cubic feet	75	2.12 cu. m.	85	2.41 cu. m.

DETAILS INCLUDED WITH THE MACHINE

Motor and control gear.
One pair of high speed steel cutters.

One set of spanners.
Lubricating gun and tin of lubricant.

Chip deflector incorporated in cover

Fibre glass cover which can be swung clear to enable adjustments to be made

Handwheel for table rise and fall

Handwheel for simultaneous vertical adjustment of table rollers

Start and stop push button controls

Isolating switch. To special order

Scale and pointer for timber thickness

Feed change gear lever

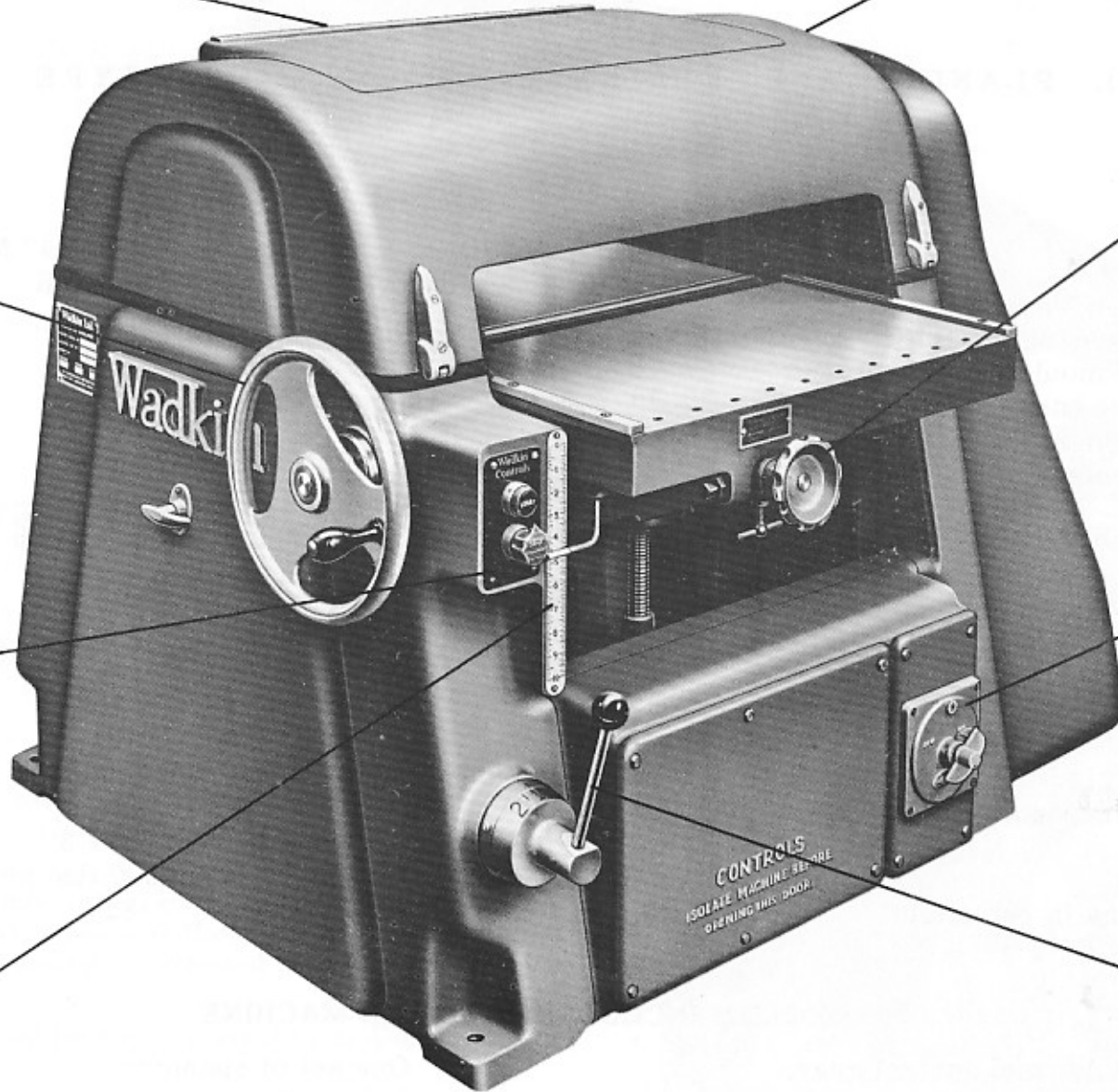


FIG. 1 FRONT VIEW OF MACHINE SHOWING PRINCIPAL CONTROLS

INSTALLATION

The machine is despatched from the Works with all bright surfaces greased to prevent rusting. This protective covering should be removed by applying a cloth damped in paraffin or turpentine.

FOUNDATIONS

Rag type bolts $\frac{5}{8}$ " (16mm) diameter or bolts with plates should be used to fix the machine to the floor, but these are not supplied by Wadkin Ltd. , unless specially ordered. If the mill floor consists of 4" (102mm) solid concrete no special foundation is necessary. The outlines in Figs. 2 and 3 give details of bolt positions and clearances required for the 18" and 24" machines respectively. Cut 4" (102mm) square holes in the concrete and with bolts in position run in liquid cement to fix. A good wooden floor is also satisfactory in which case coach bolts may be used.

Whatever the method of fixing the machine should be carefully levelled before fixing and again after final fixing to ensure that no distortion has taken place. Check that the thickening table is free in its slide when unlocked and that the cutterblock rotates freely in its bearings.

WIRING

For details of wiring instructions see pages 17 to 19. Diagram D. 863 is for motors on 50 cycles and diagram D. 586 is for motors on 60 cycles.

DUST EXTRACTION

A chip deflector is normally supplied, but when the machine is to be connected to a main dust exhaust plant a dust hood is provided in lieu of the deflector.

FOUNDATION PLAN OF 18" THICKENING MACHINE, TYPE F E.
 Dimensions given in Feet, Inches and Millimetres.

