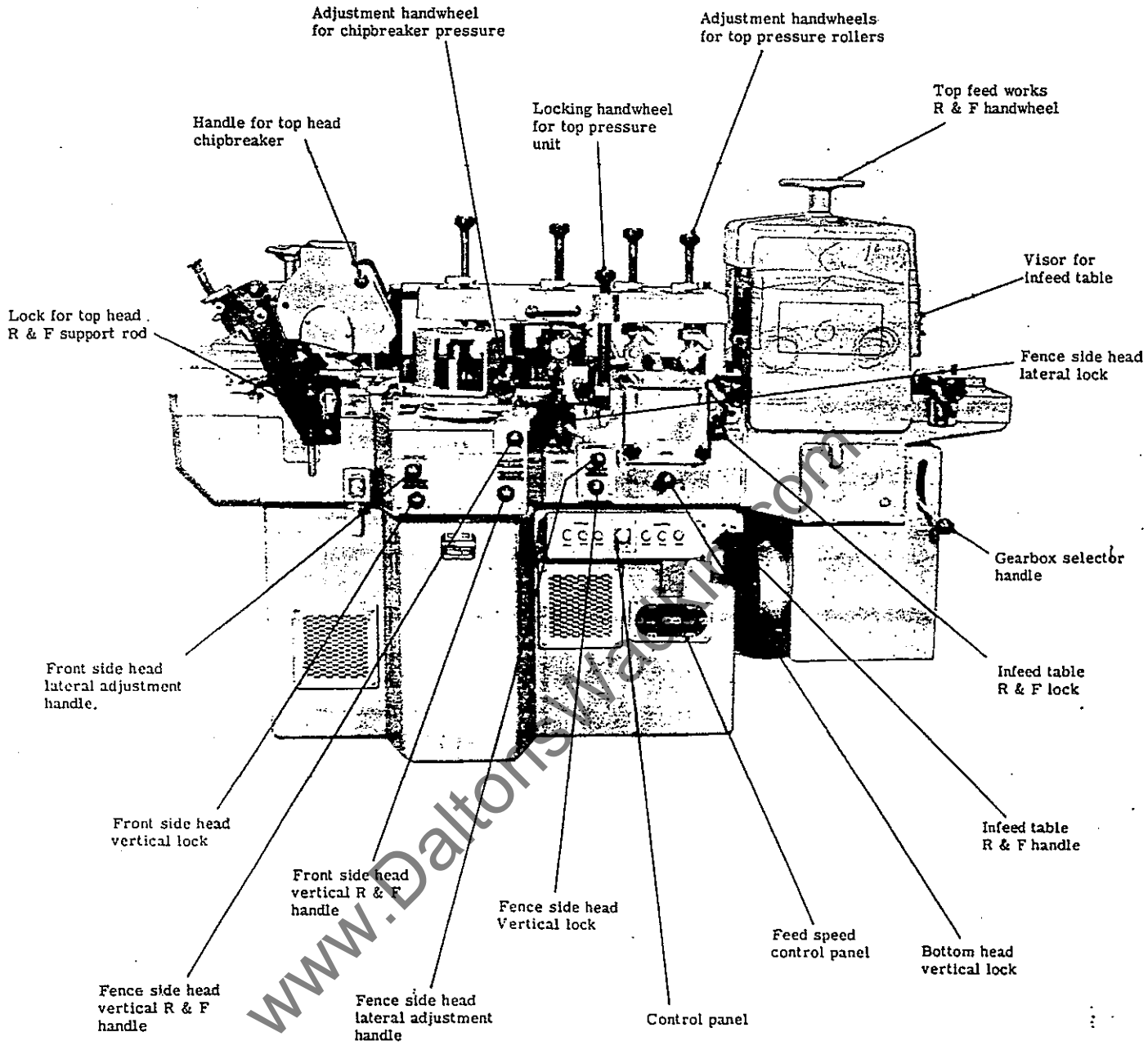
6" x 3" PLANER & MOULDER TYPE 6" BFO



SPECIFICATION

Maximum Size of timber admitted		$6\frac{1}{2}$" x $3\frac{1}{2}$" Standard		165 x 90mm Maximum Moulding Dia.
Cutting Circle :	Bottom Head	$5\frac{1}{2}$"	140mm	$6\frac{1}{4}$" 159mm
	Top Head	$5\frac{1}{2}$"	140mm	$7\frac{1}{2}$" 191mm
	Fence Side Head	$5\frac{1}{2}$"	140mm	7" 178mm
	Front Side Head	$5\frac{1}{2}$"	140mm	$7\frac{1}{4}$" 185mm
	Extra Bottom Head	$5\frac{1}{2}$"	140mm	$7\frac{1}{2}$" 191mm
Extra bottom head can accommodate		9" (230mm) dia. saw		
Feed speeds per minute		20, 30, 40 and 60ft.		6, 9, 12, 18m
Dia. of Spindle End		40mm		40mm
Feed motor (2speed: 3000/1500 rpm)		5-5/4-2HP		5-5/4-2HP
Spindle motors: Horizontal heads		10HP		10HP
Side Heads		7.5HP		7.5HP
Extra bottom head		7.5HP		7.5HP
Spindle speeds		5,000rpm		5,000rpm
Diameter of feed rolls		4"		100mm
Yield of feed rolls		5/8"		16mm
Floor space :				
4 Head machine		75" x 43"		1900 x 1090mm
5 Head machine		94" x 43"		2390 x 1090mm
Net weight approx:				
4 Head machine		3140 lb		1420 kg
5 Head machine		3360 lb		1525 kg
Shipping dimensions :				
4 Head machine		133 cu.ft.		$3,7m^3$
5 Head machine		160 cu.ft.		$4,7m^3$

INSTALLATION

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

WIRING DETAILS

The motor and control gear have been wired in before despatch. All that is required is to connect the power supply to the starter or isolator when fitted.

Points to note when connecting to power supply:-

1. Check that the voltage, phase and frequency correspond to those on the motor plate, also the correct coils and heaters are fitted to the starters.
2. It is important that the correct size of cable is used to give the correct voltage at the starter. Too light a cable will give a voltage drop at the starter and may damage the motor.
3. Check the main line fuses are of the correct capacity. See list below. When an isolator is fitted, the fuses are of the correct capacity as received.
4. Connect the line leads to the appropriate terminals. See fig. 2 for wiring diagram.
5. Check all connections are sound.
6. Check the rotation of all the motors for the correct direction. If this is incorrect reverse any two of the line lead connections.

Four Head Machine Voltage	Phase	HP	S.W.G. Tinned Copper Wire	Fuse Rating Amps
220	3	10/7½/5½/4·2	15	78
380/420	3		19	38
550	3		19	38

Five Head Machine Voltage	Phase	HP	S.W.G. Tinned Copper Wire	Fuse Rating Amps
220	3	10/7½/7½/5½/4·2	14	102
380/420	3		18	45
550	3		18	45

FOUNDATION

See fig. 3 for foundation bolt positions and clearances required

Foundation bolts are not supplied with the machine but are available at a reasonable extra charge.

LUBRICATION

Lubrication should be carried out as shown in fig. 4.

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

DUST EXHAUST SYSTEM

The size of all dust outlets are shown in Fig. 4.

We have developed with Messrs. Dustraction of Leicester a special collector unit for this machine which represents a big advance on the usual practise of coupling each head independently into the main exhaust system. We shall be pleased to supply details and quotation on request.

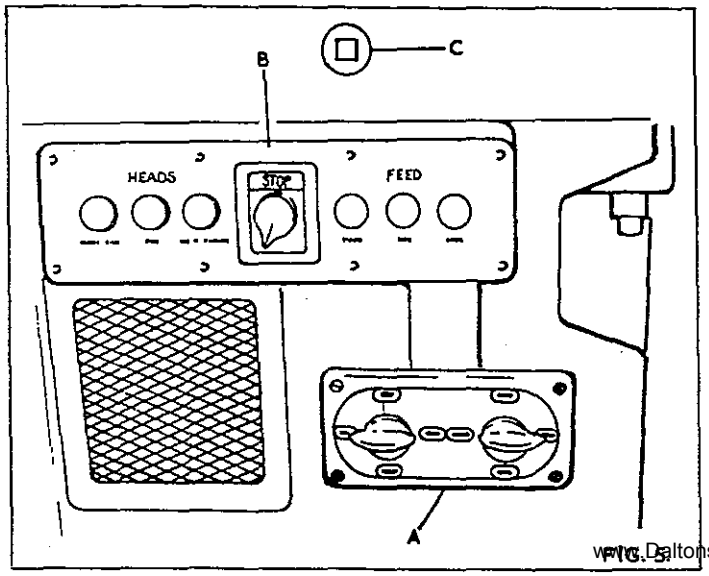


FIG. 5.

OPERATING INSTRUCTIONS FOR ELECTRICAL CONTROLS

All the electrical controls are conveniently placed towards the in-feed end of the machine. The controls are situated in two separate panels as shown in Fig. 5.

Panel "A" incorporates the rotary switches to control the feed motor. They are for forward and reverse motion of the feed rollers and fast and slow speed to give you the range of feed speeds.

Panel "B" is in two sections. One section for the feed, with start and stop push buttons and an inch button. This button operates the feed in either direction for the period it is depressed only.

The other section has the start buttons for the top and bottom motor, side head motor and extra head motor when supplied.

A master stop button is fitted between the two sections, which when operated stops the whole machine. This button is fitted with a lock off feature and can be pushed in and half turned to lock the button in the "off" position, thus rendering all the controls inoperative. It should be used when leaving the machine or when attending to the cutterblocks to prevent accidental starting.

A master stop button is also fitted to the main table after the top head.

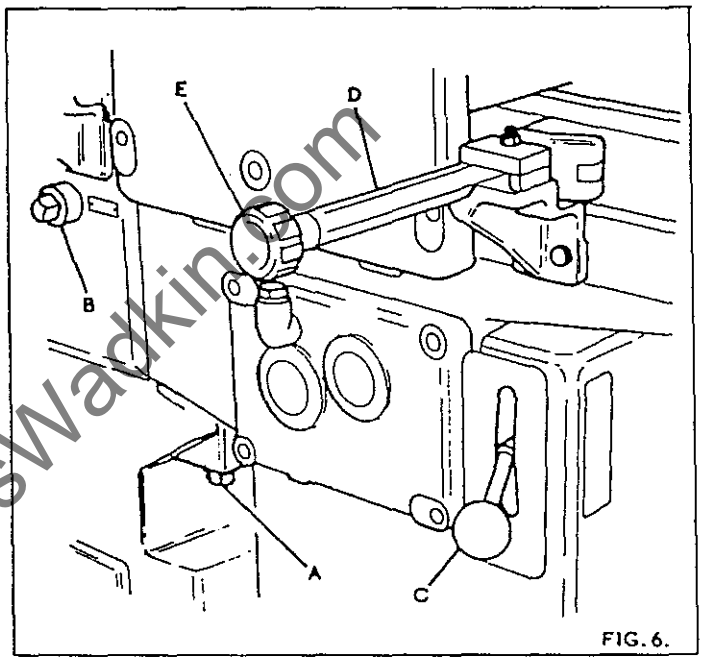


FIG. 6.

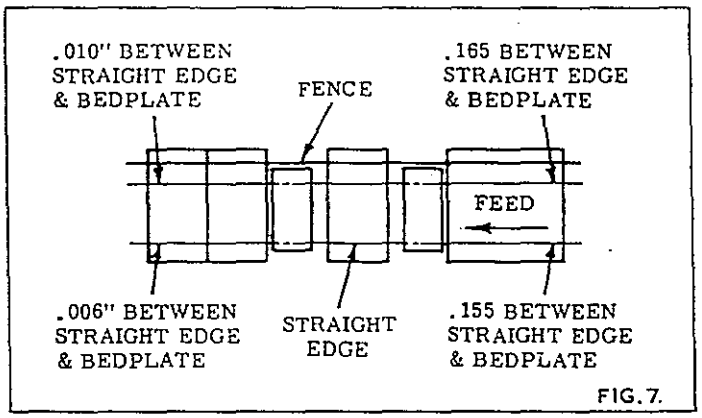


FIG. 7.

INFEED TABLE

The infeed table is fitted with renewable bedplates and four driven ball bearing mounted feed rollers. The table has a total movement of ¼" (6mm) which is controlled by the handle "A" in Fig. 6 . The table should be set to give the amount of cut required on the bottom head and can be locked in any position by means of the locking handle "B"

The four feed rollers are all power driven with the top pair mounted directly above the bottom pair. These rollers are pitched to ensure that the stock is kept against the fence throughout the machine.

The rollers are set at the works in accordance with dimensions shown in Fig. 7 . The bottom rollers can be adjusted by means of four set screws and locknuts each placed under the ends of the rollers. Care should be taken to ensure that the rollers are set to the dimensions shown should any re-alignment be necessary.

FOUNDATION PLAN

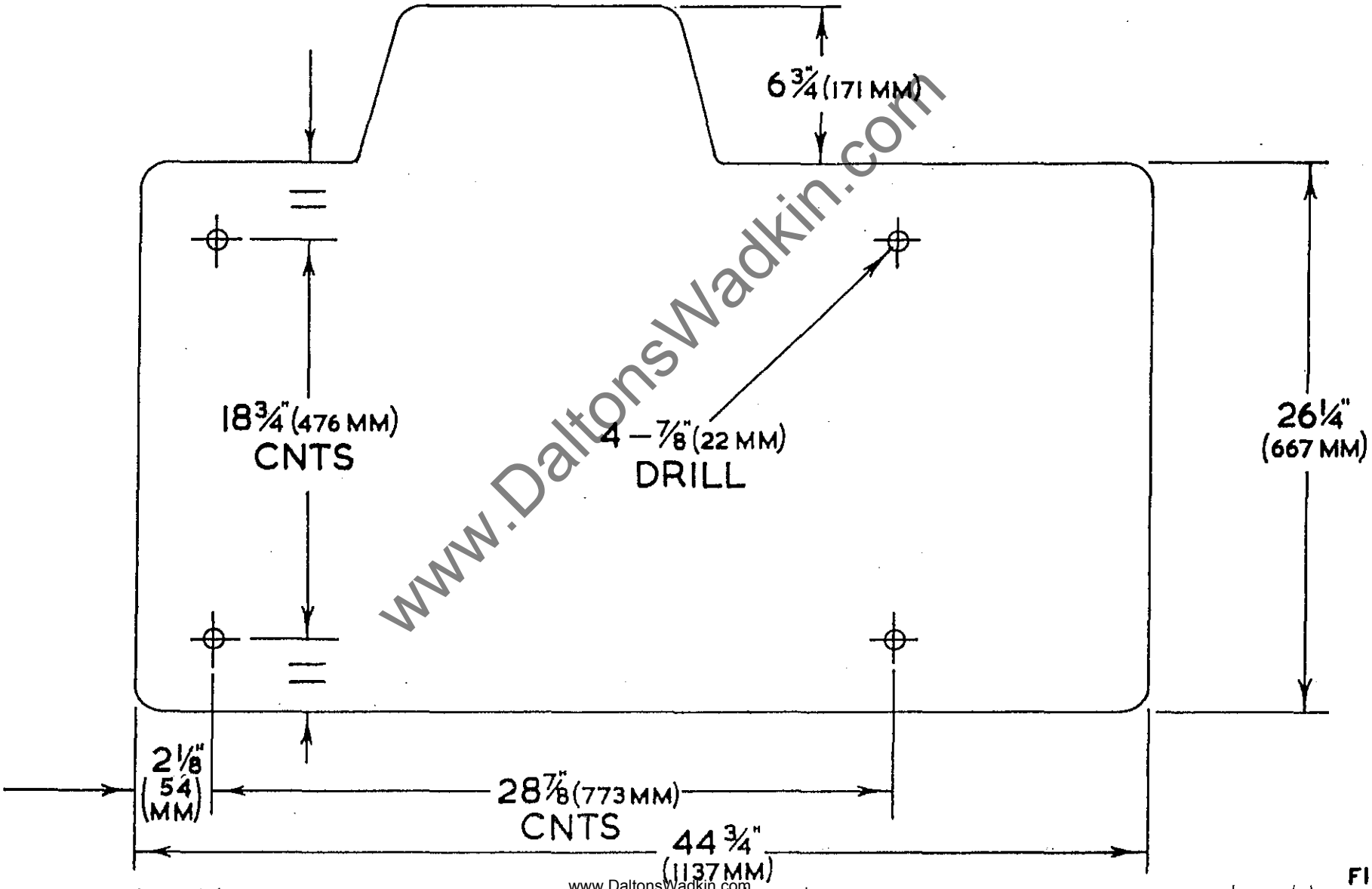
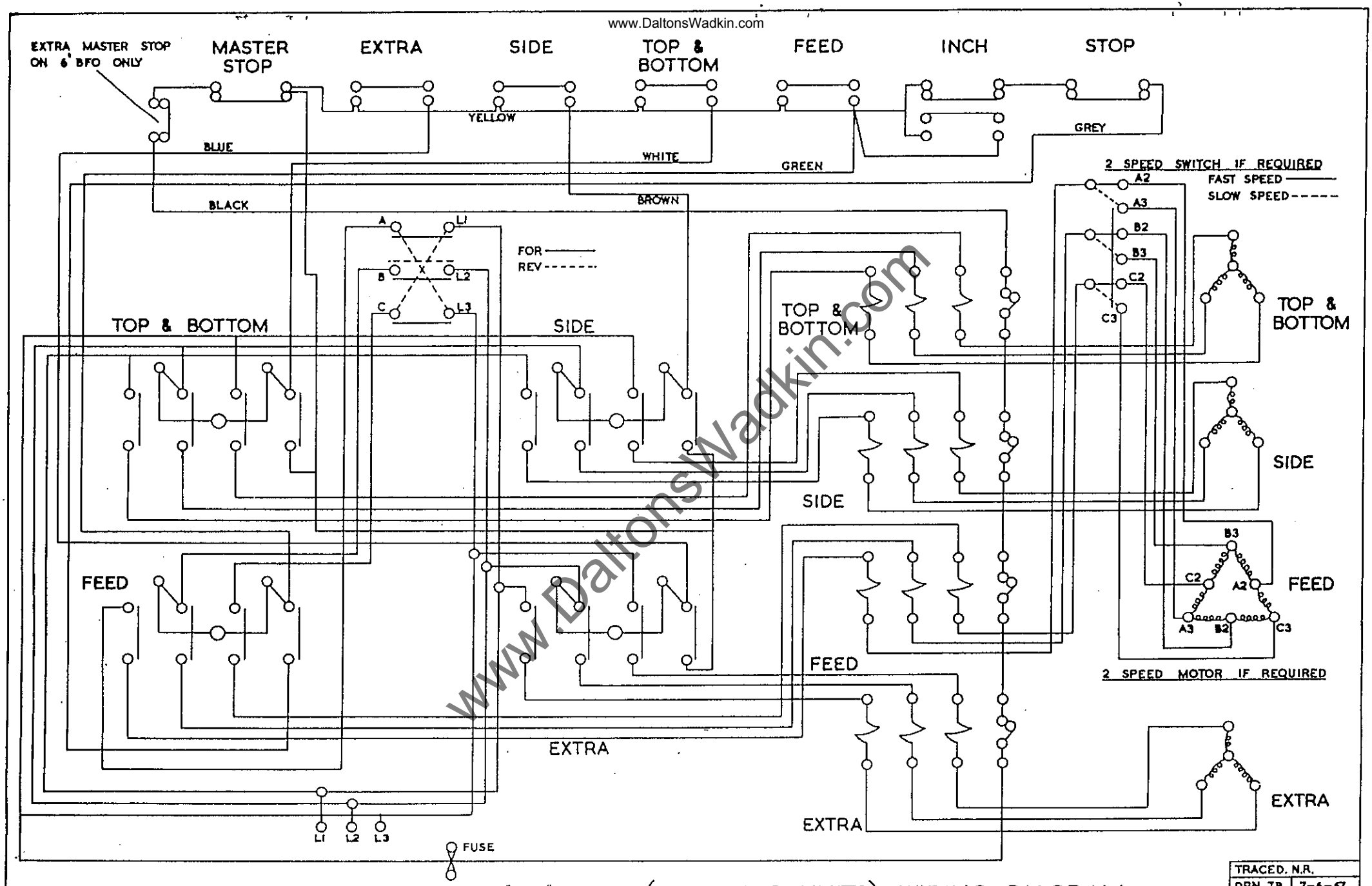
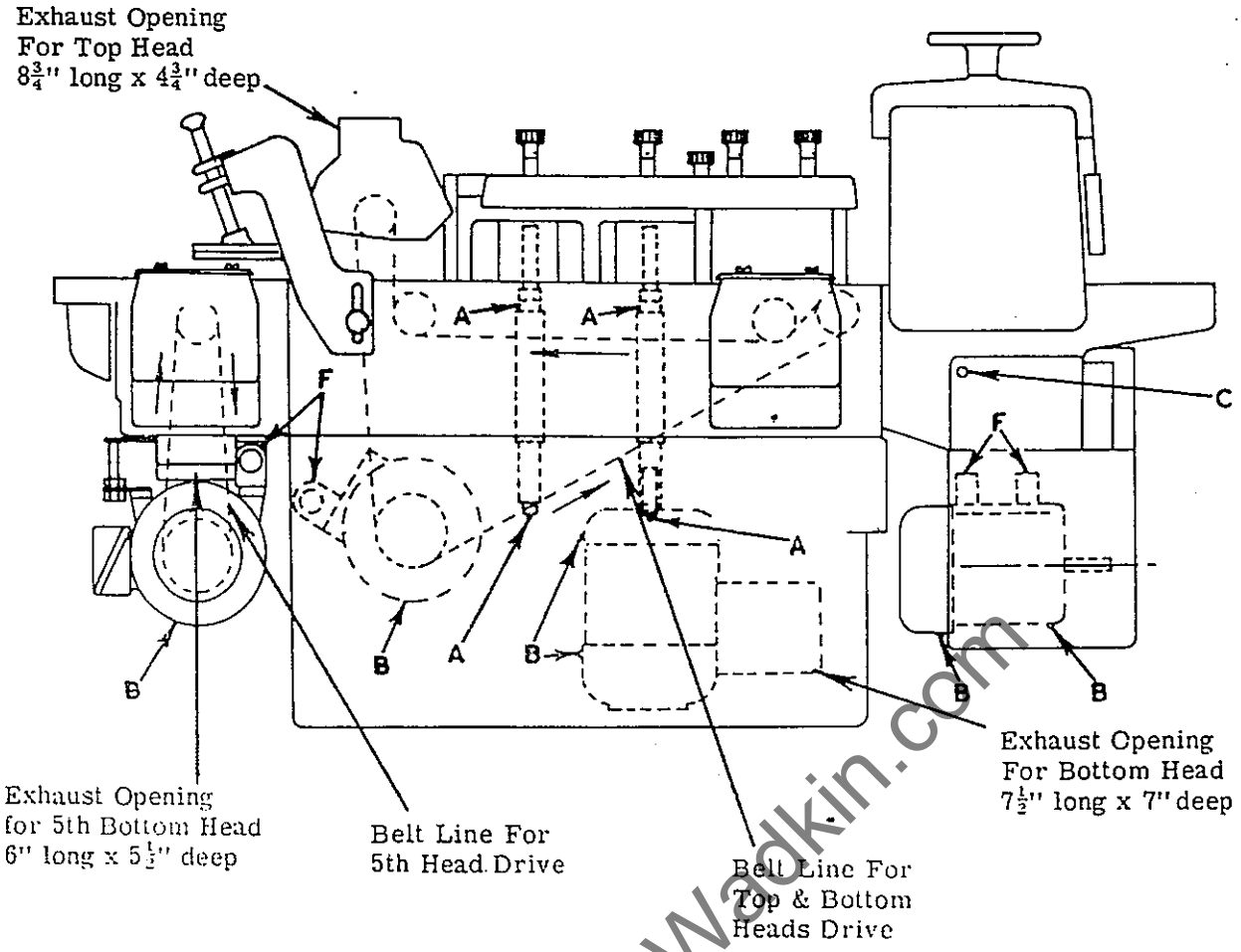


