

Wadkin

COMBINED SURFACER AND THICKNESSER, TYPE F.M.

PRINCIPAL DIMENSIONS AND CAPACITIES

	18" MACHINE		24" MACHINE	
	ENGLISH	METRIC	ENGLISH	METRIC
Thickening capacity	18" x 9"	457 x 229mm	24" x 9"	610 x 229mm
Surface capacity without removing fence	20"	508mm	26"	660mm
Maximum depth of cut on surfacing tables	$\frac{3}{4}$ "	19mm	$\frac{3}{4}$ "	19mm
Maximum depth of rebate in any width of timber	$\frac{1}{2}$ "	13mm	$\frac{1}{2}$ "	13mm
Maximum depth of rebate when timber overhanging tables does not exceed $1\frac{5}{8}$ "	1"	25mm	1"	25mm
Maximum depth of moulding with pressure bars	$\frac{5}{8}$ "	16mm	$\frac{5}{8}$ "	16mm
Maximum depth of moulding removing pressure bars	$1\frac{1}{4}$ "	32mm	$1\frac{1}{4}$ "	32mm
Length of surfacing tables overall	6' 1"	1854mm	6' 1"	1854mm
Length of thickening table	3' 7 $\frac{1}{2}$ "	1105mm	3' 7 $\frac{1}{2}$ "	1105mm
Length of thickening table over carrier rollers	5' 5 $\frac{1}{2}$ "	1664mm	5' 5 $\frac{1}{2}$ "	1664mm
Height of surfacing table	2' 10"	864mm	2' 10"	864mm
Fence on surfacing table cants		45°		45°
Speed of cutterblock in r.p.m. on 50 and 60 cycles		4,500		4,500
Diameter of cutting circle	5"	127mm	5"	127mm
Standard rates of power feed in feet per minute	25, 35 and 55	7.6, 10.7 and 16.8m	25, 35 and 55	7.6, 10.7 and 16.8m
Horse power of motor		5		7 $\frac{1}{2}$
Floor space	6' 1" x 4' 3"	1854 x 1295mm	6' 1" x 4' 9"	1854 x 1448mm
Net weight in cwt	26 (2912lb)	1321 kgs	29 (3248lb)	1473 kgs
Shipping dimensions in cubic feet	75	2.12 cu. m.	88	2.49 cu. m.

DETAILS INCLUDED WITH MACHINE

Motor, control gear and insulated wiring.
 One canting fence complete with holding down springs.
 One pair of high speed steel cutters.

One cutter guard.
 One lubricating gun and tin of lubricant.
 One set of spanners.

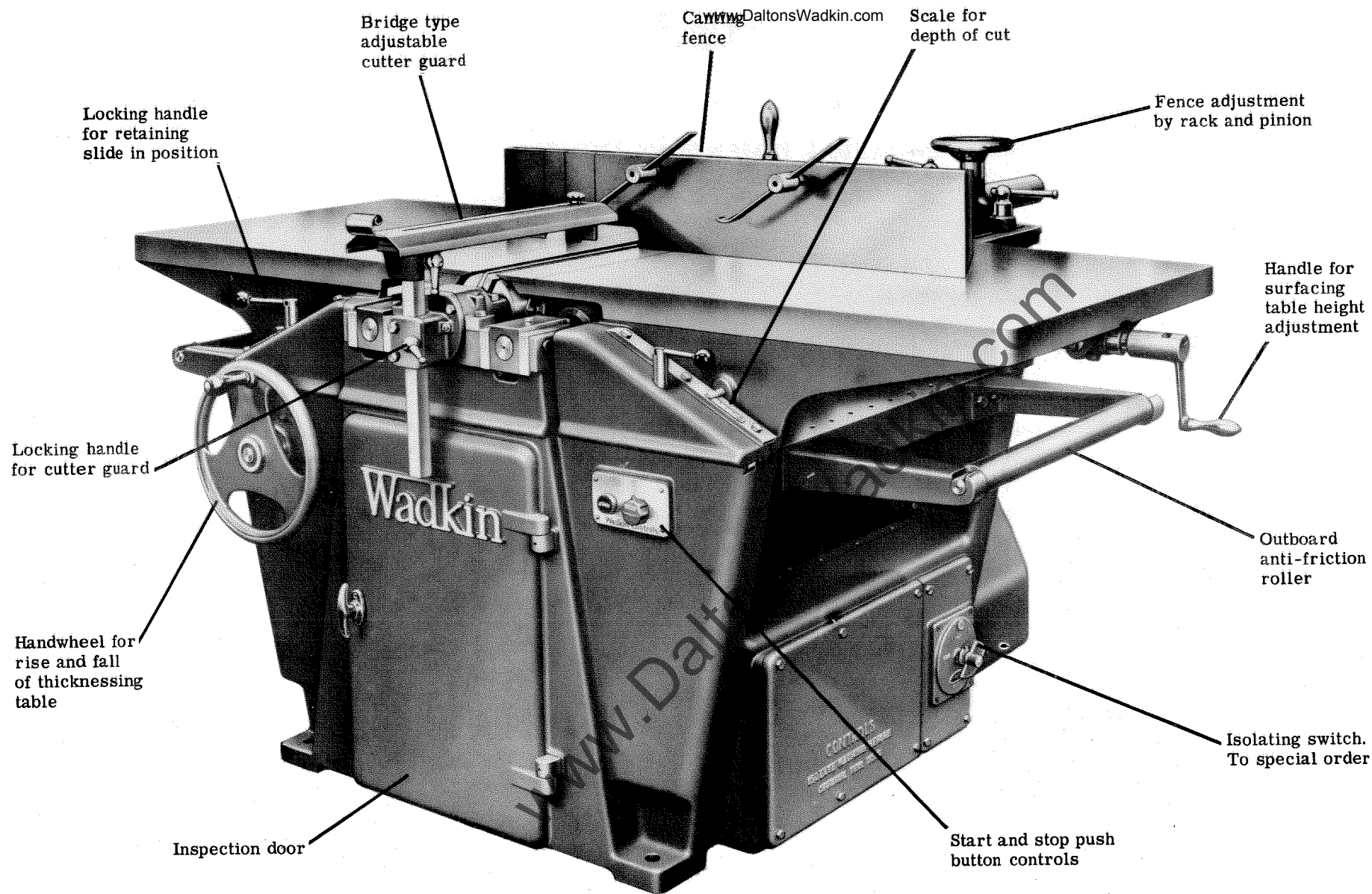


FIG. 1 GENERAL VIEW OF MACHINE SHOWING PRINCIPAL CONTROLS

INSTALLATION

The machine is despatched from the Works with all bright surfaces greased to prevent rusting. This protective covering should be removed by applying a cloth damped with paraffin or turpentine.

FOUNDATIONS

Four rag type foundation bolts $\frac{5}{8}$ " (16mm) diameter should be used to fix the machine to the floor but these are not supplied with the machine unless specially ordered. If the mill floor consists of 6" (152mm) solid concrete no special foundation is necessary. The outlines in Figs. 2 and 3 give details of bolt positions and clearances required for 18" and 24" machines respectively. Cut 4" (102mm) square holes in the concrete and with bolts in position run in liquid cement to fix. A good wooden floor is also satisfactory in which case coach bolts may be used.

Whatever the method of fixing, the machine should be carefully levelled before fixing and again after final fixing to ensure that no distortion has taken place. Check that the thickening table is free in its slide when unlocked and that the cutterblock rotates freely in its bearings.

WIRING

For details of wiring instructions see pages 19 to 21. Diagram D.863 is for motors on 50 cycles and diagram D.586 is for motors on 60 cycles.

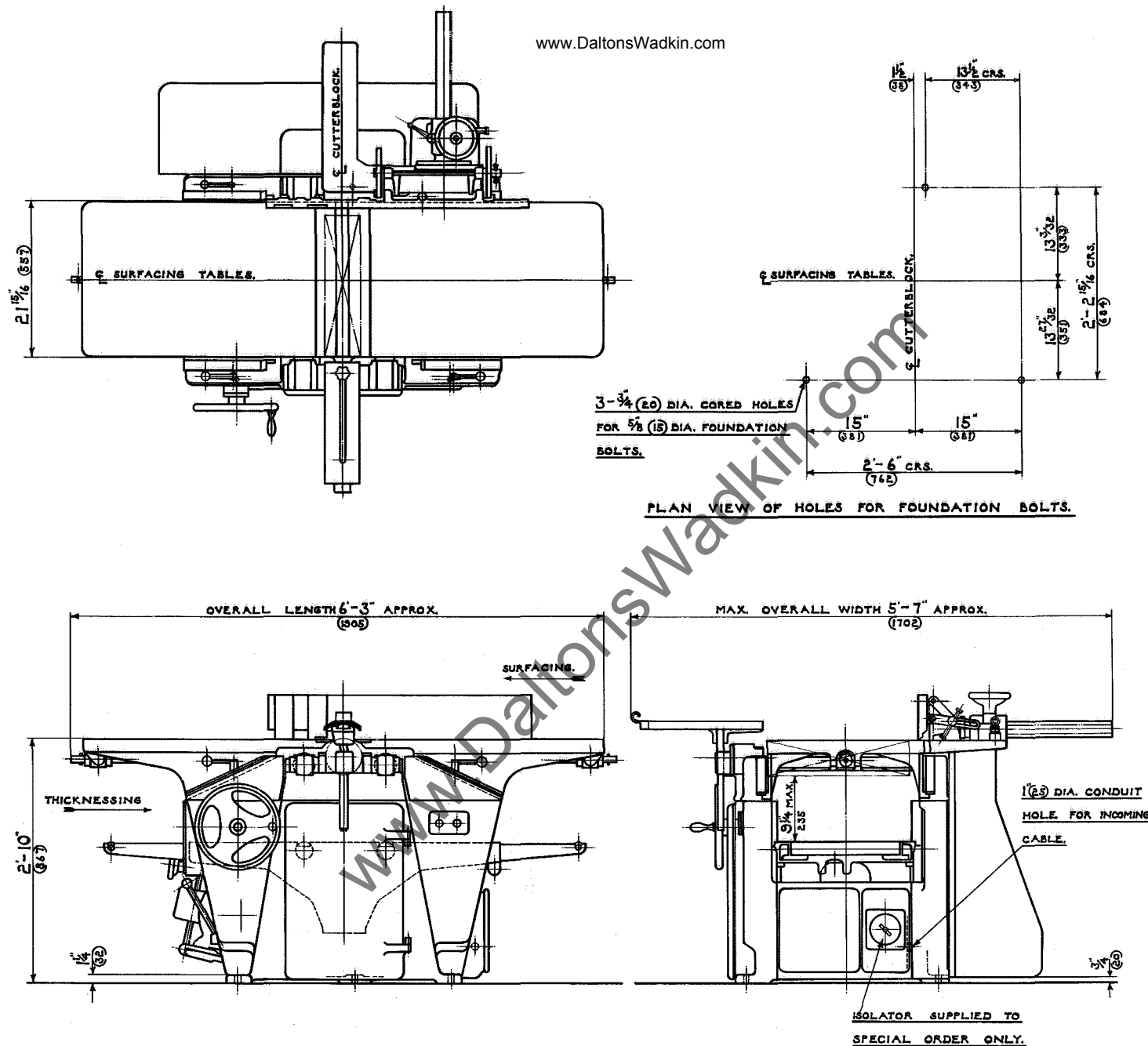


FIG. 2

FOUNDATION PLAN OF 18" SURFACING & THICKENING MACHINE. TYPE F.M.

DIMENSIONS GIVEN IN FEET, INCHES & MILLIMETRES.

