Wadkin

OPERATING AND MAINTENANCE INSTRUCTIONS

9" x 4" PLANING & MOULDING MACHINE

TYPE F.B.

BOOKLET NO. 1129

Wadkin Ltd. GREEN LANE WORKS, LEICESTER, LE5 4PF, ENGLAND Telephone: 0533 769111
TELEGRAMS: } WOODWORKER, LEICESTER, TELEX
CABLES: } TELEX: 34646 (WADKIN, LEICSTER)
and at YORK HOUSE, EMPIRE WAY, WEMBLEY, MIDDX., HA9 0PA. Telex: 262210. Tel: 01-902 7714 (3 lines)

9" x 4" PLANING & MOULDING MACHINE

TYPE F.B.

BOOKLET NO. 1129

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.

SECTIONS

ILLUSTRATIONS

9" x 4" PLANING & MOULDING MACHINE TYPE F.B.

PRINCIPAL DIMENSIONS AND CAPACITIES

	FIRST BOTTOM HEAD	FIRST TOP HEAD	FENCE SIDE HEAD	NEAR SIDE HEAD	SECOND TOP HEAD	SECOND BOTTOM HEAD
MAXIMUM CUTTING CIRCLE	7½" 190mm.	10" 254 mm.	8½" 215mm.	8½" 215mm.	10" 254mm.	10" 254mm.
MINIMUM CUTTING CIRCLE	6" 152mm.	6" 152mm.	6" 152mm.	6" 152mm.	6" 152mm.	6" 152mm.
R.P.M. OF CUTTER SPINDLES	4200 & 6000	4200 & 6000	4200 & 6000	4200 & 6000	4200 & 6000	4200 & 6000
H.P.	7½ or 10	10 or 15	7½	7½ or 10	10 or 15	10 or 15
SIZE OF EXHAUST OUTLET	5½" x 6" 140 x 152	11¼" x 4" 286 x 102	5" dia. 127 dia.	5" dia. 127 dia.	11¼" x 4" 286 x 102	10¾" x 5" 273 x 127

H.P. of feed motor.. .. .. 7½/3¾

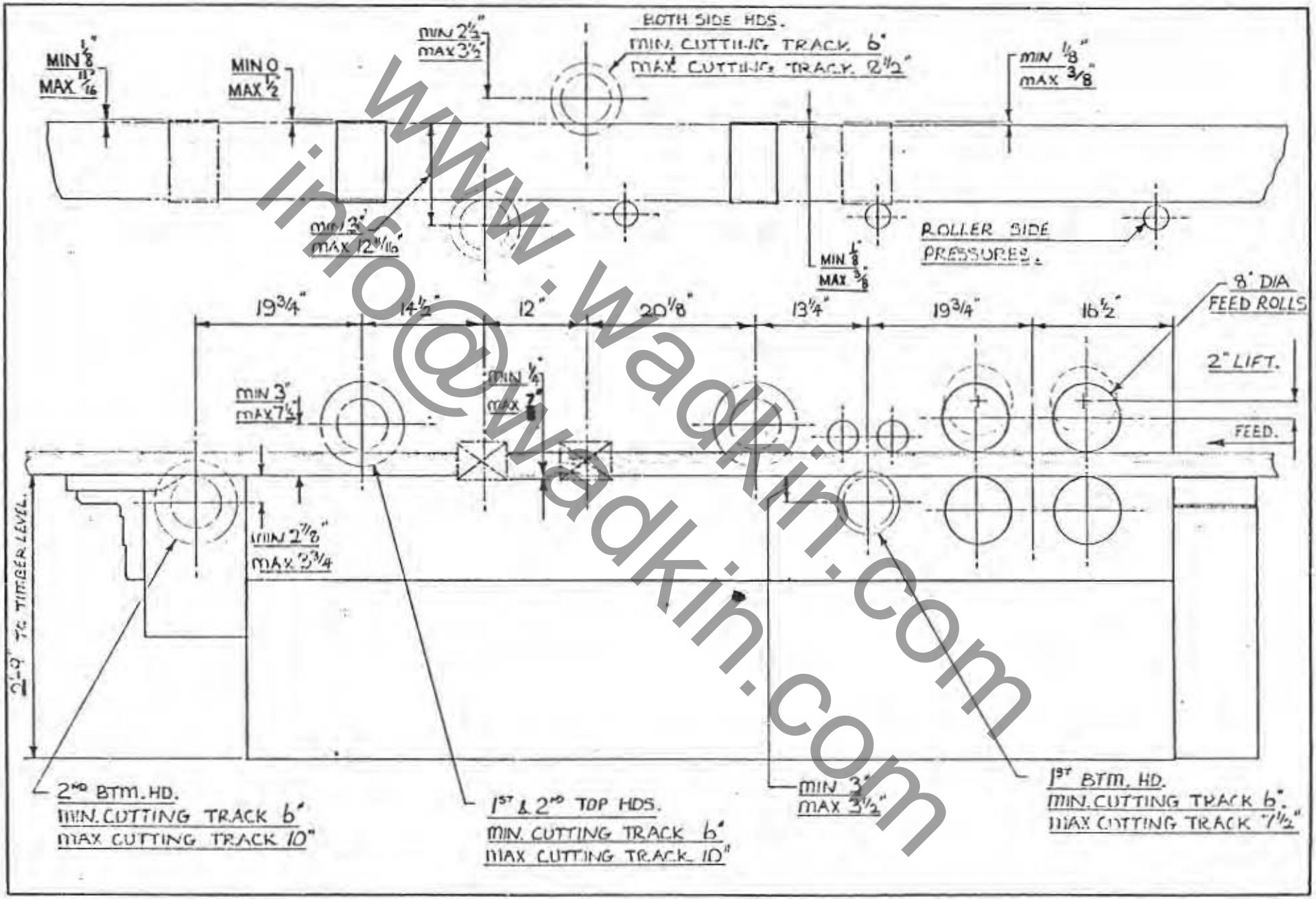
Diameter of feed rolls .. .. 8" 203 mm.

Feed Speeds .. ft/min. 20, 30, 40, 45, 50, 60, 65, 75, 87, 100, 130, 150.

.. m/min. 6, 9, 12, 13, 15, 18, 20, 23, 26, 30, 40, 45.

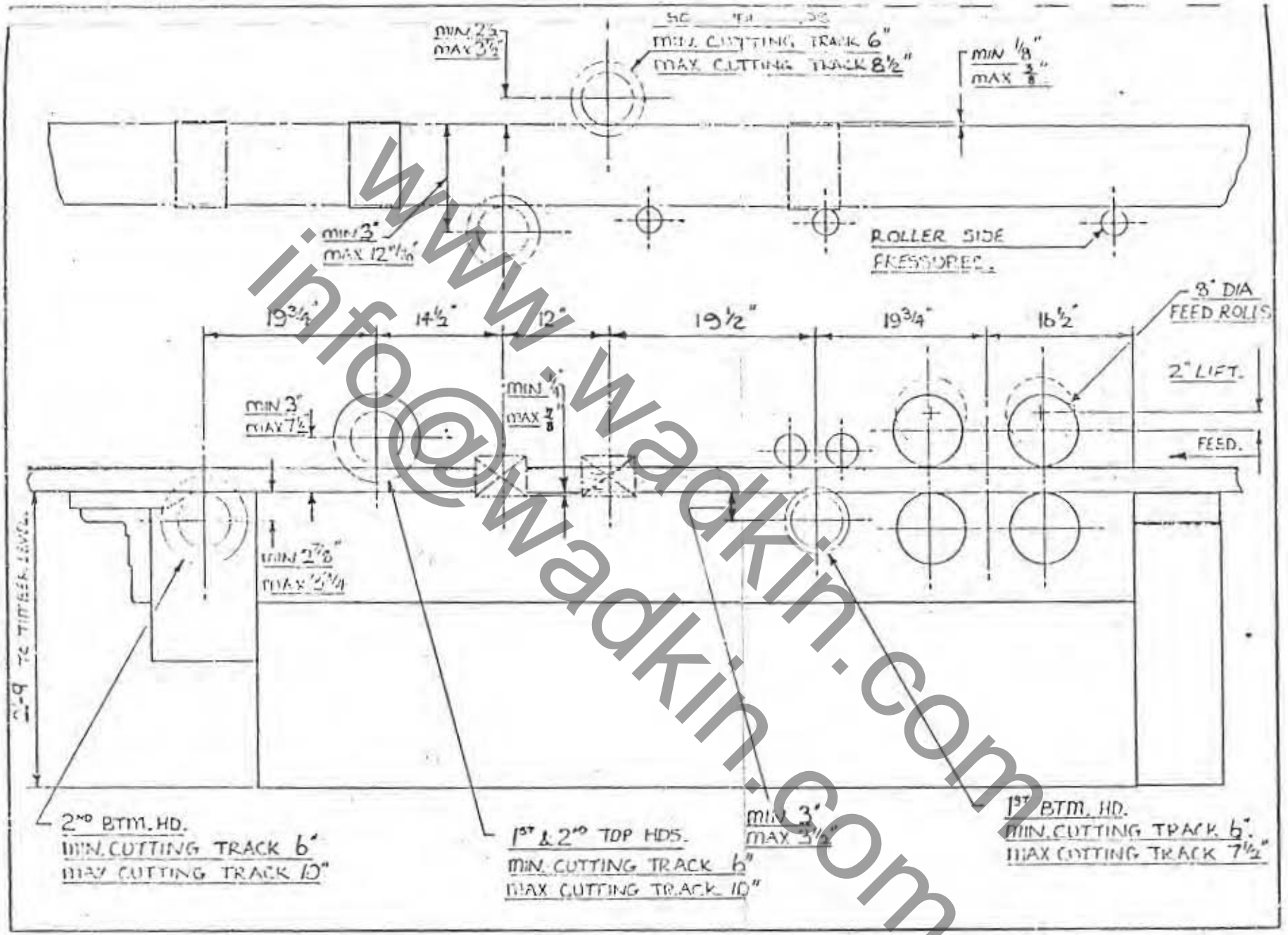
Cutter spindle diameters .. .. 40 mm.

Bed height from floor .. .. 2'-9" 840 mm.



CAPACITY DIAGRAM FOR 9" x 4" MOULDER, TYPE FB.

MODELS 95 AND 96



CAPACITY DIAGRAM FOR 9" x 4" TYPE FB MOULDER

MODEL 91 & 92

SECTION A

INSTALLATION

Foundation bolts are not supplied with the machine. If the mill floor consists of 4" to 6" solid concrete, no special foundation is necessary. Rag type holding-down bolts may be used. Cut 6" 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.

(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 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, (access through door H-Fig. B1). 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 (see lubrication notes page C1).

