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OPERATING INSTRUCTIONS AND MAINTENANCE BOOK

24" ROLLER FEED PLANER & THICKNESSER

TYPE 24" BAO

INSTRUCTION BOOK No. B456

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

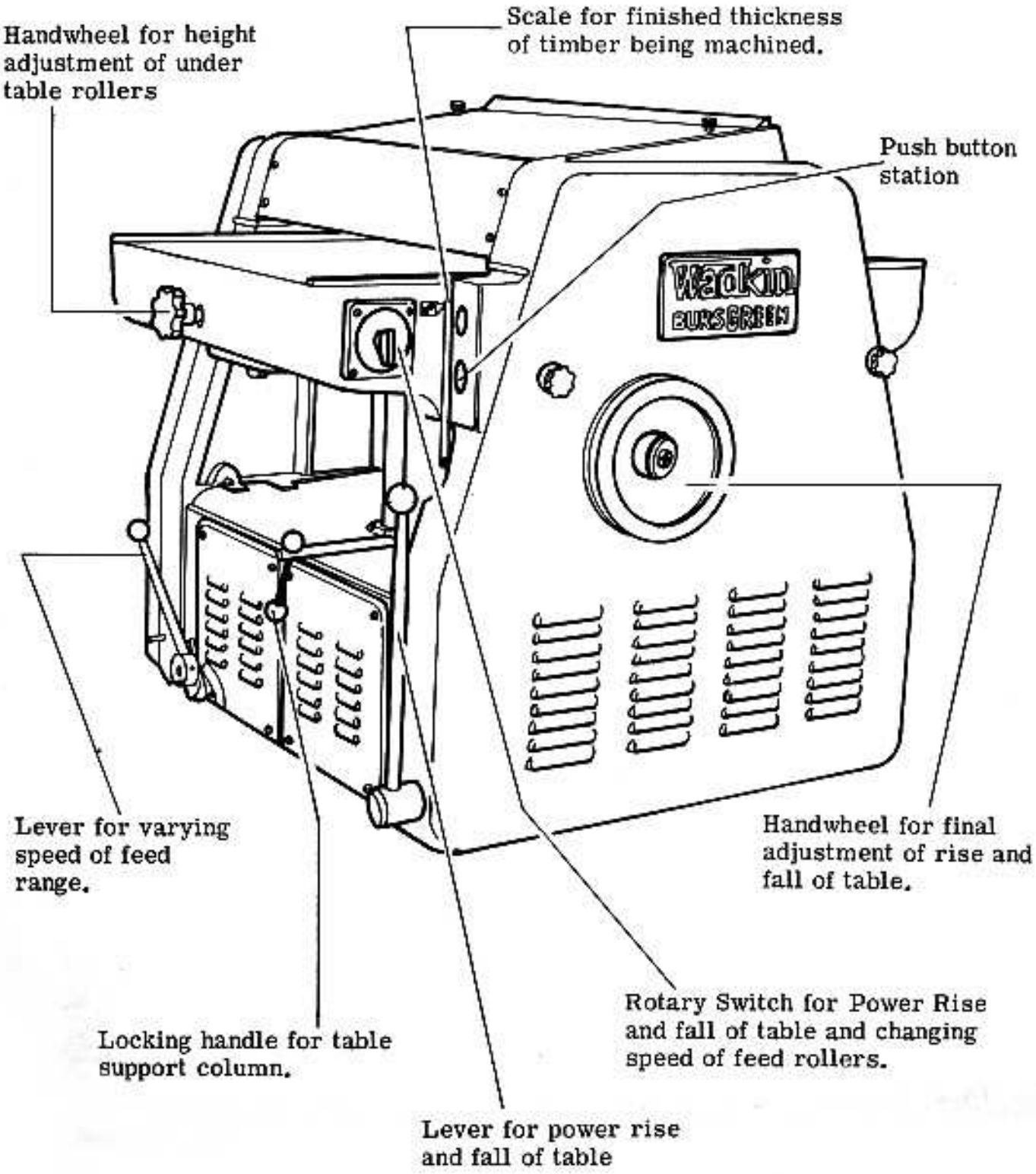
USER PLEASE INSERT SERIAL NUMBER OF MACHINE [ ]

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

24" ROLLER FEED PLANER

& THICKNESSER

TYPE BAO



SPECIFICATION

Length of thicknessing table	44"		1120mm
Feed speeds per minute	20-60ft		6 -18mm
Speed of motor:- 50 cycles		3,000rpm	
60 cycles		3,600rpm	
Speed of cutterblock		4,500rpm	
Horsepower of cutterblock motor		$7\frac{1}{2}$HP	
Approx. Floor space	46" x 43"		1170 x1100mm
Approx. Net weight	2160 lb		980 kg
Approx. Gross weight	2350 lb		1066 kg
Shipping dimensions	66cu. ft.		$1 \cdot 9m^3$

Installation

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

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 or isolator when fitted.

