

Set # 3027

SERVICE MANUAL and PARTS LIST

cincinnati

Hydrashift

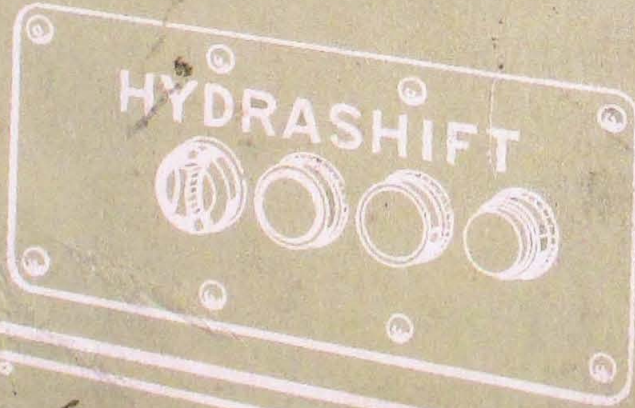
lathes

MODEL LR

CINCINNATI

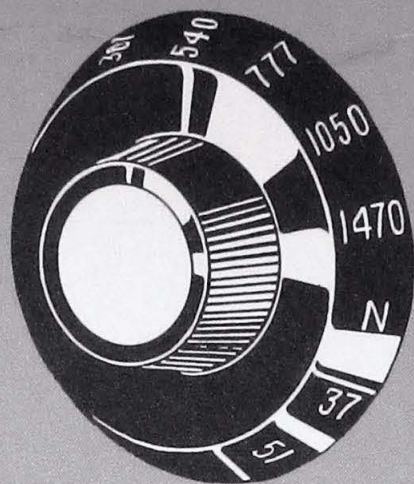


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CINCINNATI LATHE AND TOOL CO.
WILMINGTON, OHIO 45177 U. S. A.





FOREWORD

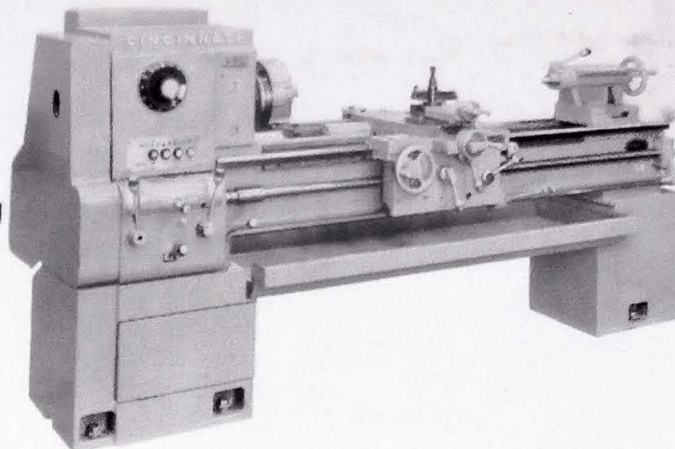
This manual has been prepared for use with the Cincinnati Hydrashift Lathes, Model LR, manufactured by Cincinnati Lathe and Tool Co., Wilmington, Ohio, 45177, U. S. A.

WARRANTY

Cincinnati Lathe and Tool Co. warrants each Cincinnati Hydrashift Lathe to be free from defects in material and workmanship.

Replacements for any parts of this machine or its equipment, which, when owned by the original user, under normal operation or service, prove defective in material or workmanship as determined by an inspection authorized by us, will be furnished f. o. b. plant, free of charge during a period of one year from date of shipment from the factory.

The design and specifications of Cincinnati Hydrashift Lathes are subject to change without notice. Cincinnati Lathe and Tool Co. reserves the right to make such changes without incurring any obligation to apply them to lathes previously sold.



PREPARATION FOR USE, OPERATION, MAINTENANCE AND PARTS LIST

for CINCINNATI HYDRASHIFT LATHES

MODEL LR *18*

10", 13", 15", 17", 19", 22", 26"
ENGINE AND TOOLROOM LATHES

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CINCINNATI LATHE AND TOOL CO.
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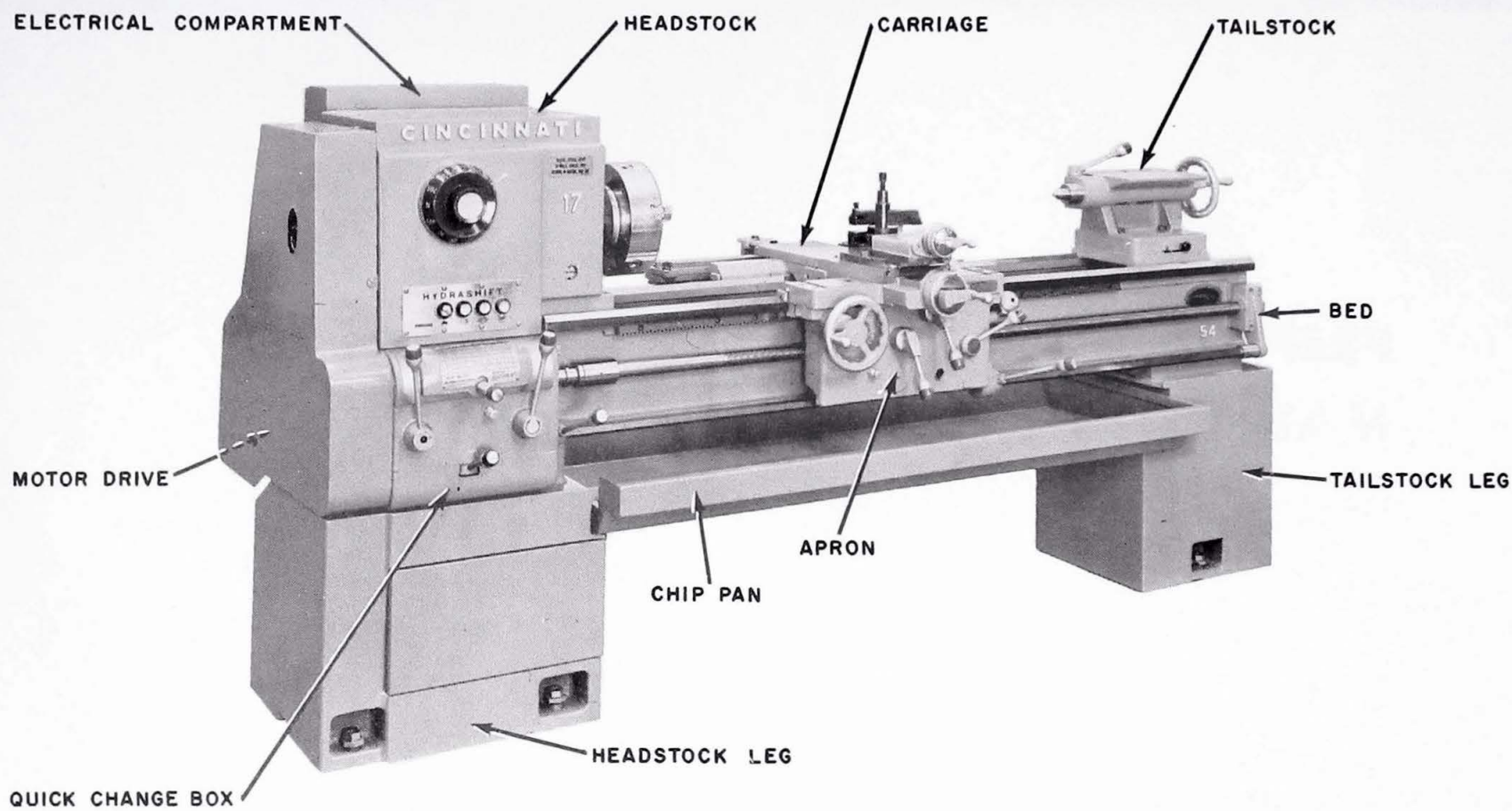


Figure M2A. Major Units
Cincinnati Hydrashift Lathe
10", 13", 15", 17" and 19" Swing Sizes

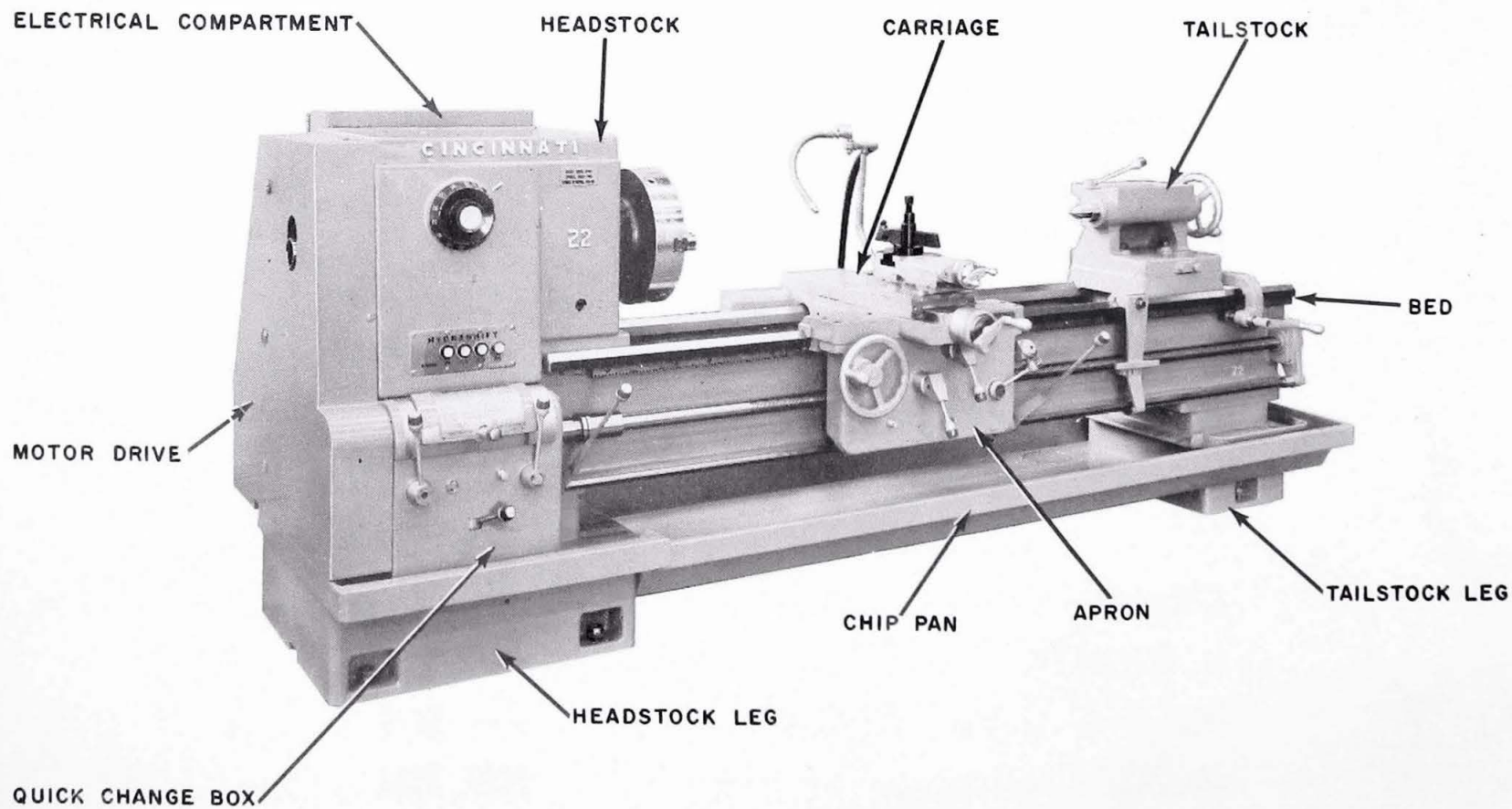


Figure M2B. Major Units
Cincinnati Hydrashift Lathe
22" and 26" Swing Sizes



DESCRIPTION

The Hydrashift is basically a conventional engine lathe, built in quantities by line assembly methods using completely tooled parts and components.

Included in the line of Hydrashift lathes are the standard engine model and the toolroom model. These models are built in 10", 13", 15", 17", 19", 22", and 26" sizes.

All Hydrashift lathes are capable of performing those operations, such as turning, facing, boring and threading which are normally done on the surfaces of rotating workpieces, thereby producing shapes which are basically cylindrical in form.

The toolroom models are equipped with micrometer carriage stop, ball type cross feed stop and steady rest. In addition, their spindle tolerances provide the extreme accuracy required for toolroom or precision production work.

All Hydrashift models incorporate the necessary basic units which provide the stability, accuracy, versatility and dependability of a Cincinnati lathe. These units are described in the following paragraphs.

MOTOR DRIVE.

The Hydrashift lathe is driven by a constant speed motor which is mounted beneath the headstock. Motor torque is transmitted to the headstock by V-belts.

HEADSTOCK.

The headstock unit consists of a cast iron housing which contains the mechanism and gearing needed to obtain the various spindle speeds. A spindle speed dial located on the face of the headstock operates a hydraulic shifter mechanism which moves the gearing to provide the selected spindle R. P. M. The spindle is provided with means for mounting centers, face plates, chucks or other suitable devices to hold and to drive the workpiece. The headstock is securely positioned on the inner ways of the bed.

TAILSTOCK.

The tailstock is generally used to support the right end of the workpiece. It can be used to hold a drill or

cutting tool when the workpiece is short enough to require support only at the spindle end. The tailstock can be moved longitudinally along the inner ways of the bed and clamped in position. Exact positioning of the tailstock center is obtained by turning a handwheel that moves the center toward or away from the work.

CARRIAGE.

The carriage is a sliding member that rests on the outer Vee and flatway of the bed and can be moved toward or away from the headstock. Affixed to the front of the carriage is the apron which contains the mechanism and gearing, driven by the leadscrew keyway, that provides power to move the carriage and the cross slide. Mounted upon the carriage are the cross slide, compound rest and toolpost. The complete unit (CARRIAGE - APRON - CROSS SLIDE) provides the means of positioning and controlling the manual or power movements of the cutting tools.

QUICK CHANGE GEAR BOX.

The quick change gear box is located below the headstock on the front of the bed and it is driven from the headstock spindle by the end gearing.

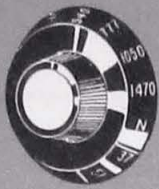
The quick change mechanism controls the rate of rotation of leadscrew in relation to spindle R. P. M., thereby providing the various feed rates and lead changes for thread chasing.

LEADSCREW.

The leadscrew is located along the front of the bed and transmits power from the quick change gear box to the apron-carriage unit. The keyway in the leadscrew provides the drive for the power feeds to the carriage and cross slide. The threads of the leadscrew provide the drive to the carriage for thread chasing only.

BED-LEGS.

The lathe bed is made of close grain cast iron. It supports the functioning units and provides accurate guideways for those units that move along it. These ways are flame-hardened to provide rugged, wear-proof surfaces. The structural stability of the bed is accomplished by cross girths which are placed at close intervals. The bed is supported at each end and, on some models, at midpoints on substantial legs.



GENERAL SPECIFICATIONS

HYDRASHIFT MODEL LR LATHES

| | 10" | 13" | 15" | 17" | 19" | 22" | 26" |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| CAPACITY | | | | | | | |
| Swing over bed (inches) | 11-1/4 | 13-1/4 | 15-1/2 | 17-1/8 | 19 | 23-1/2 | 26-3/4 |
| Swing over cross slide (inches) | 6-3/4 | 8-7/8 | 11 | 9-1/2 | 11-1/2 | 13-1/2 | 17-1/2 |
| Distance between centers (maximum turning length) inches | 24 to 60 | 24 to 60 | 24 to 60 | 30 to 114 | 30 to 114 | 48 to 216 | 48 to 216 |
| Center distance increase increments (inches) | 6 | 6 | 6 | 6 | 6 | 12 | 12 |
| RAISED MODELS - Swing over - | | | | | | | |
| Bed - raise, swing (inches) | — | — | — | — | { 2, 22-5/8 4, 26-3/8 | — | { 3, 32-5/8 5, 36-3/8 |
| Cross Slide - raise, swing (inches) | — | — | — | — | { 2, 15-1/2 4, 19-1/2 | — | { 3, 23-1/2 5, 27-1/2 |
| HEADSTOCK | | | | | | | |
| Spindle speeds (number) | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Spindle speed range (standard) (40 to 1 ratio) rpm | 35 to 1200 | 35 to 1200 | 35 to 1200 | 25 to 980 | 25 to 980 | 16 to 640 | 16 to 640 |
| Spindle speed range - high rpm | 53 to 1800 | 53 to 1800 | 53 to 1800 | 37 to 1470 | 37 to 1470 | 24 to 960 | 24 to 960 |
| Spindle speed range - super high rpm | 88 to 3000 | 88 to 3000 | - | - | - | - | - |
| Spindle speed range - low rpm | - | - | - | 17 to 653 | 17 to 653 | 11 to 427 | 11 to 427 |
| Spindle reverse | Electrical | Electrical | Electrical | Electrical | Electrical | Electrical | Electrical |
| Spindle nose - standard long taper key drive, dia. of hole thru | L0, 1-1/2" | L0, 1-1/2" | L0, 1-1/2" | L1, 1-3/4" | L1, 1-3/4" | L2, 2-5/16" | L2, 2-5/16" |
| Spindle nose - camlock, dia. of hole thru | D1-3*, 1-5/16" | D1-4*, 1-1/2" | D1-4, 1-1/2" | D1-6, 1-3/4" | D1-6, 1-3/4" | D1-8, 2-5/16" | D1-8, 2-5/16" |
| Spindle - number of bearings | 2 Taper Roller 1 Ball | 2 Taper Roller 1 Ball | 2 Taper Roller 1 Ball | 2 Taper Roller 1 Ball | 2 Taper Roller 1 Ball | 2 Taper Roller 1 Ball | 2 Taper Roller 1 Ball |
| Spindle - taper | #5 Morse | #5 Morse | #5 Morse | #200 Amer. Std. | #200 Amer. Std. | #300 Amer. Std. | #300 Amer. Std. |
| Spindle - Size of center | #3 Morse | #3 Morse | #3 Morse | #4 Morse | #4 Morse | #5 Morse | #5 Morse |
| Headstock - base length on bed (inches) | 19-3/8 | 19-3/8 | 19-3/8 | 22-5/8 | 22-5/8 | 27-15/16 | 27-15/16 |
| Area of tray top (sq. inch) | 210 | 210 | 210 | 245 | 245 | 475 | 475 |
| THREAD AND FEED RANGE | | | | | | | |
| Number of thread and feed changes | 48 | 48 | 48 | 48 | 48 | 54 | 54 |
| Range of threads per inch, low standard and high speed ranges. | 3 to 184 | 3 to 184 | 3 to 184 | 1-1/2 to 92 | 1-1/2 to 92 | 1-1/2 to 92 | 1-1/2 to 92 |
| Range of threads per inch, super high speed range | 6 to 368 | 6 to 368 | - | 3 to 184 | 3 to 184 | - | - |
| Range of feeds - carriage - low, standard and high speed ranges (I. P. R.) | .0020 to .1224 | .0020 to .1224 | .0020 to .1224 | .0019 to .1215 | .0019 to .1215 | .0019 to .1215 | .0019 to .1215 |
| Range of feeds - carriage - super high rpm (I. P. R.) | .0010 to .0612 | .0010 to .0612 | - | - | - | - | - |
| Range of feeds - cross slide - low, standard and high speed ranges (I. P. R.) | .0005 to .0310 | .0005 to .0310 | .0005 to .0310 | .0009 to .0578 | .0009 to .0578 | .0009 to .0578 | .0009 to .0578 |
| Range of feeds - cross slide - super high rpm (I. P. M.) | .0003 to .0155 | .0003 to .0155 | - | - | - | - | - |
| Leadscrew (Acme) diameter (inches) and threads per inch | 1-1/8 - 8 | 1-1/8 - 8 | 1-1/8 - 8 | 1-3/8 - 6 | 1-3/8 - 6 | 1-5/8 - 4 | 1-5/8 - 4 |
| CARRIAGE AND COMPOUND REST | | | | | | | |
| Cross slide travel (inches) | 9 | 9 | 9 | 12 | 12 | 16-3/4 | 16-3/4 |
| Top slide travel (inches) | 2-3/8 | 2-3/8 | 2-3/8 | 3-1/4 | 3-1/4 | 4-1/2 | 4-1/2 |
| Solid tool size (inches) | 3/8 x 3/4 | 1/2 x 1 | 1/2 x 1 | 5/8 x 1-1/4 | 5/8 x 1-1/4 | 3/4 x 1-1/2 | 3/4 x 1-1/2 |
| Tool holders - size of tool shank (inches) and number | 3/8 x 7/8 (#0) | 1/2 x 1-1/8 (#1) | 1/2 x 1-1/8 (#1) | 5/8 x 1-3/8 (#2) | 5/8 x 1-3/8 (#2) | 3/4 x 1-5/8 (#3) | 3/4 x 1-5/8 (#3) |
| Carriage bearing on ways (inches) | 18-1/4 | 18-1/4 | 18-1/4 | 22-3/8 | 22-3/8 | 27 | 27 |
| Width of bridge (inches) | 6 | 6 | 6 | 7-1/2 | 7-1/2 | 9 | 9 |
| TAILSTOCK | | | | | | | |
| Spindle travel (inches) | 4-1/2 | 4-1/2 | 4-1/2 | 5 | 5 | 6 | 6 |
| Spindle diameter (inches) | 1-3/4 | 1-3/4 | 1-3/4 | 2-1/4 | 2-1/4 | 2-3/4 | 2-3/4 |
| Spindle - size of center | #3 Morse | #3 Morse | #3 Morse | #4 Morse | #4 Morse | #5 Morse | #5 Morse |
| Tailstock body - length on bed (inches) | 9-1/4 | 9-1/4 | 9-1/4 | 11 | 11 | 15-1/4 | 15-1/4 |
| Tailstock set-over (either side of center) (inches) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1 | 1 |
| Area of tray top (sq. in.) | 50 | 50 | 50 | 80 | 80 | 110 | 110 |

* Standard with super high speed range

| | 10" | 13" | 15" | 17" | 19" | 22" | 26" |
|--|--------------|--------------|--------------|----------------|----------------|-------------|-------------|
| TAPER ATTACHMENT | | | | | | | |
| Maximum taper per foot (inches) . . . | 3-1/2 | 3-1/2 | 3-1/2 | 4 | 4 | 4-1/2 | 4-1/2 |
| Turns at one setting (inches) | 12 | 12 | 12 | 16 | 16 | 20 | 20 |
| Maximum included angle (degrees) . . . | 16 | 16 | 16 | 18 | 18 | 20 | 20 |
| MISCELLANEOUS | | | | | | | |
| Face plate - regular, diameter (inches) | 9-1/2 | 12 | 14-1/2 | 14-1/2 | 17-1/2 | 21 | 25-1/2 |
| Dog plate - regular, diameter (inches) | 6-3/4 | 6-3/4 | 6-3/4 | 9 | 9 | 13-3/4 | 13-3/4 |
| Steady rest, standard capacity, min. and max. diameter (inches) . . | 1/4 to 3-1/2 | 1/4 to 3-1/2 | 1/4 to 3-1/2 | 1/2 to 5 | 1/2 to 5 | 3/4 to 8 | 3/4 to 8 |
| Steady rest, oversize capacity, min. and max. diameter (inches) . . | 3 to 6 | 3 to 6 | 3 to 6 | 4-1/2 to 7-1/2 | 4-1/2 to 7-1/2 | 7-1/2 to 15 | 7-1/2 to 15 |
| Follow rest capacity - min. and max. diameter (inches) | 1/4 to 2 | 1/4 to 2 | 1/4 to 2 | 1/2 to 2-1/2 | 1/2 to 2-1/2 | 3/4 to 4 | 3/4 to 5 |
| DRIVE - MOTOR | | | | | | | |
| Motor - standard, high or super high spindle speed range (H. P.) . . . | 3 | 3 | 3 | 5 | 5 | 10 | 10 |
| Motor - low spindle speed range (H. P.) | - | - | - | 5 | 5 | 7-1/2 | 7-1/2 |
| Number of Vee Belt | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| Pulley size - headstock (inches) | 6-5/8 | 6-5/8 | 6-5/8 | 8-7/16 | 8-7/16 | 13-1/16 | 13-1/16 |
| Pulley speed - headstock (rpm) standard | 755 | 755 | 755 | 615 | 615 | 667 | 667 |
| Pulley speed - headstock (rpm) high range | 1150 | 1150 | 1150 | 923 | 923 | 1001 | 1001 |
| Pulley speed - headstock (rpm) super high range | 2300 | 2300 | 2300 | - | - | - | - |
| Pulley speed - headstock (rpm) low range | - | - | - | 410 | 410 | 460 | 460 |
| SHIPPING DATA | | | | | | | |
| Basic machine size (inches) | 10 x 24 | 13 x 24 | 15 x 24 | 17 x 30 | 19 x 30 | 22 x 48 | 26 x 48 |
| Net weight, lbs. (approx.) | 2,040 | 2,140 | 2,240 | 3,190 | 3,340 | 6,750 | 6,950 |
| Add for each 6" extra of bed, lbs. . . | 30 | 30 | 30 | 50 | 50 | 150 | 150 |
| Weight - domestic shipment, lbs. (approx.) | 2,440 | 2,540 | 2,640 | 3,840 | 4,040 | 7,450 | 7,750 |
| Add for each 6" extra of bed, lbs. . . | 65 | 65 | 65 | 90 | 90 | 180 | 180 |

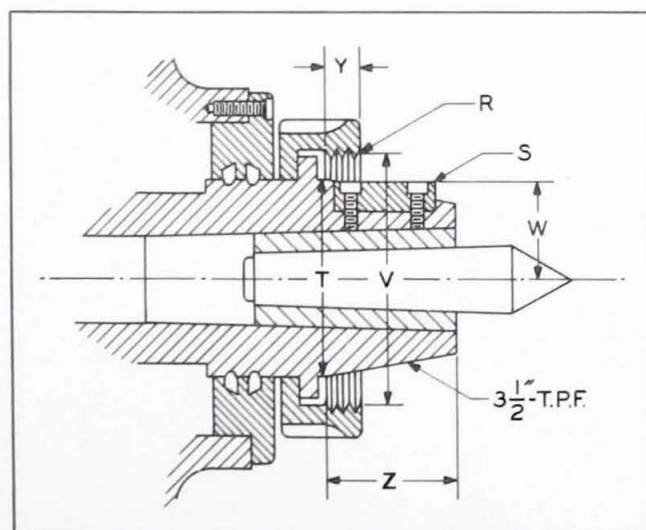


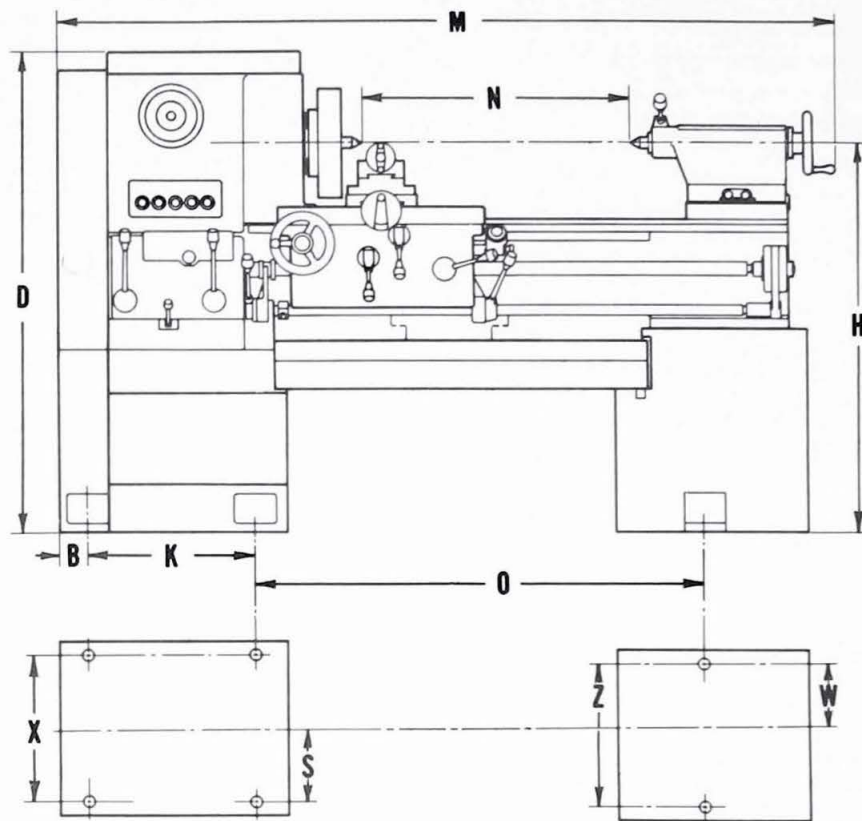
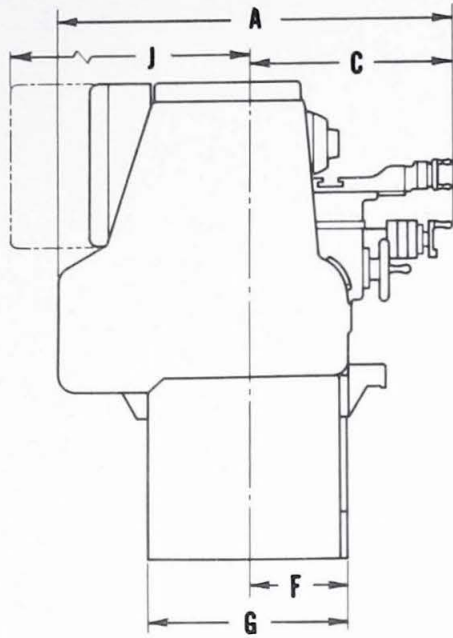
Figure M5. Dimensional Drawing Spindle Nose

| SPINDLE NOSE DIMENSIONS | | | |
|-------------------------|----------------|------------------|----------------|
| SIZE AND TYPE NOSE | L0 | L1 | L2 |
| R | 6NS-RH | 6NS-RH | 5NS-RH |
| S | 3/8 | 5/8 | 3/4 |
| T | 3-1/4 | 4-1/8 | 5-1/4 |
| V | 4-1/2 | 6 | 7-3/4 |
| W | 1.620 1.613 | 2.0575 2.0505 | 2.620 2.613 |
| Y | 5/8 | 3/4 | 1 |
| Z | 2-5/16 | 2-7/8 | 3-3/8 |



GENERAL DIMENSIONS

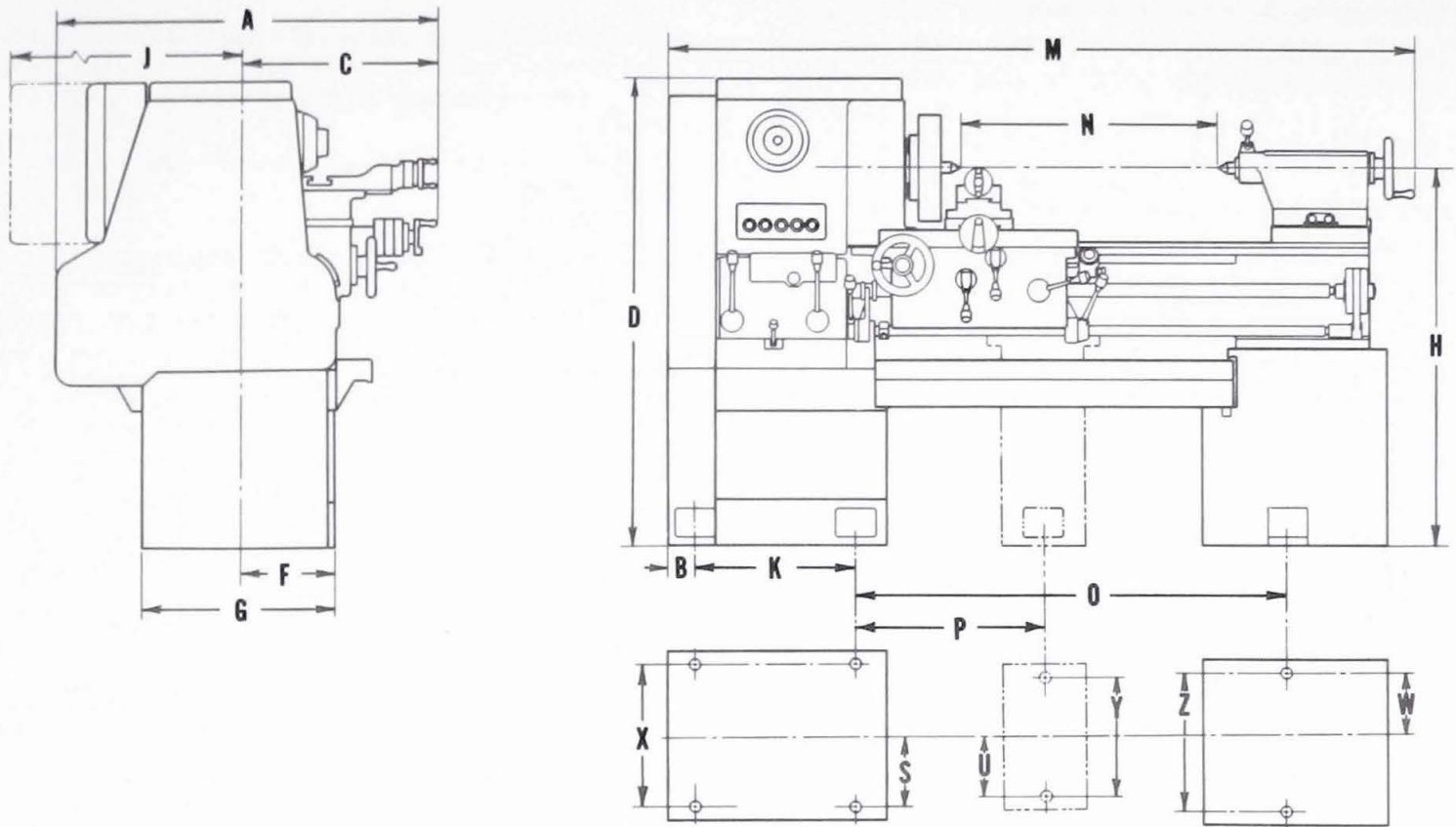
10", 13", AND 15" ENGINE AND TOOLROOM LATHES



| LATHE SIZE | DIMENSIONS IN INCHES | | | | | | | | | | | | |
|------------|----------------------|-------|---------|--------|-------|--------|--------|--------|--------|-------|-------|--------|--------|
| | A | B | C | D | F | G | H | J | K | S | W | X | Z |
| 10" | 35-1/4 | 2-5/8 | 17-5/16 | 51-3/8 | 8-5/8 | 17-1/4 | 42-1/2 | 33-1/8 | 15-1/4 | 6-3/4 | 5-7/8 | 13-1/2 | 11-3/4 |
| 13" | 35-1/4 | 2-5/8 | 17-5/16 | 52-1/2 | 8-5/8 | 17-1/4 | 43-5/8 | 33-1/8 | 15-1/4 | 6-3/4 | 5-7/8 | 13-1/2 | 11-3/4 |
| 15" | 35-1/4 | 2-5/8 | 17-5/16 | 53-3/4 | 8-5/8 | 17-1/4 | 44-7/8 | 33-1/8 | 15-1/4 | 6-3/4 | 5-7/8 | 13-1/2 | 11-3/4 |

| TURNING DISTANCE | 24 | 36 | 42 | 48 | 60 | |
|------------------|--------|----------|----------|----------|----------|----------|
| M | 80-5/8 | 90-5/8 | 96-5/8 | 102-5/8 | 114-5/8 | |
| N | L0 | 32-9/16 | 44-9/16 | 50-9/16 | 56-9/16 | 68-9/16 |
| | D1-3 | 32-15/16 | 44-15/16 | 50-15/16 | 56-15/16 | 68-15/16 |
| | D1-4 | 32-13/16 | 44-13/16 | 50-13/16 | 56-13/16 | 68-13/16 |
| O | 42-5/8 | 54-5/8 | 60-5/8 | 66-5/8 | 78-5/8 | |

17" AND 19" ENGINE AND TOOLROOM LATHES



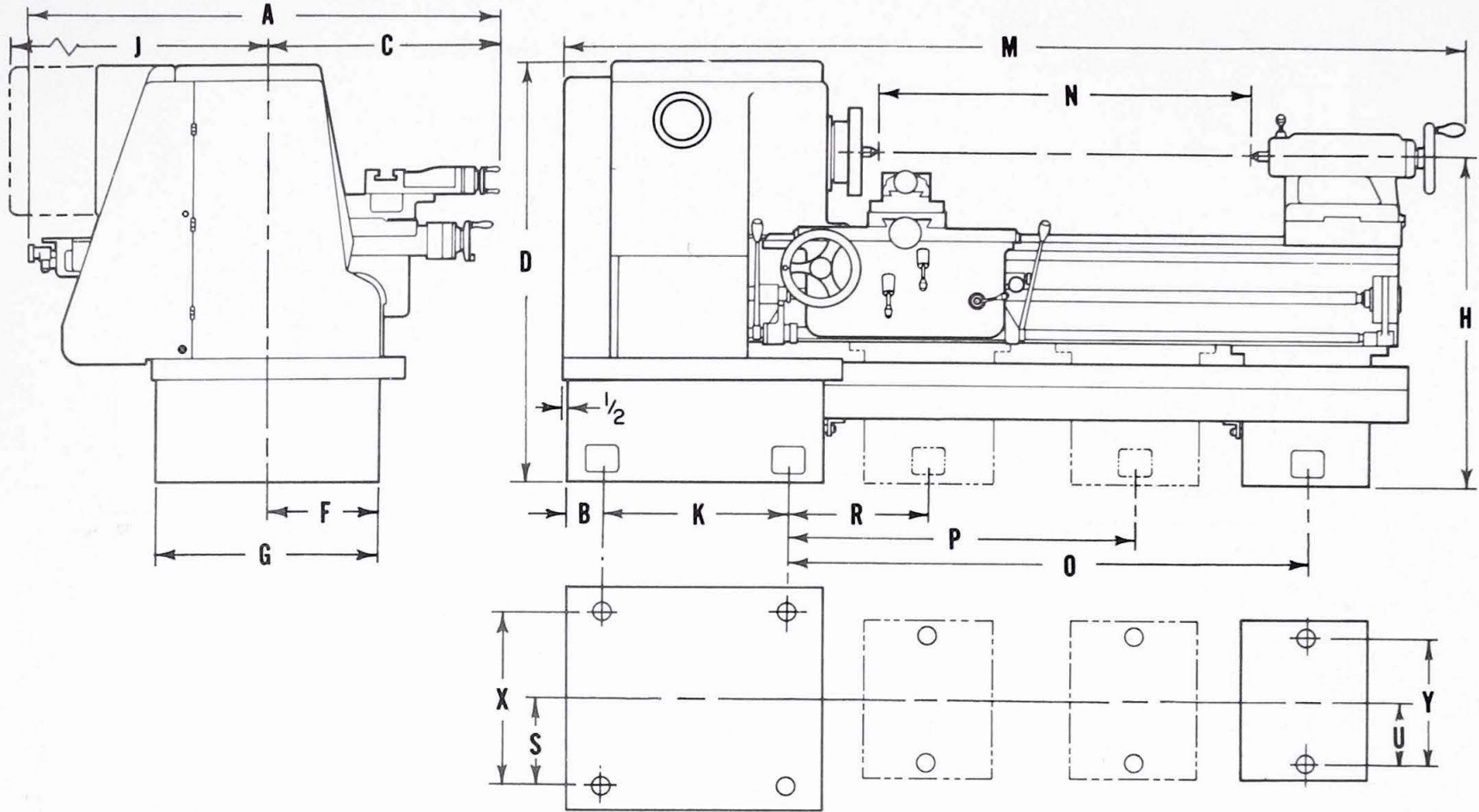
| LATHE SIZE | DIMENSIONS IN INCHES | | | | | | | | | | | | | | |
|------------------|----------------------|---|--------|----------|--------|--------|---------|----------|---------|-------|-------|-------|--------|--------|--------|
| | A | B | C | D | F | G | H | J | K | S | U | W | X | Y | Z |
| 17" | 43-3/16 | 3 | 22-1/8 | 51-5/8 | 10-7/8 | 18-3/4 | 41-7/16 | 36-11/16 | 17-5/16 | 9-1/4 | 6-5/8 | 7-1/8 | 18-1/2 | 13-1/4 | 15-1/2 |
| 19" | 43-3/16 | 3 | 22-1/8 | 52-11/16 | 10-7/8 | 18-3/4 | 42-1/2 | 36-11/16 | 17-5/16 | 9-1/4 | 6-5/8 | 7-1/8 | 18-1/2 | 13-1/4 | 15-1/2 |
| 19" 2" Raised | 43-3/16 | 3 | 22-1/8 | 54-11/16 | 10-7/8 | 18-3/4 | 44-1/2 | 36-11/16 | 17-5/16 | 9-1/4 | 6-5/8 | 7-1/8 | 18-1/2 | 13-1/4 | 15-1/2 |
| 19" 4" Raised | 43-3/16 | 3 | 22-1/8 | 56-11/16 | 10-7/8 | 18-3/4 | 46-1/2 | 36-11/16 | 17-5/16 | 9-1/4 | 6-5/8 | 7-1/8 | 18-1/2 | 13-1/4 | 15-1/2 |

| TURNING DISTANCE | 30 | 42 | 54 | 72 | 96 | 114 |
|---------------------|--------|---------|---------|---------|---------|---------|
| M | 87-7/8 | 99-7/8 | 111-7/8 | 129-7/8 | 153-7/8 | 171-7/8 |
| N | L1 | 33 | 45 | 57 | 75 | 99 |
| | D1-6 | 33-9/32 | 45-9/32 | 57-9/32 | 75-9/32 | 99-9/32 |
| O | 52-1/2 | 64-1/2 | 76-1/2 | 94-1/2 | 118-1/2 | 136-1/2 |
| P | | | | 47-1/4 | 59-1/4 | 68-1/4 |



GENERAL DIMENSIONS

22" AND 26" ENGINE AND TOOLROOM LATHES



| LATHE SIZE | DIMENSIONS IN INCHES | | | | | | | | | | | | |
|------------------|----------------------|---|----|---------|--------|--------|---------|--------|----|--------|-------|--------|--------|
| | A | B | C | D | F | G | H | J | K | S | U | X | Y |
| 22" | 59-1/16 | 4 | 30 | 54-1/8 | 13-3/4 | 27-1/2 | 42-9/16 | 44-3/8 | 23 | 12-3/8 | 9-3/8 | 24-3/4 | 18-3/4 |
| 26" | 59-1/16 | 4 | 30 | 56-1/16 | 13-3/4 | 27-1/2 | 44-1/2 | 44-3/8 | 23 | 12-3/8 | 9-3/8 | 24-3/4 | 18-3/4 |
| 26" 3" Raised | 59-1/16 | 4 | 30 | 59-1/16 | 13-3/4 | 27-1/2 | 47-1/2 | 44-3/8 | 23 | 12-3/8 | 9-3/8 | 24-3/4 | 18-3/4 |
| 26" 5" Raised | 59-1/16 | 4 | 30 | 61-1/16 | 13-3/4 | 27-1/2 | 49-1/2 | 44-3/8 | 23 | 12-3/8 | 9-3/8 | 24-3/4 | 18-3/4 |

| TURNING DISTANCE | 22" and 26" LATHES | | | |
|------------------|--------------------|-----------|-----------|-----------|
| | 48 | 72 | 96 | 120 |
| M | 120-1/2 | 144-1/2 | 168-1/2 | 192-1/2 |
| N | L-2 | 50-1/8 | 74-1/8 | 98-1/8 |
| | D1-8 | 50-29/32 | 74-29/32 | 98-29/32 |
| O | 72-1/2 | 96-1/2 | 120-1/2 | 144-1/2 |
| P | | | 57-1/4 | 69-1/4 |
| | 144 | 168 | 192 | 216 |
| M | 216-1/2 | 240-1/2 | 264-1/2 | 288-1/2 |
| N | L-2 | 146-1/8 | 170-1/8 | 194-1/8 |
| | D1-8 | 146-29/32 | 170-29/32 | 194-29/32 |
| O | 168-1/2 | 192-1/2 | 216-1/2 | 240-1/2 |
| P | 81-1/4 | 126-7/8 | 142-7/8 | 158-7/8 |
| R | | 59-5/8 | 67-5/8 | 75-5/8 |



PREPARATION FOR USE

SELECTING LOCATION FOR MACHINE.

For best results from any lathe, it is important that the area selected for its location be as well-lighted, dry, and free from vibration as possible.

FOUNDATION.

A special foundation is not essential for this machine. However, for precision operation, it is essential that it be placed on a substantial foundation. Concrete is recommended. If placed on a wooden floor, care should be taken to see that it is adequately supported and free from vibration.

If the machine is to be placed on an upper floor, locate it directly over a supporting beam or girder to reduce any vibration generated by nearby machines. After initial installation, periodically check the level of the machine to make certain that the foundation is rigid.

UNCRATING THE MACHINE.

Upon receipt of shipment, remove crating carefully, but do not remove skids from under the legs until the lathe has been moved to the approximate place selected for its location.

CLEANING THE MACHINE.

Do not move the carriage or tailstock on the bedways before thoroughly cleaning and oiling the ways.

Use a good clean grease solvent to remove slushing compound and dirt accumulated in transit. Use rags rather than waste to eliminate lint. Do not use an air hose as this will force grit and dirt into important functioning units. Use a stiff bristle brush to get into corners and to clean leadscrew thoroughly.

When the machine has been cleaned satisfactorily, rub clean machine oil over all ways and make certain no grit remains. Before moving the carriage on the bed, remove the filler plug on the top of the carriage and fill the apron with the proper oil as specified in the Lubrication Chart. Pump the one-shot oil plunger several times to force oil to carriage ways on bed.

Also check the end gearing for proper meshing of gears. Clearance between meshing gear teeth should be 0.006 inches.

LIFTING THE MACHINE.

To obtain a balanced condition before lifting, it is necessary to move the tailstock to the right-hand end of the bed and clamp it there. Be sure to clean bed ways before moving carriage or tailstock (see preceding paragraph).

With the cross support "A" (figure M9B) under the approximate center of gravity, lift the machine about one inch from the floor and make minor adjustments of the center of gravity by moving the carriage along the bed.

If a crane is used in lifting, exercise care that none of the mechanism is damaged. Chain, wire cable, or rope may be used to lift the lathe. Be certain that they are strong enough to safely carry the weight of the machine. The finished surfaces of the machine must be protected from chains by using wooden blocks.

Figure M9A shows the machine after crating has been removed. The method of lifting is shown by figure M9B. After removing cross support "A" (figure 9A), place it under the bed as shown in figure M9B. Make certain it does not contact control rod. This support has been offset to avoid this condition, so be certain it is properly set before lifting.

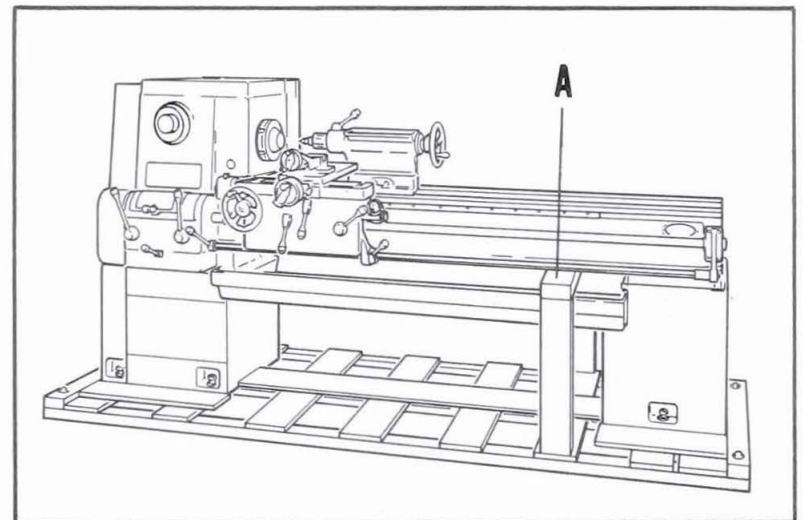


Figure M9A. Lathe with Crating Removed

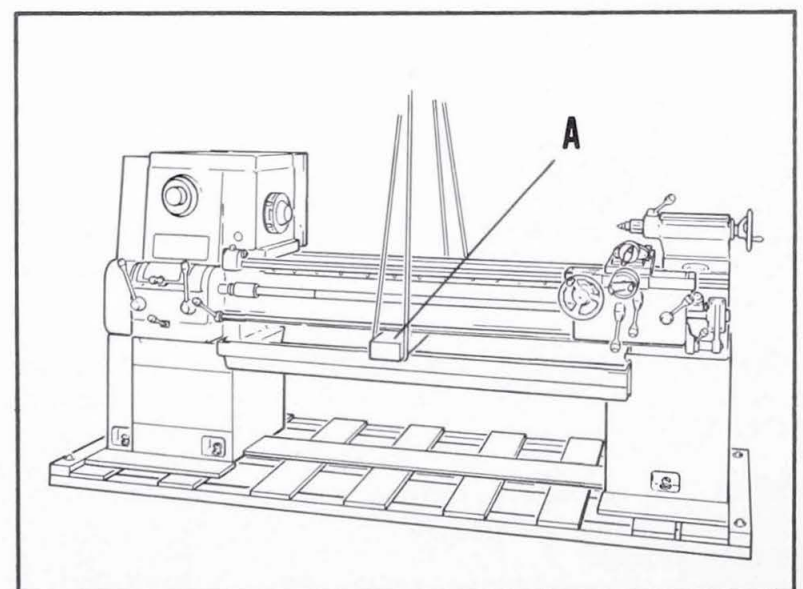
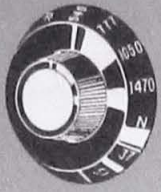


Figure M9B. Method of Lifting



PREPARATION FOR USE

LEVELING THE MACHINE.

Leveling a lathe and keeping it level is one of the primary essentials in precision lathe operation.

Cincinnati Hydrashift lathes are equipped with built-in leveling jacks to simplify this operation. Four are located in the headstock leg, two in the tailstock leg, and two in each center leg (if supplied).

The complete leveling jack consists of the parts shown in figure M10A.

If the machine is not to be fastened to the floor, it is only necessary to see that the screw seats are properly placed before proceeding with the leveling as described below.

It may be desirable to anchor the machine firmly in place by bolting it to the foundation. This can be accomplished by means of the hole through the center of the leveling jack.

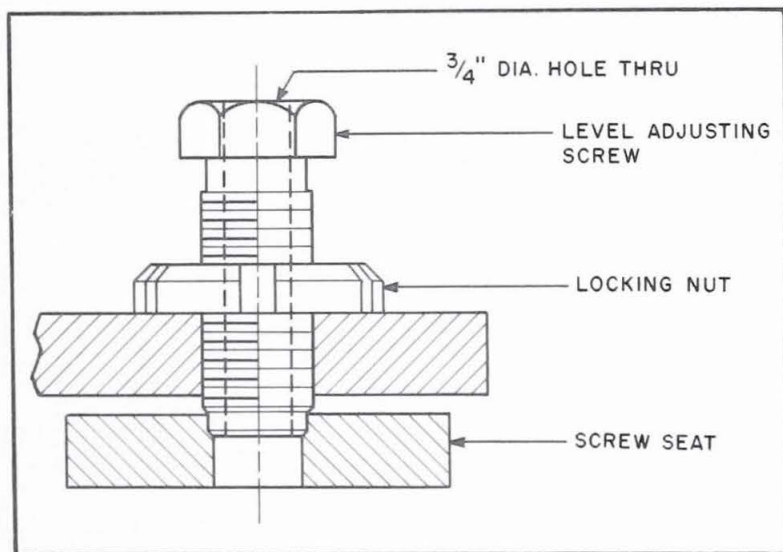


Figure M10A. Leveling Jack Assembly

ANCHORING TO CONCRETE FLOOR.

If the lathe is to be bolted to a concrete floor, anchor bolts (not supplied with the lathe) should be used. Since the center distance between bolt holes, as shown in the dimensional drawings, are approximate, location for anchor bolts or lag screws should be taken from the actual machine.

This can be done by setting the machine in its exact location and marking the leveling screw locations directly on the floor. Then, proceed as follows:

Move the machine out of the way and drill the holes for the anchor bolts about 6 inches in diameter and 6 inches deep.

Raise the machine with a crane approximately 10 inches from the floor. Place 4-inch square steel

plates and screw seats on 5/8-inch diameter anchor bolts, 9-1/2 inches long, and insert the bolts through the bores in the level adjusting screws, engaging the holddown nuts on the bolts to hold the entire assembly in place. Lower the machine into position, placing a 1-inch thick board under each leg of the lathe. Fill the holes around the anchor bolts with quick drying cement, thin enough to flow easily.

After the cement around the anchor bolts has set, the boards should be removed, the machine lowered to the floor, and the holddown nuts threaded onto the anchor bolts. The leveling jack assembly appears as in figure 10B. The machine is now ready for leveling.

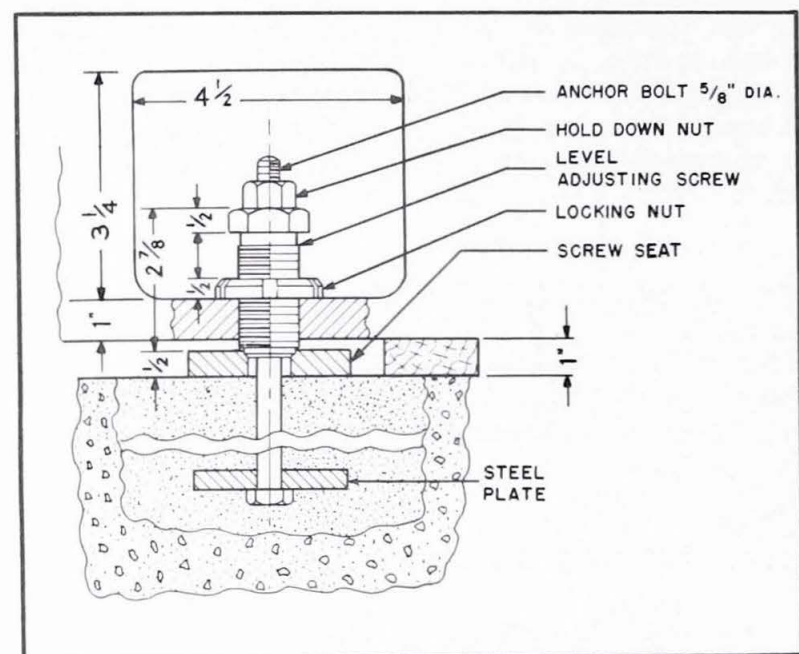


Figure M10B. Anchoring Machine

ANCHORING TO WOODEN FLOOR.

Where the machine is to be fastened to a wooden floor by lag screws, the pilot holes for the lag screws can be drilled after their locations have been determined from leveling screw locations in legs. Then, when the machine is spotted over the screw holes in the floor and the lag screws have been partially screwed down, the leveling operation can proceed.

PROCEDURE FOR LEVELING.

Use a precision level that is graduated to at least 0.001 inch per foot. A carpenter's level or the level in a machinist's combination square is not accurate enough.

The leveling process is accomplished in two phases, the first being the preliminary leveling and the second the final leveling. The preliminary leveling is to remove any pronounced twist in the bed and should be done with the units remaining in one position. This is accomplished in the following manner:

Place the level across the top of the vee ways close to the headstock as shown in Figure M11A. On the 17" and 19" sizes only, the back way is 1/16" lower than

the front way. Place a piece of 1/16" stock between the back way and the level.

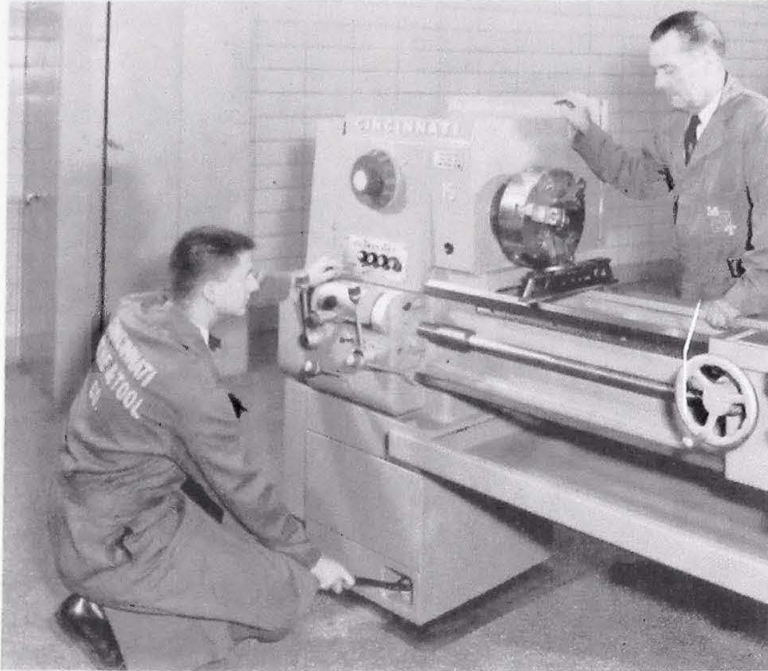


Figure M11A. Leveling the Lathe

Adjust the screws under the headstock end leg until reading is zero. Then move the level to the tailstock end and with the level across top of the vee ways, adjust the screws under tailstock end leg until reading is zero. Then recheck and make minor adjustments with the level at each of the above mentioned positions. This completes the preliminary leveling.

For final leveling, place the level lengthways on the front flat way close to the headstock end (see figure M11B) and adjust screws under headstock end leg until reading is zero. At the same time, check the level across the top of the bed ways to make certain these adjustments do not cause a twist in the bed.



Figure M11B. Final Leveling

Place the level lengthways on the front flat way, close the tailstock, and repeat the operations above; also check with the level across the vee ways to eliminate any twist.

NOTE

Repeat these operations and make whatever minor adjustments are required.

The next operation is to level the lathe crossways by placing the level across the carriage wings and moving the carriage from one end of the bed to the other without disturbing the position of the level. If the level shows any variation throughout its travel, the screws nearest the point where variation occurs should be raised or lowered to bring the level back to zero.

Any adjustment made to bring the lathe level in one direction may affect the level of the lathe in the other direction. It is only a combination of adjustments that will bring the lathe into proper level.

During the first week of operation, or until foundation has "set", the level of the machine should be checked frequently. Periodic rechecks should be made at least every six months.

SERVICE TOOLS

There are no special tools required for servicing and overhauling these lathes.