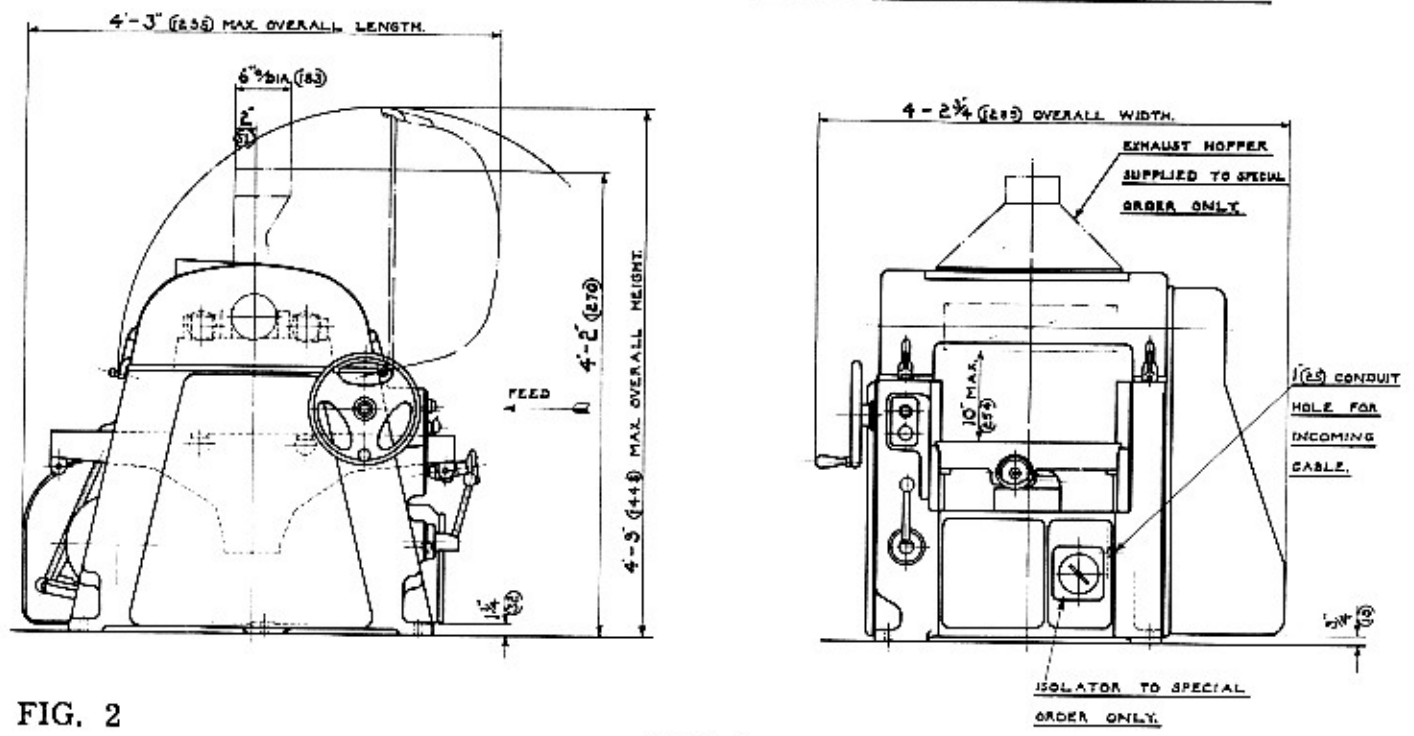
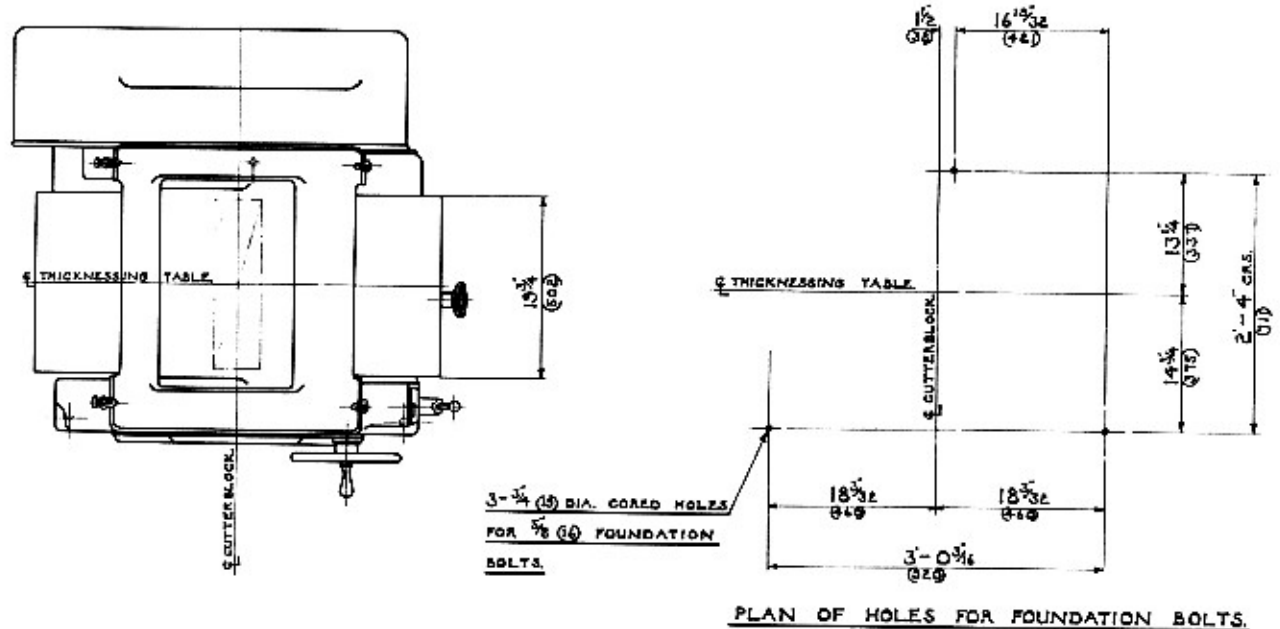


FIG. 2

FOUNDATION PLAN OF 24" THICKENING MACHINE, TYPE F E.
 Dimensions given in Feet, Inches and Millimetres.