Points to note when connecting to power supply.

1. Check that 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 table is used to give the correct voltage to the starter as running on low voltage will damage the motor.

3. Check the main line fuses are of the correct capacity. See list below. When an isolator is fitted these are correct as received.

4. Connect the line leads to the appropriate terminals. See fig. 1 for 3phase supply.

5. Check all connections are sound.

6. Check the rotation of the motor for correct direction. If this is incorrect, reverse any two of the line lead connections.

Voltage	Phase	HP	S.W.G. Tinned Copper Wire	Fuse Rating Amps
220	3	$7\frac{1}{2}/1$	17	65
380/420	3	$7\frac{1}{2}/1$	21	29
550	3	$7\frac{1}{2}/1$	22	24

Lubrication

It is advisable to keep all bright parts covered with a thin film of oil to prevent rusting. See fig. 3.

TYPE OF OIL RECOMMENDED	POWER EM 125 (For general purposes)
TYPE OF OIL RECOMMENDED	SHELL VITREA 75 (For gearbox)
TYPE OF GREASE RECOMMENDED	SHELL ALVANIA 3.

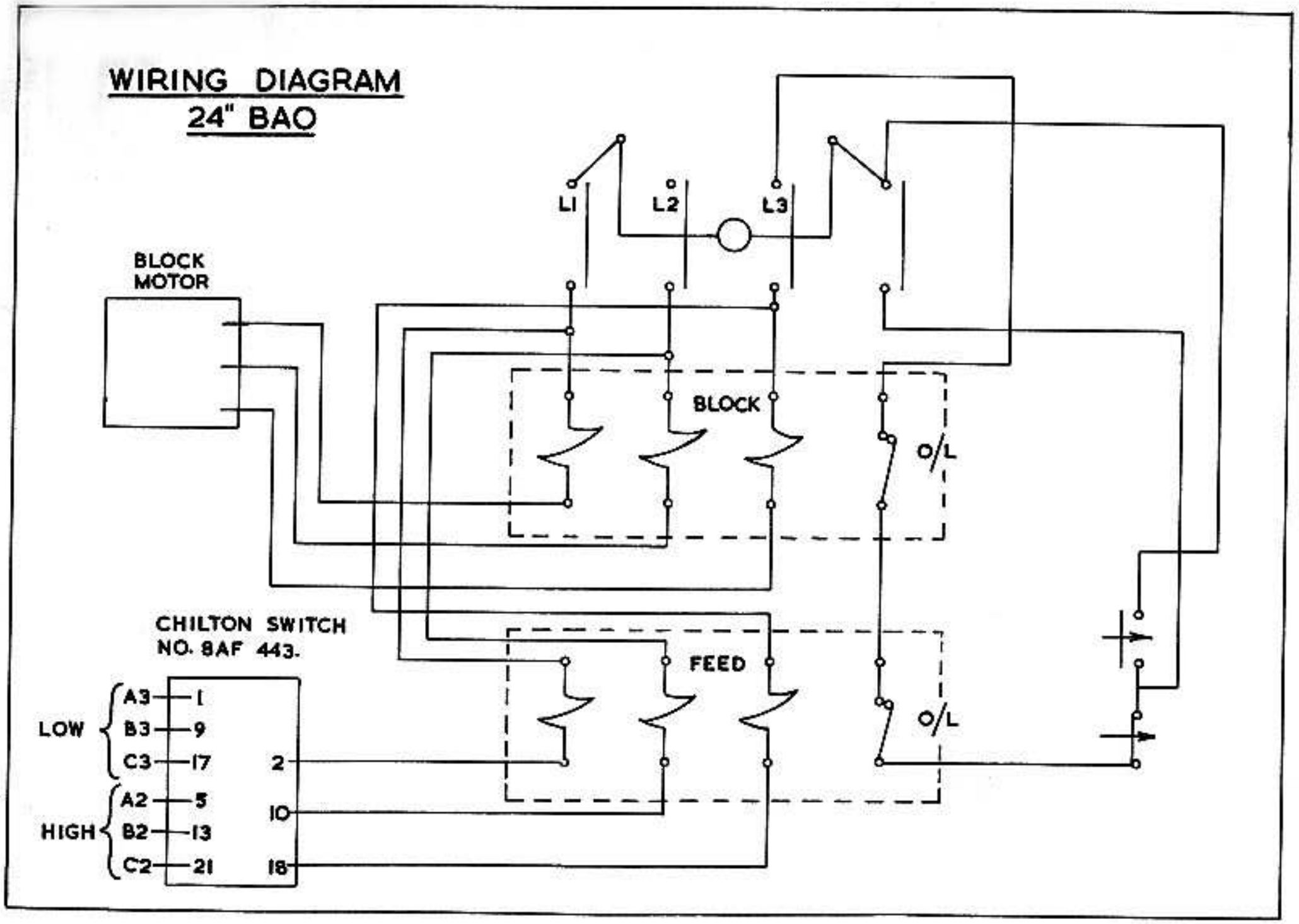
TYPE OF OIL RECOMMENDED FOR VARIABLE PULLEY - CASTROL MAGNA CF OIL

Foundation

See Fig. 2 for bolt positions and clearances required.

Foundation bolts are not supplied with the machine except by special order.

WIRING DIAGRAM
24" BAO



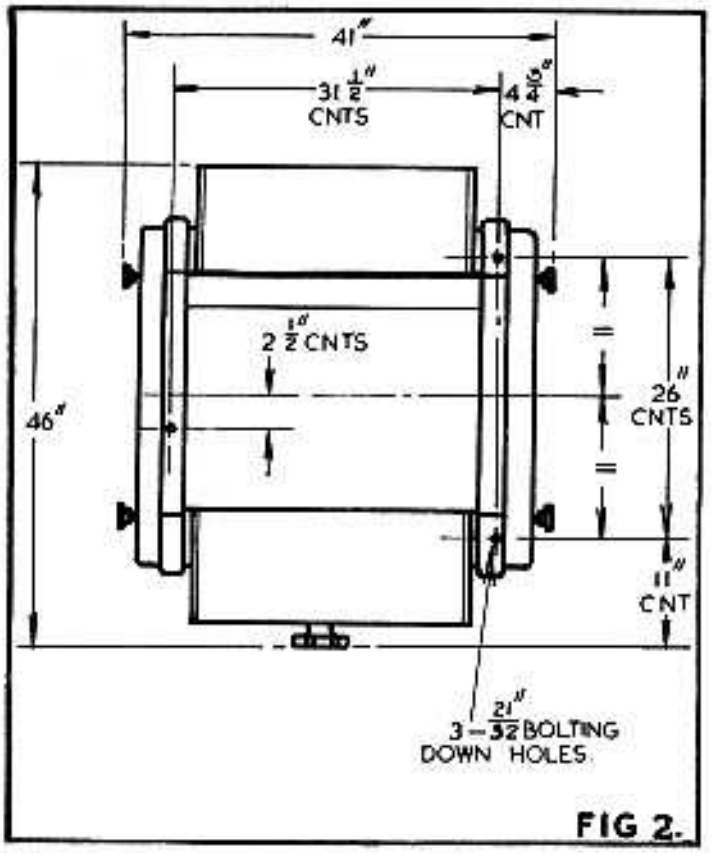

41"
31 1/2" CNTS
4 4/16" CNT
2 1/2" CNTS
26" CNTS
46"
11" CNT
3 — 21/32" BOLTING DOWN HOLES

FIG 2.

