AXELSON LATHES

SERVICE MANUAL

__INCH LATHE • SERIAL NO.____

INSTALLATION
OPERATION
MAINTENANCE
PARTS

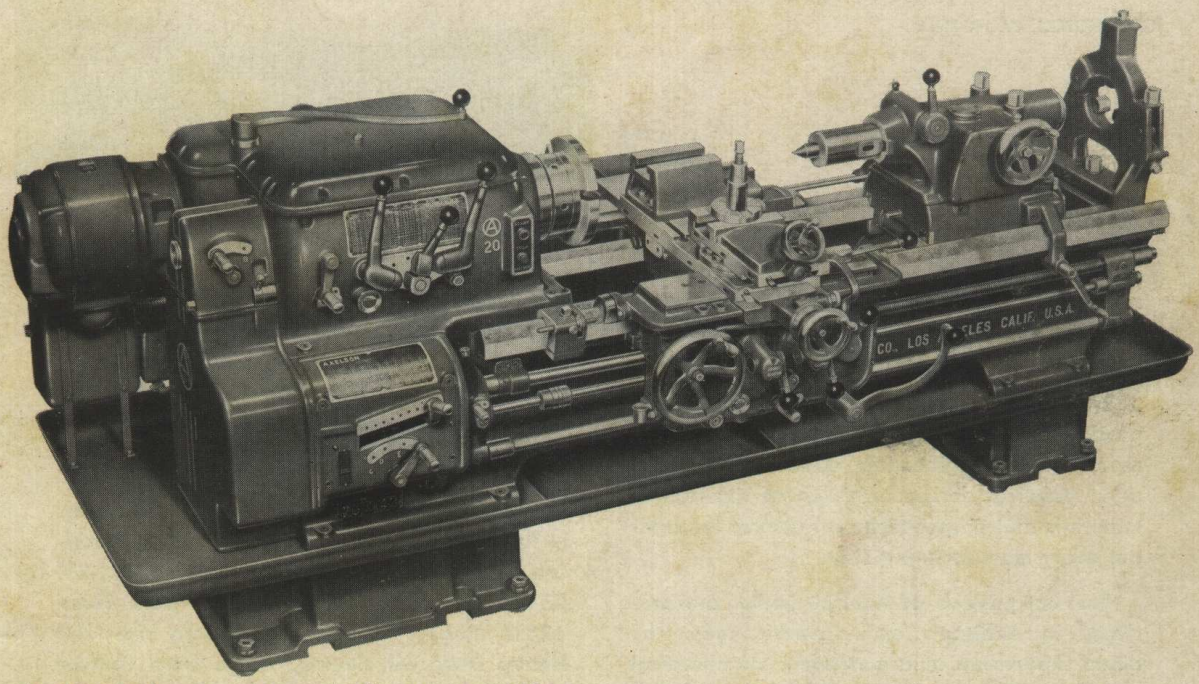
AXELSON MANUFACTURING COMPANY

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

AXELSON MANUFACTURING COMPANY
6160 SOUTH BOYLE AVENUE, LOS ANGELES 58, CALIF.

OPERATION and SERVICE MANUAL

AXELSON HEAVY DUTY ENGINE LATHES



Axelson Lathes are the result of more than thirty years of specialized experience in producing precision machine tool equipment designed to deliver a long life of service. The superior quality of Axelson Lathes has been conclusively proven through many years of satisfactory performance.

In order to obtain the best results from the outstanding construction features embodied in these lathes it is essential that the machines be properly installed and maintained to preserve their accuracy and versatility.

This manual is intended to instruct the operator and the maintenance man in the proper use and care of Axelson Lathes so that maximum productivity may be obtained, and should be kept available to these men in order that they may become completely familiar with lubrication, adjustments, and construction details.

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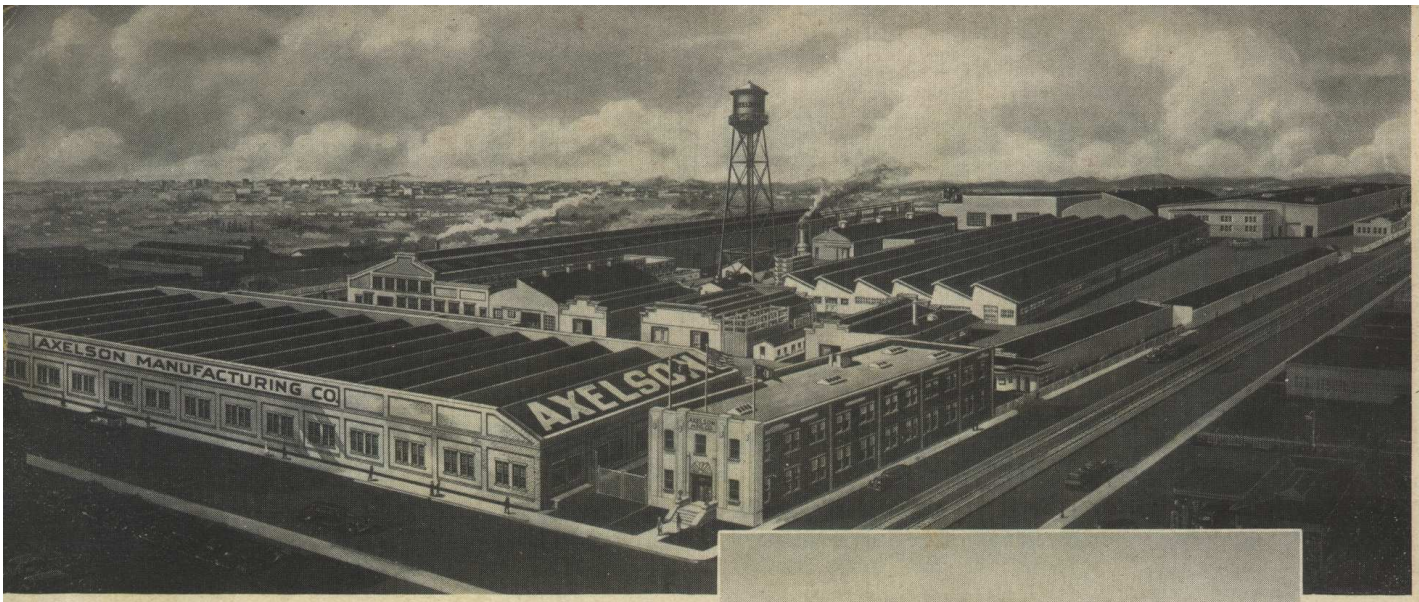
Backed By More Than Thirty Years of Progress



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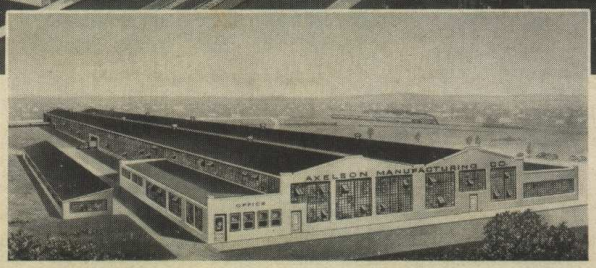

ST. LOUIS, MISSOURI

Axelson Lathes are produced completely —from pig iron to precision assembly—in the entirely modern Axelson plant at Los Angeles.