Standard tools furnished with lathes are as follows:

- Wrench - Hook Spanner for Spindle
- Wrench - Tool Post

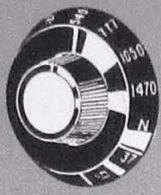
Tools needed but not furnished:

| | | |
|-----------------------------|---|----------|
| Wrench - Male Socket, Allen | - | 3/32 in. |
| " " " " | - | 1/8 in. |
| " " " " | - | 5/32 in. |
| " " " " | - | 3/16 in. |
| " " " " | - | 7/32 in. |
| " " " " | - | 5/16 in. |
| " " " " | - | 3/8 in. |
| " " " " | - | 1/2 in. |
| " " " " | - | 9/16 in. |

Standard Type Screw Driver - 1/16 in. thick x 5/16 in. wide blade

Bent Scratch Awl

Adjustable Face Spanner - 3 in. size (J. H. Williams Co. No. 483)



LUBRICATION

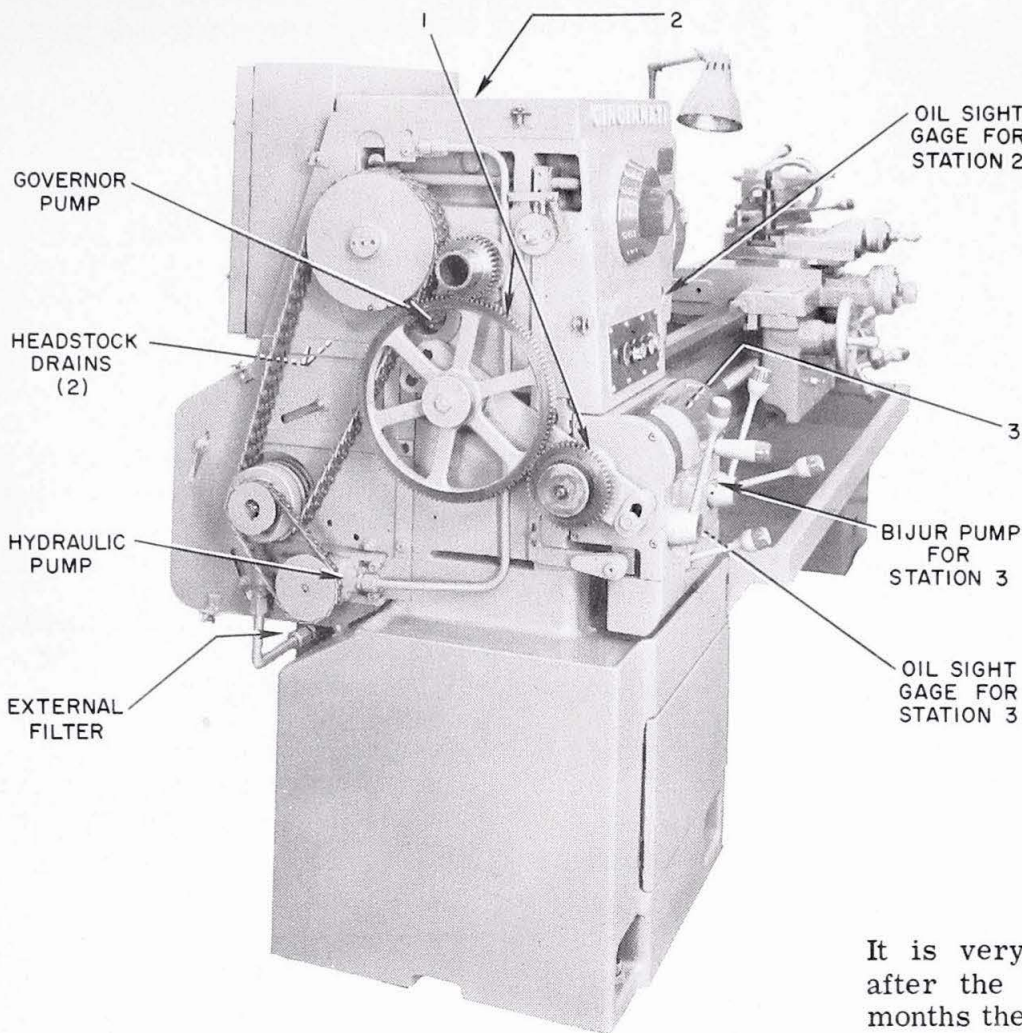


Figure M12A. Lubrication Diagram Headstock End

The importance of correct lubrication cannot be over-emphasized. Under no circumstances should the lathe be operated without first seeing that it has been thoroughly oiled.

The successful and satisfactory operation of the lathe, as well as its useful service life, depend upon the care with which the lubrication instructions given below are followed.

Since all oil was drained from the machine before shipment, it is necessary at the outset to fill the reservoirs in the headstock, quick change box, and apron to the levels indicated on the sight gages with which each unit is provided. All of the other points indicated on the diagram and covered in the instructions should be thoroughly oiled.

NOTE: Lubricate electric motor according to motor manufacturer's recommendations. Do not over-lubricate.

CLEANING OIL FILTERS.

There are two oil filters for the headstock. All models have one filter inside the headstock attached to the governor pump housing. The other filter is located outside the headstock beneath the main drive motor on smaller models and above the motor on larger models.

M12

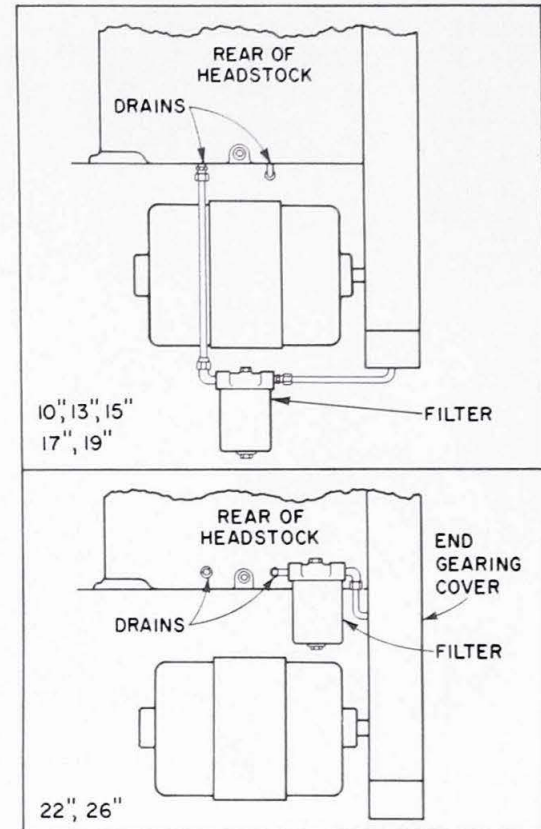


Figure M12B. Filters and Drains

It is very important that these filters be cleaned after the first month of operation and every six months thereafter.

Prior to cleaning the filters, drain the oil from the headstock at two places (see figure M12B). Remove tube fitting that leads to the top of the external filter and the pipe plug on the opposite side of the electrical conduit. On 22" and 26" models, these are in the rear of the headstock above the drive motor. On smaller models, they are in the bottom of the headstock.

Disconnect the fitting from the other end of the filter and dismantle. The filter element is held in place by a single hex nut. Wash in solvent and clean with forced air.

The other filter (to the governor pump) should be cleaned by reverse flushing. Remove the large quadrant gear for access to the governor pump. Before attempting to remove the pump, scribe a line on the outer edge of the pump and on the end of the pump housing. Remove four cap screws holding pump in place. Remove the pump and gasket and insert a tube into the suction line opening in the housing. Force solvent through this tube to dislodge sludge from the filter. Then flush out the headstock with solvent. When replacing pump in pump housing line up scribe marks to insure proper position. If the gasket is loose from the pump, reseal it with Permatex. Also, coat the threads of the pump retaining screws with Permatex before replacing.

NOTE: During overhaul operations when gearing is removed, remove this filter and wash thoroughly in solvent.

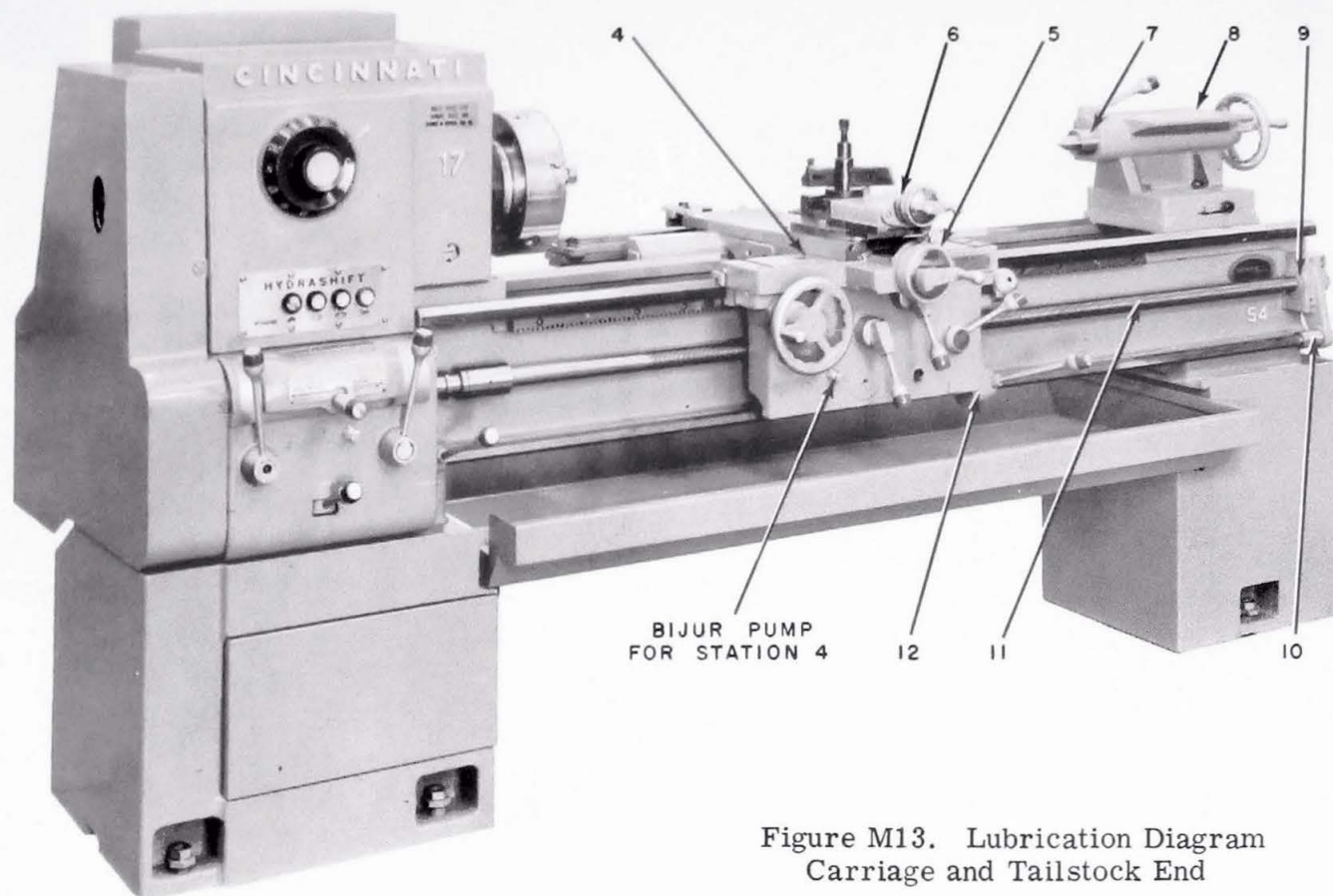


Figure M13. Lubrication Diagram
Carriage and Tailstock End

| STATION NUMBER | PART LUBRICATED | TYPE LUBRICANT | FREQUENCY | INSTRUCTIONS |
|----------------|---|-------------------------|-------------|---|
| 1 | End gearing | Socony Mobil Dorcia 150 | 6 months | Remove end gearing cover. |
| 1 | End bearings | P-55 | 6 months | |
| 2 | Headstock gearing | P-38 / | Keep filled | *Check oil sight gage daily. Drain and refill every six months. |
| 3 | Quick change gear box | P-55 | Keep filled | * Check oil sight gage daily. Operate Bijur pump at least daily. Drain and refill every six months. |
| 4 | Apron gearing lead-screw, bedways and cross slide | P-55 | Keep filled | *Check oil sight gage daily. Take six strokes on Bijur pump twice daily. Drain and refill every six months. |
| 5 | Cross screw | P-55 | Daily | Use bench oil can. |
| 6 | Compound screw | P-55 | Daily | Use bench oil can. |
| 7 | Tailstock spindle | P-55 | Bi-Weekly | Use bench oil can. |
| 8 | Tailstock spindle nut | P-55 | Daily | Use bench oil can. |
| 9 | Leadscrew bearing | P-55 | Daily | Use bench oil can. |
| 10 | Control rod bearing | P-55 | Bi-Weekly | Use bench oil can. |
| 11 | Leadscrew | P-55 | Daily | Use bench oil can. |
| 12 | Control rod bearings on apron | P-55 | Bi-Weekly | Use bench oil can. |

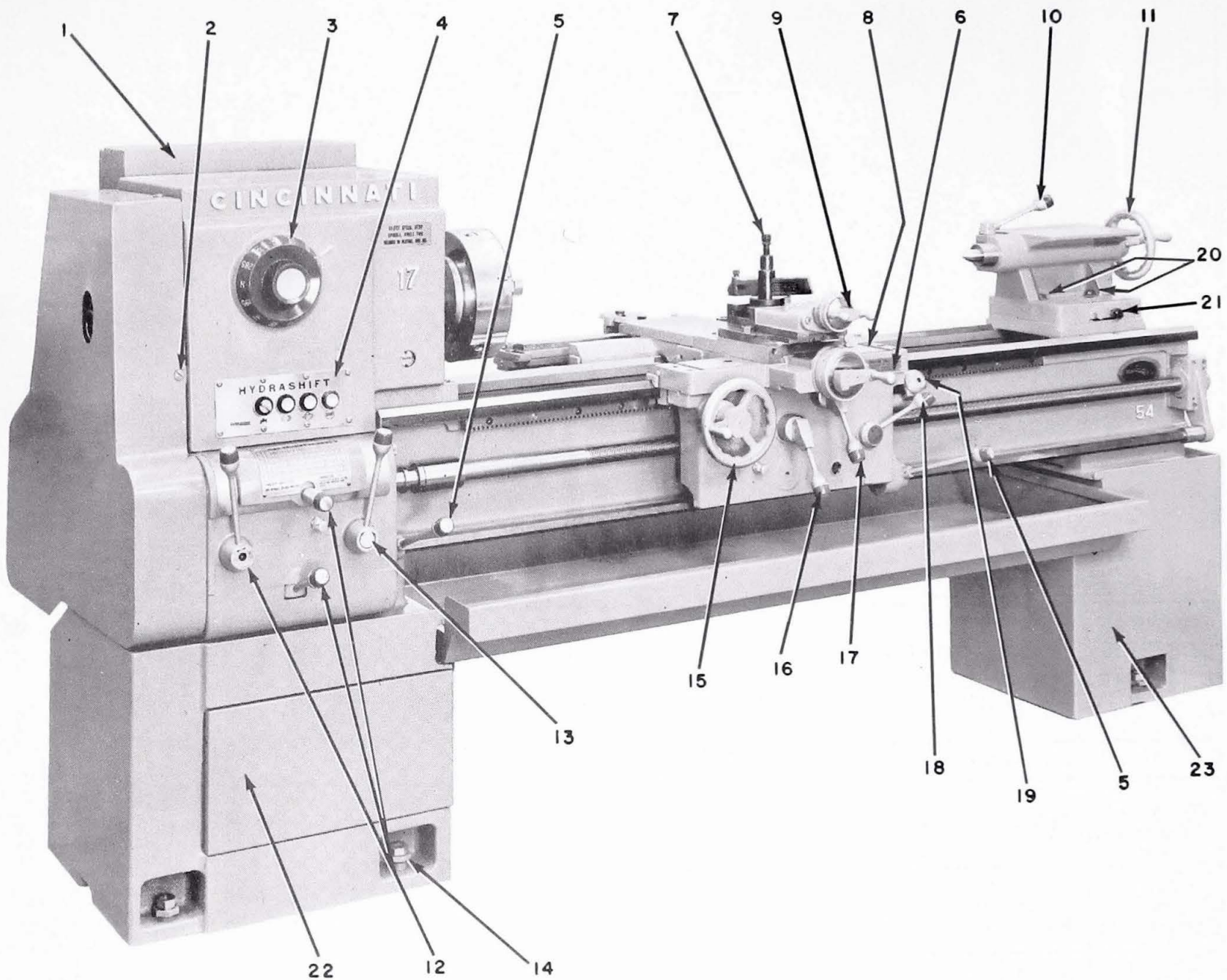
See page M28 for list of approved lubricants.

* At the end of the first two-month operating period, drain the unit, flush thoroughly with a mixture of four parts kerosene and one part light lubrication oil, and then refill. The second oil change should be made four months later and thereafter every six months to one year, depending on actual operating time of the lathe.

/ Headstock capacities are as follows: 6 quarts for 10", 13", and 15" lathes; 13 quarts for 17" and 19" lathes; and 6 gallons for 22" and 26" lathes.



FUNCTIONAL DIAGRAM



- | | |
|-------------------------------------|--|
| 1. Electrical Compartment | 13. Leadscrew Reverse |
| 2. Guard Latches | 14. Leveling Screw |
| 3. Spindle Speed Selector Dial | 15. Carriage Handwheel |
| 4. Push Button Panel | 16. Longitudinal Power Feed Engaging Lever |
| 5. Spindle Start-Stop Lever | 17. Cross Slide Power Feed Engaging Lever |
| 6. Cross Slide Adjusting Handle | 18. Half-Nut Engaging Lever |
| 7. Tool Post | 19. Chasing Dial |
| 8. Carriage Clamp | 20. Tailstock Clamping Nuts |
| 9. Compound Rest Adjusting Handle | 21. Tailstock Set-Over Adjusting Screws |
| 10. Tailstock Spindle Clamp | 22. Storage Compartment |
| 11. Tailstock Spindle Handwheel | 23. Coolant Storage Tailstock Leg |
| 12. Thread and Feed Selector Levers | |



OPERATION

Study the functional diagrams (figure M14) and become familiar with the operating units and control levers.

STANDARD ELECTRIC CONTROL.

All standard lathes are shipped from the factory with the following electrical equipment: overload relays, forward-reverse-stop push buttons mounted on headstock, magnetic reversing starters, non-fused disconnect switch and instant reversing main drive motor.

All standard lathes contain a control transformer with 110 volt coils for use with all A. C. circuits of 230 volts and over. All electrical equipment (except push buttons) is located on a panel in the compartment at the rear of the headstock. Access to the electrical panel may be gained only after throwing the disconnect switch on the compartment door to "OFF" or "OPEN" position and loosening the captive screws in compartment door.

An independent selector switch for the coolant pump (when supplied) is mounted on the front of the headstock and a magnetic starter for the pump is included on the electrical panel.

Rotation of the main drive motor is controlled by the push buttons on the front of the headstock. Place disconnect switch on door of electrical compartment in "ON" position. Check rotation of drive motor. To do this, depress the "FORWARD" button to start the motor. Engage the clutch momentarily by raising the start-stop lever. As you face the spindle from the tailstock end, the spindle should rotate in a counter-clockwise direction. If it does not, it is necessary to reverse the rotation of the motor before attempting to operate the lathe.

Forward spindle rotation is obtained as described in paragraph above. To reverse rotation of the spindle, lower the spindle start-stop lever through neutral to "BRAKE", depress the "REVERSE" push button and re-engage the clutch by raising the spindle start-stop lever.

To stop the spindle, lower the spindle start-stop lever past neutral which then engages a multiple-disc friction type brake. Pressure on the lever determines the amount of braking force.

The rapidity of engagement of the drive clutch and application of the brake should be gaged with reference to the weight of the workpiece and the holding device. If these are heavy, engage the clutch gradually until the spindle picks up speed. Apply the brake gradually at first and then with increasing pressure as the spindle slows down.

The Start-Stop lever is detented in the "UP" (clutch engaged) position but has a spring return to "NEUTRAL" from the "DOWN" (brake) position.

SPINDLE SPEED SELECTION.

Spindle speeds may be selected on the speed selector dial while the spindle is turning or stopped.

To shift to selected speeds, lower the control handle to "BRAKE" position until spindle has stopped. Allow it to return to neutral for approximately two seconds for the gears to shift, then jog once or twice before fully engaging clutch. The neutral setting "N" disengages the spindle from the gear train.

THREAD AND FEED SELECTION.

The quick change box provides a selection of 48 thread and feed changes (54 on the 22" and 26" models) through positioning of:

- The index slide
- A two-position lever (A-B)
- A three-position lever (C-D-E)

To obtain the desired thread or feed:

- a. STOP THE HEADSTOCK SPINDLE. To facilitate spur gear engagement, jog the spindle when necessary.
- b. Pull out the index slide plunger and permit the slide to drop, thereby disengaging the tumbler gears.
- c. Shift the two-position lever to A or B and the three-position lever to C, D or E as required for the selected thread or feed.
- d. Move the index slide to any one of the eight positions, depending on the thread or feed desired, obtaining the approximate location by matching the appropriate line on the index plate with the fixed reference on the quick change box. Seat the index plunger in location hole for final setting of index plate.

Also incorporated in this unit is a leadscrew reverse lever to facilitate chasing right-hand or left-hand threads and to reverse the feeding direction of the carriage and cross slide. Do not force this lever.

To engage power movement to the carriage or cross slide, drop levers, located on the apron, are employed.



OPERATION

CHASING ENGLISH THREADS ON MACHINES EQUIPPED WITH AN ENGLISH LEADSCREW.

The pair of half-nuts is engaged with the leadscrew by depressing the lever at the right side of the apron.

This lever can be moved only when the feed engaging drop levers are in the down or disengaged position. A simple interference device prevents the engagement of the drop levers when the half-nut is closed, or vice versa, to prevent damage to gearing.

The chasing dial, to facilitate thread chasing, is

mounted on a swivel bracket on the right end of the apron. This dial is rotated by a small worm wheel which is engaged with the threads of the leadscrew and rotates as the leadscrew turns. The bracket can be swiveled to disengage the worm wheel from the leadscrew to reduce wear when not chasing threads. The procedure followed in chasing threads, when the tool setup has been completed, is to bring the carriage to the starting point of the thread by hand. Then watch the graduations on the chasing dial as they pass the index mark on the bracket. When one particular graduation, say "zero", coincides with the index mark, the half-nuts are closed.

METRIC CONVERSION PROCEDURE (See Figure 17)

1. Remove end gearing cover.
2. Remove quadrant gear (A).
3. Mount conversion gear (B) on hub of gear (A). Secure with taper pins.
4. Remove gear (C) and entire quadrant (D).
5. Remove four cap screws and pull off end cover (E).
6. Move the "A-B" control lever to the left past the detent and pull cluster gear (F) off the upper spline shaft.
7. Remove cap (J) and cap and clutch (K) from right end of gear box. Tap lower spline shaft to the right until cluster gear (F) can be slipped on end of shaft while shifting lever is engaged in groove of gear.
8. Replace cap (J) and cap and clutch (K) in reverse order. Cap (K) has the letter "C" embossed on its face. This cap and clutch always go on the shaft without the cluster gear. For metric conversion, this is the upper spline shaft.
9. Replace end cover and quadrant.
10. Replace the two quadrant gears. The larger gear should be next to the quadrant and engaging pinion (G).
11. Install gear (H) on lower shaft, engaging the outer (smaller) quadrant gear.

NOTE

10", 13" AND 15" MACHINES. On English setup, one spacer is on each side of gear (C). Install gear (H) with both spacers behind gear.

17" AND 19" MACHINES. On English setup, large end of bushing is out and hub of gear (C) is next to quadrant. Install gear (H) with large end of bushing against quadrant and hub of gear against shoulder of bushing.

22" AND 26" MACHINES. On English setup, hub of gear (C) is against quadrant and spacer is outside of gear. Install gear (H) with spacer against quadrant and gear hub against spacer.

12. ADJUST GEAR CLEARANCE. (See page M20.)
13. Replace end gearing cover.
14. Replace English THREAD AND FEED plate on quick change box with metric plate.
15. When changing back to English setup, quadrant gear (B) need not be removed from (A). On models 10", 13", 15", 17" and 19", reverse the position of the gears on the stud.

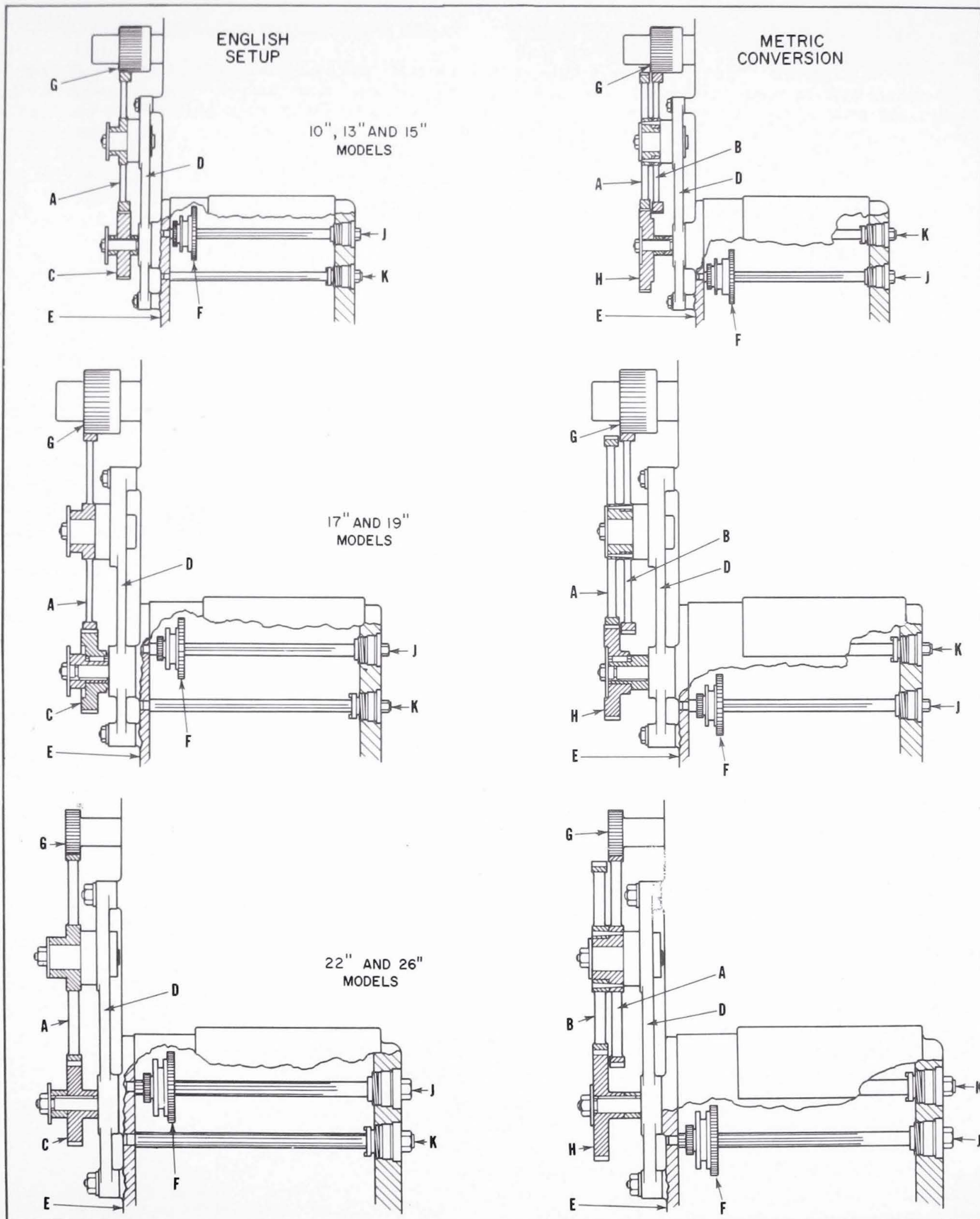


Figure M17. Metric Conversion



OPERATION

The chasing dial remains stationary as it travels with the carriage until the half-nuts are opened again at the end of the thread. The tool is then withdrawn from contact with the work, the carriage returned by hand to the start of the thread, and the cross feed reset to the proper depth. The particular graduation on the chasing dial to be used for closing the half-nuts again depends on the lead of thread being chased.

For any number of threads per inch divisible by the number of threads per inch of the leadscrew, the half-nuts can be closed at any point without regard to the chasing dial. (The number of threads per inch of the leadscrew varies with machine swing size. See the Thread and Feed Range section of the specifications on page M4.) The general rule to follow for all other threads is: for even number of threads per inch, close the half-nuts on any line; for odd number of threads, close the half-nuts on any numbered line; and for fractional threads, close the half-nuts every full revolution. See instruction plate on carriage near chasing dial.

CHASING METRIC THREADS ON MACHINES EQUIPPED WITH AN ENGLISH LEADSCREW.

In less than fifteen minutes, a Hydrashift lathe with English screw can be changed to cut a full series of metric threads using the Quick Change Box in the normal manner.

Only two additional gears and another (metric) thread index plate are required (supplied on special order). One gear is pinned to the 120-tooth idler gear normally furnished so that only one gear need be stored when not in use.

Follow the directions given on page M16 to make the conversion. Then refer to paragraph below for metric thread chasing instructions. Disregard and disengage the chasing dial after making the above conversion.

Move the carriage by hand to the starting point of the thread. Close the half-nuts and begin the chasing cut. At the end of the thread, withdraw the tool from contact with the work, but keep the half-nuts closed. Lower start-stop lever to neutral and press "REVERSE" push button. Stay in reverse with half-nuts closed until carriage returns to the start of the thread. Reset the cross feed to the proper depth and with the half-nuts still closed, re-engage the tool with the work and take another cut.

Repeat the above operation until the full depth of thread is reached. **Caution:** the half-nuts must remain closed until the thread has been completely machined.

TAPER ATTACHMENT (Telescopic).

The taper attachment is furnished as an extra and is supplied only when ordered. It incorporates the use of a telescopic cross screw which does not have to be disengaged for turning taper work. This feature eliminates the necessity of disconnecting the cross screw nut, permits normal use of the cross feed adjustment, and greatly simplifies the transition from straight to taper turning.

Installation of this unit on machines in the field is not recommended. This is due to the necessity of installing a different cross screw. Therefore, it is advisable to order this attachment at the time the machine order is placed. In exceptional cases, field installation is possible. However, additional service costs are involved.

The swivel slide is graduated in both degrees (left end) and inches taper per foot (right end) and represents the included angle or taper.

To set the attachment for any desired taper, loosen clamping nuts "C", "D", "E", "F", and "G" (figure M18). The swivel bar can then be adjusted by hand to the approximate setting and after tightening nut "C", fine adjustments can be made by using the adjusting screw "B". Tighten clamping nuts "D", "F", and "G" when the proper setting has been obtained. Nut "E" must remain loose during taper turning. Move the tool into position for the first cut before tightening nut "A" which engages the taper attachment.

Prior to each cut, move the carriage so that the tool is about one inch beyond the end of the work. Then advance the tool for the desired depth. This procedure will remove backlash from the taper attachment. To disengage the attachment, loosen nut "A" and tighten nut "E" which must remain tight except during taper turning. If the taper attachment is not in regular or frequent service, the clamping block "H" should be removed.

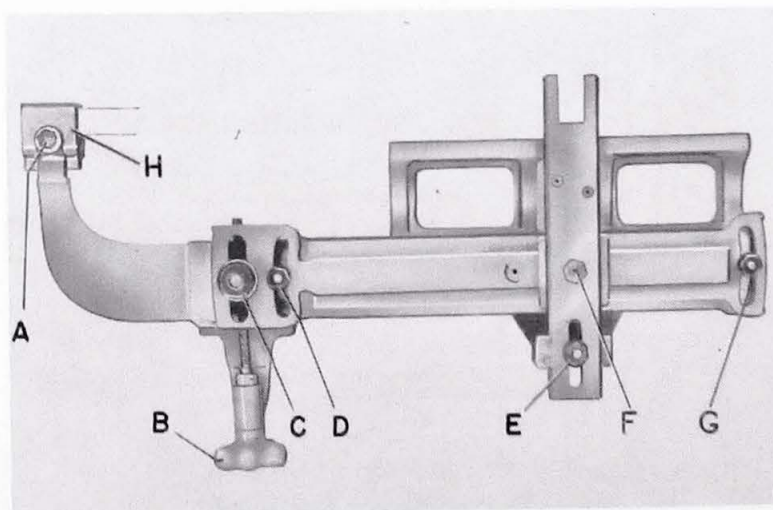


Figure M18. Taper Attachment



MAINTENANCE

GENERAL MAINTENANCE.

Be certain that the lathe is properly lubricated at all times and that oil reservoirs are filled to correct levels in accordance with lubricating instructions.

To insure prolonged accuracy of the machine, level the bed at installation, recheck in one month, again at two months, and at least every six months thereafter. If the lathe turns taper on work supported at the headstock end only, check the level of the lathe.

Special shoe-type locknuts are used throughout the lathe. To remove locknuts from shafts, loosen set screw in locknut, tap edge of locknut near set screw to loosen locking shoe under set screw and unscrew locknut from shaft. Never attempt to unscrew locknut from shaft until lock screw and lock shoe are loose.

All drive plugs over one-inch in diameter have a tapped hole to aid removal. A rod threaded at each end and equipped with a sliding weight and a nut at one end makes a good puller. Screw open end of rod into tapped hole in plug and hammer plug out of casting.

If it is necessary to use a mallet or hammer, be sure the blows are muffled by lead, wood, rawhide, rubber or brass—preferably by using mallets or hammers made of such materials.

When removing oil seals from shafts, wrap shim stock around any sharp edges, such as threads or key slots. This will prevent damage to the lip of the oil seals.

SHEAR PIN.

To prevent possible damage to elements of the feed transmission including quick change box, a safety shear pin is used to transmit power from the quick change box to the lead screw.

If the pin should shear off, shut down the lathe and locate the cause. Replace as indicated under "To Replace Shear Pin" on page M26. Be sure replacement conforms to the specifications given.

MAINTENANCE GUIDE

| condition | adjustment |
|--|---|
| 1. main drive v-belts slip under load | motor position (See page M20) |
| 2. play in cross slide ways | gib screws (See page M20) |
| 3. play in compound rest ways | gib screws (See page M20) |
| 4. end play or looseness in spindle | spindle bearing locknut (See page M21) |
| 5. headstock clutch or brake slips | adjusting collars (See page M21) |
| 6. backlash when threading | 1. leadscrew locknut for end play (See page M21) |
| | 2. half nut adjusting screws (See page M22) |
| 7. backlash in cross feed | 1. bearing locknut adjustment (See page M22) |
| | 2. C. F. nut for backlash (See page M22) |
| 8. play in taper attachment | bearing locknut adjustment and gib adjustment (See page M22) and page M27 |
| 9. power feed levers slip out of engagement | tension locknut adjustment (See page 22) |
| 10. headstock gearing shifts while spindle is rotating | pressure adjustment in shifter block (See page M20) |
| 11. headstock shifting is sluggish | pressure adjustments in shifter block and relief valve (See page M20) |



MAINTENANCE

ADJUSTMENTS. (See chart, page M19.)

Many adjustments and minor repairs, described below, can easily be accomplished when competently supervised by your own maintenance department. The need of many of these adjustments will be greatly lessened if the instructions regarding the machine, particularly lubrication, are strictly adhered to.

ADJUSTING HYDRAULIC PRESSURE. (See figures M20A and M20B.)

To adjust hydraulic pressure to the shifting cylinders, remove headstock top cover and connect a pressure gage (400 psi) at point "A" (Figure M20A).

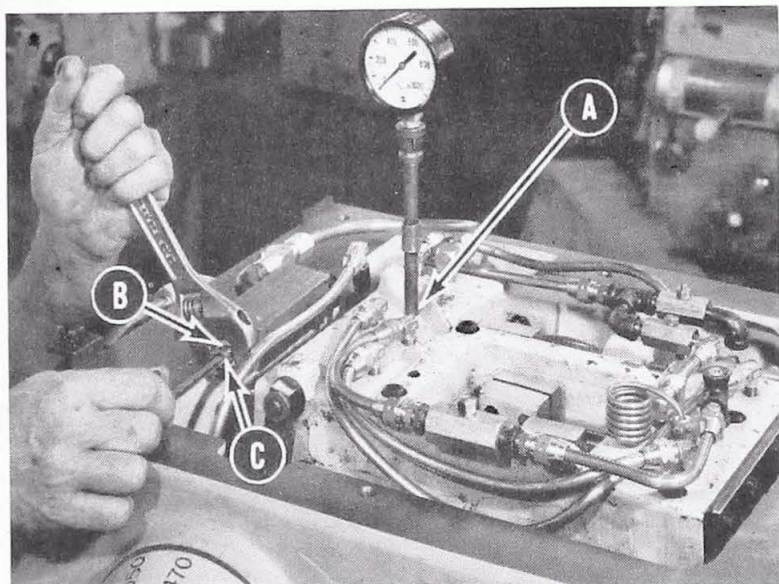


Figure M20A. Hydraulic Adjustment

With the spindle speed selector set at the lowest speed and the start-stop lever in "neutral" position, the gage should show 250 psi. Adjust, if necessary, by loosening nut "B" on relief valve and turning screw "C".

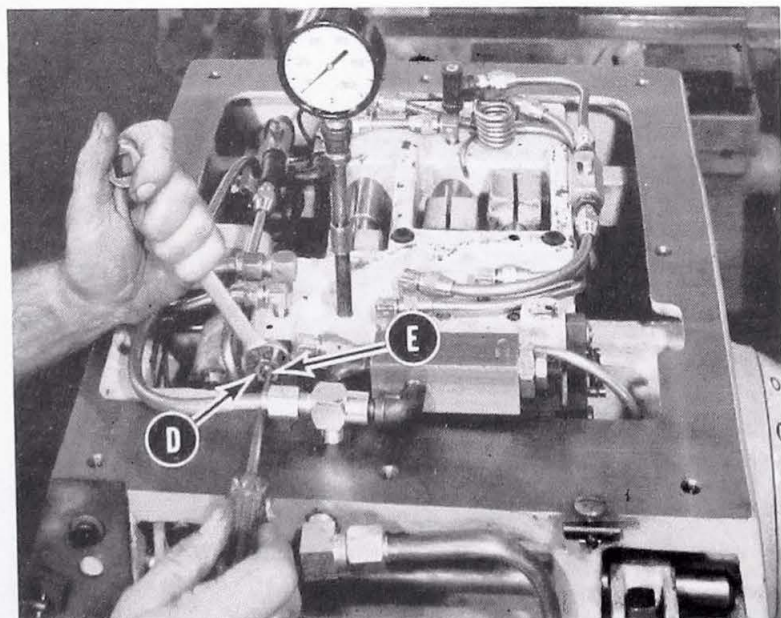


Figure M20B. Governor Adjustment

Move the start-stop lever up to "run" position. The pressure at the gage should drop to approximately zero. If necessary to adjust, loosen nut "D" (figure M20B) and rotate screw "E" until pressure drops to zero.

ADJUSTING THE MAIN DRIVE V-BELTS.

10" through 19" lathes are equipped with either flange-mounted or foot-mounted drive motors. 22" and 26" lathes have foot-mounted motors.

To adjust belts with flange-mounted motors, remove end cover, loosen four self-locking nuts, adjust position of motor in slots, and re-tighten nuts.

To adjust belts with foot-mounted motors, loosen three socket head cap screws holding motor base to motor leg. Loosen lock nut on adjusting screw and turn adjusting screw until proper belt tension is obtained. Tighten lock nut and cap screws.

It is important that belts be a "matched set", exactly the same length. Belts should be checked periodically and tightened when necessary.

When replacing belts, loosen motor so that belts can be slipped off sheaves. Do not pry them off.

ADJUSTING END GEARS. (See figure RP24.)

End gear clearance should be adjusted whenever gears are changed or disturbed. This can be accomplished easily with a .006" feeler or a piece of paper for a gage.

Loosen the three locknuts (16 and 34). Place the paper between the quadrant gear and the drive shaft gear (26). Make the fit snug and tighten the nut on the idler.

Move the quadrant up so that the gear is snug with the pinion, again with the paper as a gage. Tighten the locknuts at either end of the quadrant.

ADJUSTING THE CROSS SLIDE AND COMPOUND REST GIBS.

Headless type taper gibs are provided to compensate for wear between the bearing surfaces of these sliding units. Two adjusting screws are employed for each gib, one located at the thick or front end of the gib and the other at the thin or rear end. To adjust this type of gib, proceed in the following manner:

- a. See that power engaging lever of the unit containing the gib to be adjusted is in the neutral position.
- b. Loosen the adjusting screw at the rear of the gib several turns.
- c. Turn the front adjusting screw until tight, then back off one turn.

d. Retighten the rear adjusting screw.

NOTE

Gibs should never be drawn up so tightly as to prohibit free movement of the particular unit with operating handle. Tight adjustments squeeze out the oil film, resulting in rapid wear.

ADJUSTING THE HEADSTOCK SPINDLE BEARINGS. (See figure M21A.)

a. Run the headstock about an hour, until the bearings are warm.

b. Turn the spindle speed selector dial to "N" and stop spindle rotation. After the gears have shifted to neutral, turn off the drive motor.

c. Remove the top cover from the headstock. Remove the hydraulic shifter block assembly. Do not disturb position of selector spool and gear.

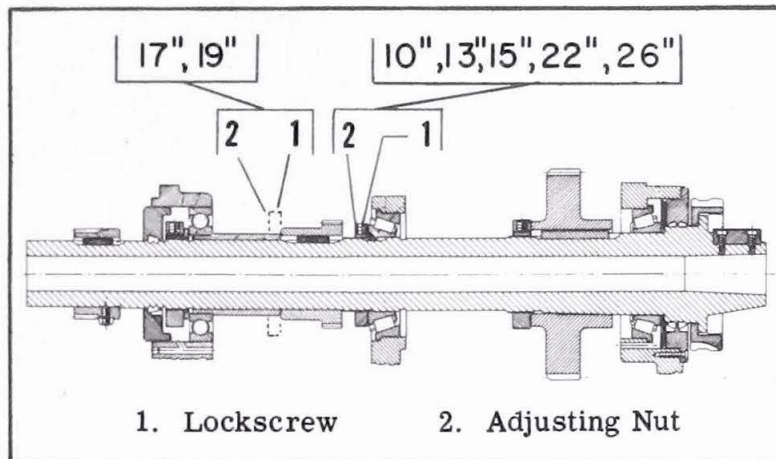


Figure M21A. Adjusting Headstock Spindle Bearings

d. Rotate the spindle by hand until set screw (1) in locknut (2) is accessible. Loosen screw and tap to loosen shoe beneath it.

e. Adjust nut (2) with a spanner wrench until bearings are snug.

CAUTION

Spindle must rotate freely but be free of shake.

f. Tighten set screw.

g. Replace shifter block assembly. Be sure speed selector dial is still set at "N". Replace cover.

ADJUSTING THE CLUTCH AND BRAKE MECHANISM. (See figure M21B.)

The multiple disc clutch-brake assembly in the headstock has been carefully adjusted before leaving the factory and is of adequate size. However, it is

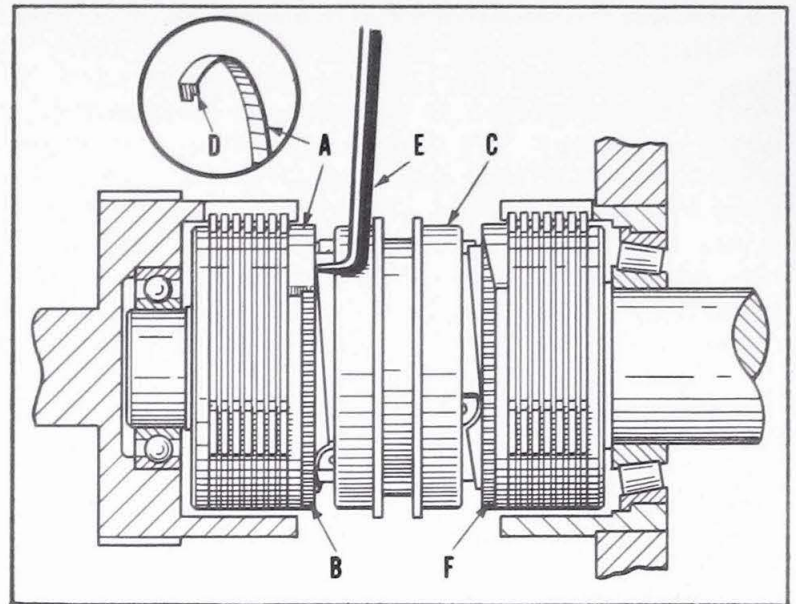


Figure M21B. Clutch Adjustment

subject to wear and may require adjustment from time to time.

To adjust, set selector dial at "N" and allow gears to shift. Shut off motor. Remove headstock top cover and the hydraulic shifter block assembly. Do not disturb settings of selector spool or selector knob.

NOTE

Tool E, as shown in figure M21B, is a bent scratch awl.

To adjust clutch, first see that the shifter sleeve "C" is in neutral. Then lift spring "A" with tool "E", using the heel of the tool as a fulcrum. (Do not use a screwdriver.) Lift spring just high enough for lip "D" to clear the teeth on collar "B". Then turn collar "B" one notch at a time, clockwise, BY HAND.

CAUTION

Do not lift spring higher than necessary to clear the collar or it may fly off or break.

Adjustment of the brake is the same, turning collar "F" one notch at a time until suitable adjustment is obtained.

ADJUSTING THE LEADSCREW THRUST. (See figure M26A.)

The adjustment for the leadscrew thrust is located at the extreme right end of the leadscrew. Adjustments should be made with the nut (1) only after the set screw and shoe have been loosened. Tighten the nut sufficiently to eliminate excessive end play in the leadscrew, but do not overload the thrust bearings. Lock the nut in the adjusted position by re-tightening the set screw.



MAINTENANCE

ADJUSTING THE CROSS FEED THRUST. (See figure RP38)

When backlash occurs in the cross feed screw (43), loosen set screw (27) in lock nut (26) and turn nut clockwise to eliminate any excessive end play in the cross feed screw. When adjustment is correct, re-tighten set screw (27). To eliminate play caused by wear between the cross feed screw (43) and cross feed nut (1), tighten screw (3) until looseness disappears.

If the lathe is equipped with a taper attachment, it will be necessary to eliminate any remaining excessive end play by adjusting the nut (17, page RP44) at the taper attachment end of the cross feed screw. Before attempting to adjust nut (17), loosen lock screw (18), then tighten the nut against thrust bearings (16) to eliminate excessive end play. When correct adjustment is obtained, lock the nut in adjusted position by tightening screw (18).

ADJUSTING THE COMPOUND REST END THRUST. (See figure M22A.)

Adjustment for end play in the compound rest is made in the following manner:

- Knock out the taper pin (1) and remove the ball crank handle.
- Slide the bushing (2) and dial (3) off the shaft.
- Remove locking set screw (4).
- Tighten set screw (5) only enough to take out excessive end play.
- Replace the locking set screw and other parts.

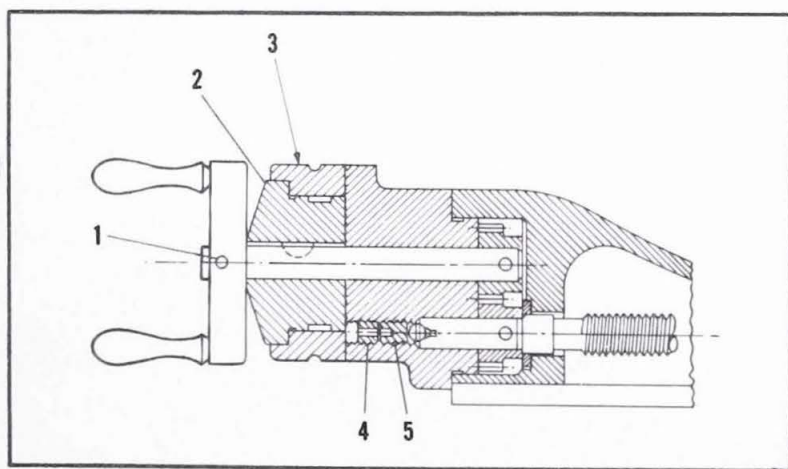


Figure M22A. Adjusting Compound Rest End Play

ADJUSTING THE HALF-NUT ENGAGEMENT. (See Figure RP36.)

Under normal operating conditions, this adjustment will probably never be required. However, if extensive use of this unit necessitates an adjustment, stop the machine and proceed in the following manner:

- Back out the adjusting screws (18), located in the arm of the lower half-nut (16), several turns.
- Move half-nut engaging lever to down position.
- Tighten adjusting screws until they contact the upper half-nut (16).
- Raise engaging lever and advance adjusting screws one-quarter to one-half turn to provide proper clearance between half-nuts and leadscrew. This clearance is essential to prevent a binding action between these units.

ADJUSTING POWER FEED ENGAGING DROP LEVER. (See figure M22B.)

If the power feed engaging drop levers do not remain in the engaged position, the following adjustment is required:

- Loosen the Allen set screw (1) in the adjusting cap (2) on the feed shaft.
- Turn the adjusting cap until the desired tension in the engagement of the drop lever exists. Make only a slight adjustment and check by engaging the drop lever. If the adjusting cap is over-tightened, excessive wear will result on the feed shaft bearings.
- Lock the adjusting cap in position by retightening the Allen set screw.

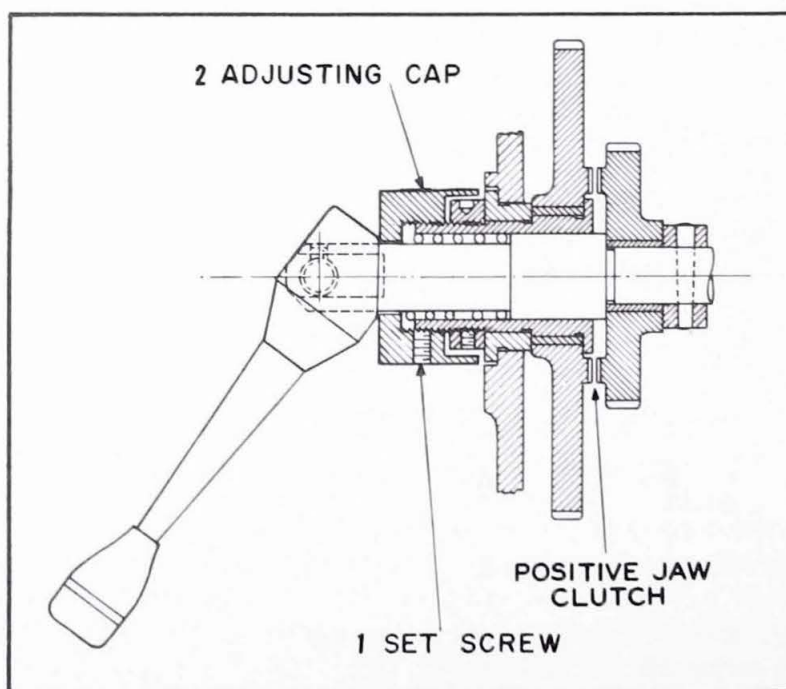


Figure M22B. Power Feed Engaging Drop Lever

TO REMOVE AND DISMANTLE SPEED SHIFTER MECHANISM. (See figure RP20.)

- Remove headstock top cover.

IMPORTANT

When replacing dial assembly, be sure witness mark on valve spool detent is at bottom dead center and selector dial indicates the slowest spindle speed.

b. Disconnect three oil lines leading into shifter block. Remove screws from shifter block and lift block clear of gearing and out of headstock.

c. To remove selector dial assembly, loosen screw (52) about 3/16" and tap assembly out from inside.

d. To disassemble selector dial assembly, tap out roll pin (47), remove gear (46) and dial (53).

e. To disassemble shifter block, remove housing covers (2). Take out screws (16), spring (17) and ball (18). Loosen two screws each (40) in the three shifter forks and slip pistons (22), (23) and (24) out of forks and shifter block. Remove four flanged bushings (21, 25 and 57) from the piston cylinders.

f. The selector valve is held in place by a pin (29) in the bottom of the block. Remove button head screw (28) and washer (27) and pull pin out with a #10-24 threaded stud as described on page M19.

g. Loosen screw (14) in the top of the block and remove detent assembly. Entire selector valve (43) and sleeve (41) can then be removed from the block.

TO REMOVE AND DISMANTLE HEADSTOCK SPINDLE (See figure M23.)

a. Proceed as described in steps "a" through "c" above under "To Remove and Dismantle Speed Shifter Mechanism."

b. Remove face plate or chuck, center, and center bush. Remove end gearing guard.

c. Remove quadrant gear (18 or 55, page RP24 and end gearing pinion (1, Figure M23) (except 22" and 26").

d. Remove bearing cap (2). This cap is a plug fit in the headstock and has two 3/8-16 tapped holes to facilitate removal.

17" and 19" Models

e. Loosen set screws in adjusting nut (18) which holds helical gear (19) and rear tapered roller bearing (21). Back nut off threads.

f. Tap helical gear toward rear of spindle and remove keys (20 and 22).

g. Tap spindle forward lightly until retaining ring (17) is accessible. Remove retaining ring.

10", 13", 15", 22" and 26" Models

e. Loosen set screw in lock nut (10), using Allen wrench, and tap to free lock shoe under screw. Unscrew nut from threads. Tap gear (11) toward rear of spindle to free it from taper. After gear is free of taper, remove lock nut (3) from spindle, following same instructions above for lock nut (10).

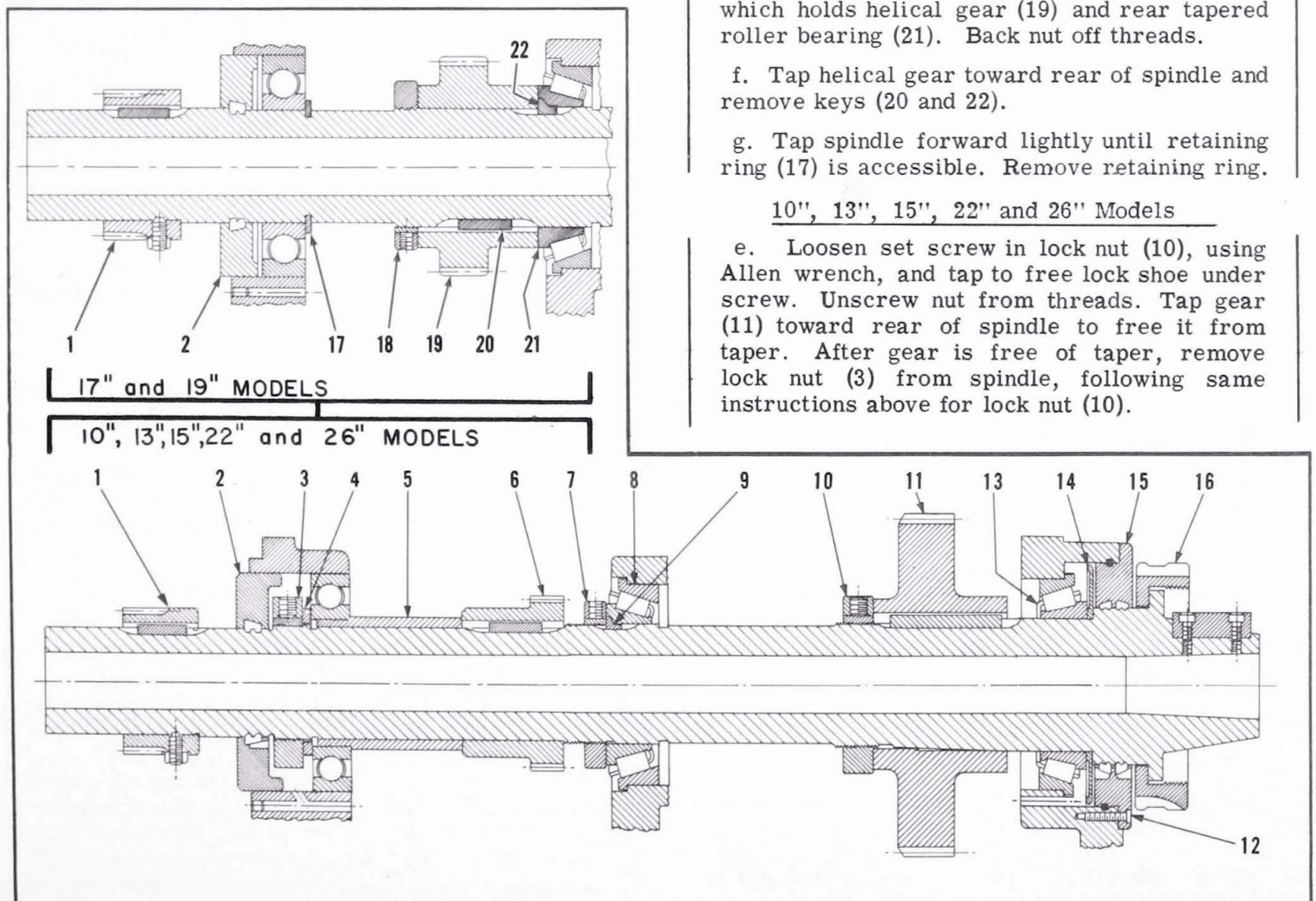


Figure M23. Headstock Spindle

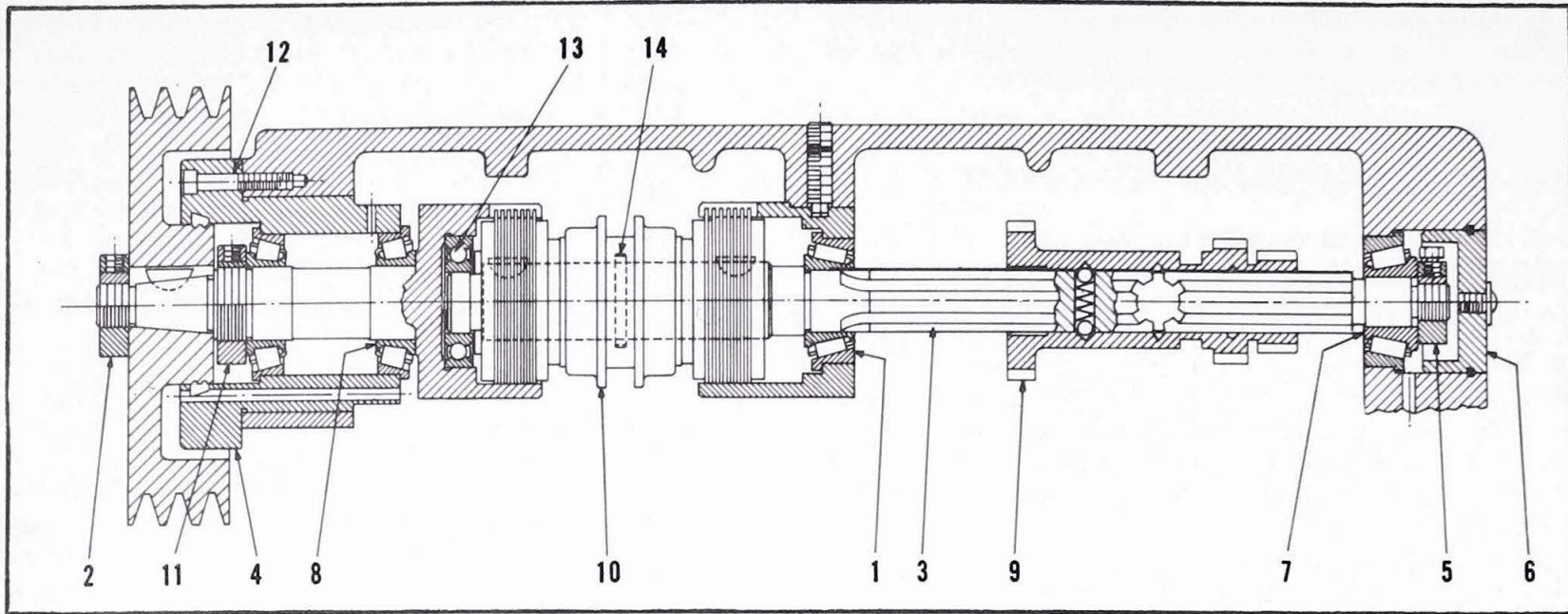
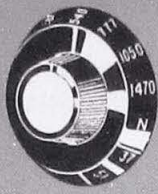


Figure M24A. Drive Shaft

f. Remove washer (4). To remove ball bearing and spacer (5), tap helical gear (6) toward the rear of the spindle. Slide gear off key. Remove key.

g. Loosen set screw in adjusting nut (7) for rear tapered roller bearing (8). Back nut off threads. Remove key (9).

h. Tap spindle forward, removing in turn bearing with spacer (5), helical gear (6), rear tapered roller bearing adjusting nut (7), bearing (8), large face gear adjusting nut (10) and large face gear (11).

j. To remove the front bearing cone (13), oil slinger (14), spindle front bearing cap (15), and spindle nut (16) from spindle, tap the spindle nut toward the rear of spindle.