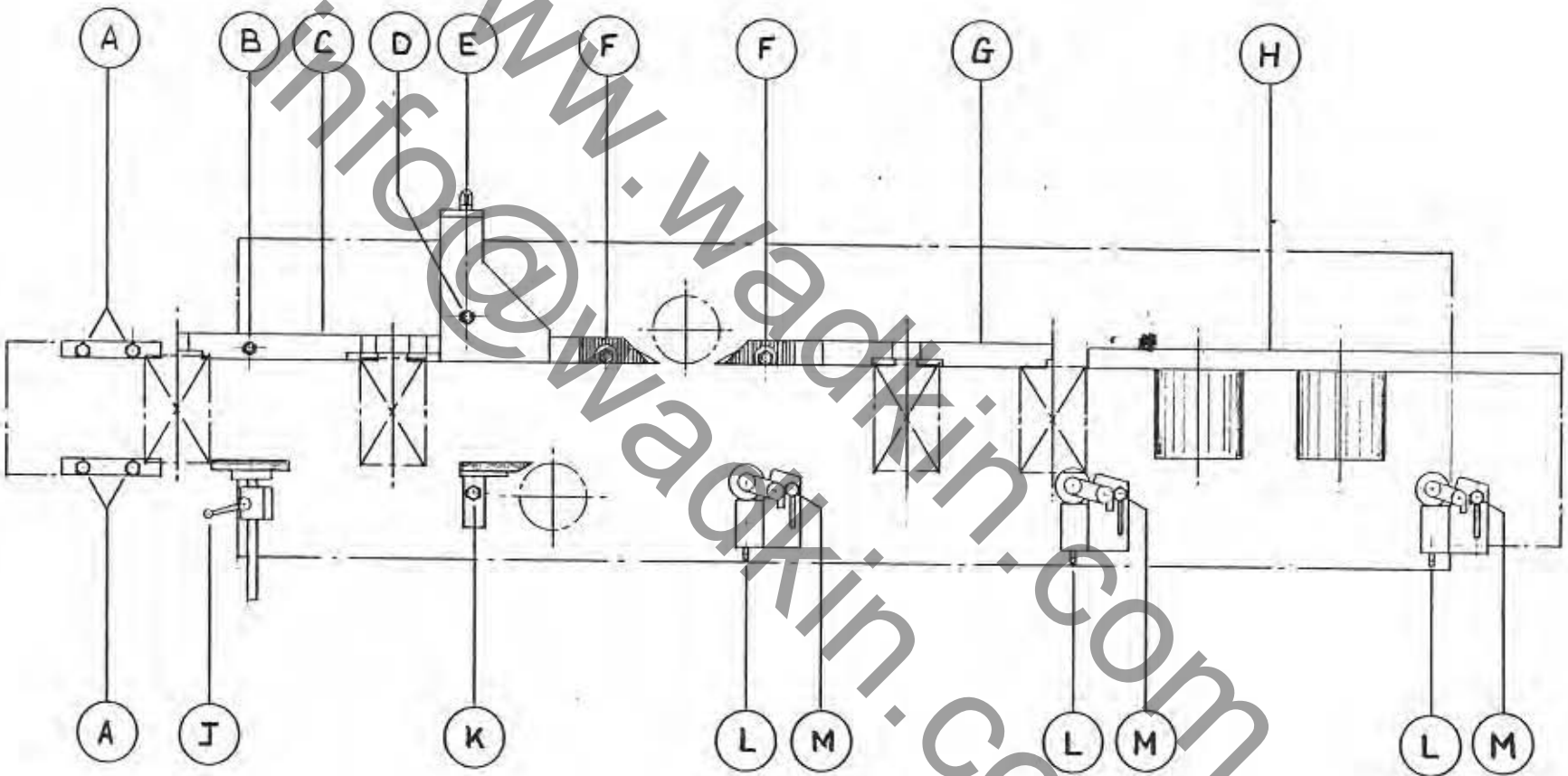
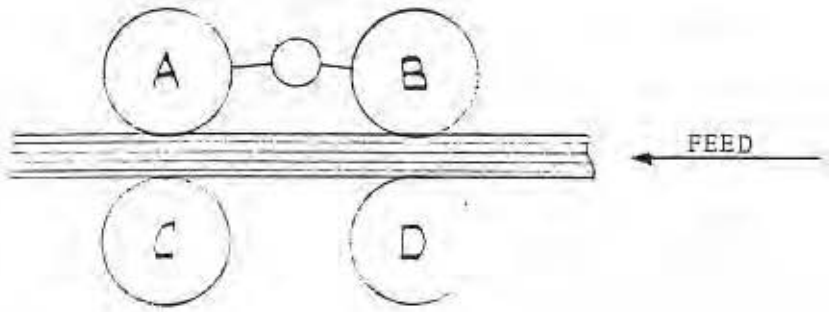


FIG. B16 SIDE PRESSURES AND FENCES

MODEL 95 AND 96

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

SECTION B

DESCRIPTION & OPERATION

General view of machine (Fig. B1).

(A) Top beam and tool tray.

(B) Cover for access to top feedrolls.

(C) Two master stop buttons.

(D) Door for access to second bottom head.

(E) Door for access to near side head drive motor.

(F) Door for access to near side head.

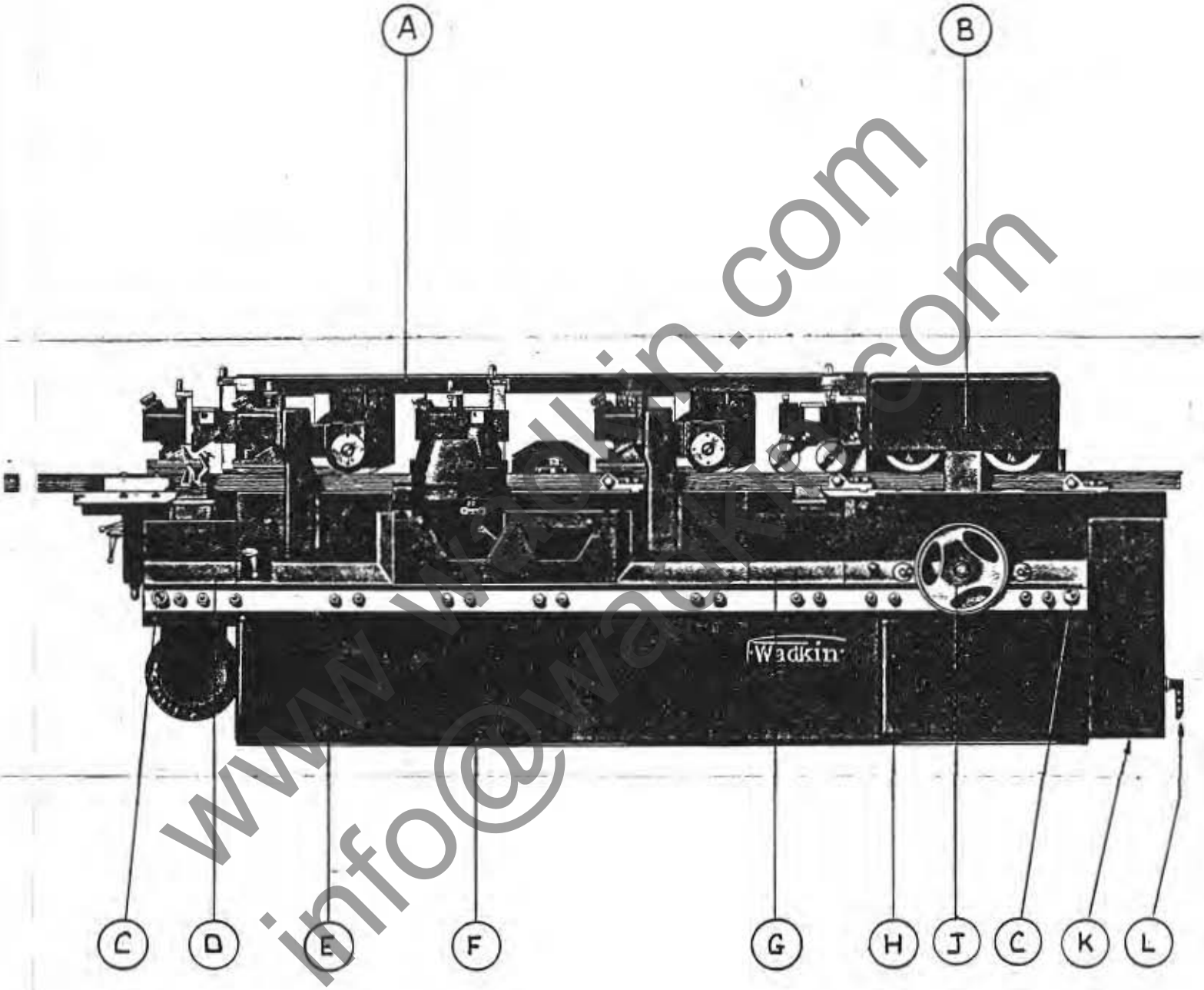
(G) Door for access to first bottom head.

(H) Door for access to spring tension to top feedrolls or pneumatic equipment (to special order).

(J) Handwheel for raising and lowering top feedrolls.

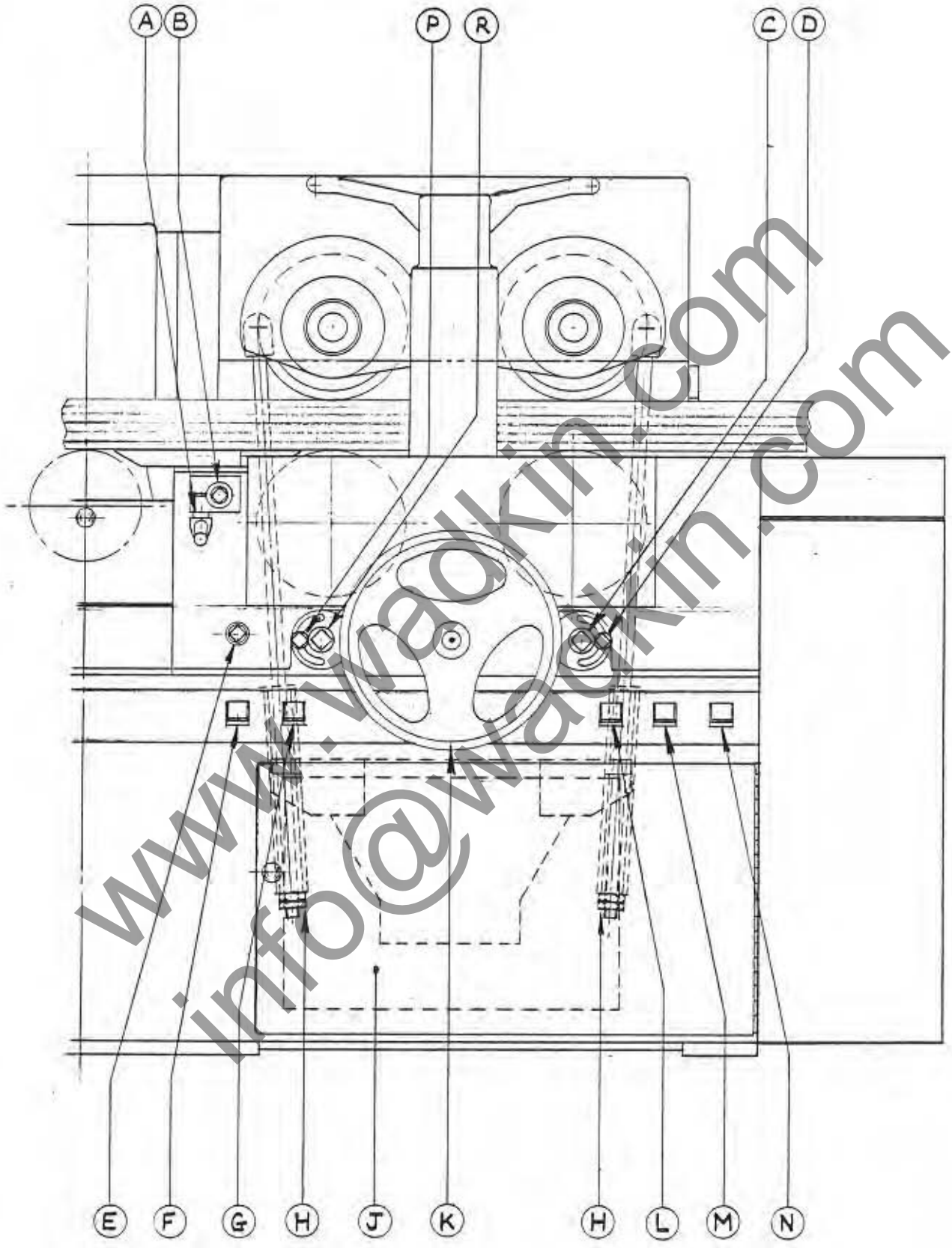
(K) Electrical control gear box.

(L) Isolating switch.



GENERAL VIEW OF MACHINE FIG. B1.

FIG. B2 FEEDWORKS (FRONT VIEW).



THE FEEDWORKS (FIG. B2)

The top feedrolls are adjusted vertically by means of handwheel (K).

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

The first bottom feedroll is adjusted vertically by means of square (C). The lock for this adjustment is at (D).

The second bottom feedroll is adjusted vertically by means of square (R) and lock (P).

The table before the first bottom head is adjusted vertically by square (B). Handle (A) is the lock for this adjustment.

The square (E) is for vertical adjustment of the first bottom head.

The feedworks electrical control buttons are as follows:-

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

NOTE: If the machine is fitted with pneumatic feedworks, access to cylinders and the filter-regulator-lubricator unit is through door (J).

See maintenance and lubrication notes (page C1).

See page B6 for operation of pneumatic controls.

