

No. 9325 11³/₄" DRILL PRESS

Get Acquainted with Your Drill Press . . .

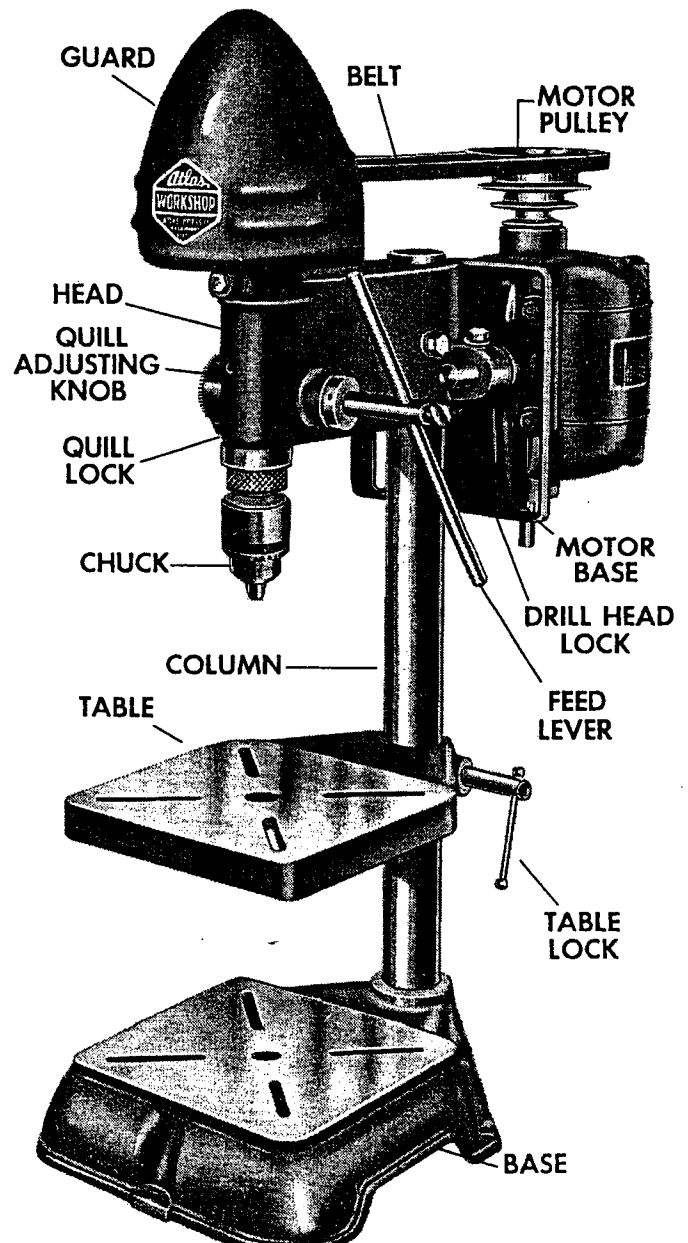
Before using it, familiarize yourself with the major parts and controls by studying the view at right. Read and follow the instructions carefully — then you'll get the most from your drill press.

MOTOR

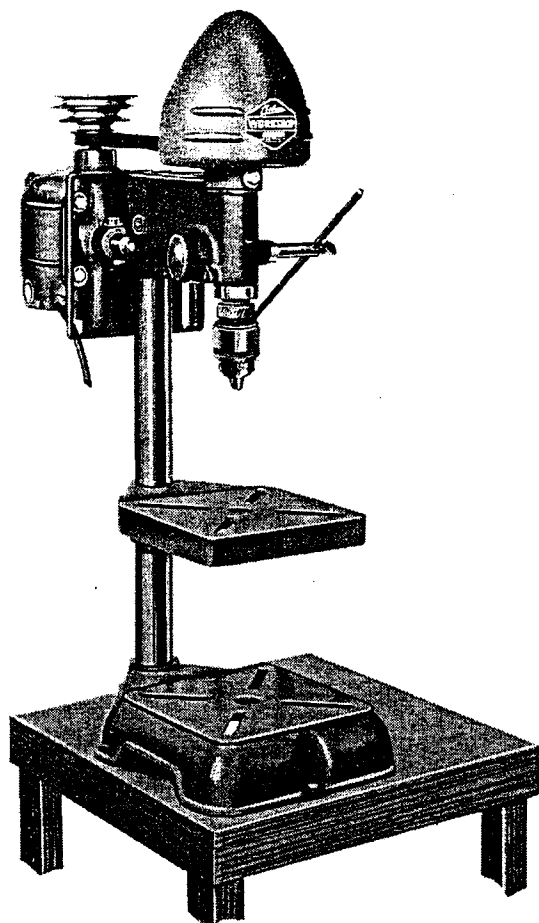
A 1/3 or 1/4 HP, 1725 RPM motor is recommended to operate this drill press.

