

# Wadkin

## OVERHEAD BORING AND RECESSING MACHINE TYPE L. Q.

### PRINCIPAL DIMENSIONS AND CAPACITIES.

	English	Metric
Centre of cutter spindle to inside of body frame	21"	533 mm
Maximum distance between table and chuck	16"	406 mm
Size of main table	33" x 19"	838 mm x 483 mm
Longitudinal traverse by rack and pinion motion	30"	762 mm
Transverse motion by handwheel and screw	18"	457 mm
Vertical motion of table	8"	203 mm
Vertical motion of spindle either by hand lever or foot lever.	6"	152 mm
Spindle chuck bored - No. 4 Morse taper.		
Speeds of cutter spindle in r. p. m. on 50 and 60 cycles.	2,000, 3,000 4,000, 6,000.	2,000, 3,000 4,000, 6,000
Horse power of motor	2	2
Speed of motor in r. p. m. on 50 cycles	3,000	3,000
Speed of motor in r. p. m. on 60 cycles	3,600	3,600
Total height	6'3"	1905 mm
Floor space (allowing for full movements)	5'3" x 6'3"	1600 mm x 1905 mm
Approximate net weight in cwts.	14½ (1624 lbs)	750 kilos
Approximate shipping dimensions in cubic feet	93	2.63 cu. metres

### DETAILS INCLUDED WITH THE MACHINE.

One 5/8" (16 mm) adaptor bush.	Transparent cutter guard.
One set of stops for locating table.	Special endless belt and tool extractors.
One set of spindle depth stops.	One set of spanners.
Motor and control gear, including reverse switch.	One lubricating pump and tin of ball bearing lubricant.

Wadkin Ltd., Green Lane Works, Leicester. Telephone: Leicester 0116 2769111

# Wadkin OPERATING AND MAINTENANCE INSTRUCTIONS

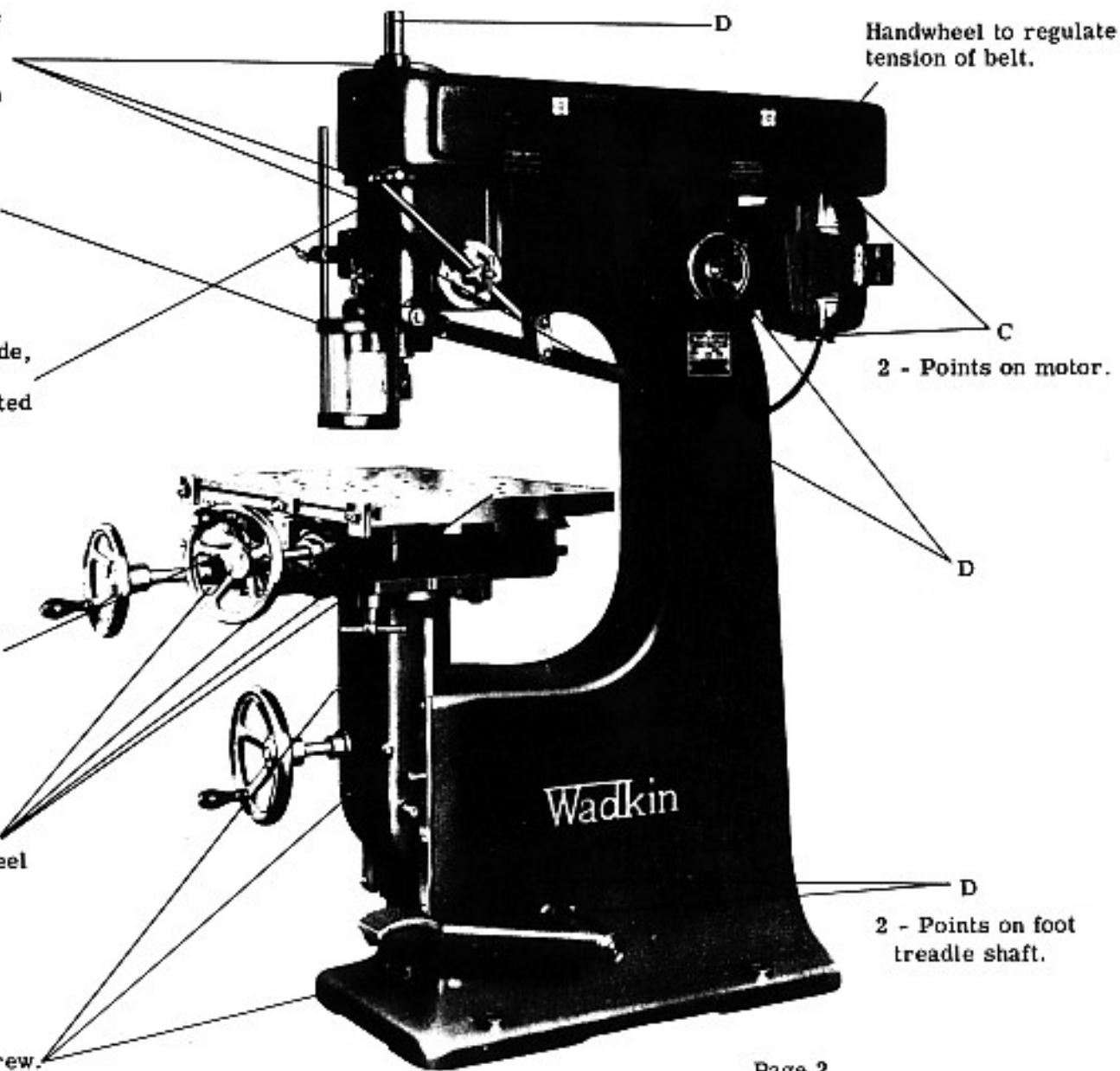
A 4 - Points. To lubricate ball bearing at 3 points on boring spindle the circular slide must be in top position and for the other point the spindle must be lowered until grease nipple is visible.

D To lubricate circular slide, spindle must be slightly lowered and oil can inserted through hole.

D 2 - Points. One on each locking handle shaft.

D 4 - Points. 1 - Point at each end of each handwheel shaft.

B 3 - Points on raising screw.



**INSTALLATION.**

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

**FOUNDATIONS.**

If the mill floor consists of 4" (100 mm) solid concrete no special foundation is necessary. Rag type foundation bolts  $\frac{5}{8}$ " (16 mm) diameter should be used to fix the machine to the floor, but these are not supplied by Wadkin Ltd. unless specially ordered. The outline on page 4 gives details of bolt positions and clearances required. Cut 6" (150 mm) to 8" (200 mm) square holes in the concrete and run in liquid cement with bolts in position. The machine should be carefully levelled before fixing and again after final fixing to ensure that no distortion has taken place.

**WIRING.**

For detailed cabling instructions see diagrams of connections on pages 6 (motors on 50 cycles) and 19 (Motors on 60 cycles).

**LUBRICATION.**

**POINTS A.** Give 1 or 2 depressions of the grease gun every 1 to 2 months.

**POINTS B.** Give 1 depression of the grease gun weekly.

**POINTS C.** Give 1 turn to the grease caps weekly, or if grease nipples are fitted give 1 depression of the grease gun weekly.

