



**ULTRACARE**  
*At the Cutting Edge of Industry*

# **BT500**

# **BTS500**

## **HIGH SPEED PLANER**

## **AND THICKNESSER**

**T: 0116 2769111**

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**OPERATING & MAINTENANCE MANUAL**  
**No.B543**

## **SAFETY**

- 1. Read Instruction Book.**
- 2. Securely Lock Cutters.**
- 3. Set Guards Correctly.**
- 4. Select Correct Speed.**
- 5. Use Feeding Devices Where Possible.**
- 6. Refer To HSW Booklet No.41. (in UK) For Safety In The Use Of Woodworking Machinery.**

# BT 500

## PLANER & THICKNESSER

FEED SPEED SCALE

ROBUST LID FOR ACCESS  
TO CUTTERBLOCK

FEED SELECTOR SWITCH

CUTTERBLOCK START-STOP SWITCH

UNDER TABLE ROLLER  
ADJUSTING LEVER

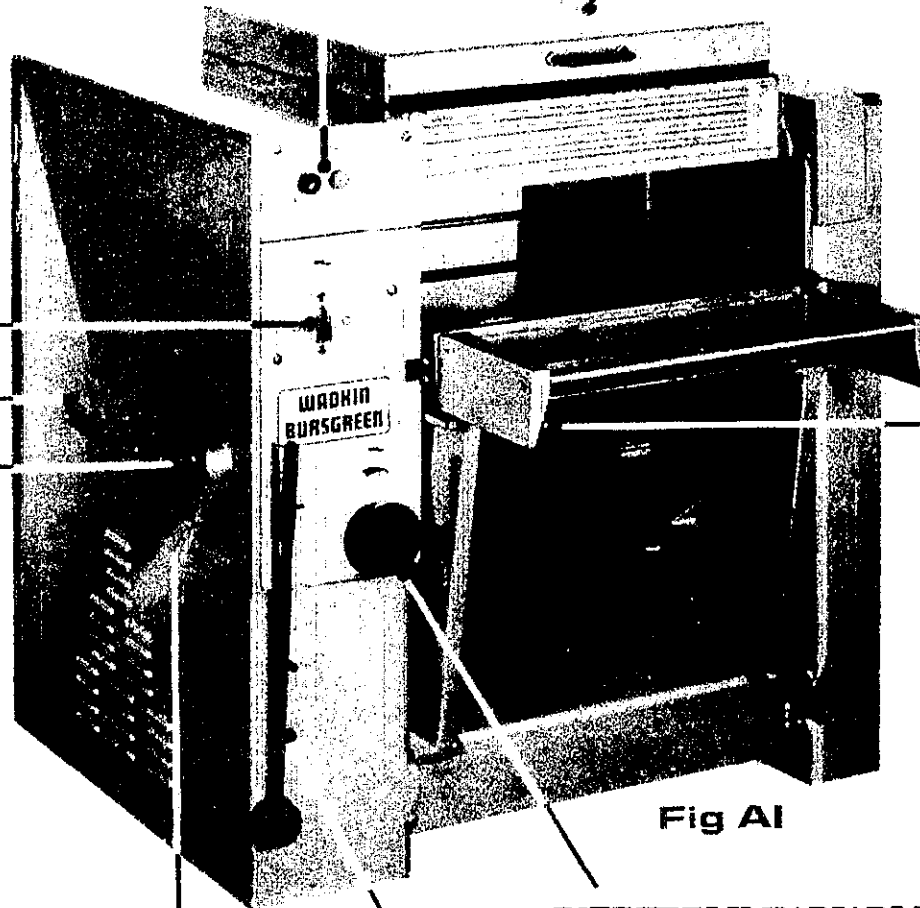


Fig A1

INFINITELY VARIABLE FEED  
SPEED CONTROL

POWER TABLE RISE  
AND FALL LEVER

TABLE RISE AND FALL MICRO  
ADJUSTMENT HANDWHEEL

ROBUST CONSTRUCTION  
THROUGHOUT

LOCK FOR TABLE RISE AND FALL  
MICRO ADJUSTMENT HANDWHEEL

# **SECTIONS**

<b>SECTION A</b>	<b>PRINCIPAL DIMENSIONS &amp; CAPACITIES</b>
<b>SECTION B</b>	<b>INSTALLATION</b>
<b>SECTION C</b>	<b>DESCRIPTION &amp; OPERATION</b>
<b>SECTION D</b>	<b>MAINTENANCE</b>
<b>SECTION E</b>	<b>SPARE PARTS LISTS</b>

## SECTION A

### PRINCIPAL DIMENSIONS & CAPACITIES

Capacity of machine -----	508 x 230	20" x 9"
Feed of machine -----	6 - 18 metres/min	20-60ft/min
H.P. of feed motor -----	.75kw	1HP
H.P. of cutterblock motor -----	5.5kw	7.5HP
Speed of cutterblock -----	5,000rpm	5,000rpm
Speed of motor : 50 cycle -----	3,000rpm(syn)	3,000rpm(syn)
: 60 cycle -----	3,600rpm(syn)	3,600rpm(syn)
Dia. of cutting circle -----	115	4½"
Dia. of feed rollers -----	75	3"
Yield of complete infeed roller -----	10	3/8"
Minimum stock length -----	292	11½"
Maximum stock removal -----	10	3/8"
Length of table -----	765	30"
Floor space -----	1205 x 944	3'-11½" x 3'-1"
Nett weight approx. -----	635 kg	1400lb
Gross weight approx. -----	749 kg	1652lb
Shipping dimensions -----	1.47m <sup>3</sup>	52ft <sup>3</sup>

#### Bearings Used

1-SKF 6202-2RS -----	Feed Motor traverse screw
2-SKF 51205 -----	Rise and fall cross shaft
2-SKF 51104 -----	Rise and fall screw
4-SKF 6203-2RS -----	Under table rollers
2-SKF 6207-2RS -----	Cutterblock
2-Hoffman XLM 18 -----	Rise and fall screw
1-INA AXK 2542 -----	Clutch thrust bearing
2-INA AS 2542 -----	Clutch bearing pressure plates

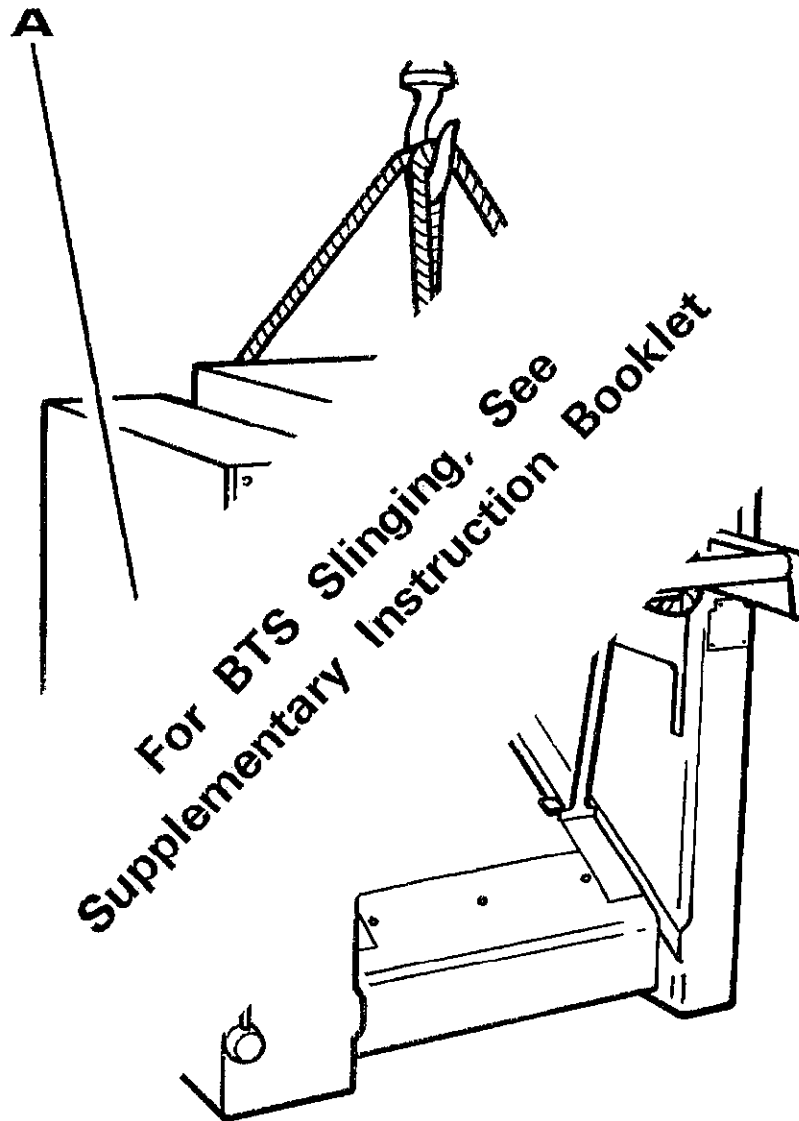


Fig B1

**IMPORTANT**  
**ENSURE DAMAGE WILL NOT BE CAUSED**  
**TO MACHINE DURING SLIDING OPERATION**

## SECTION "B" INSTALLATION

### SLINGING

#### FIG. B1.

1. Manually rise the table by handwheel "A" until the table reaches the stops in its uppermost position. Place sling under table as shown in FIG. B1 ensuring damage will not be caused to the machine during slinging.
2. Move machine to required position.

### CLEANING

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

### MARKING OUT

#### FIG. B2.

1. Mark out floor and drill to suit 4 foundation bolts. These bolts can be supplied at an additional extra charge.
2. Level table by packing under base.

### WIRING DETAILS

#### FIG. B3.

The motor and control gear have been wired in before despatch. All that is required is to connect the power supply to the isolating switch. 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 on 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.
5. Check all connections are sound.
6. Check the rotation of both motors for the correct direction. If these are incorrect reverse any two of the line lead connections.

Voltage	H. P.		Phase	Cycles	SWG Tinned Copper Wire	
	Block - Feed				Amps	-
380/420.	7½	1	3	50	38	19
380	7½	1	3	50	38	19
208/220.	7½	1	3	60	65	17
550	7½	1	3	60	24	22
220	7½	1	3	50	65	17
440	7½	1	3	60	29	21

Fuse capacity should not exceed three times full load current of the machine.  
NOTE: DUST EXHAUST Information is available on request.

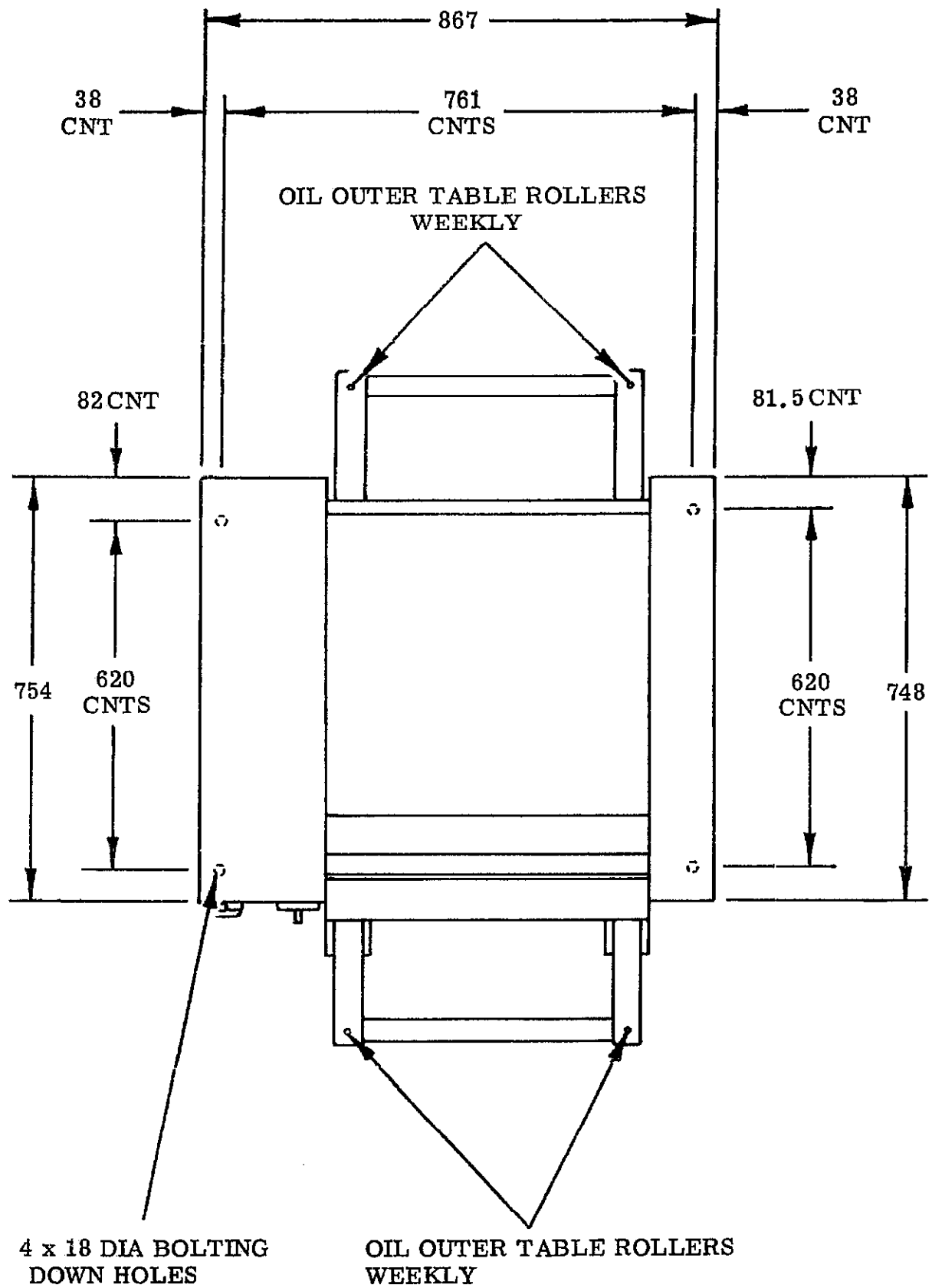


Fig B2



# MEM AUTO LINE - DIRECT ON LINE STARTER STANDARD WIRING DIAGRAM

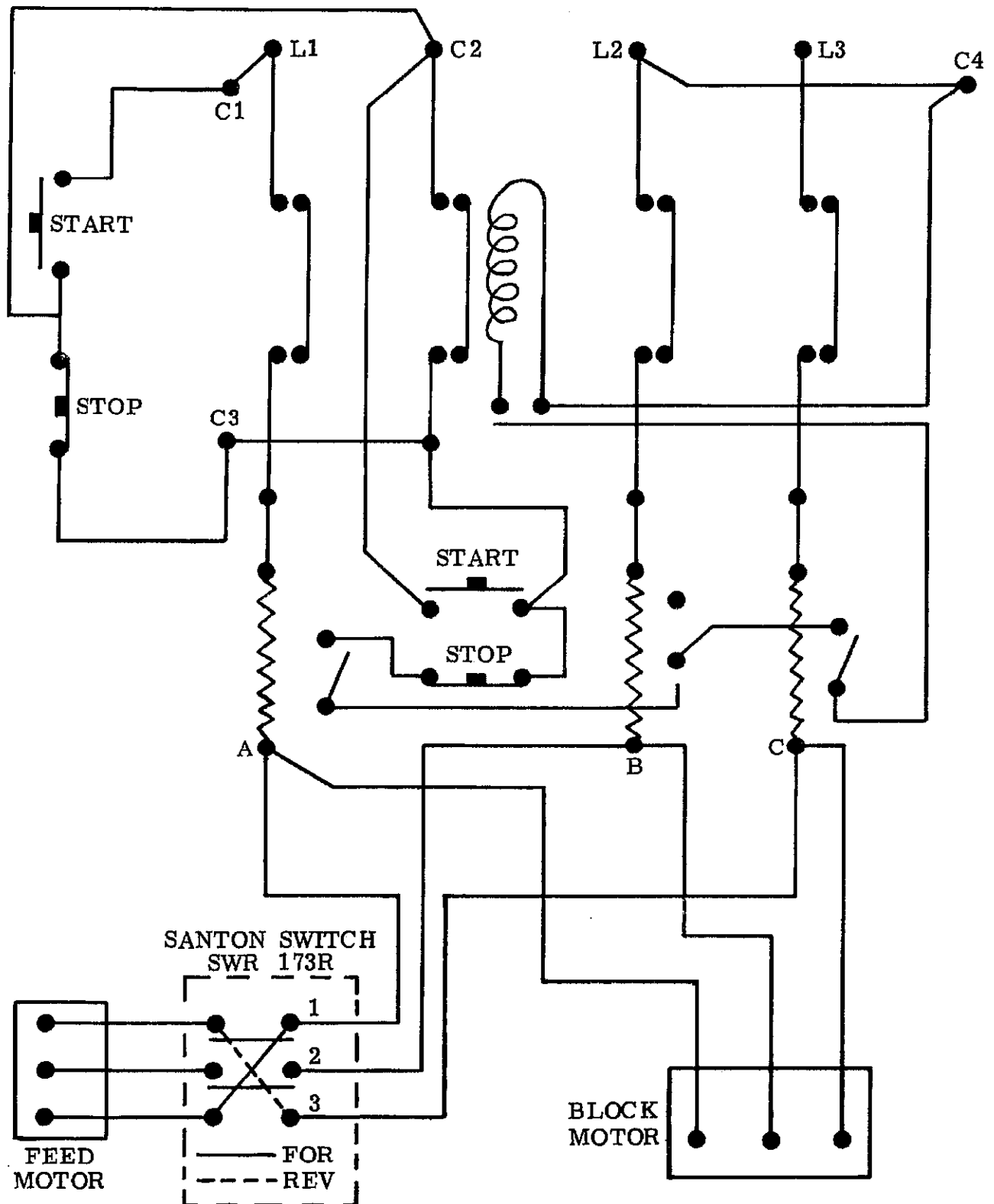
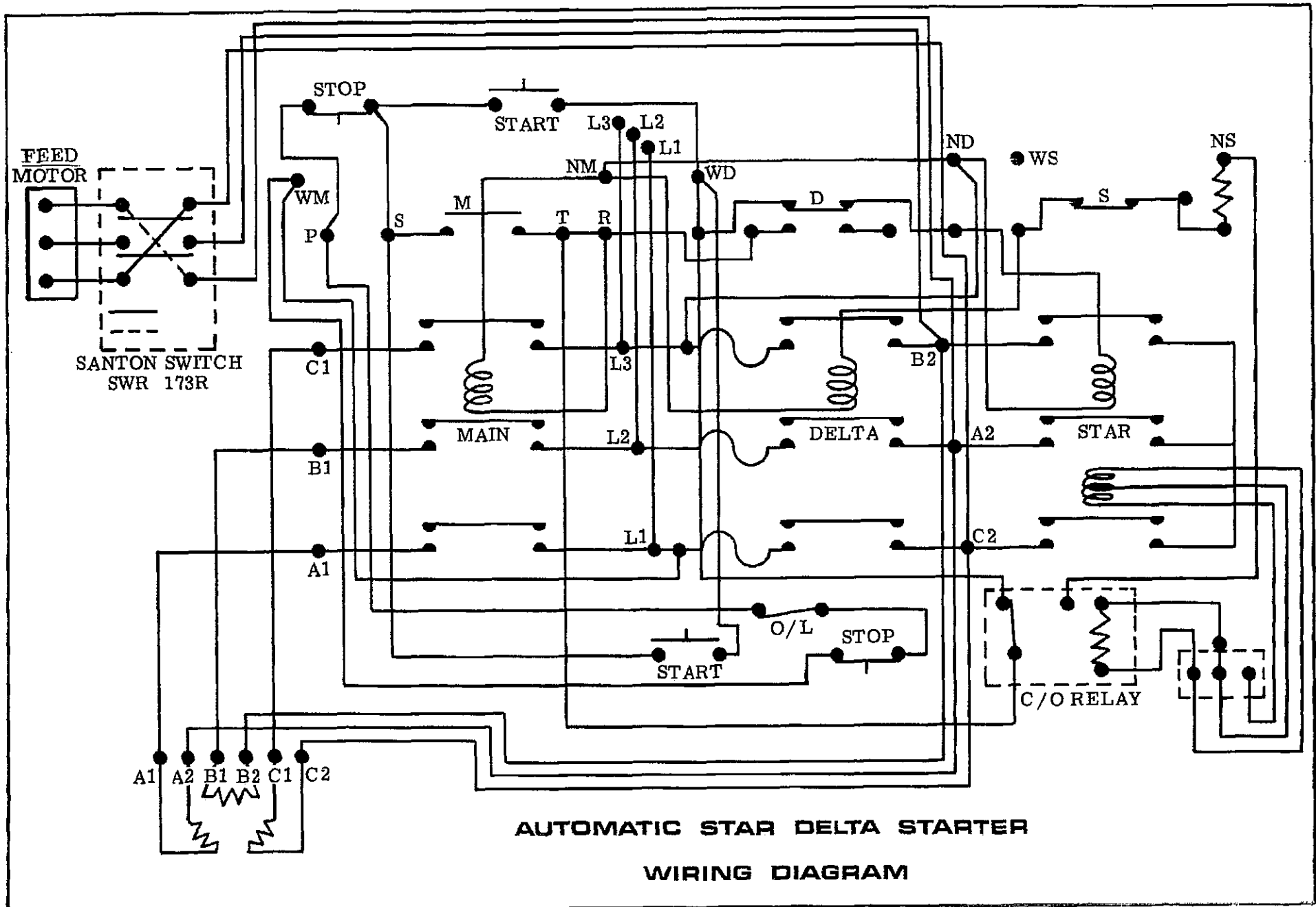
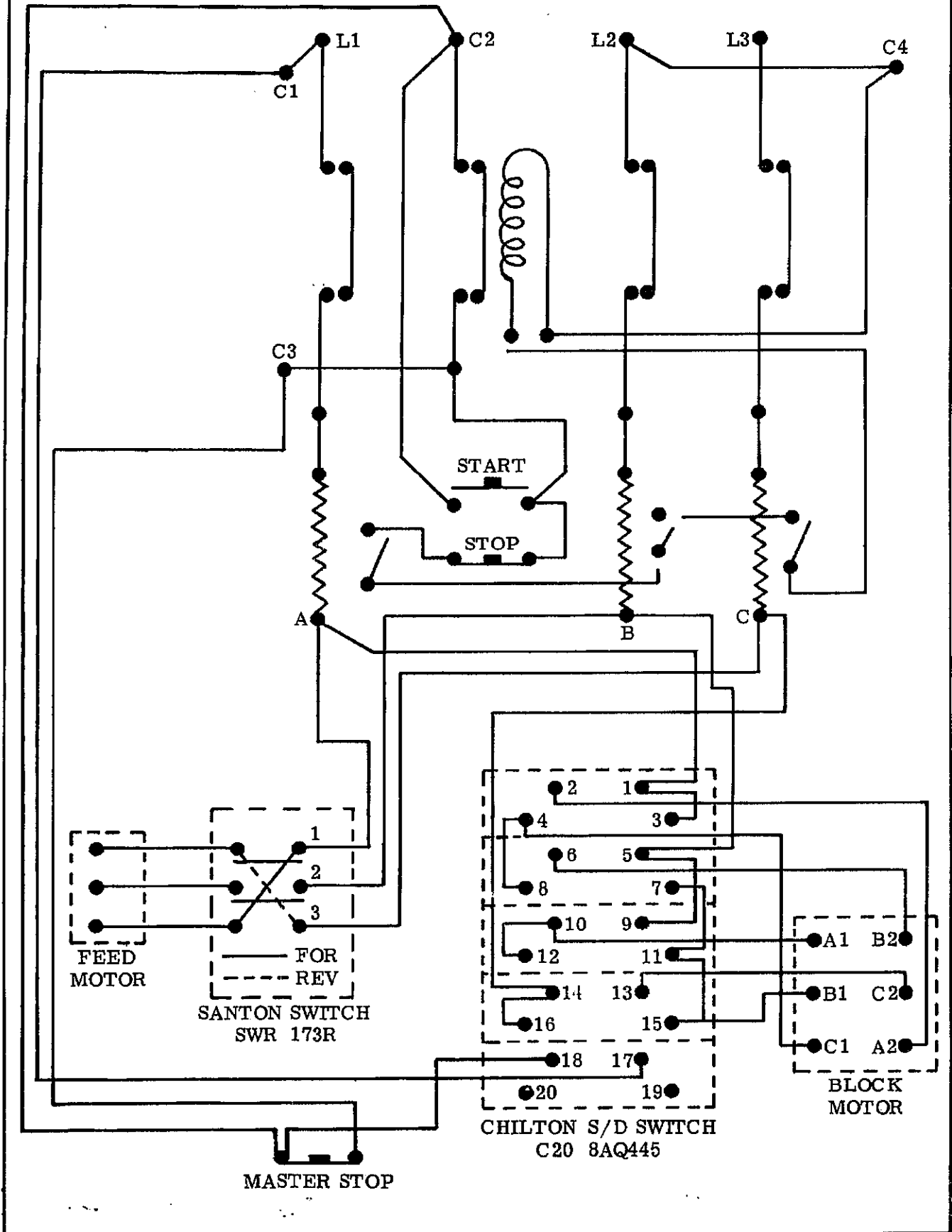