BELT

Use a 1/2" wide x 9/32" thick x 36" long V-belt.



INSTALLATION



1 Drill Press mounted on wood stand.

MOUNTING DRILL PRESS

- 1 — For best results, use a sturdy, level bench. Bench should be about 32" high and the top about 13" wide x 17" long — use good, strong, thick lumber.
- 2 — Position drill press on bench so base is almost even with side of bench top. This position enables you to handle work longer than the distance between base and chuck by swinging the drill press head — see Figures 1 and 25.

CAUTION — To properly run-in the bearings of your drill press, DO NOT operate at top speed for the first 8 or 10 hours.

MOUNTING MOTOR

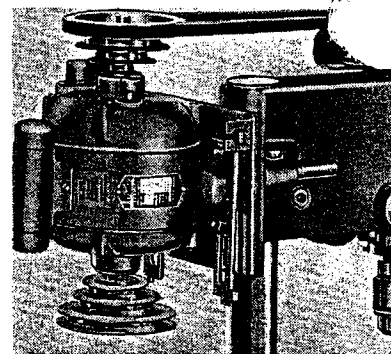
- 1 — Loosen drill head lock and raise head to top of column. Lock in this position.
- 2 — Slide pulley on motor shaft with small groove next to motor — tighten set screw securely.
- 3 — Remove motor support bracket from drill press and fasten motor to bracket with machine bolts and washers. Do not tighten bolts securely.
- 4 — Mount motor and support bracket to head. Place belt around small step of motor pulley and large step of spindle pulley.
- 5 — Shift motor until pulleys are in line, then tighten motor mounting bolts securely.
- 6 — Shift motor in or out on the sliding pins until belt is tight. **IMPORTANT** — Maintain proper belt tension at all times — belt should be just tight enough to prevent slipping. If the belt is too loose, it will slap; if too tight, belt and pulleys will overheat and overload motor.
- 7 — Check motor rotation — drill press spindle should turn clockwise.
- 8 — Before operating the drill press, lubricate the bearings. See LUBRICATION, page 3.

MOUNTING MOTOR USING THE FLOATING MOTOR RAIL

Figure 2 shows motor mounted to drill press with floating motor rail — permits quick and easy removal of motor so it can be used to operate other machines.

Complete installation instructions furnished with attachment.

2 Motor mounted to drill press with floating motor rail so motor may easily be removed to operate other machines.



CONTROLS

(See illustration on cover)

- 1 — **DRILL HEAD LOCK** — loosen the hex nut to change position of head on column. Move head only when necessary, it's much easier to raise or lower the table to position desired.
- 2 — **TABLE LOCK** — to change the table position, loosen the table lock handle.
- 3 — **DRILL HEAD LOCK** — of head to lock quill in position.
- 4 — **QUILL RETURN ADJUSTING KNOB** — to increase or decrease quill return tension, turn spring cap one quarter turn counterclockwise and pull out just enough to disengage slot, see Figure 5. Turn until correct tension is obtained, then re-

KEEP YOUR DRILL PRESS IN TIP-TOP CONDITION . . .

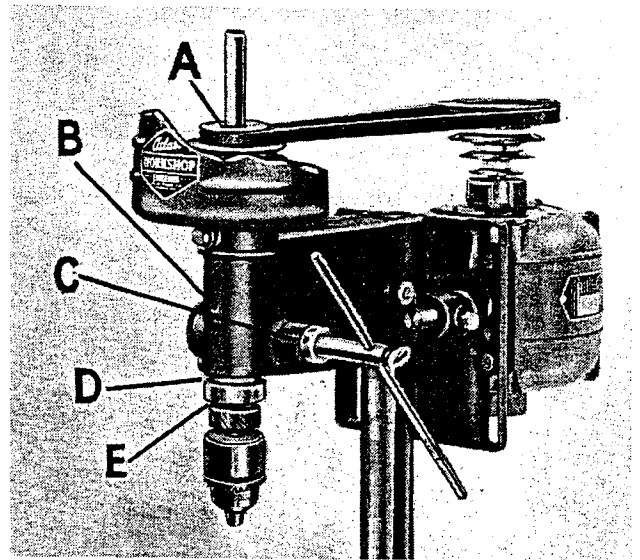
It's Easy — Just Follow These Suggestions

LUBRICATION

**Before Operating Drill Press,
Lubricate Bearings Thoroughly**

Use S.A.E. No. 20 Machine Oil

- A — Upper Spindle Pulley Bearing—Oil frequently thru hole on top of pulley.
- B — Spindle Bearings — Oil frequently. To oil, lower spindle until hole in quill lines up with hole in head.
- C — Pinion Shaft Hub Bearing — Oil occasionally.
- D — Quill Surface — Oil occasionally.
- E — Spindle Thrust Washer — Occasionally place a few drops of oil on washer.
- F — Keep column, table and base covered with a light film of oil when not in use.