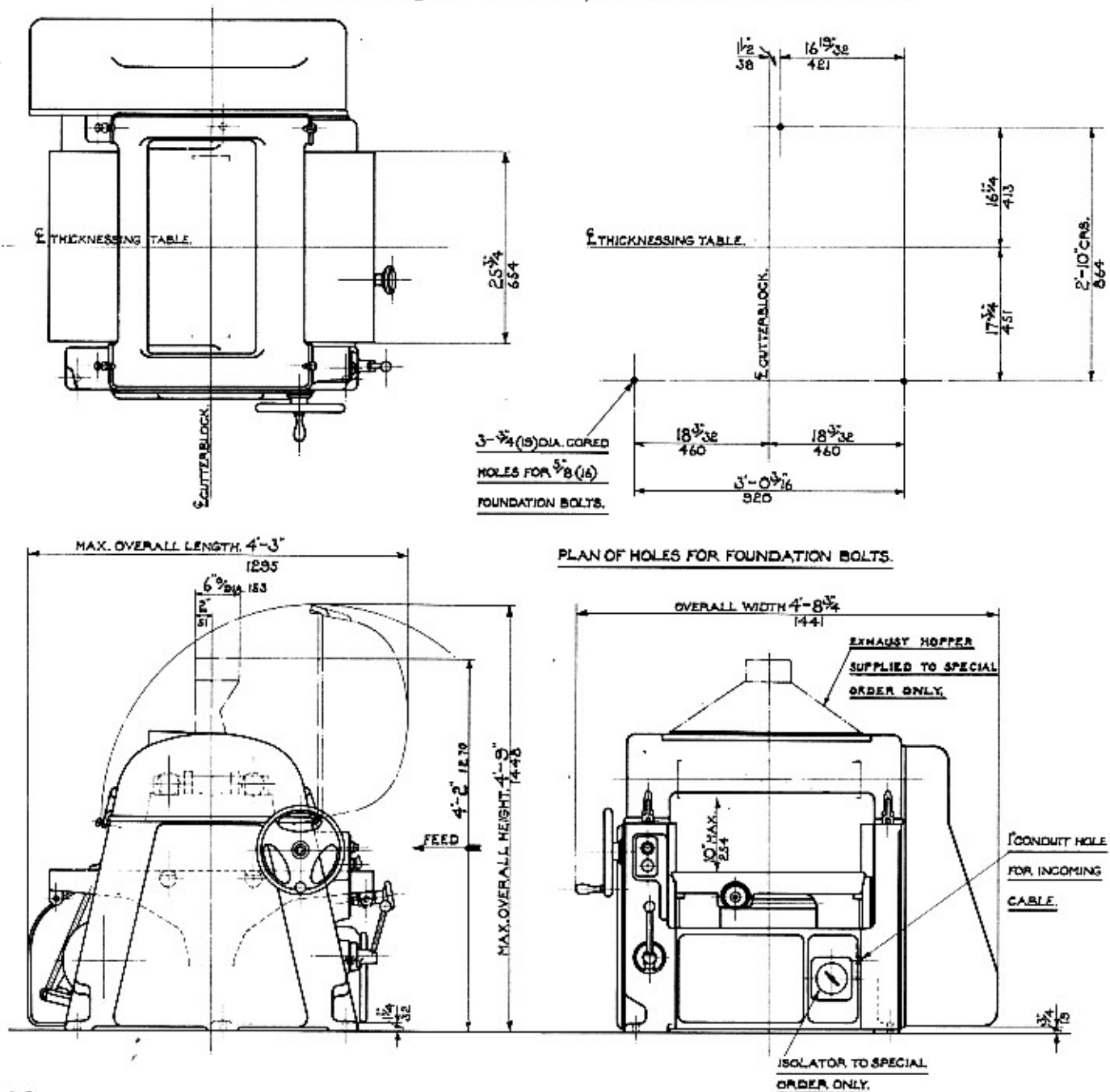


FIG. 3

LUBRICATION

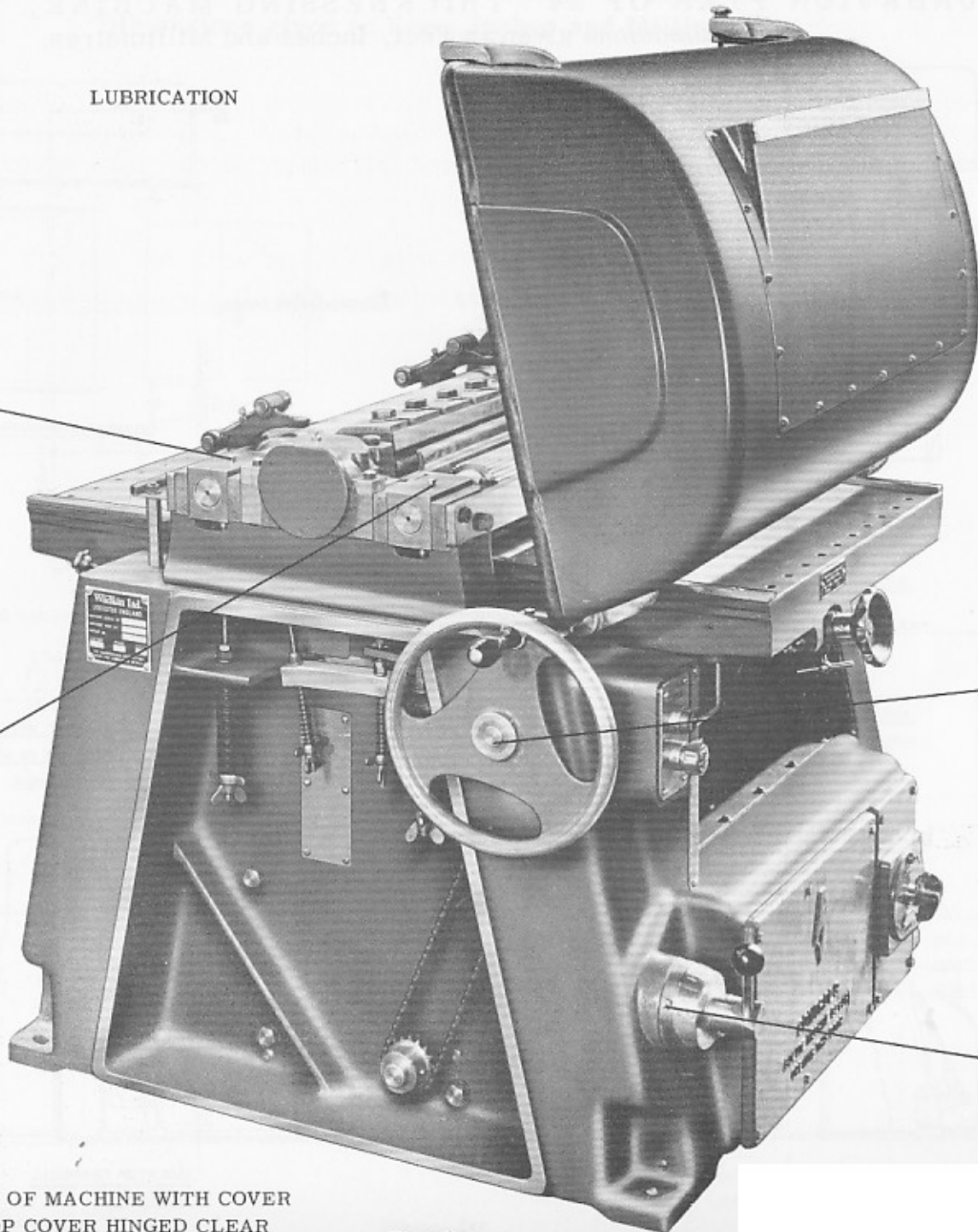
Two Points 'A'
Outfeed Roller

Two Points 'A'
Infeed Roller

'B'

'B'

FIG.4 FRONT VIEW OF MACHINE WITH COVER
REMOVED AND TOP COVER HINGED CLEAR



LUBRICATION

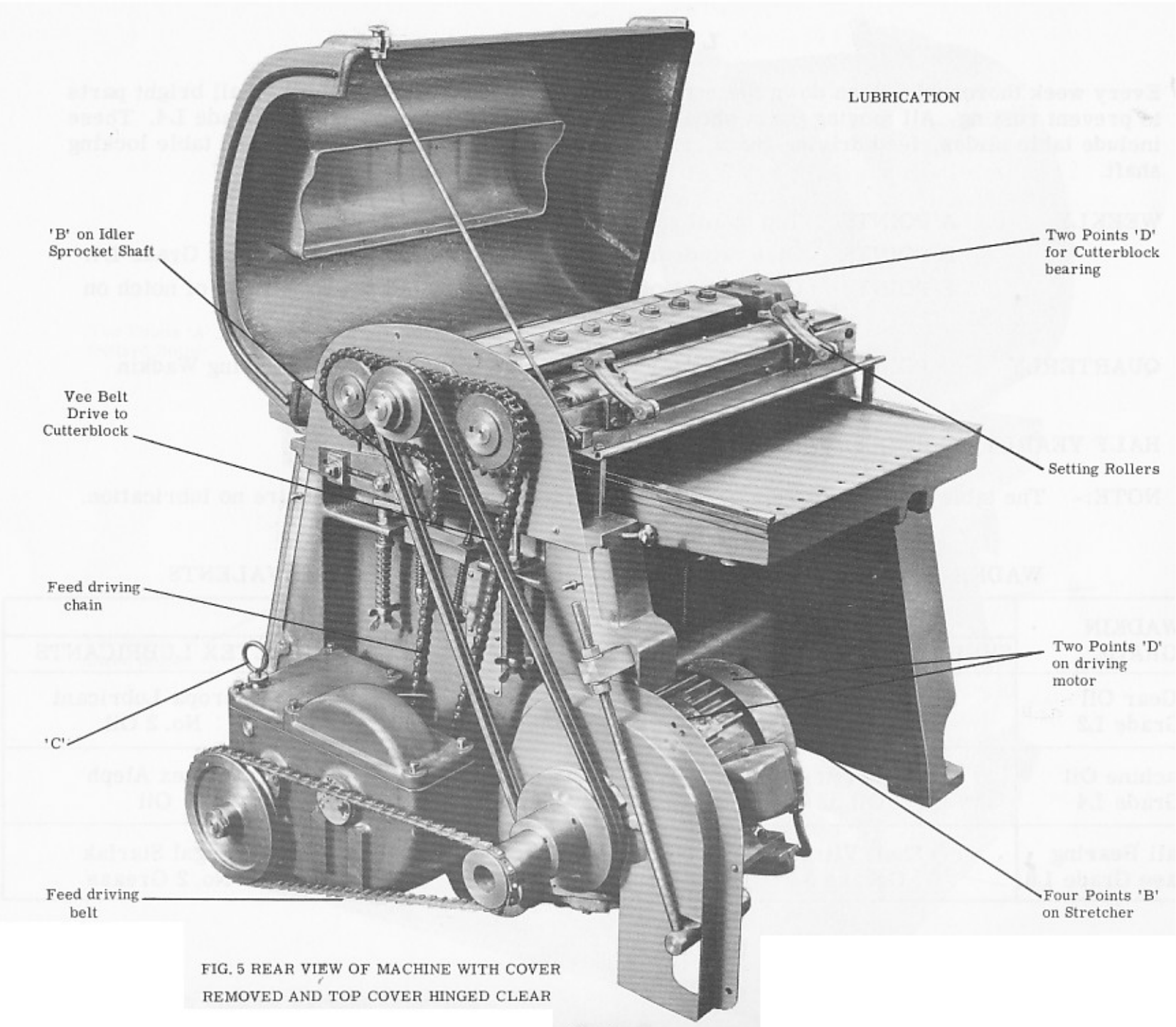
Every week thoroughly clean down the machine and renew the thin film of oil on all bright parts to prevent rusting. All moving parts should be oiled monthly using Wadkin oil Grade L4. These include table slides, feed driving chain, rise and fall chain, motor pivot shaft and table locking shaft.