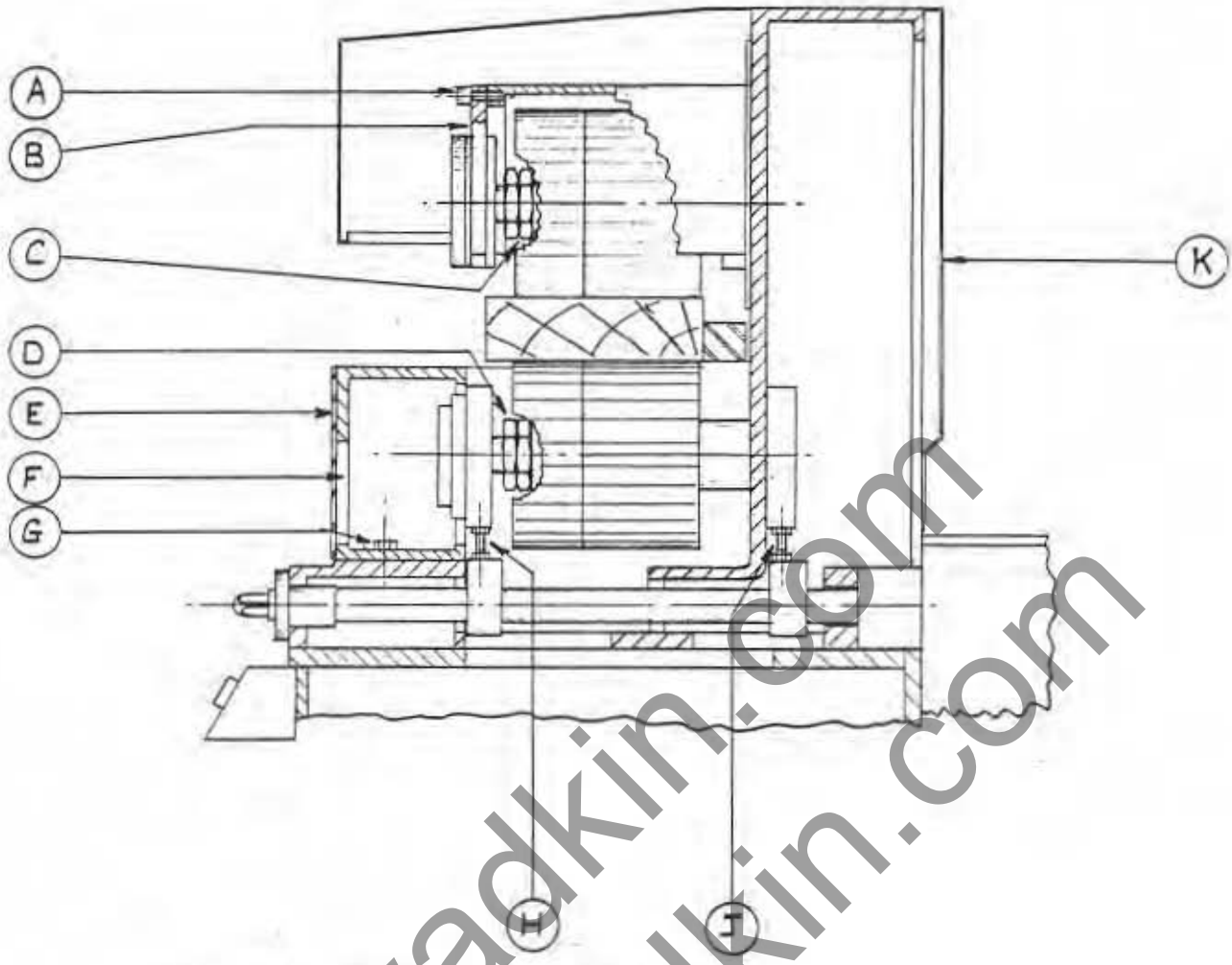


FIG. B3 SECTIONAL VIEW OF FEEDWORKS

To Remove Top Feedrolls

Remove four capscrews (A)
Remove outboard bearing assembly (B)
Remove locknuts (C)
Remove feedrolls

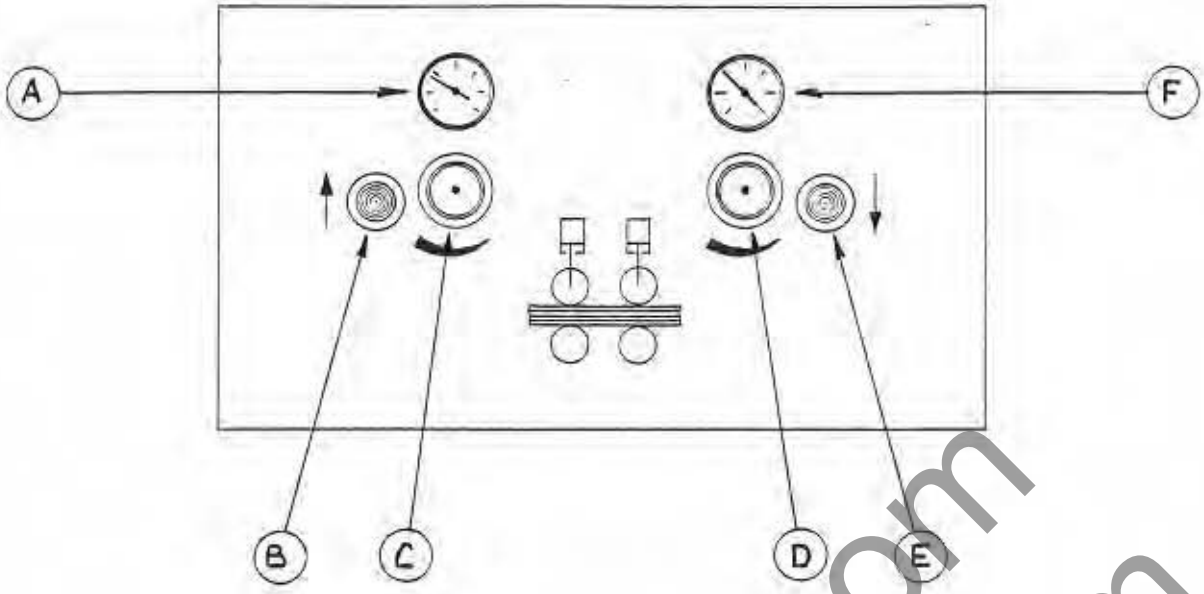
To Remove Bottom Feedrolls

Remove sheet iron cover (E)
Remove two bolts (G)
Remove front apron (F) (bottom rolls must be supported when apron is removed)
Remove locknuts (D)
Remove feedrolls

To Pitch Bottom Feedrolls

The jackscrews (H) and (J) should be used to vary the pitch of the bottom feedrolls.

Access to jackscrews is through front apron cover (E) and feedworks rear cover (K).



PNEUMATIC CONTROL PANEL FIG. B.4

PNEUMATIC FEEDWORKS (TO SPECIAL ORDER ONLY).

See installation and maintenance notes regarding filter-regulator-lubricator unit.

The input pressure should be set to 80 lb/in^2 gauge. The isolating switch and master stops must be turned on before top rolls can be lowered.
To lower top rolls, depress button (E).
To raise top rolls, depress button (B), or either of the electrical master stop buttons.
The amount of pressure that each top roll exerts on the timber is independently controlled.
To increase the pressure to the infeed roll, turn knob (D) clockwise. The amount of pressure applied is registered on gauge (F).
Knob (C) and gauge (A) control the second roll in the same manner.

The pneumatic circuit is covered by patent No. 986651.

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^3 (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

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

Pneumatic Operation:- The input pressure should be set to 5.7
(80 lbs./sq. in.)

To lower the Top Rolls depress button (4)

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

The amount of pressure each top roll exerts on the timber sho
that the traction is sufficient without defacing the timber.
is independently controlled. To increase the pressure to the
turn knob (6) counter clockwise. The amount of pressure appl
registered on gauge (7). Knob (8) and gauge (9) similarly co
second top roll.

IMPORTANT.

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

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

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

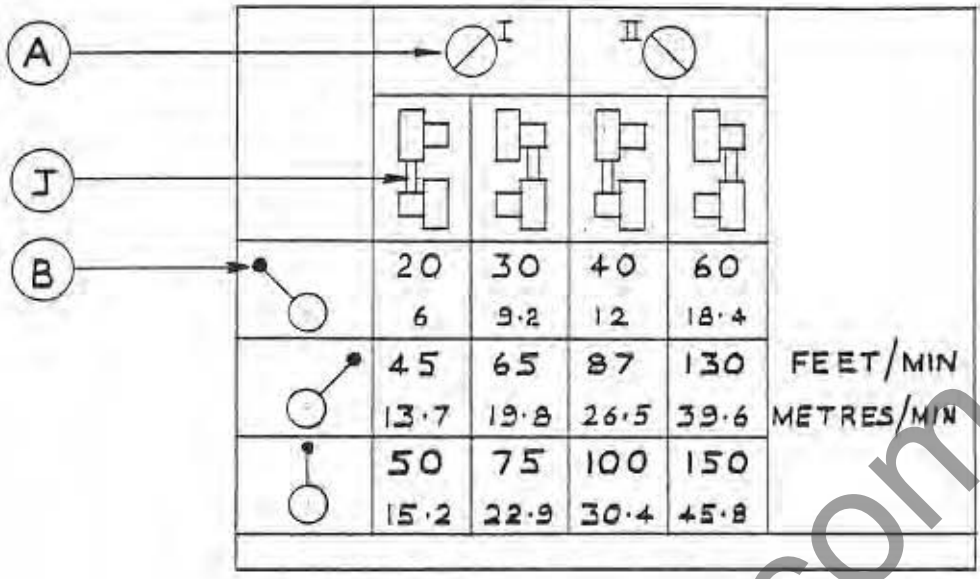


FIG. B6 FEED SPEED PLATE.

THE GEARBOX AND FEED DRIVE (FIG. B5)

The feed speed plate (Fig. B6) is located near to the gear change lever (B).

Speeds are selected by means of gear change lever (B), two speed motor switch (A) and belts (J). FEED MUST BE STOPPED BEFORE CHANGING SPEED. To change belts (J) release toggle lever (D).

If necessary the drive belts (J) may be tensioned by means of locknuts (H).

The chain drive (C) may be tensioned by slacking off bolt (F) and two nuts (L) and adjusting jackscrews (K).

The gearbox is provided with an oil filler plug/dipstick (E) and drain plug (G) (see lubrication instructions).

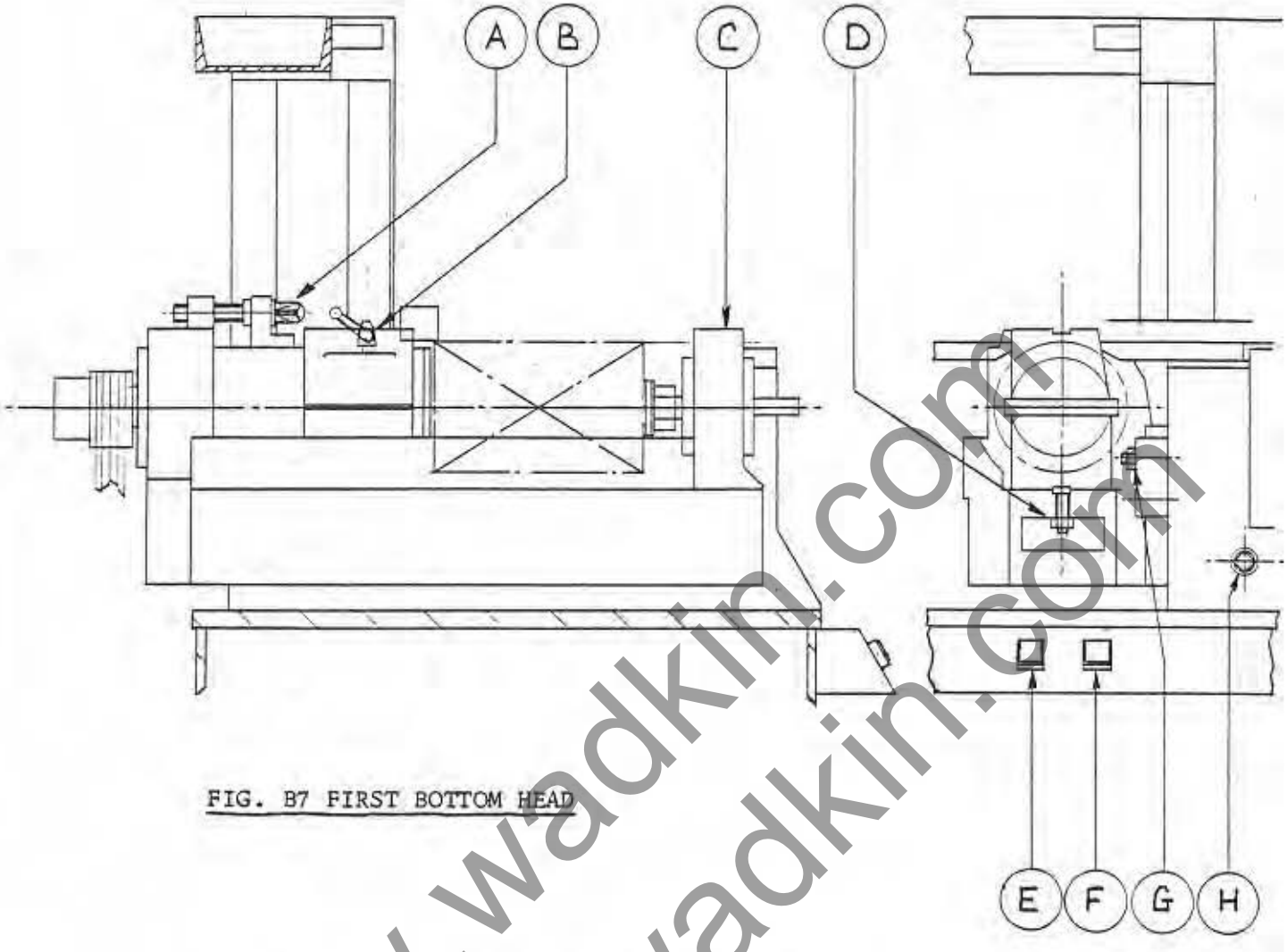


FIG. B7 FIRST BOTTOM HEAD

Vertical adjustment of the first bottom head is made by applying a crank handle to the square (H). Nut (G) is the lock for this movement.