3 Drill Press lubrication chart.

1 — To remove spindle

- (a) Remove quill return adjusting knob and spring. **CAUTION:** Be careful when removing knob that tension spring remains inside knob — remove knob slowly, disengaging spring from end of feed spindle.
- (b) Remove feed lever lock screw and feed lever. Loosen set screw in collar that's between feed lever and head, and remove collar.
- (c) Pull feed shaft out from left side of head, holding spindle to prevent it falling, see Figure 6. Remove spindle and quill assembly from head.
- (e) Loosen set screw in collar directly above quill and remove spindle.

- (b) Push spindle firmly against bottom of quill, at the same time forcing collar against top of quill. Lock collar in this position.
- (c) Rotate spindle by hand to make sure it turns freely—**DO NOT HAVE SPINDLE ADJUSTMENT TOO TIGHT.**
- (d) Re-assemble parts.

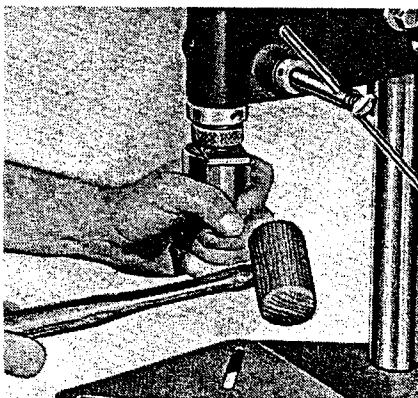
2 — To eliminate spindle end play

- (a) Follow steps as outlined above for removing spindle, but do not remove spindle.

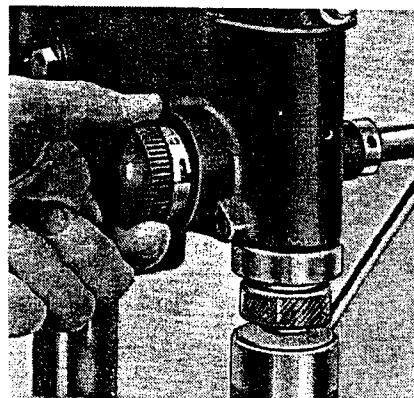
REMOVING CHUCK

To remove chuck from spindle, insert the steel wedge between chuck and knurled collar, see Figure 4. Tap wedge with a hammer, catching chuck as it falls from the spindle.

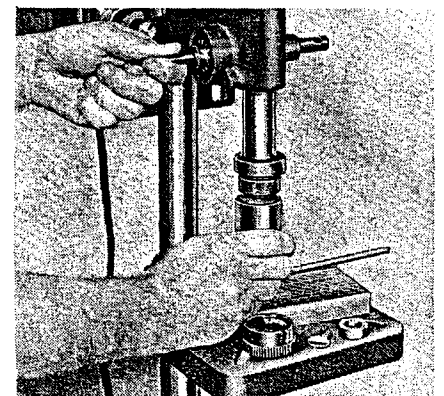
IMPORTANT — Always clean spindle taper and chuck bore before replacing chuck. Chips or dirt score the spindle and cause chuck to slip and run out of true. Always keep spindle taper and chuck bore dry.



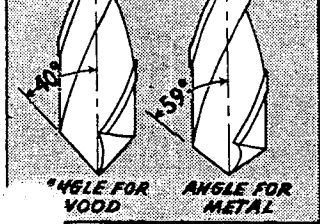
4 Removing chuck with the steel



5 Adjusting quill return tension.

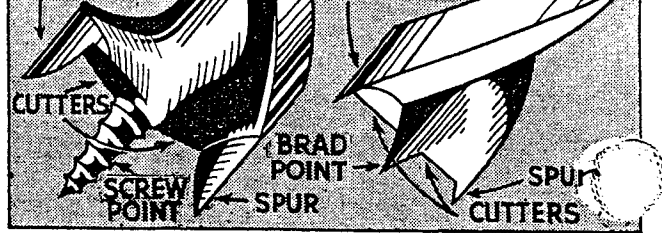


6 Removing spindle and quill from



7 (Left) Point angles on a twist drill.

8 (Right) Two common types of wood bits.



SPINDLE SPEEDS

The following speeds are obtained using a 1725 RPM motor — 700, 1300, 2275 and 4150 RPM.