Fig B3



# STAR DELTA SWITCH ( SPECIAL )



## SECTION "C" DESCRIPTION AND OPERATION

### PREPARATION FOR OPERATION

FIG. C1.

1. Remove filler plug "A" from top of reduction gearbox "B" and oil level plug "C" from side of gearbox. Check that the oil is up to the oil level hole "C". Top up if necessary using correct grade of oil.  
See APPROVED LUBRICANTS, page 12.  
Replace oil filler plug "A" and oil level plug "C".
2. Remove filler "D" from top of variable pulley "E" and check that oil level is to within  $\frac{1}{2}$ " from top of hole. Top up, if necessary, using correct grade of oil. See APPROVED LUBRICANTS, page 12.
3. FIG. C2 and C3. Lubricate machine according to lubrication operations No's. 1 to 7. See APPROVED LUBRICANTS, page 12.
4. It is advisable to keep all bright parts covered with a thin film of oil to prevent rusting.

### CONTROLS AND OPERATION

FIG. C3.

1. The control panel is situated on the front left side of the machine with the following controls incorporated in a grouped layout:-
  - A. CUTTERBLOCK START-STOP SWITCH.
  - B. FEED SELECTOR SWITCH.
  - C. TABLE RISE AND FALL MICRO ADJUSTMENT HANDWHEEL.
  - D. LOCK FOR TABLE RISE AND FALL MICRO ADJUSTMENT HANDWHEEL.
  - E. POWER TABLE RISE AND FALL LEVER.
  - F. INFINITELY VARIABLE FEED SPEED CONTROL.
  - G. UNDER TABLE ROLLER ADJUSTING LEVER.

#### IMPORTANT NOTES:-

The FEED SELECTOR SWITCH works in conjunction with the POWER TABLE RISE AND FALL LEVER. When the switch is pointing in the upward position and the power table lever operated, the table will rise until the power table lever is released.

With the switch in the downward position the procedure is the same only the table falls.

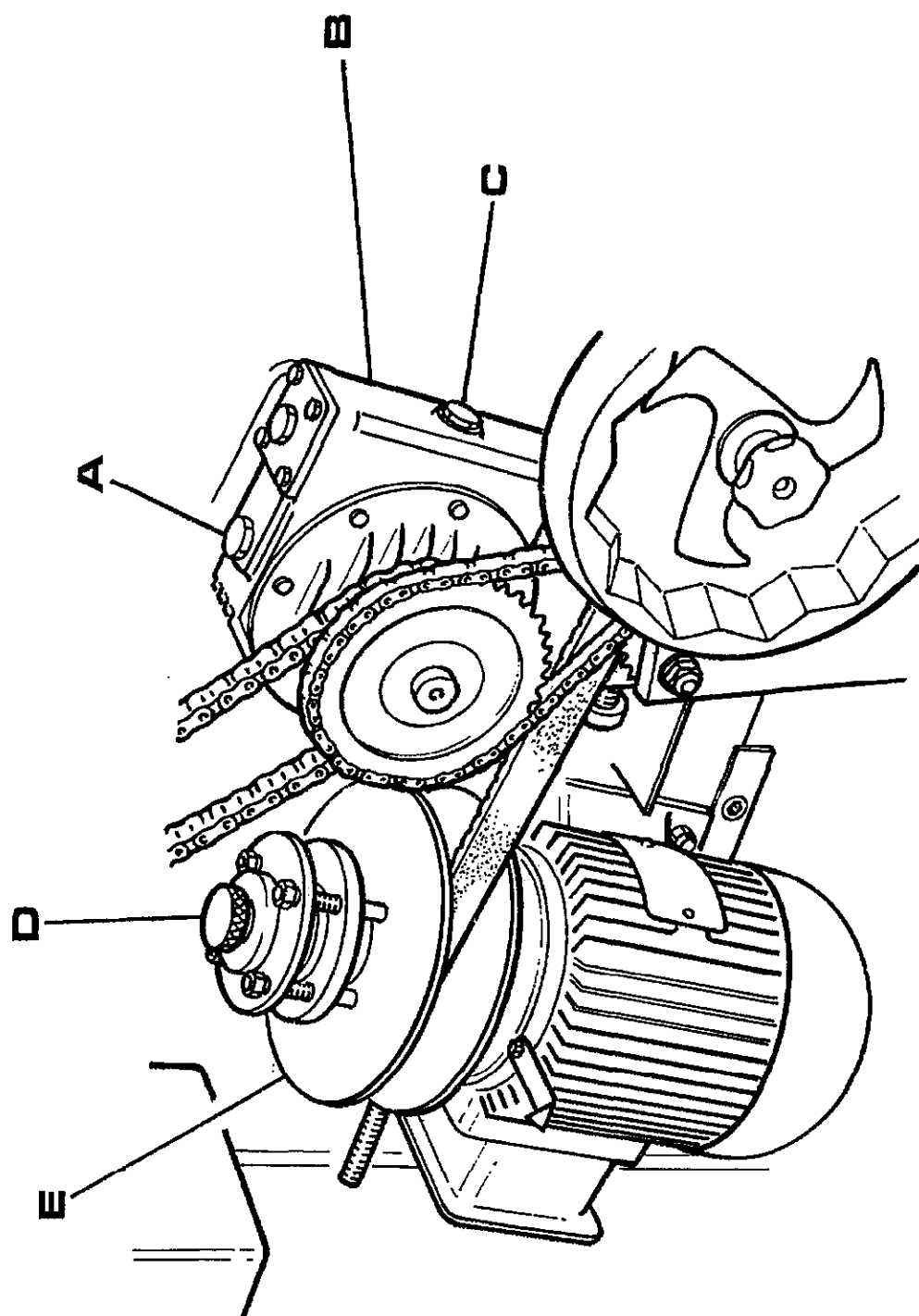
Normal feeding is attained with the feed selector switch in the up position.

NOTE : The feed is reversed when the feed selector switch is in the down position. The feed is OFF when the switch is in the horizontal position.

When altering the INFINITELY VARIABLE FEED SPEED CONTROL, the feed motor must be running.

The UNDER TABLE ROLLER ADJUSTING LEVER readily selects the correct roller position for maximum traction.

Fig C1



TYPE FV HOLROYD REDUCTION BOX  
(20.5 : 1 REDUCTION). USE CASTROL ALPHA 617 (OR EQUIVALENT)  
**5** CHECK OIL IN REDUCTION BOX MONTHLY

**4**  
CHECK OIL IN VARIABLE PULLEY  
MONTHLY

**3**  
OIL OUTER TABLE ROLLERS WEEKLY

1342.5

FEED

982.5

869.5  
CNT

1205

**1** GREASE RISE AND FALL GEARS  
WEEKLY

**2** OIL RISE AND FALL SCREWS  
WEEKLY.

**7**  
FEED MOTOR - BROOKS D80a  
(1HP - .75KW) 1,500 RPM  
GREASE BOTH ENDS OF  
MOTOR 2 TURNS EVERY  
6 MONTHS

Fig C2

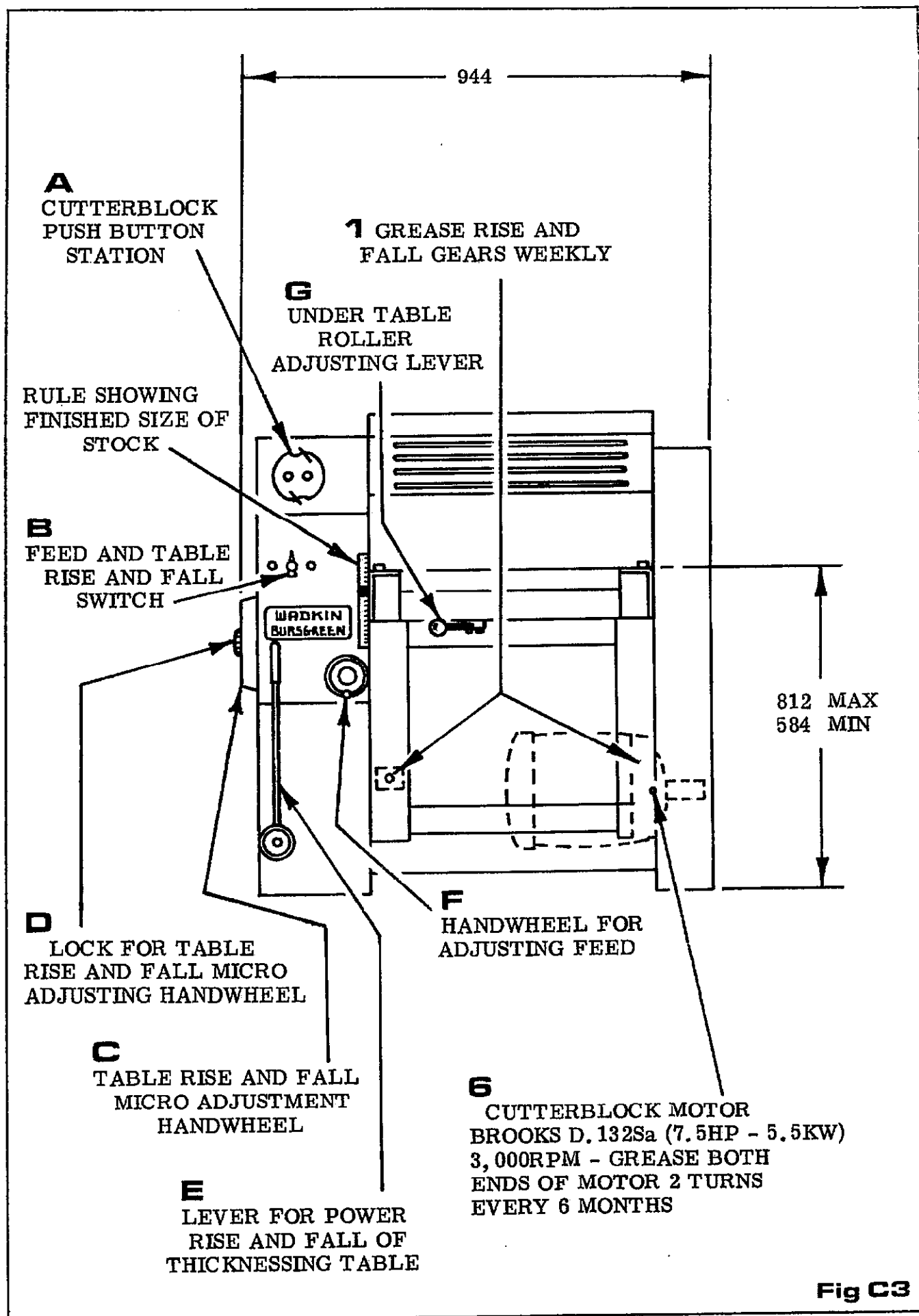


Fig C3

## SECTION "D" MAINTENANCE

All adjustments and alignments following have been carefully set and checked and the complete machine thoroughly tested before despatch from the works.

During the first few weeks of operation and at regular intervals afterwards certain items such as belt tension and chain tension should be checked carefully. When adjustments are necessary, proceed in accordance with the relative instructions given.

### LUBRICATION

FIG. C2 & C3.

#### WEEKLY

1. GREASE RISE AND FALL GEARS.
2. OIL RISE AND FALL SCREWS.
3. OIL OUTER TABLE ROLLERS.

#### MONTHLY

4. CHECK OIL IN VARIABLE PULLEY IS TO WITHIN  $\frac{1}{2}$ " FROM TOP OF FILLER. TOP UP IF NECESSARY.
5. CHECK OIL IN REDUCTION GEARBOX IS UP TO OIL LEVEL HOLE. TOP UP IF NECESSARY.

#### 6 MONTHLY

6. GREASE BOTH ENDS OF CUTTERBLOCK MOTOR:- 2 TURNS.
7. GREASE BOTH ENDS OF FEED MOTOR:- 2 TURNS.

TYPE OF OIL RECOMMENDED FOR GENERAL USE:- CASTROL MAGNA ED

TYPE OF OIL RECOMMENDED FOR REDUCTION GEARBOX } CASTROL ALPHA  
 TYPE OF OIL RECOMMENDED FOR VARIABLE PULLEY } 617 (OR EQUIV').

TYPE OF GREASE RECOMMENDED:- CASTROL SPHEEROL AP3.

### TYPE FV HOLROYD REDUCTION BOX

NOTE: After about 200 hours running with a new gear it is desirable to drain and flush out the original charge of oil and refill with clean oil, after which the oil need only be changed after long intervals. Regular inspection of oil level and topping up when necessary is however important.

### TABLE ROLLERS

FIG. D1.

The anti-friction table rollers or bed rollers revolve on sealed for life bearings which require no lubrication. These rollers are automatically adjusted in relation to the table surface by a single operating lever "A" at the infeed end of the table.

Under table roller height depends on the stock being machined.

The extremes of height being for narrow wet and soft material which allow the rollers to sink into the material considerably and still allow the bottom of the stock to ride on the table surface.

The level position of the rollers caters for the opposite extremes of wide hard dry material which will not permit the rollers to sink into it.

Infinite variation therefore permits correct setting for all classes of timber.

The general rule for setting being that the bottom rollers should be high enough to relieve the friction between table and stock WITHOUT the material losing contact with the table surface.



