



# **7x4" MOULDING MACHINE**

## **Model FB**

**OPERATING & MAINTENANCE INSTRUCTIONS**

# **OPERATING AND MAINTENANCE INSTRUCTIONS**

**FOR**

**7 X 4" MOULDING MACHINE**

**TYPE**

**FB**



OPERATING AND MAINTENANCE  
INSTRUCTIONS

7" x 4"

MOULDING MACHINE

TYPE FB

SPARE PARTS

Should spare parts be required due to breakage or wear full particulars including the machine and test number must be given. This information is on the name plate attached to the \_\_\_\_\_ of the machine and should be forwarded to the SERVICE MANAGER.

WADKIN LTD., GREEN LANE WORKS, LEICESTER, ENGLAND.  
Telephone : 68151

Telex : 34646

7" x 4" MOULDING MACHINE TYPE FB

PRINCIPAL DIMENSIONS AND CAPACITIES

(SEE BOOKLET No. 1000 FOR CUTTER EQUIPMENT)

	FIRST BOTTOM HEAD	FIRST TOP HEAD	FENCE SIDE HEAD	NEAR SIDE HEAD	SECOND TOP HEAD	SECOND BOTTOM HEAD
MAXIMUM CUTTING CIRCLE	7½" 190 mm	9" 228 mm	8½" 215 mm	8½" 215 mm	9" 228 mm	10" 254 mm
MINIMUM CUTTING CIRCLE	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm
R.P.M.	4200 and 6000	4200 and 6000	4200 and 6000	4200 and 6000	4200 and 6000	4200 and 6000
H.P.	7½ or 10	7½ or 10	5	5 or 7½	7½ or 10	7½ or 10
SIZE OF EXHAUST OUTLET	5¾" x 5½" 146 x 140mm	4" x 9¼" 100 x 235mm	5" dia. 127mm	5" dia. 127 mm	4" x 9¼" , 5½" x 9¼" 101 x 235mm	5½" x 9¼" 140 x 235mm

H.P. OF FEED MOTORS	7½/6 or 5/4 r.p.m. 2880/1440					
FEED SPEEDS FT/MIN M/MIN	20 6.1	35 10.7	40 12.2	50 15.2	70 21.3	100 30.4

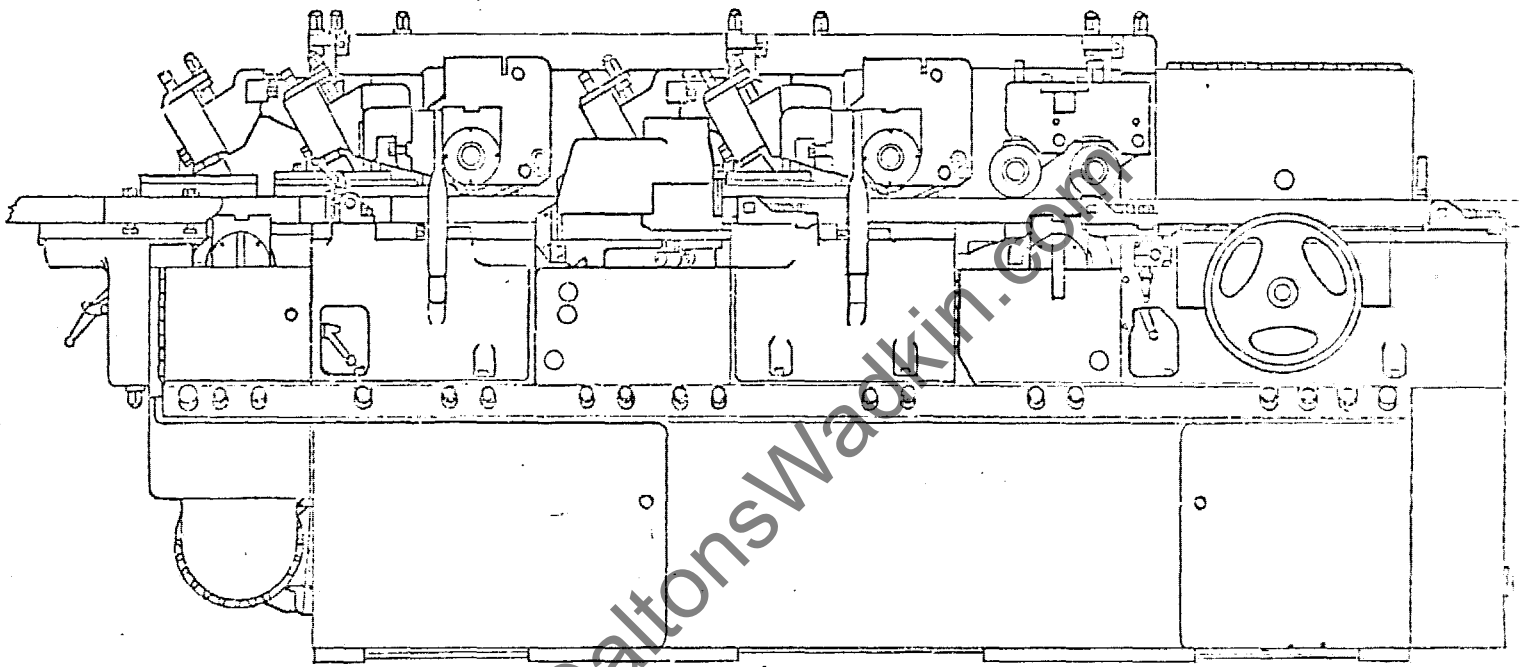


FIG. 1

FRONT VIEW OF MACHINE

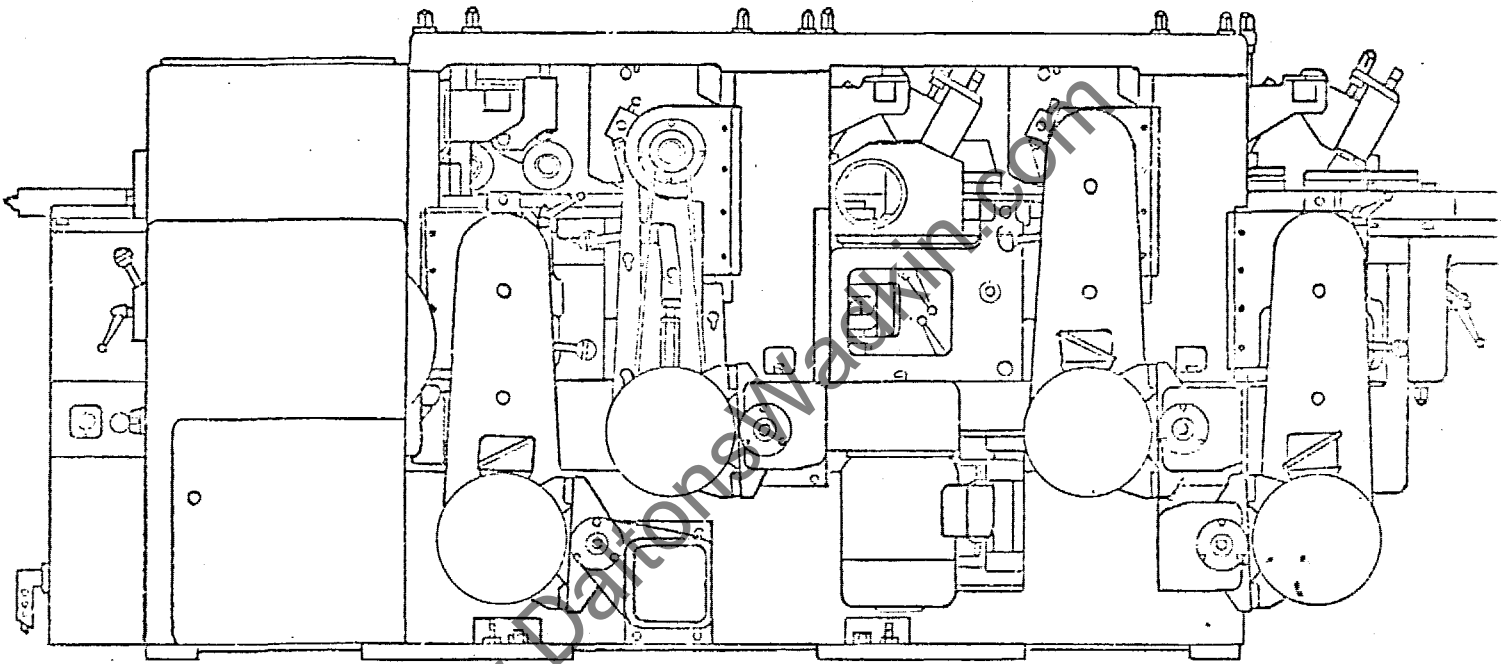
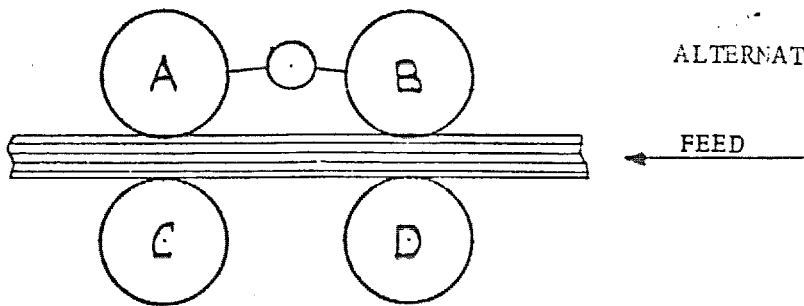


FIG. 2

REAR VIEW OF MACHINE



ALTERNATIVE FEED ROLL ARRANGEMENTS.

NOTE: Toothed rolls must not be fitted at 'A'.

I General Purpose Work (Standard Arrangement)

- A Plain
- B Saw tooth
- C Plain
- D Saw tooth

II Wet Timber

- A Plain
- B Diamond tooth
- C Plain
- D Saw tooth

III Hardwood

- A Plain
- B Diamond tooth
- C Plain
- D Diamond tooth

IV Waxed Timber

As for II or III

V Pre-Machined Stock

- A Polyurethane coated
- B Polyurethane coated
- C Plain
- D Saw tooth

VI Bevelled Stock

- A Narrow heavithane
- B Narrow heavithane
- C Plain
- D Saw tooth

VII Veneered or Faced Stock

- A Polyurethane coated
- B Polyurethane coated
- C Polyurethane coated
- D Polyurethane coated

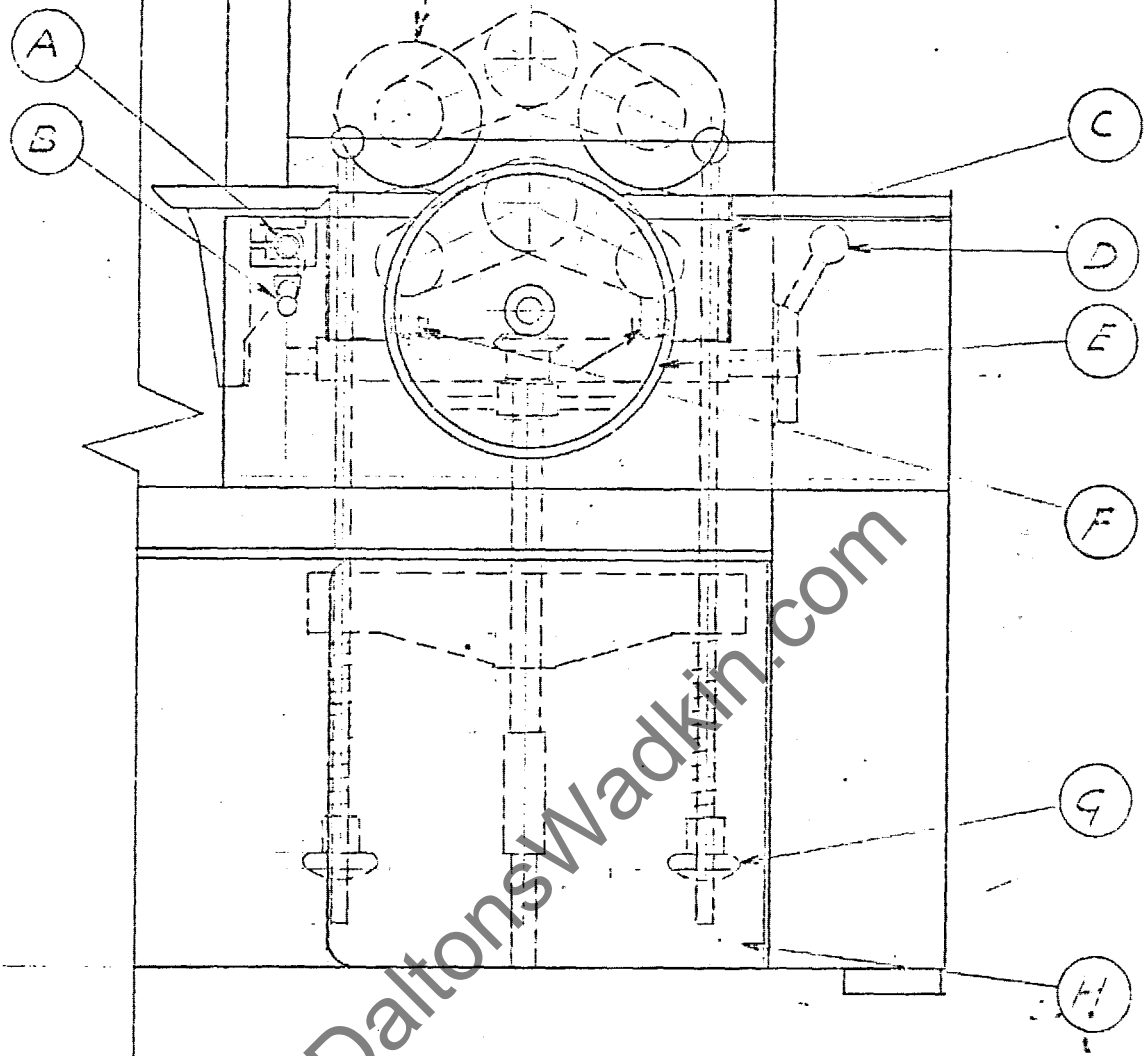


FIG. 3

FRONT VIEW OF FEEDWORKS  
THE FEEDWORKS      THE TOP FEED ROLLS

ADJUSTED VERTICALLY BY MEANS OF HANDWHEEL 'E'.

SPRING TENSION TO THE TOP ROLLS IS ADJUSTED BY MEANS OF HANDWHEELS

'G' ACCESSIBLE THRO' DOOR 'H'

THE TABLE BEFORE FIRST BOTTOM BLOCK IS ADJUSTED BY APPLYING A CRANK

HANDLE TO THE SQUARE 'A' HANDLE 'B' IS THE LOCK FOR THIS ADJUSTMENT

THE BOTTOM FEED ROLLS ARE ADJUSTED BY ROTATING ECCENTRIC 'D', INDEPENDENT  
 ADJUSTMENT IS BY MEANS OF JACKSCREWS 'F'

ACCESS TO THESE JACKSCREWS IS BY REMOVING HANDWHEEL 'E' AND CENTRE PORTION  
 OF TABLE 'C'.

THE BOTTOM FEED ROLLS ARE REMOVABLE AND ACCESS FOR THIS PURPOSE IS ALSO  
 WITH HANDWHEEL 'E' AND TABLE 'C' REMOVED.

NOTE:- FLUTED FEED ROLL MUST NOT BE FITTED ON THE SECOND TOP FEED ROLL  
 SHAFT POSITION 'X'



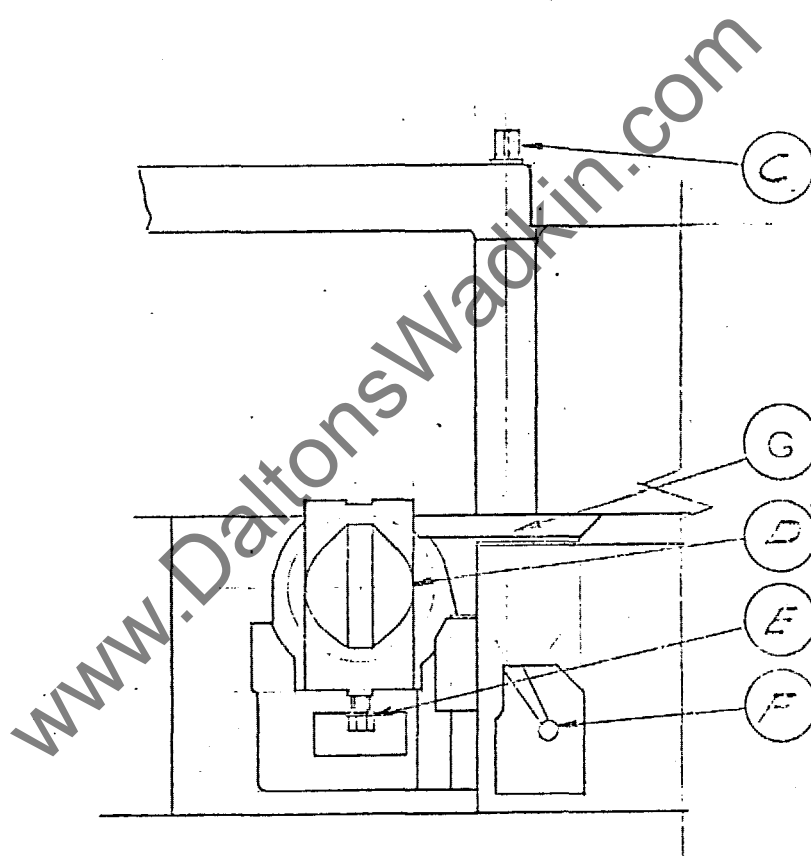
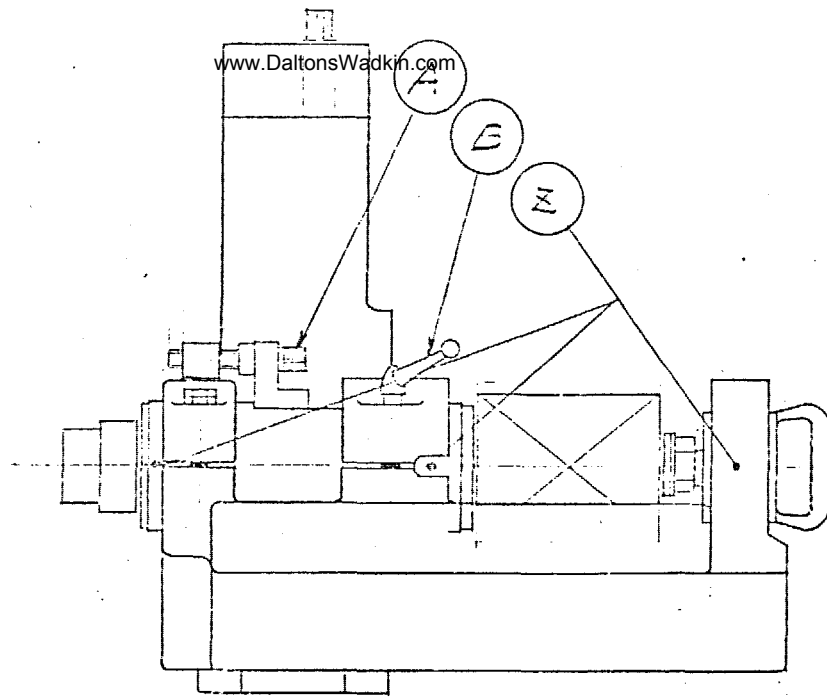
THE FEED SPEED PLATE AS FIG. 5 IS LOCATED ABOVE THE GEAR CHANGE LEVER 'D'. SPEEDS ARE CHANGED BY ADJUSTING THE LEVER AND/OR ADJUSTING THE TWO SPEED MOTOR SWITCH 'E'.

FEED MUST BE STOPPED TO CHANGE SPEED.

TO REPLACE VEE BELTS 'J' TENSION IS REMOVED BY ADJUSTING SCREW 'F' THE CHAIN DRIVE FROM GEARBOX IS TENSIONED BY SLACKING OFF SCREW 'G' AND NUTS 'B' AND ADJUSTING JACK SCREWS 'C'.

THE GEAR BOX IS PROVIDED WITH AN OIL FILLER PLUG/DIPSTICK 'A' AND DRAIN PLUG 'H' (SEE LUBRICATION INSTRUCTIONS)

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FIGS. 6

THE FIRST BOTTOM HEAD

VERTICAL ADJUSTMENT OF THE FIRST BOTTOM HEAD IS MADE BY APPLYING A CRANK HANDLE TO THE SQUARE 'C'. HANDLE 'F' IS A LOCK TO THE MOVEMENT. HORIZONTAL ADJUSTMENT IS MADE BY APPLYING A CRANK HANDLE TO SQUARE 'A'. HANDLE 'B' IS A LOCK TO THIS MOVEMENT THE OUTBOARD BEARING 'D' CAN BE REMOVED FROM SPINDLE END (TO CHANGE C/BLOCK) BY SLACKING OFF NUT 'E'. A LONGER TABLE 'G' IS AVAILABLE TO SUIT THE CONDITIONS FOR DIFFERENT CUTTER DIAMETERS.

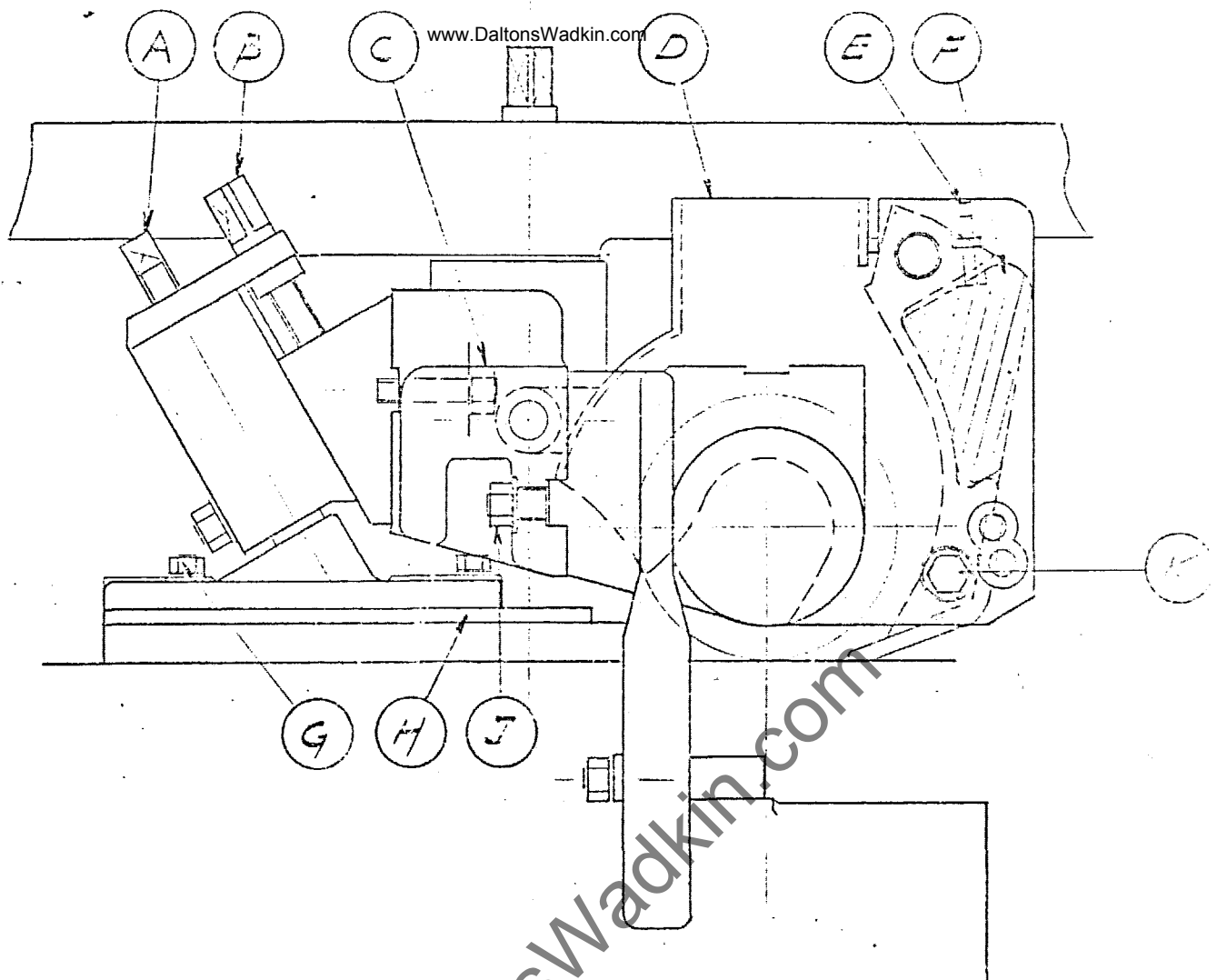


FIG. 7

THE TOP HEAD CHIPBREAKER AND RIGID PRESSURE

THE CHIPBREAKER MAY BE SET IN ONE OF THREE POSITIONS (RELATIVE TO HOOD) FOR DIFFERENT BLOCK DIAS. HEX SCREW 'K' LOCKS CHIPBREAKER IN POSITION. THE LOAD AT THE CHIPBREAKER MAY BE ALTERED BY REMOVING OR ADDING WEIGHTS 'F' SCREWS 'E' LOCK WEIGHTS IN POSITION.

THE RIGID PRESSURE IS ADJUSTED VERTICALLY BY APPLYING A CRANK HANDLE TO SQUARE 'B' AND HORIZONTALLY (ACROSS BED) BY RELEASING NUT 'C' AND SLIDING BY HAND LOADING ON THE PRESSURE IS ALTERED BY ADJUSTING SQUARE HEAD 'A'. LOOSE PLATE 'H' CARRYING WOOD PRESSURE SHOE HAS ADJUSTMENT RELATIVE TO C/BLOCK, NUTS 'G' LOCK PLATE IN POSITION.

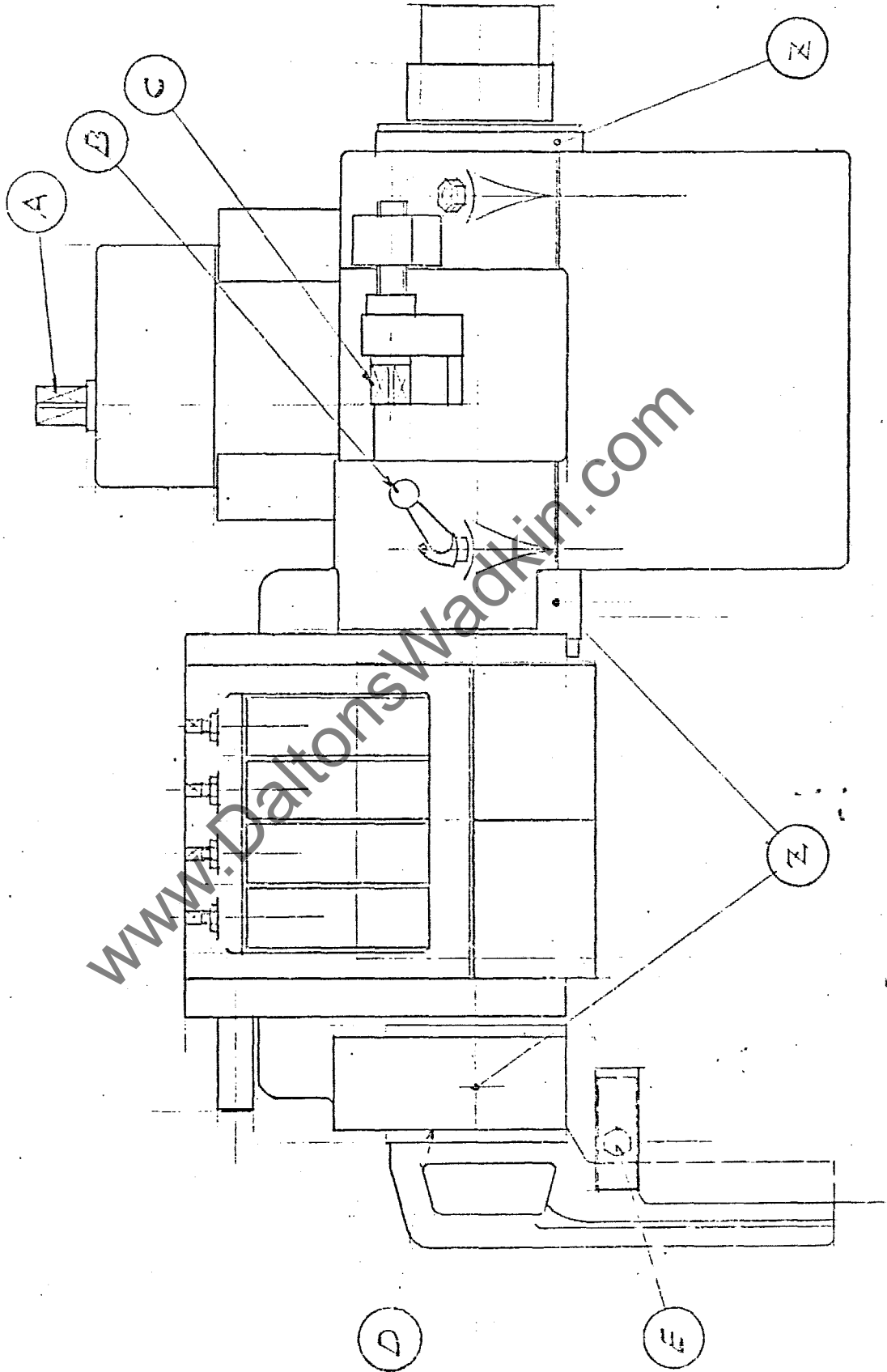


FIG. 8  
THE TOP HEAD

VERTICAL ADJUSTMENT OF THE TOP HEAD IS MADE BY APPLYING A CRANK HANDLE TO THE SQUARE 'A'. HEX. NUT 'E' IS THE LOCK TO THIS MOVEMENT. HORIZONTAL ADJUSTMENT IS MADE BY APPLYING A CRANK HANDLE TO SQUARE 'C'. HANDLE 'B' IS A LOCK TO THIS MOVEMENT. THE OUTBOARD BEARING 'D' CAN BE REMOVED FROM SPINDLE END (TO CHANGE C/BLOCK) BY SLACKING OFF NUT 'J' FIG. 7 AND NUT 'E'

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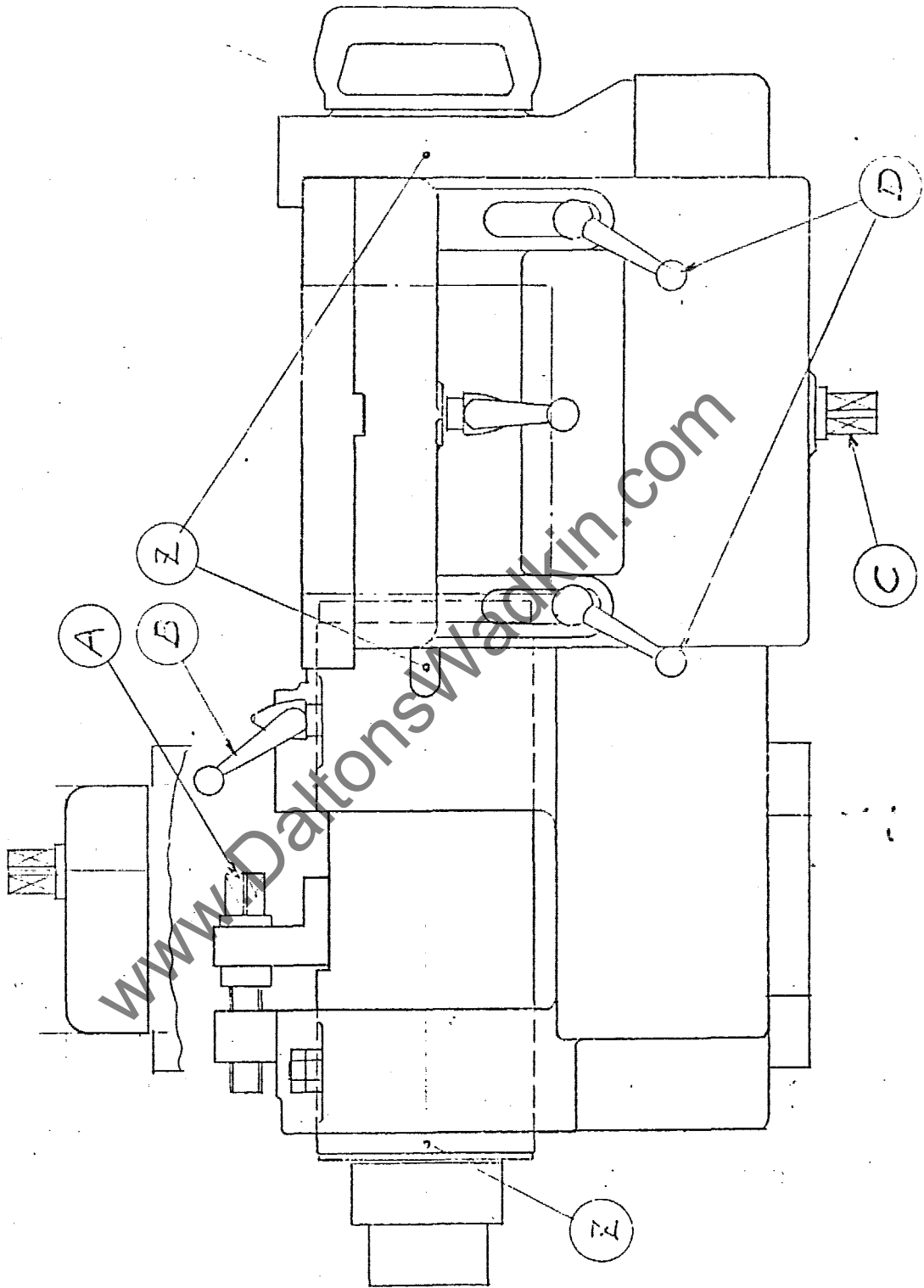


FIG. 9  
THE SECOND BOTTOM HEAD

THE SECOND BOTTOM HEAD

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HORIZONTAL ADJUSTMENT OF THE SECOND BOTTOM HEAD IS MADE BY APPLYING A CRANK HANDLE TO THE SQUARE A HANDLE B IS A LOCK TO THIS MOVEMENT.

VERTICAL MOVEMENT OF THE TABLE AFTER THE SECOND BOTTOM HEAD IS MADE BY APPLYING A CRANK HANDLE TO THE SQUARE C. HANDLES D LOCK THE TABLE SLIDE IN POSITION.

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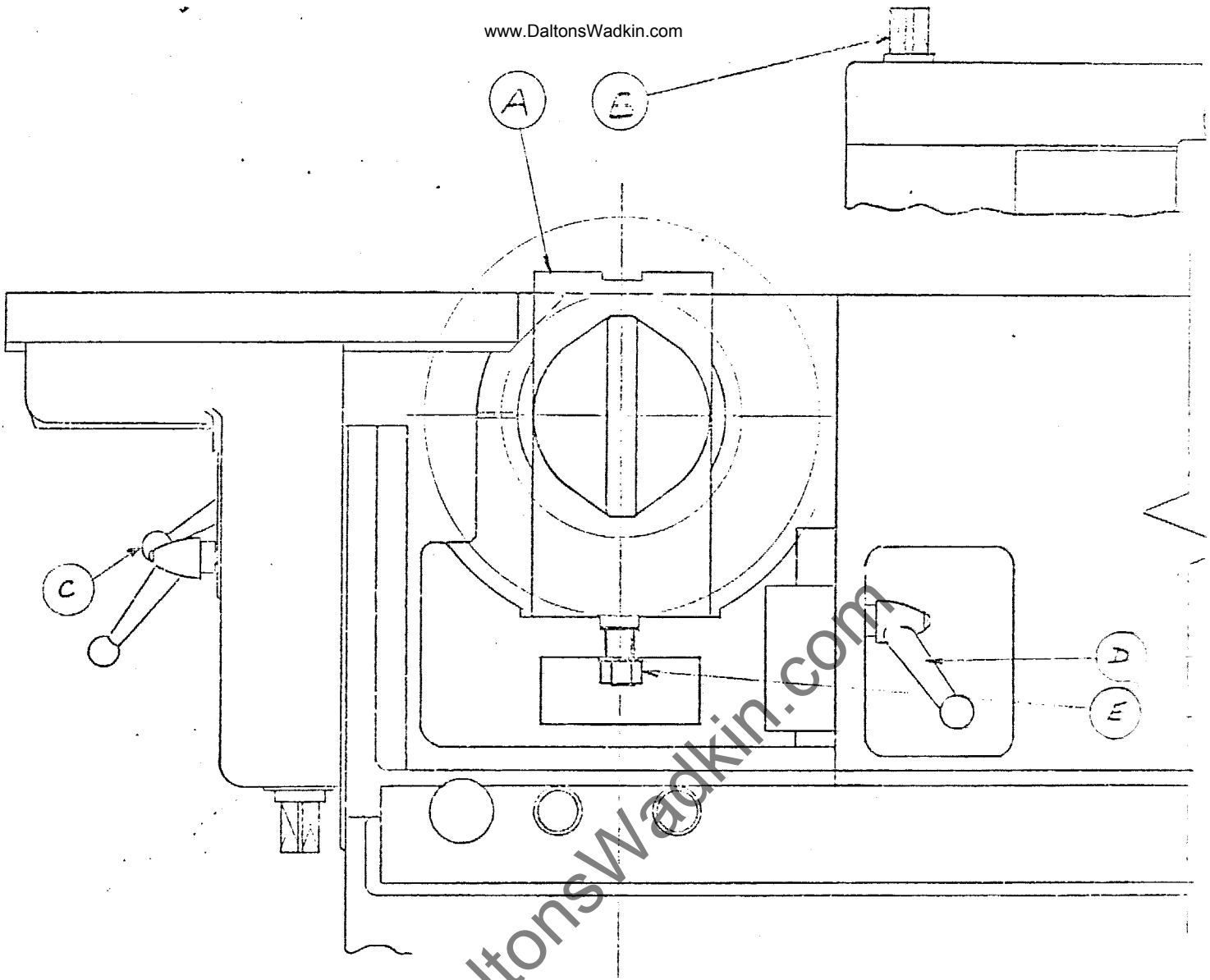


FIG. 10

THE SECOND BOTTOM HEAD

THE TABLE AFTER THE SECOND BOTTOM HEAD MAY BE MOVED OUT TO ACCOMMODATE LARGE CUTTING CIRCLES BY RELEASING LOCKING HANDLE 'C' AND SLIDING TABLE BY HAND.

VERTICAL ADJUSTMENT OF SECOND BOTTOM HEAD IS MADE BY APPLYING A CRANK HANDLE TO SQUARE 'B'. HANDLE 'D' IS A LOCK TO THIS MOVEMENT.

