

**GENERAL INSTRUCTIONS FOR USE OF 'MULTICO'
MORTISING MACHINE. TYPE 'K' Mk. 3.**

1. If crated when received, remove lid, stand crate on end and slide machine forward. There is no need to remove packing blocks.
2. (a) Bench Model. Place on bench, ensuring that handwheels will clear the front of the bench. There are four holes provided in the base of the machine for purposes of bolting to the bench. An aperture cut through the bench top and roughly central with the base of the machine will facilitate the removal of chips which will eventually accumulate inside the base.
(b) The Cabinet Stand is delivered ready for assembly, and comprises sheet steel front and rear, two shelves, side panel, door, and screws and nuts for assembly. Bolt shelves to front and rear sections. (We advise using shelves flange down, but this is optional.) Fasten side panel to L.H. side of cabinet and drop door on to hinge pins. Place machine on top of cabinet and bolt securely with nuts and bolts provided.
3. Fit handwheels (**A** and **B**), small one to lower shaft first, and secure by locking tight with nuts (**H**).
4. Remove back plate from column, fit weight (**D**) on hook (**E**), ensuring that cable fits smoothly into grooves of pulley. Replace back plate.
5. Connect mains supply to switch, checking that voltage, etc., as shown on motor plate, correspond with supply. Ensure that grub screw (**K**) is **not** protruding far from coupling before testing motor. Should direction of rotation of three-phase motor be wrong, correct by changing over any two leads of supply.

FITTING AND CHANGING OF HOLLOW SQUARE CHISEL.

The 'Multico' Mortiser has been designed to take chisels ranging from $\frac{1}{4}$ in. to $\frac{3}{4}$ in., and the notes which follow apply to all these sizes. The machine is supplied with four bushes to suit the various drill shank diameters. These four bushes will suit the complete range of chisels. Use only "Multico" chisels and bits.

Tools required for fitting chisels are :

- One $\frac{1}{4}$ -in. A./F Allen Key.
- One $\frac{1}{4}$ -in/ $\frac{5}{16}$ -in. Spanner.

TO FIT CHISEL.

1. Select the correct bush for the drill shank of the required chisel and assemble into the coupling. Press the bush up as far as it will go, checking that the hole in the side of the bush lines up with the grub screw (K). Screw in this grub screw until it enters the hole in the side of the bush, far enough to prevent bush from falling out.

2. Assemble the chisel, drill, chisel bush and adjusting collar as shown in sketch. Set the adjusting collar (M) low on the thread.

3. Remove clamping pads and bolt (P) completely from the headstock, and separate them. Insert the whole of the chisel assembly into the head, then, holding the chisel up, align the flat on the drill shank with the grub screw (K) and push up until it butts hard against the end of the motor shaft. Holding drill up firmly, lock up grub screw (K) with Allen Key. (If drill shank is not butted against motor shaft it may push up when in use and ruin chisel.) Replace the two clamping pads in front hole of headstock, one from either side, so that they pass through the slot in the chisel bush and the angled faces contact the chisel shank. Replace bolt but do not tighten. The chisel should now be resting on the flared end of the drill. Adjust the knurled collar (M) until there is approximately $\frac{1}{8}$ in. (the thickness of a penny is a good guide) clearance between the top collar and the head casting. Push the chisel up as far as the collars will allow, thus transferring the clearance to between chisel end and drill point. Set chisel square to fence, with lower clearance slots to the sides, and tighten bolt through clamping pads firmly.

Rotate coupling by hand to check that everything is running freely. Lock collar (M)

The clearance of $\frac{1}{8}$ in. may be varied to suit type of wood and size of chisel. Generally the larger chisels require greater clearance.

Keep chisels sharp. Blunt tools do not cut.

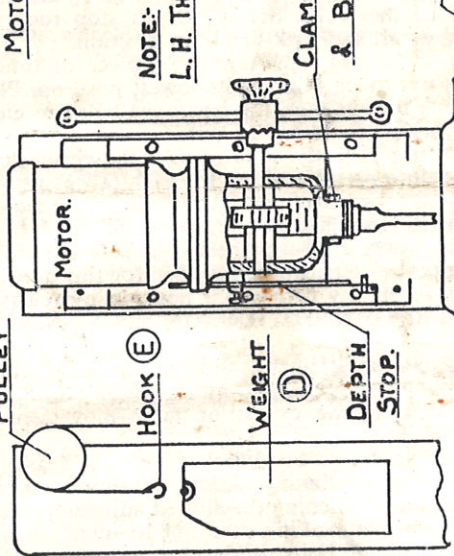
4. To change chisels, slacken bolt (P) and grub screw (K) and withdraw chisel and bit. Undo grub screw (K) until drill bush can be withdrawn. It is usually unnecessary to remove the chisel bush, but remember to reset the adjusting collars. A piece of wood placed on the table will avoid damage to the chisel should it drop during removal. Sets of Chisel-sharpening tools are readily available ex stock.

