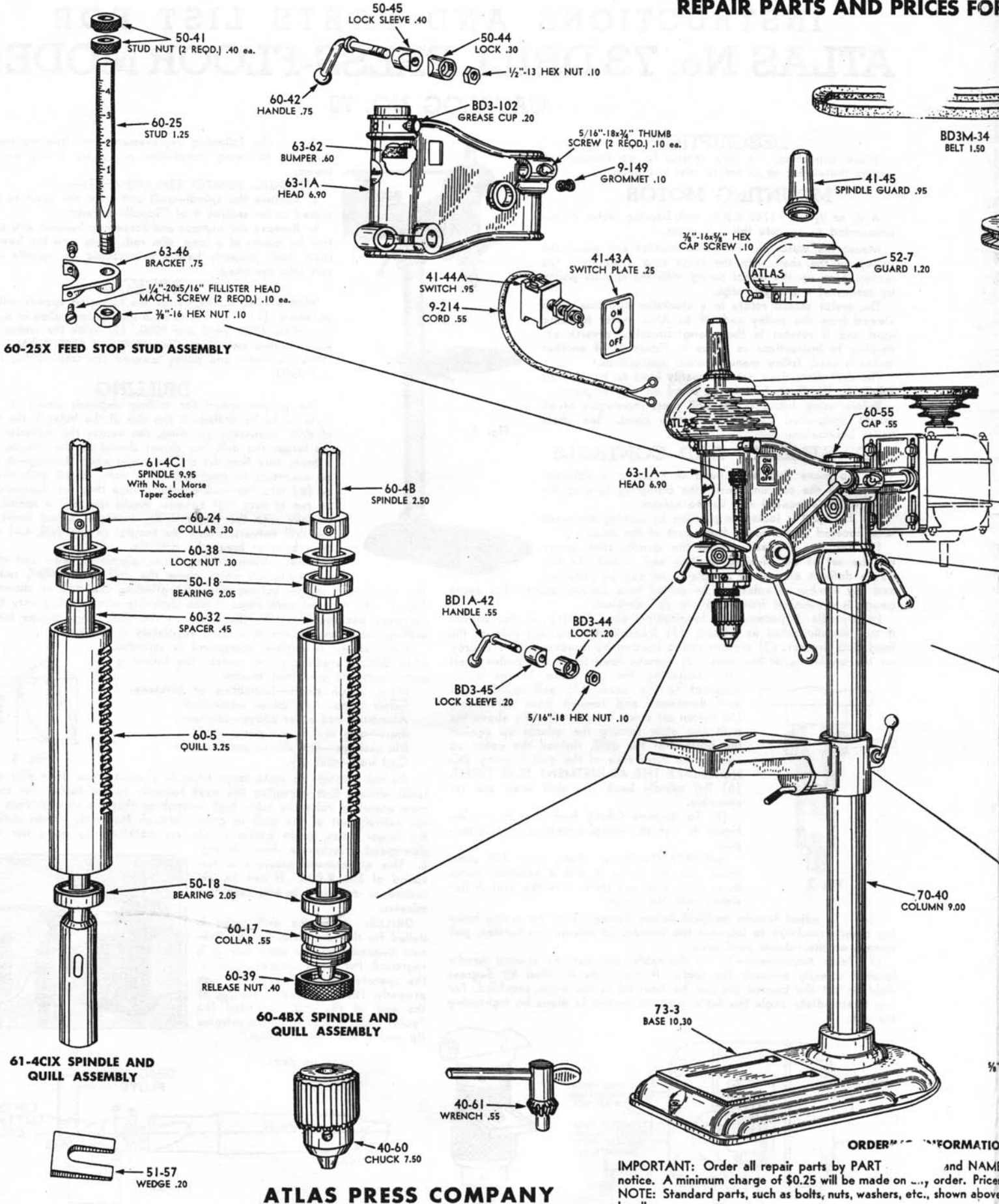




# REPAIR PARTS AND PRICES FOR

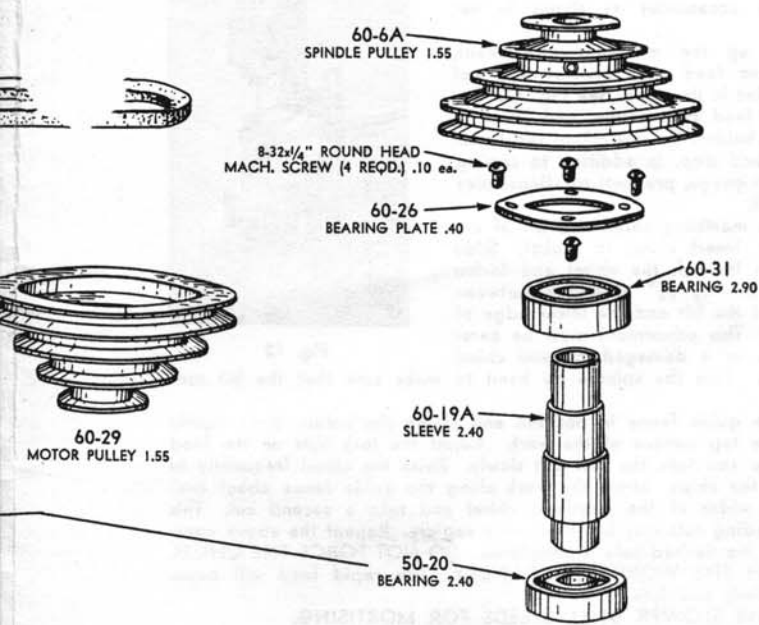


## ORDER INFORMATION

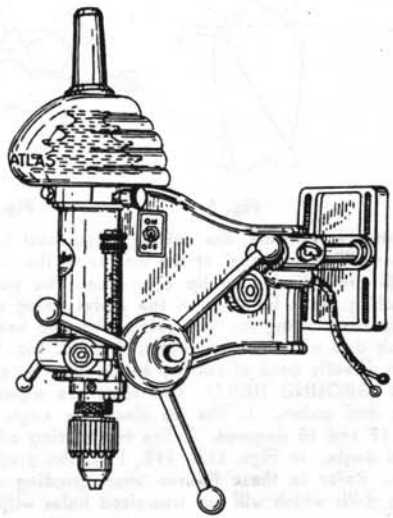
IMPORTANT: Order all repair parts by PART and NAME and notice. A minimum charge of \$0.25 will be made on any order. Prices NOTE: Standard parts, such as bolts, nuts, washers, etc., shown above locally.