THE OUTBOARD BRG. 'A' CAN BE REMOVED FROM SPINDLE END (TO CHANGE C/BLOCK) BY SLACKING OFF NUT 'E'.



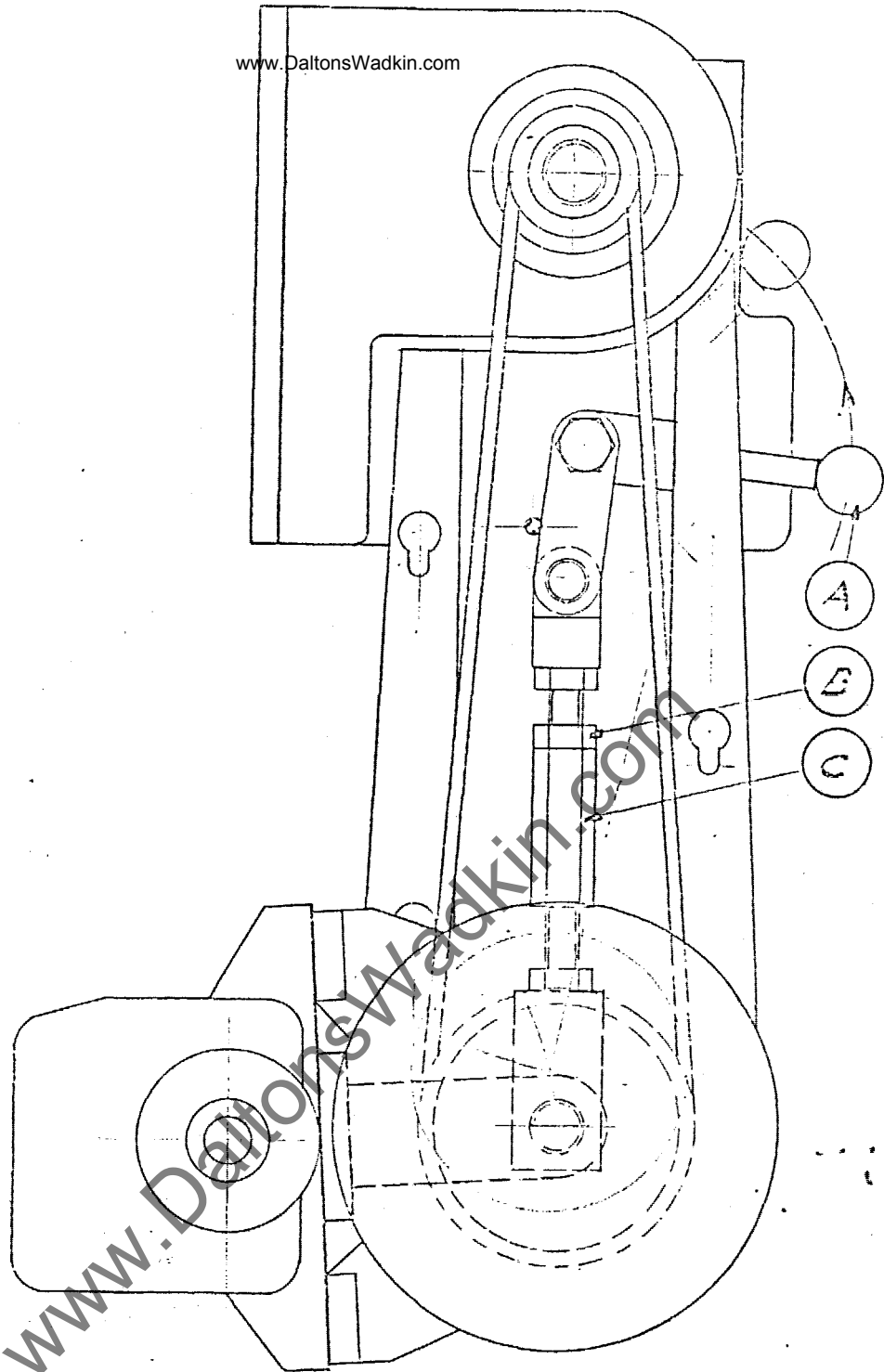


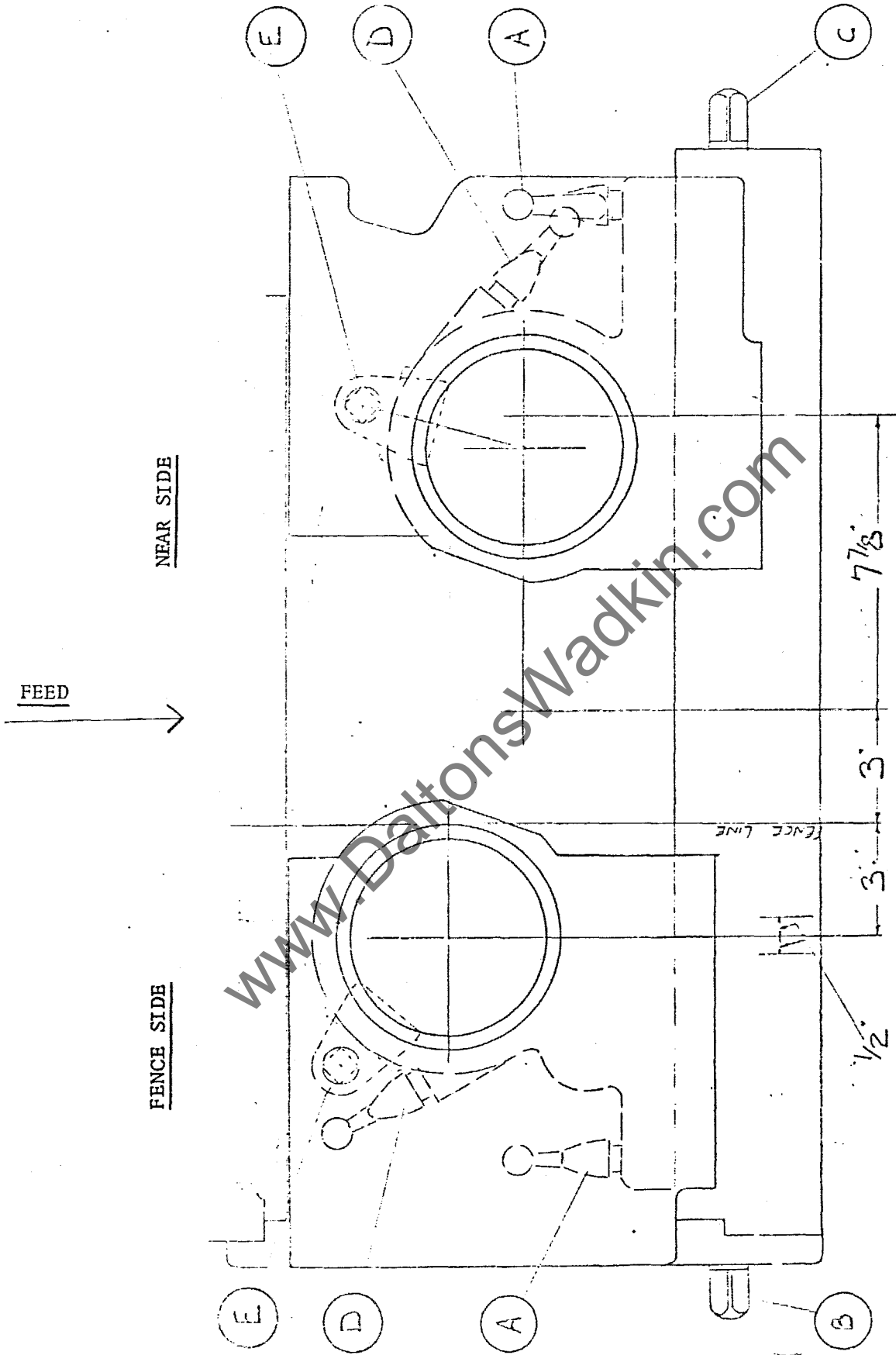
FIG. 11

THE TOP AND BOTTOM HEAD DRIVES (SHOWN WITH COVER REMOVED)

TO TENSION BELTS ROTATE TURNBUCKLE 'C'. THIS IS LOCKED WITH LOCKNUT 'B'.

TO CHANGE SPEED LIFT HANDLE 'A'. THIS RAISES MOTOR AND ALLOWS BELTS TO BE CHANGED. LOWER HANDLE BACK TO ORIGINAL POSITION AFTER CHANGING SPEED.

AFTER THE DRIVE HAS BEEN RUNNING FOR A FEW DAYS, THE BELTS WILL HAVE SEATED IN THE GROOVES AND THE DRIVE TENSION SHOULD BE RE-CHECKED.



MAX. ADJUSTMENTS

FIG. 12

SIDE HEADS

SIDE HEADS

TO ADJUST IN HORIZONTAL PLANE RELEASE APPROPRIATE LOCK AT 'A' AND APPLY CRANK HANDLE PROVIDED TO SQUARES AT 'B' AND 'C'. IN THE CASE OF NEAR SIDE HEAD USE LOWEST OF 2 SQUARES AT 'C' AND FENCE SIDE HEAD USE THE UPPERMOST SQUARE AT 'C'. FENCE SIDE HEADS MAY ALSO BE ADJUSTED BY MEANS OF SQUARE AT 'B' - REAR OF MACHINE.

NOTE:- RELOCK AT 'A' BEFORE COMMENCING CUTTING. TO ADJUST IN VERTICAL PLANE RELEASE APPROPRIATE LOCK 'D' AND APPLY RATCHET SPANNER PROVIDED TO SQUARES AT 'E' LOCATED UNDERNEATH THE SIDE HEAD CARRIAGES. A NORMAL VERTICAL ADJUSTMENT OF 9/16" IS PROVIDED.

NOTE:-

RELOCK AT 'D' BEFORE COMMENCING CUTTING

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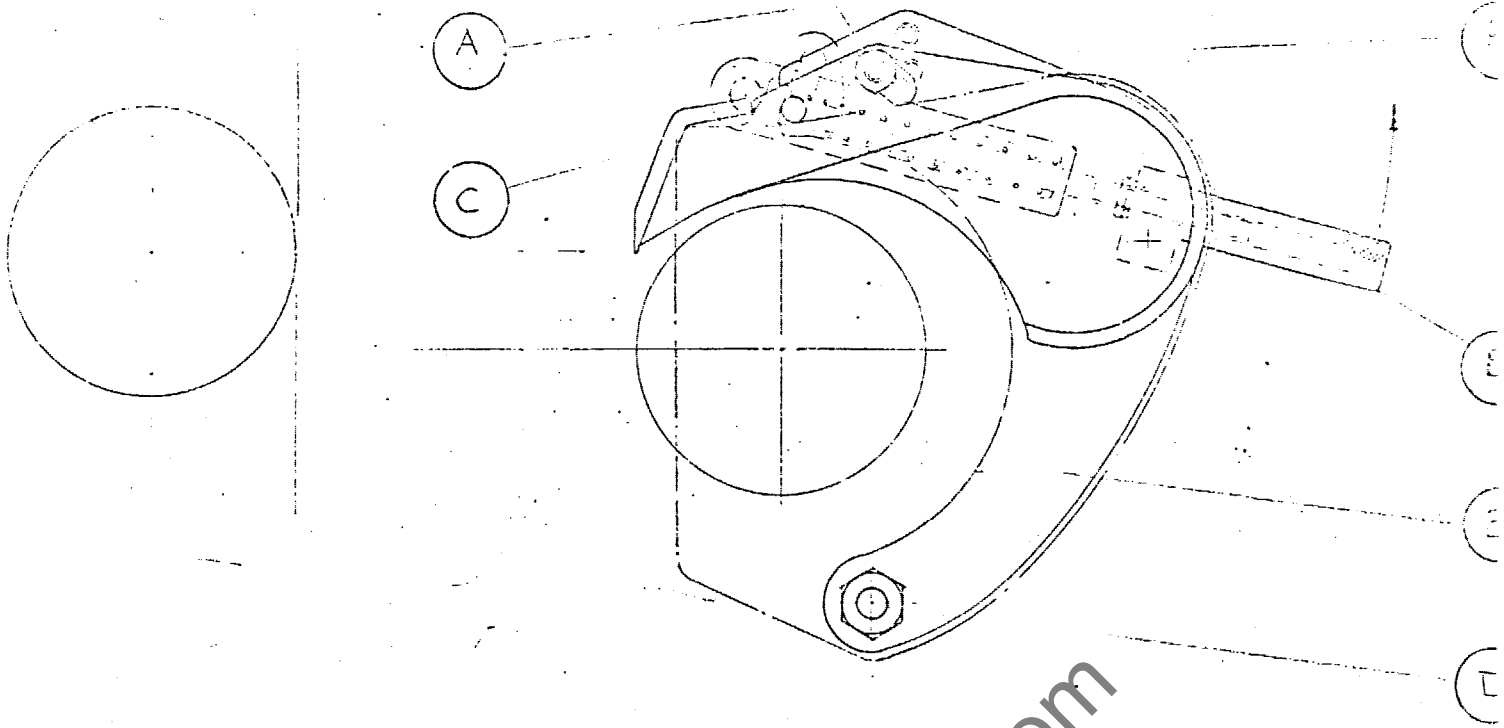


FIG. 13

NEAR SIDE HEAD CHIPBREAKER (DUST HOOD - CHAIN DOTTED)

SCREW 'A' CAN BE POSITIONED IN ONE OF THREE HOLES IN CARRIER PLATE 'B', THIS CATERS FOR VARIOUS CUTTING CIRCLE DIAS. THE DUST HOOD IS EASILY REMOVED FROM ITS LOCATING PINS AT 'C' AND 'D'.

BY UNSCREWING HANDLE AT 'E' SUFFICIENTLY TO DISENGAGE SPIGOT IT CAN BE SWUNG SIDEWAYS IN DIRECTION OF ARROW, THIS ALLOWS CHIPBREAKER MECHANISM TO BE SWUNG CLEAR OF 'BLOCK', TO ENABLE THE JOINTERS TO BE MOUNTED ON CARRIAGE.

NO ADJUSTMENT ON SPRING PRESSURE IS NECESSARY, THE LOCKNUTS AT 'F' ENABLE AN ADJUSTMENT TO THE CHIPBREAKER POSITION TO BE MADE.

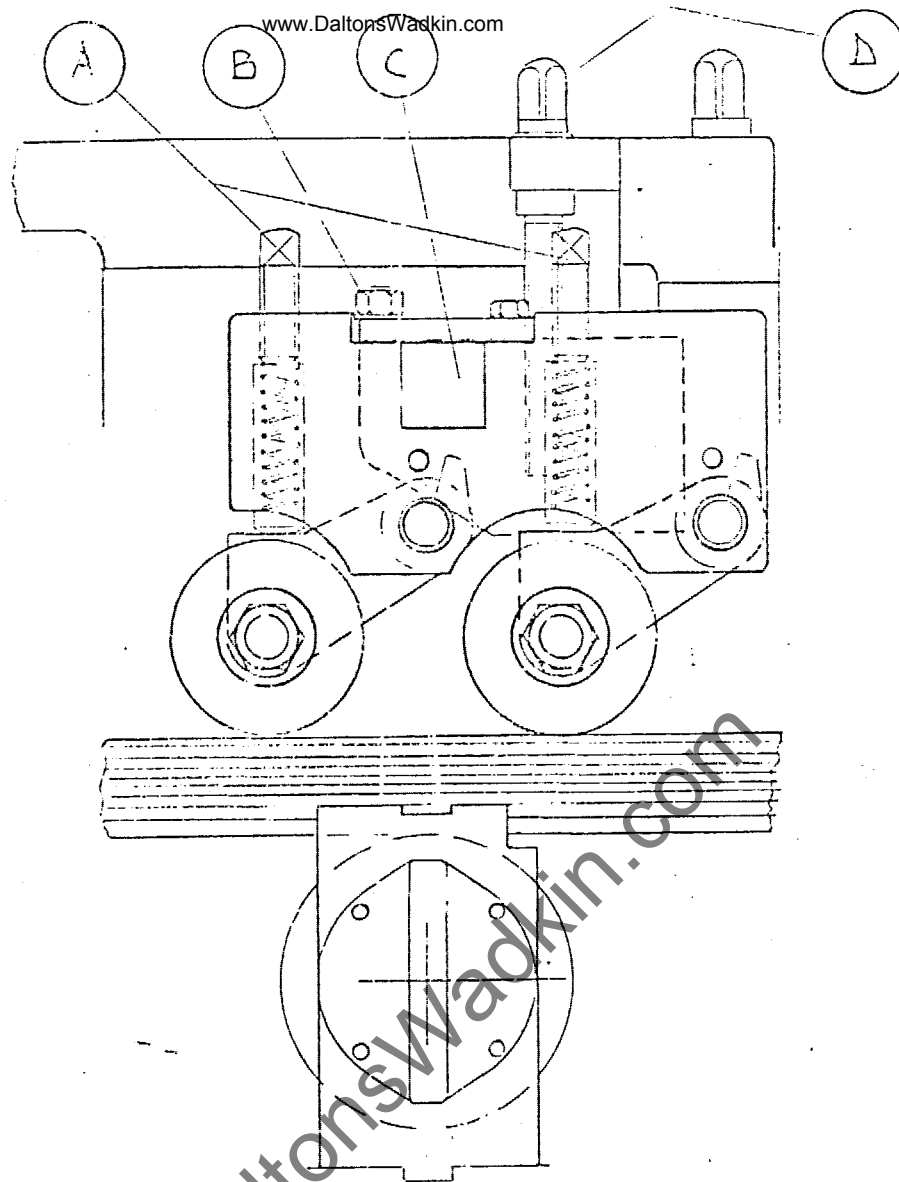


FIG. 14

ROLLER PRESSURE OVER FIRST BOTTOM HEAD

ROLLER PRESSURE IS APPLIED BY MEANS OF SPRINGS AND IS ADJUSTED BY SCREWS AT 'A'.

IN ORDER TO POSITION ROLLERS ACCORDING TO TIMBER WIDTH, THE NUT AT 'B' IS SLACKENED AND MECHANISM MOVED ALONG BAR 'C'. RETIGHTEN NUT 'B'.

VERTICAL MOVEMENT IS OBTAINED BY APPLYING A CRANK HANDLE TO SQUARE AT 'D'

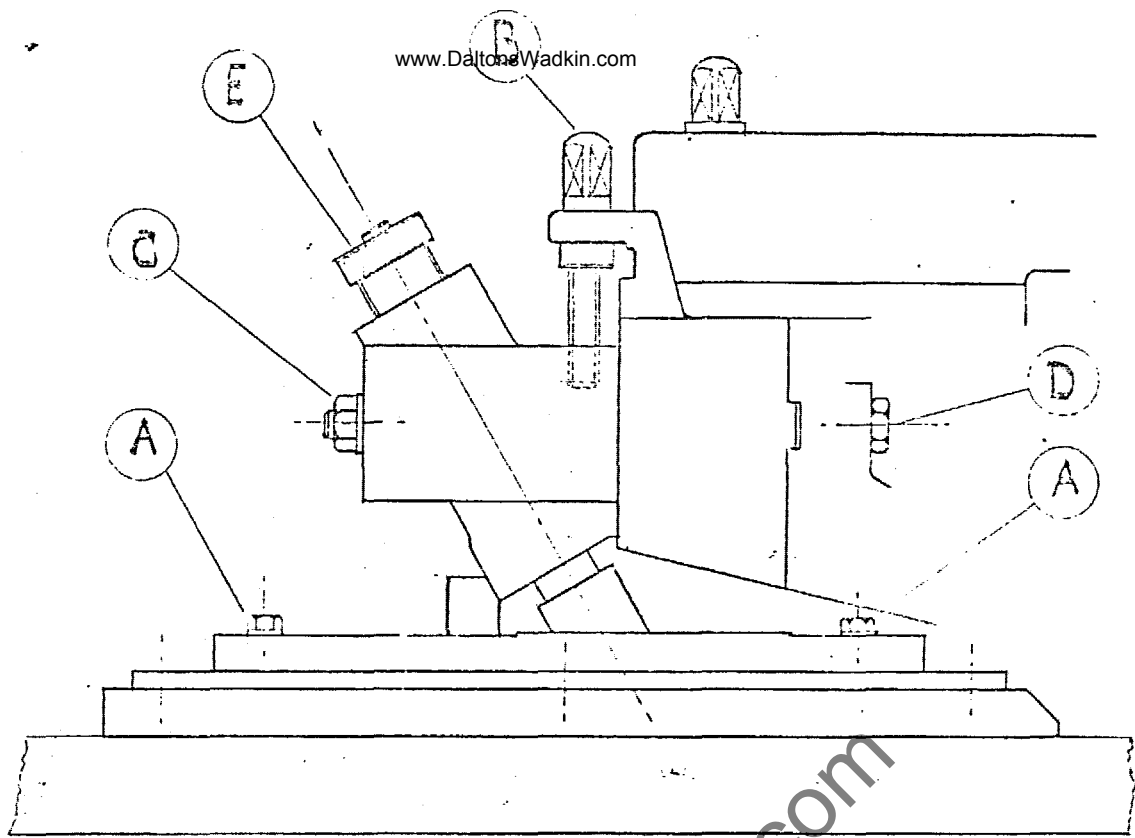


FIG. 15

RIGID PAD PRESSURE

THE ABOVE PRESSURE HAS A WOODEN PAD WHICH IS ADJUSTABLE IN THE DIRECTION OF FEED BY MEANS OF NUTS AT 'A'.

THE PRESSURE RISES AND FALLS WITH THE TOP HEAD CARRIAGE, BUT ALSO HAS A FINE ADJUSTMENT BY MEANS OF SQUARE SCREW (B). THE NUT (C) IS THE LOCK FOR THIS MOVEMENT.

HORIZONTAL ADJUSTMENT IS PROVIDED BY SLACKENING NUT (D) AND SLIDING THE PRESSURE ALONG THE HEAD CARRIAGE.

THE AMOUNT OF SPRING TENSION APPLIED TO THE PRESSURE IS CONTROLLED BY SCREW (E).

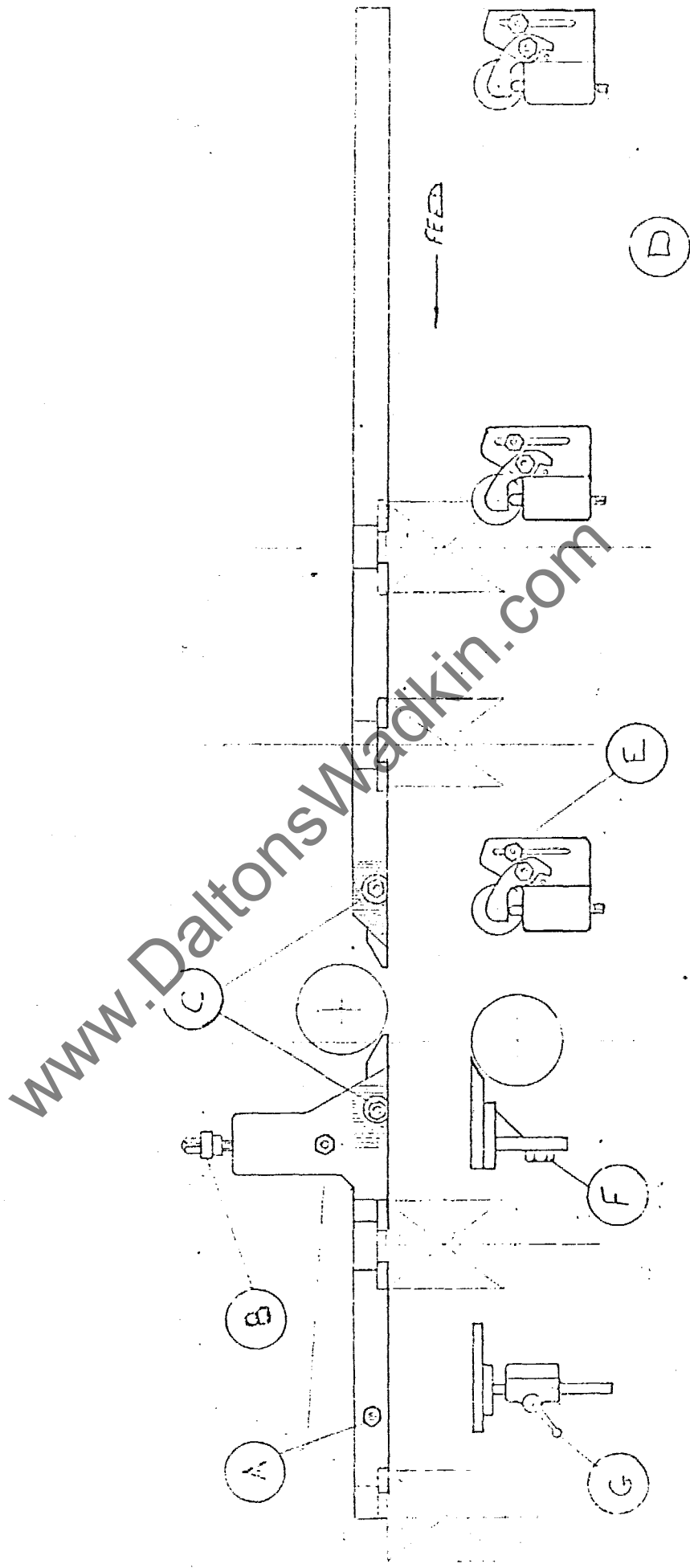


FIG. 16  
SIDE PRESSURES AND FENCES

SIDE PRESSURES & FENCES

FENCE IS FIXED AT INFEED SIDE AND AFTER FENCE SIDE HEAD IS ADJUSTABLE BY UNLOCKING NUTS AT 'A' AND TURNING SCREW 'B'.

BOTH FENCES CARRY NOSE PIECES ADJUSTABLE ON SLIDES ON FENCES AND LOCKED IN POSITION BY HEX NUTS AND SERRATED WASHERS AT 'C'.

THERE ARE THREE ROLLER PRESSURES WITH ADJUSTABLE SPRING PRESSURE (TURN SCREW 'D') ADJUSTABLE FOR VARIOUS TIMBER WIDTHS BY SLACKENING NUT 'E'.

A GUIDE IS SITUATED DIRECTLY AFTER NEAR SIDE HEAD AND IS ADJUSTED BY MOVING ON A SLIDE ON NEAR SIDE HEAD CARRIAGE AFTER SLACKENING NUT 'F'.

A FURTHER GUIDE IS POSITIONED BETWEEN SECOND TOP AND SECOND BOTTOM HEADS AND ADJUSTED AFTER LOOSENING HANDLE 'G'.

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JOINTING

JOINTERS ARE NOT PROVIDED FOR SHARPENING ALONE, ALTHOUGH THIS RESULT IS ACHIEVED, BUT ARE DESIGNED TO IMPROVE QUALITY OF FINISH BY ENSURING THAT ALL KNIVES ON A BLOCK ARE CUTTING EQUALLY.

NORMALLY ABOUT 5 JOINTING OPERATIONS CAN BE OBTAINED BEFORE A MAXIMUM HEEL OF .045" APPROXIMATELY IS REACHED AND THE BLOCK IS REMOVED FOR REGRINDING.

THE JOINTERS CAN BE DIVIDED INTO 4 TYPES

1. STRAIGHT BUILT - IN JOINTER FOR first BOTTOM HEAD ONLY
  2. STRAIGHT JOINTER FOR HORIZONTAL HEADS
  3. PROFILE JOINTER FOR HORIZONTAL HEADS
  4. COMBINATION (STRAIGHT AND PROFILE) JOINTER FOR USE ON SIDE HEADS
- THESE ARE DESCRIBED IN MORE DETAIL ON THE FOLLOWING PAGES.

ALL JOINTERS ARE SUPPLIED AS OPTIONAL EXTRAS ON THIS MACHINE

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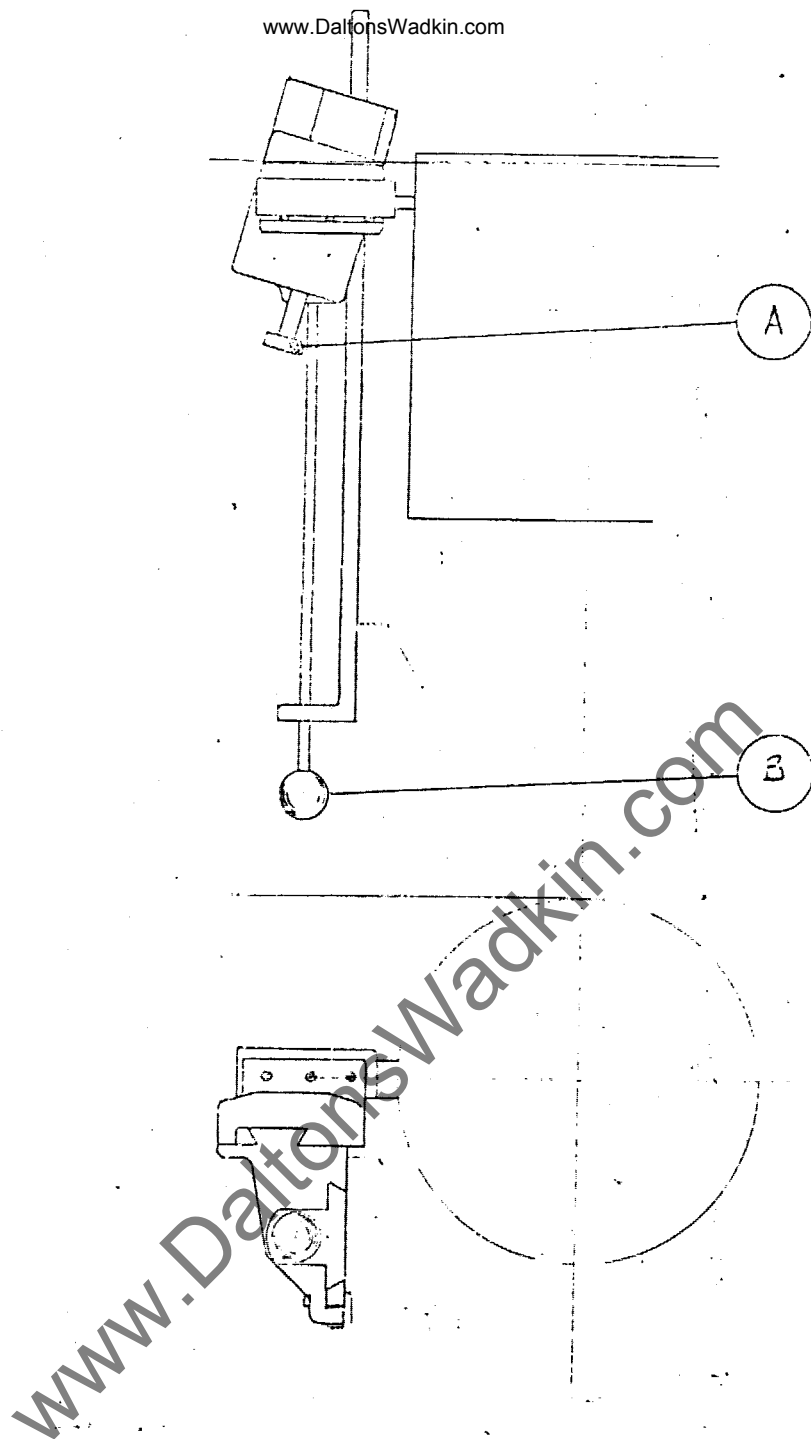


FIG. 17

FIRST BOTTOM HEAD

BUILT IN JOINTER (TO SPECIAL ORDER)

CONFINED TO FIRST BOTTOM HEAD BUT ENABLES JOINTING TO BE UNDERTAKEN WITHOUT INTERRUPTING PRODUCTION.

THE STONE IS CLAMPED INTO ITS HOLDER WITH STONE PROTRUDING, THE HOLDER IS THEN CLAMPED, OPEN SIDE DOWN, INTO THE SLIDE WHICH HAS BEEN WOUND TOWARDS THE FRONT OF THE MACHINE.

THE ANGULAR SLIDE GIVES A FINE FEED TOWARDS THE BLOCK AND IS OPERATED BY TURNING KNOB 'A'.

THE STONE IS PASSED ACROSS THE BLOCK IN A PUSH PULL ACTION BY KNOB AT 'B'.

WHEN JOINTER IS NOT IN USE IT CAN BE PUSHED TO ITS INNERMOST POSITION AT THE REAR OF THE BLOCK. IT WILL BE PREVENTED FROM MOVEMENT ACCIDENTALLY OR BY RUNNING VIBRATIONS BY THE FRONT DOOR WHICH CLOSES OVER THE KNOB 'B'

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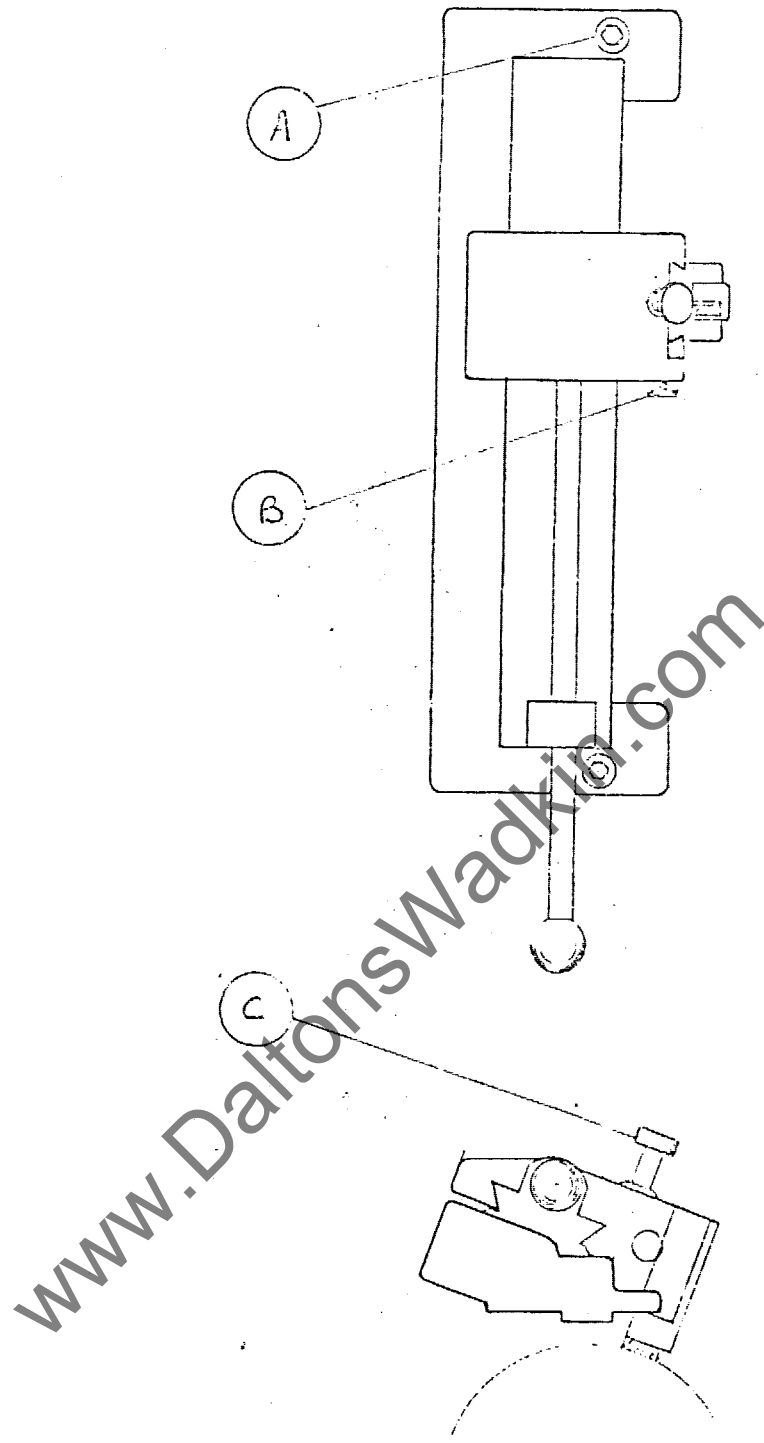


FIG. 18

STRAIGHT JOINTER FOR HORIZONTAL HEADS

THIS HAS SAME ACTION AS BUILT-IN JOINTER AND IS CAPABLE OF BEING USED ON ALL HORIZONTAL HEADS BUT NECESSARILY INTERRUPTS PRODUCTION. THE SLIDE IS MOUNTED ON TONGUE-SLOTS IN CARRIAGE AND OUTBOARD BRG. AND HELD BY TWO CAPTIVE SCREWS 'A'.

SINCE THE SLIDE ON WHICH THE STONE IS FED INTO THE BLOCK IS NORMAL TO THE BLOCK (UNLIKE THE BUILT-IN JOINTER) A LOCKING SCREW 'B' IS PROVIDED. THIS MUST BE TIGHTENED PRIOR TO EACH JOINTING CUT. THE STONE IS FED INTO THE BLOCK BY TURNING KNOB 'C'

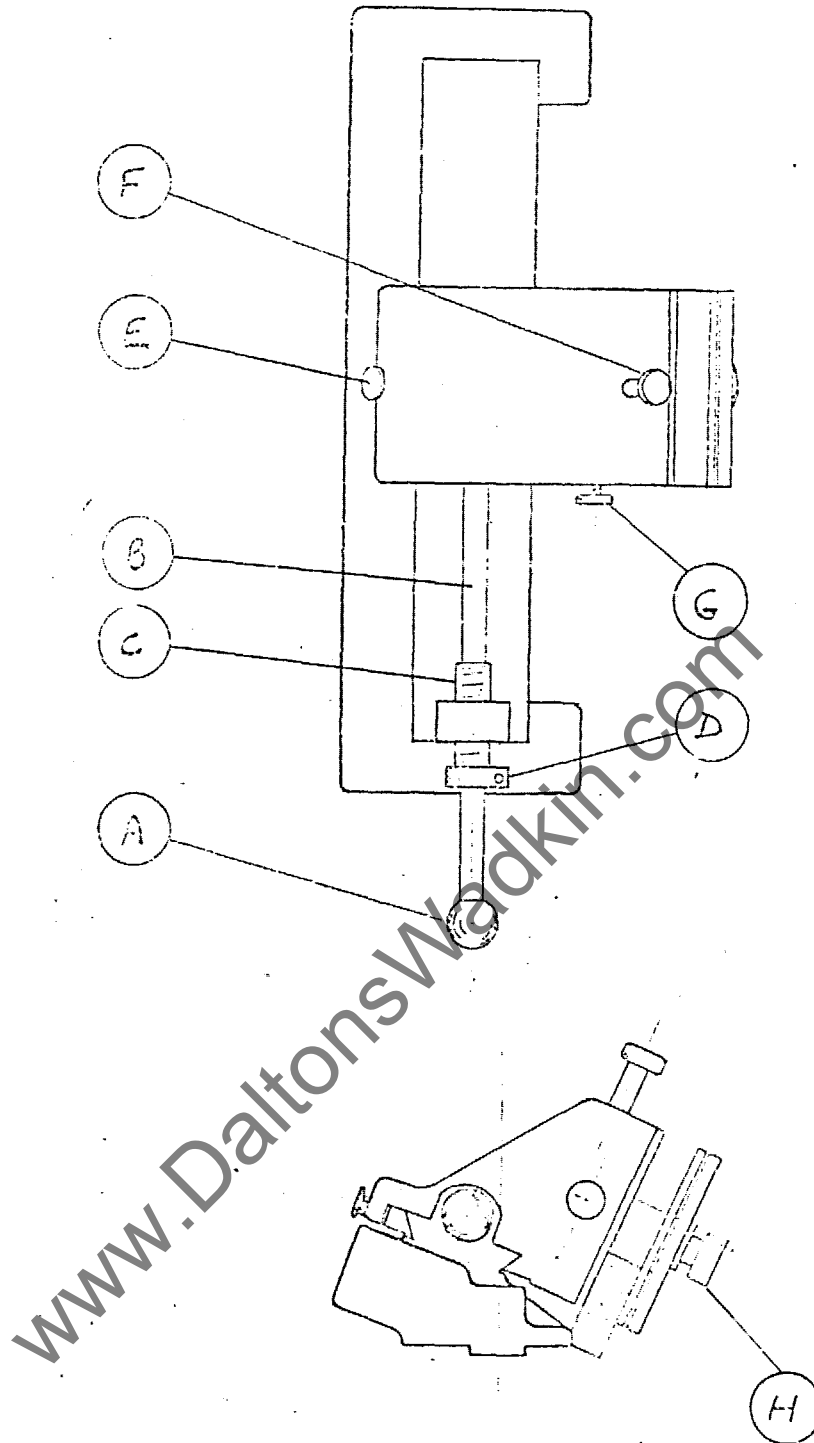


FIG.19  
PROFILE JOINTER FOR HORIZONTAL HEADS

SPECIALY SHAPED STONES ARE APPLIED TO THE CUTTING EDGE OF THE BLOCK EITHER SINGLY OR IN STAGES BY MEANS OF A TURRET HOLDER. IN COMBINING 4 STONES COMPLICATED FORMS CAN BE CATERED FOR.