**POINTS D.** Oil twice weekly with good quality machine oil.

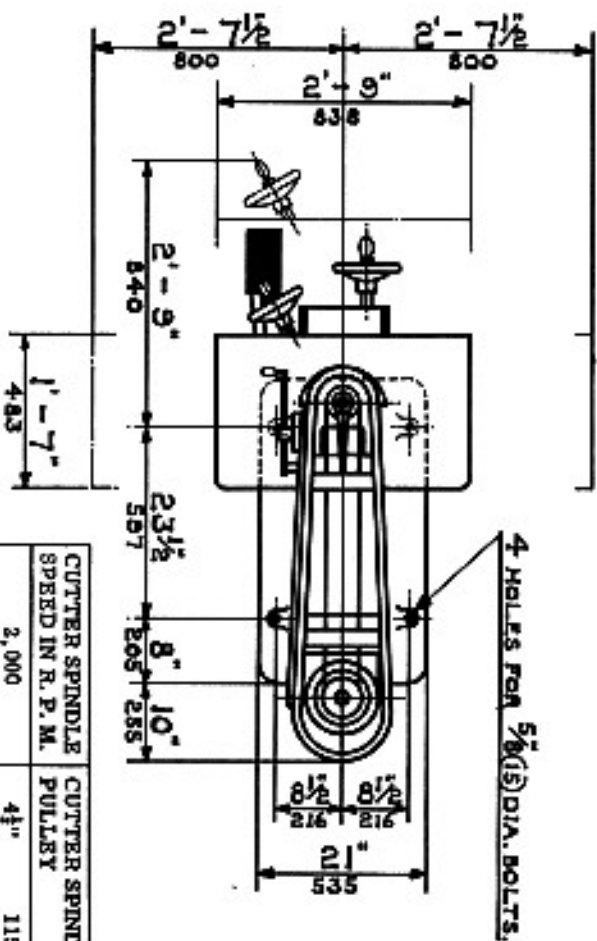
The grease recommended is Wadkin Ball Bearing Grease Grade L. 6. For lubricating oil use Wadkin Machine Oil Grade L. 4.

**WADKIN RANGE OF OIL AND GREASE LUBRICANTS WITH EQUIVALENTS.**

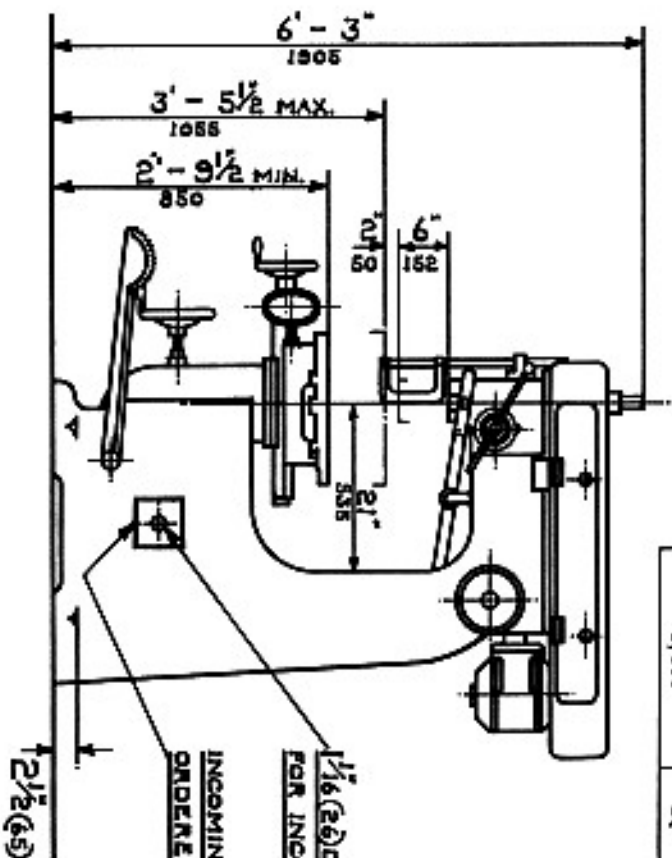
WADKIN GRADE.	EQUIVALENT LUBRICANTS.		
	SHELL MEX AND B. P. LTD.	MOBIL OIL CO. LTD.	CASTROL
Machine Oil Grade L. 4.	Shell Vitrea Oil 33.	Mobil "Vactra" Oil (Heavy Medium)	Perfecto NN
Ball Bearing Grease Grade L. 6.	Shell Alvania Grease 3	Mobilux Grease No. 2.	Spheerol S

**BORING & RECESSING MACHINE. TYPE LQ.**

DIMENSIONS IN FEET, INCHES & MILLIMETRES.