WEEKLY	A POINTS	Top up oil cups with Wadkin oil Grade L4.
	B POINTS	Give two depressions of the oil gun using Wadkin oil Grade L4.
	C POINT	Check level of oil in the gearbox and fill up to level of notch on the dip stick with Wadkin gear oil Grade L2.
QUARTERLY	D POINTS	Give four to six depressions of the grease gun using Wadkin grease Grade L6.
HALF YEARLY	C POINT	Drain off old oil and refill.

NOTE:- The table roller and gearbox bearings are sealed for life and require no lubrication.

WADKIN RANGE OF OIL AND GREASE LUBRICANTS WITH EQUIVALENTS

WADKIN GRADE	EQUIVALENT LUBRICANTS		
	SHELL MEX. & B. P. LTD.	MOBIL OIL CO. LTD.	CALTEX LUBRICANTS
Gear Oil Grade L2	Shell Vitrea Oil 69	Mobil Oil D. T. E. /BB	Meropa Lubricant No. 2 Oil
Machine Oil Grade L4	Shell Vitrea Oil 33	Mobil 'Vactra' Oil (Heavy Medium)	Caltex Aleph Oil
Ball Bearing Grease Grade L6	Shell Vitrea Grease 3	Mobilux Grease No. 2	Regal Starfak No. 2 Grease



LUBRICATION

'B' on Idler Sprocket Shaft

Two Points 'D' for Cutterblock bearing

Vee Belt Drive to Cutterblock

Setting Rollers

Feed driving chain

Two Points 'D' on driving motor

'C'

Four Points 'B' on Stretcher

Feed driving belt

FIG. 5 REAR VIEW OF MACHINE WITH COVER REMOVED AND TOP COVER HINGED CLEAR

TABLE ROLLERS

The table rollers should be set $1/64$ " (0.4mm) above the table level for boards which are reasonably straight and a little higher for badly twisted boards.

BELT TENSION (SEE FIG. 5)

The main drive belts are endless of the Vee Rope Type and are tensioned correctly before leaving the Works. If they require re-tensioning because of belt stretch the tie bar should be adjusted. The feed driving belt is of the Link Type Vee Belting and may be shortened by removing a link as stretch takes place.

FEED DRIVING CHAIN (SEE FIG. 5)

Drive to the feed rollers is by a chain from a three speed gearbox. The feed driving chain should always be run with enough slack in the chain to allow the front feed roller to lift to its maximum lift of $\frac{1}{2}$ " (13mm). Adjustment is by means of the idler sprocket.

Gears should be changed whilst the machine is slowing down or nearly stopped. Never change gear under load.

The feed speeds obtainable are 25, 35 and 55 feet per minute (7.6, 10.7 and 16.8 metres per minute).

FIG. 6 SETTING OF FEED ROLLERS AND PRESSURE BARS

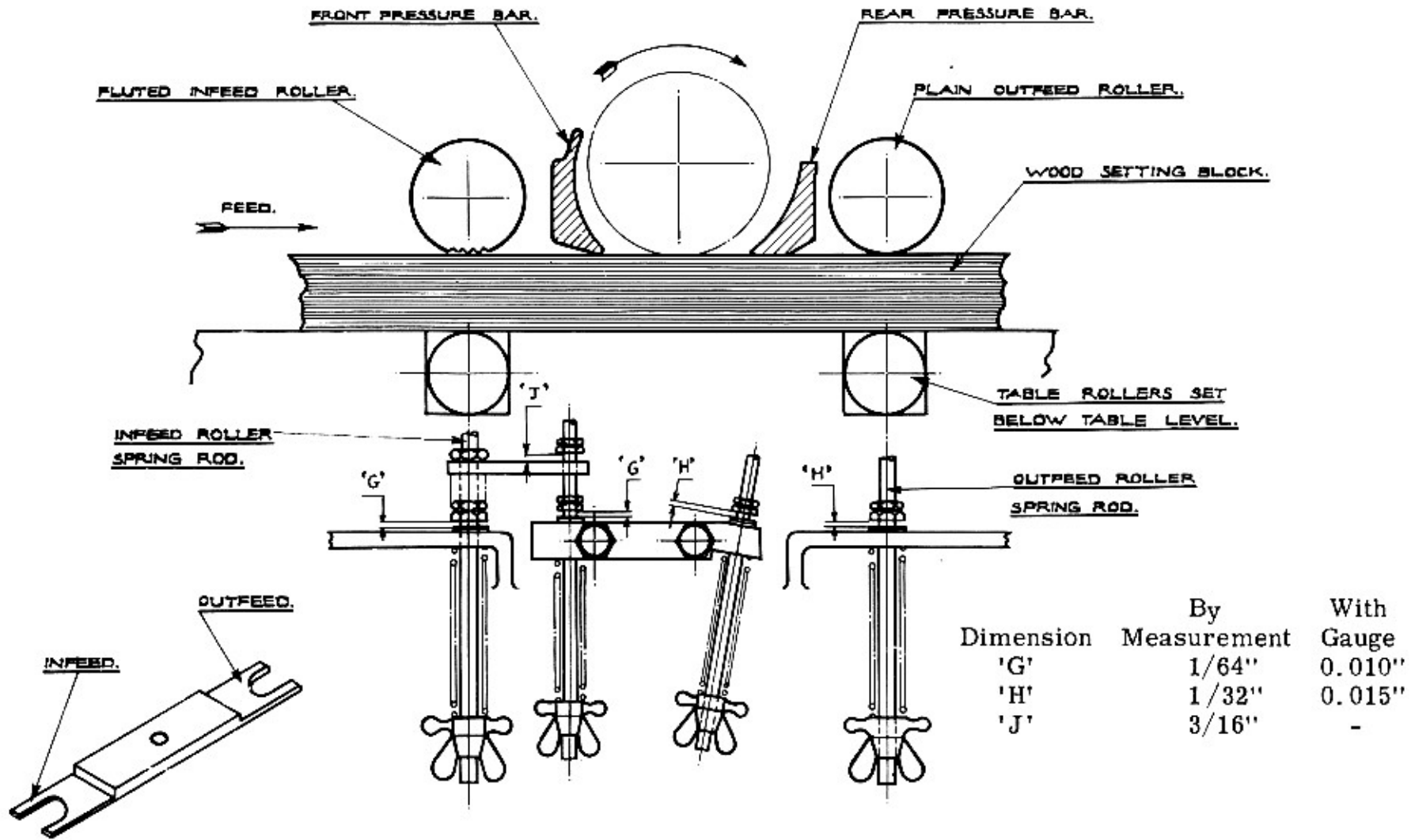


Fig. 7 Fine Setting Gauge

THICKNESSING ADJUSTMENT

A graduated scale and pointer register the finished thickness of work desired. The pointer is accurately set before the machine is despatched, but it is advisable to check over its accuracy before starting the machine, in case it has been displaced during transit. Tighten the wear strips on the table slides just sufficiently to take up all play.