THE TURRET CAN BE MOVED TO ITS APPROXIMATE POSITION BY PUSH PULL ACTION WITH KNOB 'A'. SHAFT 'B' IS THEN LOCKED TO SCREW 'C' BY TIGHTENING SCREW 'D' THE TURRET CAN NOW BE FINELY ADJUSTED OVER THE LENGTH OF SCREW 'C' AND CAN BE LOCKED ON ITS SLIDE BY SCREW 'E'.

THE STONE CAN NOW BE FED INTO THE BLOCK BY TURNING SCREW 'F' AND A LOCK IS PROVIDED AT SCREW 'G'. TO ROTATE THE TURRET, KNOB 'H' IS UNTIGHTENED SUFFICIENTLY TO RELEASE A PLUNGER, AFTER ROTATION KNOB 'H' CAN BE

RETIGHTENED ALLOWING THE SPRING PLUNGER TO LOCATE IT EXACTLY.  
THE SLIDE IS MOUNTED IN THE SAME WAY AS THE STRAIGHT JOINTER ON  
HORIZONTAL HEADS

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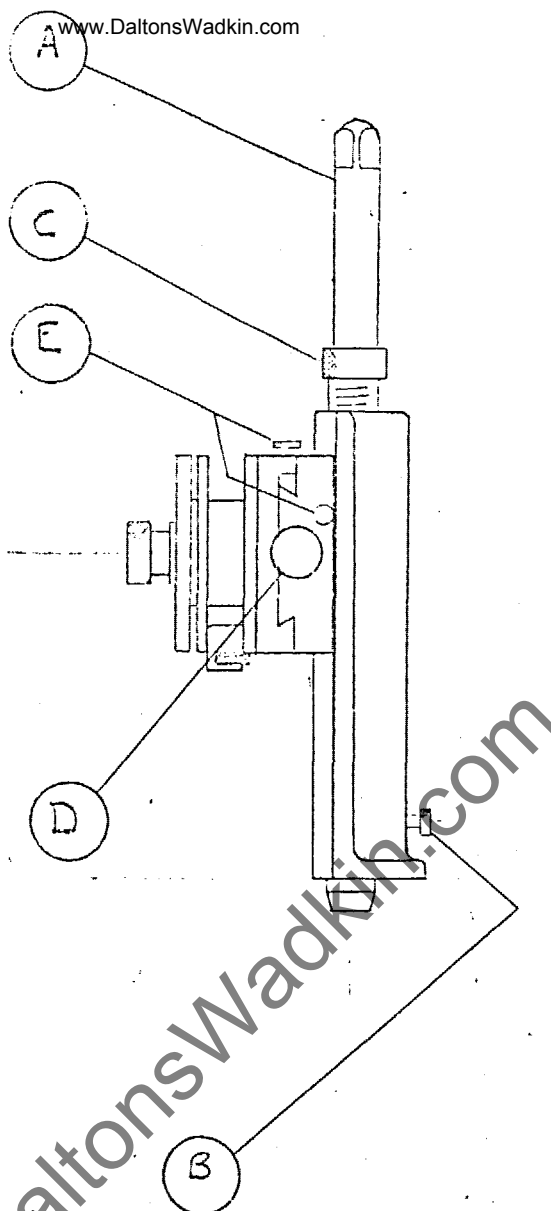


FIG. 20

COMBINATION JOINTER FOR SIDE HEADS

A TURRET PROVIDES THE MEANS FOR BOTH PROFILE AND STRAIGHT JOINTING OPERATION OF TURRET IS THE SAME AS ON HORIZONTAL HEADS.

TO FACILITATE STRAIGHT JOINTING A HOLDER IS PROVIDED FOR THE FLAT STONE MOUNTED IN TURRET AS SHOWN.

THE TURRET IS WOUND UP AND DOWN THE SLIDE BY ROTATING SHAFT 'A'

AFTER LOCKING SCREW 'B', FINE ADJUSTMENT IS OBTAINED BY ROTATING SCREW 'C'.

JOINTING STONES ARE FED TOWARDS THE BLOCK BY ROTATING SCREW 'D'.

LOCKING SCREWS 'E' ARE PROVIDED ON BOTH SLIDES.

ON NEAR SIDE HEAD PRIOR TO JOINTING THE EXTRACTION EQUIPMENT MUST BE REMOVED AND CHIPBREAKER MECHANISM SWUNG CLEAR.

IN CASE OF FENCE SIDE, EXTRACTION HOOD ONLY NEED BE REMOVED, SHAFT 'A' MUST BE ENTERED THROUGH THE HOLE IN THE BEAM AND IN BOTH CASES THE SLIDE IS LOCATED ON A SPIGOT AND LOCK DOWN BY MEANS OF TWO CAPTIVE SCREWS IN BASE.

SPARES LIST

POSITION ON MACHINE	MAKERS' NO.	QUANTITY	BORE	O/D	THICKNESS
RAISING SCREW TO	TORRINGTON THRUST BRG. NTA 2031	2	1 $\frac{1}{4}$		
TOP FEED ROLLS	" " RACE TRD 2031	4	1 $\frac{1}{4}$		
RAISING SCREWS	" " BRG. NTA 1625	5	1		
TO	" " RACE TRA 1625	4	1		
HORIZONTAL HEADS	" " " TRB 1625	6	1		
RAISING SCREWS ON	" " BRG. NTA 1220	2	$\frac{3}{4}$		
SIDE HEADS	" " RACE TRA 1220	4	$\frac{3}{4}$		
FEED ROLL SHAFT	FBC SEALED BRGS DN 207	8	35 mm	72mm	17mm
FEEDWORKS	HOFFMANN ROLLER BRG. RLS 14	3	1 $\frac{3}{4}$	3 $\frac{3}{4}$	13/16
GEARS	" " LS 14	1	1 $\frac{3}{4}$	3 $\frac{3}{4}$	13/16
GEARBOX	" " LS 12	1	1 $\frac{1}{4}$	2 $\frac{3}{4}$	11/16
GEARBOX	" " LS 10	3	1	2 $\frac{1}{4}$	5/8
HORIZONTAL AND SIDE	" " N 3349	4			
HEADSPINDLES	" " N 1071	12			
GEARBOX	NADELLA SHELL TYPE DLF 4020/35	2	35mm	48mm	20mm
GEARBOX	RENOLD DUPLEX CHAIN 114 046	1			
SIDE HEAD DRIVES	FENNER BELTS ALPHA 530	4			
FEED DRIVE	FENNER BELTS ALPHA 560	2			
HORIZONTAL HEAD DRIVES	" " " 560	12			
GEAR BOX	GACO OIL SEAL G225 150	1			
GEAR BOX	" " " G189 125	1			



LUBRICATIONHORIZONTAL HEADS

3 POINTS (Z FIGS. 6, 8, 9) 2 ON CARRIAGE, 1 OUTBOARD BEARING - 1 SHOT/DAY  
WADKIN GRADE L1 SPINDLE OIL. RAISING SCREWS AND SLIDES OILED WEEKLY. WADKIN  
GRADE L4 OIL.

VERTICAL HEADS

2 POINTS AT EXTREME ENDS OF SPINDLE BARRELS - 1 SHOT/DAY WITH WADKIN GRADE  
L1 SPINDLE OIL.

RAISING SCREWS AND SLIDES OILED WEEKLY - WADKIN GRADE L4 OIL

GEARBOX

CHECK LEVEL AT 3 MONTHLY INTERVALS (DIPSTICK 'A' FIG. 4)

TOP UP WITH WADKIN GRADE L2 GEAR OIL

FEEDWORKS

DRIVING GEARS AND FEEDROLL SWINGS TO HAVE DAILY SHOT OF WADKIN GRADE L4 OIL  
(6 POINTS - SITUATED ON OUTSIDE OF COVERS)

AT THREE MONTHLY INTERVALS REMOVE REAR COVERS FROM FEEDWORKS AND APPLY  
WADKIN GRADE L6 GREASE TO TWO GREASE POINTS ON DRIVING GEAR AND SPROCKET.

WADKIN TYPE AND GRADEEQUIVALENTS

HIGH SPEED SPINDLE OIL L1		CASTROL HYSPIN 70	:	MOBIL DTE LIGHT	:	TELLUS OIL 27
HEAVY GEAR OIL	L2	" ALPHA 417	:	" " BB	:	SHELL VITREA 69
GOOD QUALITY M/C OIL	L4	" PERFECTO NN	:	" " VACTRA	:	SHELL VITREA 33

OPERATING AND MAINTENANCE INSTRUCTIONS

7 in FB 180 PLANING AND MOULDING MACHINE

(12 in STAGGER)

INSTRUCTION MANUAL 1193/12

SPARE PARTS

Should spare parts be required due to breakage or wear full particulars including the machine and test number must be given. This information is on the name plate attached to the \* of the machine and should be forwarded to the SERVICE MANAGER.

\*On main frame, inside door below feedworks

## SAFETY RULES

THE SAFE OPERATION OF WOODWORKING MACHINERY REQUIRES CONSTANT ALERTNESS AND CLOSE ATTENTION TO THE WORK IN HAND.

CAREFULLY READ INSTRUCTION MANUAL BEFORE OPERATING MACHINE.

DO NOT OPERATE WITHOUT ALL GUARDS AND COVERS IN POSITION.

BE SURE MACHINE IS ELECTRICALLY EARTHED - GROUNDED

REMOVE OR FASTEN LOOSE ARTICLES OF CLOTHING SUCH AS NECKTIES ETC. CONFINE LONG HAIR.

REMOVE JEWELLERY SUCH AS FINGER RINGS WATCHES, BRACELETS ETC.

USE SAFETY FACE SHIELD, GOGGLES OR GLASSES TO PROTECT EYES AND OTHER PERSONAL SAFETY EQUIPMENT AS REQUIRED.

STOP MACHINE BEFORE MAKING ADJUSTMENTS OR CLEANING CHIPS FROM WORK AREA.

BLUNT CUTTERS OFTEN CONTRIBUTE TO ACCIDENTS. AN EFFICIENT MACHINIST KNOWS WHEN RE-SHARPENING IS NECESSARY, BUT IF THERE IS RELUCTANCE TO SPEND TIME ON GRINDING AND RE-SETTING, THE CUTTERS MAY BE RUN BEYOND THEIR EFFICIENT LIMITS AND INSTEAD OF CUTTING EFFICIENTLY AND SMOOTHLY, THEY TEND TO CHOP AND SNATCH AT THE WOOD. THIS NOT ONLY INCREASES THE RISK OF ACCIDENTS BUT ALSO LOWERS THE QUALITY OF WORK.

CUSTOMERS ARE STRONGLY ADVISED TO USE AT ALL TIMES HIGH TENSILE STRENGTH CUTTER BLOCK BOLTS WHICH SHOULD BE TENSIONED BY MEANS OF A TORQUE SPANNER SET AT 21 MKG. - METRES KILOGRAMMES - 150 LBS. FT.

KEEP THE FLOOR AROUND THE MACHINE CLEAN AND FREE FROM SCRAPS, SAWDUST, OIL OR GREASE TO MINIMISE THE DANGER OF SLIPPING.

## ATTENTION

THIS MACHINE CAN BE DANGEROUS IF IMPROPERLY USED.

ALWAYS USE GUARDS

KEEP CLEAR UNTIL ROTATION HAS CEASED

ALWAYS OPERATE AS INSTRUCTION AND IN ACCORDANCE WITH GOOD PRACTICE.

READ THE INSTRUCTION MANUAL.

## NOTE:

THIS MACHINE, WHEN UNDER WORKING CONDITIONS, MAY PRODUCE A NOISE LEVEL IN EXCESS OF 90 D.B. "WADKIN" LTD., WILL SUPPLY INFORMATION ON ACOUSTICAL ENCLOSURES ON REQUEST, AND WILL REQUIRE A WRITTEN UNDERTAKING THAT THE NECESSARY STEPS WILL BE TAKEN TO ENSURE THAT THE MACHINE IS ONLY USED IN COMPLIANCE WITH THE TERMS OF HEALTH AND SAFETY AT WORK - ACT 1974.

IT IS RECOMMENDED THAT ALL PERSONNEL INVOLVED WITH THE MACHINE ARE ACQUAINTED WITH THE WOODWORKING MACHINES REGULATIONS, 1974 AND ALSO BOOKLET NO: 41 - SAFETY IN THE USE OF WOODWORKING MACHINES - THE LATTER IS ISSUED BY THE DEPARTMENT OF EMPLOYMENT AND AVAILABLE FROM HER MAJESTY'S STATIONERY OFFICE.

## IMPORTANT

IT IS OUR POLICY AND THAT OF OUR SUPPLIERS TO REVIEW CONSTANTLY THE DESIGN AND CAPACITY OF OUR PRODUCTS. WITH THIS IN MIND WE WOULD REMIND OUR CUSTOMERS THAT WHILST THE DIMENSIONS AND PERFORMANCE DATA CONTAINED HEREIN ARE CURRENT AT THE TIME OF GOING TO PRESS, IT IS POSSIBLE THAT, DUE TO THE INCORPORATION OF LATEST DEVELOPMENTS TO ENHANCE PERFORMANCE, DIMENSIONS AND SUPPLIES MAY VARY FROM THOSE ILLUSTRATED.

ALWAYS QUOTE MODEL AND MACHINE NUMBER WHEN ORDERING SPARES

## SPARE PARTS

SHOULD SPARE PARTS BE REQUIRED DUE TO BREAKAGE OR WEAR, FULL PARTICULARS INCLUDING MACHINE AND TEST NUMBER MUST BE GIVEN, THIS INFORMATION IS ON THE NAMEPLATE ATTACHED TO THE FRONT OF THE MACHINE AND SHOULD BE FORWARDED TO THE SERVICE MANAGER.

<b>Wadkin PLC</b>	
GREEN LANE WORKS, LEICESTER, ENGLAND	
MACHINE NO.	<input type="text"/>
TEST NO.	<input type="text"/>
VOLTS	<input type="text"/> 3- <input type="checkbox"/> HZ
AMPS	<input type="text"/> MAX
7in. "FB" 180. (12in.)	

### SAMPLE TYPE ORDER

MACHINE  
MACHINE NO:  
TEST NO:  
PARTS REQUIRED

- |   |   |                                     |
|---|---|-------------------------------------|
| 1 | - | M10 x 50mm. long screwed stud       |
| 1 | - | M10 size. bright mild steel washers |
| 1 | - | Raising screw                       |

Wadkin PLC., Green Lane Works. Leicester LE5 4PF Telephone: 0533 769111  
Cables: Woodworker Leicester  
Telex: 34646 (Wadkin Leicester)

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7 in x 4 in FB 180

## PRINCIPAL DIMENSIONS &amp; CAPACITIES

Maximum timber admitted	190 x 114mm (7.1/2 x 4.1/2in)
Maximum size of finished work	178 x 102mm (7 in x 4 in)
Feed speeds via 3 speed gear box and 2 speed motor	6.1, 10.7, 12.2, 15.2, 21.3, 30.4 m/min 20, 35, 40, 50, 70, 100 ft/min
Infinitely variable feed unit	6-45 m/min. (20-150 ft/min)
Horsepower of feed motor	5.5/2.75 Kw. 7.5/3.75 hp. or 4.8/2.4 Kw. 6.5/3.25Hp
Speed of all main cutter spindles	4200/6000 rpm
Horsepower of cutter spindle motors:	5.5 Kw (7.1/2 hp)
Universal Head	7.5/5.5 Kw (10/7.1/2 hp)
To special order for 2in or 12 in stagger machines, and 3rd top for 12in stagger only.	15Kw (20hp) on 2nd bottom 2nd top
Cutting circles:	
Minimum basic diameter	
Without jointing:-	
First bottom head	146mm (5.3/4 in)
First top head	120mm (4.3/4 in)
Fence side head	120mm (4.3/4 in)
Near side head	120mm (4.3/4 in)
Second top head	120mm (4.3/4 in)
Second bottom head	120mm (4.3/4 in)
With jointing:-	
First bottom head	146mm (5.3/4 in)
First top head	120mm (4.3/4 in)
Fence side head	120mm (4.3/4 in)
Near side head	120mm (4.3/4 in)
Second top head	120mm (4.3/4 in)
Second bottom head	120mm (4.3/4 in)
Maximum basic diameter:	
Without jointing:-	
First bottom head	178mm (7.0 in)
First top head	160mm (6.1/4 in)
Fence side head	165mm (6.1/2 in)
Near side head	165mm (6.1/2 in)
Second top head	160mm (6.1/4 in)
Second bottom head	178mm (7.0 in)
With jointing:-	
First bottom head	178mm (7.0 in)
First top head	160mm (6.1/4 in)
Fence side head	165mm (6.1/2 in)
Near side head	165mm (6.1/2 in)
Second top head	160mm (6.1/2 in)
Second bottom head	178mm (7.0 in)

Cutting circles:

Maximum swing diameter:

Without jointing:-

First bottom head	190mm (7.1/2 in)
First top head	228mm (9.0 in)
Fence side head	216mm (8.1/2 in)
Near side head	216mm (8.1/2 in)
Second top head	228mm (9.0 in)
Second bottom head	254mm (10.0 in)

With jointing:-

First bottom head	178mm (7.0 in)
First top head	178mm (7.0 in)
Fence side head	190mm (7.1/2 in)
Near side head	190mm (7.1/2 in)
Second top head	178mm (7.0 in)
Second bottom head	178mm (7.0 in)

Spindle diameter All heads 40mm

Diameter of feed rolls 152mm (6 in)

Maximum height of machine 1245mm (4ft. 1 in)

Bed height 838mm (2ft. 9 in)

www.DaltonsWadkin.com



7 in x 4 in FB 180 CAPACITY CHART 12 in STAGGER

ADJUSTABLE FENCE ADJUSTS

6mm (0 - 1/4in) IN FRONT OF  
FIXED FENCE LINE

MAX. 95mm (3.3/4in)

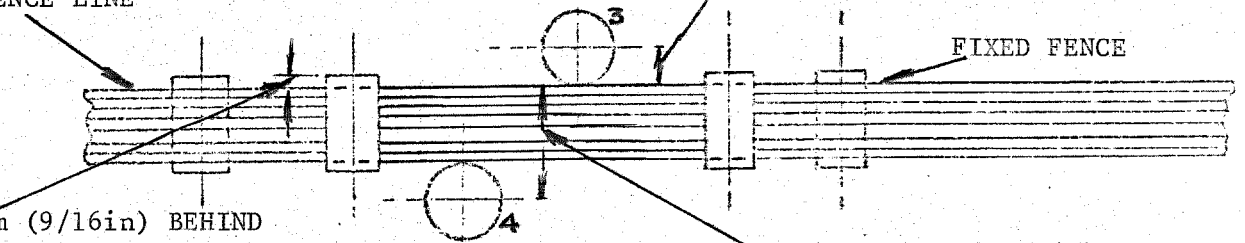
MIN. 57mm (2.1/4in)

MAX. 14mm (9/16in) BEHIND

MIN. 3mm (1/8 in) FORWARD

MAX. 267mm (10.1/2in)

MIN. 70mm (2.3/4in)



194mm (7.5/8in) MAX.

76mm (3in) MIN

FEED

INFEED  
TABLE  
ADJUSTS  
FROM BED  
LEVEL TO  
3mm (1/8in)  
BELOW

MAX. 89mm (3.1/2in)

MIN. 60mm (2.3/8in)

MAX. 19mm (3/4in) BELOW

MIN. 3mm (1/8in) ABOVE

MAX. 89mm (3.1/2in)

MIN. 73mm (2.7/8in)

	6		5 and 7		4		3		2		1	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
D1	120	4.3/4	120	4.3/4	120	4.3/4	120	4.3/4	120	4.3/4	146	5.3/4
D2	178	7	160	6.1/4	165	6.1/2	165	6.1/2	160	6.1/4	178	7
D3	254	10	228	9	216	8.1/2	216	8.1/2	228	9	190	7.1/2
D3 (J)	178	7	178	7	190	7.1/2	190	7.1/2	178	7	178	7

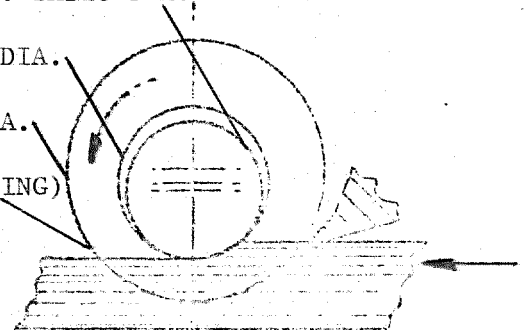
ALL HEADS - CUTTING DIA.  
OF WADKIN STANDARD  
CUTTERBLOCKS ON 40mm dia.  
SPINDLES - 6 in (152mm)

D1 MIN. BASIC DIA.

D2 MAX. BASIC DIA.

D3 MAX. SWING DIA.

D3 MAX. SWING DIA. (JOINTING)



## INSTALLATION

Foundation bolts are not supplied with the machine. If the mill floor consists of 4 in to 6 in solid concrete, no special foundation is necessary. Rag type holding-down bolts may be used. Cut 6in square holes in concrete for bolts. Run in liquid cement when machine has been levelled.

Clean protective coating from bright parts with cloth soaked in paraffin, turpentine, or another solvent.

See foundation drawing supplied separately.

It is essential that the machine is connected to a dust collecting system. The machine has a built-in outlet point for each head.

## WIRING DETAILS

The motors 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 with those on the machine plate.
- (2) Check that the main fuses are of the correct capacity in accordance with the machine name plate
- (3) Connect the incoming supply leads to the appropriate terminals.
- (4) Check that all connections are sound.
- (5) Check that the spindle rotation is correct (start forward feed; from front of machine the top feed rolls should rotate clockwise). Reverse any two of the line lead connections of the incoming supply to reverse rotation.

## PNEUMATICS (TO SPECIAL ORDER)

The pneumatic equipment is fitted and tested before despatch. All that is required is to connect an air pipe to the filter unit, located under the front of the feedworks. The regulator on this unit should be set to read 80 p.s.i. on the gauge.

The lubricator on this unit MUST be filled with Mobil Almo No.1 oil.

## THE FEEDWORKS

The top feedrolls are adjusted vertically by means of handwheel (1). Where pneumatics are fitted, a cranked handle is supplied in place of the handwheel.

If necessary the spring tension to the top feed rolls can be adjusted by means of locknuts (2) accessible through the lower door.

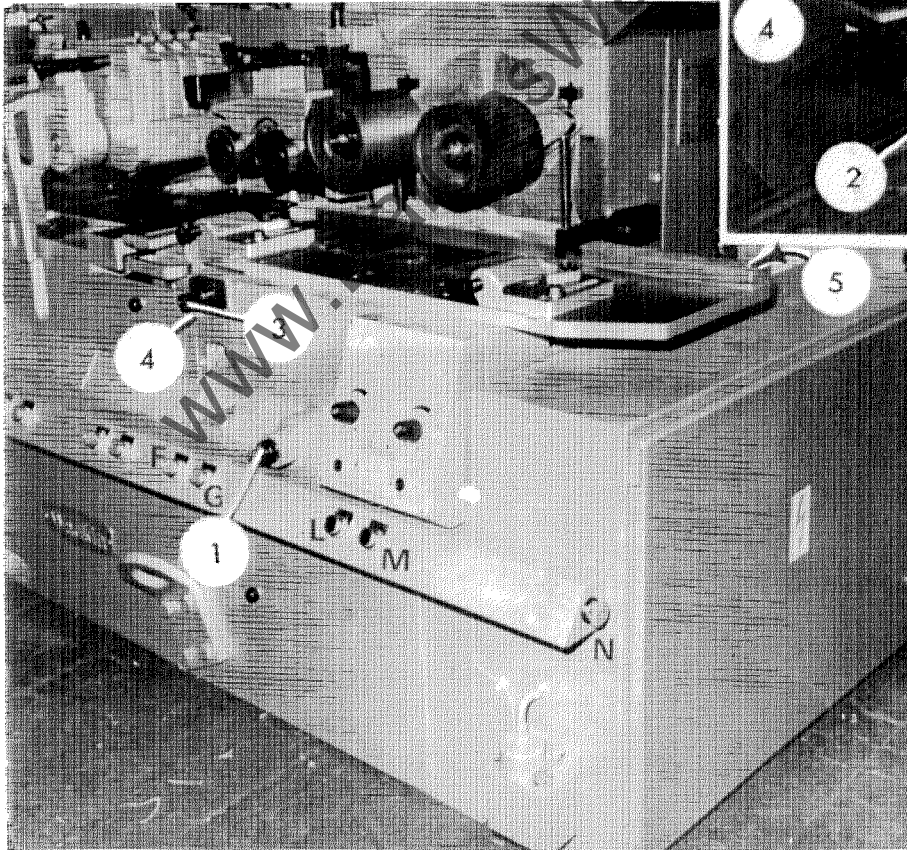
The bottom feedrolls are adjusted vertically by means of a toggle handle (5) between the end of the machine and electrical cabinet, a locking nut is provided at the circular slot.

The table before the first bottom head is adjusted vertically by square (3), (4) is the lock for this adjustment.

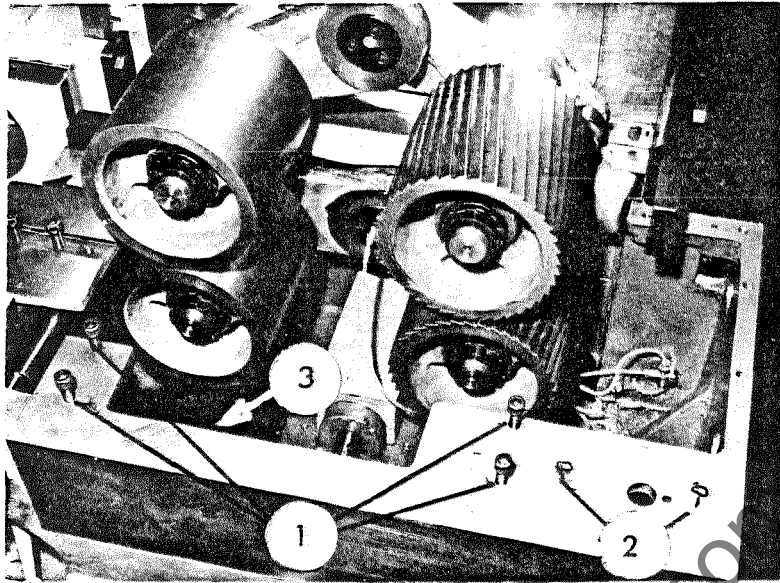
The feedworks electrical control buttons are as follows:-

Master stop	- (N)
Inch reverse feed	- (M)
Inch forward feed	- (L)
Stop feed	- (C)
Start feed	- (F)

See maintenance and lubrication notes.



## FEED ROLLS



Feed Rolls must be removed after excessive wear or when it is required to fit different type of rolls. The following types are available.

1. Knurled chrome - for Hardwood Mouldings.
2. Fluted for normal dutywork. For heavy duty work a second fluted roll may be fitted in the second top roll position.
3. Polyurethane coated for pre-machined work.
4. Plain for general purpose work. These are normally fitted in second top and second bottom positions.

### TO REMOVE TOP FEEDROLLS

Release tab washers and remove notch nuts.  
Remove Feedrolls.

### TO REMOVE BOTTOM FEEDROLLS.

Remove table section between the bottom feed rolls (four cap head screws) (1).  
Remove the two cap head screws on infeed table section (fastening to the front apron) (2).

Remove the three cap head screws fixing the front apron to the main frame (3).

Draw the front apron section clear of the machine frame.

NOTE: Where pneumatics are fitted, draw the apron section away from the main frame and support, taking care not to damage the connecting pipework and cable.

Release tab washers and remove notch nuts from the lower feed rolls.  
Remove feedrolls.

To fit new rolls reverse the procedure.

## PNEUMATICALLY CONTROLLED FEED ROLLS

The Top Rolls (1) must be set relative to the thickness of the timber (2) by lowering the rolls by depressing button (3). The amount of vertical travel should be sufficient to moderately hold the workpiece in position. At this stage the workpiece should be withdrawn. Following which further vertical adjustment to the top rolls should be made by means of Handwheel or Crank Handle (4). The adjustment should be such that the rolls take up a position which represents approximately 6mm (0.25 ins.) less than the thickness of the work piece.

Pneumatic Operation:- The input pressure should be set to 5.7 Kg/cm<sup>3</sup> (80 lbs./sq. in.)

To lower the Top Rolls depress button (4)

To Raise the Top Rolls depress button (5) or either of the electrical master stop buttons.

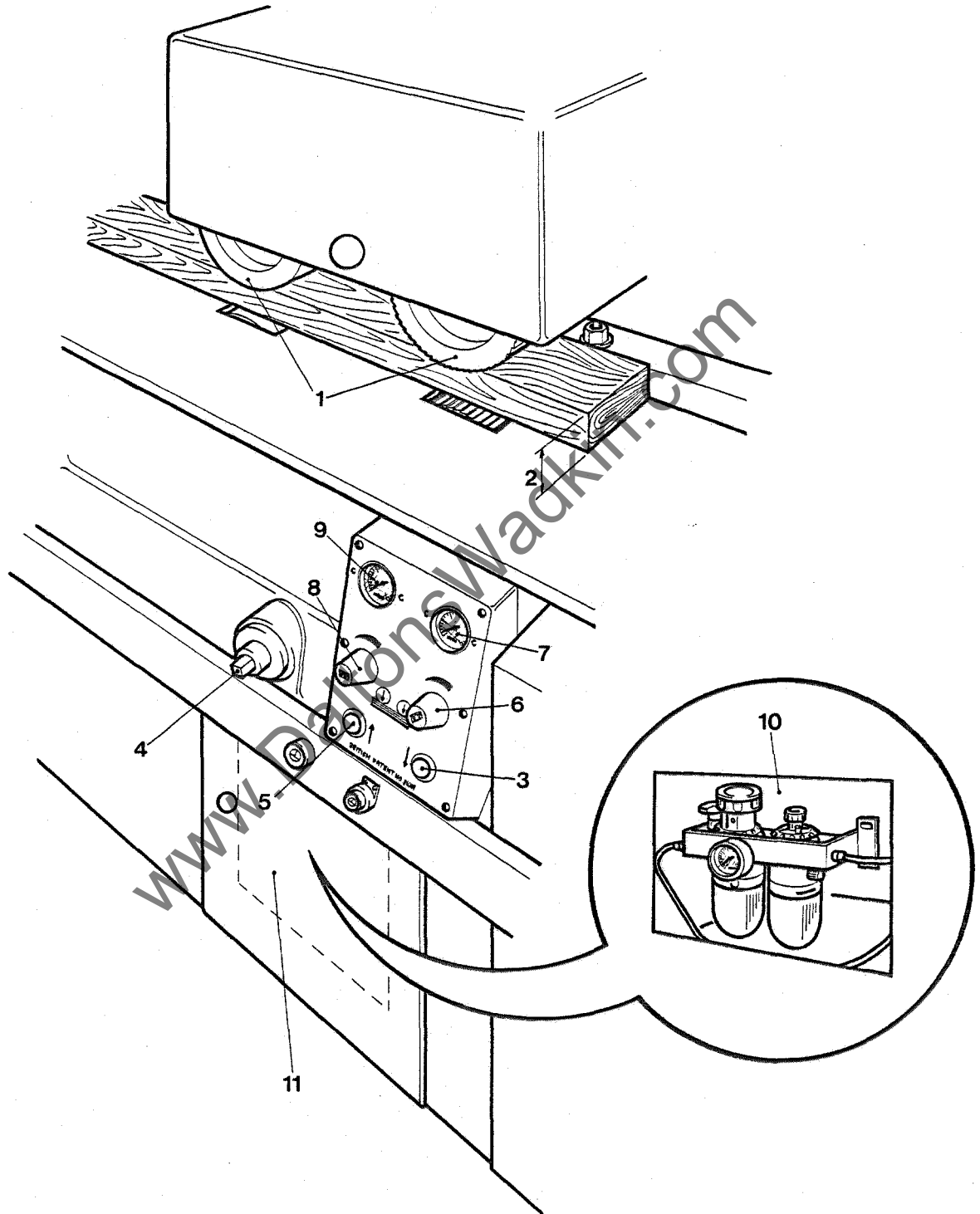
The amount of pressure each top roll exerts on the timber should be such that the traction is sufficient without defacing the timber. Each roll is independently controlled. To increase the pressure to the infeed roll turn knob (6) counter clockwise. The amount of pressure applied is registered on gauge (7). Knob (8) and gauge (9) similarly control the second top roll.

### IMPORTANT.

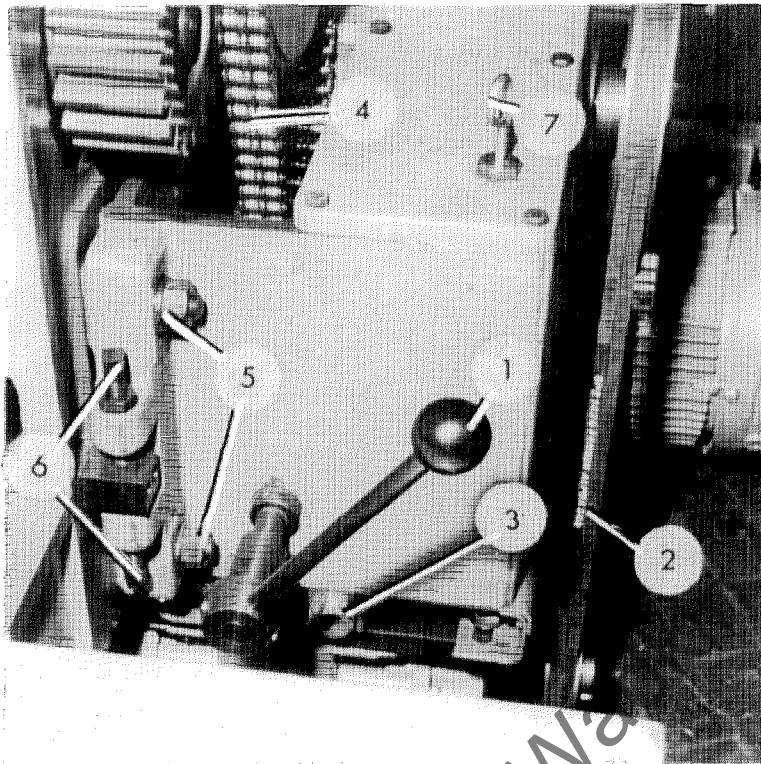
IF WORKING CONDITIONS DEMAND INCREASED TRACTION, INCREASE THE AIR PRESSURE AT THE REGULATORS (6) and (8) OR IF THE AIR SUPPLY HAS SUFFICIENT RESOURCES INCREASE THE PRESSURE AT THE FILTER REGULATOR UNIT (10), LOCATED THROUGH DOOR (11). UNDER NO CIRCUMSTANCES SHOULD TRACTION BE INCREASED BY THE VERTICAL ADJUSTMENT OF THE ROLLS BY MEANS OF THE CRANK HANDLE OR HANDWHEEL (4).

FAILURE TO OBSERVE THIS PRECAUTION WILL PRECIPITATE MECHANICAL DAMAGE TO THE FEED ROLLS DRIVE.

AT THE INITIAL STARTING OF THE FEED ROLLS A FINE MIST OF OIL SHOULD BE ADDED TO THE AIR SUPPLY BY OPENING THE REGULATING SCREW ON THE FILTER REGULATOR OILER UNIT (10) FOR A BRIEF PERIOD BUT NOT LONGER THAN FIVE MINUTES. IT WILL BE NECESSARY TO REPEAT THIS PROCESS AT INTERVALS OF TWO WEEKS



PNEUMATICALLY CONTROLLED FEED ROLLS



RPM	Diagram	RPM
20		6.1
35		10.7
40		12.2
50		15.2
70		21.2
100		30.4

#### THE SIX SPEED GEARBOX DRIVE

The feed speed plate is located near to the gear change lever (1)

Speeds are selected by means of a three position gear change lever (1) and a two speed motor switch located at the rear of the electrical cabinet. FEED MUST BE STOPPED BEFORE CHANGING SPEED.

If necessary the drive belts (2) may be tensioned by means of the adjusting bolt at the Kenyon motor mounting baseplate (3).

The chain drive (4) may be tensioned by slacking off pivot bolt to the right of the gearbox and two nuts (5) and adjusting, jackscrews (6).

The gearbox is provided with an oil filler plug/dipstick (7) and drain plug lower right corner, (see lubrication instructions).

The rear cover guard is held in position by two nuts, one at either side.

## HYDRAULIC DRIVE, FEED GEARBOX.

A variable speed hydraulic gearbox, belt driven from a pick-a-back motor is mounted on a bed plate at the rear of the machine feedworks.