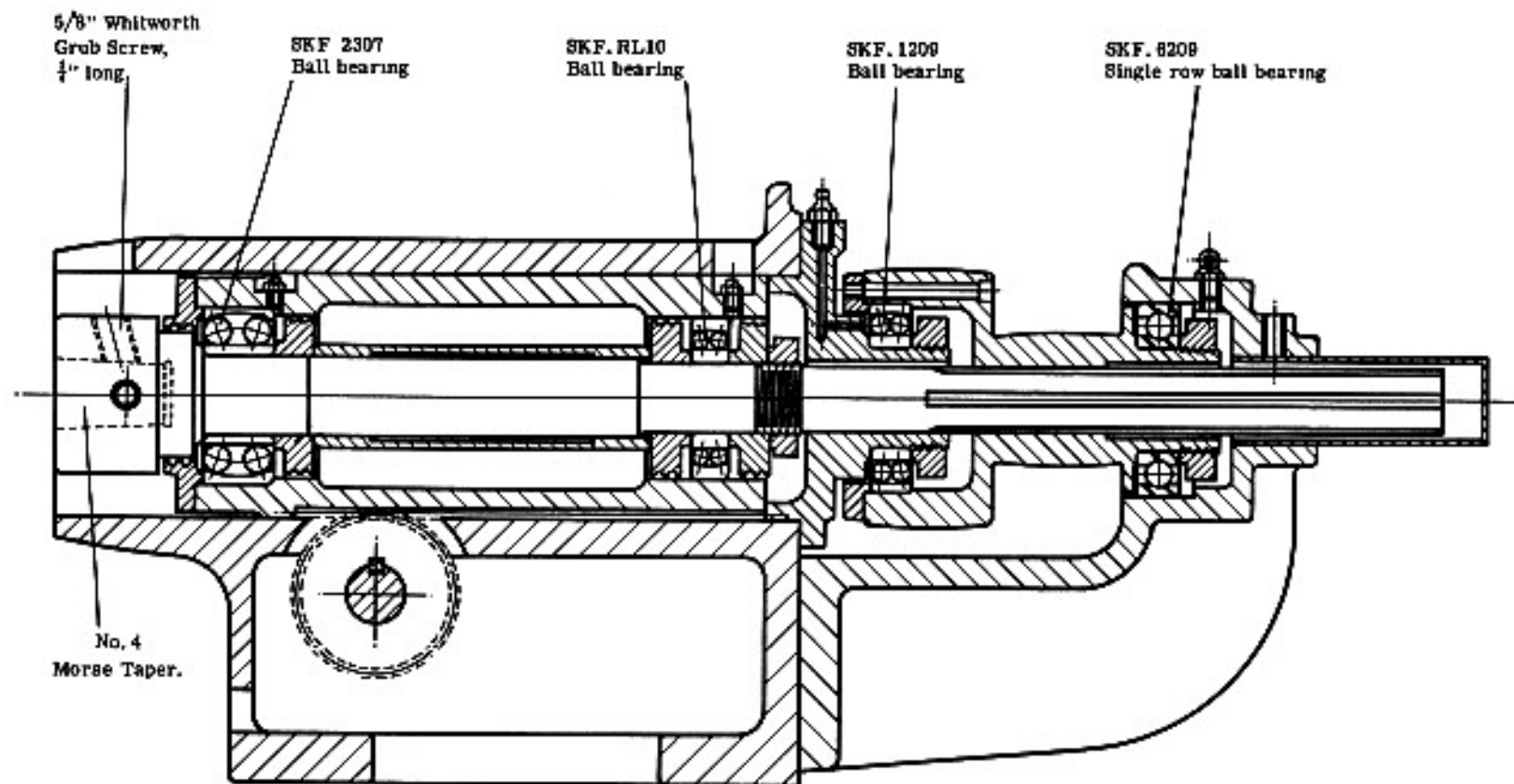


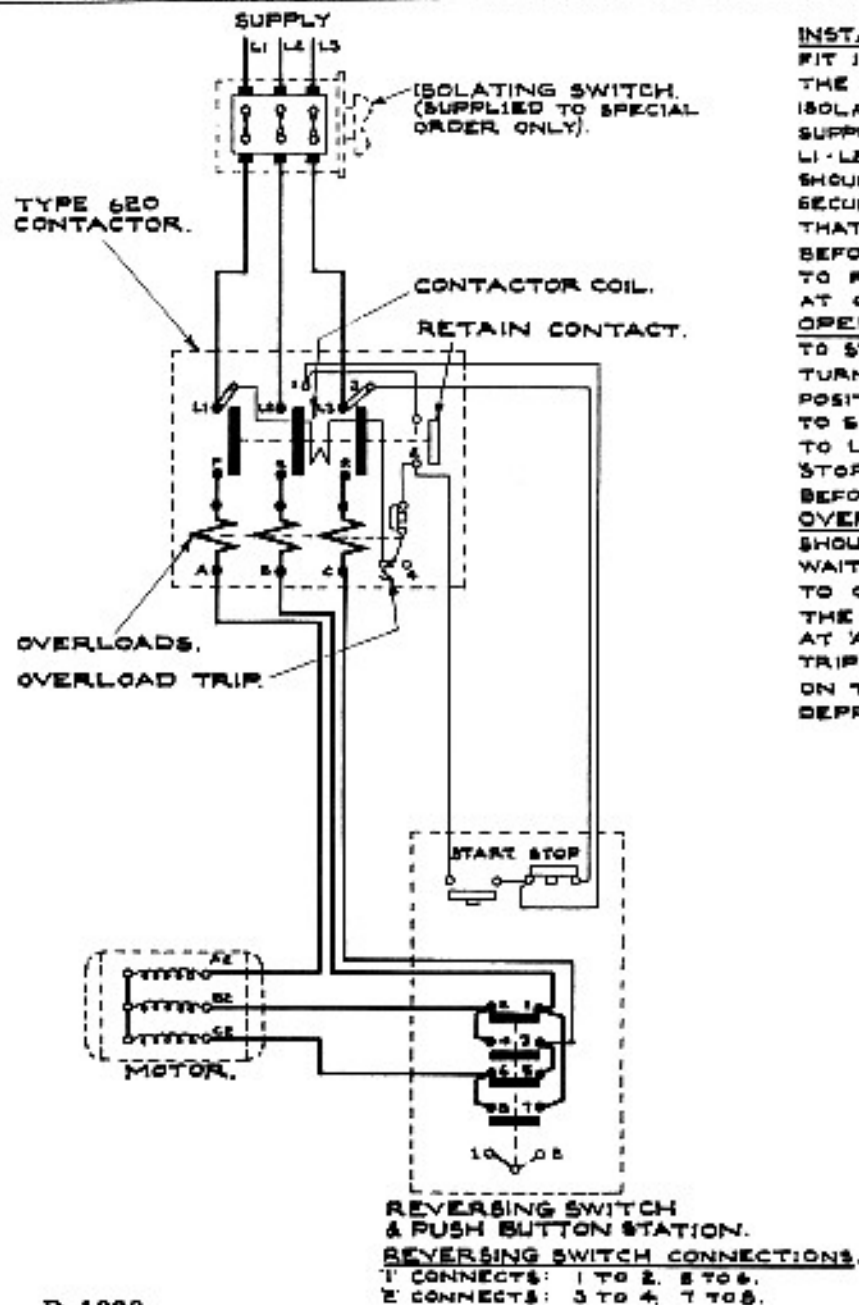
CUTTER SPINDLE SPEED IN R. P. M.	CUTTER SPINDLE PULLEY	MOTOR PULLEY AT 3000 R. P. M.	
2,000	4 1/2"	3"	76 } CONE PULLEY
3,000	4 1/2"	4 1/2"	115 } PULLEY
4,000	4 1/2"	8 1/2"	180 } CONE PULLEY
6,000	2 1/2"	4 1/2"	120 } PULLEY



1 1/8 (26) DIA. HOLE IN MAIN FRAME FOR INCOMING CONDUIT.  
INCOMING CONDUIT WHEN ISOLATOR IS ORDERED WITH MACHINE.

## THE CUTTER SPINDLE BEARINGS





**INSTALLATION INSTRUCTIONS.**

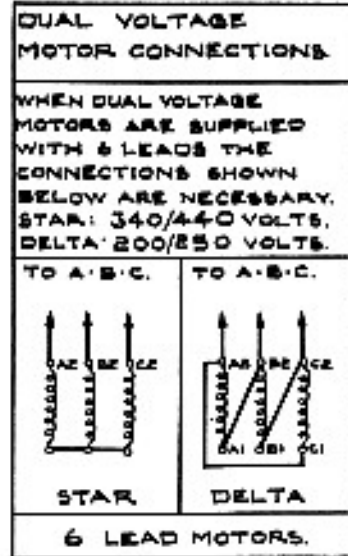
FIT ISOLATING SWITCH NEAR MACHINE SO THAT THE ELECTRICAL GEAR MAY READILY BE ISOLATED FOR INSPECTION PURPOSES. BRING SUPPLY CABLES TO ISOLATING SWITCH AND TO L1-L2-L3 CONTACTOR THROUGH CONDUIT WHICH SHOULD BE SCREWED INTO THE MACHINE AND SECURED BY MEANS OF LOCKNUTS. ENSURE THAT THE DIRECTION OF ROTATION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

**OPERATING INSTRUCTIONS.**

TO START MACHINE: CLOSE ISOLATING SWITCH, TURN REVERSING SWITCH TO REQUIRED POSITION 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 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 MUST BE DEPRESSED TO RESET.



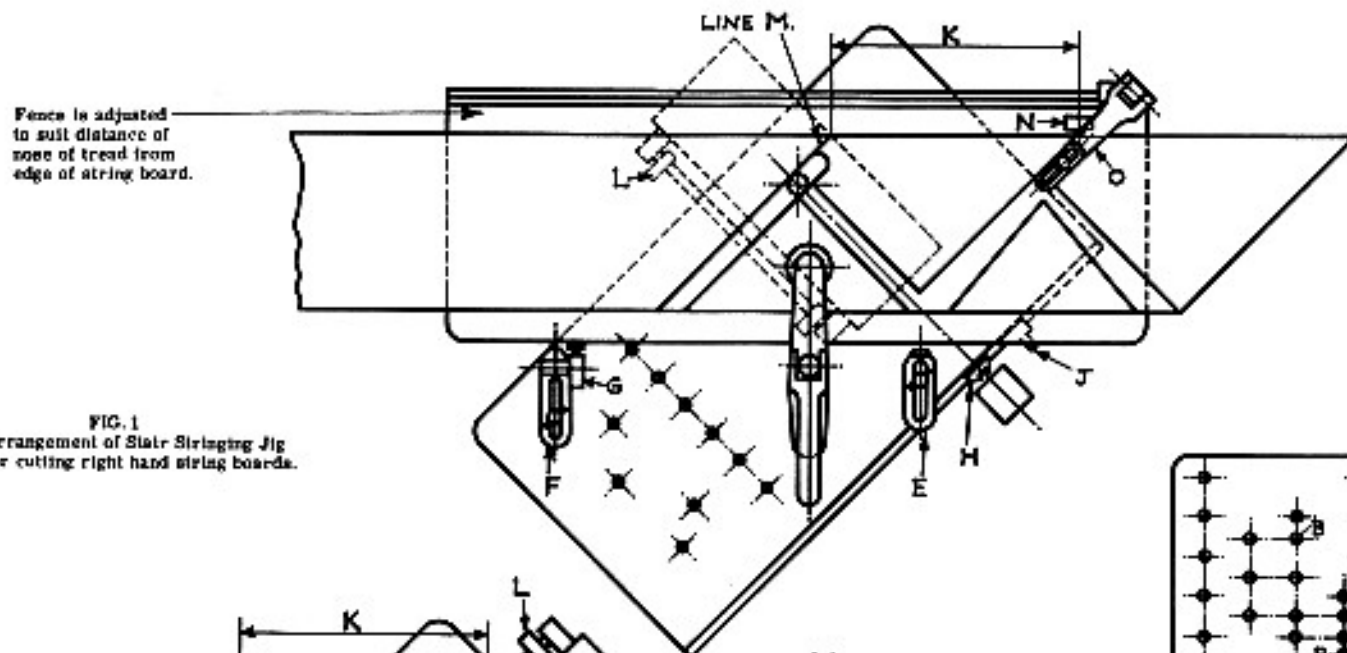


FIG. 1  
Arrangement of Stair Stringing Jig for cutting right hand string boards.

