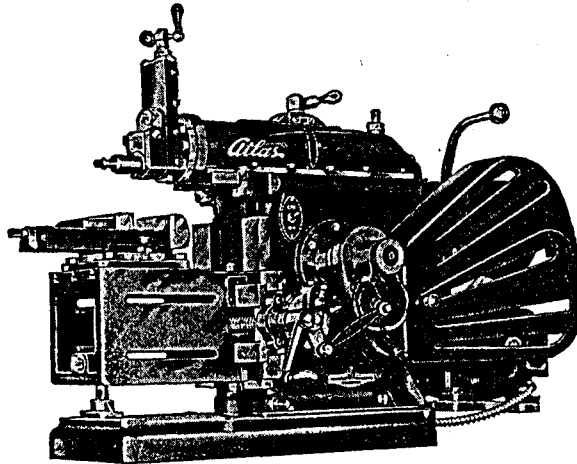


AUGUST, 1953
SHAPER BULLETIN S7B-5
Replaces Bulletin S7B-4

Atlas

REPAIR PARTS LIST FOR ATLAS 7" METAL SHAPER

CATALOG No. 7B



ATLAS PRESS COMPANY - KALAMAZOO 13D - MICHIGAN - U.S.A.

(7B)

1000

OPERATING INSTRUCTIONS

RAM HAZARD

TOO MUCH EMPHASIS CANNOT BE PLACED UPON THE DANGER TO OPERATOR FROM THE RAM MOVEMENT. SUCH ACCIDENTS, AS CATCHING THE FINGERS BETWEEN THE VISE OR WORK AND THE TOOL ARE ALL TOO FREQUENT. ON RETURN STROKES THE HAND MAY BE CAUGHT BETWEEN TOOL HEAD AND COLUMN. NEEDLESS TO SAY, SUCH ACCIDENTS ARE ALWAYS THE RESULT OF CARELESSNESS. WHEN SHAPER IS RUNNING KEEP THE HANDS AWAY FROM THE WORK, VISE, RAM, TABLE OR ANY OTHER DANGEROUS POSITIONS. IF ANY ADJUSTMENTS MUST BE MADE — MAKE THEM WITH THE POWER OFF.

CAUTION

Where there is a machine in operation there is danger! Either to the person, the machine, to the work or to all three! Unfortunately, on a shaper there is one danger point that has never been successfully eliminated. That is the tool feed control. The hand must be used on this handle a large share of the time while the ram is in motion. All the other controls are on stationary pivots.

Before making adjustments to ram stroke, ram position, cross feed or belts **ALWAYS SHUT OFF THE POWER**. The switch is most conveniently placed on the shaper for instant use, so there is no excuse whatever for not using it when needed.

Great care should be taken to see that the tool head clears the column on the back stroke. It is wise to operate the ram by hand power through one complete stroke before turning on the power. This may readily be accomplished by turning the four step pulley on the power shaft.

IMPORTANT: BE SURE DIRECTION OF ROTATION IS IN ACCORDANCE WITH ARROW ON LARGE SINGLE-STEP COUNTER-SHAFT PULLEY.

SETTING-UP

Place the shaper on a rigid foundation. Level it lengthwise and crosswise. If the base does not touch evenly at all points on the bench, place shims where necessary. Fasten down with bolts or lag screws.

Before operating the shaper, clean the rustproof coating off from all bearing surfaces, such as ram ways, table slide ways, etc. with a cloth soaked in kerosene. Then wipe off with a dry clean cloth.

IMPORTANT: Lubricate the shaper **THOROUGHLY** at all points shown on the lubrication chart, page 6.

MOTOR REQUIREMENTS

A $\frac{1}{3}$ H.P. 1740 R.P.M. capacitor or $\frac{1}{2}$ H.P. split phase or capacitor motor is recommended. We do not recommend motors of greater horsepower than $\frac{1}{2}$. Most standard makes will mount on the motor base at back of machine. Before mounting motor connect the machine switch to it as shown in Fig. 2. Motor pulley should be aligned with large countershaft pulley. Use a straight edge to perform this operation. **Important:** Be sure direction of rotation is in accordance with arrow on large single step counter-

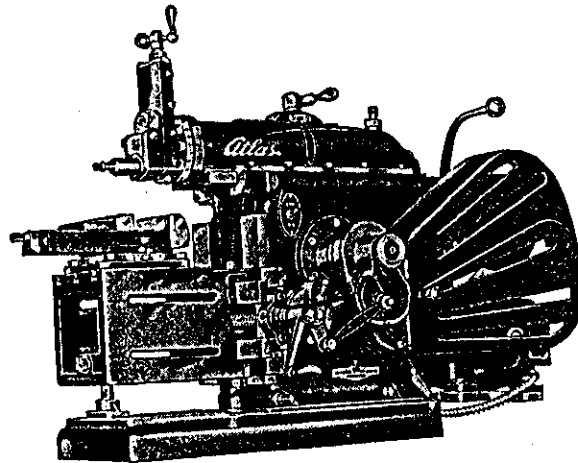


Fig. 1

shaft pulley. Belt tension is adjusted with the screw stud in the motor base.

If a 3 phase motor is to be used, the control switch should be mounted beneath the bench or floor leg board. We can furnish a thermal overload manual starter 3 pole for use on 3 phase or 2 phase 3 wire circuits complete with mounting bracket. Cat. No. S7-300. We also can furnish suitable 3 phase motors. (See Cat.)

CONTROLS

The Shaper has four different stroke speeds. These are obtained by simply changing the belt on the 4-step cone pulleys. Select the proper ram speed in feet per minute. SEE TABLE OF RAM SPEEDS, page 4. The motor is controlled by means of the ON-OFF switch on the side of the main column.

Starting and stopping the ram is controlled entirely by the ball lever. This lever should always be down when starting the motor. On the opposite end of the lever there is a brake shoe which fits into the groove in a pulley on the countershaft. When the lever is let down the tension on both belts is relieved and the brake applied to the countershaft.

After starting the motor (with belts in the proper place) lift the ball handle up until the ram starts to move. A little practice with this handle will enable you to move the ram along by inches to any point desired with accuracy. When you have become familiar with the movements of the machine under power, you are ready to proceed with the setting up for work. The ram stroke and position should be such that the tool will clear the work about $\frac{1}{4}$ " at the start end of cut and about $\frac{1}{8}$ " at the finish end.

RAM POSITION

MAKE SURE RAM WILL MOVE ITS ENTIRE LENGTH OF STROKE AND RETURN WITHOUT STRIKING THE TOOL HEAD ON THE COLUMN. Stroke position is adjusted by turning the stud on the rear top of the ram with the crank after loosening the lock handle located on top. **IMPORTANT:** Be sure that the lock handle is tightened securely before taking a cut, otherwise serious damage may result to the ram adjusting screw and its component parts.

RAM STROKE LENGTH

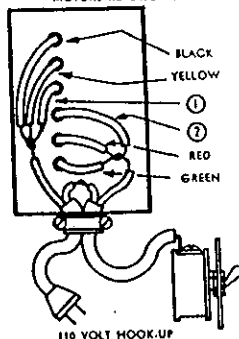
To adjust the stroke length, place the crank on the square-end shaft inside the large hand nut which revolves with the bull gear. Hold the hand nut with the left hand and turn the crank a half turn to the right with the right hand. This will free the crank shaft to adjust the length of stroke. (The ram must be at the extreme return end of stroke.) Turn

the crank and watch the pointer and scale at the side of ram. The reading shows length of stroke directly in inches. Then hold the crank and turn the hand nut to the right until it stops. Lock by holding the hand nut and turning to the left with the crank. **NEVER STRIKE THE HAND NUT WITH ANYTHING.**

TOOL HEAD

Tool feed slide can be tilted from vertical to 50° right or left for cutting angles such as V-block or dovetail by loosening the two cap screws. Tighten securely after setting to desired angle.

TO REVERSE ROTATION OF ATLAS MOTORS REVERSE 1 & 2



TO REVERSE OTHER MOTORS FOLLOW MANUFACTURERS INSTRUCTIONS

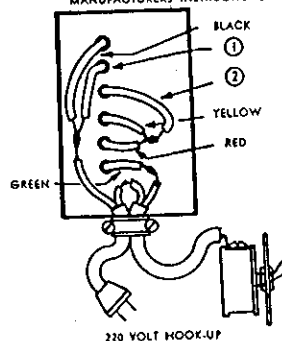




Fig. 3

TOOL POST CLAPPER

When cutting surfaces parallel to tool slide ways (Figs. 3, 10, 11, and 12), the clapper swivel must be adjusted so that the tool will lift away from the surface while tool is making the return stroke. The clapper seat must be clean and clapper must swing freely back into seat—yet there must not be excessive play in the parts. Too much play in the clapper results in wavy and unevenly finished surface. While the tool head can be revolved in a complete circle, it is seldom actually used for greater than 45° angle cuts. Therefore, it is graduated for only 50° each side of vertical.

KNEE

This unit consists of table cross slide, vertical slide, and front table support and all other parts associated with this unit.

The vertical adjustment is obtained by loosening 8 cap screws on the vertical slides one quarter turn each. **CAUTION!** Before making this vertical adjustment of the table, wipe off all metal dust and chips from the column ways. Loosen the hex cap screw on the front of the table, and crank the table to the desired position. Retighten the 8 cap screws and lock the cap screw. **CAUTION! NO CUTTING SHOULD BE DONE WITH THE KNEE LOOSE ON THE VERTICAL SLIDES.**

If shaper is to be mounted on a table too far from edge to permit use of crank, a universal joint should be used between lift screw shaft and extension.

CROSS RAIL

The bearing surfaces of the cross feed slides receive probably the roughest use. Chips and metal dust work into the slides and cause wear. Therefore, no play should be allowed between the moving parts on the ways, but the table must slide without binding.

CROSS FEED

The power feed is engaged or disengaged with the small lever on the side of the ratchet gear case. There are two letters, R and L, stamped on the gear case. When the lever is engaged on R the table travels to the Right when viewed from the front, oppositely when engaged on L. Neutral position is midway between R and L. Five feeds are obtainable viz: .005", .010", .015", .020", and .025" per stroke.

To increase feed, loosen square head cap screw on the Tee slotted crank disc and slide nut toward periphery of crank disc—then retighten. To decrease feed, slide nut toward center of crank disc.

Note:—It is very important that the nut be secured on the proper half of this crank disc to advance the work during the idle stroke as outlined below.

FEED TIMING

The proper time to advance the tool for the next stroke is during the idle stroke, whether feeding by hand or power. In power feeding this timing changes with the reversal of the ratchet knob. It is advisable to start each succeeding cut from the same side of the work instead of reversing the feed.

TABLE

Three Tee slots are machined in the top of the work table for holding work or the vise. Two open slots on each side are for holding work on the side with $\frac{3}{8}$ " machine bolts.

After the shaper has been in service for some time the table top will undoubtedly become nicked either from tool cuts or from the work. It is good practice to take a light truing cut on the table surface when needed.