Backed by more than half a century of precision production progress, Axelson Lathes represent an engineering achievement based upon practical design, selection of the best in materials and proper technical control throughout every manufacturing step.

Cast components of Axelson Lathes are produced in Axelson's own foundry under the direct supervision of a competent metallurgical staff. Machining operations are done by skilled workmen using the most modern machine tool equipment. Exacting inspection and final assembly assure adherence to the high standards of precision which make Axelson Lathes the choice of engineers and plant managers throughout the metal working industry.

Designed and constructed to give the utmost in fast, dependable, accurate production, **Axelson Heavy Duty Lathes** are built in 14, 16, 20, 25 and 32 inch sizes. **Medium Duty Lathe** (20W Model) is built in 20 inch size and **Heavy Duty Oil Country Large Bore Spindle** models in 20, 25 and 32 inch sizes.

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6160 SO. BOYLE AVE. (Box 98, Vernon Station) LOS ANGELES 58, CALIFORNIA

Representatives in Principal Cities Throughout the World.

Axelson Lathes

AXELSON LATHE OPERATION AND SERVICE MANUAL

INDEX

INSTALLATION

LUBRICATION

OPERATION

ADJUSTMENT

SPECIAL LEADS OR THREADS

DIMENSIONAL DATA

EXTRA EQUIPMENT

PARTS SECTION

STANDARD PARTS

EXTRA EQUIPMENT PARTS

Axelson Lathes

INSTALLATION

FOUNDATION

Axelson Heavy-Duty Lathes do not require special foundations. Except in cases involving extraordinary conditions, such as turning work which creates severe vibration, any substantial floor, wood or concrete, reasonably flat, and constructed to support the weight of the machine is satisfactory.

Foundation plans, giving complete information as to space required, distance between bolt holes, etc., are supplied with each individual lathe. A certified print is furnished if hold-down bolts are to be located before the lathe is received.

Base weights of various sizes of Axelson Lathes are given in the table below.

Size	Base Length	Base Weight
14"	6'-0"	5165
16"	6'-0"	6000
20"W	8'-0"	7200
20"	8'-0"	9400
25"	10'-0"	16350
32"	10'-0"	19900

CLEANING

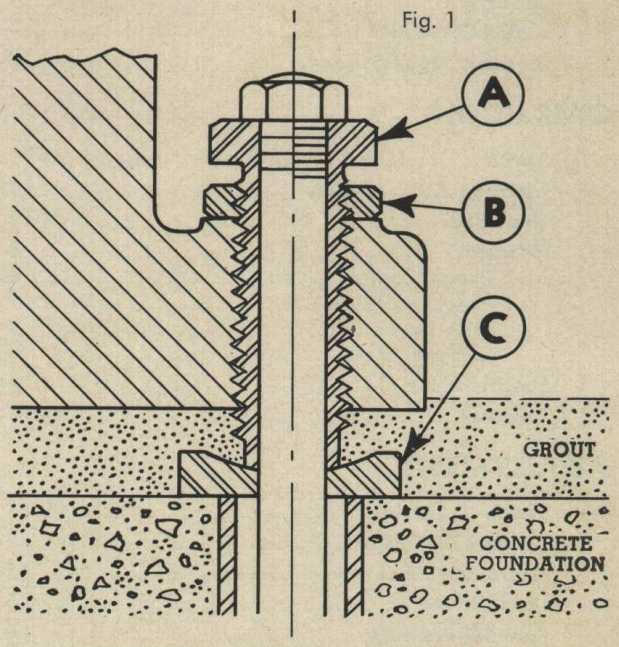
Do not operate the machine slides until all bearing surfaces have been cleaned and oiled. Do not use caustic cleaners. The sludge oil applied to protect all machined surfaces can be easily removed by wiping with waste soaked in kerosene. After cleaning, all surfaces should be thoroughly covered with quality machine oil.

LEVELING

Correct leveling at the time the lathe is installed is extremely important. It is virtually impossible to produce accurate work on any lathe if there is the slightest warp or twist in the bed. No matter how smooth or level the floor may seem to be, it is absolutely essential that the straightness and exact alignment of the bed be checked with an accurate spirit level. To assure accurate leveling easily and quickly, Axelson Lathes are provided with specially designed positive-locking adjustable leveling screws (see Fig. 1). In installation, the floor plate (C) is slipped over the previously anchored hold-down bolt, with the concave side up. The lock nut (B) is screwed onto the hollow sleeve type leveling screw (A) and the leveling screw is started into the threaded hole in the lathe leg. The lathe is then set down over the hold-down bolts and the leveling screws are adjusted until the bed is level. The lock nut may then be tightened down against the bed leg "toe", positively locking the adjustable leveling screw.

Another check should be made after the hold-down bolt nuts are tightened to be sure that the anchoring process has not affected bed alignment. Periodic inspections should be made to insure that settling of foundations, or other causes, have not affected the accuracy of the original setting.

Fig. 1



STARTING LATHE THE FIRST TIME

After your Axelson Lathe has been properly installed, be sure to check all lubricated points carefully. Be sure that the oil reservoirs in the headstock and the apron have been filled to the proper level. See Pages 5 to 7 for complete lubrication instructions.

In making the electrical connection to the motor, check to be certain that the motor rotation is in the proper direction. This is very important as the oil pump in the headstock does not function when the motor runs in reverse. Forward and reverse headstock spindle rotation is secured through operation of clutch levers.

After wiring has been connected, start the motor and pull the clutch control lever (on top of the headstock) toward the front of the lathe (clockwise) on the 14, 16, 20W and 20 inch sizes, and toward the spindle nose (counter-clockwise) on the 25 and 32 inch sizes.

With the lever in this position, the spindle will revolve toward the operator if the motor is correctly connected. An arrow on the motor housing indicates correct direction of motor rotation.

Axelson Lathes

LUBRICATION

HEADSTOCK LUBRICATION

The design and construction of the Axelson 24-speed selective geared headstock provides a simple trouble-free combination splash and pump lubrication system. Oil is drawn from the headstock reservoir by a gear pump, forced through an easily replaceable micronic type filter element, (see Page 34) and then pressure-fed to the front and rear double-opposed Timken precision spindle bearings. To complete the cycle the oil then drains back to the reservoir. All other moving parts in the headstock are lubricated by splash resulting from the gears dipping into the oil. The filter automatically removes foreign matter, thus assuring a constant supply of clean oil to the pump. The drain plug on the filter cavity may be removed periodically to permit removal of accumulated deposits. Filter element should be replaced whenever oil appears dirty, and oil level maintained at all times to level indicated by sight gage on front of headstock. Added oil should conform to recommended specifications shown on Page 6.