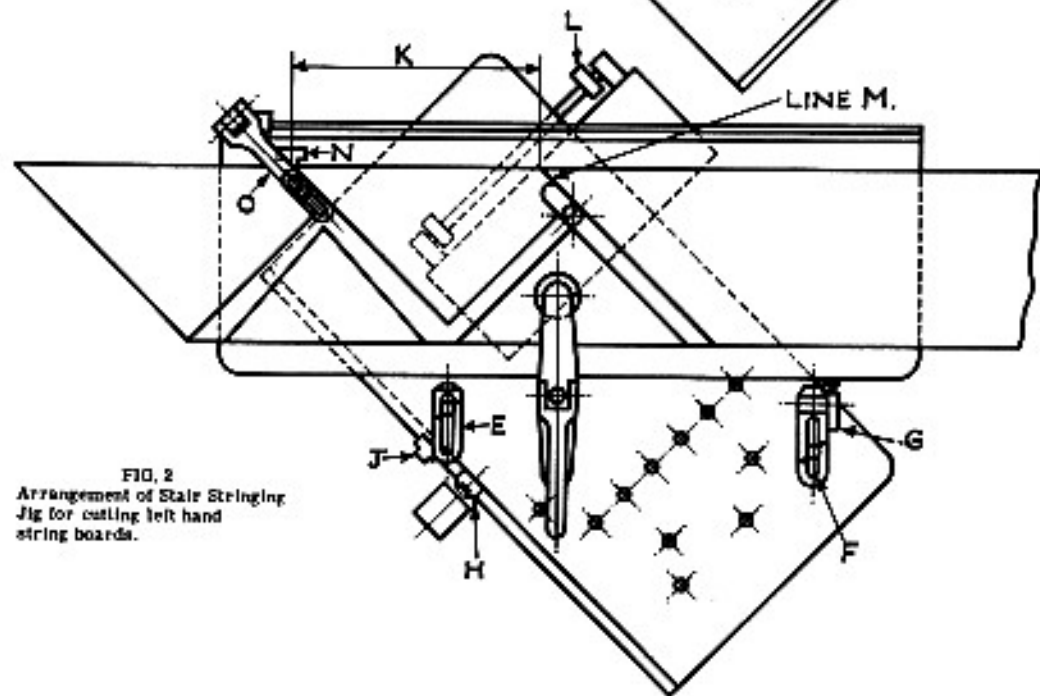


FIG. 2  
Arrangement of Stair Stringing Jig for cutting left hand string boards.

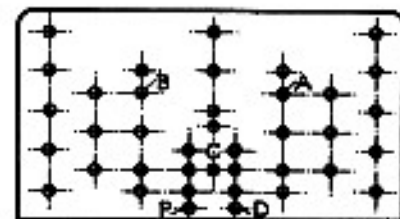
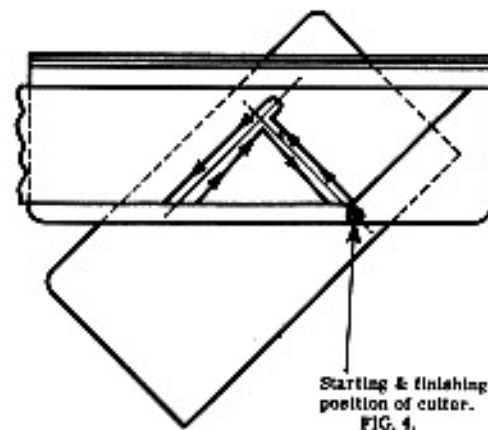


FIG. 3



Starting & finishing position of cutter.  
FIG. 4.

## INSTRUCTIONS FOR CUTTING STAIR STRINGS.

## OPERATIONS FOR CUTTING RIGHT HAND STRING.

Pivot machine table round to right and fix at suitable angle to suit stair strings to be cut as Fig. 1. Fix stair stringing jig to pivot round hole "A" Fig. 3. Bring table forward and arrange pivot pin in hole "A" dead under centre of cutter spindle. Fix stops "H" and "L" to suit this position. Fix clamp in hole "C" and stop "E" in hole "D" to give required taper on tread. Fix stop "F" in suitable hole to give required taper on riser and arrange screw in turn-over stop "G" to bring jig to normal position. Arrange stop "J" to give required length of nose to tread. With jig in normal position (with turn-over stop "G" down) bring cutter to starting point as shown in Fig. 4.

Arrange depth stop to suit and cut the first parallel riser nosing and tread. Pivot jig on to stop "E" and turn back turn-over stop "G". Cut wedge room on tread. Pivot jig on to stop "F" and cut wedge room on riser. Scribe line "M" (which is a continuation of top of tread) and on setting-out of stair string measure pitch of treads dimension "K". Fix pointer "N" to suit this dimension. Bring jig to normal position again (with turn-over stop "G" down) and move stair string along until scribed line "M" coincides with pointer "N". Clamp down and arrange turn-over stop "O" in end of nosing. No more marking out is necessary. To cut second and remaining treads and risers cut parallel riser, nosing and tread, pivot jig round to stop "E", turn back turn-over stop "G", cut wedge room on tread; pivot jig round to stop "F" and cut wedge room on riser. The pitch of the treads is now controlled by turnover stop "O".

## TO CUT LEFT HAND STRING.

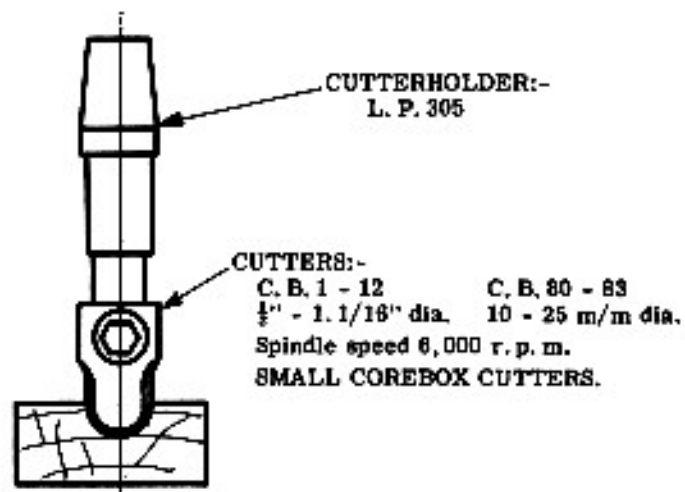
Pivot machine table round to left and fix at suitable angle to suit stair string to be cut, Fig. 2. Fix jig to pivot round hole "B" Fig. 3. Arrange stop "E" in hole "P" and stop "F" in suitable position and repeat operations as before using the pointer at the left hand end of jig and opposite hand turn-over stop "O".