See speed chart below for drilling various material.

WOOD BITS AND DRILLS

In general, the term drilling applies to operations in both wood and metal alike. Cutters intended for working in wood are given the name "bits", while those in metal are called "drills".

The two common types of wood bits are the screw point and brad or diamond point — see Figure 8. Use the brad point in the drill press — the screw point for hand drilling.

The twist drill, shown in Figure 7, used for metal can also be used successfully in wood. If used exclusively for wood, the point angle should be ground to about 40 degrees instead of 59 degrees as used in metal.

The WORKSHOP Drill Press will drill up to 1/2 inch holes in metal, larger holes in wood.

DRILLING SPEEDS IN REVOLUTIONS PER MINUTE				
Revolutions Per Minute	4150	2275	1300	700
MATERIAL	DRILL SIZE			
STEEL	1/8"-under	1/8"-1/4"	1/4"-3/8"	3/8"-1/2"
CAST IRON	1/16"-under	1/16"-3/16"	3/16"-5/16"	5/16"-1/2"
BRASS, BRONZE AND ALUMINUM	3/16"-under	3/16"-5/16"	5/16"-7/16"	7/16"-1/2"
WOOD AND SOFT PLASTICS	1/4"-under	1/4"-1/2"	1/2"-over	
HARD PLASTICS	3/16"-under	3/16"-5/16"	5/16"-7/16"	7/16"-1/2"

DRILLING LUBRICANTS

The following is recommended — apply with a brush or squirt oil can.

STEEL — machine oil

ALUMINUM — kerosene

SOFT PLASTICS — soapy water

HARD PLASTICS — drill dry

BRASS AND BRONZE — drill dry

CAST IRON — drill dry

OPERATIONS

CAUTION — To properly run-in the bearings of your drill press, DO NOT operate at top speed for the first 8 or 10 hours.

INSERTING DRILLS —

Insert drill in chuck with the left hand, then strike chuck glancing blows with the heel of the right hand until jaws grip drill — see Figure 9. Rotate drill slowly while tightening chuck to make sure drill centers in jaws. Then tighten chuck securely with chuck wrench.

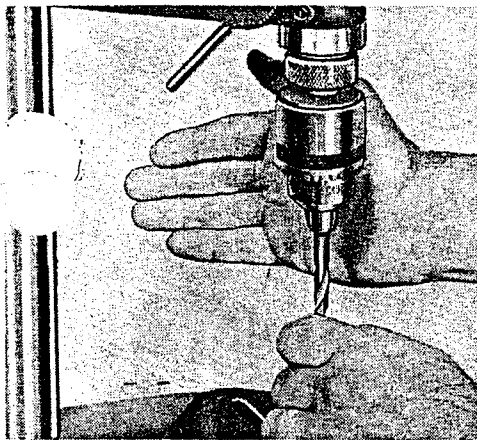
IMPORTANT — When removing drill from chuck be sure to hold drill, or place a wood block on table to prevent drill falling and damaging the chuck jaws.

DRILLING —

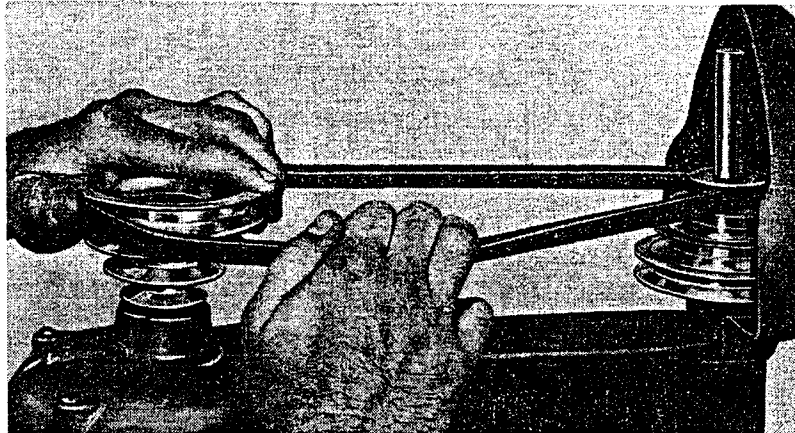
The proper speed for drilling depends upon —

- (1) The material to be drilled.
- (2) The size of the hole.
- (3) The kind of drill.

Generally, the harder the material and the larger the drill, the slower the speeds and the feed. Avoid too high a speed, especially with large drills — excessive speed wears off the drill corners, draws the temper and may burn or break the drill lip. See Speed Chart and Lubricants above for drilling various materials.