Headstock Oil Reservoir Capacities

Lathe Size	14"	16"	20"W	20"	25"	32"
Oil Capacity (In gallons)	2¾	2¾	4	4	8	8

APRON LUBRICATION

The lubrication system on all Axelson Lathe aprons is provided with a positive pressure oil pump. In addition to supplying oil to the internal parts of the apron, the pump delivers oil under pressure to the carriage ways, the cross slide, and the tool slide. On 14", 16" & 20"W lathes the apron pump operates when either of the two feeds is engaged, while on all other sizes the pump is in operation whenever the feed rod is turning.

In order to prevent excessive oil being supplied to the ways and slides, particularly when they are not moving, by-pass valves are provided to return the oil to the inside of the apron after a predetermined pressure has been reached. In order to still further adjust the oil supply to the actual need, all aprons are equipped with a control for metering the pump output. In most cases where the lathe is operating under normal conditions, the control should be adjusted somewhere between 0 and 1 on the dial. Turning the dial to a higher figure will give quantity lubrication where necessary. In the 14", 16" & 20"W sizes this control is located on the left hand edge of the apron, while in the other sizes it is on the front of the apron plate.

Oil for lubricating the split nut and lead screw, when cutting threads, is also fed from the pump.

The oil level should be checked daily and fresh oil added if necessary to bring the level up to the full mark on the gage glass, which is located on the front of the apron. The filler cup is found on the left hand side of the apron on all models. The same grade and type of oil as is used in the headstock is used in the apron. Refer to Page 6 for lubrication specifications.

Apron Oil Reservoir Capacities

Size Lathe	14"	16"	20"W	20"	25"	32"
Oil Capacity	1½pt	1½pt	5pt	5pt	1½gal	1½gal

CARRIAGE LUBRICATION

The carriage ways, cross slide, and tool slide are lubricated automatically as described under apron lubrication. The bed ways are kept clean and protected from injury by wipers on the carriage wings. Design of these wipers prevents entrance of grit or other foreign material.

GENERAL LUBRICATION

Lubrication of the gear box, change gear train, tailstock, taper attachment and all other points is accomplished through suitably located pressure gun fittings adapted to the oil pressure gun supplied with each lathe. Location of pressure fittings and the frequency of oiling may be determined by referring to the lubrication chart on the following page.

LUBRICANT SPECIFICATIONS

Select oil, by viscosity, to suit lathe operating conditions, such as speed and feed, size of lathe, etc., for best results.

Suggested Selection of Oil

Lathe Size	* General Viscosity Range (SSU at 100° F.)	* Viscosity Range, High Speed Operation (Light Work)	Viscosity Range, Low Speed Operation (Heavy Work)
14", 16" & 20"W	250 - 300	150 - 250	Approx. 300
20"	250 - 300	150 - 250	Approx. 300
25" and 32"	300 - 350	250 - 300	300 - 350

Oil is to be well refined, 100% Mineral Base, Pale, Neutral TURBINE Oil. Viscosity, (See Above); Steam emulsion number, 60 (Max.); Neutralization Number, .05 (Max.); Viscosity Index, 40 (Min.). *Consult your lubricant supplier in selecting oil. If operator feels that foaming is excessive due to high speed operation, foam suppressor may be added.

GREASE—One grease is used for all grease applications except tailstock gear reservoir. (See "10".) Grease must be free from solid particles, either dirt or fillers, must contain no free acid or alkali, and must not be subject to separation of oil and soap.

The ASTM worked consistency should be 260 to 330 at 77° F.

The melting point should be above 275° F. if possible, with 250° F. minimum.

The preferred soap bases are Lithium, Barium or Aluminum.

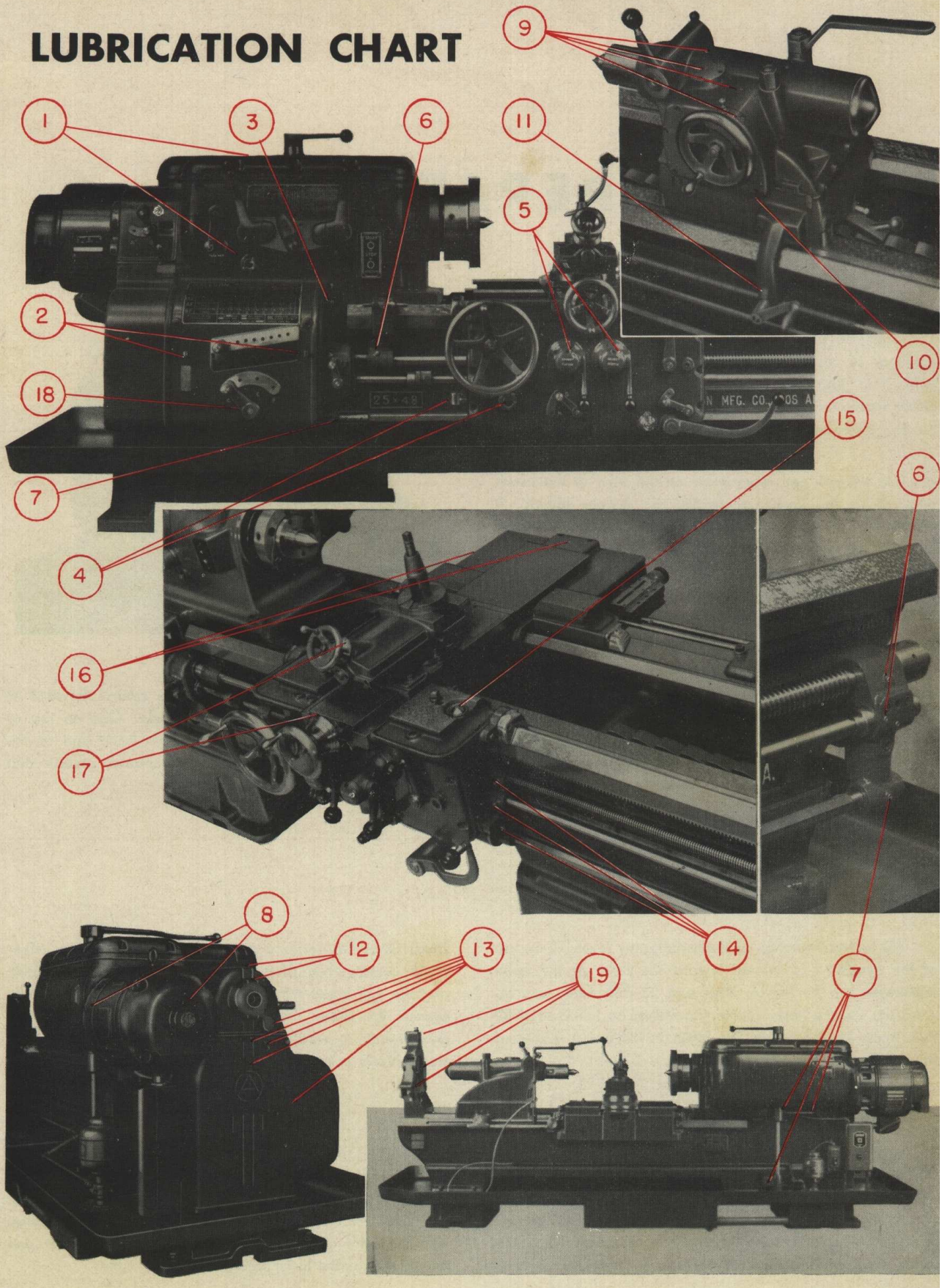
Second choice is mixed Sodium and Calcium (Soda and Lime) or other stable PROVEN special greases prepared to give resistance to combination with water and also having the high melting point as required above.