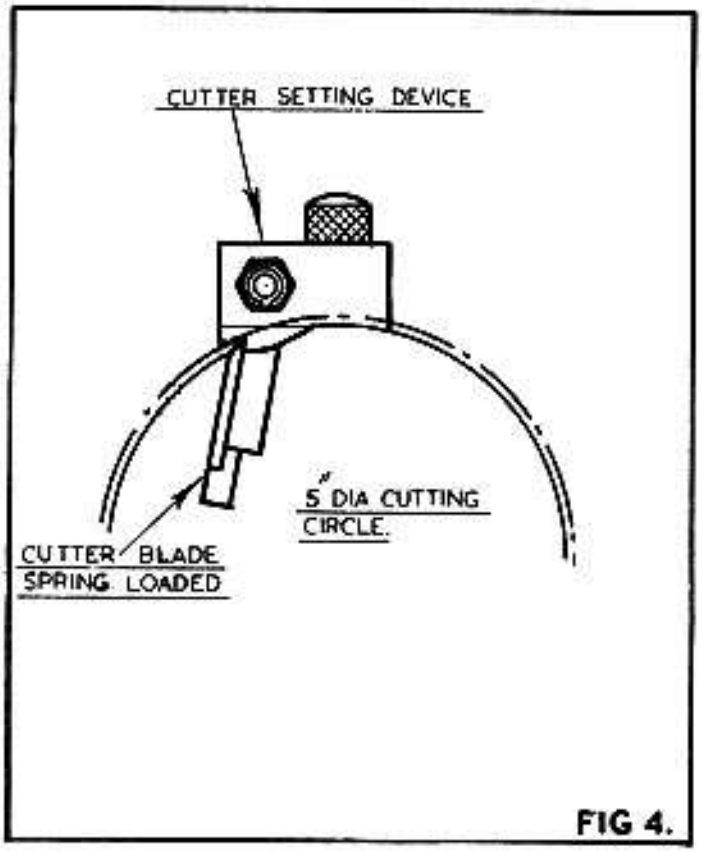
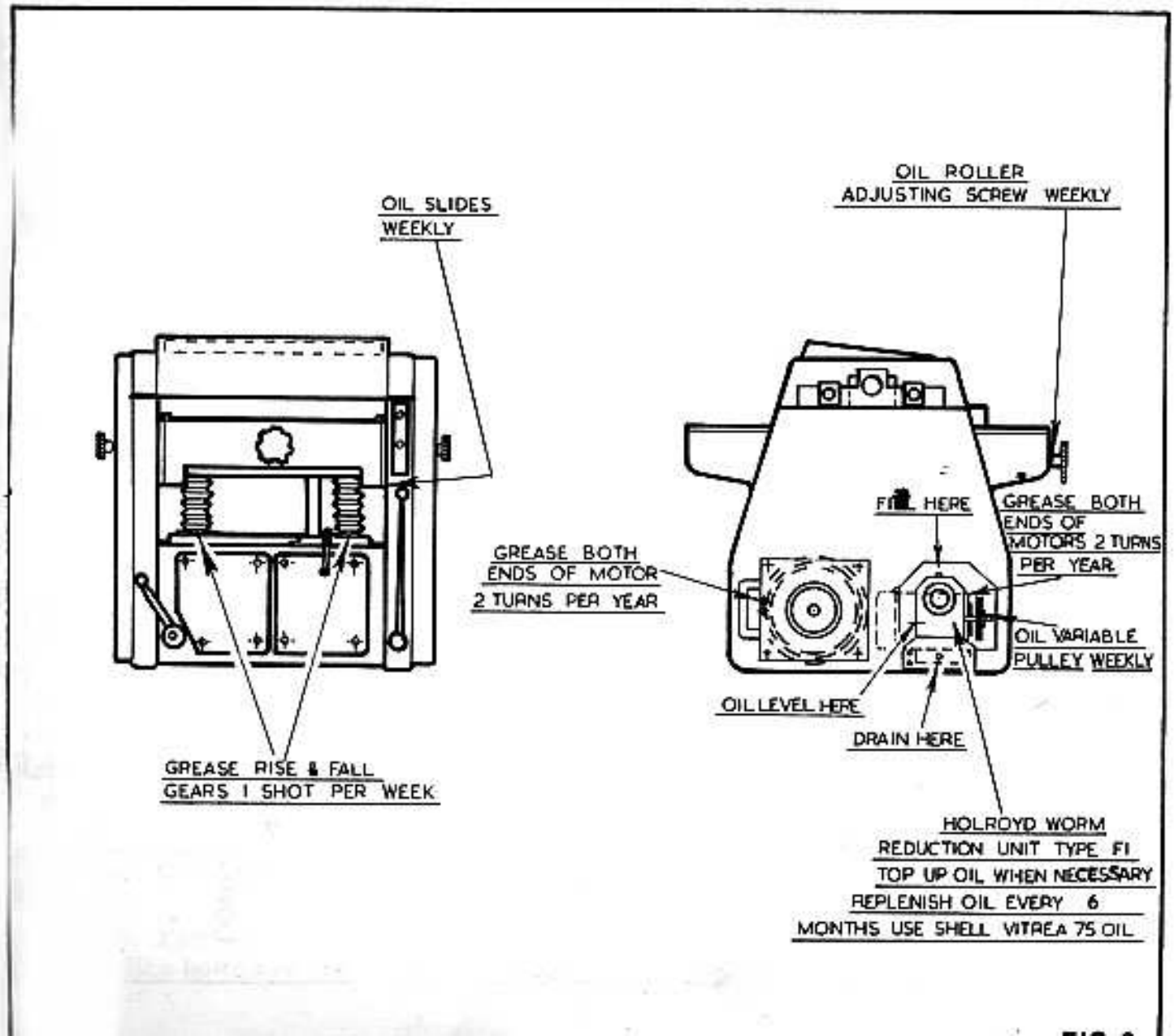

CUTTER SETTING DEVICE
5" DIA CUTTING CIRCLE.
CUTTER BLADE SPRING LOADED

FIG 4.