ALWAYS GIVE SERIAL AND MODEL NUMBER AND NAME OF PLATE. PLATE LOCATED ON BASE OF

# ATLAS No. 73 DRILL PRESS

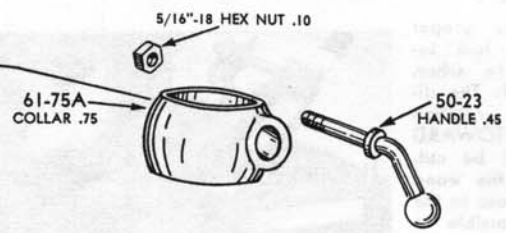


**60-6AX SPINDLE PULLEY ASSEMBLY**

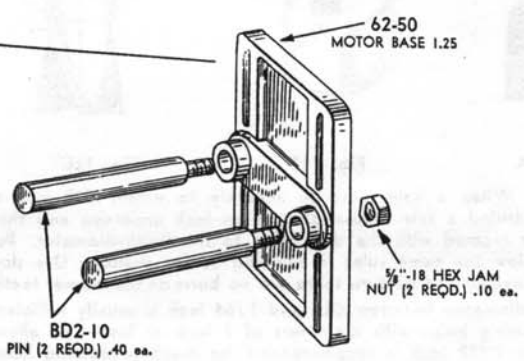


**63-IV DRILL PRESS HEAD ASSEMBLY..\$38.00**  
FURNISHED COMPLETE AS SHOWN WITH CHUCK, MOTOR MOUNTING BRACKET, BELT, PULLEY, AND SWITCH; LESS MOTOR AND COLUMN