KEY TO LUBRICATION CHART

1. Check Oil Level in Headstock every 10 operating hours. Fill to center of gage. Use plug on top of Headstock.
* 2. Grease Gear Box every 400 operating hours.
3. Oil Tumbler Gear every 10 operating hours. Lever should be in Extreme Right Hand position.
4. Check Oil Level in Apron every 10 operating hours. Fill to mark on gage. Use cup at end of Apron.
5. Oil Clutch Cams every 50 operating hours.
6. Oil Lead Screw, Feed Rod and Clutch Control Rod Bearings every 10 operating hours.
7. Oil Clutch Control Bearings and Linkage every 50 operating hours.
* 8. Grease Motor every 1000 operating hours.
9. Oil Tailstock every 50 operating hours, through exterior fittings.
10. Drain, flush and refill Tailstock Block Oil Reservoir every 100 operating hours. Use caution not to overfill. Use grease suitable for worm gearing.
11. Oil Tailstock Traverse Handle every 50 operating hours.
12. Oil External Spindle Gears every 50 operating hours.
13. Oil Change Gears every 10 operating hours.
14. Oil Auxiliary Supports every 50 operating hours.
15. Oil Chasing Dial every 50 operating hours.
16. Oil Taper Attachment every 10 operating hours, when in use.
17. Oil Compound and Cross Feed Handwheels every 50 operating hours. (Oil Tapered Roller Bearings and Bevel Gears.)
18. Oil Gear Box Shift Lever every 50 operating hours.
19. Oil Steady Rest or Follow Rest Jaws frequently, when used.

*Note: Use oil at these points on 25" and 32" lathes.

LUBRICATION CHART



Axelson Lathes

OPERATION

HEADSTOCK OPERATION

The gearing in the Axelson Lathe Headstock (See Fig. 2) is designed to provide 24 spindle speeds. Arranged in two banks of 12 speeds, called the high and low range, each bank is in geometrical progression. Easily operated shift levers enable the operator to quickly select the correct speed for any given condition.

The easy-to-read index plate on the front of the headstock shows the lever settings for the various speeds. It also shows, for each setting, the surface speed in feet per minute that will be obtained with various diameters of work-piece. The three vertical shift levers (A), by which the speeds are controlled, are located on the front of the headstock, directly in front of the index plate.

Twelve lever positions are possible, in addition to a neutral or free spindle position. The range, high or low, is controlled by the lever (B) directly to the left of the shift levers. This allows 12 speeds, in either high or low (fast or slow) range, making a total of 24 individual speeds in all.

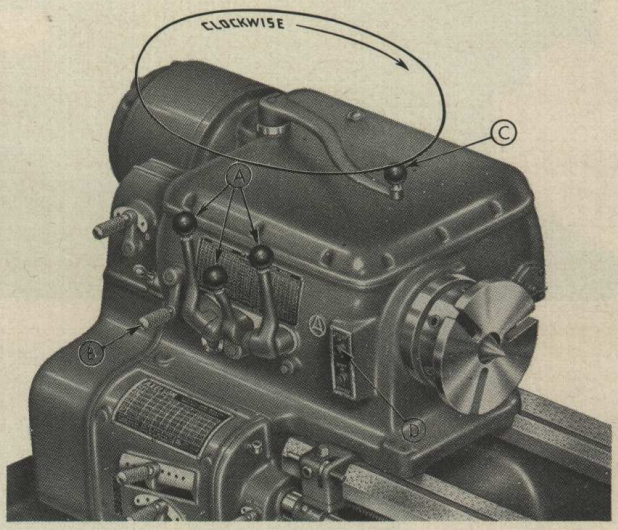


Fig. 2

Two clutch levers are provided to control forward or reverse rotation of the headstock spindle. One on top of the headstock (C) and one on the right hand end of the apron. Each of these levers has a forward, reverse and neutral position.

OPERATION OF HEADSTOCK CLUTCH CONTROL LEVER

For forward rotation of the spindle, the lever (C) on top of the headstock is moved toward the front of the lathe (clockwise) on the 14, 16, 20W and 20 inch sizes, and toward the spindle nose (counter-clockwise) on the 25 and 32 inch sizes. The corresponding lever on the apron is pushed down (clockwise) in every case.

CAUTION:—Do not lean on or hold pressure against either clutch control lever after the clutch is engaged. Excessive pressure will cause the clutch shifting shoes to bear heavily against the shifter mechanism, resulting in undue heating and premature wear of the parts involved. Always have clutch levers in neutral when shifting headstock gears.

HEADSTOCK SPINDLE BRAKE

Axelson Lathe Headstocks are equipped with a spindle brake which is automatically applied whenever the clutch levers are placed in neutral.

If spindle rotation by hand is desired, as in the case of chucking work, the right hand gear shift lever (See A, Fig. 2) on the headstock is placed in its central or neutral position. This disconnects the spindle driving gear and allows the spindle to be freely rotated by hand.

HEADSTOCK SHIFT LEVERS

The shift levers on the headstock of current Axelson Lathes are provided with a positive action detent arrangement to assure gears remaining in position under exceptionally heavy duty work. To operate, the shift levers are pulled away from the headstock, which frees the positive action detent pin. After shifting the lever to the desired position, it is released and automatically locks into position. Previous models incorporate the conventional ball and spring detent, the ball "clicking" into the detent of each lever position.

MOTOR

The driving motor ordinarily supplied on all Axelson Lathes is controlled by the start-stop push button station located on the front face of the headstock (D, Fig. 2). This motor is of the constant running, single speed, single direction type and requires no attention during normal operation. (Lubrication requirements are given on Page 6).

No reverse switch is necessary as the double clutch provides mechanical reverse rotation of the headstock spindle. A full-voltage, non-reversing magnetic motor starter, located on the back of the lathe, provides protection against undervoltage as well as overloading. A pilot light, located within the red transluscent "stop" button of the push button station, is illuminated when the motor is running.