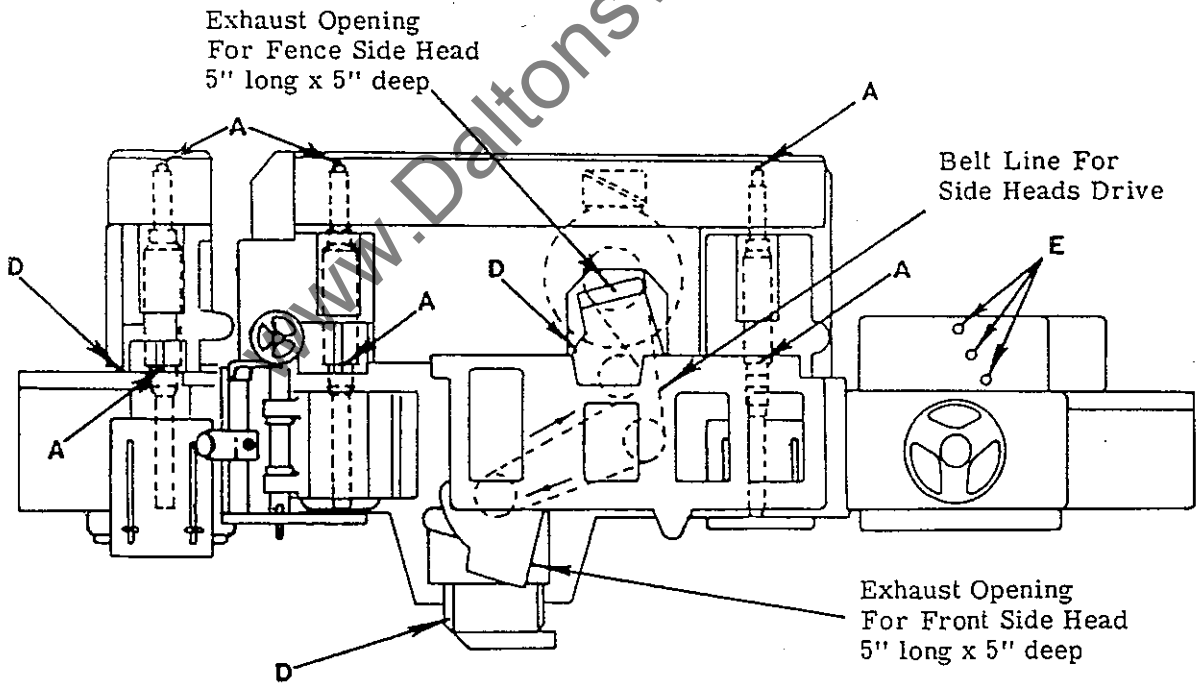
FIG. 3.



4"–6" BFO (MTE–UCO UNITS) WIRING DIAGRAM.

TRACED. N.R.	
DRN. T.B.	7-6-67
C-1033/WD	





LUBRICATION INSTRUCTIONS

POINT "A"	ONE SHOT OF GREASE PER WEEK
POINT "B"	TWO TURNS OF GREASE BOTH ENDS OF MOTOR PER YEAR
POINT "C"	TOP UP TO OIL LEVEL WEEKLY USING EP LUBRICANT
POINT "D"	OIL SLIDES WEEKLY
POINT "E"	KEEP STAUFFERS FILLED WITH OIL
POINT "F"	OIL PIVOTS WEEKLY

TYPE OF GREASE RECOMMENDED :- SHELL ALVANIA 3.
TYPE OF OIL RECOMMENDED, POINT C :- CASTROL PERFECTO R.R.
TYPE OF OIL RECOMMENDED, POINT D :- CASTROL "D" EP 140

FIG. 4.

FEED WORKS

The feed works are chain driven from a two speed gearbox which in turn is belt driven from a two speed motor giving feed speeds of 20, 30, 40 & 60ft per minute (6, 9, 12 & 18 m/min)

The gearbox is controlled by means of the lever "C" in Fig. 6 and the two speed motor is controlled by the rotary switch which is mounted on the control panel at the front of the machine.

The feed chain can be tensioned by means of the adjustable pulleys "A" in Fig. 8. These are to the rear of the feed works.

The top feed rollers can be raised or lowered by means of the 8" diameter handwheel at top of the feed works unit. This also applies pressure to the feed rollers. Care should be taken, not to apply excessive pressure to the feed rollers as this causes erratic feeding.

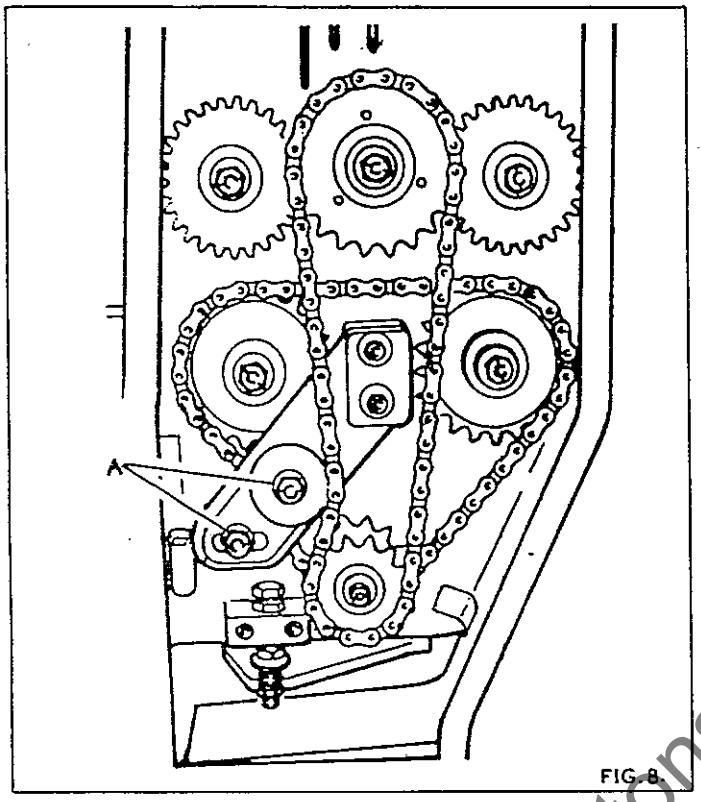


FIG. 8.

BOTTOM HEAD

The drive to this head is by a flat belt from a 10HP motor which also drives the top head. The spindle end is 40mm diameter with special cone seating as shown in Fig. 9, and runs at 5,000rpm.

The block fitted to this spindle is $3\frac{1}{2}$" (89mm) square x $6\frac{1}{2}$" (165mm) long giving a standard cutting circle of $5\frac{1}{2}$" (140mm) dia. A circular cutterblock can also be fitted which is 5.3/8" (137mm) dia x $6\frac{1}{2}$" (165mm) long and gives a $5\frac{1}{2}$" (140mm) dia cutting circle.

The spindle is provided with lateral adjustment of 3/8"(10mm) by means of handle "A" in Fig. 10. The head is locked by the locking handle "B". Vertical movement of 5/16" (8mm) is provided to the spindle by means of the handle "C" which can be locked by the handle "C"in Fig. 5.

The standard cutting circle diameter of the block is $5\frac{1}{2}$" (140mm) and a maximum moulding diameter of $6\frac{1}{4}$" (159mm) is obtainable on this head.

NOTE:-

All cone seatings on the spindle and in the cutterblocks should be kept clean and free from dirt at all times.

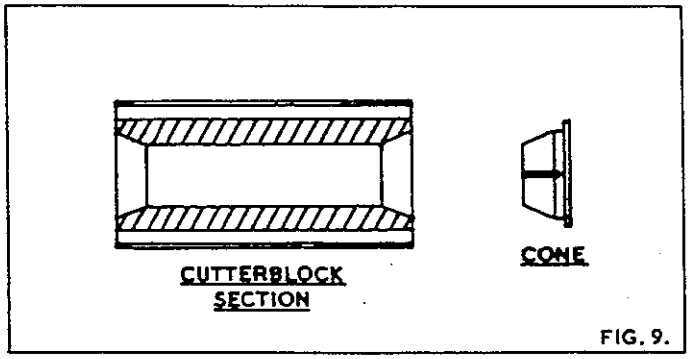


FIG. 9.

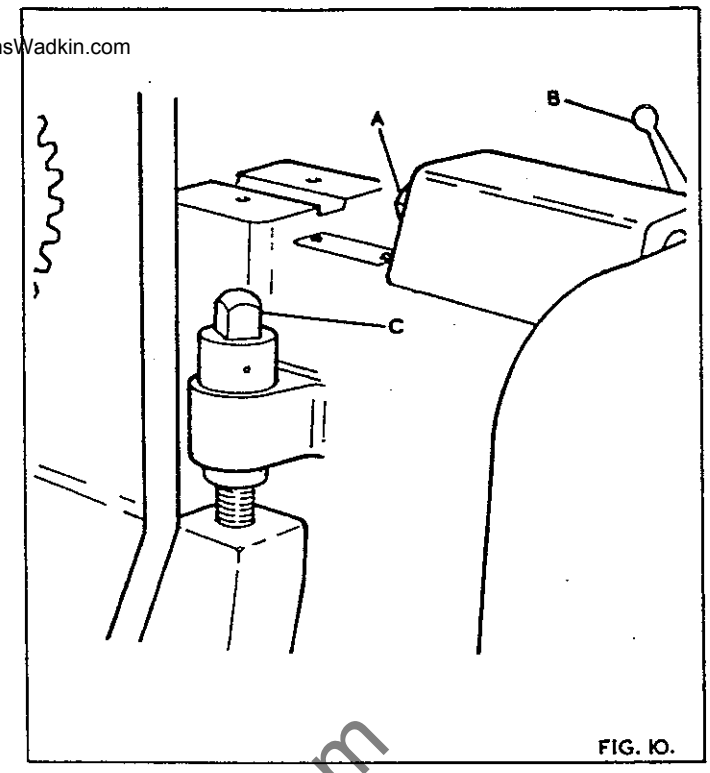


FIG. 10.

FENCE SIDE HEAD

The drive to this head is by a flat belt from a $7\frac{1}{2}$HP motor, which also drives the front side head. The spindle end is 40mm dia with special cone seating as shown in Fig. 9 and runs at a speed of 5,000rpm.

The block fitted to the spindle is $3\frac{1}{2}$" (89mm) square x $3\frac{1}{4}$" (83mm) long giving a standard cutting circle of $5\frac{1}{2}$" (140mm) dia. A circular cutterblock can also be fitted which is 5.3/8" (137mm) dia x $3\frac{1}{4}$" (83mm) long and gives a $5\frac{1}{2}$" (140mm) dia cutting circle.

The spindle is provided with vertical adjustment of 5/8" (16mm) by means of the handle "A" in Fig. 11. This head is locked by means of the locking handle "B" in Fig. 11. Lateral movement of $\frac{1}{2}$" (13mm) is provided to the head by means of the handle "C" in Fig. 11 which can be locked by the locking handle "D" in Fig. 11.

The standard cutting circle diameter of the block is $5\frac{1}{2}$" (140mm) and a maximum moulding diameter of 7" (178mm) is obtainable on this head.

NOTE :-

All cone seatings on the spindle and in the cutterblocks should be kept clean and free from dirt at all times.

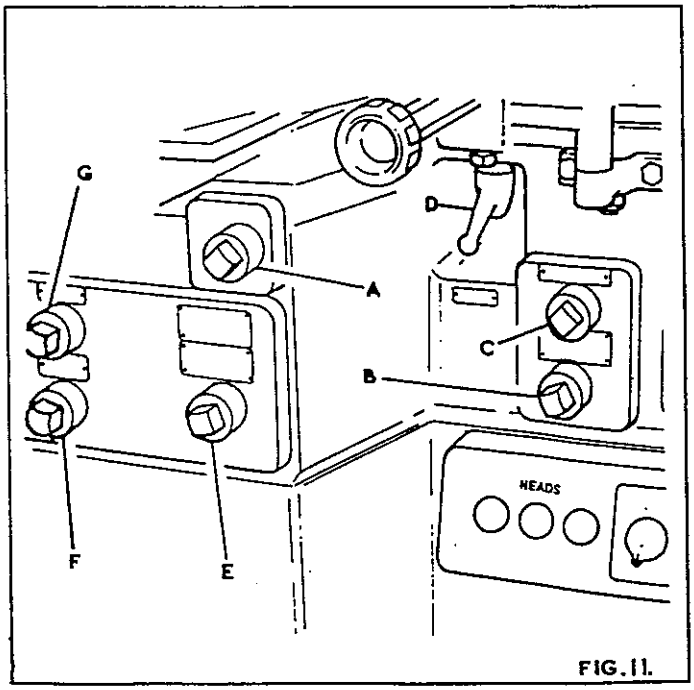


FIG. 11.

FRONT SIDE HEAD

The drive to the head is by a flat belt from the same 7½ HP motor which drives the fence side head. The spindle end is 40mm dia with special cone seating as shown in Fig. 9 and runs at a speed of 5,000rpm.

A circular cutterblock can also be fitted which is 5. 3/8" (137mm) dia x 3¼" (83mm) long and gives a 5½" (140mm) dia cutting circle.

The spindle is provided with vertical adjustment of 5/8" (16 mm) by means of the handle " E " in Fig. 11 . This being locked by means of the locking handle " F ". Lateral movement of "6¾" (171mm) is provided to the head by means of the handle " G " in Fig. 11 which can be locked by the locking handle "

The standard cutting circle diameter of the block is 5½" (140mm) and a maximum moulding diameter of 7¼" (184 mm) is obtainable on this head.

NOTE:-

All cone seatings on the spindle and in the cutterblocks should be kept clean and free from dirt at all times.

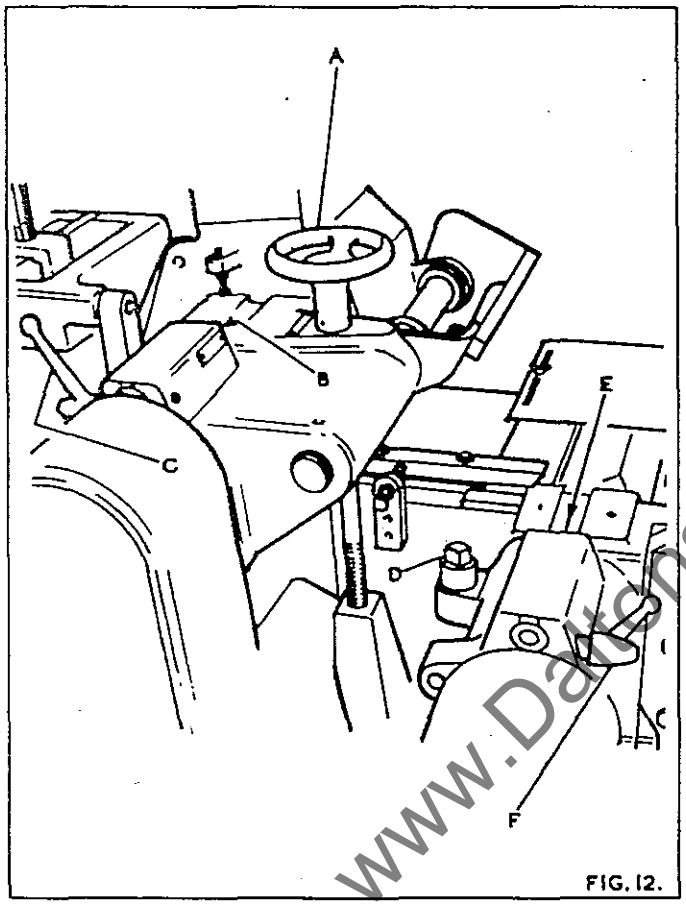


FIG. 12.

TOP HEAD

The drive to the head is by a flat belt from the same 10HP motor which drives the bottom head. The spindle end is 40mm dia with special cone seating as shown in Fig. 9 and runs at a speed of 5,000rpm.

The block fitted to the spindle is 3½" (89mm) square x 6½" (165mm) long giving a standard cutting circle of 5½" (140mm) dia. A circular cutterblock can also be fitted which is 5.3/8" (137mm) dia x 6½" (165mm) long and gives a 5½" (140mm) dia cutting circle.

The spindle is provided with vertical adjustment of 3¼" (83mm) by means of the handwheel "A" in Fig. 12. This head is locked by means of the locking handle "A" in Fig. 13. Lateral movement of 3/8" (10mm) is provided to the head by the handle "B" in Fig. 12. This can be locked by the handle "C".

The standard cutting circle diameter of the block is 5½" (140mm) a maximum moulding diameter of 7½" (191mm) is obtained on the head.

NOTE :-

All cone seatings on the spindle and in the cutterblocks should be kept clean and free from dirt at all times.

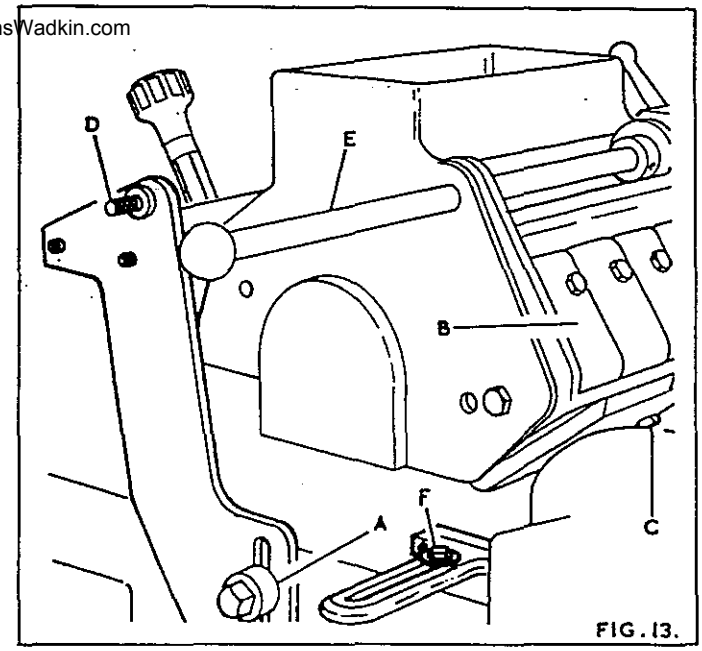


FIG. 13.

EXTRA HEAD

The drive to the head is by a flat belt from a 7½HP motor. The spindle end is 40mm dia with special cone seating as shown in Fig. 9, and runs at a speed of 5,000rpm.

The block fitted to this spindle is 3½" (89mm) square and 6½" (165mm) long with a 5½" (140mm) dia cutting circle. A circular cutterblock can also be fitted which is 5.3/8" (137mm) dia x 6½" (165mm) long and gives a 5½" (140mm) dia cutting circle.

The spindle is provided with vertical adjustment of ¾" (19mm) by means of the handle "D" in Fig. 12 and can be locked by the locking handle "A" in Fig. 14. Lateral movement of 3/8" (10mm) is provided to the head by means of the handle "E" in Fig. 12. This can be locked by the handle "F" in Fig.

The standard cutting circle diameter of the block is 5½" (140mm) and a maximum moulding diameter of 7½" (191mm) is obtainable on this head.

NOTE :-

All cone seatings on the spindle and in the cutterblocks should be kept clean and free from dirt at all times.

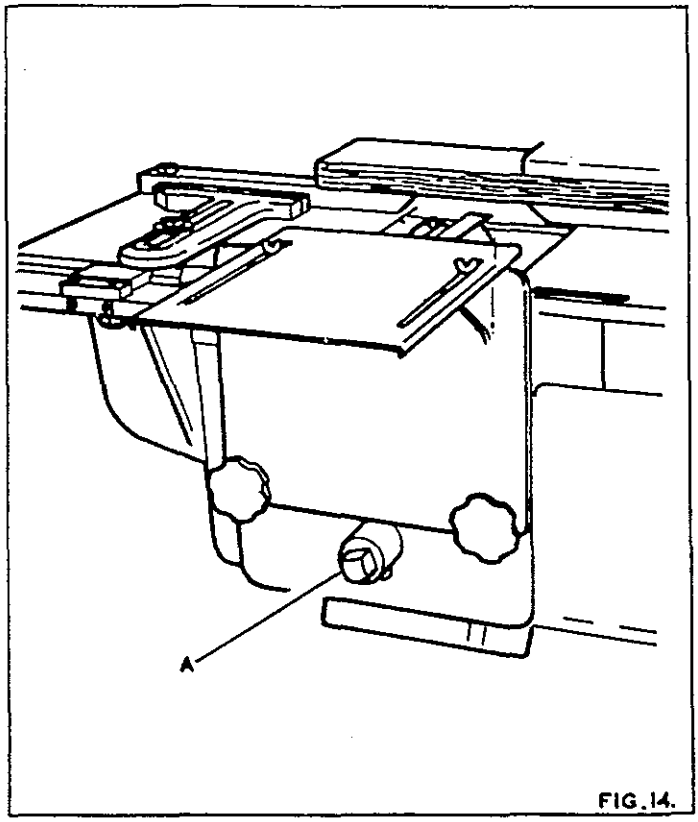


FIG. 14.