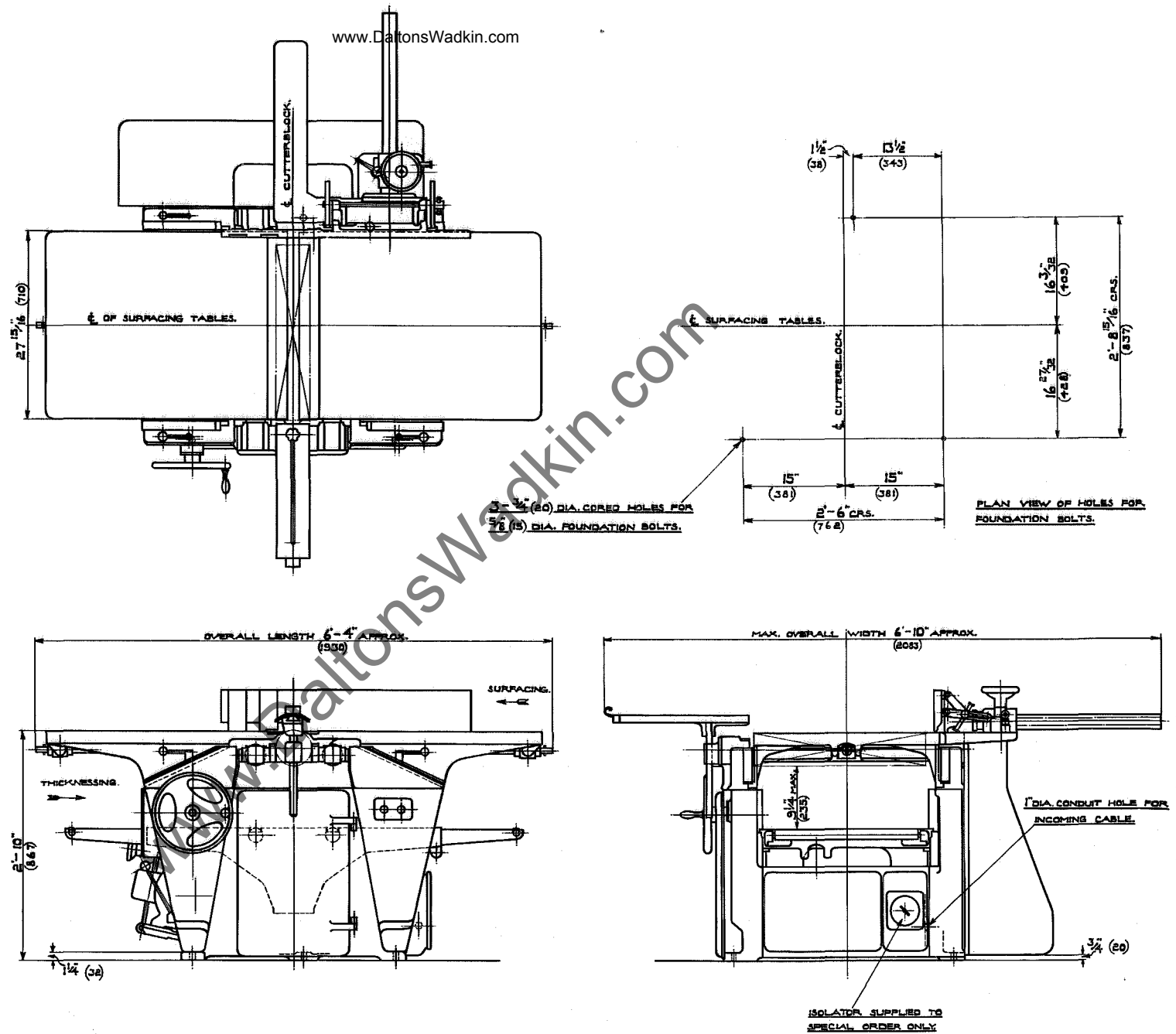


FIG. 3

FOUNDATION PLAN OF 24" SURFACING & THICKENING MACHINE. TYPE FM.

MEASUREMENTS GIVEN IN FEET, INCHES & MILLIMETERS.

LUBRICATION

Every week thoroughly clean down the machine and renew the thin film of oil on all bright parts to prevent rusting. All moving parts should be oiled monthly using Wadkin oil Grade L4. These include table slides, feed driving chain, rise and fall chain, motor pivot shaft and table locking shaft.

WEEKLY	A POINTS	Top up oil cups with Wadkin oil Grade L4.
	B POINTS	Give two depressions of the oil gun using Wadkin oil Grade L4.
	C POINT	Check level of oil in the gearbox and fill up to level of notch on the dip stick with Wadkin gear oil Grade L2.
QUARTERLY	D POINTS	Give four to six depressions of the grease gun using Wadkin grease Grade L6.
HALF YEARLY	C POINT	Drain off old oil and refill.

NOTE:- The table roller and gearbox bearings are sealed for life and require no lubrication.

WADKIN RANGE OF OIL AND GREASE LUBRICANTS WITH EQUIVALENTS

WADKIN GRADE	EQUIVALENT LUBRICANTS		
	SHELL MEX. & B. P. LTD.	MOBIL OIL CO. LTD.	CALTEX LUBRICANTS
Gear Oil Grade L2	Shell Vitrea Oil 69	Mobil Oil D. T. E. /BB	Meropa Lubricant No. 2 Oil
Machine Oil Grade L4	Shell Vitrea Oil 33	Mobil 'Vactra' Oil (Heavy Medium)	Caltex Aleph Oil
Ball Bearing Grease Grade L6	Shell Vitrea Grease 3	Mobilux Grease No. 2	Regal Starfak No. 2 Grease

TABLE ROLLERS

The table rollers should be set $1/64$ " (0.4mm) above the table level for boards which are reasonably straight and a little higher for badly twisted boards.

BELT TENSION (SEE FIG. 5)

The main drive belts are endless of the Vee Rope Type and are tensioned correctly before leaving the Works. If they require re-tensioning because of belt stretch the tie bar should be adjusted. The feed driving belt is of the Link Type Vee Belting and may be shortened by removing a link as stretch takes place.

FEED DRIVING CHAIN (SEE FIG. 5)

Drive to the feed rollers is by a chain from a three speed gearbox. The feed driving chain should always be run with enough slack in the chain to allow the front feed roller to lift to its maximum lift of $\frac{1}{2}$ " (13mm). Adjustment is by means of the idler sprocket.

Gears should be changed whilst the machine is slowing down or nearly stopped. Never change gear under load.

The feed speeds obtainable are 25, 35 and 55 feet per minute (7.6, 10.7 and 16.8 metres per minute).

FIG. 6 SETTING OF FEED ROLLERS AND PRESSURE BARS

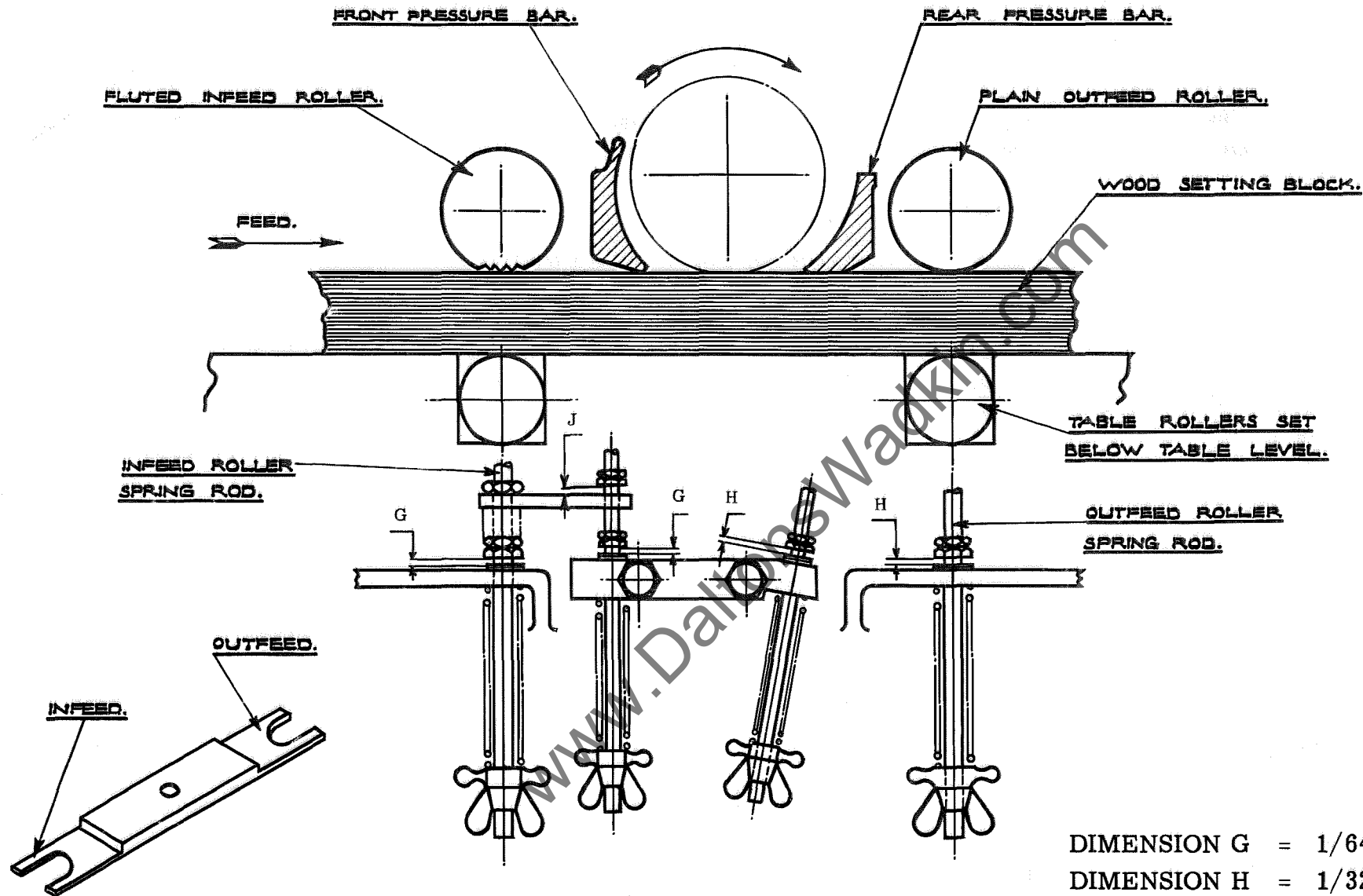


FIG. 7 SETTING GAUGE

THICKNESSING ADJUSTMENT

Thicknessing or planing to exact size is performed on the bottom table. A graduated scale and pointer register the finished thickness of work desired. The pointer is accurately set before the machine is despatched, but it is advisable to check over its accuracy before starting the machine in case it has been displaced during transit. Tighten the wear strips on the table slides just sufficiently to take up all play.

To prevent or eliminate sticking of the feed or marking of the job correct adjustment of the feed rollers, pressure bars and table rollers is essential. First set the table rollers approximately $1/64$ " (0.4mm) above the table level by means of the adjusting handwheel on the end of the table. Then proceed to thickness two pieces of timber, one at either side of the machine. WITHOUT RAISING THE TABLE, feed through again and put the feed change speed lever in neutral with both pieces in the machine. Switch off the machine and lower the table rollers below the table level. Adjust the nuts to obtain dimensions 'G' and 'H' Fig. 6, either measuring the clearances or using the gauge provided if a finer setting is desired. Dimension 'J' can then be set. Make these adjustments at both sides. Slacken off all the spring adjusting wing nuts and adjust back until just touching the spring. When this position has been reached give one complete turn and lock for the pressure bars. For the feed rollers give three or four complete turns before locking. Lower the table and remove the pieces of wood.

Raise the table rollers approximately $1/64$ " (0.4mm) above the level of the table for planing boards which are fairly straight. If the work is wet or badly twisted the rollers should be set a little higher in the table. Check that both ends of the two rollers are at the same height and correct if necessary by adjusting the screws below the table roller bearings under the table.

THE CUTTERS

Cutters to sizes as given in the table opposite are supplied in balanced pairs. They should be kept in balanced pairs by ensuring that the cutters have equal dimensions after grinding and that the cutting edge is parallel to the back edge.

PART NO.	SIZE	MACHINE
$20\frac{1}{4}" \times 1\frac{1}{2}" \times \frac{1}{8}"$	VP. 24	18" FM
$26\frac{1}{8}" \times 1.9/16" \times \frac{1}{8}"$	VP. 27	24" FM

Keep the cutters sharp when in position in the block by using a fine grade oil stone dipped in paraffin. Allow the stone to rest lightly and flat on the bevel and pass over the cutter with a rotating action a few times. Give about two strokes on the full length of each knife on the face side to remove all burrs from the cutting edge. Do not allow a heel greater than $\frac{1}{32}"$ (.8mm) wide on the bevel before taking out and re-grinding on the grinding machine. Take care to grind off the same amount from each cutter taking light cuts with the grinding wheel. Keep the wheel free from glaze by using an emery wheel dresser occasionally.

For general work knife angles for soft and hard woods are recommended as in Figs. 8 and 9. Where a very fine finish

is required on dry soft and hard woods a slight front bevel is given as in Figs. 10 and 11. For wet or green timber the cutting bevel may be decreased five degrees, but the front bevel should not be given.