TO REMOVE DRIVE SHAFT (See Figure M24A.)

a. Proceed as described in steps "a" through "c" on page M22 under, "To Remove and Dismantle Speed Shifter Mechanism."

b. Loosen set screw in lock nut (2) holding pulley, tap to free lock shoe. Back off lock nut two turns.

c. Tap end of shaft to break pulley loose from taper. Unscrew lock nut from drive shaft. Remove drive shaft pulley and key.

d. Unscrew the socket head screws (12) from the bearing retainer bushing (4).

e. Pull bushing (4) with shaft and bearings (8) from clutch-brake assembly (10).

f. Remove plug (6) in headstock at right end of drive shaft with plug knockout tool (see page 19).

g. Loosen set screw in nut (5) on right end of drive shaft (3), tap to loosen shoe, remove nut, and tap

drive shaft out through pulley end of headstock, removing cluster gear (9) as it clears the shaft.

NOTE: Detent balls and spring in shaft will drop out when (9) is removed.

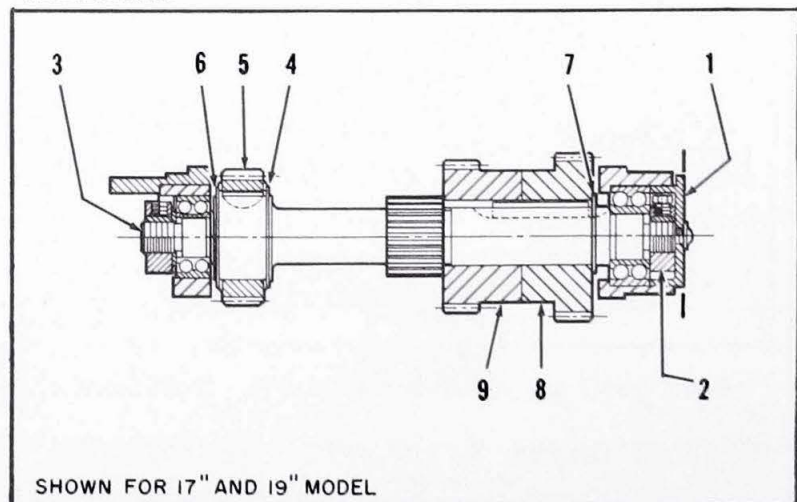
h. To remove clutch-brake assembly (10) from drive shaft, remove bearing (13) and drive out pin (14) holding assembly on shaft (3). Push clutch toward right end of shaft, remove split ring, and slide complete clutch-brake assembly off shaft.

j. Reverse this procedure to re-assemble.

TO REMOVE INTERMEDIATE SHAFT ("C" Shaft)
(See figure M24B.)

a. Proceed as described in steps "a" through "g" on this page, under "To Remove Drive Shaft." Also steps "a" through "e" on page M25 under "To Remove Back Gear Shaft."

b. Remove plug (1) in the headstock casting in line with shaft.



SHOWN FOR 17" AND 19" MODEL

Figure M24B. Intermediate Shaft

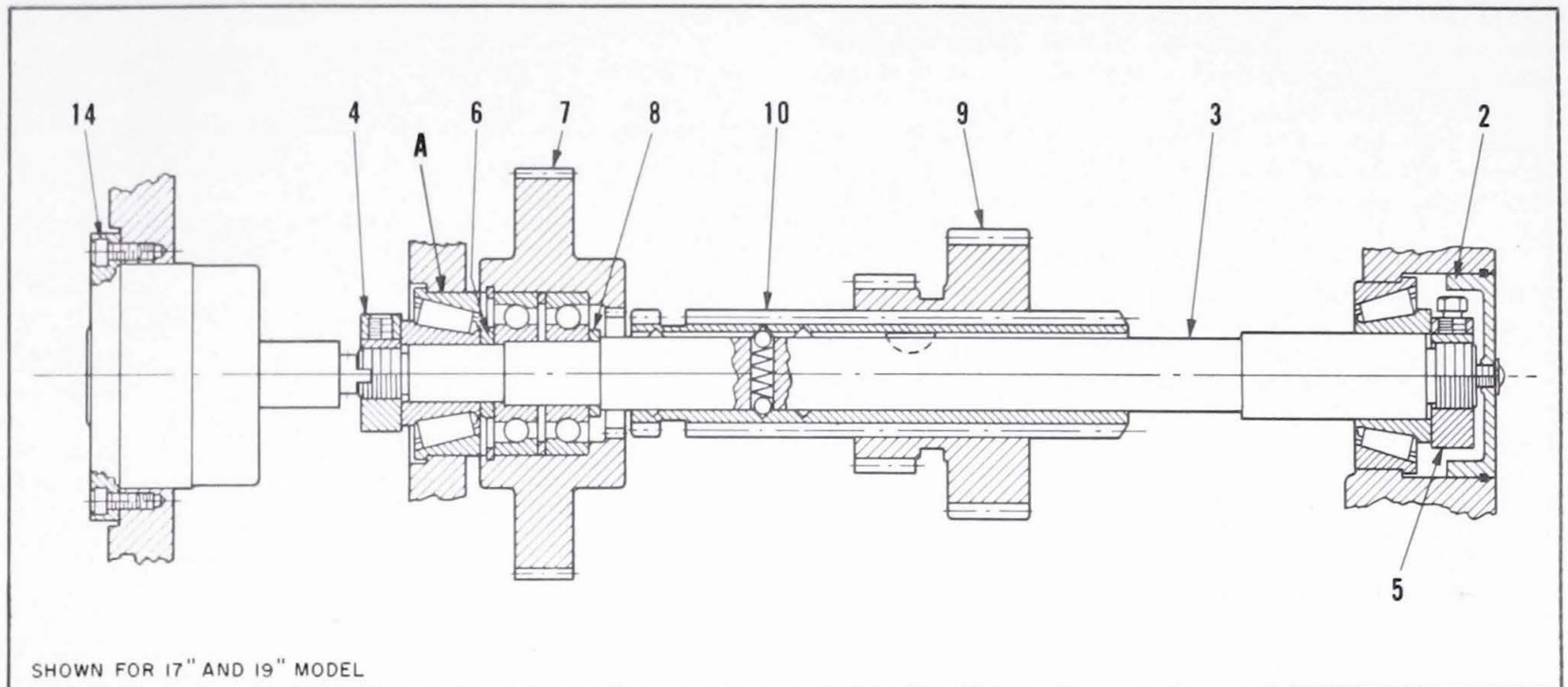


Figure M25. Back Gear Shaft

c. Remove lock nut (2) from end of shaft (3) by loosening set screw and tapping to free lock nut. Then unscrew nut.

d. Remove retaining ring (4) and slide gear (5) towards spindle nose end of headstock. Now remove retaining ring (6).

e. Tap shaft (3) away from spindle nose end of headstock, until retaining ring (7) can be removed.

f. Gears (8 and 9) can now be slid off end of shaft. Follow, by sliding gear (5) off end of shaft.

g. Shaft is now free to be removed.

TO REMOVE BACK GEAR SHAFT ("B" Shaft).
(See page M25)

a. Proceed as described in steps "a" through "c" on page M22 under, "To Remove and Dismantle Speed Shifter Mechanism".

b. Remove face plate from spindle if lathe is equipped with one.

c. Scribe a line on outer edge of the governor pump and on the end of the pump housing. Remove the four socket head cap screws holding the pump in its housing. Take the pump out of the headstock. NOTE: Should the gasket become detached from the pump, reseal it to the pump with Permatex. When replacing the pump, coat the threads of the cap screws with Permatex to insure an oil-tight seal. Line up scribe marks before replacing screws.

d. Loosen set screw in locknut (4), tap to loosen shoe beneath it, and remove nut from shaft (3).

e. Tap shaft out of casting toward tailstock, driving plug (2) ahead of shaft. As shaft is drawn out, remove in turn, bearing "A", spacer (6), gear (7) with bearings, spacer (8), and gears (9 and 10). As gear (10) is removed, watch for detent balls and spring in shaft (3).

TO REMOVE AND DISMANTLE END GEAR DRIVE SHAFT (22" and 26" Lathes). (See figure RP12.)

a. Proceed as described in paragraphs "a" through "c", "To Remove and Dismantle Speed Shifter Mechanism."

b. Open door in end gearing guard, and remove end gearing and quadrant. Drain oil from headstock.

c. Loosen set screw in gear (32) and remove from shaft. Remove four cap screws from cap (37).

d. Loosen set screw in adjusting nut (41), tap to free shoe, and turn adjusting nut against gear to force shaft toward pulley end of headstock.

NOTE

Be careful not to hit key in shaft under gear (42).

e. After shaft is started, tap it from spindle nose end of headstock. Oil seal (36), cap (37), and bearing (61 and 62) will come off pulley end of shaft.

f. Slide shaft out, removing in turn gear (42), key and adjusting nut (41).



MAINTENANCE

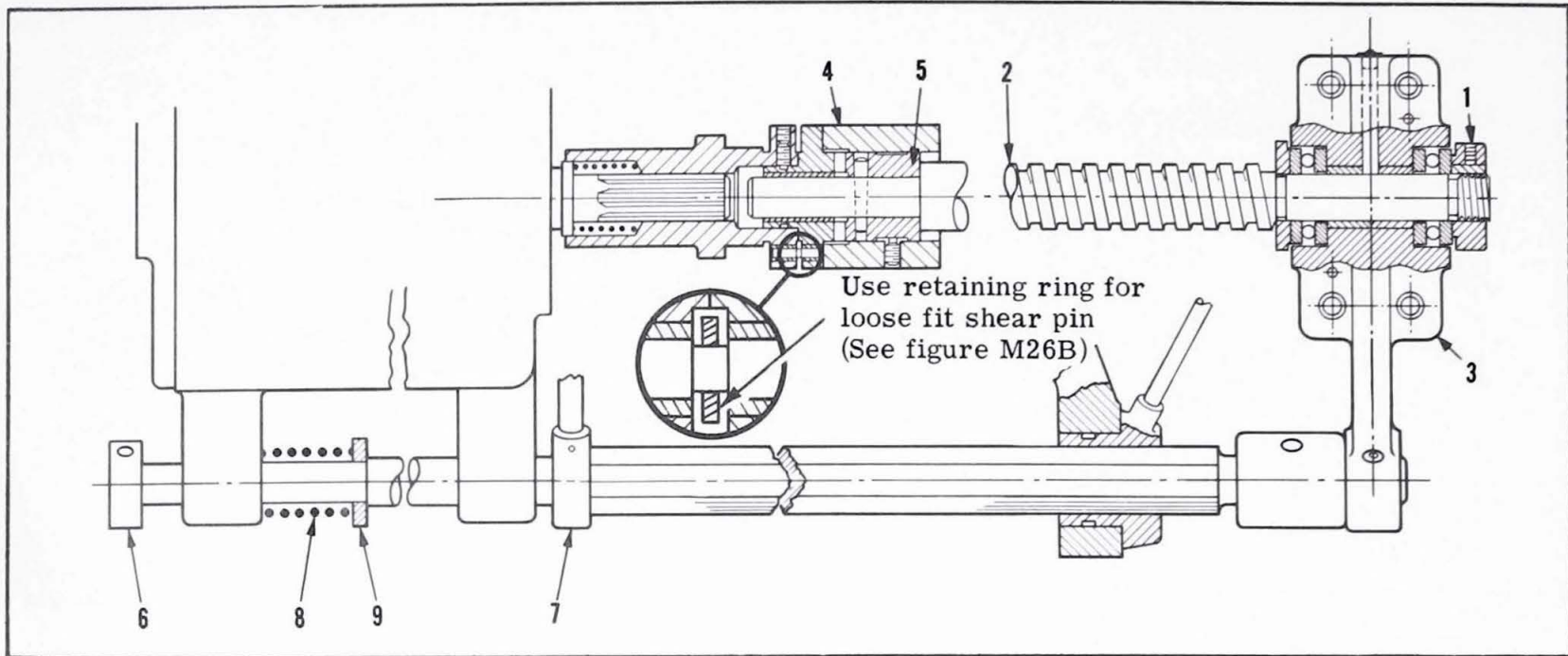


Figure M26A. Leadscrew and Control Rod

TO REMOVE AND DISMANTLE LEADSCREW AND CONTROL ROD. (See figure M26A.)

- a. Move carriage to headstock end of bed.
- b. Remove end gearing cover.
- c. Loosen set screw in locknut (1), tap to loosen shoe beneath it and remove locknut from leadscrew (2).
- d. Remove four capscrews and pry back box (3) out from bed until it clears locating pins. Pull off end of leadscrew and control rod.
- e. Loosen set screw in sleeve (4) and slip sleeve off clutch (5). Drive taper pin out of clutch.
- f. Engage half nuts and move carriage by hand to right until clutch is clear. Release half nuts and pull leadscrew out of apron.
- g. Drive taper pins from control rod lever (6), control handle (7). Withdraw control rod, removing lever (6), spring (8), thrust washer (9), and control handle (7).

TO REPLACE SHEAR PIN. (See figure M26A.)

- a. With carriage moved to the right, back off screw in leadscrew sleeve (4) and slip sleeve off clutch.
- b. Turn leadscrew until broken shear pin is aligned with clearance hole in opposite flange. Drive it out through clearance hole.
- c. Then align left half of shear pin with a clearance hole and use a drift pin through the hole to drive it clear.
- d. Re-align shear pin holes in both flanges and tap a new pin into place.

CAUTION

Replacement shear pins must conform to dimensions and material as specified in Figure M26B. Though there are two holes in both flanges, only one shear pin should be employed.

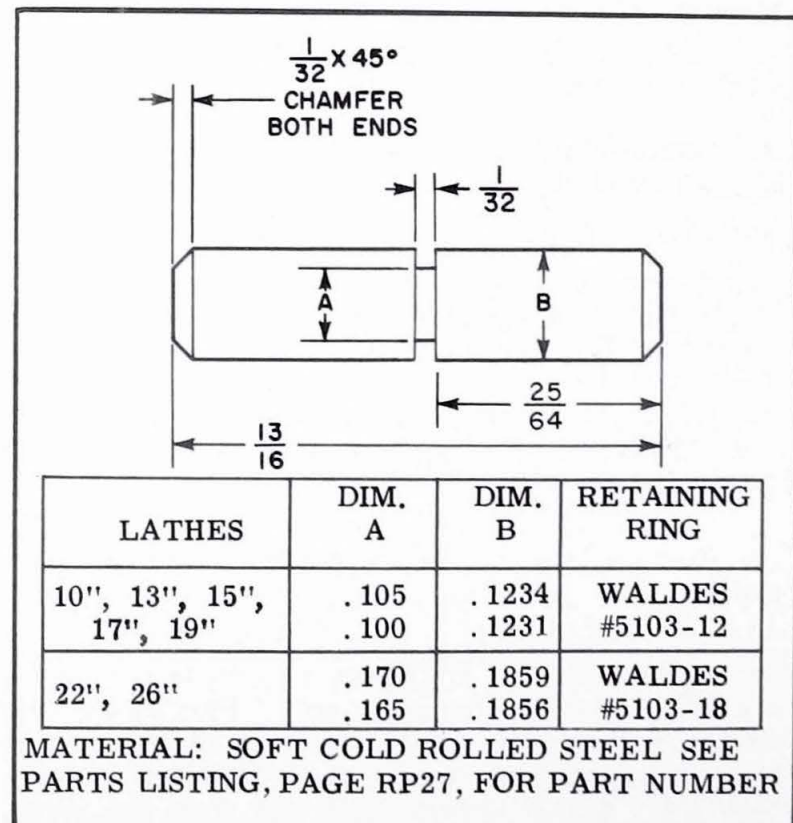


Figure M26B. Shear Pin

TO REMOVE APRON UNIT.

- a. Proceed as per instructions in steps "a" through "g" above, under "To Remove and Dismantle Leadscrew and Control Rod."

b. Remove chasing dial.

c. Attach crane to apron. Remove the six socket head screws holding apron to carriage. If a crane is not available, two men are required when removing apron.

TO REMOVE QUICK CHANGE GEAR BOX. (See figure RP24.)

a. Proceed as per instructions in steps "a" through "g" above, under "To Remove and Dismantle Lead-screw and Control Rod."

b. Unscrew nut (23, 28, or 60) and slide off washer, change gear spacers and drive shaft gear from end of drive shaft.

c. Unscrew the two nuts (34 or 65) locking the quadrant plate (33 or 64) in position and remove quadrant plate and quadrant gear. Remove the four socket head screws (2) and the end cover (1).

d. Remove four socket head screws (70, 74, figure RP28) holding quick change gear box and remove by tapping quick change gear box to break loose from key.

ADJUSTING THE TAPER ATTACHMENT GIBS. (See Figure RP44.)

Gibs are provided to compensate for wear between the bearing surfaces of the taper attachment. Two screws are employed for adjusting the taper gib (45). Loosen the screw at the rear of the gib several turns. Turn the front adjusting screw until tight, then back it off one turn. Retighten adjusting screw at rear of gib.

Three screws and jam nuts (two on the 10", 13" and 15" lathes) are used to adjust the flat gib (7). Loosen the jam nuts, adjust the gib, then relock the jam nuts.

INSTRUCTIONS FOR INSTALLATION OF TAPER ATTACHMENT ON LATHES IN THE FIELD. (See figures RP38 and RP42)

To facilitate installation of the telescopic taper attachment on lathes in the field, we supply a completely assembled taper attachment when ordered. The cross feed screw (52, page RP38), which is splined, can be easily removed from the pinion for assembly purposes. The correct method of installing the taper attachment on lathes in the field should be accomplished in the following manner:

a. Remove the present cross feed screw 43A, page RP38) by removing crank (60), lock nut (26A), spring (29), dial (31) [clutch (30) is pinned to dial (31)], and clutch (33A). Remove four cap screws (37) holding cross feed bushing (36) and tap bushing free. The cross feed screw can then be turned out of the cross feed nut (1).

b. To remove the cross feed nut, slide the cross slide assembly toward the rear of the machine and unscrew the cross feed nut screw (2) which fastens the nut to the underside of the cross slide. Remove the chip guard (35, page RP42) from the rear of the cross slide, push the cross slide toward the front of the machine, exposing the cross feed nut which can now be lifted out.

c. Break all sharp corners on drawbar (1, page RP44). Fit drawbar to dovetail of carriage. Then fit drawbar to dovetail of bracket (55). Mount the taper attachment bracket on the rear of the carriage, using the holes which have been drilled and tapped at the factory.

d. When so mounted, place an indicator on the cross slide and indicate along the bottom of the carriage dovetail. Set indicator on zero and indicate to both sides of bottom of bracket dovetail. Tolerance should be plus or minus 0.001".

e. At this point make sure the drawbar slides freely in the bracket dovetail and the carriage dovetail, with the locking nut (4) loose. Make adjustments as required until it does slide freely, then tighten cap screws (57) securely and pin bracket to carriage.

f. Remove the drawbar and install the new cross feed screw assembly. The cross feed screw (52, page RP38) with cross feed nut (49), bearing bracket (10, page RP44), bearings (16) nut (17), bushing (15) and collar (13) in place, is inserted into position from the rear of the lathe. Replace and tighten the screw (50, page RP38), holding the cross feed nut in position. Slide the drawbar into position and attach to the bearing bracket (10, page RP44) with the two screws (11) and straight pins (12) provided. Position the cross slide so the shoulder screw (6) connecting the drawbar to the taper attachment top slide can be inserted and tightened.

g. Move the cross slide to the front of carriage. Install the cross feed pinion (46A, page RP38) from the front of the carriage, making certain that the internal key (48) of the cross feed pinion engages the key-way of the cross feed screw. Then position cross feed bushing (36) and secure in place with the four screws (37) provided. Assemble clutch (33A), dial (31) [dial has clutch (30) pinned to it], spring (29), lock nut (26A) and crank (60) in place on pinion (46A).

h. Check alignment of the cross feed nut and screw by moving the cross slide to the extreme positions. If binding action occurs at either extreme front or rear positions, loosen and then retighten the screw, holding the cross feed nut.

i. As a final check to ascertain whether the gibs on the taper attachment and cross slide are set properly, tighten the locating clamps of the taper attachment and move the carriage slowly by hand along the bed.



MAINTENANCE

It should move freely and evenly. If the gibs are too tight, the movement of the cross slide will be jumpy instead of operating smoothly.

j. To check alignment of taper attachment with bed, loosen all nuts and bolts until top and bottom slides move freely. Move top slide freely by hand until it finds its own centerline. Position it at extreme left of its traverse. Tighten nut at right end. Slide through to extreme right position and tighten nut at left end. Slide through again to see if it slides freely.

k. Set dial indicator on cross slide in position to indicate on tailstock spindle or shaft mounted in chuck. Set indicator on zero as top slide is in extreme left position. Move top slide to extreme right position. Indicator should still be on zero.

Tighten bolt holding drawbar and shoe, then all other nuts and set pointers at each end on zero.

LIST OF APPROVED LUBRICANTS

P-38. A dual purpose high quality rust and oxidation inhibited petroleum fluid intended for service as a hydraulic fluid and general purpose lubricant. Viscosity 135 to 165 S. U. S. at 100°F.

P-55. A dual purpose high quality rust and oxidation inhibited petroleum fluid intended for service as a hydraulic fluid and general purpose lubricant, such as gear boxes, one-shot system, oil cups and general shop use. Viscosity 194 to 236 S. U. S. at 100°F.

| SUPPLIER | PRODUCT NAME |
|---|--|
| Ace-Lube Oil Co. American Oil Co. (Standard Oil Co. — Div. of American Oil Co.) | Ace-Lube Light American Industrial Oil No. 15 |
| Boron Oil Co. B P Trading Ltd. and its Affiliated Companies | Factovis 43 B P Energol HL-65 |
| British-American Oil Co., Ltd. Chevron Oil Co. Cities Service Oil Co. | Britex R & O Oil 44 Chevron OC Turbine Oil 9 Citgo Pacemaker 15 and Citgo Pacemaker T-15 |
| Crescent Oil Co., Inc. E. F. Houghton Co. Fiske Refining Co. Gulf Oil Corp. and Subsidiaries Humble Oil & Refining Co. and its Esso-Affiliated Companies Overseas | Clingolene SP-150 Hydro-drive 1500 Lubriplate Hydraulic Oil HO-OC Gulf Harmony 44 & Gulfcrest 44 Teresso 43, Teresstic 43, Nuto 43 and Nuto H-44 |
| Midwest Oil Co. Mobil Oil Corp. Pure Oil Co. Petrofina Group Richfield Oil Corp. Henry E. Sanson and Sons, Inc. Shell Oil Co. Sinclair Refining Co. Standard Oil Co. (Ohio) Sun Oil Co. Sunray D-X Oil Co. Texaco Inc. Tidewater Assoc. Oil Co. Union Oil Co. (Calif.) | Ace-Lube Light Mobil D.T.E. Oil Light Puropale RX Light Fina Hydran 31 Eagle Oil R & O No. 10 No-Gum Hydraulic Oil Light "H" Tellus 27 Duro 150 Sohivis 43 Sunvis 916 — Sunvis 706* DX-Cherokee Oil "L" (R & O) Rando Oil A Veedol Aturbrio 50 Red Line Turbine Oil 150 |

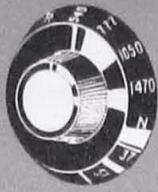
| SUPPLIER | PRODUCT NAME |
|---|---|
| Ace-Lube Oil Co. American Oil Co. (Standard Oil Co.) Div. of American Oil Co.) | Ace-Lube Medium American Industrial Oil No. 21 |
| Boron Oil Co. BP Trading Ltd. and its Affiliated Companies | Factovis 47 BP Energol HL-80 |
| British-American Oil Co., Ltd. Chevron Oil Co. Cities Service Oil Co. | Britex R & O 48 Chevron O.C. Turbine Oil 11 Citgo Pacemaker 20 and Citgo Pacemaker T-20 |
| Gulf Oil Corp. and Subsidiaries Humble Oil & Refining Co. and its Esso-Affiliated Companies Overseas | Gulf Harmony 47 Teresso 47, Teresstic 47, and Nuto 48 |
| Midwest Oil Company Mobil Oil Corp. Pennzoil Co., The (Calif.) Pure Oil Co. Richfield Oil Corp. Henry E. Sanson & Sons Inc. Shell Oil Co. Sinclair Refining Co. Standard Oil Co. (Ohio) Sun Oil Co. Sunray D-X Oil Co. Texaco Inc. Tidewater Assoc. Oil Co. | Ace-Lube Medium Mobil D.T.E. Oil Medium Zoil Hydraulic Oil Medium Puropale RX Medium Eagle Oil R & O Ex. Light No-Gum Hydraulic Oil No. 10-H Tellus 29 Duro 200 Sohivis 47 Sunvis 921 DX-Cherokee Oil "M" (R & O) Rando Oil B Veedo Aturbrio 58 |

*Neutralization number exceeds specification limits.



TROUBLE SHOOTING

| PROBLEM: | CHECK: |
|---------------------------------------|---|
| Main drive motor won't start | Is main disconnect switch in "On" position? Does power supply have correct size of fuses? Are magnetic starters freely operating? Does machine have correct voltage available? Any loose wires at push buttons or in control panel? Is motor wired for correct voltage? Are heaters OK? Correct size? |
| Headstock will not shift or preselect | Is hydraulic pump belt OK? Check hydraulic pressure. Is governor spool free? Do gears and shafts all move freely? Check rotary valve and sleeve. Check governor pump operation. Is machine supplied with correct oil? Is oil filter clean? |
| Noise | Check end gearing adjustment and lubrication. Check bearing adjustment on shafts. Check gears for distortion or improper meshing. Look for nicks and for burrs. Is drive pulley tight? Is oil filter OK? |
| Jumping out of gear | Check bearing adjustment on shafts. Are shifter forks correctly positioned? Do gears mesh properly? |
| Vibration | Check level of machine. Check belts and drive pulley. Check for nicks and burrs on gears. Check balance of plates and chucks. Check drive motor. |
| No feed to apron | Check end gearing adjustment. Is shear pin in leadscrew intact? Check gears in quick change box. Are shifter handles in correct positions? Check for sheared key in clutch in gear box. |
| No feed from apron | Check for sheared pin in apron gears. Check for sheared key in pinion gear. Check adjustment of cross feed and longitudinal drop levers. Check worm gear and pinion. |
| Turning taper | Check level of machine. Is tool on center? Is tool sharp? Any spring in the work piece? Check headstock alignment with test bar. |
| Chatter on work piece | Is tool <u>sharp</u> and on center? Is machine level? Check gib adjustment on cross slide and compound and on carriage. Check spindle bearing adjustment. Check proper speed and feed for material and work piece size. |
| Untrue taper with taper attachment | Check taper attachment gibs. Check cross slide gib adjustment. Check taper attachment for free and smooth movement. Check cross slide for free and smooth movement. Does feed start 3/4" from work piece as it should? Check cross feed for backlash. Check tool (geometry and condition). |



TROUBLE SHOOTING

| PROBLEM: | CHECK: |
|----------------------------------|---|
| Will not take normal cut | Check drive belt slippage. Check tooling (geometry and condition). Check clutch adjustment Check electric motor amperage under load. |
| Will not hold size on work piece | Check cross slide and compound gib adjustment. Check backlash in cross feed screw and dial. Check backlash in compound. Check tool (geometry and sharpness). Any spring or distortion in work piece? Check level of machine. |
| Coolant will not operate | Check for correct voltage. Check for correct fuses in power supply. Are heaters correct size? Any loose wires at push buttons or in control panel? Correct voltage in motor wiring? Check for chips or foreign material in impeller. |
| Backlash when threading | Check thrust bearing adjustment on leadscrew. Check half-nut adjustment. |



REPAIR PARTS

The following assembly parts listings are shown in four columns. The first column contains the figure number and index numbers of the parts illustrated. The second column is composed of the Cincinnati Lathe and Tool Co. part number, followed by the part name in the third column. The last column shows the number of parts required for the assembly.

Electrical equipment parts for these machines are not shown. Contact the local representative of the electrical manufacturer for servicing and maintenance of his equipment.

You will get quicker service when ordering repair parts by adhering to the following procedure:

1. Give complete serial number of the lathe. The serial number is stamped between the front flat and vee way at the tailstock end of the bed.
2. Give amount wanted.
3. Give part number stamped on part or shown in the parts list, specifying where you obtained the number.
4. Give complete size of machine, i. e., 15" x 72" Cincinnati Hydrashift Lathe.
5. Specify each individual part required. Never use the term "complete assembly"; it always raises the question of how much of a unit to supply.
6. State how and where to ship. Do not say "ship quickest way". Be definite and state the agency desired, that is, Air Parcel Post, Special Delivery, Railway Express, Motor Freight, etc. Give complete destination.

ORDERING REPAIR PARTS

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| Figure No. | Title | Page No. |
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| RP4 | General Assembly for 22" and 26" Lathes | RP4 |
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| RP8 | Headstock - Cam Lock Spindles | RP8 |
| RP10 | Headstock - "B" and "C" Shaft Assemblies 10", 13", 15", 17" and 19" Lathes . . . | RP10 |
| RP12 | Headstock - "B", "C" and "E" Shaft Assemblies 22" and 26" Lathes | RP12 |
| RP14 | Headstock - Drive Shaft Assembly | RP14 |
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| RP38 | Carriage and Crossfeed Assembly | RP38 |
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| RP42 | Compound Rest and Tool Post Assemblies | RP42 |
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| RP46 | Motor Drive for 10", 13", 15", 17" and 19" Lathes | RP46 |
| RP47 | Motor Drive for 22" and 26" Lathes | RP47 |
| RP48 | Tailstock Assembly for 10", 13", 15", 17" and 19" Lathes | RP48 |
| RP50 | Tailstock Assembly for 22" and 26" Lathes | RP50 |
| RP52 | Coolant System and Pan for 10", 13", 15", 17" and 19" Regular Lathes | RP52 |
| RP54 | Coolant System and Pan for 22" and 26" Regular Lathes | RP54 |
| RP56 | Standard and Accessory Equipment | RP56 |
| RP58 | Standard and Accessory Equipment | RP58 |
| RP60 | Accessory Equipment | RP60 |

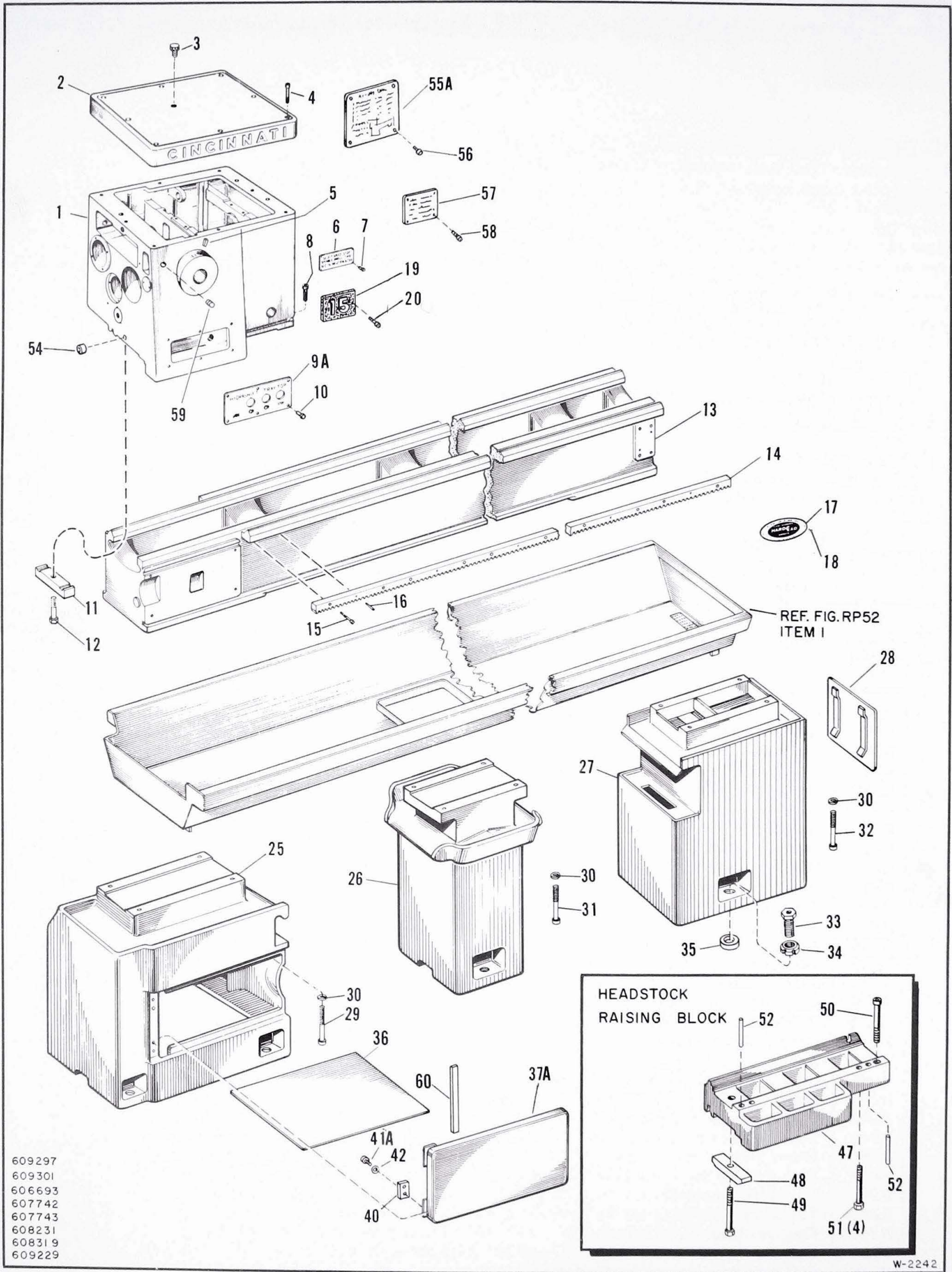


Figure RP2 General Assembly for 10", 13", 15", 17" and 19" Lathes

GENERAL ASSEMBLY FOR 10", 13", 15", 17" AND 19" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---|-----------|
| RP2-1 | | Headstock | | RP2-26 | | Leg - Center | |
| | 607561 | 10" Lathe | 1 | | 605434 | 17" and 19" Lathes, Regular (66" through 114" Center Distance) . | 1 |
| | 607629 | 10" Lathe (Super Hi-Speed) | 1 | -27 | | Leg - Tail | |
| | 607562 | 13" Lathe | 1 | | 607744 | 10", 13" and 15" Lathes | 1 |
| | 607946 | 13" Lathe (Super Hi-Speed) | 1 | | 607745 | 17" and 19" Lathes | 1 |
| | 608473 | 15" Lathe | 1 | -28 | 607746 | Cover - Access Hole | 1 |
| | 608307 | 17" Lathe | 1 | -29 | | Screw - Motor Leg | |
| | 608308 | 19" Lathe | 1 | | 3248 | 10", 13" and 15" Lathes | 4 |
| -2 | | Cover - Headstock | | | 3268 | 17" and 19" Lathes | 4 |
| | 606658 | 10", 13" and 15" Lathes | 1 | -30 | 2118 | Washer - Lock | AR |
| | 606586 | 17" and 19" Lathes | 1 | -31 | 3268 | Screw - Center Leg, 17" and 19" Lathes. | 4 |
| -3 | 60959 | Plug | 1 | -32 | | Screw - Tail Leg | |
| -4 | 3262 | Screw - Socket Head Cap | 8 | | 3321 | 10", 13" and 15" Lathes | 4 |
| -5 | 607062 | Pointer | 1 | | 1952 | 17" and 19" Lathes | 4 |
| -6 | | Plate - Instruction | | -33 | 113157 | Screw - Leveling | AR |
| | 607863 | Standard Lathe | 1 | -34 | 212169 | Nut - Lock | AR |
| | 608463 | Super Hi-Speed Lathe | 1 | -35 | 219948 | Plate - Leveling | AR |
| -7 | 3178 | Screw - Drive | 4 | -36 | | Shelf - Motor Leg | |
| -8 | | Screw - Socket Head Cap | | | 604635 | 10", 13" and 15" Lathes | 1 |
| | 3405 | 10" and 13" Lathes | 2 | | 604444 | 17" and 19" Lathes | 1 |
| | 3321 | 15" Lathe | 2 | -37A | | Door - Motor Leg | |
| | 3317 | 17" Lathe | 2 | | 609300 | 10", 13" and 15" Lathes | 1 |
| | 1925 | 19" Lathe | 2 | | 609298 | 17" and 19" Lathes | 1 |
| -9A | | Plate - Mounting | | -40 | 607790 | Shim | AR |
| | 606696 | 10", 13" and 15" Lathes | 1 | -41A | 3396 | Screw | 4 |
| | 609308 | 17" and 19" Lathes | 1 | -42 | 936 | Washer | 4 |
| -10 | | Screw - Socket Head Cap | | -47 | | Block - Raising | |
| | 2310 | 10", 13" and 15" Lathes | 6 | | 608464 | 15" Lathe | 1 |
| | 2310 | 17" and 19" Lathes | 8 | | 606325-1 | 19" Lathe, Raised 2" | 1 |
| -11 | | Clamp - Headstock | | | 606325-3 | 19" Lathe, Raised 4" | 1 |
| | 600757 | 10", 13" and 15" Lathes | 1 | -48 | 604047 | Clamp - Headstock, 19" Lathe | 1 |
| | 604047 | 17" and 19" Lathes | 1 | -49 | | Screw - Hex Head Cap | |
| -12 | | Screw - Hex Head Cap | | | 3321 | 15" Lathe | 1 |
| | 3429 | 10" and 13" Lathes | 1 | | 3302 | 2" Block, 19" Lathe | 1 |
| | 3221 | 15" Lathe | 1 | | 248932 | 4" Block, 19" Lathe | 1 |
| | 610 | 17" and 19" Lathes | 1 | -50 | | Screw - Socket Head Cap | |
| -13 | | *Bed | | | 2221 | 15" Lathe | 2 |
| | 605947 | 10", 13" and 15" Lathes | 1 | | 87338 | 2" Block, 19" Lathe | 2 |
| | 605931 | 17" and 19" Lathes | 1 | | 87340 | 4" Block, 19" Lathe | 2 |
| -14 | | *Rack | | -51 | 3251 | Screw | 4 |
| | 600035 | 10", 13" and 15" Lathes | 1 | -52 | 1857 | Pin | 2 |
| | 603421 | 17" and 19" Lathes | 1 | -54 | 608474 | Spacer, 15" Lathe Only | 1 |
| -15 | | Screw - Socket Head Cap | | -55A | 609210 | Plate - Lubrication | 1 |
| | 3227 | 10", 13" and 15" Lathes | AR | -56 | 3178 | Screw | 4 |
| | 3400 | 17" and 19" Lathes | AR | -57 | 609155 | Plate - Tool Room Lathe Only | 1 |
| -16 | | Pin - Taper | | -58 | 3178 | Screw | 4 |
| | 663 | 10", 13" and 15" Lathes | AR | -59 | 609167 | Plug - Drive | 1 |
| | 83800 | 17" and 19" Lathes | AR | -60 | | Strip, Magnetic | |
| -17 | 605012 | Plate - Flame Hardened Bed | 1 | | 609305 | 10", 13", and 15" Lathes | 1 |
| -18 | 1651 | Screw - Drive | 2 | | 609306 | 17" and 19" Lathes | 1 |
| -19 | 609154 | Plate - Name, 15" Lathe Only | 1 | | | | |
| -20 | 1651 | Screw - Flat Head | 2 | | | | |
| -25 | | Leg - Motor | | | | | |
| | 606661 | 10", 13" and 15" Lathes | 1 | | | | |
| | 606521 | 17" and 19" Lathes | 1 | | | | |

* State center distance with size of machine when ordering.

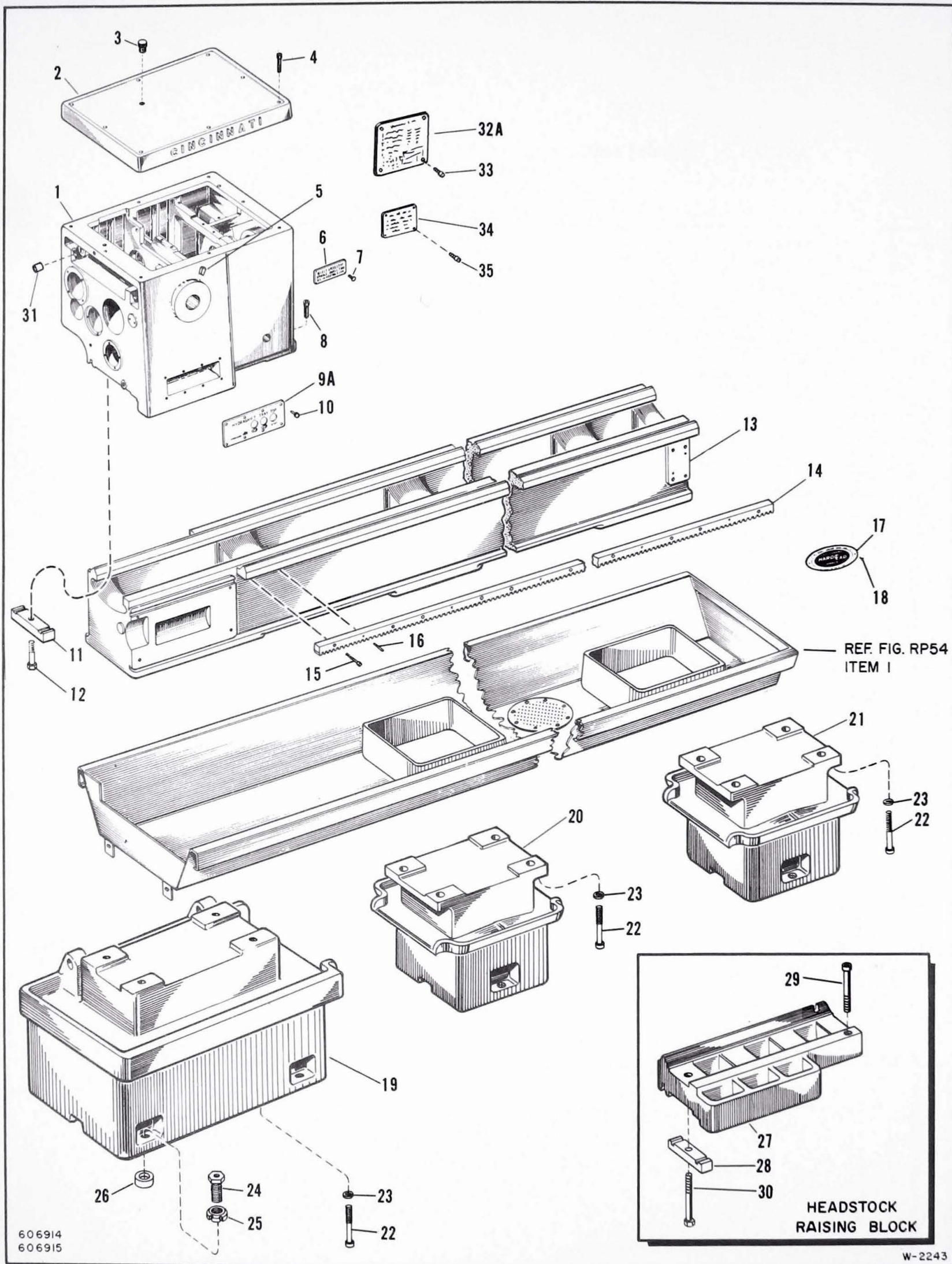


Figure RP4 General Assembly for 22" and 26" Lathes

GENERAL ASSEMBLY FOR 22" AND 26" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used | |
|----------------------|----------|---|-----------|----------------------|----------|---|------------------------------|---|
| RP4-1 | | Headstock | | RP4-21 | 608929 | Leg - Tail | 1 | |
| | 606917 | 22" Lathe | 1 | -22 | 3409 | Screw - Socket Head Cap. | AR | |
| | 606869 | 26" Lathe | 1 | -23 | 2215 | Washer - Lock | AR | |
| -2 | 606863 | Cover - Headstock | 1 | -24 | 113157 | Screw - Leveling | AR | |
| -3 | 60959 | Plug | 1 | -25 | 212169 | Nut - Lock | AR | |
| -4 | 3262 | Screw - Socket Head Cap. | 8 | -26 | 219948 | Plate - Leveling | AR | |
| -5 | 607062 | Pointer. | 1 | -27 | | Block - Raising | | |
| -6 | 607863 | Plate - Instruction | 1 | | 606326-1 | 26" Lathe, Raised 3" | 1 | |
| -7 | 3178 | Screw - Drive | 4 | | 606326-3 | 26" Lathe, Raised 5" | 1 | |
| -8 | 1925 | Screw - Socket Head Cap. | 2 | -28 | 602320 | Clamp - Headstock, 26" Lathe | 1 | |
| -9A | 609308 | Plate - Mounting | 1 | -29 | | Screw - Hex Head Cap | | |
| -10 | 3210 | Screw - Socket Head Cap. | 8 | | 83360 | 3" Block, 26" Lathe | 1 | |
| -11 | 602320 | Clamp - Headstock. | 1 | | 73797 | 5" Block, 26" Lathe | 1 | |
| -12 | 3468 | Screw - Hex Head Cap. | 1 | -30 | | Screw - Socket Head Cap | | |
| -13 | | *Bed | | | 87339 | 3" Block, 26" Lathe | 2 | |
| | 605942 | 22" and 26" Lathes, Regular | 1 | | 86927 | 5" Block, 26" Lathe | 2 | |
| -14 | 604913 | *Rack | 1 | -31 | 3551 | Plug Closure, Without Brake & Clutch (With Lever Shift Only) | 1 | |
| -15 | 3401 | Screw - Socket Head Cap. | AR | | -32 A | 609210 | Plate - Lubrication. | 1 |
| -16 | 2267 | Pin - Taper | AR | -33 | 3178 | Screw | 4 | |
| -17 | 605012 | Plate - Flame Hardened Bed | 1 | -34 | 609155 | Plate - Coolant (On Demand Only) | 1 | |
| -18 | 3178 | Screw - Drive | 2 | -35 | 3178 | Screw | 4 | |
| -19 | | Leg - Motor | | | | | | |
| | 608928 | 22" and 26" Lathes, Regular | 1 | | | | | |
| -20 | | Leg - Center | | | | | | |
| | 608929 | 22" and 26" Lathes, Regular (96" through 156" Center Distance) | 1 | | | | | |
| | | (168" through 216" Center Distance) | 2 | | | | | |

*NOTE: State center distance with size of machine when ordering.

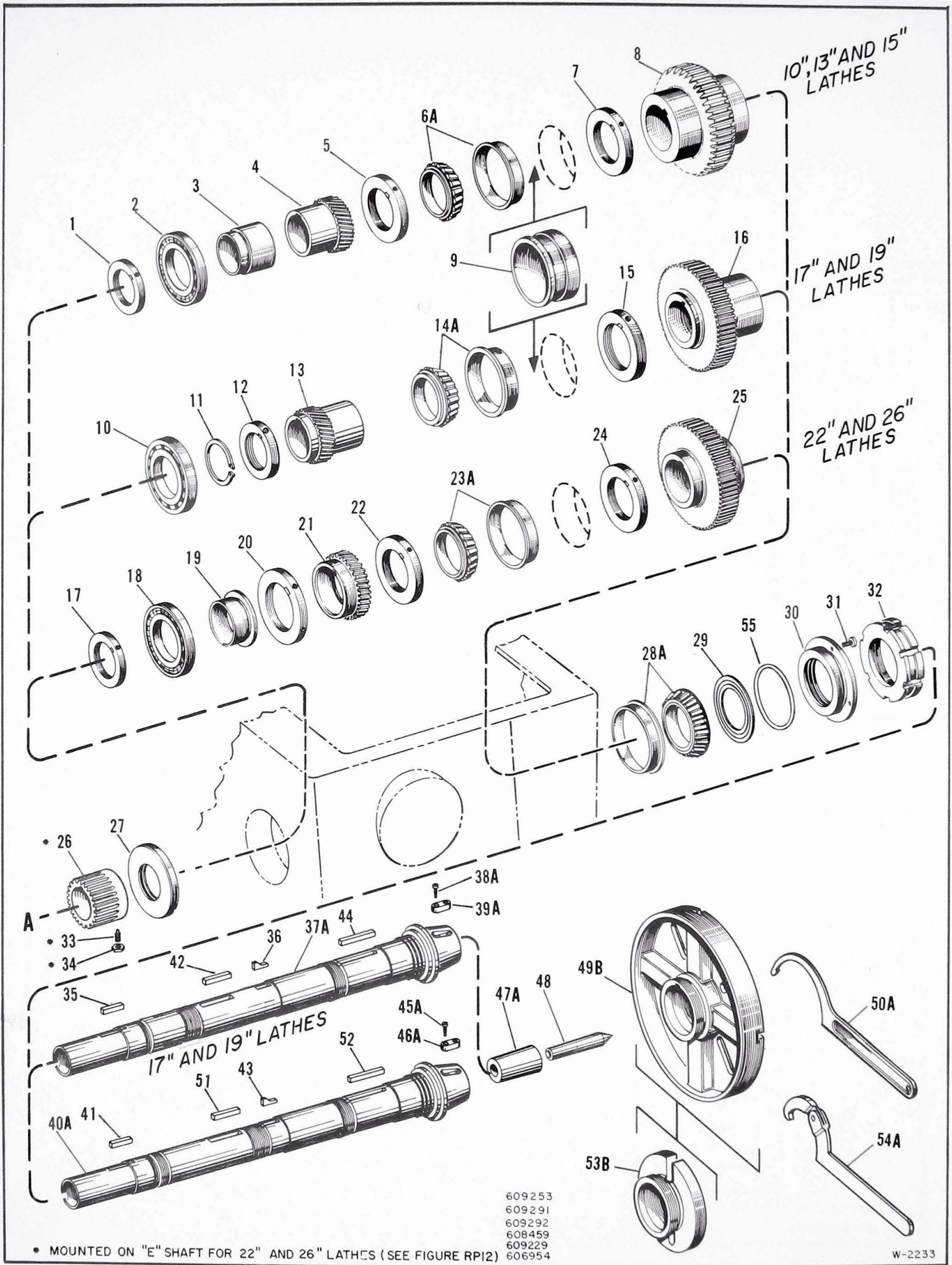


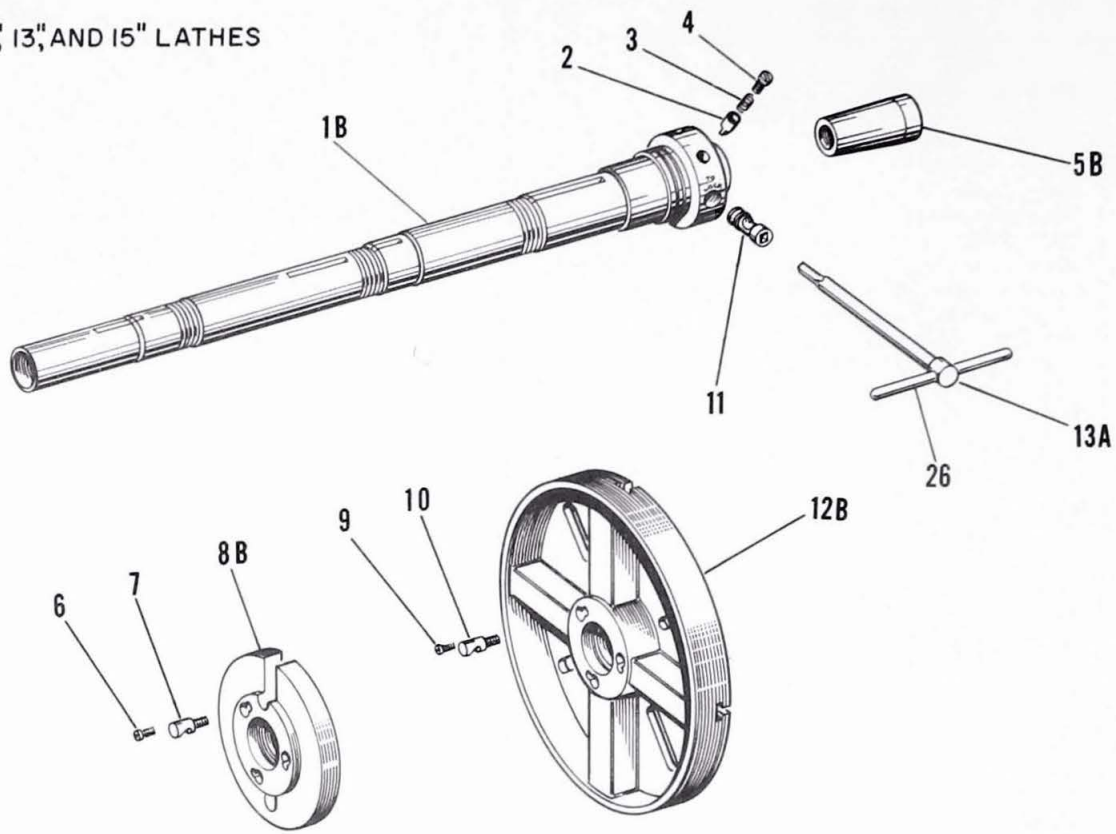
Figure RP6 Headstock Spindle Assembly ("A" Shaft)

HEADSTOCK SPINDLE ASSEMBLY ("A" SHAFT")

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---------------------------------------|-----------|
| RP6-1 | 4195 | Nut - Lock | 1 | RP6-35 | 3307 | Key - Square | 1 |
| -2 | | Bearing - Rear | | -36 | 4021 | Key - "A" Shaft | 1 |
| | 607631 | Standard and Super Hi-Speed | 1 | -37A | | Spindle - "A" Shaft | |
| -3 | 604796 | Adapter - Rear Bearing | 1 | | 608527 | L1 Taper Nose, 17" and 19" Lathes | 1 |
| -4 | 604769 | Gear - Helical | 1 | -38A | | Screw - Socket Head Cap | |
| -5 | 4197 | Nut - Lock | 1 | | 124975 | L1 Spindle | 2 |
| -6A | 604800 | Bearing - Roller | 1 | -39A | | Key - Spindle Nose | |
| -7 | 4255 | Nut - Lock | 1 | | 602268 | L1 Spindle | 1 |
| -8 | 604776 | Gear - "A" Shaft | 1 | -40A | | Spindle - "A" Shaft | |
| -9 | | Adapter - Super Hi-Speed Bearing | | | 604777 | L0 Spindle Nose, 10", 13" & 15" Lathe | 1 |
| | 607627 | 10" and 13" Lathes | 1 | | 604349 | L2 Spindle Nose, 22" and 26" Lathe | 1 |
| -10 | 606720 | Bearing - Rear | 1 | -41 | 864 | Key - Square, 10", 13" & 15" Lathes | 1 |
| -11 | 126615 | Ring - Retaining | 1 | -42 | 3450 | Key - Square | 1 |
| -12 | 4255 | Nut - Lock | 1 | -43 | | Key - "A" Shaft | |
| -13 | | Gear - Helical | | | 604812 | 10", 13" and 15" Lathes | 1 |
| | 608531 | Standard Lathe | 1 | | 604350 | 22" and 26" Lathes | 1 |
| | 608534 | Super Hi-Speed Lathe | 1 | -44 | 3450 | Key - Square | 1 |
| -14A | 604101 | Bearing - Roller | 1 | -45A | | Screw - Socket Head Cap | |
| -15 | 4259 | Nut - Lock | 1 | | 3194 | 10", 13" and 15" Lathes | 2 |
| -16 | | Gear - "A" Shaft | | | 2320 | L2 Spindle, 22" and 26" Lathes | 2 |
| | 604037 | Standard Lathe | 1 | -46A | | Key - Spindle Nose | |
| | 606723 | Super Hi-Speed Lathe | 1 | | 600203 | L0 Spindle, 10", 13" & 15" Lathes | 1 |
| -17 | 4203 | Nut - Lock | 1 | | 602650 | L2 Spindle, 22" & 26" Lathes | 1 |
| -18 | 603234 | Bearing - Rear | 1 | -47A | | Sleeve - Center | |
| -19 | 603247 | Adapter - Bearing | 1 | | 600243 | L0 Spindle, 10", 13" & 15" Lathes | 1 |
| -20 | 4263 | Nut - Lock | 1 | | 602269 | L1 Spindle, 17" and 19" Lathes | 1 |
| -21 | 603276 | Gear - Helical | 1 | | 602647 | L2 Spindle, 22" and 26" Lathes | 1 |
| -22 | 602648 | Nut - Lock | 1 | -48 | | Center | |
| -23A | 602945 | Bearing - Roller | 1 | | 600242 | 10", 13" and 15" Lathes | 1 |
| -24 | 4265 | Nut - Lock | 1 | | 601373 | 17" and 19" Lathes | 1 |
| -25 | 603268 | Gear - "A" Shaft | 1 | | 603445 | 22" and 26" Lathes | 1 |
| -26 | | Pinion - End Gearing | | -49B | | Plate - Face | |
| | 607368 | 10" and 13" Lathes | 1 | | 604759 | L0 Spindle, 10" Lathe | 1 |
| | 607821 | 10" and 13" Lathes, Super Hi-Speed | 1 | | 601758 | L0 Spindle, 13" Lathe | 1 |
| | 608471 | 15" Lathe (English) | 1 | | 600510 | L0 Spindle, 15" Lathe | 1 |
| | 609195 | 15" Lathe (Metric) | 1 | | 604364 | L1 Spindle, 17" Lathe | 1 |
| | 607388 | 17" and 19" Lathes | 1 | | 604036 | L1 Spindle, 19" Lathe | 1 |
| -27 | | Cap - Rear Bearing | | | 603993 | L0 Spindle, 19" Lathe Raised 4" | 1 |
| | 606615 | 10", 13" and 15" Lathes | 1 | | 602523 | L1 Spindle, 19" Lathe Raised 2" | 1 |
| | 606615 | 10" and 13" Lathes, Super Hi-Speed | 1 | | 604365 | L1 Spindle, 19" Lathe Raised 4" | 1 |
| | 608532 | 17" and 19" Lathes | 1 | | 604373 | L2 Spindle, 22" Lathe | 1 |
| | 603264 | 22" and 26" Lathes | 1 | | 602528 | L2 Spindle, 26" Lathe | 1 |
| -28A | | Bearing - Front Roller | | | 604942 | L2 Spindle, 26" Lathe Raised 3" | 1 |
| | 604798 | 10", 13" and 15" Lathes | 1 | | 604943 | L2 Spindle, 26" Lathe Raised 5" | 1 |
| | 604099 | 17" and 19" Lathes | 1 | -50A | | Wrench - Spanner | |
| | 603436 | 22" and 26" Lathes | 1 | | 602357 | With L1 Spindle, 17" & 19" Lathes | 1 |
| -29 | | Slinger - Oil | | | 602666 | With L2 Spindle, 22" & 26" Lathes | 1 |
| | 604795 | 10", 13" and 15" Lathes | 1 | -51 | | Key - Square | |
| | 604094 | 17" and 19" Lathes | 1 | | 3307 | 10", 13" and 15" Lathes | 1 |
| | 603249 | 22" and 26" Lathes | 1 | | 3450 | 22" and 26" Lathes | 1 |
| -30 | | Cap - Front Bearing | | -52 | | Key - Square | |
| | 604858 | L0, D1-3 and D1-4 Spindle, 10", 13" and 15" Lathes | 1 | | 965 | 10", 13" and 15" Lathes | 1 |
| | 604097 | 17" and 19" Lathes | 1 | | 602257 | 22" and 26" Lathes | 1 |
| | 603267 | 22" and 26" Lathes | 1 | -53B | | Plate - Dog | |
| -31 | 3203 | Screw - Low Socket Head Cap | 4 | | 605847 | L0 Spindle, 10", 13" and 15" Lathes | 1 |
| -32 | | Nut - Spindle | | | 604367 | L1 Spindle, 17" and 19" Lathes | 1 |
| | 604793 | With L0 Spindle | 1 | | 605676 | L2 Spindle, 22" and 26" Lathes | 1 |
| | 603277 | With L1 Spindle | 1 | -54A | | Wrench - Adjustable Spanner | |
| | 603279 | With L2 Spindle | 1 | | 600966 | L0 Spindle | 1 |
| -33 | | Screw - Dog Point Set | | -55 | | Ring - "O" | |
| | 2342 | 10", 13" and 15" Lathes | 1 | | 177373 | 10", 13" and 15" Lathes | 1 |
| | 3230 | 17" and 19" Lathes | 1 | | 161929 | 17" and 19" Lathes | 1 |
| -34 | 3472 | Nut - Hex, Thin | 1 | | 263735 | 22" and 26" Lathes | 1 |