Horizontal adjustment is made by means of square (A) for which handle (B) is the lock.

The outboard bearing (C) can be removed from the spindle end (to change cutterblock) by slacking off nut (D) and sliding off.

To start the head press start button (E).

To stop the head, press stop button (F), or (in an emergency) either of the master stop buttons.

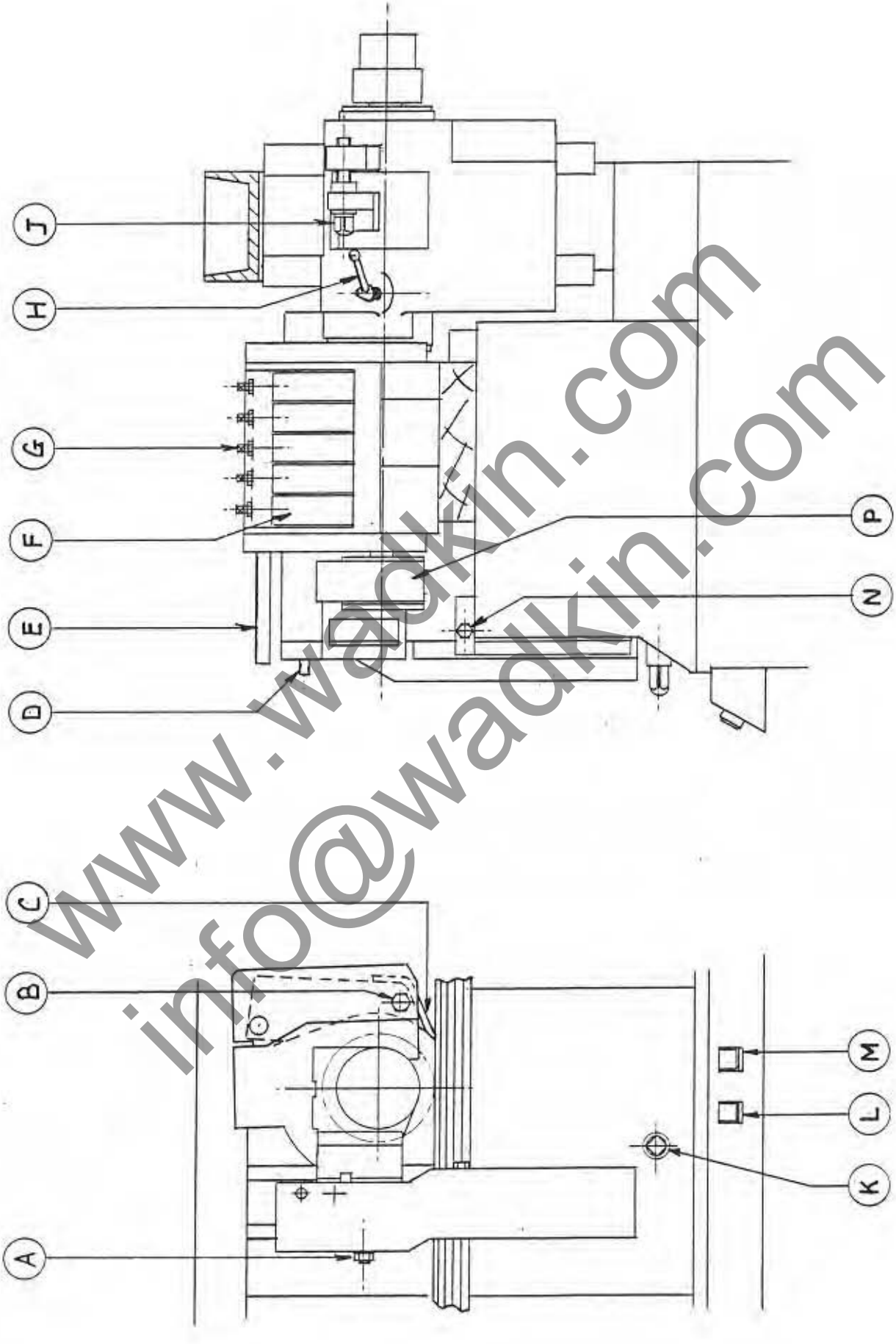


FIG. B8 TOP HEAD AND CHIPBREAKER

TOP HEAD AND CHIPBREAKER (FIG. B8)

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

Horizontal adjustment is made by applying a crank handle to square (J). Handle (H) is the lock for this movement.

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

The outboard bearing (P) can be removed from the spindle end (to change cutterblock) by slacking off nut (A) and sliding off.

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

The load at the chipbreaker may be altered by removing or adding weights (F). The screws (G) lock the weights in position.

To start the head press start button (L).

To stop the head press stop button (M), or (in an emergency) either of the master stop buttons.

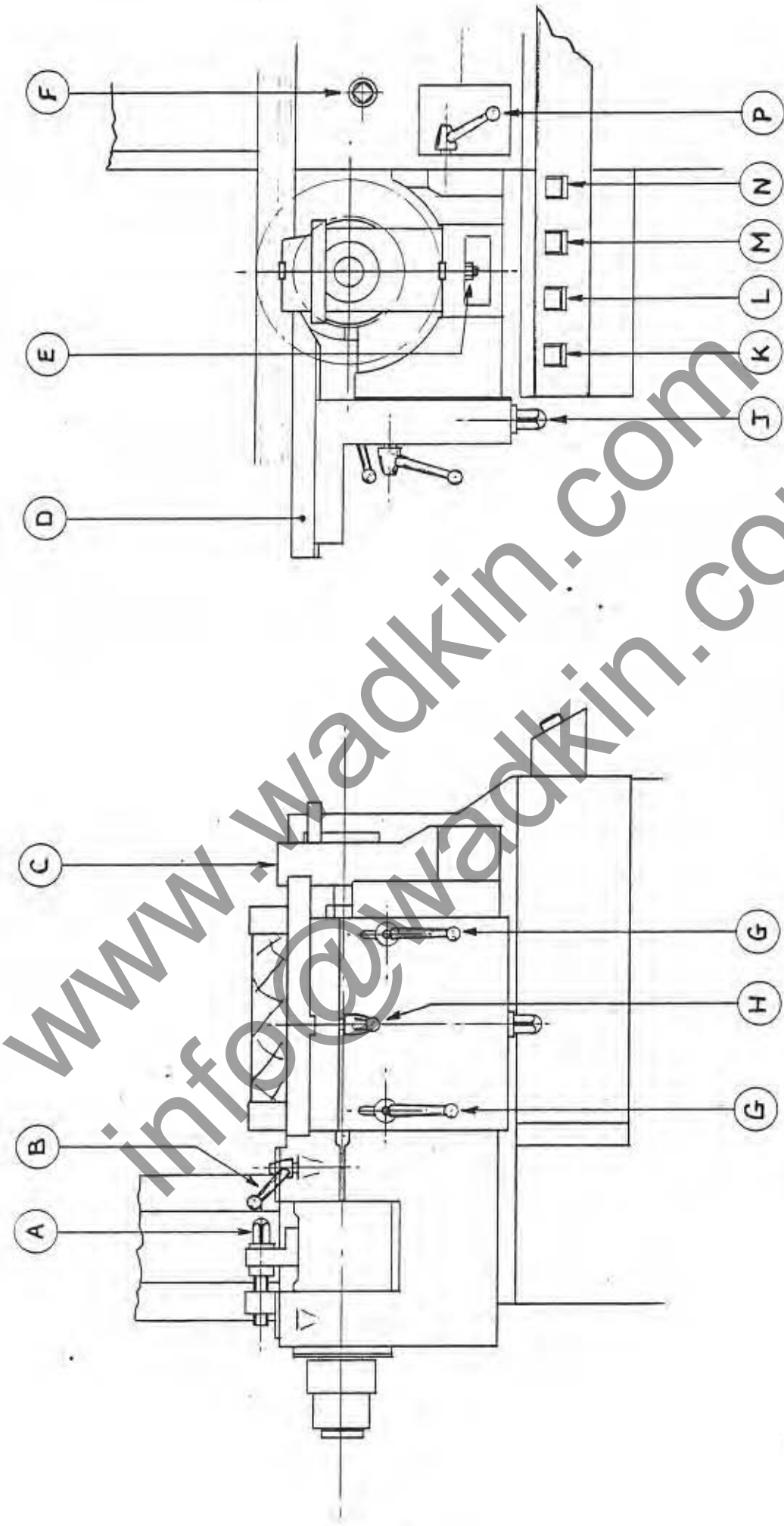


FIG. B9 SECOND BOTTOM HEAD AND OUTFEED TABLE

SECOND BOTTOM HEAD (FIG. B9)

Horizontal adjustment of the second bottom head is made by applying a crank handle to the square (A). Handle (B) is the lock for this movement.

Vertical adjustment of the second bottom head is made by applying a crank handle to square (F). Handle (P) is the lock for this movement.

The outboard bearing (C) can be removed from spindle end (to change cutterblock) by slacking off nut (E) and sliding off.

To start the head, press start button (L).

To stop the head, press stop button (M) or (in an emergency) either of the master stop buttons.

The button shown at (K) is one of the master stops and the button shown at (N) is one of the inch feed buttons.

THE OUTFEED TABLE (FIG. B9)

Vertical movement of the outfeed table is made by applying a crank handle to the square (J). The two handles (G) lock the table slide in position.

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

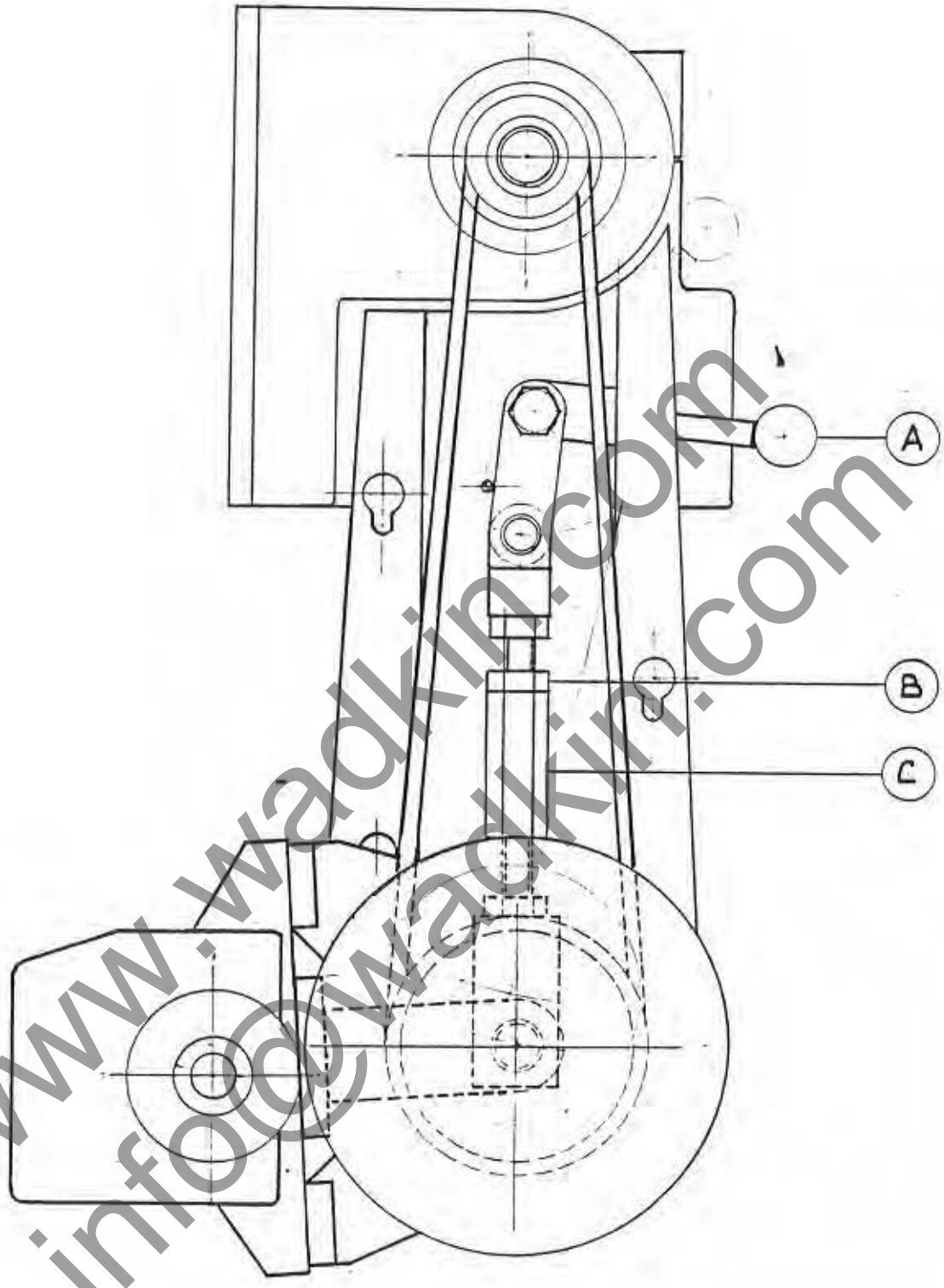


FIG. B10 HORIZONTAL HEAD DRIVES

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

To tension belts, rotate turnbuckle (C). This is locked with locknut (B).