OIL SLIDES WEEKLY
OIL ROLLER ADJUSTING SCREW WEEKLY
FILL HERE
GREASE BOTH ENDS OF MOTORS 2 TURNS PER YEAR
GREASE BOTH ENDS OF MOTOR 2 TURNS PER YEAR
OIL VARIABLE PULLEY WEEKLY
OIL LEVEL HERE
DRAIN HERE
GREASE RISE & FALL GEARS 1 SHOT PER WEEK
HOLROYD WORM REDUCTION UNIT TYPE F1
TOP UP OIL WHEN NECESSARY
REPLENISH OIL EVERY 6 MONTHS USE SHELL VITREA 75 OIL

Belt Tension

The cutterblock drive is by 3 vee belts from a 7½HP motor. To tension the belts, remove the drive side panel and loosen the 4hexagon head bolts securing the motor mounting plate to the side frame. Move the plate down the slots until the correct tension is reached. When set re-lock the hexagon bolts.

Replace side panel before operating machine.

Feed Chain Tension

Drive to the feed rollers is by roller chain from a two speed motor and reduction gearbox, giving feed speeds of 20 to 60ft per minute (6-18m per minute).

It should be noted that the feed chain must run with sufficient slack to allow the front serrated feed roller to freely lift 5/16" (8mm) from the rest position. To adjust, remove drive side panel and loosen the two hexagon nuts securing the jockey sprocket arm to the side frame and adjust until the required tension is reached. Care must be taken to ensure 5/16" (8mm) lift to feed roller. When set re-lock hexagon nuts.

Replace side panel before operating machine.

Thicknessing Table Rise and Fall Controls

The thicknessing table rises and falls on slides and screws controlled through skew gears and chain drive from the conveniently placed handwheel to the right of the thicknessing table. The table is also fitted with power rise and fall which is operated by the lever on the side frame to the right of the table. The table can be locked in any position by the toggle lever under the table.

The finished thickness of the timber is clearly shown on the rule, on the right hand side frame and indicated by a pointer.

Feed and Table Power Rise and Fall Controls

The feed and table control plate is divided into two separate sections.

1. The table power movement "UP" and "DOWN"
2. The feed speeds "HIGH" and "LOW".

One motor drives both the table rise and fall and the feed works.

To power rise and fall the table, the feed and table control switch must be placed in either "TABLE" "UP" or "DOWN" position. With the locking handle for the table support column loosened the table can now be moved to the required position by operating the lever controlling the powered rise and fall. When desired position is reached the lever can be returned to the neutral position and locking handle relocked.

Note:- When rotary switch is in "TABLE UP" or "DOWN" position the feed works revolve backwards but return to correct direction when the switch is moved into the "FEED" section.

The feed speed required can be selected by setting the feed rotary switch to either "HIGH" or "LOW FEED" position. The lever for power rise and fall should not be moved while the rotary switch is in the "LOW" "FEED" position but only moved in conjunction with the rotary switch in either "TABLE UP" or "DOWN" positions. When the machine is not in use the rotary switch can be moved to the "OFF" position

Thicknessing table rollers

The anti-friction table rollers or bed rollers revolve on sealed for life ball bearings and require no lubrication. These are adjustable simultaneously by means of the hand-wheel at the infeed end of the thicknessing table. Turning the handwheel in a clockwise direction increases the height of the rollers above the table surface.

In all cases the lowest position consistent with good and regular feeding should be used as this will give the best possible results. Should the table rollers be removed for

any reason care must be taken to replace them exactly as before otherwise the settings will be disturbed.

It must be emphasised that a really good surface finish from a thicknessing machine is only possible when the face of the timber resting on the machine table is flat and has a reasonable finish. Wherever practicable this face should be pre-machined on an over-hand jointer or surfacer to remove twist and other irregularities.

Also to assist feeding the under table rollers should be cleaned at regular intervals or resin, etc which tends to build up and thus create an eccentric rolling action to the rollers which in turn give inaccurate and jerky feeding to the timber.

Adjusting bed rollers

It is most important that the bed rollers are parallel to the thicknessing table at all times to ensure good feeding. Should the bed rollers be disturbed for any reason and are incorrectly aligned to the thicknessing table the undermentioned procedure should be followed.

1. Clear thicknessing table of all chippings etc and place a straight edge over both rollers to one side of the table.

2. Check the straight edge is parallel throughout the length of the table, also check the bed rollers are parallel across the width of the table.