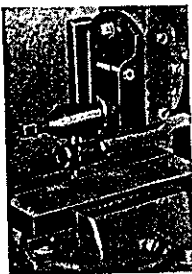


Fig. 5

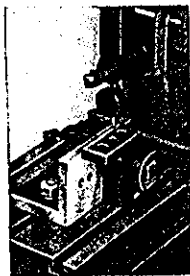


Fig. 6

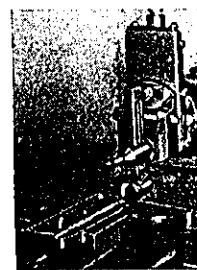


Fig. 7

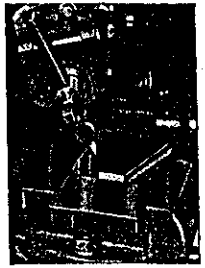


Fig. 4

WISE

This is a very important piece of equipment and must stand a great strain. It is constructed of a minimum of parts to insure rigidity.

The swivel base is graduated 0 to 90° right and left and has two witness marks on the base flange. This makes a reading possible at any position of the vise. Alignment with the table is held with a key in the base. Fig. 4.

CLAMPING WORK IN THE VISE

First, be sure the vise is securely fastened to the table, and the work securely locked. When clamping work in vise, place the piece solidly on the ways of the vise between the jaws. If the piece is thinner than the depth of the jaws, use parallels of the right height to raise the work above the jaws enough to allow the cutting to be done without the tool touching the vise. Fig. 5. Proceed to tighten the vise with one hand, at the same time lightly tap the work downward with a small hammer. This is to overcome the lifting tendency of the sliding jaw when it is being tightened. A piece of paper put between the work and the vise jaw will be of great benefit in this operation.

CLAMPING WORK ON TABLE

When work cannot be satisfactorily held in the vise for shaping, the vise is removed and the work clamped either directly to the table or a special fixture is used to hold the work. An angle plate having holes in the wing can be conveniently fastened directly to the table by bolts. See Fig. 6. Fig. 7 shows a piece of flat work bolted directly to the top of the table.

SQUARING OR FLAT ON SHAFT

For this type of operation the work is held in the vise. The tool post slide and clapper should be in a vertical position. In the case of squaring a shaft, first proceed to cut one side. Then turn the work $\frac{1}{4}$ turn for the next cut. Check for trueness by using a square. Hold the square against the top of the table and the flat spot on the shaft against the vertical arm of the square. Clamp in the vise at this position. Check every time in this manner before proceeding to cut the next side. See Fig. 8.

DOVETAILING

When performing a dovetailing operation, the work may either be held in the vise, or in a fixture, depending upon the shape of the work to be dovetailed. Set the tool post slide to the angle desired. Also tilt the clapper so that the tool lifts off and away from the work on the return stroke. Bad work will result if this requirement is not followed.

Figure 10 shows a female dovetail being cut. Note that the clapper tilts in the same direction as the angle of the surface being cut.

In figure 11 a male dovetail is shown being cut. In this case, also, the clapper is tilted in the same direction as the angle of the surface being cut. Figure 12 shows a "V" cutting operation.

CUTTING KEYWAYS

A cutting tool ground to proper size and shape will be suitable for cutting small keyways. Provide sufficient clearance behind the cutting edges of the tool—the sides as well as the bottom because the sides are also cutting away stock.

When using a narrow tool for cutting wide keyways, cut a slot the width of the tool first, then, cut away the sides until proper width is obtained.

If a keyway is desired along the entire length of a shaft which is considerably longer in length than the maximum stroke of the

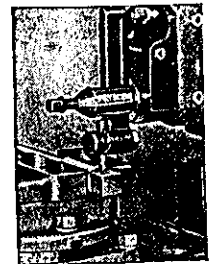


Fig. 8

shaper, this can be accomplished by having the table off toward the left side so that the work will clear the machine as it is moved back for continuing the cutting of the keyway. The clapper should also be tilted toward the left.

INTERNAL SHAPING AND KEYSEATING

Fig. 13 and 15. This kind of work is usually held in the vise. A special tool and holder are used. Catalog No. S7-315. The cutting tool projects ahead of the holder a little farther than the length of cut. In some cases of internal shaping, the clapper action must be limited.

One method is to insert a fairly stiff spring under the shank of tool holder just above the hinge of the clapper. Another method sometimes used, but not so good, is to tie or clamp the clapper down solidly. This, of course, prevents any movement of the clapper and thus defeats its purpose. It must be remembered that the purpose of the clapper is to relieve the pressure on the tool point during the return stroke while it is being fed for the next stroke-cut.

Internal shaping is a delicate task because the tool shape is such that it will have a strong tendency to "bite or hog" into the work and extreme care must be used in feeding, especially the down feed.

Fig. 13 shows a typical internal shaping operation upon a die block. Fig. 15 shows a gear keyseating operation.

CUTTING TAPER AND WEDGES

When cutting tapers, the vise will be found the most convenient fixture. Clamp the work in the jaws firmly. Set the swivel to the desired angle and tighten the bolts. A combination of angles can be cut on the same piece without removing from the vise jaws simply by setting the swivel to different angles. In most of taper and angle cutting the tool is fed across the surface and depth of cut fed by the cross slide. The width of the surface is limited by the travel of the tool slide.

In general, however, the operator will set up his work so as to take advantage of the power feed as shown in Fig. 16.

Making a wedge with only a slight angle, the work may be clamped in an inclined position in vise, one end raised to the desired height, but all parts should rest solidly as much as possible.

RACK AND GEAR CUTTING

Cutting rack teeth, either ratchet style or gear style, is a comparatively simple operation, whereas cutting teeth on a radius involves some special fixtures for indexing the teeth.

For indexing the teeth on a rack the feed screw dial is used. For example 16 diametral pitch equals .196" which is the distance the table is moved for each tooth. (Fig. 17.) Gear cutting operations are performed in much the same way except that an indexing fixture is necessary to hold the blank.

CUTTING BITS AND TOOLS

Cutting tools and holders for a shaper are very similar to the tool equipment used on a metal lathe, even to the sharpening of the tool bits, with this exception, however. We suggest for the harder metals to use more top rake and less end and side clearance.

Fig. 14 illustrates how cutting bits should be ground for various shaping operations. The angles and form shown are general and will vary with materials and conditions.

FORMED TOOLS

When duplicate shaping is done, such as gear teeth, ratchet teeth, keyways, fillets, beads, grooves, etc. formed tools are required for uniformity.

Formed tools present the old problem of chattering cuts. The greater the cutting edge of tool in contact with the work, the greater chance for chatter.

When conditions permit, it is advisable to rough out with a narrow tool before using the formed tool.

For internal shaping such as keyseating a hole square, hexagon or any odd shape in a hole, a long projecting tool is used. This tool should have the largest possible shank and minimum offset at the cutting end to obviate trouble due to springing of the tool. (See Fig. 14.)

RAM SPEEDS

Below is a table of ram speeds in feet per minute. These speeds are only applicable when using a 1740 R.P.M. motor and the motor pulley furnished with this machine, and are approximate.

Length of Stroke in Inches	POSITION OF BELT IN PULLEY			
	Smallest Step No. 1	Step No. 2	Step No. 3	Step No. 4
1	30	19	12	7
2	58	35	24	14
3	86	56	36	21
4	112	74	47	27
5	138	90	58	33
6	163	107	68	39
7	187	122	78	45

CUTTING SPEEDS FOR VARIOUS MATERIALS

Select the cutting speed suitable for your work. Cutting speeds for the various materials in general would be as follows:

Aluminum	100 to 116 Ft. per Min.	Cast Iron	40 to 50 Ft. per Min.
Brass	100 to 116 Ft. per Min.	Soft Steel	40 to 50 Ft. per Min.
Bronze	80 to 100 Ft. per Min.	Carbon Steel	30 to 40 Ft. per Min.
Zinc	80 to 100 Ft. per Min.	Plastics	100 to 116 Ft. per Min.

Because of excessive vibration caused by the action of the ram travel, very high speeds should be avoided on the longer strokes.

ADJUSTMENTS

The ram, the knee and the cross rail slide bearings are provided with shims and gibs for making adjustments when necessary. The shims are .010" thick and are made up of (4) .002" and (2) .001" leaves, held together with a light film of solder for convenience in handling, and can be easily separated with a knife blade. (See Fig. 9.) The side with the .001" laminations is colored gray.

The sliding vise jaw is also equipped with laminated shims for necessary take-up.

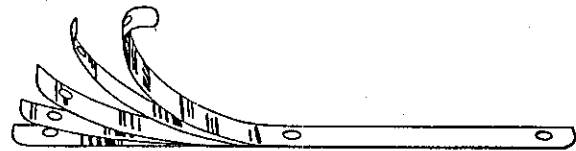


Fig. 9

1. TIMKEN BEARING ADJUSTMENT

The bull gear and pinion gear shafts run on Timken bearings which have been properly adjusted at the factory and should not be tampered with unless end or radial play develops. If so proceed as follows:

A. BULL GEAR BEARINGS: Run the shaper about an hour to warm up the shaft (a temperature rise increases the length of the shaft). Remove the knurled knob from the shaft. Also, detach the pitman rod from the cross feed disc (located directly beneath the knob). Pry off the Feed disc guard, after loosening the two cap screws. Loosen the set screw in the collar adjacent to the spur gear and turn collar until bearings bind slightly in rotation; then, back off to give free rotation with no end play. (Test this by moving the bull gear in a longitudinal and radial direction.) Tighten set screw in the collar and reassemble the parts in reverse order.

B. PINION GEAR SHAFT BEARINGS: Run the shaper as explained above. Loosen the set screw in the bearing boss on the LEFT side of the main frame. With a small shaft held angularly in one of the recessed holes in the thrust plate, tap lightly with a hammer and advance plate in a clockwise direction until bearings bind slightly in rotation; then back off to give free rotation with no end play. Tighten the set screw in the boss.