IMPORTANT.—It is unnecessary at any time to unscrew the grub screw at the top of the coupling. This locks the coupling on to the motor shaft.

FITTING DRILL CHUCK.

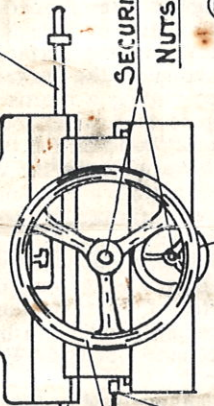
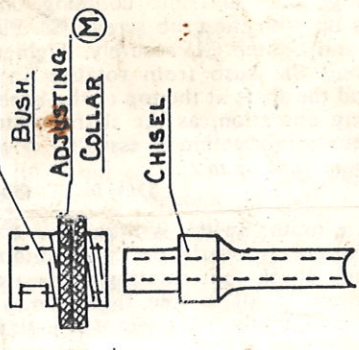
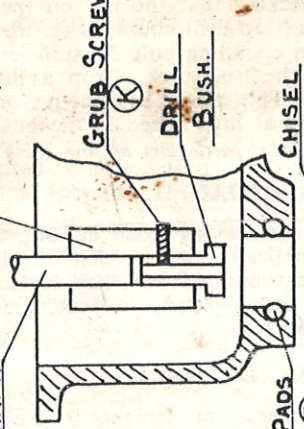
Remove clamping pads and bolt from headstock and push drill adaptor bush into place in bottom of headstock. Replace clamping pads in rear hole, ensuring that the angled faces are in contact with

PULLEY



NOTE:
L. H. THREAD

MOTOR SHAFT



SIDE TRAVEL
HANDWHEEL (A)

CROSS TRAVEL
HANDLE (B)
LOCK

SECURING
NUTS (H)

SIDE STOPS

CLAMPING PADS
& BOLT (P)

GRUB SCREW (K)

DRILL
BUSH

CHISEL
BUSH

ADJUSTING
COLLAR (M)

CHISEL

bush, and lightly tighten the bolt. Pass drill chuck adaptor shaft through bush and into coupling, checking that the flat on the shaft lines up with the grub screw (K). Push up drill chuck as far as it will go, and tighten (K) securely. Tighten clamping bolt (P) sufficiently to prevent the bush from rotating in the headstock. Drop a little oil round the shaft at the top of the bush. This should be done periodically during operation, as the shaft rotates at high speed in the bush and adequate lubrication is essential. *Write for particulars of saw-tooth centre bits which drill up to 2".*

DO NOT OVERLOAD.

The motor switch is fitted with a thermal overload cut-out, and if the motor is overloaded will automatically switch itself off. If this occurs, check that rotating parts are running freely, and lubricate if required. If all is free then it may be necessary to reduce drilling pressure slightly, i.e. operate at a slower rate of feed.

OPERATING INSTRUCTIONS

When clamping timber, ensure that the clamp bracket is as close to the job as practicable, so as to use as little as possible of the screw thread, thereby reducing strain on the clamping mechanism and increasing the rate of operation.

If a mortise or hole is required to a definite depth, bring chisel or drill down to the surface of the work. Set the depth stop rod to a height equal to the desired depth and lock firmly in position.

When cutting a mortise or drilling right through a piece of timber, set stop so that chisel does **not** touch table at its lowest position. Place a piece of wood on the table thicker than the clearance between chisel and table and clamp the work piece on top of this.

When cutting a deep mortise it is advisable to take the chisel down in stages of about 1 in., moving the table along for each successive cut. This enables the chisel to clear itself of chips, and avoid subsequent overheating, particularly when cutting hard or green wood.

When mortising long or heavy timbers, the main bulk should be supported off the table. Support rollers can be supplied for this purpose.

Operating handle can be set in any convenient position by releasing locking hand nut (NOTE LEFT-HAND THREAD) and adjusting on serrations.

A locking lever is fitted on the left-hand slide of the cross travel slide for locking the cross slide in position during repetition work. Side stops are also fitted for limiting the extent of table movement as required.

Should, after long use, the tables or headstock develop a degree of side play, this can be rectified by slackening slightly the three retaining bolts on the slide concerned, and tightening the slotted adjusting screws until the side play is eliminated, but taking care not to interfere with normal movement. Tighten retaining bolts firmly after adjusting.