9 Inserting drill in the chuck.



10 To change speeds, shift belt on pulleys as shown.

Feeding is the distance a drill moves into the work with each revolution. Correct feed is best determined by feel and observation. Don't try to force the drill. The pressure on the handle should be just enough to keep the drill cutting. Too much pressure will burn the point, or cause breakage. Too little pressure will dull the cutting tool since it produces a scraping action.

Make sure the drill runs true when starting — it may be necessary to countersink the work.

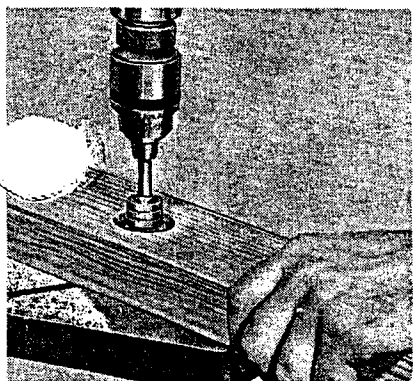
Do not attempt to make large holes in small or thin material without first clamping the work securely to the table or a vise.

For maximum accuracy when drilling, raise the table so quill will not extend too far beyond the drill press head.

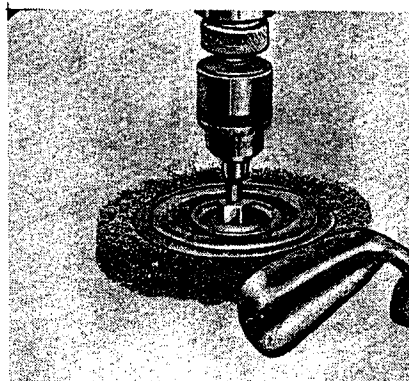
HOLDING DEVICES —

The accuracy and efficiency in drilling, reaming, or tapping depends largely on how it's held. Holding work by hand usually results in damaged work, broken drills, and may even injure the operator.

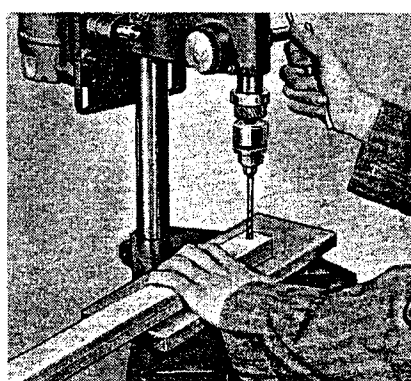
To properly mount the work, various holding devices may be used, they are the drill press vise, V-blocks, clamps, bolts and stops. On production work drill jigs are used.



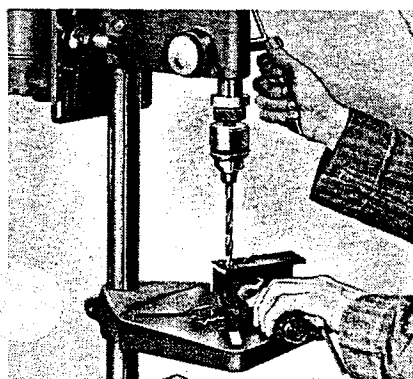
11 Drilling large holes in wood. Use the lowest speed.



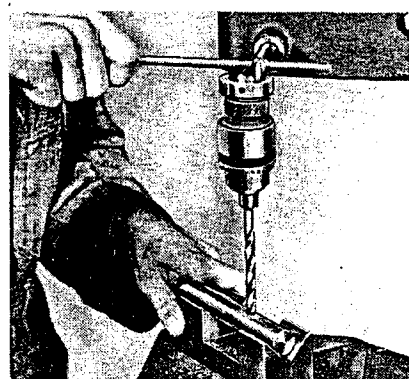
12 Using a wire brush to remove rust.



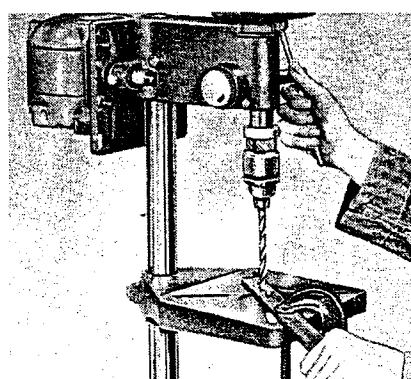
13 Drilling operation in wood.