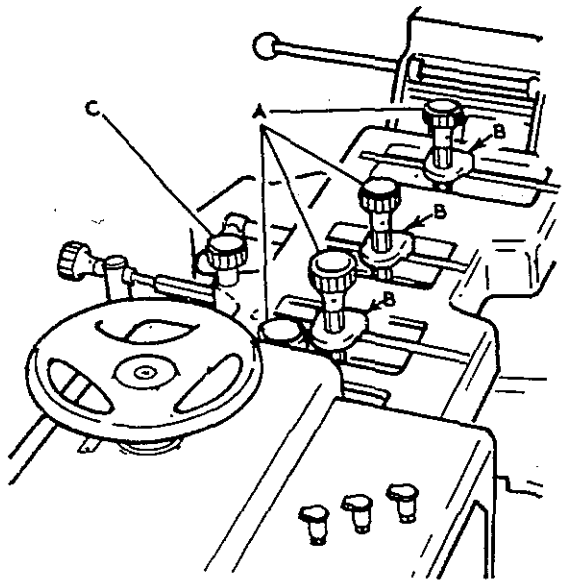


FIG. 15.

PRESSURES

First Side Pressure

The first side pressure is mounted on the in-feed table before the feed works as shown in Fig. 6 . The roller is mounted on the adjustable bar "D". To set roller reduce spring pressure to a minimum by turning handwheel "E" then proceed to loosen hexagon nut "F" and move bar forward until the roller touches the timber. Move the bar forward a further $\frac{1}{4}$" (6mm) and relock hexagon nut "F". This should give the necessary pressure required for a good finish, but should further tension be required this should be done by adjusting the handwheel "E". The spring loaded roller when correctly set will allow for a maximum variation in timber of 3/8" (10 mm) without altering the setting of the pressure unit, except on maximum size stock.

Second Side Pressure before Bottomhead

The second side pressure is identical to the first side pressure and is adjustable in exactly the same manner.

Top Pressures over Bottom Head and Side Heads

Four top pressures are mounted on the top pressure bracket. Each one can be individually adjusted by reducing spring pressure to a minimum by turning handwheel "A" in Fig. 15 then proceeding to loosen the square head bolt "B" in Fig. 15 . Move bar down until the roller touches the timber, then move bar down a further $\frac{1}{4}$" (6mm) and relock bolt "B". This should give the necessary pressure required for a good finish, but should further tension be required, this should be done by adjusting the handwheel "A". The spring loaded roller when correctly set will allow for a maximum variation in timber of 3/8" (10 mm) without altering the setting of the pressure unit. The top pressure bracket can be lifted clear to allow for easy access to the cutterblocks by loosening the handwheel " C " in Fig. 15 .

Side Pressure before Front Side Head

This pressure is identical to the first side pressure and is adjustable in exactly the same manner.

Side Pressure After Front Side Head

This pressure is of the solid type. The unit is slotted to give adjustment. To adjust the pressure loosen the bolt "F" in Fig. 13, and position where required and relock bolt "F".

The front of this pressure plate is drilled to take a wood packing piece if required.

Side Pressure after Top Head (4 Head Machine)

This pressure is identical to the side pressure before top head and is adjustable in exactly the same manner.

Top Pressure after Top Head

This pressure is of the spring loaded type with the pressure plate drilled to take a wood pressure pad. To adjust to pressure loosen the square head nut "A" in Fig. 16 making sure that the pin is in the centre of the slot on the hexagon tube. Move pad down until it touches timber and relock bolt "A". Pressure can now be applied to the pad by adjusting handwheel "B" until there is approximately $\frac{1}{4}$" (6mm) between adjusting bar and handwheel boss as shown at "C". This should give the necessary pressure required for a good finish, but should further tension be required this should be done by adjusting the handwheel "B".

Side Pressure after Extra Head (5 Head Machine)

This pressure is identical to the side pressure before top head and is adjustable in exactly the same manner.

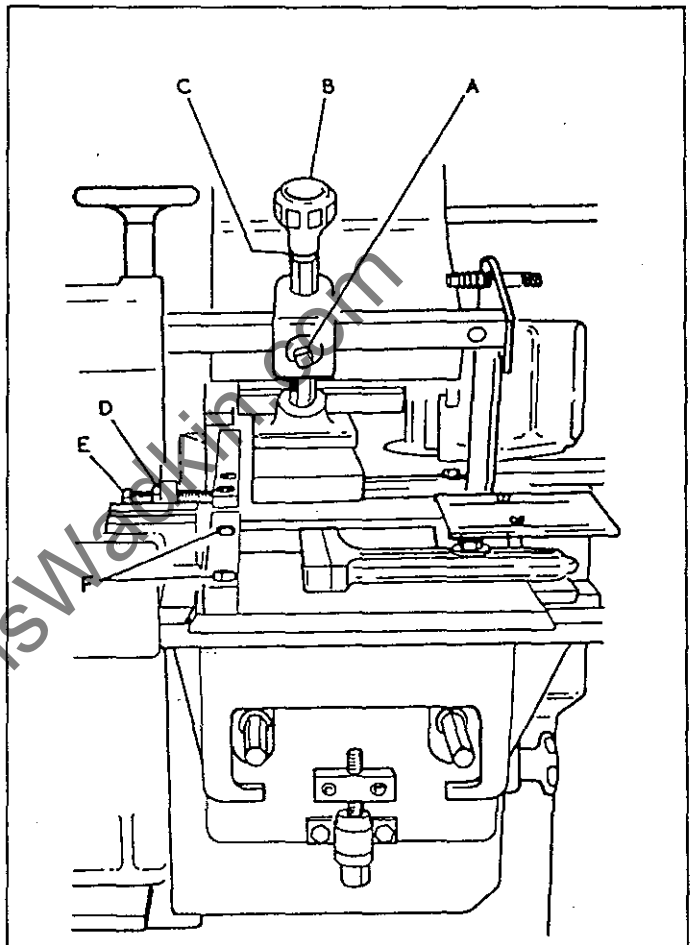


FIG. 16.

CHIPBREAKERS

Side Head Chipbreaker

This chipbreaker is fitted to the slide which houses the front side head and so moves with the whole head unit. The chipbreaker bracket "A" in Fig. 17. can be set to the cutting circle being used by using any one of the three hole positions on the guard. The steel toe piece can be adjusted by loosening the socket head capscrew " B " in Fig. 17. positioning as required then relocking the socket head capscrew " B ". The chipbreaker assembly pivots by means of a pivot screw which also has three alternate positions depending on the relationship of the bedplate to the cutting circle. The whole unit can be moved clear to give access to the front side head by loosening the bolt " C " and swinging the unit round on its pivot. When in the working position, pressure can be placed on the chipbreaker by means of the handwheel " D ".

Top Head Chipbreaker

This chipbreaker is fitted with removable weights. Refer to Fig. 13 for required pressure. Two steel toe pieces are attached to the chipbreaker and are adjustable by loosening the hexagon head bolts " C ", positioning where required then relocking the hexagon head bolts " C ". The chipbreaker has two positions depending on the cutting circle being used. These positions can be altered by loosening the hexagon head bolt at the rear of the chipbreaker then removing the hexagon head bolt "M" at the front moving the chipbreaker to the desired cutting circle and replacing the hexagon head bolt in the appropriate hole. Relock both bolts.

The complete guard and chipbreaker assembly can be lifted clear to give access to the top head cutterblock. The assembly will be held clear by means of the spring loaded plunger " D ". Care should be taken, by taking the weight of the chipbreaker with the handle " E " before releasing the plunger " D " then gently lowering the unit back to the working position.

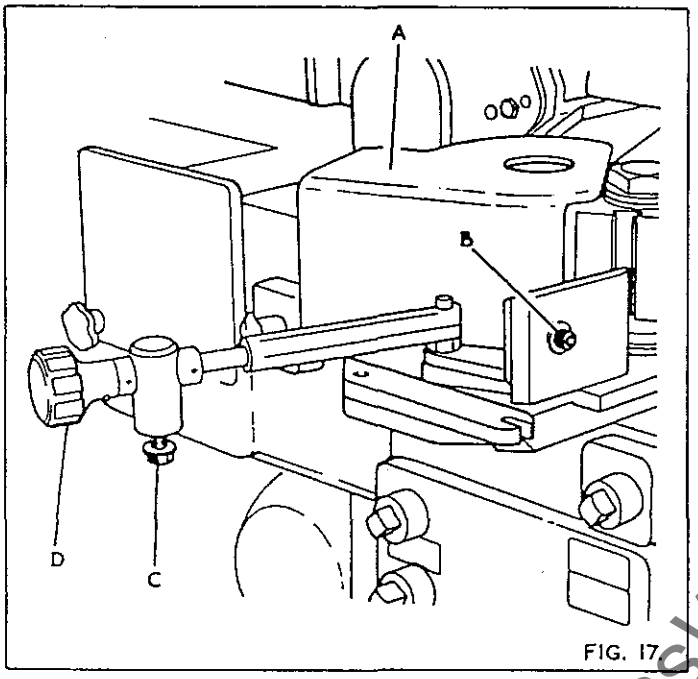


FIG. 17.

FENCES

Infeed Fence

This pre-set fence is secured to the infeed table and needs no adjustment.

Fences between Bottom and Fence Side Head

These two short fences are fitted to the bedplate between the bottom and fence side heads and are provided with longitudinal adjustment to cater for various cutting circles. To adjust fences loosen large socket head capscrew "A" in Fig. 18 at rear of fence, proceed to loosen the hexagon head bolts "B" position fences with minimum clearance to cutting circles then relock bolts "B" and capscrew "A".

Outfeed Fence

This fence is secured to the main table immediately proceeding the fence side head and has a total lateral adjustment of $\frac{1}{4}$" (6mm).

For this adjustment loosen socket head capscrew "A", hexagon head bolts "C" and locknut "D" in Fig. 19 also loosen locknut "D" in Fig. 16. Proceed to adjust square head bolts "E" in Fig. 19 and "E" in Fig. 16 equally until fence is in required position. Relock locknuts "D" in Fig. 16 and 19, hexagon head bolts "C" in Fig. 19 and socket head capscrew "A" in Fig. 19. This proceedure ensures the outfeed fence is kept parallel to the infeed fence.

The short extension of the outfeed fence is adjustable longitudinally to cater for various cutting circles on the fence side head. For adjustment loosen socket head capscrews "A" and "B" in Fig. 19, position fence with minimum clearance to cutting circle, then relock socket head capscrews "A" and "B".

Fence after Extra Head (Five Head Machine)

This fence is fitted to the bedplate on the rear table and has a total lateral adjustment of $\frac{1}{2}$" (6mm). The fence moves longitudinally with the bedplate to give minimum clearance to the fifth head cutting circle. To adjust fence laterally loosen hexagon head bolts "F" in Fig. 16, position fence as required ensuring that it is kept parallel to the outfeed fence and relock hexagon head bolts "F".

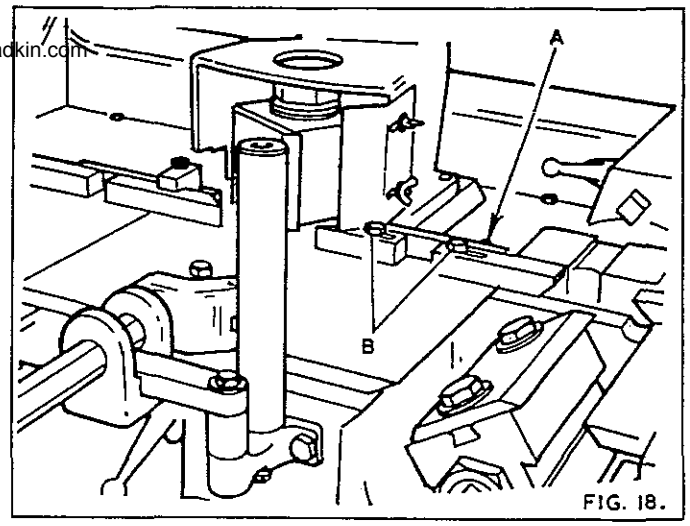


FIG. 18.

BEDPLATES

Renewable steel bedplates are fitted throughout the entire length of the machine.

Fixed Bedplate before Feed Works

This bedplate is secured to the infeed table before feed works and requires no further attention.

Fixed Central Infeed Table Bedplate

This bedplate requires no further attention.

Fixed Bedplate after Feed Works

This bedplate requires no further attention.

Adjustable Bedplate before Bottom Head

This bedplate has 1" (25mm) adjustment to allow for varying sizes of cutting circle. A 1" (25mm) wide removable packing piece is also provided.

Adjustable Fence Side Head Bedplate

This bedplate has 7/8" (22mm) adjustment to allow for varying sizes of cutting circle

Adjustable Front Side Head Bedplate

This bedplate is attached to the front side head and moves laterally with the head. It also has an independent movement of $1\frac{1}{4}$" (32mm).

Bedplate below Bottom Head

This bedplate requires no further attention.

Bedplate for Extra Head (5 Head Machine)

This bedplate has $2\frac{1}{2}$" (64mm) adjustment to allow for varying sizes of cutting circle. $2\frac{1}{2}$" (64mm) and $1\frac{1}{4}$" (32mm) removable packing pieces are also provided.

Bedplate after Extra Head

This bedplate is secured to the fifth head slide bracket and is adjustable longitudinally with the table to the size of cutting circle.

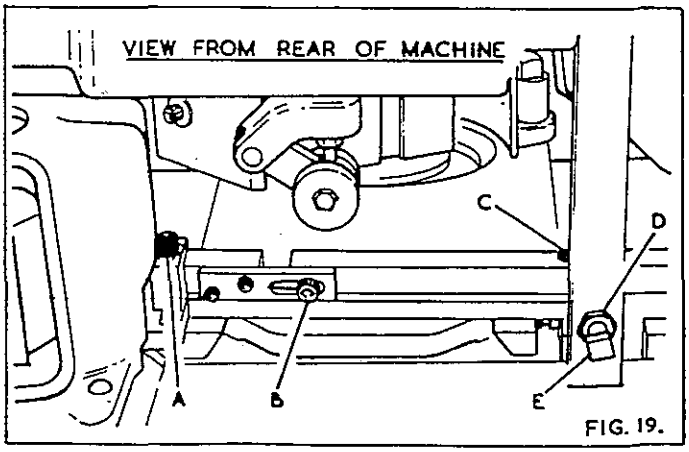


FIG. 19.

Instructions to Change Feed Rollers

To change feed rollers the undermentioned procedure should be followed:-

1. Remove feed works drive cover at rear of machine then loosen aerotight nuts and washers "B" in Fig. 20 and remove.
2. Extract split link "C" remove chain. Proceed to loosen socket head capscrews "D" and remove chain tensioner assembly "E".
3. Remove drive gears "F" and "G" complete with spacers behind gears "G". Proceed by extracting split link "H" removing chain "I" and sprockets "J".
4. Loosen four round head screws holding infeed table visor and remove visor. Remove dust caps "A" in Fig. 21 and proceed to loosen socket head capscrews "B" in Fig. 21. Drift front sideframe "C" from dowels by means of hide faced mallet or similar tool.
5. Raise feed rollers to top position by means of handwheel "D" in Fig. 21. Loosen socket head capscrew "A" in Fig. 22 then lower feed rollers by handwheel "D" in Fig. 21 down until they rest on piece of stock which should be placed beneath feed rollers to take weight.
6. Remove feed roller pivot shaft "B" in Fig. 22 by drifting from the rear of machine, then continue by removing circlips "C" and driving pins "D".
7. Top feed roller housing assembly "E" can now be removed from machine.
8. Proceed with bottom rollers by loosening hexagon head bolts "A" in Fig. 23 and removing infeed fence "B". Loosen socket head capscrews "C" and remove feed roller retaining bar "D" taking care not to lose two tension springs.
9. Loosen socket head capscrews "E" and remove bedplate "F" before feed rollers, bedplate "G" between feed rollers and bedplate "H" after feed rollers.
10. Lift feed rollers "I" and "J" vertical until the bearing blocks at the fence side clear dowels, then remove from machine.
11. At this stage the bottom feed rollers can be changed by loosening countersunk head screws and washers "G" in Fig. 22 then removing bearing blocks "K". The feed rollers can now be removed from their respective shafts.
12. To remove the top feed rollers from housings, loosen hexagon head screws and washers "I" in Fig. 22 and remove shafts "J" by pressing from same end as circlip held bearings. Note position of spacers on shafts to ensure correct reassembly. The rollers can now be removed.

To replace feed roller assembly reverse above procedure.

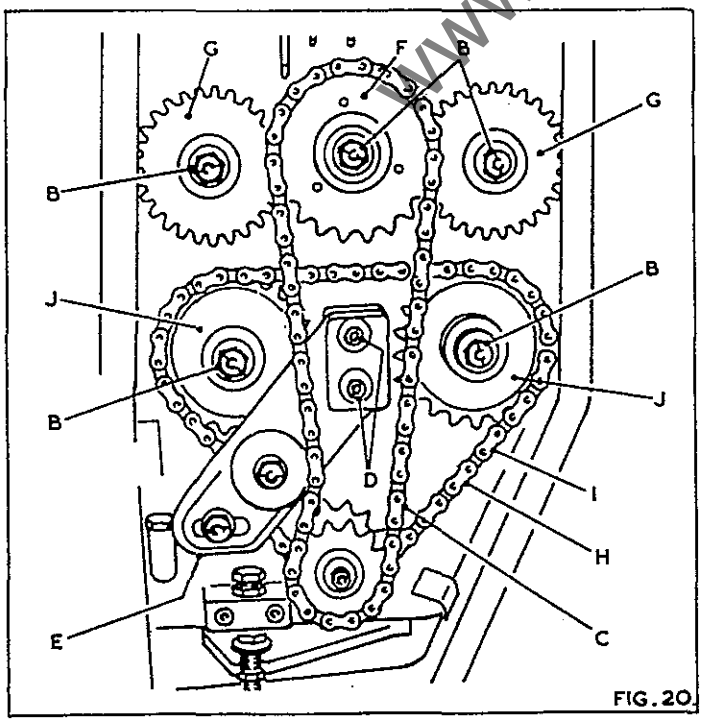


FIG. 20.

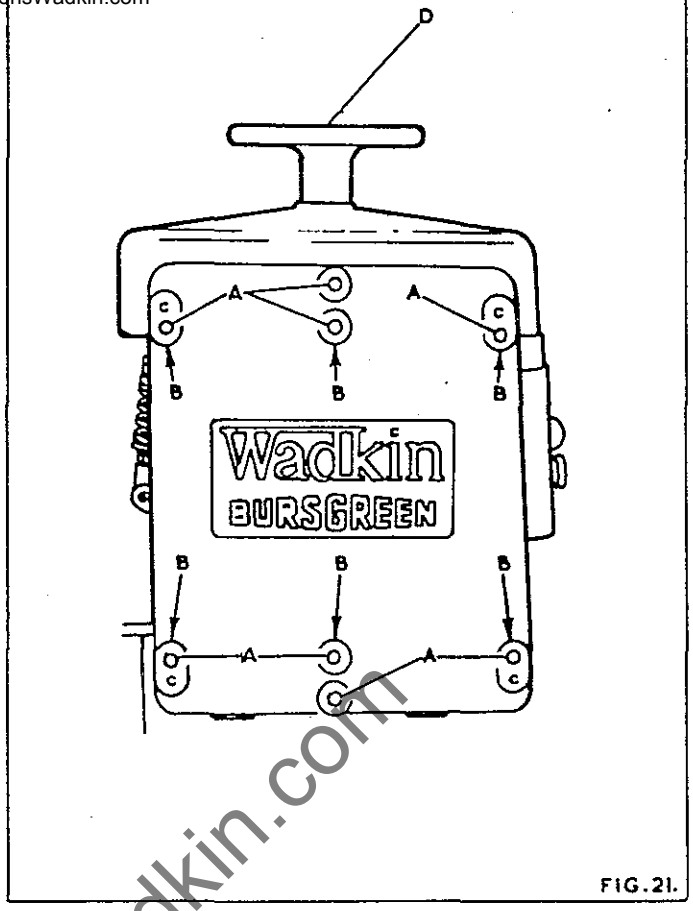


FIG. 21.

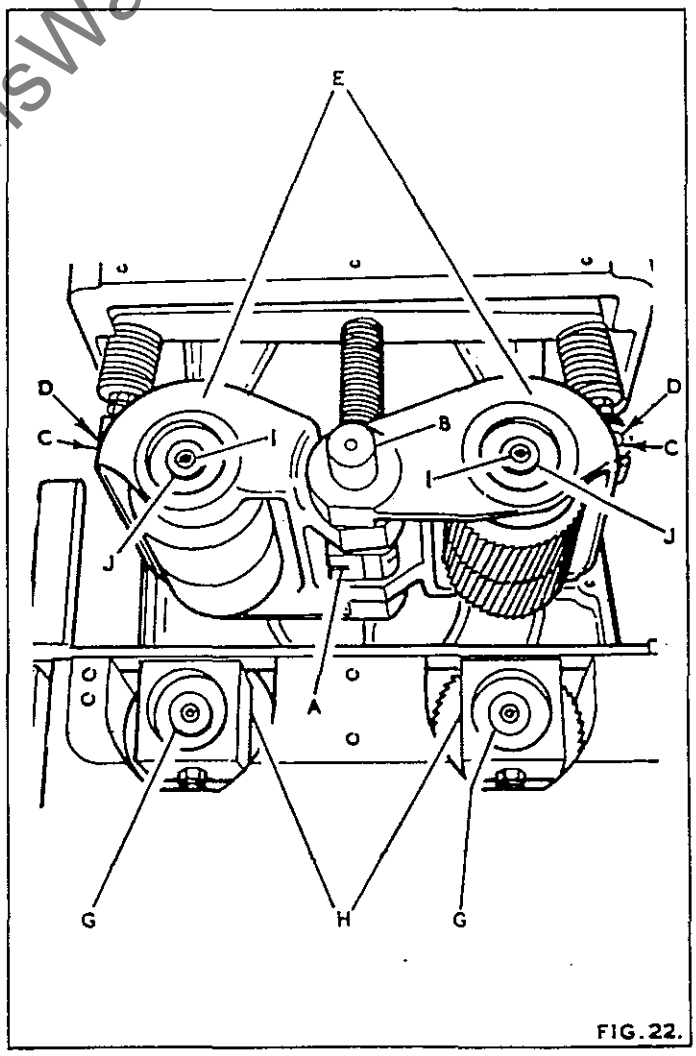


FIG. 22.