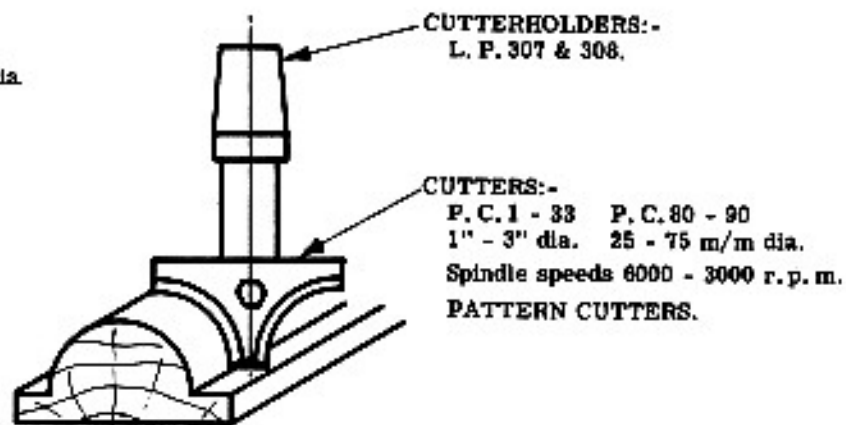
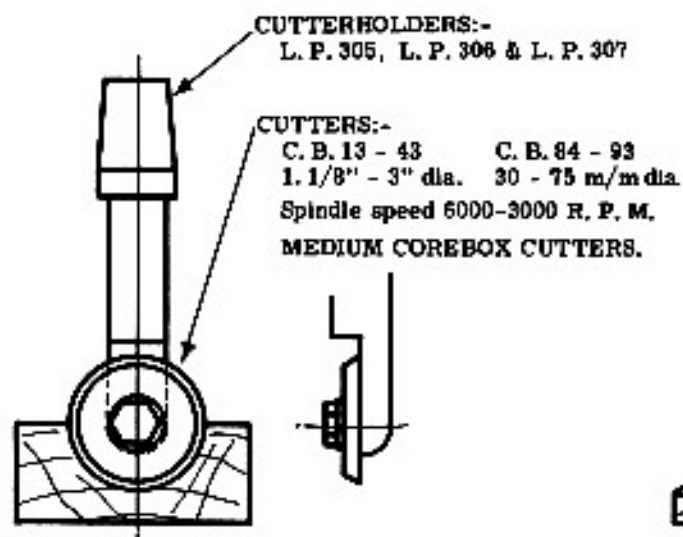
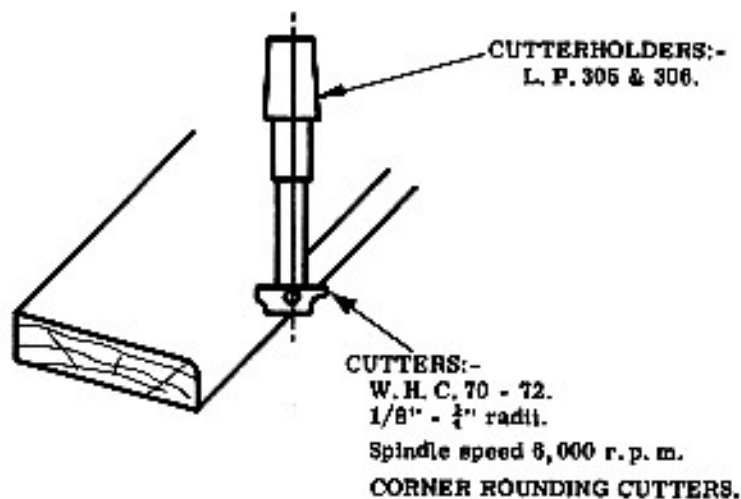
### **CUTTER EQUIPMENT**

The following pages 10 to 15 illustrate the variety of cuts that can be made using the cutter equipment included or available for use with the machine.

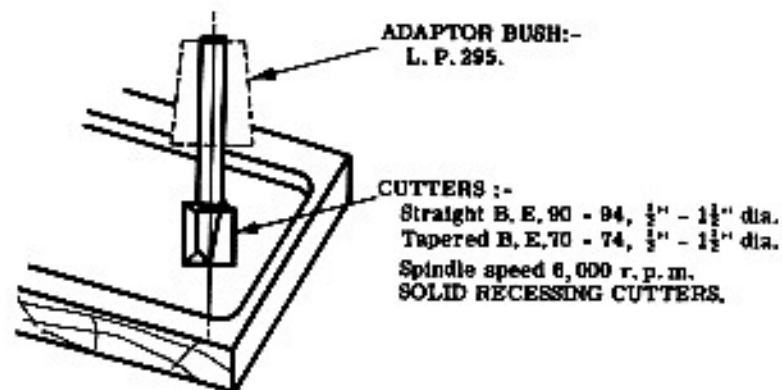
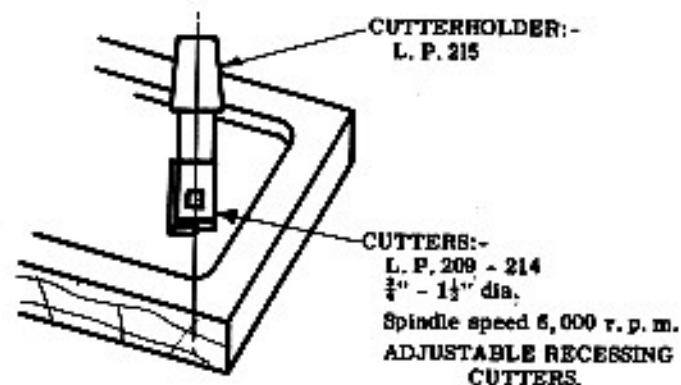
$\frac{1}{2}$ " - 3" DIA. COREBOX CUTTERS.



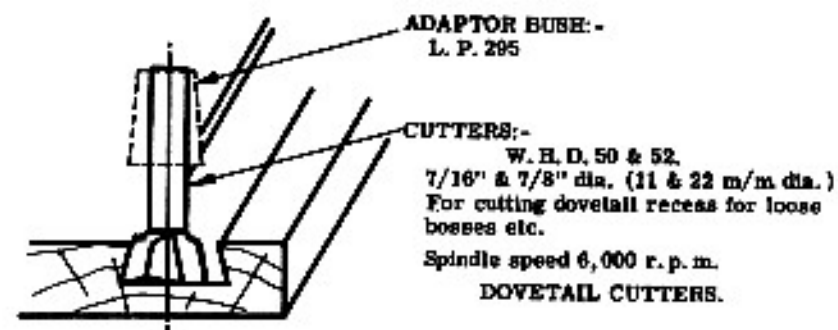
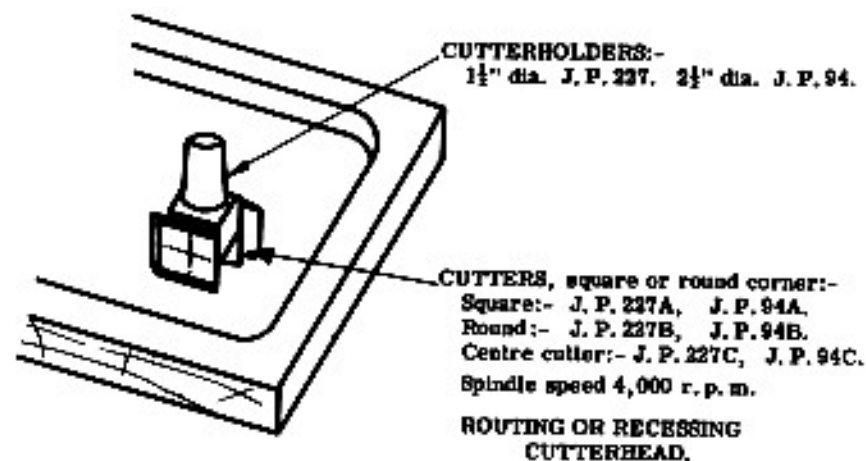
CORNER ROUNDING & PATTERN CUTTERS.



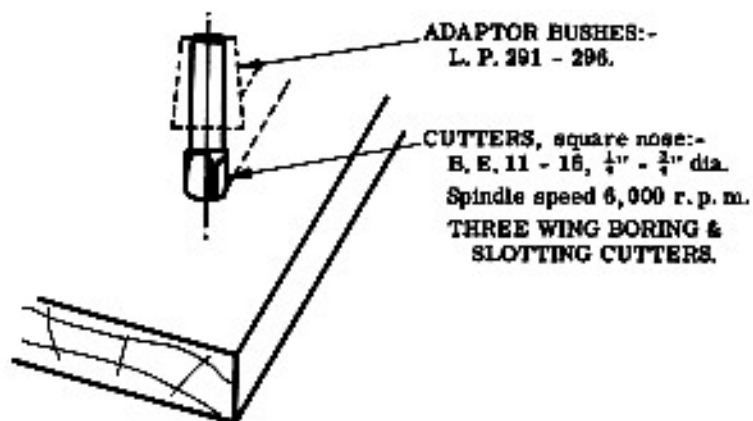
## $\frac{1}{2}$ " - $1\frac{1}{2}$ " DIA. SOLID & ADJUSTABLE RECESSING CUTTERS.