FIG. 8
FOR SOFT WOOD



FIG. 9
FOR HARD WOOD

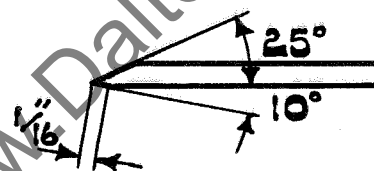


FIG. 10 FOR DRY
SOFT WOOD

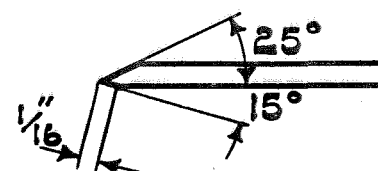


FIG. 11 FOR DRY
HARD WOOD

The cutterblock supplied is of the wedge type and is arranged to take moulding cutters without in any way upsetting the planing knives. A section through the block is shown in Fig. 12. The block is provided with two dovetail slots as making up pieces 'E' and 'F' and use dovetail bolts in the slots.

For standard range of square and shaped cutters available see Section C of our Tools and Accessories Catalogue No.745.

Cutters to suit customers own shapes can be supplied to special order. When necessary, Tungsten Carbide Tipped cutters can be manufactured.

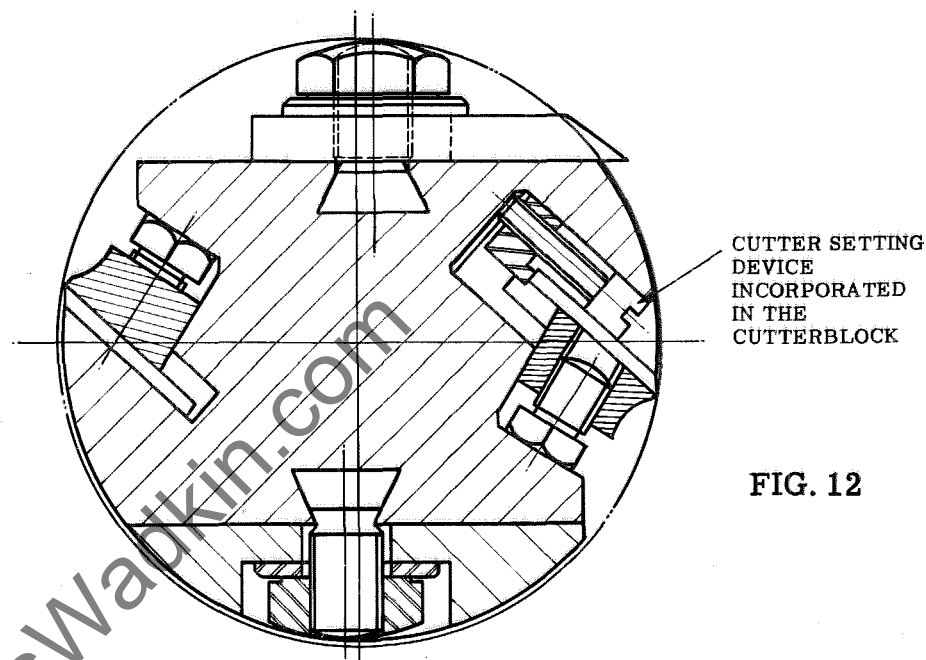


FIG. 13

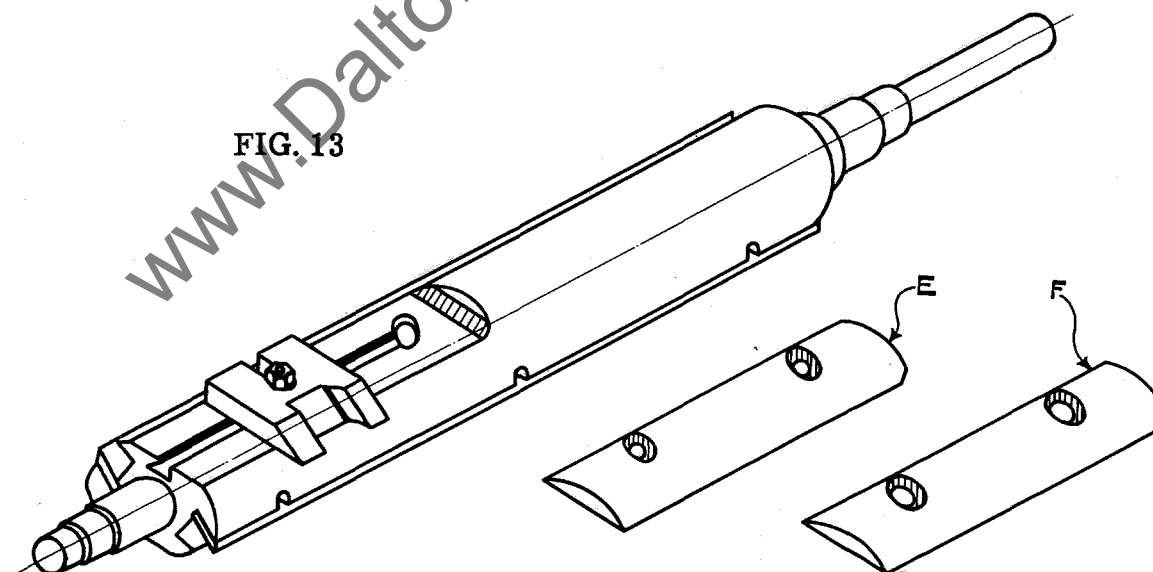
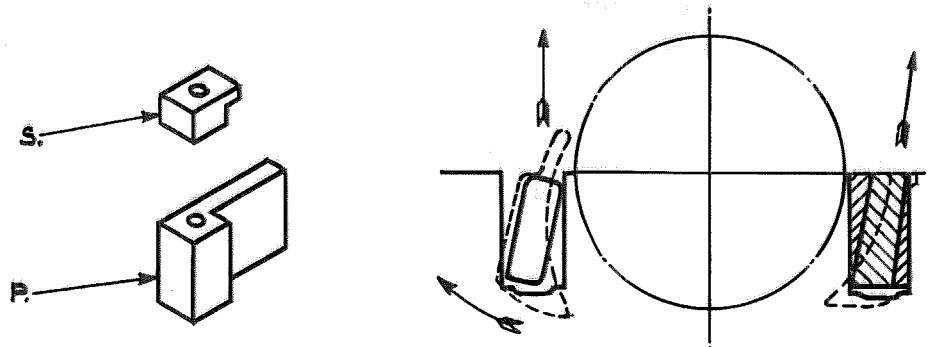
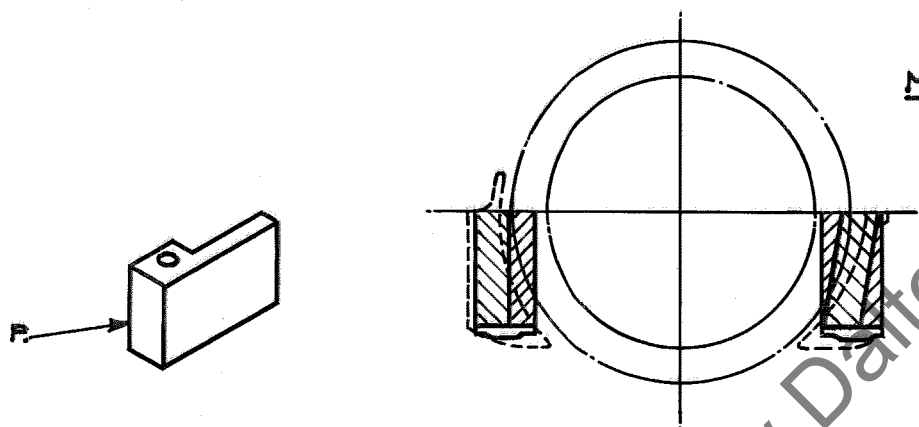


FIG. 14 REMOVAL OF BLOCKS AND PRESSURE BARS

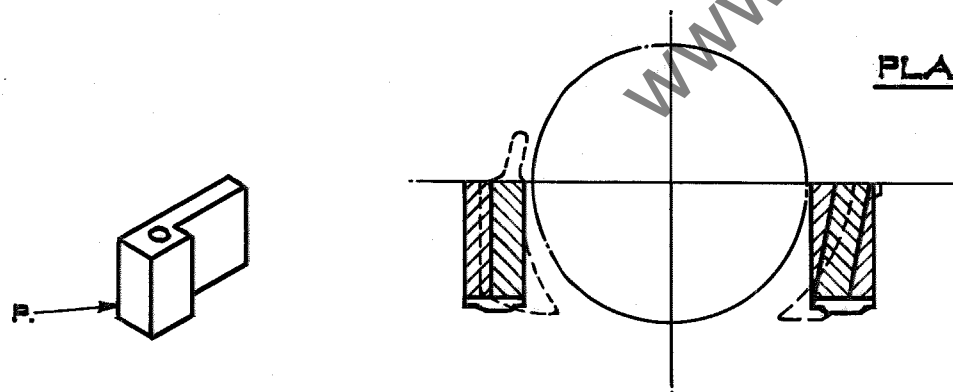
REMOVE FRONT PRESSURE BAR BLOCKS
TWIST PRESSURE BAR IN DIRECTION OF
ARROW THEN GENTLY WITHDRAW IT.



MOULDING, WITH FRONT PRESSURE BAR MOVED
TO ITS BACK POSITION.



PLANING, FRONT PRESSURE BAR IN
ITS NORMAL POSITION.



If it is desired to cut mouldings up to $\frac{5}{8}$ " (16mm) in depth the infeed pressure bar must be moved back from the cutterblock. This is done by removing the blocks 'P' Fig. 14 and moving the bar back in the slot. The blocks should then be replaced upside down.

For mouldings over $\frac{5}{8}$ " (16mm) in depth both pressure bars must be removed. The tension springs and safety stops 'S' should be removed, thus allowing the outfeed pressure bar to be withdrawn. Remove blocks 'P' and the infeed pressure bar can be removed by tilting as shown.

Mouldings can be worked in two ways, either by using the bottom table and passing the work under the cutters with the power feed motor or by passing the work over the cutters by hand using the top table. The particular operation depends entirely on the type and size of moulding to be cut and also the quantity required. When using the top table, the fence acts as the guide. However with the bottom table wooden guide strips are necessary to keep the work parallel, which are secured by screws at each end of the table.

BEARING LIST

Makers' Number	Size			Number per Machine	Where used on machine
	Bore	Outside Diameter	Width		
SKF 2308	40mm	90mm	33mm	2	Cutterblock
INA SCI 1616 Needle roller bearing	1"	1 $\frac{1}{2}$ "	1"	1	Pin for idler sprocket
FBC DN 2062	$\frac{5}{8}$ "	1.9/16"	7/16"	4	Table rollers
SKF 0.12 Thrust bearing	1 $\frac{1}{2}$ "	2.5/16"	23/32"	2	Raising screw
SKF 0.10 Thrust bearing	1 $\frac{1}{4}$ "	2.1/16"	23/32"	1	Raising screw
FBC DN 2100	1"	2 $\frac{1}{4}$ "	$\frac{5}{8}$ "	2	} Gearbox
FBC DN 2075	$\frac{3}{4}$ "	1 $\frac{7}{8}$ "	9/16"	2	

CUTTER ADJUSTMENT AND SETTING

The cutters are held in the block by wedges and each cutter is adjusted out by three micrometer screws. Cutter setting is greatly facilitated by using the Wadkin PRECISION cutter setter, supplied to special order only, but an ordinary straight edge will suffice.

When setting cutters proceed as follows:-

1. Remove the cutter guard.
2. Swing the canting fence clear of the tables or push back as far as possible.
3. Withdraw horizontally the front table.
4. Adjust the back table to the zero position on the scale, which should bring the table surface $1/16''$ above the body of the cutterblock.
5. Place the cutter setter on the back table allowing it to project over the cutterblock as Fig. 15.
6. One of the knives is then adjusted level with the table surface by means of the micrometer screws using the special key provided. When correctly set the knife should lightly contact the spring controlled pad and the pointer should register zero on the scale. It is advisable to check the setting at either end and in the mid position of the block to ensure the knife is set parallel.
7. Lock the wedges from the centre outwards.
8. Set the second knife in a similar position, noting that both knives in the block must register the same, i. e. zero.

If a straight edge is used proceed as far as operation 5 and instead of the cutter setter place the straight edge on the back table as shown in Fig. 16. Set the knives so that they lightly make contact with the straight edge.