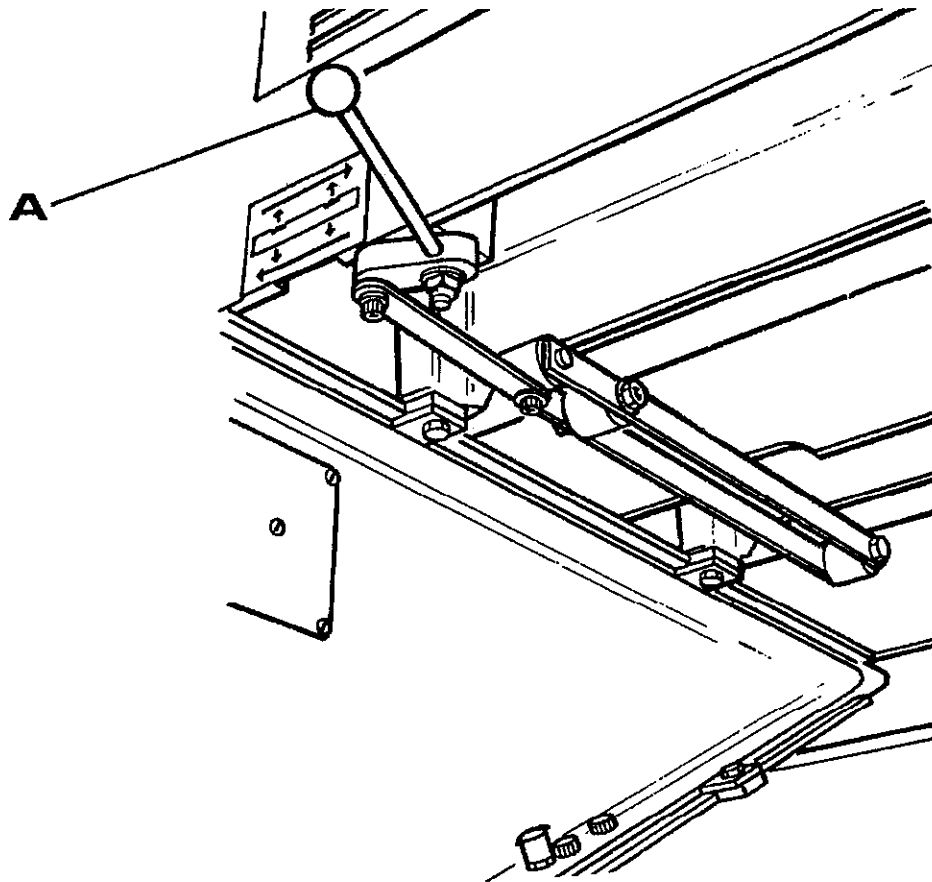
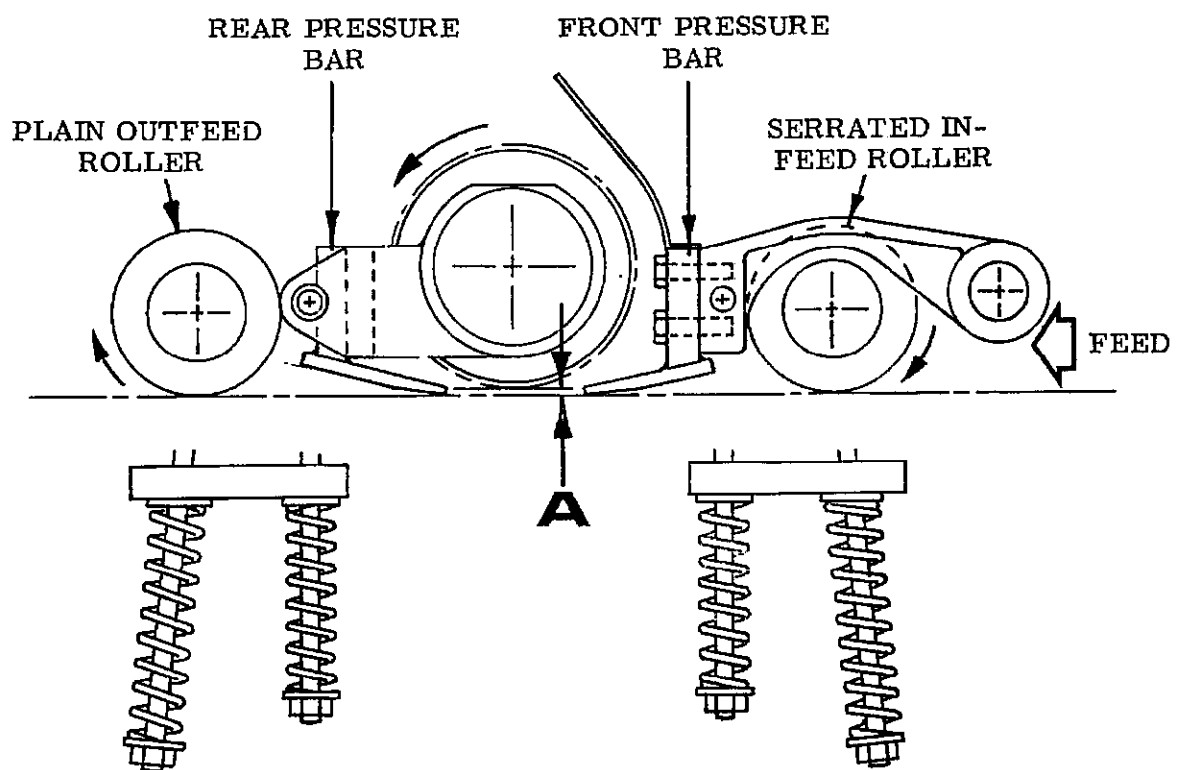


Fig D1



A = FEED ROLLERS AND PRESSURE BARS  
SET .6MM (.025") BELOW CUTTING CIRCLE.

Fig D2

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 setting will be disturbed.

It must be emphasised that a really good surface finish from a thickening 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 a overhand jointer, or surfacer to remove twist and other irregularities.

## FEED ROLLER AND PRESSURE BAR SETTINGS

### FIG. D2.

These are pre-set at the works and vertical adjustment relative to the cutter-block is neither possible nor necessary provided the cutters are correctly set with the special setting guage supplied with each machine. Should replacement feed rollers or pressure bars be fitted at any time, the settings should be very carefully checked with FIG. D2.

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

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

## BELT TENSION

### FIG. D3.

The cutterblock drive is by three Vee belts from a  $7\frac{1}{2}$ HP motor. Tension is effected to these belts by adjusting motor. To adjust, loosen four aerotight nuts "A" then proceed to turn hexagon head nut "B" until required tension is reached then relock nuts "A".

## FEED CHAIN TENSION

### FIG. D4.

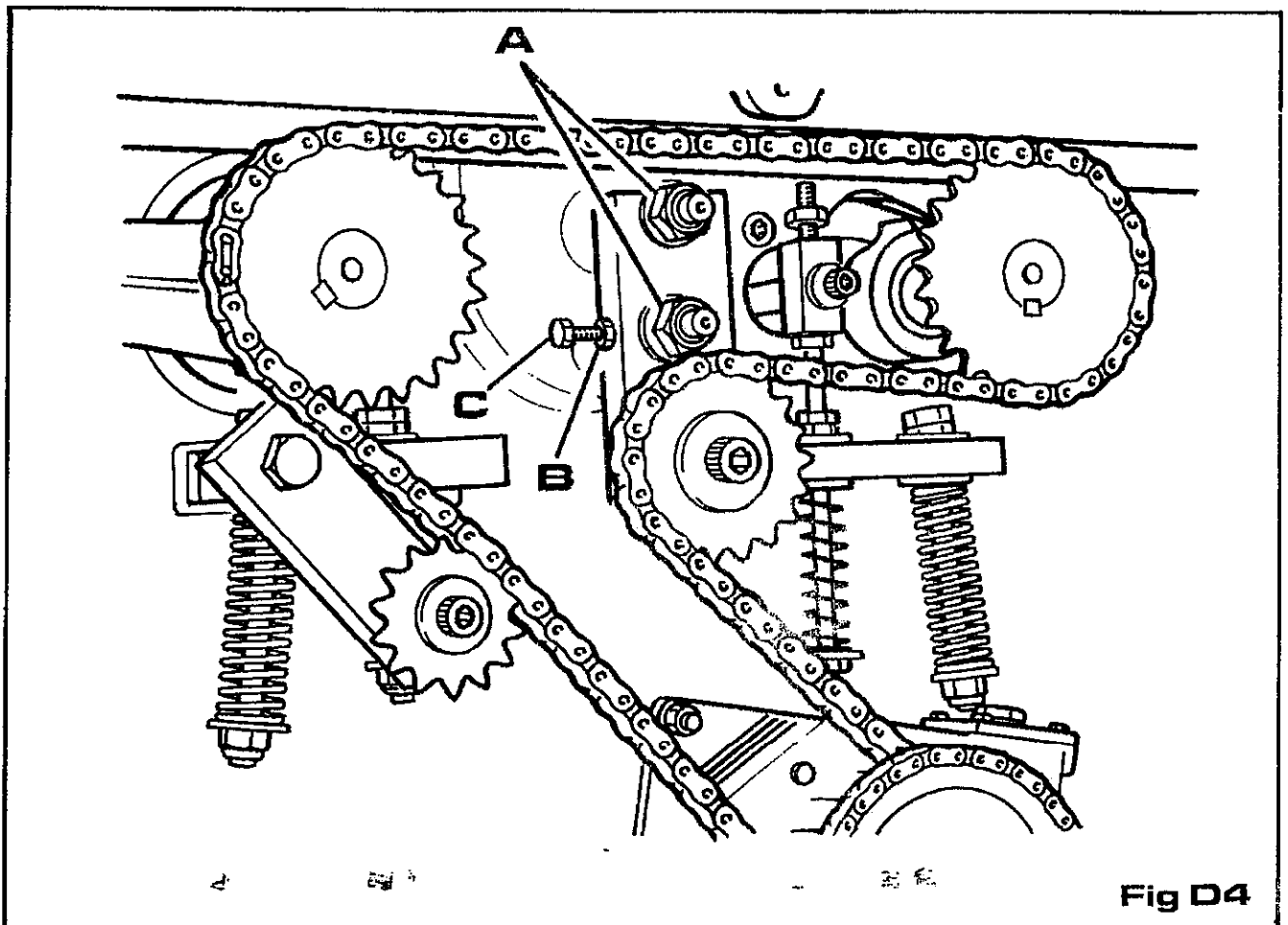
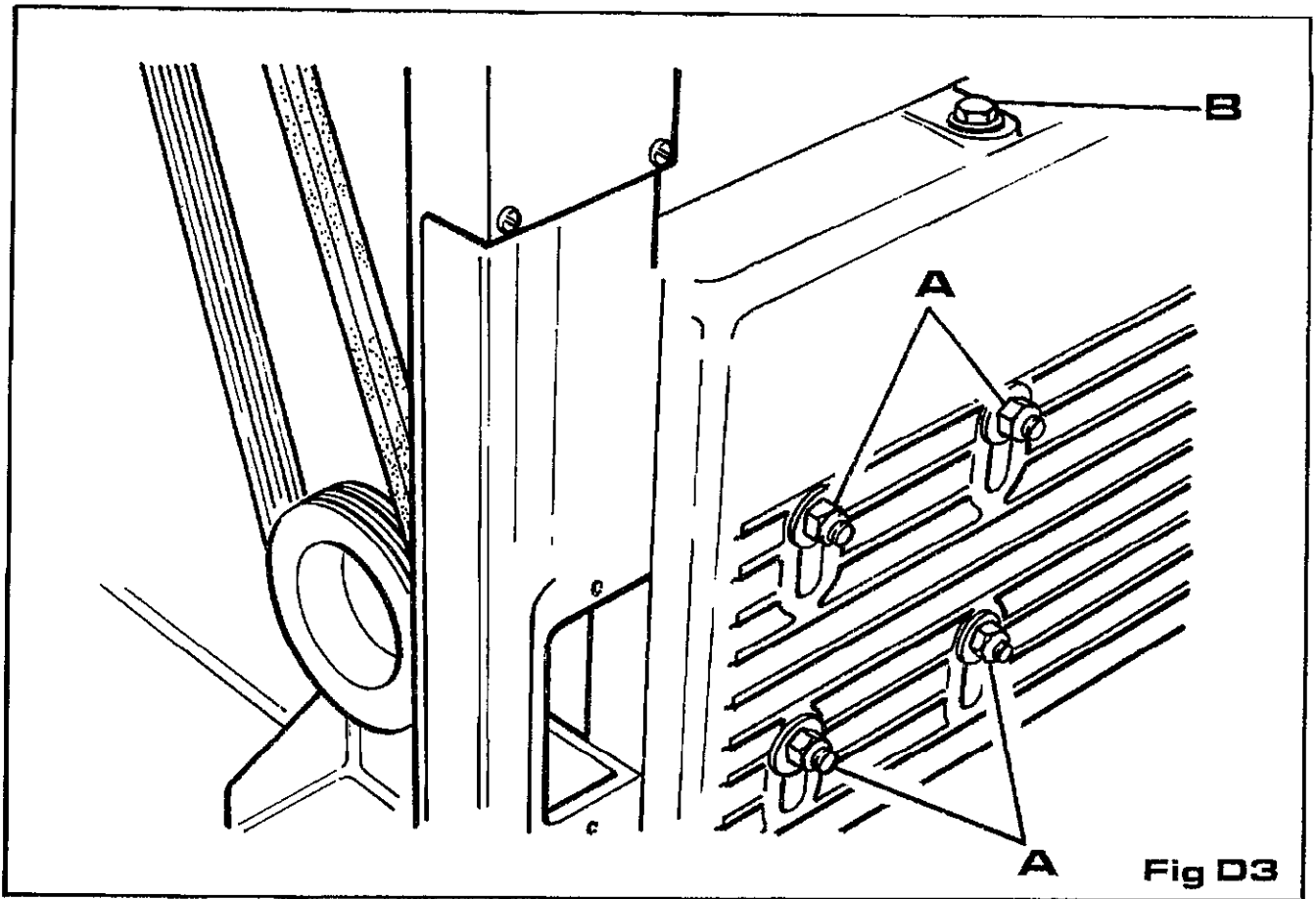
The drive to feed rollers is by roller chain from a worm reduction gearbox which is in turn driven by a variable pulley from a 1HP motor, giving variable feed speeds of 6 - 18 METRES/MIN (20 - 60 FT/MIN).

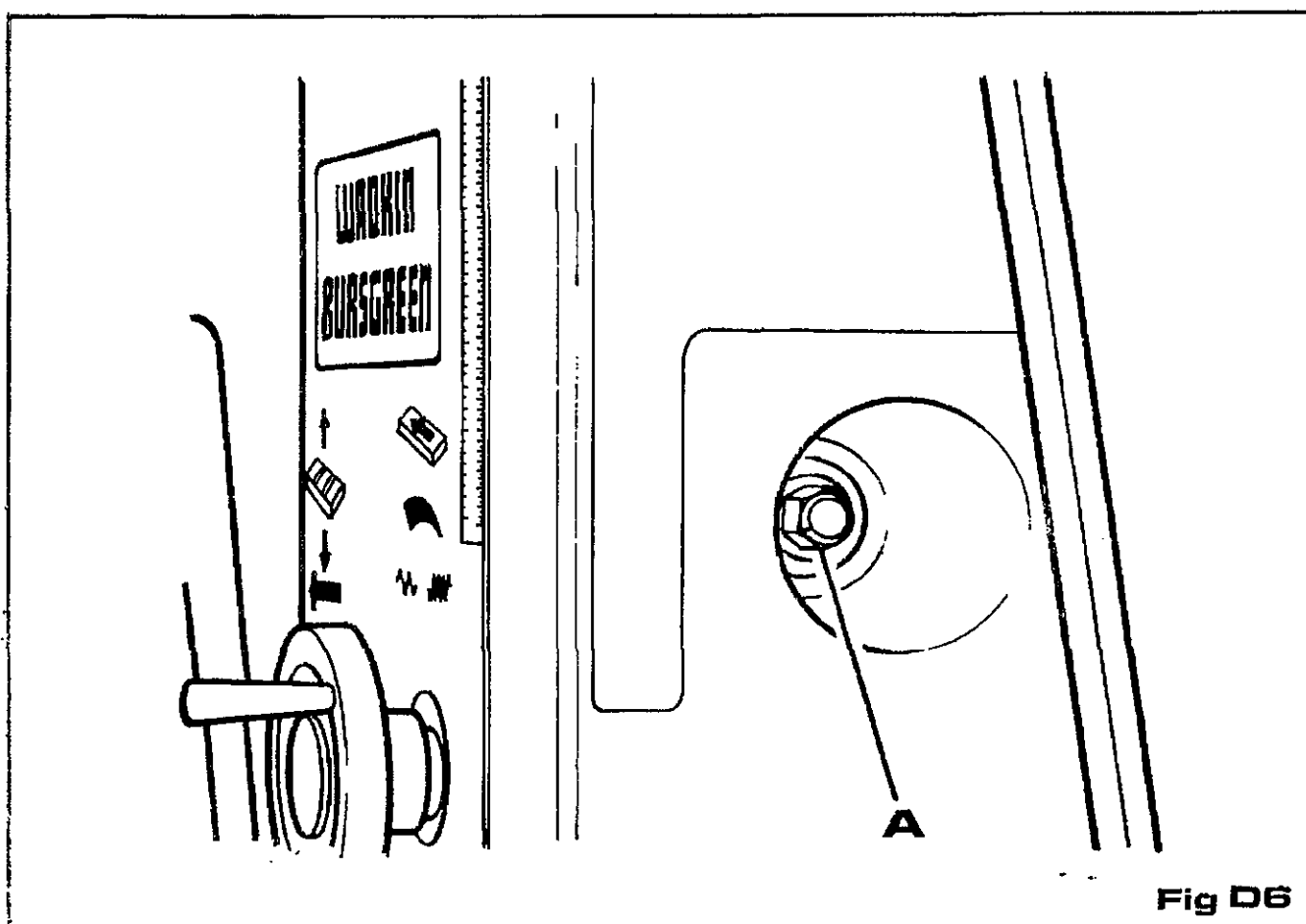
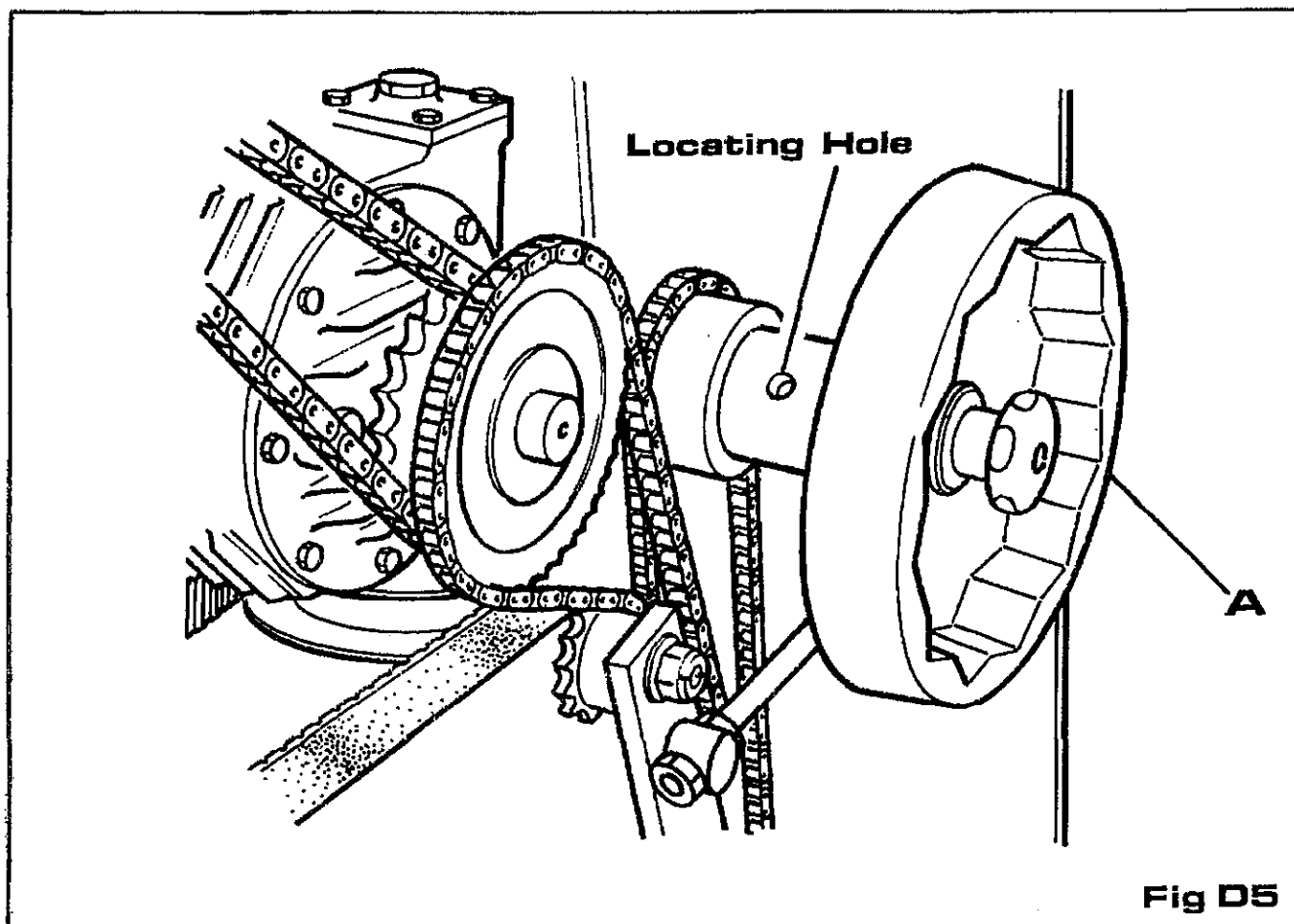
To adjust chain tension on top feed roller chain, proceed as follows:- Loosen two aerotight nuts "A" and hexagon head locknut "B". Adjust square head screw "C" until required tension is reached, i.e. chain should not be run either too slack or too tight. When chain is correctly tensioned relock aerotight nuts "A" and locknut "B".