To prevent or eliminate sticking of the feed or marking of the job correct adjustment of the feed rollers, pressure bars and table rollers is essential. First set the table rollers approximately $1/64$ " (0.4mm) above the table level by means of the adjusting handwheel on the end of the table. Then proceed to thickness two pieces of timber, one at either side of the machine. WITHOUT RAISING THE TABLE, feed through again and put the feed change speed lever in neutral with both pieces in the machine. Switch off the machine and lower the table rollers below the table level. Adjust the nuts to obtain dimensions 'G' and 'H' Fig. 6 either measuring the clearances or using the gauge provided if a finer setting is desired. Dimension 'J' can then be set. Make these adjustments at both sides. Slacken off all the spring adjusting wing nuts and adjust back until just touching the spring. When this position has been reached give one complete turn and lock for the pressure bars. For the feed rollers give three or four complete turns before locking. Lower the table and remove the pieces of wood.

Raise the table rollers approximately $1/64$ " (0.4mm) above the level of the table for planing boards which are fairly straight. If the work is wet or badly twisted the rollers should be set a little higher in the table. Check that both ends of the two rollers are at the same height and correct if necessary by adjusting the screws below the table roller bearings under the table.

THE CUTTERS

Cutters to sizes given in the table opposite are supplied in balanced pairs. They should be kept in balanced pairs by ensuring that the cutters have equal dimensions after grinding and that the cutting edge of each cutter is parallel to the back edge.

Keep the cutters sharp when in position in the block by using a fine grade oil stone dipped in paraffin. Allow the stone to rest lightly and flat on the bevel and pass over the cutter with a rotating action a few times. Give about two strokes on the full length of each knife on the face side to remove all burrs from the cutting edge. Do not allow a heel greater than $1/32''$ (0.8mm) wide on the bevel before taking out and regrinding on the grinding machine. Take care to grind off the same amount from each cutter, taking light cuts with the grinding wheel. Keep the wheel free from glaze by using an emery wheel dresser occasionally.

For general work knife angles for soft and hard woods are recommended as in Figs. 8 and 9. Where a very fine finish is required on dry soft and hard woods a slight front bevel is given as in Figs. 10 and 11. For wet or green timber the cutting bevel may be increased by five degrees, but the front bevel should not be given.

**PLAIN CUTTERS FOR STANDARD
SQUARE SKEW TYPE BLOCK**

SIZE	PART NO.	MACHINE
$18\frac{1}{2}'' \times 3\frac{3}{8}'' \times \frac{3}{8}''$	VP 57	18'' FE
$24\frac{1}{2}'' \times 3\frac{3}{8}'' \times \frac{3}{8}''$	VP 53	24'' FE

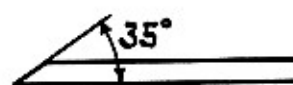


FIG. 8
FOR SOFT WOOD.

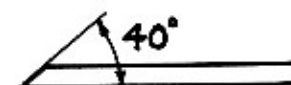


FIG. 9
FOR HARD WOOD.

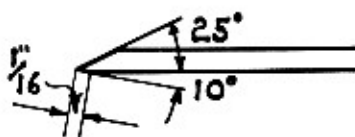


FIG. 10
FOR DRY SOFT WOOD.

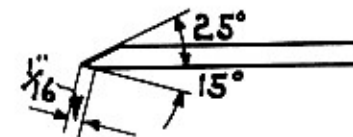


FIG. 11
FOR DRY HARD WOOD.

THE CUTTERBLOCK

The cutterblock supplied is of the two knife square skew type. It is arranged to take moulding irons without in any way upsetting the planing knives by using the two full length dovetail slots in the cutterblock and the bolts supplied with the machine.

CUTTER SETTING

Mount the cutters on the block finger tight and swing over the two pre-set rollers as illustrated in Fig. 12. Adjust both ends of each knife in turn so that the knives just perceptibly turn the setting roller. Lock the knives down from the centre outwards.

Should the setting roller be disturbed set the knives from a block of wood as shown in Fig. 13 and re-set the rollers to the knives using the adjusting screws in the swing arms.

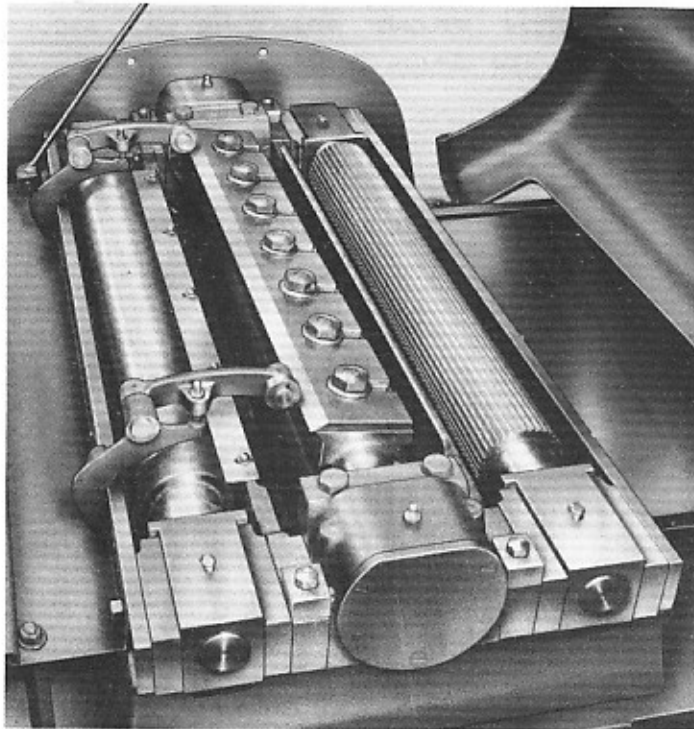


FIG. 12 SETTING ROLLERS IN USE

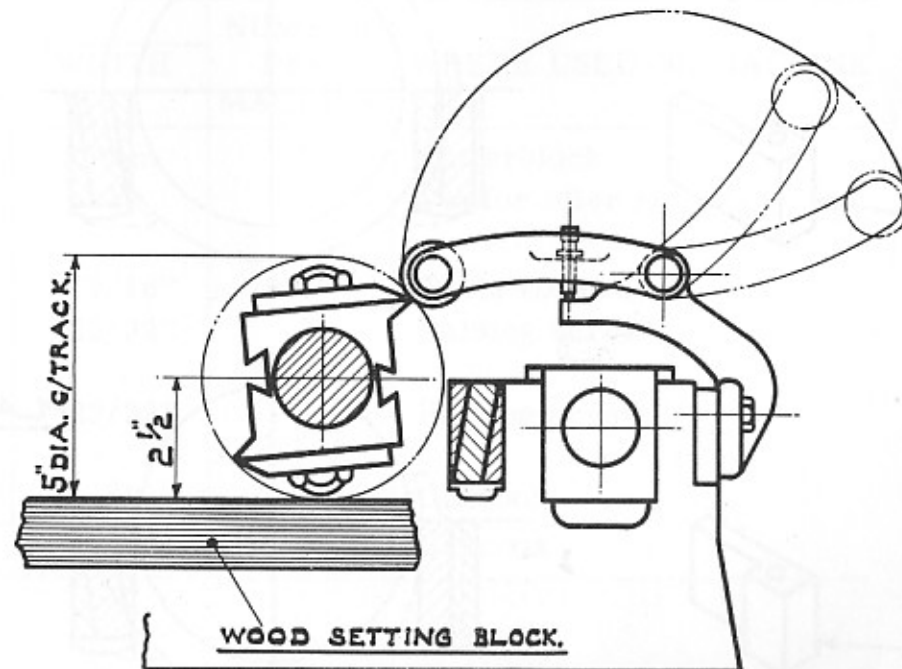
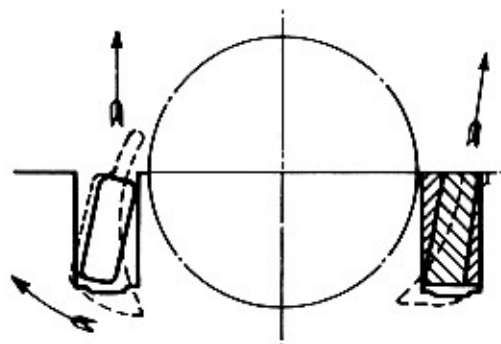
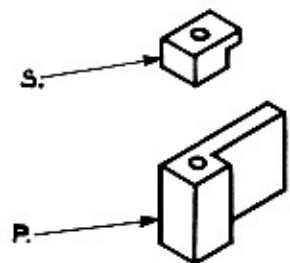
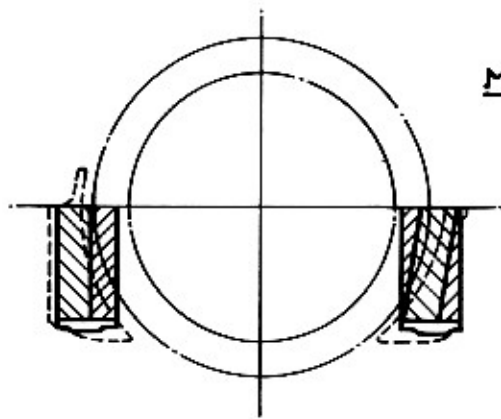
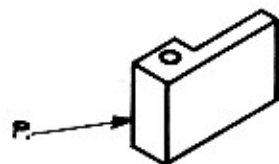
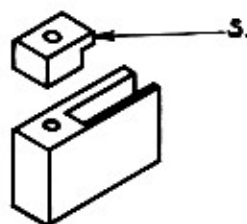