14 Using a vise to drill in metal.

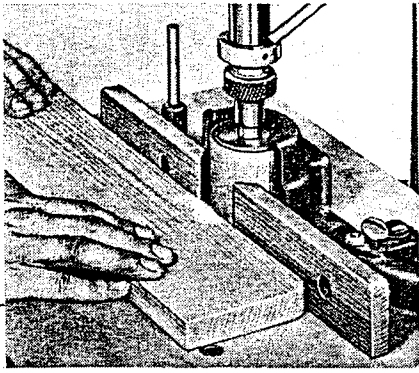


15 Drilling in metal using a vee block.

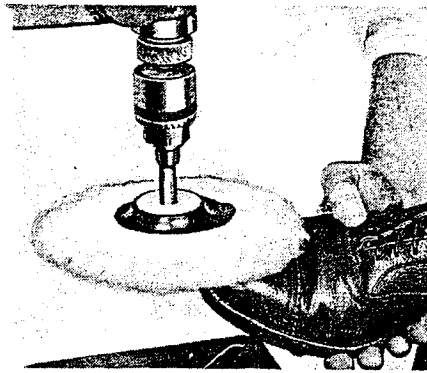


16 If vise or vee block are not available, clamp work to table.

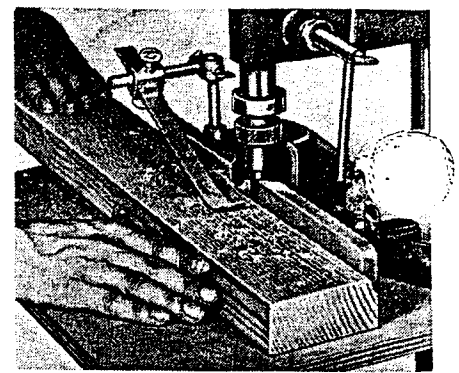
OPERATIONS (Continued)



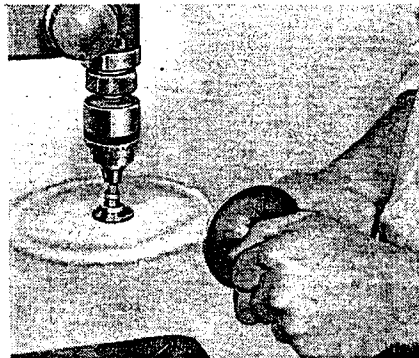
17 *Straight sanding using a fence.*



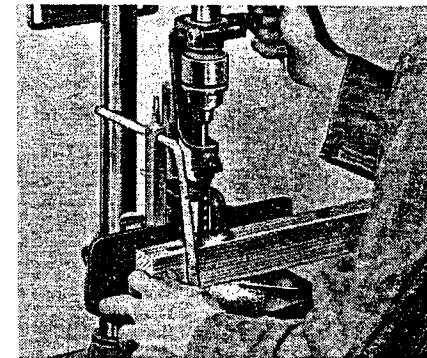
18 *Polishing a shoe using a lambs wool disc.*



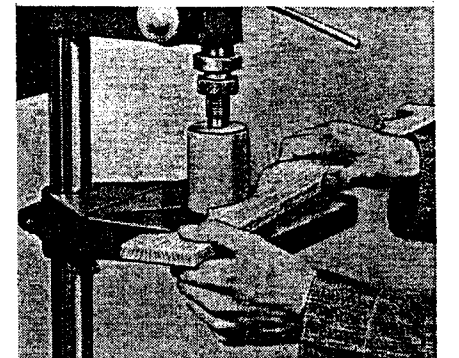
19 *With fence attached to table and cutters replacing chuck, drill press becomes an efficient shaper.*



20 *Using a fabric wheel to buff a candlestick holder.*



21 *Mortising attachment adapts drill press to cut square, clean holes and mortise slots.*



22 *The drum sander is mounted to drill press using a special adapter.*

MORTISING —

Mortising is cutting square or rectangular holes in wood. It's done with a special square hollow chisel inside of which wood bit revolves. Mortise chisels are made in various sizes, the smallest is $\frac{1}{4}$ inch. Chisels are mounted to the drill press quill with a special chisel socket. A block or fence clamped to the table guides the work while performing the mortising cuts — see Figure 21. A series of overlapping square holes is then made in the stock as it is moved sideways until the mortise slot reaches the required length. **DO NOT FORCE THE CHISEL THROUGH THE WORK TOO RAPIDLY.** Too rapid feed will result in burned chisels and bits. Raise the chisel frequently to discharge the chips. Kerosene applied to the chisel bit will help to remove chips from the chisel. Use the slower speeds.

SANDING —

A drum sanding attachment or sanding sticks, are mounted to the drill press with a special adapter or directly in the chuck.

Drum sanders are used primarily for sanding edges of stock. It consists of a hard rubber sleeve over which is mounted a piece of sandpaper. This sander should be fastened in an adapter. Much of the sand-

for straight work a fence can be used, see Figure 17.

Sanding sticks of various sizes and diameters can be made by gluing strips of sandpaper to the outside of dowel rod. The stick can then be fastened in the chuck for sanding edges of jig saw work.