A lever operated speed change mechanism affords feed speed of 6 to 45 m/min This lever is situated on right hand side of the feedworks gearbox.

Belt tensioning of the driving motor is achieved by raising the motor mounting via the thread studs and locking nuts.

The Hydraulic Drive consists of a power driven hydraulic pump, supplying oil to a hydraulic motor. Both are housed in a common casing which also serves as an oil reservoir. The pump and hydraulic motor are vane-type units with a variable working space in which the rotor housing is free to rotate together with the vanes, the rotor and the driving oil.

### Methods of operation.

The Hydraulic Drive operated in a closed circuit. The driven pump draws in oil from the hydraulic motor and the oil reservoir and delivers it under pressure to the hydraulic motor, so that the latter in turn is driven. With a constant input speed, the output speed depends on the ratio between the volume of the oil of the pump and the volume of the oil of the hydraulic motor.

### Oil Filling.

The drive is delivered with oil. Before starting open the oil filler plug and check that the oil level is correct. If it is not correct, fill with oil until the oil level stays visible in the opening of the oil filler. After starting, the pump and hydraulic motor draws oil from the reservoir, causing the oil level to subside, add more oil until the oil level again reaches the opening of the oil filler. Regularly check the oil level.

Temporary idling at 'zero' adjustment (output shaft on-speed) is harmless However, the automatic lubrication depends upon a certain amount of pressure i.e. a load of the drive. Therefore, running without a load for more than 10 to 15 minutes should be avoided. If the driven machine requires extremely long idling periods, especially with the output shaft of the drive running it is advisable to consult the manufacturers.

### Oil change and maintenance.

First oil change should be made after 500 running hours and subsequently after every 2000 running hours, in any case at least every six months. It is not sufficient merely to add some oil. The oil must be drained completely At the same time the housing of the drive must be rinsed out with a small quantity of fresh warm oil of the recommended grade. After carefully draining the rinsing oil, refill completely with fresh oil.

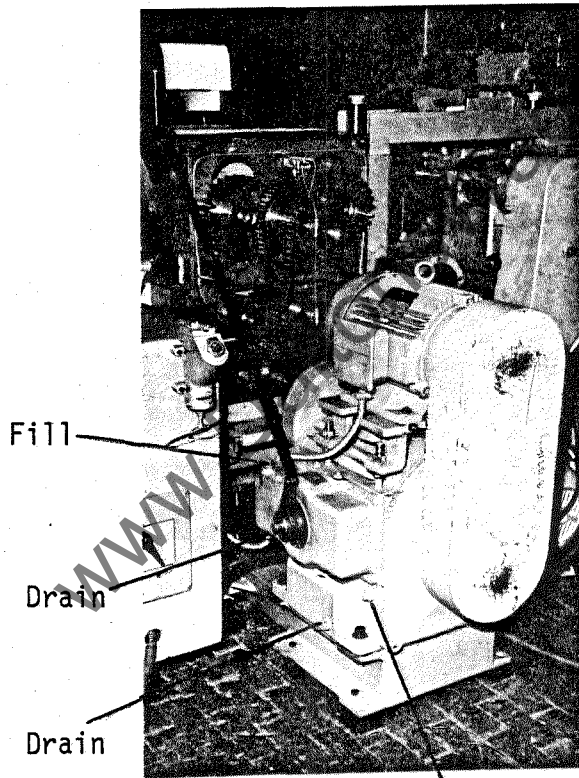
Change the oil simultaneously at the encased auxiliary attachments, mounted to the drive housing. Use the same oil as for the drive. The other encased adjustment members not mounted to the drive housing should be lubricated with a few charges of oil. Except for an occasional checking of the oil and external cleaning, no additional measures are necessary.



For the Boehringer-Sturm Hydraulic Drive Model 3046ZK any of the following oil grades may be used.

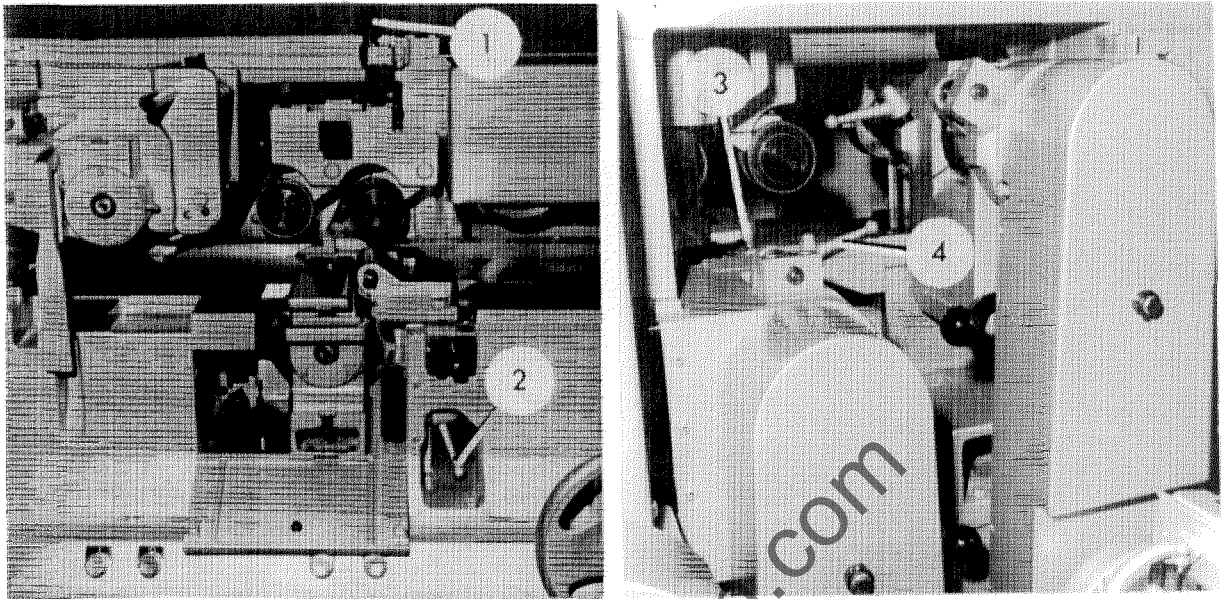
Aral Oil Hty.	Aral AG
BP Energol HLP 100	BP Ltd.,
Texaco Regal Oil PC R & O.	Texaco-Caltex.
Esso Nuto H-54	Esso Standard
Misola CH	Antar
Mobil D.T.E. Oil Heavy	Mobil Oil Ltd.
Shell Turbo Oil 37	Shell
Sunvis 941	Sun Oil Company
Valvoline Turbine Oil No.35	Freedom-Valvoline Oil Comp.

Oil Change: Volume - 14 Litres (21 pints) approximately.  
Motor Drive Belts - 3 Fenner SPZ 1140



Fill

FIRST BOTTOM HEAD



Vertical adjustment of the first bottom head is made by applying a crank handle to the square (1). Locking lever (2) is the lock for this movement.

Horizontal adjustment is made by means of square (3). Locking lever (4) is the lock for this movement.

## TOP HEAD AND CHIPBREAKER

Vertical adjustment of the top head is made by applying a crank handle to the square (1). Nut (2) is the lock for this movement.

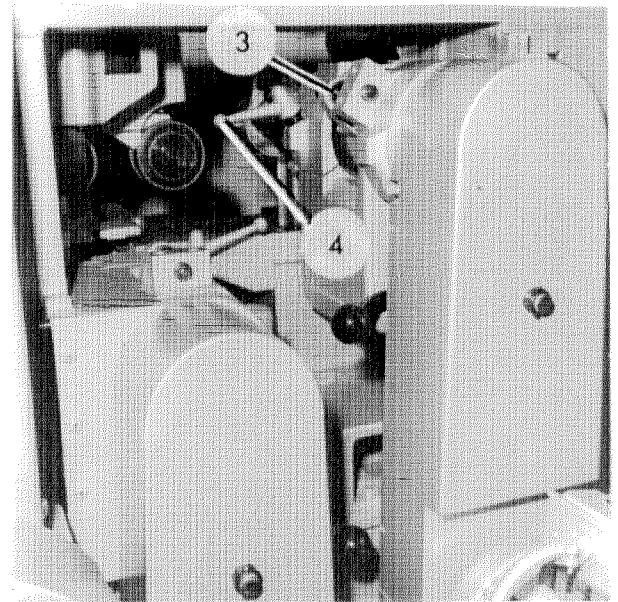
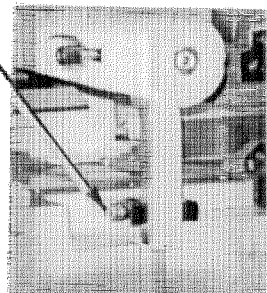
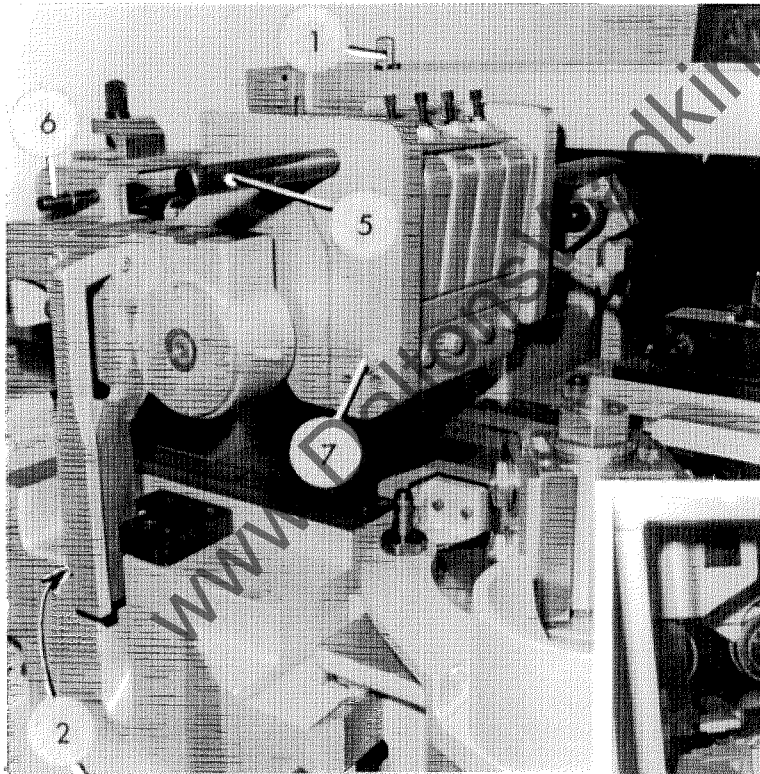
Horizontal adjustment is made by square (3). Locking lever (4) is the lock for this movement.

The chipbreaker hood can be swung back for access to the cutterblock by lifting handle (5). The hood is held back by pushing in shaft (6)

The chipbreaker may be set in one of three positions (relative to hood) for different cutterblock diameters. Stud (7) locks the chipbreaker in position.

The chipbreaker hood may be adjusted in the vertical from a stud and locking 'nut' at the rear of the chipbreaker.

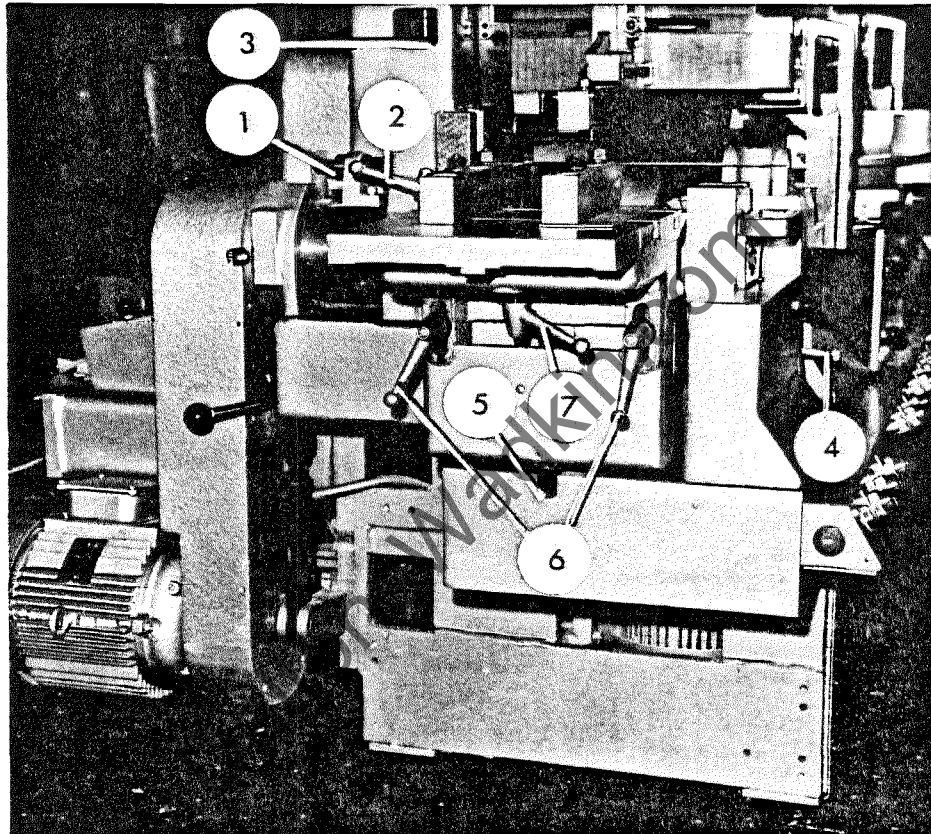
Chipbreaker shoes are independently spring loaded.



## SECOND BOTTOM HEAD

Horizontal adjustment of the second bottom head is made by square (1). Locking lever (2) is the lock for this movement.

Vertical adjustment of the bottom head is made by applying a crank handle to square (3). Locking lever (4) is the lock for this movement. (Similar adjustment to the first bottom head).



## THE OUTFEED TABLE

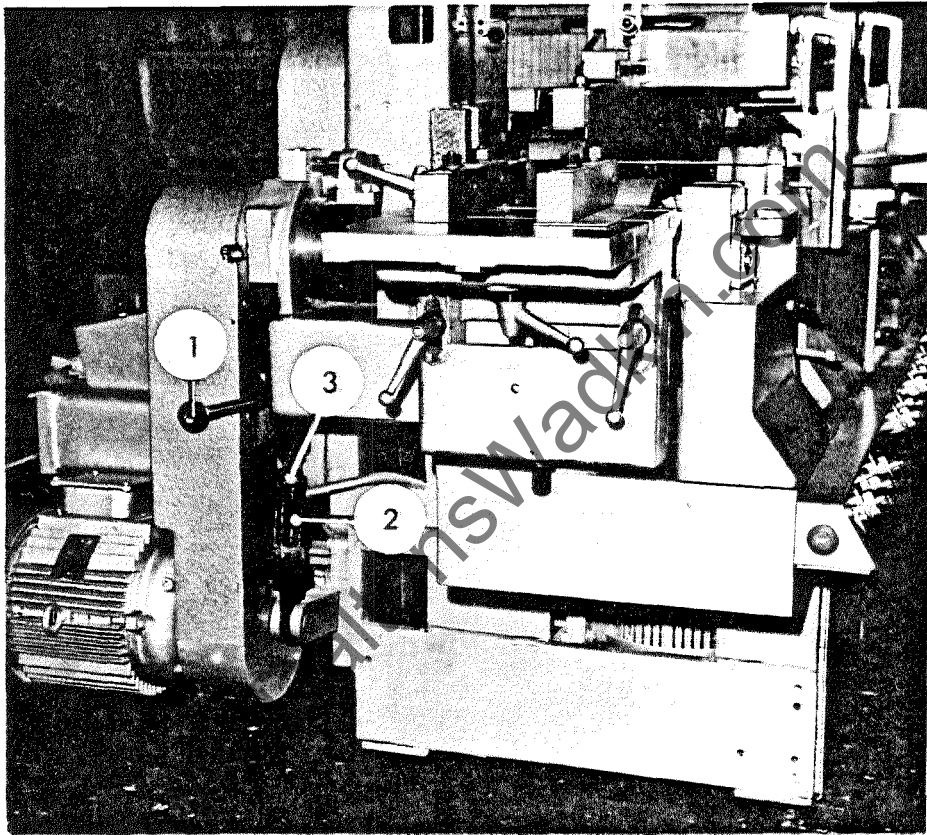
Vertical movement of the outfeed table is made by applying a loose ratchet handle to the square (5). The two locking levers (6) lock the table slide in position.

The bedplate on the outfeed table may be moved out to accommodate larger cutting circles by releasing locking handle (7) and sliding the bedplate by hand.

### HORIZONTAL HEAD DRIVES (BELT)

To change speed, lift handle (1). This raises the motor and allows belts to be changed. Lower handle back to original position after changing speed.

To tension belts, rotate turnbuckle (2). This is locked with locknut (3).



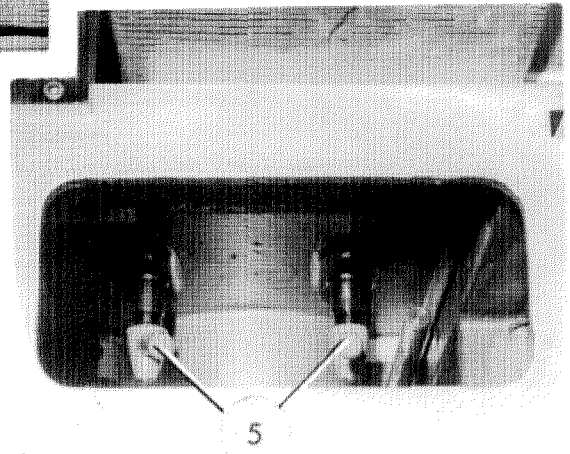
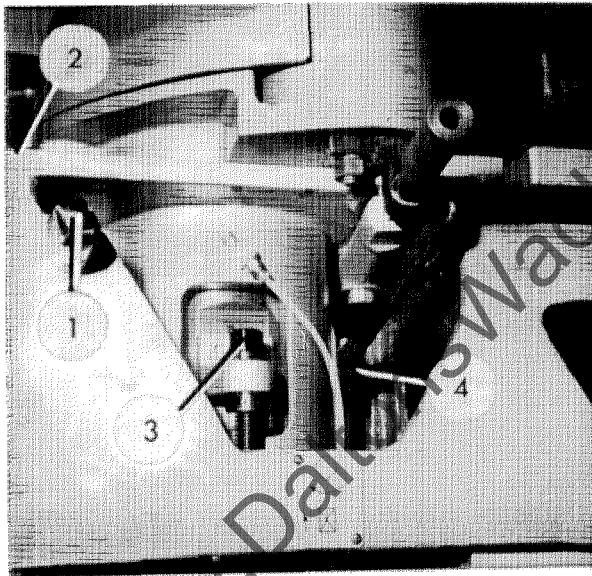
## SIDE HEADS

### NEAR SIDE HEAD - (12 in Stagger)

Horizontal adjustment of near side head is made by means of a crank handle on the square (1). Nut (2) is the lock for this movement.

Vertical adjustment of near side head is made by means of a square (3). Nut (4) is the lock for this movement.

The bedplate may be adjusted to allow for larger cutting circles by slackening off two locking handles (5) (underneath the carriage at the rear of the machine) and sliding plate by hand.



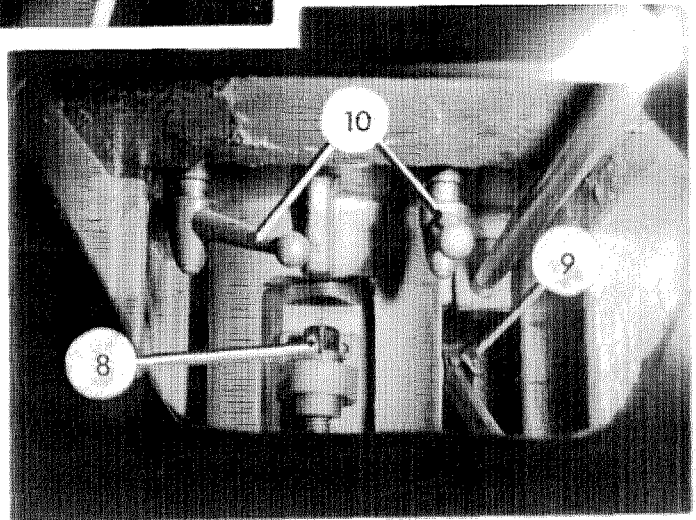
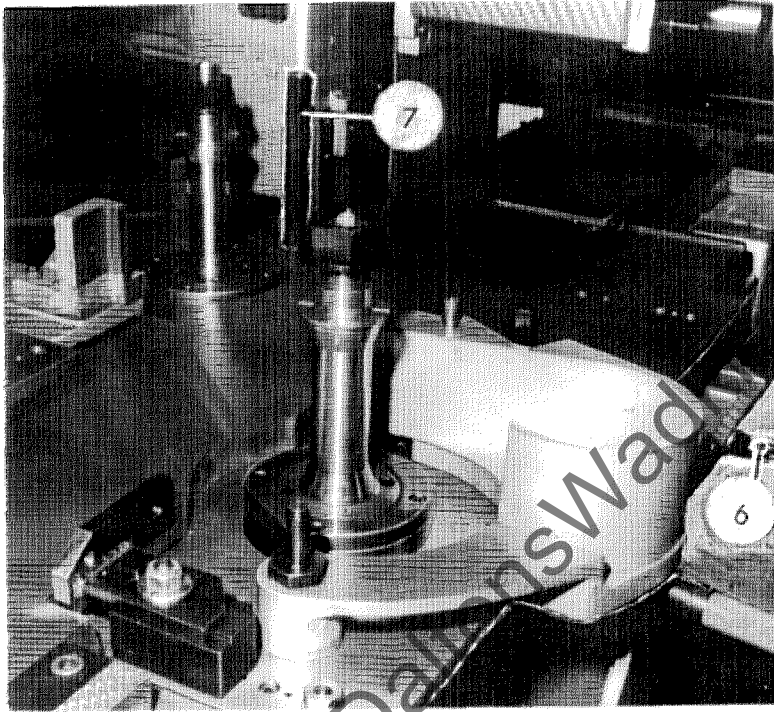


### FENCE SIDE HEAD -(12 in Stagger)

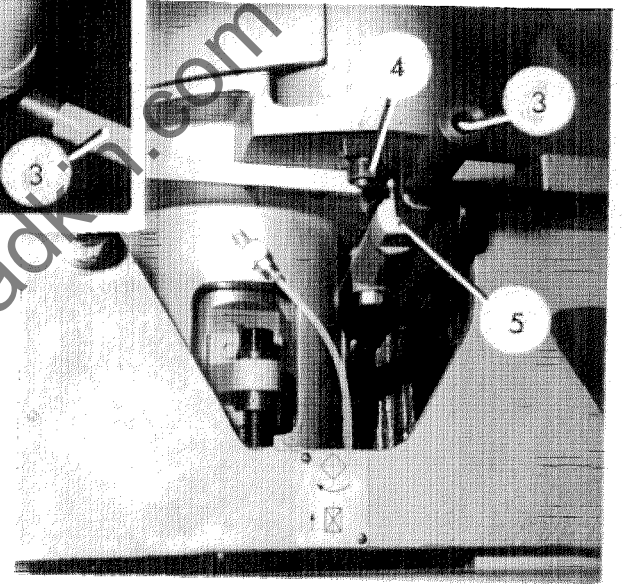
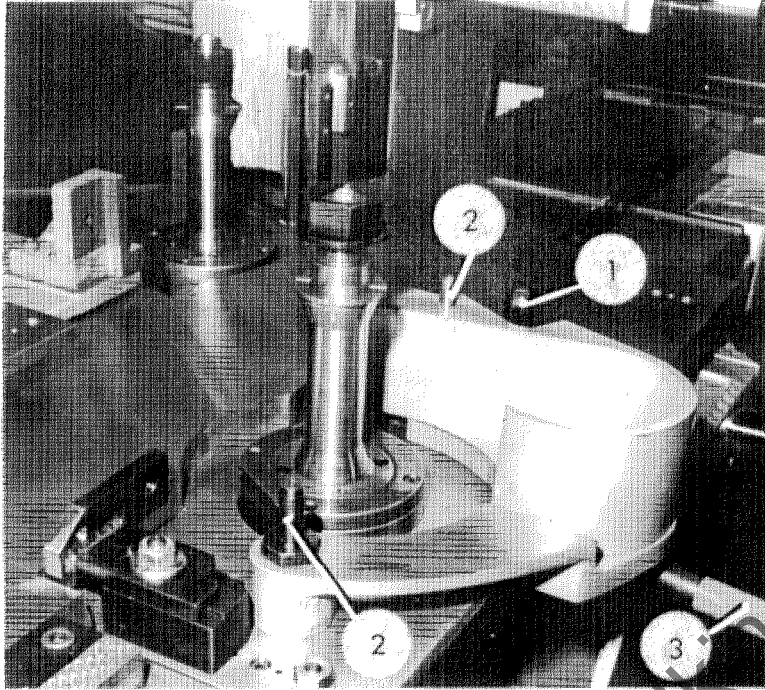
Horizontal adjustment of fence side head is made by applying a crank handle to square (6) at front or rear of machine. Nut (7) is the lock for this movement.

Vertical adjustment of fence side head is made by means of a square (8). Nut (9) is the lock for this movement.

The bed plate may be adjusted to allow for larger cutting circles by slackening off two locking handles (10) (underneath the carriage from front of machine) and sliding plate by hand.



NEAR SIDE HEAD CHIP BREAKER - (12 in Stagger)



The chipbreaker may be set in one of two positions, to allow for different cutting circle diameters, by repositioning locking screw (1)

The dust hood is removed by lifting from locating pins (2).

Handle (3) can be swung sideways, (in the direction of arrow) by releasing nut (4). This allows the chipbreaker mechanism to be swung clear of the block.

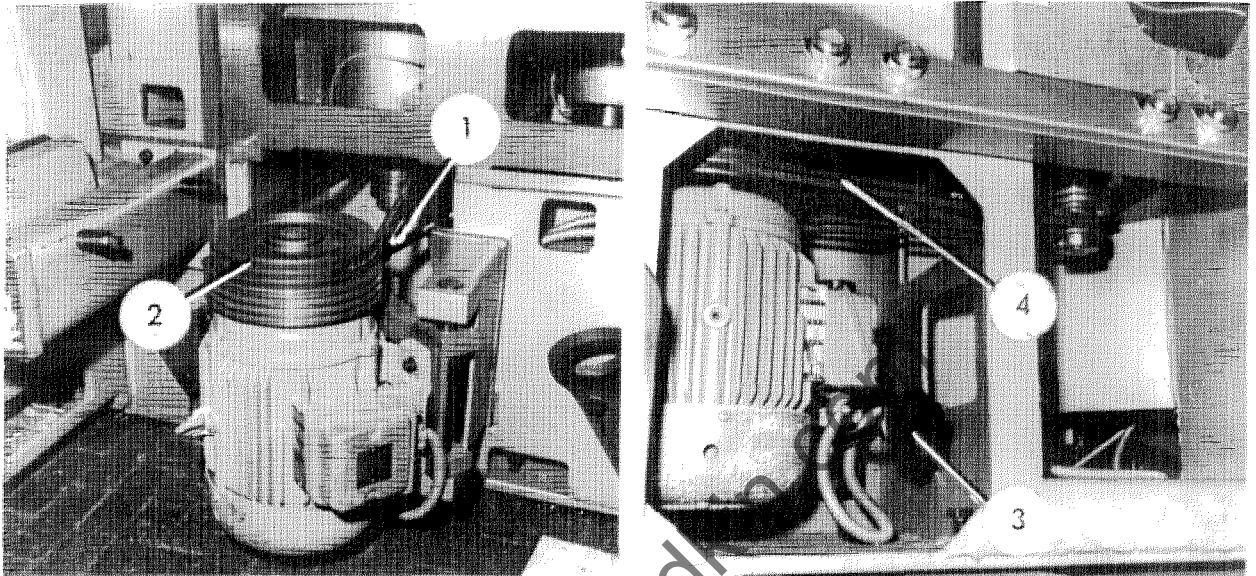
No adjustment to spring pressure is required, releasing locknut (5) enables adjustment of the chipbreaker position to be made by knurled handle (3).



### SIDE HEAD DRIVES (BELT)

#### FENCE SIDE HEAD DRIVE

To change speed (or replace belts), remove cover, release tension via square (1), change belts (2) and re-tension.



#### NEAR SIDE HEAD DRIVE

Access to near side head belts is through doors at front of machine  
To change speed (or replace belts), release tension by means of knob (3),  
change belts (4) and re-tension.

PRESSURE ARRANGEMENTS

7 in. FB PRESSURE FORMAT  
12 in Stagger

TYPE REQUIRED	MODEL							
	71	72	73	74	75	76	77	78
	71U	72U	73U	74U	75U	76U	77U	78U
	FORMAT PAGE							
Standard Pressures	21	21	21 and 26	31	31	31 and 36		
Short Stock	22	22	22 and 27	32	32	32 and 37		
Narrow Stock	23		28	33	33	33 and 38		
Thin Stock	24	24	24 and 29	34	34	34 and 39		
Optional Pressures	25		30	35	35	35 and 40		
Universal Hd. STD. Press.	91	93	91	93	91	93	91	93
Universal Hd. Narrow Stock	92	94	92	94	92	94	92	94

To use the format table above, select the type of pressure required under the machine model column - with cross reference to the TYPE REQUIRED, extract the FORMAT PAGE number. Refer to this page and confirm the pressure arrangement. This arrangement will reference back to the style of pressure required.

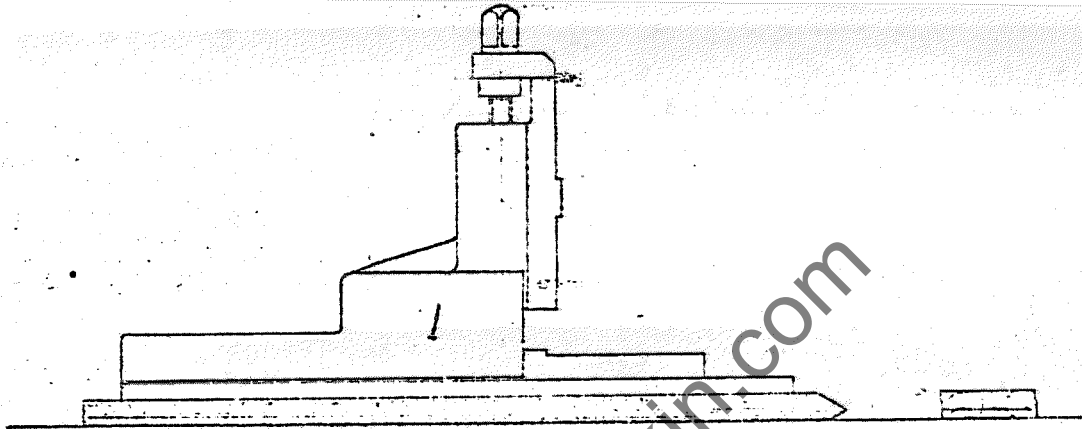
WIDE PAD PRESSURE

Pressure Unit No.1

Notes:

This pressure unit is supplied fitted with a wooden pad. On moulded work shaped pads may be fitted to give greater control. On narrow work it may be necessary to fit stepped pads in order to clear the side pressures. This is indicated on the pressure arrangement pages. This pressure incorporates flexible rubber bushes and should not be "Wound" down until solid.

Note: Pressure (2) eliminates the need for stepped shoes.

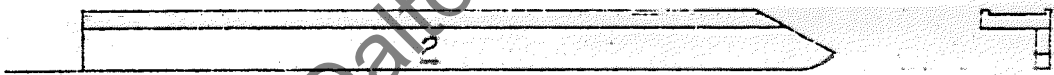


PRESSURE SHOES FOR NARROW STOCK

Pressure Unit No.2

Notes:

Shoe may be attached to Pressure No.1 to eliminate the need for stepped wooden pads on narrow stock.



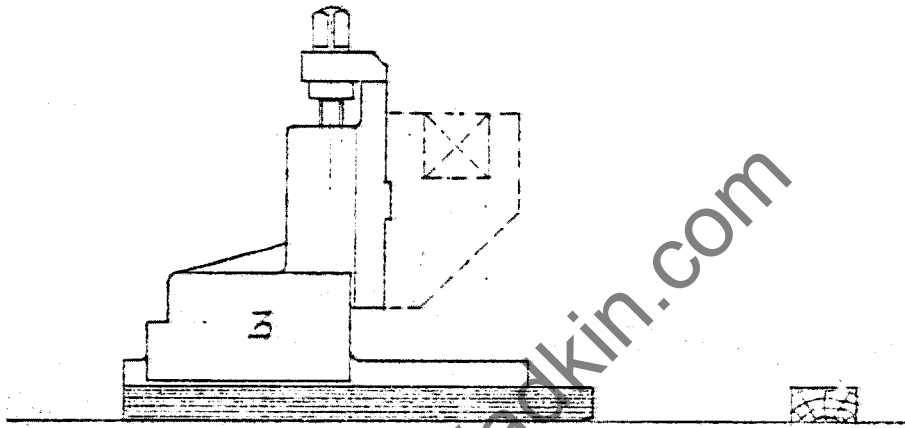
SHORT WIDE PAD PRESSURES

Pressure Unit No.3

Notes:

This pressure is supplied fitted with a wooden pad  
On moulded work shaped pads may be fitted to give greater control.  
On narrow work it may be necessary to fit stepped pads in order to  
clear the side pressures. This is indicated on the pressure arrangement  
pages.

Note: In some cases pressure (4) eliminates the need for stepped shoes.

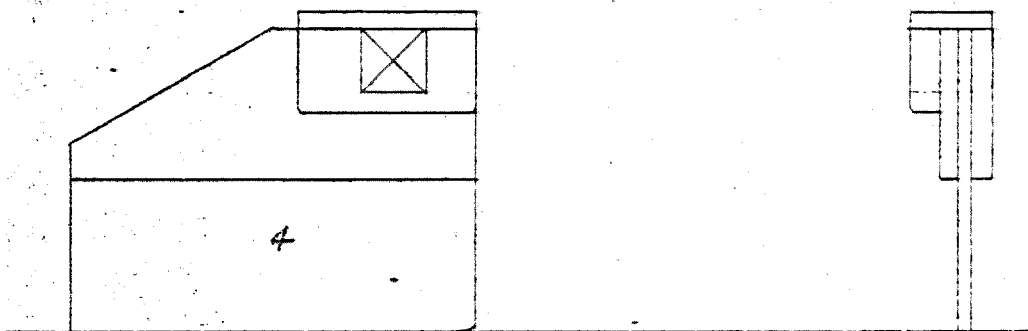


NARROW PAD PRESSURE

Pressure Unit No.4

Notes:

Generally used in place of pressure (3) for narrow work.  
Shaped Wooden pads may be fitted for moulded work but are generally  
not necessary.

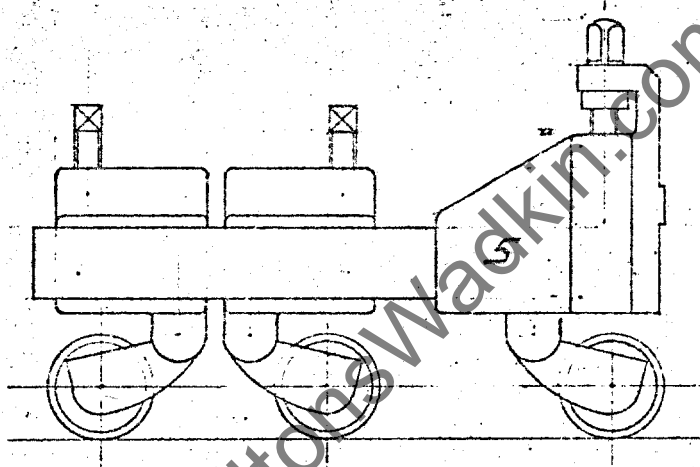


MULTIPLE TOP ROLLER PRESSURE

Pressure unit No. 5

Notes:

This pressure is used after a top head in place of pad pressure (1)  
It can also be used as a double roller unit in conjunction with pad  
pressure (3) where greater control of the timber is required on leaving  
the cutterblock.



WIDE ROLLER PRESSURE - SINGLE UNIT

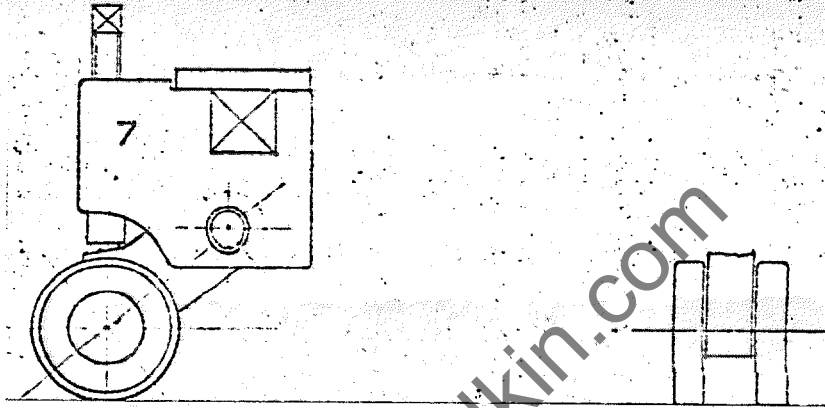
Pressure Unit No.7

Notes:

Normally used for wider material.

The front roll may be removed (2 capscrews) when used on narrow material.

See Pressure Arrangement Pages for details.

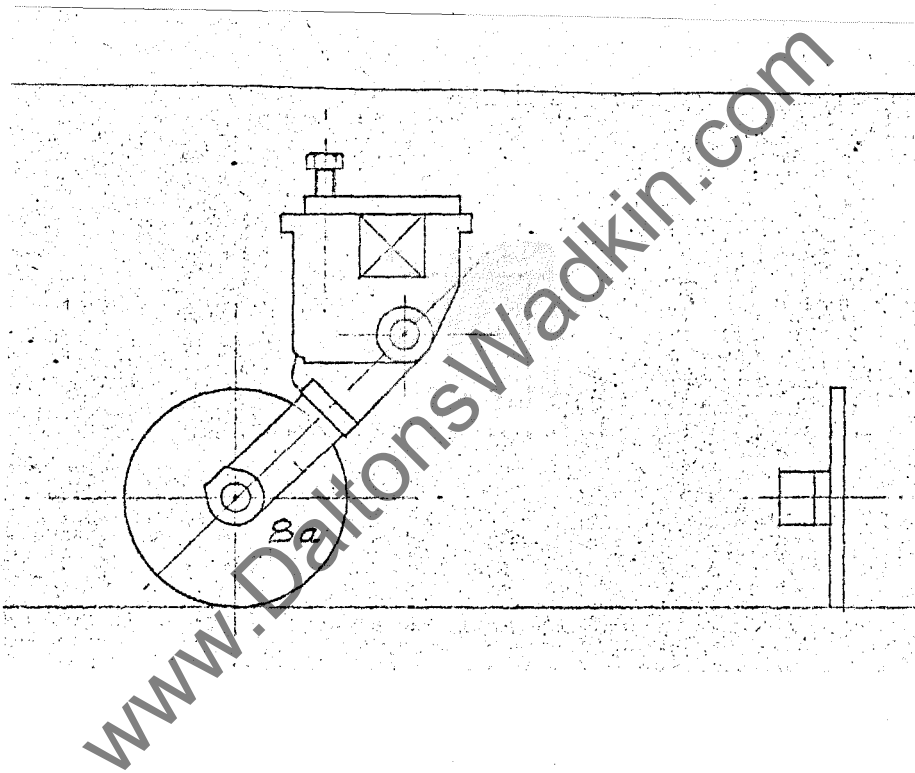


NARROW ROLLER PRESSURE

Pressure Unit No. 8a

Notes:

Used for Narrow stock between side heads on 7 in FB 180 with 2 in Stagger side heads only.