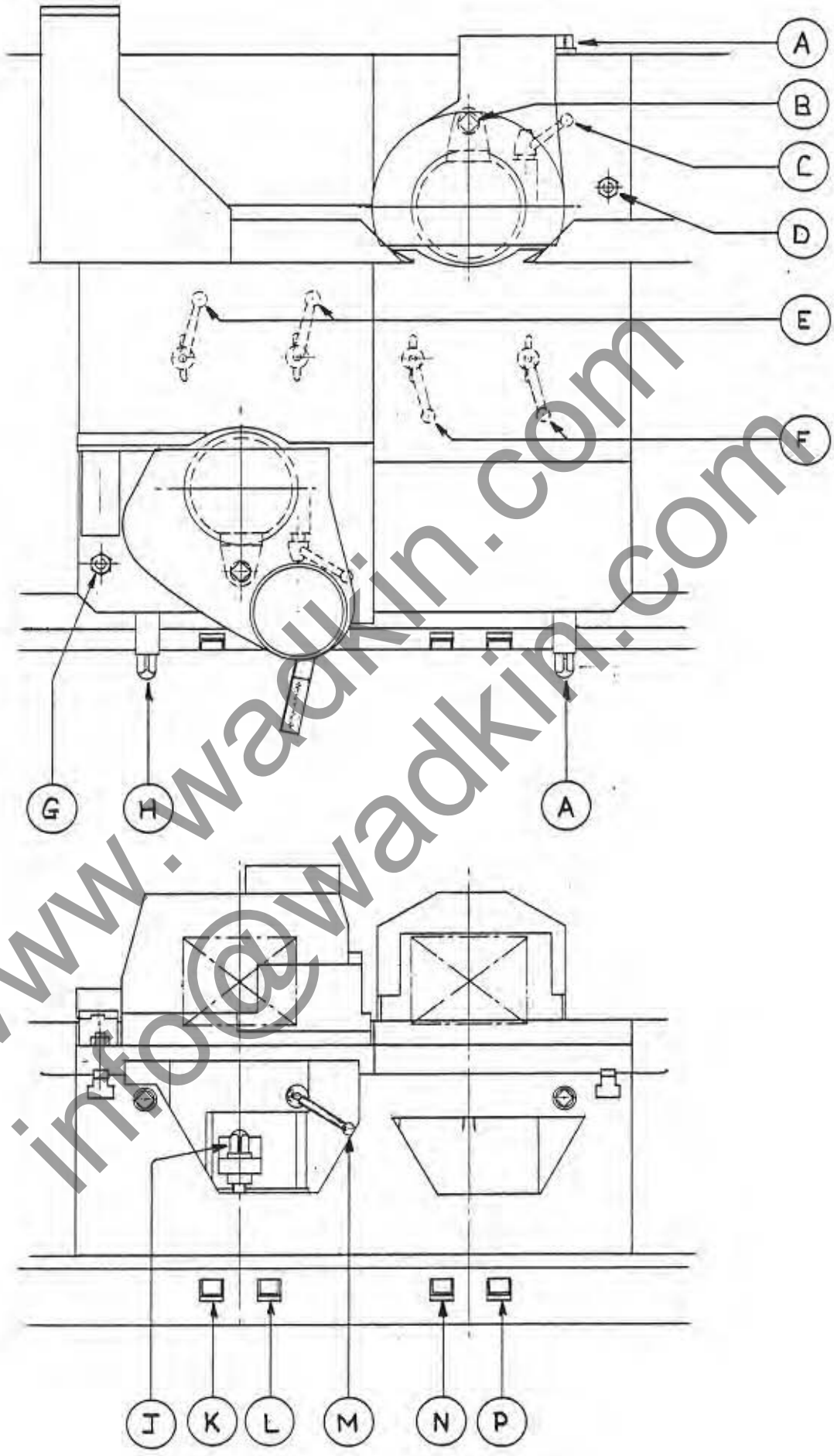


FIG. B11 SIDE HEADS

SIDE HEADS (FIG. B11)

NEAR SIDE HEAD

Horizontal adjustment of near side head is made by means of the square (H). Nut (G) is the lock for this movement.

Vertical adjustment of near side head is made by means of square (J). Handle (M) is the lock for this movement.

The bed plate may be adjusted to allow for larger cutting circles by slacking off two handles (E) (underneath the carriage) and sliding plate by hand.

To start the head, press button (K).

To stop the head, press button (L), or (in an emergency) either of the master stop buttons.

FENCE SIDE HEAD

Horizontal adjustment of fence side head is made by means of squares (A) at front and rear of machine. Nut (D) is the lock for this movement. *

Vertical adjustment of fence side head is made by means of square (B). Handle (C) is the lock for this movement.

The bed plate may be adjusted to allow for larger cutting circles by slacking off two handles (F) (underneath the carriage) and sliding plate by hand.

To start the head, press button (N).

To stop the head, press button (P), or (in an emergency) either of the master stop buttons.

*on certain machine this is replaced by a dampening lock.

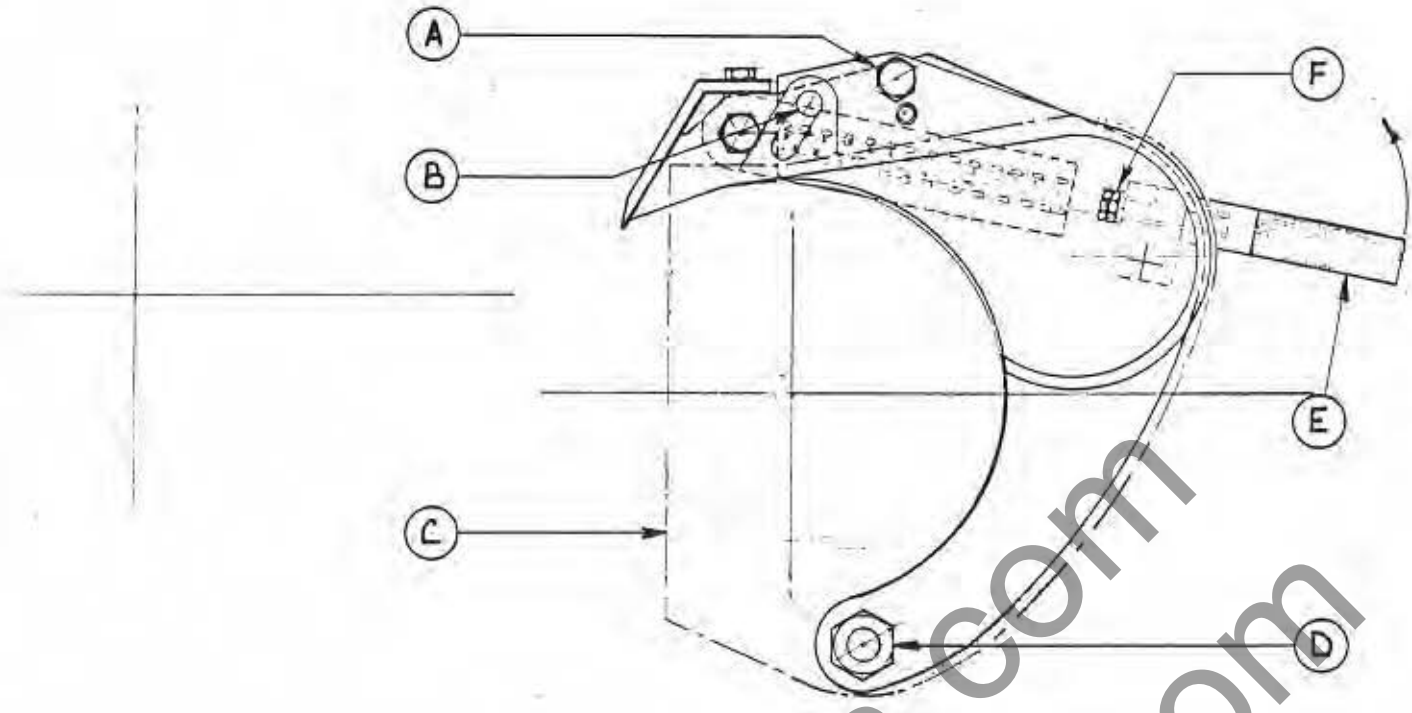


FIG. B12. NEAR SIDE HEAD CHIPBREAKER

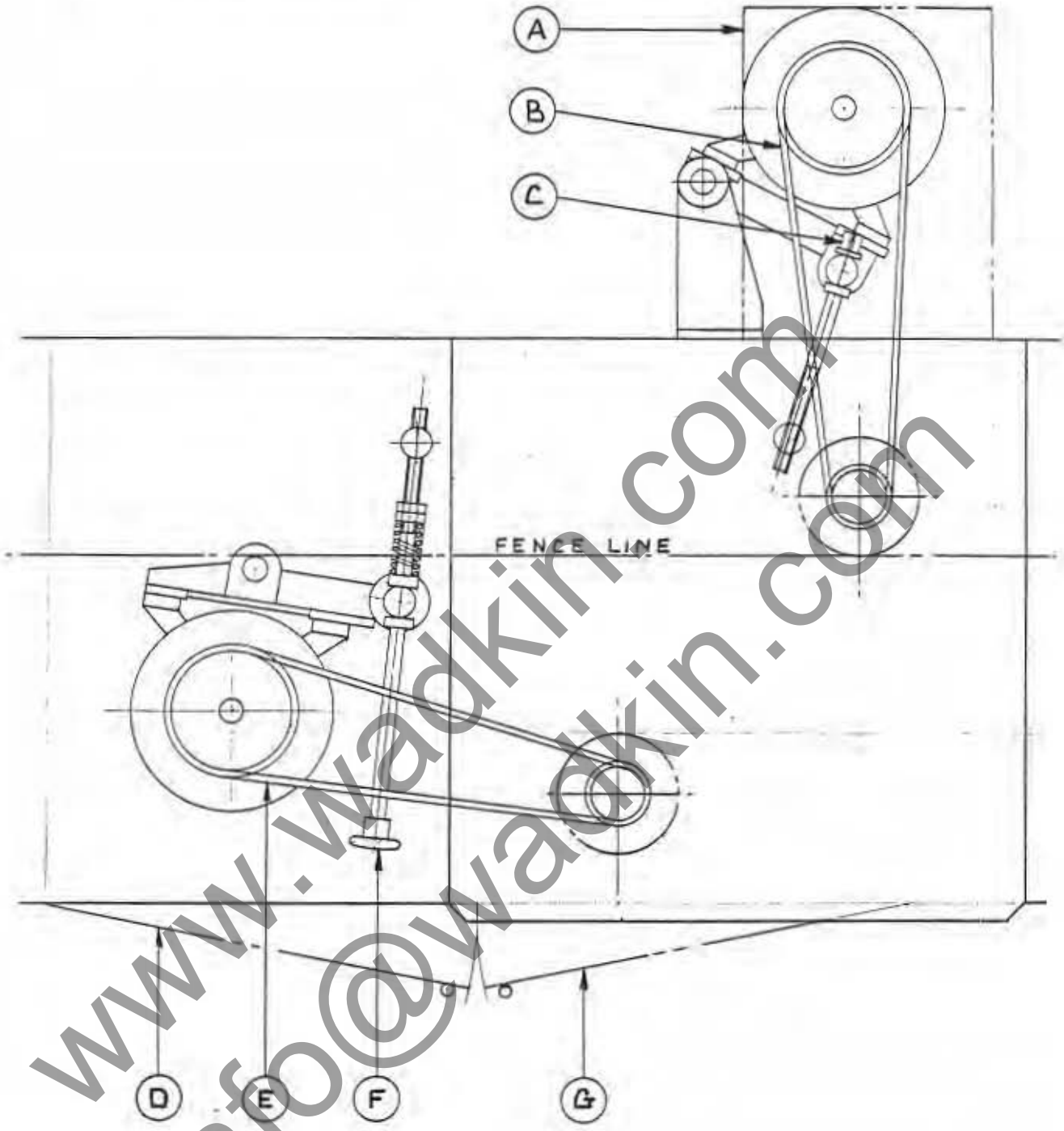
The chipbreaker may be set in one of three positions, to allow for different cutting circle diameters, by repositioning locking screw (A).