3. To adjust the height of the bed rollers raise thicknessing table to approximately the top position and adjust the 4-3/8" whit hexagon head bolts and nuts on the underside of the thicknessing table directly below each end of the bed rollers.

When bed rollers are correctly set ensure all bolts are securely locked in position.

Feed Roller & Pressure Bar Settings.

These are pre-set at the works in accordance with the details given in Fig. 5 and vertical adjustment relative to the cutterblock is neither possible nor necessary provided the cutters are correctly set with the special gauge supplied with the machine.

Should replacement feed rollers or pressure bars be fitted at any time the settings should be very carefully checked with those given in Fig. 5.

Some slight advantage in finish or feed on occasions can be obtained by increasing or decreasing the tension of the pressure bar or feed roller springs.

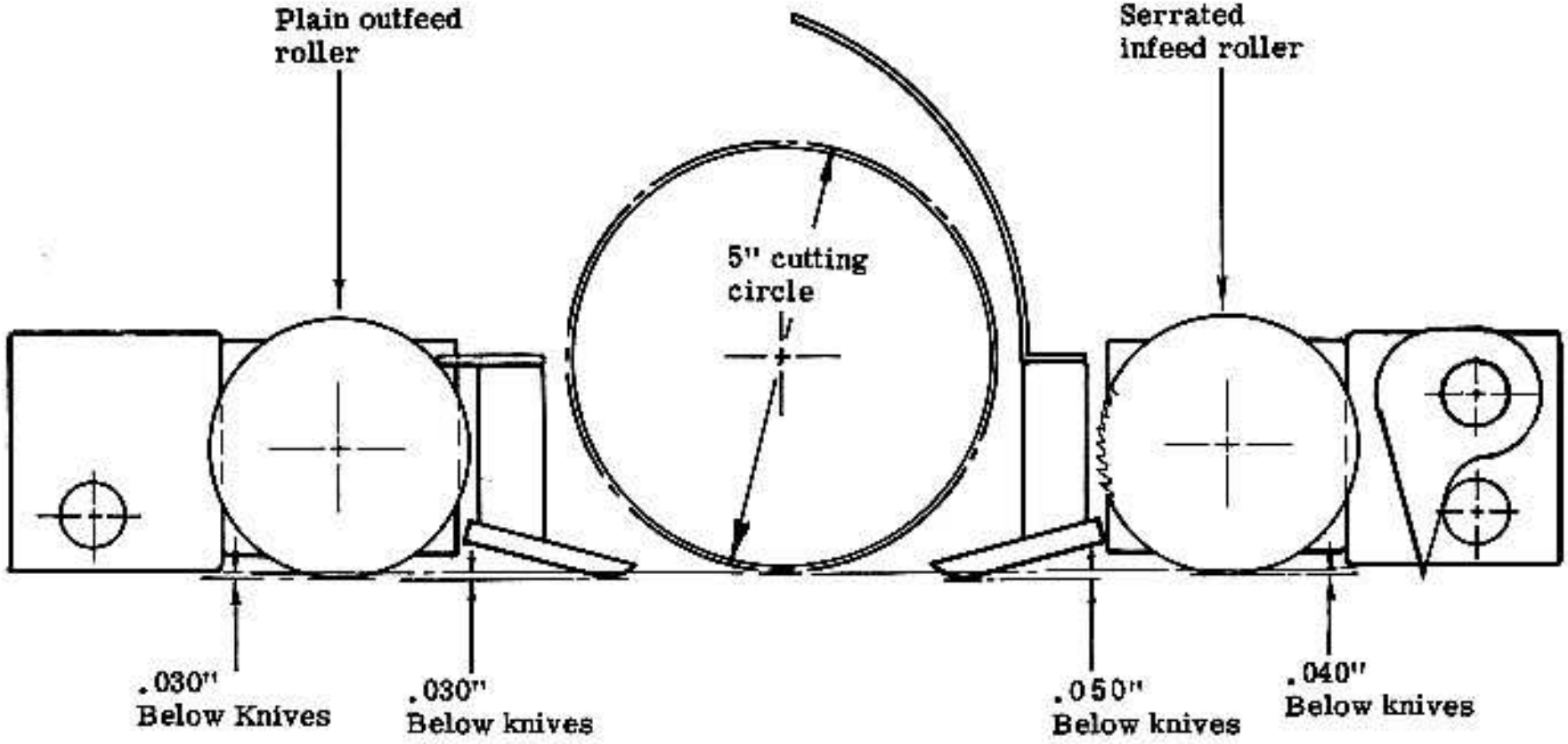
The springs should never be compressed to a point where the feed rollers and pressure bar cannot lift sufficient to allow the maximum cut to be taken.