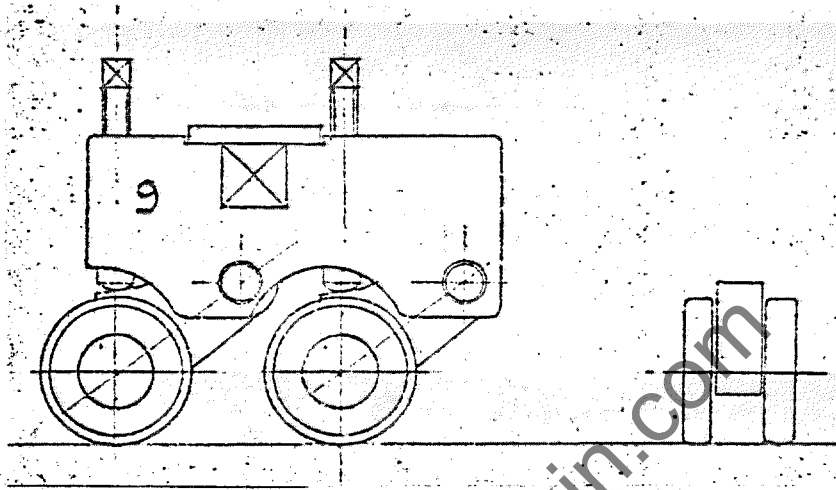
WIDER ROLLER PRESSURE - DOUBLE UNIT

Pressure Unit No.9

Notes:

Normally used for wider material.

The front rolls may be removed (2 capscrews) when used on narrower material see pressure arrangement pages for details.



www.DaltonsWadkin.com



SHALLOW FRONT FENCE

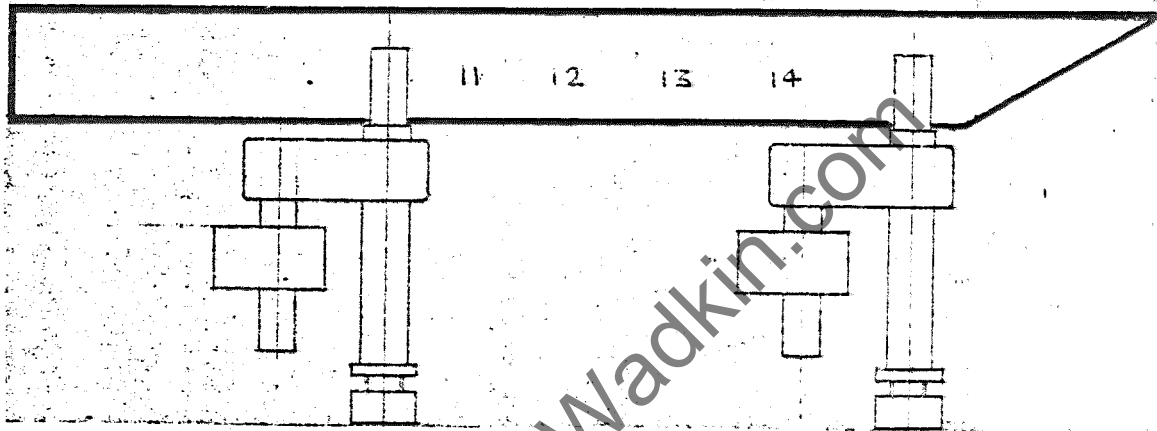
Pressure Unit No. 11,12,13 and 14.

Notes:

Numbers 11, 12, 13 and 14 refer to shallow front fences of different lengths to suit various models.

This unit is adjustable in height to suit work which is moulded on the front edge.

Wooden shoes may be fitted if required.

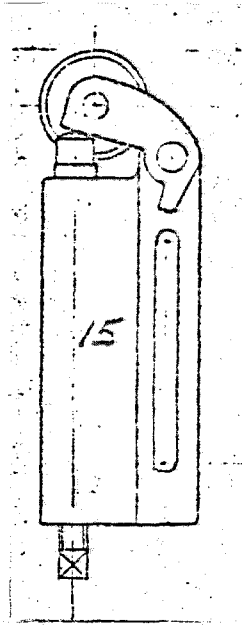


SIDE ROLLER PRESSURE

Pressure Unit No.15

Notes:

Standard side roller pressure unit as fitted to all machines.  
Extra units may be fitted for short stock.



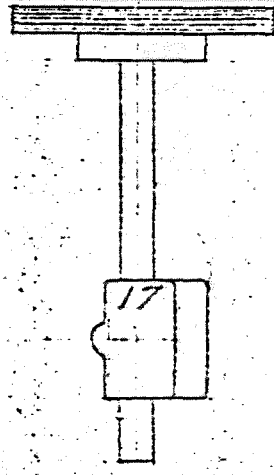
www.DaltonsWadkin.com

SIDE PAD PRESSURE

Pressure Unit No. 17

Notes:

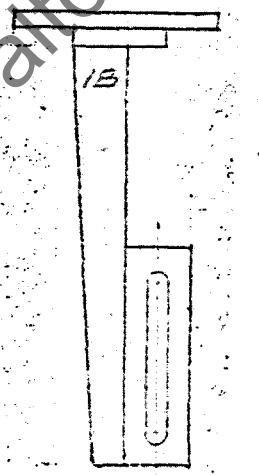
Shaped wooden pad may be fitted for moulded work.  
Long pad may be fitted for short stock.



TOP GUIDE FOR THIN STOCK

Pressure Unit No. 18

This unit is always used mounted on side roller pressure (15).  
This unit is intended as a guide only and should be set clear of timber.  
Wooden guides may be fitted in place of the steel shoe if required.



CAPACITY

STANDARD PRESSURES Supplied with machine

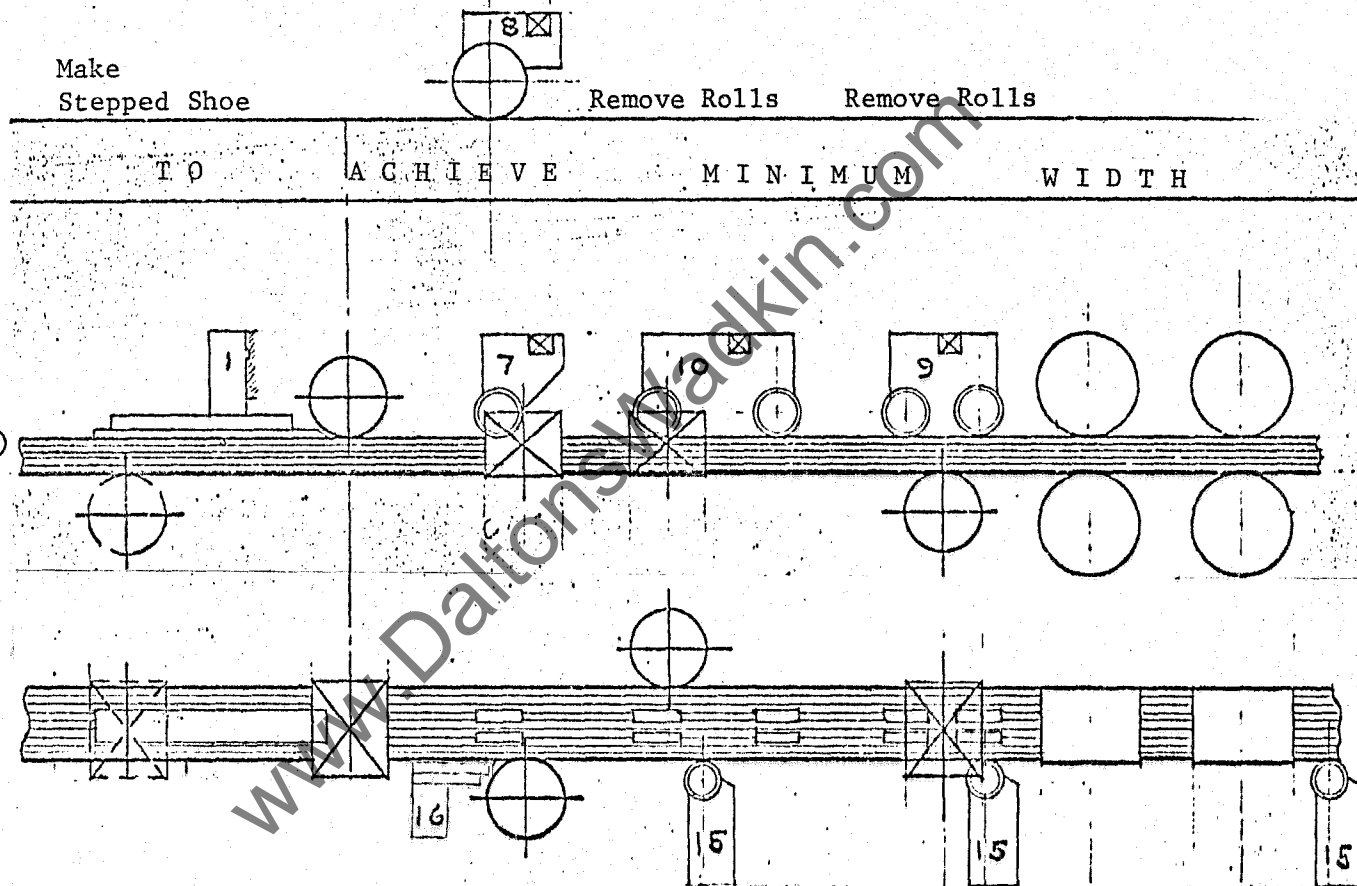
7in FB 180  
12in Stagger

Common to models 73 74  
73U 74U

MODELS:

71 72  
71U 72U

October '73



MINIMUM WIDTH =  
11mm (7/16in)

MINIMUM THICK-  
NESS = 9mm (3/8in)

MINIMUM LENGTH =  
600 mm (24in)

MODELS 71U See also Page 47 - Model 72U See also 49

October '73

CAPACITY

SHORT STOCK PRESSURES to special order

7 in FB 180  
12 in Stagger

MODELS:

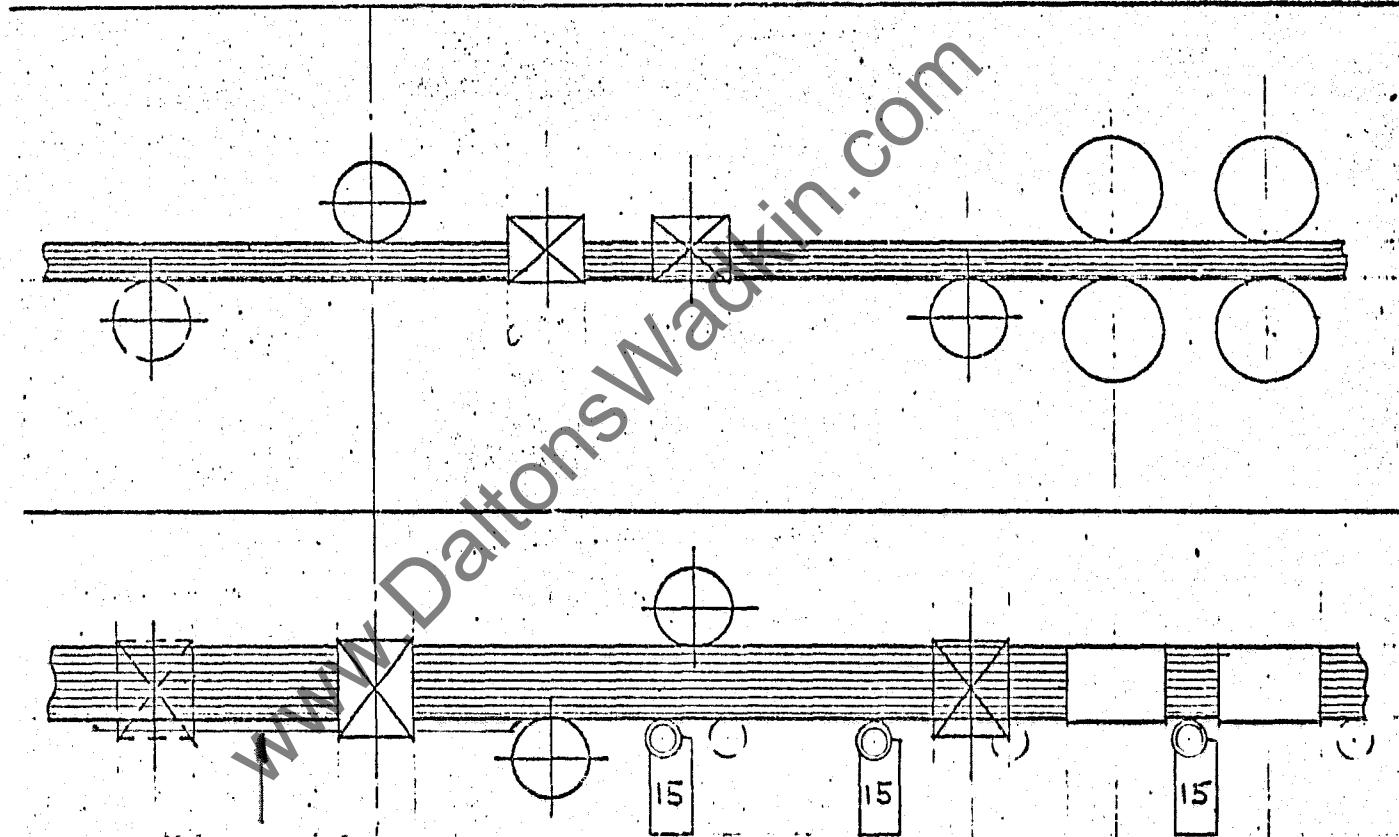
71 72  
71U 72U

COMMON TO MODELS 73 74

73U 74U

MINIMUM LENGTH

= 350mm (14in)



Make special  
long wooden  
shoe.

FORMAT 22  
Page 28

October '73

CAPACITY

MODELS:

71 72

71U 72U

NARROW STOCK PRESSURES to special order

COMMON TO MODELS 73 74

73U 74U

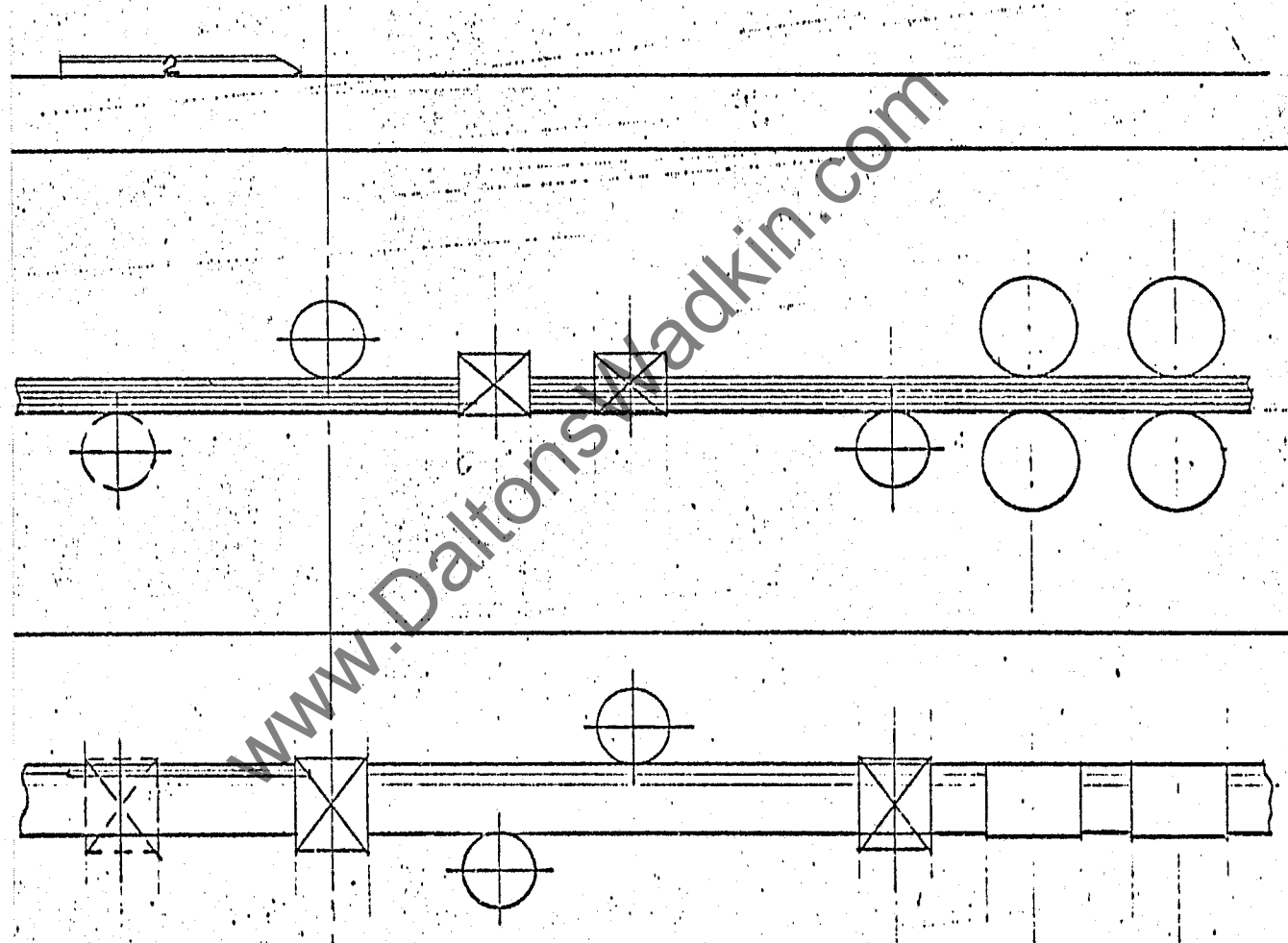
7 in FB 180

12 in stagger

MINIMUM WIDTH

= 11mm (7/16 in)

NOTE: This shoe does not reduce the minimum width but eliminates the need to make special stepped wooden pads.



MODEL 71U SEE ALSO P.48 MODEL 72U SEE ALSO P.50

October '73

CAPACITY,

THIN STOCK PRESSURES. to special order

7in FB 180  
12 in Stagger

MODELS:

COMMON TO MODELS 73 74

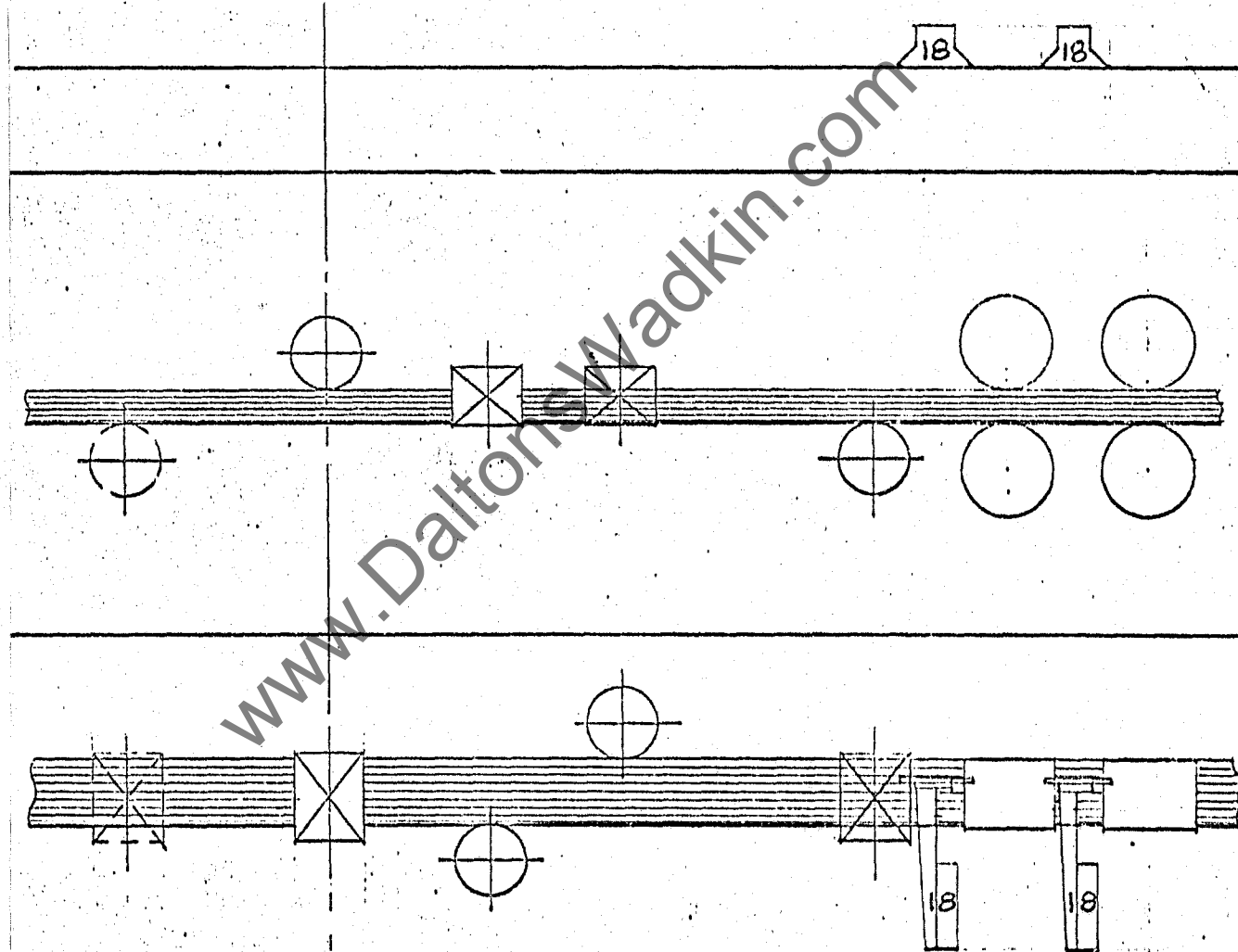
71 72  
71U 72U

73U 74U

MINIMUM

THICKNESS

= 6mm (1/4in)



FORMAT 24  
Page 30

October '73

CAPACITY

OPTIONAL PRESSURES to special order

7 in FB-180-  
12 in Stagger

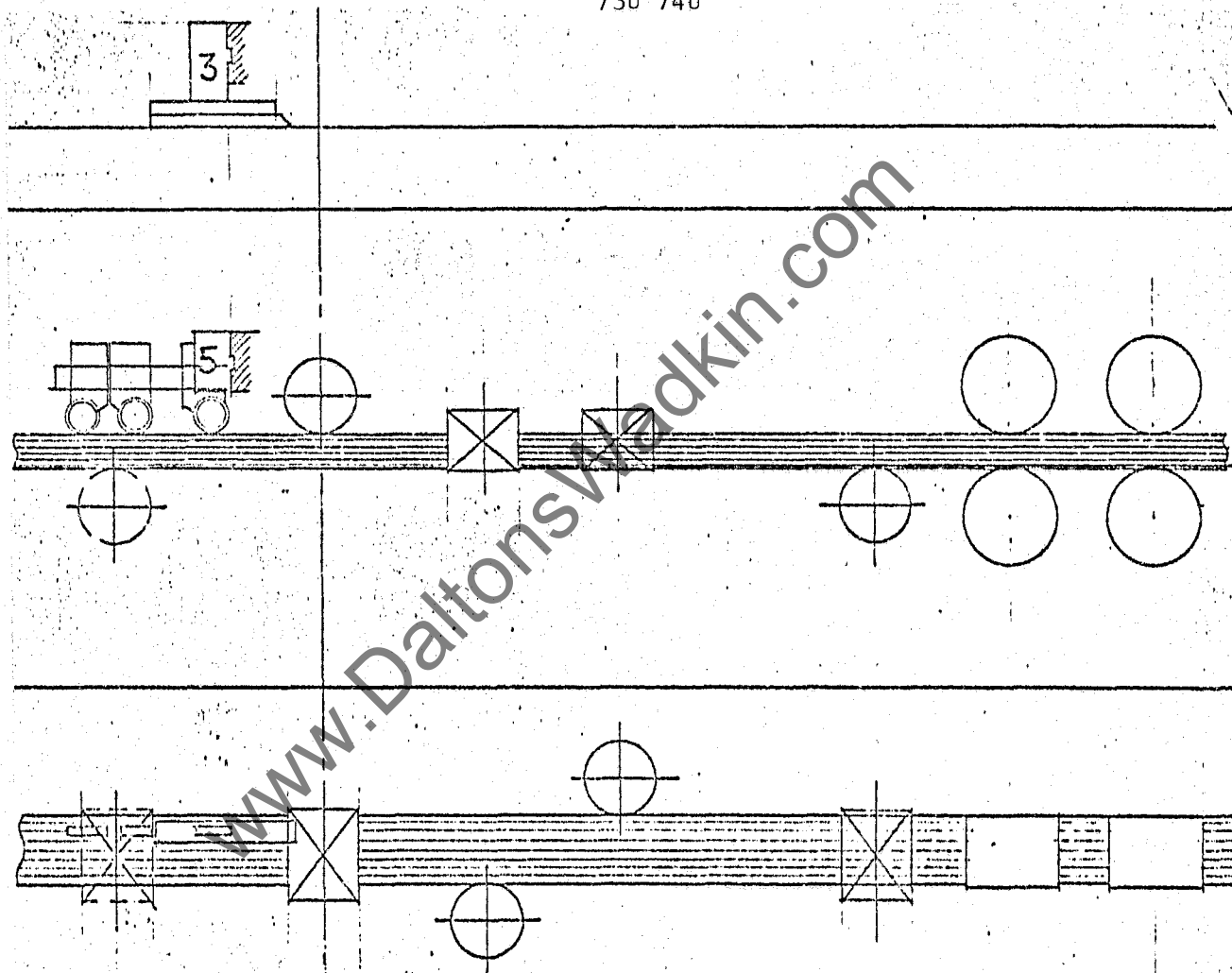
MODELS:

71 72  
71U 72U

COMMON ON MODELS 73 74

73U 74U

NOTE: Pressure (5) may be used as a triple unit as shown or as a double unit with pad pressure (3)



TRIPLE ROLLER  
PRESSURE ONLY

Minimum length  
= 450mm (18in)

DOUBLE ROLLER  
PLUS PAD

CAPACITY  
NOT RESTRICTED

FORMAT 25  
Page 31



7 in FB 180  
12 in Stagger

STANDARD PRESSURES supplied with machine

CAPACITY

MODELS:

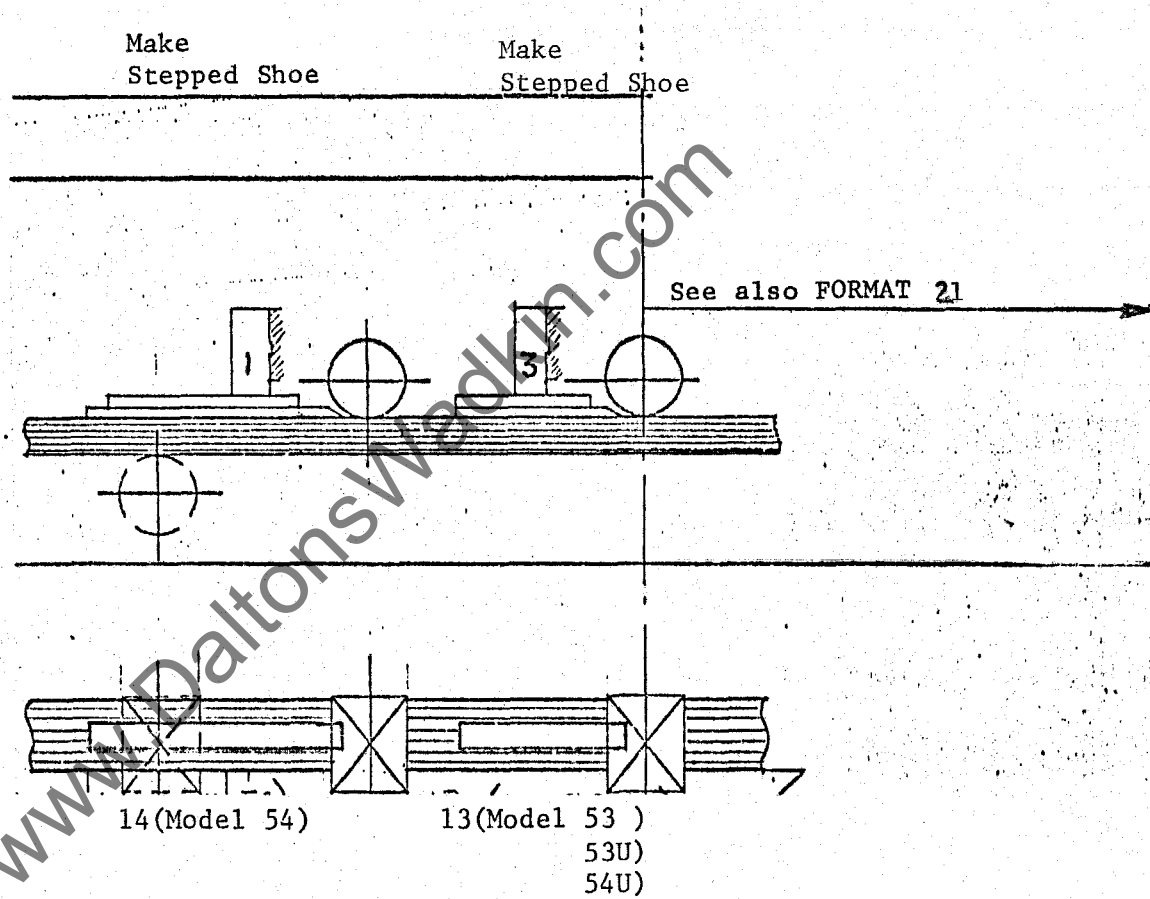
73 74  
73U 74U

October '73

MINIMUM WIDTH  
= 11mm (7/16in)

MINIMUM  
THICKNESS  
= 9mm = (3/8in)

MINIMUM LENGTH  
= 600mm (24in)



MODEL 73U SEE ALSO P.91 MODEL 74U SEE ALSO P.93

October '73

CAPACITY

SHORT STOCK PRESSURES to special order

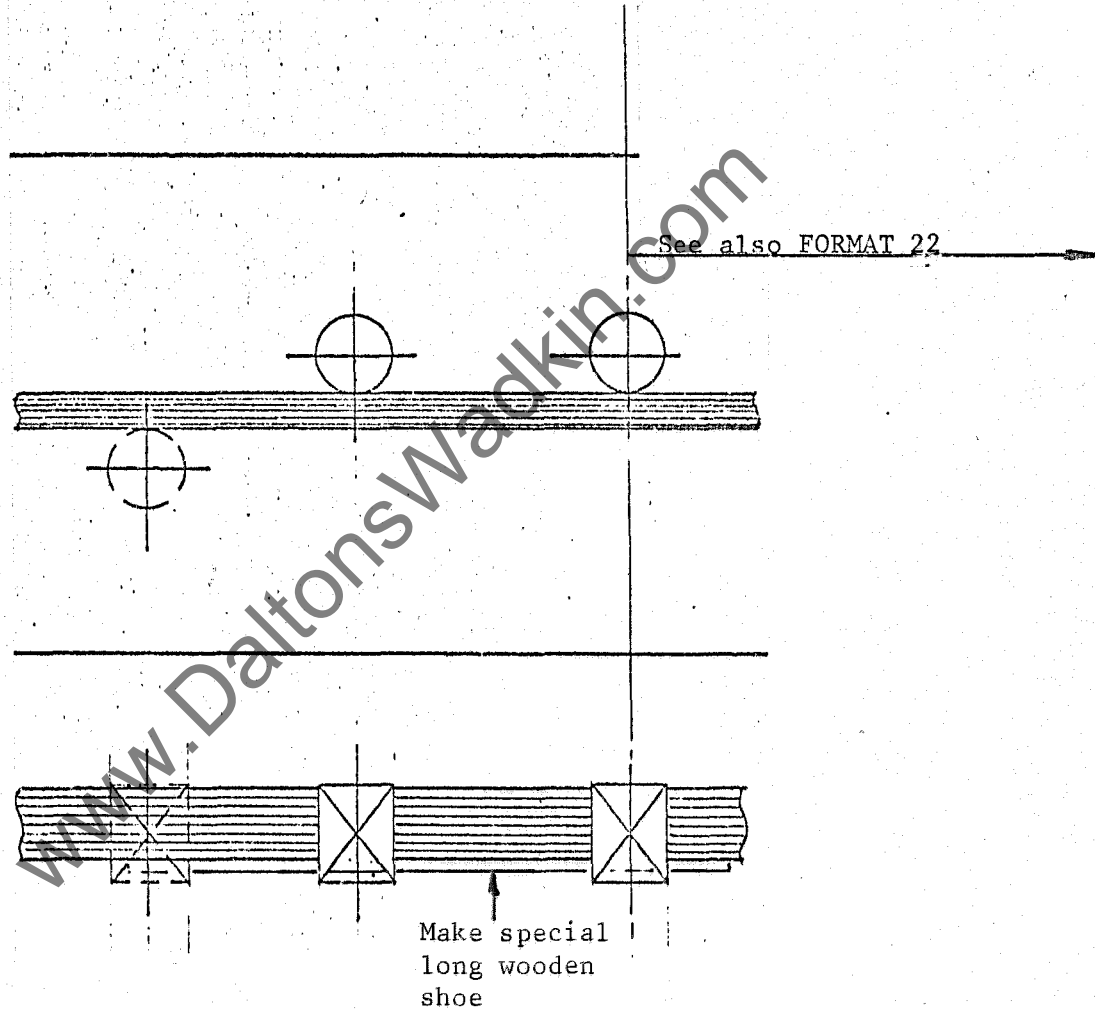
7in FB 180  
12in Stagger

MODELS;

73 74  
73U 74U

MINIMUM  
LENGTH

= 350mm (14in)



FORMAT 27  
Page 33

CAPACITY

NARROW STOCK PRESSURES to special order

7in FB 180  
12 in Stagger

October '73

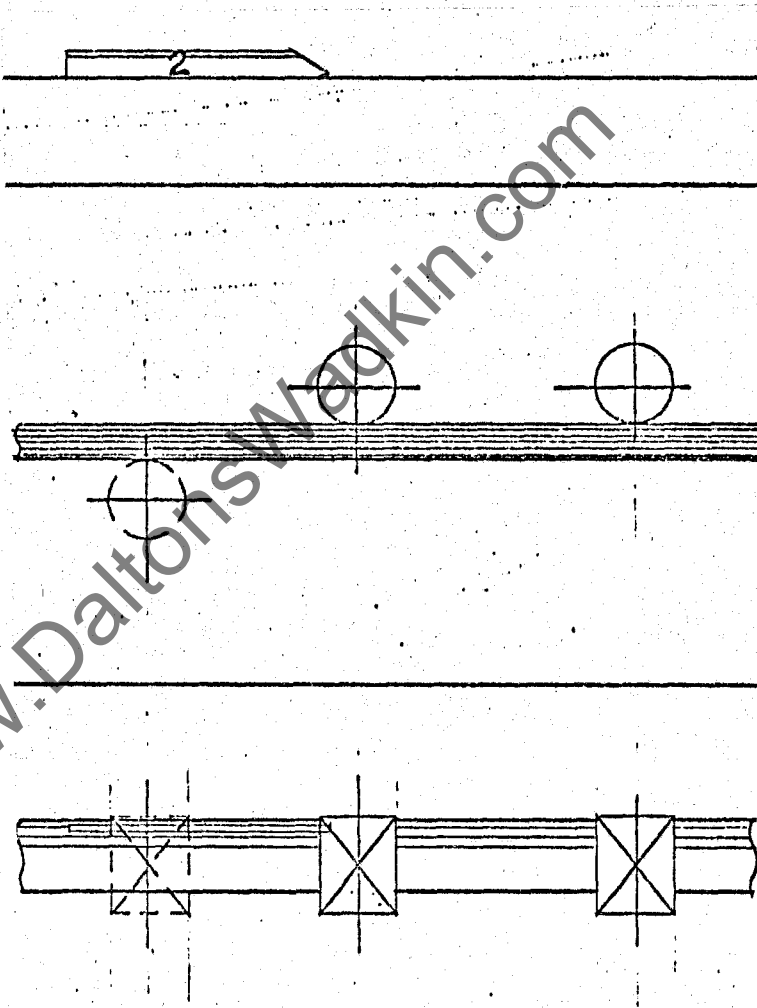
MODELS:

73 74  
73U 74U

MINIMUM  
WIDTH

= 11mm(7/16in)

NOTE: This shoe  
does not reduce  
the minimum width  
but eliminates the  
need to make  
special stepped  
wooden pads.