The sander should run at a fairly slow speed — no more than 1740 R.P.M. (see speeds, page 4). **High speed will result in burned surfaces and rapid wear on the abrasive sleeve.**

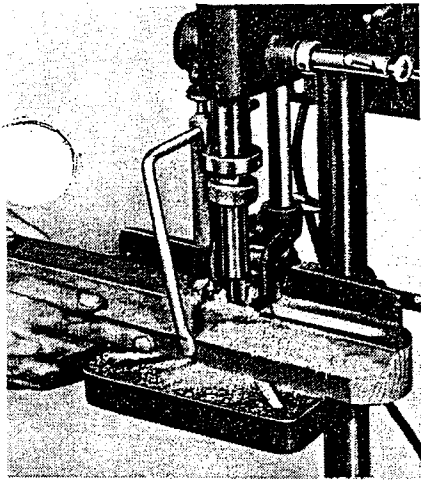
SHAPING —

Shaping is cutting all types of edge designs, beaded corners, tongue and groove joints, fluting and reeding. All types of shapes required for furniture and interior trim are made quickly, easily and accurately with a shaping attachment.

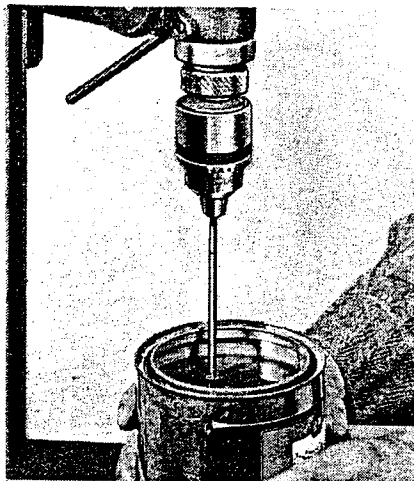
The cutters are mounted to the drill press with a special adapter. A fence, fastened to the table, guides the work for straight shaping. Figure 19 shows a straight shaping operation using the fence as a guide. For irregular shapes the fence is removed and various depth collars used.

Always cut against the grain of the wood. If the direction of the grain changes, feed the stock slowly. The rotation of the cutter should always be **TOWARD** the work being cut. Use speeds of 4000

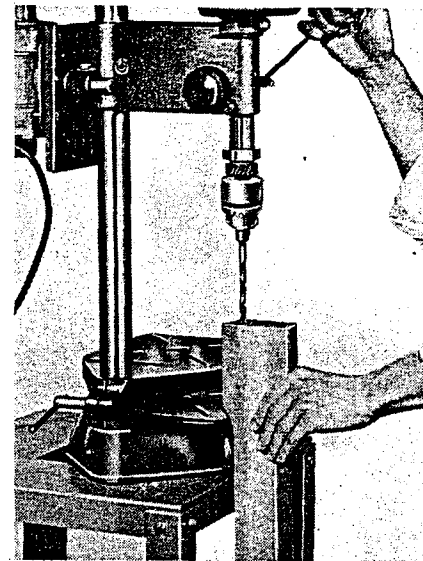
OPERATIONS (Continued)



23 Routing with the drill press. Bits are held with a special adapter.



24 Using the drill press to mix paint.



25 Swinging the head to handle work longer than the distance between base and chuck.

ROUTING —

Carving, inlaying, round-end mortising, dovetailing, and reeding are accomplished on the drill press using the router bits. Bits are held in the drill press with a special adapter. A fence or block, fastened