## TABLE RISE AND FALL CHAIN TENSION

### FIG. D5 & FIG. D6.

Tension adjustment to the manual table rise and fall chain is as follows:- Power rise table to uppermost position. Turn handwheel "A" in FIG. D5 until the hole in the handwheel boss lines with the hole in the handwheel shaft, then locate 6mm DIA toggle bar into handwheel shaft. Loosen aerotight nut "A" in FIG. D6 then move toggle bar until required chain tension is reached i.e. chain should not be run either too slack or too tight. When chain is correctly tensioned hold toggle bar in position and re-tighten aerotight nut "A", then remove toggle bar.





## WORM GEARBOX TO CLUTCH CHAIN TENSION

### FIG. D7.

Slacken hexagon locknut "A" and adjust hexagon locknut "B" until chain tension is correct, i.e. chain should not be run either too slack or too tight.

When chain is correctly tensioned relock hexagon locknuts "A" and "B".

## CUTTER SETTING

### FIG. D8.

The cutters are held in the cutterblock by a steel clamping bar secured with 7 - 10mm heat treated socket head screws. As the amount of cutter projection is vital to the correct operation of the machine it is most important that the actual setting gauge supplied with the machine should be used. Should any other method of cutter setting be employed the amount of cutter projection must correspond exactly with that given by the setting gauge supplied and failure to observe this instruction will result in bad feeding and poor finish.

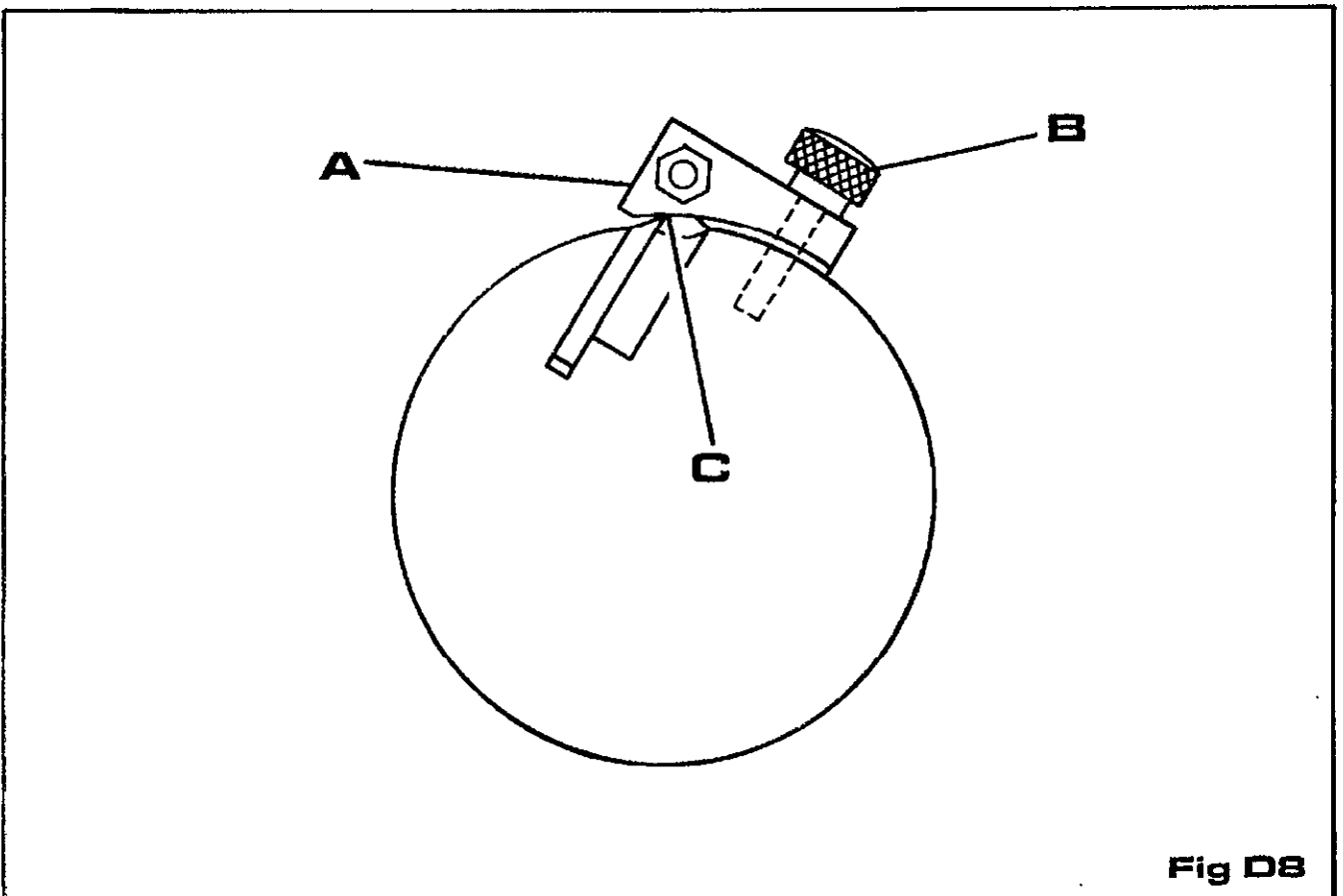
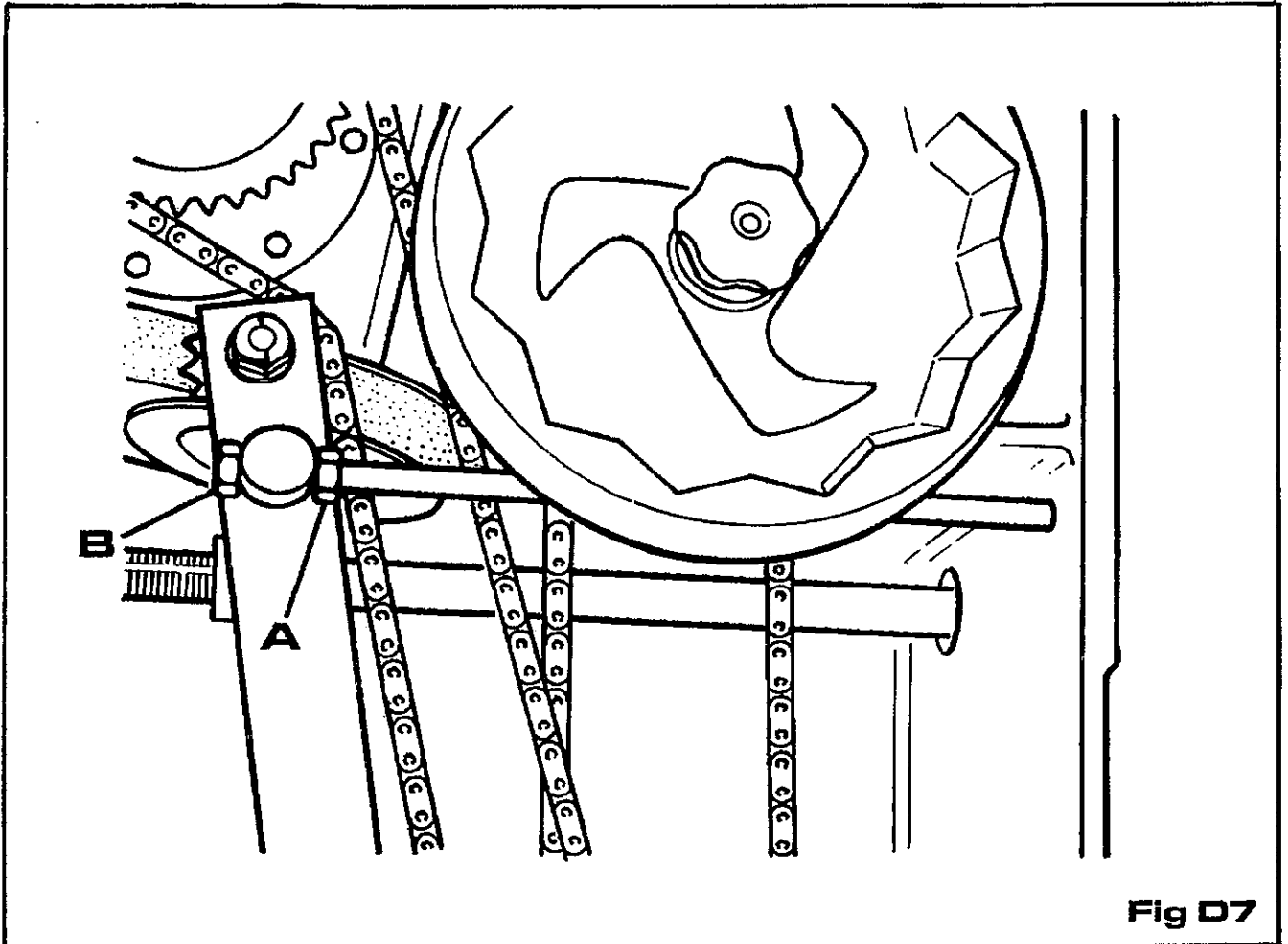
To remove the cutters and re-set with the "BURSGREEN" cutter setting guage, proceed as follows:-

1. Turn the cutterblock to approximately the position shown in FIG.D8. and slacken the 7 - 10mm knife locking screws until the knife is just free of the cutterblock.

The knives can now be removed for grinding or replacing. When grinding it is most important that knives are ground dead straight and balanced in pairs or sets.

An efficient regrinding service is available, charges are moderate and service prompt. To avail yourself with this service, return cutters to:  
BURSGREEN (DURHAM) LTD., FENCE HOUSES, HOUGHTON-LE-SPRING,  
CO. DURHAM

2. To re-set the knives the cutterblock should be in approximately the position as shown in FIG.D8. Place the knife in the slot ensuring that all faces are clean and the clamping bar free from burrs.
3. Ensure that the three socket head jacking screws upon which the knife rests, are at their lowest positions by means of a 6mm allenkey.
4. Secure the knife setting device "A" (which when not in use is normally secured to the rear of the machine table) to the cutterblock by the three knurled locking screws "B" as shown in FIG.D8.
5. Adjust the three socket head jacking screws until the knife just touches the knife setting device at three points "C".  
**IMPORTANT** Care should be taken to ensure that the knife only just touches the knife setting device, as over-adjusting will damage the knife.
6. When the knife is correctly set, securely lock the 7 - 10mm knife locking screws.
7. Rotate cutterblock until the next knife is in position and repeat the procedure until all the knives have been set.



8. When changing cutters it is advisable to check that all the locking screws are adequately lubricated and quite free. Periodically examine 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.

#### CUTTER CARE

##### FIG. D9.

The cutters supplied are 511mm long x 30mm wide x 3mm thick in balanced sets. They should be kept in balanced sets by ensuring that the cutters have equal dimensions after grinding and that the cutting edge is straight and parallel to the back edge.

For general work, knife angles for soft and hard woods are recommended as in FIG. D9. (a) and (b).

When a very fine finish is required in dry soft and hard woods a slight front bevel is given as in FIG. D9. (c) and (d). For wet or green timber the cutting bevel may be decreased five degrees, but the front bevel should not be given.

Keep the cutters sharp when in position 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.

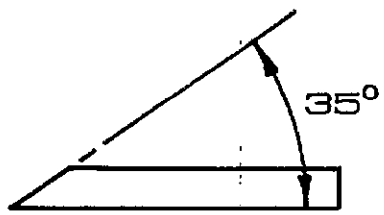
Do not allow a heel greater than .79mm (1/32") wide on the bevel before removing and regrinding. When the heel becomes too wide the knives may heat up or have a hammering effect on the wood and more than normal power will be required to run the cutterblock.

#### SETTING THICKNESSING TABLE PARALLEL TO CUTTERBLOCK

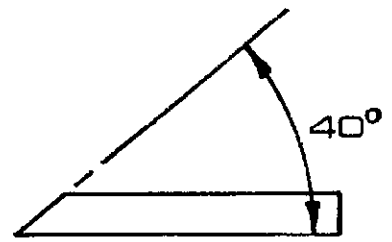
The machine table is accurately set parallel to cutterblock before despatch but should it be disturbed for any reason it must be carefully checked and made parallel to the cutterblock, if necessary, by the following procedure.

1. Feed a short length of timber approximately 50mm (2" square) x 460mm (18" long) through the machine to one side of the thicknessing table.
2. Without adjustment to the height of the table feed the timber through the machine again on the opposite side of the table to that in item 1.
3. If a cut is taken or it does not touch the wood adjust the fine thread adjusters on the underside of the table to suit and when set tighten all screws.

As the knife setting device sets the knives parallel to the cutterblock it is vitally important that the table is set parallel to the knives for accurate thicknessing.

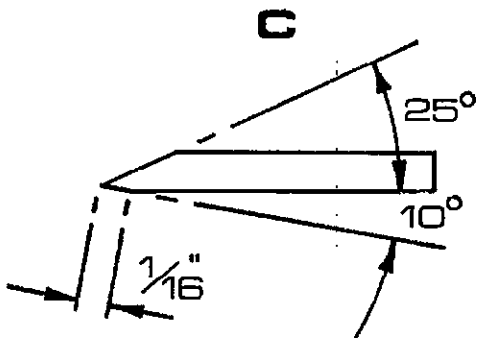
**A**

for soft wood

**B**

for hard wood

for dry soft wood

**C**

for dry hard wood

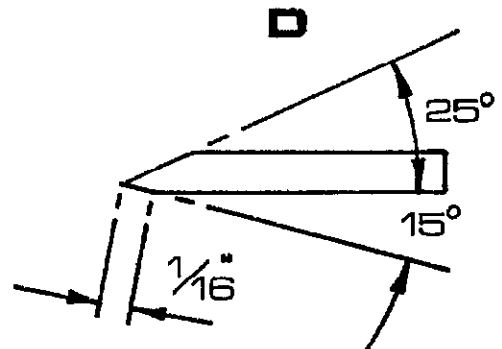
**D**

Fig D9

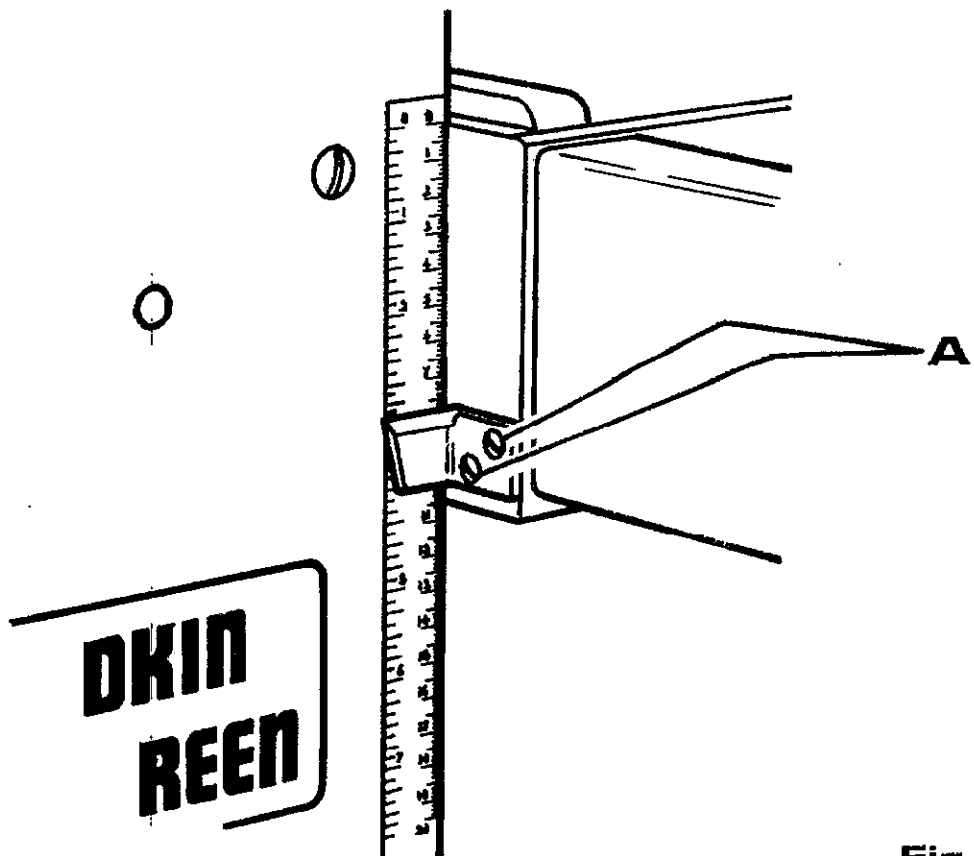


Fig D10



**THICKNESSING RULE****FIG. D10.**

The pointer on the machine table is pre-set before despatch. Should it be disturbed, feed a piece of timber through the machine and measure the thickness accurately. Check that the reading given by the pointer corresponds to the thickness of timber machined. Should adjustment be necessary slacken the screws "A" in FIG. D10. and set pointer to the correct thickness.

**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 the slow feed speed. For roughing when the finish is not important use the fast feed speed.
3. For the best results always feed the timber to cut with the grain.
4. Should the timber stick when thicknessing two probable causes are given below:
  - (a) The table rollers are set too low in the table.
  - (b) The spring pressure is too great on the pressure bars and too little on the feed rollers.