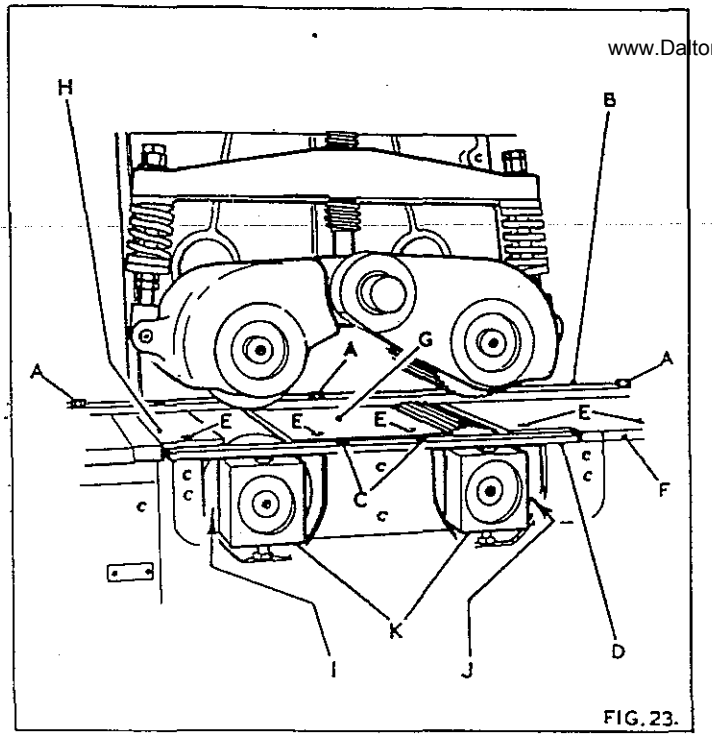


FIG. 23.

EXTRA

A 9" dia alloy slitting saw can be fitted to extra head as shown in Fig. 24.

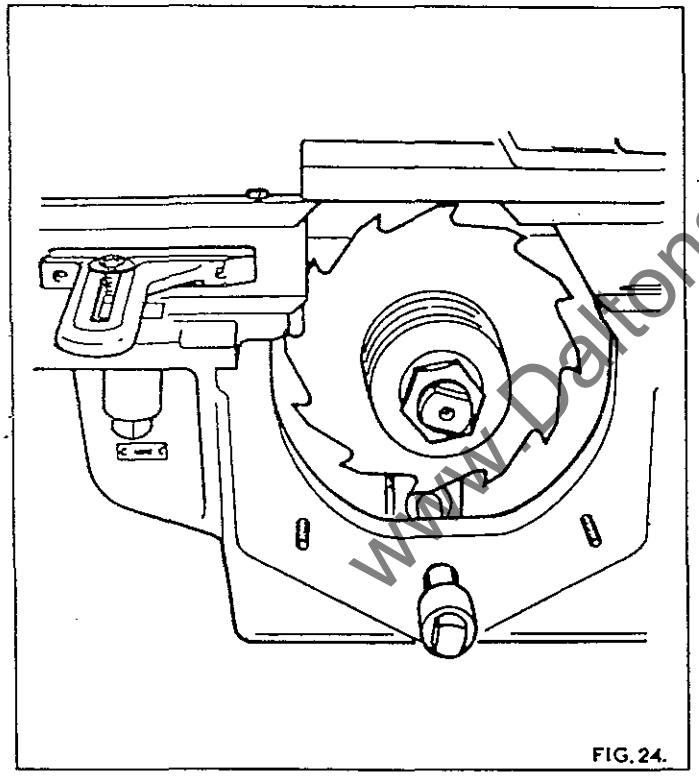


FIG. 24.

Shaping Cutters

When shaping cutters for any mould on any type of cutterhead or slotted collars it is important that the correct allowance is made to the depth of form of the cutter.

Fig. 25 shows the projections of the cutter to produce a simple rebate. For example using the 3½"square cutterblock, to produce a ¾" (19mm) deep rebate the cutter must have a depth of form of 7/8" (22mm) this being due to the angle at which the cutter strikes the work on the line "A.A." When a shaped mould is required to be cut it is necessary to plot out the form of the cutter; this is shown in Fig. 26.

It is important when selecting blanks from which to make the cutter that they have the minimum necessary overhang. Also, a blank as near the shape and width as possible should be selected so that there will be less waste and less chance of overheating cutters when grinding.

The minimum cutting circle is fixed to give the necessary clearance for the bolt head when working with straight irons only.

The cutting angle which is normally 35° is shown at "B" in Fig. 25 and the cutting angle at "C" this angle varies with the size of the cutterblock and the depth of the mould.

To obtain the correct cutter form for a shaped mould without using the moulders rule, it is necessary to plot this out as shown.

First the square block and cutter at minimum cutting circle are drawn out at "Y" in Fig. 26 The radius of the minimum cutting circle is drawn around to the centre line and divided up by the lines A, B, C, D and E, into either 1/16" (2mm) of 1/8" (3mm) according to the size and intricacy of the shape, these lines are then struck round from the centre line radially to the face of the cutter.

At "X" the lines A1, B1, C1, D1 and E1 are carried across as shown, also at "W" the mould is produced exactly as at "Z" and divided up the same, the lines 1, 2, 3, 4 and 5 which are from the points where lines A, B, C, etc. intersect the edge of the mould, are then drawn across to "X" thus E1 is cut by 1, D1 by 2 etc. The points of intersection are joined as shown thus giving the correct projected form of the cutter.

This takes up considerable time to do for each shape of cutters required, and can be very much reduced by using the moulders rule as shown in Fig. 27. This is a graph on which the form can be plotted and automatically gives the necessary allowance on the depth of form.

When the mould is to be a standard a template should be made to the projected form to which the cutters can be shaped when the job repeats. This will ensure uniformity on all future runs.

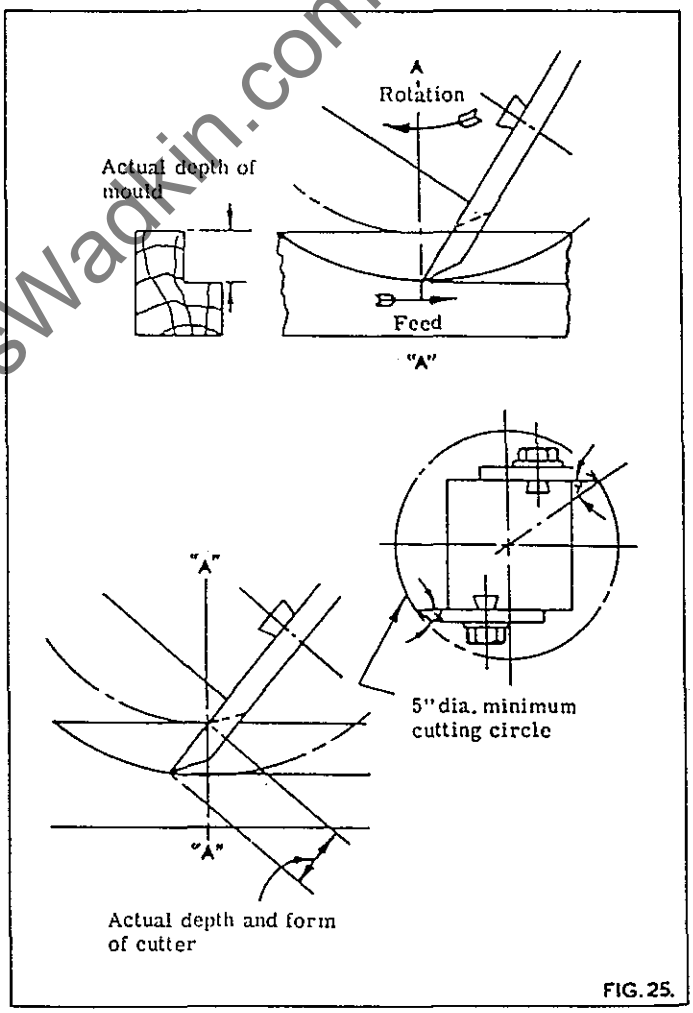


FIG. 25.

Moulders Rule

A permanent moulders rule can be made by the customer in sheet brass and aluminium and will then be handy to use in the workshop.

To plot the form of a cutter by use of the moulder's rule it is necessary to draw the full size shape of the mould on tracing paper and rule 1/8" (3mm) squares as shown in Fig. 27. This is then placed alongside the moulders rule and projected across, this will give a series of dots which must be joined to give the form of the cutter. The cutter blank chosen must be wide enough to give at least 1/8" (3mm) overlap beyond the edge of the mould.

Cutter Grinding

Cutters should be ground carefully avoiding any overheating as this will crack or soften cutters so that they will not stand up to the work.

A solution of soluble oil and water should be handy and the cutters should be held in this occasionally to cool them. This solution will also prevent rusting. Cutters should never be allowed to become discoloured during grinding as this indicates overheating.

The correct cutting angle of 35° for most cutters should be maintained as this gives the correct strength of the cutting edge. When hollow grinding is carried out, the angle of the cutting edge, should be kept as near 35° as possible, see Fig. 28 (A) and (B).

Hollow grinding is recommended whenever possible, as a keen cutting edge is more easily obtained when hand lapping. When lapping or stoning a flat ground cutter, a good edge is more difficult to obtain due to the tendency to rock the stone and leave a convex face.

Good open grain wheels should be used and should not be allowed to become glazed as this will cause excessive heat.

About 12" (304mm) diameter wheels used down to 10" (254mm) give the best radius for a hollow grind and an economic life 8" (204mm) wheels used down to 6" (153mm) leave the grind too hollow.

Tungsten carbide tipped cutters should be purchased to the shape required and re-ground only as necessary. In this case cutters should be relieved at 35° on the steel position and the tips finished with a diamond impregnated wheel at 45° as shown, using only very light cuts to prevent cracking. The diamond wheel should not be allowed to touch the steel backing as this clogs the wheel and causes excessive heat. Where available a copious flow of coolant should be used. They may be honed with a diamond hand lap, as the cutter becomes dull, until a regrind is necessary. A thin oil lubricant should be used on the hand lap.

All cutter blanks sent out by us are ground only, and, if used as chippers or rebate cutters, require honing with a 142 carborundum slip stone to produce at razor sharp edge before commencing to cut. This will ensure a good finish on the wood and an easy feed. Dull cutters give a poor, rough and plucked out finish, and make it difficult to feed the job past the cutters. Honing should be done by a reciprocating or rotary motion on the cutter, using a little paraffin to give "Bite" to the stone. The honing stone is a much finer grit than the grinding wheel and leaves a sharp keen edge. A number of honing stones of different shapes, e.g. round sticks or square sticks will be found helpful in honing shaped cutters.

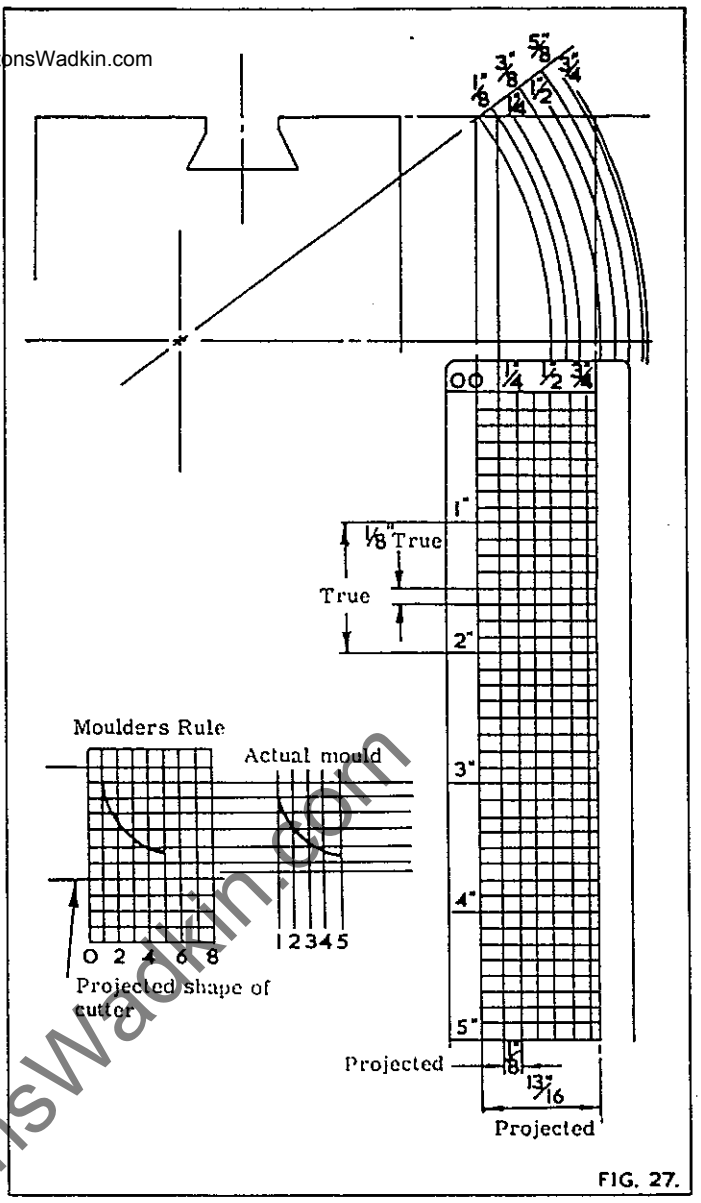


FIG. 27.

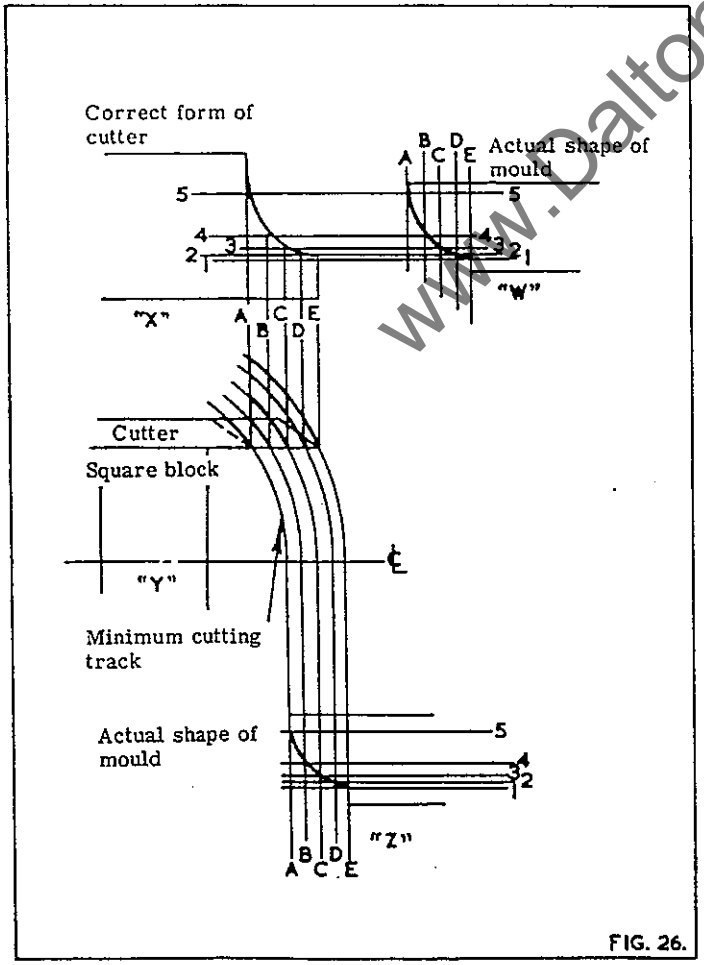


FIG. 26.

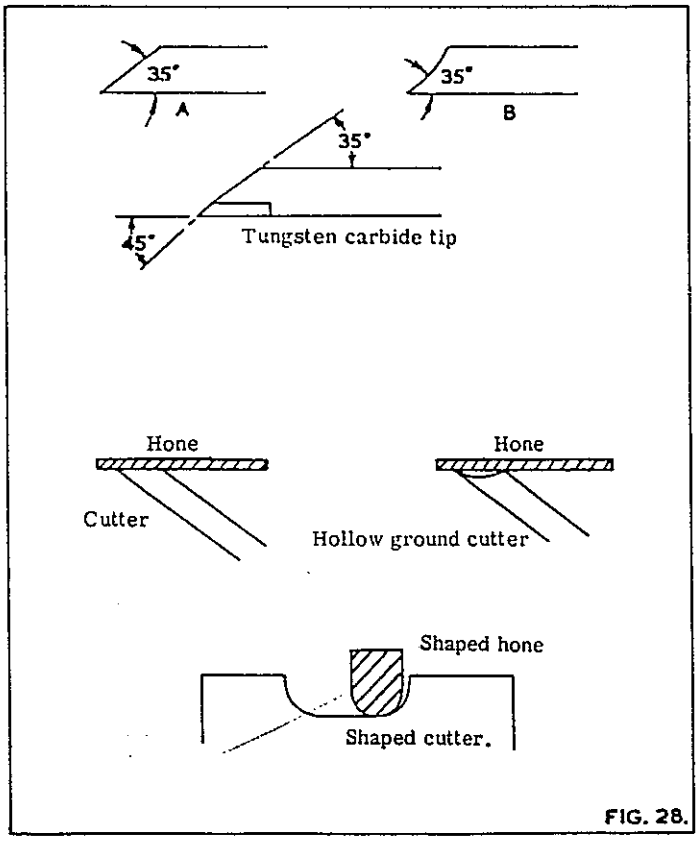
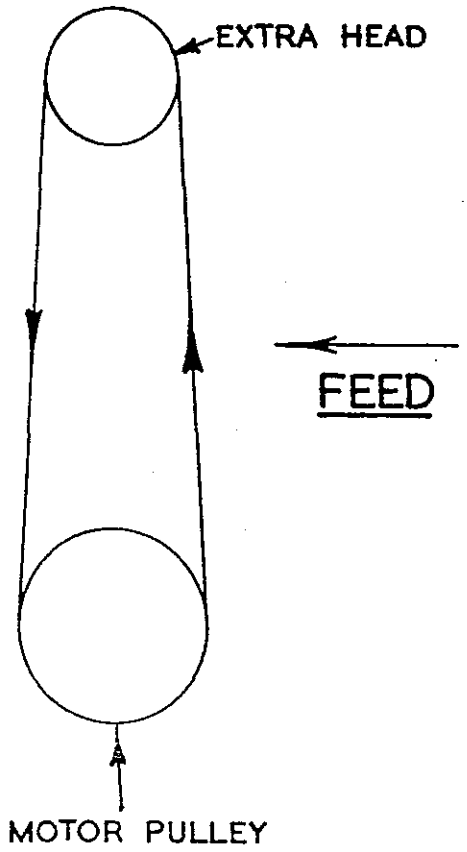


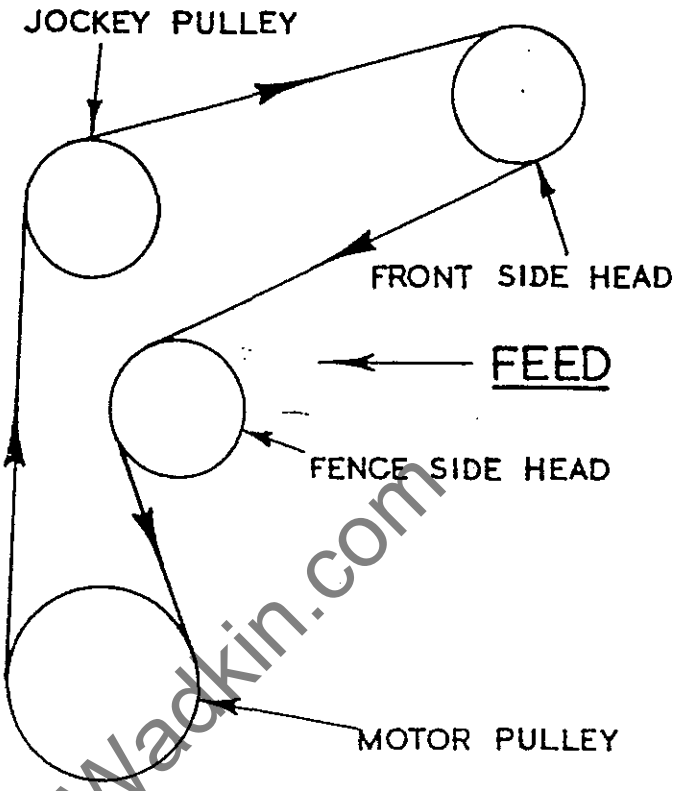
FIG. 28.