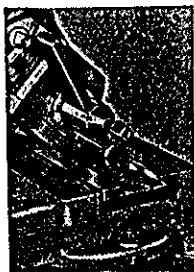


Fig. 10



Fig. 11

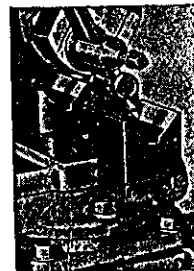


Fig. 12

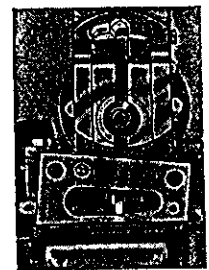


Fig. 13

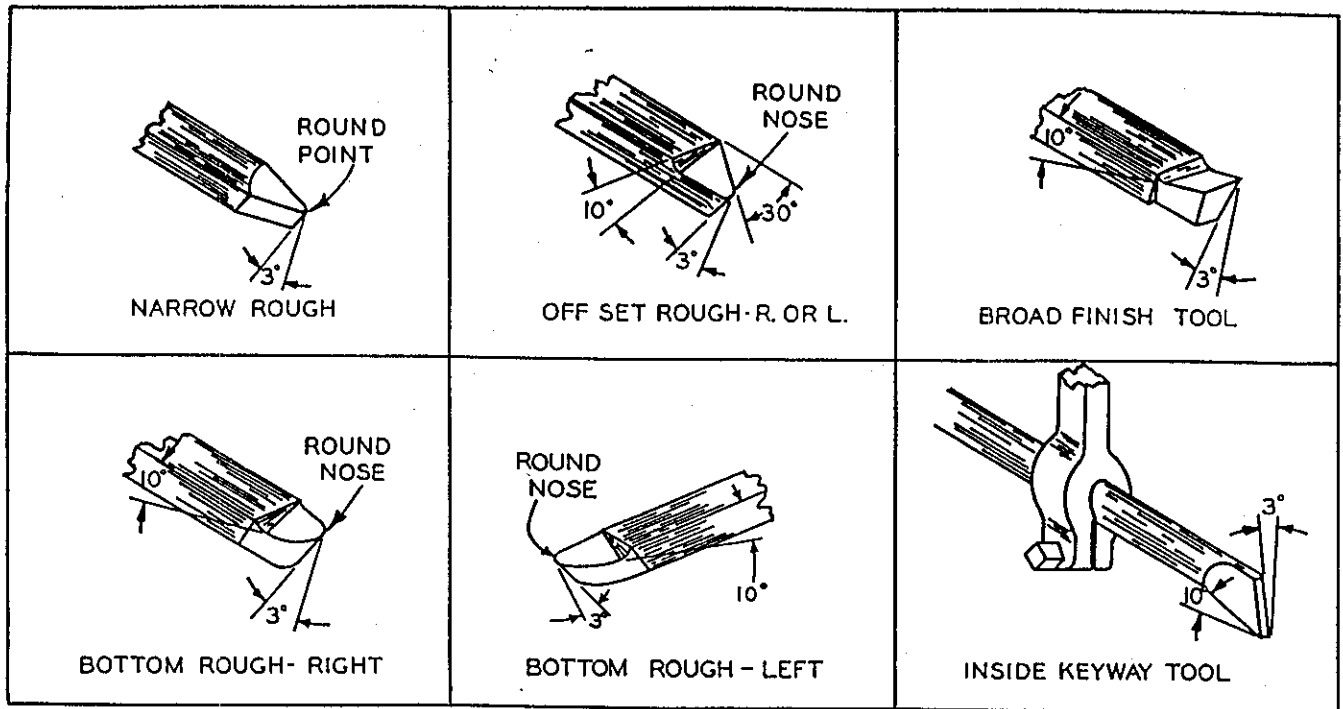


Fig. 14

2. RAM

Vertical play on the ram can be taken up by peeling off a leaf at a time from the laminated shims. Side play is adjusted with the gib screws at the left side top edge of the column or body. Adjust vertical play to .001"-.002". Side play to .001"-.002". This allows a film of oil to "float" the ram.

The ram screw may be adjusted to remove excessive end play by tightening nut on extreme rear of ram and securing with lock nut.

3. TOOL POST CLAPPER

The tool post clapper hinges on a tapered pin which affords take-up adjustment.

If excessive play develops between the clapper and pin, tighten the nut on the pin until play is eliminated, but yet permitting the clapper to fall freely into position by its own weight.

If the pin is drawn up too tightly, loosen nut and lightly tap pin with a hammer.

4. KNEE

No play should be allowed in the slides of the knee. The clamping plates should be adjusted so that the knee slides will be rigid when the 8 cap screws are tightened. A good way to do this is to make adjustment so the knee will just slide without play when the 8 cap screws are tight. Then remove an extra .002" lamination on each side for clamping. The gib at the left side should be adjusted for sliding with no play, but should not be locked.

5. CROSS SLIDE

Adjustments on the cross slide are a little different from either the ram or knee slides. The table should slide freely on the cross slide, yet no play must be present. Excessive friction here would result in broken feeding mechanism. Excessive play would result in chattering cuts and rough finish.

Adjustment on cross slides is also made by peeling or inserting shims which are placed between the bearing plates and held with 8 socket head cap screws. These are accessible from the rear when the table is moved to the extreme right and extreme left.

Vertical play is taken up with 3 gib screws at the bottom of slide.

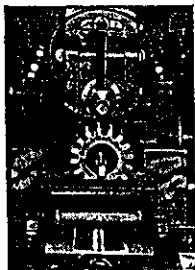


Fig. 15

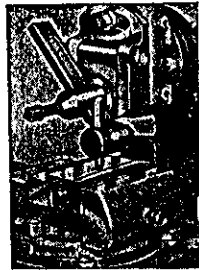


Fig. 16

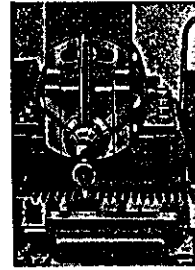


Fig. 17

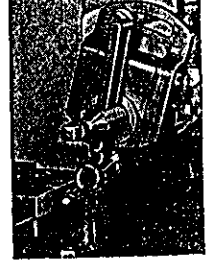


Fig. 18

The cross slide screw may be adjusted to remove excessive end play by tightening nut on left end of cross slide screw and securing with lock nut.

6. SLIDING VISE JAW

If vertical play develops in the sliding vise jaw, it can be eliminated by removing some laminations from the shims. It will be necessary to remove the jaw. To do this, proceed as follows:

Remove the front bearing plate; loosen the two jam nuts on the end of the screw; pull jaw off from the vise.

7. TOOL SLIDE

The gib screws on the tool slide should be kept tightened to prevent any undue play. After tightening, lock in position with the jam nuts. Note: When making this adjustment be sure the gib is against the solid portion of the inner slide, otherwise a bent gib will be the result. The tool slide screw may be adjusted for end play with the two nuts on the hub of the handle. To adjust, tighten inner nut and lock with outer nut. A nice working, snug fit is ideal.

8. CRANK BLOCK SLIDE

Machine tool builders as a rule do not attempt to provide adjustment on this particular part of the shaper because any adjusting mechanism only complicates and makes more delicate parts to give trouble quicker than if left solid and allowed reasonable tolerance for wear. When worn to the stage of unsatisfactory service, the parts are renewed and the cost to replace is small.

9. END PLAY IN SHAFTS AND SPINDLES

End play in the vise screw may be removed by tightening nut on screw at end of vise and locking with ram lock nut.

End play in shafts and spindles is taken up by means of collars with set screws in them. This applies to the countershaft, pinion shaft, ram screw adjusting shaft (on top of ram) and knee lift screw shaft. However, adjustments of these parts will seldom be necessary.

10. COUNTERSHAFT HANGER BRACKET

The countershaft hanger bracket is provided with slots so that the unit may be raised or lowered if necessary to provide additional motor clearance or aid in tensioning belts.

LUBRICATION CHART

NOTE: Use a good grade of No. 10 motor oil or equivalent throughout (except where otherwise specified.) (Refer to Chart.)

1. RAM ADJUSTING SCREW AND CRANK LEVER PIN

Oil liberally every time the shaper is used. This will also oil the crank lever slide and bottom link pin and should not be neglected. Note: Use a No. 20 lubricating oil in this case.

2. CRANK LEVER BLOCK AND PIN

Remove side cover plate, and frequently apply a liberal amount of oil to the crank block through the oil hole located in the plate on the side of the ram lever. Notice: The ram must be in extreme forward position.

3. CRANK LEVER LINK

Oil every time shaper is used. Also, apply a few drops of oil to the oilite bushings in the shaper frame which are bearing points for the shaft which supports the crank lever link.

4. CRANK AND PINION GEARS

A small amount of graphite gear grease should be applied to the gears occasionally.

5. COUNTERSHAFT

Oil every time the shaper is used.

6. ROCKERSHAFT

Oil occasionally. Also apply a little grease on the cams occasionally.

7. BEVEL GEARS

Oil occasionally.

8. BEVEL GEAR SHAFT

Occasionally apply a few drops of oil on the bevel gear shaft on top rear of ram.

9. TABLE LIFT SCREW

About once a month clean the table lift screw with kerosene using a stiff brush, then apply a small amount of oil.

10. HORIZONTAL CROSS RAIL WAYS

Apply a liberal quantity of oil to the ways and to the cross rail wipers whenever the shaper is used.

11. VERTICAL CROSS RAIL WAYS

Clean regularly and occasionally apply a liberal quantity of oil.

12. LIFT SCREW (AT POINT OF BEARING)

Occasionally put a few drops of oil at the point of bearing of the table lift screw on the frame.

13. SPIRAL GEARS

Occasionally place a few drops of oil in oil hole on top of gear housing.

14. CROSS FEED SCREW

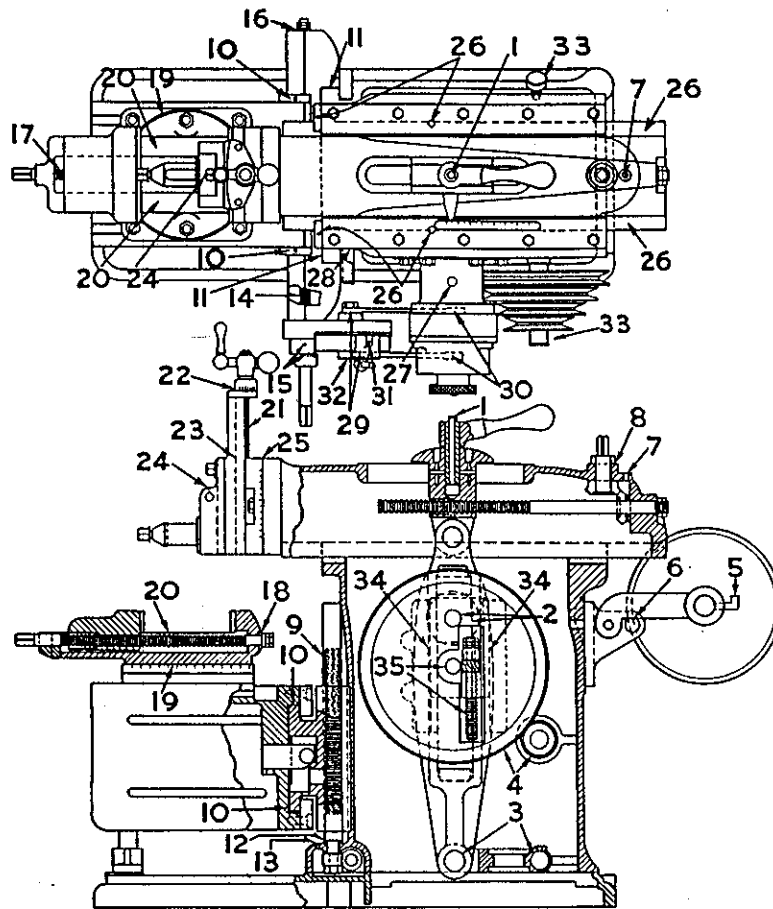
About once a month clean the lead screw threads with kerosene and a small, stiff brush and apply a small amount of oil.

15 and 16. CROSS FEED SCREW BEARING (Left and Right)

Occasionally apply a few drops of oil.

17. VISE SCREW

Put a few drops of oil on the vise screw. This should be done every time the shaper is used. Clean the vise screw regularly with a small stiff brush.