MODEL 73U SEE ALSO P48 MODEL 74U SEE ALSO P.50

CAPACITY

THIN STOCK PRESSURES to special order

7in FB 180  
12 in Stagger

October '73

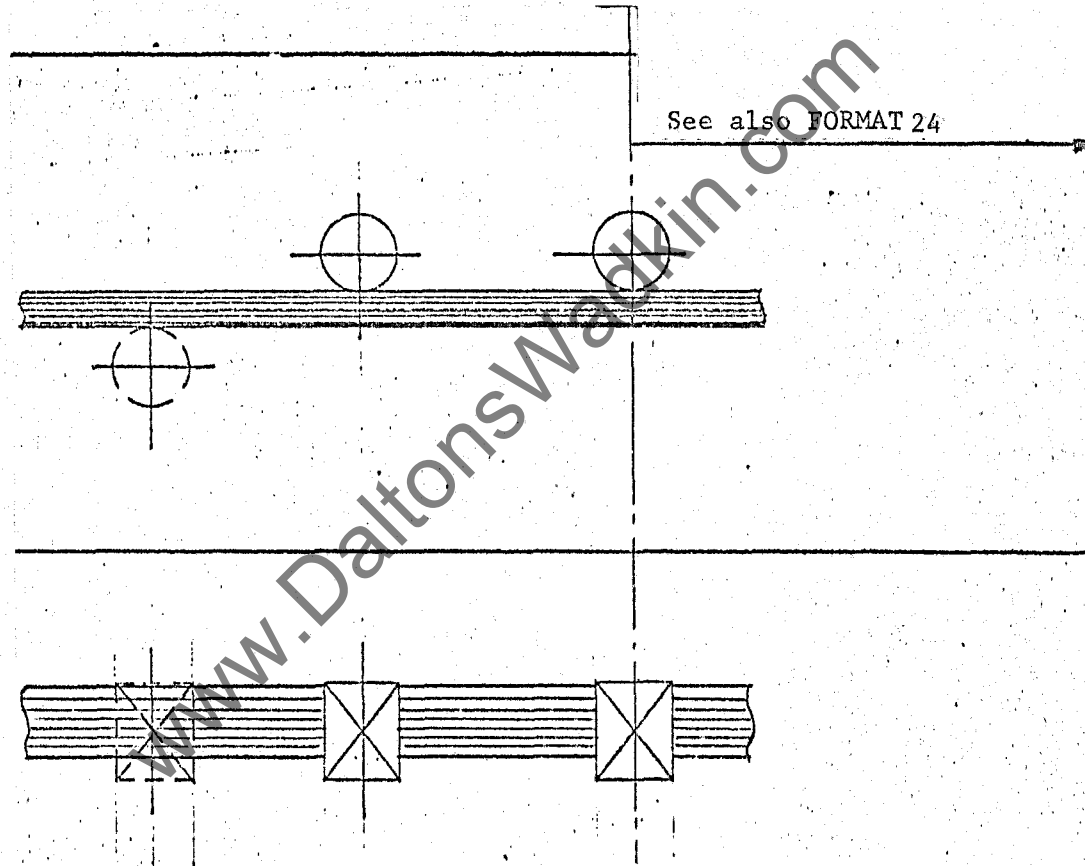
MODELS:

73 74

73U 74U

MINIMUM  
THICKNESS

= 6mm (1/4in)



October '73

CAPACITY

OPTIONAL PRESSURES to special order

7 in FB 180  
12 in Stagger

MODELS:

73 74  
73U 74U

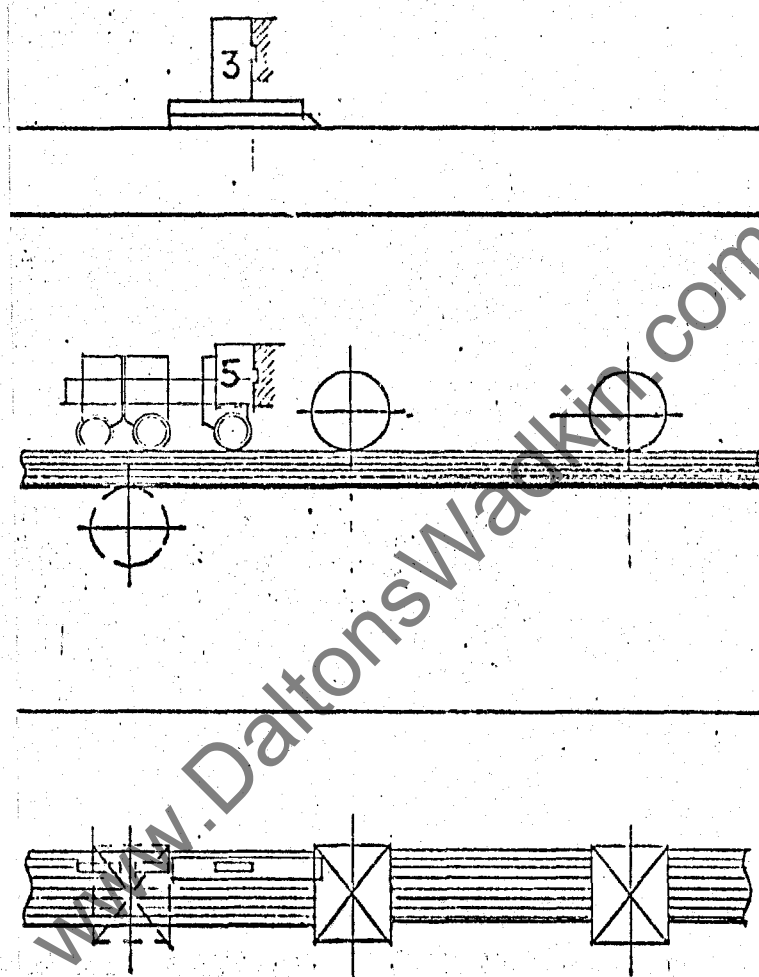
NOTE: Pressure (5) may be used as a triple unit as shown or as a double unit with pad pressure (3)

TRIPLE ROLLER PRESSURE ONLY

Minimum length = 450mm (18in)

DOUBLE ROLLER PLUS PAD

Capacity Not Restricted



FORMAT 30  
Page 36

October '73

CAPACITY

STANDARD PRESSURES supplied with machine

7in FB 180  
12 in Stagger

MODELS

COMMON TO MODELS 77 78

75 76  
75U 76U

77U 78U

Make  
Stepped Shoe

Make  
Stepped Shoe

Make  
Stepped Shoe

Remove Rolls

MINIMUM  
WIDTH

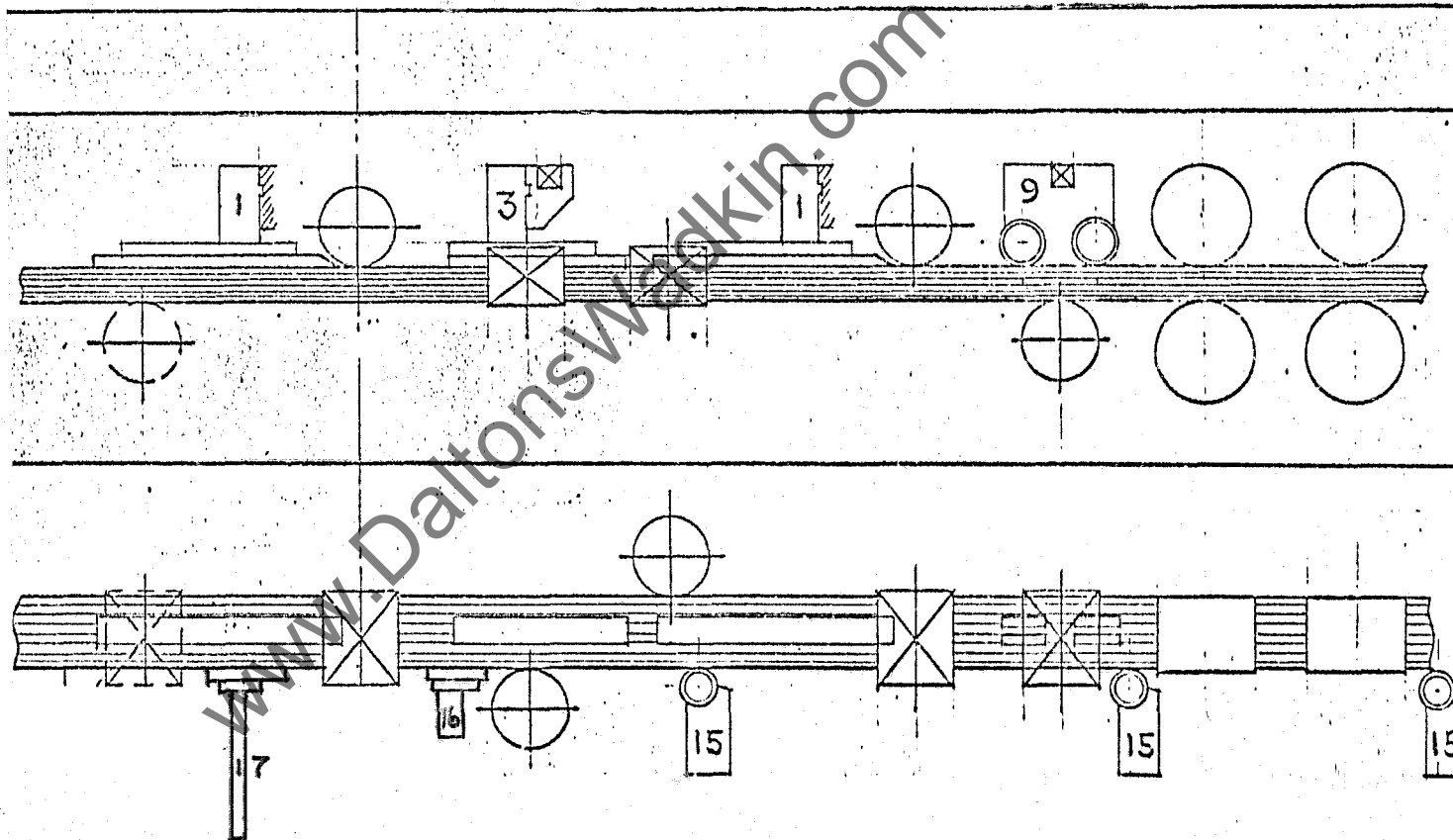
= 9mm (3/8in)

MINIMUM  
THICKNESS

= 9mm (3/8in)

MINIMUM  
LENGTH

= 600mm(24in)



MODEL 75U SEE ALSO P. 47 MODEL 76U SEE ALSO P.49

October '73

CAPACITY

SHORT STOCK PRESSURES to special order

7in FB 180  
12 in Stagger

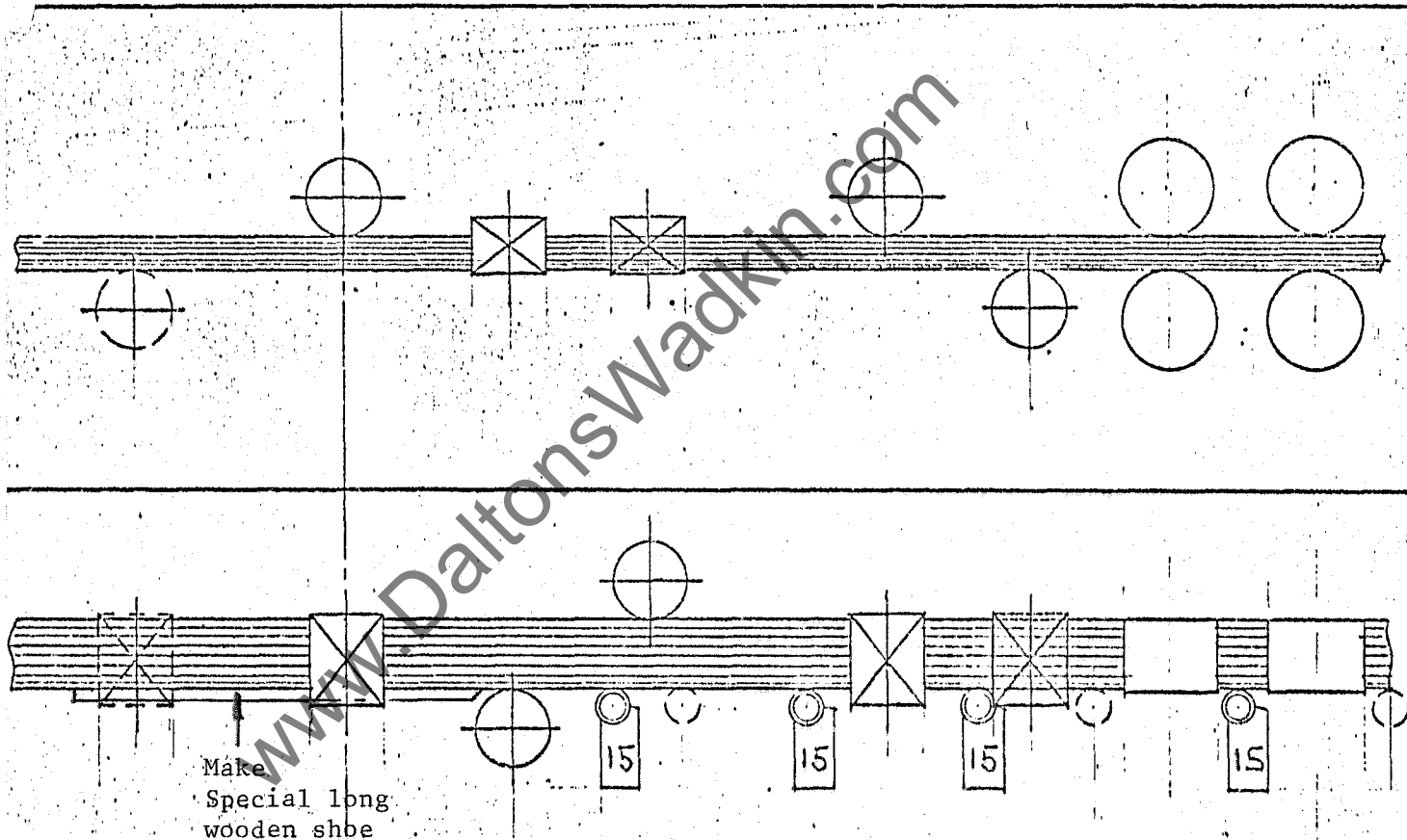
MODELS:

75 76  
75U 76U

COMMON ON MODELS 77 78

77U 78U

MINIMUM  
LENGTH  
= 280mm (11in)



FORMAT 32  
Page 38

October '73

CAPACITY

NARROW STOCK PRESSURES to special order

7 in FB 180  
12 in Stagger

MODELS:

COMMON ON MODELS 77 78

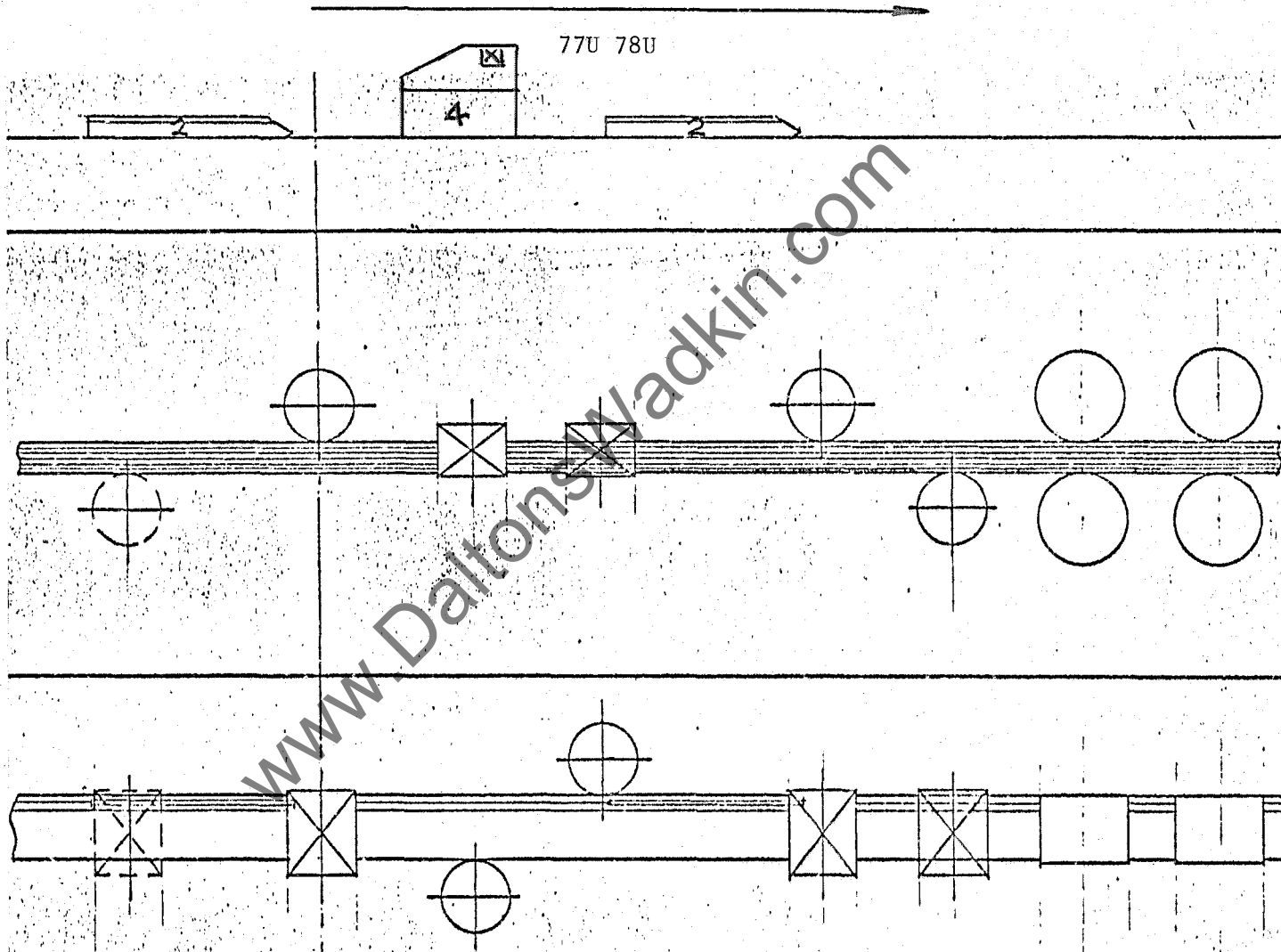
75 76  
75U 76U

77U 78U

MINIMUM  
WIDTH

= 9mm(3/8in)

NOTE: These units do not reduce the minimum width but do eliminate the need to make special stepped wooden pads



MODEL 75U SEE ALSO P.48 MODEL 76U SEE ALSO P50



October '73

CAPACITY

THIN STOCK PRESSURES to special order

7in FB 180  
12 in Stagger

MODELS:

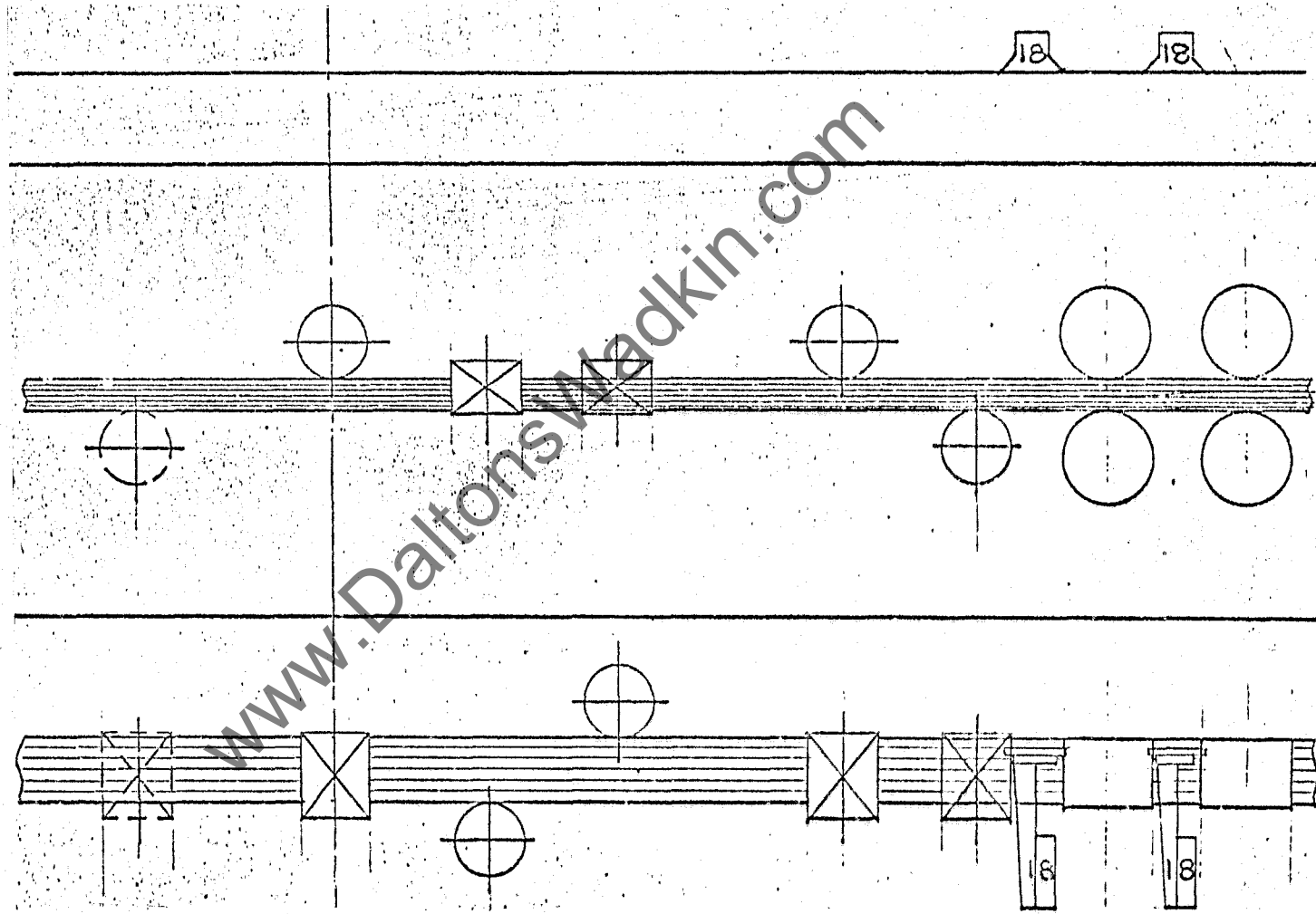
COMMON ON MODELS 77 78

75 76  
75U 76U

77U 78U

MINIMUM  
THICKNESS

= 5mm(3/16in)



CAPACITY

OPTIONAL PRESSURES to special order

7in FB 180  
12 in Stagger

MODELS:

COMMON ON MODELS 77 78

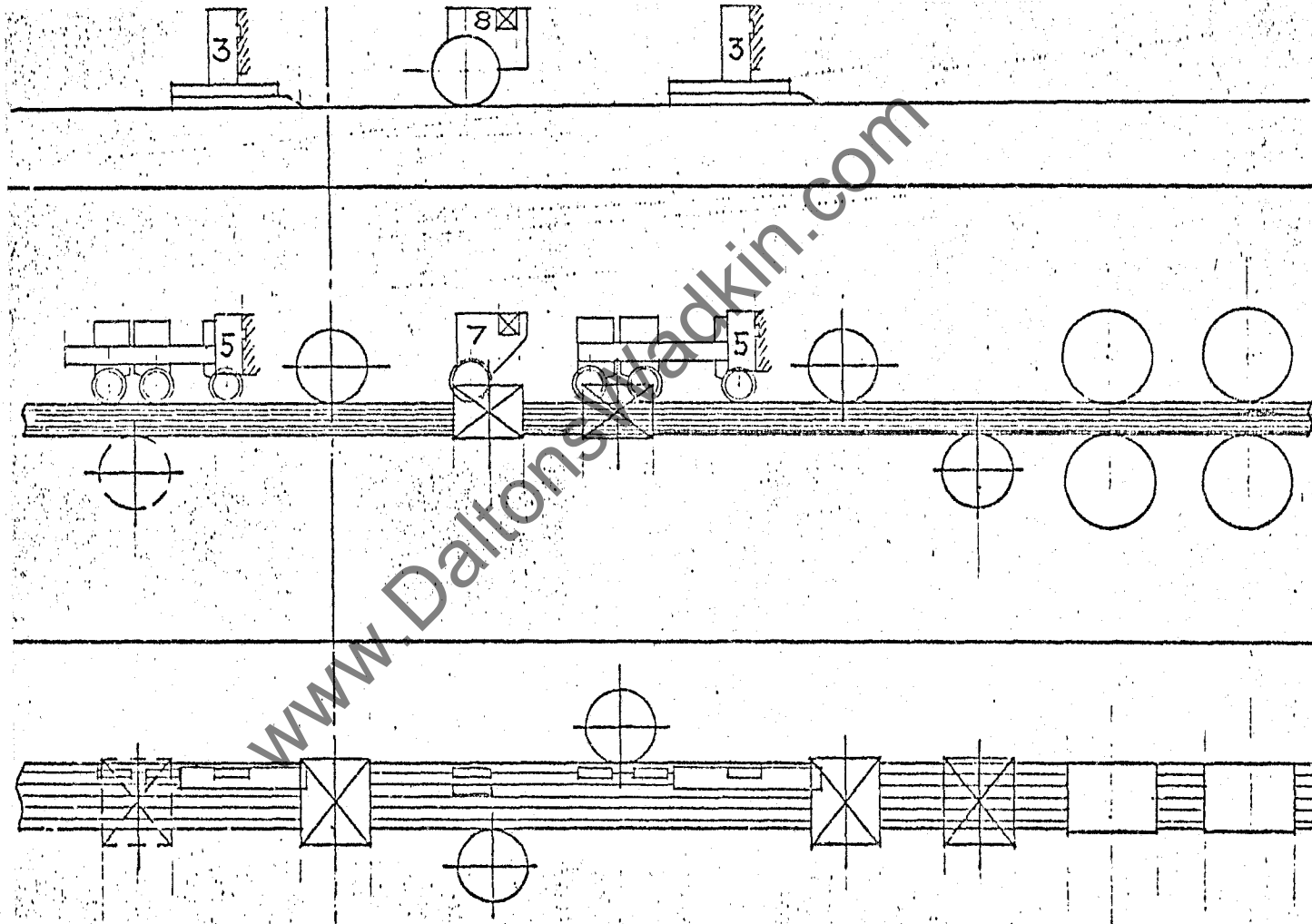
75 76  
75U 76U

77U 78U

October '73

NOTE: Pressure (5) may be used as a triple unit as shown (which limits the min. length to 450mm (18in) or as a double unit with pad pressure (3) which does not restrict minimum length

NOTE: Pressure (7) restricts the minimum width to 50mm (2in) Pressure (8) is fitted in place of (7) for narrow stock Minimum width = 11mm (7/16in)



CAPACITY

STANDARD PRESSURES supplied with machine

7in FB 180  
12in Stagger

MODELS:

77 78  
77U 78U

Make  
Stepped Shoe

Make  
Stepped Shoe

See also FORMAT 31

MINIMUM  
WIDTH

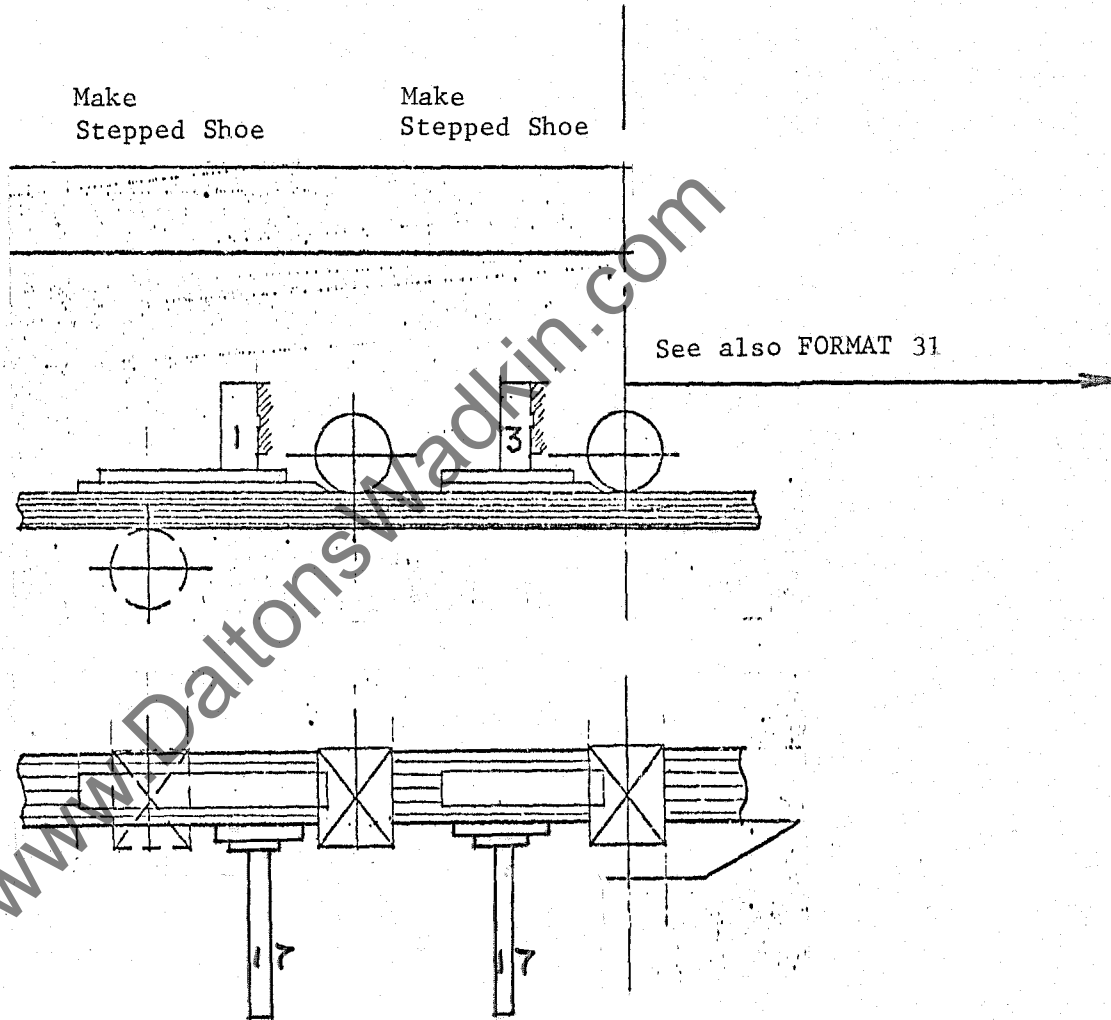
= 9mm (3/8in)

MINIMUM THICKNESS

= 9mm (3/8in)

MINIMUM LENGTH

= 600mm (24in)



MODEL 77U SEE ALSO PAGE 47 MODEL 78U SEE ALSO P49

October '73

FORMAT 36  
Page 42

CAPACITY

SHORT STOCK PRESSURES to special order

7 in FB 180  
12in Stagger

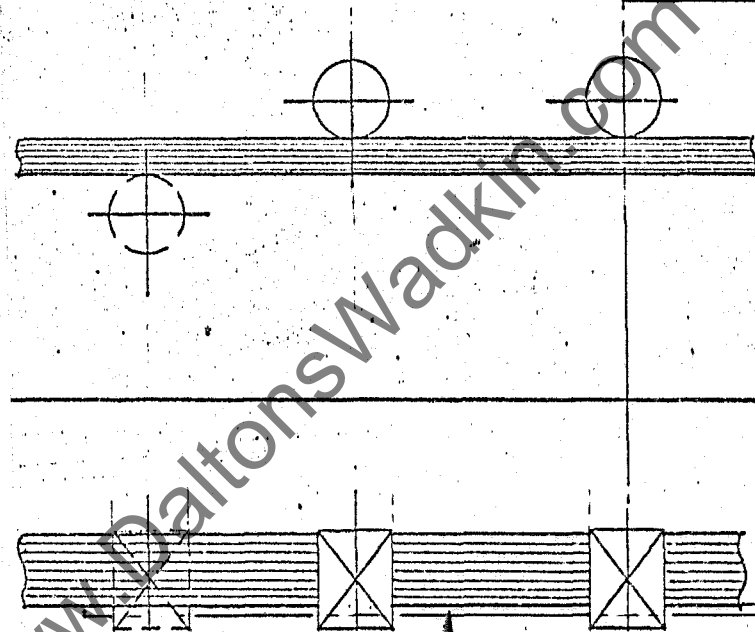
October '73

MODELS:

77 78  
77U 78U

MINIMUM LENGTH  
= 280mm (11in)

See also FORMAT 32



Make  
Special Long  
Wooden Shoe

CAPACITY

NARROW STOCK PRESSURES to special order

7in FB 180  
12 in Stagger

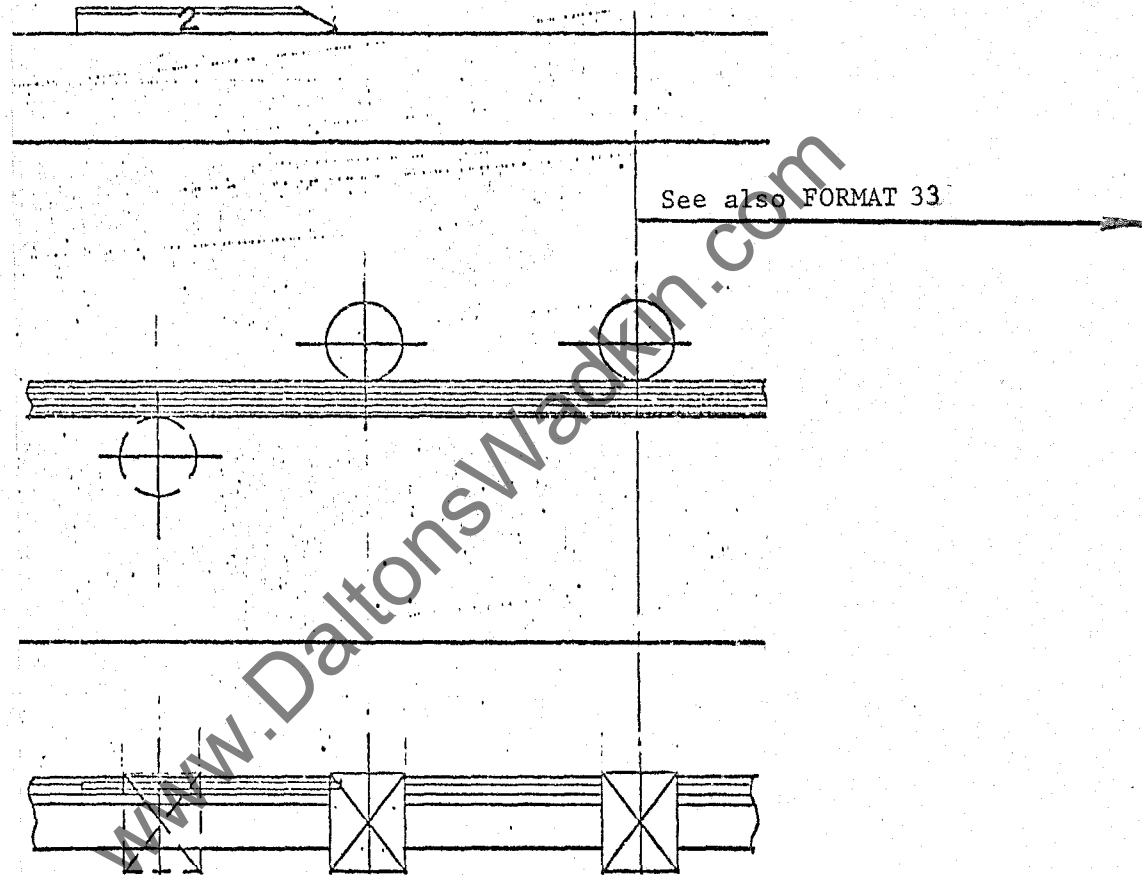
MODELS:

77 78  
77U 78U

MINIMUM  
WIDTH

= 9mm (3/8in)

NOTE: This shoe  
does not reduce  
the minimum  
width but elimin-  
ates the need  
to make special  
stepped wooden  
pads.



MODEL 77U SEE ALSO P.48 MODEL 78U SEE ALSO P. 50

October '73

FORMAT 38  
Page 44

October '73

CAPACITY

THIN STOCK PRESSURES to special order

7in FB 180  
12 in Stagger

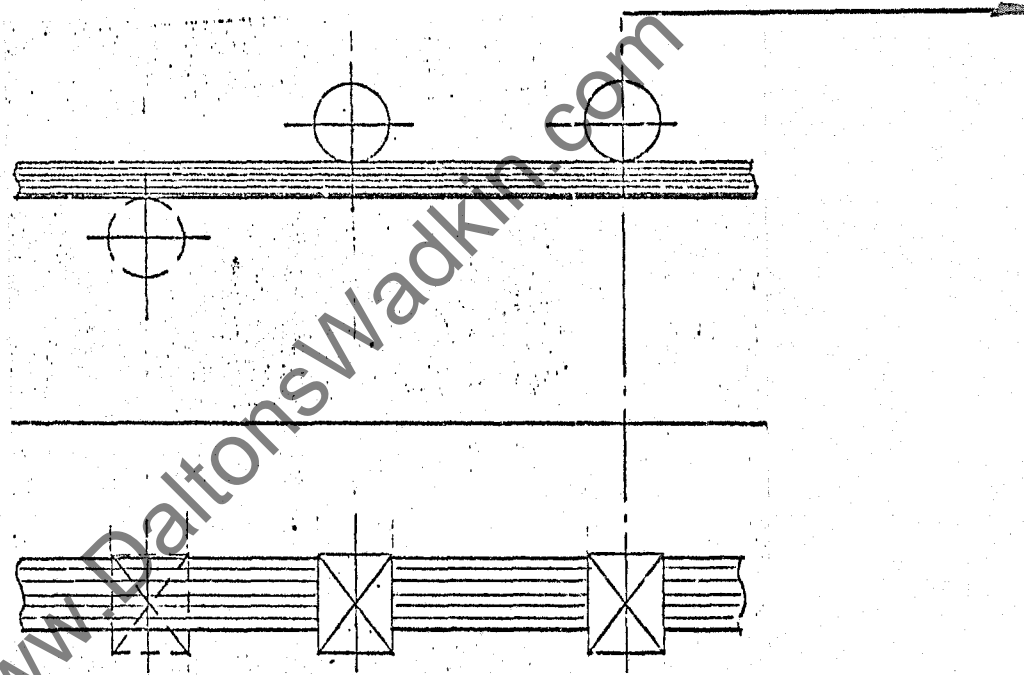
MODELS:

77 78  
77U 78U

MINIMUM  
THICKNESS

= 5mm (3/16in)

See also FORMAT 34



October '73

CAPACITY

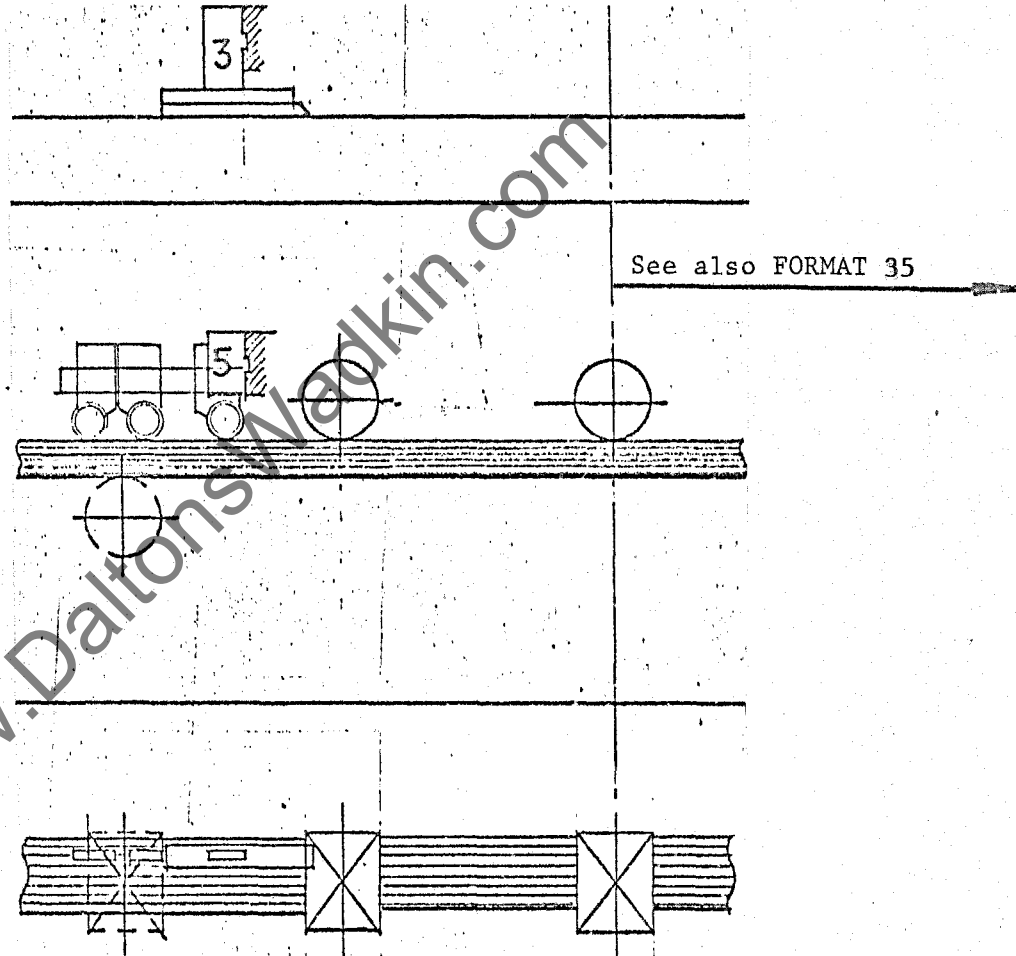
OPTIONAL PRESSURES to special order

7in FB 180  
12 in Stagger

MODELS:

77 78  
77U 78U

NOTE: Pressure (5) may be used as a triple unit as shown (which limits the min length to 450mm (18 in) or as a Double unit with pad pressure (3) which does not restrict the minimum length.