## ROUTING OR RECESSING CUTTERHEAD & DOVETAIL CUTTERS.



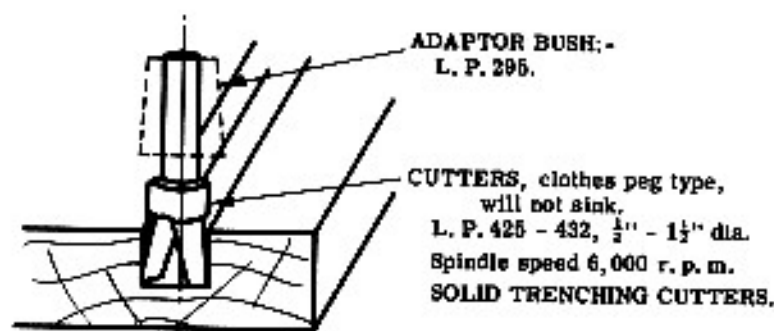
**$\frac{1}{4}$ " - 2.5/8" DIA . BORING & SLOTTING CUTTERS.**



ADAPTOR BUSHES:-  
L. P. 291 - 296.

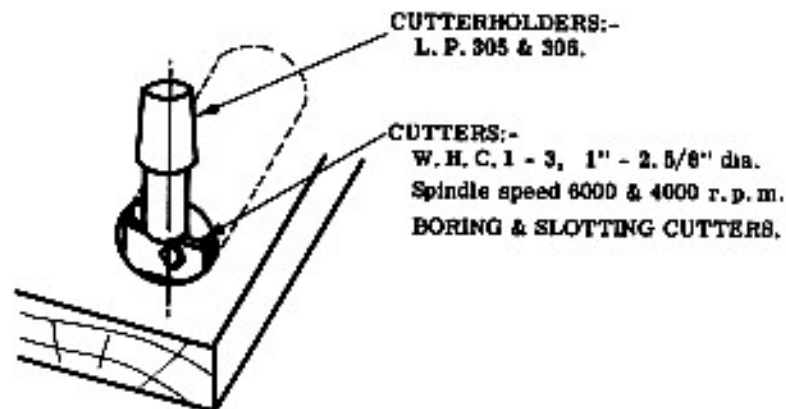
CUTTERS, square nose:-  
B. E. 11 - 16,  $\frac{1}{4}$ " -  $\frac{3}{4}$ " dia.  
Spindle speed 6,000 r. p. m.  
**THREE WING BORING &  
SLOTTING CUTTERS.**

**SOLID TRENCHING CUTTERS & TWO-FLUTED CENTRE BITS.**



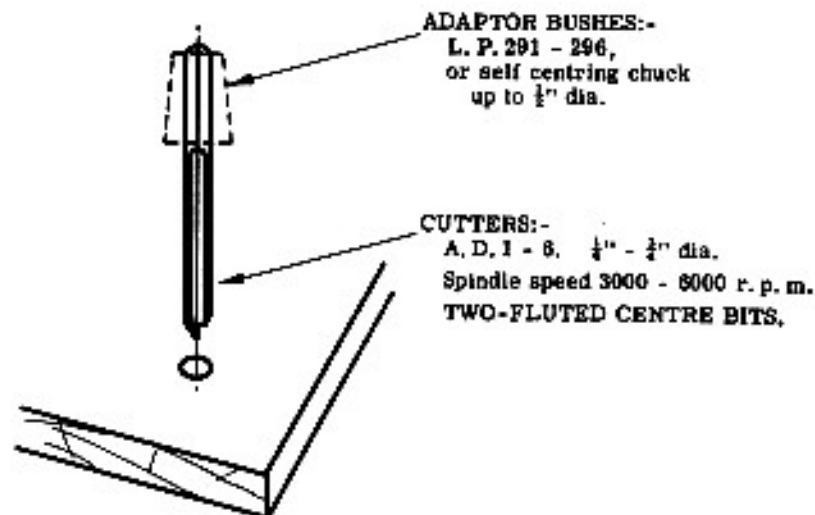
ADAPTOR BUSH:-  
L. P. 295.

CUTTERS, clothes peg type,  
will not sink,  
L. P. 425 - 432,  $\frac{1}{2}$ " -  $1\frac{1}{2}$ " dia.  
Spindle speed 6,000 r. p. m.  
**SOLID TRENCHING CUTTERS.**



CUTTERHOLDERS:-  
L. P. 305 & 306.

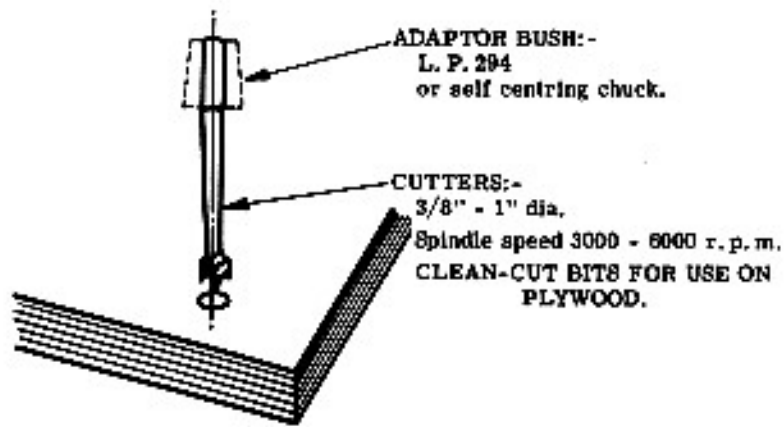
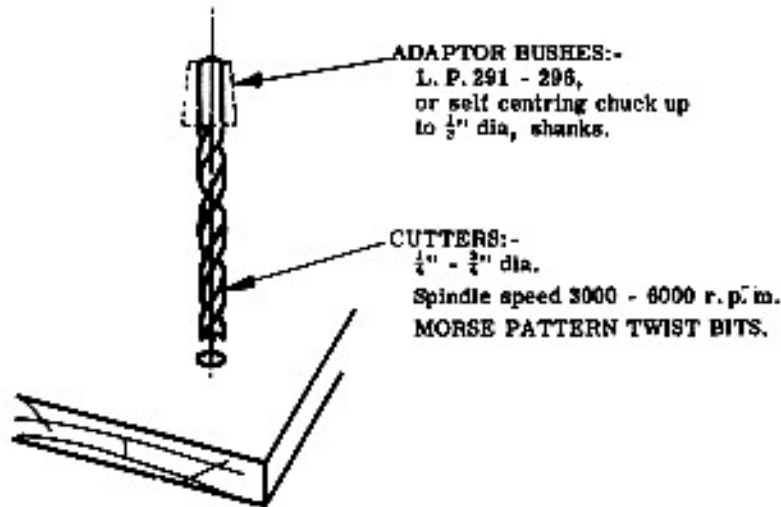
CUTTERS:-  
W. H. C. 1 - 3, 1" - 2.5/8" dia.  
Spindle speed 6000 & 4000 r. p. m.  
**BORING & SLOTTING CUTTERS.**