FIG. 13 RE-SETTING OF SETTING ROLLERS

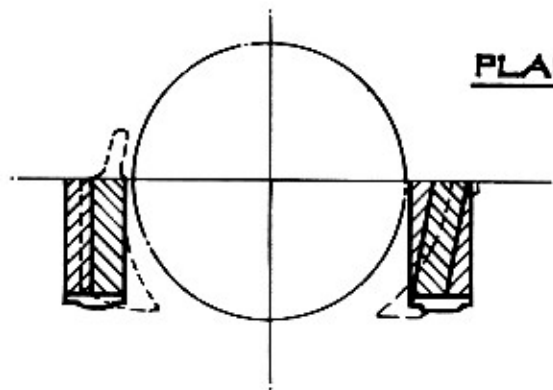
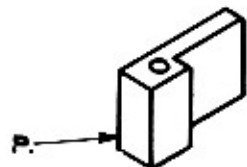
FIG. 14 REMOVAL OF BLOCKS AND PRESSURE BARS



REMOVE FRONT PRESSURE BAR BLOCKS
TWIST PRESSURE BAR IN DIRECTION OF
ARROW THEN GENTLY WITHDRAW IT.



MOULDING, WITH FRONT PRESSURE BAR MOVED
TO ITS BACK POSITION.



PLANING, FRONT PRESSURE BAR IN
ITS NORMAL POSITION.

MOULDING

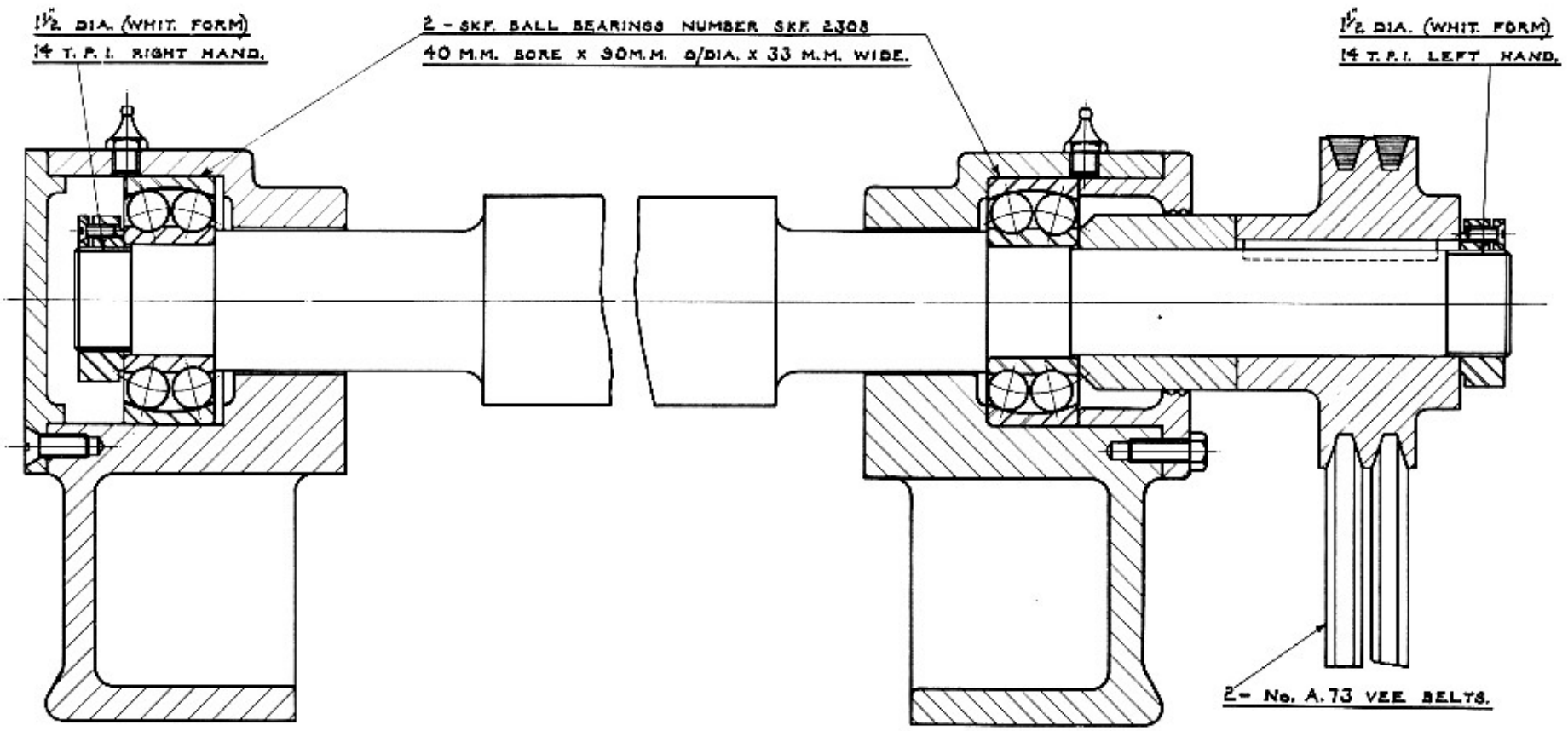
If it is desired to cut mouldings up to $\frac{5}{8}$ " (16mm) in depth the infeed pressure bar must be moved back from the cutterblock. This is done by removing blocks 'P' Fig. 14 and moving the bar back in the slot. The blocks should then be replaced upside down.

For mouldings over $\frac{5}{8}$ " (16mm) in depth both pressure bars must be removed. The tension springs and safety stops 'S' should be removed, thus allowing the outfeed pressure bar to be withdrawn. Remove blocks 'P' and the infeed pressure bar can be removed by tilting as shown.

When moulding, wooden guide strips are necessary to keep the work parallel. Secure the strips by screws at each end of the table.