BELT DRIVE LAYOUT

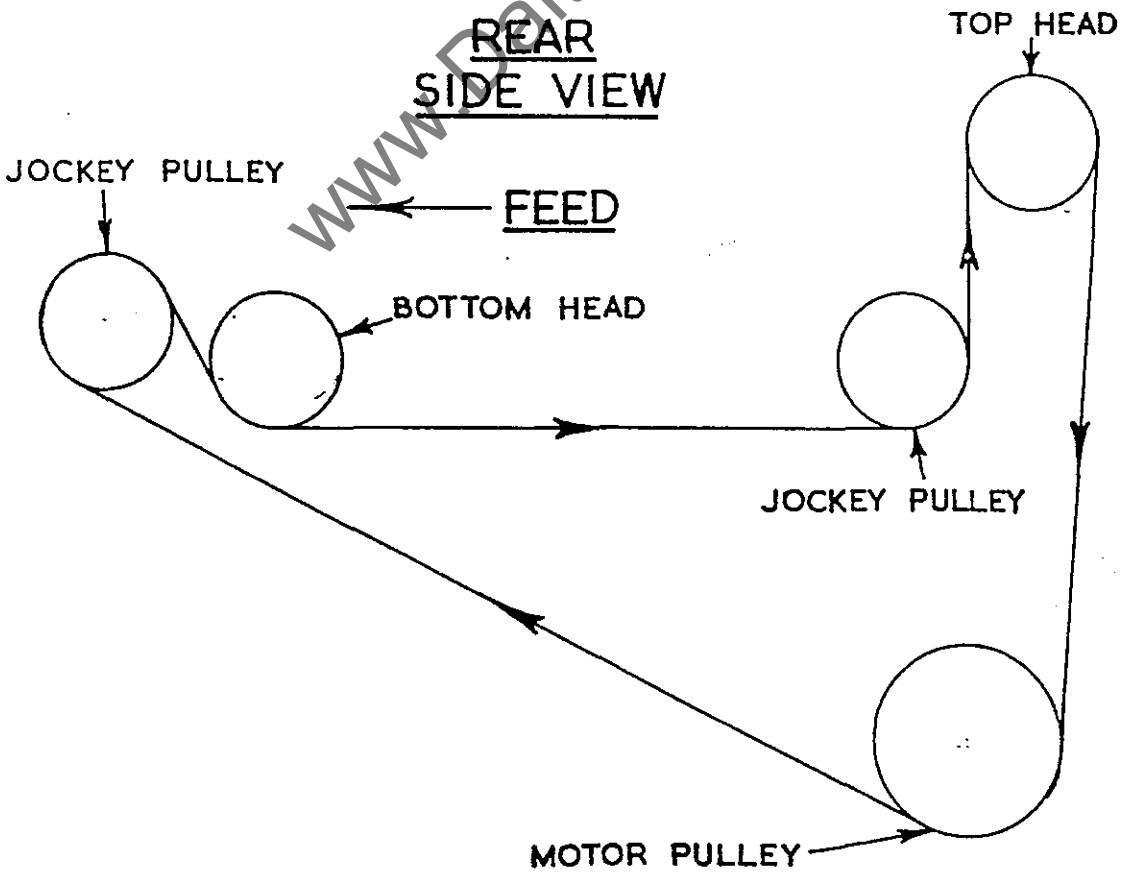
REAR SIDE VIEW

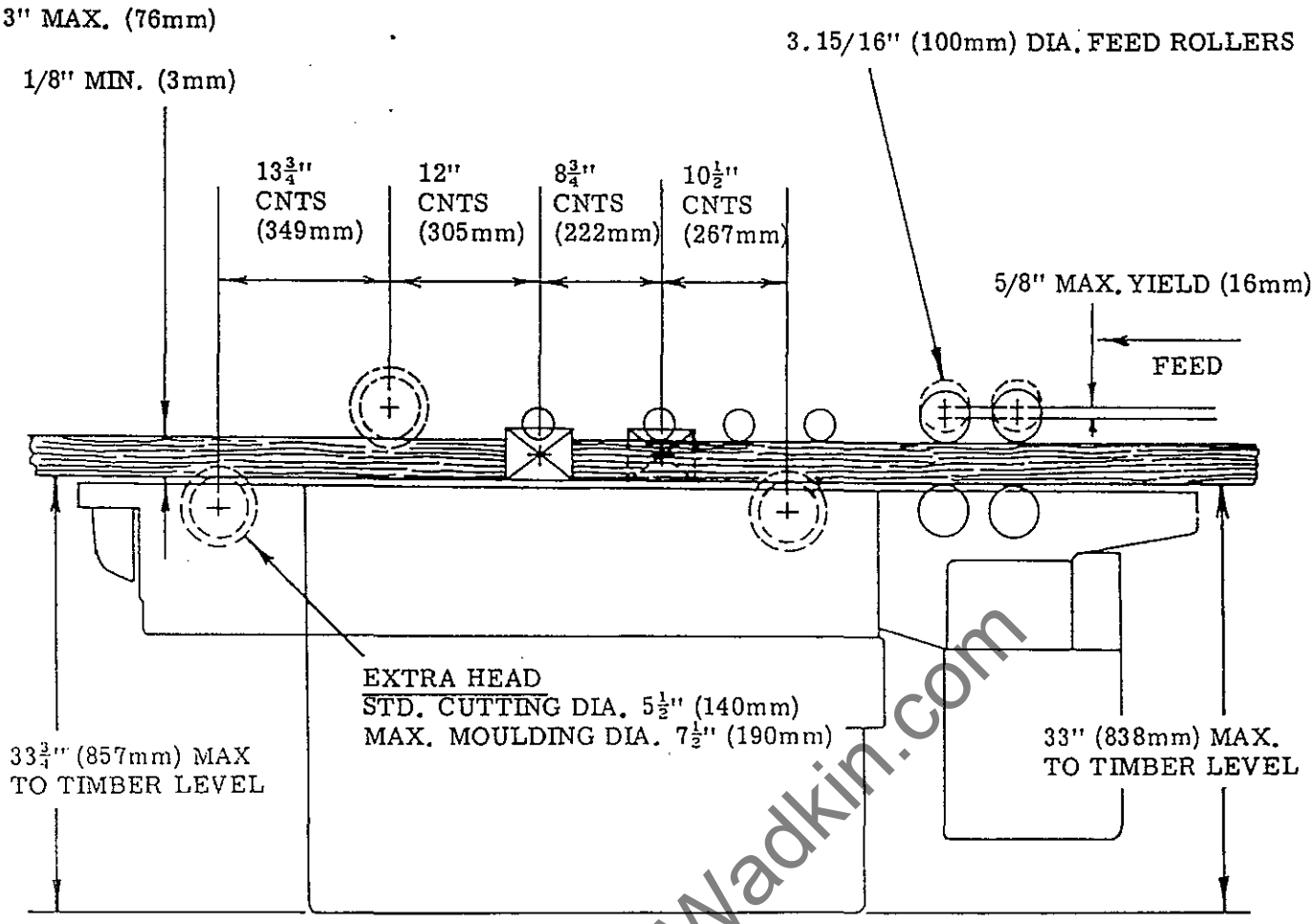


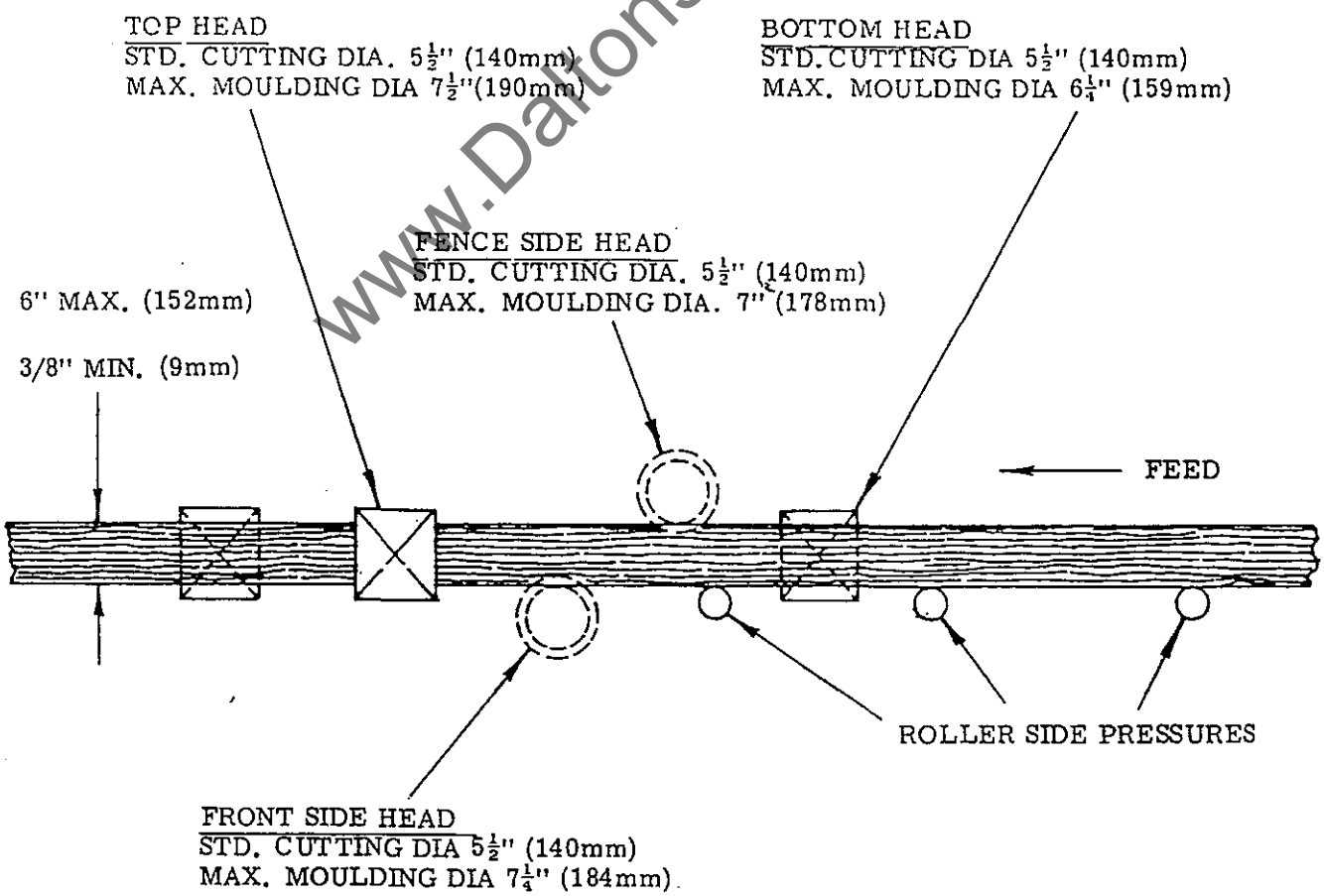
PLAN VIEW



REAR SIDE VIEW







PLAN VIEW

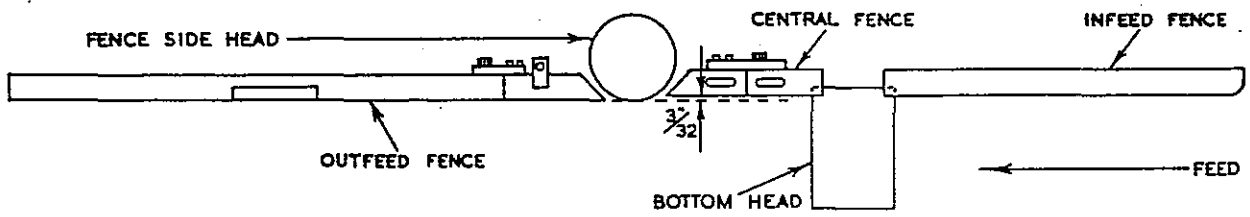


FIG. 29.

FOUR HEAD MACHINE

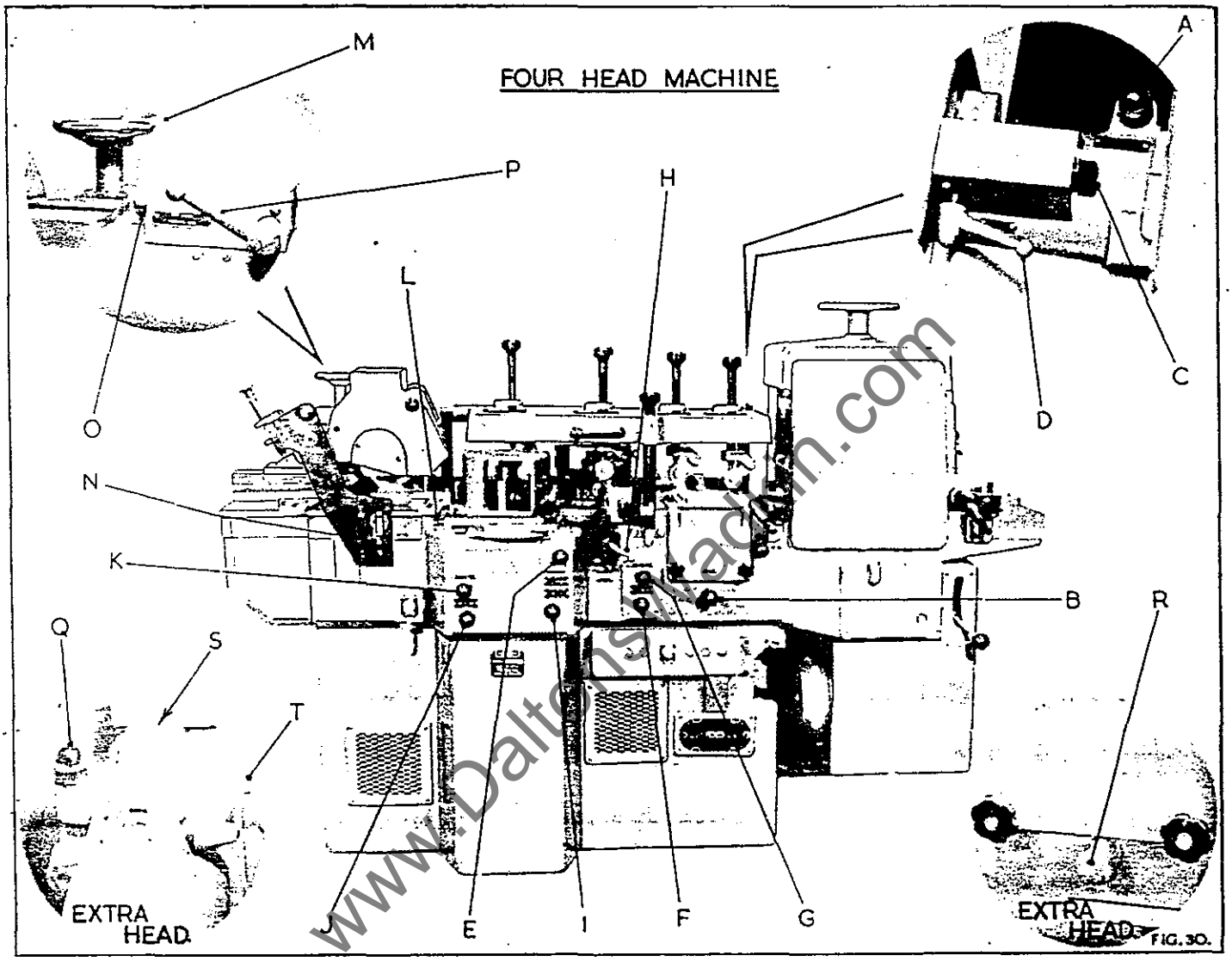


FIG. 30.

Upon leaving the works all machines have the central and outfeed fences pre-set to the infeed fence (as in Fig. 29.) which requires no adjustment. These fences when altering, must be kept parallel to the infeed fence, which can be accomplished by placing a straight edge along the fences.

To set the machine to the shape and size of mould required the following procedure should be followed:-

1. Work along the machine starting at first bottom head. Position cutterblock vertically by means of handle "A" in Fig. 30. until minimum cutting circle lines up with central bedplate. Lock head vertically by handle "B". Lateral movement is made through handle "C" which in turn is locked by handle "D".

Note:- Ensure locks are free before making either vertical or lateral adjustment.

2. Having set bottom head, adjustment is now carried out on fence side head. Set cutting circle in line with outfeed fence according to stock being worked. Vertical adjustment through the handle "E" is locked by handle "F". Lateral adjustment through handle "G" is locked by handle "H".

Note:- Ensure locks are free before making either vertical or lateral adjustment.

3. Similar procedure is then carried out on front side head. Handle "I" for vertical adjustment is locked by handle "J". Lateral movement is through handle "K" which is in turn locked by handle "L".

Note:- Ensure locks are free before making either vertical or lateral adjustment.

4. Having set front side head proceed to adjust top head to suit stock. Vertical adjustment by means of handwheel "M" is locked by handle "N". Lateral movement through handle "O" which in turn is locked by handle "P".

Note:- Ensure locks are free before making either vertical or lateral adjustment.

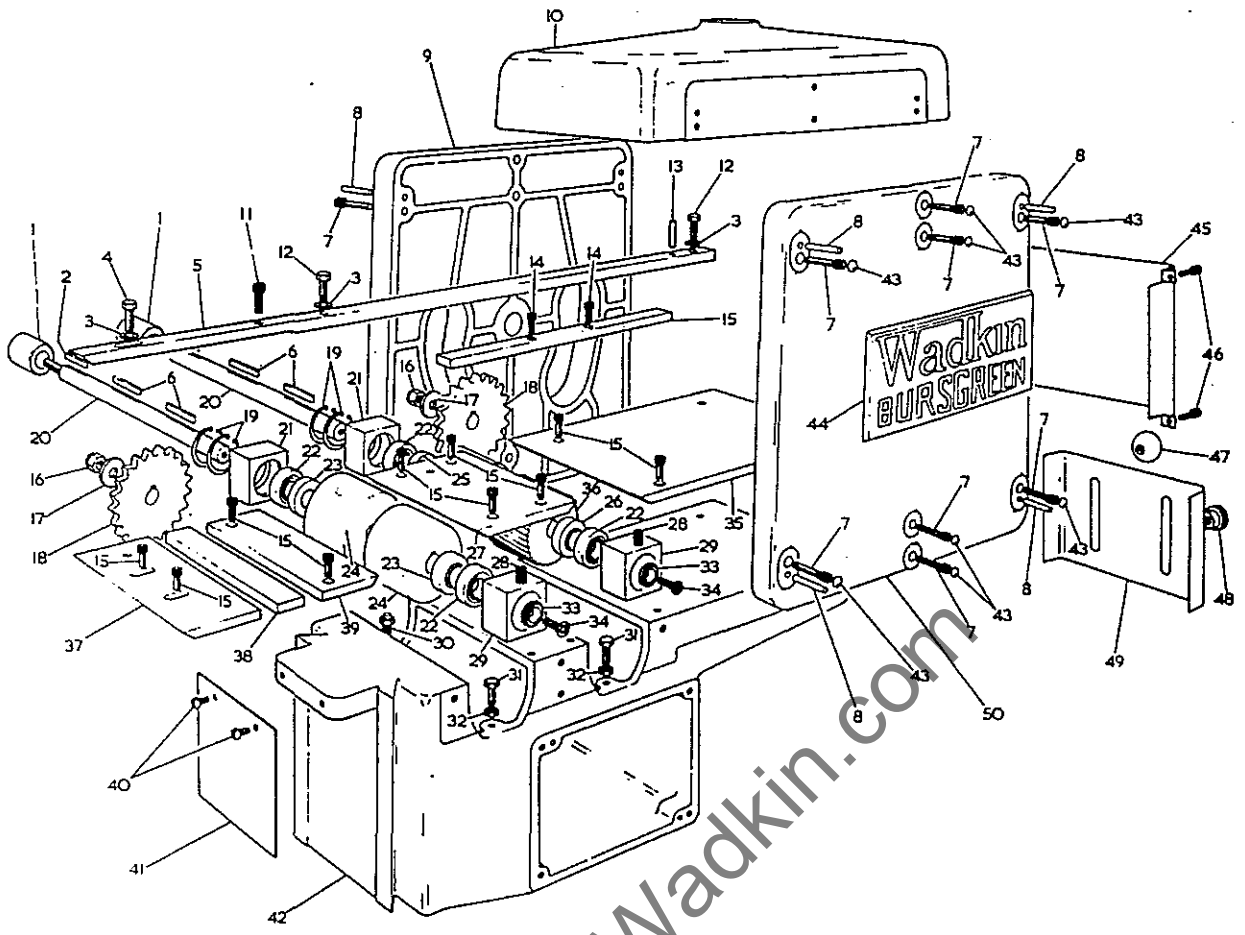
5. On all machines an extra head can be fitted as an optional extra. When fitted, adjust as follows:-
Vertical adjustment by handle "Q" is locked by handle "R". Lateral movement through handle "S" is in turn locked by handle "T".

Note:- Ensure locks are free before making either vertical or lateral adjustment.

6. Pressures are used along the machine to keep stock being worked, well up against either the fence or bedplate. They must be set to suit the stock being worked as previously described.

7. Feed rollers should be adjusted to correct pressure on the stock so as to give a smooth feeding action throughout the machine as previously described.

8. Before commencing to start the machine carefully check to ensure that all the cutters are tight and secure in their respective cutterblocks. Inch stock through feed rollers checking that they have lifted to the horizontal position and are driving over full face of stock. Check that the pressures and fences are all set correctly, before commencing to make the first mould.

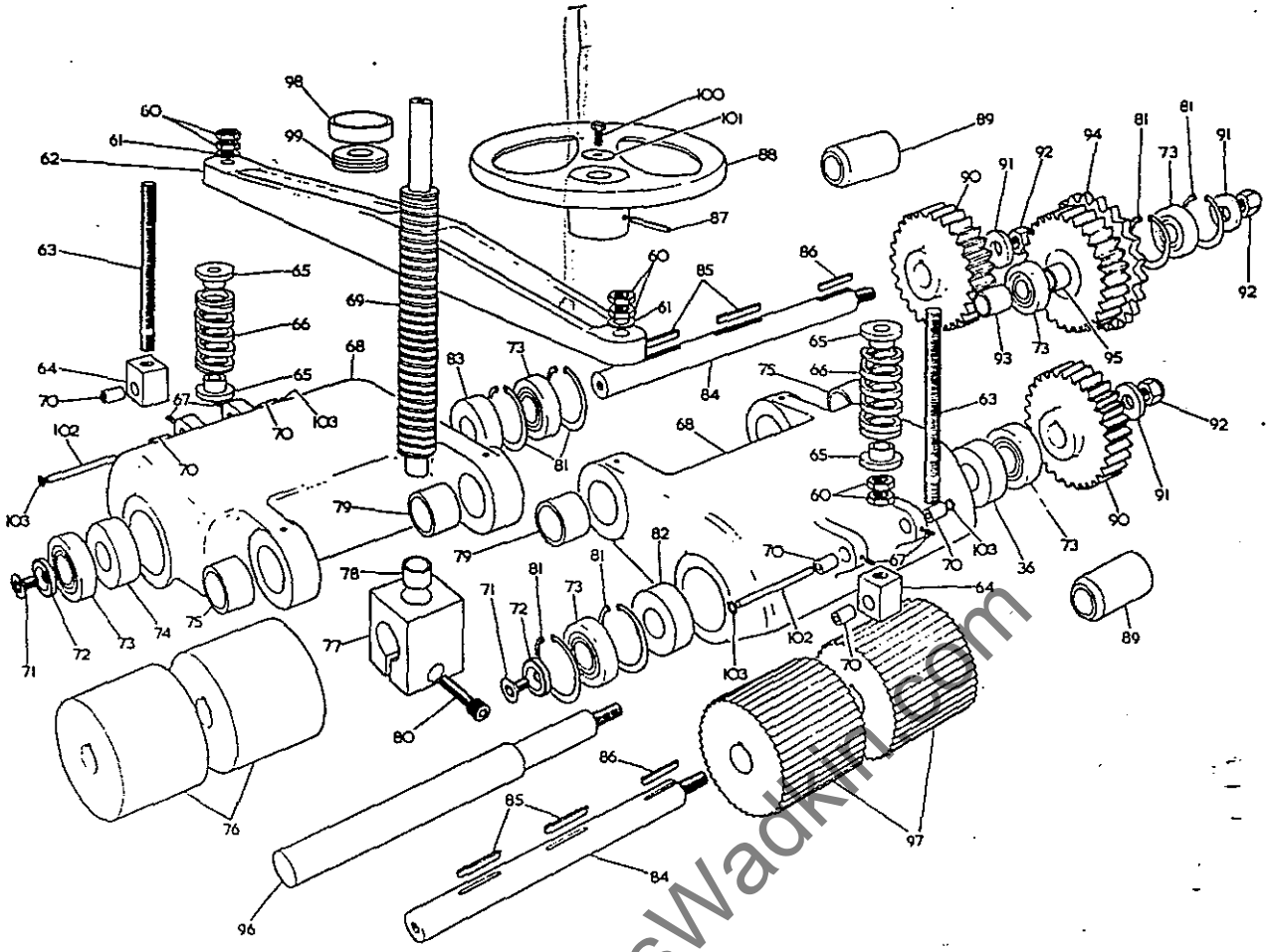


NOTE:-

When ordering replacement parts quote part no. and serial number of the machine.