CAM LOCK SPINDLE

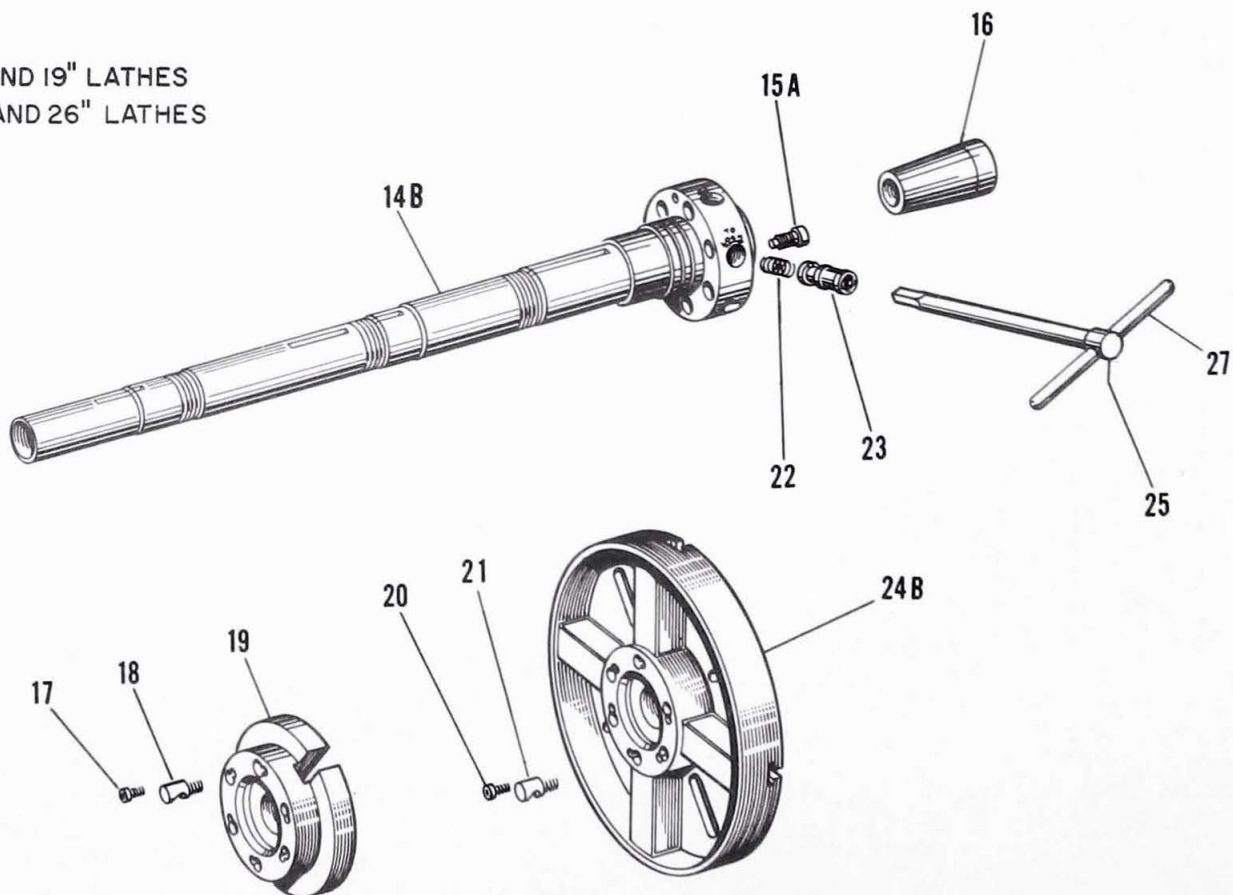
DI-3 SPINDLE }
DI-4 SPINDLE } 10", 13", AND 15" LATHES



W-2215

CAM LOCK SPINDLE

DI-6 SPINDLE — 17" AND 19" LATHES
DI-8 SPINDLE — 22" AND 26" LATHES



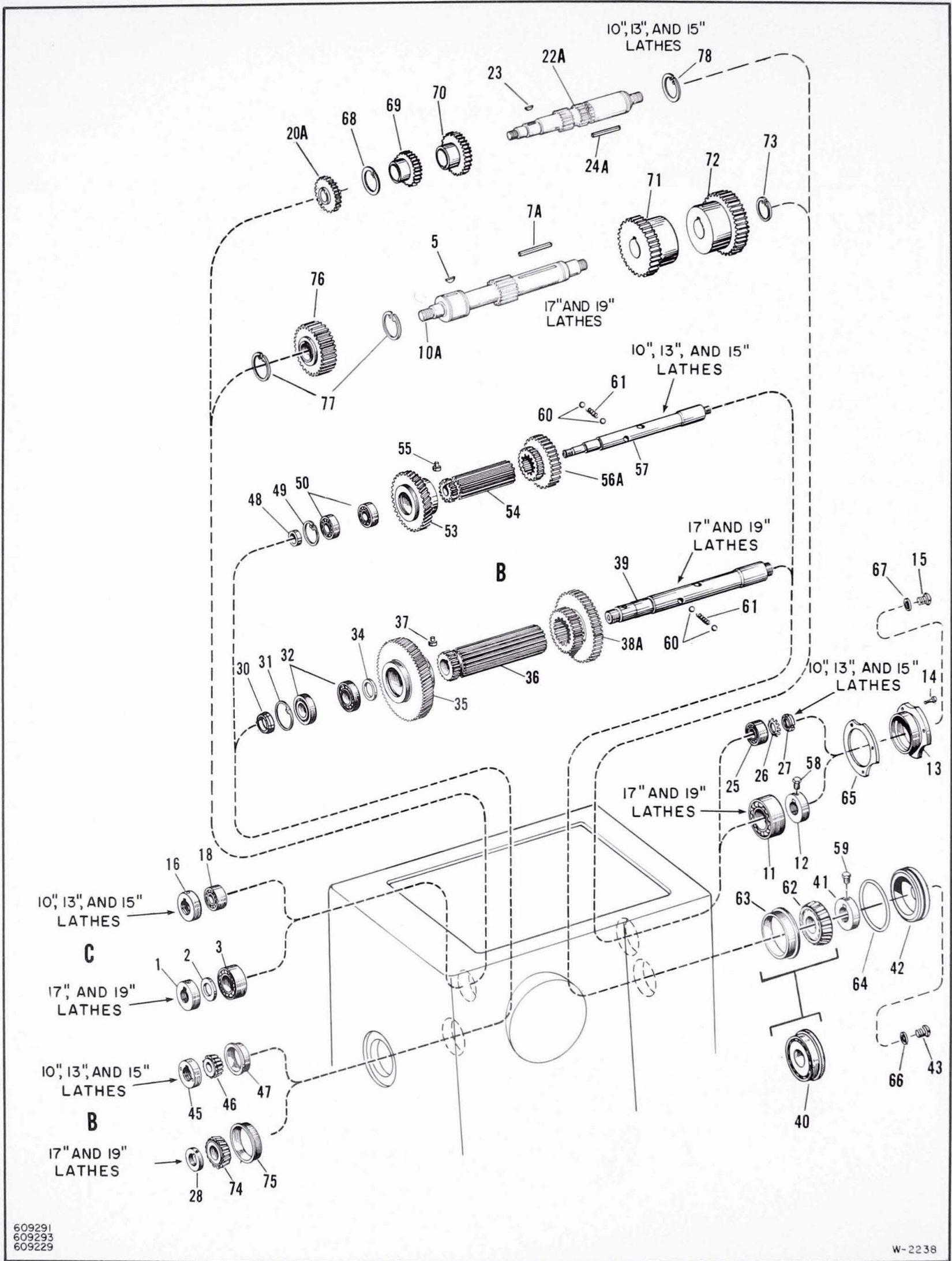
608459
609229
606954

W-2226

Figure RP8. Headstock - Cam Lock Spindles

HEADSTOCK - CAM LOCK SPINDLES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|--|-----------|
| RP8-1B | | Spindle - Cam Lock | | RP8-15A | | Screw - Spindle Nose Detent | |
| | 604780 | D1-3 Spindle | 1 | 603690 | | With D1-6 Spindle | 6 |
| | 604779 | D1-4 Spindle | 1 | 610333 | | With D1-8 Spindle | 6 |
| -2 | 604362 | Plunger | 3 | -16 | | Sleeve - Center | |
| -3 | 718 | Spring - Spindle Nose Detent | 3 | 604357 | | With D1-6 Spindle | 1 |
| -4 | | Screw - Spindle Nose Detent | | 605078 | | With D1-8 Spindle | 1 |
| | 601613 | With D1-3 Spindle | 3 | -17 | 2319 | Screw - Cam Lock | 6 |
| | 2320 | With D1-4 Spindle | 3 | -18 | | Stud - Cam Lock | |
| -5B | | Sleeve - Center | | 603693 | | With D1-6 Spindle | 6 |
| | 603960 | With D1-3 Spindle | 1 | 610332 | | With D1-8 Spindle | 6 |
| | 604283 | With D1-4 Spindle, 10", 13" and 15" Lathes | 1 | -19 | | Plate - Dog, Cam Lock | |
| -6 | 3218 | Screw - Cam Lock | 3 | 604370 | | With D1-6 Spindle | 1 |
| -7 | | Stud - Cam Lock | | 605716 | | With D1-8 Spindle | 1 |
| | 601618 | With D1-3 Spindle | 3 | -20 | 2319 | Screw - Cam Lock | 6 |
| | 601626 | With D1-4 Spindle | 3 | -21 | | Stud - Cam Lock | |
| -8B | | Plate - Dog, Cam Lock | | 603693 | | With D1-6 Spindle | 6 |
| | 605848 | With D1-3 Spindle, 10" & 13" Lathes . | 1 | 610332 | | With D1-8 Spindle | 6 |
| | 605849 | With D1-4 Spindle, 10" & 13" Lathes . | 1 | -22 | 603691 | Spring - Spindle Nose Detent | 6 |
| -9 | 3218 | Screw - Cam Lock | 3 | -23 | | Cam | |
| -10 | | Stud - Cam Lock | | 603692 | | With D1-6 Spindle | 6 |
| | 601618 | With D1-3 Spindle | 3 | 610335 | | With D1-8 Spindle | 6 |
| | 601626 | With D1-4 Spindle | 3 | -24B | | Plate - Face, Cam Lock | |
| -11 | | Cam | | 604115 | | D1-6 Spindle, 17" Lathe | 1 |
| | 601614 | With D1-3 Spindle | 3 | 604369 | | D1-6 Spindle, 19" Lathe | 1 |
| | 604363 | With D1-4 Spindle | 3 | 604359 | | D1-6 Spindle, 19" Lathe, Raised 2" . | 1 |
| -12B | | Plate - Face, Cam Lock | | 604368 | | D1-6 Spindle, 19" Lathe, Raised 4" . | 1 |
| | 601616 | D1-3 Spindle, 10" Lathe | 1 | 604374 | | D1-8 Spindle, 22" Lathe | 1 |
| | 603989 | D1-3 Spindle, 13" & 15" Lathes . . . | 1 | 604957 | | D1-8 Spindle, 22" Lathe | 1 |
| | 604761 | D1-4 Spindle, 10" Lathe | 1 | 604368 | | D1-6 Spindle, 26" Lathe | 1 |
| | 604762 | D1-4 Spindle, 13" Lathe | 1 | 610330 | | D1-8 Spindle, 26" Lathe | 1 |
| | 601624 | D1-4 Spindle, 15" Lathe | 1 | 604957 | | D1-8 Spindle, 26" Lathe, Raised 3" . | 1 |
| -13A | | Wrench - Cam Lock | | 604958 | | D1-8 Spindle, 26" Lathe, Raised 5" . | 1 |
| | 602711 | With D1-3 Spindle | 1 | -25 | | Wrench - Body, Cam Lock | |
| | 602692 | With D1-4 Spindle | 1 | 611070 | | With D1-6 Spindle | 1 |
| -14B | | Spindle - Cam Lock | | 610345 | | With D1-8 Spindle | 1 |
| | 608529 | D1-6 Spindle | 1 | -26 | | Handle - Wrench | |
| | 604361 | D1-8 Spindle | 1 | 602712 | | D1-3 Spindle | 1 |
| | | | | 602693 | | D1-4 Spindle | 1 |
| | | | | -27 | 603694 | Handle - Wrench | 1 |



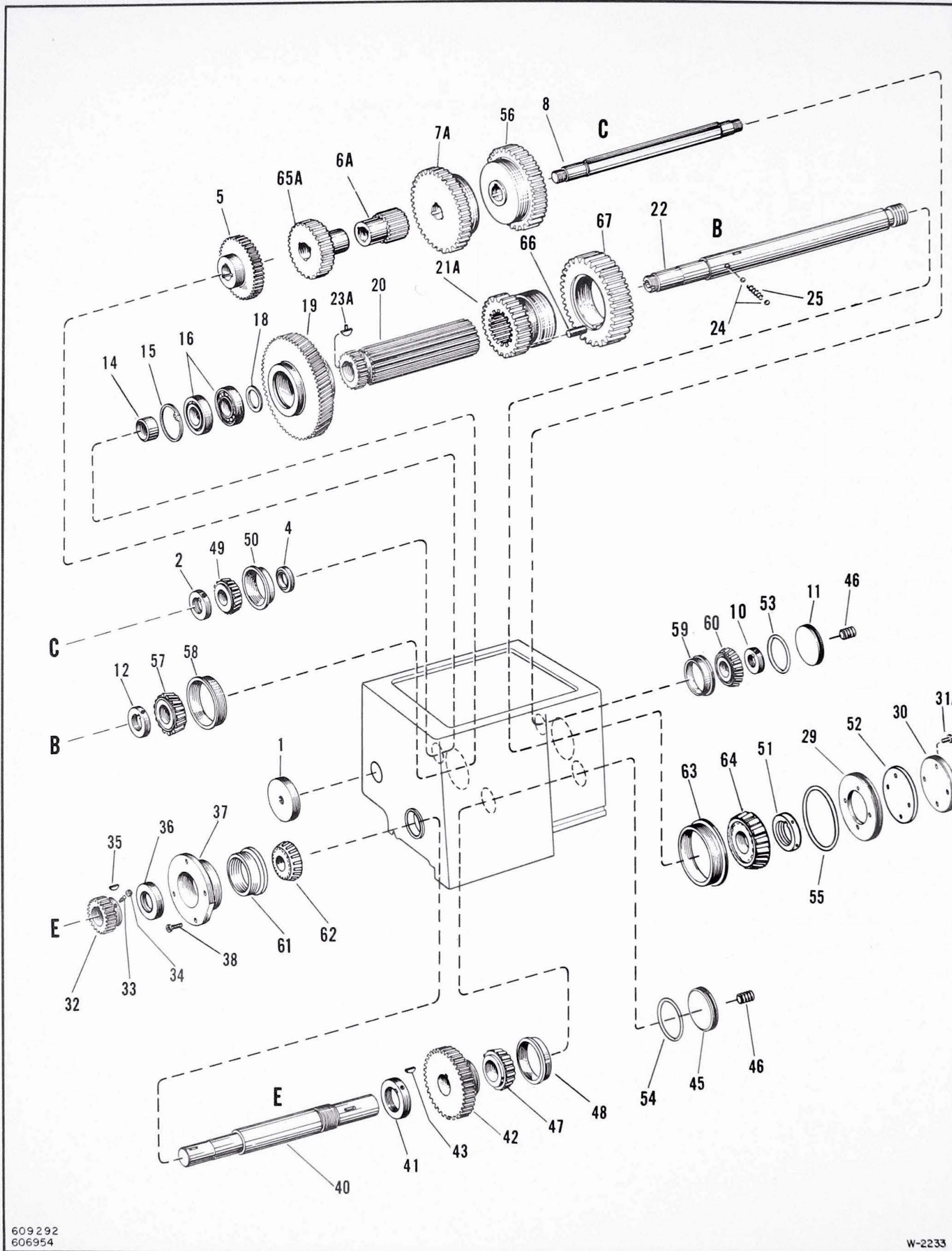
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Figure RP10 Headstock - "B" and "C" Shaft Assemblies
10", 13", 15", 17" and 19" Lathes

HEADSTOCK - "B" AND "C" SHAFT ASSEMBLIES
FOR 10", 13", 15", 17" and 19" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|---|-----------|
| RP10-1 | 4241 | Nut - Lock, 17" and 19" Lathes . . . | 1 | RP10-46 | 94233 | Cone - Roller Bearing, 10", 13" and 15" Lathes . . . | 1 |
| -2 | 235503 | Washer - Thrust, 17" and 19" Lathes . | 1 | -47 | 202877 | Cup - Roller Bearing, 10", 13" and 15" Lathes . . . | 1 |
| -3 | 45390 | Bearing - "C" Shaft, 17" and 19" Lathes | 1 | -48 | 607845 | Spacer - "B" Shaft, 10", 13" and 15" Lathes . . . | 1 |
| -5 | 1286 | Key - Hi-Pro, 17" and 19" Lathes . . . | 1 | -49 | 240206 | Ring - Retaining Internal Snap, 10", 13" and 15" Lathes . . . | 1 |
| -7A | 3446 | Key - Square, "C" Shaft, 17" and 19" Lathes . . . | 1 | -50 | 608986 | Bearing - Ball, 10", 13" and 15" Lathes | 2 |
| -10A | 609245 | Shaft - "C" | 1 | -53 | 608315 | Gear - Helical, "B" Shaft, 10", 13" and 15" Lathes . . . | 1 |
| -11 | 70656 | Bearing - "C" Shaft, 17" and 19" Lathes | 1 | -54 | 608563 | Gear - Sliding, "B" Shaft, 10", 13" and 15" Lathes . . . | 1 |
| -12 | 110202 | Nut - Lock, 17" and 19" Lathes . . . | 1 | -55 | 608569 | Key - Stem, 10", 13" and 15" Lathes . | 1 |
| -13 | | Plug - "C" Shaft | 1 | -56A | 609238 | Gear - Cluster Sliding, 10", 13" and 15" Lathes . . . | 1 |
| | 604746 | 10", 13" and 15" Lathes | 1 | -57 | 608564 | Shaft - "B", 10", 13" and 15" Lathes . | 1 |
| | 604092 | 17" and 19" Lathes | 1 | -58 | 607403 | Screw, 17" and 19" Lathes | 1 |
| -14 | 3203 | Screw - Socket Head Cap | 3 | -59 | | Screw | 1 |
| -15 | 273171 | Screw | 1 | | 607403 | 10", 13" and 15" Lathes | 1 |
| -16 | 241957 | Nut - Lock, 10", 13" and 15" Lathes . | 1 | | 606385 | 17" and 19" Lathes | 1 |
| -18 | 57267 | Bearing - "C" Shaft, 10", 13" and 15" Lathes | 1 | -60 | | Ball | 1 |
| -20A | 609247 | Gear - "C" Shaft, 10", 13" and 15" Lathes | 1 | | 30060 | 10", 13" and 15" Lathes | 2 |
| -22A | 609244 | Shaft - "C", 10", 13" and 15" Lathes . | 1 | | 13665 | 17" and 19" Lathes | 2 |
| -23 | 703074 | Key - Hi-Pro, 10", 13" and 15" Lathes . | 1 | -61 | | Spring | 1 |
| -24A | 965 | Key - Hi-Pro, 10", 13" and 15" Lathes . | 1 | | 83957 | 10", 13" and 15" Lathes | 1 |
| -25 | 604801 | Bearing - "C" Shaft, 10", 13" and 15" Lathes | 1 | | 607864 | 17" and 19" Lathes | 1 |
| -26 | 3805 | Washer - Lock, 10", 13" and 15" Lathes | 1 | -62 | 111074 | Cone - Roller Bearing, 10", 13" and 15" Lathes | 1 |
| -27 | 3806 | Nut - Lock, 10", 13" and 15" Lathes . . | 1 | -63 | 111075 | Cup - Roller Bearing, 10", 13" and 15" Lathes | 1 |
| -28 | 4241 | Nut - Lock, 17" and 19" Lathes | 1 | -64 | | Ring - "O" | 1 |
| -30 | 607847 | Spacer - "B" Shaft, 17" and 19" Lathes . | 1 | | 608927 | 10", 13" and 15" Lathes | 1 |
| -31 | 238243 | Ring - Retaining Internal Snap, 17" and 19" Lathes | 1 | | 244088 | 17" and 19" Lathes | 1 |
| -32 | 608987 | Bearing - Ball, 17" and 19" Lathes . . . | 2 | -65 | | Gasket | 1 |
| -34 | 607846 | Spacer - "B" Shaft, 17" and 19" Lathes . | 1 | | 608841 | 10", 13" and 15" Lathes | 1 |
| -35 | | Gear - Helical, "B" Shaft 17" and 19" Lathes (Standard) | 1 | | 608837 | 17" and 19" Lathes | 1 |
| -36 | 608565 | Gear - Sliding, "B" Shaft, 17" and 19" Lathes | 1 | -66 | 289606 | Washer | 1 |
| -37 | 608570 | Key - Stem, 17" and 19" Lathes | 1 | -67 | 289606 | Washer | 1 |
| -38A | 609241 | Gear - Cluster Sliding, "B" Shaft 17" and 19" Lathes | 1 | -68 | 252208 | Ring - Retaining | 1 |
| -39 | 609063 | Shaft - "B", 17" and 19" Lathes | 1 | -69 | 609236 | Gear - Cluster, "C" Shaft, 10", 13" and 15" Lathes | 1 |
| -40 | | Bearing - Roller 17" and 19" Lathes | 1 | -70 | 609237 | Gear - Cluster, "C" Shaft, 10", 13" and 15" Lathes | 1 |
| -41 | | Nut - Lock 10", 13" and 15" Lathes | 1 | -71 | 609235 | Gear "C" Shaft | 1 |
| | 110202 | 17" and 19" Lathes | 1 | -72 | 609234 | Gear "C" Shaft, 17" and 19" Lathes . . | 1 |
| -42 | | Plug - "B" Shaft | 1 | -73 | 122094 | Ring - Retaining | 1 |
| | 604789 | 10", 13" and 15" Lathes | 1 | -74 | 70115 | Cone - Bearing | 1 |
| | 604111 | 17" and 19" Lathes | 1 | -75 | 306636 | Cup - Bearing | 1 |
| -43 | 273171 | Screw | 1 | -76 | 609248 | Gear - "C" Shaft, 17" and 19" Lathes . | 1 |
| -45 | 110202 | Nut - Adjusting Lock, 10", 13" and 15" Lathes | 1 | -77 | 113677 | Ring - Retaining | 2 |
| | | | | -78 | 252208 | Ring - Retaining | 1 |



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Figure RP12 Headstock - "B", "C" and "E" Shaft Assemblies
22" and 26" Lathes Only

HEADSTOCK - "B", "C" and "E" SHAFT ASSEMBLIES
22" and 26" Lathes Only

| Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|
| RP12-1 | 603271 | Plug - "C" Shaft, Rear | 1 |
| -2 | 4243 | Nut - Lock | 1 |
| -4 | 603246 | Collar - "C" Shaft | 1 |
| -5A | 609251 | Gear - "C" Shaft | 1 |
| -6A | 609230 | Gear - "C" Shaft | 1 |
| -7A | 609232 | Gear - Cluster, "C" Shaft | 1 |
| -8 | 603262 | Shaft - "C" | 1 |
| -10 | 4243 | Nut - Lock | 1 |
| -11 | 603243 | Plug - "C" Shaft, Front | 1 |
| -12 | 4245 | Nut - Lock | 1 |
| -14 | 608316 | Spacer - "B" Shaft | 1 |
| -15 | 603282 | Ring - Snap | 1 |
| -16 | 608988 | Bearing - "B" Shaft | 2 |
| -18 | 603270 | Spacer - "B" Shaft | 1 |
| -19 | 608317 | Gear - Helical, "B" Shaft | 1 |
| -20 | 609272 | Gear - Sliding, "B" Shaft | 1 |
| -21A | 609242 | Gear - Cluster Sliding, "B" Shaft | 1 |
| -22 | 609061 | Shaft - "B" | 1 |
| -23A | 184036 | Key - Stem | 1 |
| -24 | 13665 | Ball | 2 |
| -25 | 65916 | Spring | 1 |
| -29 | 609074 | Plug - Outer, "B" Shaft | 1 |
| -30 | 609076 | Plug - Inner, "B" Shaft | 1 |
| -31A | 2368 | Screw - Button Head | 4 |
| -32 | 603363 | Pinion - End Gearing, "E" Shaft | 1 |
| -33 | 3230 | Screw - Hex Socket Dog Point Set | 1 |
| -34 | 3472 | Nut - Hex, Thin | 1 |
| -35 | 3497 | Key - Woodruff | 1 |
| -36 | 603241 | Seal - Oil, "E" Shaft | 1 |
| -37 | 603362 | Cap - "E" Shaft | 1 |
| -38 | 3396 | Screw - Socket Head Cap | 4 |
| -40 | 603365 | Shaft - "E" | 1 |
| -41 | 4249 | Nut - Lock | 1 |
| -42 | 603364 | Gear - Helical, "E" Shaft | 1 |
| -43 | 3497 | Key - Woodruff | 1 |
| -45 | 603243 | Plug - "E" Shaft | 1 |
| -46 | 2357 | Screw - Socket Head Set | 2 |
| -47 | 59687 | Cone - Roller Bearing | 1 |
| -48 | 212669 | Cup - Roller Bearing | 1 |
| -49 | 113409 | Cone - Roller Bearing | 1 |
| -50 | 62199 | Cup - Roller Bearing | 1 |
| -51 | 4247 | Nut - Lock | 1 |
| -52 | 609075 | Gasket - "B" Shaft | 1 |
| -53 | 244088 | Ring - "O" | 1 |
| -54 | 244088 | Ring - "O" | 1 |
| -55 | 244057 | Ring - "O" | 1 |
| -56 | 609233 | Gear - "C" Shaft | 1 |
| -57 | 308518 | Cone - Bearing | 1 |
| -58 | 306635 | Cup - Bearing | 1 |
| -59 | 306634 | Cup - Bearing | 1 |
| -60 | 308513 | Cone - Bearing | 1 |
| -61 | 306662 | Cup - Bearing | 1 |
| -62 | 308559 | Cone - Bearing | 1 |
| -63 | 306620 | Cup - Bearing | 1 |
| -64 | 308524 | Cone - Bearing | 1 |
| -65A | 609231 | Gear - "C" Shaft | 1 |
| -66 | 3369 | Pin | 2 |
| -67 | 609243 | Gear - "C" Shaft | 1 |

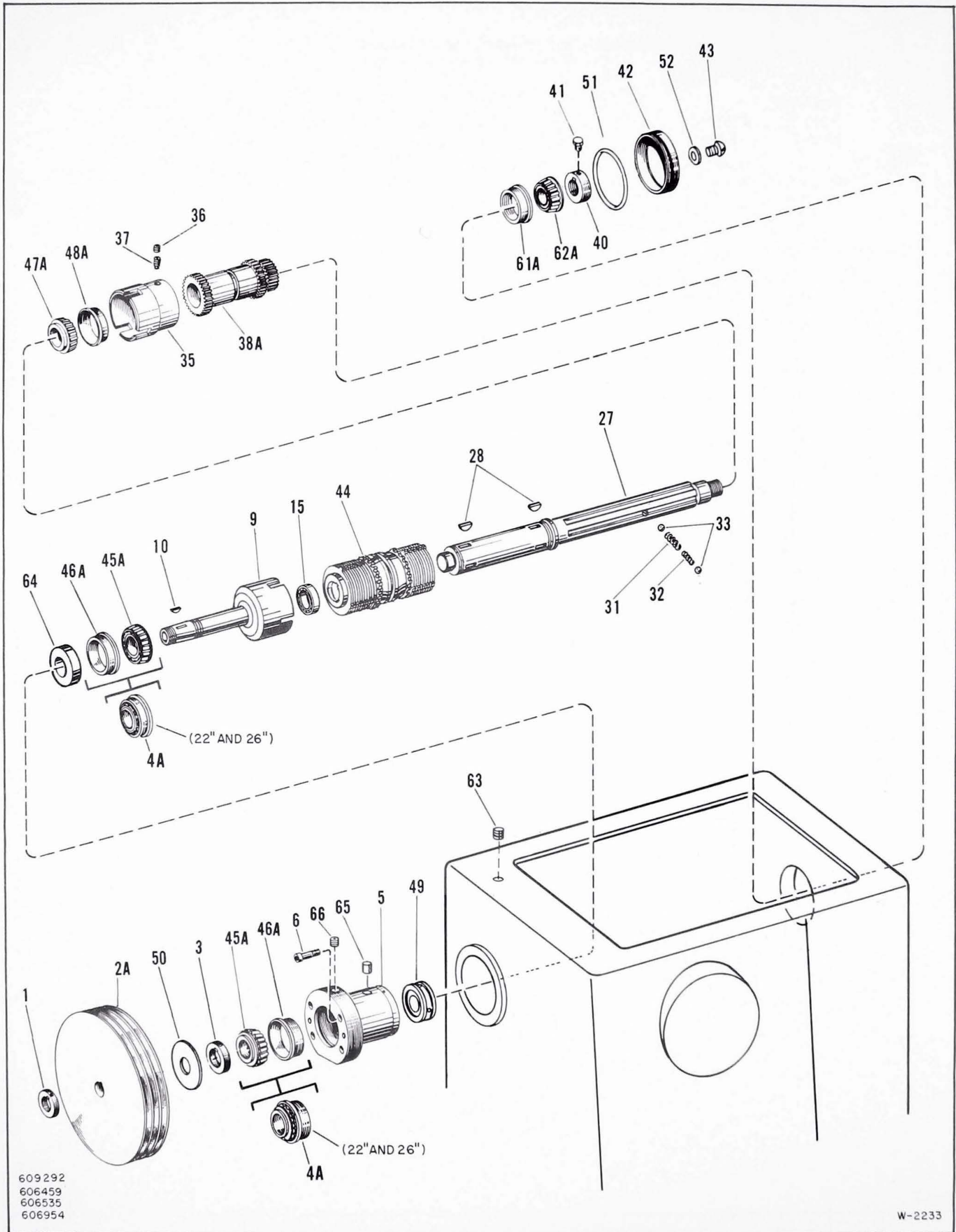


Figure RP14 Headstock - Drive Shaft Assembly

HEADSTOCK - DRIVE SHAFT ASSEMBLY (Concluded)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|--|-----------|
| RP14-1 | | Nut - Lock | | RP14-38A | | Gear - Cluster, "D" Shaft | |
| | 248690 | 10", 13" and 15" Lathes | 1 | 608457 | | 10", 13" and 15" Lathes | 1 |
| | 4241 | 17" and 19" Lathes | 1 | 609246 | | 17" and 19" Lathes | 1 |
| | 4242 | 22" and 26" Lathes | 1 | 603258 | | 22" and 26" Lathes | 1 |
| -2A | | Pulley - Drive Shaft | | -40 | | Nut - Lock | |
| | 605557 | 10", 13" and 15" Lathes | 1 | 110202 | | 10", 13" and 15" Lathes | 1 |
| | 608586 | 17" and 19" Lathes | 1 | 110202 | | 17" and 19" Lathes | 1 |
| | 609362 | 22" and 26" Lathes | 1 | 4241 | | 22" and 26" Lathes | 1 |
| -3 | | Nut - Lock | | -41 | | Screw | |
| | 4186 | 10", 13" and 15" Lathes | 1 | 607403 | | 10", 13" and 15" Lathes | 1 |
| | 4245 | 17" and 19" Lathes | 1 | 607403 | | 17" and 19" Lathes | 1 |
| | 4248 | 22" and 26" Lathes | 1 | -42 | | Plug - "D" Shaft | 1 |
| -4A | 603235 | Bearing - Roller, Cone and Cup, 22" and 26" Lathes | 2 | 604789 | | 10", 13" and 15" Lathes | 1 |
| -5 | | Cap - Drive Shaft Bearing, "D" Shaft | | 604093 | | 17" and 19" Lathes | 1 |
| | 608816 | 10", 13" and 15" Lathes | 1 | 603243 | | 22" and 26" Lathes | 1 |
| | 608795 | 17" and 19" Lathes | 1 | -43 | | Screw | |
| | 603902 | 22" and 26" Lathes | 1 | 273171 | | 10", 13" and 15" Lathes | 1 |
| -6 | | Screw - Socket Head Cap | | 273171 | | 17" and 19" Lathes | 1 |
| | 3400 | 10", 13" and 15" Lathes | 4 | 2357 | | 22" and 26" Lathes | 1 |
| | 3401 | 17" and 19" Lathes | 4 | -44 | | Pullmore Clutch Assembly | |
| | 3401 | 22" and 26" Lathes | 4 | 604788 | | 10", 13" and 15" Lathes | 1 |
| -9 | | Shaft - Drive Clutch | | 608914 | | 10" and 13" Super Hi-Speed Lathes | 1 |
| | 607817 | 10", 13" and 15" Lathes | 1 | 608437 | | 17" and 19" Lathes | 1 |
| | 608815 | 10" and 13" Super Hi-Speed Lathes | 1 | 608438 | | 22" and 26" Lathes | 1 |
| | 607818 | 17" and 19" Lathes | 1 | -45A | | Cone - Bearing | |
| | 607859 | 22" and 26" Lathes | 1 | 108345 | | 10", 13" and 15" Lathes | 2 |
| -10 | | Key | | 308486 | | 17" and 19" Lathes | 2 |
| | 3280 | 10", 13" and 15" Lathes | 1 | -46A | | Cup - Bearing | |
| | 1286 | 17" and 19" Lathes | 1 | 202877 | | 10", 13" and 15" Lathes | 2 |
| | 605990 | 22" and 26" Lathes | 1 | 306648 | | 17" and 19" Lathes | 2 |
| -15 | | Bearing - "D" Shaft | | -47A | | Cone - Bearing | |
| | 145767 | 10", 13" and 15" Lathes | 1 | 72197 | | 10", 13" and 15" Lathes | 1 |
| | 604089 | 17" and 19" Lathes | 1 | 139420 | | 17" and 19" Lathes | 1 |
| | 702200 | 22" and 26" Lathes | 1 | 308517 | | 22" and 26" Lathes | 1 |
| -27 | | Shaft - "D" Drive | | -48A | | Cup - Bearing | |
| | 608455 | 10", 13" and 15" Lathes | 1 | 108004 | | 10", 13" and 15" Lathes | 1 |
| | 608814 | 10" and 13" Super Hi-Speed Lathes | 1 | 139421 | | 17" and 19" Lathes | 1 |
| | 604032 | 17" and 19" Lathes | 1 | 306634 | | 22" and 26" Lathes | 1 |
| | 603260 | 22" and 26" Lathes | 1 | -49 | | Ring - Collector | |
| -31 | | Spring | | 608817 | | 10" and 13" Super Hi-Speed Lathes | 1 |
| | 83957 | 10", 13" and 15" Lathes | 1 | -50 | | Slinger | |
| | 607864 | 17" and 19" Lathes | 1 | 608818 | | 10" and 13" Super Hi-Speed Lathes | 1 |
| | 718 | 22" and 26" Lathes | 1 | -51 | | Ring - "O" | |
| -32 | 607864 | Spring (22" and 26" Lathes) | 1 | 608927 | | 10", 13" and 15" Lathes | 1 |
| -33 | | Ball | | 251924 | | 17" and 19" Lathes | 1 |
| | 30060 | 10", 13" and 15" Lathes | 2 | 244088 | | 22" and 26" Lathes | 1 |
| | 13665 | 17" and 19" Lathes | 2 | -61A | | Cup - Bearing | |
| | 13665 | 22" and 26" Lathes | 2 | 72208 | | 10", 13" and 15" Lathes | 1 |
| -35 | | Cup - Clutch | | 306630 | | 17" and 19" Lathes | 1 |
| | 604786 | 10", 13" and 15" Lathes | 1 | 306634 | | 22" and 26" Lathes | 1 |
| | 604096 | 17" and 19" Lathes | 1 | -62A | | Cone - Bearing | |
| | 603283 | 22" and 26" Lathes | 1 | 72209 | | 10", 13" and 15" Lathes | 1 |
| -36 | | Screw - Hex Socket Set | | 308514 | | 17" and 19" Lathes | 1 |
| | 2356 | 10", 13" and 15" Lathes | 1 | 308915 | | 22" and 26" Lathes | 1 |
| | 2357 | 17" and 19" Lathes | 1 | -63 | | Plug | |
| | 2248 | 22" and 26" Lathes | 1 | 1844 | | 10", 13" and 15" Lathes | 2 |
| -37 | | Screw - Hex Socket Dog Point Set | | 1844 | | 17" and 19" Lathes | 3 |
| | 3236 | 10", 13" and 15" Lathes | 1 | 608552 | | Spacer (22" and 26" Lathes) | 1 |
| | 3242 | 17" and 19" Lathes | 1 | 2345 | | Screw - Set, (22" and 26" Lathes) | 1 |
| | 3241 | 22" and 26" Lathes | 1 | 2248 | | Screw - Set, (10", 13" & 15" Lathes) | 1 |

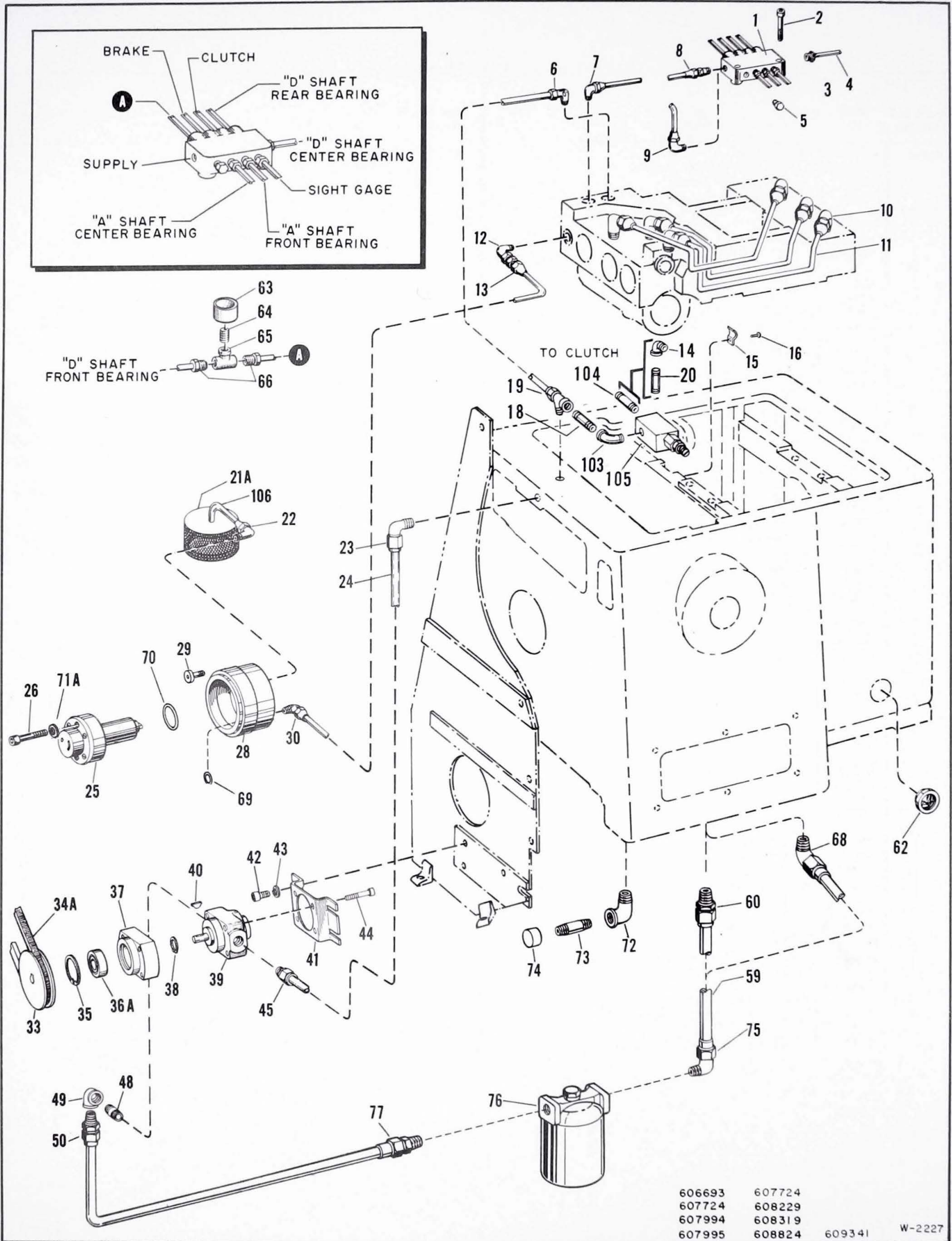


Figure RP16 Headstock Lubrication System for 10", 13", 15", 17" and 19" Lathes

HEADSTOCK LUBRICATION SYSTEM FOR 10", 13", 15", 17" AND 19" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---|-----------|
| RP16-1 | 605200 | Junction | 1 | RP16-39 | 607726 | Pump - Hydraulic | 1 |
| -2 | 3227 | Screw - Socket Head Cap | 1 | -40 | 3279 | Key - Hi-Pro | 1 |
| -3 | | Fitting - Compression | | -41 | | Bracket - Pump Mounting | |
| | 115595 | Bushing | 8 | | 608115 | 10", 13" and 15" Lathes | 1 |
| | 214304 | Sleeve | 8 | | 608114 | 17" and 19" Lathes | 1 |
| -4 | | Tubing - Supply and Lubrication Lines | | -42 | 3399 | Screw - Socket Head Cap | 3 |
| | 608070 | 10", 13" and 15" Lathes | AR | -43 | 2135 | Washer - Lock | 3 |
| | 608071 | 17" and 19" Lathes | AR | -44 | 2324 | Screw - Socket Head Cap | 4 |
| -5 | 115596 | Plug | 1 | -45 | 130961 | Connector - Male | 1 |
| -6 | 251631 | Elbow - Male | 1 | -48 | 30434 | Nipple | 1 |
| -7 | 4013 | Elbow - Compression, 10", 13" and 15" Lathes | 1 | -49 | 24024 | Elbow | 1 |
| -8 | 70382 | Fitting - Compression, 10", 13" and 15" Lathes | 1 | -50 | 135087 | Connector - Male | 1 |
| -9 | 4013 | Elbow - Compression, 17" and 19" Lathes | 1 | -59 | 607986 | Tubing - Oil | AR |
| -10 | 4013 | Elbow - Compression, 10", 13" and 15" Lathes | 6 | -60 | 130963 | Connector - Male, 17" and 19" Lathes | 1 |
| -11 | | Tubing - Hydraulic Shifter Block | | -62 | 605278 | Gage - Oil Sight | 1 |
| | 607899 | 10", 13" and 15" Lathes | AR | -63 | 607802 | Cup - Oil | 1 |
| | 608806 | 17" and 19" Lathes | AR | -64 | 14006 | Nipple | 1 |
| -12 | 30803 | Elbow - Street, 10", 13" and 15" Lathes | 1 | -65 | 607801 | Junction - Three Way | 1 |
| -13 | 70382 | Fitting - Compression, 10", 13" and 15" Lathes | 1 | -66 | | Fittings - Bijur Compression | |
| -14 | 12838 | Elbow - 1/4" Pipe (17" and 19" Lathes) | 1 | | 115595 | Bushing | 2 |
| -15 | 220002 | Clip - Tubing | 3 | | 214304 | Sleeve | 2 |
| -16 | 2209 | Screw - Drive | 3 | -68 | 159253 | Elbow - 45°, 10", 13" and 15" Lathes | 1 |
| -18 | 147831 | Nipple | 1 | -69 | 243780 | Ring - "O" | 2 |
| -19 | 607919 | Fitting - Tee | 1 | -70 | 246357 | Ring - "O" | 1 |
| -20 | 10048 | Nipple - 1/4" Pipe (17" and 19" Lathes) | 1 | -71A | 205678 | Washer | 4 |
| -21A | 609368 | Strainer | 1 | -72 | 38853 | Elbow - Street | 1 |
| -22 | 4013 | Elbow - Compression | 1 | -73 | 32064 | Nipple | 1 |
| -23 | 130962 | Elbow - Male | 1 | -74 | 203939 | Cap | 1 |
| -24 | | Tubing - Oil | | -75 | 130964 | Elbow - Male | 1 |
| | 607917 | 10", 13" and 15" Lathes | AR | -76 | 608597 | Filter | 1 |
| | 607833 | 17" and 19" Lathes | AR | -77 | 130963 | Connector - Male | 1 |
| -25 | | Pump | | -78 | 70383 | Fitting | 1 |
| | 608311 | 10", 13" and 15" Lathes | 1 | -79 | 58435 | Tee | 1 |
| | 608548 | 17" and 19" Lathes | 1 | -80 | 14006 | Nipple | 2 |
| -26 | | Screw - Socket Head Cap | | -81 | 608361 | Valve - Needle | 1 |
| | 229485 | 10", 13" and 15" Lathes | 4 | -82 | 30803 | Elbow - Street | 2 |
| | 244021 | 17" and 19" Lathes | 4 | -83 | 608794 | Valve - Check | 1 |
| -28 | | Housing - Pump | | -84 | 4013 | Elbow | 2 |
| | 608312 | 10", 13" and 15" Lathes | 1 | -89 | 76644 | Plug | 1 |
| | 608549 | 17" and 19" Lathes | 1 | -90 | 58435 | Tee | 1 |
| -29 | 4168 | Screw - 10", 13" and 15" Lathes | 2 | -91 | 14006 | Nipple | 1 |
| -30 | 4013 | Elbow - Compression | 1 | -92 | 70382 | Fitting | 1 |
| -33 | 608309 | Pulley - Pump | 1 | -93 | 58197 | Reducer | 2 |
| -34A | | Belt - "V" | | -94 | 609078 | Valve - Check | 1 |
| | 607992 | 10", 13" and 15" Lathes | 1 | -95 | 70382 | Fitting | 2 |
| | 608333 | 17" and 19" Lathes (5 hp) | 1 | -96 | 608819 | Nut - Short Style | 1 |
| | 609311 | 17" and 19" Lathes (7-1/2 hp) | 1 | -97 | 130957 | Fitting - Straight (Less Compression Nut) | 1 |
| -35 | 607730 | Ring - Truarc | 1 | -98 | 30803 | Elbow - Street | 1 |
| -36A | 131810 | Bearing - Ball | 1 | -99 | 14006 | Nipple | 1 |
| -37 | 607719 | Housing - Pump Bearing | 1 | -100 | 4063 | Coupling | 1 |
| -38 | 125924 | Ring - Truarc | 1 | -101 | 4013 | Elbow | 2 |
| | | | | -102 | 251631 | Elbow - Flare | 1 |
| | | | | -103 | 12838 | Elbow - Street | 1 |
| | | | | -104 | 10048 | Nipple, 10", 13" and 15" Lathes | 1 |
| | | | | -105 | 608906 | Valve - Relief | 1 |
| | | | | -106 | 609747 | Tubing | 1 |

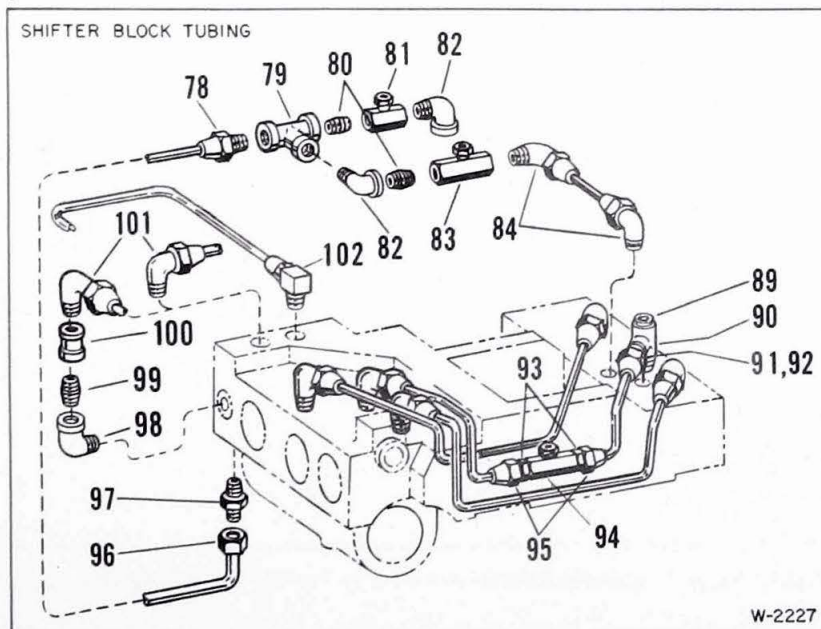


Figure RP17 Shifter Block Tubing - 17" and 19" Lathes

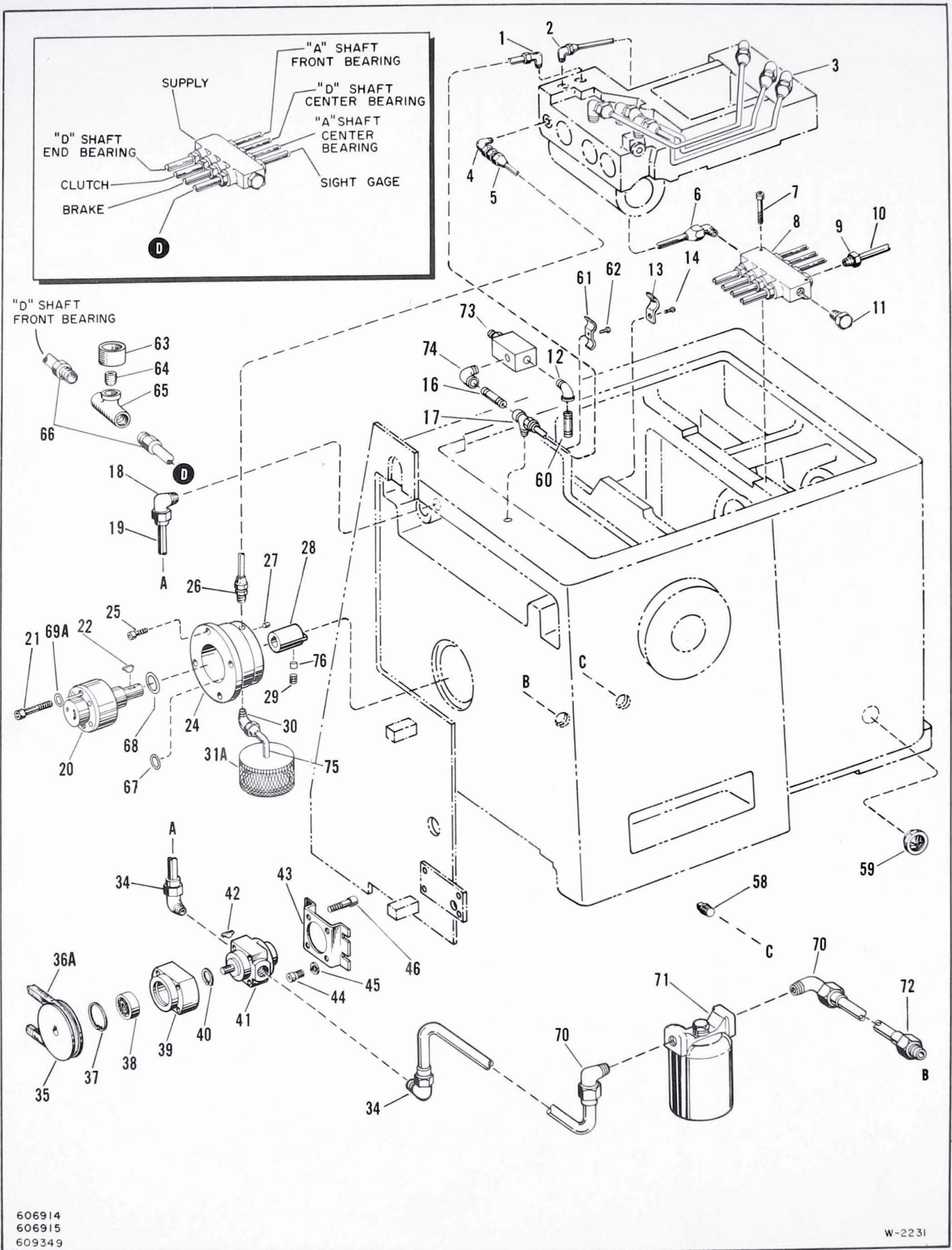
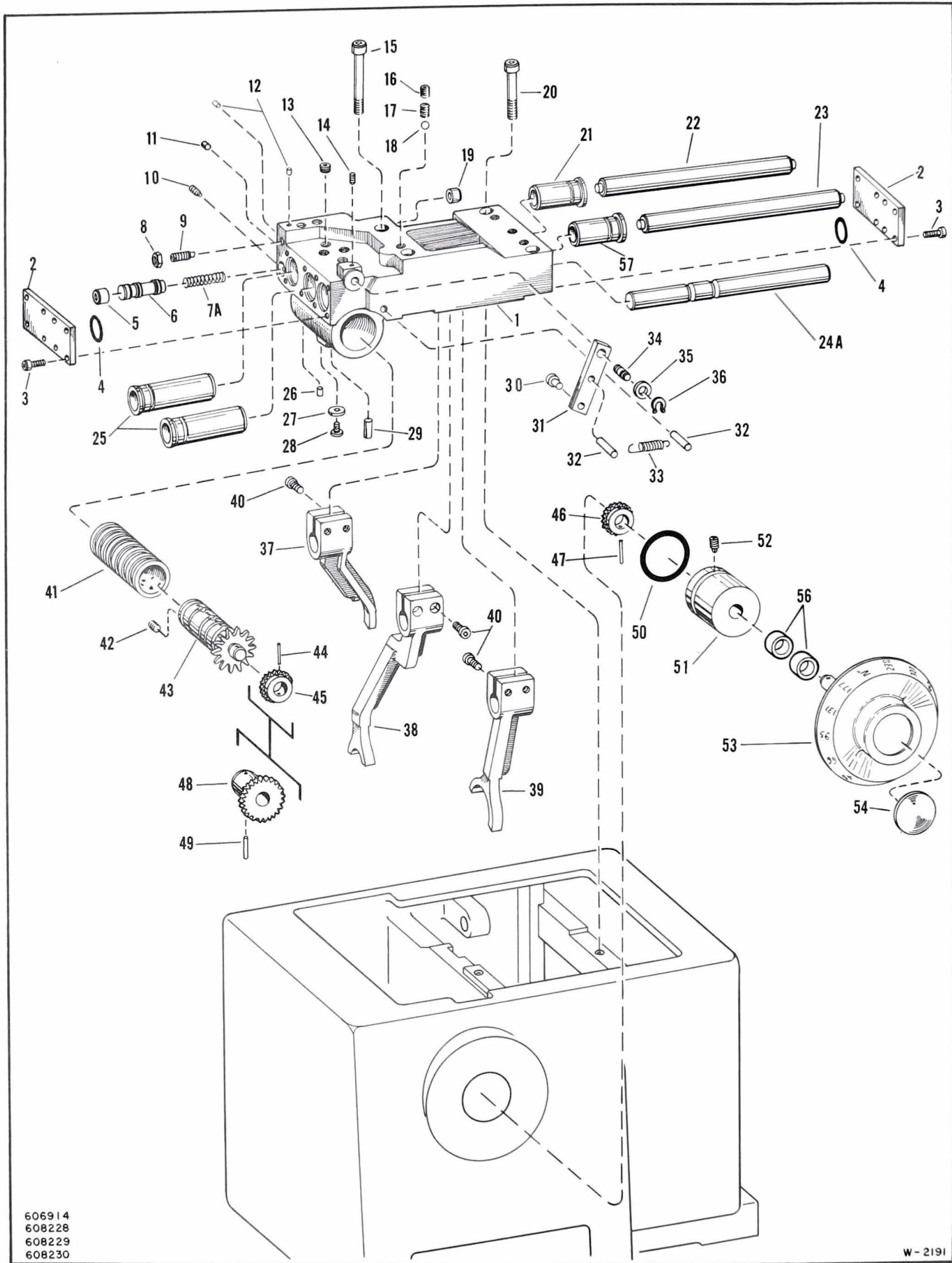


Figure RP18 Headstock Lubrication System for 22'' and 26'' Lathes

HEADSTOCK LUBRICATION SYSTEM FOR 22" AND 26" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|----------------------------------|-----------|----------------------|----------|-----------------------------------|-----------|
| RP18-1 | 251631 | Elbow - Male. | 1 | RP18-35 | 608309 | Pulley - Pump | 1 |
| -2 | 4013 | Elbow - Compression | 1 | -36A | 606713 | Belt - "V". | 1 |
| -3 | 4013 | Elbow - Compression | 6 | -37 | 607730 | Ring - Truarc | 2 |
| -4 | 30803 | Elbow - Street | 1 | -38 | 701137 | Bearing - Ball | 1 |
| -5 | 70382 | Fitting - Compression. | 1 | -39 | 607719 | Housing - Pump Bearing | 1 |
| -6 | 4013 | Elbow - Compression | 1 | -40 | 125924 | Ring - Truarc | 1 |
| -7 | 3227 | Screw - Socket Head Cap. | 2 | -41 | 607726 | Pump - Hydraulic | 1 |
| -8 | 605200 | Junction | 1 | -42 | 3279 | Key - Hi-Pro. | 1 |
| -9 | | Fitting - Compression | | -43 | 608114 | Bracket - Pump Mounting | 1 |
| | 115595 | Bushing | 8 | -44 | 3399 | Screw - Socket Head Cap. | 3 |
| | 214304 | Sleeve | 8 | -45 | 2135 | Washer - Lock | 3 |
| -10 | 607545 | Tubing - Oil | AR | -46 | 2324 | Screw - Socket Head Cap. | 4 |
| -11 | 115596 | Plug. | 1 | -58 | 4119 | Plug - Pipe | 1 |
| -12 | 12838 | Elbow - 1/4" Pipe | 1 | -59 | 605278 | Gage - Oil Sight. | 1 |
| -13 | 220002 | Clip - Tubing. | 1 | -60 | 10048 | Nipple - 1/4" Pipe | 1 |
| -14 | 2209 | Screw - Drive | 1 | -61 | 126912 | Clip - Tubing. | 3 |
| -16 | 10048 | Nipple | 1 | -62 | 2209 | Screw - Drive | 3 |
| -17 | 607919 | Fitting - Tee. | 1 | -63 | 607802 | Cup - Oil | 1 |
| -18 | 130962 | Elbow - Male. | 1 | -64 | 14006 | Nipple | 1 |
| -19 | 607911 | Tubing - Oil | AR | -65 | 607801 | Junction - Three Way | 1 |
| -20 | 606633 | Pump - Governor | 1 | -66 | | Fittings - Bijur Compression | |
| -21 | 244021 | Screw - Socket Head Cap. | 4 | | 115595 | Bushing | 2 |
| -22 | 3279 | Key - Hi-Pro. | 1 | | 214304 | Sleeve | 2 |
| -24 | 607548 | Housing - Pump. | 1 | -67 | 243780 | Ring - "O" | 2 |
| -25 | 3396 | Screw - Socket Head Cap. | 4 | -68 | 246357 | Ring - "O" | 1 |
| -26 | 70382 | Fitting - Compression. | 1 | -69A | 209678 | Washer. | 4 |
| -27 | 1844 | Plug - Brass. | 2 | -70 | 133091 | Elbow - Male. | 2 |
| -28 | 607860 | Coupling | 1 | -71 | 608597 | Filter | 1 |
| -29 | 170510 | Screw - Set | 1 | -72 | 133089 | Connector - Male | 1 |
| -30 | 4013 | Elbow - Compression | 1 | -73 | 608906 | Valve - Relief | 1 |
| -31A | 609368 | Strainer | 1 | -74 | 12838 | Elbow - Street | 1 |
| -34 | 130962 | Elbow - Male. | 2 | -75 | 607947 | Tubing | 1 |
| | | | | -76 | 282982 | Plug - Nylon | 1 |