BEARING LIST

MAKERS' NUMBER	SIZE			NUMBER PER MACHINE	WHERE USED ON MACHINE
	BORE	OUTSIDE DIAMETER	WIDTH		
SKF 2308	40mm	90mm	33mm	2	Cutterblock
INA SCI 1616 Needle roller bearing	1"	1 $\frac{1}{2}$ "	1"	1	Pin for idler sprocket
FBC DN 2062	$\frac{5}{8}$ "	1.9/16"	7/16"	4	Table rollers
SKF 0.12 Thrust bearing	1 $\frac{1}{2}$ "	2.5/16"	23/32"	2	Raising screw
SKF 0.10 Thrust bearing	1 $\frac{1}{4}$ "	2.1/16"	23/32"	1	Raising screw
FBC DN 2100	1"	2 $\frac{1}{4}$ "	$\frac{5}{8}$ "	2	Gearbox
FBC DN 2075	$\frac{3}{4}$ "	1 $\frac{7}{8}$ "	9/16"	2	Gearbox



SECTION THROUGH CUTTERBLOCK.

FIG. 15

ELECTRICAL INSTALLATION INSTRUCTIONS

The cabling between the motor and the control gear has been carried out by Wadkin Ltd. , and it is only necessary to bring the line leads to the machine for it to be put into service. This should be done as follows:-

- (1) Fit triple pole isolating switch near the machine, unless this has been supplied to special order by Wadkin Ltd. , when it will be fitted and connected up at the machine.
- (2) Connect the line lead to the appropriate terminals, see diagram. The cables should be taken to the machine in conduit and secured to the control gear by means of locknuts.
- (3) Connect solidly to earth.
- (4) Close isolating switch and press start button. If machine does not rotate in the correct direction, interchange any two incoming line leads.

FAILURE TO START

- (1) Electric supply is not available at the machine.
- (2) Fuses have blown or have not been fitted.
- (3) Isolating switch has not been closed.
- (4) Lock-off or stop button has not been released.

STOPPAGE DURING OPERATION AND FAILURE TO RESTART

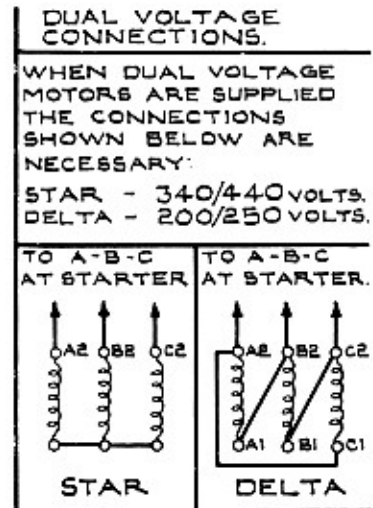
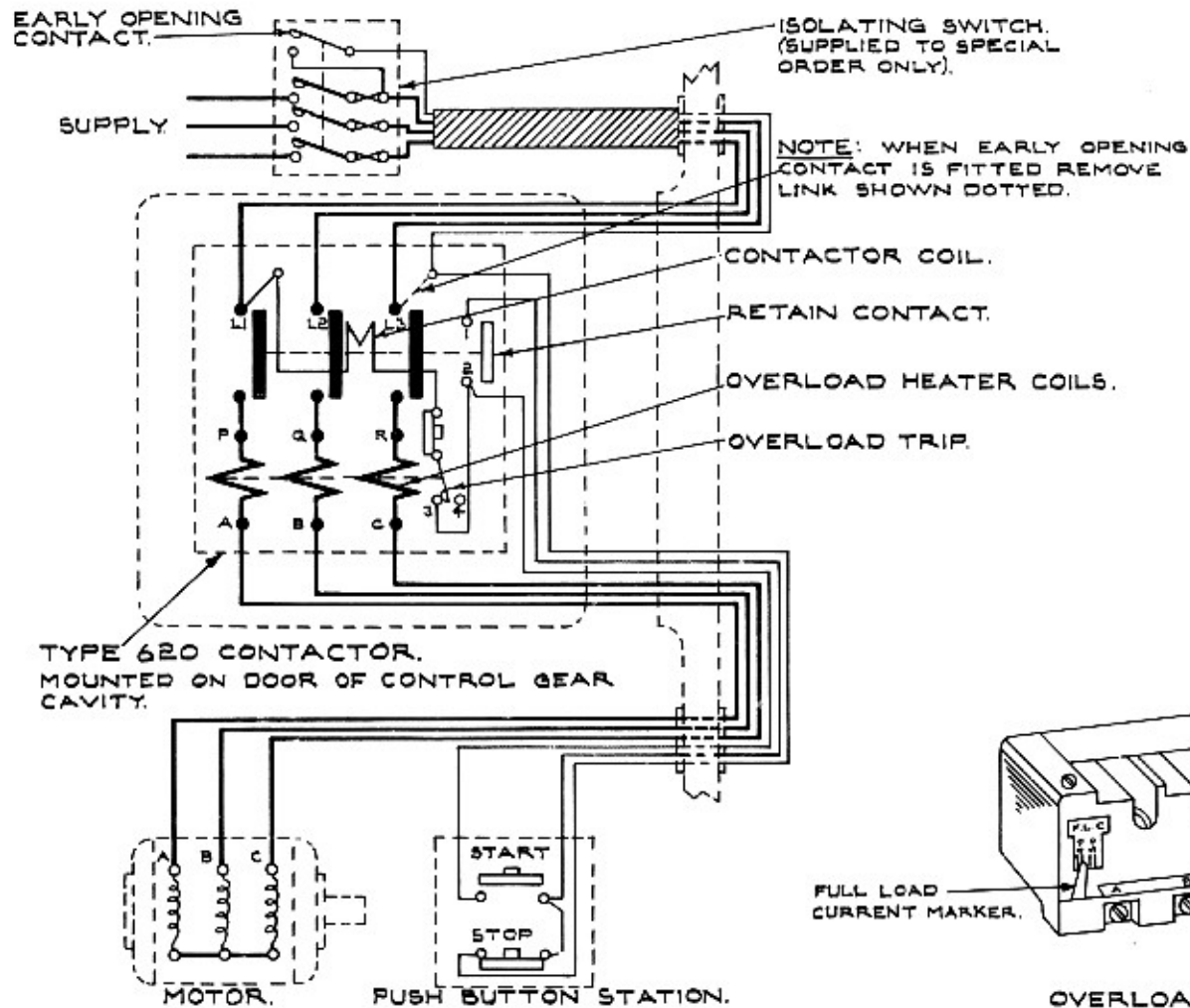
- (1) Fuses have blown.
- (2) Overloads have tripped. They will reset automatically after a short time, and the machine can be restarted in the usual manner.

ADJUSTMENT

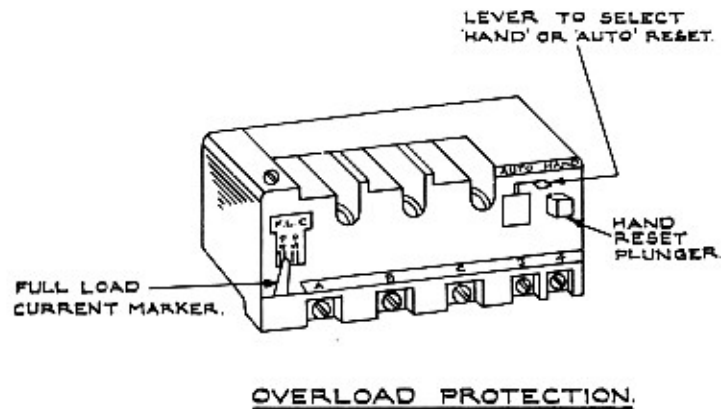
For a finer overload setting, set the load indicator to a lower value, and vice versa for a less fine setting.

GENERAL

Check the earth connection from time to time. Users are recommended to display in an appropriate position in the maintenance department Wadkin Electrical Maintenance Instruction Card, No. 356, which is issued gratis on application.