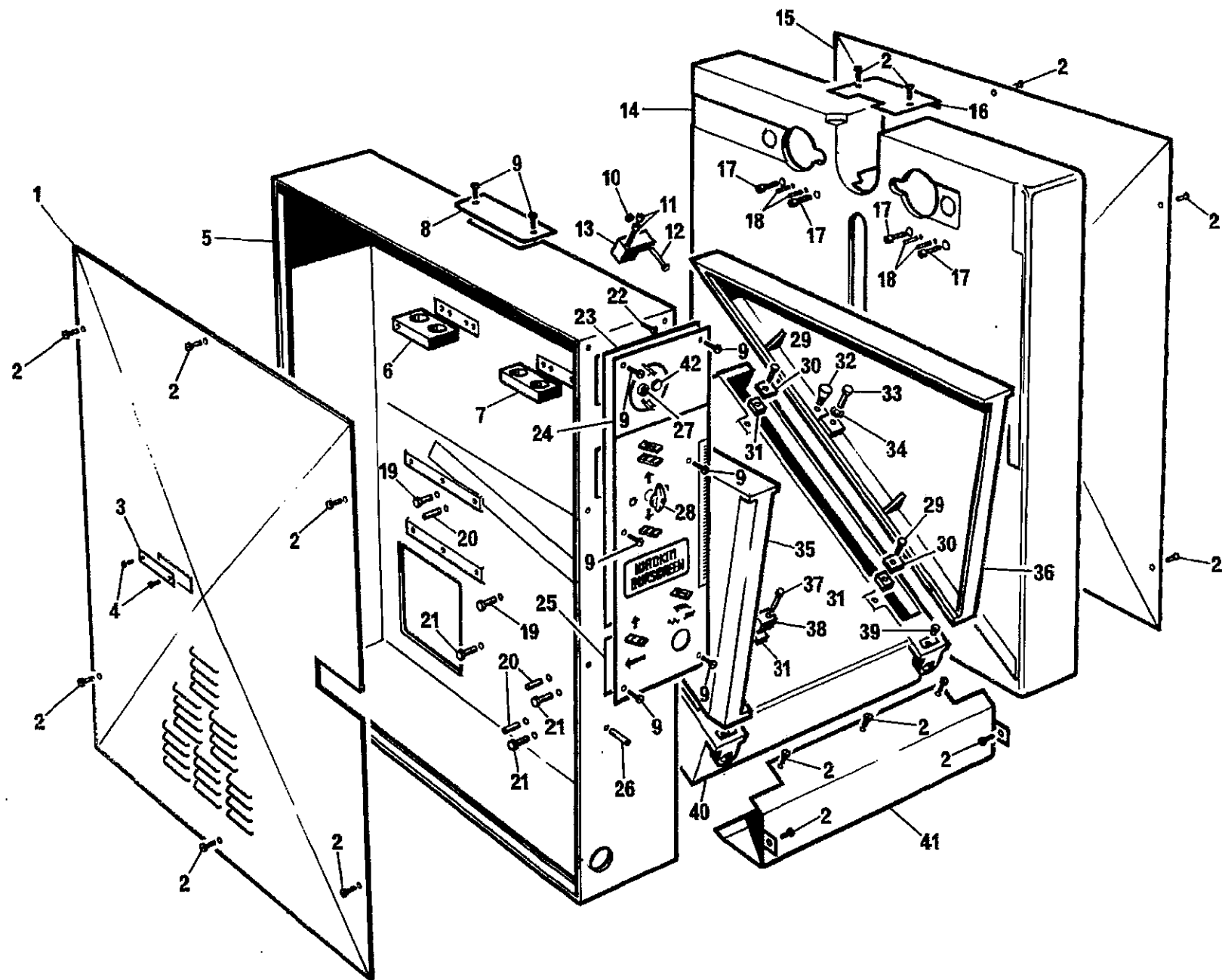
BURSGREEN (DURHAM) LIMITED  
APPROVED LUBRICANTS

Application	Approved Lubricant					
	Castrol	B. P.	Shell	Esso	Texaco/ Caltex	Wadkin
Worm Boxes	Alpha 617	Energol CS425	Vitrea 75	Pen-O-Led E. P.3	Regal Oil J	L. 2.
General Lubrication	Magna ED	Energol HP. 20	Vitrea 33	Esstic 50	Ursa Oil P. 20	L. 4.
Pneumatic Lubricators	Hyspin AWS 32	Energol HL 65	Tellus 27	Nuto H 44	Rando Oil HDA	
Grease	Spheerol AP.3	Energrease LS.3	Alvania 3	Beacon 3 Starfak Premium 3	Regal	L. 6.
Brake Cables	Brake cable grease	Energrease L21M	Alvania 3	Multi-purpose grease H		

## **SECTION E**

# **SPARE PARTS LISTS**

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



## MAIN FRAME ASSEMBLY

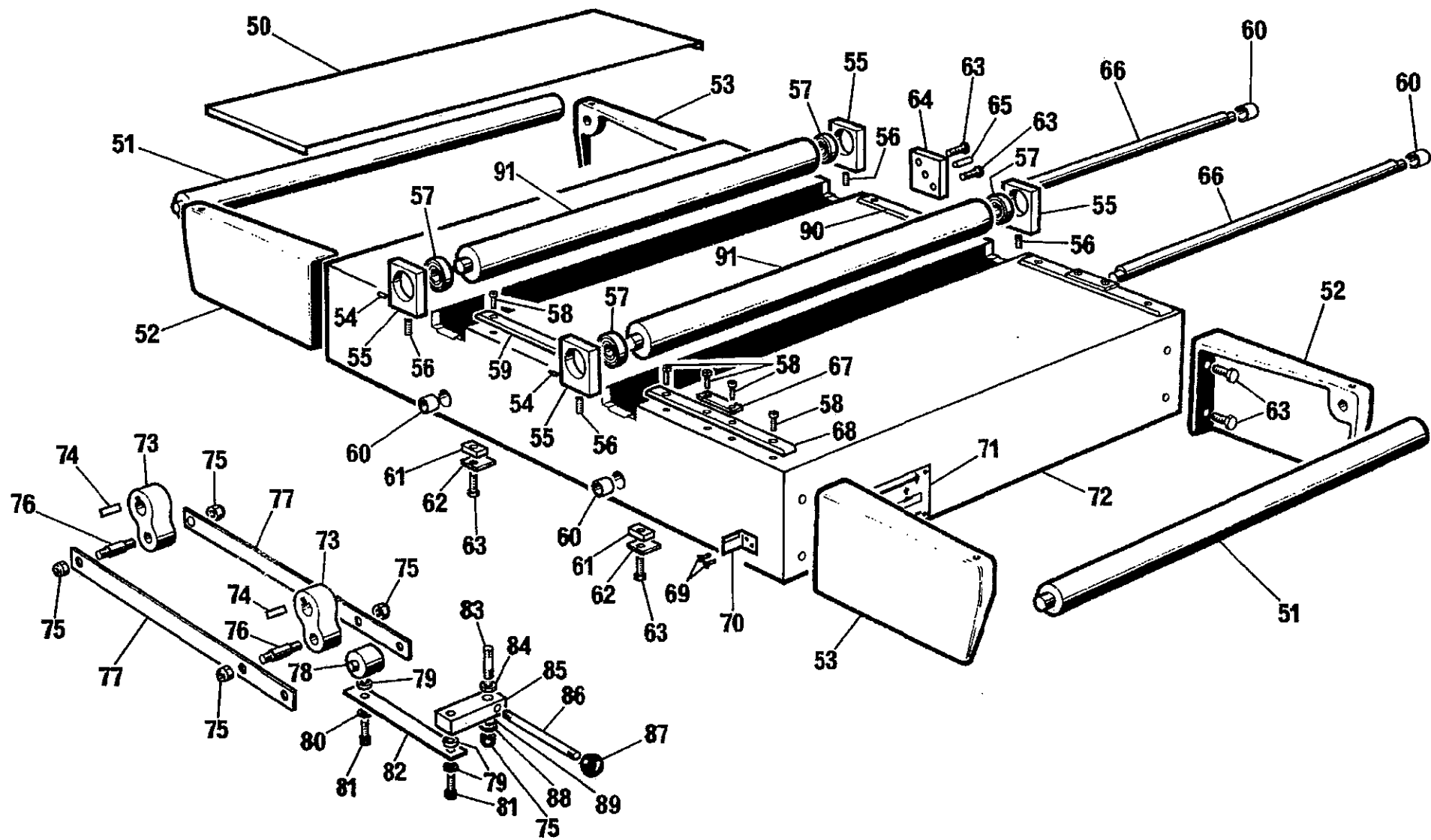
Ref. No.	Part No.	No. Off	Description
1	1069/208	1	Drive side cover
2		19	8mm x 10mm pan head screw
3	1069/136	1	Feed scale
4		2	1/8" dia x 1/4" long self tapping screw
5	1069/235	1	Drive side frame
6	1069/162	1	Spring and jockey pressure plate
7	1069/48	3	Spring pressure plate
8	1069/84	1	Cover for belt aperture
9		8	6mm x 10mm pan head screw
10		1	8mm nut
11		2	8mm x 25mm socket head capscrew
12		1	8mm x 50mm hexagon head bolt
13	1069/186	1	Thicknessing table stop
14	1069/236	1	Rebate side frame
15	1069/243	1	Rebate side cover
16	1069/276	1	Spindle pulley cover
17		8	10mm x 25mm socket head capscrew
18		8	1/4" dia. x 1 1/4" long fluted dowel
19		2	12mm x 30mm hexagon head bolt
20		6	12mm x 28mm hardened ground dowel
21		8	12mm x 35mm hexagon head bolt
22		4	6mm x 10mm countersunk socket head screw
23	1069/89	1	Front panel back plate
24	1069/204	1	Control plate
25	1069/241	1	Front panel back plate
26	1069/295	1	Stop peg
27		1	Brooks "STOP" push button unit
28		1	Chilton switch No. C6 - A292 with tear drop handle
29		3	10mm x 25mm hexagon head bolt
30	1069/93	9	Wedge keeps
31	1069/92	4	Wedge keep locking piece
32	WF 1920	2	Spring lid oil cup wick feed (1/8" gas)
33		2	10mm x 35mm socket head capscrew
34	1032/22	2	Washer for rise and fall nut
35	1069/171	1	Wedge (left hand)
36	1069/171	1	Wedge (right hand)
37		1	10mm x 45mm hexagon head bolt
38	1069/187	1	Thicknessing table stop block
39	PC2	2	Grease nipple (1/8" gas)
40	1069/168	1	Base
41	1069/37	1	Cover for rise and fall gears
42		1	Brooks "START" push button unit

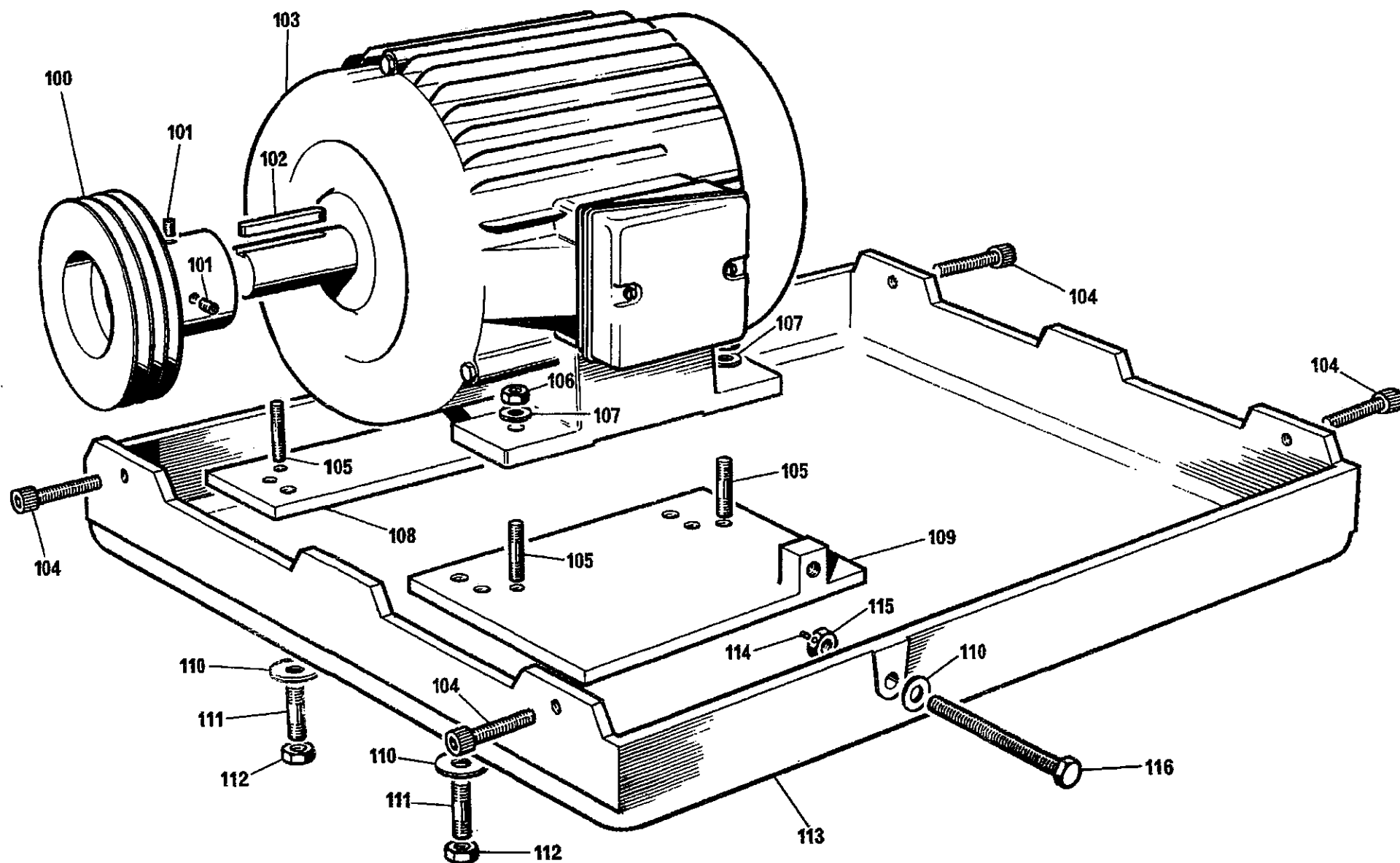
NOTE :- When ordering replacement parts quote  
Part No. and Serial No. of the machine

## TABLE ASSEMBLY

Ref. No.	Part No.	No. Off	Description
50	1069/193	1	Cover for outfeed roller
51	1069/35	2	Outer table roller
52	1069/18	2	Outer table roller bracket (right hand)
53	1069/18	2	Outer table roller bracket (left hand)
54		4	6mm x 16mm long socket head grubscrew
55	1069/77	4	Under table roller bearing block
56	1069/239	4	Under table roller adjusting screw
57	SKF 62032RS	4	Bearing
58		12	6mm x 12mm long cheese head screw
59	1069/210	1	Left hand inner table strip
60	1069/78	4	Under table roller bushes
61	1069/92	4	Wedge keep locking piece
62	1069/93	4	Wedge keep
63		14	10mm x 25mm hexagon head bolts
64	1069/51	1	Table key
65		1	3/8" dia. x 1" long fluted dowel
66	1069/34	2	Under table roller eccentric
67	1069/228	2	Depth stop control plate
68	1069/97	2	Front table strip
69		2	1/8" dia. x 3/8" long self tapping screw
70	1069/292	1	Thickness pointer
71	1069/137	1	Table roller instruction plate
72	1069/5	1	Table
73	1069/72	2	Under table roller links
74		2	8mm x 7mm x 32mm feather key
75		5	10mm nut
76	1067/76	2	Under table roller link pin
77	1069/74	2	Under table roller adjusting link
78	1069/75	1	Under table roller swivel nut
79	1069/147	3	Roller link swivel
80		1	8mm washer
81		2	8mm x 25mm socket head capscrew
82	1069/145	1	Roller control link
83	1069/231	1	Stud for under-table mechanism
84		1	10mm fibre washer (thick)
85	1069/148	1	Under table swivel block
86	1069/32	1	Under table control lever
87		1	10mm x 32mm dia. plastic ball
88		1	10mm washer
89		1	10mm fibre washer (thin)
90	1069/209	1	Right hand inner table strip
91	1069/33	2	Under table roller

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







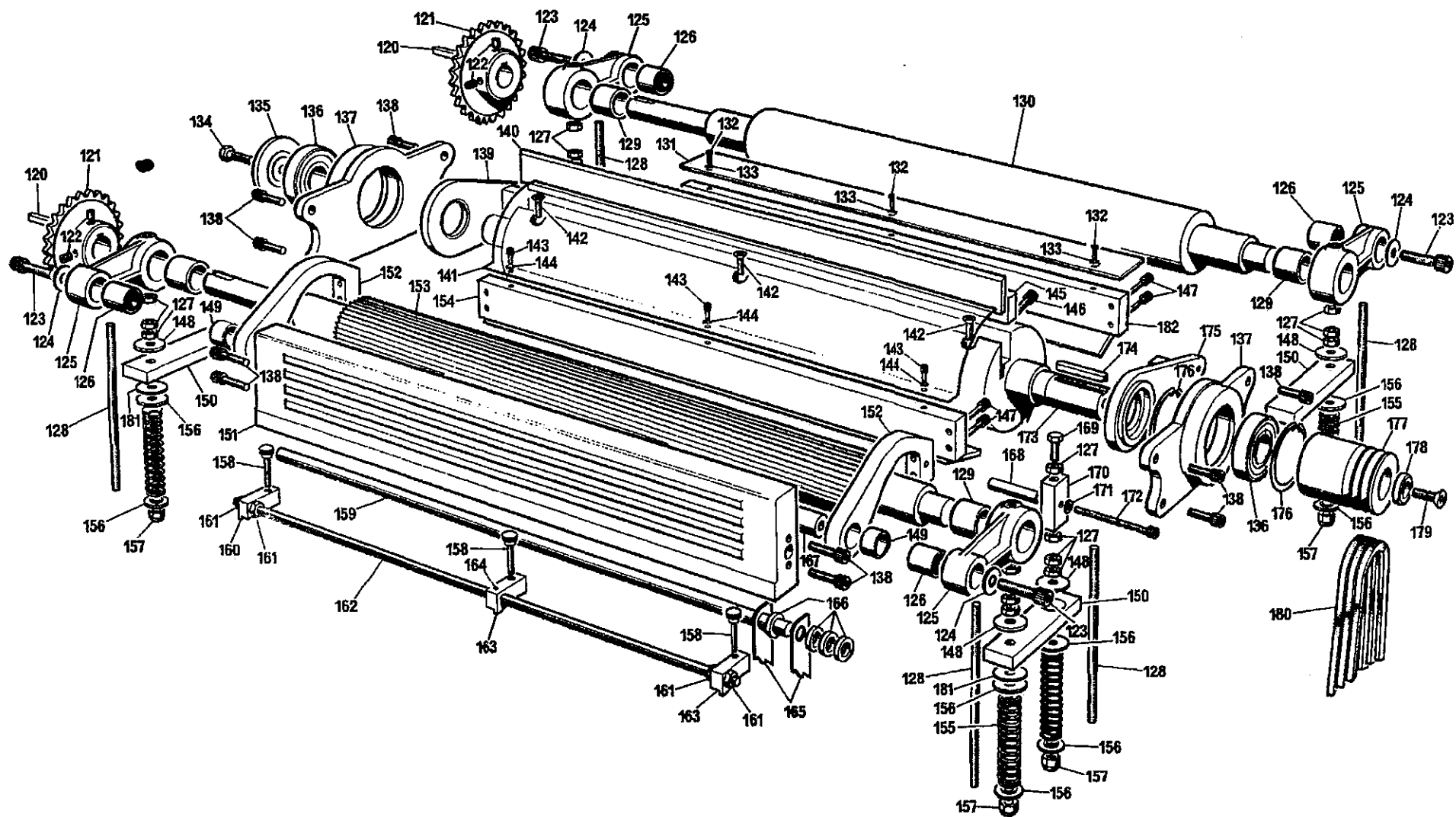
## MOTOR MOUNTING ASSEMBLY

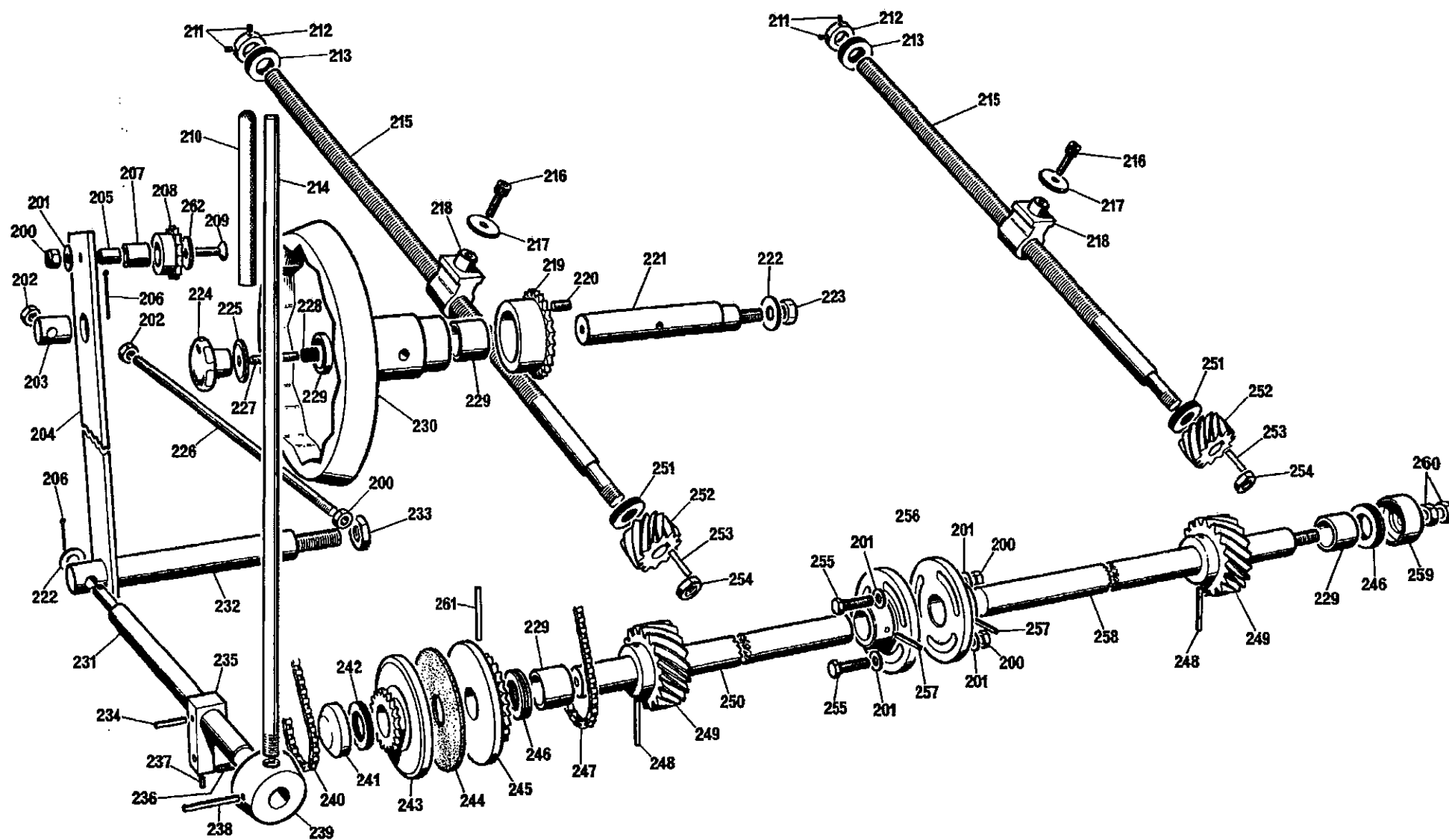
Ref. No.	Part No.	No. Off	Description
100	1069/23	1	Block motor pulley
101		2	10mm x 12mm socket head grubscrew
102		1	8mm x 10mm x 60mm feather key (ground to size)
103		1	Brook motor, 7.5HP, 3,000RPM, T.E.F.C. Frame D.132SA, Foot mounted star delta wound, 3PH, 50 cycles, Terminal box in std. position.
		1	Brook motor, 7.5HP, 3,600RPM, T.E.F.C. Frame D.132SA, Foot mounted star delta wound, 3PH 60 cycles. Terminal box in std. position. (SPECIAL)
104	1069/233	4	12mm x 35mm socket head capscrew
105		4	Stud for motor platform
106		4	10mm nut
107		4	10mm washer
108	1069/58	1	Plate for motor feet
109	1069/79	1	Motor adjustment plate
110	1069/234	5	12mm washer
111		4	Stud for motor platform
112	1069/6	4	12mm nut
113		1	Motor platform
114		1	6mm x 6mm socket head grubscrew
115		1	12mm nut (with 6mm tapped hole)
116		1	12mm x 100mm hexagon head bolt