GEAR BOX OPERATION

The quick change gear box on Axelson Lathes is mounted on the front of the lathe bed directly below the headstock. Through it power is transmitted to the feed rod and lead screw for accurate feeding of cutting tools. As in the headstock, the mechanism of the Axelson gear box is arranged to provide a high and low speed range.

The lever C (Fig. 4) controlling the high and low speed range is located on the change gear train housing to the left of the headstock high-low lever.

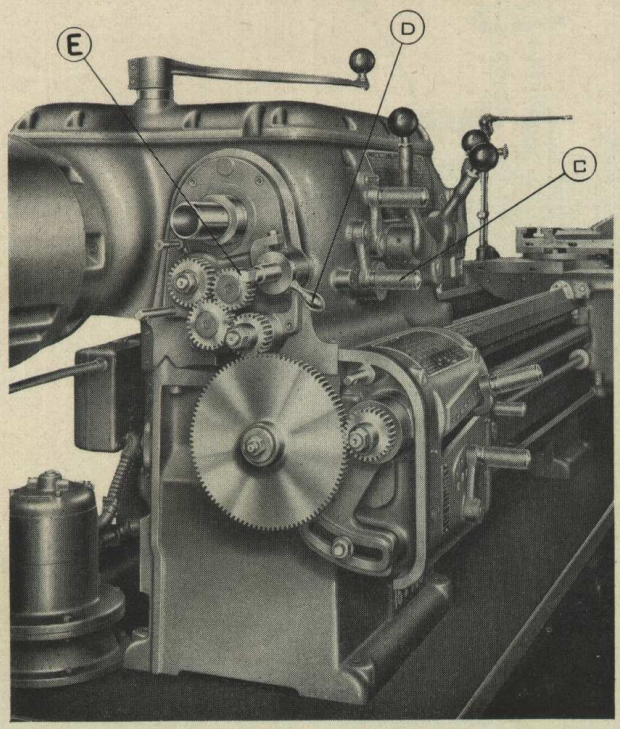


Fig. 4 (14", 16" & 20"W Lathes)

To reverse the rotation of the gear box gears, and consequently the rotation of the feed rod or lead screw, the lever D (Fig. 4) located at the left end of the headstock is moved downward. To accomplish this the lock-nut E (Fig. 4) must be loosened, and tightened again after shifting the lever. This locknut has a square head which has been designed to take the conventional tool post wrench furnished with every lathe.

Various feeds and threads are obtainable from the gear box. Settings can be quickly and easily made through a combination of the two levers, (A and B, Fig. 3, Page 10). The direct reading index plate, located above the two levers, has a vertical row of feeds and threads directly above, and in line with, each of the upper lever positions.

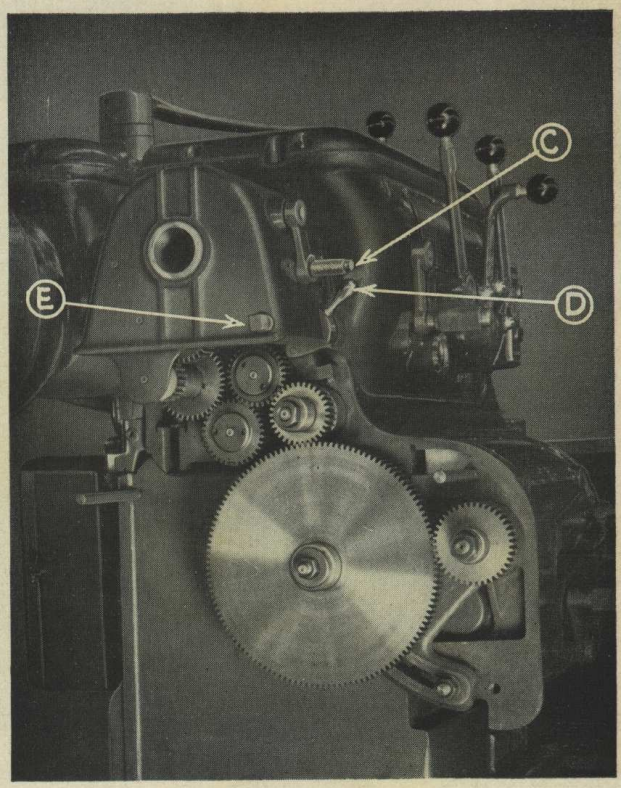


Fig. 4 (20", 25" & 32" Lathes)

The lower lever positions, referred to as C, D, E and F, will be found in the extreme left hand column of the index plate.

The gears used in obtaining the various feeds can be shifted while the main driving clutch is engaged, providing the rate of spindle rotation is not too fast. Practice is required, however, in order to manipulate the levers without clashing gears.

Normally it is preferable to shift lever positions only when the clutch is in neutral.

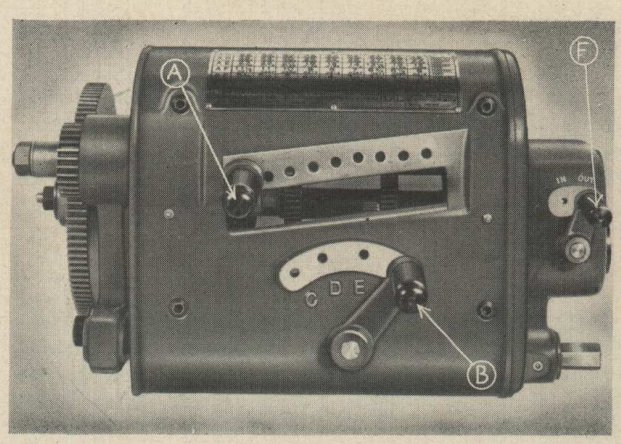


Fig. 3

OPERATION OF APRON

The large handwheel A (Fig. 5) on the front of the lathe apron has been provided for moving the apron and carriage assembly along the bed ways by hand.