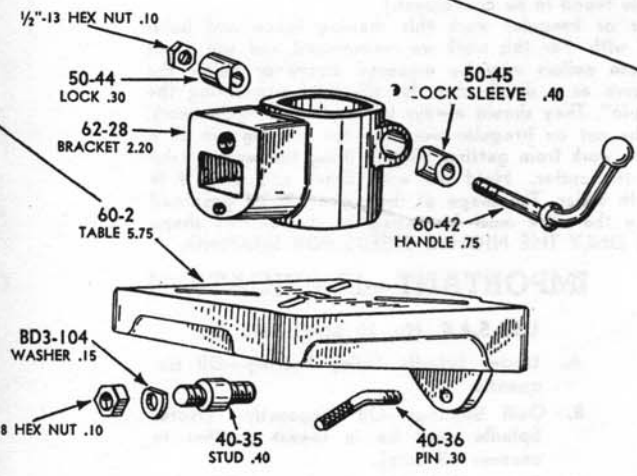
**63-IZ DRILL PRESS HEAD ASSEMBLY..\$38.00**  
FURNISHED COMPLETE WITH NO. 1 MORSE TAPER, MOTOR MOUNTING BRACKET, BELT, PULLEY, AND SWITCH; LESS MOTOR AND COLUMN



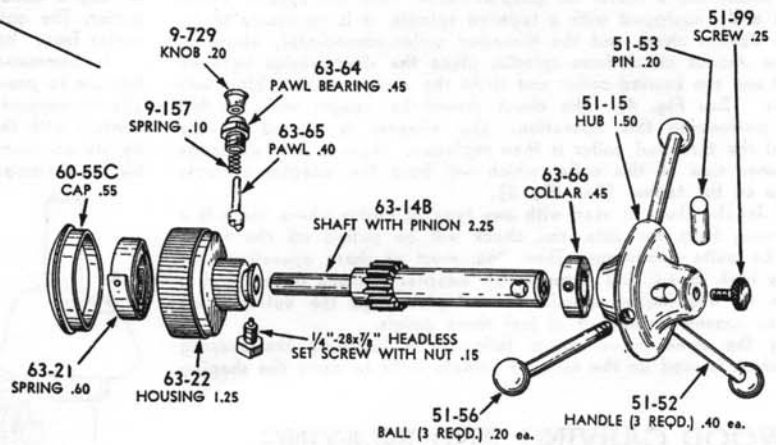
**61-75B COLUMN COLLAR ASSEMBLY**



**62-50X MOTOR BASE ASSEMBLY**



**60-2X TABLE ASSEMBLY**



**63-148X SPINDLE FEED ASSEMBLY**

ON  
ME. are subject to change without  
es do not include postage or express charges.  
re without part numbers should be purchased

**KALAMAZOO 13D, MICHIGAN, U.S.A.**

NUMBERS STAMPED ON  
OF DRILL PRESS.

# OPERATING INSTRUCTIONS

## MORTISING

Use the hollow chisel mortising attachment and accessories as shown in our catalog.

To set up the mortising attachment, first remove feed stop bracket and put chisel socket in its place. See Fig. 12. Remove the feed stop gauge, and insert in the chisel holder. Do not clamp too tightly. This feed stop, in addition to serving as a depth gauge, prevents rotational play in the quill.

Select a mortising chisel and bit of desired size. Insert chisel in socket. Slide the bit up through the chisel and fasten in chuck, leaving  $\frac{1}{8}$ " clearance between the spur of the bit and the lower edge of the chisel. This adjustment must be carefully made or a damaged bit and chisel will result. Turn the spindle by hand to make sure that the bit runs freely.