INFEED TABLE ASSEMBLY

Ref. No.	Part No.	No. Off	Description
1	A-1056/69	2	Bottom feed roller distance piece
2		2	$\frac{1}{4}$" wide x $1\frac{1}{4}$" long key
3		3	3/8" BSF Washer
4		1	3/8" whit x $1\frac{1}{4}$" long hexagon head bolt
5	B-1056/170	1	Infeed fence
6		4	$\frac{1}{4}$" wide x $1\frac{1}{2}$" long key
7		14	3/8" whit x $1\frac{3}{4}$" long socket head capscrew
8		8	3/8" dia x 2" long fluted dowel
9	D-1056/4	1	Rear sideframe for feedworks
10	D-1056/5	1	Top cover for feedworks
11		1	3/8" whit x 1" long socket head capscrew
12		2	3/8" whit x $1\frac{3}{4}$" long hexagon head bolt
13		1	3/8" dia x $1\frac{1}{4}$" long dowel
14		11	5/16" whit x $1\frac{1}{2}$" long socket head grubscrew
15	B-1056/287	1	Bottom feed roller spring block
16		2	$\frac{1}{2}$" whit aerotight nut
17	A-1056/343	2	Washer for feed roller shaft
18	B-1056/27	2	Bottom feed roller sprocket
19	No. 5000/206	4	52mm Truarc internal circlip
20	B-1056/134	2	Bottom feed roller shaft
21	B-1056/93	2	Bottom roller bearing block with circlip groove
22	SKF-6205-2RS	4	Sealed for life bearing
23	A-1056/72	2	Feed roller retainer (23/32" wide)
24	B-1056/301	2	Plain feed roller
25	A-1056/72	1	Feed roller retainer (19/32" wide)
26	A-1056/72	1	Feed roller retainer (27/32" wide)
27	B-1056/161	1	Centre bedplate for infeed table
28	A-1810/74	2	Spring for bottom feed roller block
29	B-1056/93	2	Bottom roller bearing block
30	A-1056/329	2	Feed roller adjustment screw
31		2	3/8" whit x $1\frac{1}{2}$" long hexagon head bolt
32		4	3/8" whit locknuts
33	A-1056/370	2	Washer for feed roller shaft
34		2	$\frac{1}{2}$" whit x $\frac{3}{4}$" long countersunk socket head screw
35	B-1056/160	1	Front bedplate for infeed table
36	B-1056/131	2	Serated feed roller
37	B-1056/163	1	Adjusting bedplate for infeed table
38	A-1056/169	1	Packing piece for infeed table bedplate
39	B-1056/162	1	Fixed rear bedplate for infeed table
40		2	$\frac{1}{4}$" whit x $\frac{1}{2}$" long hexagon head bolt
41	B-1056/192	1	Deflector for infeed table
42	E-1056/1	1	Infeed table
43		8	Plastic caps for 3/8" whit socket head capscrew
44	B-S-115	1	Nameplate
45	C-1056/181	1	Cover for feedworks
46		4	$\frac{1}{4}$" whit x $\frac{1}{2}$" long socket head capscrew
47		1	$1\frac{1}{4}$" dia x 3/8" whit bore plastic ball
48	A-1029/59	2	Knurled knob
49	C-1056/182	1	Visor for feedworks
50	D-1056/3	1	Front sideframe for feedworks
51		2	$\frac{1}{4}$" spring washer

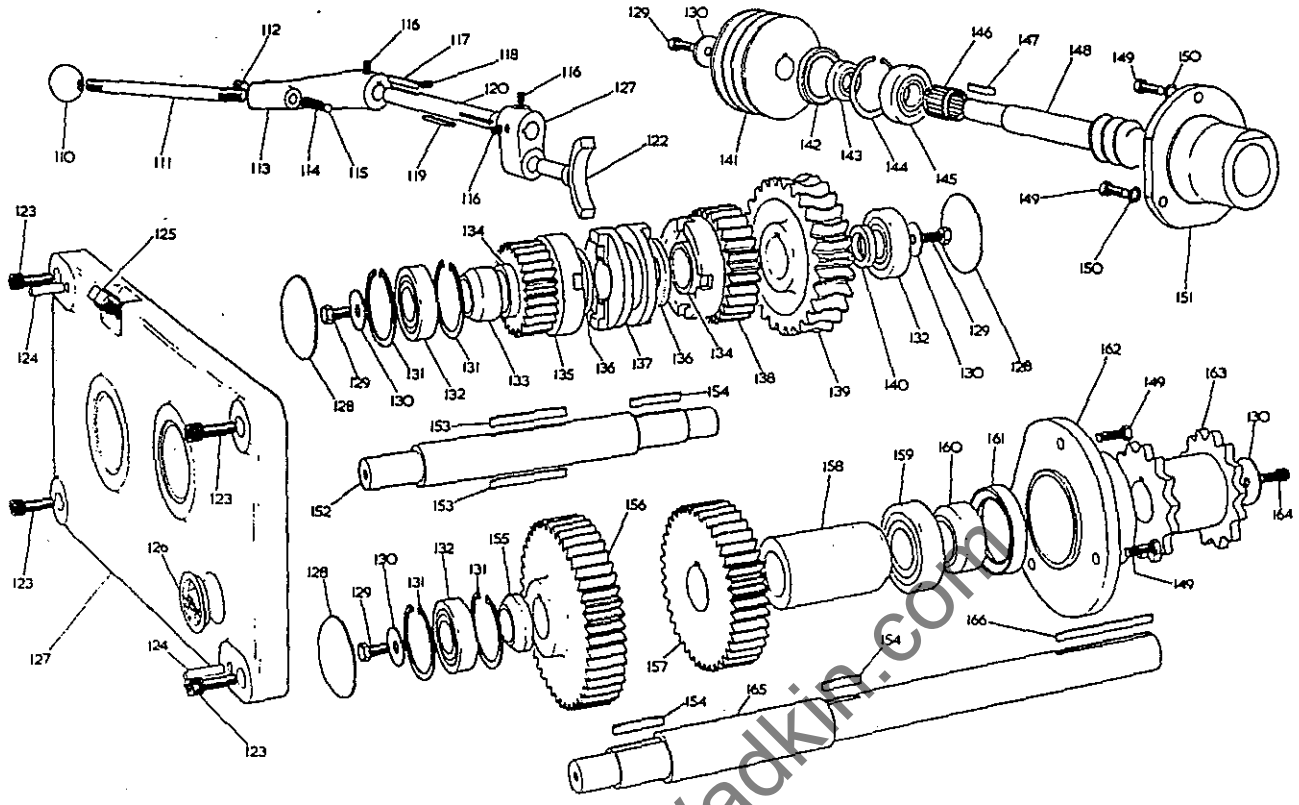


FEED WORKS ASSEMBLY

Ref. No.	Part No.	No. Off	Description
60		8	½" whit Locknut
61		2	½" washer
62	C-1056/7	1	Feed roller rise and fall bracket
63	A-1056/159	2	Feed roller spring stud
64	A-1056/154	2	Top feed roller spring block
65	A-1056/289	4	Feed roller spring seating
66	A-1033/300	2	Feed roller spring
67		4	¼" whit x 3/8" long socket head grubscrew
68	D-1056/6	2	Feed roller pivot arm
69	B-1056/130	1	Feed roller rise and fall screw
70	A-1056/395	6	Feed roller shear bush
71		2	½" whit x 1" long countersunk socket head grubscrew
72	A-1056/370	2	Washer for feed roller shaft
73	SKF-6205-2RS	5	Sealed for life bearing
74	A-1056/72	1	Feed roller retainer (¾" wide)
75		2	1¼" bore x 1½" o/d x 1½" long oilite bush
76	B-1056/301	2	Plain feed roller
77	B-1056/135	1	Feed roller rise and fall screw support
78		1	¾" bore x 1" o/d x ½" long oilite bush
79		2	1¼" bore x 1½" o/d x 1½" long oilite bush
80		1	½" whit x 1½" long socket head capscrew
81	5,000/206	6	52mm Truarc internal circlip
82	A-1056/72	1	Feed roller retainer (15/16" wide)
83	A-1056/72	1	Feed roller retainer (5/8" wide)
84	B-1056/133	2	Top feed roller shaft
85		4	¼" wide x 1½" long key
86		2	¼" wide x 1¼" long key
87	No. 4	1	Taper pin
88	3B	1	Handwheel (8" dia)
89	A-1056/245	2	Top feed roller distance piece
90	B-1056/29	2	Feed roller drive gear
91	A-1056/343	3	Washer for feed roller shaft
92		3	½" whit aerotight nut
93	A-1056/70	1	Distance piece (1.7/16" long)
94	B-1056/30	1	Feed roller centre gear
95	A-1056/70	1	Distance piece (¾" long)
96	B-1056/132	1	Feed roller pivot bar
97	B-1056/131	2	Serated feed roller
98	A-1056/71	1	R & F screw thrust race shroud
99	W ¾" B	1	Hoffman thrust race
100		1	¼" whit x ¾" long hexagon head bolt
101	A-1033/280	1	Washer
102	A-1056/394	4	Feed roller shear pin
103	5555 - 18	4	3/16" grip rings

NOTE:-

When ordering replacement parts quote part no. and serial number of the machine.

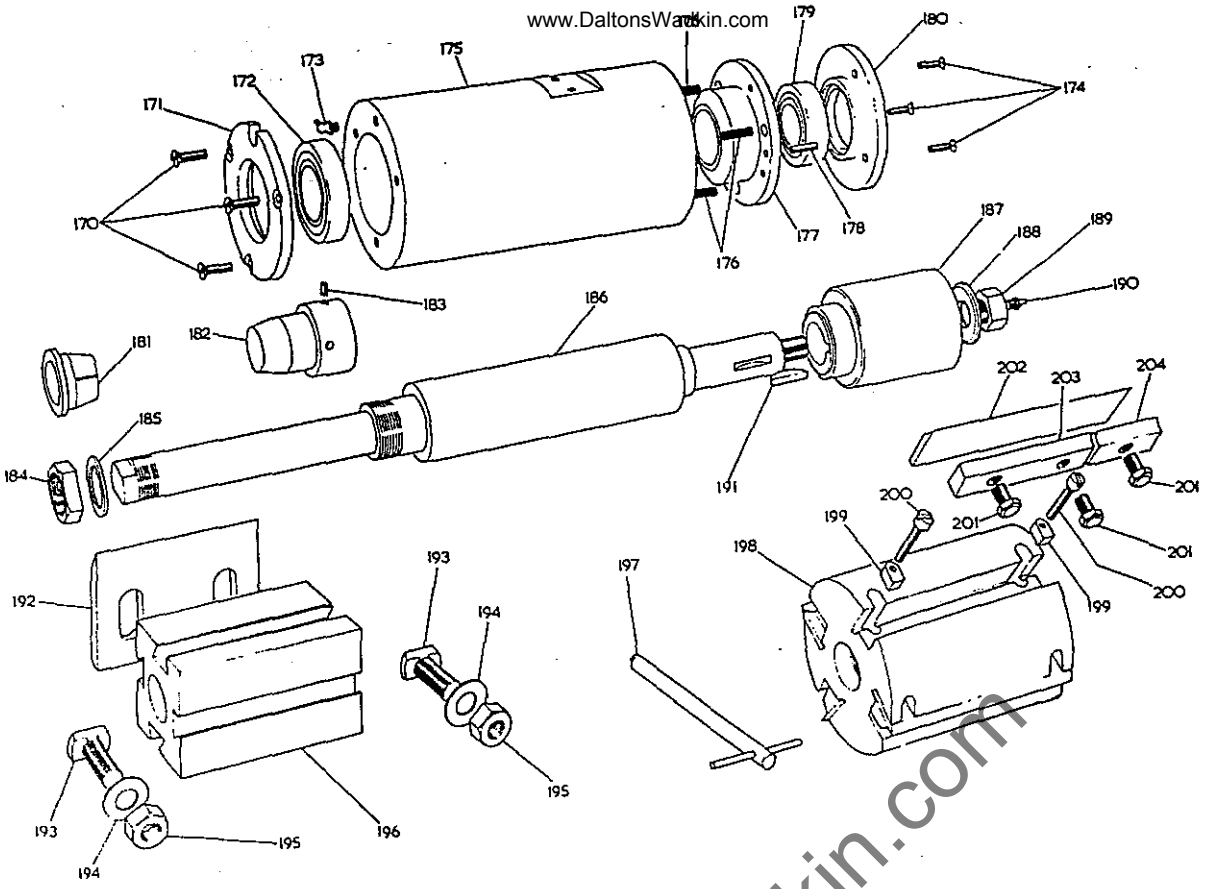


GEARBOX ASSEMBLY

NOTE:-

When ordering replacement parts quote part no. and serial number of the machine.

Ref. No.	Part No.	No. Off	Description
110		1	1½" dia plastic ball, ½" whit
111	A-1810/73	1	Selector handle stud
112		1	½" whit x 5/8" long socket head grubscrew
113	B-1810/30	1	Gearbox selector handle
114	A-1810/74	1	Selector handle compression spring
115		1	3/8" dia steel ball
116		3	1/8" gas x 3/8" long socket head grubscrew
117		1	3/16" wide x 1" long key
118		1	1/8" gas x ½" long socket head grubscrew
119		1	3/16" wide x 1" long key
120	A-1056/311	1	Gearbox handle shaft
121	B-1810/31	1	Gearbox selector arm
122	A-1810/32	1	Gearbox selector
123		4	3/8" whit x 1¼" long socket head capscrew
124		2	3/8" dia x 1¾" long fluted dowel
125		1	½" gas filler plug for gearbox
126	IC4610	1	Oil level window
127	C-1056/8	1	Gearbox lid
128		3	Welsh washer (2" dia)
129		4	5/16" whit x ¾" long hexagon head bolt
130	A-1031/70	5	Washer
131	5,000/185	4	47mm Truarc internal circlip
132	SKF 6204	3	Bearing for gearbox
133	A-1056/63	1	Gearbox input shaft distance piece (13/16" long)
134		2	1" bore x 1¼" o/d x 1½" long oilite bush
135	B-1056/23	1	20tooth input gear
136	A-1810/71	2	Gearbox layshaft distance piece
137	B-1810/68	1	Gearbox selector dog
138	B-1056/22	1	26tooth input gear
139	B-1056/324	1	Wormwheel for gearbox
140	A-1056/63	1	Gearbox input shaft distance piece (7/32" long)
141	B-1056/33	1	Gearbox pulley (50 cycle)
	B-1056/350 INA	1	Gearbox pulley (60cycle)
142	G42 x 52 x 4	1	Oil seal for worm shaft
143	A-1056/65	1	Worm shaft distance piece
144	5,000/206	1	52mm internal circlip
145	SKF 6205 INA	1	Bearing for worm shaft
146	NK30/20	1	Roller bearing for worm shaft
147		1	5/16" wide x 1½" long key
148	B-1056/324	1	Worm for gearbox
149		6	5/16" whit x 1" long hexagon head bolt
150		3	5/16" BSF washer
151	B-1056/19	1	Gearbox worm shaft bearing housing
152	B-1056/25	1	Gearbox input shaft
153		2	¼" wide x 2½" long key
154		3	¼" wide x 1¼" long key
155	A-1056/62	1	Gearbox output shaft distance piece (short)
156	B-1056/21	1	45 tooth output gear
157	B-1056/20	1	39tooth output gear
158	A-1056/61	1	Gearbox output shaft distance piece (long)
159	SKF 6206	1	Bearing for gearbox
160	A-1056/64	1	Gearbox output sprocket distance piece
	WB 2441	1	Weston oil seal
161	7739 R 4	1	Gearbox output shaft bearing housing
162	B-1056/112	1	Gearbox sprocket
163	B-1056/28	1	3/8" whit x 1" long socket head grubscrew
164		1	Gearbox output shaft
165	B-1056/26	1	5/16" wide x 2¾" long key
166		1	



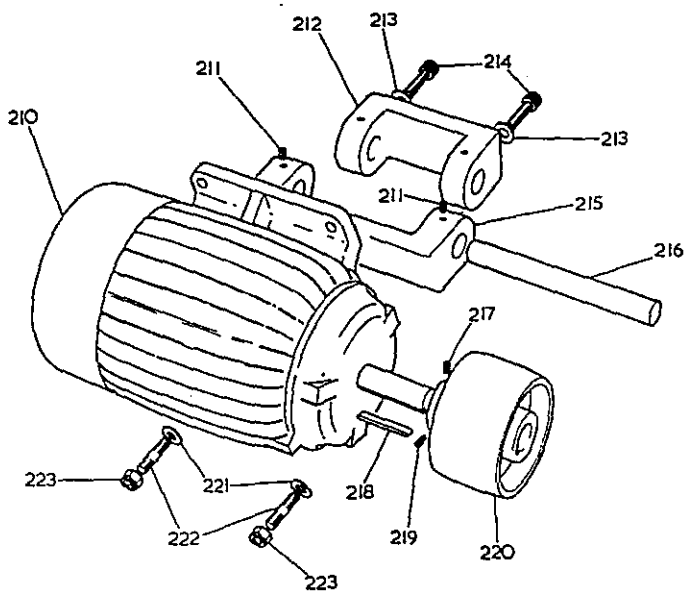
SPINDLE ASSEMBLY

NOTE:-

When ordering replacement parts quote part no. and serial number of the machine.

Ref. No	Part No.	No. Off	Description
170		12	5/16"whit x 1" long CSK head screw
		3	Extra Head "ditto"
171	B-1033/11	4	Thrust end dustcap
		1	Extra head "ditto"
172		4	Hoffman 145 bearing
		1	Extra head "ditto"
173		2	¼" BSF 35° angle grease nipple (Top and Bottom heads)
		1	Extra head "ditto"
		2	¼" BSF Straight grease nipple (Side heads)
174		12	¼" whit x 5/8" long countersunk head screw
		3	Extra head "ditto"
175	C-1056/14	4	Spindle quill (state head required for)
		1	Extra head "ditto"
176	A-1033/59	12	Springs for spindle end float
		3	Extra head "ditto"
177	B-1056/89	4	Float end inside dust cap
		1	Extra head "ditto"
178		4	3/16" dia x 1¼" long groverlok spring dowel
		1	Extra head "ditto"
179		4	Hoffman 135 bearing
		1	Extra head "ditto"
180	B-1033/13	4	Float end outside dust cap
		1	Extra head "ditto"
181	A-1056/146	4	Locking cone for cutterblock
		1	Extra head "ditto"
182	B-1056/353	2	Top and bottom head spindle adaptor (State head)
	B-1056/354	2	Side head spindle adaptor (state head)
	B-1056/353	1	Bottom head spindle adaptor (Extra head)
183		4	5/16" whit x ½" long socket head grubscrew
		1	Extra head "ditto"
184	A-1056/352	2	Cutterblock locknut R.H. thread (Top and fence side head)
		2	Cutterblock locknut L.H. thread (Bottom and front side head)
		1	Cutterblock locknut L.H. thread (Extra head)
185	A-1056/312	4	Washer for spindle
		1	Extra head "ditto"
186	C-1056/140	2	Top and bottom head spindle (State head)
	C-1056/141	2	Side head spindle (State head)
	C-1056/140	1	Extra head spindle
187	B-1056/39	4	Spindle pulley
		1	Extra head "ditto"
188	A-1033/58	4	Spindle washer
		1	Extra head "ditto"
189		2	¼" whit R.H. nut (Bottom head and Front side head)
		2	¼" whit L.H. nut (Top head and Fence side head)
		1	¼" whit R.H. nut (Extra head)
190		4	1/8" gas straight grease nipple
		1	Extra head "ditto"
191		4	5/16" woodruff key
		1	Extra head "ditto"
192	B-1056/220	2pair	Standard knives for horizontal blocks
	B-1056/381	2pair	Standard knives for vertical blocks
	B-1056/220	1pair	Standard knives for extra head
193	A-1033/224	16	Square cutterblock bolt
		4	Extra head "ditto"
194	A-1033/226	16	Square cutterblock washer
		4	Extra head "ditto"
195	A-1033/225	16	Square cutterblock nut
		4	Extra head "ditto"
196	B-1056/143	2	Top and bottom head square cutterblock
	B-1056/142	2	Side head square cutterblock
	B-1056/143	1	Extra head square cutterblock
197		1	Adjusting spanner for circular cutterblock Cutters (Special)
198	C-1056/145	2	Top and bottom head circular cutterblock (Special)
	C-1056/144	2	Side head circular cutterblock - (Special)
	C-1056/145	1	Extra head circular cutterblock - (Special)
199		32	No. 2 adjusting nuts (Special)
		8	Extra head "ditto" (Special)
200		32	No. 2 Adjusting Screws (Special)
		8	Extra head "ditto" (Special)
201	A-1033/221	44	½" whit wedge screws (Special)
		10	Extra head "ditto" (Special)
202	A-1056/221	4pair	Knives for horizontal head circular cutterblock (Special)
	A-S-164	4pair	Knives for vertical head circular cutterblock (Special)
	A-1056/221	2pair	Knives for extra head circular cutterblock (Special)
203	A-1033/217	16	Circular cutterblock wedges (3¼" long Special)
		4	Circular cutterblock wedges (3¼" long Extra head)
	A-1033/218	4	Circular cutterblock wedges (1½" long Special)
	A-1033/218	2	Circular cutterblock wedges (1½" long Extra head)
	A-1056/285	4	Circular cutterblock wedges (5" long Special)
	A-1056/285	2	Circular cutterblock wedges (5" long Extra head)

TOP & BOTTOM MOTOR MOUNTING ASSEMBLY



Ref No.	Part No.	No. Off	Description
210		1	Brook motor, frame D132Sb, 10HP 3,000 rpm foot mounted terminal box at 9 o'clock, 50 cycles (3,600 rpm, 60 cycles)
211		2	3/8" whit x ½" long socket head grubscrew
212	B-1056/36	1	Top head motor pivot bracket
213		2	½" spring washer
214		2	½" whit x 1¼" long socket head capscrew
215	B-1056/35	1	Top head motor bracket
216	A-1056/66	1	Top head motor pivot pin
217		1	3/8" whit x ½" long socket head grubscrew
218		1	10mm wide x 2¼" long key
219		1	3/8" whit x 3/8" long socket head grubscrew
220	B-1056/38	1	Motor pulley
221		2	½" washer
222		2	½" whit x 2" long stud
223		2	½" whit aerotight nut.