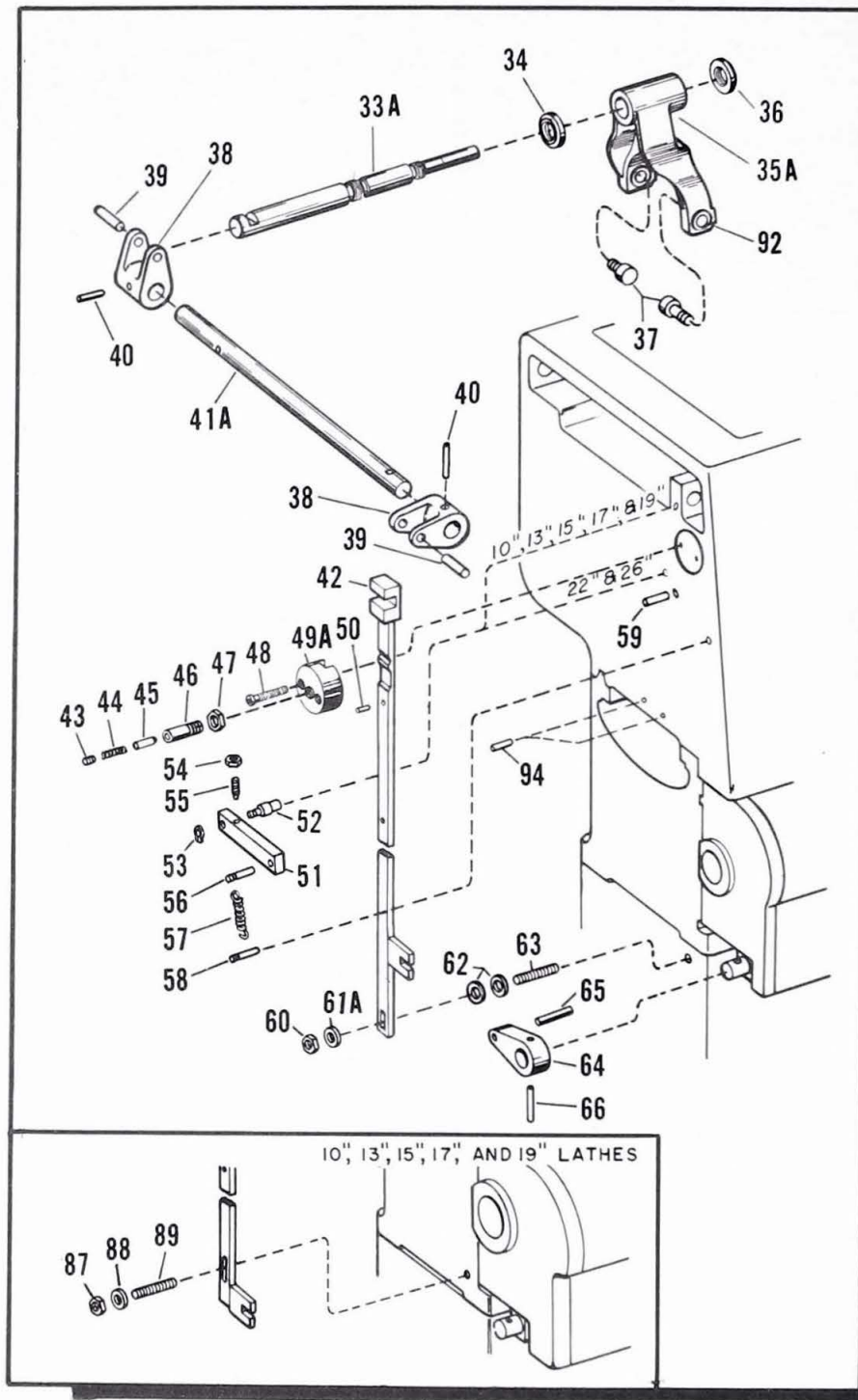
606914
 608228
 608229
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W-2191

Figure RP20 Hydraulic Shifter Assembly

HYDRAULIC SHIFTER ASSEMBLY

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|---|-----------|
| RP20-1 | | Housing - Shifter | | RP20-35 | 3441 | Washer | 1 |
| | 607923 | 10", 13" and 15" Lathes | 1 | -36 | 123820 | Ring - Truarc | 1 |
| | 607924 | 17" and 19" Lathes | 1 | -37 | | Shifter - "D" Shaft Gear | |
| | 607924 | 22" and 26" Lathes | 1 | | 606656 | 10", 13" and 15" Lathes | 1 |
| -2 | 606594 | Cover - Housing | 2 | | 606592 | 17" and 19" Lathes | 1 |
| -3 | 124975 | Screw - Socket Head Cap | 16 | | 608873 | 22" and 26" Lathes | 1 |
| -4 | 169447 | Ring - "O" | 6 | -38 | | Shifter - "B" Shaft Inner Gear | |
| -5 | 607684 | Plug - Interlock | 1 | | 606655 | 10", 13" and 15" Lathes | 1 |
| -6 | 607693 | Plunger - Interlock | 1 | | 606591 | 17" and 19" Lathes | 1 |
| -7A | | Spring | | | 606872 | 22" and 26" Lathes | 1 |
| | 230035 | 10", 13", 15", 17" and 19" Lathes | 1 | -39 | | Shifter - "B" Shaft Outer Gear | |
| | 3936 | 22" and 26" Lathes | 1 | | 606657 | 10", 13" and 15" Lathes | 1 |
| | 3936 | 17" and 19" Lathes (Low Range) | 1 | | 606590 | 17" and 19" Lathes | 1 |
| -8 | 3473 | Nut - Hex | 1 | | 606871 | 22" and 26" Lathes | 1 |
| -9 | 1624 | Screw - Metering | 1 | -40 | 606636 | Screw - Socket Head Cap | 6 |
| -10 | 3228 | Screw - Dog Point Set | 1 | -41 | 606588 | Bushing - Rotary Valve | 1 |
| -11 | 1844 | Plug - Brass | 1 | -42 | 2316 | Screw | 1 |
| -12 | 2008 | Plug - Brass | 2 | -43 | 606589 | Spool - Rotary Valve | 1 |
| -13 | 76644 | Plug - Pipe | 3 | -44 | 143319 | Pin - Roll, 10", 13" and 15" Lathes | 1 |
| -14 | 171552 | Screw - Hex Socket Set | 1 | -45 | 606650 | Gear - 10", 13" and 15" Lathes | 1 |
| -15 | 2302 | Screw - Socket Head Cap | 2 | -46 | | Gear | |
| -16 | 606444 | Screw - Hex Socket Set | 1 | | 606650 | 10", 13" and 15" Lathes | 1 |
| -17 | 606617 | Spring | 1 | | 606611 | 17" and 19" Lathes | 1 |
| -18 | 13665 | Ball | 1 | | 606868 | 22" and 26" Lathes | 1 |
| -19 | 606613 | Plug - Delay Valve | 1 | -47 | | Pin - Roll | |
| -20 | 3262 | Screw - Socket Head Cap | 2 | | 143319 | 10", 13" and 15" Lathes | 1 |
| -21 | | Bushing - Piston | | | 167492 | 17" and 19" Lathes | 1 |
| | 606648 | 10", 13" and 15" Lathes | 1 | | 167492 | 22" and 26" Lathes | 1 |
| | 606598 | 17" and 19" Lathes | 1 | -48 | 606868 | Gear - 22" and 26" Lathes | 1 |
| | 606598 | 22" and 26" Lathes | 1 | -49 | 167492 | Pin - Roll, 22" and 26" Lathes | 1 |
| -22 | | Piston - "D" Shaft Gear Shifter | | -50 | 141682 | Ring - "O" | 1 |
| | 607940 | 10", 13" and 15" Lathes | 1 | -51 | 606932 | Bushing - Speed Selector | 1 |
| | 607942 | 17" and 19" Lathes | 1 | -52 | 3233 | Screw - Dog Point Set | 1 |
| | 607942 | 22" and 26" Lathes | 1 | -53 | | Dial - Speed Selector | |
| -23 | | Piston - "B" Shaft Inner Gear | | | 608846 | 10", 13" and 15" Lathe (Standard Range) | 1 |
| | 607941 | 10", 13" and 15" Lathes | 1 | | 608847 | 10", 13" and 15" Lathe (High Range) | 1 |
| | 607944 | 17" and 19" Lathes | 1 | | 608848 | 10" and 13" Super Hi-Speed | 1 |
| | 607943 | 22" and 26" Lathes | 1 | | 608851 | 17" and 19" Lathes (Low Range) | 1 |
| -24A | | Piston - "B" Shaft Outer Gear | | | 608849 | 17" and 19" Lathes (Standard Range) | 1 |
| | 606653 | 10", 13" and 15" Lathes | 1 | | 608850 | 17" and 19" Lathes (High Range) | 1 |
| | 606595 | 17" and 19" Lathes | 1 | | 608854 | 22" and 26" Lathes (Low Range) | 1 |
| | 606595 | 22" and 26" Lathes | 1 | | 608852 | 22" and 26" Lathes (Standard Range) | 1 |
| -25 | | Bushing - Piston | | | 608853 | 22" and 26" Lathes (High Range) | 1 |
| | 607920 | 10", 13" and 15" Lathes | 2 | -54 | 606940 | Plate | 1 |
| | 606598 | 17" and 19" Lathes | 2 | -56 | 603702 | Bearing - Oilite | 2 |
| | 606598 | 22" and 26" Lathes | 2 | -57 | | Bushing - Piston | |
| -26 | 1844 | Plug - Brass | 1 | | 606648 | 10", 13" and 15" Lathes | 1 |
| -27 | 936 | Washer - Flat | 1 | | 609077 | 17" and 19" Lathes | 1 |
| -28 | 2368 | Screw | 1 | | 606598 | 22" and 26" Lathes | 1 |
| -29 | 606612 | Pin | 1 | | | | |
| -30 | 604834 | Roller - Detent | 1 | | | | |
| -31 | 606607 | Arm - Detent | 1 | | | | |
| -32 | 606609 | Pin | 2 | | | | |
| -33 | 203544 | Spring | 1 | | | | |
| -34 | 606608 | Stud - Detent | 1 | | | | |



606668
 606918
 609350

W-2231

Figure RP22. Mechanical Control Assembly

MECHANICAL CONTROL ASSEMBLY

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|---|-----------|
| RP22-33A | | Shaft - Clutch Shifter | | RP22-45 | 605295 | Plunger - Detent | 1 |
| | 608639 | 10", 13", and 15" Lathes | 1 | -46 | 605296 | Body - Plunger | 1 |
| | 608825 | 17" and 19" Lathes | 1 | -47 | 3475 | Nut - Hex | 1 |
| | 606928 | 22" and 26" Lathes | 1 | -48 | 3266 | Screw - Socket Head Cap | 2 |
| -34 | 3808 | Nut - Positive Lock | 1 | -49A | 604721 | Guide - Control Rod | 1 |
| -35A | | Shifter - Clutch, "D" Shaft | | -50 | 3431 | Pin | 1 |
| | 604837 | 10", 13" and 15" Lathes | 1 | -51 | 607705 | Bar - Pressure | 1 |
| | 604835 | 17" and 19" Lathes | 1 | -52 | 607706 | Pin - Pivot | 1 |
| | 604836 | 22" and 26" Lathes | 1 | -53 | 244098 | Ring - Retaining. | 1 |
| -36 | 3806 | Nut - Positive Lock | 1 | -54 | 3472 | Nut - Hex | 1 |
| -37 | | Roller - Clutch Shifter | | -55 | | Screw - Hex Socket Dog Point | |
| | 604834 | 10", 13" and 15" Lathes | 2 | | 3231 | 10", 13", 15", 17" and 19" Lathes | 1 |
| | 604833 | 17", 19", 22" and 26" Lathes | 2 | | 3165 | 22" and 26" Lathes | 1 |
| -38 | 606925 | Lever - Shaft | 2 | -56 | 606609 | Pin - Spring | 1 |
| -39 | 148045 | Pin - Roll | 2 | -57 | | Spring | |
| -40 | | Pin | | | 607836 | 10", 13" and 15" Lathes | 1 |
| | 111408 | 10", 13" and 15" Lathes | 2 | | 608593 | 17", 19", 22" and 26" Lathes | 1 |
| | 148454 | 17", 19", 22" and 26" Lathes | 2 | -58 | 98825 | Pin | 1 |
| -41A | | Shaft - Lever | | -59 | 1384 | Pin - 22" and 26" Lathes | 1 |
| | 607084 | 10", 13", 15", 17" and 19" Lathes | 1 | -60 | 702723 | Nut - 22" and 26" Lathes | 1 |
| | 606927 | 22" and 26" Lathes | 1 | -61A | 122184 | Washer - 22" and 26" Lathes | 1 |
| -42 | | Rod - Connecting | | -62 | 239914 | Washer, 22" and 26" Lathes. | 2 |
| | 608640 | 10" Lathe | 1 | -63 | 67494 | Stud - Holder | 1 |
| | 608641 | 13" Lathe | 1 | -64 | 602296 | Lever - Control Rod | 1 |
| | 608642 | 15" Lathe | 1 | -65 | 1384 | Pin - Straight | 1 |
| | 608726 | 17" Lathe | 1 | -66 | 151338 | Pin - Roll | 1 |
| | 608727 | 19" Lathe | 1 | -87 | 702723 | Nut - Lock, 10", 13", 15", 17" & 19" Lathe | 1 |
| | 608730 | 19" Lathe, Raised 2" | 1 | -88 | 936 | Washer - Plain, 10", 13" 15", 17" and | |
| | 608728 | 19" Lathe, Raised 4" | 1 | | | 19" Lathes | 1 |
| | 609181 | 22" Lathe | 1 | -89 | 67494 | Stud - Holder, 10", 13", 15", 17" and | |
| | 609182 | 26" Lathe | 1 | | | 19" Lathes | 1 |
| | 609185 | 26" Lathe, Raised 3" | 1 | -92 | | Bushing | |
| | 609187 | 26" Lathe, Raised 5" | 1 | | 609151 | 10", 13", 15" Lathes | 2 |
| -43 | 1911 | Screw - Socket Head Set | 1 | | 609162 | 17", 19", 22" and 26" Lathes | 2 |
| -44 | 259175 | Spring | 1 | -94 | 148717 | Pin - Roll | 2 |

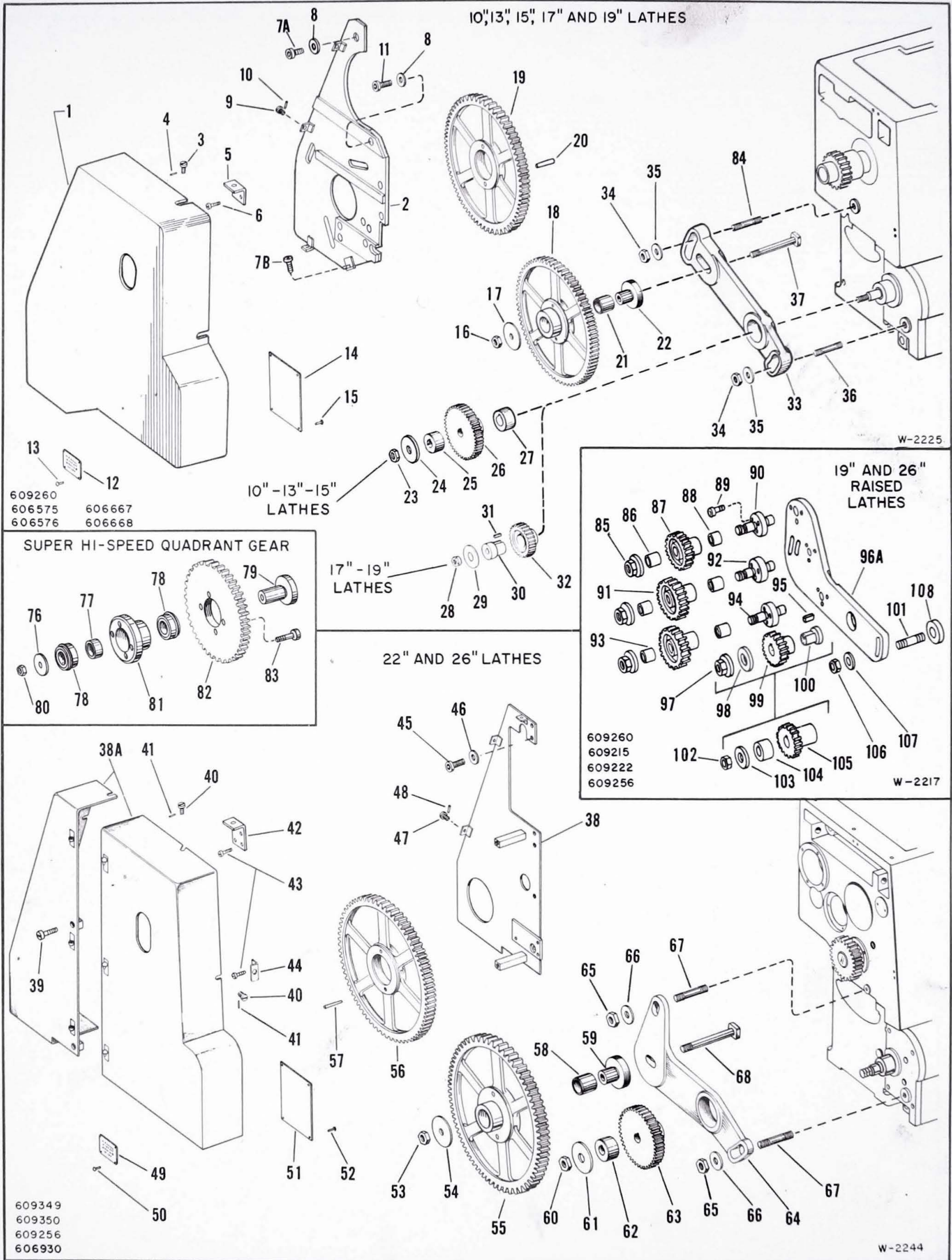


Figure RP24 End Gearing Assembly

END GEARING ASSEMBLY

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|--|-----------|
| RP24-1 | | Cover - End | | RP24-30 | 607389 | Spacer - Change Gear | 1 |
| | 606679 | 10", 13" and 15" Lathes | 1 | -31 | 2212 | Key | 1 |
| | 607820 | 10", 13" Lathes Super Hi-Speed | 1 | -32 | | Gear - Drive Shaft | |
| | 608470 | 15" Lathe | 1 | | 607392 | 48T, 17" and 19" Lathes (English) | 1 |
| | 606520 | 17" and 19" Lathes | 1 | | 607393 | 64T, 17" and 19" Lathes (Metric) | 1 |
| | 607446 | 19" Lathes, Raised. | 1 | | 607396 | 54T, 17" and 19" Lathes (27 Threads per Inch) | 1 |
| -2 | | Plate - End Cover | | | 607394 | 60T, 17" and 19" Lathes (7-1/2, 15, 30 and 60 Threads per Inch) | 1 |
| | 607945 | 10" Lathes | 1 | -33 | | Plate - Quadrant | |
| | 606678 | 13" Lathes | 1 | | 604673 | 10", 13" and 15" Lathes | 1 |
| | 608472 | 15" Lathes | 1 | | 604383 | 17" and 19" Lathes | 1 |
| | 606523 | 17" and 19" Lathes | 1 | | 607740 | 17" and 19" Lathes, Super Hi-Speed | 1 |
| | 607443 | 19" Lathes, Raised. | 1 | -34 | | Nut | |
| -3 | 603344 | Screw - Cover | 2 | | 3473 | Hex, 10", 13" and 15" Lathes | 2 |
| -4 | 3539 | Pin - Straight | 2 | | 76639 | Collar, 17 and 19" Lathes | 2 |
| -5 | 603327 | Bracket - Angle | 2 | -35 | 3441 | Washer - Flat, 10", 13" and 15" Lathes Only | 2 |
| -6 | 2370 | Screw | 4 | -36 | | Stud | |
| -7A | | Screw - Socket Head Cap | | | 600198 | 10", 13" and 15" Lathes | 1 |
| | 3399 | 10", 13" and 15" Lathes | 3 | | 604143 | 17" and 19" Lathes | 2 |
| | 3399 | 17" and 19" Lathes | 4 | -37 | | Bolt - Tee | |
| | 3210 | 19" Lathe, Raised | 4 | | 600619 | 10", 13" and 15" Lathes | 1 |
| -7B | 3399 | Screw - Socket Head Cap | 1 | -38A | 603502 | 17" and 19" Lathes | 1 |
| -8 | 1934 | Washer - Flat | 4 | | 609360 | Cover - End | |
| -9 | 603344 | Screw - Cover | 3 | | 609361 | 22" and 26" Lathes | 1 |
| -10 | 3539 | Pin - Straight | 3 | -39 | 3422 | 26" Lathes, Raised | 1 |
| -11 | 3266 | Screw - Socket Head Cap, 10" 13" and 15" Lathes | 1 | -40 | 603344 | Screw - Fillister Head Cap | 2 |
| -12 | 607577 | Plate - Instruction | 1 | -41 | 3539 | Screw - Cover | 2 |
| -13 | 3178 | Screw - Drive | 4 | -42 | 606921 | Pin - Straight | 2 |
| -14 | | Plate - End Gearing | | -43 | 2371 | Bracket - Angle | 1 |
| | 603887 | 10" and 13" Lathes, English to Metric Conversion | 1 | -44 | 603327 | Screw | 4 |
| | 609211 | 15" Lathes, English to Metric Conversion | 1 | -45 | 2375 | Bracket - Angle | 1 |
| | 609262 | 10" and 13" Lathes, 7-1/2, 15, 27, 30, 60 and 120 Threads per Inch | 1 | -46 | 1934 | Screw - Socket Head Cap | 4 |
| | 601591 | 10", 13", 15", 17" and 19" Lathes, English to Metric Conversion | 1 | -47 | 603069 | Washer - Flat | 4 |
| | 601487 | 17" and 19" Lathes, 27 Threads per Inch | 1 | -48 | 600478 | Screw - Cover | 3 |
| | 609263 | 17" and 19" Lathes, 7-1/2, 15, 30 and 60 Threads per Inch. | 1 | -49 | | Pin - Straight | 3 |
| -15 | 3178 | Screw - Drive | 4 | -50 | 607577 | Plate - Instruction | |
| -16 | | Nut - Hex | | -51 | 3178 | English to Metric Conversion | 1 |
| | 3478 | 10", 13" and 15" Lathes | 1 | -52 | 602941 | Screw - Drive | 4 |
| | 607390 | 17" and 19" Lathes. | 1 | -53 | 3178 | Plate - End Gearing | 1 |
| -17 | | Washer - Flat | | -54 | 124706 | Screw - Drive | 4 |
| | 600695 | 10", 13", and 15" Lathes | 1 | -55 | 602018 | Nut - Hex | 1 |
| | 607386 | 17" and 19" Lathes | 1 | -56 | 603353 | Washer | 1 |
| -18 | | Gear - Quadrant | | -57 | 603354 | Gear - Quadrant, 127T | 1 |
| | 607366 | 10", 13" and 15" Lathes | 1 | -58 | | Gear - Quadrant, 120T (Metric Conversion) | 1 |
| | 607398 | 17" and 19" Lathes | 1 | -59 | 1857 | Pin - Taper, With Metric Conversion | 2 |
| -19 | | Gear - Quadrant, 127T (Metric Conversion) | | -60 | 602021 | Bearing - Plain | 1 |
| | 607367 | 10", 13" and 15" Lathes | 1 | -61 | 602016 | Bushing | 1 |
| | 607399 | 17" and 19" Lathes | 1 | -62 | 124706 | Nut - Hex | 1 |
| -20 | | Pin - Taper, With Metric Conversion | | -63 | 602018 | Washer - Flat | 1 |
| | 3304 | 10", 13" and 15" Lathes | 2 | -64 | 602024 | Spacer | 1 |
| | 642 | 17" and 19" Lathes | 2 | | | Gear - Drive | |
| -21 | | Bearing - Plain | | | 602023 | 48T, 22" and 26" Lathes, English | 1 |
| | 600693 | 10", 13" and 15" Lathes | 1 | | 602022 | 64T, 22" and 26" Lathes, Metric | 1 |
| | 607387 | 17" and 19" Lathes | 1 | | | Plate - Quadrant | |
| -22 | | Bushing - Quadrant Gear | | | 603366 | 22" Lathes | 1 |
| | 601513 | 10", 13" and 15" Lathes, With 54T Drive Shaft Gear | 1 | -65 | 603356 | 26" Lathes | 1 |
| | 607401 | 10", 13" and 15" Lathes, With 72T and 81T Drive Shaft Gears | 1 | -66 | 3480 | Nut - Hex | 2 |
| | 607401 | 15" Lathes | 1 | -67 | 1040 | Washer - Flat | 2 |
| | 607385 | 17" and 19" Lathes. | 1 | -68 | 602025 | Stud | 2 |
| -23 | 3478 | Nut - Hex | 1 | -76 | 602017 | Bolt - Tee | 1 |
| -24 | 600695 | Washer - Flat | 1 | -77 | | Washer - Flat | |
| -25 | 601041 | Spacer - Change Gear | 1 | | 257395 | 10" and 13" Lathes (Super Hi-Speed) | 1 |
| -26 | | Gear - Drive Shaft | | -78 | 607825 | Spacer - Bearing | |
| | 607369 | 54T, 10" and 13" Lathes (English). | 1 | | | 10" and 15" Lathes (Super Hi-Speed) | 1 |
| | 609164 | 80T, 10" and 13" Lathes (Metric) | 1 | -79 | 607824 | Bearing - Ball | |
| | 607372 | 81T, 10", 13" and 15" Lathes, (7-1/2, 15, 27, 30 and 60 Threads per Inch. | 1 | | | 10" and 13" Lathes (Super Hi-Speed) | 2 |
| | 607372 | 15" Lathe (English). | 1 | -80 | 607823 | Bush - Quadrant Gear | |
| | 609165 | 16" Lathe (Metric) | 1 | | | 10" and 13" Lathes (Super Hi-Speed) | 1 |
| | 607827 | 96T, 10" and 13" Lathes Super Hi-Speed | 1 | -81 | | Nut - Hex | |
| -27 | 607365 | Spacer - Change Gear | 1 | -82 | 3478 | 10" and 13" Lathes (Super Hi-Speed) | 1 |
| -28 | 607390 | Nut | 1 | | 607826 | Housing - Bearing | |
| -29 | 607386 | Washer - Flat | 1 | -83 | | 10" and 13" Lathes (Super Hi-Speed) | 1 |
| | | | | -84 | 607822 | Gear - Quadrant | |
| | | | | | | 10" and 13" Lathes (Super Hi-Speed) | 1 |
| | | | | | 3227 | Screw - Socket Head Cap | |
| | | | | | | 10" and 13" Lathes (Super Hi-Speed) | 4 |
| | | | | | | Stud | |
| | | | | | 600198 | 10" and 13" Lathes. | 1 |
| | | | | | 203619 | 15" Lathes | 1 |

Part listing continued on following page.

END GEARING ASSEMBLY (Concluded)

| Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|----------------------------------|-----------|
| RP24-85 | 134729 | Nut - Collar | |
| | 124706 | 19" Raised Lathes | 3 |
| -86 | 606454 | 26" Raised Lathes | 3 |
| | 171548 | Bearing - Oilite | |
| -87 | 609227 | 19" Raised Lathes | 1 |
| | 609220 | 26" Raised Lathes | 1 |
| -88 | 606454 | Gear - Idler | |
| | 171578 | 19" Raised Lathes | 1 |
| -89 | 2386 | 26" Raised Lathes | 1 |
| | 3400 | 19" Raised Lathes | 9 |
| -90 | 609225 | 26" Raised Lathes | 9 |
| | 609218 | Stud - Quadrant Gear | |
| | 609219 | 19" Raised Lathes | 1 |
| -91 | 609226 | 26" Lathes, 3" Raised | 1 |
| | 609221 | 26" Lathes, 5" Raised | 1 |
| | 609224 | Gear - Quadrant | |
| -92 | 609219 | 19" Raised Lathes, 60T | 2 |
| | 609218 | 26" Raised Lathes, 70T | 2 |
| | 609218 | Stud - Quadrant Gear | |
| | 609218 | 19" Raised Lathes | 1 |
| | 609219 | 26" Lathes, 3" Raised | 1 |
| | 609218 | 26" Lathes, 5" Raised | 1 |

| Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|
| RP24-93 | 171578 | Bearing - Oilite | 4 |
| -94 | 609225 | Stud - Quadrant Gear | |
| | 609218 | 19" Raised Lathes | 1 |
| -95 | 2212 | 26" Raised Lathes | 1 |
| | 609441 | Key | 1 |
| -96A | 609441 | Plate - Quadrant | |
| | 609442 | 19" Raised 2" | 1 |
| | 609216 | 19" Raised 4" | 1 |
| -97 | 134729 | 26" Raised Lathe | 1 |
| | 609257 | Nut - Collar, 19" Raised Lathes | 1 |
| -98 | 607392 | Washer - 19" Raised Lathes | 1 |
| | 609258 | Gear - Drive, 19" Raised Lathes | 1 |
| -100 | 489955 | Bushing - Change Gear | 1 |
| | 602025 | Stud | |
| -101A | 3480 | 19" Raised Lathes | 2 |
| | 602018 | 26" Raised Lathes | 2 |
| -102 | 602018 | Nut, 26" Raised Lathes | 1 |
| | 602024 | Washer, 26" Raised Lathes | 1 |
| -103 | 602024 | Spacer, 26" Raised Lathes | 1 |
| | 602023 | Gear - Drive, 26" Raised Lathes | 1 |
| -104 | 76639 | Nut | |
| | 3480 | 19" Raised Lathes | 2 |
| -105 | 1040 | 26" Raised Lathes | 2 |
| | 609443 | Washer, 26" Raised Lathes | 2 |
| -106 | 609443 | Spacer - Quadrant, 19" Lathes | 2 |
| | | | |

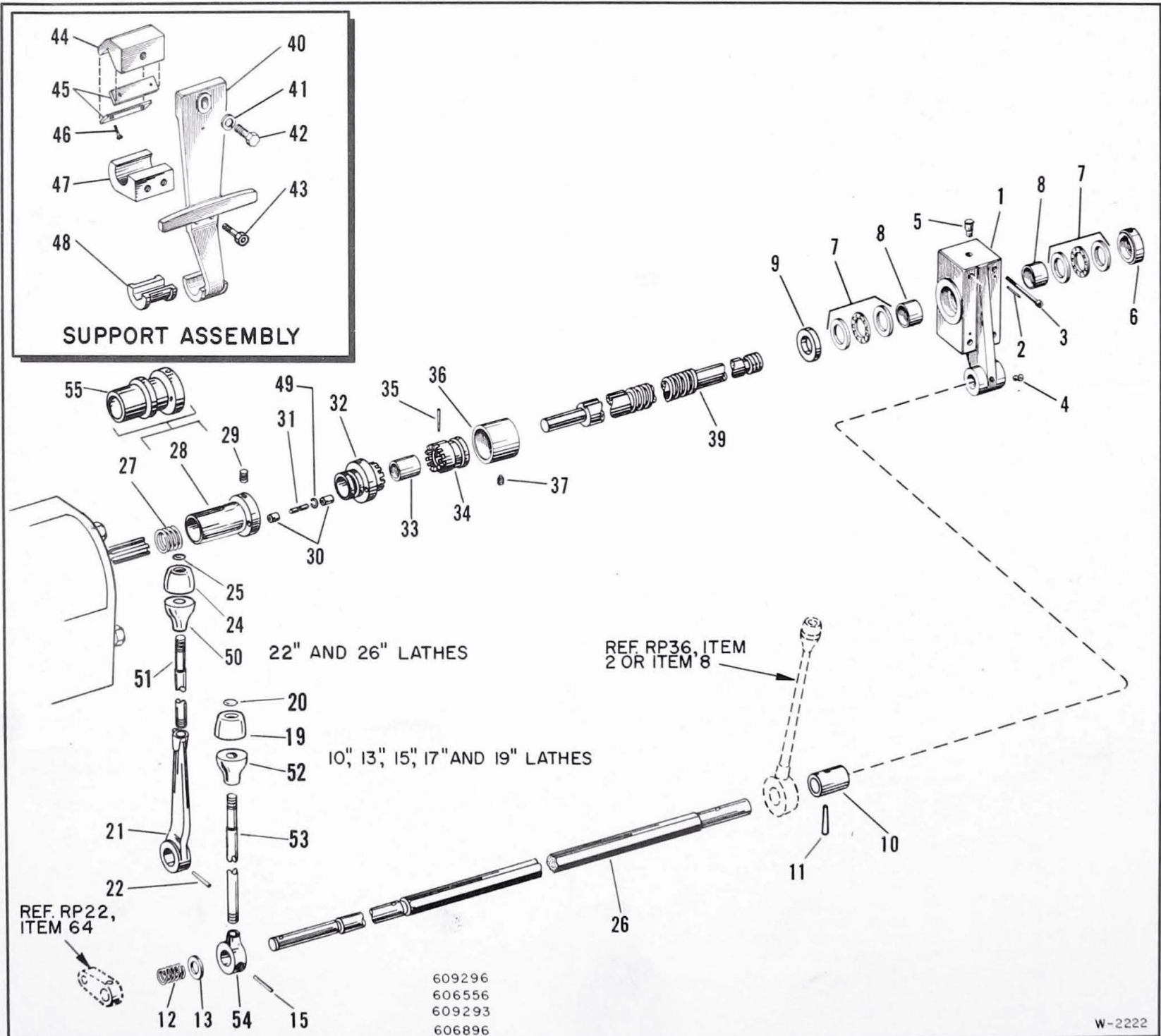
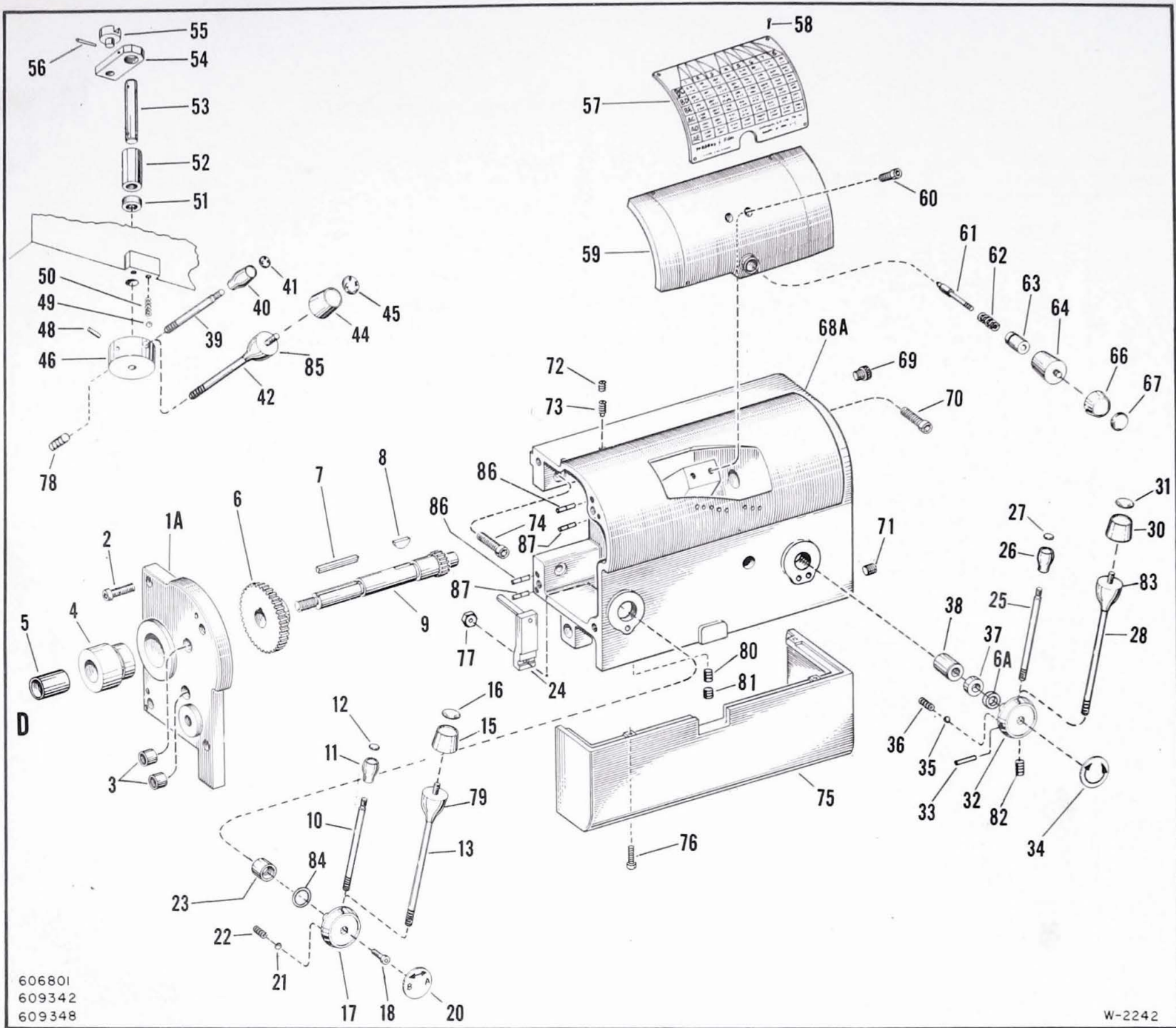


Figure RP26 Leadscrew and Control Rod Assembly

LEADSCREW AND CONTROL ROD ASSEMBLY

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---|-----------|
| RP26-1 | | Box - Back | | RP26-32 | | Clutch - Leadscrew, L.H. | |
| | 604642 | 10", 13" and 15" Lathes | 1 | | 606535 | 10", 13" and 15" Lathes | 1 |
| | 604126 | 17" and 19" Lathes | 1 | | 606535 | 17" and 19" Lathes | 1 |
| | 604351 | 22" and 26" Lathes | 1 | | 606882 | 22" and 26" Lathes | 1 |
| -2 | | Pin - Straight | | -33 | | Bearing - Plain, Clutch | |
| | 3285 | 10", 13" and 15" Lathes | 2 | | 604648 | 10", 13" and 15" Lathes | 1 |
| | 3543 | 17" and 19" Lathes | 2 | | 604648 | 17" and 19" Lathes | 1 |
| | 3543 | 22" and 26" Lathes | 2 | | 229967 | 22" and 26" Lathes | 1 |
| -3 | | Screw - Socket Head Cap | | -34 | | Clutch - Leadscrew, R.H. | |
| | 3161 | 10", 13" and 15" Lathes | 4 | | 606536 | 10", 13" and 15" Lathes | 1 |
| | 3192 | 17" and 19" Lathes | 4 | | 606536 | 17" and 19" Lathes | 1 |
| | 2302 | 22" and 26" Lathes | 4 | | 606883 | 22" and 26" Lathes | 1 |
| -4 | 60062 | Oiler - Drive Cup | 1 | -35 | | Pin - Taper | |
| -5 | 69583 | Cup - Oil | 1 | | 143 | 10", 13" and 15" Lathes | 1 |
| -6 | | Nut - Lock | | | 143 | 17" and 19" Lathes | 1 |
| | 4241 | 10", 13" and 15" Lathes | 1 | | 1857 | 22" and 26" Lathes | 1 |
| | 4242 | 17" and 19" Lathes | 1 | -36 | | Sleeve | |
| | 4246 | 22" and 26" Lathes | 1 | | 606540 | 10", 13" and 15" Lathes, L0 Spindle . | 1 |
| -7 | | Bearing - Ball Thrust | | | 606541 | 10", 13" and 15" Lathes D1-3 and D1-4 Spindles | 1 |
| | 216283 | 10", 13" and 15" Lathes | 2 | | 606642 | 17" and 19" Lathes, L1 Spindle . . . | 1 |
| | 94705 | 17" and 19" Lathes | 2 | | 606643 | 17" and 19" Lathes, D1-6 Spindle . . | 1 |
| | 89008 | 22" and 26" Lathes | 2 | | 606886 | 22" and 26" Lathes, L2 Spindle . . . | 1 |
| -8A | | Bearing - Back Box | | | 606888 | 22" and 26" Lathes, D1-8 Spindle . . | 1 |
| | 148282 | 10", 13" and 15" Lathes | 1 | -37 | 172444 | Screw - Hex Socket Dog Point Set . . . | 1 |
| | 600027 | 17" and 19" Lathes | 2 | -39 | | *Leadscrew | |
| | 602174 | 22" and 26" Lathes | 2 | | 606538 | 10", 13" and 15" Lathes | 1 |
| -9 | | Spacer | | | 606573 | 17" and 19" Lathes | 1 |
| | 607060 | 10", 13" and 15" Lathes | 1 | | 606891 | 22" and 26" Lathes | 1 |
| | 607051 | 17" and 19" Lathes | 1 | -40 | | Support - Leadscrew | |
| | 606889 | 22" and 26" Lathes | 1 | | 604136 | 17" and 19" Lathes | 1 |
| -10 | | Collar | | | 602616 | 22" and 26" Lathes | 1 |
| | 604645 | 10", 13" and 15" Lathes | 1 | -41 | 888 | Washer | 1 |
| | 604124 | 17" and 19" Lathes | 1 | -42 | 3428 | Screw - Hex Head | 1 |
| | 602171 | 22" and 26" Lathes | 1 | -43 | 3396 | Screw - Socket Head Cap | 2 |
| -11 | 642 | Pin - Taper | 1 | -44 | | Block - Vee Way | |
| -12 | 3922 | Spring | 1 | | 604237 | 17" and 19" Lathes | 1 |
| -13 | 601056 | Washer | 1 | | 602615 | 22" and 26" Lathes | 1 |
| -15 | 645 | Pin - Taper | 1 | -45 | | Strip - Vee Way | |
| -19 | 608855 | Knob | 1 | | 601983 | 17" and 19" Lathes | 2 |
| -20 | 606152 | Plate - Name, Control Rod | 1 | | 602614 | 22" and 26" Lathes | 2 |
| -21 | 608896 | Lever - Control, 22" and 26" Lathes . . | 1 | -46 | 3198 | Screw - Low Socket Head Cap | 4 |
| -22 | 645 | Pin - Taper | 1 | -47 | | Block - Leadscrew Support | |
| -24 | 608855 | Knob | 1 | | 601985 | 17" and 19" Lathes | 1 |
| -25 | 606152 | Plate - Name, Control Rod | 1 | | 602619 | 22" and 26" Lathes | 1 |
| -26 | | *Rod - Control | | | 606709 | Support - Control Rod | 1 |
| | 606526 | 10", 13" and 15" Lathes | 1 | -48 | | Ring - Retaining | |
| | 606527 | 17" and 19" Lathes | 1 | -49 | 608460 | 10", 13" and 15" Lathes | 1 |
| | 606892 | 22" and 26" Lathes | 1 | | 608460 | 17" and 19" Lathes | 1 |
| -27 | | Spring - Trip | | | 608461 | 22" and 26" Lathes | 1 |
| | 601216 | 10", 13" and 15" Lathes | 1 | -50 | 608668 | Knob - Lever | 1 |
| | 226199 | 17" and 19" Lathes | 1 | -51 | 608884 | Lever | 1 |
| | 97209 | 22" and 26" Lathes | 1 | -52 | 608668 | Knob - Lever | 1 |
| -28 | | Housing - Clutch (Without Single Automatic Length Stop) | | -53 | 608884 | Lever | 1 |
| | 608932 | 10", 13" and 15" Lathes | 1 | -54 | 608887 | Hub - Handle | 1 |
| | 608930 | 17" and 19" Lathes | 1 | -55 | | Housing - Clutch (With Single Automatic Length Stop) | 1 |
| | 608931 | 22" and 26" Lathes | 1 | | 606537 | 10", 13" and 15" Lathes | 1 |
| -29 | 172444 | Screw - Hex Socket Dog Point Set | 1 | | 606575 | 17" and 19" Lathes | 1 |
| -30 | | Bushing | | | 606881 | 22" and 26" Lathes | 1 |
| | 606094 | 10", 13" and 15" Lathes | 2 | | | | |
| | 606094 | 17" and 19" Lathes | 2 | | | | |
| | 606884 | 22" and 26" Lathes | 2 | | | | |
| -31 | | Pin - Shear | | | | | |
| | 606095 | 10", 13" and 15" Lathes | 1 | | | | |
| | 606095 | 17" and 19" Lathes | 1 | | | | |
| | 607504 | 22" and 26" Lathes | 1 | | | | |

*NOTE: State center distance when ordering.



606801
609342
609348

W-2242

Figure RP28 Quick Change Box (Front View)

QUICK CHANGE BOX (FRONT VIEW)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|-----------------------------------|---|-----------|
| RP28-1A | 609344 | Cover - End | | RP28-7 | | Key - Gear and Drive Shaft | |
| | 609347 | 10", 13" and 15" Lathes | 1 | 600355 | 10", 13" and 15" Lathes | 10", 13" and 15" Lathes | 1 |
| | 603230 | 17" and 19" Lathes | 1 | 108016 | 17" and 19" Lathes | 17" and 19" Lathes | 1 |
| -2 | 124975 | 22" and 26" Lathes | 1 | 602155 | 22" and 26" Lathes | 22" and 26" Lathes | 1 |
| | 2386 | Screw - Socket Head Cap | | -8 | | Key | |
| | 3403 | 10", 13" and 15" Lathes | 4 | 3280 | 10", 13" and 15" Lathes | 10", 13" and 15" Lathes | 1 |
| -3 | | 17" and 19" Lathes | 4 | 3280 | 17" and 19" Lathes | 17" and 19" Lathes | 1 |
| | | 22" and 26" Lathes | 4 | 3497 | 22" and 26" Lathes | 22" and 26" Lathes | 1 |
| | | Bearing - Needle | | -9 | | Shaft - Drive | |
| | 601558 | 10", 13" and 15" Lathes | 2 | 604519 | 10", 13" and 15" Lathes | 10", 13" and 15" Lathes | 1 |
| | 603478 | 17" and 19" Lathes | 2 | 603472 | 17" and 19" Lathes | 17" and 19" Lathes | 1 |
| | 93445 | 22" and 26" Lathes | 2 | 602094 | 22" and 26" Lathes | 22" and 26" Lathes | 1 |
| -4 | | Bushing - Pivot End Cover, "D" Shaft | | -10 | 608881 | Handle - Shifter, 10", 13" and 15" Lathes | 1 |
| | 604516 | 10", 13" and 15" Lathes | 1 | -11 | 608843 | Knob - 10", 13" and 15" Lathes | 1 |
| | 608904 | 17" and 19" Lathes | 1 | -12 | 607619 | Plate - Name, "B"- "A", 10", 13" and 15" Lathes | 1 |
| | 602153 | 22" and 26" Lathes | 1 | -13 | | Handle - Shifter | |
| -5 | | Bearing - Plain, "D" Shaft | | 608878 | 17" and 19" Lathes | 17" and 19" Lathes | 1 |
| | 604517 | 10", 13" and 15" Lathes | 1 | 608880 | 22" and 26" Lathes | 22" and 26" Lathes | 1 |
| | 608905 | 17" and 19" Lathes | 1 | -15 | | Knob | |
| | 602154 | 22" and 26" Lathes | 1 | 608855 | 17" and 19" Lathes | 17" and 19" Lathes | 1 |
| -6 | | Gear - Large | | 608855 | 22" and 26" Lathes | 22" and 26" Lathes | 1 |
| | 604470 | 10", 13" and 15" Lathes | 1 | -16 | | Plate - Name, "B"- "A" | |
| | 603471 | 17" and 19" Lathes | 1 | 607620 | 17" and 19" Lathes | 17" and 19" Lathes | 1 |
| | 602091 | 22" and 26" Lathes | 1 | 607620 | 22" and 26" Lathes | 22" and 26" Lathes | 1 |
| -6A | 608293 | Washer - 17" and 19" Lathes Only. | 1 | | | | |

QUICK CHANGE BOX (FRONT VIEW) (Concluded)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---|-----------|
| RP28-17 | | Hub - Shifter, "A" and "B" Shafts | | RP28-53 | | Shaft - Shifter | |
| | 608893 | 10", 13" and 15" Lathes | 1 | | 606563 | 10", 13", 15", 17" and 19" Lathes | 1 |
| | 608890 | 17" and 19" Lathes | 1 | | 603129 | 22" and 26" Lathes | 1 |
| | 608890 | 22" and 26" Lathes | 1 | -54 | | Lever - Shifter | |
| -18 | | Screw - Socket Head Cap | | | 604490 | 10", 13" and 15" Lathes | 1 |
| | 3397 | 10", 13" and 15" Lathes | 1 | | 603507 | 17" and 19" Lathes | 1 |
| | 3251 | 17" and 19" Lathes | 1 | | 602078 | 22" and 26" Lathes | 1 |
| | 3402 | 22" and 26" Lathes | 1 | -55 | | Shoe - Sliding Clutch Shifter | |
| -20 | 607625 | Plate - Name, "B"- "A" | 1 | | 604489 | 10", 13" and 15" Lathes | 1 |
| -21 | 13665 | Ball | 1 | | 608325 | 17" and 19" Lathes | 1 |
| -22 | 165162 | Spring | 1 | | 602077 | 22" and 26" Lathes | 1 |
| -23 | | Bushing - Shifter, L. H. | | -56 | | Pin - Taper | |
| | 606630 | 10", 13" and 15" Lathes | 1 | | 150577 | 10", 13" and 15" Lathes | 1 |
| | 604998 | 17" and 19" Lathes | 1 | | 150577 | 17" and 19" Lathes | 1 |
| | 604998 | 22" and 26" Lathes | 1 | | 266706 | 22" and 26" Lathes | 1 |
| -24 | | Shifter - Drive Gear | | -57 | | Plate - Index | |
| | 604997 | 10", 13" and 15" Lathes | 1 | | 607079 | 10", 13" and 15" Lathes, English | 1 |
| | 605100 | 17" and 19" Lathes | 1 | | | 19" and 13" Lathes, Super | |
| | 606807 | 22" and 26" Lathes | 1 | | | Hi-Speed | 1 |
| -25 | 608881 | Handle - Shifter, 10", 13" and 15" Lathes | 1 | | 607085 | 10", 13" and 15" Lathes, Metric | 1 |
| -26 | 608843 | Knob - 10", 13" and 15" Lathes | 1 | | 607078 | 17" and 19" Lathes, English | 1 |
| -27 | 607622 | Plate - Name, Reverse, 10", 13" and 15" Lathes | 1 | | 607086 | 17" and 19" Metric | 1 |
| -28 | | Handle - Shifter | | -58 | 607549 | 22" and 26" Lathes, English | 1 |
| | 608878 | 17" and 19" Lathes | 1 | -59 | 607550 | 22" and 26" Lathes, Metric | 1 |
| | 608880 | 22" and 26" Lathes | 1 | | 2285 | Screw - Drive | 4 |
| -30 | | Knob | | -60 | | Slide - Index | |
| | 608855 | 17" and 19" Lathes | 1 | | 606555 | 10", 13" and 15" Lathes | 1 |
| | 608855 | 22" and 26" Lathes | 1 | | 606559 | 17" and 19" Lathes | 1 |
| -31 | | Plate - Name, Reverse | | | 606804 | 22" and 26" Lathes | 1 |
| | 4353 | 17" and 19" Lathes | 1 | | 603980 | Screw - Index Slide | |
| | 4353 | 22" and 26" Lathes | 1 | | 603981 | 10", 13" and 15" Lathes | 2 |
| -32 | | Hub - Shifter, R. H. | | | 603982 | 17" and 19" Lathes | 2 |
| | 608892 | 10", 13" and 15" Lathes | 1 | -61 | 607672 | 22" and 26" Lathes | 2 |
| | 608889 | 17" and 19" Lathes | 1 | -62 | 203247 | Plunger - Index | 1 |
| | 608889 | 22" and 26" Lathes | 1 | -63 | 606567 | Spring - Compression | 1 |
| -33 | 154807 | Pin - Roll | 1 | -64 | 607671 | Bushing - Index | 1 |
| -34 | 606118 | Plate - Name, Reverse | 1 | -66 | 608855 | Handle - Index | 1 |
| -35 | 13665 | Ball | 2 | -67 | 4330 | Knob | 1 |
| -36 | 165162 | Spring | 2 | -68A | | Plate | 1 |
| -37 | | Seal - Oil | | | 609343 | Box - Quick Change | |
| | 700911 | 10", 13" and 15" Lathes | 1 | | 608345 | 10", 13" and 15" Lathes | 1 |
| | 608292 | 17" and 19" Lathes | 1 | -69 | 606802 | 17" and 19" Lathes | 1 |
| | 602079 | 22" and 26" Lathes | 1 | -70 | 90377 | 22" and 26" Lathes | 1 |
| -38 | | Bushing - Shifter, R. H. | | | 3266 | Plug - Oil Filler | 1 |
| | 608515 | 10", 13" and 15" Lathes | 1 | | 3266 | Screw - Socket Head Cap | |
| | 608294 | 17" and 19" Lathes | 1 | | 3404 | 10", 13" and 15" Lathes | 3 |
| | 606806 | 22" and 26" Lathes | 1 | -71 | | 17" and 19" Lathes | 2 |
| -39 | 608881 | Handle - Feed, 10", 13" and 15" Lathes | 1 | | 76645 | 22" and 26" Lathes | 2 |
| -40 | 608843 | Knob - 10", 13" and 15" Lathes | 1 | | 220784 | Plug - Pipe | |
| -41 | 606639 | Plate - Name, "C"- "D"- "E", 10", 13" and 15" Lathes | 1 | -72 | 2353 | 10", 13" and 15" Lathes | 1 |
| -42 | | Handle - Feed | | | 2330 | 17", 19", 22" and 26" Lathes | 1 |
| | 608865 | 17" and 19" Lathes | 1 | -73 | | Screw - Low Socket Set, 10", 13" and 15" Lathes Only | 1 |
| | 608883 | 22" and 26" Lathes | 1 | -74 | | Screw - Socket Head Set, 10", 13" and 15" Lathes Only | 1 |
| -44 | | Knob | | | 3209 | Screw - Low Socket Head Cap | |
| | 608855 | 17" and 19" Lathes | 1 | | 3400 | 10", 13" and 15" Lathes | 1 |
| | 608855 | 22" and 26" Lathes | 1 | -75 | 3248 | 17" and 19" Lathes | 2 |
| -45 | | Plate - Name, "C"- "D"- "E" | | | | 22" and 26" Lathes | 2 |
| | 606560 | 17" and 19" Lathes | 1 | | 606659 | Skirt 0 Quick Change Box | |
| | 606560 | 22" and 26" Lathes | 1 | | 606571 | 10", 13" and 15" Lathes | 1 |
| -46 | | Hub - Shifter, "C"- "D"- "E" | | | 606803 | 17" and 19" Lathes | 1 |
| | 608891 | 10", 13" and 15" Lathes | 1 | -76 | 3227 | 22" and 26" Lathes | 1 |
| | 608891 | 17" and 19" Lathes | 1 | -77 | 3472 | Screw - Socket Head Cap | 3 |
| | 608888 | 22" and 26" Lathes | 1 | -78 | 101782 | Nut - Hex, 10", 13" and 15" Lathes Only | 1 |
| -48 | 154807 | Pin - Roll | 1 | -79 | 608668 | Screw | 1 |
| -49 | 13665 | Ball | 1 | -80 | 2354 | Knob - Lever | 1 |
| -50 | 165162 | Spring | 1 | -81 | 3229 | Screw - 22" and 26" Lathes Only | 1 |
| -51 | | Seal - Oil | | -82 | 101782 | Screw | 1 |
| | 600402 | 10", 13" and 15" Lathes | 1 | -83 | 608668 | Knob - Lever | 1 |
| | 600402 | 17" and 19" Lathes | 1 | -84 | | Ring - "O" | |
| | 602079 | 22" and 26" Lathes | 1 | | 246308 | 10", 13" and 15" Lathes | 1 |
| -52 | | Bushing - Shifter | | | 129367 | 17", 19", 22" and 26" Lathes | 1 |
| | 604488 | 10", 13" and 15" Lathes | 1 | -85 | 608668 | Knob - Lever | 1 |
| | 603505 | 17" and 19" Lathes | 1 | -86 | 1421 | Pin - Double Dia., 10", 13", 15", 17" and 19" Lathes | 2 |
| | 603130 | 22" and 26" Lathes | 1 | -87 | 285815 | Pin - Double Dia., 22" and 26" Lathes | 2 |

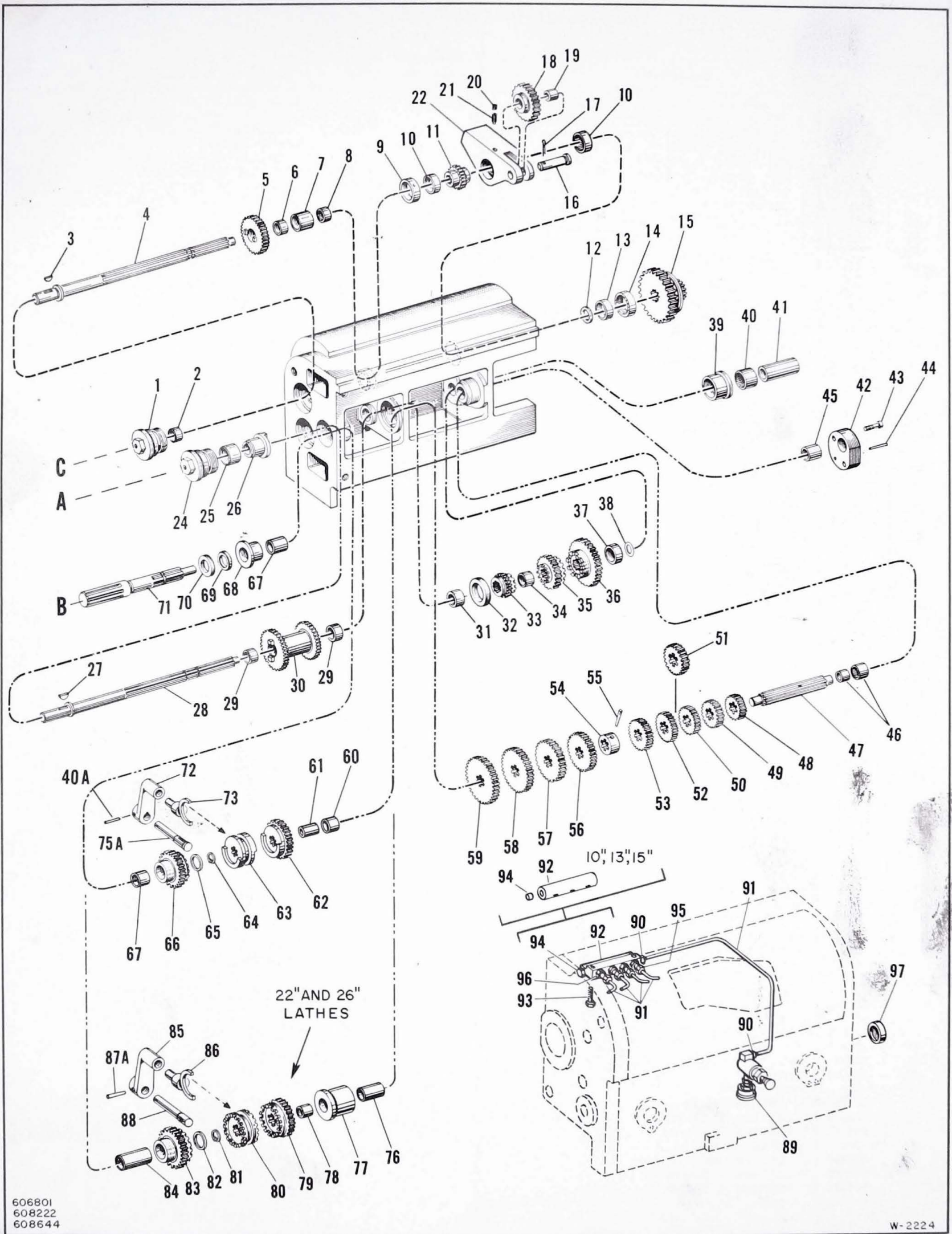


Figure RP30 Quick Change Box (Rear View)