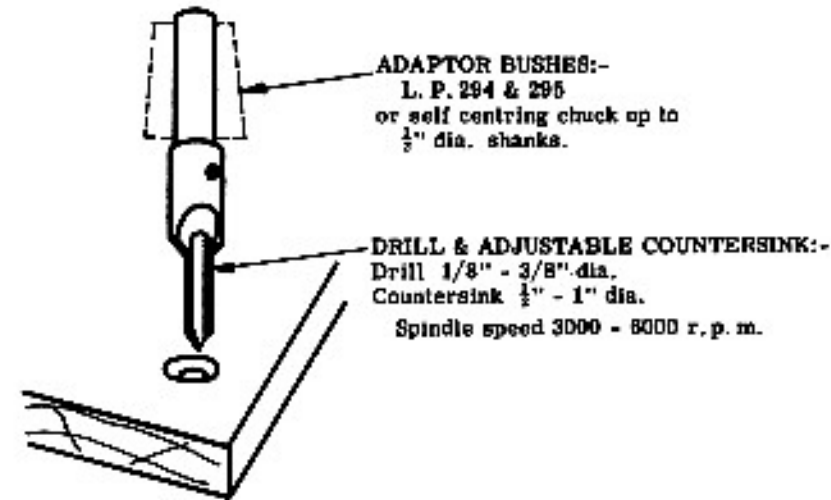
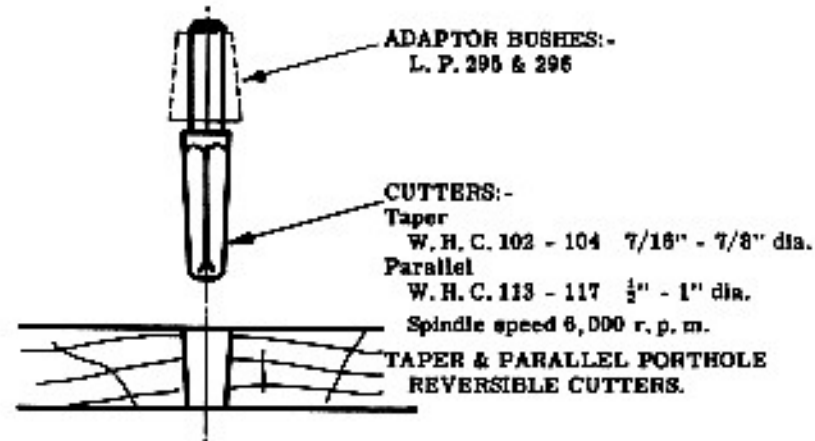
ADAPTOR BUSHES:-  
L. P. 291 - 296,  
or self centring chuck  
up to  $\frac{1}{2}$ " dia.

CUTTERS:-  
A. D. 1 - 8,  $\frac{1}{4}$ " -  $\frac{1}{2}$ " dia.  
Spindle speed 3000 - 6000 r. p. m.  
**TWO-FLUTED CENTRE BITS.**

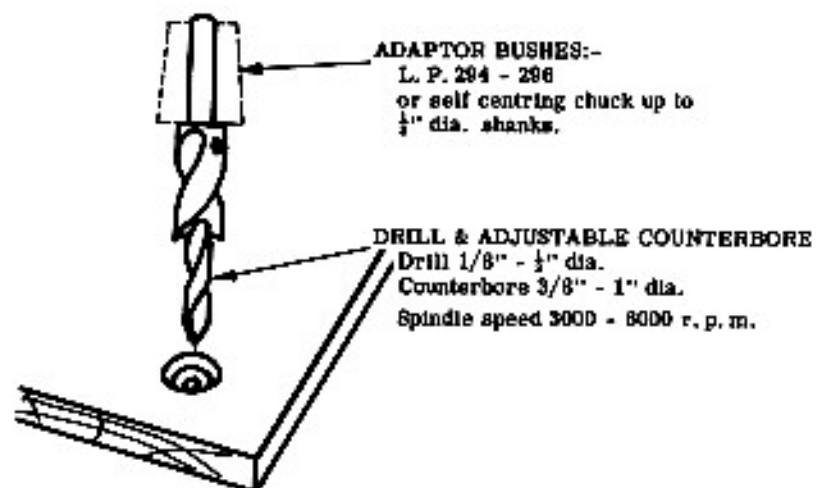
## MORSE PATTERN TWIST & CLEAN-CUT BITS.



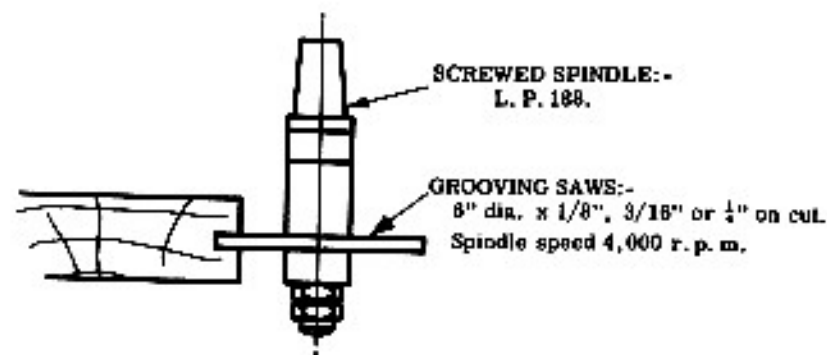
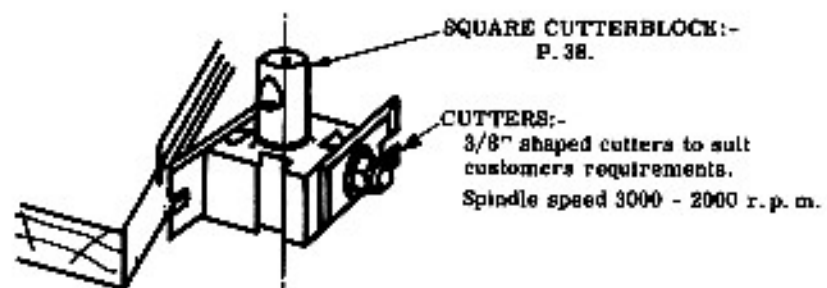
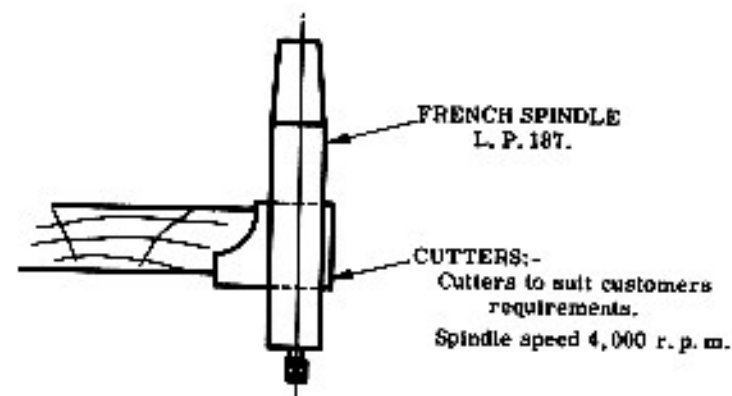
## TAPER & PARALLEL PORTHOLE CUTTERS, DRILLS & COUNTERSINKS.



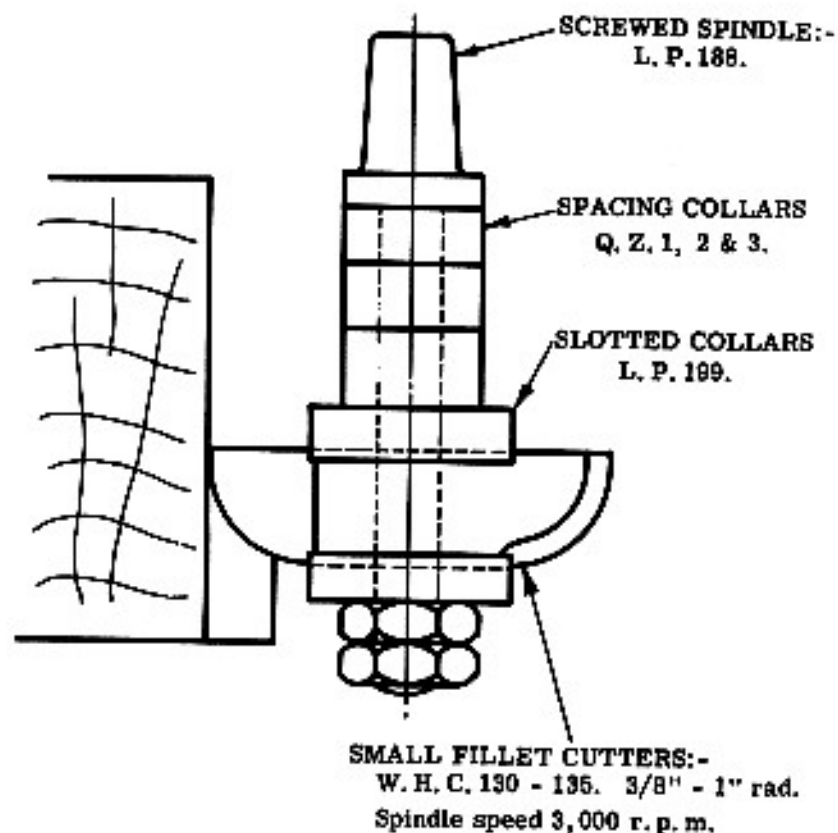
## DRILL WITH COUNTERBORE & SQUARE CUTTERBLOCK.