18. VISE SCREW BEARING
Occasionally apply a few drops of oil.

19. VISE BASE

Keep the revolving surface of the vise base well oiled at all times.

20. VISE CLAMP WAYS

Keep the vise clamp ways oiled at all times. Always leave a generous film of oil on the ways when the shaper is not in use.

21. TOOL FEED SCREW

Frequently oil the tool feed screw. Clean occasionally with a small stiff brush.

22. TOOL FEED SCREW BEARING

Occasionally apply a few drops of oil where the graduated collar contacts the screw thrust plate.

23. DOVETAILS ON THE TOOL POST SLIDE

Keep clean and apply a liberal quantity of oil on the ways every time the shaper is used.

24. TOOL POST CLAPPER

Oil regularly.

25. RAM SWIVEL

Oil occasionally.

26. RAM WAYS

Keep the ram ways oiled at all times. Two oil cups are provided for this purpose of the ram wipers. THIS APPLICATION IS VERY IMPORTANT.

Also apply oil to the exposed portions forward and back positions, and to both of the ram wipers. THIS APPLICATION IS VERY IMPORTANT.

27. NECK AND OUTER BEARINGS

Oil these bearings every time the shaper is used.

28. TABLE LIFT SCREW SHAFT BEARING

Oil occasionally.

29 and 30. PITMAN ROD BEARINGS

Apply a few drops of oil on each end of both the pitman rods every time the shaper is used.

31. RATCHET CASE

Apply a few drops of oil on each end of both the pitman rods every time shaper is used.

32. RATCHET GEAR BEARING

Oil every time the shaper is used.

33. PINION GEAR BEARINGS

Fill both grease cups with a light ball bearing grease every two weeks. Give the grease cup caps a turn or so every time the shaper is used.

34. RAM STROKE ADJUSTING BLOCK WAYS

Remove the side cover plate and oil the ways occasionally.

35. RAM STROKE ADJUSTING BLOCK SCREW AND SPIRAL GEARS

Remove the side cover plate and oil occasionally.

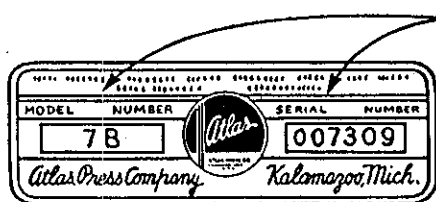
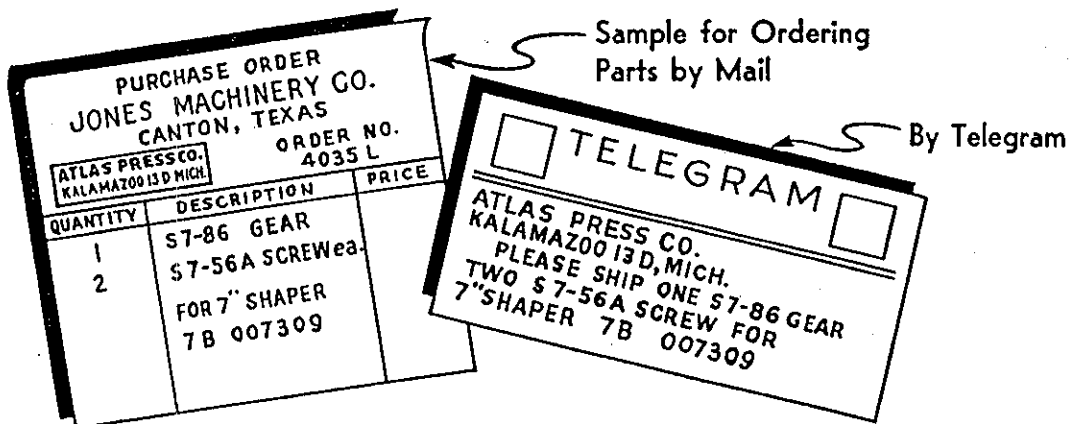
KEEP ALL BEARING SURFACES CLEAN. DIRT IS THE NATURAL ENEMY OF ACCURATE SHAPER WORK. WHEN NOT IN USE THE SHAPER SHOULD BE KEPT WELL OILED AND PREFERABLY COVERED.

IMPORTANT: Where Oilless Bronze Bearings are used in this shaper, lubrication takes place by oil seepage through the porous bushing wall thus assuring a filtered lubricant. DO NOT DRILL HOLES THROUGH THE BUSHINGS.

ORDERING INFORMATION

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

1. Quantity Required
2. PART NUMBER and Name of Part
3. Model and Serial Number of Shaper



Be sure to give Model and Serial Number on Plate. Plate located on Right Side of Shaper Frame.

NOTE: On shapers without this plate, SERIAL NUMBER is found on LEFT FRAME WAY.

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

INDEX

FOR SHAPER PARTS AND PRICES

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COUNTERSHAFT, GUARDS, MOTOR BASE, MOTOR PULLEY and BELT	14

FRAME PARTS LIST

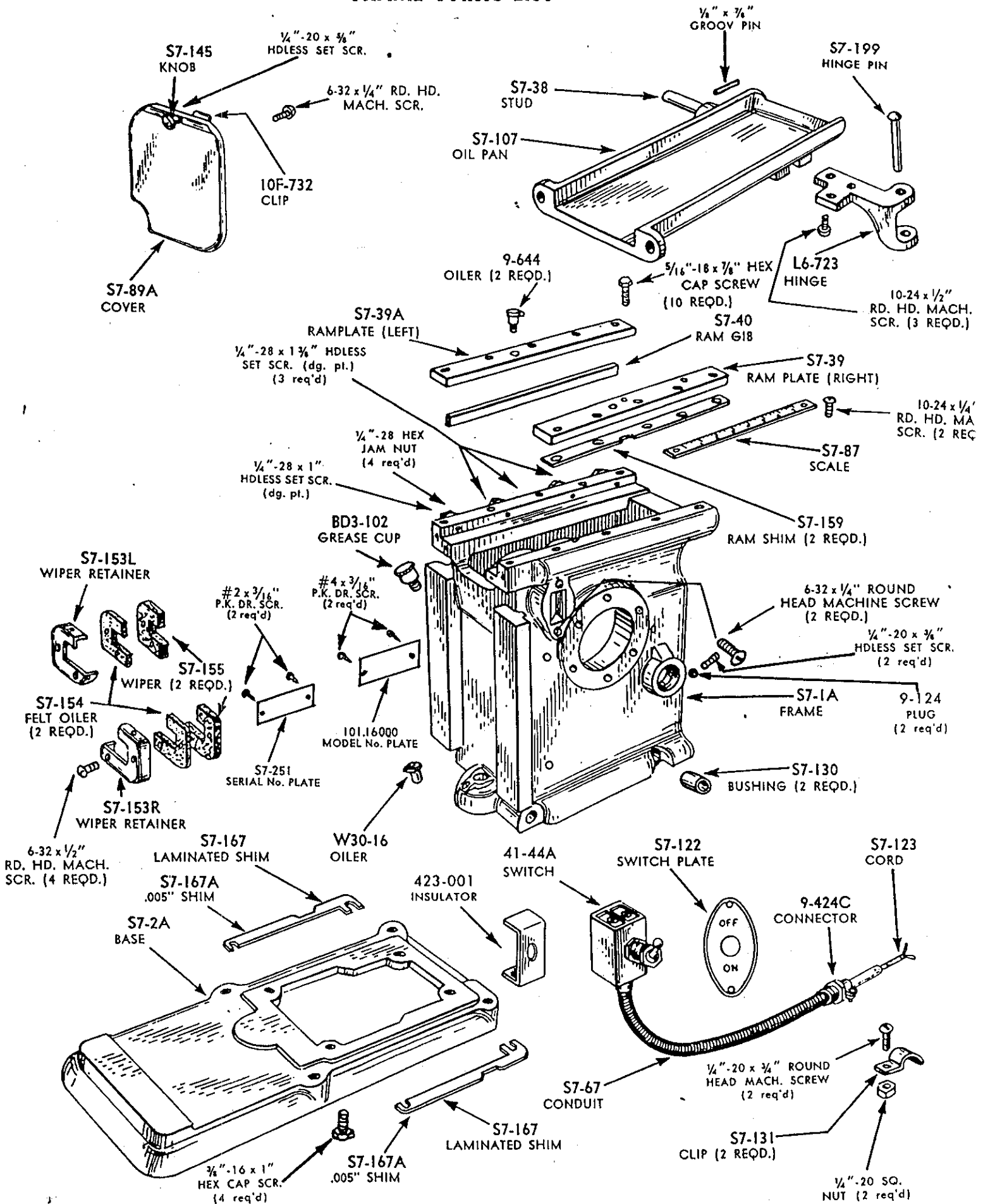
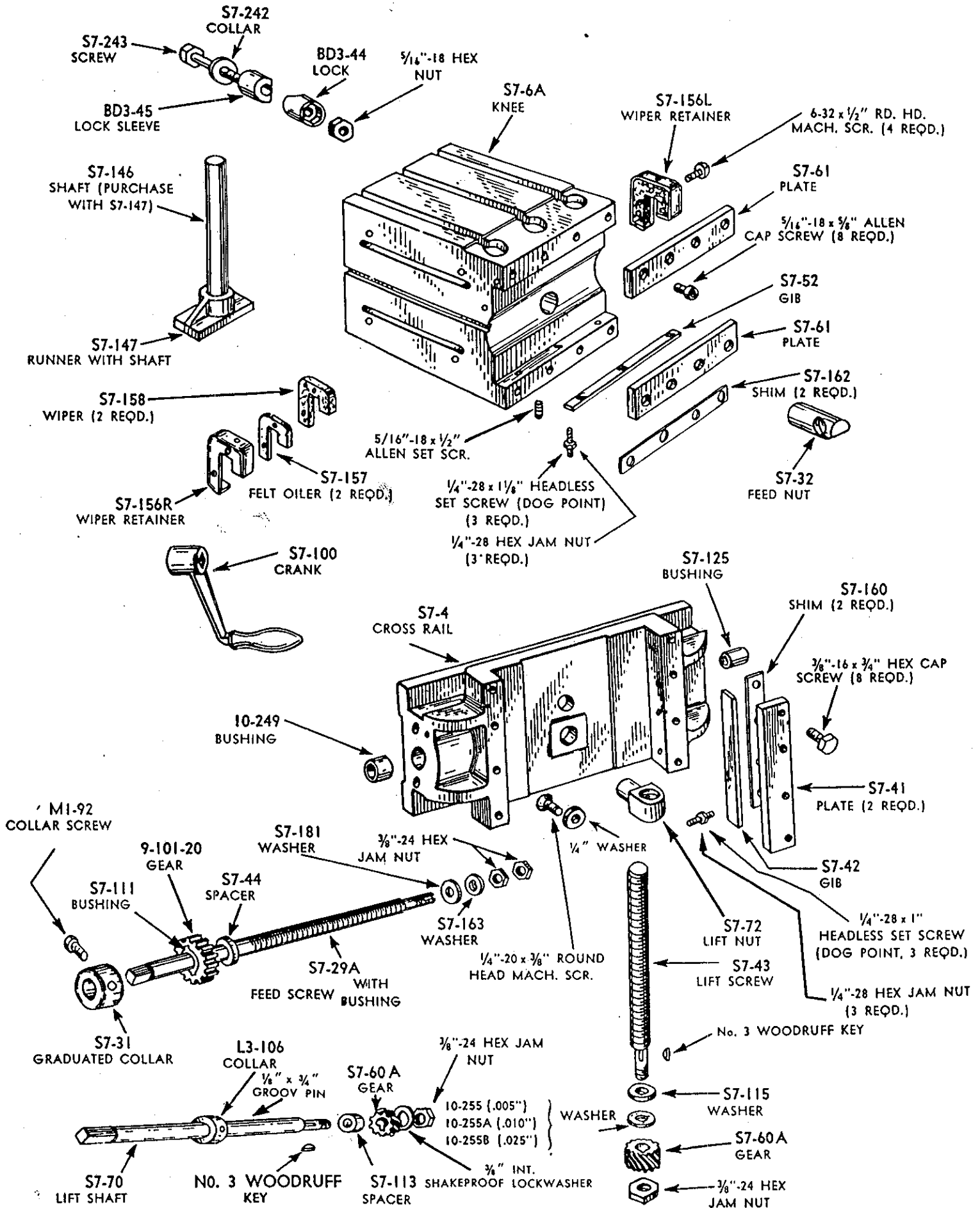
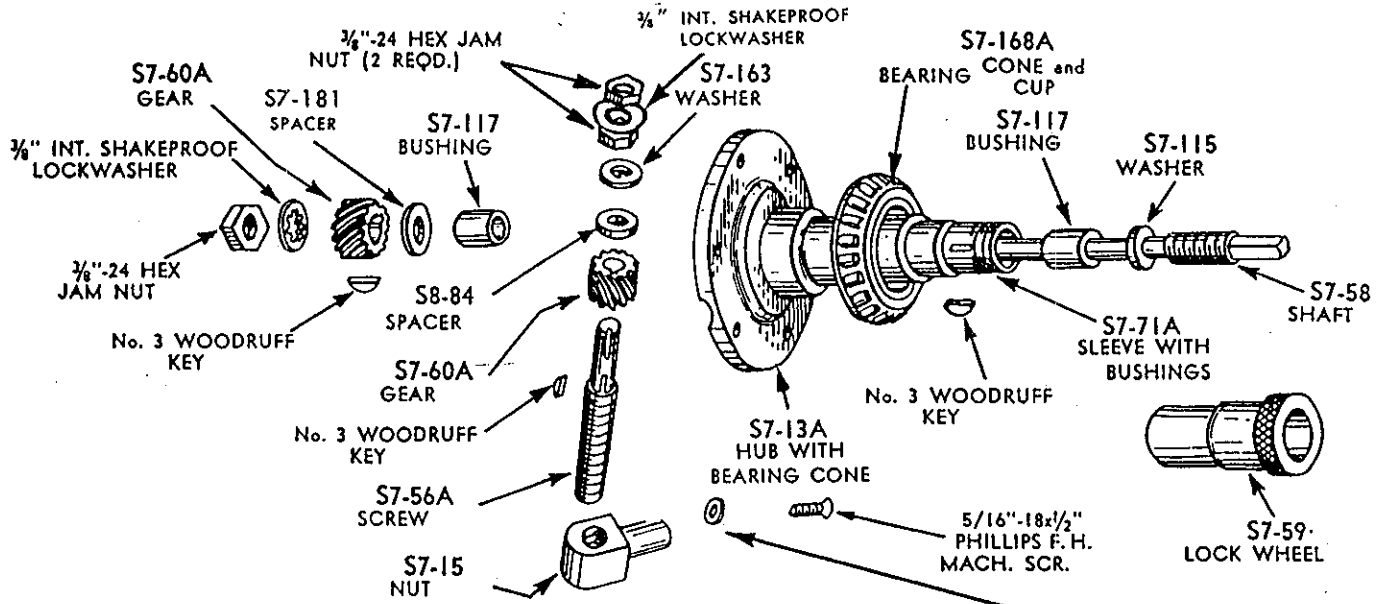