Feed Drive Control

The drive between the 1horsepower two speed motor and reduction gearbox is by vee belt and variable pulley to obtain the feed speeds of 20 to 60ft per minute (6-18m.) per minute.) The speed of the motor is selected by the rotary switch which is positioned on the right hand side of the thicknessing table. This also determines the direction of the power drive to the table. The motor is movable on a pivot by means of the lever on the left hand side frame. It should be noted that the machine should be run through the range of feed speeds daily to ensure the variable pulley is working efficiently.

Cutter Setting

The cutters are held in the cutterblock by a steel clamping bar secured with 9 - $\frac{1}{2}$" whit heat treated socket head screws. When the locking screws are released the cutter is ejected slightly by small leaf springs. This is to facilitate easy setting with the special gauge supplied. This sets the cutters to 5" (127mm) cutting circle diameter and should any other method of cutter setting be employed the amount of cutter projection must correspond to that given by the setting gauge supplied.



FEED ROLLER & PRESSURE BAR SETTINGS

FIG 5.

Note:-

It is important that the hexagon socket in the knife locking screws is kept clear of all gum and dirt to ensure easy removal of screws when changing knives.

Always ensure that the hexagon key is fully inserted in the screw when locking or unlocking the cutters. This avoids damage to the hexagon sockets.

Periodically examine screws for damage or cracks particularly in the hexagon hole. Any doubtful screws should be replaced and all screws well lubricated with "Molyslip" or similar oil, before replacing.

To remove cutters and re-set with the "Bursgreen" cutter setting gauge proceed as follows:-

1. Lift the cutter clear of the cutterblock and swing to the rear of the machine.
2. Turn cutterblock to a position suitable for access to securing screws. Slacken the securing screws until the knife is just free of the cutterblock. Care should be taken when loosening the last screw as the knives are spring loaded.
3. To re-set the knives. Place the knife in the slot making sure that all faces are clean and the clamping bar free from burrs. Press the knife into the cutterblock and lock the setting device to the cutterblock body with the knurled headed screws supplied until the predominant pads rest on the cutterblock body as shown in Fig. 4. Position the knife central in the cutterblock.
4. Tighten the securing screws. The cutting edge will now be parallel to the cutterblock body and the thicknessing table.
   Check all securing screws have been fully tightened before proceeding to set the rest of the knives.

General Hints

1. When thicknessing long lengths of timber always support after the machine table, otherwise a step will appear on either or both ends.
2. When a smooth finish is required use a slow feed speed. For roughing when the finish is not important use a fast feed speed.
3. For the best results always feed the timber to cut with the grain.
4. Should the timber stick when thicknessing probable causes are given below:-
   a) The table rollers are set too low in table
   b) The spring pressure is too great on the pressure bars and too light on the feed rollers
   c) The timber is too roughly sawn or badly twisted and requires pre-facing.
   d) The timber may be tapered in its length and thus wedged under the cross tie bar.

SPARES LIST FOR 24" BAO

1 pair HSS planing cutters $24\frac{1}{2}$" long x $1\frac{1}{2}$" wide x 1/8" thick
1 - Cutter setting device
1 - Clutch control cable B-1020/11
2 - Table R & F clutch discs A-1045/109

Bearings Used

Cutterblock bearings :- 3 - Fischer 6208FF sealed for life bearings
Table R & F assembly :- 2 - SKF 010 Thrust races
2 - SKF 08 Thrust races
Under Table Rollers :- 4 - SKF 6203 2RS Sealed for life bearings

3 - Fenners alpha 670 spacesaver vee belts cutterblock drive
1 - Goodyear 1422V290 (Belt for variable feed drive)

1 - Fenners alpha 280 spacesaver vee belt, 2 step feed drive

Sprockets Pulleys and Chain for 50 cycle machine

1 - 25 tooth cast iron clutch sprocket B-1045/5
1 - 19 tooth cast iron rise and fall sprocket B-1045/49
1 - 13 tooth idler sprocket, 7/8" bore A-1033/233
2 - 38 tooth cast iron roller sprocket $1\frac{1}{4}$" bore A-1002/102
1 - 38 tooth cast iron R & F sprocket 1" bore A-1002/108
1 - 19 tooth cast iron jocket sprocket 7/8" bore A-1031/59
1 - 36/19 tooth cast iron gearbox and feed sprocket B-1045/22
1 - Cutterblock pulley B-1045/24
1 - Cutterblock motor pulley B-1045/25
1 - Bursgreen 5" dia adjustable pulley
1 - Gearbox input pulley B-1045/295A
1 - Feed motor pulley (2step drive) B-1045/15 (Special)
1 - Feed gearbox pulley (2 step drive) B-1045/14 (Special)
1 - Renolds chain, Cat. No. 110046
Feed roller drive - 89 links including joining link
Table hand R & F - 32 links including joining link
Table power R & F - 29 links including joining link