**NOTE :-** When ordering replacement parts quote  
Part No. and Serial No. of the machine

**CUTTERBLOCK ASSEMBLY**

Ref. No.	Part No.	No. Off	Description
120		2	8mm x 6mm x 30mm feather key
121	1069/131	2	Feed roller sprocket
122		4	10mm x 10mm socket head grubscrew
123		4	12mm x 80mm socket head capscrews
124	1069/141	4	Washer for "Metalastic" bush
125	1069/11	4	Feed roller pivot arm
126		4	"Metalastic" bush
127		25	10mm locknut
128	1069/68	8	Stud for pressure bar spring
129	1069/78	4	Under table roller bush
130	1069/28	1	Outfeed roller
131	1069/240	1	Scraper plate
132		3	6mm x 10mm hexagon head bolt
133		3	6mm washer
134		1	12mm x 30mm hexagon head bolt
135	1069/38	1	Washer for cutterblock
136	6207-2RS	2	Cutterblock bearing
137	1069/7	2	Bearing housing
138		12	10mm x 30mm socket head capscrew
139	1069/9	1	Back pressure bar bracket (left hand)
140		as required	Cutterblock knives (state quantity required)
141	1069/86	1	Chip deflector
142		6	8mm x 30mm countersunk socket head screw
143		3	6mm x 10mm socket head capscrew
144		3	6mm spring washer
145	1069/178	as required	Cutterblock wedge (state quantity required)
146	1069/183	as required	Cutterblock screw
147		8	8mm x 30mm socket head capscrew
148	1069/70	8	Washer for feed roller spring
149	BS 99	2	Oilite bush
150	1069/48	3	Spring pressure plate
151	1069/10	1	Front tie piece
152	1069/8	2	Front pressure bar bracket
153	1069/28	1	Infeed roller
154	1069/29	1	Front pressure bar
155	ETS 194	4	Feed roller spring
156	1069/69	16	Spring guide
157		8	10mm aerotight nut
158	1069/184	3	Knife setting device fixing screw
159	1069/82	1	Anti kick back fingers bar
160	1069/175	1	Knife setting device block (left hand)
161		4	10mm nut
162	1069/185	1	Knife setting tie bar
163	1069/175	2	Knife setting device block (right hand)
164		1	6mm x 6mm socket head grubscrew
165	1069/40	62	Knife back finger
166	1069/41	68	Spacer for kick back finger
167	1069/81	1	Tie bar
168	1069/50	4	Pressure bar tie rods
169		1	10mm x 45mm hexagon head bolt
170	1069/49	4	Pressure bar block
171		4	8mm washer
172		4	8mm x 90mm socket head capscrew
173	1069/198	1	Cutterblock
174		1	10mm x 7.2mm x 60mm feather key.
175	1069/9	1	Back pressure bar bracket (right hand)
176	5000/283	2	72mm internal circlip
177	1069/22	1	Cutterblock pulley
178	1069/39	1	Washer for cutterblock pulley
179		1	12mm x 35mm countersunk "nylok" socket head screw
180	ALPHA 630	3	Vee belts
181	1069/254	2	Washer for spring guide
182	1069/30	1	Rear pressure bar





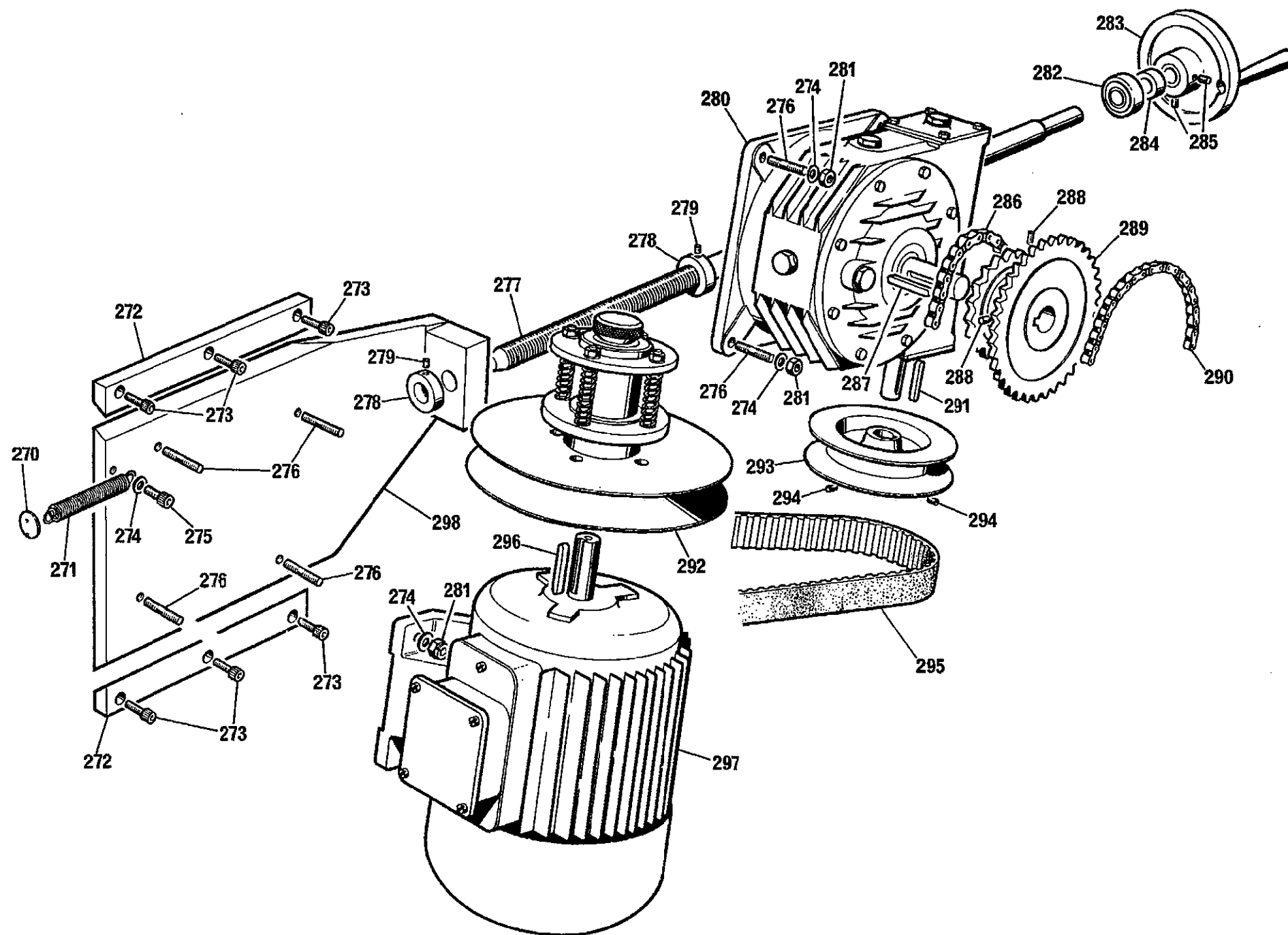
# **TABLE RISE & FALL ASSEMBLY**

Ref. No.	Part No.	No. Off	Description
200		5	10mm nut
201		7	10mm washer
202		2	10mm locknut
203	1069/251	1	Pivot for rise and fall chain tension bar
204	1069/207	1	Table rise and fall chain tension bar
205	1069/64	1	Jockey sprocket bush
206		2	2.5mm x 30mm split pin
207	CT264A	2	16mm ID x 22mm OD x 20mm long oilite bush
208	1069/134	1	Jockey sprocket
209		1	10mm x 50mm countersunk slotted screw
210		1	14mm dia rubber handle
211		4	6mm x 6mm socket head grubscrew
212	1069/56	2	Stop for rise and fall screw
213	SKF 51104	2	Rise and fall screw bearing
214	1069/102	1	Clutch control lever
215	1069/173	2	Rise and fall screw
216		2	10mm x 35mm socket head capscrew
217	1032/22	2	Washer for rise and fall nut
218	1069/172	2	Rise and fall nut
219	1069/25	1	Handwheel sprocket
220		1	10mm x 20mm socket head grubscrew
221	1069/46	1	Rise and fall handwheel shaft
222		2	12mm washer
223		1	12mm nut
224		1	8mm x 44mm plastic handwheel
225	1062/47	1	Handwheel washer
226	1069/212	1	Adjusting screw for jockey sprocket
227	1069/230	1	Stud for rise and fall handwheel
228	1026/63	1	Handwheel return spring
229	BS 99	4	Oilite bush
230	1069/24	1	Rise and fall handwheel
231	1069/61	1	Clutch pressure shaft
232	1069/59	1	Rise and fall chain tension post
233		1	16mm locknut
234		1	6mm x 32mm groverlok spring dowel
235	1069/205	1	Clutch pressure link
236	1069/221 —	1	— Adjusting screw for clutch pressure
237		1	6mm x 12mm socket head grubscrew
238		1	8mm x 50mm groverlok spring dowel
239	1069/63	1	Boss for clutch pressure shaft
240	110038	1	Roller chain (state no. of links including split link)
241	1069/66 —	1	Thrust bearing cover
242	INA-AXK 2542 —	1	Clutch thrust bearing
243	1069/20	1	Inner clutch sprocket
244	1069/73 —	1	Clutch for table rise and fall
245	1069/138	1	Outer clutch sprocket
246	SKF 51105	2	Rise and fall cross shaft bearing
247	110038	1	Roller chain (state no. of links including split link)
248		2	6mm x 45mm groverlok spring dowel
249	1069/14	1	Driving gear for table rise and fall
250	1069/31	1	Rise and fall cross-shaft (with female end)
251	SKF 51104	2	Rise and fall screw bearing
252	1069/13	2	Driven gear for table rise and fall
253		2	5mm x 5mm x 20mm key
254		2	16mm nut
255		3	10mm x 35mm hexagon head bolt
256	1069/15	2	Cross-shaft coupling
257		2	6mm x 40mm groverlok spring dowel
258	1069/31	1	Rise and fall cross-shaft (with male end)
259	1069/213	1	Cover for cross-shaft thrust bearing
260		2	12mm locknut
261		1	6mm x 60mm groverlok spring dowel
262	1069/83	1	Washer for jockey sprocket

## VARIABLE DRIVE ASSEMBLY

Ref. No.	Part No.	No. Off	Description
270	1069/203	1	Anchor plate for feed roller spring
271	1034/44	1	Spring
272	1069/288	2	Gib strip
273		6	8mm x 16mm button head capscrew
274		9	8mm washer
275		1	8mm x 16mm socket head capscrew
276		8	8mm x 35mm stud
277	1069/60	1	Motor platform traverse screw
278	1069/56	2	Stop for rise and fall screw
279		2	6mm x 6mm socket head grubscrew
280		1	Holroyd type F. V. worm reduction box 20.5 to 1 reduction (50 cycle)
		1	Holroyd type F. V. worm reduction box 25 to 1 reduction (60 cycle) special
281		8	8mm nut
282	6202/2RS	1	Bearing for motor control shaft
283	Rencol No. 601	1	Handwheel
284	1069/99	1	Handwheel spacer
285		2	6mm x 12mm socket head grubscrew
286	110046	1	Roller chain (FEED ROLLERS)
287		1	6mm x 6mm x 40mm feather key
288		2	6mm x 10mm socket head grubscrew
289	1069/206	1	Gearbox output sprocket
290	110038	1	Roller chain (GEARBOX TO CROSS SHAFT)
291		1	5mm x 5mm x 32mm feather key
292		1	Variable pulley
293	1069/21	1	Gearbox input sprocket
294		2	8mm x 8mm socket head grubscrew
295		1	CRVSV24HO81O3D Variable pulley belt
296		1	6mm x 6mm x 35mm feather key
297		1	Brook motor, 1HP, 1,500RPM, Frame 80A, T.E.F.C. Foot mounted terminal box in standard position 3PH, 50cycles.
		1	Brook motor, 1HP, 1,800RPM, Frame 80A, T.E.F.C. Foot mounted terminal box in standard position 3PH, 60cycles. (SPECIAL)
298	1069/286	1	Feed motor platform.

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



# **BTJ KNIFE JOINTING & GRINDING INSTRUCTIONS**



## BTJ KNIFE JOINTING & GRINDING INSTRUCTIONS

In order to ensure that all the knives in the cutterblock are actually cutting and each doing its share of work per revolution of the spindle, it is essential they all run in one common circle at the cutting edge. To give the operator the desired means of obtaining the accuracy required, a combined knife grinding and jointing device is fitted on a slide attached to the top of machine.

NOTE: It is possible to joint and grind the knives 3 or 4 times before resetting with the setting gauge supplied with the machine. See Page 19 of the BT Instruction Manual.

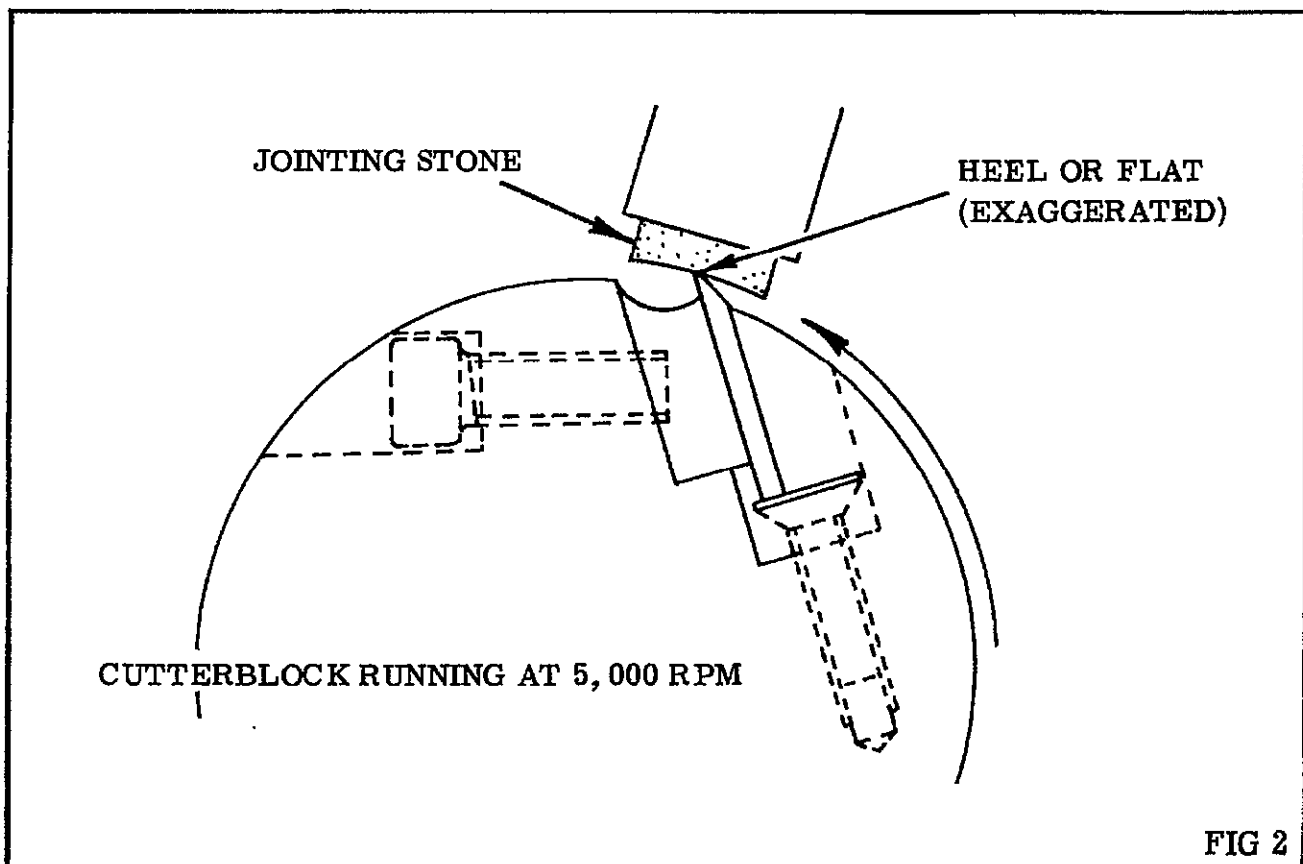
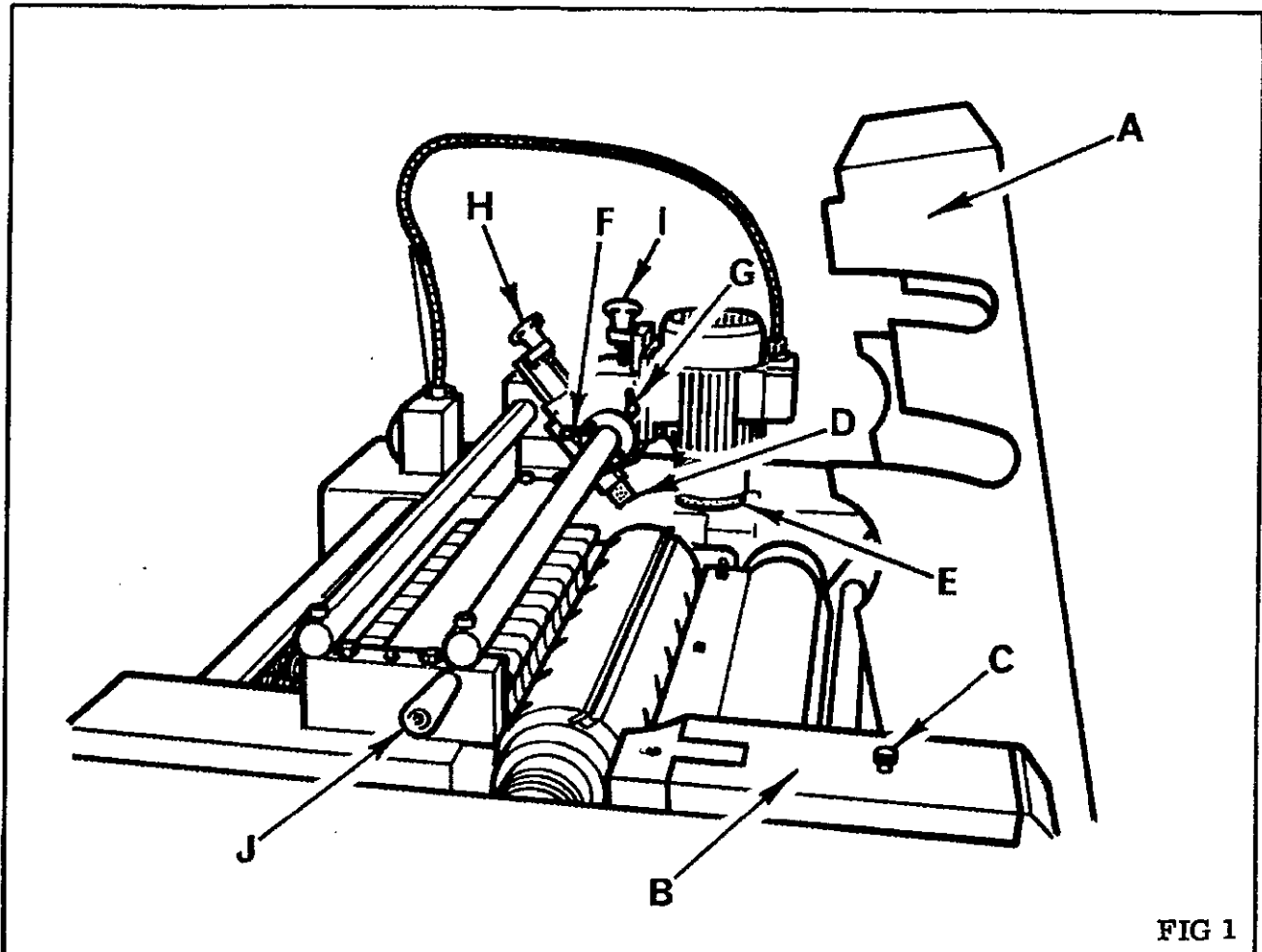
### To Joint the knives proceed as follows:-