October '73

CAPACITY

STANDARD PRESSURES SUPPLIED WITH MACHINE

UNIVERSAL HEAD

MODELS

- 71U
- 73U
- 75U
- 77U

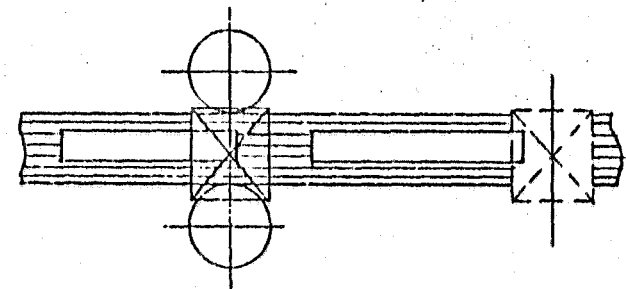
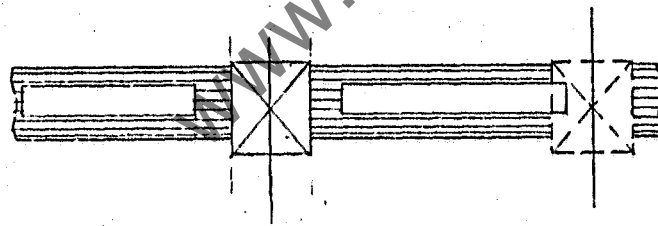
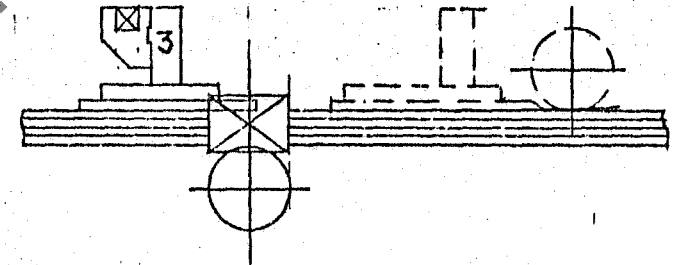
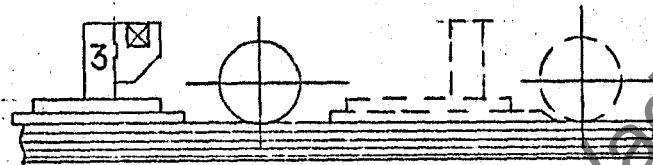
NOTE: These pressures do not restrict the capacity as stated on previous pages

NOTE: Side control is by universal head fences.

NOTE: Extra pressures are not reqd. for short or thin material

MAKE STEPPED SHOE

MAKE STEPPED SHOE



HEAD IN TOP POSITION

HEAD IN BOTTOM OR SIDE POSITIONS



October '73

CAPACITY

MODELS:

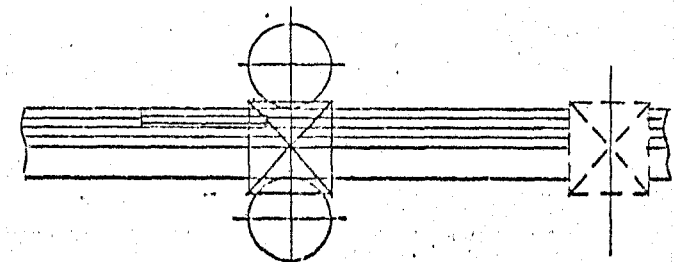
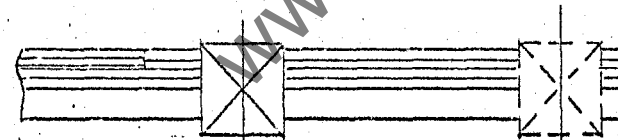
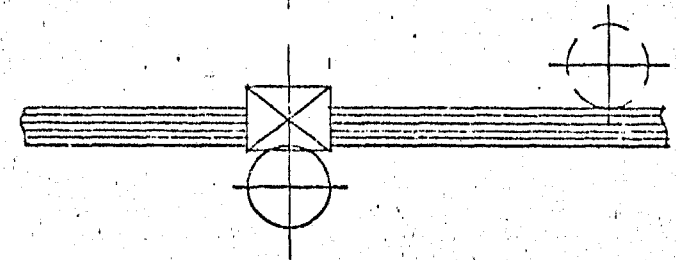
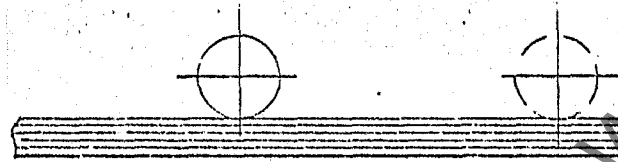
- 71U
- 73U
- 75U
- 77U

NOTE: This pressure does not reduce the minimum width but eliminates the need to make special stepped wooden pads.

NARROW STOCK PRESSURES TO SPECIAL ORDER



UNIVERSAL HEAD



HEAD IN TOP POSITION

HEAD IN BOTTOM OR SIDE POSITIONS

October '73

CAPACITY

MODELS

- 72U
- 74U
- 76U
- 78U

STANDARD PRESSURES SUPPLIED WITH MACHINE

UNIVERSAL HEAD

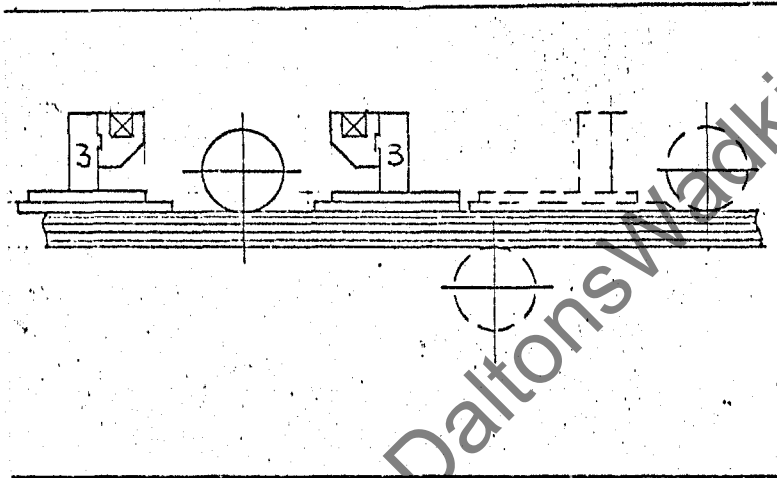
MAKE                      MAKE  
 STEPPED SHOE        STEPPED SHOE

MAKE                      MAKE  
 STEPPED SHOE        STEPPED SHOE

NOTE: These pressures do not restrict capacity as stated on previous pages.

Note: Side control is by Universal Head Fences.

NOTE: Extra pressures are not reqd. for short or thin material.



HEAD IN TOP POSITION



HEAD IN BOTTOM OR SIDE POSITIONS

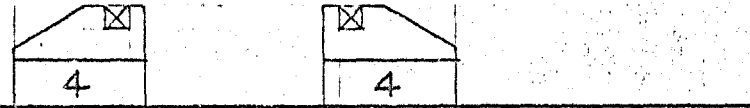
October '73

CAPACITY

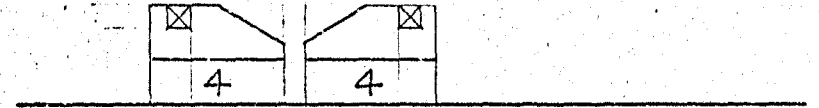
MODELS:

- 72U
- 74U
- 76U
- 78U

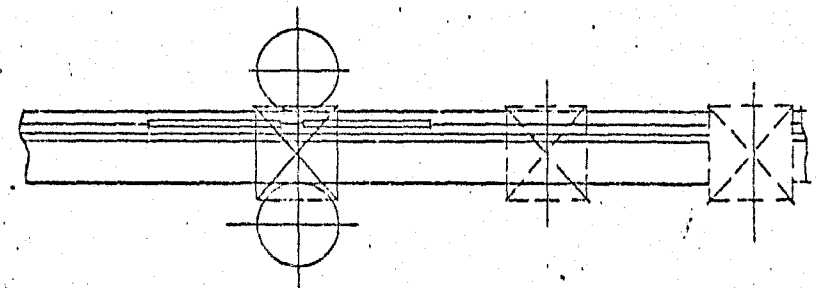
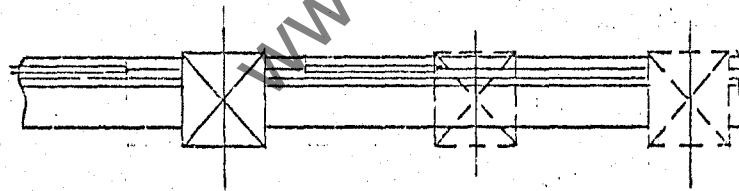
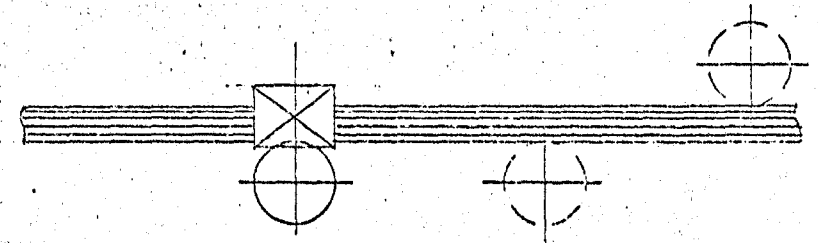
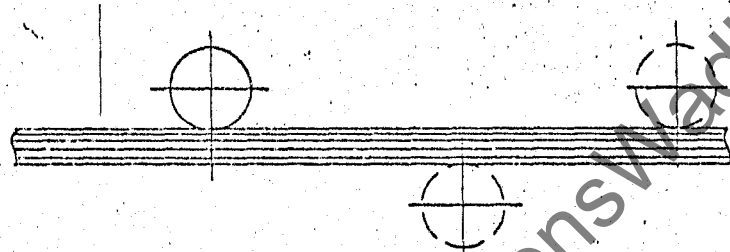
NARROW STOCK PRESSURES TO SPECIAL ORDER



UNIVERSAL HEAD



NOTE: These pressures do not reduce the minimum width but eliminate the need to make special stepped wooden pads



HEAD IN TOP POSITION

HEAD IN BOTTOM OR SIDE POSITIONS

# LUBRICATION SCHEDULE

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## DAILY

- FEEDWORKS - Top up lubricator reservoir for the feedwork mechanism (L4.oil)
- \*\* - Hourly - (mechanical hand pump only) apply one shot.
- PNEUMATIC - Top up air lubricator Mobil Almo No.1.access through lower door (front)
- SPINDLES - Belt driven  
Apply one shot of L1.oil to each lubricator positioned either at the spindle nose or main frame, bearing housing for front bearing and at the rear of main frame for rear bearing.

## WEEKLY

Oil machine slideways and adjusting screw with L4.oil.  
Check oil level in the feedworks gearbox with the dipstick. Top up with L2. oil. Change oil - 6 monthly.

NOTE: Where a Universal head is fitted the following lubrication points should be covered. Those at either end of the spindle assembly and also at either end of the motor. The slide ways should be lubricated with L4. oil weekly. The vertical slide leadscrew should be oiled via. the 'oiler' on the end of the drive adjusting square.

APPROVED LUBRICANTS.							
WADKIN GRADE	CASTROL	B.P.	SHELL	MOBIL	ESSO	GULF	CALTEX
L.1	HYSPIN AWS 32	ENERGOL H.L.P.32	VITROL 32	DTE OIL LIGHT 24	NUTO 44 OR ESSTIC H 44	HARMONY 43AW	RANDO OIL HDA
L.2	ALPHA ZN 150	ENERGOL H.P.150 OR C.S.150	VITREA 150	VACTRA EXTRA HEAVY	ESSTIC 65	SERVICE 13	URSA P 40
L.4	MAGNA 68	ENERGOL H.P.68 OR C.S.68	VITREA 33	VACTRA OIL HEAVY MEDIUM	ESSTIC 50	SERVICE 51	URSA P 20

L.1 OIL Hydraulic oil with anti-corrosion, anti-oxidation, anti-wear, anti-foam performance.

L.2 OIL Gear oil (viscosity 150 centi-stokes at 40°C.)

L.4 OIL Plain mineral oil (viscosity 68 centi-stokes at 40°C.)

\*\* Current machines are fitted with cyclic lubrication system - produced by Interlube Systems Ltd.,

The lubricator employed is Type SL 1513/010 and gives a constant discharge of 1.CC.per cycle. The lubricator is adjusted so as to give one discharge every 8 minutes - refer to Appendix 'E' for Operating and Maintenance Instruction, Publication: No. 258. Issue 3.

Due to the enclosed construction of the SIMPLABELT pulleys very little maintenance is required. Regreasing must be effected every four weeks based on eight hours operation per day. In the interest of a long working life we would recommend the pulleys to be greased occasionally at the weekly machine cleaning i.e. in the intervals below.

8 Hour day	once weekly
16 Hour day	twice weekly
24 Hour day	three times weekly

For greasing we recommend the following lubricants.

BP	ESSO	MOBIL	SHELL
BP Energrease RBB 2	Andok A	Mobilgrease BRB No.3	Shell Alvania grease 2
BP Energrease	Beacon 2	Mobilux 2	

When selecting another grease same or similar composition should be used.

7 in x 4in FB 180

#### ELECTRICAL INSTALLATION

The whole of the cabling between the motors and control gear is carried out by Wadkin Ltd., it is only necessary to bring the line supply to the machine and it is ready for running.

On certain machines with free standing control cubicles, certain disconnections are made for transit purposes, these should be remade when installing the machine, the cables disconnected are identified with letters and/or numbers and should be reconnected to the terminal blocks provided as shown on the diagrams supplied with each machine.

After connecting the mains supply to the machine check direction of rotation of the feed rollers and if correct, all other rotations of the head motors will be correct. If the direction of the rotation of the feed rollers is incorrect, interchange any two of the incoming line supply cables at the isolating (disconnect) switch in the main control cubicle

Providing all rust preventing grease has been removed, oil levels checked and lubrication carried out, the machine is ready to start up.

See operating instructions.

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LIST OF WEARABLE PARTS

A list of wearable parts is being reviewed and customers will be informed in due course.

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7 in x 4 in FB 180

#### ELECTRICAL CONTROLS

The electrical supply isolating (disconnect) switch is situated in the main control cubicle and before any cutterhead or feed can be started the switch must be turned to the 'on' position.

The master 'lock-off' pushbutton must be turned and released before any head or feed can be started, these buttons are situated at the infeed and outfeed end of the pushbutton channel on the front of the machines.

To start the cutterheads, first ensure that the cutterblocks are free to rotate then press the respective start pushbutton situated on the pushbutton channel, to stop the cutterhead press the associated stop button. These buttons are conveniently situated in line with the respective cutterheads.

To start the feed motor first select the feed speed required i.e. low speed (1) or high speed (2) with the selector switch situated on the rear of the main control cubicle, then press the start feed push button at the infeed end of the machine, to stop the feed press the stop feed button. The feed rolls can be reversed by depressing and holding the inch (jog) reverse pushbutton situated at the infeed end of the machine. Similarly the feed can be "Inched" (Jogged) forward by holding depressed the "Inch" (Jog) pushbutton situated at both the infeed and outfeed end of the machine. The outfeed "Inch" (Jog) pushbutton when depressed will also stop the feed rolls, if it is required to inch (Jog) forward the feed rolls from the outfeed end of the machine, this pushbutton reverts to its normal control function i.e. it is an inch (jog) and stop feed button.

#### FAILURE TO START

1. Electrical supply is not available
2. Fuses have blown or are not fitted
3. Isolating (disconnect) switch has not been closed.
4. One or both of the master stop buttons is locked in the "OFF" position.

Shut down during operation and failure to re-start.

1. Fuses have 'blown'
2. Overloads have tripped, these will automatically reset after a short time



DATE ALT. No. SIG. F

20.3.81

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- 1) "ATLAS" "COPCO" CYLINDER KQE 1/B4
- 2) QUICK EXHAUST VALVE KMV9/95
- 3) 5. PORT VALVE KMV1/43
- 4) 3. PORT VALVE - PUSH BUTTON KMV52/20/4P
- 5) 3. PORT VALVE - "SOLENOID" OPERATION KMVS2/20/4P
- 6) PRESSURE REGULATOR KASP. 100PB4
- 7) PRESSURE GAUGE 0 - 100 304 - M1E0
- 8) LUBRICATOR CONTROL ASSEMBLY K30 G1 717

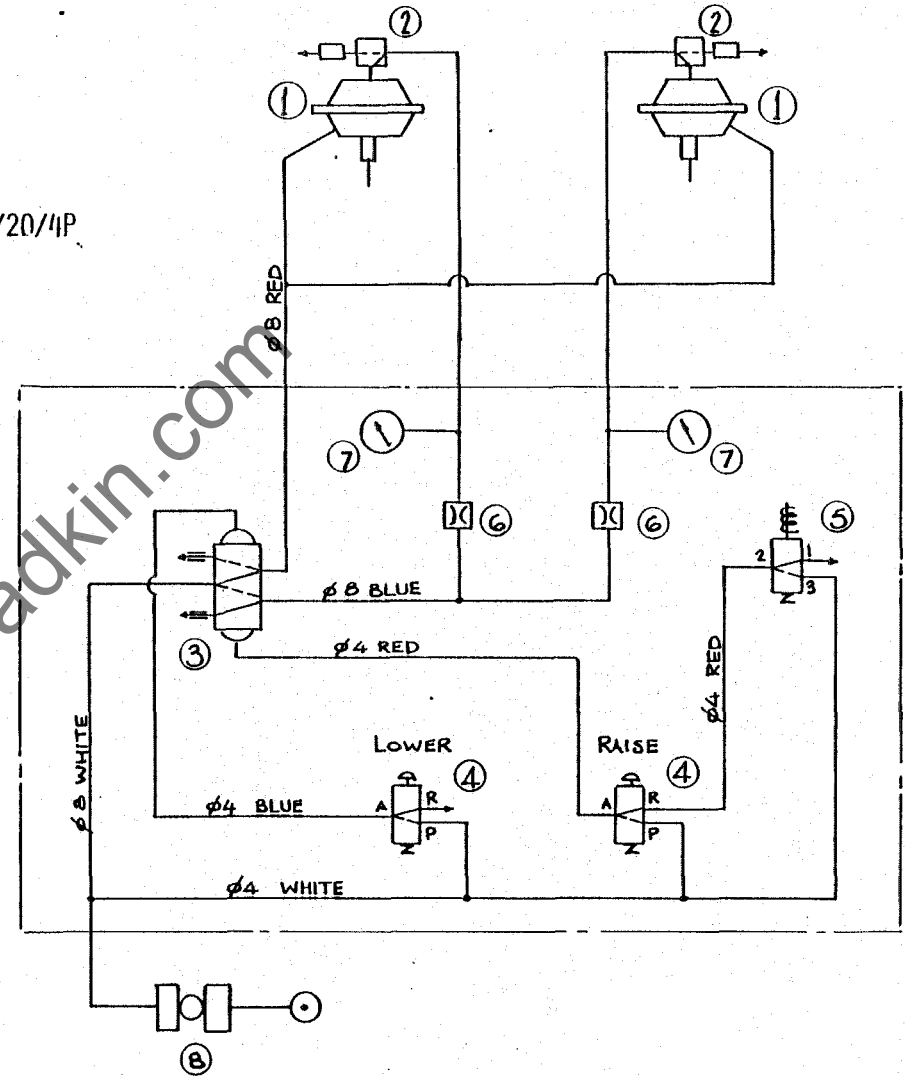


DIAGRAM FOR PNEUMATIC FEEDROLL CONTROL

GENERAL TOLERANCES, LIMITS & SURFACE FINISH, UNLESS STATED

FLATNESS	$\square$	0.04 IN ANY LENGTH UP TO 300, PLUS 0.04/300 THEREAFTER
STRAIGHTNESS	-	
SQUARENESS	$\perp$	
PARALLELISM	//	
FIN OUT	$\wedge$	0.08mm T.I.R. MAX.
CYLINDRICITY	$\curvearrowright$	0.02mm MAX.
ANGULARITY	$\sphericalangle$	$\pm 0.25^\circ$ MAX.
SYMMETRY	$\equiv$	
WHOLE NUMBERS		$\pm 1\text{mm}$ NON
1 DECIMAL PLACE		$\pm 0.1\text{mm}$ ACCUMULATIVE
2 DECIMAL PLACE		$\pm 0.01\text{mm}$ ACCUMULATIVE

$\nabla$  - 6.3-25.0 MICRONS, ROUGH M/C  
 $\text{W}$  - 1.6-3.2 MICRONS, FINISH M/C  
 $\text{WW}$  - 1.6-3.2 MICRONS, ROUGH GRD  
 $\text{WWW}$  - 0.4-0.8 MICRONS, FINISH GRD

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED  
 MACHINE SHOP NOTE -  
 \*INSPECTION MUST PASS THE FIRST COMPONENT OF A BATCH BEFORE STARTING THE SECOND.

THIRD ANGLE PROJECTION	DATE	A	WADKIN LTD. LEICESTER	QTY.	MATERIAL
SIMILAR TO	DRAWN		DESCRIPTION	SCALE	PART No.
page 56	CHECKED		DIAGRAM FOR PNEUMATIC FEEDROLL CONTROL		

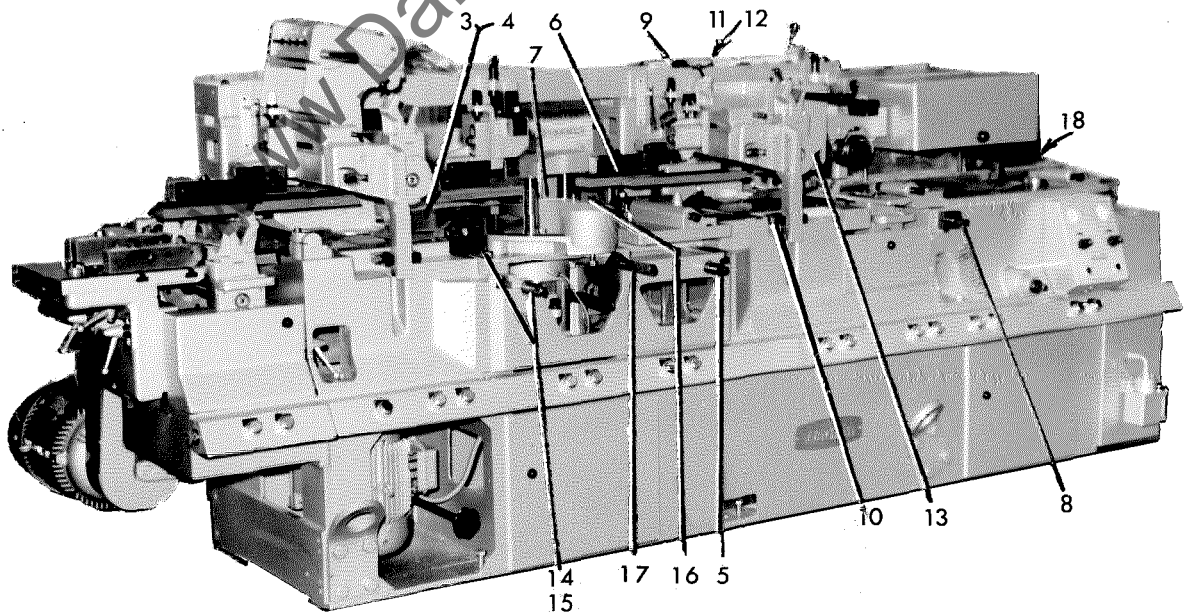
PREPARATORY STEPS TO MACHINING (7in FB 180 12 in Stagger)

Having knowledge of the dimensions of the finished workpiece the following sequential procedures should take place.

1. Set the section of fence which extends from the fence side head to the outfeed table. The setting should allow for the appropriate amount of timber removal by the fence side head. The setting is achieved by releasing the locking nuts (3) and handle on square (4), (straight edge between outfeed and infeed fences).
2. Adjust the fence side head to bring the cutting circle in line with the outfeed fence, lateral adjustment via square (5), locknut (6). Adjust the table to within 3 to 6 mm (1/8 - 1/4 in) in front of cutting circle - locking levers under bedway.
3. Set the fence gap at the fence side head to clear the cutting circle by the adjusting piece on the outfeed and infeed fences (7).
4. Set the vertical position of the infeed table section between the feed rolls and the first bottom head. The setting should coincide with the amount of timber to be removed by the first bottom head. Adjustment is via the square (8) lock in position following adjustments.
5. The bottom feed roll should be adjusted to be 0.8mm (1/32in.) proud of the table by handle (18). "Rough timber requires a greater projection"
6. The bottom head cutter block should be adjusted so that the cutting circle is level with the outfeed table and the cutterblock is laterally adjusted to be 3mm (1/8in.) behind the rear fence line.
7. Set the clearance of the stock gate at the infeed so as to clear incoming material by 6mm (1/4in)
8. The first top head should be set to machine the required thickness. Vertical adjustment is via square (9) and locking nut. (10). Lateral adjustment of cutter head is via square (11) and locking lever (12) and should be adjusted to be 3mm (1/8in.) behind the rear fence line.
9. The first top head chipbreaker shoes should be set for clearance to the cutting circle of the block and can be set to any one of three positions by stud (13).
10. Chipbreaker shoes should rest on the timber with approximately 3mm (1/8in) depression on the spring loading.  
NOTE: A jacking screw is provided on the rear of chipbreaker hood to restrict downward movement of the hood assembly.

7 in x 4 in FB 180 (12 in Stagger)

11. Roller and pad pressures should be raised to permit free movement of timber for setting purposes and laterally adjusted in approximate positions for the timber to be machined.
12. The near side head should be set to machine the timber to the required width. Lateral movement via square (14) locknut (15). Adjust table to within 3-6mm (1/8 - 1/4 in) of cutting circle locking levers, under bedway through rear aperture.
13. Near side head chipbreaker should be set by selecting one of the two positions by adjusting screw (16) releasing the knurled handle locking nut (17) and turn the knurled handle to align the chipbreaker shoes with the cutting circle.
14. Where second or third top heads are fitted set head and chipbreaker as in procedures 9, 10 and 11.
15. Where second bottom head is fitted the outfeed table is set level with the cutting circle using a straight edge and the table is moved in or out to provide minimum clearance to the cutting circle.
16. Adjust the vertical position of the head and outfeed table to gain the cut required, relative to the machine table.



## MACHINING

1. Select a piece of timber to be machined, enter to the first feed roll allowing 6mm (1/4 in) clearance on the stock gate.  
  
NOTE: (Where air operated rolls are fitted there must be a clearance of at least 15mm (5/8 in) between the roll and the top face of the timber). Where hand adjustable rolls are fitted a suitable gripping pressure should be set on the timber.
2. Adjust the first side pressure on the infeed table up to the timber with no exerted pressure (clearance - this is a guide only) where short stock is run a similar side pressure should be mounted between the feed rolls
3. When air operated rolls are fitted select rolls down.
4. Inch (Jog) forward the timber until it enters the first side pressure roller, then adjust in the roller to give 4mm (3/16 in) depression on the rollers.
5. Lower the first top roller pressure to 3mm (1/8 in) depression on the roller.
6. Start first bottom head cutterblock.
7. Inch (Jog) the timber through until it just causes the first top head chipbreaker shoes to lift.
8. Start first top head and inch (Jog) timber through until it enters 50mm (2in) under the following top pressure (pad).
9. Wind the pressure down to touch the timber. This pressure incorporates flexible rubber bushes and should not be 'wound' down until solid.
10. Inch (Jog) the timber through to the next side pressure (roller) and set 3mm (1/8 in) depression.
11. Start fence side head.
12. Inch (Jog) to move the timber up to the back fence.
13. Set second top pressure (first pad) to hold.
14. Start nearside head.
15. Inch (jog) timber through to end (back) of second pad pressure.
16. Wind down to hold over the full length.
17. When a second top head is fitted Inch (jog) until the timber just causes the second top head chipbreaker shoes to lift.
18. Offer up the near side fence to the approximate width of finished timber.

19. Start second top head.
20. Inch (jog) through the timber until it enters 50mm (2in) under the following top pressure pad.
21. Wind down the pressure to just touch the timber. This pressure incorporates flexible rubber bushes and should not be "wound" down until solid.
22. Inch (jog) through the timber approximately up to the last bottom head.
23. Reset pressure as in (21) to hold over the full length.
24. Set the outfeed side pressure to hold along length.
25. Start the last bottom head.
26. Inch (jog) through timber to the outfeed table, run one complete piece and check dimensions.
27. If the finished piece of timber is not dimensionally correct adjust where necessary.

APPENDIX 'A' UNIVERSAL HEAD

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## UNIVERSAL HEAD

### General

A universal head can follow either a top head or a bottom head. Machines so supplied have the suffix 'U' after the model number.

### Construction

The slide is part of a substantial iron casting carried on an 'L' shaped fabrication bolted to the end of the body and carries an upper stand unit to which is bolted an extension to the longitudinal beam. An outfeed table with rise and fall and lateral adjustment is mounted on the outside of the vertical 'L' shape.

### Spindle

The spindle is 40mm with 40° included angle integral cone and fitted with double keys to allow for direction reversal with a totally enclosed timing belt drive from the motor. The spindle is approximately 195mm long for 150mm long cutterblocks, but longer blocks can be accommodated by recessing the cone and nut. Speeds of 6000 and 3000 r.p.m. are standard.

### Electrical Equipment.

The motor is a 7.5/5.5 kW (10/7.5 h.p.) 2 speed TEFC unit running at 3000/1500 rev/min. Start, stop, 2 speed and forward and reverse controls are mounted in a control box on the main frame adjacent to the universal head. Where a 'Rotor Push' direction and start push switch is fitted, before depressing the start pushbutton - turn the barrel of the push switch to select the spindle direction.

### Dust Extraction

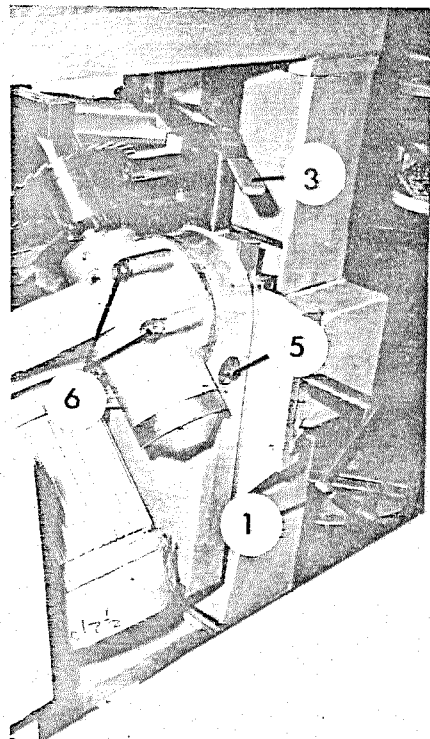
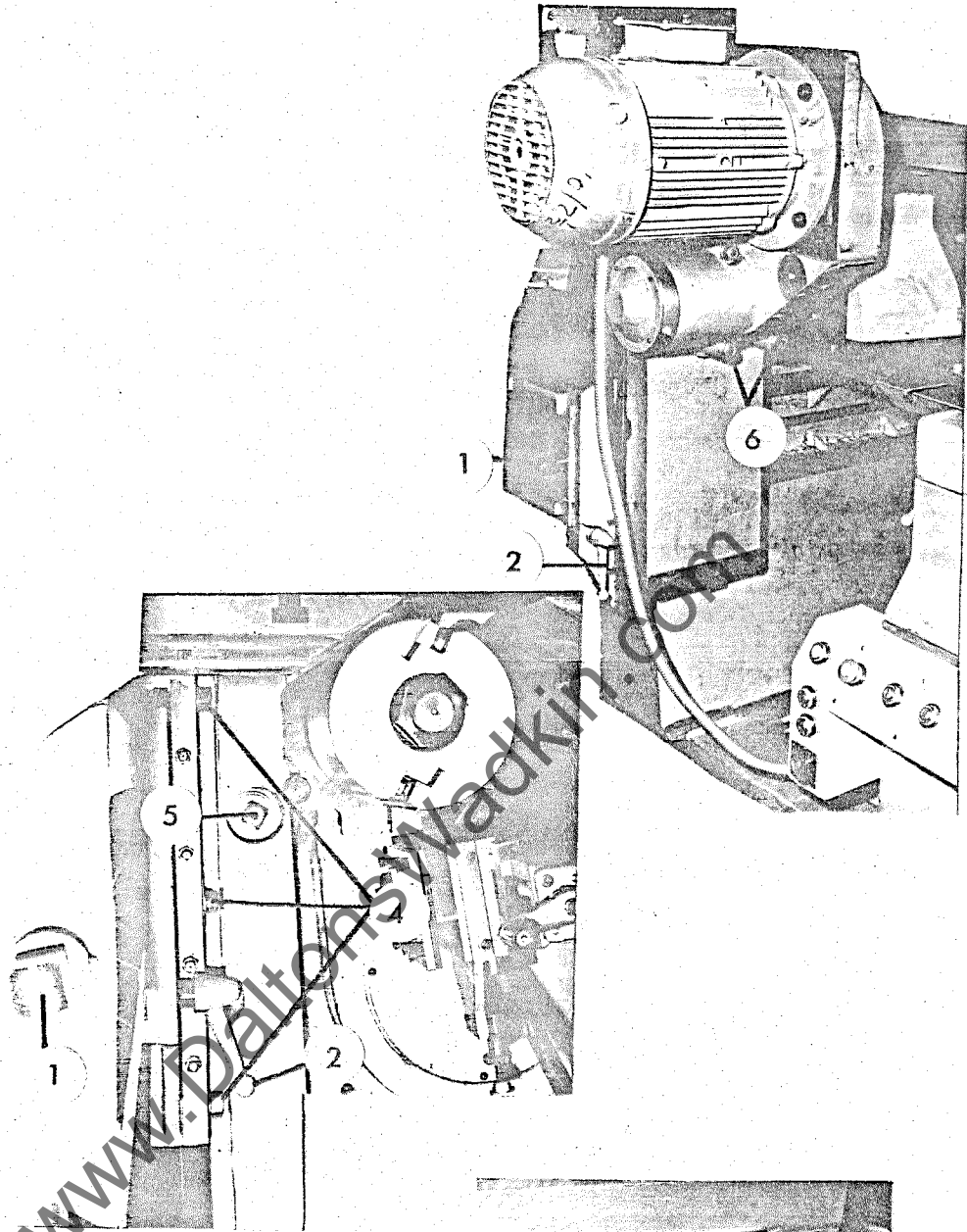
A variety of dust hoods is available to suit the application

### Pressures

Standard pad pressures are mounted before and behind the unit.

### Application

The long movements of both horizontal and vertical slides, together with the worm and wheel canting features, allow the spindle to be positioned as a top, bottom, fence or front side head and in any intermediate position of cant. In addition, the open construction allows the fitting of large diameter saws for splitting and sill throating.





## ADJUSTMENTS

### HORIZONTAL

The complete Universal Head assembly can be traversed laterally by movement of the slide via square (1) from either the front or rear of the machine locking lever (2) holds this movement.

### VERTICAL

A vertical slide unit mounted on the horizontal saddle may be adjusted via square (3) three locking nuts (4) are provided to hold this movement.

Both of the above movements can be used to provide for either top or bottom head positions. By positioning the spindle in a vertical mode the spindle can then be used as front or fence side head.

### CANTING

The spindle can be positioned  $110^{\circ}$  back or forward to the vertical and locked in any intermediate position. A cranked handle is fitted to the worm drive square (5) at either the front or rear of the machine, three locking nuts (6) secure the canted head.

A canted head cutting position can be selected above or below the table

Various table sections can be fitted to suit the mode of machining, a dust extraction hood is supplied and must be fitted to the mounting collar inboard of the cutter. The hood and collar are adjustable for the various positions of the head.

### OUTFEED TABLE (machine)

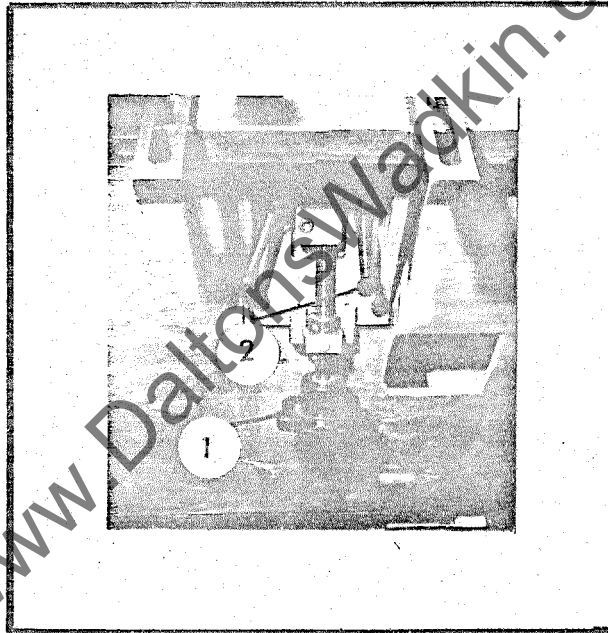
When a Universal head follows a second bottom head various 'infill' table sections are available to suit the cutting circles of both heads. This table section is set vertically as the outfeed to the last bottom head.