50 cycle electrics

1 - Brook $7\frac{1}{2}$HP motor, frame D.213, 3000rpm, T.E.F.C. flange mounted no spigot, star delta wound, 3phase.
1 - Brook two speed motor, frame 80b, 1,500 and 3,000 rpm, T.E.F.C. ·9/1·1HP, foot mounted
1 - Chilton rotary switch ref. C16.8AF443E with R.G. 001 black handle.

Voltage 380/420/3phase 50 cycles 7·5HP/1·1/0·9HP D.O.L.

1 - MTE UCO unit pack 1 size 5
1 - " " " " 2 " 5
1 - " " " " 3 " 10
2 - " Overload units Vol 1/2
1 set - MTE Heater elements 7·5 amps 95 000 556 006
1 set - " " " 2·2 amps 95 000 555 002

Voltage 340/380 3phase, 50cycles 380/420 3phase, 50 cycles 7·5HP/1·1/0·9HP

Star Delta

3 - MTE UCO Units pack 1 size 5
3 - " " " " 2 " 5
3 - " " " " 3 " 10
1 - " " " " 4 " 5
1 - " " " " 5 " 5
1 - " " " " 7 " 10
2 - " Overload units Vol 1/2
1 set - MTE Heater elements 5amps 95 000 556 004
1 set - " " " 2·2amps 95 000 555 002

Special for 60 cycle machine

Sprocket Pulleys and Chains

2 - 38 tooth cast iron feed roller sprocket, $1\frac{1}{4}$" bore, B-1002/108
1 - 38 tooth cast iron rise and fall sprocket 1" bore B-1002/108
1 - 36/17 tooth cast iron gearbox and feed sprocket B-1045/171
1 - 19 tooth cast iron jockey sprocket B-1031/59

1 - 25 tooth cast iron clutch sprocket B-1045/5
1 - 19 tooth cast iron R & F sprocket B-1045/49
1 - 13 tooth idler sprocket 7/8" bore A-1033/233
1 - Cutterblock pulley B-1045/145
1 - Cutterblock motor pulley B-1045/146
1 - Variable feed pulley, picador 5" dia autojust pulley Fig. 98
1 - Feed gearbox pulley, picador 6" dia pulley Fig. 1A 5/8" bore and keyway
1 - Feed motor pulley (2 step drive) B-1045/15 (Special)
1 - Feed gearbox pulley (2step drive) B-1045/14 (Special)
1 - Renolds chain Cat. No. 110046
Feed roller drive - 87 links including joining link
Table hand R & F - 32 links including joining link
Table power R & F - 29 links including joining link

Special 60 cycle electrics

1 - Brook 7½HP motor, frame kompack L213TD, 3,600rpm T.E.F.C. flange mounted no spigot, 3phase
1 - Brook two speed feed motor, frame 80B, 1,800 and 3,600 rpm T.E.F.C. ·9/1·1HP foot mounted.

Voltage 550/3phase 60 cycles 7·5HP/1·1/0·9HP

2 - MTE UCO Units pack 1 size 5
2 - " " " " 2 " 5
2 - " " " " 3 " 10
2 - " Overload units Vol 1/2
1 set - MTE Heater elements 7·5amps 95 000 556 006
1 set - " " " 1 5 amps 95 000 556 007

Voltage 208/220/3phase 60 cycles 7·5HP/1·1/0·9HP

1 - MTE UCO Units pack 1 size 5
1 - " " " " 2 " 5
1 - " " " " 3 " 5B
1 - " " " " 1 " 20
1 - " " " " 2 " 20
1 - " " " " 3 " 20
1 - " " " " 8 " 203
2 - " Overload units Vol 1/2
1 set - MTE Heater elements 16·5amps 95 000 558 000
1 set - " " " 3·3amps 95 000 556 003

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The feed speed required can be selected by setting the feed rotary switch to either "HIGH" or "LOW FEED" position. The lever for power rise and fall should not be moved while the rotary switch is in the "LOW" "FEED" position but only moved in conjunction with the rotary switch in either "TABLE UP" or "DOWN" positions. When the machine is not in use the rotary switch can be moved to the "OFF" position

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