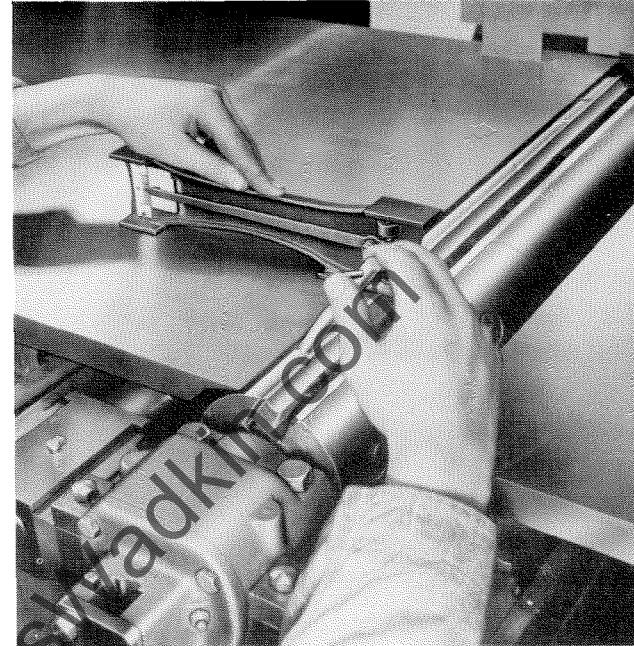


FIG. 15 PRECISION CUTTER SETTER

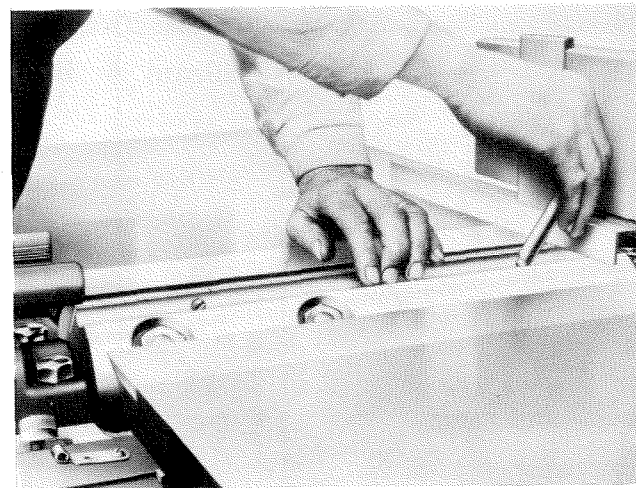


FIG. 16

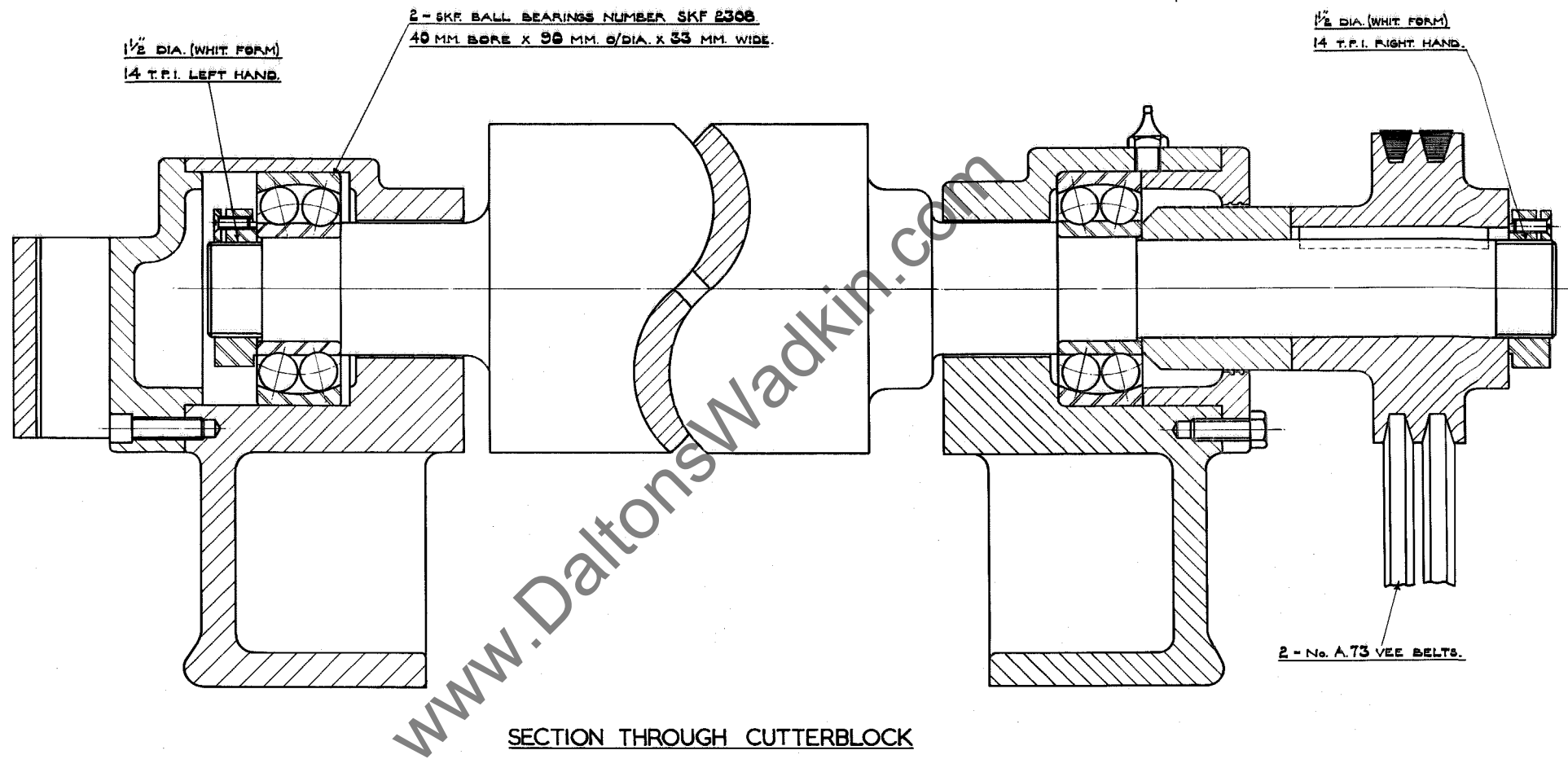


FIG. 17

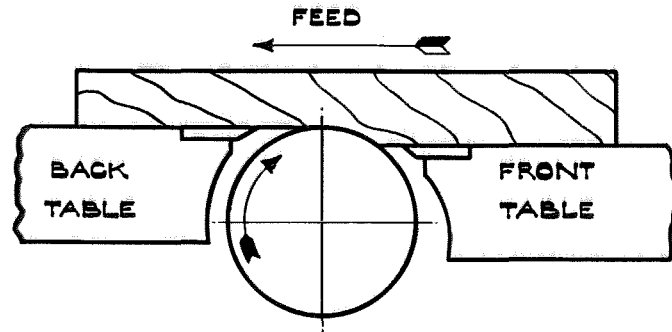


FIG. 18 CORRECT RUN OF GRAIN.

To obtain the best surface finish always check the direction of the grain, which should run with the cutter as in Fig. 18.

To obtain a perfectly flat surface, especially with warped stock, always put maximum pressure on the back table at 'K' Fig. 19, and as little as possible on the front table at 'L'.

Greater pressure will be required on bad grained timber, otherwise chattering will take place resulting in a coarse finish near each knot.

When planing four sides of timber square, turn the timber anti-clockwise after each cut, so that there will always be a machined side toward the fence. The fence locates accurately at 90° on machined pads and no adjustment is necessary to maintain this accuracy.

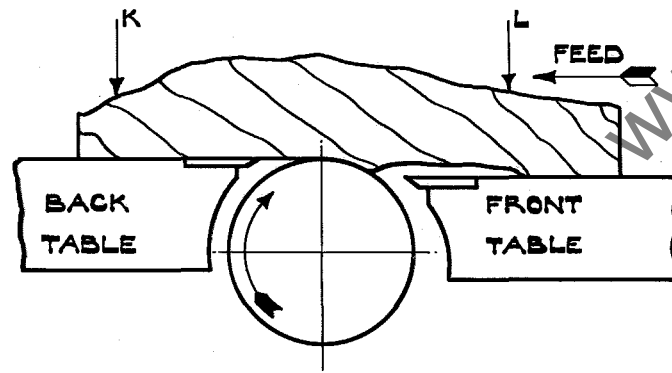


FIG. 19 FEEDING WARPED TIMBER.

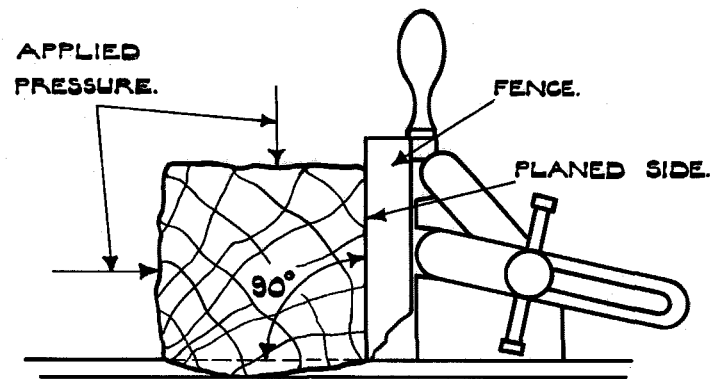


FIG. 20 WORKING WITH FENCE.

www.DaltonsWadkin.com
ELECTRICAL INSTALLATION INSTRUCTIONS

The cabling between the motor and the control gear has been carried out by Wadkin Ltd., and it is only necessary to bring the line leads to the machine for it to be put into service. This should be done as follows:-

- (1) Fit triple pole isolating switch near the machine, unless this has been supplied to special order by Wadkin Ltd., when it will be fitted and connected up at the machine.
- (2) Connect the line lead to the appropriate terminals, see diagram. The cables should be taken to the machine in conduit and secured to the control gear by means of locknuts.
- (3) Connect solidly to earth.
- (4) Close isolating switch and press start button. If machine does not rotate in the correct direction, interchange any two incoming line leads.

FAILURE TO START

- (1) Electric supply is not available at the machine.
- (2) Fuses have blown or have not been fitted.
- (3) Isolating switch has not been closed.
- (4) Lock-off or stop button has not been released.

STOPPAGE DURING OPERATION AND FAILURE TO RESTART

- (1) Fuses have blown.
- (2) Overloads have tripped. They will reset automatically after a short time, and the machine can be restarted in the usual manner.

ADJUSTMENT

For a finer overload setting, set the load indicator to a lower value, and vice versa for a less fine setting.

GENERAL

Check the earth connection from time to time. Users are recommended to display in an appropriate position in the maintenance department Wadkin Electrical Maintenance Instruction Card, No. 356, which is issued gratis on application.

MAIN DISCONNECT SWITCH.

www.DaltonsWadkin.com

SUPPLY

MAGNET COIL.

MAINTAIN CONTACT.

OVERLOAD HEATER COILS.

OVERLOAD TRIP SWITCH.

TYPE R.A. SIZE N²1 MAGNETIC STARTER.
MOUNTED ON DOOR OF CONTROL GEAR CAVITY.

550 VOLT MOTOR. PUSH BUTTON STATION.

DUAL VOLTAGE MOTOR CONNECTIONS.			
WHEN DUAL VOLTAGE MOTORS ARE SUPPLIED WITH 9 LEADS THE CONNECTIONS SHOWN BELOW ARE NECESSARY. SERIES/STAR - 440 VOLTS. PARALLEL/STAR - 220 VOLTS.		WHEN DUAL VOLTAGE MOTORS ARE SUPPLIED WITH 6 LEADS THE CONNECTIONS SHOWN BELOW ARE NECESSARY. STAR - 340/440 VOLTS. DELTA - 200/250 VOLTS.	
TO T1-T2-T3 AT STARTER.	TO T1-T2-T3 AT STARTER.	TO T1-T2-T3 AT STARTER.	TO T1-T2-T3 AT STARTER.
SERIES/STAR 9 LEAD MOTORS.		STAR DELTA 6 LEAD MOTORS.	

INSTALLATION INSTRUCTIONS.