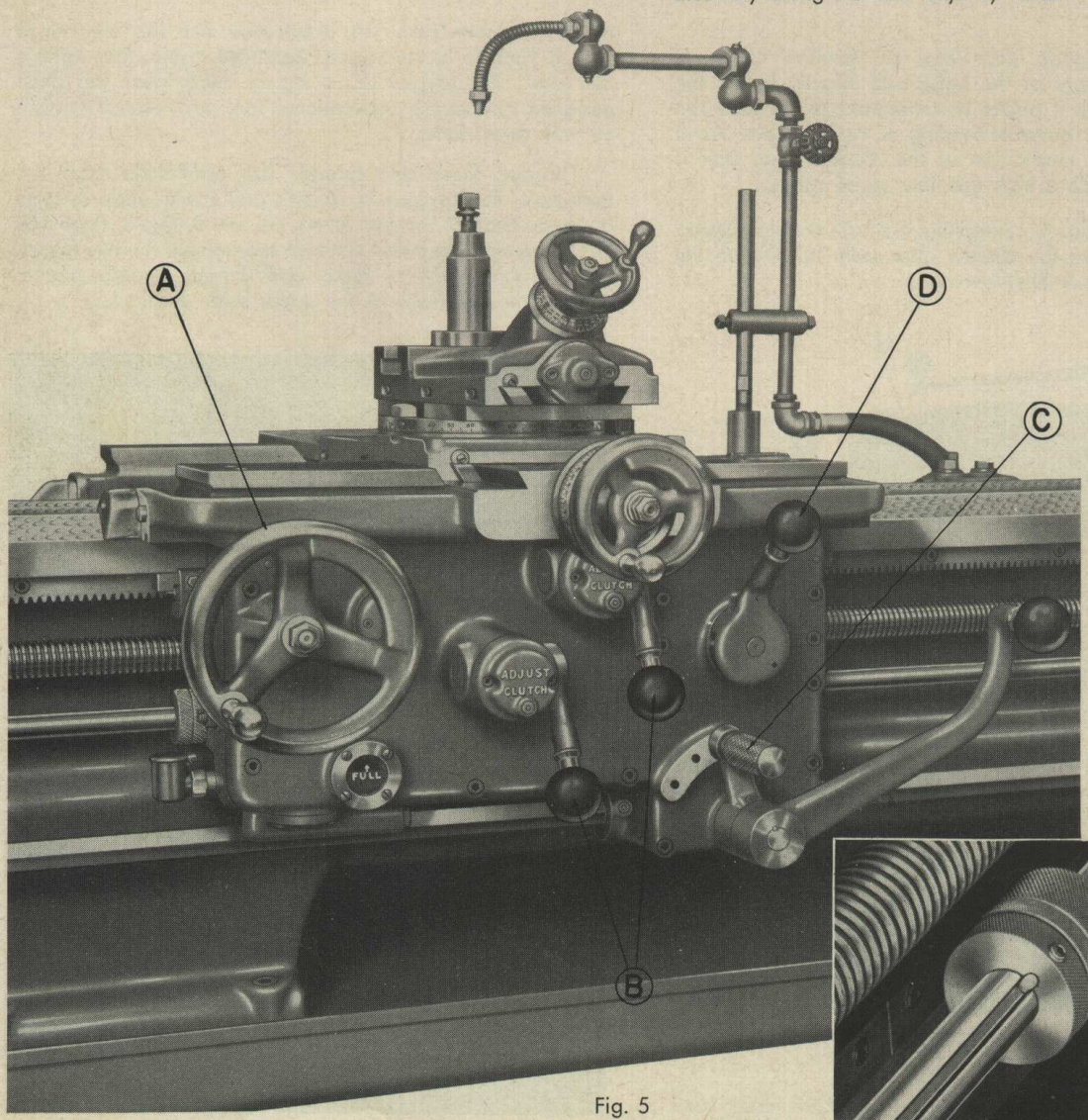


Fig. 5
(14", 16" & 20"W Lathes)

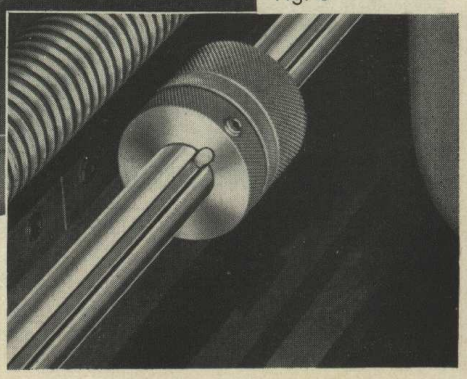


Fig. 6

Two downwardly projecting levers with black knobs B (Fig. 5), located approximately in the center of the apron, control the power feeds. The left hand lever operates the traverse feed clutch and the right hand lever controls the cross feed clutch. A quick sharp pull of the levers, rather than a slow steady pull, is necessary to engage clutches properly. Release is obtained by pushing the levers in toward the apron.

The lever just below the traverse clutch lever provides the apron with a high and low speed when the feed rod

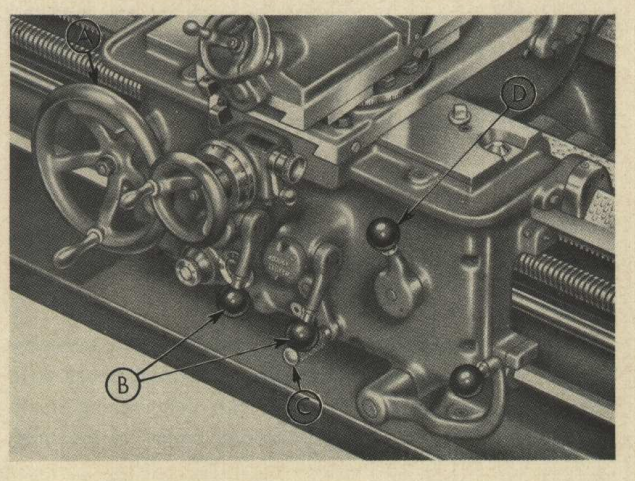


Fig. 5 (20" Lathe)

is engaged. These settings are referred to as "G" (upper position), and "H" (lower position) plainly lettered on the apron plate. Exact travel per spindle revolution will be found on the index plate located on the gear box housing.

A lever (C) in the lower right hand corner of the apron controls the direction of the feed. This lever has three positions. The central position is neutral, with both power feeds inoperative. Actually, the direction of apron and cross slide travel is dependent upon the reverse gears in the change gear train (See Fig. 4), but shifting the direction control lever from one position to the other will change the direction of feed.

With the lever (C) set to feed the carriage toward the headstock, engaging the cross feed clutch will move the tool in toward the center of the work. Both cross feed and longitudinal feed can be engaged at the same time, in which case the tool will travel on a line approximately 45 degrees to the spindle centerline.

At the upper right hand corner of the apron (Fig. 5) is the lever (D) controlling the split nut. For the use of this lever see the paragraph pertaining to Lead Screw Operation. For information relative to oiling the lathe apron see Lubrication Specification on Pages 6 and 7.

Closely connected with the apron is the automatic adjustable knock-out on the feed rod (See Fig. 6). This is a movable collar and its position is adjustable to be set, by the operator, to interrupt the feed of the apron at any predetermined point. This collar incorporates a threaded adjustment feature which allows very close setting of the release point. Small changes in location are possible after the collar has been tightly clamped to the feed rod.

When the lathe is shipped an additional safety collar is set in position, on the headstock side of the knockout collar, to disconnect the feed rod clutch before the carriage might be drawn into the headstock. This safety collar is permanently located and its position should not be changed.