1. Stop cutterblock by cutterblock stop button on control panel then swing combined chip deflector/safety guard "A" clear, as shown in FIG 1.
2. Unscrew knurled knob and move cutterblock pulley guard "B" to position shown in FIG 1 and secure with same knurled knob "C".
3. Remove two socket head capscrews and lift chip deflector baffle (which covers top of cutterblock) from the machine.
4. Ensure the jointing stone "D" and grinding wheel "E" are raised clear of the cutterblock by releasing the locking levers "F" and "G" and adjusting handwheels "H" and "I". Relock locking levers "F" and "G".
5. Start cutterblock running and allow to attain full speed.
6. Very slowly and evenly traverse the device across the cutterblock by handle "J". Release locking lever "F" and adjust handwheel "H" until the stone touches the knives and gives off a very light spark.
7. This operation is carried on very lightly until the knives appear to be in a true circle. Stop cutterblock at intervals for examination. A slight flat or heel as shown in FIG 2 will be produced thus ensuring that all the knives are cutting equally.  
The jointing operation may be performed two or three times before regrinding, but never allow a heel greater than  $1/32"$  (.8mm) wide on the bevel.
8. When jointing operation is complete, push jointing/grinding unit clear of cutterblock by handle "J" in FIG 1. Relock locking lever "F".

After jointing operation inspect all knives edges to check the width of heel on the bevel. If the heel is greater than  $1/32"$  (.8mm) wide then the back bevel of the knife must be ground to ensure the minimum possible heel on each knife.

### To grind each knife proceed as follows:-

1. Rotate the cutterblock carefully by hand until it can be locked securely with the lever "A" in FIG 3 in the Cutterblock Locked position.



2. Start the grinder spindle by the switch "B" and release locking lever "C" then carefully adjust handwheel "D" until the grinding wheel just touches the back bevel of the knife.

**IMPORTANT** When grinding take light cuts and traverse rapidly.

3. Traverse the grinder across the cutterblock two or three times until the land is just visible on the knife edge and finish with the grinding wheel clear of the cutterblock.
4. Repeat on all knives.
5. When grinding is completed, move lever "A" in FIG 3 to "NORMAL RUNNING" position.  
Replace chip deflector baffle and guards "A" and "B" in FIG 1.

**IMPORTANT**

#### **DRESSING OF CIRCULAR GRINDING STONE**

Keep the grinding face on the circular grinding stone to within 1/8" (3mm) wide as shown in FIG 4. This will ensure accurate and clean grinding of knives.

To dress the grinding stone proceed as follows:-

1. Release lock "C" in FIG 3 then by turning vertical adjustment handwheel "D" remove motor complete with vertical slide from grinder support bracket "E".
2. Rest motor on top of the machine sideframe.
3. Holding motor securely, start motor and proceed to dress the internal lip of the grinding wheel with a dressing stone or dressing wheel.
4. Dressing operation is complete when the lip on the circular grinding stone is 1/8" (3mm) wide as shown in FIG 4.
5. Reverse procedure No. 1 to refit motor and slide to bracket.

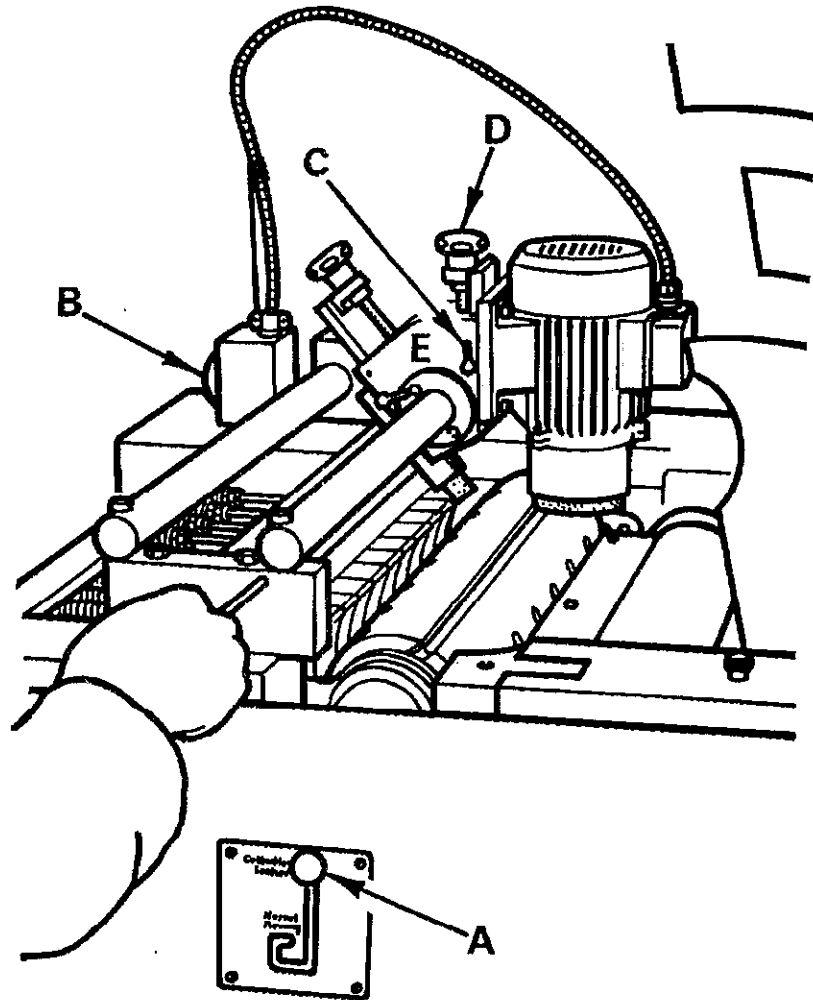


FIG 3

## SECTIONED VIEW OF GRINDING STONE

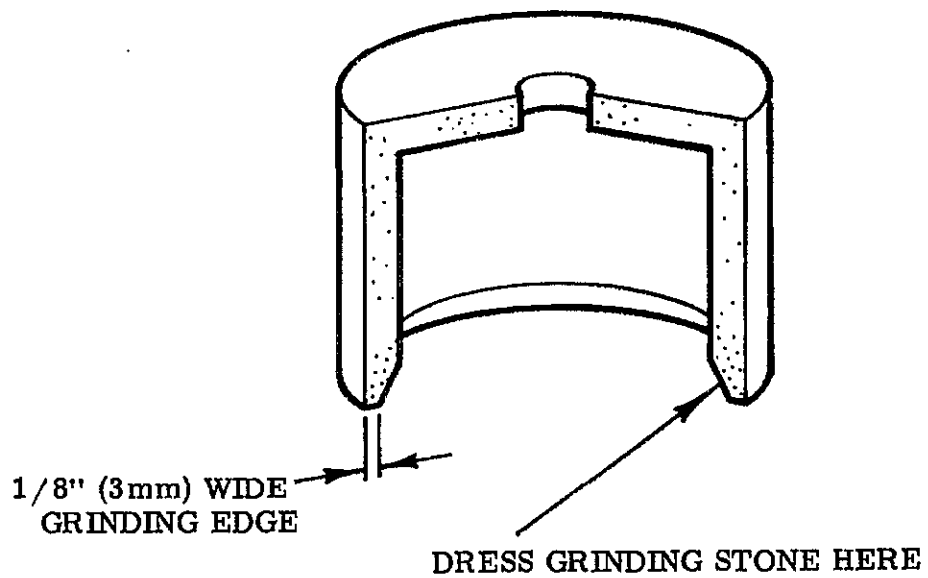
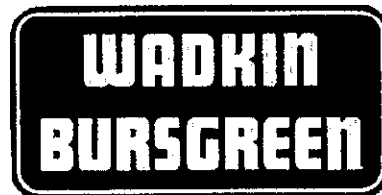


FIG 4

# **BTS SURFACING TABLE INSTRUCTIONS**



**T: 0116 2769111**

**F: 0116 2598138**

**NOTE:**

THE BASIC CONSTRUCTION OF OUR BTS MACHINE IS THE SAME AS THE BT THICKNESSER WITH THE ADDITION OF TOP SURFACING TABLES.

THE BASIC BT INSTRUCTION BOOK IS THEREFORE VALID APART FROM THE TOP TABLES WHICH ARE SHOWN IN THESE SUPPLEMENTARY INSTRUCTIONS.

### B.T.S. WIRING DETAILS.

See enclosed B.T.S. Foundation Drawing for wiring diagram.  
For fuse rating, refer to Page 3 of B.T. instruction manual.

### B.T.S. LUBRICATION.

Refer to enclosed B.T.S. Foundation Drawing for lubrication details.

### B.T.S. SLINGING OPERATION.

Ensure thickening table is in uppermost position. Attach slings to machine as shown in FIG. 1A. and ensure damage will not be caused to machine during slinging operation.

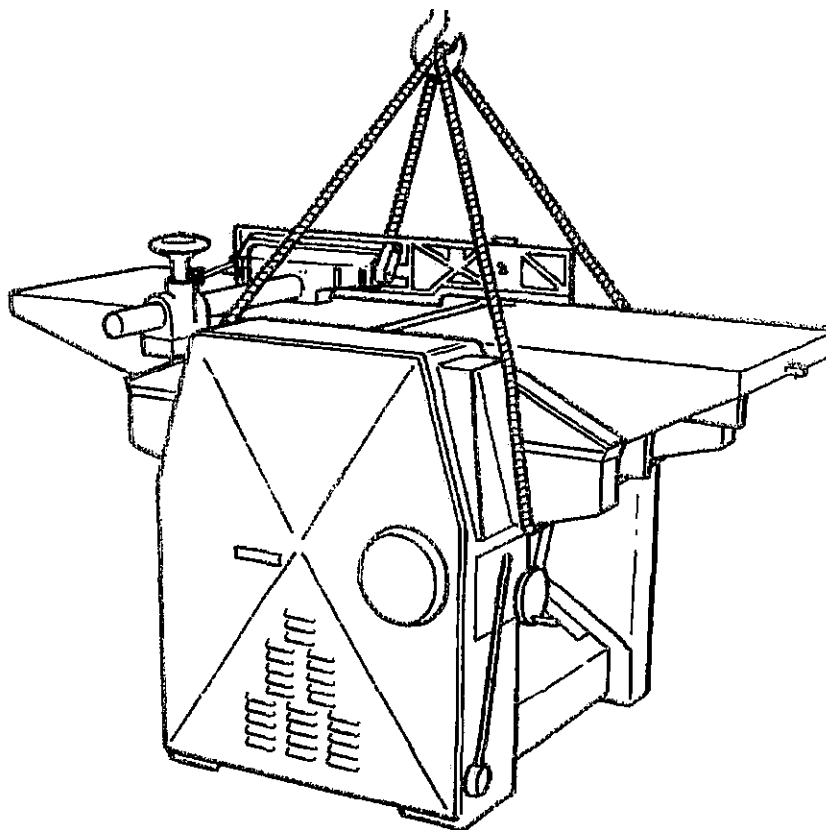


FIG. 1A.

### IMPORTANT.

BEFORE ADJUSTING TABLES OR OPERATING MACHINE ETC.,  
READ SAFETY NOTES INSIDE FRONT COVER OF B.T. INSTRUCTION MANUAL.

## CONTROLS

The control panels are situated at the thickening infeed end of the machine with the following controls incorporated in a grouped layout:- FIG. 1

1. A digital timber thickness indicator
2. Cutterblock start - stop switch.
3. Feed selector switch.
4. Table rise and fall micro adjustment handwheel
5. Lock for table rise and fall micro adjustment handwheel
6. Power table rise and fall lever.
7. Infinitely variable feed speed controls.
8. Under table roller adjusting lever.

An additional Cutterblock start - stop switch is fitted to the side of the infeed planing table for operator convenience.

NOTE: See controls and Operation of enclosed instruction manual.

## SURFACE TABLE ADJUSTMENT

To raise or lower the infeed table, loosen knurled knob "A" in FIG.2 then turn adjusting nut "B" using crank handle supplied with machine, working in conjunction with the depth of cut scale "C" indicated by pointer "D". When set tighten knurled knob "A".

Ensure the outfeed table top is always kept in line with the cutting circle, See FIG. 11.

## BTS FENCE ADJUSTMENT

The fence has positive stops at 90° and 45° which are accurately set before despatch.

To cant fence, loosen handwheel "A" in FIG. 3 and move fence to required position by lever "B". When set relock handwheel "A".

The fence front plate is fitted with an insert "C" which is adjustable depending on the depth of cut being taken. To adjust, loosen wingnut "D" then move insert until it touches the rear table. Relock wingnut "D".

NOTE: The insert should be loosed at all times before raising or lowering table.

To move fence across the table, loosen adjustable handle "E" then turn handwheel "F" until fence is in required position. Relock adjustable handle "E".

The fence should be locked in both positions at all times when machine is in operation.

WORKING WITH FENCE: SEE FIG. 4.