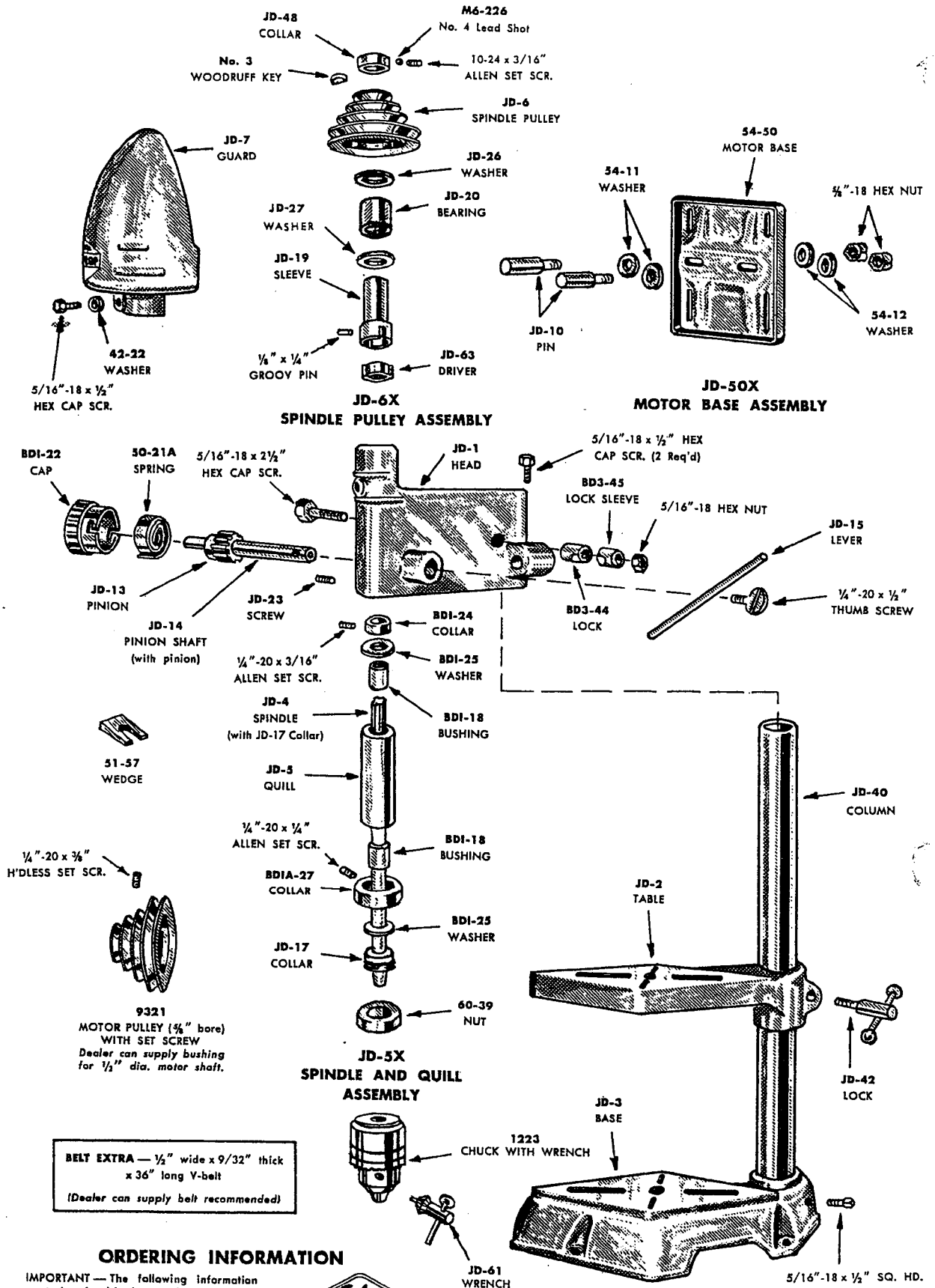
to the table guides the work for straight routing — see Figure 23. When routing irregular shapes, hold the work with both hands, guiding it through the design pattern. Use speeds of 4000 R.P.M. and over.

SUGGESTIONS FOR OPERATION AND MAINTENANCE

- Maintain proper belt tension — keep the belt just tight enough to prevent its slipping.
- Before placing chuck on spindle, clean spindle and chuck taper thoroughly. Chips or dirt score the spindle and cause chuck to slip and run out of true. Always keep spindle taper and chuck bore dry.
- Don't drop the drill or strike it with a hammer.
- Do not use drills larger than the capacity of the chuck.
- When drilling, position hole in table beneath drill, or place a piece of wood beneath work to prevent drilling holes in table.
- Clamp work to the drill press table or hold it in a vise. Drills are apt to snag in work not held properly and could bend or score spindle, damage drill, and even injure the operator.
- Quill return spring should have a light tension — excessive tension prevents sensitive drilling.
- Don't use scored or marred drill shanks — they won't cut a true hole.
- When drilling metal use safety goggles.
- A light ball bearing grease applied to spindle spline maintains spindle lubrication and eliminates noise.
- Keep the column, table, and base covered with a film of oil when drill press is not in use — it will prevent rusting.

**WORKSHOP DRILL PRESS ACCESSORIES
ARE AVAILABLE FROM YOUR DEALER**

PARTS FOR No. 9325 11³/₄" DRILL PRESS



BELT EXTRA — 1/2" wide x 9/32" thick x 36" long V-belt
(Dealer can supply belt recommended)

ORDERING INFORMATION

IMPORTANT — The following information must be furnished on all repair part orders —

- 1 — Quantity Required
- 2 — Number and Name of Part
- 3 — Model Number

Parts shown without part numbers are standard parts and should be purchased locally. We reserve the right to make



Be sure to give Model Number on this plate. Plate located on drill

ATLAS PRESS COMPANY
KALAMAZOO, MICHIGAN, U.S.A.