The dust hood (C) (shown chain dotted) is removed by lifting from locating pins (B) (D).

Handle (E) can be swung sideways, (in the direction of arrow) by unscrewing the handle sufficiently to disengage the spigot. This allows the chipbreaker mechanism to be swung clear of the block, to enable the jointer to be mounted on the carriage.

No adjustment to spring pressure is required, the locknuts at (F) enable an adjustment to the chipbreaker position to be made.

FIG. B13. SIDE HEAD DRIVES



FENCE SIDE HEAD DRIVE (FIG. B13)

To change speed (or replace belts), remove cover (A) release tension using screw (C), change belts (B) and retension.

NEAR SIDE HEAD DRIVE (FIG. B13)

Access to near side head belts is through doors (D) (G). To change speed (or replace belts), release tension by means of screw (F), change belts (E) and re-tension.

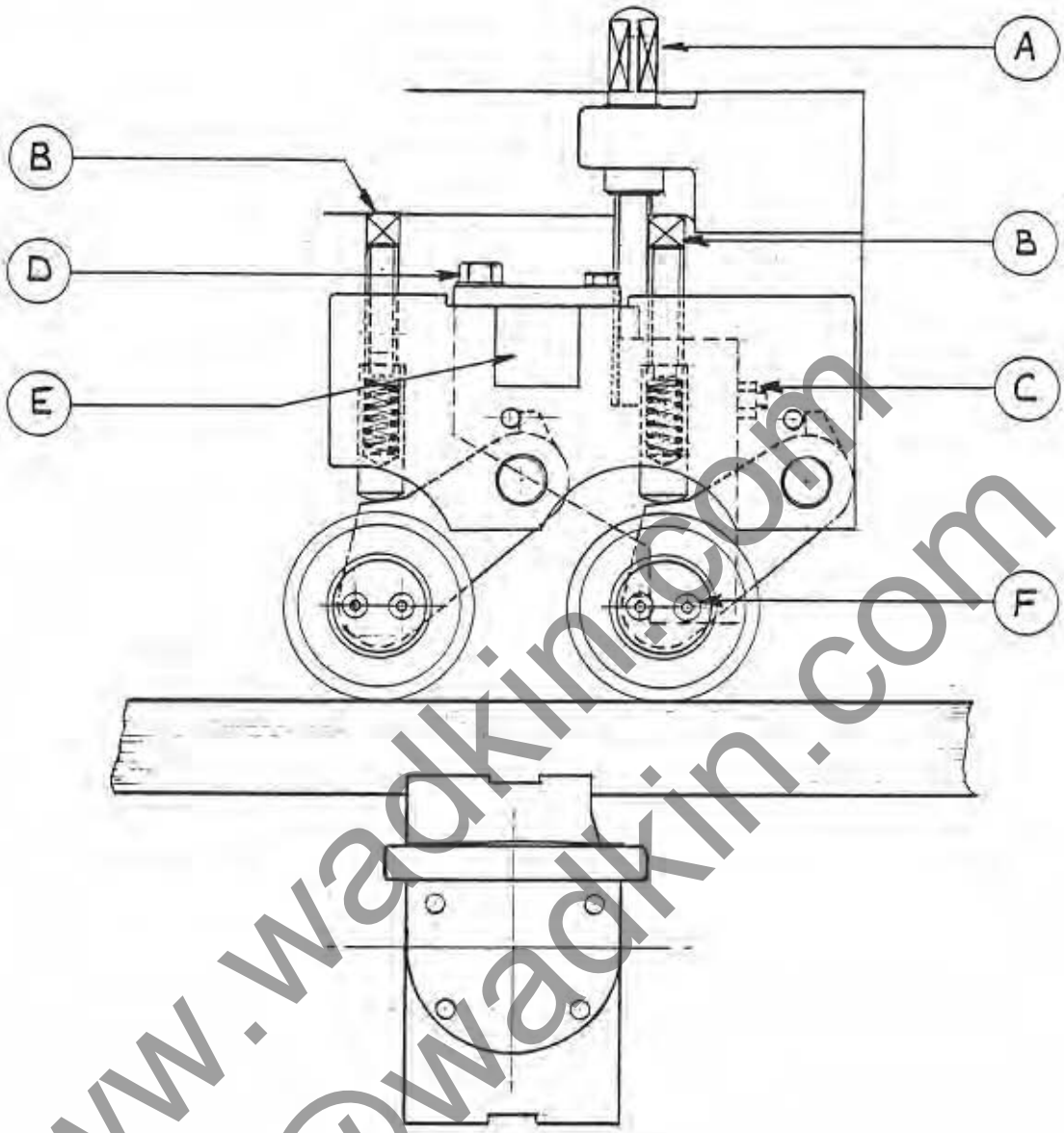


FIG. B14. ROLLER PRESSURE

The vertical adjustment of the roller pressure is by means of square (A). Nut (C) is the lock for this movement.

The horizontal adjustment is made by slacking off nut (D) and sliding pressure by hand along bar (E).

The spring pressure applied to each roller can be adjusted by means of screws (B).

NARROW STOCK

When cutting narrow stock it may be necessary to remove the outside rollers from this pressure (to allow the side pressure access to the timber) by removing capscrews (F).

Also if required the two special narrow rollers can be fitted on inside of pressure. (Special narrow rolls are supplied with machine).

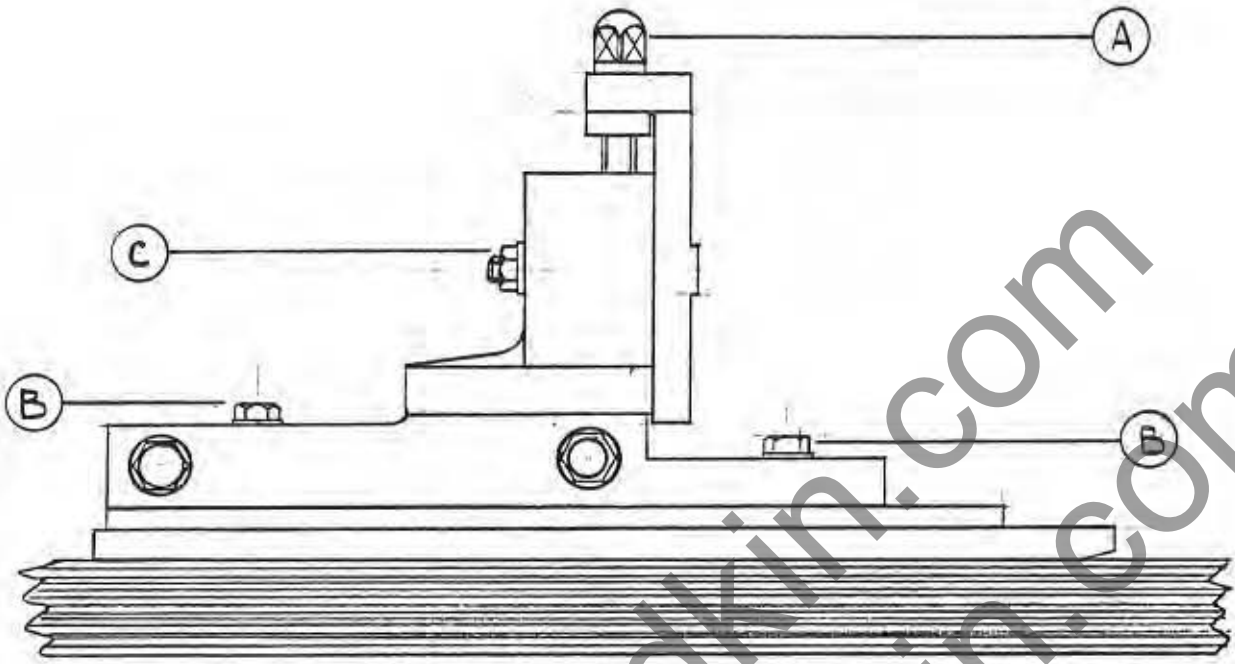


FIG. B15. TOP PAD PRESSURE

The pad pressures are all interchangeable on both square bar mounting and chipbreaker support mounting.

Vertical adjustment when the pressure is mounted on the square bar is by means of a square on top of the beam.

Fine vertical adjustment is made by turning square (A). Nut (C) is the lock for this movement.

The pad is mounted on rubber bushes these allow the pressure pad to flex in any direction to a maximum of 1/32".

Do not set the pressure hard down at any time as this will take up all the movement in the rubber.

The pad is adjusted lateraly by slackening off nuts (B) and sliding by hand.

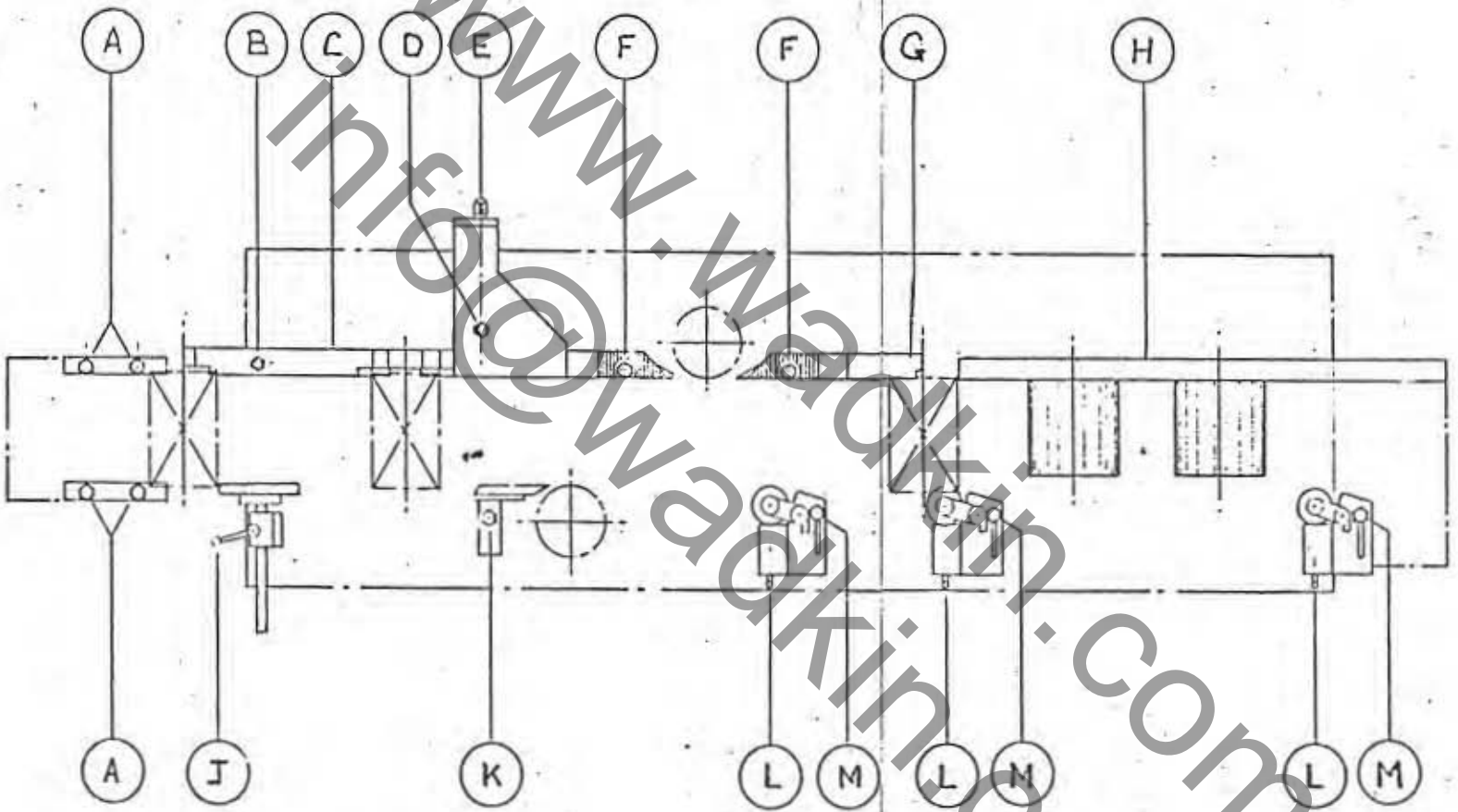


FIG. B160SIDE PRESSURES AND FENCES

(MODEL 91 & 92)

B21A

SIDE PRESSURES AND FENCES (FIG. B16& B16a)

The infeed fence (H) is fixed and requires no adjustment.