Set the guide fence in position and clamp the holder down lightly against the top surface of the work. Adjust the lock nuts on the feed stop gauge and take the first cut slowly. Raise the chisel frequently to discharge the chips. Move the work along the guide fence about two-thirds the width of the mortising chisel and take a second cut. This and succeeding cuts may be taken more rapidly. Repeat the above operation until the desired hole is completed. **DO NOT FORCE THE CHISEL THROUGH THE WORK TOO RAPIDLY.** Too rapid feed will cause burned chisels and bits.

USE THE SLOWER DRILL SPEEDS FOR MORTISING.

## SHAPING

The head may be used in the normal position as shown in Fig. 13 or inverted. Use the special extension table and spring clips listed in our catalog. When the drill is equipped with a tapered spindle, a special shaping adapter is mounted on the spindle and held by the collar above the chuck. Be sure to use the collar to hold the shaping adapter in place. See "Caution".

Select the proper cutters and lock securely on the arbor. **IMPORTANT:** The direction of rotation should be TOWARD the work to be cut. Always set the wood facings as close to the cutter as possible to secure maximum safety. To feed work from the opposite side: 1. Turn cutter or cutters over. 2. Reverse direction of rotation of spindle. 3. Place hold-downs on opposite side. (A reversing switch will be found to be convenient.)

In shaping circular or irregular work this shaping fence and hold-downs are dispensed with. For this work we recommend and sell a set of depth collars. These collars may be mounted above or below the cutter. The collars serve as a depth stop for the work preventing the cutter from "hogging-in". They should always be used on irregular work.

In commencing the cut on irregular work use the starting pin as a fulcrum to prevent the work from getting caught. Bring the work gradually in contact with the cutter. Hold the work firmly and keep it in contact with the depth collar. The shape of the piece will be governed by its contour; hence the work must be sawed to the desired shape before shaping. **USE ONLY THE HIGHER SPEEDS FOR SHAPING.**

## IMPORTANT—LUBRICATION

USE S.A.E. No. 20 MACHINE OIL

- Upper Spindle Pulley Bearing—Oil frequently.
- Quill Bearings—Oil frequently. (Note: Spindle must be in lowest position to uncover oil hole).
- Pinion Shaft Hub Bearing — Oil occasionally.
- Lower Quill Bearing—Oil frequently.
- Lower Spindle Pulley Bearing—Fill grease cup with Lubrico M-6 Grease every three months.

Quill Surface—Oil should frequently be applied to the outside surface of this quill. The spindle cap should be removed frequently and oil applied to the splined spindle also.