### OUTFEED TABLE (Universal Head)

This table section is set in the vertical by means of adjustment on a 30° slideway via knob (1), locking lever (2) holds the movement.

The table section can be adjusted to clear the cutting circle, two locking points for this section are located on the underside of the table.

Reference should be made to the Pressure Section of this manual for the various fixtures and arrangements.



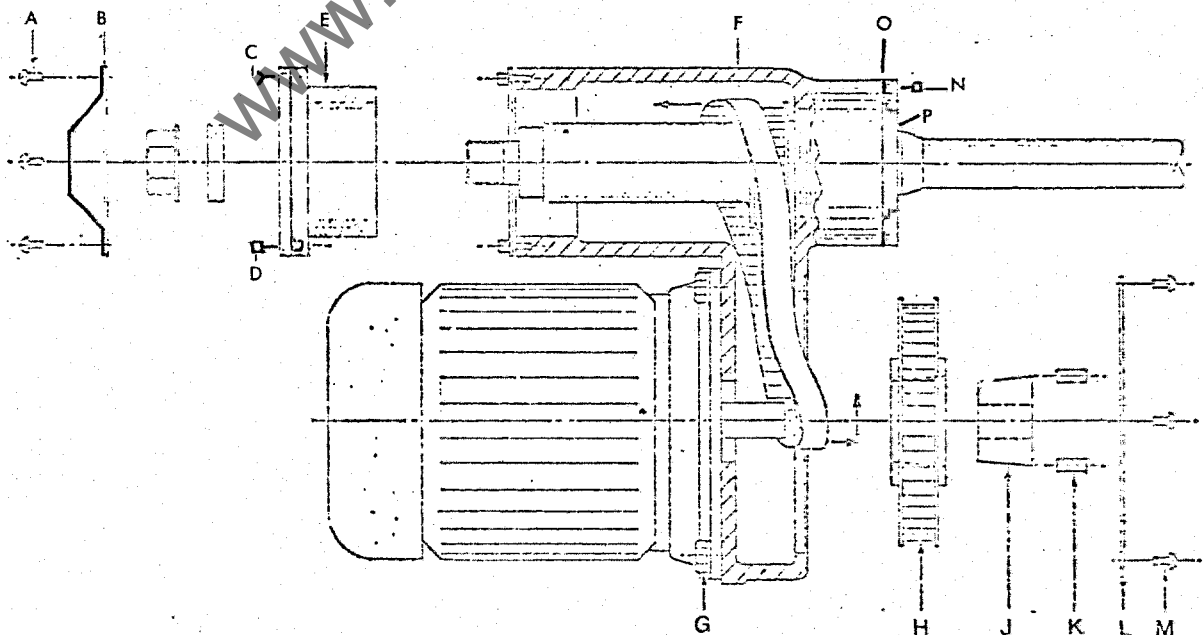
## UNIVERSAL HEAD DRIVE - BELT REPLACEMENT

## TO REMOVE BELT

1. Remove screws (A) and cover (B).
2. Remove screws (C) then screws (D) from the rear bearing assembly (E).
3. Remove screws (N) and retaining ring (O).
4. Remove nut (P) from the spindle then replace retaining ring (O) to hold the bearings.
5. Remove screws (M) and cover (L).
6. Remove two screws (K) from taper-lock bush (J).
7. Use one of these screws (K) in the third hole to jack off the taper lock bush (J).
8. Disengage belt (F) from pulley and remove pulley (H).
9. Move belt (F) off the motor spindle and form a loop in the spindle housing and then remove the spindle from the rear of the spindle housing.
10. Withdraw the belt through the motor drive cavity.

## TO FIT NEW BELT

11. Reverse the above procedure. Note: when replacing the spindle ensure the bearing and spacers are not damaged and are correctly positioned.
12. Before cover (L) is replaced, it may be found necessary to adjust the tension in the belt. (The belt should not be too tight, not too loose. When one side of the belt span is depressed, it should deflect approximately 3mm (5/32in.)  
To tension the belt, slacken off four bolts (G) and move motor mounting plate. NOTE: Once the belt tension is set correctly, it will not require retensioning.

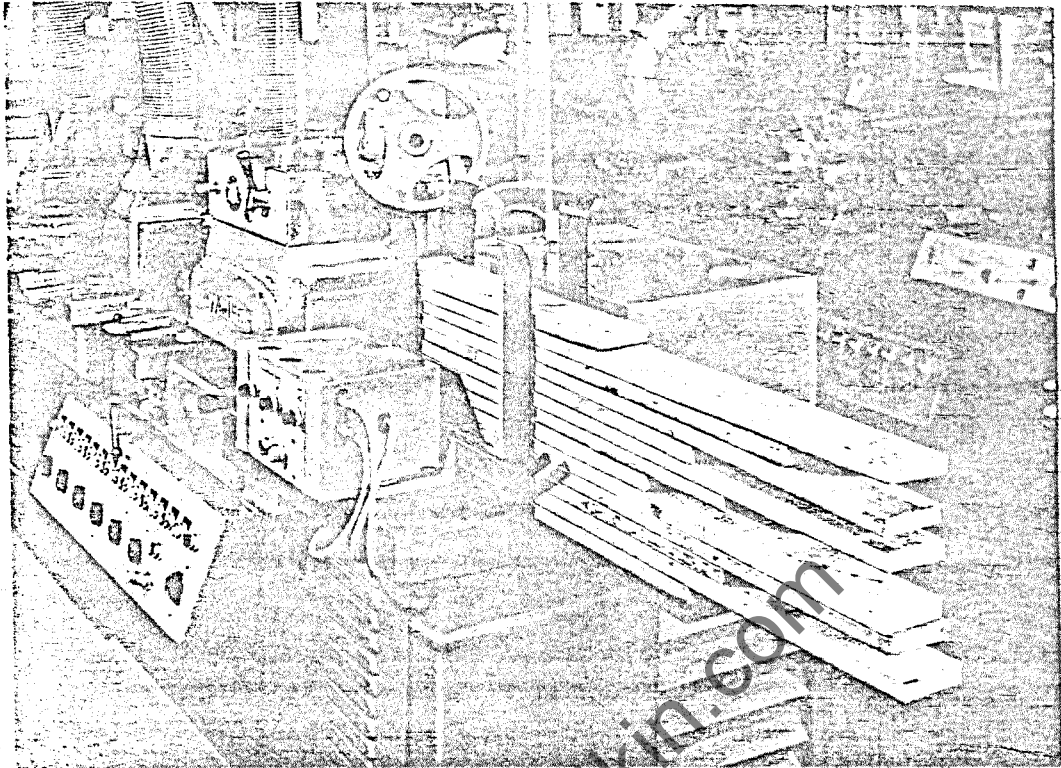


APPENDIX 'B' JOINTING (WITHDRAWN 8.3.76)

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APPENDIX 'C' HOPPER FEED UNIT

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Principal Dimensions and Capacities.

Minimum section of workpiece

75mm x 300mm      3in x 12in

Minimum length of workpiece

6 mm x 12 mm      1/4in x 1/2in

Maximum length of workpiece depends on weight and surface texture

300mm      12in

Infinitely variable feed speed range

12 - 60 m/min      40-200 ft/min

Horsepower of feed motor

3/4 - 1.1/2

Speed of feed motor

750/1500 r.p.m.

## HOPPER FEED UNIT

### General Description

The unit is made up of two quite independent sections carrying the adjustable guide plates and fences. The front section consists of two idling polyurethane faced rollers which are operated pneumatically by a signal transmitted from a photo cell. Pressure regulators for each of these rollers and the air clutch of the rear unit along with start and stop buttons are all mounted on the front unit for ease of access. The front unit carries a fence and two hopper guide plates one being fixed and one adjustable horizontally for timber length being fed. The whole of this unit is adjustable for timber width and is covered to prevent entry of dust by its own sheet iron cover, this unit carries the light source of the photo electric unit.

The rear section consists of a 2 speed motor driving through variable speed pulleys to a wormbox which is fitted with a pneumatic slipping clutch, sprockets and duplex chain drive to main driving rollers, the rollers are knurled steel for maximum traction with minimum wear, the chain drive is adjustable for tension by means of a jockey sprocket having an eccentric adjustment, this rear unit also has a fence and two hopper guide plates both of which are adjustable vertically for timber thickness and one adjustable horizontally for timber length. This unit also carries the photo cell receiver and the selection switch for the two motor speeds. The whole of the rear unit is mounted on its own baseplate which is in turn mounted directly to the machine table top, the unit again being covered against ingress of dust by its own sheet iron cover.

## INSTALLATION.

The unit is primarily designed for mounting direct on the machine table top of planing and moulding machines, but could be adapted to suit other machines such as multi-rip-saws and machines having power feed attachments as it is mounted directly onto the machine table top it usually requires only the fixing holes to be drilled and tapped in their correct location for the unit and its mounting brackets. Where it is impractical to fit the unit on to a machine table top, it can be fitted to a free standing unit at the end of a machine. (See later sections for particular machine applications). An outfeed table support may also be fitted as an extra to special order only.

The rear section of the unit is mounted on the infeed table, the fence line being set 1/16in. behind fixed fence line of the machine to allow for rollers, which protrude through the rear section fence to form the fence line when adjusted by means of the screw and nuts device fitted. Although the rollers are independently adjusted, care should be taken to ensure that the rear section fence is parallel through its length with the machines fixed fence line as all further positioning is taken from rear section fence position.

The front unit is also mounted on the infeed table and is adjustable for timber width by means of elongated slots and nuts; the fixing holes are drilled and tapped to allow for full movement. It is important that the fence line of the front unit is adjusted to be parallel with rear unit fence line, and that the light projector and the photo-cell receiver are in alignment, as this is essential for the efficient working of the unit.

All air piping and electronic wiring are completed before leaving the factory and it only remains to connect the unit to suitable supply sources after checking the following details.

Main air supply to be	80 p.s.i.	(Minimum 60 p.s.i.)
Clutch	25 p.s.i.	
1st Roller	40 p.s.i.	These are variable in use dependent on timber section.
2nd Roller	20 p.s.i.	

When connecting to electrical supply check voltage, phase and frequency on machine plate for the unit, ensure all connections are secure and the correct fuses are used. Check the rotation of the drive roller on the rear section, when viewed from the front and above these should rotate clockwise, reverse any two line lead connections to reverse rotation (3 phase).



## Adjustments

### Motor Belt Tension

This belt tension is adjusted and tested before leaving the factory, although it is not anticipated that it should require resetting, this can be achieved by movement of the sliding base.

### Polyurethane Drive Rollers and Idling Rollers

The main drive rollers are adjusted to protrude beyond the unit's fence by 1/16 in which will bring them into line with machines fixed fence line by means of the dual nuts and screw device. Because of the slipping clutch these rollers should not experience a great deal of wear, but should they need replacing the units should be removed from the machine, the retaining grub screws unlocked and the rollers slipped off their shafts and replaced by new.

### Chain Tension.

This should be checked monthly and is adjusted by the eccentric device on the jockey sprocket.

### Hopper Guide Plates.

Each of the adjustable guide plates has individual clamping handles for each movement required, these handles should be unlocked, guide plate positioned and handles relocked securely.

### Pressure to Rollers and Clutch

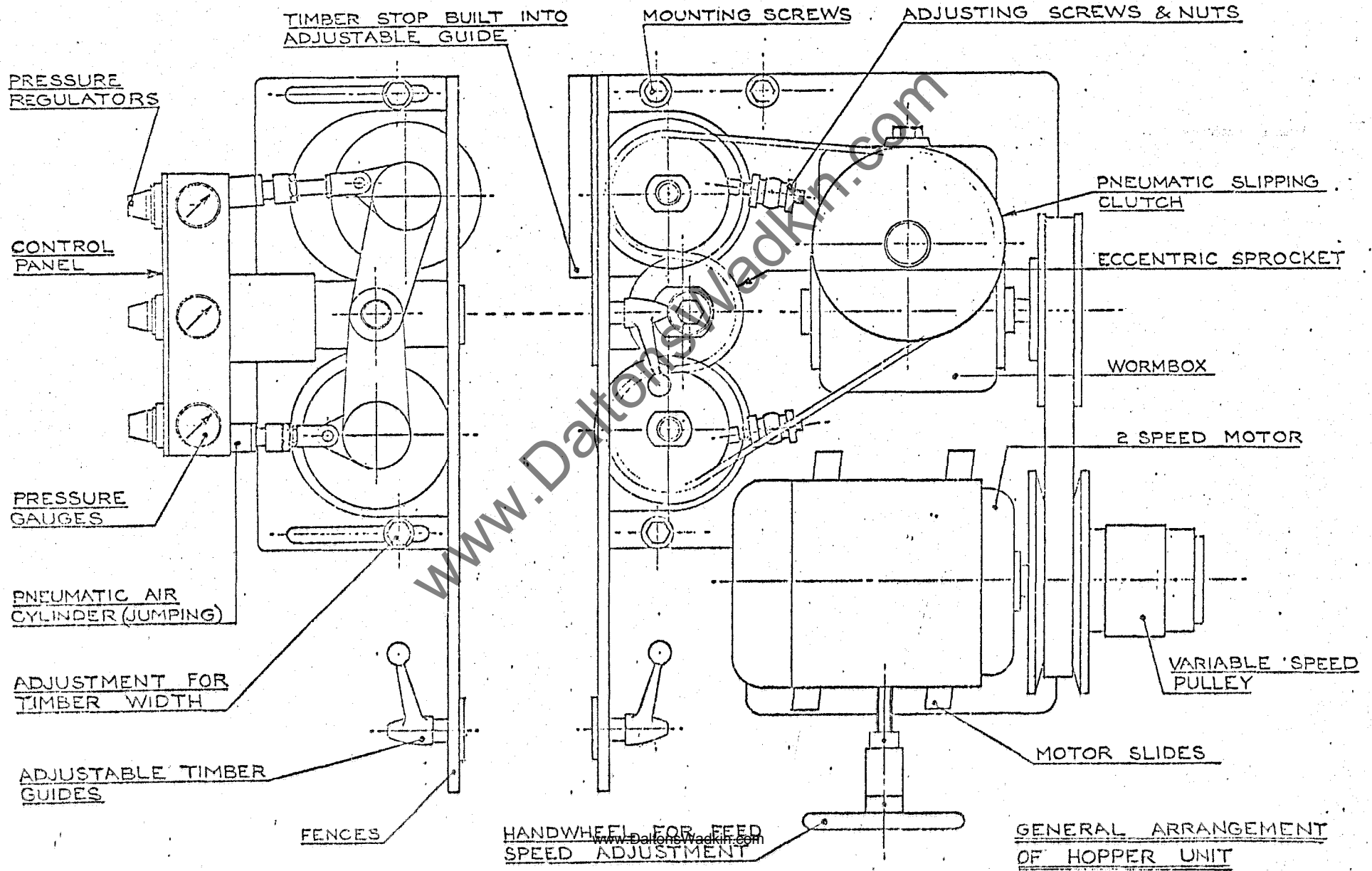
The pneumatic pressure applied by the rollers and also the amount of slip at the clutch can be adjusted from the front of the machine by adjustment of the pressure regulators mounted on the control panel, there is one for each roller and one for the clutch, this pressure should be adjusted to give the best traction of timber through the unit, with minimum pressure at the clutch, this would depend on weight and section of timber being fed.

### Variable Speed Pulleys

The infinitely adjustable pulleys speed range is effected by rotation of the hand wheel at the motor slide end, this gives either an increase or decrease in speed depending on direction of rotation of handwheel, further speed range is operated by selecting the second of the motors two speeds.

Speeds are within the range of 40/200 ft/min. and the unit is adjusted to run at 30-50% faster than main machine feed to ensure an uninterrupted feed through the machine.

August '73



## Setting for Operation

The hopper guide plates are adjusted so that they are closer together than the minimum length of timber being fed by movement horizontally after clamping handle has been unlocked, guide plates must also be set to timber thickness by movement vertically also after unlocking clamp handles, when guide plates are set these handles must be locked firmly. The pressure to the pneumatically operated rollers and the clutch is adjusted depending on the timber sections being fed, to give the best traction with minimum pressure at the clutch, the unit being adjusted to run at 30-50% faster than main machine to keep a continuous flow of timber through the machine, the pieces being butted end to end. The machine can be used conventionally by removing the front section of the hopper unit or alternatively opening it to its maximum to prevent fouling hand fed timber lengths.

The main machine and the hopper unit are switched to run after the hopper has been filled with timber and this will be fed into machine until supply is exhausted.

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## Maintenance

Daily:- The orifices for the light projector and the photo-cell receiver should be blown free of dust.

Weekly:- Remove rear unit cover to perform the following:-

- 1 - oiler on chain tensioner sprocket also main sprockets and chain require oiling.  
Adjusting screws and nuts of main drive rollers require oiling.
- 1 - oiler on each of the motor slides for variable speed adjustment, at the same time the variable speed unit must be operated through its full speed range to prevent sticking during operation and maintain an oil film over the entire surface of the slides.
- 1 - oiler in clutch top spindle bearing.

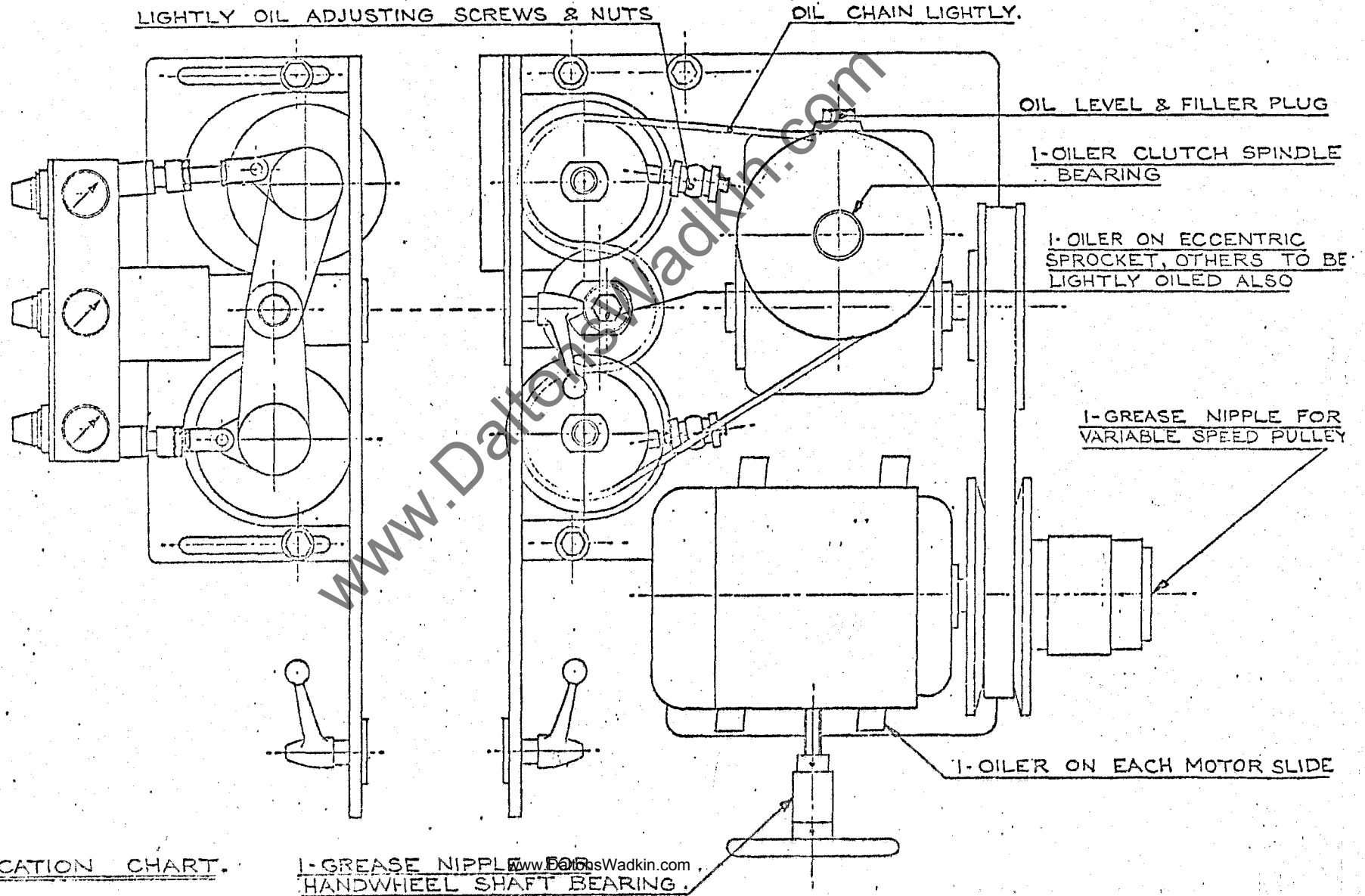
Monthly:- Remove rear unit cover to perform the following:-

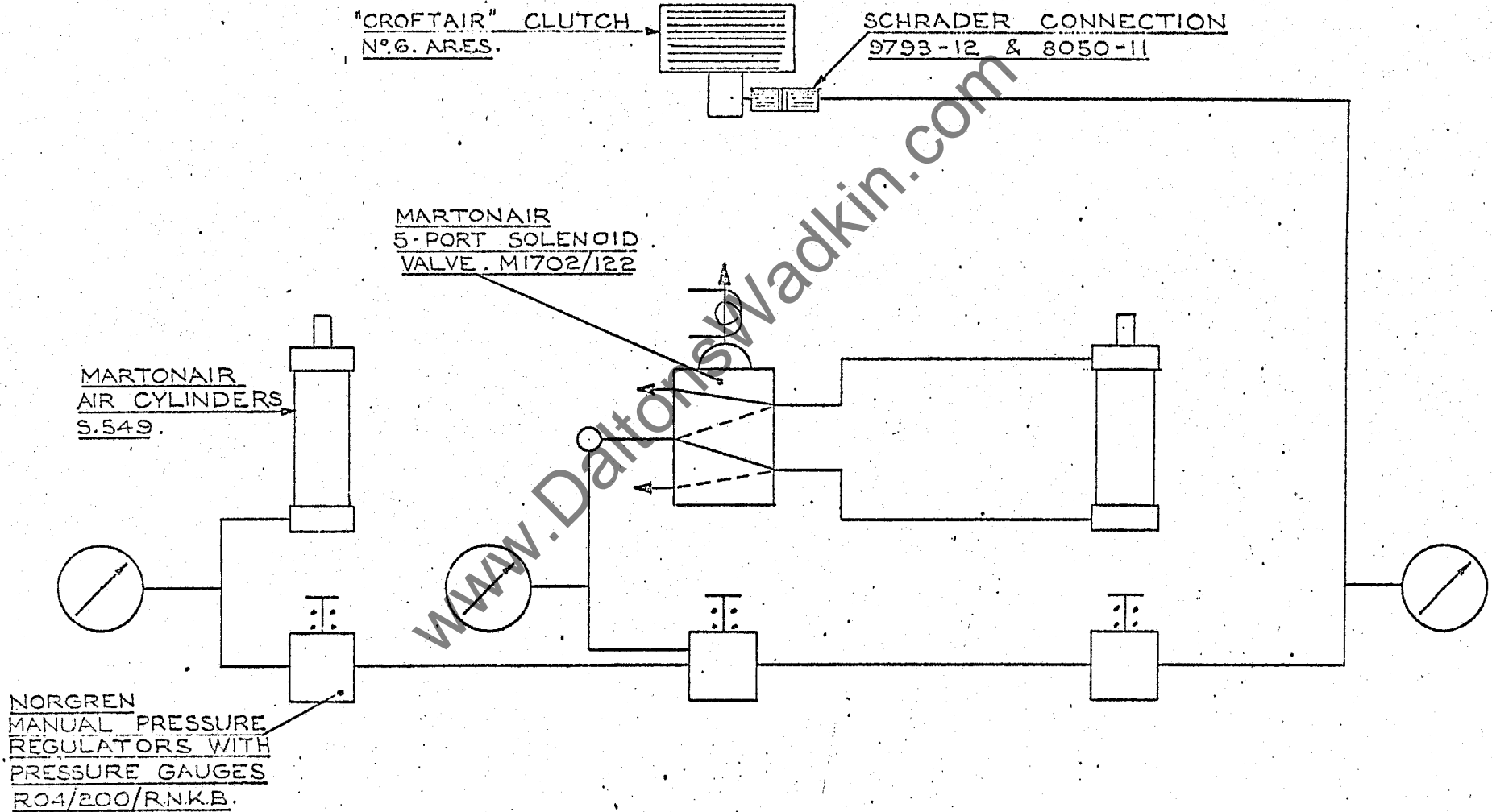
- 1 - grease nipple in variable speed handwheel shaft.
  - 1 - grease nipple in variable speed pulley
- Check oil level in wormbox fill to level by removing filler cap and level bung and topping up with oil until it just runs out at level bung position, this indicates box is full, replace filler caps and level bung. Check belt and chain tensions, adjust if necessary.

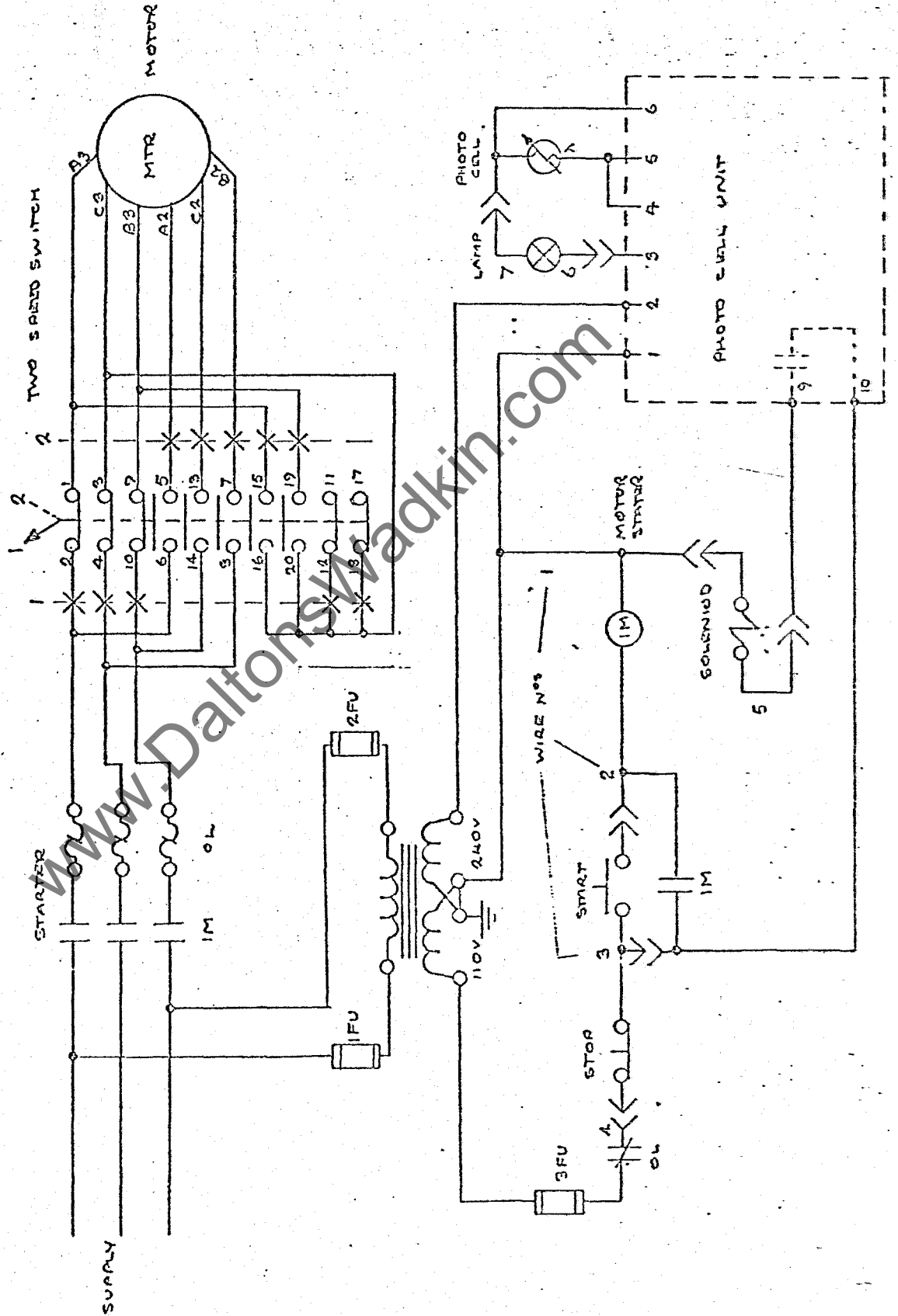
All other bearings are sealed for life and require no further lubrication up to replacement. The bushes are of the self lubricating type and do not require oiling, they may be replaced when worn.

It must be pointed out that this maintenance is additional to any carried out on the main machine to which the unit is fitted.

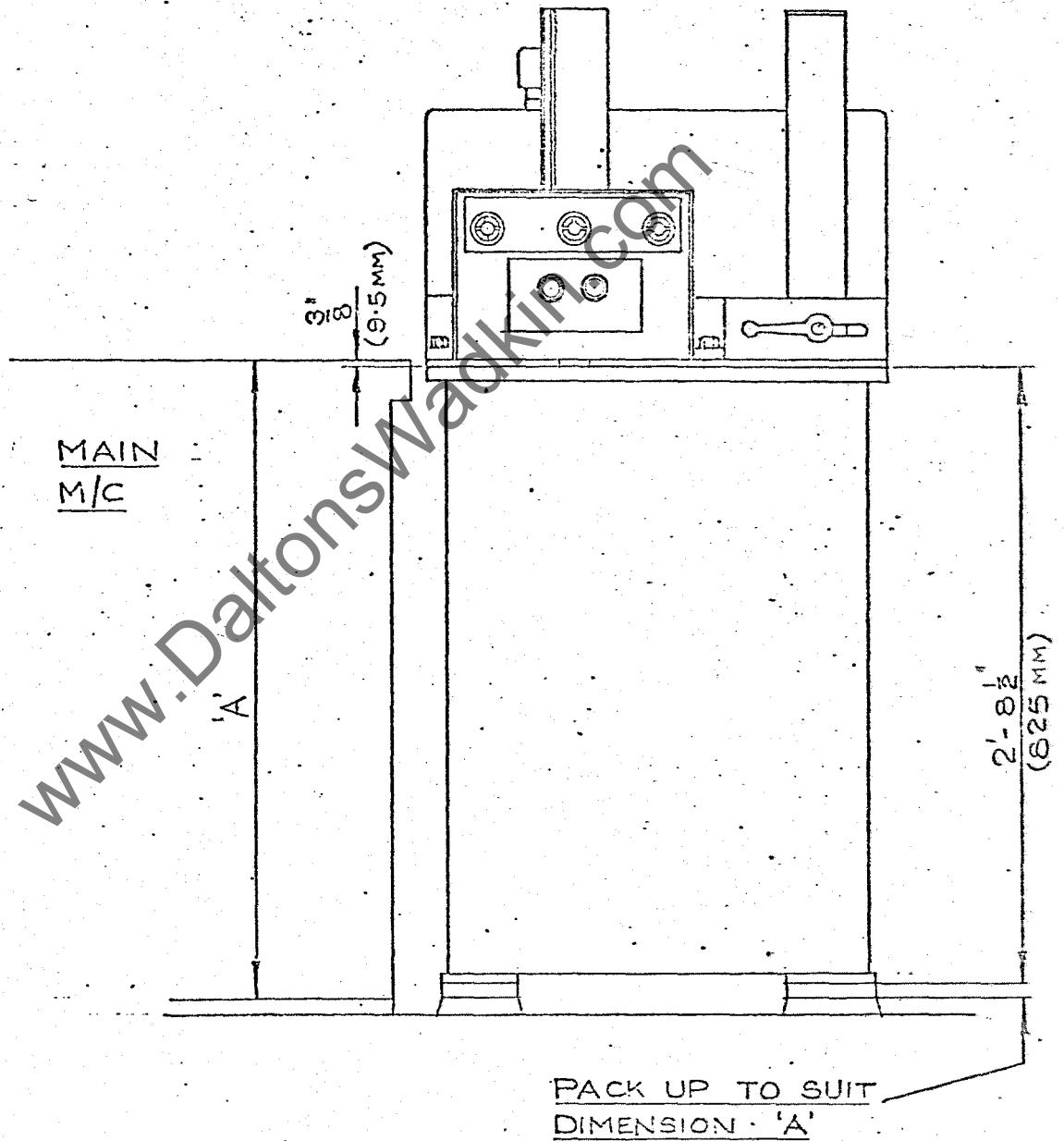
Replacement of either light projector or photo-cell requires unit removing from machine. The grub screws on the underside which retain projector and cell in position require unlocking and the units concerned slipped out of the orifice and replaced with new. The life of the bulb is about 2000 hrs. under normal running operations but is not guaranteed.







HFU CIRCUIT DIAGRAM

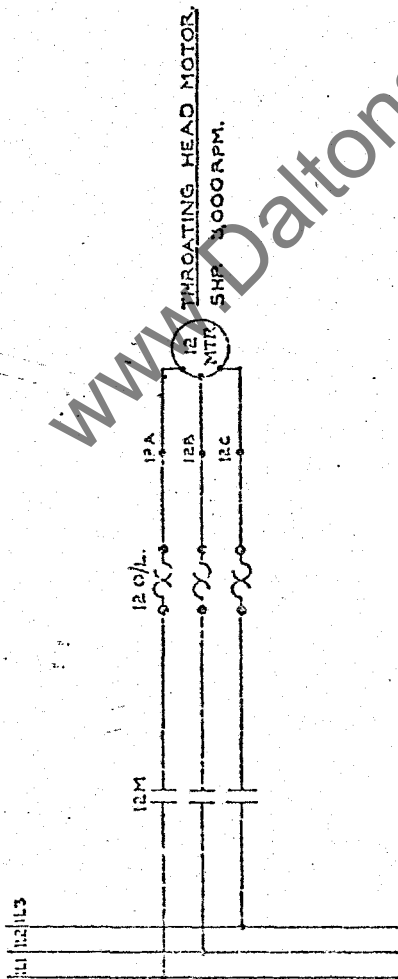
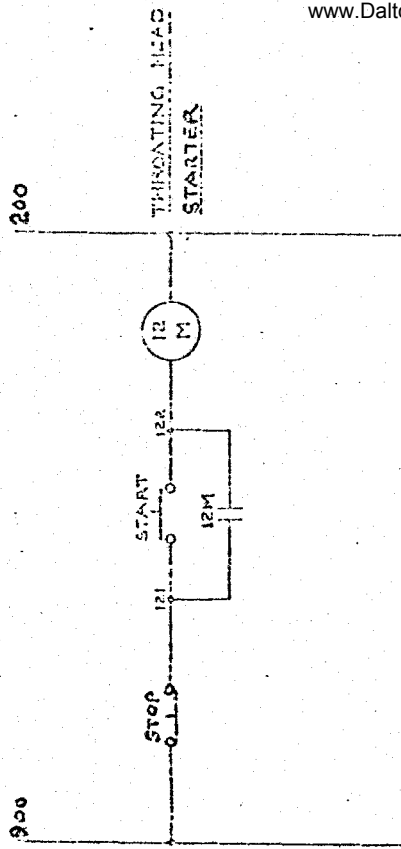


FREE STANDING HOPPER FEED UNIT



APPENDIX 'D' THROATING HEAD

www.DaltonsWadkin.com



www.DaltonsWadkin.com

THIRD ANGLE PROJECTION		WADKIN LTD. LEICESTER	
D	C	A	DESCRIPTION
		12I 12J 12M 12N	THROATING HEAD FOR
		12M	FB. FDB
			D.2078

## VERTICAL THROATING HEAD

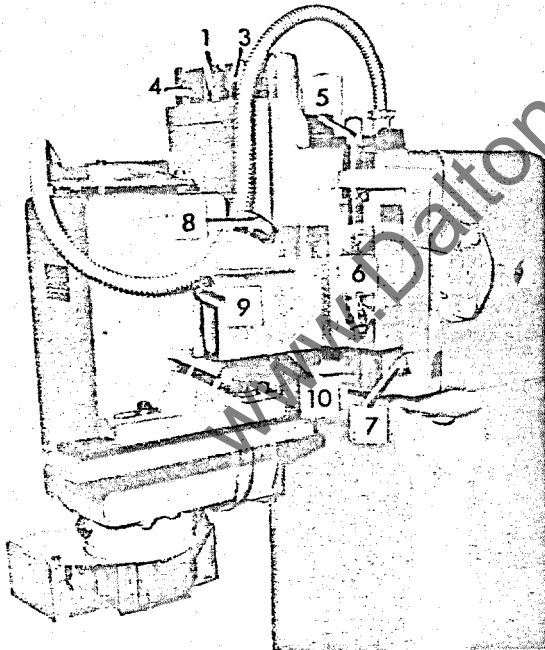
The vertical throating head is a free standing unit designed to stand at the outfeed end of the machine. It is equipped with a 5hp, 2,800 r.p.m. squirrel cage induction motor complete with direct on line contactor starter having no volt and three overload releases and self contained start and stop push buttons.

Vertical traverse 8in can be moved in increments of .005in (0.125mm)

1 complete revolution of Traverse Handle	= 0.125 in.
Canting movement	= 90° max. either side of the vertical. Scale graduated in 1/2° increments.
Bed movement (Horizontal)	= 35.1/2in.
Throat lateral movement	= 16 in.

A top pressure unit is provided to fit on the "V" slide either side of the head. Vertical movement is via crank handle with a locking nut on the R.H. side. A wedge lock holds lateral position on the slide.

Lubrication:- Grease nipples are provided at each of the motor bearings. Horizontal screw is provided with an oiler at each end of the screw. The vertical and canting screws should have light oil lubrication.



### ADJUSTMENTS

1. Cant
2. Vertical (Head)
3. Cant Lock
4. Vertical Lock Nut (Head)
5. Vertical (Pressure)
6. Vertical Lock Nut (Pressure)
7. Horizontal (Pressure) Lock
8. Pressure Spring Adjustment
9. Pressure Holding Nut (Not Adjustment)
10. Horizontal Lock Nut
11. Horizontal (Head)
12. On/Off Pushbuttons.