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INSTALLATION INSTRUCTIONS.

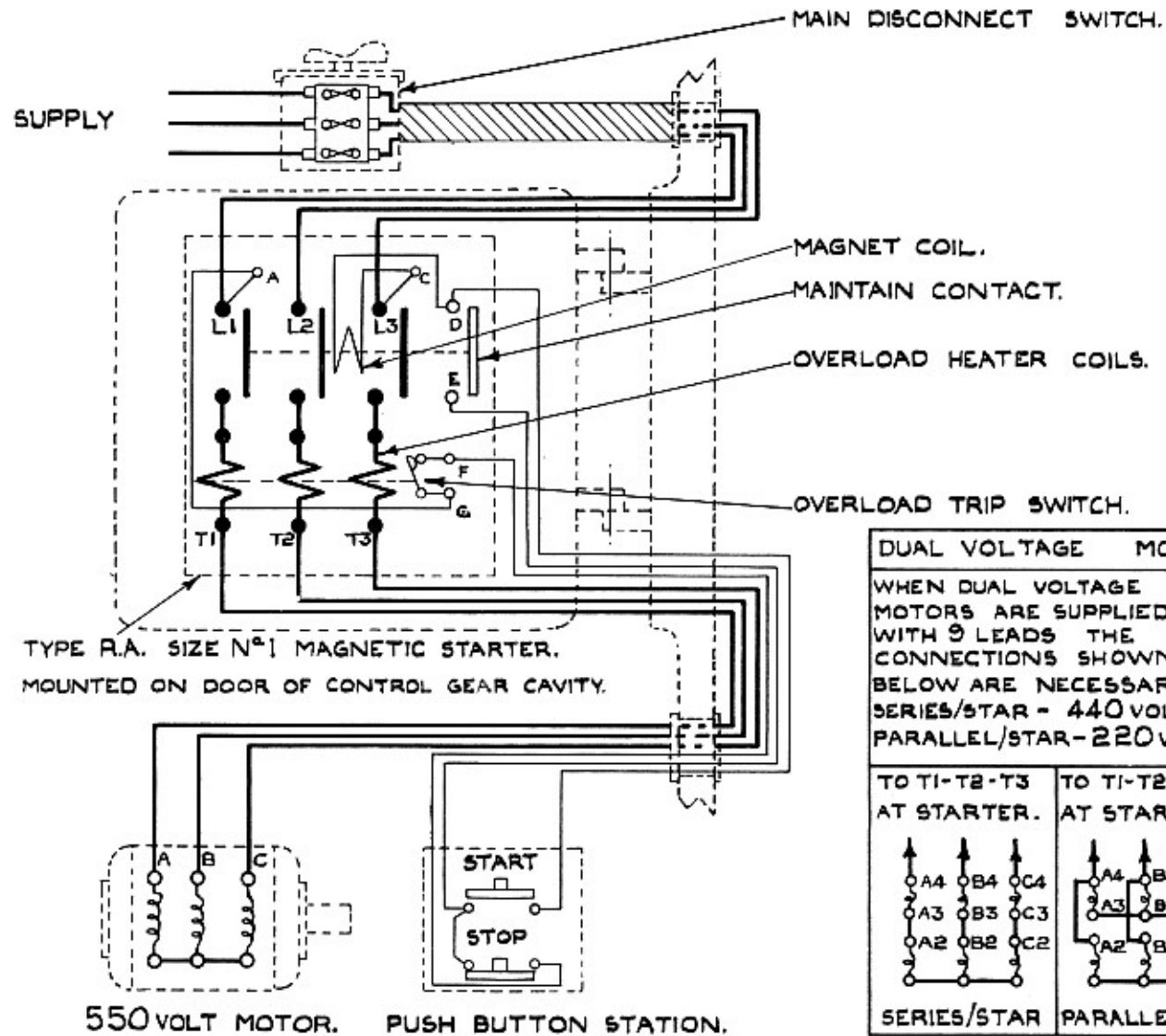
FIT ISOLATING SWITCH NEAR MACHINE SO THAT THE ELECTRICAL GEAR MAY READILY BE ISOLATED FOR INSPECTION PURPOSES. BRING SUPPLY CABLES TO ISOLATING SWITCH AND TO L1-L2-L3 AT CONTACTOR THROUGH CONDUIT WHICH SHOULD BE SCREWED INTO THE MACHINE AND SECURED BY MEANS OF LOCKNUTS. ENSURE THAT THE DIRECTION OF ROTATION IS CORRECT BEFORE PUTTING THE MACHINE INTO SERVICE. TO REVERSE ROTATION INTERCHANGE L1 AND L3 AT CONTACTOR.

OPERATING INSTRUCTIONS.

TO START MACHINE: CLOSE ISOLATING SWITCH AND PRESS 'START' BUTTON. TO STOP MACHINE: PRESS 'STOP' BUTTON. TO LOCK OFF MACHINE: PRESS AND TURN 'STOP' BUTTON, THIS MUST BE RELEASED BEFORE A START CAN BE MADE.

OVERLOAD.

SHOULD THE MACHINE STOP DUE TO OVERLOAD, WAIT FOR A SHORT TIME TO ALLOW THE HEATER COILS TO COOL THEN START IN THE USUAL MANNER. THE OVERLOADS ARE SET AT THESE WORKS AT 'AUTO' FOR AUTOMATIC RESET AFTER TRIPPING. IF SET AT 'HAND' THE PLUNGER ON THE OVERLOAD ASSEMBLY SHOULD BE DEPRESSED TO RESET.



DUAL VOLTAGE MOTOR CONNECTIONS.			
WHEN DUAL VOLTAGE MOTORS ARE SUPPLIED WITH 9 LEADS THE CONNECTIONS SHOWN BELOW ARE NECESSARY. SERIES/STAR - 440 VOLTS. PARALLEL/STAR - 220 VOLTS.		WHEN DUAL VOLTAGE MOTORS ARE SUPPLIED WITH 6 LEADS THE CONNECTIONS SHOWN BELOW ARE NECESSARY. STAR - 340/440 VOLTS. DELTA - 200/250 VOLTS.	
TO T1-T2-T3 AT STARTER.	TO T1-T2-T3 AT STARTER.	TO T1-T2-T3 AT STARTER.	TO T1-T2-T3 AT STARTER.
9 LEAD MOTORS.		6 LEAD MOTORS.	

INSTALLATION INSTRUCTIONS.

FIT MAIN DISCONNECT SWITCH NEAR MACHINE SO THAT THE ELECTRICAL GEAR MAY READILY BE ISOLATED FOR INSPECTION PURPOSES. BRING SUPPLY CABLES TO DISCONNECT SWITCH AND TO L1-L2-L3 AT MAGNETIC STARTER THROUGH CONDUIT WHICH SHOULD BE SCREWED INTO THE MACHINE FRAME AND SECURED BY MEANS OF LOCKNUTS. ENSURE THAT THE DIRECTION OF ROTATION OF THE MOTOR IS CORRECT BEFORE PUTTING THE MACHINE INTO SERVICE. TO REVERSE ROTATION INTERCHANGE L1 AND L3 AT MAGNETIC STARTER.

OPERATING INSTRUCTIONS.

TO START MACHINE: CLOSE MAIN DISCONNECT SWITCH AND PRESS 'START' BUTTON. TO STOP MACHINE: PRESS 'STOP' BUTTON. TO LOCK OFF MACHINE: PRESS AND TURN 'STOP' BUTTON, THIS MUST BE RELEASED BEFORE A START CAN BE MADE.

OVERLOAD.

SHOULD THE MACHINE STOP DUE TO OVERLOAD, THE OVERLOAD TRIP SWITCH SHOULD BE RESET BY DEPRESSING THE PLUNGER ON THE OVERLOAD ASSEMBLY, THEN START IN THE USUAL MANNER.