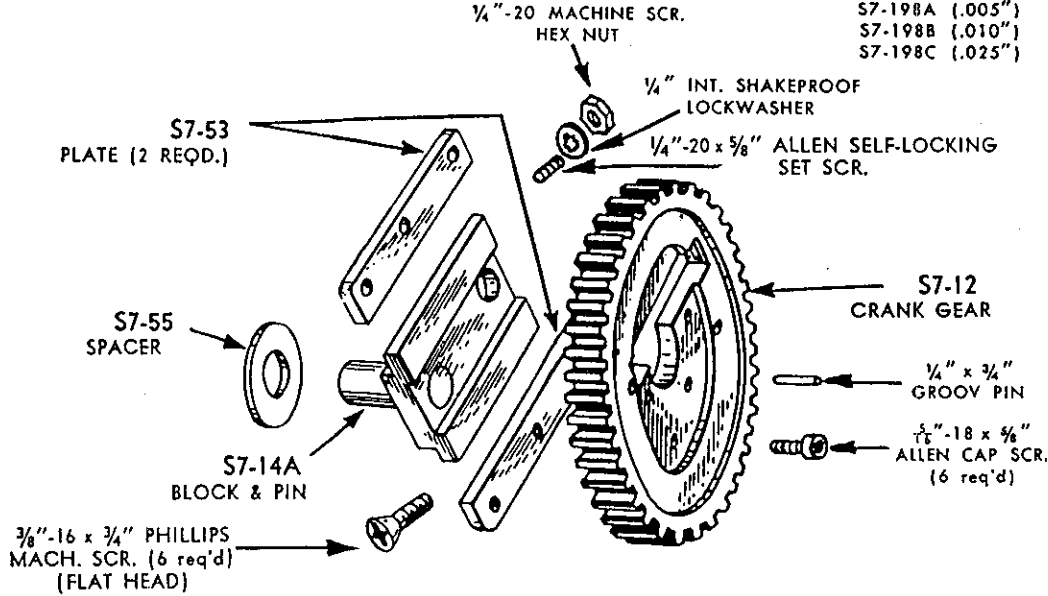
TABLE PARTS LIST



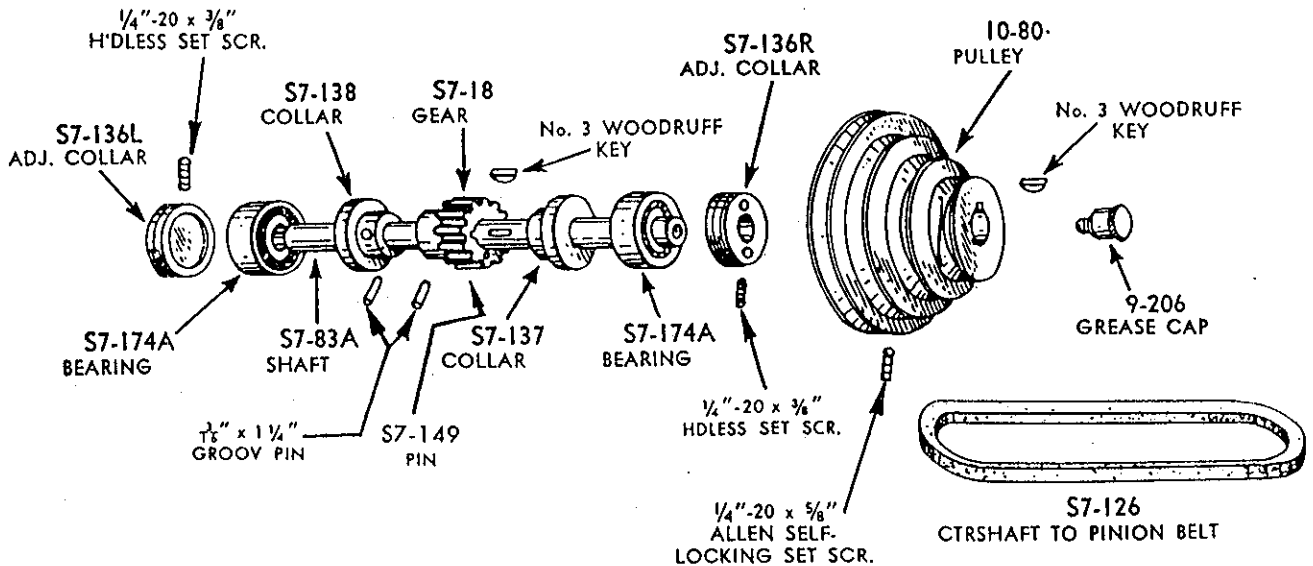
HUB, CRANK GEAR, AND PINION SHAFT PARTS LIST



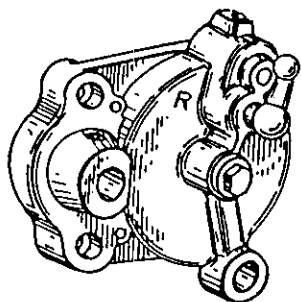
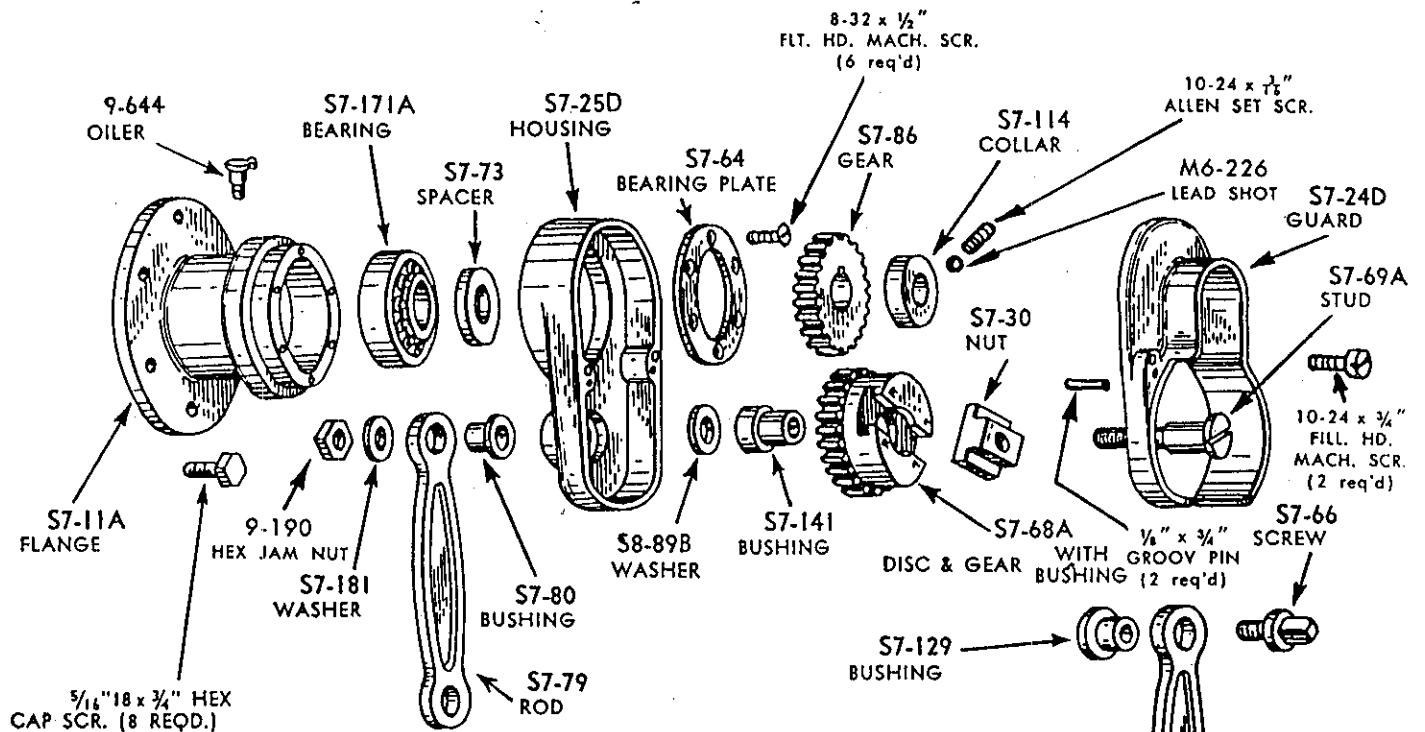
S7-13AX CRANK GEAR HUB ASSEMBLY
(LESS S7-59 LOCK WHEEL)