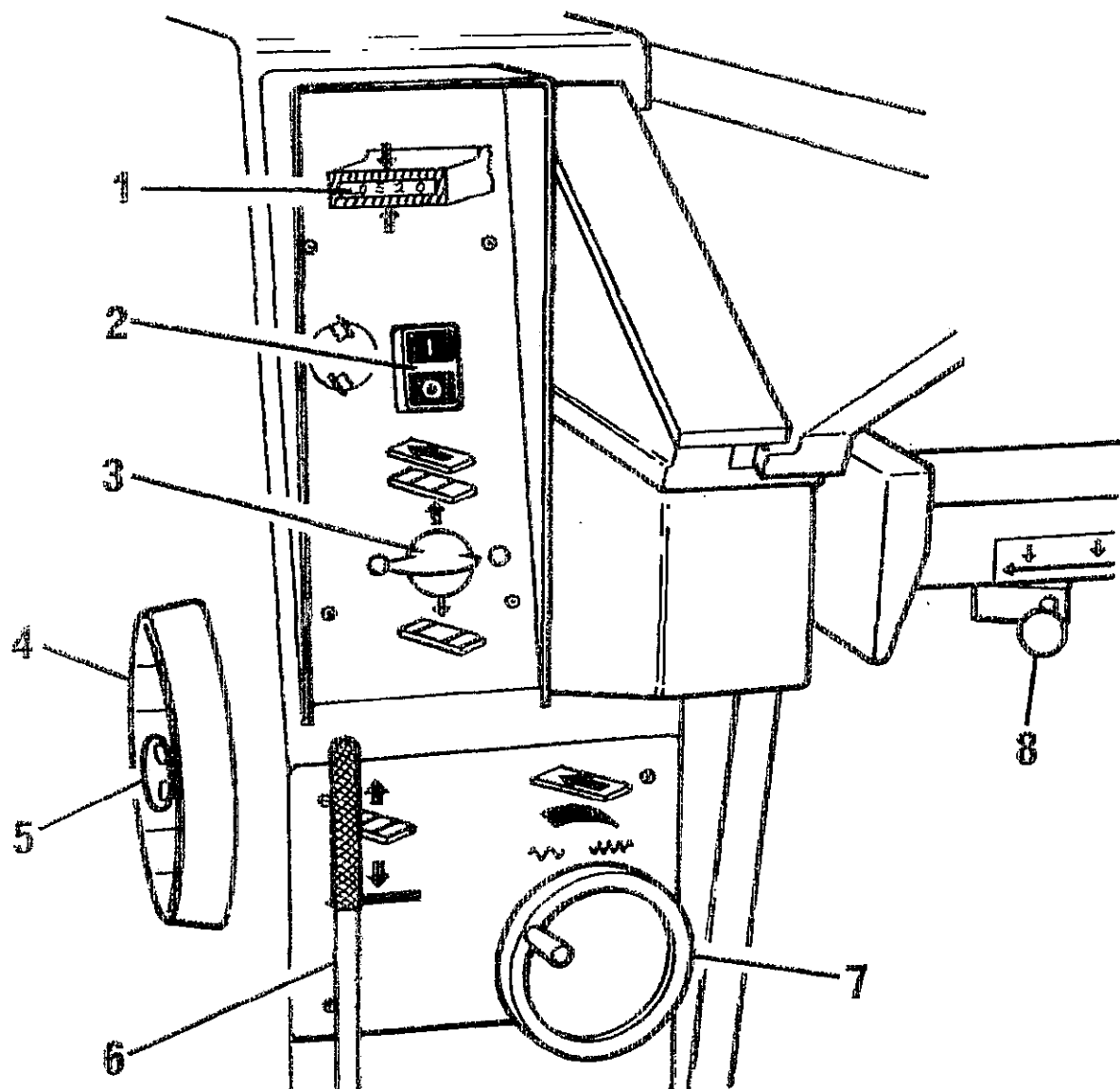
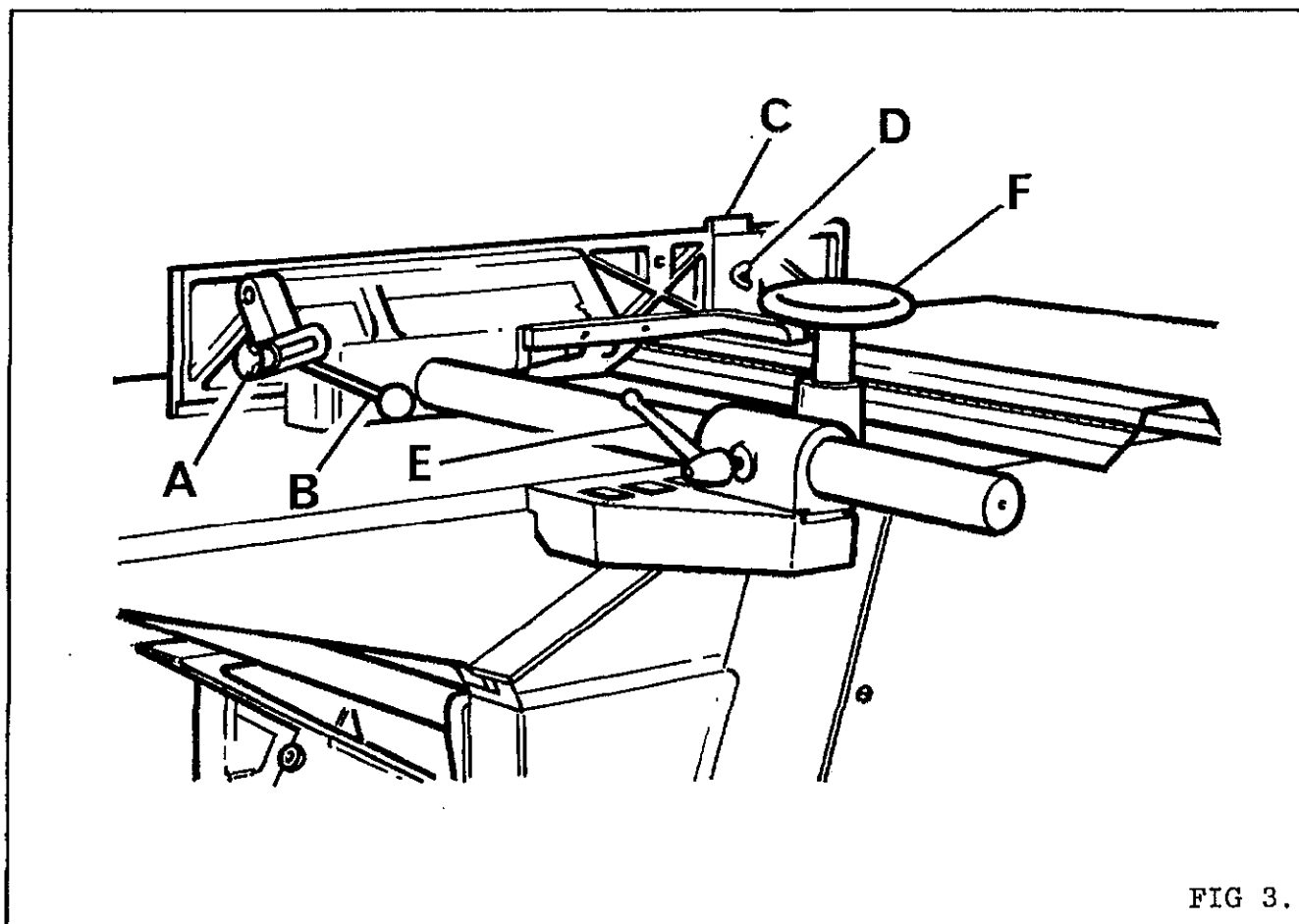
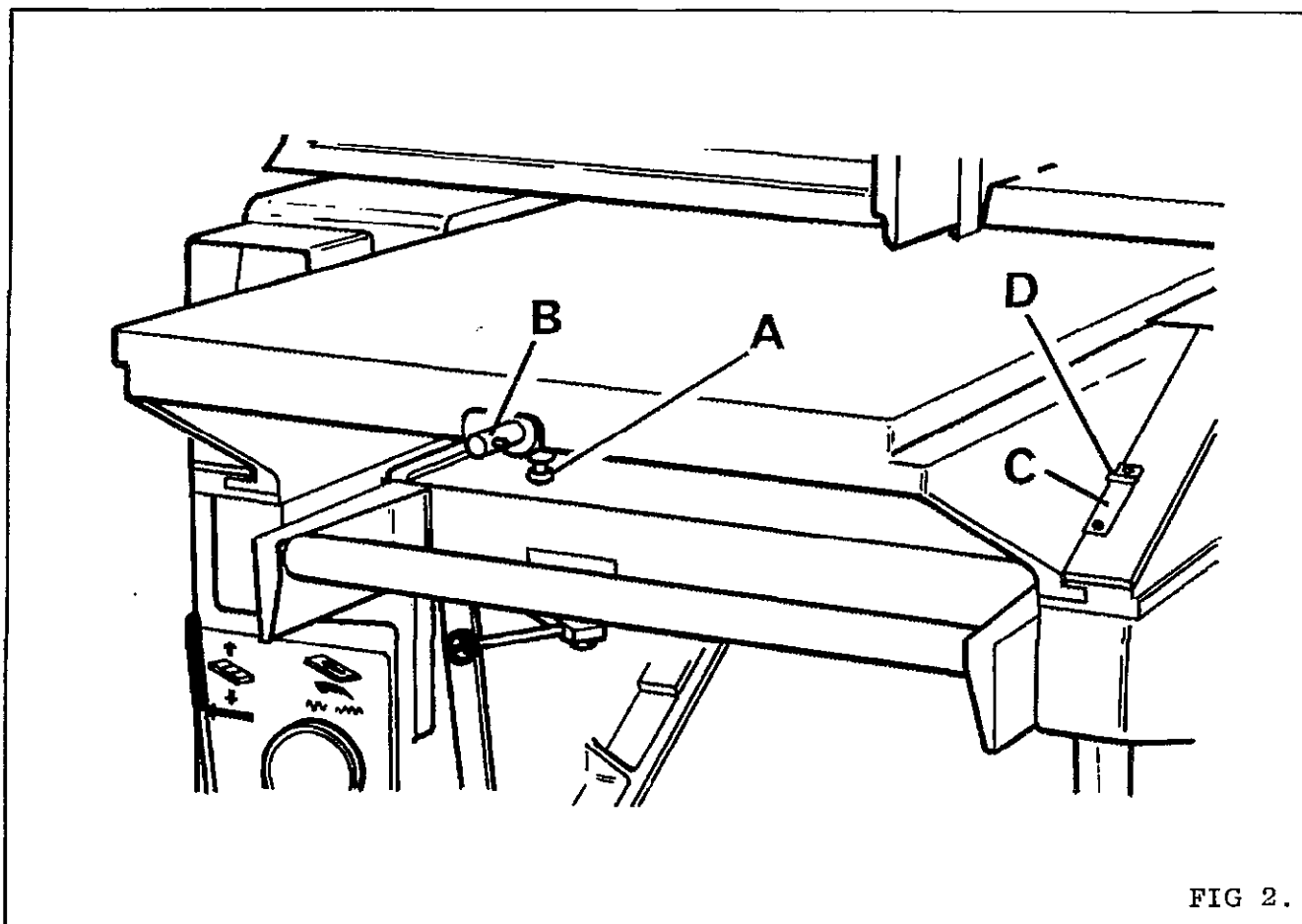


FIG 1.





TO CHECK THE FENCE, FOLLOW THE UNDERMENTIONED PROCEDURE:-

1. Move fence towards rear of table as shown in FIG. 5.
2. Check the 90° positive stop by means of a steel square as in FIG. 5. If adjustment is necessary, loosen locknuts "A" then adjust hexagon head bolts "B" until fence is at right angles to table when hard up against the stops with the handwheel "A" in FIG. 3. locked. When set, tighten locknuts "A" in FIG. 5.
3. Check the 45° positive stop by means of an adjustable square. If adjustment is necessary, loosen locknut "C" in FIG. 5. then adjust hexagon head bolt "D" until the fence is 45° to the table when hard up against the stop and the handwheel "A" in FIG. 3. locked. When set, tighten locknut "C" in FIG. 5.

GUARDS

The front Cutterblock Guard "A" in FIG. 6 must be adjusted at all times to protect the operator from cutterblock when machine is in operation.

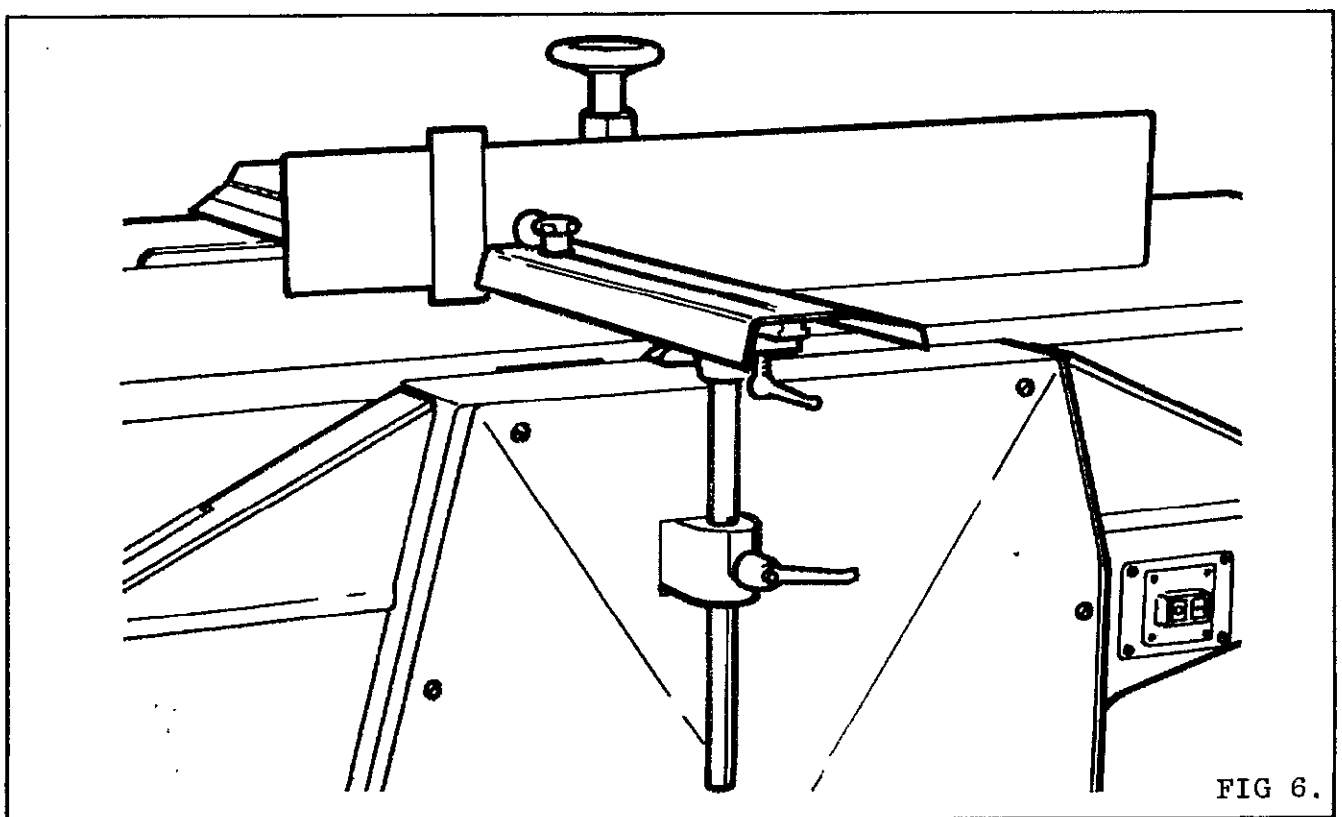
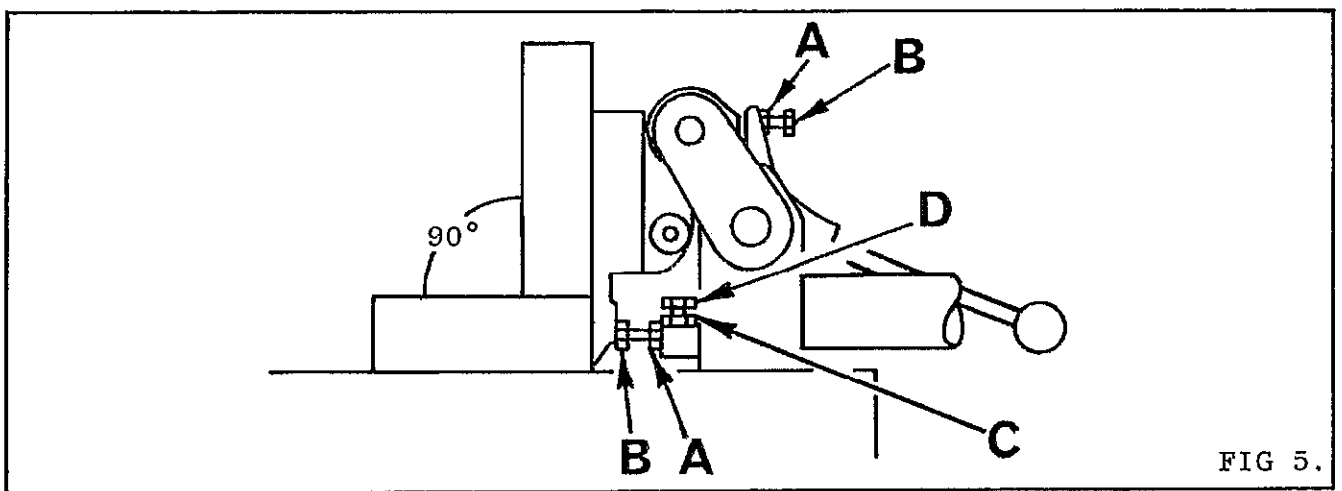
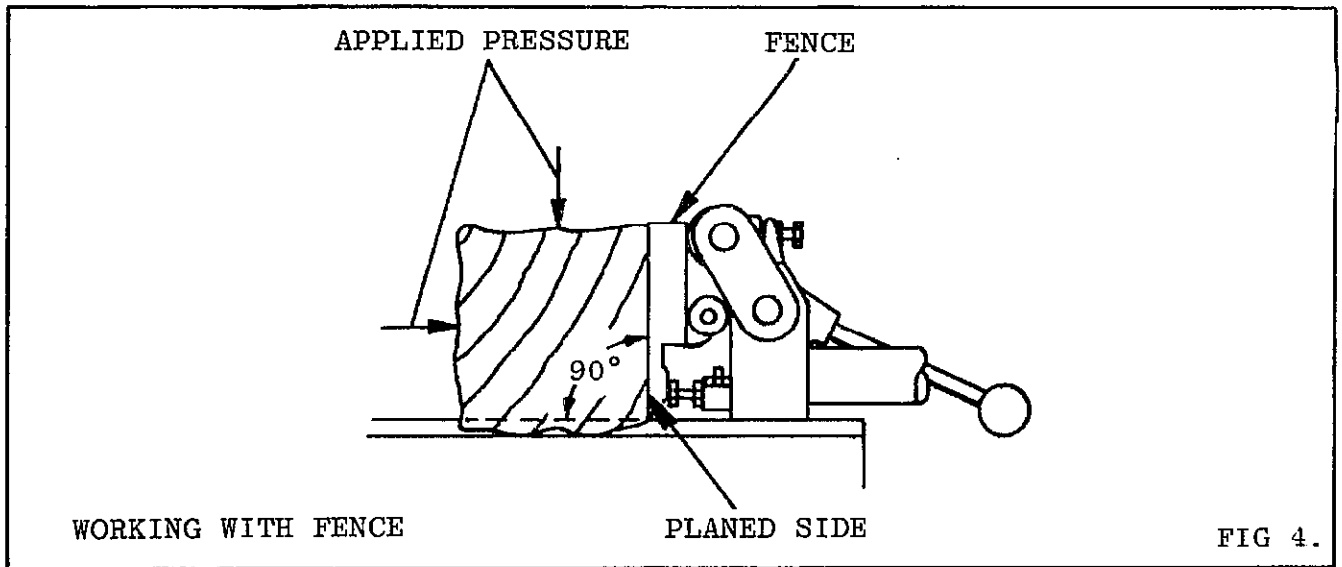
IMPORTANT: Stop machine before adjusting guards.

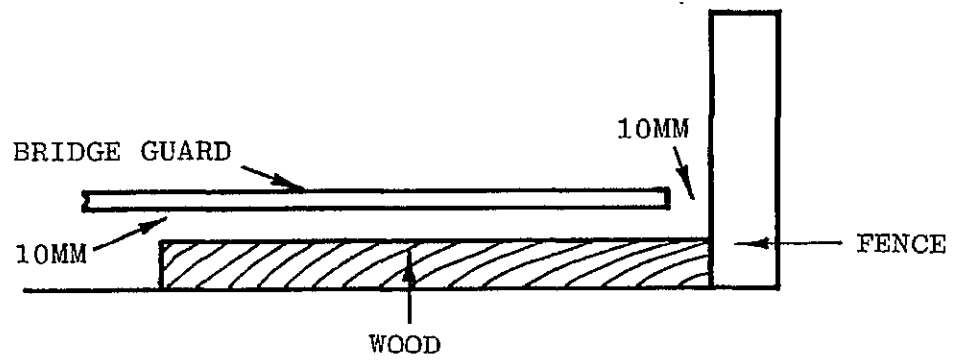
For correct cutterblock guard positions see FIG. 7, FIG. 8 and FIG. 9.

When the machine is to be used for thicknessing, the Tunnel Guard supplied with machine should be fitted to front cutterblock guard as shown in FIG. 10.

GENERAL HINTS FOR SURFACE PLANING

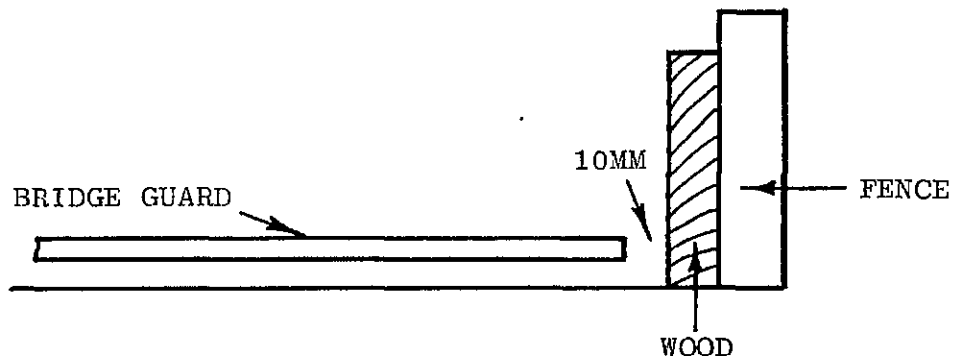
1. To obtain the best surface finish always ensure that the direction of grain runs with the cutterblock as in FIG. 11.
2. To obtain a perfectly flat surface, especially with warped stock always put maximum pressure on the back table at "A" in FIG. 12 and as little as possible on the front table at "B".
3. Greater pressure will be required when surfacing bad grained timber otherwise chattering will take place resulting in a coarse finish near each knot.
4. When square planing four sides of timber, turn timber anti-clockwise after each cut to ensure a machined face is always against the fence as in FIG. 4.





GUARD ADJUSTMENT FOR FLATTING

FIG 7.



GUARD ADJUSTMENT FOR EDGING

FIG 8.

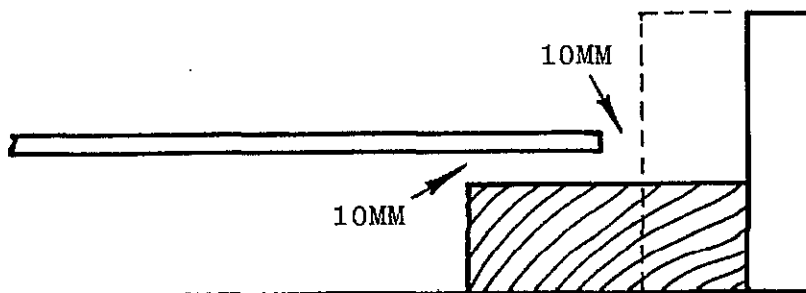
GUARD ADJUSTMENT FOR FLATTING AND EDGING  
CARRIED OUT ONE AFTER THE OTHER

FIG 9.