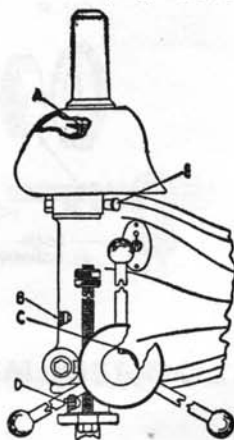


Fig. 14

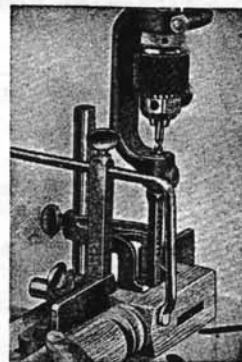


Fig. 12

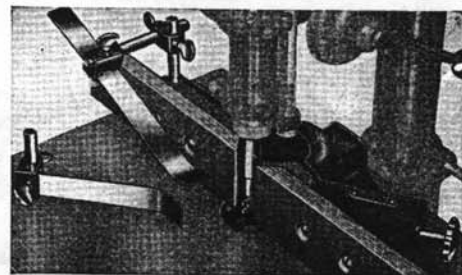


Fig. 13

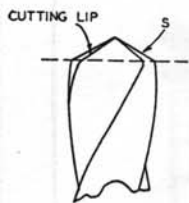


Fig. 8

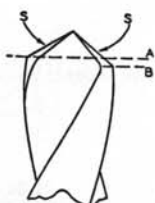


Fig. 9

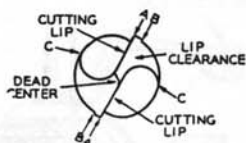


Fig. 10

In order to penetrate the work, the cutting edge must have the correct cutting angle and "lip clearance" at the center of the drill (Fig. 10). Fig. 8 shows a drill ground with no lip clearance. The portion of the drill behind the cutting lip is bearing on the metal being cut and prevents the cutting lip from biting in. The cutting lip and heel "S" are in the same plane. This drill will cut very poorly, if at all. Fig. 9 shows how the "heel", the part directly back of cutting angle, must be ground away.

**THE PROPERLY GROUND DRILL:** Two rules are especially important when grinding drill points. 1. The lip clearance angle (Fig. 11A) should be between 12 and 15 degrees. 2. The two cutting edges must be of equal length and angle. In Figs. 11A, 11B, 11C, the properly ground drill point is shown. Refer to these figures when grinding a drill—they will aid in grinding drills which will cut true-sized holes with a minimum of drill wear.

We manufacture and sell a drill grinding attachment which is a great aid for grinding drills. (Cat. No. W30.) Any drill between  $\frac{3}{32}$  and  $\frac{1}{2}$  inch can be ground accurately with this attachment with a minimum of waste to the drill. (See catalog for full information).



Fig. 11A



Fig. 11B

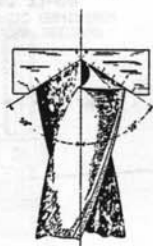


Fig. 11C

**REAMING:** When a hole must be accurate to within .002 inch or less, it is first drilled a few thousandths of an inch undersize and then hand-reamed or reamed with the drill press to the finish-diameter. For best results, follow the same rules in reaming as for drilling. Use slow speeds, feed in evenly and be sure there are no burrs on the reamer teeth.

A reaming allowance between .010 and  $\frac{1}{64}$  inch is usually sufficient for machine-reaming holes with diameters of 1 inch or less—an allowance of  $\frac{1}{64}$  or  $\frac{1}{32}$  inch is recommended for machine-reaming holes between 1 and 2 inches in diameter. .003 to .005 inch is usually allowed for hand reaming operations.

**CAUTION!** In using the drill press for any purpose other than drilling, it is necessary to make use of special chucks and adapters.

In using the various types of mortising bits, router bits, etc., the operator **MUST** use a router bit adapter rather than the Jacobs' chuck. On those drills, equipped with a tapered spindle, it is necessary to remove the Jacobs chuck and the threaded collar immediately above it. To remove Jacobs chuck from spindle, place the steel wedge between the chuck and the knurled collar and strike the wedge a sharp blow with a hammer. (See Fig. 4). The chuck should be caught with the left hand in performing this operation. The adapter is placed on the taper, and the threaded collar is then replaced. There is a small flange on the inner side of this collar which will hold the adapter securely in position on the taper. (See Fig. 2).

If the Jacobs chuck is used with any type of cutter where there is a thrust coming from the side, the chuck will be pulled off the taper. This can be quite dangerous. Then, too, most of these operations are done at a high speed, and a router bit adapter is much lighter and is preferable for the higher speed. The adapter grips the cutter shank all the way around instead of at just three points.

Exactly the same procedure is followed in installing the shaping adapter which is used on the tapered spindle drills to carry the shaping cutters.

## WOOD CARVING AND INLAYING

For this work, use the special router or woodcarving bits shown in our catalog. The drill press should run at a speed of about 5,000 R.P.M. or higher. Hold the piece to be worked firmly in one hand and run the bit into the work the proper depth. Clamp the spindle securely at this point. Now holding the work with both hands, guide it through the desired design. Frequently, in carving, the work is guided by a jig saw pattern cut out of plywood. This pattern is fastened to the underside of the work itself. A prong pin projecting up from the table runs in the pattern and guides the work.