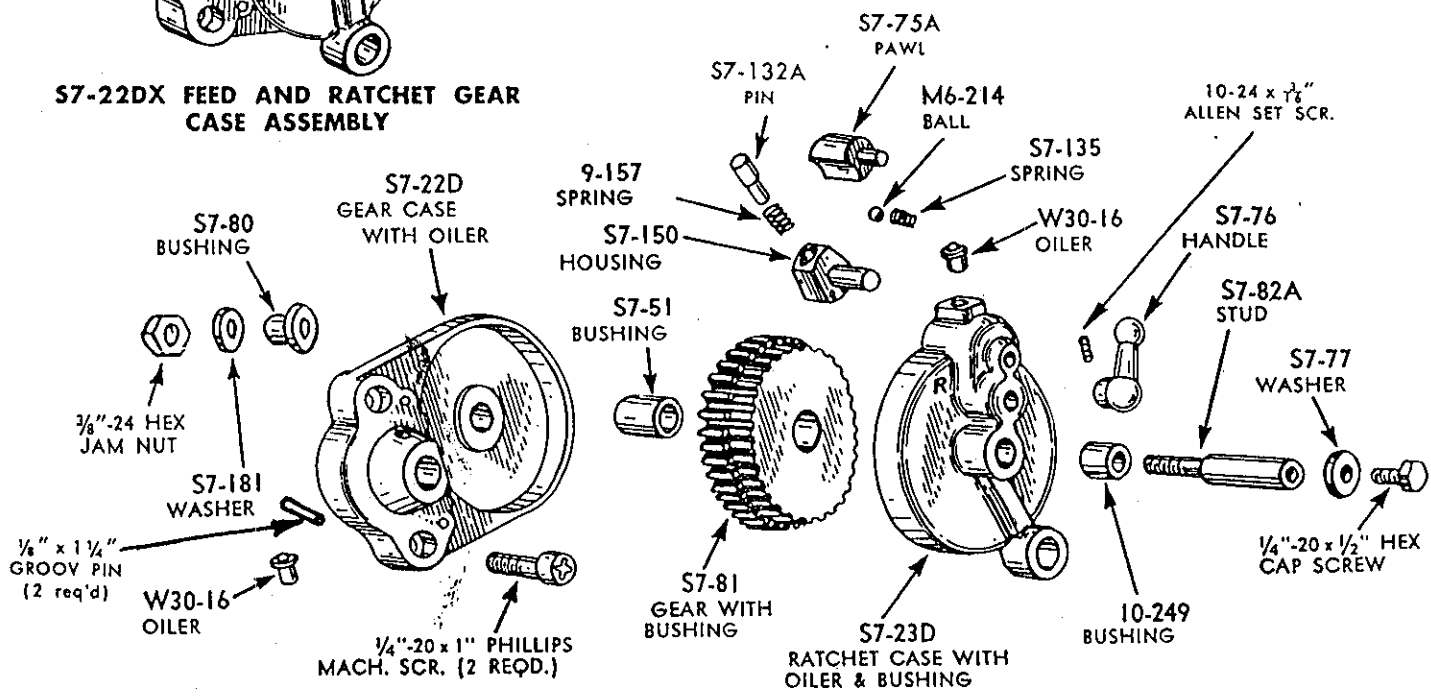
S7-12X CRANK GEAR ASSEMBLY



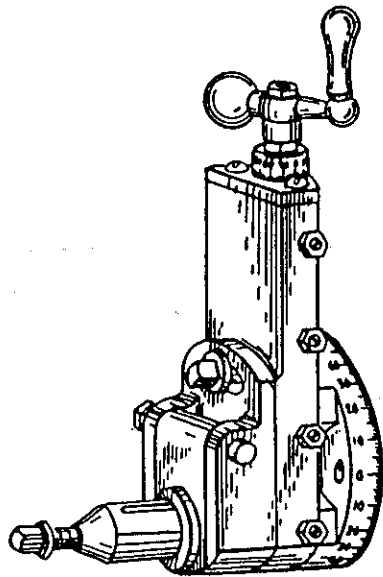
FEED AND RATCHET CASE PARTS LIST



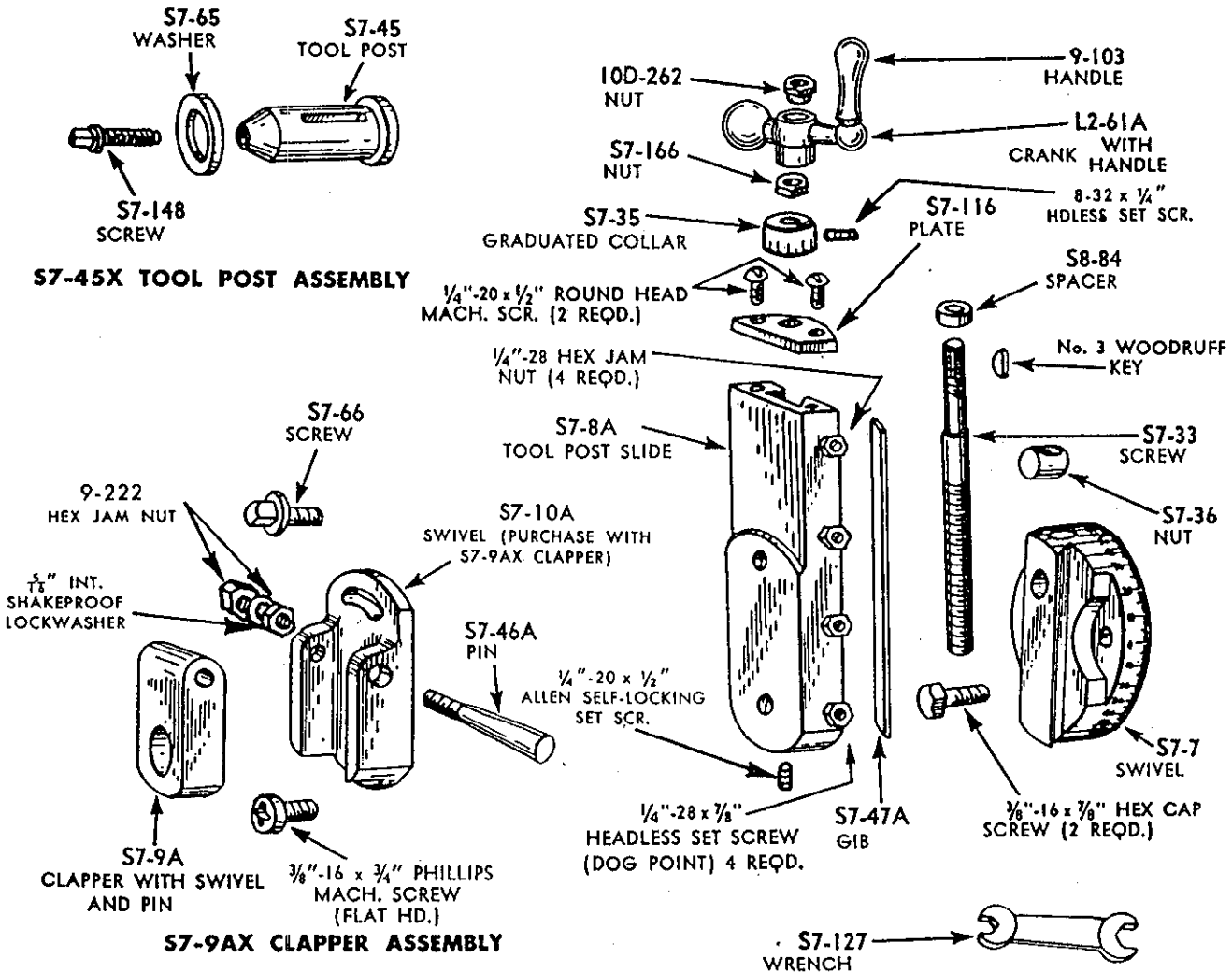
S7-22DX FEED AND RATCHET GEAR CASE ASSEMBLY