To prevent the possibility of friction on the feed rod forcing unwanted disengagement of the feed rod clutch, a positive lock-up device has been provided at the extreme tailstock end of the feed rod. When this lock-up is tightened

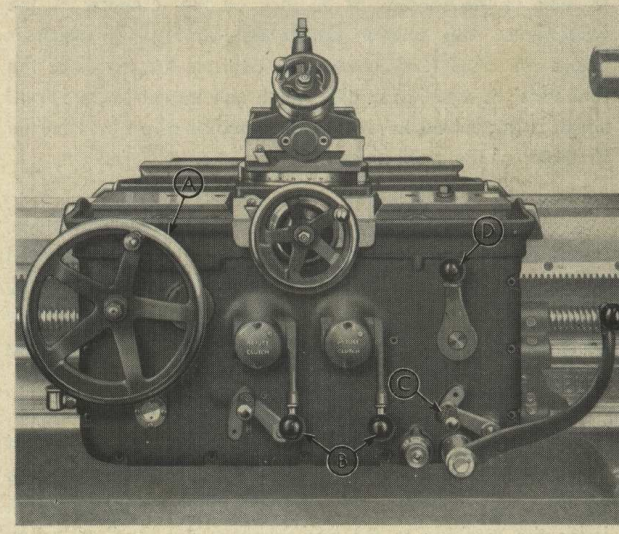


Fig. 5 (25" & 32" Lathes)

and locked against the bearing, the regular knock-out collar must be out of the way and the operator must watch the apron to prevent the carriage from being drawn out of the desired operating area.

LEAD SCREW OPERATION

The lead screw should be used only for the purpose of cutting threads. Failure to observe this rule will result in premature wear of the screw and may seriously impair its accuracy. In addition, the lead screw should never be allowed to revolve unless it is being used. For this reason the right hand end of the gear box is provided with a two-position lever marked "IN" and "OUT" (F, Fig. 3). These markings refer to the engagement of the lead screw with its driving gear, and the lever should always be set in the "OUT" position except when the lathe is being used for cutting threads.

To prevent simultanneous engagement of lead screw and feed rod, the apron is provided with an interlocking mechanism. Consequenntly, the apron feed direction lever, as mentioned under "Apron Operation," must be in the central or neutral position before the split nut operating lever can be moved. This lever is located on the front of the apron in the upper right hand corner (D, Fig. 5). With the lever in the vertical position the split nut is open and there is no engagement with the lead screw. Moving the handle to the right and down closes the split nut and the rotation of the lead screw then moves the carriage.

The necessity of reversing the lead screw to find the proper starting point when cutting threads is eliminated by the Axelson built-in thread chasing dial (E, Fig. 7). The chasing dial permits the operator to open the split nut and return the carriage to the starting point quickly by hand. The instruction plate fastened next to this dial provides the necessary information for its use.

OPERATION OF CARRIAGE AND CROSS SLIDE

Manual movement of the cross slide is effected by turning the cross slide handwheel (A, Fig. 7), which is located on the front of the carriage. This handwheel has a dial which can be set to zero, and which is graduated to read in thousandths of an inch on the diameter of the work-piece. The smaller handwheel (B, Fig. 7), which is above the cross feed handwheel, controls the travel of the tool slide. It also has a dial which can be set to zero, and which is graduated to read in thousandths of an inch on the diameter of the work-piece.

The tool slide is supported on the compound rest block, which swivels on the cross slide. This block is graduated in degrees in both directions so that any angular setting, either right or left, can be read directly. After setting, the block is locked to the cross slide by two or four (depending on lathe size) clamping nuts (C, Fig. 7).

On the right hand front wing of the carriage is located a square-headed bolt (D) arranged to be turned by means of the tool post wrench. This bolt operates the clamp which holds the carriage to the bed when no longitudinal movement is desired, as, for example, when taking facing cuts. Always be sure that this clamp is loose before attempting to traverse the carriage along the bed either by hand or by power.

For heavy cuts or very accurate work it is sometimes desirable to clamp both the cross slide and the tool slide against their respective dovetails. This removes considerable strain from the screws, and helps to hold the whole assembly more rigidly. For this purpose friction clamping shoes have been provided in both slides. The cross slide locking clamp is located at the front and right hand corner of the slide.

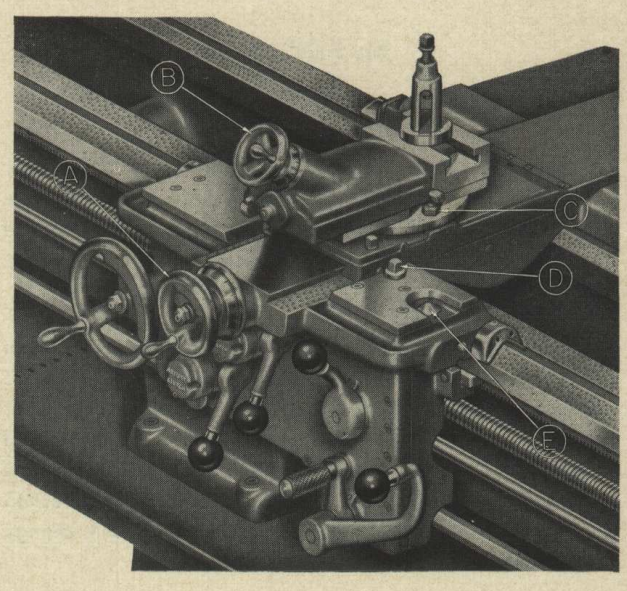


Fig. 7

It is turned by using the friction lock wrench supplied with the lathe. The tool slide clamp is on the right hand face adjacent to the tee-slot. It is operated by means of the same wrench used for the cross slide lock.

TAILSTOCK OPERATION

The Axelson patented tailstock (See Fig. 8) provides two different rates of spindle traverse. The fast rate is normally used in set-up work where it is desired to bring the tailstock center up to the work-piece as rapidly as possible. In order, however, to provide a slow, powerful movement of the spindle, a change-gear arrangement is provided. This allows the use of a drill mounted in the spindle which is made with a tang-driving slot for such use. With this arrangement heavy pressures can be exerted by the spindle without any additional effort on the part of the operator and without the necessity of using a bar in the tailstock handwheel.

Shifting of the change-gear mechanism is effected by moving the handwheel in toward the tailstock body for fast spindle movement, and by pulling the handwheel out from the body for slow movement. In order to move the handwheel as directed, the lock pin A (Fig. 8), on the body just behind the wheel should be lifted and the wheel rotated slightly while it is being moved in or out.

The tailstock is clamped to the bed by means of two bolts. For light work one one bolt need be used, but for heavy cuts both clamping nuts should be tightened thoroughly. To assure lateral alignment, the clamping bolt over the Vee way of the bed should be tightened first and the bolt over the flat way then brought up secure. If using only one clamping bolt always use the one over the Vee way. The clamping nuts should be released before attempting to move the tailstock on the bed.