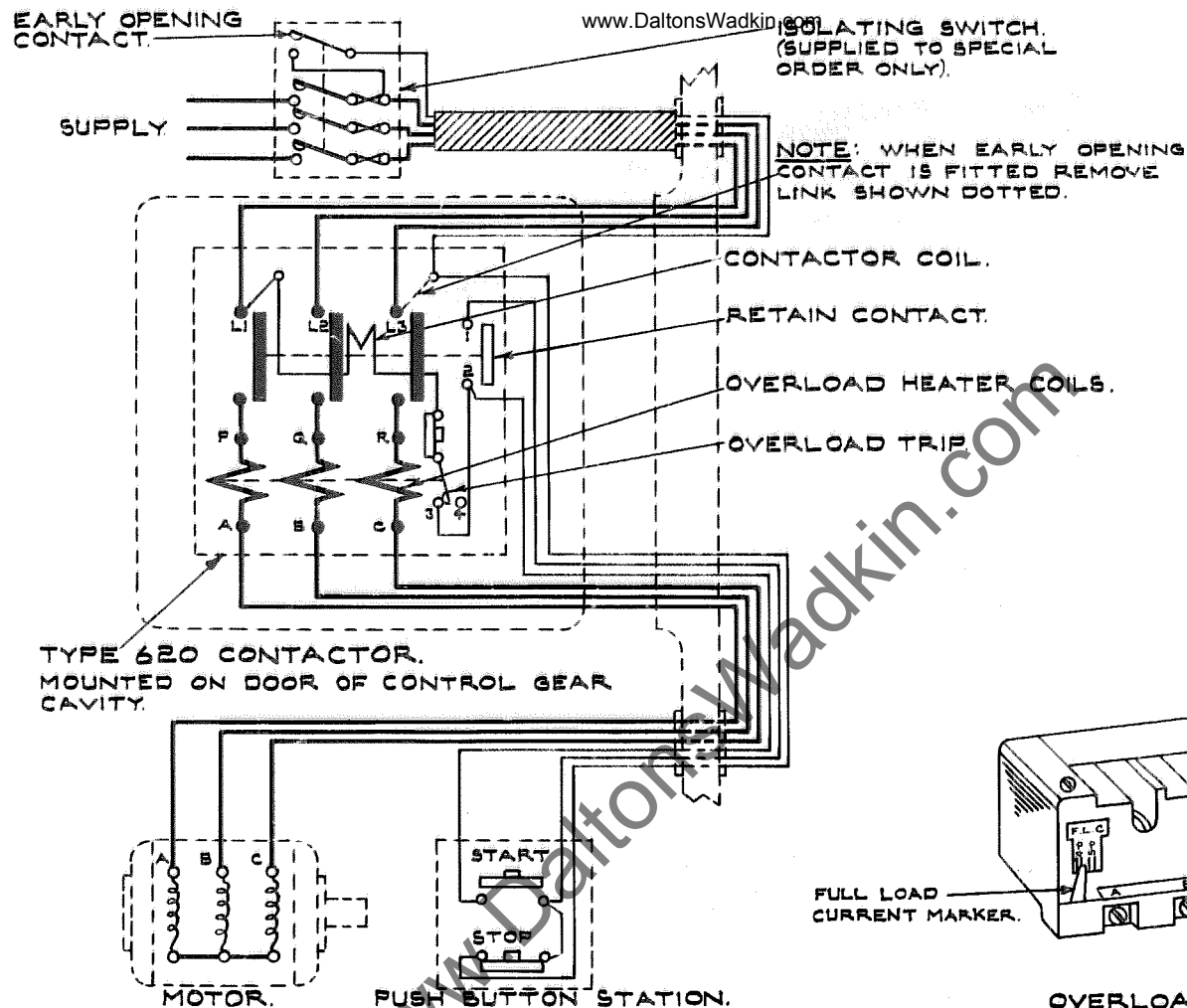
FIT MAIN DISCONNECT SWITCH NEAR MACHINE SO THAT THE ELECTRICAL GEAR MAY READILY BE ISOLATED FOR INSPECTION PURPOSES. BRING SUPPLY CABLES TO DISCONNECT SWITCH AND TO L1-L2-L3 AT MAGNETIC STARTER THROUGH CONDUIT WHICH SHOULD BE SCREWED INTO THE MACHINE FRAME AND SECURED BY MEANS OF LOCKNUTS. ENSURE THAT THE DIRECTION OF ROTATION OF THE MOTOR IS CORRECT BEFORE PUTTING THE MACHINE INTO SERVICE. TO REVERSE ROTATION INTERCHANGE L1 AND L3 AT MAGNETIC STARTER.

OPERATING INSTRUCTIONS.

TO START MACHINE: CLOSE MAIN DISCONNECT SWITCH AND PRESS 'START' BUTTON. TO STOP MACHINE: PRESS 'STOP' BUTTON. TO LOCK OFF MACHINE: PRESS AND TURN 'STOP' BUTTON, THIS MUST BE RELEASED BEFORE A START CAN BE MADE.

OVERLOAD.

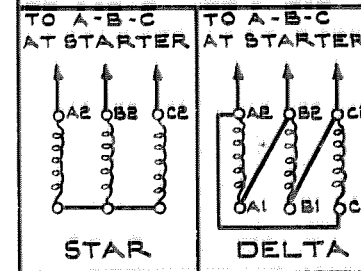
SHOULD THE MACHINE STOP DUE TO OVERLOAD, THE OVERLOAD TRIP SWITCH SHOULD BE RESET BY DEPRESSING THE PLUNGER ON THE OVERLOAD ASSEMBLY, THEN START IN THE USUAL MANNER.



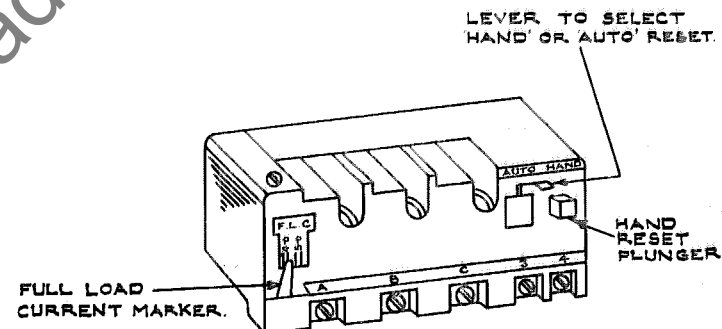
DUAL VOLTAGE CONNECTIONS.

WHEN DUAL VOLTAGE MOTORS ARE SUPPLIED THE CONNECTIONS SHOWN BELOW ARE NECESSARY.

STAR - 340/440 VOLTS.
DELTA - 200/250 VOLTS.



D.863



OVERLOAD PROTECTION.

INSTALLATION INSTRUCTIONS.

FIT ISOLATING SWITCH NEAR MACHINE SO THAT THE ELECTRICAL GEAR MAY READILY BE ISOLATED FOR INSPECTION PURPOSES. BRING SUPPLY CABLES TO ISOLATING SWITCH AND TO L1-L2-L3 AT CONTACTOR THROUGH CONDUIT WHICH SHOULD BE SCREWED INTO THE MACHINE AND SECURED BY MEANS OF LOCKNUTS. ENSURE THAT THE DIRECTION OF ROTATION IS CORRECT BEFORE PUTTING THE MACHINE INTO SERVICE. TO REVERSE ROTATION INTERCHANGE L1 AND L3 AT CONTACTOR.

OPERATING INSTRUCTIONS.

TO START MACHINE: CLOSE ISOLATING SWITCH AND PRESS 'START' BUTTON. TO STOP MACHINE: PRESS 'STOP' BUTTON. TO LOCK OFF MACHINE: PRESS AND TURN 'STOP' BUTTON, THIS MUST BE RELEASED BEFORE A START CAN BE MADE.

OVERLOAD.

SHOULD THE MACHINE STOP DUE TO OVERLOAD, WAIT FOR A SHORT TIME TO ALLOW THE HEATER COILS TO COOL THEN START IN THE USUAL MANNER. THE OVERLOADS ARE SET AT THESE WORKS AT 'AUTO' FOR AUTOMATIC RESET AFTER TRIPPING. IF SET AT 'HAND' THE PLUNGER ON THE OVERLOAD ASSEMBLY SHOULD BE DEPRESSED TO RESET.



... blow away harmful dust, chips and dirt with a Wadkin Electric Blower

No motor can run at its maximum efficiency with its ventilating duct or control gear covered with dust and dirt. Sooner or later the resultant overheating will cause serious trouble.

Similarly, accumulations of chips and dust, in the mechanical parts of the machine can interfere with its efficiency. A few minutes a week for blowing down all Woodworking Machinery will be amply repaid in better and easier running, in increased life, and freedom from breakdown.

Blowers can be supplied for single phase A.C. or Direct Current for any voltage up to 250.

Please state voltage when ordering.



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 nameplate attached to the machine and will be similar to the picture below.

Wadkin Ltd.		
LECESTER ENGLAND		
MACHINE SERIAL NO.	FD 9134	
MACHINE TEST NO.	75601	
PATENT NO.		
VOLTAGE	PHASE	CYCLES
400	3	50
SEE MAINTENANCE INSTRUCTION BOOK FOR LUBRICATION DETAILS		

Please see the next page for sample detail of how to order spare parts.

SAMPLE TYPE ORDER

MACHINE: FM 18"

MACHINE NO: 1407

TEST NO: 68975

PARTS REQUIRED

1 - FM1006/1/FM120 DUST COVER

1 - FM1006/1/FM203 SUPPORT BRACKET L.H.

1 - FM1006/1/FM307 GEAR CHANGE LEVER BOSS

1 - FM1006/1/FM360 GEAR CHANGE LEVER

1 - FM1006/1/FM507 MOTOR SWING PLATE

18" FM MACHINE SPARE PARTS LIST

FM1006/1/FM5	SPROCKET FOR FEED ROLLER
FM1006/1/FM7	BLOCK FOR FRONT PRESSURE BAR
FM1006/1/FM9	BEARING FOR FEED ROLLER
FM1006/1/FM19	12" DIAMETER RISE AND FALL HANDWHEEL
FM1006/1/FM20	PACKING PIECE FOR THICKNESSING SCALE
FM1006/1/FM26	INFEED PRESSURE BAR (18" MACHINE)
FM1006/1/FM27	OUTFEED PRESSURE BAR (18" MACHINE)
FM1006/1/FM104	STOP FOR PRESSURE BARS
FM1006/1/FM112	DUST PLATE FOR ROLLER BEARING BLOCK
FM1006/1/FM115	BUSH FOR HANDWHEEL SHAFT
FM1006/1/FM117	CHAINWHEEL FOR HANDWHEEL SHAFT
FM1006/1/FM118	COVER PLATE FOR HANDWHEEL SHAFT
FM1006/1/FM119	DUST COVER
FM1006/1/FM120	DUST COVER
FM1006/1/FM131	BLOCK FOR REAR PRESSURE BAR (R.H.)
FM1006/1/FM132	BLOCK FOR REAR PRESSURE BAR (L.H.)
FM1006/1/FM143	HANDWHEEL SHAFT
FM1006/1/FM148	PLAIN OUTFEED ROLLER (18" MACHINE)
FM1006/1/FM150	FLUTED INFEED ROLLER (18" MACHINE)
FM1006/1/FM165	TIE BAR FOR BRIDGE PIECE (18" MACHINE)
FM1006/1/FM166	SCRAPER FOR OUTFEED ROLLER (18" MACHINE)
FM1006/1/FM174	FILLING IN PIECE BETWEEN STRETCHER (18" MACHINE)
FM1006/1/FM202	SUPPORT BRACKET R.H.
FM1006/1/FM203	SUPPORT BRACKET L.H.
FM1006/1/FM254	SCREWED SHAFT (TABLE ROLLER ADJ.)
FM1006/1/FM258	POINTER FOR THICKNESSING TABLE
FM1006/1/FM265	SUPPORT ROLLER (18" MACHINE)
FM1006/1/FM305	ISOFUSE COVER (R.H. STRETCHER)
FM1006/1/FM307	GEAR CHANGE LEVER BOSS
FM1006/1/FM310	GEAR CHANGE BRACKET
FM1006/1/FM312	STRETCHER (R.H.) (18" MACHINE)
FM1006/1/FM314	COVER (R.H. STRETCHER)
FM1006/1/FM358	GEAR CHANGE SHAFT
FM1006/1/FM360	GEAR CHANGE LEVER
FM1006/1/FM361	GEAR CHANGE CONNECTING LINK
FM1006/1/FM408	DROP ARM FOR CONNECTING LINK
FM1006/1/FM472	PIN FOR DROP ARM
FM1006/1/FM501	MOTOR PIVOT BRACKET SIDE FRAME
FM1006/1/FM502	MOTOR PIVOT BRACKET (STRETCHER)
FM1006/1/FM507	MOTOR SWING PLATE
FM1006/1/FM508	MOTOR SWING PLATE