QUICK CHANGE BOX (REAR VIEW)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|---|-----------|
| RP30-1 | | Retainer | | RP30-21 | | Screw - Hex Socket | |
| | 604476 | 10", 13" and 15" Lathes | 1 | | 2339 | Set, 10", 13" and 15" Lathes | 2 |
| | 603489 | 17" and 19" Lathes | 1 | | 3228 | Dog Point, 17" and 19" Lathes | 1 |
| | 603083 | 22" and 26" Lathes | 1 | | 3233 | Dog Point, 22" and 26" Lathes | 1 |
| -2 | | Bearing - Plain | | -22 | | Yoke - Tumbler | |
| | 600082 | 10", 13" and 15" Lathes | 1 | | 604465 | 10", 13" and 15" Lathes | 1 |
| | 603486 | 17" and 19" Lathes | 1 | | 603596 | 17" and 19" Lathes | 1 |
| | 602150 | 22" and 26" Lathes | 1 | | 602127 | 22" and 26" Lathes | 1 |
| -3 | | Key | | -24 | | Retainer - Drive Clutch | |
| | 3279 | Woodruff, 10", 13" and 15" Lathes | 1 | | 604477 | 10", 13" and 15" Lathes | 1 |
| | 3280 | Hi-Pro, 17" and 19" Lathes | 1 | | 603490 | 17" and 19" Lathes | 1 |
| | 3280 | Hi-Pro, 22" and 26" Lathes | 1 | | 603082 | 22" and 26" Lathes | 1 |
| -4 | | Shaft - Tumbler Gear, "C" Shaft | | -25 | | Bearing - Plain | |
| | 604461 | 10", 13" and 15" Lathes | 1 | | 600058 | 10", 13" and 15" Lathes | 1 |
| | 603496 | 17" and 19" Lathes | 1 | | 600354 | 17" and 19" Lathes | 1 |
| | 602124 | 22" and 26" Lathes | 1 | | 602141 | 22" and 26" Lathes | 1 |
| -5 | | Gear - Feed Reverse | | -26 | | Clutch - Drive | |
| | 604468 | 10", 13" and 15" Lathes | 1 | | 604520 | 10", 13" and 15" Lathes | 1 |
| | 603488 | 17" and 19" Lathes | 1 | | 601102 | 17" and 19" Lathes | 1 |
| | 602137 | 22" and 26" Lathes | 1 | | 603135 | 22" and 26" Lathes | 1 |
| -6 | | Bearing - Plain | | -27 | | Key | |
| | 604469 | 10", 13" and 15" Lathes | 1 | | 3279 | Woodruff, 10", 13" and 15" Lathes | 1 |
| | 603480 | 17" and 19" Lathes | 1 | | 3280 | Hi-Pro, 17" and 19" Lathes | 1 |
| | 602136 | 22" and 26" Lathes | 1 | | 3280 | Hi-Pro, 22" and 26" Lathes | 1 |
| -7 | | Spacer - Tumbler Gear Shaft | | -28 | | Shaft - "A" | |
| | 601576 | 10", 13" and 15" Lathes | 1 | | 604457 | 10", 13" and 15" Lathes | 1 |
| | 601535 | 17" and 19" Lathes | 1 | | 603595 | 17" and 19" Lathes | 1 |
| | 602135 | 22" and 26" Lathes | 1 | | 602143 | 22" and 26" Lathes | 1 |
| -8 | | Bearing - Needle | | -29 | | Bearing - Plain | |
| | 79525 | 10", 13" and 15" Lathes | 1 | | 601563 | 10", 13" and 15" Lathes | 2 |
| | 79762 | 17" and 19" Lathes | 1 | | 601526 | 17" and 19" Lathes | 2 |
| | 94627 | 22" and 26" Lathes | 1 | | 602108 | 22" and 26" Lathes | 2 |
| -9 | | Bushing | | -30 | | Gear - Cluster, "A" Shaft | |
| | 601110 | 17" and 19" Lathes | 1 | | 604460 | 10", 13" and 15" Lathes | 1 |
| | 602139 | 22" and 26" Lathes | 1 | | 603493 | 17" and 19" Lathes | 1 |
| -10 | | Bearing - Plain | | -31 | | 22" and 26" Lathes | 1 |
| | 604523 | 10", 13" and 15" Lathes | 2 | | 602140 | 22" and 26" Lathes | 1 |
| | 600384 | 17" and 19" Lathes | 2 | | | Bearing - Needle | |
| | 602126 | 22" and 26" Lathes | 2 | | 79525 | 10", 13" and 15" Lathes | 1 |
| -11 | | Gear - Tumbler | | | 79762 | 17" and 19" Lathes | 1 |
| | 601575 | 10", 13" and 15" Lathes | 1 | | 98840 | 22" and 26" Lathes | 1 |
| | 601498 | 17" and 19" Lathes | 1 | | | Collar | |
| | 602125 | 22" and 26" Lathes | 1 | | 600049 | 10", 13" and 15" Lathes | 1 |
| -12 | | Ring - "O" | | | 600348 | 17" and 19" Lathes | 1 |
| | 243716 | 10", 13" and 15" Lathes | 1 | | 602106 | 22" and 26" Lathes | 1 |
| | 246308 | 17" and 19" Lathes | 1 | | | Gear - Clutch | |
| | 129871 | 22" and 26" Lathes | 1 | | 604473 | 10", 13" and 15" Lathes | 1 |
| -13 | | Race - Inner | | | 603451 | 17" and 19" Lathes | 1 |
| | 601571 | 10", 13" and 15" Lathes | 1 | | 602107 | 22" and 26" Lathes | 1 |
| | 603475 | 17" and 19" Lathes | 1 | | | Bearing - Plain | |
| | 602100 | 22" and 26" Lathes | 1 | | 601563 | 10", 13" and 15" Lathes | 1 |
| -14 | | Bearing - Needle | | | 603483 | 17" and 19" Lathes | 1 |
| | 601066 | 10", 13" and 15" Lathes | 1 | | 602108 | 22" and 26" Lathes | 1 |
| | 93416 | 17" and 19" Lathes | 1 | | | Gear - Sliding Clutch | |
| | 79763 | 22" and 26" Lathes | 1 | | 608521 | 10", 13" and 15" Lathes | 1 |
| -15 | | Gear - Cluster | | | 603450 | 17" and 19" Lathes | 1 |
| | 604518 | 10", 13" and 15" Lathes | 1 | | 602109 | 22" and 26" Lathes | 1 |
| | 603470 | 17" and 19" Lathes | 1 | | | Gear - Clutch | |
| | 602093 | 22" and 26" Lathes | 1 | | 604463 | 10", 13" and 15" Lathes | 1 |
| -16 | | Shaft - Tumbler Idler Gear | | | 603448 | 17" and 19" Lathes | 1 |
| | 604498 | 10", 13" and 15" Lathes | 1 | | 602103 | 22" and 26" Lathes | 1 |
| | 604415 | 17" and 19" Lathes | 1 | | | Bearing - Plain | |
| | 602121 | 22" and 26" Lathes | 1 | | 601561 | 10", 13" and 15" Lathes | 1 |
| -17 | | Pin | | | 601521 | 17" and 19" Lathes | 1 |
| | 703 | Cotter, 10", 13" and 15" Lathes | 1 | | 602105 | 22" and 26" Lathes | 1 |
| | 703 | Cotter, 17" and 19" Lathes | 1 | | | Ring - "O" | |
| | 143 | Taper, 22" and 26" Lathes | 1 | | 243716 | 10", 13" and 15" Lathes | 1 |
| -18 | | Gear - Tumbler Idler | | | 246308 | 17" and 19" Lathes | 1 |
| | 604482 | 10", 13" and 15" Lathes | 1 | | 129871 | 22" and 26" Lathes | 1 |
| | 603449 | 17" and 19" Lathes | 1 | | | Bushing | |
| | 602123 | 22" and 26" Lathes | 1 | | 604472 | 10", 13" and 15" Lathes | 1 |
| -19 | | Bearing - Plain | | | 603594 | 17" and 19" Lathes | 1 |
| | 604557 | 10", 13" and 15" Lathes | 1 | | 602564 | 22" and 26" Lathes | 1 |
| | 604524 | 17" and 19" Lathes | 1 | | | Bearing - Needle | |
| | 602122 | 22" and 26" Lathes | 1 | | 94627 | 10", 13" and 15" Lathes | 1 |
| -20 | | Screw - Hex Socket Set | | | 93421 | 17" and 19" Lathes | 1 |
| | 2330 | 10", 13" and 15" Lathes | 2 | | 159098 | 22" and 26" Lathes | 1 |
| | 2332 | 17" and 19" Lathes | 1 | | | Pin - Roll | |
| | 1911 | 22" and 26" Lathes | 1 | | 141 | 10", 13" and 15" Lathes | 1 |
| | | | | -40A | 3304 | 17" and 19" Lathes | 1 |

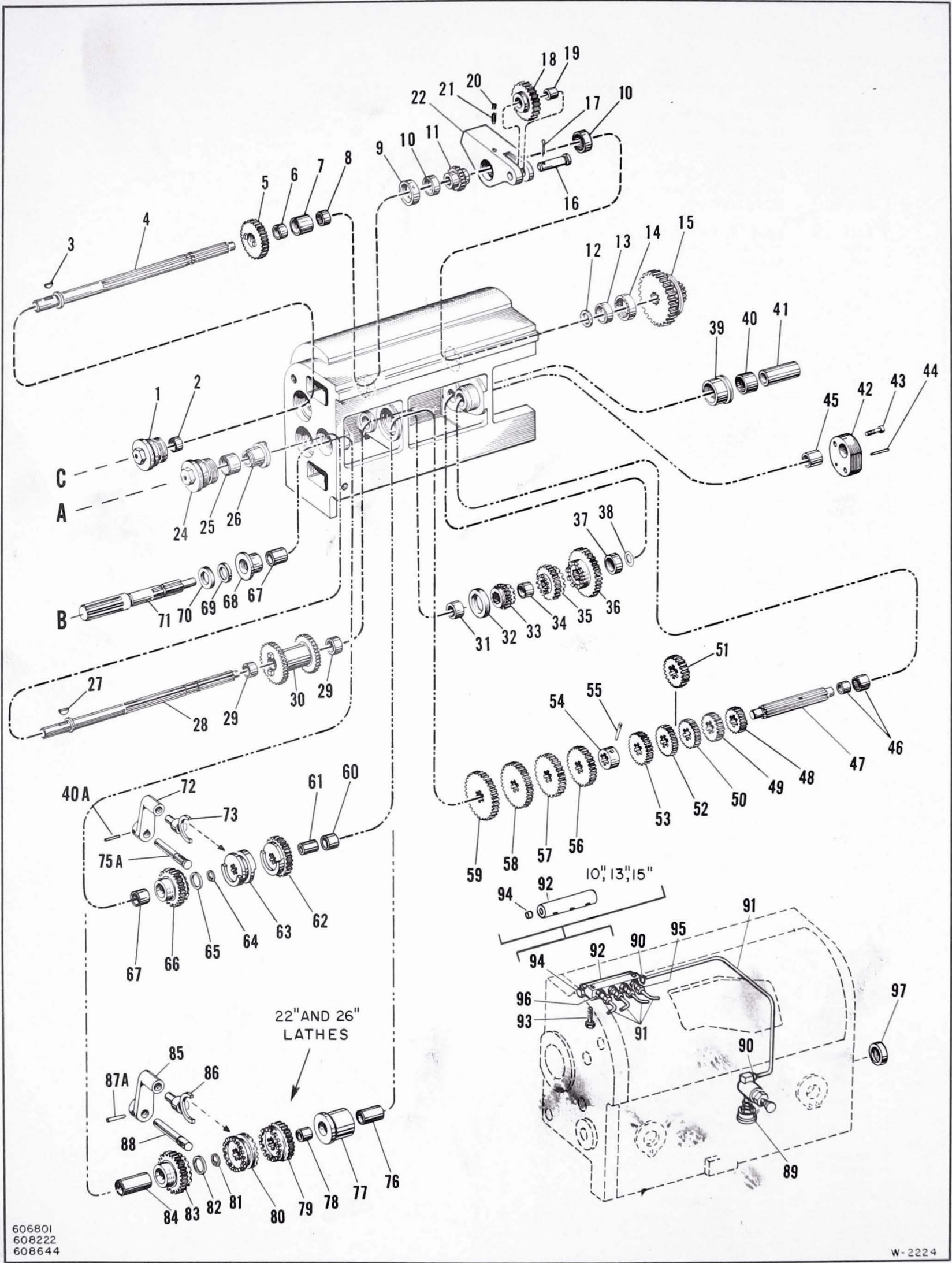


Figure RP32 Quick Change Box (Rear View)

QUICK CHANGE BOX (REAR VIEW) (Continued)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|---|---|-----------|
| RP32-41 | 601559 | Race - Inner | | RP32-60 | 600059 | Bearing - Plain | |
| | 603477 | 10", 13" and 15" Lathes | 1 | | 603481 | 10", 13" and 15" Lathes | 1 |
| | 602104 | 17" and 19" Lathes | 1 | -61 | | 17" and 19" Lathes | 1 |
| -42 | | 22" and 26" Lathes | 1 | 600082 | Bearing - Plain | | |
| | 604478 | Bushing - Eccentric | | 603482 | 10", 13" and 15" Lathes | 1 | |
| | 601125 | 10", 13" and 15" Lathes | 1 | -62 | | 17" and 19" Lathes | 1 |
| | 602096 | 17" and 19" Lathes | 1 | 604499 | Gear - Idler, 36T | | |
| -43 | | 22" and 26" Lathes | 1 | 603492 | 10", 13" and 15" Lathes | 1 | |
| | 3218 | Screw - Socket Head Cap | | -63 | | 17" and 19" Lathes | 1 |
| | 3396 | 10", 13" and 15" Lathes | 2 | 601565 | Clutch - Feed Reverse | | |
| | 3397 | 17" and 19" Lathes | 2 | 601528 | 10", 13" and 15" Lathes | 1 | |
| -44 | | 22" and 26" Lathes | 2 | -64 | | 17" and 19" Lathes | 1 |
| | 140 | Pin - Taper | | 240852 | Ring - Truarc Retainer | | |
| | 3304 | 10", 13" and 15" Lathes | 1 | 237432 | 10", 13" and 15" Lathes | 1 | |
| | 642 | 17" and 19" Lathes | 1 | -65 | | 17" and 19" Lathes | 1 |
| -45 | | 22" and 26" Lathes | 1 | 600077 | Washer | | |
| | 600342 | Bearing - Plain | | 600374 | 10", 13" and 15" Lathes | 1 | |
| | 600347 | 10", 13" and 15" Lathes | 1 | -66 | | 17" and 19" Lathes | 1 |
| | 602095 | 17" and 19" Lathes | 1 | 604467 | Gear - Idler, 44T | | |
| -46 | | 22" and 26" Lathes | 1 | 603491 | 10", 13" and 15" Lathes | 1 | |
| | 604504 | Bearing - Needle | | -67 | | 17" and 19" Lathes | 1 |
| | 604505 | Bearing, 10", 13" and 15" Lathes | 1 | 601566 | Bearing - Plain | | |
| | 601067 | Inner Race, 10", 13" and 15" Lathes | 1 | 603484 | 10", 13" and 15" Lathes | 1 | |
| | 601067 | Bearing and Race, 17" and 19" Lathes | 1 | -68 | | 17" and 19" Lathes | 2 |
| | | Bearing and Race, 22" and 26" Lathes | 1 | 601260 | Bushing - Feed Reverse Shaft | | |
| -47 | | Shaft - Cone | | 603487 | 10", 13" and 15" Lathes | 1 | |
| | 604459 | 10", 13" and 15" Lathes | 1 | 602145 | 17" and 19" Lathes | 1 | |
| | 603494 | 17" and 19" Lathes | 1 | -69 | | 22" and 26" Lathes | 1 |
| | 602098 | 22" and 26" Lathes | 1 | 608575 | Bearing - Thrust | | |
| -48 | | Gear - Cone, 24T | | 608577 | 10", 13" and 15" Lathes | 1 | |
| | 604501 | 10", 13" and 15" Lathes | 1 | 608579 | 17" and 19" Lathes | 1 | |
| | 603452 | 17" and 19" Lathes | 1 | -70 | | 22" and 26" Lathes | 1 |
| | 602111 | 22" and 26" Lathes | 1 | 608576 | Washer - Thrust | | |
| -49 | | Gear - Cone, 26T | | 608578 | 10", 13" and 15" Lathes | 1 | |
| | 604511 | 10", 13" and 15" Lathes | 1 | 608580 | 17" and 19" Lathes | 1 | |
| | 603453 | 17" and 19" Lathes | 1 | -71 | | 22" and 26" Lathes | 1 |
| | 602112 | 22" and 26" Lathes | 1 | 604458 | Shaft - Feed Reverse | | |
| -50 | | Gear - Cone, 28T | | 603495 | 10", 13" and 15" Lathes | 1 | |
| | 604510 | 10", 13" and 15" Lathes | 1 | 602146 | 17" and 19" Lathes | 1 | |
| | 603454 | 17" and 19" Lathes | 1 | -72 | | 22" and 26" Lathes | 1 |
| | 602113 | 22" and 26" Lathes | 1 | 608514 | Shifter - Feed Reverse Clutch | | |
| -51 | | Gear - Cone, 30T, 22" and 26" Lathes | 1 | 608291 | 10", 13" and 15" Lathes | 1 | |
| | | Only | 1 | -73 | | 17" and 19" Lathes | 1 |
| -52 | | Gear - Cone, 32T | | 600152 | Shoe - Shifter | | |
| | 604509 | 10", 13" and 15" Lathes | 1 | 600413 | 10", 13" and 15" Lathes | 1 | |
| | 603455 | 17" and 19" Lathes | 1 | -75A | | 17" and 19" Lathes | 1 |
| | 602115 | 22" and 26" Lathes | 1 | 608513 | Shaft - Shifter | | |
| -53 | | Gear - Cone, 36T | | 606808 | 10", 13" and 15" Lathes | 1 | |
| | 604502 | 10", 13" and 15" Lathes | 1 | 602131 | 17" and 19" Lathes | 1 | |
| | 603456 | 17" and 19" Lathes | 1 | -76 | | 22" and 26" Lathes | 1 |
| | 602116 | 22" and 26" Lathes | 1 | 602565 | Bearing - Plain, 22" and 26" Lathes | 1 | |
| -54 | | Spacer - Cone Gear | | | Bushing - Cone Shaft, 22" and 26" Lathes Only | 1 | |
| | 604503 | 10", 13" and 15" Lathes | 1 | -78 | 602122 | Bearing - Plain, 22" and 26" Lathes | 1 |
| | 603461 | 17" and 19" Lathes | 1 | -79 | 602130 | Gear - Idler, 36T, 22" and 26" Lathes | 1 |
| | 602110 | 22" and 26" Lathes | 1 | -80 | 602132 | Clutch - Feed Reverse, 22" and 26" Lathes | 1 |
| -55 | | Pin - Spacer | | -81 | 113079 | Ring - Truarc Retainer, 22" and 26" Lathes | 1 |
| | 154160 | 10", 13" and 15" Lathes | 1 | -82 | 602129 | Washer, 22" and 26" Lathes | 1 |
| | 266706 | 17" and 19" Lathes | 1 | -83 | 602133 | Gear - Idler, 44T, 22" and 26" Lathes | 1 |
| | 154807 | 22" and 26" Lathes | 1 | -84 | 602134 | Bearing - Plain, 22" and 26" Lathes | 1 |
| -56 | | Gear - Cone, 40T | | -85 | 607522 | Shifter - Feed Reverse Clutch, 22" and 26" Lathes | 1 |
| | 604508 | 10", 13" and 15" Lathes | 1 | -86 | 602083 | Shoe - Shifter, 22" and 26" Lathes | 1 |
| | 603457 | 17" and 19" Lathes | 1 | -87A | 663 | Pin - Roll, 22" and 26" Lathes Only | 1 |
| | 602117 | 22" and 26" Lathes | 1 | -88 | 606808 | Shaft - Shifter, 22" and 26" Lathes | 1 |
| -57 | | Gear - Cone, 44T | | -89 | 603983 | Lubricator | 1 |
| | 604507 | 10", 13" and 15" Lathes | 1 | -90 | | Fitting - Compression | |
| | 603458 | 17" and 19" Lathes | 1 | 115595 | Bushing, 10", 13" and 15" Lathes | 1 | |
| | 602118 | 22" and 26" Lathes | 1 | 214304 | Sleeve, 10", 13" and 15" Lathes | 1 | |
| -58 | | Gear - Cone, 46T | | 115595 | Bushing, 17" and 19" Lathes | 2 | |
| | 604506 | 10", 13" and 15" Lathes | 1 | 214304 | Sleeve, 17" and 19" Lathes | 2 | |
| | 603459 | 17" and 19" Lathes | 1 | 115595 | Bushing, 22" and 26" Lathes | 2 | |
| | 602119 | 22" and 26" Lathes | 1 | 214304 | Sleeve, 22" and 26" Lathes | 2 | |
| -59 | | Gear - Cone, 48T | | | | | |
| | 604500 | 10", 13" and 15" Lathes | 1 | | | | |
| | 603460 | 17" and 19" Lathes | 1 | | | | |
| | 602120 | 22" and 26" Lathes | 1 | | | | |

Part listing continued on following page.

QUICK CHANGE BOX (REAR VIEW) (Concluded)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|-----------------------------------|-----------|----------------------|----------|--------------------------------------|-----------|
| RP32-91 | | Tubing - Oil | | RP32-95 | | Fitting - Compression | |
| | 604496 | 10", 13" and 15" Lathes | 1 | | 600188 | Nut, 17" and 19" Lathes | 4 |
| | 603598 | 17" and 19" Lathes | 1 | | 600189 | Sleeve, 17" and 19" Lathes | 4 |
| | 603598 | 22" and 26" Lathes | 1 | | 600188 | Nut, 22" and 26" Lathes | 4 |
| -92 | | Distributor - Lubrication | | | 600189 | Sleeve, 22" and 26" Lathes | 4 |
| | 604497 | 10", 13" and 15" Lathes | 1 | -96 | | Unit - Metering (FJD-D) | |
| | 603512 | 17" and 19" Lathes | 1 | | 600191 | 17" and 19" Lathes | 4 |
| | 143414 | 22" and 26" Lathes | 1 | | 600191 | 22" and 26" Lathes | 4 |
| -93 | | Screw - Socket Head Cap | | -97 | | Gage - Oil Sight | |
| | 3246 | 17" and 19" Lathes | 2 | | 143496 | 10", 13" and 15" Lathes | 1 |
| | 3205 | 22" and 26" Lathes | 2 | | 143496 | 17" and 19" Lathes | 1 |
| -94 | | Plug | | | 237701 | 22" and 26" Lathes | 1 |
| | 1550 | 10", 13" and 15" Lathes | 1 | | | | |
| | 115596 | 17" and 19" Lathes | 1 | | | | |
| | 115596 | 22" and 26" Lathes | 1 | | | | |

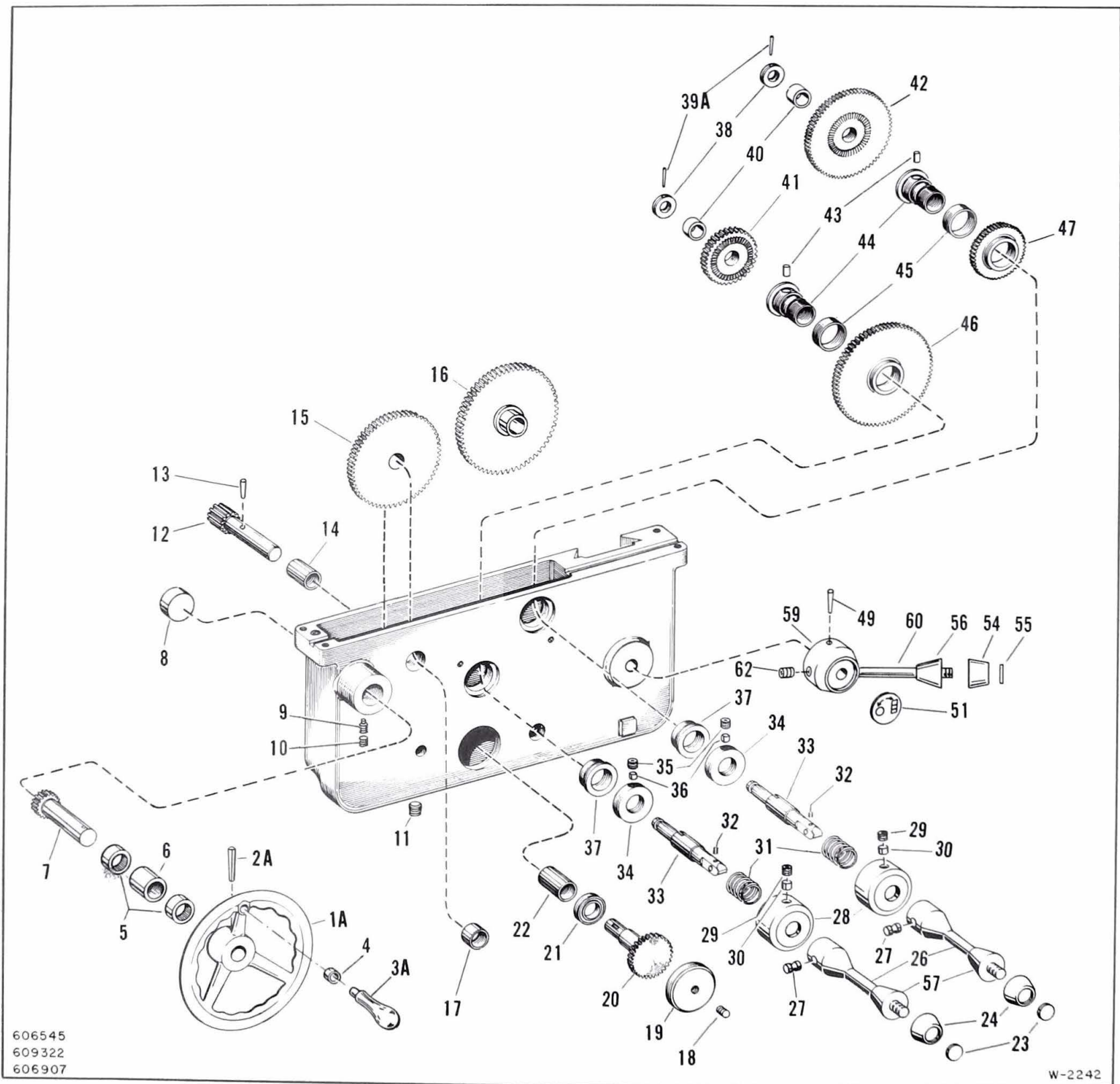


Figure RP34 Apron (Front View)

APRON (FRONT VIEW)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---|-----------|
| RP34-1A | | Handwheel | | RP34-28 | | Cap | |
| | 606059 | All 10", 13" and 15" Lathes | 1 | | 607786 | 10", 13" and 15" Lathes | 3 |
| | 606861 | 17" and 19" Lathes | 1 | | 606148 | 17" and 19" Lathes | 3 |
| | 608520 | 22" and 26" Lathes | 1 | | 606857 | 22" and 26" Lathes | 3 |
| -2A | | Pin | | -29 | | Screw | |
| | 1890 | All 10", 13" and 15" Lathes | 1 | | 2331 | 10", 13" and 15" Lathes | 2 |
| | 844 | 17", 19", 22" and 26" Lathes | 1 | | 2332 | 17" and 19" Lathes | 2 |
| -3A | | Handle and Stud | | | 2332 | 22" and 26" Lathes | 2 |
| | 607598 | 10", 13" and 15" Lathes | 1 | -30 | | Plug - Nylon | |
| | 607596 | 17", 19", 22" and 26" Lathes | 1 | | 282982 | 10", 13" and 15" Lathes | 2 |
| -4 | | Washer - 22" and 26" Lathes | 1 | | 280916 | 17" and 19" Lathes | 2 |
| -5 | | Bearing - Needle | | | 280916 | 22" and 26" Lathes | 2 |
| | 237109 | 10", 13" and 15" Lathes | 2 | -31 | | Spring - Compression | |
| | 237109 | 17" and 19" Lathes | 2 | | 259185 | 10", 13" and 15" Lathes | 2 |
| | 231390 | 22" and 26" Lathes | 2 | | 603954 | 17" and 19" Lathes | 2 |
| -6 | | Collar - Handwheel | | | 603953 | 22" and 26" Lathes | 2 |
| | 604617 | 10", 13" and 15" Lathes | 1 | -32 | | Screw - Hex Socket Set | |
| | 604024 | 17" and 19" Lathes | 1 | | 2330 | 10", 13" and 15" Lathes | 2 |
| | 603144 | 22" and 26" Lathes | 1 | | 2330 | 17" and 19" Lathes | 2 |
| -7 | | Pinion - Handwheel | | | 2332 | 22" and 26" Lathes | 2 |
| | 606455 | 10", 13" and 15" Lathes | 1 | -33 | | Shaft - Feed | |
| | 606445 | 17" and 19" Lathes | 1 | | 606485 | 10", 13" and 15" Lathes | 2 |
| | 606856 | 22" and 26" Lathes | 1 | | 606260 | 17" and 19" Lathes | 2 |
| -8 | | Plug - 22" and 26" Lathes Only | 1 | | 603156 | 22" and 26" Lathes | 2 |
| -9 | | Screw - Dog Point Set | | -34 | | Nut - Lock | |
| | 2345 | 10", 13" and 15" Lathes | 1 | | 607784 | 10", 13" and 15" Lathes | 2 |
| | 3233 | 17" and 19" Lathes | 1 | | 606122 | 17" and 19" Lathes | 2 |
| | 3233 | 22" and 26" Lathes | 1 | | 606910 | 22" and 26" Lathes | 2 |
| -10 | | Screw - Hex Socket Set | | -35 | | Screw | |
| | 2356 | 10", 13" and 15" Lathes | 1 | | 2330 | 10", 13", 15", 22" and 26" Lathes | 2 |
| | 2356 | 17" and 19" Lathes | 1 | | 2354 | 17" and 19" Lathes | 2 |
| -11 | | Plug - Pipe | 1 | -36 | | Plug - Nylon | |
| -12 | | Pinion - Rack | | | 282982 | 10", 13", 15", 22" and 26" Lathes | 2 |
| | 604593 | 10", 13" and 15" Lathes | 1 | | 280916 | 17" and 19" Lathes | 2 |
| | 604078 | 17" and 19" Lathes | 1 | -37 | | Bushing - Feed Shaft | |
| | 602180 | 22" and 26" Lathes | 1 | | 606543 | 10", 13" and 15" Lathes | 2 |
| -13 | | Pin - Roll | | | 606071 | 17" and 19" Lathes | 2 |
| | 148045 | 10", 13" and 15" Lathes | 1 | | 606860 | 22" and 26" Lathes | 2 |
| | 148014 | 17" and 19" Lathes | 1 | -38 | | Collar | |
| | 605582 | 22" and 26" Lathes | 1 | | 604614 | 10", 13" and 15" Lathes | 2 |
| -14 | | Bearing - Plain | | | 239810 | 17" and 19" Lathes | 2 |
| | 604615 | 10", 13" and 15" Lathes | 1 | | 602194 | 22" and 26" Lathes | 2 |
| | 604073 | 17" and 19" Lathes | 1 | -39A | | Pin - Taper | |
| | 602179 | 22" and 26" Lathes | 1 | | 143319 | 10", 13" and 15" Lathes | 2 |
| -15 | | Gear - Rack Pinion | | | 143319 | 17" and 19" Lathes | 2 |
| | 604594 | 10", 13" and 15" Lathes | 1 | | 148045 | 22" and 26" Lathes | 2 |
| | 602196 | 22" and 26" Lathes | 1 | -40 | | Bearing - Plain | |
| -16 | | Gear - Rack Pinion, 17" and 19" Lathes. | 1 | | 604568 | 10", 13" and 15" Lathes | 2 |
| -17 | | Bearing - Plain | | | 604439 | 17" and 19" Lathes | 2 |
| | 241507 | 10", 13" and 15" Lathes | 1 | | 602200 | 22" and 26" Lathes | 2 |
| | 604071 | 17" and 19" Lathes | 1 | -41 | | Gear - Small Longitudinal Feed | |
| | 602206 | 22" and 26" Lathes | 1 | | 604598 | 10", 13" and 15" Lathes | 1 |
| -18 | | Screw - 17", 19", 22" and 26" Lathes | 1 | | 604082 | 17" and 19" Lathes | 1 |
| -19A | | Plug | | | 602197 | 22" and 26" Lathes | 1 |
| | 604542 | 10", 13" and 15" Lathes | 1 | -42 | | Gear - Large Cross Feed | |
| | 607852 | 17" and 19" Lathes | 1 | | 604122 | 10", 13" and 15" Lathes | 1 |
| | 78392 | 22" and 26" Lathes | 1 | | 604080 | 17" and 19" Lathes | 1 |
| -20 | | Gear - Main Drive | | | 602202 | 22" and 26" Lathes | 1 |
| | 604603 | 10", 13" and 15" Lathes | 1 | -43A | | Pin | |
| | 603520 | 17" and 19" Lathes | 1 | | 217555 | 10", 13" and 15" Lathes | 2 |
| | 602215 | 22" and 26" Lathes | 1 | | 248160 | 17" and 19" Lathes | 2 |
| -21 | | Seal - Oil | | | 201826 | 22" and 26" Lathes | 2 |
| | 93234 | 10", 13" and 15" Lathes | 1 | -44 | | Sleeve - Feed Shaft | |
| | 93236 | 17" and 19" Lathes | 1 | | 607785 | 10", 13" and 15" Lathes | 2 |
| | 93236 | 22" and 26" Lathes | 1 | | 606456 | 17" and 19" Lathes | 2 |
| -22 | | Bearing - Plain | | | 606859 | 22" and 26" Lathes | 2 |
| | 604601 | 10", 13" and 15" Lathes | 1 | -45 | | Bearing - Plain | |
| | 603518 | 17" and 19" Lathes | 1 | | 604535 | 10", 13" and 15" Lathes | 2 |
| | 602216 | 22" and 26" Lathes | 1 | | 604072 | 17" and 19" Lathes | 2 |
| -23 | | Plate | 2 | | 603150 | 22" and 26" Lathes | 2 |
| -24 | | Knob | 2 | -46 | | Gear - Large Longitudinal Feed | |
| -26 | | Lever - Drop | | | 604599 | 10", 13" and 15" Lathes | 1 |
| | 608669 | 10", 13" and 15" Lathes | 2 | | 604079 | 17" and 19" Lathes | 1 |
| | 608669 | 17" and 19" Lathes | 2 | | 603146 | 22" and 26" Lathes | 1 |
| | 608670 | 22" and 26" Lathes | 2 | -47 | | Gear - Small Cross Feed | |
| -27 | | Pin - Drop Lever | | | 604589 | 10", 13" and 15" Lathes | 1 |
| | 604608 | 10", 13" and 15" Lathes | 2 | | 604081 | 17" and 19" Lathes | 1 |
| | 604608 | 17" and 19" Lathes | 2 | | 603147 | 22" and 26" Lathes | 1 |
| | 603155 | 22" and 26" Lathes | 2 | | | | |

Part listing continued on following page.

APRON (FRONT VIEW) (Concluded)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|------------------------|-----------|----------------------|----------|---|-----------|
| RP34-49 | 154807 | Pin - Roll | 1 | RP34-59 | 608885 | Hub - Half Nut | 1 |
| -51 | 606119 | Plate - Name | 1 | -60 | 608882 | Handle | |
| -54 | 608855 | Knob | 1 | | 608882 | 10", 13" and 15" Lathes | 1 |
| -55 | 4330 | Plate | 1 | | 608883 | 17" and 19", 22" and 26" Lathes | 1 |
| -56 | 608668 | Knob - Lever | 1 | -62 | 101782 | Screw - Socket Head Set, Flat | 1 |
| -57 | 608668 | Knob - Lever | 2 | | | | |

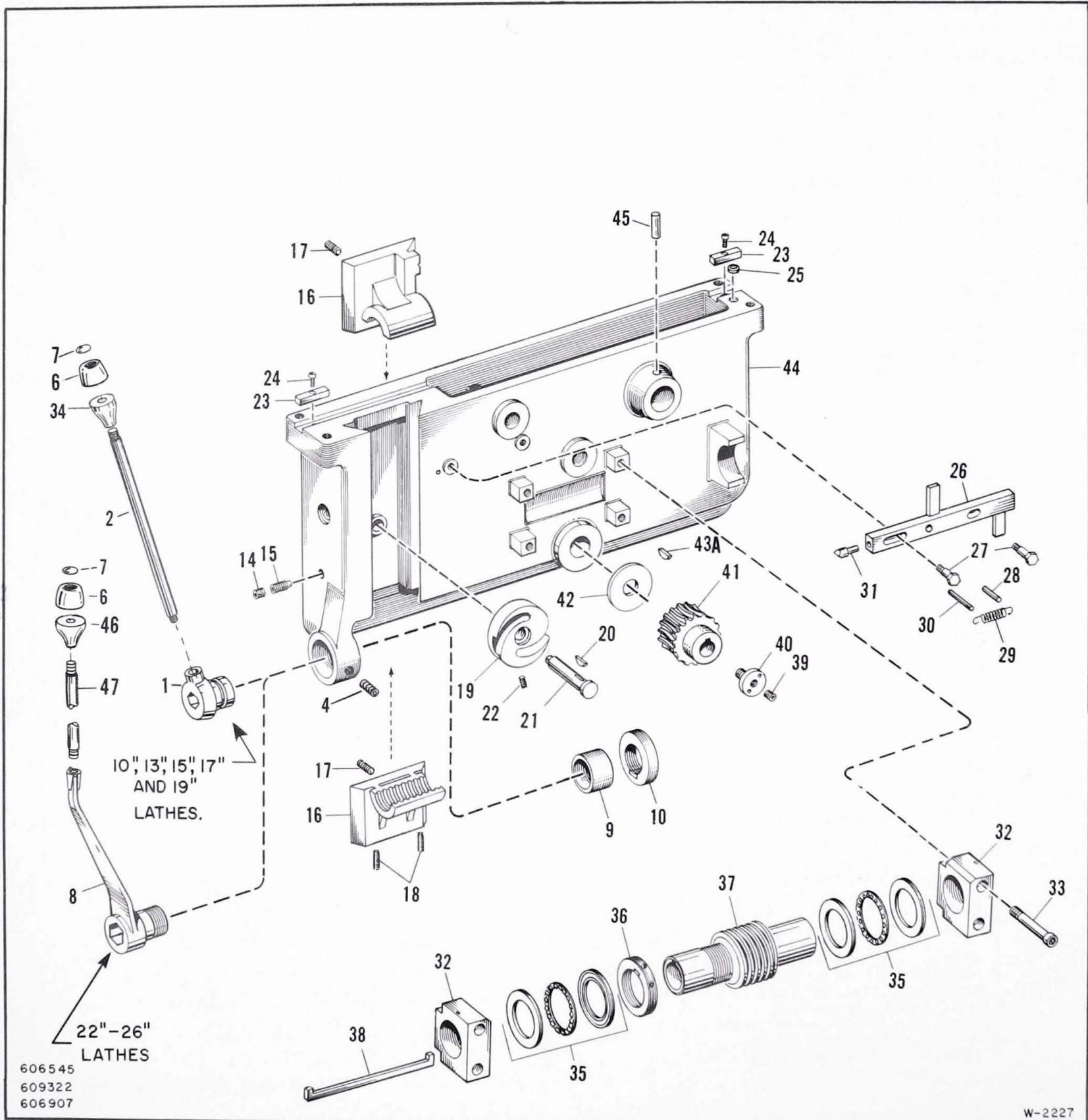
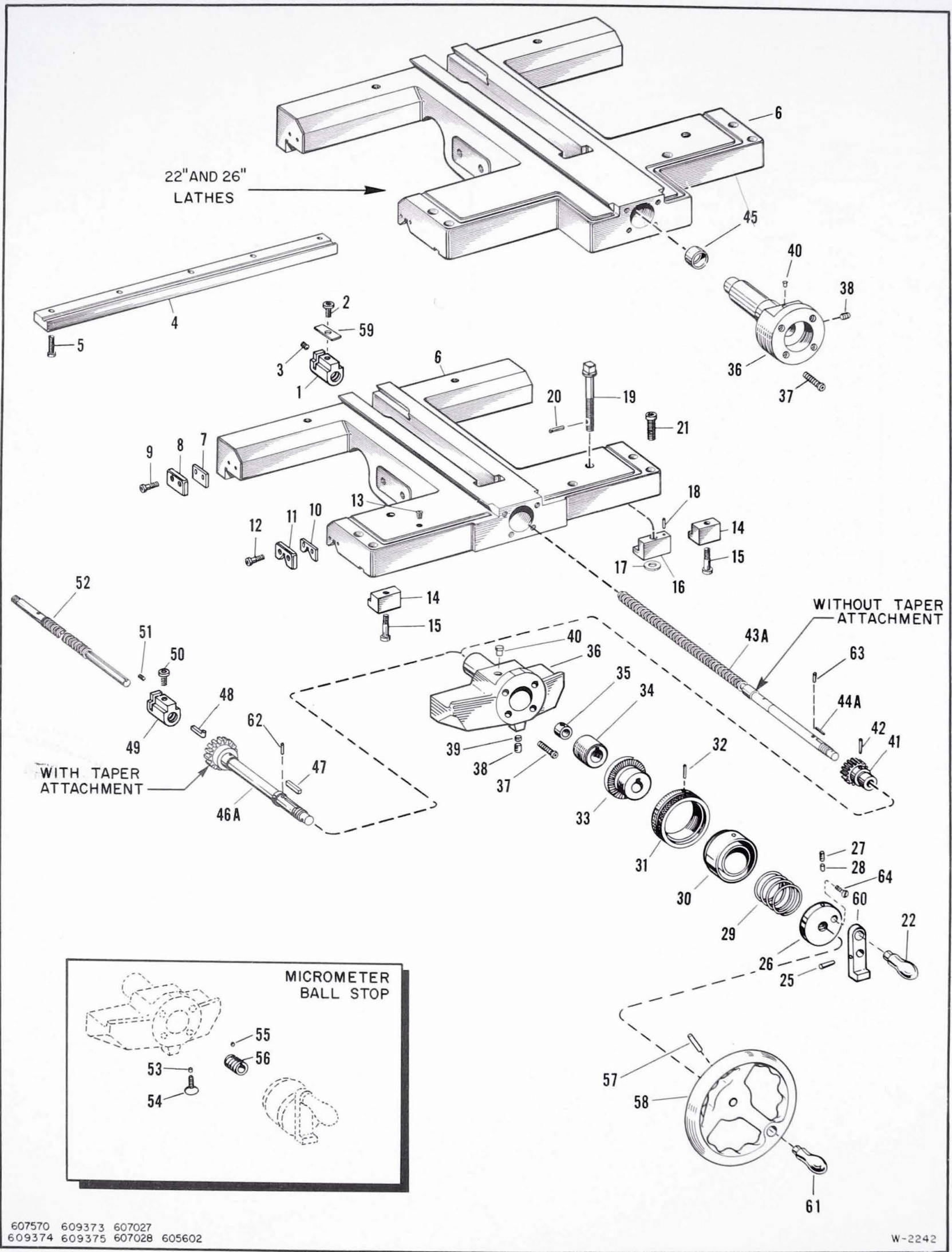


Figure RP36 Apron (Rear View)

APRON (REAR VIEW)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|-----------------------------------|--|-----------|
| RP36-1 | | Hub - Handle | | RP36-28 | 98826 | Pin - Spring | 1 |
| | 608894 | 10", 13" and 15" Lathes | 1 | -29 | 140630 | Spring - Extension | 1 |
| | 608894 | 17" and 19" Lathes | 1 | -30 | 98825 | Pin - Spring | 1 |
| -2 | | Handle | | -31 | 601361 | Pin - Interference | 1 |
| | 608884 | 10", 13" and 15" Lathes | 1 | -32 | | Bracket - Worm | |
| | 608884 | 17" and 19" Lathes | 1 | 604604 | 10", 13" and 15" Lathes | 2 | 2 |
| -4 | | Screw - Dog Point Set | | 604086 | 17" and 19" Lathes | 2 | 2 |
| | 606444 | 10", 13" and 15" Lathes | 1 | 603159 | 22" and 26" Lathes | 2 | 2 |
| | 606444 | 17" and 19" Lathes | 1 | -33 | | Screw - Socket Head Cap | |
| -6 | 608855 | Knob | 1 | 2326 | 10", 13" and 15" Lathes | 4 | 4 |
| -7 | 606152 | Plate - Name | 1 | 2326 | 17" and 19" Lathes | 4 | 4 |
| -8 | 608897 | Hub - Handle, 22" and 26" Lathes | 1 | 3262 | 22" and 26" Lathes | 4 | 4 |
| -9 | 602540 | Bushing, 22" and 26" Lathes | 1 | -34 | 608668 | Knob - Lever | 1 |
| -10 | 4191 | Nut - Lock, 22" and 26" Lathes | 1 | -35 | | Bearing - Thrust | |
| -14 | | Screw - Socket Head, Flat | | 102789 | 10", 13" and 15" Lathes | 2 | 2 |
| | 2356 | 10", 13" and 15" Lathes | 1 | 604087 | 17" and 19" Lathes | 2 | 2 |
| | 1175 | 17" and 19" Lathes | 1 | 603218 | 22" and 26" Lathes | 2 | 2 |
| | 1175 | 22" and 26" Lathes | 1 | -36 | | Nut - Lock, Worm | |
| -15 | | Screw - Dog Point Set | | 604609 | 10", 13" and 15" Lathes | 1 | 1 |
| | 3233 | 10", 13" and 15" Lathes | 1 | 604075 | 17" and 19" Lathes | 1 | 1 |
| | 3455 | 17" and 19" Lathes | 1 | 603166 | 22" and 26" Lathes | 1 | 1 |
| | 3456 | 22" and 26" Lathes | 1 | -37 | | Worm | |
| -16 | | Nut - Half | | 604595 | 10", 13" and 15" Lathes | 1 | 1 |
| | 604591 | 10", 13" and 15" Lathes | 1 | 604084 | 17" and 19" Lathes | 1 | 1 |
| | 604225 | 17" and 19" Lathes | 1 | 603161 | 22" and 26" Lathes | 1 | 1 |
| | 602191 | 22" and 26" Lathes | 1 | -38 | | Key - Worm | |
| -17 | | Stud - Positioning | | 604618 | 10", 13" and 15" Lathes | 1 | 1 |
| | 600108 | 10", 13", and 15" Lathes | 2 | 604070 | 17" and 19" Lathes | 1 | 1 |
| | 600108 | 17" and 19" Lathes | 2 | 603158 | 22" and 26" Lathes | 1 | 1 |
| | 602210 | 22" and 26" Lathes | 2 | -39 | 3231 | Screw - Dog Point Set | 1 |
| -18 | | Screw - Dog Point Set | | -40 | | Screw - Back Gear | |
| | 3230 | 10", 13" and 15" Lathes | 2 | 602801 | 10", 13" and 15" Lathes | 1 | 1 |
| | 3165 | 17" and 19" Lathes | 2 | 602222 | 17" and 19" Lathes | 1 | 1 |
| | 3295 | 22" and 26" Lathes | 2 | 602222 | 22" and 26" Lathes | 1 | 1 |
| -19 | | Cam - Half Nut | | -41 | | Worm - Wheel | |
| | 600640 | 10", 13" and 15" Lathes | 1 | 606542 | 10", 13" and 15" Lathes | 1 | 1 |
| | 601694 | 17" and 19" Lathes | 1 | 606489 | 17" and 19" Lathes | 1 | 1 |
| | 602204 | 22" and 26" Lathes | 1 | 606906 | 22" and 26" Lathes | 1 | 1 |
| -20 | 1266 | Key - Woodruff | 1 | -42 | 602220 | Spacer - 22" and 26" Lathes Only | 1 |
| -21 | | Shaft - Half Nut Cam | | -43A | | Key - Hi-Pro | |
| | 606492 | 10", 13" and 15" Lathes | 1 | 3279 | 10", 13" and 15" Lathes | 1 | 1 |
| | 606446 | 17" and 19" Lathes | 1 | 3280 | 17" and 19" Lathes | 1 | 1 |
| | 606858 | 22" and 26" Lathes | 1 | 703074 | 22" and 26" Lathes | 1 | 1 |
| -22 | | Stud - Locating | | -44 | | Apron | |
| | 600641 | 10", 13" and 15" Lathes | 1 | 606547 | 10", 13" and 15" Lathes | 1 | 1 |
| | 600448 | 17" and 19" Lathes | 1 | 606546 | 17" and 19" Lathes | 1 | 1 |
| | 600448 | 22" and 26" Lathes | 1 | 606904 | 22" and 26" Lathes | 1 | 1 |
| -23 | 600458 | Key - Apron | 2 | -45 | | Pin - Straight | |
| -24 | 3203 | Screw - Socket Head Cap | 2 | 3383 | 10", 13" and 15" Lathes | 1 | 1 |
| -25 | 600184 | Washer - Seal | 1 | 3385 | 17" and 19" Lathes | 1 | 1 |
| -26 | | Bar - Interference | | 3377 | 22" and 26" Lathes | 1 | 1 |
| | 604590 | 10", 13" and 15" Lathes | 1 | -46 | 608668 | Knob - Lever | 1 |
| | 603521 | 17" and 19" Lathes | 1 | -47 | 608884 | Handle, 22" and 26" Lathes | 1 |
| | 602188 | 22" and 26" Lathes | 1 | | | | |
| -27 | 201682 | Screw - Hex Head Shoulder | 2 | | | | |



607570 609373 607027
 609374 609375 607028 605602

W-2242

Figure RP38 Carriage and Crossfeed Assembly

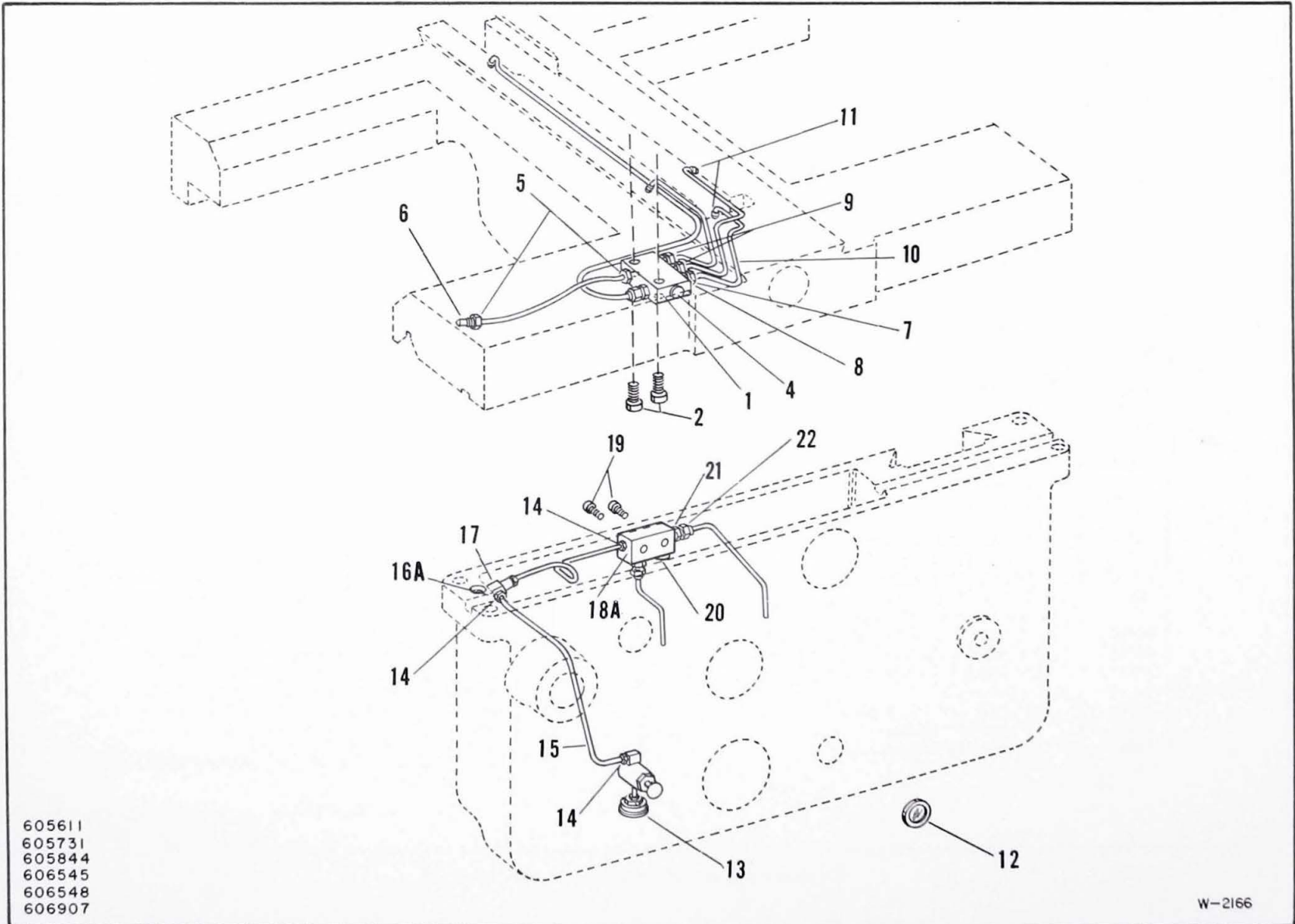
CARRIAGE AND CROSSFEED ASSEMBLY

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|--|--|-----------|
| RP38-1 | | Nut - Crossfeed, Without Taper Attachment | | RP38-21 | | Screw - Socket Head Cap | |
| | 603971 | 10", 13" and 15" Lathes | 1 | 3401 | 10", 13" and 15" Lathes | 4 | |
| | 603575 | 17" and 19" Lathes | 1 | 3405 | 17" and 19" Lathes | 6 | |
| | 605641 | 22" and 26" Lathes | 1 | 3322 | 22" and 26" Lathes | 6 | |
| -2 | | Screw - Crossfeed Nut | | -22 | 607598 | Handle | |
| | 603967 | 10", 13" and 15" Lathes | 1 | 607596 | 10", 13", 15", 17" and 19" Lathes | 1 | |
| | 4169 | 17" and 19" Lathes | 1 | | 22" and 26" Lathes | 1 | |
| | 602380 | 22" and 26" Lathes | 1 | -25 | | Pin - Taper | |
| -3 | | Screw - Hex Socket Set | | 140 | 10" Lathe | 1 | |
| | 2333 | 10", 13" and 15" Lathes | 1 | 2291 | 13" and 15" Lathes | 1 | |
| | 2334 | 17" and 19" Lathes | 1 | 141 | 17" and 19" Lathes | 1 | |
| | 2334 | 22" and 26" Lathes | 1 | 143 | 22" and 26" Lathes | 1 | |
| -4 | | Gib - Rear | | -26 | | Nut - Lock | |
| | 600548 | 10", 13" and 15" Lathes | 1 | 609369 | 10", 13", 15" Lathes | 1 | |
| | 600292 | 17" and 19" Lathes | 1 | 609371 | 17", 19", 22", 26" Lathes | 1 | |
| | 602382 | 22" and 26" Lathes | 1 | 2331 | Screw - Hex Socket Set | 1 | |
| -5 | | Screw - Socket Head Cap | | -28 | 1994 | Plug - Brass | 1 |
| | 3396 | 10", 13" and 15" Lathes | 5 | -29 | | Spring - Compression | |
| | 3266 | 17" and 19" Lathes | 5 | 605293 | 10", 13" and 15" Lathes | 1 | |
| | 3404 | 22" and 26" Lathes | 5 | 602663 | 17" and 19" Lathes | 1 | |
| -6 | | Carriage | | 602663 | 22" and 26" Lathes | 1 | |
| | 607006 | 10", 13" and 15" Lathes | 1 | -30 | | Clutch - Dial | |
| | 606397 | 17" and 19" Lathes | 1 | 607776 | 10", 13" and 15" Lathes | 1 | |
| | 605633 | 22" and 26" Lathes | 1 | 607764 | 17" and 19" Lathes | 1 | |
| | 607997 | 19" Lathes, Raised 4" | 1 | 607764 | 22" and 26" Lathes | 1 | |
| | 606367 | 26" Lathes, Raised 5" | 1 | -31 | | Dial - Crossfeed | |
| -7 | | Pad - Shear Wiper, Rear | | 607775 | 10", 13" and 15" Lathes | 1 | |
| | 600542 | 10", 13" and 15" Lathes | 2 | 607771 | 17" and 19" Lathes | 1 | |
| | 600285 | 17" and 19" Lathes | 2 | 607771 | 22" and 26" Lathes | 1 | |
| | 602349 | 22" and 26" Lathes | 2 | -32 | 605988 | Pin - Roll | 1 |
| -8 | | Wiper - Shear, Rear | | -33A | | Clutch - Dial | |
| | 600541 | 10", 13" and 15" Lathes | 2 | 609354 | 10", 13" and 15" Lathes | 1 | |
| | 600284 | 17" and 19" Lathes | 2 | 609370 | 17" and 19" Lathes | 1 | |
| | 602351 | 22" and 26" Lathes | 2 | 607763 | 22" and 26" Lathes | 1 | |
| -9 | | Screw - Low Socket Head Cap | | -34 | | Retainer | |
| | 3199 | 10", 13" and 15" Lathes | 4 | 607778 | 10", 13" and 15" Lathes | 1 | |
| | 3199 | 17" and 19" Lathes | 4 | 607765 | 17" and 19" Lathes | 1 | |
| | 3203 | 22" and 26" Lathes | 4 | 607783 | 22" and 26" Lathes | 1 | |
| -10 | | Pad - Shear Wiper, Front | | -35 | | Bearing | |
| | 600528 | 10", 13" and 15" Lathes | 2 | 606847 | 10", 13" and 15" Lathes | 1 | |
| | 600283 | 17" and 19" Lathes | 2 | 607766 | 17" and 19" Lathes | 1 | |
| | 602347 | 22" and 26" Lathes | 2 | 604319 | 22" and 26" Lathes | 1 | |
| -11 | | Wiper - Shear, Front | | -36 | | Bushing - Crossfeed | |
| | 600527 | 10", 13" and 15" Lathes | 2 | 607897 | 10", 13" and 15" Lathes | 1 | |
| | 600282 | 17" and 19" Lathes | 2 | 607898 | 17" Lathes, Without Tracer | 1 | |
| | 602348 | 22" and 26" Lathes | 2 | 608077 | 17" Lathes, With Tracer | 1 | |
| -12 | | Screw - Low Socket Head Cap | | 607898 | 19" Lathes, With or Without Tracer | 1 | |
| | 3199 | 10", 13" and 15" Lathes | 4 | 605645 | 22" and 26" Lathes | 1 | |
| | 3199 | 17" and 19" Lathes | 4 | -37 | | Screw - Socket Head Cap | |
| | 3203 | 22" and 26" Lathes | 4 | 3160 | 10", 13" and 15" Lathes | 4 | |
| -13 | | Plug - Pipe | 1 | 3175 | 17" and 19" Lathes | 4 | |
| -14 | | Gib - Front | | 2300 | 22" and 26" Lathes | 4 | |
| | 600552 | 10", 13" and 15" Lathes | 2 | -38 | | Screw - Set, Without Micrometer | |
| | 600295 | 17" and 19" Lathes | 2 | 605413 | Ball Stop | | |
| | 602342 | 22" and 26" Lathes | 2 | 1917 | 10", 13" and 15" Lathes | 1 | |
| -15 | | Screw - Socket Head Cap | | 1911 | 17" and 19" Lathes | 1 | |
| | 3397 | 10", 13" and 15" Lathes | 2 | 1911 | 19" Lathes, With Tracer | 1 | |
| | 3251 | 17" and 19" Lathes | 2 | 1911 | 22" and 26" Lathes | 1 | |
| | 3248 | 22" and 26" Lathes | 2 | -39 | | Plug - Brass | |
| -16 | | Clamp - Carriage | | 1550 | 10", 13" and 15" Lathes | 1 | |
| | 600549 | 10", 13" and 15" Lathes | 1 | 1926 | 17" and 19" Lathes | 1 | |
| | 600293 | 17" and 19" Lathes | 1 | 69583 | 22" and 26" Lathes | 1 | |
| | 602393 | 22" and 26" Lathes | 1 | -40 | | Oiler | 1 |
| -17 | | Washer | | -41 | | Pinion - Crossfeed, Without Taper Attachment | |
| | 3441 | 10", 13" and 15" Lathes | 1 | 604525 | 10", 13" and 15" Lathes | 1 | |
| | 3442 | 17" and 19" Lathes | 1 | 602678 | 17" and 19" Lathes | 1 | |
| | 1040 | 22" and 26" Lathes | 1 | 603350 | 22" and 26" Lathes | 1 | |
| -18 | | Pin - Straight | 1 | -42 | | Pin - Taper, Without Taper Attachment | |
| -19 | | Screw - Carriage Clamp | | 140 | 10", 13" and 15" Lathes | 1 | |
| | 604528 | 10", 13" and 15" Lathes | 1 | 663 | 17" and 19" Lathes | 1 | |
| | 603571 | 17" and 19" Lathes | 1 | 663 | 22" and 26" Lathes | 1 | |
| | 603215 | 22" and 26" Lathes | 1 | -43A | | Screw - Crossfeed, Without Taper Attachment | |
| -20 | | Pin - Cotter | | 609372 | 10", 13" and 15" Lathes | 1 | |
| | 2095 | 10", 13" and 15" Lathes | 1 | 609376 | 17" and 19" Lathes | 1 | |
| | 2095 | 17" and 19" Lathes | 1 | 609377 | 22" and 26" Lathes | 1 | |
| | 1959 | 22" and 26" Lathes | 1 | 606365 | 26" Lathes, Raised | 1 | |

Part listing continued on following page.