NOTE:-

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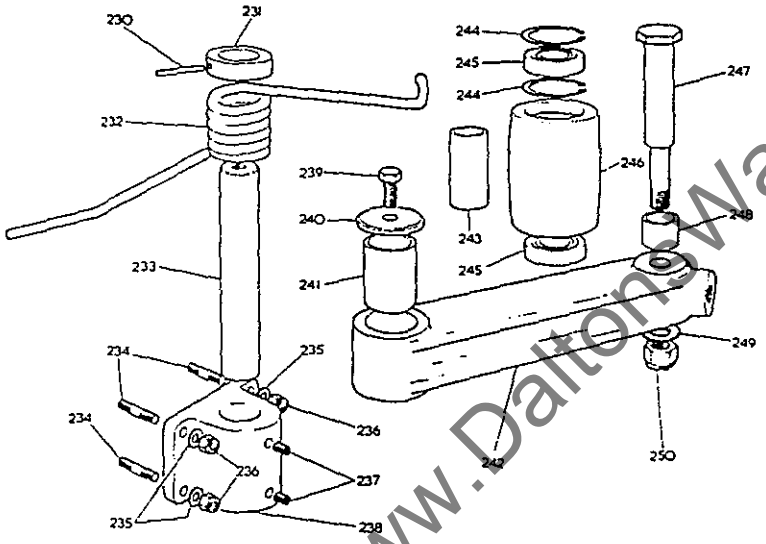
JOCKEY PULLEY ASSEMBLY



Ref No.	Part No.	No. Off	Description
230		1	¼" dia x 2" long groverlok dowel
231	A-1056/241	1	Collar for jockey arm pivot pin
232	B-1056/246	1	Spring for side head belt tension
233	B-1056/76	1	Jockey arm pivot pin
234		4	3/8" whit x 1½" long stud
235		4	3/8" washer
236		4	3/8" whit aerotight nut
237		2	1/8" gas x ½" long socket head grubscrew
238	B-1056/240	1	Side head jockey arm pivot bracket
239		1	½" whit x 1" long hexagon head bolt
240	A-1056/342	1	Washer for jockey arm
241		1	1¼" bore x 1½" o/d x 2" long oilite bush
242	C-1056/49	1	Jockey pulley arm
243	A-1056/77	1	Jockey pulley distance piece 1.13/16" long
244	No. 5000/206	2	52mm Truarc internal circlip
245	Fischer DN - 205	2	Sealed for life bearing
246	B-1056/48	1	Jockey pulley
247	B-1056/85	1	Side head jockey pulley bearing pin
248	A-1056/77	1	Jockey pulley distance piece 1.13/32" long
249		1	5/8" washer
250		1	5/8" whit aerotight nut

NOTE:-

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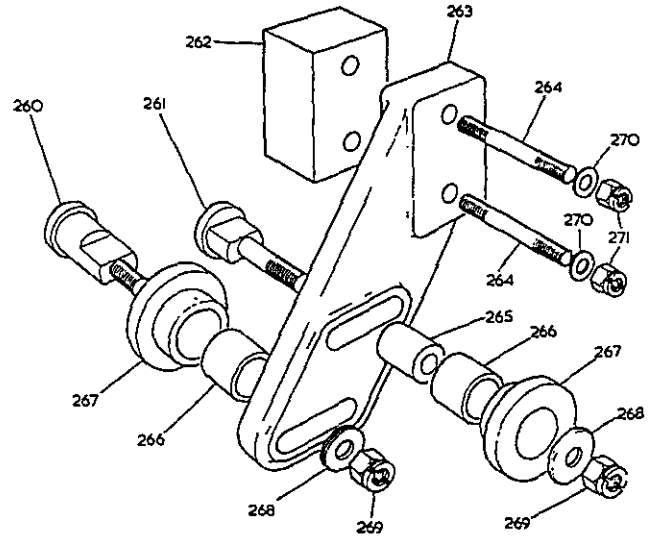
CHAIN TENSIONER ASSEMBLY



Ref. No.	Part No.	No. Off	Description
260	A-1056/264	1	Feed chain tension pin for rear roller
261	A-1056/231	1	Feed chain tension pin for front roller
262	B-1056/234	1	Feed chain tension bracket packing piece
263	C-1056/230	1	Feed chain tension bracket
264		2	3/8" whit x 5½" long stud
265	A-1056/265	1	Feed chain tension bearing bush
266		2	1" bore x 1¼" o/d x 1" long oilite bush
267	A-1056/232	2	Feed chain tension roller
268		2	½" washer
269		2	½" whit aerotight nut
270		2	3/8" washer
271		2	3/8" whit aerotight nut

NOTE:-

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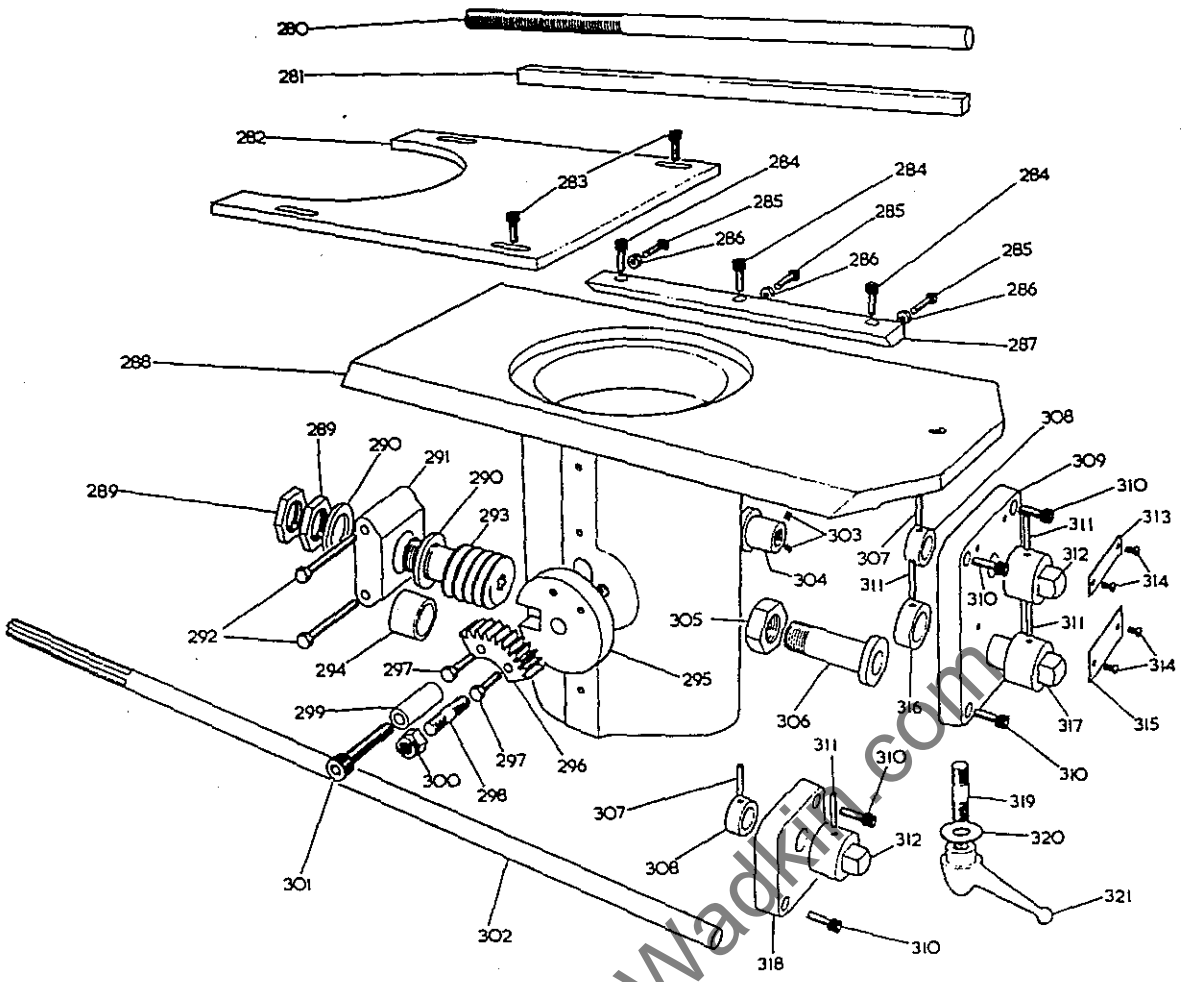

FENCE SIDE HEAD ASSEMBLY

Ref. No.	Part No.	No. Off	Description
280	B-1056/99	1	Front side head lateral adjusting screw
281	A-1056/82	1	Fence side head locking bar 16"long
		1	Front side head locking bar 17¾"long
282	B-1056/165	1	Bedplate for fence side head
	C-1056/166	1	Bedplate for front side head
283		2	5/16" whit x ¾" long socket head capscrew
284		3	3/8" whit x ¾" long socket head capscrew
285		3	5/16" whit x 1" long square head bolt
286		3	5/16" whit locknut
287	B-1056/177	1	Vee strip for fence side head
	B-1056/178	1	Vee strip for front side head
288	D-1056/16	1	Fence side head slide bracket
		1	Front side head slide bracket
289	A-1056/84	4	Side head R & F worm locknut
290	A-1056/123	4	Washer for side head R & F bearing
291	B-1056/92	2	Side head R & F bearing housing
292		2	5/16" whit x 2½" long hexagon head bolts
293	B-1056/42	2	Side head R & F worm
294		2	1" bore x 1¼" o/d x 1¼" long oilite bush
295	B-1056/98	2	Side head vertical R & F bracket
296	B-1056/43	2	Side head R & F quadrant
297		2	5/16" whit x 1¼" long hexagon head bolts
298		1	½" whit x 1¾" long stud
299	A-1056/78	2	Side head R & F peg bush
300		1	½" whit aerotight nut
301		1	½" whit x 2" long socket head capscrew
302	B-1056/44	1	Fence side head vertical adjustment shaft
		1	Front side head vertical adjustment shaft
303		2	¼" whit x ½" long socket head grub-screw
304	A-1031/58	2	Nut for side head lateral adjustment
305	A-1033/106	2	Nut for side head locking screw
306	B-1033/98	2	Side head locking screw
307		2	3/16" dia x 1¼" long groverlok dowel
308	A-1033/259	2	Collar for R & F screw
309	B-1056/46	1	Fence side head cover plate
310		6	5/16" whit x 1¼" long socket head capscrew
311		4	3/16" dia x 1½" long groverlok dowel
312	A-1056/137	1	Side head lateral adjusting handle
		1	Side head vertical adjusting handle
313	B-1056/195/D	1	Instruction Plate
314		4	¼" self tapping screw No. Z.6
315	C-SK-528/D	1	Instruction Plate
316	A-1033/261	2	Collar for side head lock
317	B-1056/138	1	Side head locking handle
318	B-1056/45	1	Fence side head bearing plate
319		1	½" whit x 1¾" long stud
320		1	½" washer
321		1	Adjustable handle 5/8" whit.

NOTE:-

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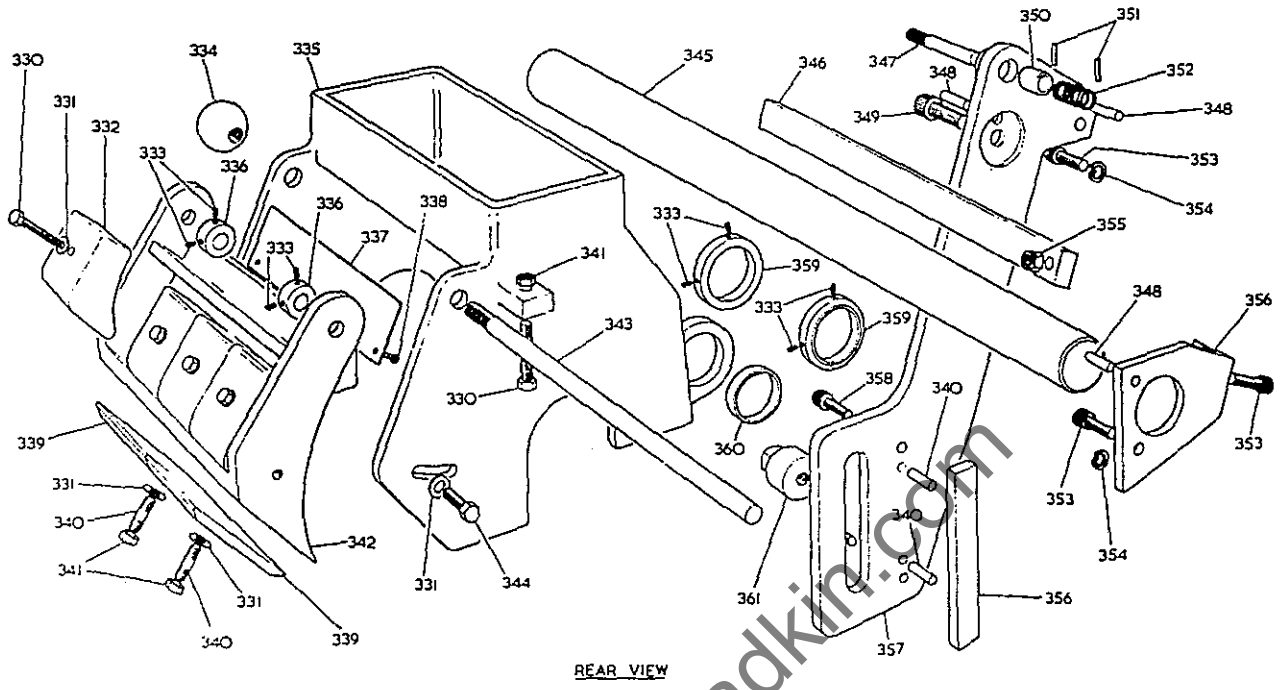

TOP HEAD CHIPBREAKER ASSEMBLY

Ref No.	Part No.	No. Off	Description
330		5	3/8" whit x 2½" long hexagon head bolt
331		7	3/8" washer
332	B-1056/91	4	Weight for top head chipbreaker
333		8	¼" whit x 3/8" long socket head grubscrew
334		1	1½" dia plastic ball, ½" whit
335	C-1056/13	1	Top head guard
336	A-1056/124	2	Collar for chipbreaker handle
337	A-1056/193	1	Deflector for top head chipbreaker
338		3	¼" whit x 3/8" long round head screw
339	A-1056/189	2	Top head chipbreaker shoes
340		2	3/8" whit x 1" long stud
341		3	3/8" whit nut
342	C-1056/94	1	Top head chipbreaker
343	A-1056/122	1	Top head chipbreaker handle
344		1	3/8" whit x 1" long bolt
345	A-1056/368	1	Top head chipbreaker pivot bar
346	B-1056/117	1	Top head pressure adjusting bar
347	A-1056/259	1	Plunger for top head chipbreaker
348		5	5/16" dia x 5/8" long fluted dowel
349		1	½" whit x 1¼" long socket head capscrew
350		1	½" i/d x ¾" o/d x 5/8" long oilite bush
351		2	3/16" dia x ¾" long groverlok dowel
352	A-1041/18	1	Spring
353		3	3/8" whit x 1" long socket head capscrew
354		2	3/8" spring washer
355		1	3/8" whit aerotight nut
356	B-1056/366	1	Top head pressure inner support plate
357	C-1056/365	1	Top head chipbreaker support plate
358		2	5/16" whit x 1¼" long socket head capscrew
359	A-1056/125	2	Collar for chipbreaker pivot
360		2	1½" bore x 1¾" o/d x ½" long oilite bush
361	A-1056/136	1	Top head locking nut

NOTE:-

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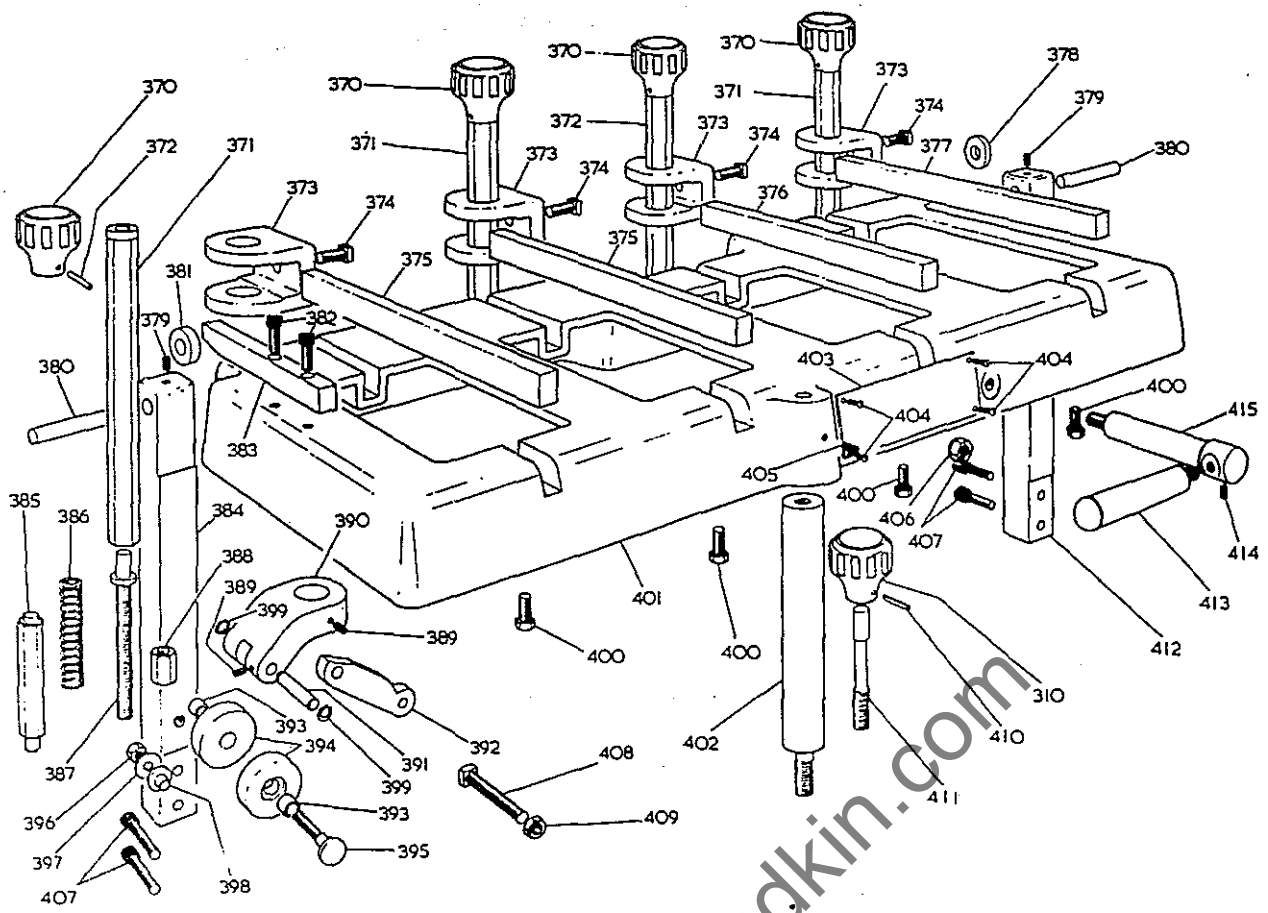

TOP PRESSURE UNIT ASSEMBLY

Ref. No.	Part No.	No. Off	Description
370	Patt. No. 24	5	2" dia plastic handwheels ½" bore
371	B-1056/107	4	Hexagon tube for pressures 7½"long
372		4	No. 3 Taper pin
373	B-1056/53	4	Pressure locking bracket
374		4	½" whit x 1" long square head bolt
375	B-1056/118	2	Pressure adjustment bar 12" long with tapped holes at 8" Cnts
376	B-1056/118	1	Pressure adjustment bar 9.7/8" long
377	B-1056/118	1	Pressure adjustment bar 12" long with tapped holes at 9¾"Cnts
378	A-1056/251	1	Distance piece for top pressure bracket ¼" thick
379		2	3/8" whit x 3/8" long grubscrew
380	A-1056/184	2	Pivot pin for top pressure bracket
381	A-1056/251	1	Distance piece for top pressure bracket 3/8" thick.
382		2	3/8" whit x 1" long socket head grubscrew
383	A-1056/247	1	Stop for top pressure bracket
384	B-1056/183	1	Support for top pressure bracket (with ½" whit hole)
385	A-1056/104	4	Plunger for top pressure 4½" long
386	A-1056/113	4	Spring for top pressure
387	A-1056/102	4	Pressure adjusting screw
388	A-1056/101	4	Pressure adjusting nut
389		2	¼" whit x 3/8" long socket head grubscrew
390	B-1056/55	4	Pressure pivot bracket
391	A-1056/108	4	Pressure link pivot pin
392	A-1056/106	4	Link for pressure
393		8	½" bore x 5/8" o/d x ½" long oilite bush
394	A-1056/105	8	Pressure rollers
395	A-1056/110	4	Roller pin
396		4	3/8" whit nut
397		4	3/8" washer
398	A-1056/109	4	Bush for double pressure rollers
399	No.5100/50	8	½" Truarc external circlip
400		8	3/8" whit x 1" long hexagon head bolt
401	C-1056/9	1	Top pressure bracket
402	B-1056/96	1	Top pressure bracket support rod
403	A-1056/252	1	Plate for top pressure bracket
404		4	No. Z6 self tapping screw ¼" long
405		1	¼" whit x ½" long socket head grubscrew
406		1	½" whit aerotight nut
407		4	3/8" whit x 1½" long socket head capscrew
408		1	½" whit x 4½" long square head bolt
409		1	½" whit locknut
410		1	3/16" dia x 1" long groverlok dowel
411	A-1056/260	1	Top pressure bracket locking handle
412	B-1056/183	1	Support for top pressure bracket (without ½" whit hole)
413		1	4" plastic pull handle 3/8" whit
414		1	5/16" whit x 3/8" long socket head grubscrew
415	A-1056/248	1	Handle for top pressure bracket