FM1006/1/FM554	MOTOR PIVOT SHAFT
FM1006/1/FM558	TIE BAR LOCKING SHAFT
FM1006/1/FM559	TIE BAR PIN
FM1006/1/FM560	MOTOR PULLEY (GEARBOX)
FM1006/1/FM563	TIE BAR
FM1006/1/FM568	MOTOR PULLEY (CUTTERBLOCK)
FM1006/1/FM603/A	SLIDE FOR SURFACING TABLE (18" MACHINE)
FM1006/1/FM604	SURFACING TABLE
FM1006/1/FM651	LIP PLATE FOR SURFACING TABLE
FM1006/1/FM652	LIP PLATE FOR SURFACING TABLE
FM1006/1/FM653	CLAMP NUT
FM1006/1/FM654	CLAMP NUT HANDLE
FM1006/1/FM655	POINTER
FM1006/1/FM656	DOVETAIL CHECKSTRIP
FM1006/1/FM659	CHECK STRIP FOR TABLE
FM1006/1/FM660	LOCKING PLATE
FM1006/1/FM661	CHECK STRIP FOR SURFACING TABLE
FM1006/1/FM701	BRACKET FOR CUTTERBLOCK GUARD
FM1006/1/FM752	SLIDE BAR FOR TELESCOPIC GUARD
FM1006/1/FM755	POST FOR TELESCOPIC GUARD
FM1006/1/FM764	TELESCOPIC GUARD
FM1006/1/FM951	RACK SHAFT FOR FENCE
FM1006/1/EV65	SPRING
FM1006/1/JP474	SPRING HOLDER
FM1006/1/MH57	SCREW STOP
FM1006/1/MJ116	STOP SCREW FOR BRIDGE PIECE
FM1006/1/MK9	BEARING FOR TABLE SCREW
FM1006/1/MK10	NUT FOR TABLE SCREW
FM1006/1/MK78/A	TABLE SCREW
FM1006/1/RD17	TABLE EXTENSION
FM1006/1/RD19/A	FENCE
FM1006/1/SSR6	SCALE
FM1006/1/SSR 151	SCALE FOR SURFACE PLANER TABLES
FM1006/1/SSR 152	SCALES FOR SURFACE PLANER TABLES
FM1006/1/1A	SLIDE ADJUSTMENT SCREW
FM1006/1/1A	TEE LOCKING HANDLE
FM1006/1/1B	HANDWHEEL
FM1006/1/2	HORN HANDLE
FM1006/1/2A	6" HANDWHEEL
FM1006/1/3	LOOSE COLLAR
FM1006/1/4	LOOSE COLLAR

FM1008/FM1	FRONT BRIDGE PIECE
FM1008/FM2	REAR BRIDGE PIECE
FM1008/FM3	BEARING CAP FOR FRONT BRIDGE PIECE
FM1008/FM11	C/BLK END CAP
FM1008/FM14	HINGED COVER FOR R.H. SIDE FRAME
FM1008/FM24	R.H. SIDE FRAME
FM1008/FM25	L.H. SIDE FRAME
FM1008/FM103	SLEEVE FOR CUTTERBLOCK
FM1008/FM108	LIFT PLATE FOR INFEED PRESSURE BAR
FM1008/FM109	SPRING ROD FOR PRESSURE BAR
FM1008/FM110	SPRING ROD FOR FEED ROLLERS
FM1008/FM111	CLAMP PLATE FOR C/BLK GUARD
FM1008/FM121	SERRATED WASHER FOR IDLER PLATE
FM1008/FM144	PIN FOR IDLER SPROCKET
FM1008/FM145	IDLER PLATE
FM1008/FM156	PRESSURE BAR BLOCK
FM1008/FM180	CUTTERBLOCK
FM1008/FM204	NUT FOR RAISING SCREW
FM1008/FM206	THICKNESSING TABLE
FM1008/FM255	LINK (TABLE ROLLER ADJ.)
FM1008/FM259	ROCKING SHAFT
FM1008/FM260	TABLE ROLLER BEARING BLOCK
FM1008/FM264	TABLE ROLLER
FM1008/FM306	SPIRAL GEAR FOR RAISING MOTION
FM1008/FM351	RAISING SCREW BUSH
FM1008/FM352	RAISING GEAR COVER
FM1008/FM353	SPACING SLEEVE
FM1008/FM354	SPACING COLLAR
FM1008/FM355	RAISING SCREW
FM1008/FM357	RAISING CHAINWHEEL
FM1008/FM362	CHAINWHEEL SPINDLE
FM1008/FM363	BUSH FOR L.H. STRETCHER
FM1008/FM364	BUSH FOR L.H. STRETCHER
FM1008/FM901	CUTTERGUARD BEHIND FENCE
FM1008/RD16	FENCE BRACKET
FM1008/RD20	SLOTTED LINK
FM1008/RD25	FENCE BASE
FM1008/RD26	FLANGE FOR FENCE RACK SHAFT
FM1008/RD36	RACK PINION AND SPINDLE
FM1008/RD39/A	STUD FOR FENCE BRACKET
FM1008/RD40	FULCRUM LINK

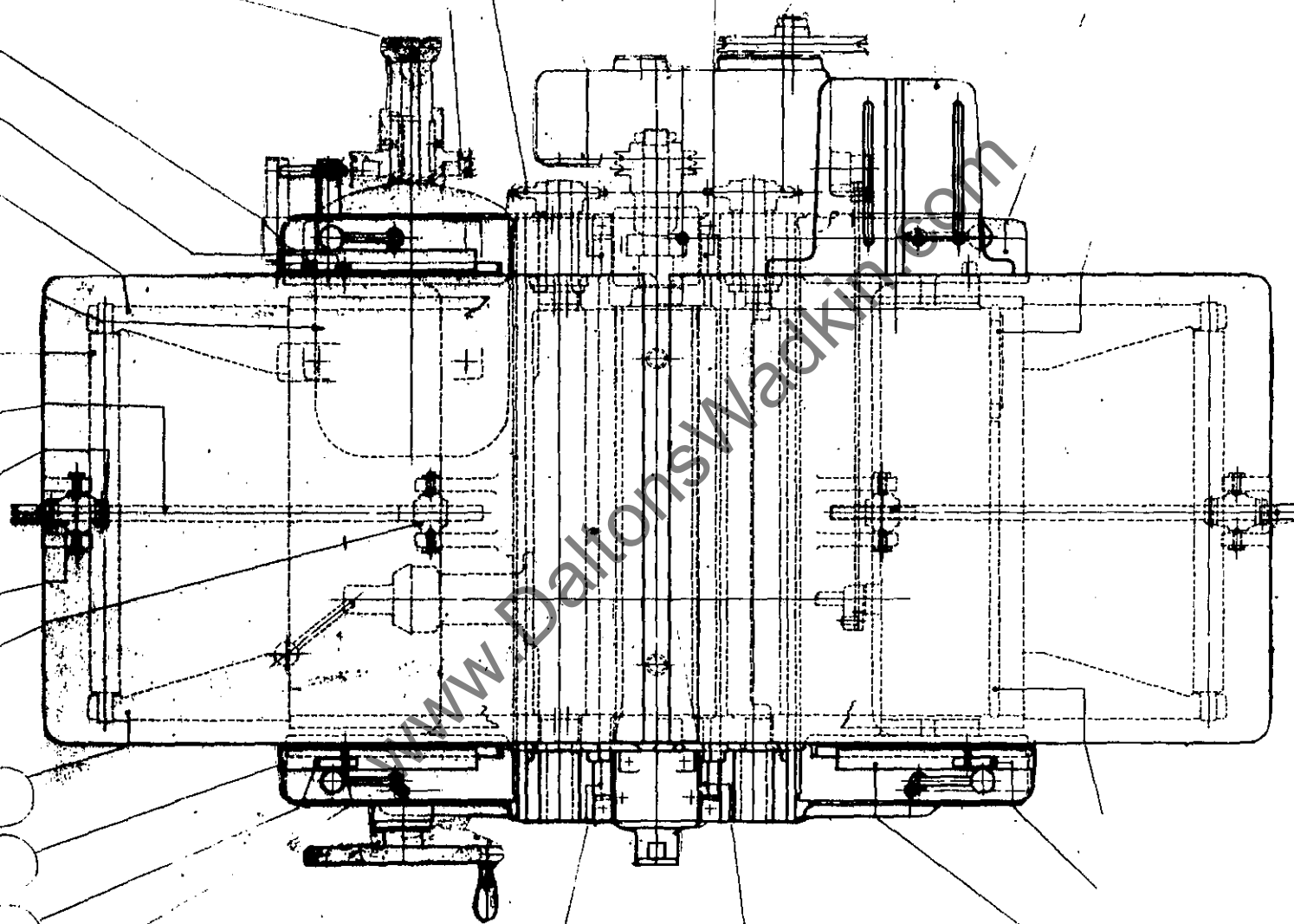
FM1008/RD41	LOCKING BOLT
FM1008/RD43	PIVOT PIN
FM1008/RD45	PLATE FOR FENCE
FM1008/RD79	STUD FOR FENCE BRACKET
FM1008/RD81	PLATE FOR FENCE BOLT
FM1008/RD83	PLATE FOR FENCE
FM1008/RE135/A	PRESSURE SPRING
FM1008/RK50	CATCH
FM1008/RK188	HANDLE
FM1008/RM11	LINK FOR ROCKING SHAFT
FM1008/RM12	FEED MOTOR BRACKET
FM1008/RM67	ECCENTRIC
FM1008/RM70	SWIVEL NUT
FM1008/RM71	LINK PIN
FM1008/RM245	WINGNUT FOR FEED ROLLER SPRING ROD
FM1008/RM246	WINGNUT FOR PRESSURE BAR SPRING ROD
FM1008/RM258	PRESSURE SPRING
FM1008/RW33	IDLER SPROCKET
FM1008/ACL2	TECALEMITE CONNECTION
FM1008/FBC DN2062	BEARINGS
FM1008/IE4820	TECALEMITE CONNECTION
FM1008/IE8281	TECALEMITE CONNECTION
FM1008/MK243	PINIONS
FM1008/SCI 1616	INA NEEDLE BEARINGS
FM1008/SKF010	SKEFCO BEARINGS
FM1008/SKF012	SKEFCO BEARINGS
FM1008/SKF2308	SKEFCO BEARINGS
FM1008/5A	LOCKNUT
FM1008/5B	LOCKNUT
FM1008/7	LOOSE COLLAR
FM1002/FM402	COVER FOR GEARBOX
FM1002/FM404	GEARBOX PULLEY 50 CYCLE DRIVE
FM1002/FM405	GEARBOX PULLEY 60 CYCLE DRIVE
FM1002/FM407	ARM FOR SELECTOR FORK
FM1002/FM409	SELECTOR FORK
FM1002/FM410	DROP ARM FOR CONNECTING LINK
FM1002/FM412	GEARBOX
FM1002/FM451	INPUT SHAFT

FM1002/FM452	GEAR SHAFT
FM1002/FM453	SLIDING GEAR SHAFT
FM1002/FM455	SPUR GEAR
FM1002/FM456	SPUR GEAR FOR INPUT SHAFT
FM1002/FM458	OUTPUT SHAFT
FM1002/FM459	COVER FOR GEARBOX
FM1002/FM460	COVER FOR GEARBOX
FM1002/FM461	BUSH FOR GEARBOX
FM1002/FM462	BUSH FOR GEARBOX
FM1002/FM464	PIN FOR SELECTOR FORK
FM1002/FM472	PIN FOR DROP ARM
FM1002/FM473	GEARBOX DIP STICK
FM1002/FM474	GEARBOX FILLER PLUG
FM1002/FM475	SPACING SHIM
FM1002/FM479	GROOVED SELECTOR SHAFT
FM1002/FM480	PLAIN SELECTOR SHAFT
FM1002/FM483	SHAFT FOR SELECTOR FORK ARM
FM1002/FM485	DRIVING SPROCKET
FM1002/RK619	FRONT CAP FOR OUTPUT SHAFT
FM1002/RK810	COVER PLATE
FM1002/RK820	BEARING LOCKING WASHER
FM1002/RK822	SPACING SLEEVE
FM1002/RM53	PINION 15T 6DP
FM1002/RM54	SLIDING TRIPLE GEAR 27, 39, 33T 8P.
FM1002/RM55	SPUR GEAR 33T 8P
FM1002/RM56	SPUR GEAR 21T 8P
FM1002/RM57	SPUR GEAR 27T 8P
FM1002/MK51	SPUR WHEEL
FM1002/189125	GACO OIL SEAL
FM1002/DN 2075	FISCHER BEARING
FM1002/DN 2100	FISCHER BEARING
FM1002/1A	BALL BEARING LOCKNUT