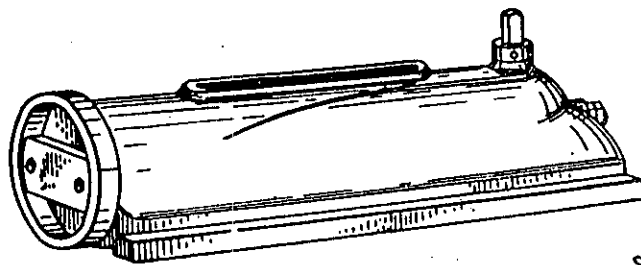
TOOL POST PARTS LIST



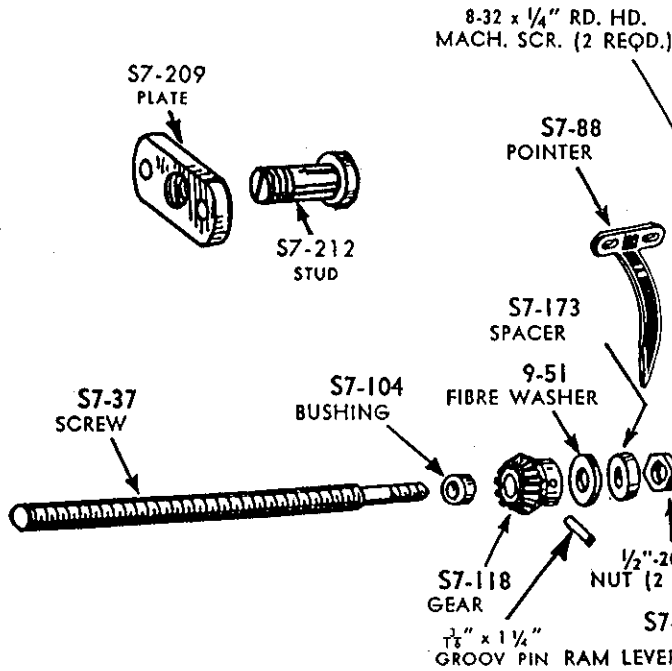
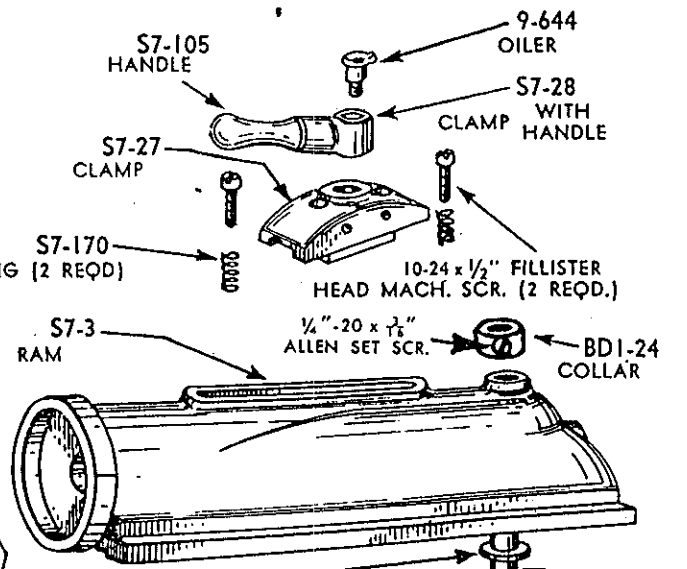
S7-8AX TOOL POST CLAPPER AND SWIVEL ASSEMBLY