The fence under the first top head (G) is also fixed and requires no adjustment.

The fence shoes either side of the fence side head are adjusted by slacking off nuts (F) and sliding by hand. This is to allow for variation in cutting circle diameters.

The fence under the second top head (C) is adjustable by means of square (E). The TWO nuts (B and D) are the locks for this fence.

The outfeed fences are adjustable in both directions by slacking off nuts (A) and sliding by hand.

Three front roller pressures are supplied. To adjust the pressure (for different timber widths) slacken off bolt (M) and slide the pressure by hand. A series of holes is provided across the bed. Bolt (M) should be used in the most suitable one.

The spring pressure applied to the roller can be adjusted by means of screws (L).

A guide is provided immediately after the near side head. This will be adjusted across the bed when the side head is moved. Adjustment relative to the near side head (for different cutting circle diameters) can be achieved by slacking off nut (K) and sliding by hand.

A second guide is positioned between the second top and second bottom heads. This is adjusted by slacking off handle (J) and sliding by hand.

Jointing (To Special Order)

Jointers are provided 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 1st 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

FIG. B17 FIRST BOTTOM HEAD BUILT IN JOINTER (TO SPECIAL ORDER)

Confined to 1st bottom head, but enables jointing to be undertaken without interrupting production.

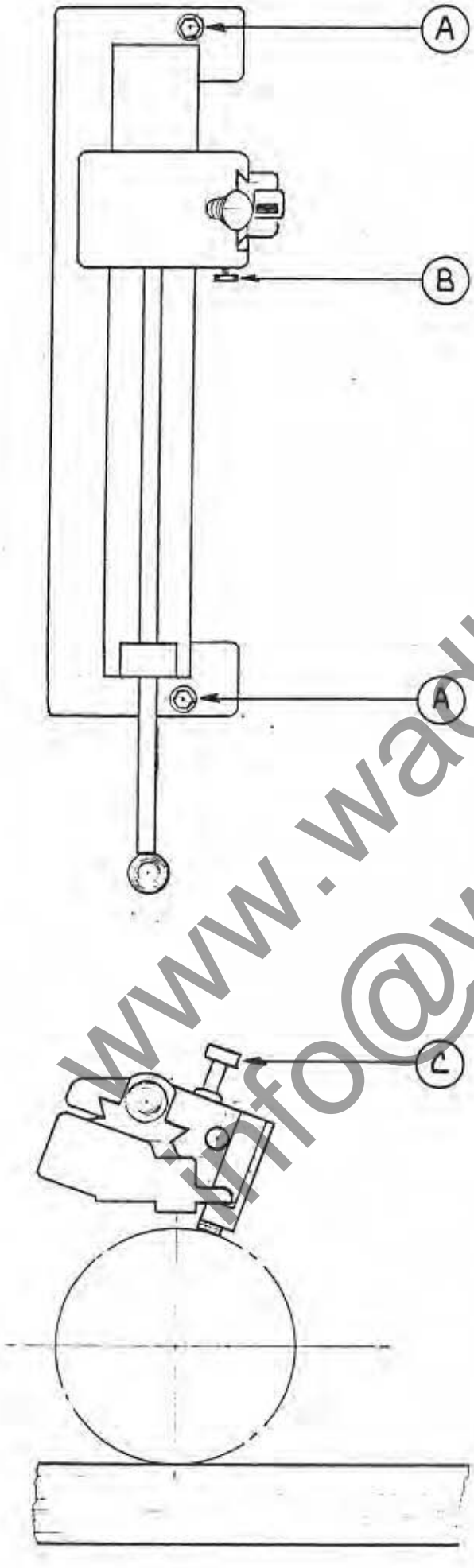
The stone is clamped into its holder with stone protruding, the holder is then clamped, open side down, into the slide which has been wound towards the front of the machine.

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'.

FIG. B18 STRAIGHT JOINTER FOR HORIZONTAL HEADS



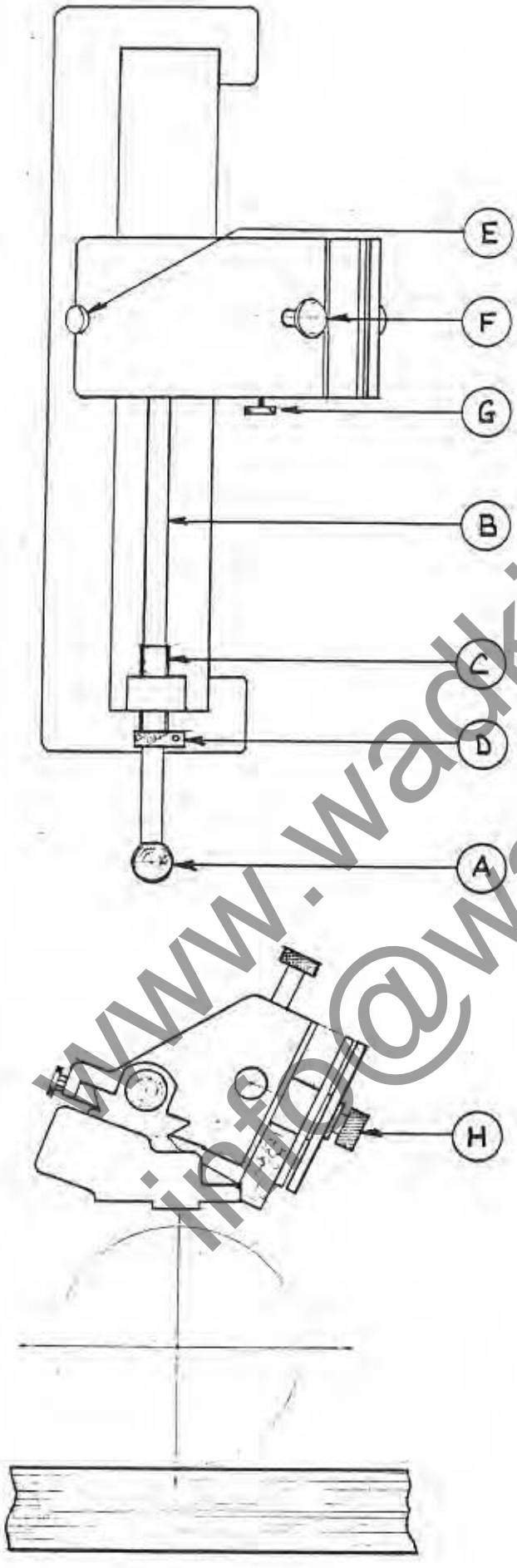
This has same action as built-in jointer and is capable of being used on all horizontal heads, but necessarily interrupts production.

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. B19 PROFILE JOINTER FOR HORIZONTAL HEADS



Specially 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 approx. position by push-pull action with knob 'A'.

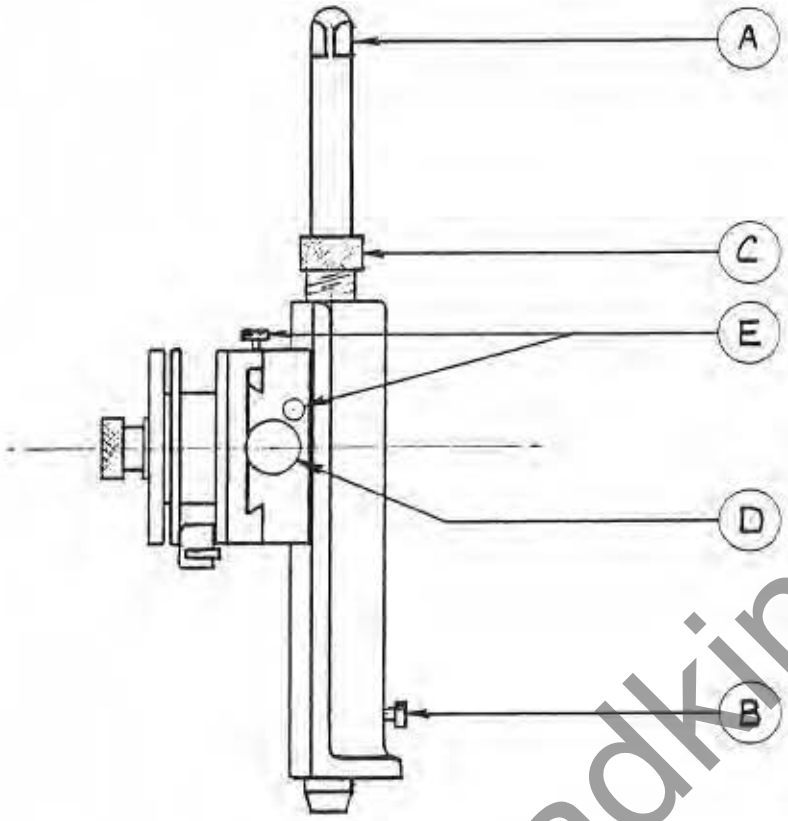
Shaft 'B' is then locked to screw 'C' by tightening screw 'D', the turret can now be finely adjusted over the length of screw 'C' and can be locked on its slide by screw 'E'.

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 un-tightened sufficiently to release a plunger, after rotation knob 'H' can be re-tightened allowing the spring plunger to locate it exactly.

The slide is mounted in the same way as the straight jointer on horizontal heads.

FIG. B2O COMBINATION JOINTER FOR SIDE HEADS



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.

In both cases the slide is located on a spigot and locked down by means of two captive screws in base.

SECTION C

MAINTENANCE AND LUBRICATION

DAILY

Before starting machine:-

(1) Apply one shot of Wadkin Grade L1 spindle oil to each point (Fig. C1. points A) on all cutter spindles.

(2) Apply one shot of oil from the hand pump (M-Fig. B5) which will lubricate the feedworks.

WEEKLY

(1) Clean down machine.

(2) Top up feedworks oil pump (M-Fig. B5) with Wadkin Grade L4 oil.

(3) Oil machine slides and raising screws with Wadkin Grade L4 oil.

(4) Top up pneumatic lubricator unit with Mobil Almo No.1 oil. Access is through door under feedworks (H-Fig. B1).

MONTHLY

(1) Check condition and tension of spindle and feed drive belts (Fig. B5, Fig. B10, Fig. B13).

THREE MONTHLY

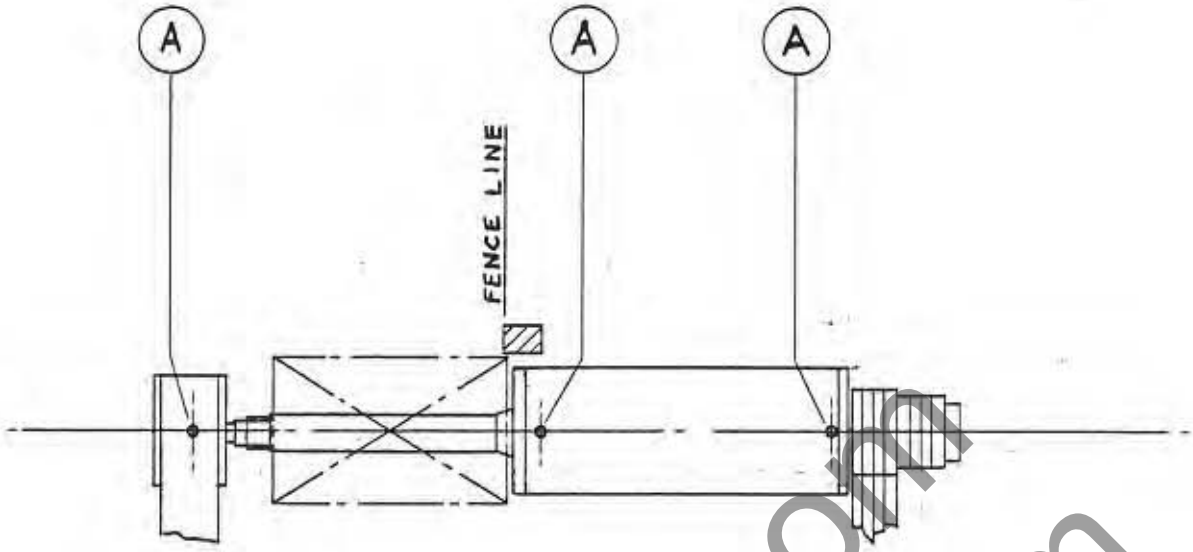
(1) Check level of oil in gearbox with dipstick (E-Fig. B5). Top up with Shell Blameta Grease OO (Wadkin parts No. K30.93.508)

(2) If mainly narrow stock is being run, the feed rolls may be removed and replaced in a different position thus spreading any wear across the full feed roll face (Fig. B3).