CARRIAGE AND CROSSFEED ASSEMBLY (Concluded)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|-----------------------------------|-----------|
| RP38-44A | 3279 | Key | 1 | RP38-54 | | Screw - With Micrometer Ball Stop | |
| -45 | 607409 | Bushing - Drive, 22" and 26" Lathes Only | 1 | 605415 | | 10", 13" and 15" Lathes | 1 |
| -46A | | Pinion - Crossfeed, with Taper Attachment | | 605416 | | 17" and 19" Lathes | 1 |
| | 609378 | 10", 13" and 15" Lathes | 1 | 605416 | | 22" and 26" Lathes | 1 |
| | 609379 | 17" and 19" Lathes | 1 | -55 | 2290 | Ball - With Micrometer Ball Stop | |
| | 609380 | 22" and 26" Lathes | 1 | | 30060 | 10", 13" and 15" Lathes | 1 |
| -47 | 3279 | Key | 1 | | 30060 | 17" and 19" Lathes | 1 |
| -48 | | Key, with Taper Attachment | | -56 | | 22" and 26" Lathes | 1 |
| | 600558 | 10", 13" and 15" Lathes | 1 | | 604581 | Stop - Ball | |
| | 602448 | 17" and 19" Lathes | 1 | | 607002 | 10", 13" and 15" Lathes | 1 |
| | 602448 | 22" and 26" Lathes | 1 | | 602059 | 17" and 19" Lathes | 1 |
| -49 | | Nut - Crossfeed, with Taper Attachment | | -57 | | 22" and 26" Lathes | 1 |
| | 603971 | 10", 13" and 15" Lathes | 1 | | 251895 | Pin | |
| | 603575 | 17" and 19" Lathes | 1 | | 647 | 19" Raised Lathe | 1 |
| | 605641 | 22" and 26" Lathes | 1 | -58 | | 26" Raised Lathe | 1 |
| -50 | | Screw - Crossfeed Nut | | | 608467 | Handwheel | |
| | 603967 | 10", 13" and 15" Lathes | 1 | | 608468 | 19" Raised Lathe | 1 |
| | 4169 | 17" and 19" Lathes | 1 | -59 | | 26" Raised Lathe | 1 |
| | 602380 | 22" and 26" Lathes | 1 | | 608977 | Shim - Crossfeed Nut | |
| -51 | | Screw - Hex Socket Set | | | 608976 | 10", 13" and 15" Lathes | 1 |
| | 2333 | 10", 13" and 15" Lathes | 1 | | 608976 | 17" and 19" Lathes | 1 |
| | 2334 | 17" and 19" Lathes | 1 | | 608978 | 22" and 26" Lathes | 1 |
| | 2334 | 22" and 26" Lathes | 1 | -60 | | Crank - Crossfeed Assembly | |
| -52 | | Screw - Crossfeed, with Taper Attachment | | | 607024 | 10" and 13" Lathes | 1 |
| | 604575 | 10", 13" and 15" Lathes | 1 | | 608478 | 15" Lathes | 1 |
| | 604147 | 17" and 19" Lathes | 1 | | 604159 | 17" and 19" Lathes | 1 |
| | 602884 | 22" and 26" Lathes | 1 | | 604159 | 22" and 26" Lathes | 1 |
| -53 | | Plug - Brass, with Micrometer Ball Stop | | -61 | | Handle and Stud | |
| | 1550 | 10", 13" and 15" Lathes | 1 | | 607598 | 19" Raised Lathe | 1 |
| | 1962 | 17" and 19" Lathes | 1 | | 607596 | 26" Raised Lathe | 1 |
| | 605099 | 22" and 26" Lathes | 1 | -62 | 710699 | Pin | 1 |
| | | | | -63 | 710699 | Pin | 1 |
| | | | | -64 | 267536 | Screw, Flathead | 1 |



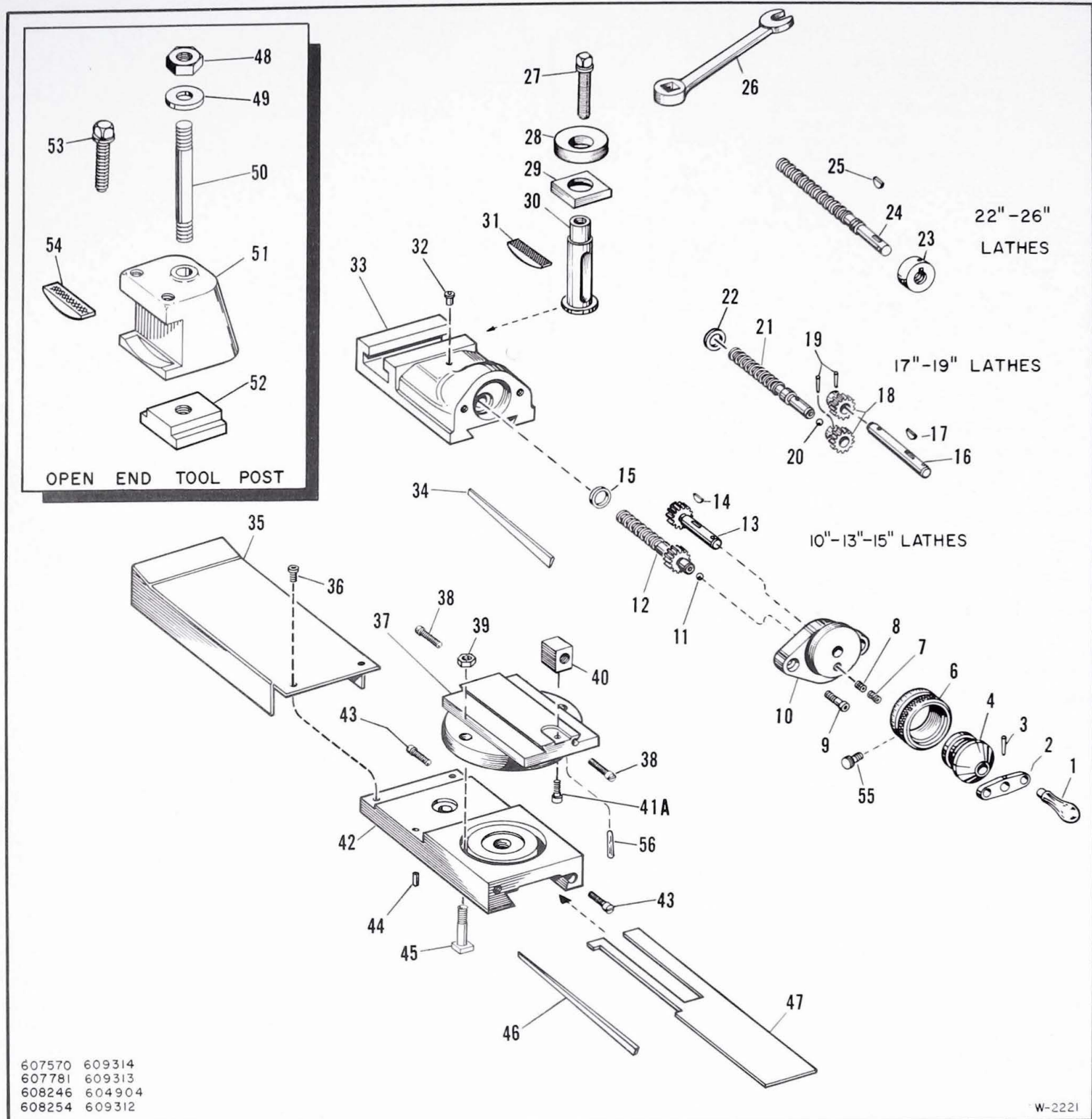
- 605611
- 605731
- 605844
- 606545
- 606548
- 606907

W-2166

Figure RP40 Apron and Carriage Lubrication System

APRON AND CARRIAGE LUBRICATION SYSTEM

| Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|-----------------------------------|-----------|
| RP40-1 | 600185 | Bar - Junction | 1 |
| -2 | 3246 | Screw - Socket Head Cap | 2 |
| -4 | 600186 | Plug - Closure | 3 |
| -5 | | Fitting - Tubing | |
| | 115595 | Bushing - Compression | 2 |
| | 214304 | Sleeve - Compression | 2 |
| -6 | 214303 | Adapter - Straight | 1 |
| -7 | | Fitting - Tubing | |
| | 600188 | Nut - Compression | 4 |
| | 600189 | Sleeve - Compression | 4 |
| -8 | 600187 | Unit - Metering | 2 |
| -9 | 600191 | Unit - Metering | 2 |
| -10 | | Tubing - Oil | |
| | 604570 | 10", 13" and 15" Lathes | 1 |
| | 604248 | 17" and 19" Lathes | 1 |
| | 604900 | 22" and 26" Lathes | 1 |
| -11 | 600192 | Bushing - Drive | 4 |
| -12 | 237701 | Gage - Oil Sight | 1 |
| -13 | 603983 | Lubricator | 1 |
| -14 | | Fitting - Tubing | |
| | 115595 | Bushing - Compression | 4 |
| | 214304 | Sleeve - Compression | 4 |
| -15 | | Tubing - Oil | |
| | 608098 | 10", 13" and 15" Lathes | 1 |
| | 608116 | 17" and 19" Lathes | 1 |
| | 602193 | 22" and 26" Lathes | 1 |
| -16A | 214303 | Adapter - Straight | 1 |
| -17 | 600937 | Tee - Adapter | 1 |
| -18A | 293432 | Bar - Junction | 1 |
| -19 | 3246 | Screw - Socket Head Cap | 2 |
| -20 | 600186 | Plug - Closure | 1 |
| -21 | 600946 | Unit - Metering | 2 |
| -22 | | Fitting - Tubing | |
| | 600188 | Nut - Compression | 2 |
| | 600189 | Sleeve - Compression | 2 |



607570 609314
 607781 609313
 608246 604904
 608254 609312

W-2221

Figure RP42 Compound Rest and Tool Post Assemblies

COMPOUND REST AND TOOL POST ASSEMBLIES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|-----------------------------------|-----------|----------------------|----------|-----------------------------------|-----------|
| RP42-1 | 606044 | Handle | 2 | RP42-6 | | Dial - Top Slide | |
| -2 | | Crank - Compound Feed | | 602794 | | 10", 13" and 15" Lathes | 1 |
| | 607021 | 10", 13" and 15" Lathes | 1 | 602362 | | 17" and 19" Lathes | 1 |
| | 607012 | 17" and 19" Lathes | 1 | 602362 | | 22" and 26" Lathes | 1 |
| | 607012 | 22" and 26" Lathes | 1 | -7 | | Screw - Hollow Hex Lock | |
| -3 | | Pin - Taper | | 2354 | | 10", 13" and 15" Lathes | 1 |
| | 140 | 10", 13" and 15" Lathes | 1 | 2356 | | 17" and 19" Lathes | 1 |
| | 141 | 17" and 19" Lathes | 1 | -8 | | Screw - Hex Socket Set | |
| | 141 | 22" and 26" Lathes | 1 | 2332 | | 10", 13" and 15" Lathes | 1 |
| -4 | | Bush - Dial | | 1911 | | 17" and 19" Lathes | 1 |
| | 605802 | 10", 13" and 15" Lathes | 1 | -9 | | Screw - Socket Head Cap | |
| | 602365 | 17" and 19" Lathes | 1 | 3218 | | 10", 13" and 15" Lathes | 2 |
| | 602365 | 22" and 26" Lathes | 1 | 3399 | | 17" and 19" Lathes | 2 |
| | | | | 3404 | | 22" and 26" Lathes | 2 |

COMPOUND REST AND TOOL POST ASSEMBLIES (Concluded)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|-----------------------------------|-----------|----------------------|----------|--|-----------|
| RP42-10 | 605801 | Bushing - Top Slide | | RP42-39 | | Nut - Hex | |
| | 605761 | 10", 13" and 15" Lathes | 1 | 3478 | | 10" and 13" Lathes | 2 |
| | 602359 | 17" and 19" Lathes | 1 | 3479 | | 15" Lathes | 2 |
| | 2290 | 22" and 26" Lathes | 1 | 3474 | | 17" Lathes | 2 |
| -11 | 604559 | Ball | 1 | 3479 | | 19" Lathes | 2 |
| -12 | 605803 | Screw - Top Slide | 1 | 3480 | | 22" and 26" Lathes | 2 |
| -13 | 1266 | Pinion - Dial | 1 | 3480 | | 19" and 26" Raised Lathes | 2 |
| -14 | 604537 | Key - Woodruff | 1 | -40 | | Nut - Top Slide | |
| -15 | 606569 | Bearing - Thrust | 1 | 600585 | | 10", 13" and 15" Lathes | 1 |
| -16 | 1266 | Shaft - Dial | 1 | 604514 | | 17" and 19" Lathes | 1 |
| -17 | 600311 | Key - Woodruff | 1 | 605758 | | 22" and 26" Lathes | 1 |
| -18 | 140 | Pinion - Feed | 2 | -41A | | Screw - Socket Head Cap | |
| -19 | 30060 | Pin - Taper | 2 | 3218 | | 10" Lathe | 1 |
| -20 | 603573 | Ball | 1 | 3397 | | 13" Lathe | 1 |
| -21 | 603577 | Screw - Top Slide | 1 | 3157 | | 15" Lathe | 1 |
| -22 | 250168 | Bearing - Thrust | 1 | 3266 | | 17" Lathe without Tracer. | 1 |
| -23 | 606731 | Nut - Lock | 1 | 2300 | | 19" Lathe without Tracer. | 1 |
| -24 | 1266 | Screw - Top Slide | 1 | 3248 | | 22" Lathe | 1 |
| -25 | | Key - Woodruff | 1 | 3321 | | 26" Lathe | 1 |
| -26 | | Wrench - Tool Post | | 3251 | | 19" Raised Lathe | 1 |
| | 602946 | 10", 13" and 15" Lathes | 1 | 3322 | | 26" Raised Lathe | 1 |
| | 601345 | 17" and 19" Lathes | 1 | -42 | | Slide - Cross | |
| | 602395 | 22" and 26" Lathes | 1 | 605796 | | 10" Lathes | 1 |
| -27 | | Screw - Tool Post | | 608861 | | 13" and 15" Lathes | 1 |
| | 601465 | 10" Lathes | 1 | 605727 | | 17" and 19" Lathes | 1 |
| | 600596 | 13" and 15" Lathes | 1 | 605636 | | 22" and 26" Lathes | 1 |
| | 600162 | 17" and 19" Lathes | 1 | -43 | | Screw - Gib | |
| | 602372 | 22" and 26" Lathes | 1 | 604536 | | 10", 13" and 15" Lathes | 2 |
| -28 | | Ring - Tool Post | | 604372 | | 17", 19", 22" and 26" Lathes | 2 |
| | 601461 | 10" Lathes | 1 | 3383 | | Pin - Straight | 1 |
| | 604623 | 13" and 15" Lathes | 1 | -44 | | Bolt - Swivel | |
| | 603563 | 17" and 19" Lathes | 1 | 605808 | | 10" Lathes | 2 |
| | 602375 | 22" and 26" Lathes | 1 | 3314 | | 13" and 15" Lathes | 2 |
| -29 | | Square - Tool Post | | 605752 | | 17" Lathe without Tracer. | 2 |
| | 601463 | 10" Lathes | 1 | 600210 | | 19" Lathe without Tracer. | 2 |
| | 600597 | 13" and 15" Lathes | 1 | 3363 | | 22" and 26" Lathes | 2 |
| | 600163 | 17" and 19" Lathes | 1 | 3362 | | 19" and 26" Raised Lathe. | 2 |
| | 602376 | 22" and 26" Lathes | 1 | 600274 | | 17" Lathe with Tracer | 2 |
| -30 | | Post - Tool | | 600210 | | 19" Lathe with Tracer | 2 |
| | 607025 | 10" Lathes | 1 | -46 | | Gib - Cross Slide | |
| | 600595 | 13" and 15" Lathes | 1 | 605807 | | 10", 13" and 15" Lathes | 1 |
| | 600161 | 17" and 19" Lathes | 1 | 605748 | | 17" and 19" Lathes | 1 |
| | 602373 | 22" and 26" Lathes | 1 | 605643 | | 22" and 26" Lathes | 1 |
| -31 | | Wedge - Tool Post | | -47 | | Guard - Cross Slide Front | |
| | 601464 | 10" Lathes | 1 | 605674 | | 10", 13" and 15" Lathes | 1 |
| | 600599 | 13" and 15" Lathes | 1 | 605746 | | 17" and 19" Lathes | 1 |
| | 600165 | 17" and 19" Lathes | 1 | 605675 | | 22" and 26" Lathes | 1 |
| | 602374 | 22" and 26" Lathes | 1 | -48 | | Nut - Hex | |
| -32 | 69583 | Oiler | 1 | 2057 | | 10", 13" and 15" Lathes | 1 |
| -33 | | Slide - Top | | 506 | | 17" and 19" Lathes | 1 |
| | 605804 | 10" Lathes | 1 | 666 | | 22" and 26" Lathes | 1 |
| | 605806 | 13" and 15" Lathes | 1 | 261479 | | Washer, 10", 13" and 15" Lathes Only | 1 |
| | 605764 | 17" and 19" Lathes | 1 | -49 | | Stud | |
| | 602358 | 22" and 26" Lathes | 1 | 605542 | | 10" Lathes | 1 |
| -34 | | Gib - Top Slide | | 605547 | | 13" and 15" Lathes | 1 |
| | 604540 | 10", 13" and 15" Lathes | 1 | 605550 | | 17" and 19" Lathes | 1 |
| | 605749 | 17" and 19" Lathes | 1 | 605554 | | 22" and 26" Lathes | 1 |
| | 602343 | 22" and 26" Lathes | 1 | -51 | | Post - Tool, Open End | |
| -35 | | Guard - Cross Slide | | 605543 | | 10" Lathes | 1 |
| | 605800 | 10", 13" and 15" Lathes | 1 | 605544 | | 13" and 15" Lathes | 1 |
| | 605742 | 17" and 19" Lathes | 1 | 605551 | | 17" and 19" Lathes | 1 |
| | 605644 | 22" and 26" Lathes | 1 | 605555 | | 22" and 26" Lathes | 1 |
| -36 | | Screw - Socket Head Cap | | -52 | | Block - Tee | |
| | 234042 | 10", 13" and 15" Lathes | 2 | 605541 | | 10" Lathes | 1 |
| | 3202 | 17" and 19" Lathes | 2 | 605546 | | 13" and 15" Lathes | 1 |
| | 3202 | 22" and 26" Lathes | 2 | 605549 | | 17" and 19" Lathes | 1 |
| -37 | | Swivel | | 605553 | | 22" and 26" Lathes | 1 |
| | 605797 | 10" Lathe | 1 | -53 | | Screw - Tool Post | |
| | 608863 | 13" Lathe | 1 | 605540 | | 10", 13" and 15" Lathes | 2 |
| | 609166 | 15" Lathe | 1 | 605548 | | 17" and 19" Lathes | 2 |
| | 605723 | 17" Lathe without Tracer. | 1 | 605552 | | 22" and 26" Lathes | 2 |
| | 605724 | 19" Lathe without Tracer. | 1 | -54 | | Wedge - Tool Post | |
| | 605637 | 22" Lathe | 1 | 601464 | | 10" Lathes | 1 |
| | 605638 | 26" Lathe | 1 | 600599 | | 13" and 15" Lathes | 1 |
| | 606331-1 | 19" Lathe Raised 2" | 1 | 600165 | | 17" and 19" Lathes | 1 |
| | 606331-3 | 19" Lathe Raised 4" | 1 | 602374 | | 22" and 26" Lathes | 1 |
| | 606335-1 | 26" Lathe Raised 3" | 1 | -55 | | Thumb Screw | |
| | 606335-3 | 26" Lathe Raised 5" | 1 | 2255 | | 17", 19", 22" and 26" Lathes | 1 |
| -38 | | Screw - Gib | | 2253 | | 10", 13" and 15" Lathes | 1 |
| | 604536 | 10", 13" and 15" Lathes | 2 | -56 | | Pin - Taper | |
| | 604372 | 17" and 19" Lathes | 2 | 141 | | 19" with Raise | 1 |
| | 604372 | 22" and 26" Lathes | 2 | 642 | | 26" with Raise | 1 |

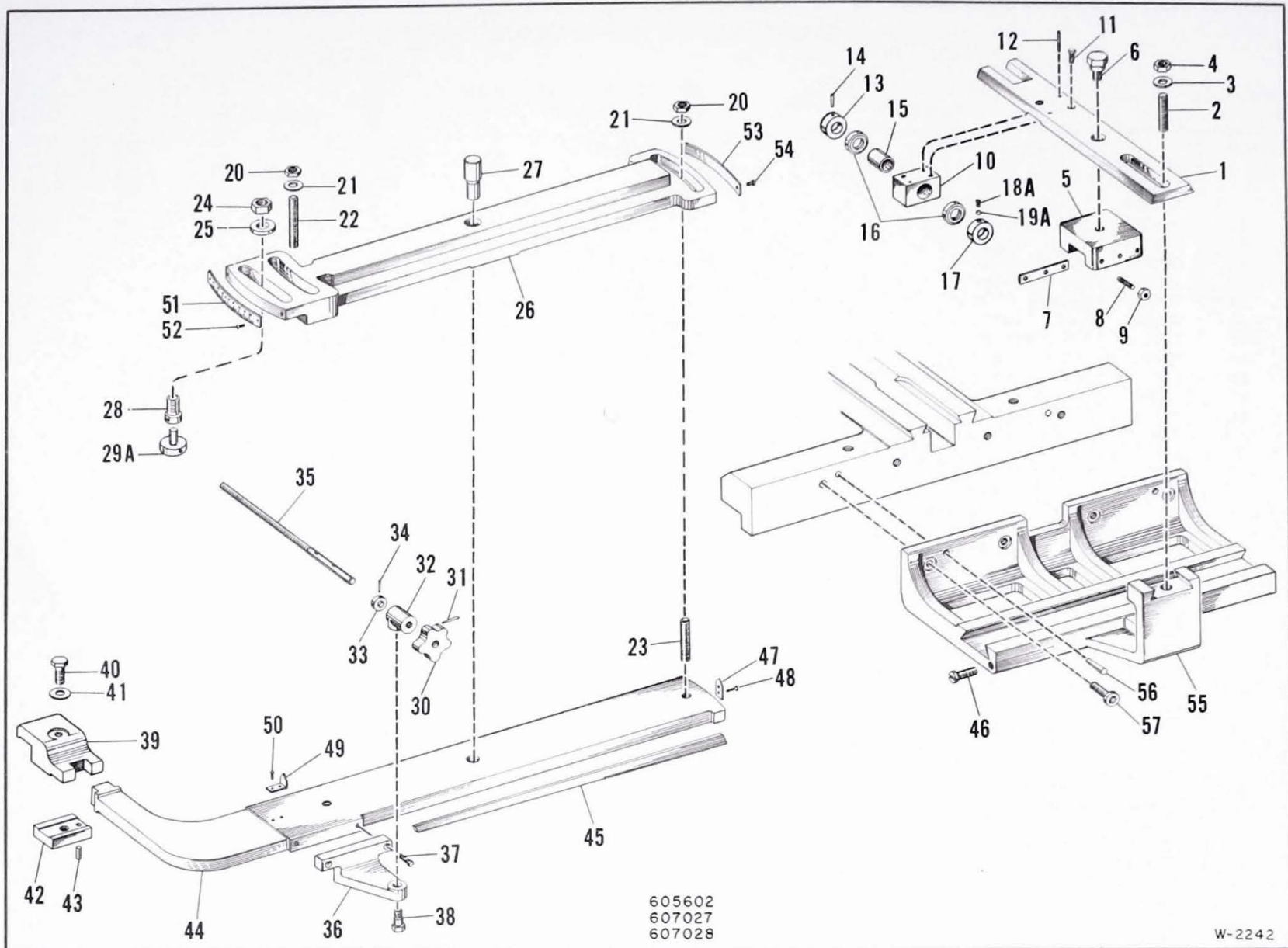


Figure RP44 Taper Attachment

TAPER ATTACHMENT

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|-----------------------------------|-----------|----------------------|----------|-----------------------------------|-----------|
| RP44-1 | | Bar | | RP44-9 | | Nut - Hex | |
| | 605858 | 10", 13" and 15" Lathes | 1 | 2280 | | 10", 13" and 15" Lathes | 2 |
| | 605754 | 17" and 19" Lathes | 1 | 3472 | | 17" and 19" Lathes | 3 |
| | 605606 | 22" and 26" Lathes | 1 | 3472 | | 22" and 26" Lathes | 3 |
| -2 | | Stud | | -10 | | Bracket - Feed Screw Bearing | |
| | 602054 | 10", 13" and 15" Lathes | 1 | 605857 | | 10", 13" and 15" Lathes | 1 |
| | 602055 | 17" and 19" Lathes | 1 | 605753 | | 17" and 19" Lathes | 1 |
| | 224115 | 22" and 26" Lathes | 1 | 605609 | | 22" and 26" Lathes | 1 |
| -3 | | Washer | | -11 | | Screw - Low Socket Head Cap | |
| | 3441 | 10", 13" and 15" Lathes | 1 | 3204 | | 10", 13" and 15" Lathes | 1 |
| | 3442 | 17" and 19" Lathes | 1 | 3210 | | 17" and 19" Lathes | 1 |
| | 1040 | 22" and 26" Lathes | 1 | 2320 | | 22" and 26" Lathes | 1 |
| -4 | | Nut - Hex | | -12 | | Pin - Straight | |
| | 3473 | 10", 13" and 15" Lathes | 1 | 3270 | | 10", 13" and 15" Lathes | 2 |
| | 3474 | 17" and 19" Lathes | 1 | 3541 | | 17" and 19" Lathes | 2 |
| | 3475 | 22" and 26" Lathes | 1 | 3162 | | 22" and 26" Lathes | 2 |
| -5 | | Shoe - Top Slide | | -13 | | Collar - Feed Screw | |
| | 600669 | 10", 13" and 15" Lathes | 1 | 600677 | | 10", 13" and 15" Lathes | 1 |
| | 600488 | 17" and 19" Lathes | 1 | 600496 | | 17" and 19" Lathes | 1 |
| | 602431 | 22" and 26" Lathes | 1 | 602439 | | 22" and 26" Lathes | 1 |
| -6 | | Screw - Shoulder | | -14 | | Pin - Taper | |
| | 600681 | 10", 13" and 15" Lathes | 1 | 140 | | 10", 13" and 15" Lathes | 1 |
| | 600502 | 17" and 19" Lathes | 1 | 143 | | 17" and 19" Lathes | 1 |
| | 605608 | 22" and 26" Lathes | 1 | 663 | | 22" and 26" Lathes | 1 |
| -7 | | Gib - Top Slide Shoe | | -15 | | Bushing - Crossfeed Screw | |
| | 600670 | 10", 13" and 15" Lathes | 1 | 240669 | | 10", 13" and 15" Lathes | 1 |
| | 600489 | 17" and 19" Lathes | 1 | 223048 | | 17" and 19" Lathes | 1 |
| | 602432 | 22" and 26" Lathes | 1 | 602436 | | 22" and 26" Lathes | 1 |
| -8 | | Screw - Set Gib | | -16 | | Bearing - Ball Thrust | |
| | 600671 | 10", 13" and 15" Lathes | 2 | 602762 | | 10", 13" and 15" Lathes | 2 |
| | 3165 | 17" and 19" Lathes | 3 | 700418 | | 17" and 19" Lathes | 2 |
| | 3231 | 22" and 26" Lathes | 3 | 602878 | | 22" and 26" Lathes | 2 |

TAPER ATTACHMENT (Concluded)

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|-----------------------------------|-----------|----------------------|----------|--|-----------|
| RP44-17 | | Nut - Adjusting | | RP44-37 | | Screw - Socket Head Cap | |
| | 602763 | 10", 13" and 15" Lathes | 1 | | 3246 | 10", 13" and 15" Lathes | 2 |
| | 246225 | 17" and 19" Lathes | 1 | | 3396 | 17" and 19" Lathes | 2 |
| | 600497 | 22" and 26" Lathes | 1 | | 3396 | 22" and 26" Lathes | 2 |
| -18A | | Screw - Low Socket Set | | -38 | | Screw - Shoulder | |
| | 2353 | 10", 13" and 15" Lathes | 1 | | 600903 | 10", 13" and 15" Lathes | 1 |
| | 2332 | 22" and 26" Lathes | 1 | | 600796 | 17" and 19" Lathes | 1 |
| -19A | | Plug - Brass | | | 600796 | 22" and 26" Lathes | 1 |
| | 600436 | 10", 13" and 15" Lathes | 1 | -39 | | Cap - Locating, Clamp | |
| | 1550 | 22" and 26" Lathes | 1 | | 600687 | 10", 13" and 15" Lathes | 1 |
| -20 | | Nut - Hex | | | 600509 | 17" and 19" Lathes | 1 |
| | 3478 | 10", 13" and 15" Lathes | 2 | | 602418 | 22" and 26" Lathes | 1 |
| | 3479 | 17" and 19" Lathes | 2 | -40 | | Screw - Hex Head Cap | |
| | 3480 | 22" and 26" Lathes | 2 | | 600908 | 10", 13" and 15" Lathes | 1 |
| -21 | | Washer | | | 73874 | 17" and 19" Lathes | 1 |
| | 3441 | 10", 13" and 15" Lathes | 2 | | 610 | 22" and 26" Lathes | 1 |
| | 3442 | 17" and 19" Lathes | 2 | -41 | | Washer | |
| | 1040 | 22" and 26" Lathes | 2 | | 3442 | 10", 13" and 15" Lathes | 1 |
| -22 | | Stud | | | 1040 | 17" and 19" Lathes | 1 |
| | 200160 | 10", 13" and 15" Lathes | 1 | | 1040 | 22" and 26" Lathes | 1 |
| | 48955 | 17" and 19" Lathes | 1 | -42 | | Clamp - Locating | |
| | 608590 | 22" and 26" Lathes | 1 | | 600686 | 10", 13" and 15" Lathes | 1 |
| -23 | | Stud - Swivel Lock | | | 600508 | 17" and 19" Lathes | 1 |
| | 75946 | 10", 13" and 15" Lathes | 1 | | 602419 | 22" and 26" Lathes | 1 |
| | 81693 | 17" and 19" Lathes | 1 | -43 | | Pin - Straight | |
| | 608589 | 22" and 26" Lathes | 1 | | 3270 | 10", 13" and 15" Lathes | 1 |
| -24 | | Nut - Hex | | | 3431 | 17" and 19" Lathes | 1 |
| | 3475 | 10", 13" and 15" Lathes | 1 | | 3431 | 22" and 26" Lathes | 1 |
| | 3476 | 17" and 19" Lathes | 1 | -44 | | Slide - Bottom | |
| | 666 | 22" and 26" Lathes | 1 | | 600899 | 10", 13" and 15" Lathes | 1 |
| -25 | | Washer | | | 600893 | 17" and 19" Lathes | 1 |
| | 1040 | 10", 13" and 15" Lathes | 1 | | 602417 | 22" and 26" Lathes | 1 |
| | 764 | 17" and 19" Lathes | 1 | -45 | | Gib | |
| | 764 | 22" and 26" Lathes | 1 | | 600900 | 10", 13" and 15" Lathes | 1 |
| -26 | | Slide - Top | | | 600894 | 17" and 19" Lathes | 1 |
| | 600665 | 10", 13" and 15" Lathes | 1 | | 602416 | 22" and 26" Lathes | 1 |
| | 600484 | 17" and 19" Lathes | 1 | -46 | | Screw - Gib | |
| | 602420 | 22" and 26" Lathes | 1 | | 604536 | 10", 13" and 15" Lathes | 2 |
| -27 | | Stud - Swivel | | | 604372 | 17" and 19" Lathes | 2 |
| | 600666 | 10", 13" and 15" Lathes | 1 | | 604372 | 22" and 26" Lathes | 2 |
| | 600485 | 17" and 19" Lathes | 1 | -47 | | Pointer - Degree | |
| | 602421 | 22" and 26" Lathes | 1 | | 600685 | 10", 13" and 15" Lathes | 1 |
| -28 | | Bushing - Index Screw | | | 600507 | 17" and 19" Lathes | 1 |
| | 601277 | 10", 13" and 15" Lathes | 1 | | 602429 | 22" and 26" Lathes | 1 |
| | 601276 | 17" and 19" Lathes | 1 | -48 | | Screw - Round Head | |
| | 602425 | 22" and 26" Lathes | 1 | | 149521 | 10", 13" and 15" Lathes | 2 |
| -29A | | Nut - Index Screw | | -49 | | Pointer - Taper per Foot | |
| | 600668 | 10", 13" and 15" Lathes | 1 | | 600683 | 10", 13" and 15" Lathes | 1 |
| | 600487 | 17" and 19" Lathes | 1 | | 600505 | 17" and 19" Lathes | 1 |
| | 602424 | 22" and 26" Lathes | 1 | -50 | 602430 | 22" and 26" Lathes | 1 |
| -30 | | Knob - Star | | | 149521 | Screw - Round Head | |
| | 600675 | 10", 13" and 15" Lathes | 1 | -51 | | Scale - Index, Taper per Foot | |
| | 601337 | 17" and 19" Lathes | 1 | | 600688 | 10", 13" and 15" Lathes, English | 1 |
| | 601337 | 22" and 26" Lathes | 1 | | 600504 | 17" and 19" Lathes, English | 1 |
| -31 | | Pin - Taper | | | 602427 | 22" and 26" Lathes, English | 1 |
| | 2291 | 10", 13" and 15" Lathes | 1 | -52 | 149521 | Screw - Round Head | |
| | 663 | 17" and 19" Lathes | 1 | | | Scale - Degrees | |
| | 663 | 22" and 26" Lathes | 1 | -53 | | 10", 13" and 15" Lathes | 1 |
| -32 | | Swivel - Index Screw | | | 600684 | 17" and 19" Lathes | 1 |
| | 600902 | 10", 13" and 15" Lathes | 1 | | 600506 | 22" and 26" Lathes | 1 |
| | 600896 | 17" and 19" Lathes | 1 | -54 | 602426 | Screw - Round Head | |
| | 600896 | 22" and 26" Lathes | 1 | | 149521 | Bracket | |
| -33 | | Collar - Index Screw | | | 605843 | 10", 13" and 15" Lathes | 1 |
| | 96952 | 10", 13" and 15" Lathes | 1 | | 605747 | 17" and 19" Lathes | 1 |
| | 103103 | 17" and 19" Lathes | 1 | | 605604 | 22" and 26" Lathes | 1 |
| | 103103 | 22" and 26" Lathes | 1 | -56 | | Pin - Taper | |
| -34 | | Pin - Taper | | | 663 | 10", 13" and 15" Lathes | 2 |
| | 140 | 10", 13" and 15" Lathes | 1 | | 663 | 17" and 19" Lathes | 2 |
| | 2291 | 17" and 19" Lathes | 1 | | 3541 | 22" and 26" Lathes | 2 |
| | 2291 | 22" and 26" Lathes | 1 | -57 | | Screw - Socket Head Cap | |
| -35 | | Screw - Index | | | 3266 | 10", 13" and 15" Lathes | 4 |
| | 600673 | 10", 13" and 15" Lathes | 1 | | 3403 | 17" and 19" Lathes | 4 |
| | 600491 | 17" and 19" Lathes | 1 | | 3408 | 22" and 26" Lathes | 4 |
| | 602423 | 22" and 26" Lathes | 1 | | | | |
| -36 | | Bracket - Index Screw | | | | | |
| | 600901 | 10", 13" and 15" Lathes | 1 | | | | |
| | 600895 | 17" and 19" Lathes | 1 | | | | |
| | 602422 | 22" and 26" Lathes | 1 | | | | |

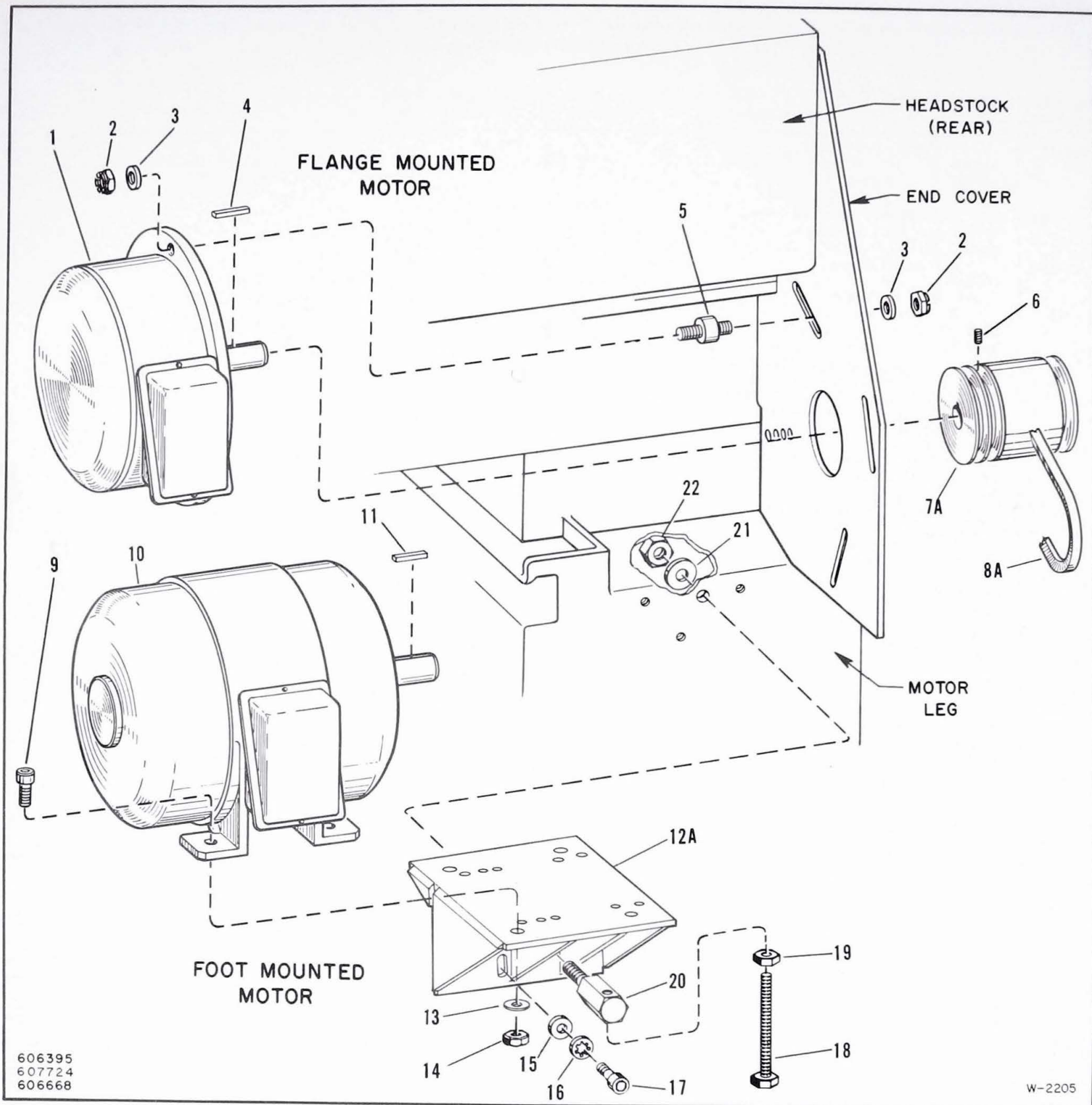
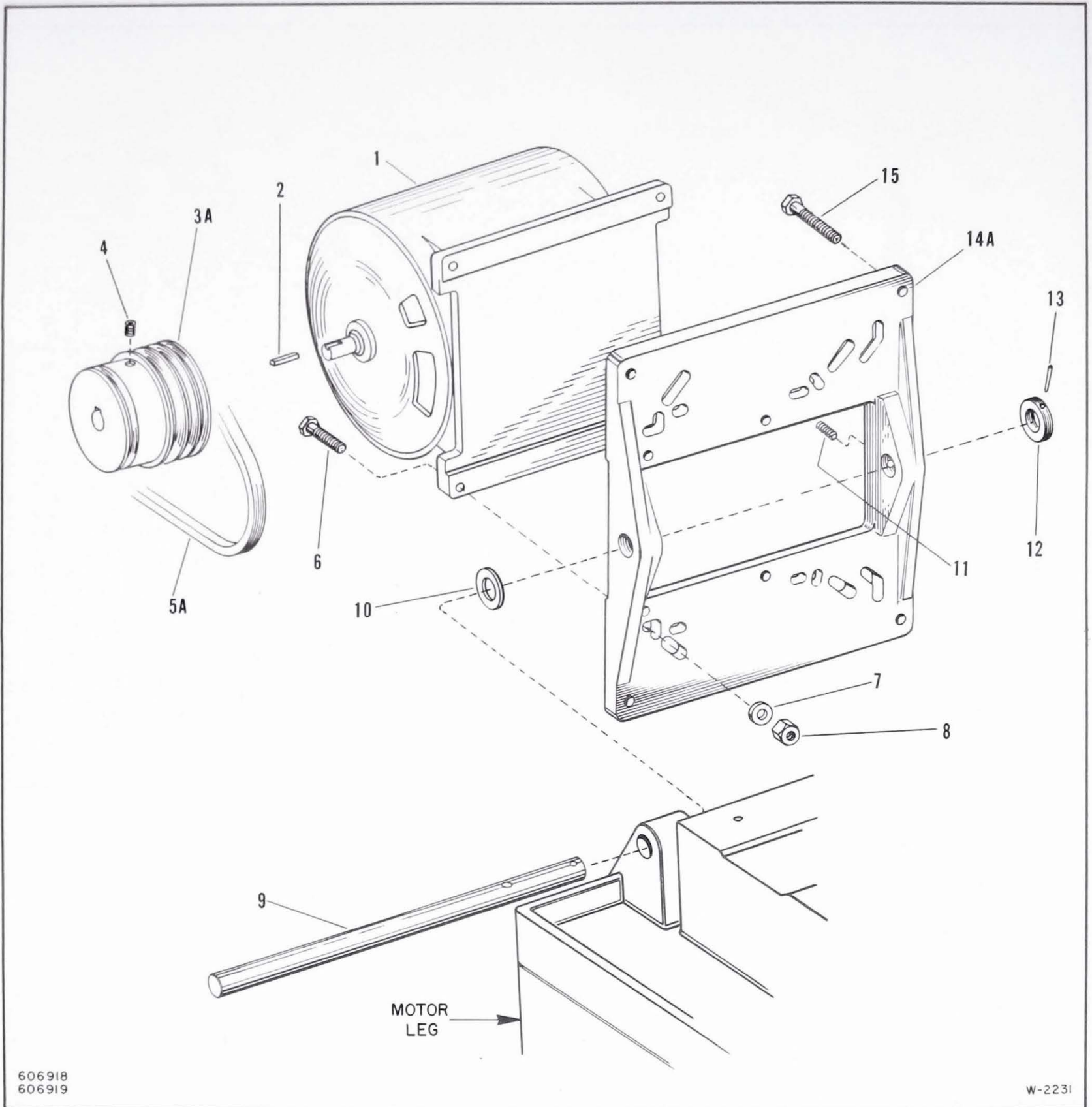


Figure RP46 Motor Drive For 10", 13", 15", 17" and 19" Lathes

MOTOR DRIVE FOR 10", 13", 15", 17" AND 19" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|--|-----------|
| RP46-1 | Example | *Motor - Flange Mounted | 1 | RP46-8A | | Belt - Drive | |
| -2 | 703077 | Nut - Elastic Stop | 8 | -13 | 606713 | 10", 13" and 15" Lathes | 2 |
| -3 | 140238 | Washer - Stop | 8 | -14 | 606713 | 17" and 19" Lathes, 5 hp | 3 |
| -4 | Example | *Key - Motor (Supplied with Motor | 1 | -15 | 609310 | 17" and 19" Lathes, 7-1/2 hp | 3 |
| -5 | 605497 | Stud - Spacer | 4 | -9 | Example | *Screw - Socket Head Cap | 4 |
| -6 | 1911 | Screw - Set | 1 | -10 | Example | *Motor - Foot Mounted | 1 |
| -7A | | Pulley - Motor | | -11 | Example | *Key (Supplied with Motor) | 1 |
| | 607983 | 10", 13" and 15" Lathes, Standard Speed | 1 | -12A | 609316 | Bracket - Motor Mounting | 1 |
| | 607984 | 10", 13" and 15" Lathes, Hi-Speed | 1 | -13 | Example | *Washer - Flat | 4 |
| | 608069 | 10", 13" and 15" Lathes, Super Hi-Speed | 1 | -14 | Example | *Nut - Hex | 4 |
| | | Super Hi-Speed | 1 | -15 | 3441 | Washer - Flat | 3 |
| | 608072 | 17" and 19" Lathes, Low Speed | 1 | -16 | 3267 | Lock Washer | 3 |
| | 607981 | 17" and 19" Lathes, Standard Speed | 1 | -17 | 3399 | Screw - Socket Head Cap | 3 |
| | 607982 | 17" and 19" Lathes, Hi-Speed 5 hp | 1 | -18 | 90727 | Screw - Hex Head | 1 |
| | 609309 | 17" and 19" Lathes, Hi-Speed 7-1/2 hp | 1 | -19 | 3474 | Nut - Hex | 1 |
| | | | | -20 | 606532 | Stud - Bracket | 1 |
| | | | | -21 | 3442 | Washer - Flat | 1 |
| | | | | -22 | 3479 | Nut - Hex | 1 |

*Note: Identify motor type, frame size, speed, horsepower and spindle speed range.



606918
606919

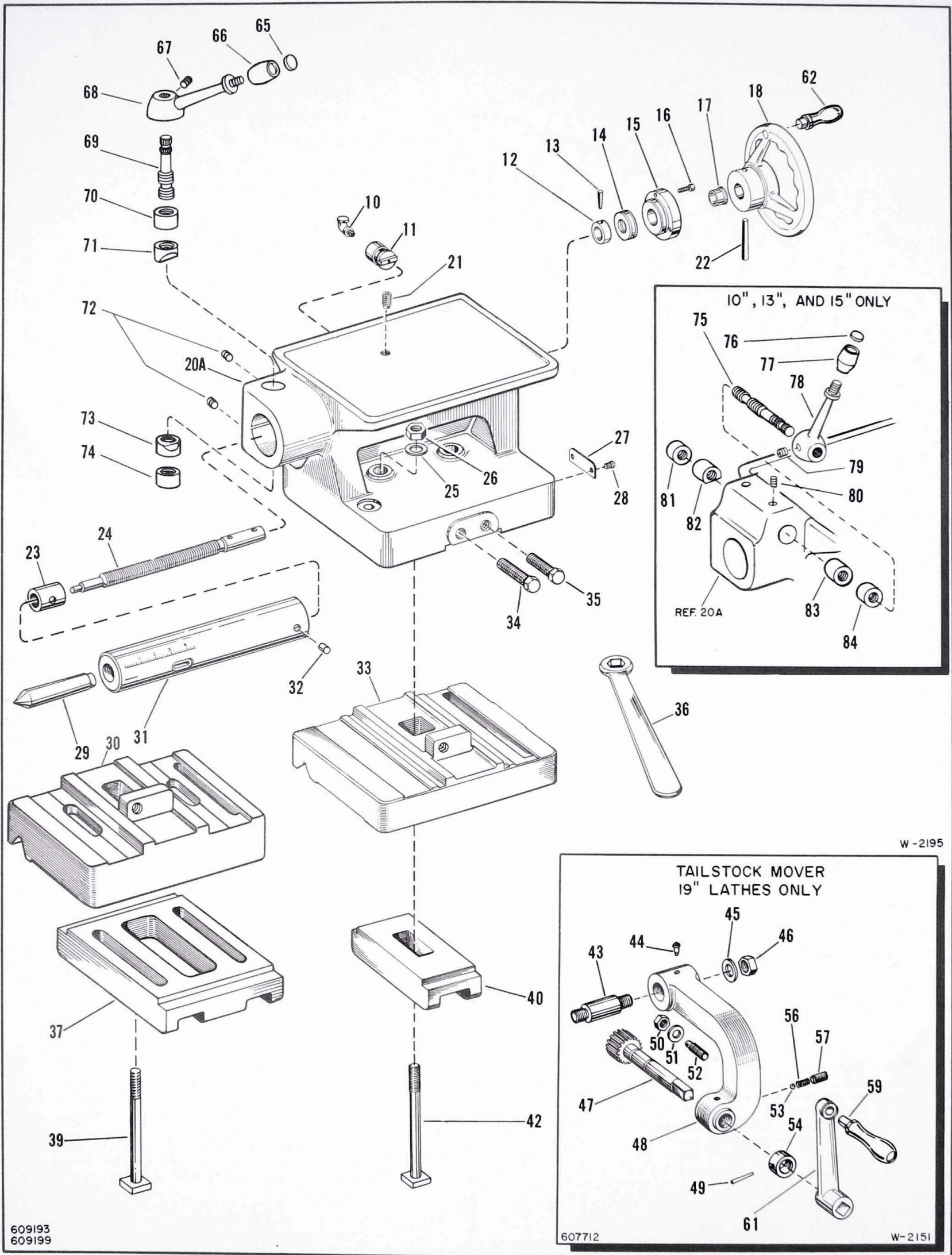
W-2231

Figure RP47 Motor Drive For 22" and 26" Lathes

MOTOR DRIVE FOR 22" AND 26" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|---|-----------|
| RP47-1 | Example | *Motor | 1 | RP47-6 | | Bolt | |
| -2 | Example | *Key (Supplied with Motor) | 1 | 3479 | | 254U, 284, and 284U Frame Motor | 4 |
| -3A | | Pulley - Motor | | 3480 | | 326 Frame Motor | 4 |
| | 609357 | Low Speed | 1 | -7 | | Washer | |
| | 609358 | Standard Speed | 1 | 3442 | | 254U, 284, and 284U Frame Motor | 4 |
| | 609359 | High Speed | 1 | 128 | | 326 Frame Motor | 4 |
| -4 | | Screw - Set | 1 | -8 | | Nut | |
| -5A | | Belt - Drive | | 1953 | | 254U, 284, and 284U Frame Motor | 4 |
| | 604905 | 22" Low and Standard Speed | 3 | 610 | | 326 Frame Motor | 4 |
| | 606987 | 22" High Speed | 3 | -9 | 603546 | Shaft - Motor Plate | 1 |
| | 606987 | 26" Low and Standard Speed Without Raise | 3 | -10 | 3471 | Washer - Flat | 1 |
| | 606988 | 26" High Speed Without Raise | 3 | -11 | 3238 | Screw - Set | 1 |
| | 609353 | 26" Standard and High Speed with 3" Raise | 3 | -12 | 3826 | Collar - Shaft | 1 |
| | 609352 | 26" Standard Speed with 5" Raise | 3 | -13 | 1890 | Pin - Taper | 1 |
| | 608905 | 26" High Speed with 5" Raise | 3 | -14A | 609351 | Plate - Motor | 1 |
| | | | | -15 | 212211 | Screw - Hex Head | 4 |

*Note: Identify motor type, frame size, speed, horsepower and spindle speed range.