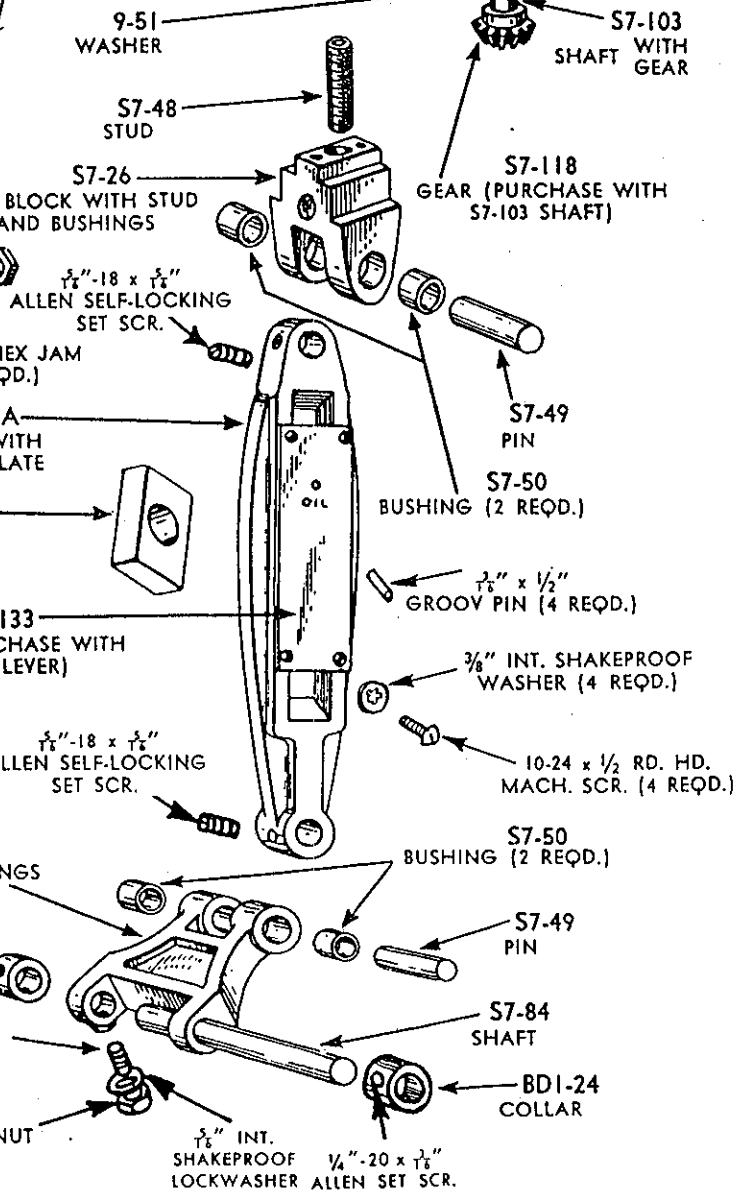
RAM AND RAM LEVER PARTS LIST



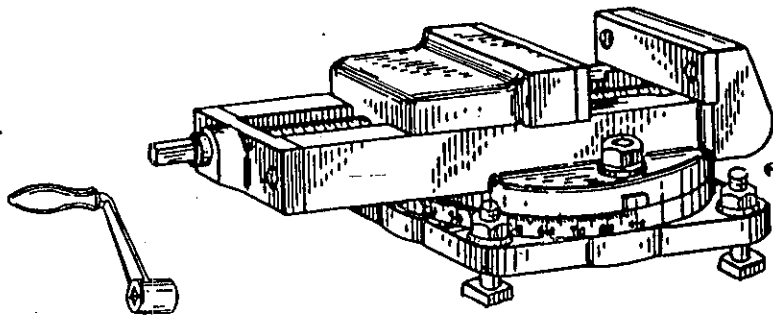
S7-3X RAM ASSEMBLY



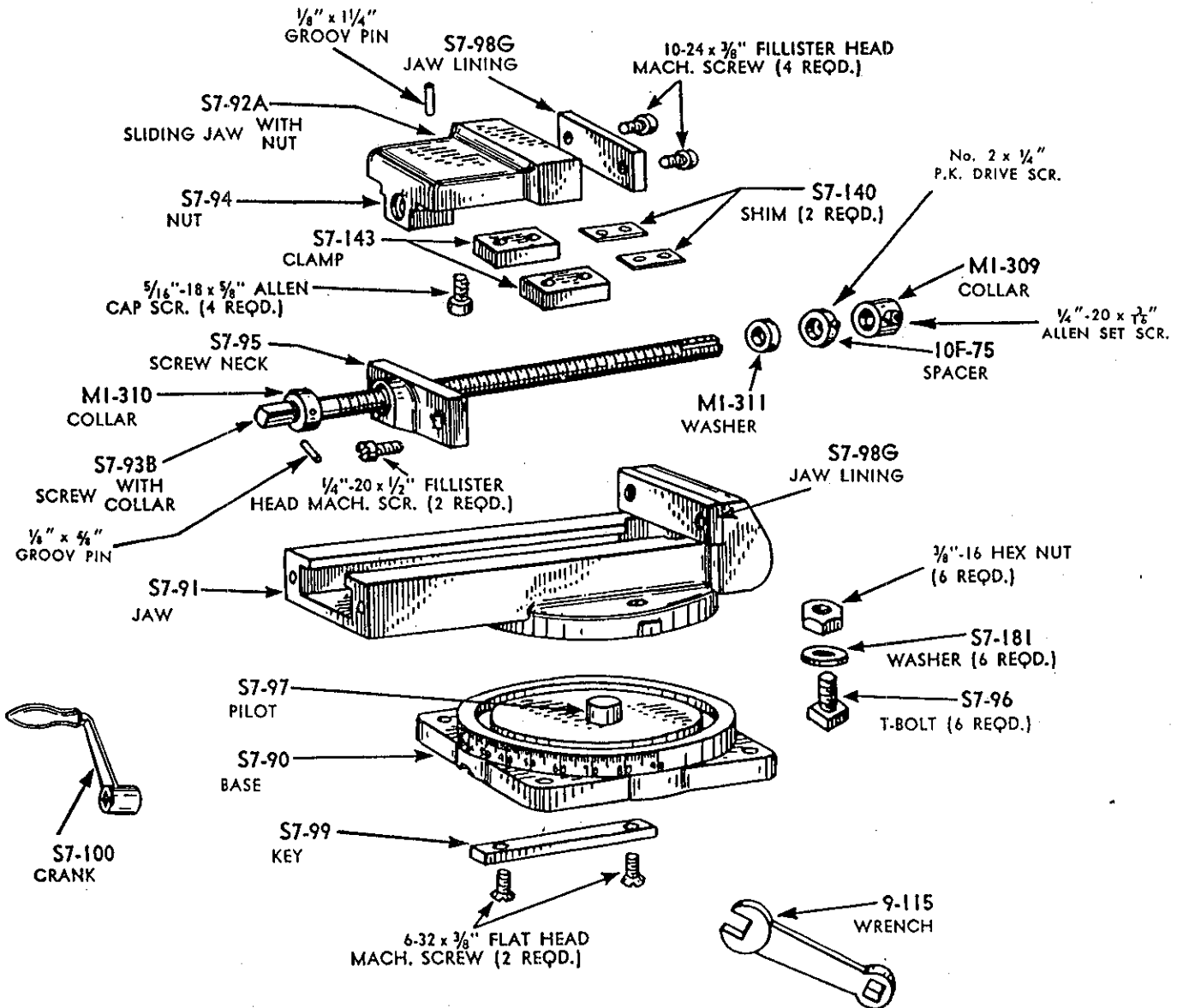
S7-16AX RAM LEVER ASSEMBLY



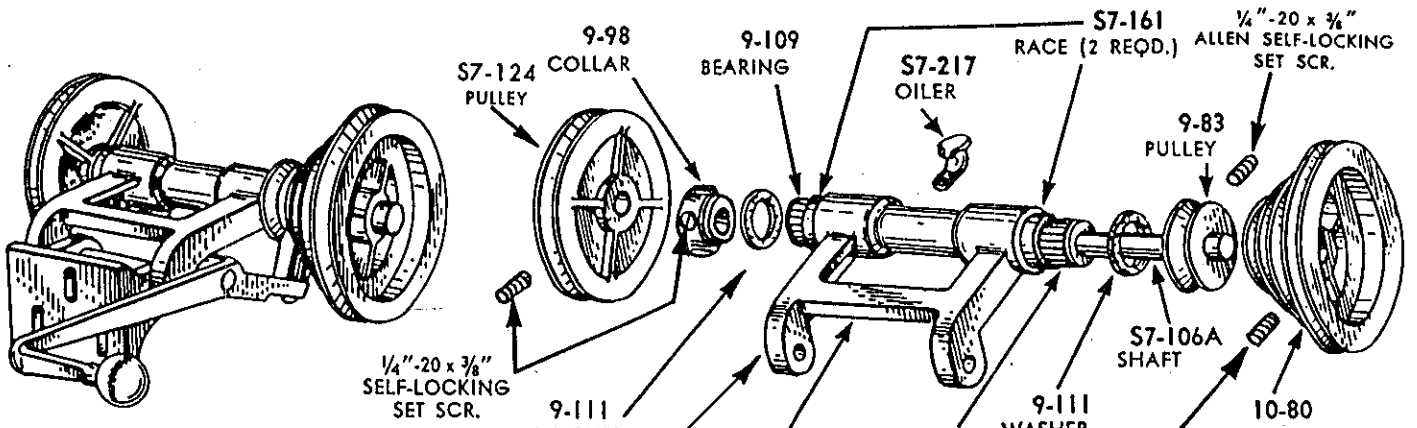
VICE PARTS LIST



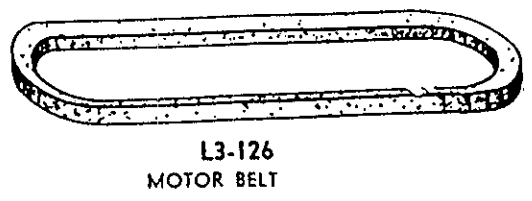
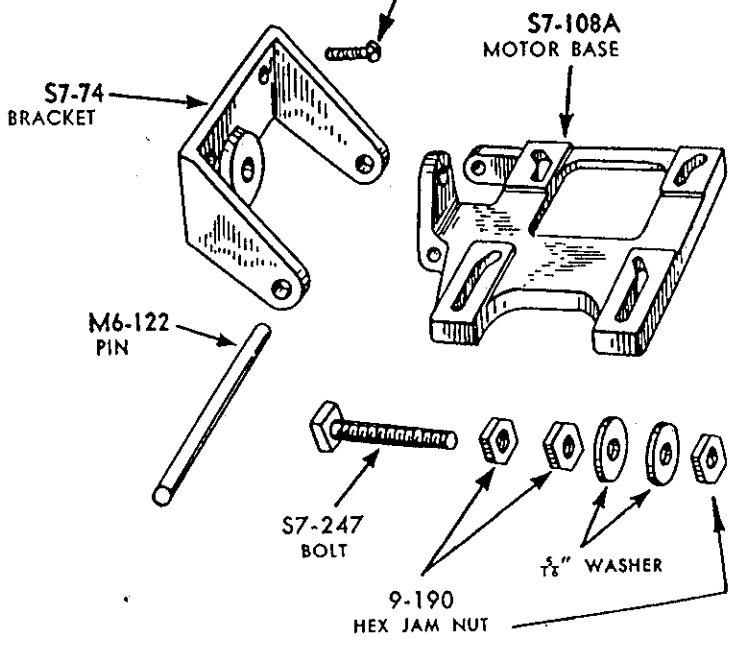
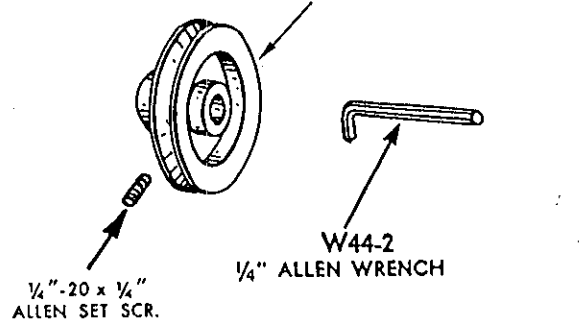
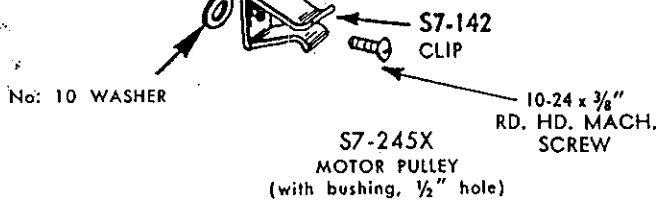
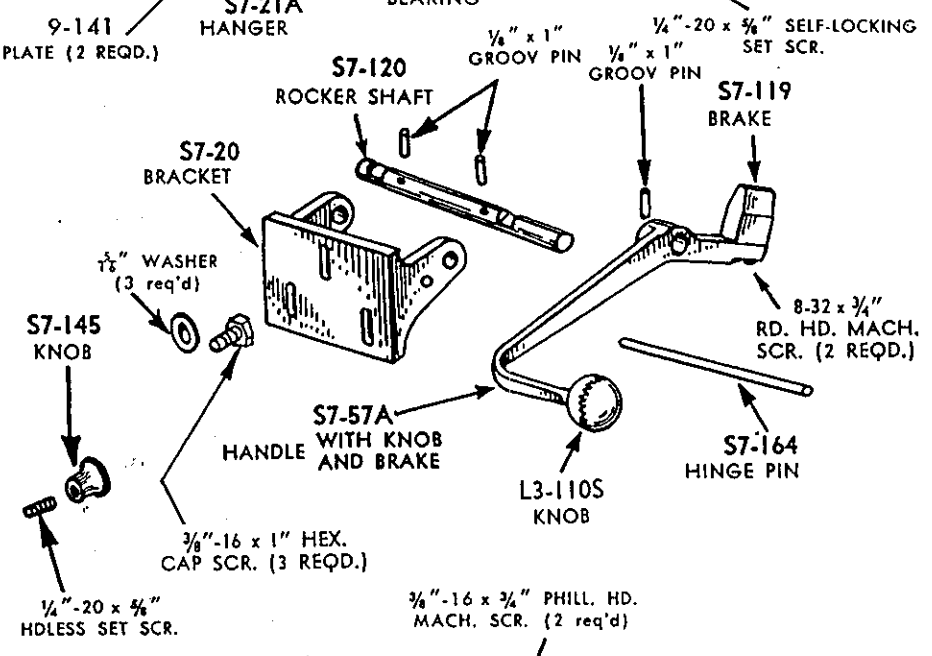
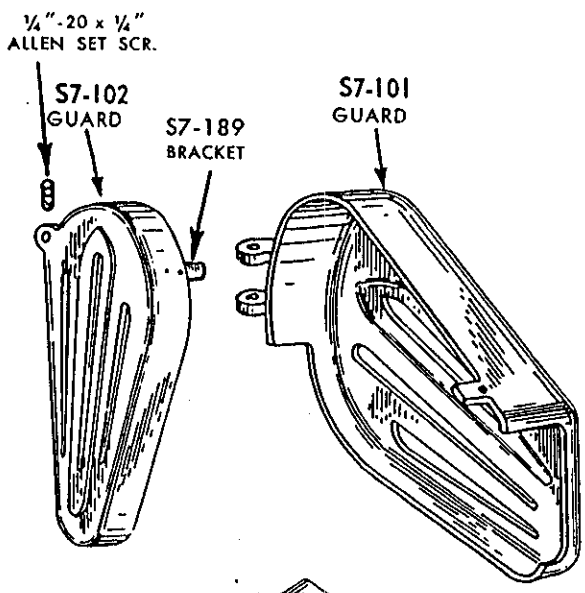
S7-91X VISE ASSEMBLY



COUNTERSHAFT, GUARDS, MOTOR BASE, MOTOR PULLEY, AND BELT PARTS LIST

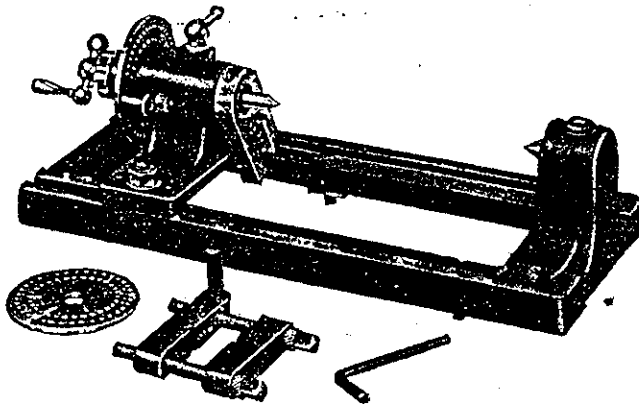


S7-21AX COUNTERSHAFT ASSEMBLY



Atlas 7" SHAPER ACCESSORIES

INDEX CENTERS



For dividing operations required in splining, fluting, gear cutting, and squaring shafts. Outer center support may be positioned for work up to 8 inches long and is locked securely by bolts which travel in two T-slots of base.

No. S7-400 INDEX CENTERS for Atlas shaper. Code word ZEHIB, weight 21 lb.

Maximum distance between centers.....8"

Maximum swing5½"

Base dimensions.....14¼" x 6" x 7/8" thick

FURNISHED: Two index plates (30 and 36 holes, 28 and 48 holes); 1¼" clamp dog, dog driver, bolts.

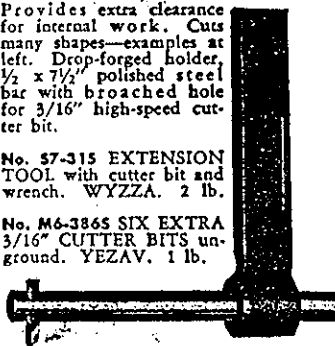


EXTENSION TOOL

Provides extra clearance for internal work. Cuts many shapes—examples at left. Drop-forged holder, ½ x 7½" polished steel bar with broached hole for 3/16" high-speed cutter bit.

No. S7-315 EXTENSION TOOL with cutter bit and wrench. WYZZA. 2 lb.

No. M6-3865 SIX EXTRA 3/16" CUTTER BITS unground. YEZAV. 1 lb.



TOOL HOLDER



For working at all angles. Extremely rigid. The head can be swivelled and locked at any one of eight positions. ¼" high speed cutter bit furnished.

No. S7-139 SHAPER TOOL HOLDER with ¼" tool bit. WYVZO. 2 lb.

CUTTER BITS



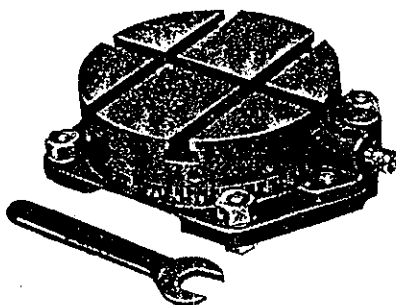
High speed steel ¼" x ¼" cutter bits ready-ground for use in S7-139 tool holder.

No. S7-386 SET of 7 FORMED CUTTER BITS shown above. ¼" x ¼". ZEDEV. Wt. 1 lb.

Unground Cutter Bits

No.	Size	No. in Set	Wt. (set)	Code
3865	¼"	6	8 oz.	YARKE
3867	½"	12	1 lb.	YARMO
3855	¾"	6	12 oz.	YARPY

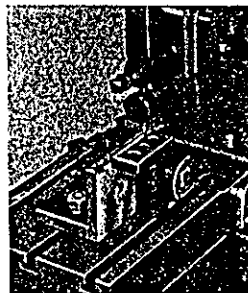
ROTARY INDEX TABLE



No. S7-420 ROTARY INDEX TABLE for Atlas shaper, with four base-clamping bolts and wrench. Code word ZEHOC, weight 14 lbs.

Table diameter5½"
Height to Top of Table.....17/8"

ANGLE PLATE



No. S7-430 ANGLE PLATE with bolts. ZEHUD. 3 lbs. Base and face each are 2½" x 4" x 7/16".

FLOOR STAND

No. S7-442C FLOOR STAND for Atlas Shaper. ZEHEZ. 138 lb.

Overall: 14" x 31" x 33½" high.