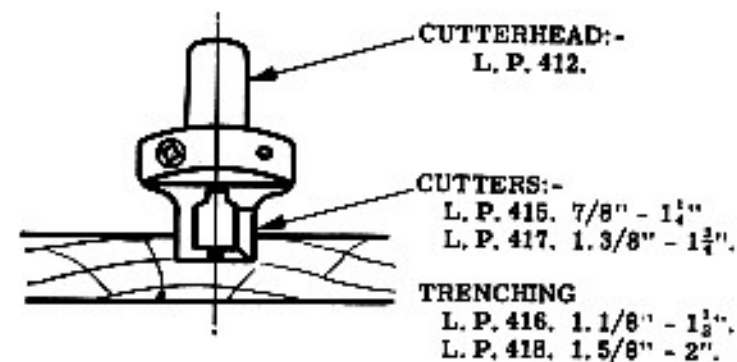
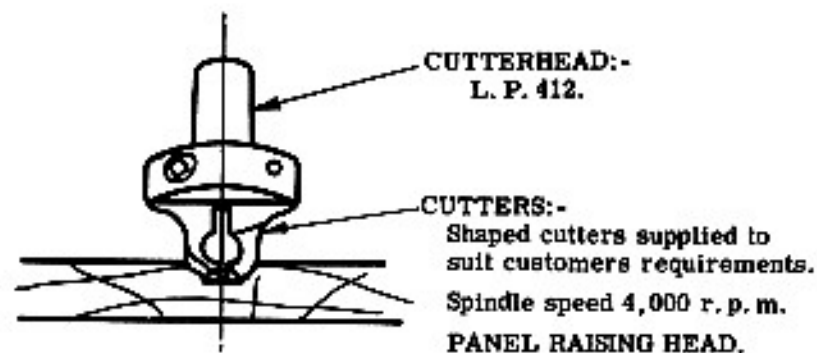
## GROOVING SAWS & FRENCH SPINDLE.



SLOTTED COLLARS, CUTTERS & SCREWED SPINDLE.



ADJUSTABLE TRENCHING & PANEL RAISING CUTTERS.



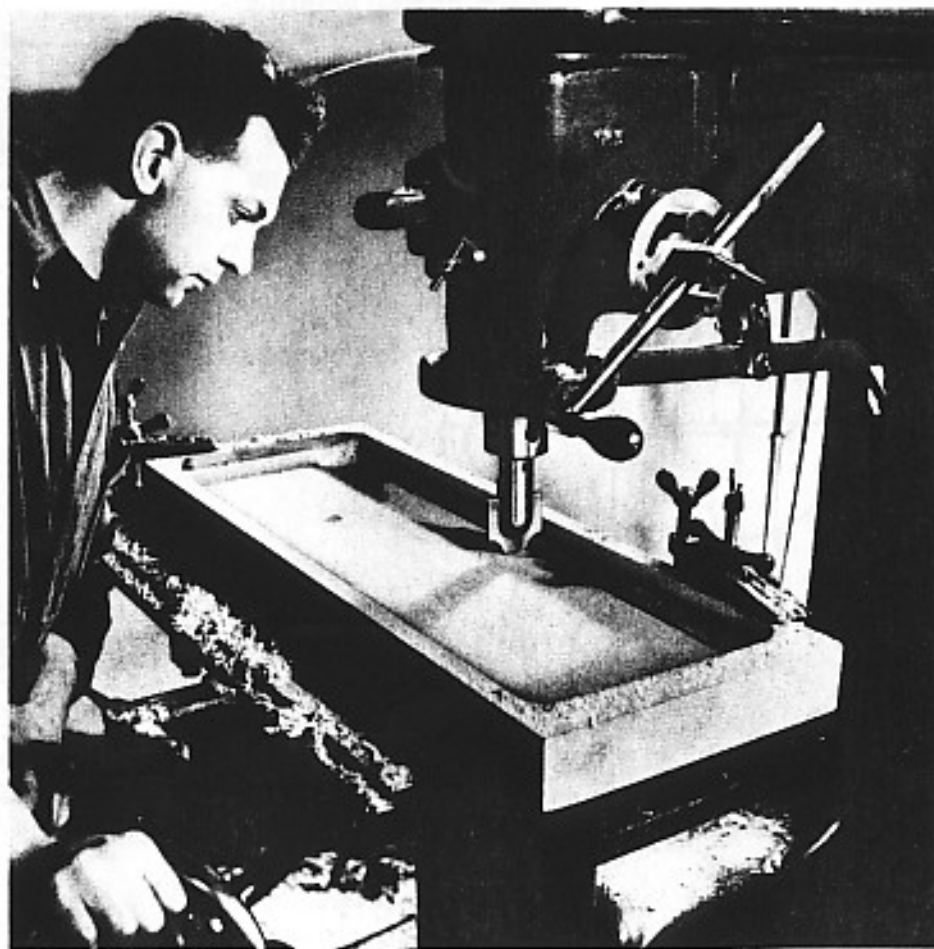
Spindle speed 4,000 r. p. m.

ADJUSTABLE TRENCHING CUTTERS.

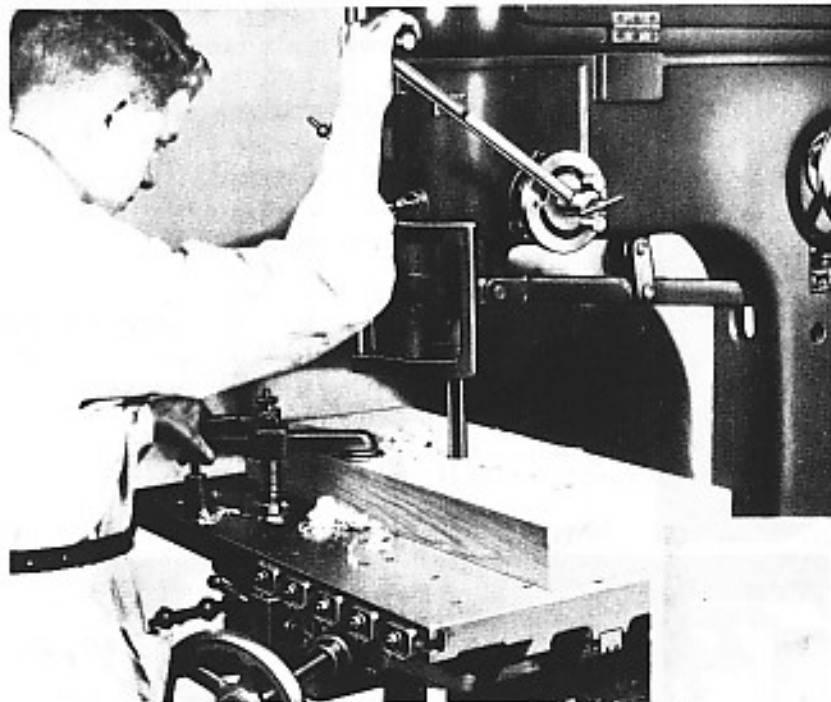
TYPICAL OPERATIONS ON THE MACHINE.

The following pages show the shapes that can be generated using the various feed movements on the machine. It should be noted that once the work is fixed on the table and the cutter accurately positioned with respect to the work, the various movements - straight line, angular, circular, etc. are precision functions of the machine. The operator controls the length of the travel only of the work past the cutter, and apart from this the various shapes are not in any way worked free hand.

Illustration shows a panel sinking operation being performed. Stops regulate the width and length of panel, and control the depth of cut. A panel 25" x 9" is the maximum that may be cut at one setting using cross and longitudinal traverse.







Boring a series of holes using a number of stops on longitudinal traverse to give quick and accurate location for repetition work.

Producing circular work up to 6" radius and segmental work 12" radius by means of auxiliary table. This table is controlled by hand lever fitted with spring plunger pin which engages holes in table and provides stops for all principal angles.