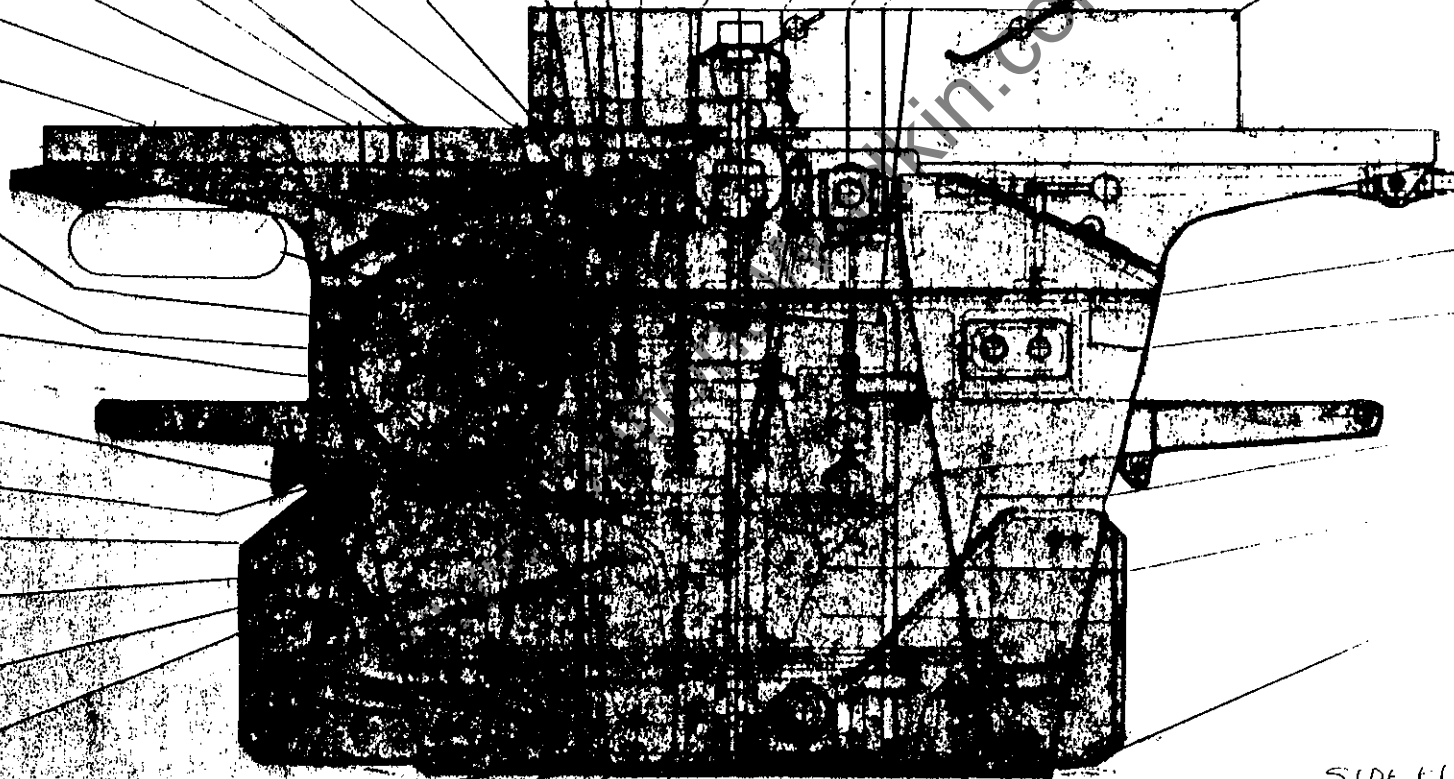
FM1002/RM53	PINION 15T 6 DP
FM1002/RM54	SLIDING TRIPLE GEAR 27, 39, 33T 8P
FM1002/RM55	SPUR GEAR 33T 8P
FM1002/RM56	SPUR GEAR 21T 8P
FM1002/RM57	SPUR GEAR 27T 8P
FM1002/MK51	SPUR WHEEL
FM1002/189125	GACO OIL SEAL
FM1002/DN 2075	FISCHER BEARING
FM1002/DN 2100	FISCHER BEARING
FM1002/1A	BALL BEARING LOCKNUT

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FM 18" X 9" SURFACING AND
THICKNESSING MACHINE



PLAN ELEVATION OF MACHINE.



SIDE ELEVATION OF
MACHINE

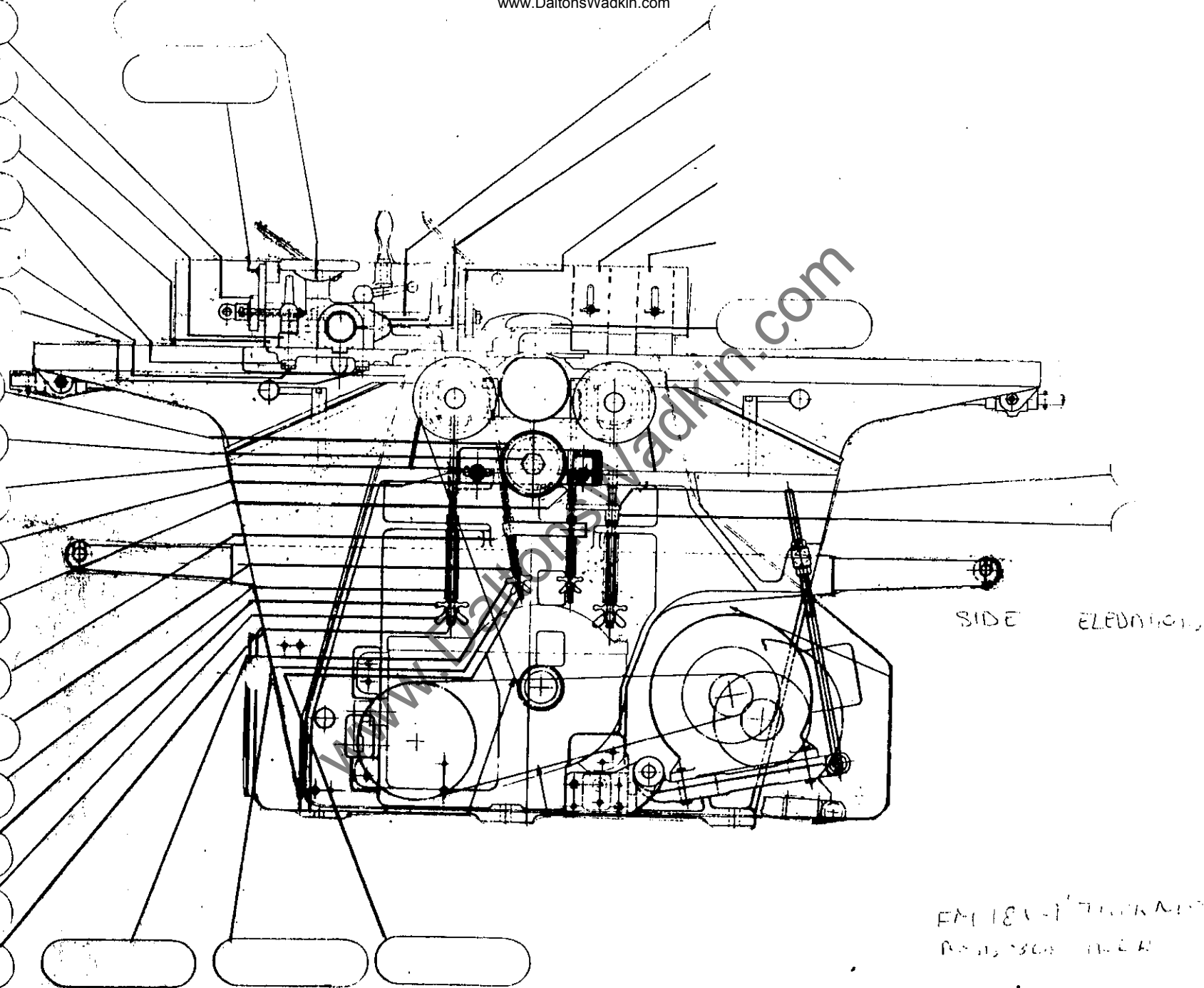
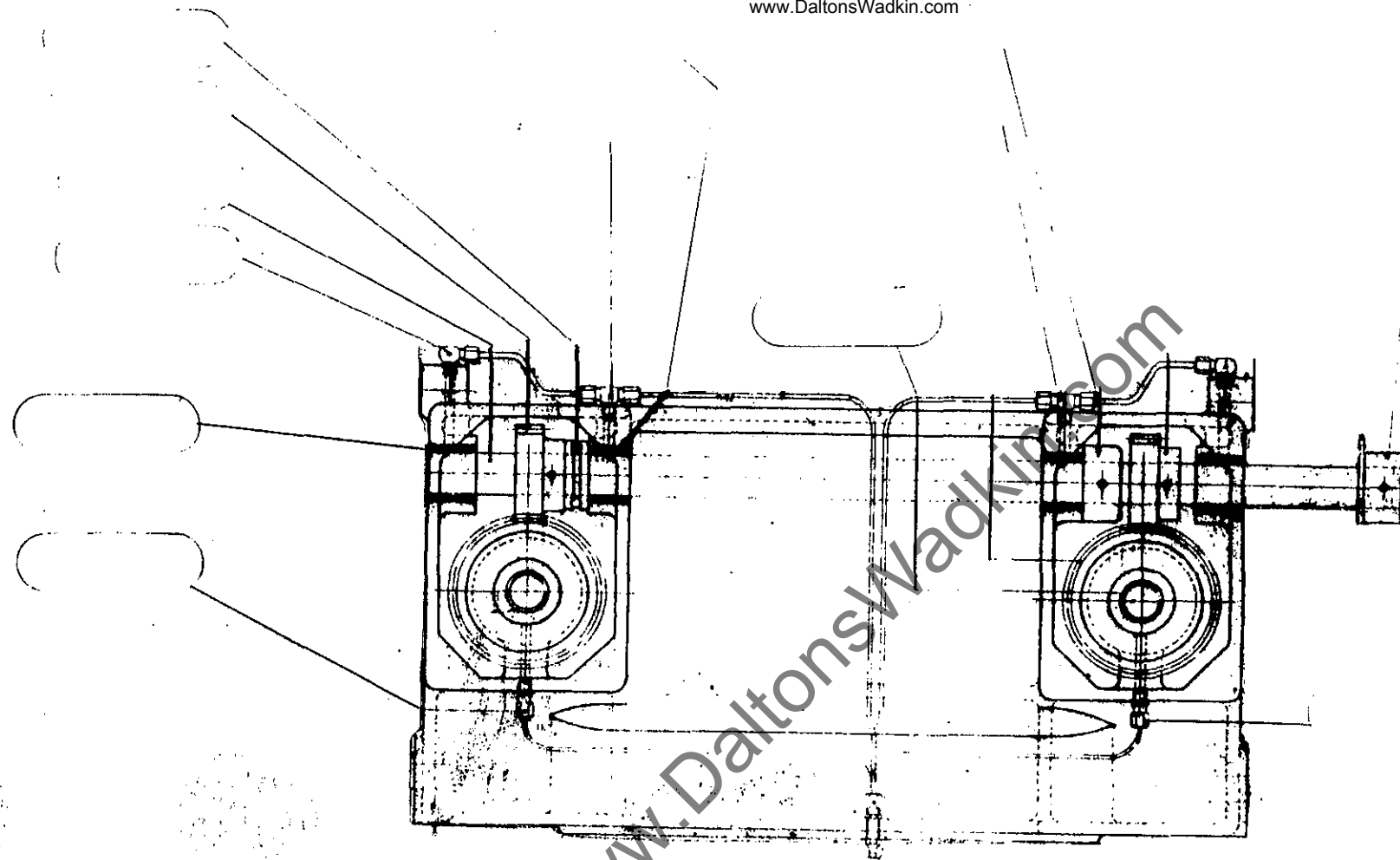
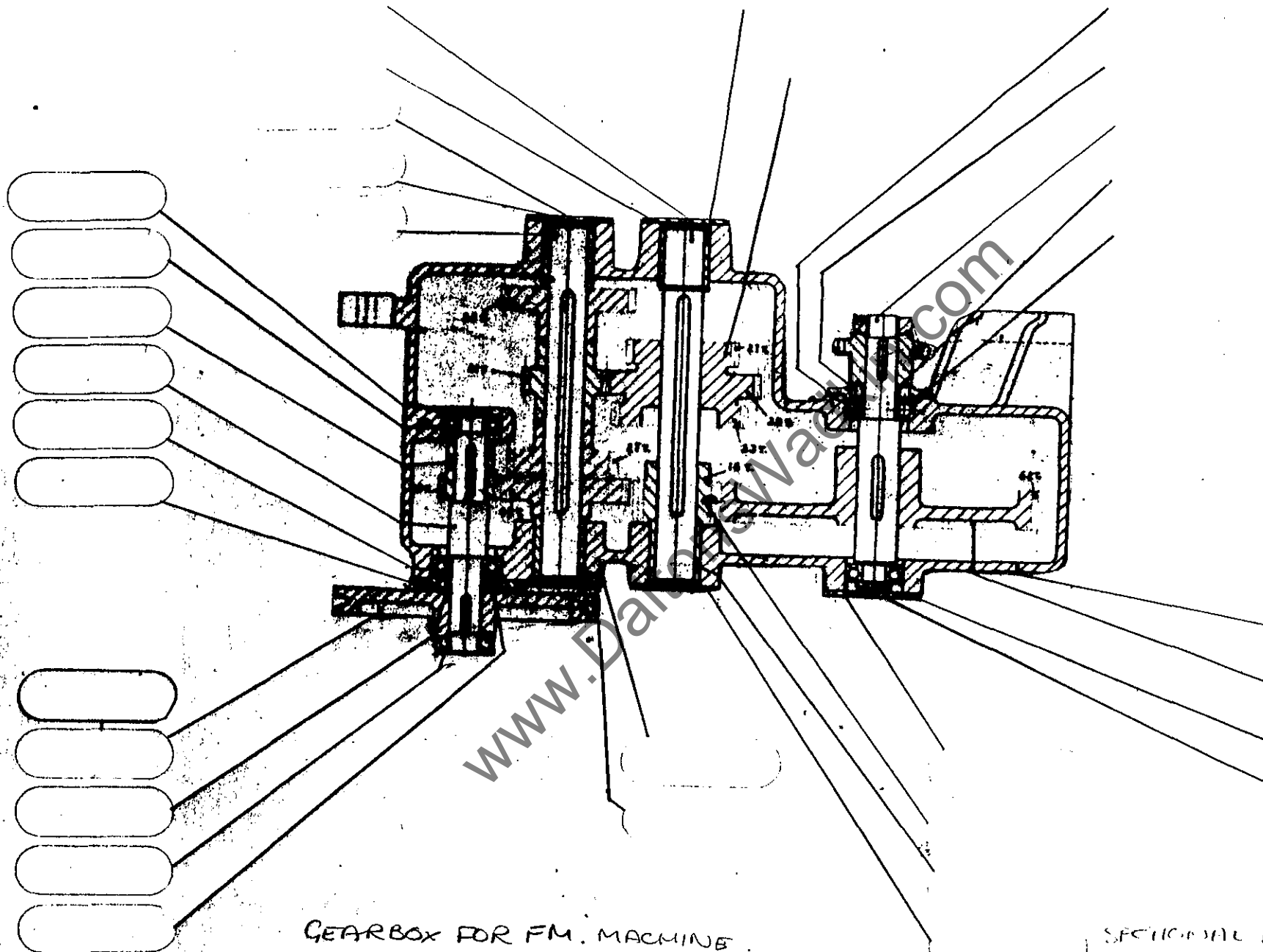