NOTE:-

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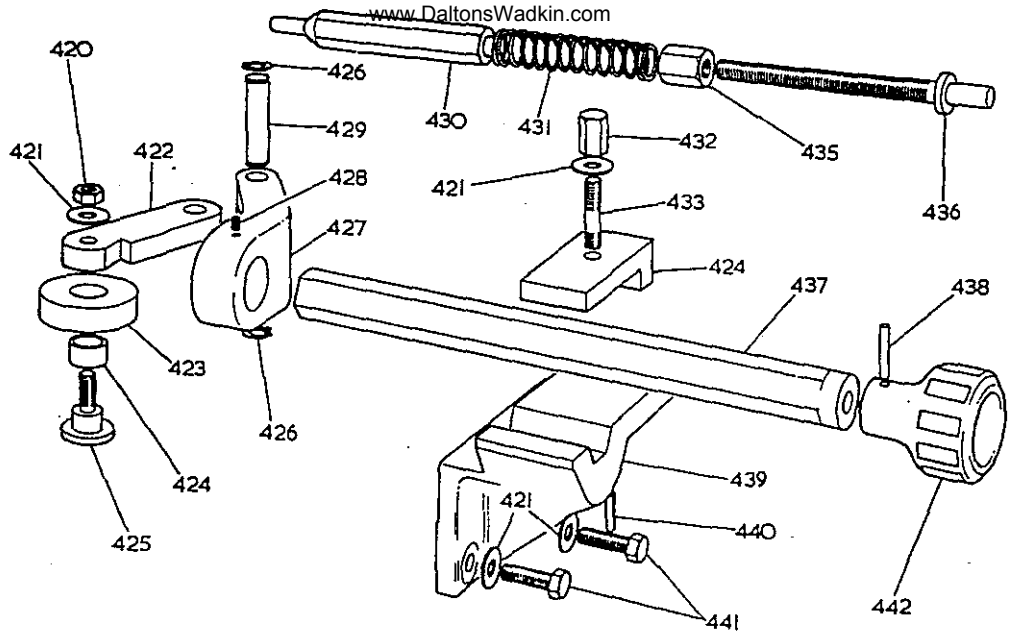
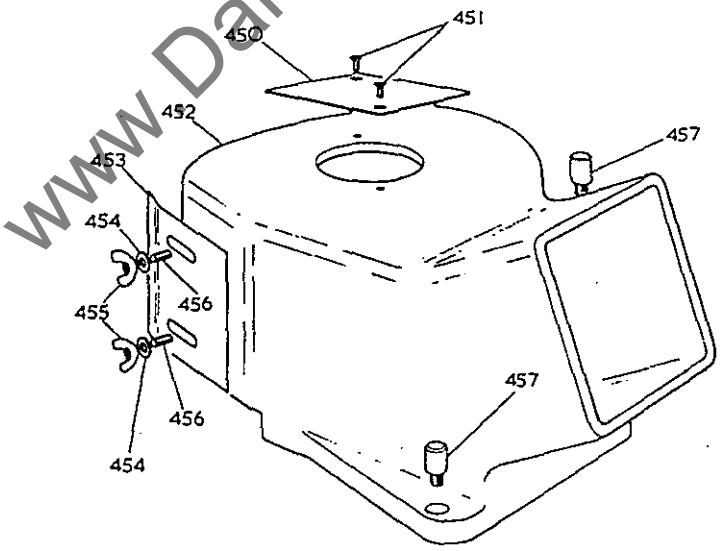


SIDE PRESSURE UNIT ASSEMBLY

Ref.No.	Part No.	No.Off	Description
420		1	3/8" whit nut
421		4	3/8" washer
422	A-1056/106	1	Link for pressure
423	A-1056/105	1	Pressure roller
424		1	½" bore x 5/8" o/d x ½" long oilite bush
425	A-1056/100	1	Pressure roller pin
426	5100/50	2	½" external circlip
427	B-1056/55	1	Pressure pivot bracket
428		1	¼" whit x 3/8" long socket head grubscrew
429	A-1056/108	1	Pressure link pivot pin
430	A-1056/104	1	Plunger for pressure 6½" long
431	A-1056/113	1	Spring for pressure
432	A-1027/29	1	Pressure locking nut
433		1	3/8" whit x 1¾" long stud
434	A-1056/147	1	Clamp for side pressure
435	A-1056/101	1	Pressure adjusting nut
436	A-1056/102	1	Pressure adjusting screw
437	B-1056/107	1	Hexagon tube for pressure 9½" long
438		1	No. 3 Taper pin
439	B-1056/57	1	Side pressure bracket
440		1	3/16" dia x 1" long groverlok dowel
441		2	3/8" whit x 1" long hexagon head bolt
442	Patt No. 24	1	2" dia plastic handwheel ½" bore



FENCE SIDE HEAD GUARD ASSEMBLY

Ref. No.	Part No.	No.Off	Description
450	A-1056/377	1	Side head guard cover
451		2	¼" whit x ½" long CSK head screw
452	C-1056/11	1	Fence side head guard
453	A-1056/266	1	Fence side head chip deflector
454		2	¼" washer
455		2	¼" whit wingnuts
456		2	¼" whit x ¾" long stud
457		2	Location peg for fence side head guard

NOTE:-

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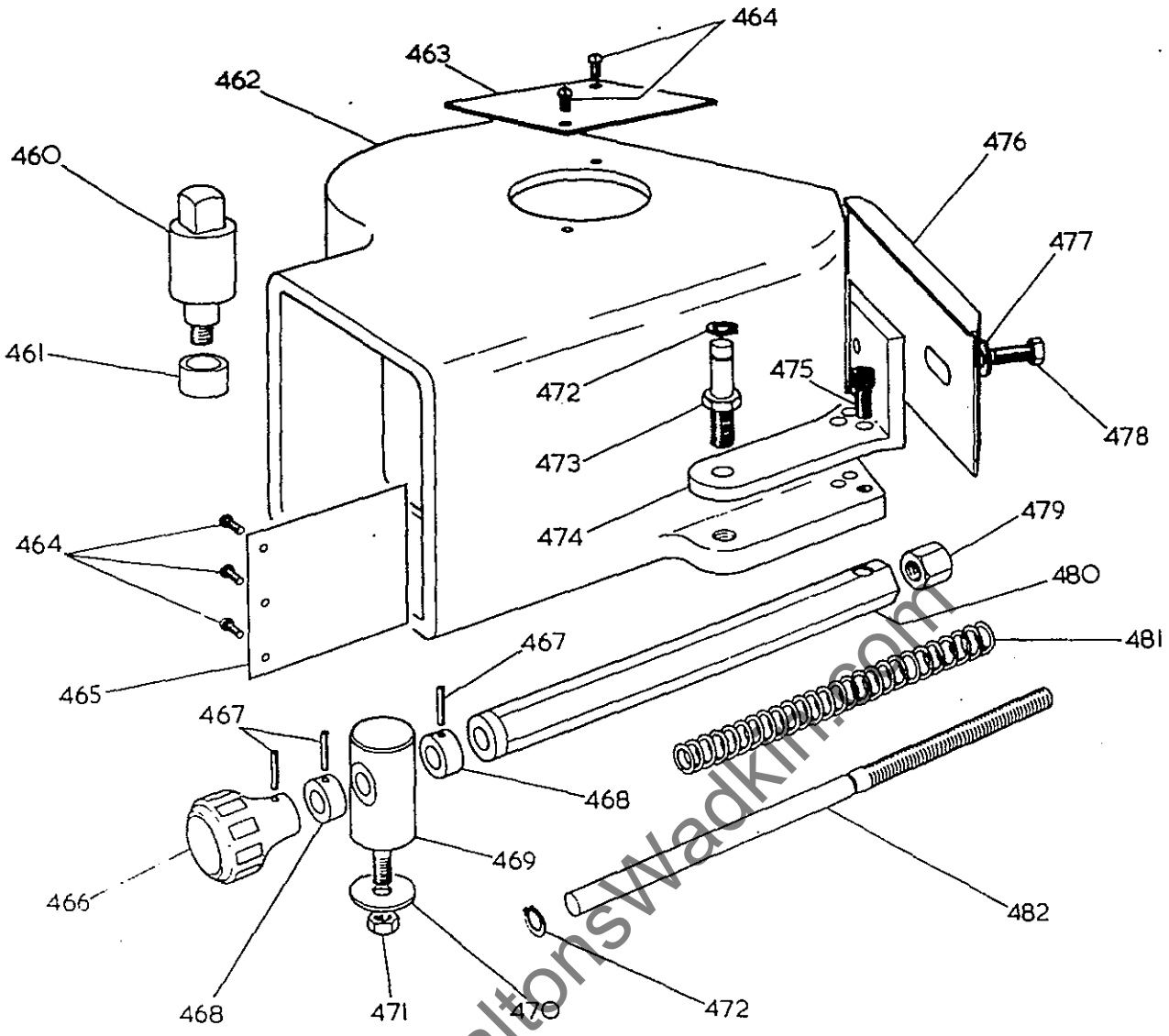

FENCE SIDE HEAD CHIPBREAKER ASSEMBLY

Ref. No.	Part No.	No. Off	Description
460	A-1056/151	1	Front side head guard pivot
461		1	¾" bore x 1" o/d x 5/8" long oilite bush
462	C-1056/10	1	Front side head guard
463	A-1056/377	1	Side head guard cover
464		5	¼" whit x 3/8" long round head screw
465	A-1056/267	1	Front side head chip deflector
466	Patt No. 24	1	2" dia plastic handwheel ½" bore
467		3	3/16" dia x 1" long grover-lok spring dowel
468	A-1056/157	2	Front side head chipbreaker locating collar
469	A-1056/238	1	Front side head chipbreaker anchor bar
470	A-1032/22	1	Washer
471		1	3/8" whit nut
472	No. 5100/50	2	½" Truarc external circlip
473	A-1056/153	1	Side head guard pivot pin
474	C-1056/111	1	Front side head chipbreaker bracket
475		1	3/8" whit x ¾" long socket head capscrew
476	B-1056/258	1	Front side head chipbreaker shoe
477		1	3/8" washer
478		1	3/8" whit x ¾" long hexagon head bolt
479	A-1056/249	1	Side head chipbreaker adjusting nut
480	A-1056/152	1	Side head chipbreaker tube
481	A-1056/250	1	Side head chipbreaker spring
482	A-1056/158	1	Side head chipbreaker adjusting screw

NOTE:-

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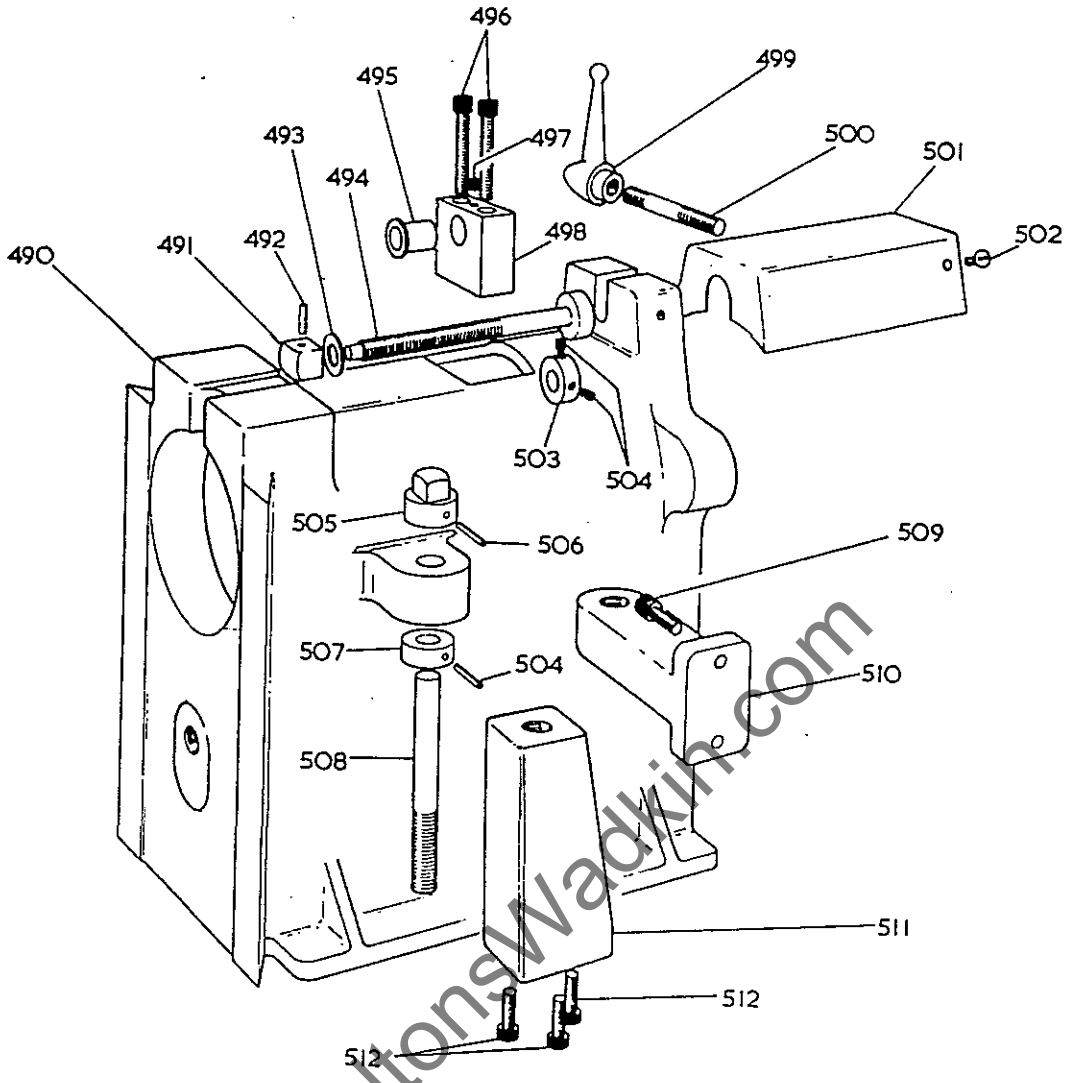
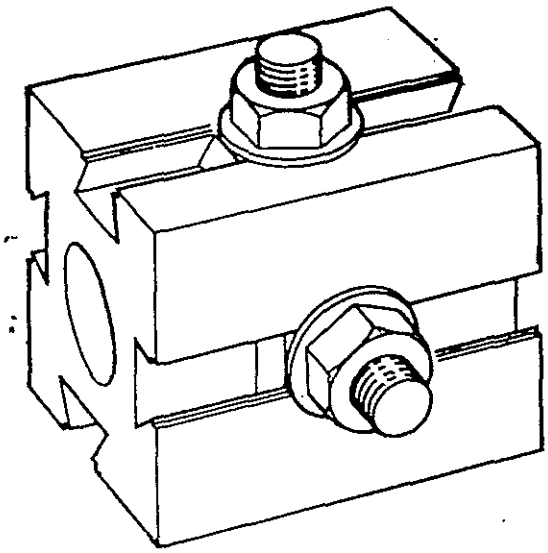


BOTTOM HEAD ASSEMBLY

Ref. No.	Part No.	No. Off	Description
490	D-1056/12	1	Bottom head slide
491	A-1056/253	1	Nut for bottom head lateral adjustment screw
492		1	3/16" dia x $\frac{3}{4}$" long groverlok dowel
493		1	5/8" washer
494	A-1056/126	1	Lateral adjustment screw
495	A-1056/348	1	Nut for lateral adjustment nut
496		2	5/16" whit x $2\frac{1}{2}$" long socket head capscrew
497		1	$\frac{1}{4}$" whit x $\frac{1}{4}$" long socket head grubscrew
498	B-1056/121	1	Lateral adjusting nut
499		1	Adjustable handle $\frac{1}{2}$" whit
500		1	$\frac{1}{2}$" whit x 2" long stud
501	C-1056/114	1	Screw cover
502		2	$\frac{1}{4}$" whit x 3/8" long round head screw
503	A-1056/127	1	Collar for lateral adjustment screw
504		1	3/16" dia x $1\frac{1}{4}$" long groverlok spring dowel
505	A-1056/137	1	Bottom head vertical adjustment handle
506		1	3/16" dia x $1\frac{1}{2}$" long groverlok spring dowel
507	A-1033/259	1	Collar for R & F screw
508	B-1056/120	1	Vertical adjusting screw
509		2	3/8" whit x 1" long socket head capscrew
510	B-1056/47	1	Extra head vertical adjustment nut
511	C-1056/229	1	Bottom head vertical adjustment nut
512		3	3/8" whit x $1\frac{3}{4}$" long socket head capscrew
513		2	5/16" whit x $\frac{1}{2}$" long dog point grubscrew

NOTE:-

When ordering replacement parts quote part no. and serial number of the machine.



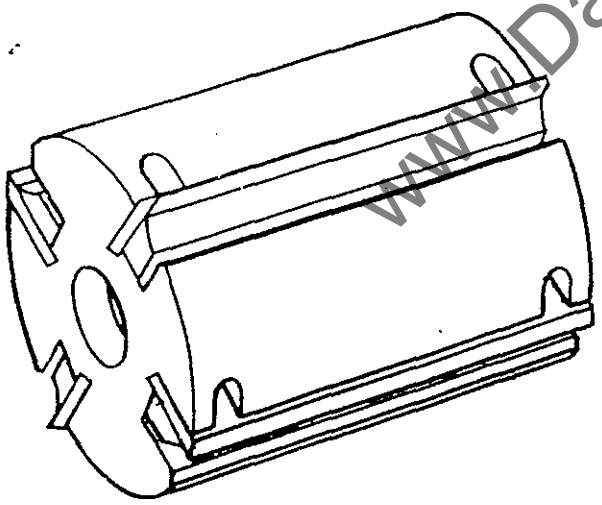
QUARE CUTTERBLOCKS

'OR TOP & BOTTOM HEADS

½" (165mm) long x 3½" (89mm) square cutterblock, cone seated, 056/143, with bolts nuts and washers.

'OR SIDE HEADS

¼" (83mm) long x 3½" (89mm) square cutterblock, cone seated, 056/142 with bolts nuts and washers



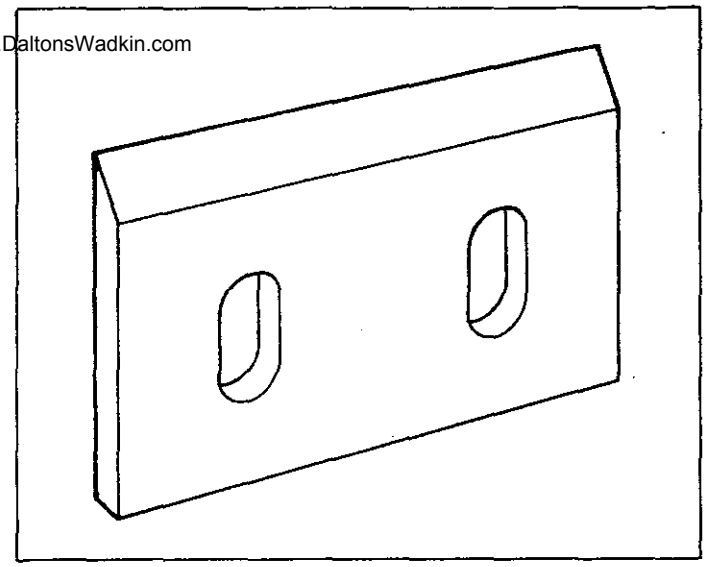
CIRCULAR CUTTERBLOCKS

FOR TOP AND BOTTOM HEADS

Four knife cone seated circular cutterblock 6½" (165mm) long x 5½" (140mm) dia cutting circle 1056/145

FOR SIDE HEADS

Four knife cone seated circular cutterblock 3¼" (83mm) long x 5½" (140mm) dia cutting circle 1056/144



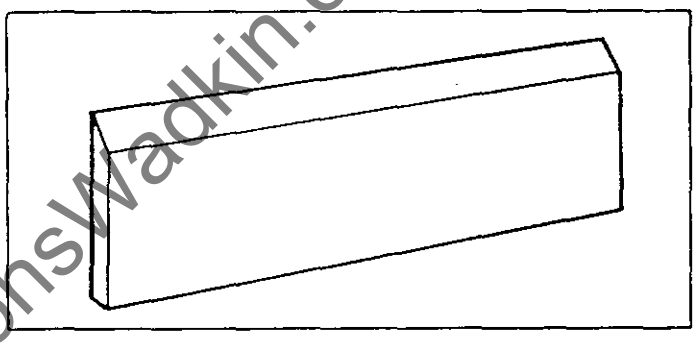
CUTTERS FOR SQUARE CUTTERBLOCKS

FOR TOP & BOTTOM HEADS

1 pair 6½" (165mm) long x 3¾" (95mm) x 3/8" (9·5mm) HSS straight cutters 1056/220

FOR SIDE HEADS

1 pair 3¼" (82mm) x 3¾" (95mm) x 3/8" (9·5mm) HSS straight cutters 1056/381



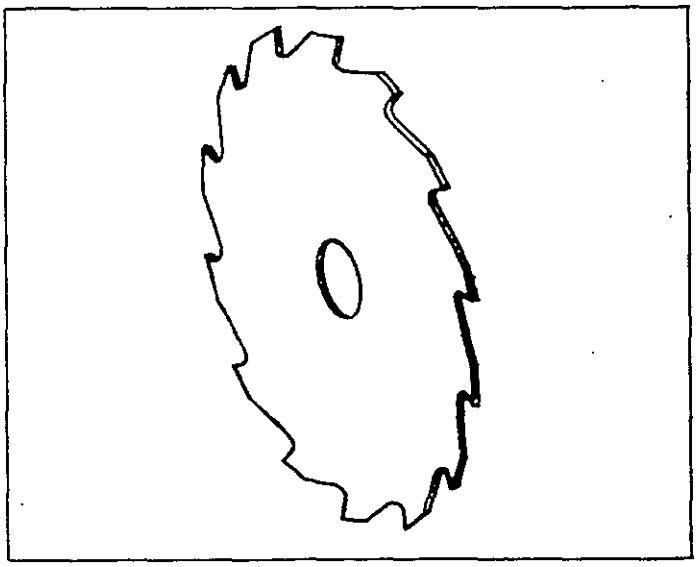
CUTTERS FOR CIRCULAR CUTTERBLOCK

FOR TOP AND BOTTOM HEADS

1 set straight cutters for circular cutterblock 6½" (165mm) long A-1056/221

FOR SIDE HEADS

1 set straight cutters for circular cutterblock 3¼" (83mm) long A-S-164



SLITTING SAW FOR FIFTH HEAD

1 - 9" (230mm) dia alloy steel slitting saw
1 pair saw flanges for above
1 set spacing collars for above