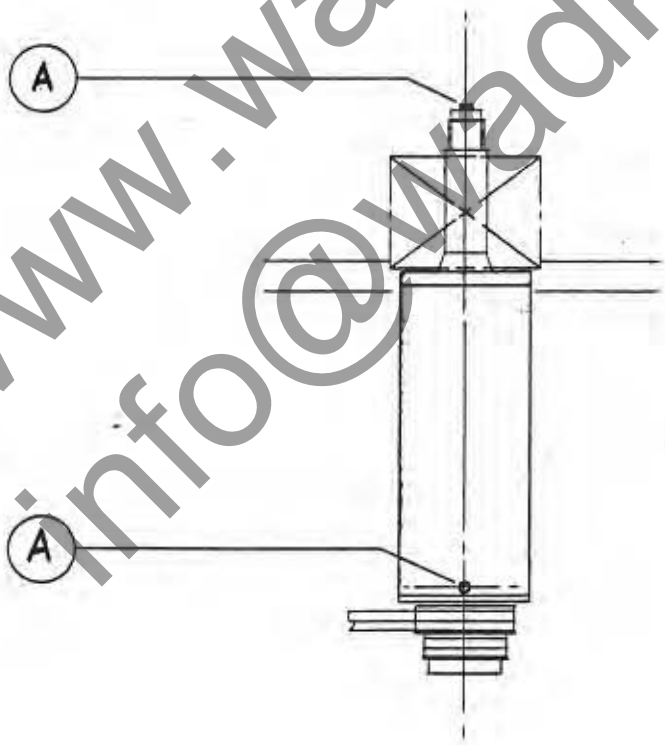
(3) Remove rear feedworks cover. Apply Wadkin grade L6 grease to front and rear bearings for bottom feed roll shafts. Check feedworks drive chains. Tension if required (Fig. B5)

ELECTRICAL MAINTENANCE

See page D1.



HORIZONTAL HEADS



SIDE HEADS

FIG. C1 CUTTER SPINDLE LUBRICATION

Revised List

~~October 1968~~ NOVEMBER 1983

WADKIN OILS AND GREASES WITH RECOMMENDED ALTERATIVES

WADKIN GRADE	CASTROL	B. P.	SHELL	MOBIL	ESSO	GULF	CALTEX
L 1	Hyspin ~~76~~ RWS 32	~~HL 65~~ HLP 32 ENERGOL	Tellus Oil ~~33~~ 37	DTE Oil Light 24	Esstic ~~42~~ 44 or Nuto H 44	Harmony ~~41~~ 43AW	RANDO HDA ~~Regal Oil A R and O~~
L 2	Alpha ~~417~~ ZN 150	Energol CS 150 OR HP150	Vitrea ~~69~~ 45	VACTRA ~~DTE Oil BB~~ EXTRA HEAVY	Esstic 65	SERVICE 13 ~~Security 85~~	URSA P40 ~~Meropa Lubricant 2~~
L 4	MAGNA 68 ~~Perfecto NN~~	Energol CS ~~100~~ 68 OR HP 68	Vitrea 33	Vactra Oil Heavy Medium	Esstic 50	SERVICE 51 ~~Security 68~~	Ursa P20
L 6	Spheerol AP3	Energrease LS 3	Alvania Grease No. 3.	MOBILPLEX ~~Mobilux~~ Grease No. ~~3~~ 48	Beacon 3	Gulfcrown Grease No. 3.	Regal Starfak Premium 3
L 9	Spheerol EP	Energrease PR EP2	Rhodina Grease No. 3.	Larital No. 2.	Ladex 1	Gulfcrown Grease EP No. 2.	Multifak EP 2
L 10	Dixol 50 (Dilute 50/1)	Energol SB 40 (Dilute 50/1)	Dromus Oil D	Solvac T	Kutwell 60	Gulfcut Soluble Oil NT	Cooltex

SECTION D

ELECTRICAL EQUIPMENT

INSTALLATION

See page A1.

FAILURE TO START

(1) Electrical supply not available at the machine.

(2) Fuses have blown or have not been fitted.

(3) Isolating switch has not been closed.

(4) Lock off stop buttons have not been released.

STOPPAGE DURING OPERATION AND FAILURE TO RESTART

(1) Fuses have blown.

(2) Overloads have tripped.

(3) Accidental operation of a master stop button.

ELECTRICAL MAINTENANCE

The machine does not require regular electrical maintenance apart from blowing down motors and checking the earth connection. Control gear should not be opened up unless a fault occurs. Do not file switch-gear contacts and do not change them unless they are definitely faulty.

See circuit diagram supplied separately.

ADJUSTMENT TO OVERLOADS

Some overloads have an adjustable current setting, but these are set at Wadkin Limited to correspond with the full load current of the motor and should not require further attention.

SECTION F

Suggested List of Wearable Parts to be Kept as Spares

When ordering spare parts, always quote machine symbol, serial number and test number.

No. per m/c.	Description	Part Number
	FEEDWORKS	
2	Plain feed roller (wide).	FB.11505
2	Plain feed roller (narrow).	FB.11506
1	Top spiral saw tooth feed roller (wide).	FB.11507
1	Top spiral saw tooth feed roller (narrow).	FB.11508
1	Bottom spiral saw tooth feed roller (wide).	FB.11532
1	Bottom spiral saw tooth feed roller (narrow).	FB.11533
1	Sprocket for infeed bottom feed roll shaft.	FB.11605
1	Sprocket for outfeed bottom feed roll shaft.	FB.11606
1	Rear sprocket for bottom drive shaft.	FB.11607
2	Front sprocket for top and bottom drive shafts.	FB.11611
2	Gear for top feed roll shafts.	FB.11612
1	Gear for top drive shaft.	FB.11613
1	Feedworks input sprocket.	FB.11614
4	Feed roll shafts outboard bearing sleeve.	FB.11626
3	Chain tightener skid.	FB.11654
1	Pair bevel gears (rise and fall top rolls).	BX.3134CT
2	Chains $\frac{3}{8}$" pitch 44 pitches long.	110056
1	Chain $\frac{3}{8}$" pitch 55 pitches long.	110056
1	Duplex chain $\frac{1}{2}$" pitch 130 pitches long.	114046
8	Sealed for life bearings 55 mm. bore x 100 mm. O.D.	155RSS
1	Sealed for life bearings 40 mm. bore x 80 mm. O.D.	140RSS
1	Sealed for life bearing 55 mm. bore x 120 mm. O.D.	335RSS
2	Self aligning bearings 55 mm. bore x 100 mm. O.D.	U155
2	Self aligning bearings 55 mm. bore x 120 mm. O.D.	U355
2	Needle thrust bearings for bevel gears.	NTA.2031
4	Needle thrust bearing races for bevel gears.	TRA.2031
1	Bush $1\frac{1}{4}$" long x $1\frac{1}{4}$" bore x $1\frac{1}{2}$" O.D.	SN.193
4	Bush $\frac{1}{2}$" long x $\frac{5}{8}$" bore x 23/32" O.D.	10DU08
4	Bush $1\frac{1}{4}$" long x $2\frac{1}{2}$" bore x 2.11/16" O.D.	40DU40
2	Bush $\frac{3}{4}$" long x 1" bore x $1\frac{1}{8}$" O.D.	16DU12
	ALTERNATIVE FEED ROLLERS (TO SPECIAL ORDER)	
	Straight fluted feed roller (Wide).	FB.11509
	Straight fluted feed roller (narrow).	FB.11510
	Diamond fluted feed roller (wide).	FB.11511
	Diamond fluted feed roller (narrow).	FB.11512
	Polyurethane feed roller (wide).	FB.11513
	Polyurethane feed roller (narrow).	FB.11514
	GEAR BOX	
1	Gear selector.	FB.12002
1	Output sprocket.	FB.12063
1	Constant mesh gear output shaft.	FB.12077
1	Gear for intermediate shaft (low speed range).	FB.12078
1	Gear for intermediate shaft (high speed range).	FB.12079
1	Constant mesh gear for intermediate shaft.	FB.12080

1	Gear cluster for input shaft.	FB.12081
1	Shell type needle bearing 52 mm. O.D.	DL.4520.P/16645
1	Shell type needle bearing 48 mm. O.D.	DL.4020/35
1	Shell type needle bearing 52 mm. O.D.	INA.BK1.4020
1	Ball bearing 45 mm. bore x 85 mm. O.D.	BRL.045
2	Ball bearing 30 mm. bore x 62 mm. O.D.	BRL.030
1	Oil seal 75 mm. O.D.	W29521647R4
1	Oil seal 52 mm. O.D.	W20515727R4
2	Bushes $\frac{3}{4}$" long x $1\frac{1}{4}$" bore x 1.13/32" O.D.	20DU12
4	Bushes $\frac{1}{2}$" long x $\frac{3}{4}$" bore x $\frac{7}{8}$" O.D.	12DU08
3	Space saver vee belts (50 cycles).	Alpha 450
	CUTTER SPINDLES	
1	Per horizontal head-outboard bearing sleeves.	FB.1718
2	Per horizontal head-helical gears-rise and fall.	FB.12702
2	Per horizontal head-helical gears-rise and fall.	FB.12703
2	Per top head-chipbreaker shoes (40 mm. spindles).	FB.1908
1	Per top head-chipbreaker shoe (40 mm. spindles).	FB.12910
1	Nearside head chipbreaker shoe (40 mm. spindles).	FB.2116
	Spindle nut (right hand thread).	FB.2128
	Spindle nut (left hand thread).	FB.2129
	Locking cone.	FAC.13
	Vee belts for horizontal heads (50 cycles).	Alpha 560
	Vee belts for side heads (50 cycles).	Alpha 530
2	Per head-main spindle bearings.	N.1071
1	Per horizontal head-outboard bearing.	N.3349
4	Per horizontal head needle thrust bearings (rise and fall).	NTA.1625
4	Per horizontal head needle thrust bearing races.	TRA.1625
4	Per horizontal head needle thrust bearing races.	TRB.1625
2	Bushes $\frac{3}{4}$" long x $\frac{3}{4}$" bore x $\frac{7}{8}$" O.D.	SN.071
1	Bush $\frac{3}{4}$" long x $\frac{5}{8}$" bore x $\frac{3}{4}$" O.D.	SN.066
1	Per horizontal head-bush 2" long x $2\frac{1}{2}$" bore x 2.11/16" O.D.	40DU32
1	Per horizontal head-bush $1\frac{1}{2}$" long x 2" bore x 2.3/16" O.D.	32DU24
1	Per horizontal head-bush $1\frac{1}{8}$" long x 1" bore x $1\frac{1}{4}$" O.D.	SN.025
4	Per horizontal head-bush $\frac{1}{2}$" long x $\frac{3}{4}$" bore x $\frac{7}{8}$" O.D.	12DU08
3	Bush 1" long x $1\frac{1}{2}$" bore x $1\frac{1}{4}$" O.D.	SN.078
1	Bush $1\frac{1}{2}$" long x $1\frac{1}{2}$" bore x $1\frac{3}{4}$" O.D.	SN.078
2	Bush $1\frac{1}{2}$" long x $1\frac{1}{4}$" bore x $1\frac{1}{2}$" O.D.	SN.193
	BEDPLATES	
1	Bedplate after infeed table.	FB.11530
1	Bedplate between feed rolls.	FB.11529
1	Bedplate before first bottom head.	FB.11667
1	Plate before 1st bottom head (long) (to special order).	FB.11668
1	Bedplate after first bottom head (long).	FB.12612
1	Bedplate after first bottom head.	FB.12613
1	Bedplate under first top head.	FB.12817
1	Bedplate for fence side head.	FB.13005
1	Bedplate for near side head.	FB.13004
1	Bedplate after side heads.	FB.12818
1	Bedplate under second top head (Permali).	FB.12820
1	Bedplate before second bottom head.	FB.12819
1	Bedplate after second bottom head.	FB.13203

	FENCES	
1	Infeed fence.	FB.11669
1	Fence before side head.	FB.12930
1	Top plate for right hand nose piece.	FB.213
1	Fence nose piece before side head.	FB.219
1	Fence nose piece after side head.	FB.218
1	Top plate for left hand nose piece.	FB.12929
1	Fence after side head.	FB.12928
1	Fence for outfeed table.	FC.68
	PRESSURES	
2	Narrow top pressure roller.	FB.2451
4	Bearings (top rollers) 55 mm. bore x 100 mm. O.D.	155RSS
4	Bush $\frac{3}{4}$" long x 1" bore x $1\frac{1}{4}$" O.D.	SN.025
2	Bush $\frac{1}{2}$" long x $\frac{3}{4}$" bore x $\frac{7}{8}$" O.D.	12DU08
3	Roller for side pressure	FB.2433
3	Bearing for roller for side pressure.	LJ17/DD