FIG. 180-1 TECHNICAL
DRAWING

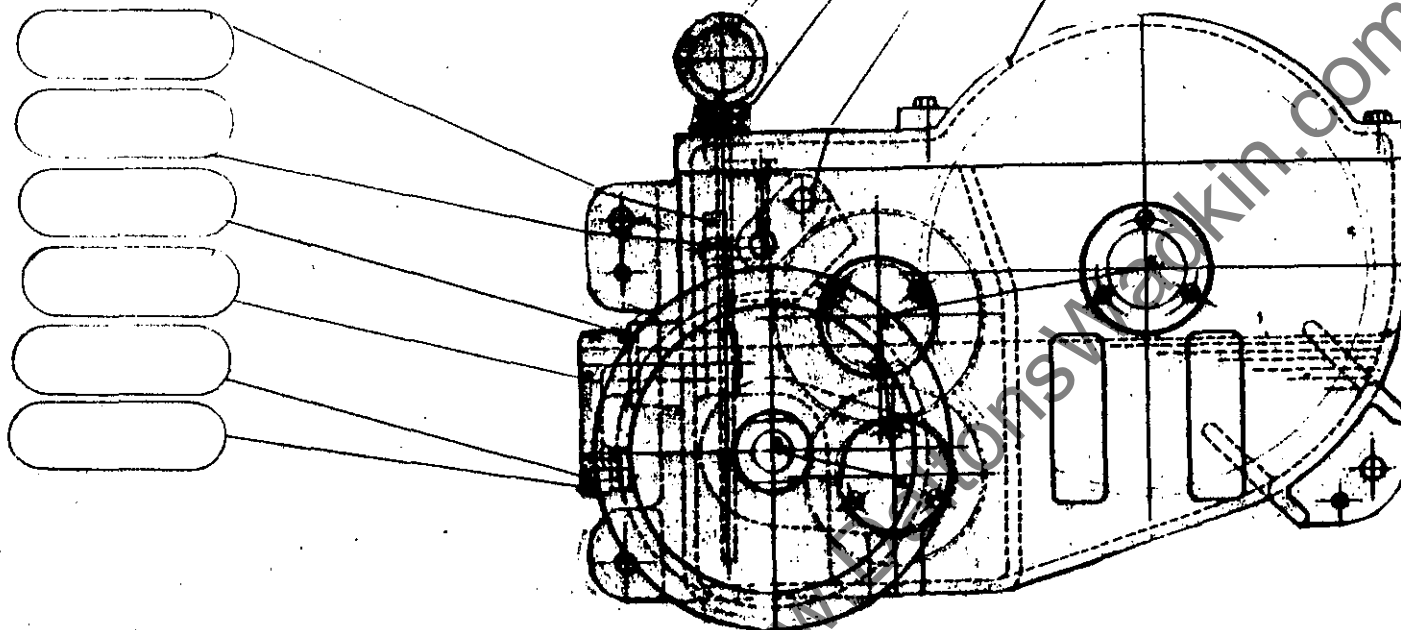


PLAN VIEW OF LEFT HAND STRETCHER

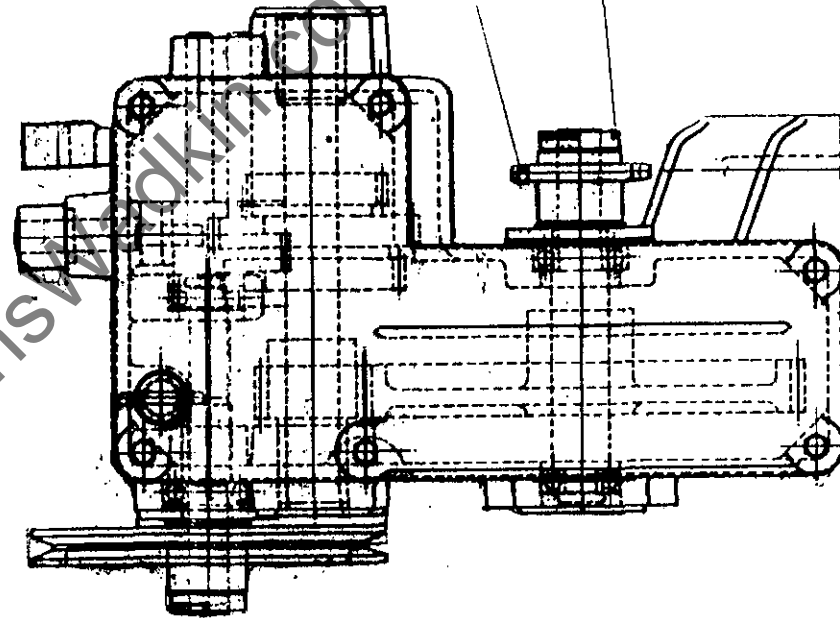
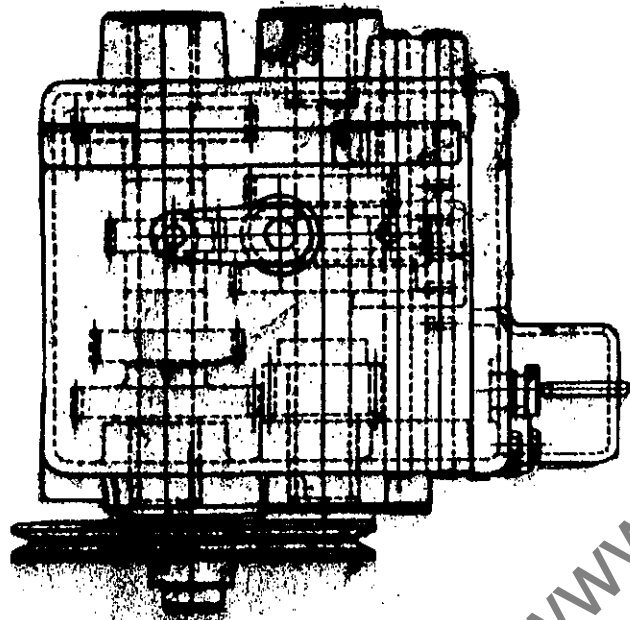


GEARBOX FOR FM MACHINE

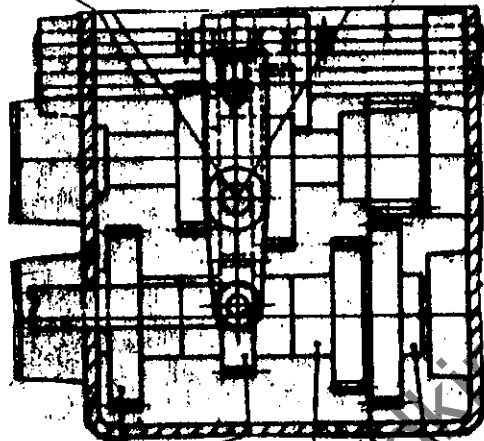
SECTIONAL ELEVATION
GEARBOX FOR FM MACHINE



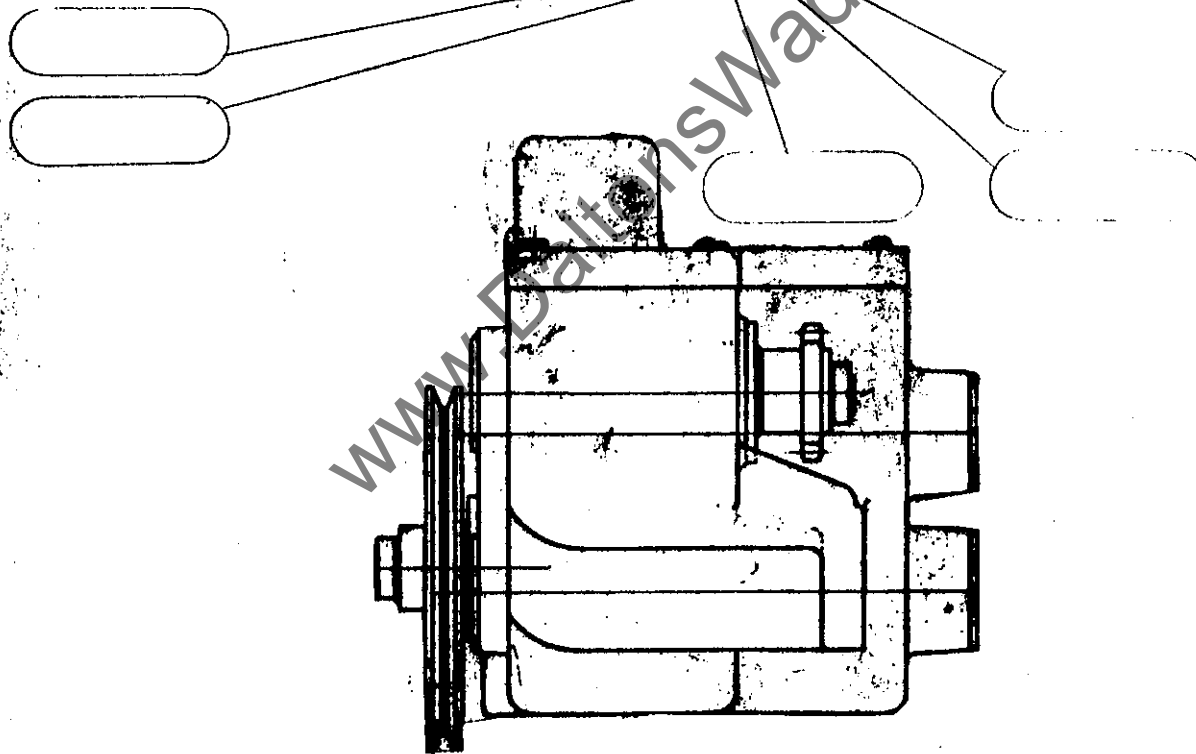
END ELEVATION OF GEARBOX



PLAN OF WOF GEARBOX



VIEW OF THE GEAR OF PUMP
FRONT WALL OF METAL REINFORCED



END ELEVATION.

FM200A
STRUCTURE
MOUNTING