W-2195

607712

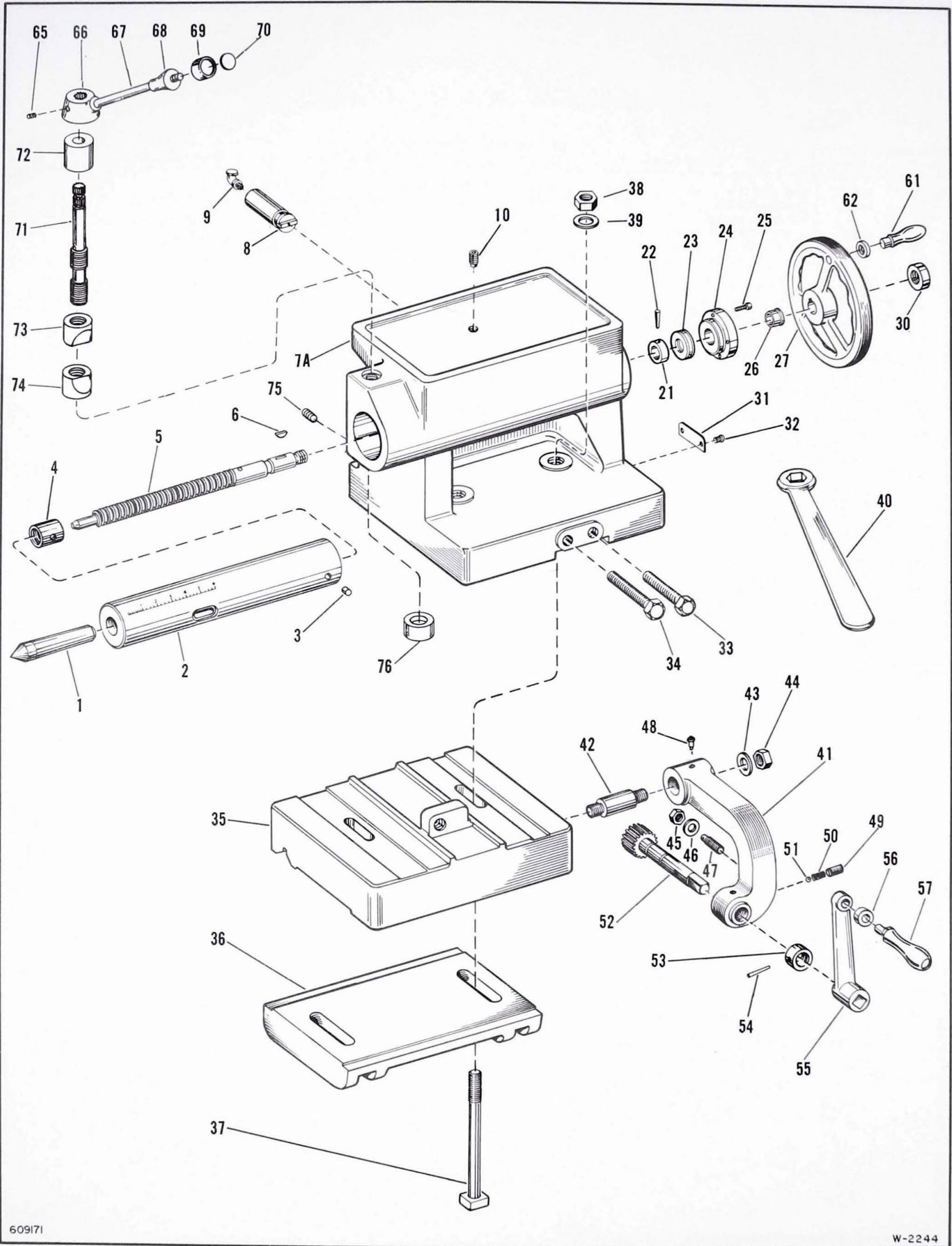
W-2151

Figure RP48 Tailstock Assembly for 10", 13", 15", 17" and 19" Lathes

609193
609199

TAILSTOCK FOR 10" 13", 15", 17" and 19" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|--|-----------|
| RP48-10 | 604513 | Cup - Oil | 1 | RP48-34 | | Screw | |
| -11 | 607061 | Guide - Spindle | 1 | 608872 | | 10", 13" and 15" Lathes | 1 |
| -12 | | Washer - Thrust | | 606013 | | 17" and 19" Lathes | 1 |
| | 239810 | 10", 13" and 15" Lathes | 1 | -35 | 608871 | Screw | |
| | 606007 | 17" and 19" Lathes | 1 | | 606012 | 10", 13" and 15" Lathes | 1 |
| -13 | | Pin - Taper | | -36 | | 17" and 19" Lathes | 1 |
| | 143 | 10", 13" and 15" Lathes | 1 | | 600968 | Wrench | |
| | 642 | 17" and 19" Lathes | 1 | | 600967 | 10", 13" and 15" Lathes | 1 |
| -14 | | Bearing - Thrust | | | 607716 | 17" and 19" Lathes | 1 |
| | 279235 | 10", 13" and 15" Lathes | | -37 | | Clamp - Tailstock, 17" and 19" Lathes | 1 |
| | 271992 | 17" and 19" Lathes | 1 | -39 | | Bolt - Tee, 17" and 19" Lathes | |
| -15 | | Cap - End | | | 607717 | 17" Lathes | 2 |
| | 606481 | 10", 13" and 15" Lathes | 1 | | 608213-1 | 19" Lathes | 2 |
| | 606006 | 17" and 19" Lathes | 1 | | 608213-2 | 19" Lathes, Raised 2" | 2 |
| -16 | | Screw - Socket Head Cap | | | 608213-4 | 19" Lathes, Raised 4" | 2 |
| | 124975 | 10", 13" and 15" Lathes | 3 | -40 | 600539 | Clamp - Tailstock, 10", 13" and 15" Lathes | 1 |
| | 4093 | 17" and 19" Lathes | 3 | -42 | | Bolt - Clamp, 10", 13" and 15" Lathes | |
| -17 | | Bushing | | | 601631 | 10" Lathes | 1 |
| | 606482 | 10", 13" and 15" Lathes | 1 | | 608517 | 13" Lathes | 1 |
| | 606008 | 17" and 19" Lathes | 1 | | 608519 | 15" Lathes | 1 |
| -18 | | Handwheel | | -43 | 606334 | Stud - Mover Bracket | 1 |
| | 607609 | 10" 13" and 15" Lathes | 1 | -44 | 60062 | Oiler | 2 |
| | 607608 | 17" and 19" Lathes | 1 | -45 | 3442 | Washer | 1 |
| -20A | | Top - Tailstock | | -46 | 3479 | Nut - Hex | 1 |
| | 609198 | 10", 13" and 15" Lathes | 1 | -47 | 606333 | Shaft - Pinion | 1 |
| | 609192 | 17" and 19" Lathes | 1 | -48 | 606332 | Bracket - Mover | 1 |
| -21 | 606279 | Screw - Hex Socket, Dog Point Set | 1 | -49 | 642 | Pin - Taper | 1 |
| -22 | 1890 | Pin - Taper | 1 | -50 | 44719 | Nut - Hex | 1 |
| 23 | | Nut - Spindle | | -51 | 3442 | Washer | 1 |
| | 606479 | 10", 13" and 15" Lathes | 1 | -52 | 3243 | Stop - Mover Bracket | 1 |
| | 606005 | 17" and 19" Lathes | 1 | -53 | 30060 | Ball | 1 |
| -24 | | Screw - Spindle Feed | | -54 | 3824 | Collar | 1 |
| | 606474 | 10", 13" and 15" Lathes | 1 | -56 | 82204 | Spring | 1 |
| | 607553 | 17" and 19" Lathes | 1 | -57 | 3211 | Screw | 1 |
| -25 | | Washer | | -59 | 607598 | Handle and Stud | 1 |
| | 1040 | 10", 13" and 15" Lathes | 1 | -61 | 702288 | Lever | 1 |
| | 764 | 17" and 19" Lathes | 2 | -62 | 607598 | Handle | 1 |
| -26 | | Nut | | -65 | 4330 | Plate - Name | 1 |
| | 3480 | 10", 13" and 15" Lathes | 1 | -66 | 608843 | Knob - Small Lever | 1 |
| | 3481 | 17" and 19" Lathes | 2 | -67 | 2339 | Screw - Set | 1 |
| -27 | 606011 | Scale | 1 | -68 | 167463 | Lever - Quill Clamp | 1 |
| -28 | 2209 | Screw - Drive | 2 | -69 | 609191 | Screw - Clamp | 1 |
| -29 | | Center | | -70 | 609190 | Bushing - Spindle Clamp | 1 |
| | 600242 | #3 Morse Taper, 10", 13" and 15" Lathes | 1 | -71 | 609188 | Clamp - Spindle, Left Hand Thread | 1 |
| | 601373 | #4 Morse Taper, 17" and 19" Lathes | 1 | -72 | 3229 | Screw - Set | 2 |
| -30 | | Bottom - Tailstock, 17" and 19" Lathes | | -73 | 609189 | Clamp - Spindle, Right Hand Thread | 1 |
| | 607713 | 17" Lathes | 1 | -74 | 167460 | Bushing - Spindle Clamp | 1 |
| | 607714 | 19" Lathes | 1 | -75 | 609197 | Screw - Clamp | 1 |
| | 607715-1 | 19" Lathes, Raised 2" | 1 | -76 | 4330 | Plate - Name | 1 |
| | 607715-3 | 19" Lathes, Raised 4" | 1 | -77 | 608843 | Knob - Small Lever | 1 |
| | 608725 | 19" Lathe, with Tailstock Mover | 1 | -78 | 167463 | Lever - Quill Clamp | 1 |
| -31 | | Spindle - Tang Slot | | -79 | 2339 | Screw - Set | 1 |
| | 607551 | 10", 13" and 15" Lathes | 1 | -80 | 3229 | Screw - Set | 2 |
| | 607552 | 17" and 19" Lathes | 1 | -81 | 167460 | Bushing - Spindle Clamp | 1 |
| -32 | | Pin | | -82 | 609195 | Clamp - Spindle, Right Hand Thread | 1 |
| | 201826 | 10", 13" and 15" Lathes | 1 | -83 | 609196 | Clamp - Spindle, Left Hand Thread | 1 |
| | 1418 | 17" and 19" Lathes | 1 | -84 | 609194 | Bushing - Spindle Clamp | 1 |
| -33 | | Bottom - Tailstock, 10", 13" and 15" Lathes | | | | | |
| | 606469 | 10" Lathes | 1 | | | | |
| | 606470 | 13" Lathes | 1 | | | | |
| | 608465 | 15" Lathes | 1 | | | | |



609171

W-2244

Figure RP50 Tailstock Assembly for 22" and 26" Lathes

MANUAL TAILSTOCK FOR 22" AND 26" LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---|-----------|
| RP50-1 | 603445 | Center - No. 5 Morse Taper | 1 | RP50-38 | 3481 | Nut - Hex Head | 2 |
| -2 | 606821 | Spindle - Tang Slot | 1 | -39 | 764 | Washer. | 2 |
| -3 | 1418 | Pin | 1 | -40 | 600967 | Wrench. | 1 |
| -4 | 606005 | Nut - Spindle | 1 | -41 | 604292 | Bracket - Mover | 1 |
| -5 | 606822 | Screw - Spindle Feed | 1 | -42 | 603137 | Stud - Mover Bracket | 1 |
| -6 | 679 | Key - Woodruff | 1 | -43 | 764 | Washer. | 1 |
| -7A | 609168 | Top - Tailstock | 1 | -44 | 666 | Nut - Hex Head | 1 |
| -8 | 606828 | Guide - Spindle | 1 | -45 | 2057 | Nut | 1 |
| -9 | 51738 | Cup - Oil | 1 | -46 | 3442 | Washer. | 1 |
| -10 | 606279 | Screw - Hex Socket Dog Point Set | 1 | -47 | 603125 | Stop - Mover Bracket, Adjust | 1 |
| -21 | 606007 | Washer - Thrust | 1 | -48 | 69583 | Oiler | 2 |
| -22 | 642 | Pin - Taper | 1 | -50 | 82204 | Spring | 1 |
| -23 | 271992 | Bearing - Thrust | 1 | -51 | 30060 | Ball | 1 |
| -24 | 606823 | Cap - End. | 1 | -52 | 604293 | Shaft - Pinion, Mover Bracket | 1 |
| -25 | 4093 | Screw - Socket Head Cap | 4 | -53 | 3824 | Collar | 1 |
| -26 | 606008 | Bushing | 1 | -54 | 642 | Pin - Taper | 1 |
| -27 | 606826 | Handwheel | 1 | -55 | 702288 | Lever | 1 |
| -30 | 606827 | Nut - Round | 1 | -56 | 606877 | Washer. | 1 |
| -31 | 606011 | Scale | 1 | -57 | 606795 | Handle and Stud | 1 |
| -32 | 2209 | Screw - Drive | 2 | -61 | 607596 | Handle and Stud | 1 |
| -33 | 606824 | Screw | 1 | -62 | 606877 | Washer. | 1 |
| -34 | 601999 | Screw | 1 | -65 | 2339 | Screw - Set | 1 |
| -35 | | Bottom - Tailstock | | -66 | 609212 | Hub - Lever | 1 |
| | 606818 | 22" Lathes | 1 | -67 | 609213 | Lever | 1 |
| | 606816 | 26" Lathes | 1 | -68 | 608668 | Knob - Lever. | 1 |
| | 607477-1 | 26" Lathes, Raised 3" | 1 | -69 | 608855 | Knob - Lever | 1 |
| | 607477-3 | 26" Lathes, Raised 5" | 1 | -70 | 4333 | Plate - Name | 1 |
| -36 | 603441 | Clamp | 1 | -71 | 707435 | Screw - Clamp | 1 |
| -37 | | Bolt - Clamp | | -72 | 707436 | Bushing - Clamp | 1 |
| | 603108 | 22" Lathes | 2 | -73 | 609169 | Nut - Left Hand Thread | 1 |
| | 603442 | 26" Lathes | 2 | -74 | 609170 | Nut - Right Hand Thread | 1 |
| | 606357-1 | 26" Lathes, Raised 3". | 2 | -75 | 3229 | Screw - Set | 2 |
| | 606357-3 | 26" Lathes, Raised 5". | 2 | -76 | 167460 | Plug - Clamp | 1 |

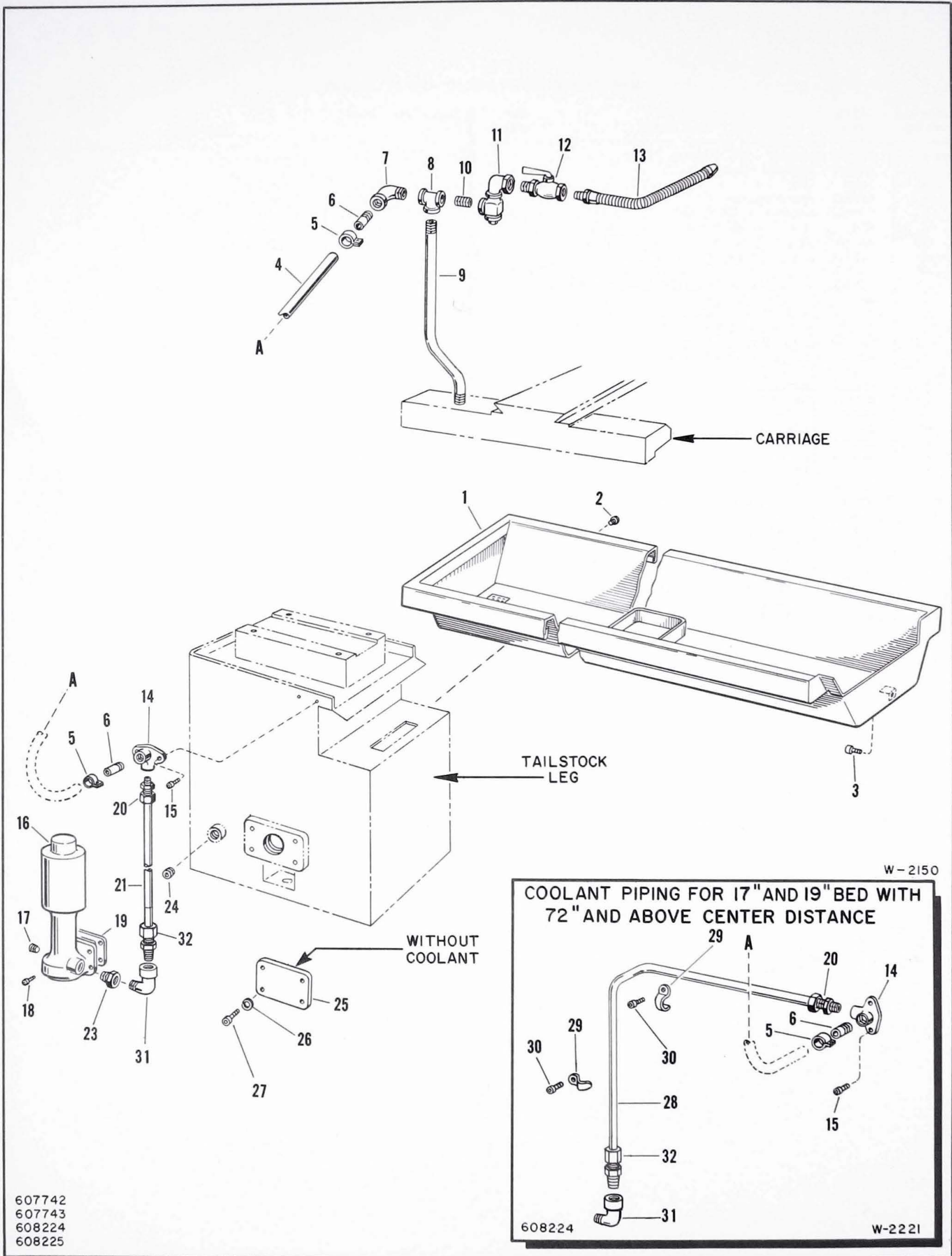
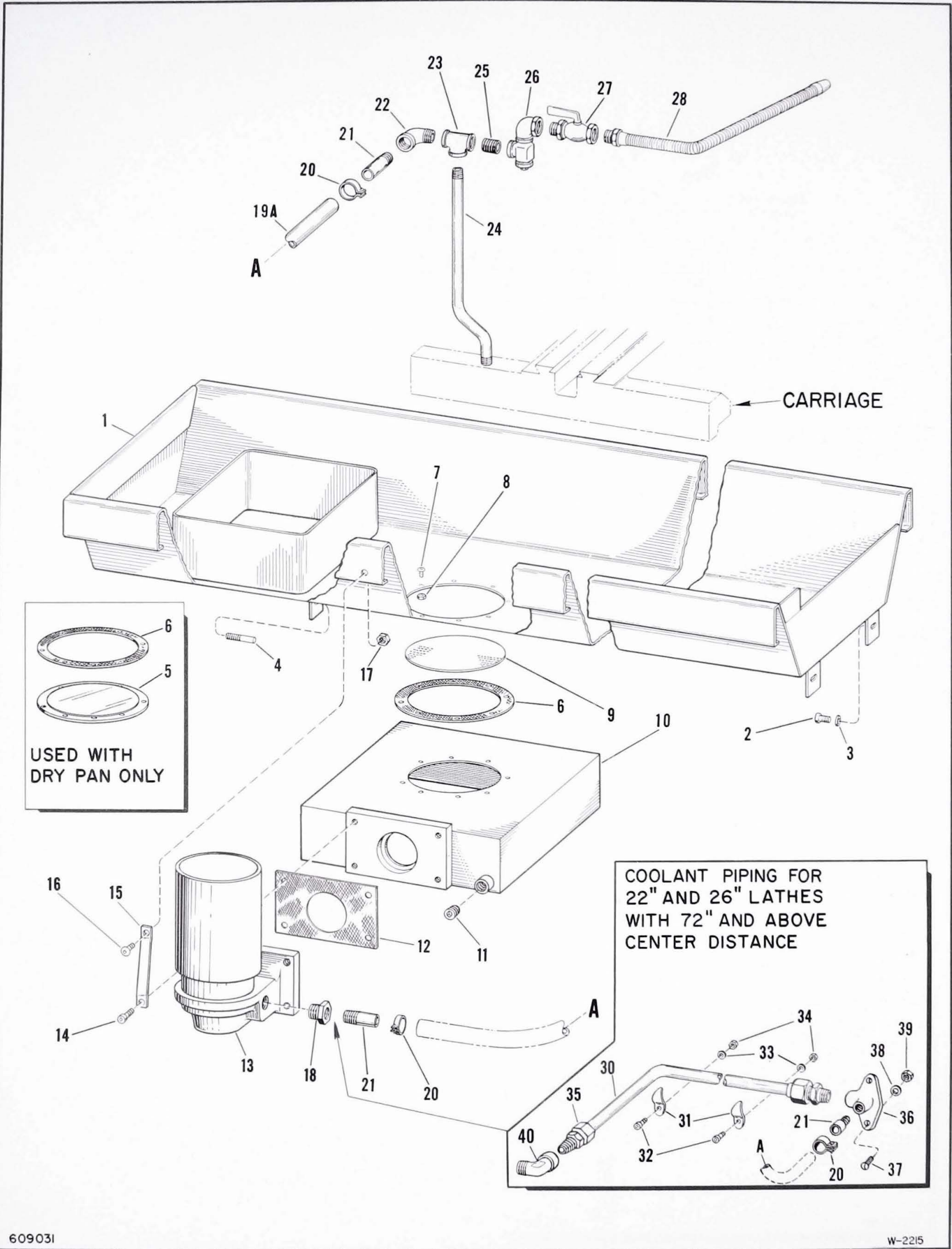


Figure RP52 Coolant System and Pan for 10", 13", 15", 17" and 19" Regular Lathes

COOLANT SYSTEM AND PAN FOR
10", 13", 15", 17" AND 19" REGULAR LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used |
|-------------------------|----------|---|--------------|
| RP52-1 | | *Pan | |
| | 606673 | 10", 13" and 15" Lathes. | 1 |
| | 606554 | 17" and 19" Lathes, Regular | 1 |
| | 607050 | 17" and 19" Lathes, Regular (With Center Leg) | 1 |
| -2 | 224341 | Screw - Shipping | 1 |
| -3 | 3396 | Screw - Shipping | 1 |
| -4 | 608226 | *Hose | 1 |
| -5 | 98607 | Clamp - Hose | 2 |
| -6 | 603183 | Pipe | 2 |
| -7 | 29810 | Elbow. | 1 |
| -8 | 89870 | Tee | 1 |
| -9 | | Rod - Support | |
| | 604633 | 10", 13" and 15" Lathes. | 1 |
| | 603170 | 17" and 19" Lathes, Regular | 1 |
| -10 | 10051 | Nipple | 1 |
| -11 | 603173 | Joint - Swing | 1 |
| -12 | 600097 | Cock - Lever | 1 |
| -13 | 97943 | Nozzle | 1 |
| -14 | 608239 | Elbow - Flange | 1 |
| -15 | 3462 | Screw. | 2 |
| -16 | Example | Pump - Coolant | 1 |
| -17 | 221981 | Plug - Pump | 1 |
| -18 | 3404 | Screw - Socket Head Cap | 4 |
| -19 | 143428 | Gasket | 1 |
| -20 | 130961 | Connector | 1 |
| -21 | | Tubing | |
| | 608244 | 10", 13" and 15" Lathes | 1 |
| | 608240 | 17" and 19" Lathes, Regular | 1 |
| | 606698 | 17" and 19" Lathes, 54" Center Distance | 1 |
| -23 | 207397 | Bushing - Pump | 1 |
| -24 | 221981 | Plug | 1 |
| -25 | 607402 | Cover - Plate (Without Coolant) | 1 |
| -26 | 2038 | Washer - Lock (Without Coolant). | 4 |
| -27 | 3215 | Screw (Without Coolant). | 4 |
| -28 | | Tubing - 17" and 19" Regular Lathes | |
| | 606699 | 72" Center Distance | 1 |
| | 606700 | 96" and 114" Center Distance | 1 |
| -29 | 3990 | Clamp - Tubing | 2 |
| -30 | 2369 | Screw. | 2 |
| -31 | 29810 | Elbow. | 1 |
| -32 | 130961 | Connector | 1 |

*NOTE: State center distance with size of machine when ordering.



609031

W-2215

Figure RP54 Coolant System and Pan for 22" and 26" Regular Lathes

COOLANT SYSTEM AND PAN FOR
22" AND 26" REGULAR LATHES

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---------------------------------|-----------|
| RP54-1 | | *Pan | | RP54-23 | 89870 | Tee | 1 |
| | 605312 | 22" and 26" Lathes, without Center Leg | 1 | -24 | | Rod - Support | |
| | 605313 | 22" and 26" Lathes, with One Center Leg. | 1 | 603170 | | 22" and 26" Lathes | 1 |
| | 605314 | 22" and 26" Lathes, with Two Center Legs | 1 | 603170 | | 26" Lathes, Raised 3" | 1 |
| -2 | 3215 | Screw - Socket Head Cap (Shipping Only) | 2 | 607065 | | 26" Lathes, Raised 5" | 1 |
| -3 | 3442 | Washer - Flat (Shipping Only) | 2 | -25 | 10051 | Nipple | 1 |
| -4 | 603385 | Stud - (Shipping Only) | 2 | -26 | 603173 | Joint - Swing | 1 |
| -5 | 605322 | Cover - Dry Pan | 1 | -27 | 600097 | Cock - Lever | 1 |
| -6 | 605325 | Gasket | 1 | -28 | 97943 | Nozzle | 1 |
| -7 | 2369 | Screw | 8 | -30 | | Tubing | |
| -8 | 3472 | Nut | 8 | 605329 | | 72" Regular Bed | 1 |
| -9 | 605323 | Sieve | 1 | 605318 | | 96" Regular Bed | 1 |
| -10 | 605321 | Tank - Coolant | 1 | 605467 | | 120" Regular Bed | 1 |
| -11 | 220784 | Plug. | 1 | 605327 | | 144" Regular Bed | 1 |
| -12 | 143428 | Gasket - Pump | 1 | 605468 | | 168" Regular Bed | 1 |
| -13 | Example | Pump - Coolant | 1 | 605469 | | 192" Regular Bed | 1 |
| -14 | 3404 | Screw | 4 | 605470 | | 216" Regular Bed | 1 |
| -15 | 605247 | Strap - Support | 2 | -31 | 3990 | Clamp - Tubing | 2 |
| -16 | 2374 | Screw | 2 | -32 | 3203 | Screw | 2 |
| -17 | 3473 | Nut | 2 | -33 | 217968 | Washer | 2 |
| -18 | 207397 | Bushing | 1 | -34 | 3472 | Nut | 2 |
| -19A | 608226 | Hose | 1 | -35 | 130961 | Connector | 2 |
| -20 | 98607 | Clamp - Hose | 2 | -36 | 608239 | Elbow - Flanged | 1 |
| -21 | 603183 | Pipe | 2 | -37 | 2264 | Screw | 2 |
| -22 | 29810 | Elbow | 1 | -38 | 108161 | Washer | 2 |
| | | | | -39 | 2280 | Nut | 2 |
| | | | | -40 | 29810 | Elbow | 1 |

*NOTE: State center distance with size of machine when ordering.

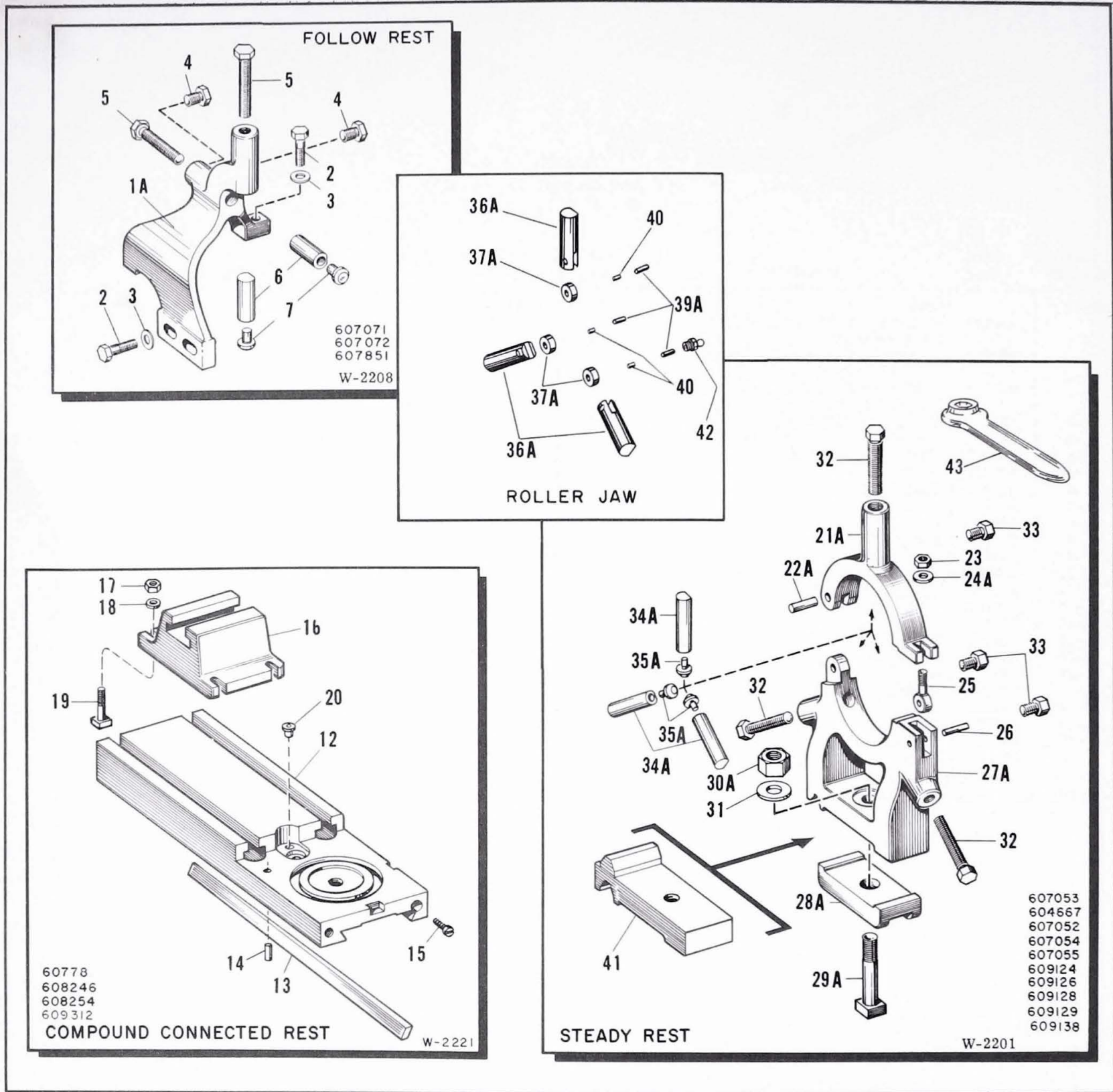


Figure RP56 Standard and Accessory Equipment

STANDARD AND ACCESSORY EQUIPMENT

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used | | | |
|----------------------|----------|--------------------------------|-----------------------------------|----------------------|----------|-----------------------------------|------------------------------|--------|-----------------------------------|---|
| RP56-1A | 607073 | Rest - Follow | | RP56-3 | 3442 | Washer | | | | |
| | 605833 | 10" Lathe | 1 | | 3442 | 10", 13" and 15" Lathes | 3 | | | |
| | 608686 | 13" Lathe | 1 | | 1040 | 17" and 19" Lathes | 3 | | | |
| | 607075 | 15" Lathe | 1 | | -4 | 2154 | Screw - Hex Head Cap | | | |
| | 605709 | 17" Lathe | 1 | | | | | 600022 | 10", 13" and 15" Lathes | 2 |
| | 606396-1 | 19" Lathe | 1 | | 602399 | 17" and 19" Lathes | 2 | | | |
| | 607396-3 | 19" Lathe, Raised 2" | 1 | | -5 | 217928 | Screw - Hex Head Cap | | | |
| | 607843 | 19" Lathe, Raised 4" | 1 | | | | | 600269 | 10", 13" and 15" Lathes | 2 |
| | 605627 | 22" Lathe | 1 | | | | | 607410 | 17" and 19" Lathes | 2 |
| | 608242-1 | 26" Lathe | 1 | | -6 | 600718 | Jaw | | | |
| | 608242-3 | 26" Lathe, Raised 3" | 1 | | | | | 600268 | 10", 13" and 15" Lathes | 2 |
| | | 26" Lathe, Raised 5" | 1 | | | | | 602612 | 17" and 19" Lathes | 2 |
| | | Screw - Hex Head Cap | | | | | 22" and 26" Lathes | 2 | | |
| | | 2040 | 10", 13" and 15" Lathes | | 3 | | | | | |
| | 383 | 17" Lathes | 3 | | | | | | | |
| | 3463 | 19" Lathes | 3 | | | | | | | |
| | 279 | 22" and 26" Lathes | 3 | | | | | | | |

STANDARD AND ACCESSORY EQUIPMENT

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|---|-----------|
| RP56-7 | | Tip - Jaw | | RP56-27A | | Bottom Steady Rest | |
| | 600021 | 10", 13" and 15" Lathes | 2 | (Cont) | 607058 | 17" Lathe | 1 |
| | 600021 | 17" and 19" Lathes | 2 | | 607059 | 17" Lathe, Spec. Cap. | 1 |
| | 602403 | 22" and 26" Lathes | 2 | | 605030 | 19" Lathe | 1 |
| -12 | | Slide - Cross | | | 605021 | 19" Lathe, Spec. Cap. | 1 |
| | 607038 | 10" Lathes | 1 | | 609122 | 22" Lathe | 1 |
| | 608862 | 13" and 15" Lathes | 1 | | 609123 | 22" Lathe, Spec. Cap., 7-1/2", 10", 15" | 1 |
| | 607039 | 17" and 19" Lathes | 1 | | 609124 | 26" Lathe | 1 |
| | 607568 | 22" and 26" Lathes | 1 | | 609125 | 26" Lathe, Spec. Cap., 7-1/2", 10", 15" | 1 |
| -13 | | Gib - Cross Slide | | | 608573 | 15" Lathe | 1 |
| | 605823 | 10", 13" and 15" Lathes | 1 | | 606336-1 | 19" Lathe, Raised 2" | 1 |
| | 605726 | 17" and 19" Lathes | 1 | | 606336-3 | 19" Lathe, Raised 4" | 1 |
| | 605617 | 22" and 26" Lathes | 1 | | 607865 | 19" Lathe, Spec. Cap., Raised 2" | 1 |
| -14 | 3383 | Pin - Straight | 1 | | 607867 | 19" Lathe, Spec. Cap., Raised 4" | 1 |
| -15 | | Screw - Gib | | | 609131 | 26" Lathe, Raised 3" | 1 |
| | 604536 | 10", 13" and 15" Lathes | 2 | | 609133 | 26" Lathe, Raised 5" | 1 |
| | 604372 | 17", 19", 22" and 26" Lathes | 2 | | 609134 | 26" Lathe, Spec. Cap., Raised 3" | 1 |
| -16 | | Base - Tool Post | | | 609136 | 26" Lathe, Spec. Cap., Raised 5" | 1 |
| | 605824 | 10" Lathes | 1 | -28A | | Clamp | |
| | 607040 | 13" Lathes | 1 | | 600725 | 10", 13" and 15" Lathes | 1 |
| | 609259 | 15" Lathes | 1 | | 604141 | 17" and 19" Lathes | 1 |
| | 605720 | 17" Lathes | 1 | | 609119 | 22" and 26" Lathes | 1 |
| | 607041 | 19" Lathes | 1 | -29A | | Bolt - Tee | |
| | 605618 | 22" Lathes | 1 | | 600726 | 10" and 13" Lathes | 1 |
| | 607567 | 26" Lathes | 1 | | 601631 | 15" Lathes | 1 |
| | 607922-1 | 19" Lathe, Raised 3" | 1 | | 2232 | 17" and 19" Lathes | 1 |
| | 607922-3 | 19" Lathe, Raised 5" | 1 | | 3169 | 17" and 19" Lathes, Spec. Cap. | 1 |
| -17 | | Nut - Hex | | | 2234 | 22" and 26" Lathes | 2 |
| | 3473 | 10" Lathe | 4 | -30A | | Nut - Hex | |
| | 3478 | 13" and 15" Lathes | 4 | | 3480 | 10", 13" and 15" Lathes | 1 |
| | 3479 | 17" and 19" Lathes | 4 | | 3475 | 10", 13" and 15" Lathes, Spec. Cap. | 1 |
| | 3480 | 22" and 26" Lathes | 4 | | 3481 | 17" and 19" Lathes | 1 |
| -18 | | Washer | | | 3476 | 17" and 19" Lathes, Spec. Cap. | 1 |
| | 3441 | 10", 13" and 15" Lathes | 4 | | 3481 | 22" and 26" Lathes | 1 |
| | 3442 | 17" and 19" Lathes | 4 | -31 | | Washer | |
| | 1040 | 22" and 26" Lathes | 4 | | 1040 | 10", 13" and 15" Lathes | 1 |
| -19 | | Bolt - Tee | | | 764 | 17" and 19" Lathes | 1 |
| | 3314 | 10" Lathe | 4 | | 764 | 22" and 26" Lathes | 1 |
| | 3328 | 13" and 15" Lathes | 4 | -32 | | Screw - Hex Head | |
| | 3274 | 17" and 19" Lathes | 4 | | 600719 | 10", 13" and 15" Lathes | 3 |
| | 3364 | 22" and 26" Lathes | 4 | | 600023 | 17" and 19" Lathes | 3 |
| -20 | 69583 | Oiler | 1 | | 216594 | 17" and 19" Lathes, Spec. Cap. | 3 |
| -21A | | Top - Steady Rest | | | 602613 | 22" and 26" Lathes | 3 |
| | 600714 | 10", 13" and 15" Lathes | 1 | -33 | | Screw - Hex Head | |
| | 601307 | 10", 13" and 15" Lathes, Spec. Cap. | 1 | | 2154 | 10", 13" and 15" Lathes | 3 |
| | 605031 | 17" and 19" Lathes | 1 | | 600022 | 17" and 19" Lathes | 3 |
| | 605019 | 17" and 19" Lathes, Spec. Cap. | 1 | | 602399 | 22" and 26" Lathes | 3 |
| | 609120 | 22" and 26" Lathes | 1 | -34A | | Jaw | |
| | 609121 | 22" and 26" Lathes, Spec. Cap., 7-1/2", 10", 15" | 1 | | 600717 | 10", 13" and 15" Lathes | 3 |
| -22A | | Pin - Straight | | | 605026 | 17" and 19" Lathes | 3 |
| | 1384 | 10", 13" and 15" Lathes | 1 | | 609118 | 22" and 26" Lathes | 3 |
| | 66535 | 17" and 19" Lathes | 1 | -35A | | Tip - Jaw | |
| | 65303 | 22" and 26" Lathes | 1 | | 600021 | 10", 13" and 15" Lathes | 3 |
| -23 | | Nut | | | 605028 | 17" and 19" Lathes | 3 |
| | 3478 | Hex - 10", 13" and 15" Lathes | 1 | | 609116 | 22" and 26" Lathes | 3 |
| | 76639 | Collar - 17" and 19" Lathes | 1 | -36A | | Support - Roller | |
| | 102198 | Collar - 22" and 26" Lathes | 1 | | 608943 | 10", 13" and 15" Lathes (With Follow Rest) | 2 |
| -24A | | Washer | | | 608940 | 10", 13" and 15" Lathes (With Steady Rest) | 3 |
| | 3441 | 10", 13" and 15" Lathes | 1 | | 608940 | 17" and 19" Lathes (With Follow Rest) | 2 |
| -25 | | Bolt - Eye | | | 608899 | 17" and 19" Lathes (With Steady Rest) | 3 |
| | 600716 | 10", 13" and 15" Lathes | 1 | | 608944 | 22" and 26" Lathes (With Follow Rest) | 2 |
| | 600019 | 17" and 19" Lathes | 1 | | 609117 | 22" and 26" Lathes (With Steady Rest) | 3 |
| | 602396 | 22" and 26" Lathes | 1 | | | | |
| -26 | | Pin - Straight | | | | | |
| | 1384 | 10", 13" and 15" Lathes | 1 | | | | |
| | 244625 | 17" and 19" Lathes | 1 | | | | |
| | 108075 | 22" and 26" Lathes | 1 | | | | |
| -27A | | Bottom Steady Rest | | | | | |
| | 607056 | 10" Lathe | 1 | | | | |
| | 607057 | 10" Lathe, Spec. Cap. | 1 | | | | |
| | 604678 | 13" and 15" Lathes | 1 | | | | |
| | 604679 | 13" and 15" Lathes, Spec. Cap. | 1 | | | | |

Part listing continued on following page.

STANDARD AND ACCESSORY EQUIPMENT

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used | |
|----------------------|---|---|-----------|----------------------|---|--|--|---|
| RP56-37A | 608942 | Roller 10", 13", 15", 17" and 19" Lathes (With Follow Rest) | 2 | RP56-39A (cont) | 608834 | Pin 22" and 26" Lathes (With Follow Rest) | 2 | |
| | 608942 | 10", 13" and 15" Lathes (With Steady Rest) | 3 | | 609130 | 22" and 26" Lathes (With Steady Rest) | 3 | |
| | 608900 | 17" and 19" Lathes (With Steady Rest) | 3 | | -40 | 282982 | Plug - Nylon With Follow Rest | 2 |
| | 608833 | 22" and 26" Lathes (With Follow Rest) | 2 | | 282982 | With Steady Rest | 3 | |
| | 609115 | 22" and 26" Lathes (With Steady Rest) | 3 | | -41 | 608573 | Block - Raising (Used with Bottom Steady Rest, 604678 for 15") | 1 |
| | -39A | Pin | | | -42 | 608836 | Fitting - Lubrication With Follow Rest | 2 |
| 608941 | 10", 13", 15", 17" and 19" Lathes (With Follow Rest) | 2 | | 608836 | With Steady Rest - 10", 13", 15", 17" and 19" Lathes | 3 | | |
| 608941 | 10", 13" and 15" Lathes (With Steady Rest) | 3 | -43 | 60062 | With Steady Rest - 22" and 26" Lathes | 3 | | |
| 608901 | 17" and 19" Lathes (With Steady Rest) | 3 | | 600968 | Wrench 10", 13" and 15" Lathes | 1 | | |
| | | | | 600967 | 17" and 19" Lathes, Spec. Cap. | 1 | | |

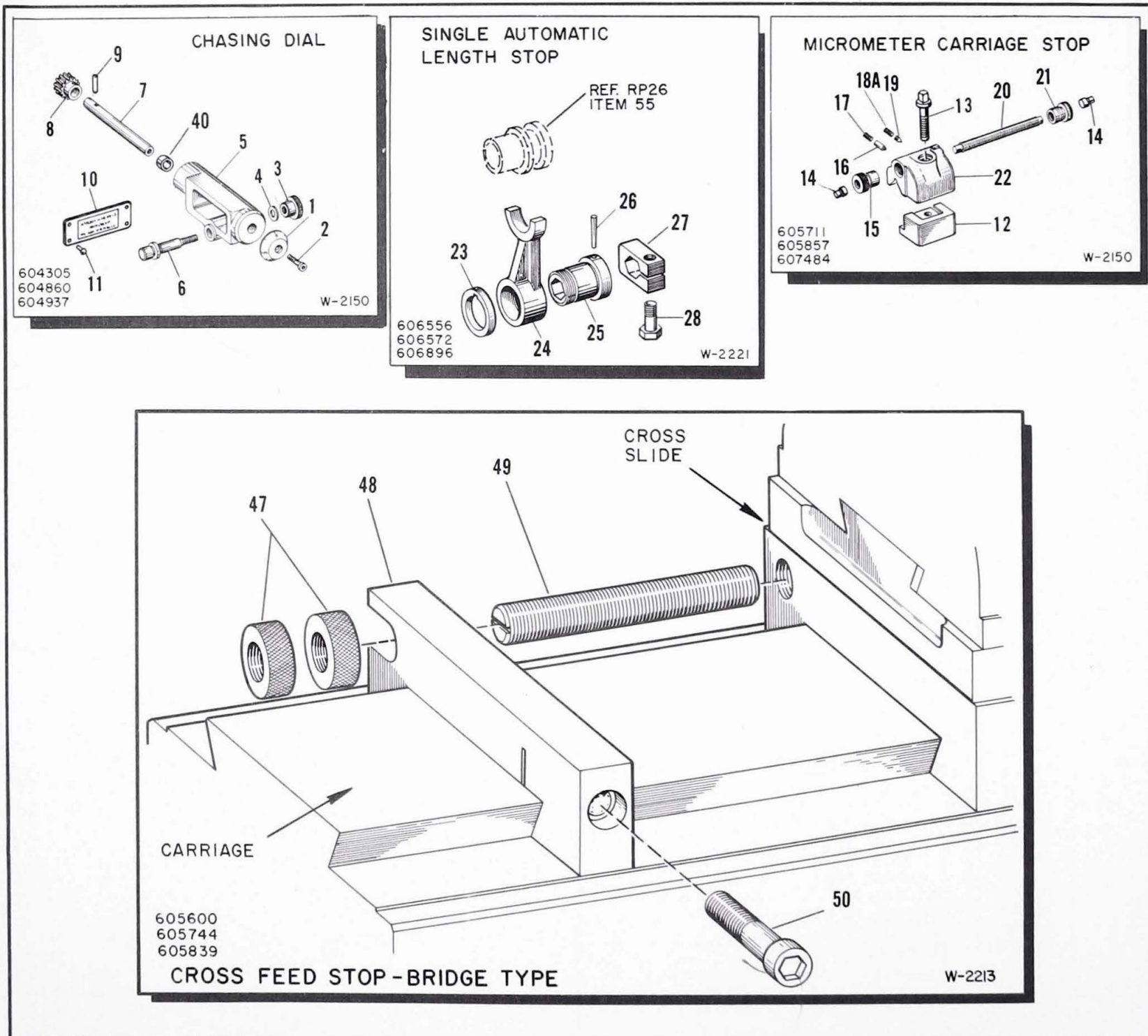


Figure RP58 Standard and Accessory Equipment

STANDARD AND ACCESSORY EQUIPMENT

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|--|-----------|----------------------|----------|---|-----------|
| RP58-1 | 600327 | Dial - Chasing | 1 | RP58-19 | 608591 | Screw - Headless Cone Point Set | 1 |
| -2 | 3203 | Screw - Low Socket Head Cap | 1 | -20 | 601038 | Screw - Adjusting | 1 |
| -3 | 202831 | Nut - Knurled | 1 | -21 | 601039 | Dial - Micrometer | 1 |
| -4 | 3442 | Washer | 1 | -22 | | Body - Carriage Stop | |
| -5 | | Bracket - Chasing Dial | | | 605836 | 10", 13" and 15" Lathes | 1 |
| | 608583 | 10", 13" and 15" Lathes | 1 | | 607483 | 17" and 19" Lathes | 1 |
| | 608584 | 17" and 19" Lathes | 1 | | 605712 | 22" and 26" Lathes | 1 |
| | 604938 | 22" and 26" Lathes | 1 | -23 | | Nut - Lock | |
| -6 | | Stud - Chasing Dial | | | 4190 | 10", 13" and 15" Lathes | 1 |
| | 608585 | 10", 13" and 15" Lathes | 1 | | 4191 | 17" and 19" Lathes | 1 |
| | 608585 | 17" and 19" Lathes | 1 | | 4191 | 22" and 26" Lathes | 1 |
| | 600959 | 22" and 26" Lathes | 1 | -24 | | Lever - Trip | |
| -7 | | Shaft - Chasing Dial | | | 601349 | 10", 13" and 15" Lathes | 1 |
| | 604682 | 10", 13" and 15" Lathes | 1 | | 601347 | 17" and 19" Lathes | 1 |
| | 604307 | 17" and 19" Lathes | 1 | | 602157 | 22" and 26" Lathes | 1 |
| | 604213 | 22" and 26" Lathes | 1 | -25 | | Bushing - Trip Lever | |
| -8 | | Worm - Wheel | | | 606549 | 10", 13" and 15" Lathes | 1 |
| | 600657 | 10", 13" and 15" Lathes | 1 | | 606579 | 17" and 19" Lathes | 1 |
| | 600607 | 17" and 19" Lathes | 1 | | 606893 | 22" and 26" Lathes | 1 |
| | 602287 | 22" and 26" Lathes | 1 | -26 | 1890 | Pin - Taper | 1 |
| -9 | 147865 | Pin - Roll | 1 | -27 | 606457 | Stop - Length | 1 |
| -10 | 607080 | Plate - Instruction | 1 | -28 | 2260 | Screw - Hex Head Cap | 1 |
| -11 | 3178 | Screw - Drive | 4 | -40 | 608823 | Bearing | 1 |
| -12 | | Clamp - Carriage Stop | | -47 | | Collar - Stop | |
| | 605835 | 10", 13" and 15" Lathes | 1 | | 601222 | 10", 13" and 15" Lathes | 2 |
| | 607485 | 17" and 19" Lathes | 1 | | 601007 | 17" 19", 22" and 26" Lathes | 2 |
| | 605713 | 22" and 26" Lathes | 1 | -48 | | Bracket - Thread Stop | |
| -13 | | Screw - Carriage Stop | | | 605840 | 10", 13" and 15" Lathes | 1 |
| | 605834 | 10", 13" and 15" Lathes | 1 | | 605745 | 17" and 19" Lathes | 1 |
| | 605714 | 17" and 19" Lathes | 1 | -49 | | Screw - Thread Stop | |
| | 605714 | 22" and 26" Lathes | 1 | | 601980 | 10", 13" and 15" Lathes | 1 |
| -14 | 605908 | Button - Carriage | 2 | | 602028 | 17", 19", 22" and 26" Lathes | 1 |
| -15 | 601040 | Nut - Locking | 1 | -50 | | Screw - Socket Head Cap | |
| -16 | 3230 | Screw - Hex Socket Dog Point Set | 1 | | 3251 | 10", 13" and 15" Lathes | 1 |
| -17 | 2354 | Screw - Hex Socket Lock | 1 | | 3402 | 17" and 19" Lathes | 1 |
| -18A | | Screw - Hex Socket Lock | | | | | |
| | 2354 | 10", 13" and 15" Lathes | 1 | | | | |
| | 2354 | 17" and 19" Lathes | 1 | | | | |
| | 2344 | 22" and 26" Lathes | 1 | | | | |

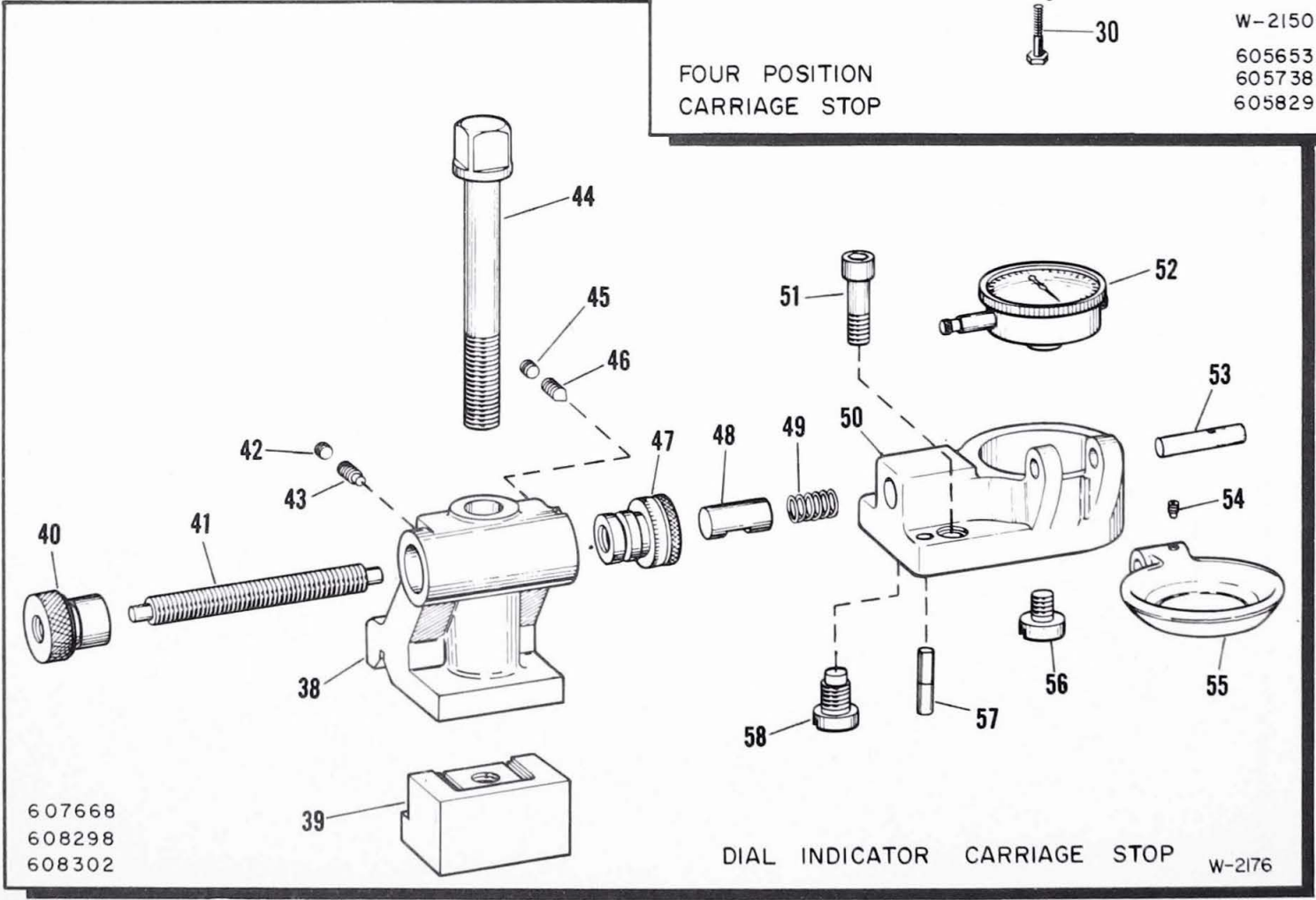
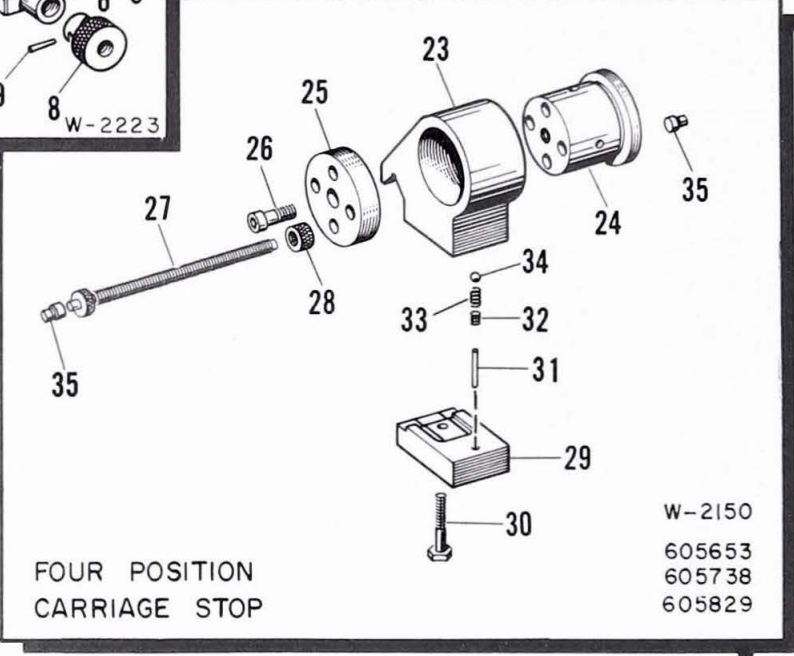
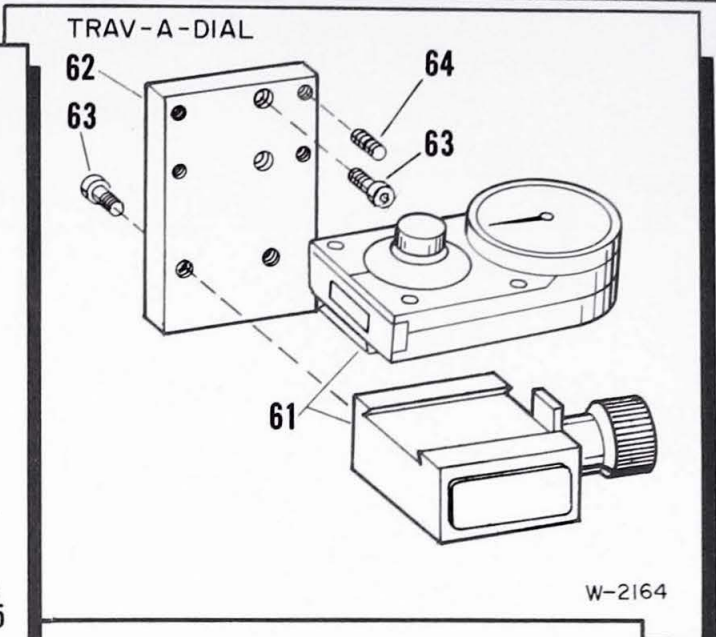
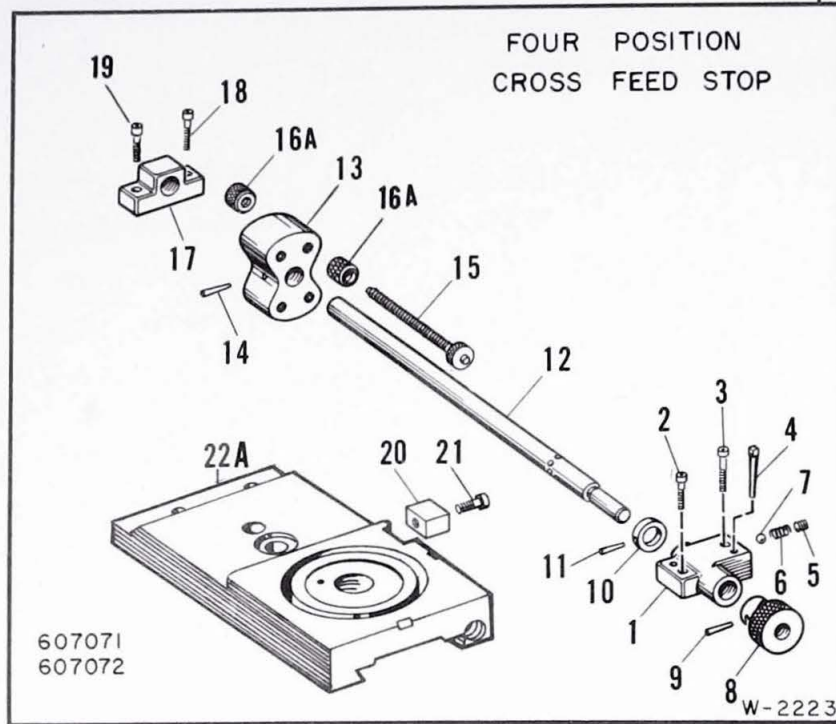


Figure RP60 Accessory Equipment

ACCESSORY EQUIPMENT

| Figure and Index No. | Part No. | Part Name | Amt. Used | Figure and Index No. | Part No. | Part Name | Amt. Used |
|----------------------|----------|---|-----------|----------------------|----------|--|-----------|
| RP60-1 | | Support - Front | | RP60-30 | 3168 | Screw - Hex Head Cap | 1 |
| | 604007 | 10", 13" and 15" Lathes | 1 | -31 | | Pin - Straight | |
| | 604007 | 17" and 19" Lathes | 1 | | 3543 | 10", 13" and 15" Lathes | 1 |
| -2 | 2320 | Screw - Socket Head Cap | 1 | | 230058 | 17" and 19" Lathes | 1 |
| -3 | 2322 | Screw - Socket Head Cap | 1 | | 230058 | 22" and 26" Lathes | 1 |
| -4 | 14556 | Pin - Square Head Taper | 2 | -32 | 1911 | Screw - Hex Socket Set | 1 |
| -5 | 1917 | Screw - Hollow Set | 1 | -33 | 601683 | Spring - Detent | 1 |
| -6 | 601683 | Spring - Compression | 1 | -34 | 13665 | Ball - Steel | 1 |
| -7 | 13665 | Ball - Steel | 1 | -35 | 605908 | Button - Carriage | 2 |
| -8 | 206084 | Knob - Knurled | 1 | -38 | | Bracket - Micrometer Adjustment | |
| -9 | 141 | Pin - Taper | 1 | | 608300 | 10", 13" and 15" Lathes | 1 |
| -10 | 94753 | Collar | 1 | | 608176 | 17" and 19" Lathes | 1 |
| -11 | 141 | Pin - Taper | 1 | | 608296 | 22" and 26" Lathes | 1 |
| -12 | | Shaft - Cross Feed Stop | | -39 | | Clamp | |
| | 604655 | 10", 13" and 15" Lathes | 1 | | 605835 | 10", 13" and 15" Lathes | 1 |
| | 604010 | 17" and 19" Lathes | 1 | | 608181 | 17" and 19" Lathes | 1 |
| -13 | 601856 | Rotor - Cross Feed Stop | 1 | | 605713 | 22" and 26" Lathes | 1 |
| -14 | 143 | Pin - Taper | 1 | -40 | 601040 | Nut - Locking | 1 |
| -15 | | Screw - Stop | | -41 | 601038 | Screw - Adjusting | 1 |
| | 601804 | 10", 13" and 15" Lathes | 4 | -42 | 2332 | Screw - Hex Socket Lock | 1 |
| | 604011 | 17" and 19" Lathes | 4 | -43 | 3229 | Screw - Hex Socket Dog Point Set | 1 |
| -16A | 601788 | Nut - Knurled Lock | 4 | -44 | | Screw | |
| -17 | 604653 | Support - Rear | 1 | | 608303 | 10", 13" and 15" Lathes | 1 |
| -18 | 3396 | Screw - Socket Head Cap | 1 | | 608180 | 17" and 19" Lathes | 1 |
| -19 | 3397 | Screw - Socket Head Cap | 1 | | 608299 | 22" and 26" Lathes | 1 |
| -20 | | Stop - Plug | | -45 | 2354 | Screw - Hex Socket Lock | 1 |
| | 601859 | Regular Compound Rest | 1 | -46 | 609030 | Screw - Headless Cone Point Set | 1 |
| | 601859 | Plain and Connected Compound Rest | 2 | -47 | | Dial - Micrometer | |
| -21 | | Screw - Socket Head Cap | | | 601039 | English | 1 |
| | 2320 | Regular | 1 | -48 | 68265 | Plunger | 1 |
| | 2320 | Connected Rest | 2 | -49 | 68266 | Spring | 1 |
| -22A | | Slide - Cross | | -50 | 608177 | Bracket - Dial Indicator | 1 |
| | 609282 | 10", 13" and 15" Lathes, Regular | 1 | -51 | | Screw - Socket Head Cap | |
| | 609283 | 10", 13" and 15" Lathes, Connected Rest | 1 | | 3402 | 10", 13" and 15" Lathes | 2 |
| | 605707 | 17" and 19" Lathes, Regular | 1 | | 3399 | 17" and 19" Lathes | 2 |
| | 607496 | 17" and 19" Lathes, Connected Rest | 1 | | 3399 | 22" and 26" Lathes | 2 |
| -23 | | Housing - Carriage Stop | | -52 | | Indicator - Dial | |
| | 604710 | 10", 13" and 15" Lathes | 1 | -53 | 152060 | English | 1 |
| | 604433 | 17" and 19" Lathes | 1 | -54 | 158754 | Pin - Lid | 1 |
| | 604901 | 22" and 26" Lathes | 1 | -55 | 2339 | Screw - Dog Point Set | 1 |
| -24 | 601786 | Rotor | 1 | -56 | 153975 | Lid - Dial Indicator | 1 |
| -25 | 601789 | Plate - Rotor | 1 | -57 | 117336 | Screw - Indicator Fastening | 1 |
| -26 | 3266 | Screw - Socket Head Cap | 1 | -58 | 1421 | Pin - Double Diameter | 2 |
| -27 | 601785 | Screw - Stop | 4 | -61 | 68267 | Screw - Stop | 1 |
| -28 | 601788 | Nut - Lock, Knurled | 4 | -62 | 608747 | Trav-A-Dial | 1 |
| -29 | | Plate - Clamp | | -63 | 608748 | Plate - Mounting | 1 |
| | 604709 | 10", 13" and 15" Lathes | 1 | -64 | 3396 | Screw | 4 |
| | 604950 | 17" and 19" Lathes | 1 | | 2333 | Screw | 4 |
| | 604950 | 22" and 26" Lathes | 1 | | | | |

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