Axelson lathes are provided with a crank and pinion (B, Fig. 8) for moving the tailstock in either direction along the bed. In using this device it is only necessary to be sure that the tailstock is free on the bed before attempting to move it. This, however, is not standard equipment on the 14" lathe.

For indicating the center position of the tailstock body with respect to its base, both members are provided with a small machine-finished surface or "pad" on the front face. When the faces of these pads are flush, the tailstock spindle is in alignment with the headstock spindle.

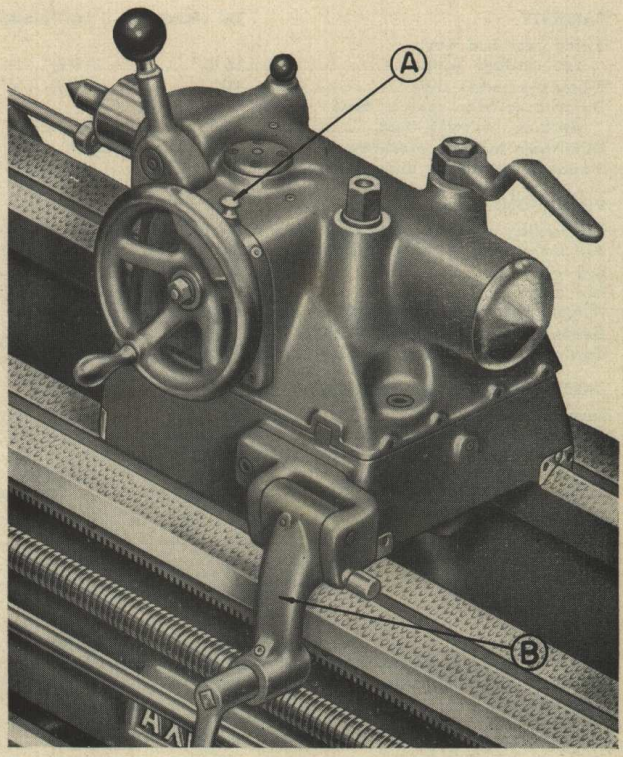


Fig. 8

The tailstock can be set over in either direction from center by means of the two adjusting bolts provided—one on the front and one on the rear of the tailstock base just under the key which holds the two members in alignment. The tailstock clamping nuts should be free before attempting to move the body by means of the setover bolts. When setting over the tailstock, it is not necessary to loosen the row of set screws on the end of the tailstock base, as these have been adjusted properly at the factory. If at any time there is a reason to change the setting of these screws, care should be taken to see that they are loose enough to permit the body to be moved by the setover bolts, but still tight enough to hold the key in register with the base.

The rack and pawl shown in Fig. 8 is not furnished on the 14", 16" & 20"W lathes.

SPECIFICATIONS

CAPACITY	14" (Model A)	16" (Model B)	20" (Model W)	20" (Model D)	25" (Model E)	32" (Model F)
Swing over bed ways and carriage wings	16 1/2"	18 1/2"	22 1/2"	22 1/2"	28 1/2"	34 1/2"
Swing over cross slide	10"	11 1/2"	13 3/4"	13 1/2"	18 1/2"	19"
Distance between centers, base machine, tailstock flush	30"	30"	48"	48"	48"	48"
Permissible tailstock overhang	4"	4"	7"	7"	7 1/2"	10"
Standard tool shank dimensions	5/8" x 1 3/8"	5/8" x 1 3/8"	3/4" x 1 5/8"	7/8" x 1 3/4"	1" x 2"	1 1/4" x 2 1/4"
DIMENSIONS						
Bed length, nominal, base machine	6' - 0"	6' - 0"	8' - 0"	8' - 0"	10' - 10"	10' - 0"
Bed length, actual, base machine	6' - 11"	6' - 11"	9' - 4"	9' - 4"	10' - 10"	11' - 6"
Bed width	14 7/8"	16 7/8"	19 1/2"	22"	26"	32"
Bed depth	10 1/2"	11 3/4"	11 3/4"	15"	16 3/4"	16 3/4"
Height, floor to center line of spindle	42 1/8"	41-5/16"	43-1/16"	41-11/16"	44-9/16"	42-7/16"
Headstock ways (center to center)	8 1/8"	9-7/16"	10-3/16"	12-11/16"	14 7/8"	20 7/8"
Carriage ways (center to center)	12 7/8"	14 3/4"	16-5/16"	19-3/16"	22 3/8"	28 3/8"
THREADING AND FEED CAPACITY						
Number of threads	54	54	54	54	45	45
Range of threads per inch	1 1/2 to 92	1 1/2 to 92	1 1/2 to 92	1 1/2 to 92	1 to 30	1 to 30
Number of feeds	54	54	54	49	81	81
Range of feed per revolution of spindle	0.0027" to 0.1665"	0.0027" to 0.1665"	0.0027" to 0.1665"	0.003" to 0.185"	0.004" to 0.300"	0.004" to 0.300"
Diameter of lead screw	1-5/16"	1-5/16"	1-5/16"	2"	2"	2"
Lead screw threads per inch (Acme)	4	4	4	2	2	2
Diameter of feed rod	7/8"	7/8"	7/8"	1 1/4"	1 5/8"	
Width and pitch of rack	1 1/2" - 10	1 1/2" - 10	1 1/2" - 10	1 3/4" - 8	1 3/4" - 6	1 3/4" - 6
DRIVE						
Type of drive	Direct	Direct	Direct	Direct	Direct	Direct
Recommended h.p. of motor	5 - 7 1/2	5 - 7 1/2	7 1/2 - 10	10	20	20-25
R.P.M. of motor, 60-cycle	1800	1800	1800	1800	1800	1800
TAILSTOCK						
Length of bearing on ways	12 3/8"	12 3/8"	12 3/8"	17 3/4"	21 3/4"	28"
Diameter of tailstock spindle	2 7/8"	2 7/8"	2 7/8"	4 1/4"	4 1/2"	5 1/4"
Travel of tailstock spindle	9"	9"	9"	12 1/4"	16 3/4"	21 1/4"
Maximum set-over toward operator	1"	1"	1"	1 1/8"	1 1/2"	2"
Maximum set-over away from operator	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	2"
HEADSTOCK						
Spindle bearings (Timken Type O - Precision)	2 front; 2 rear	2 front; 2 rear	2 front; 2 rear	2 front; 2 rear	2 front; 2 rear	2 front; 2 rear
Spindle nose	D-1 6" Camlock	D-1 6" Camlock	D-1 6" Camlock	D-1 8" Camlock	D-1 11" Camlock	A-1 11" Flanged
Diameter of hole through spindle	1-9/16"	1-9/16"	1-9/16"	2-3/16"	2-5/16"	2-5/16"
Spindle speed range, std. (60-cycle)	13 to 1127 rpm	13 to 1127 rpm	13 to 1127 rpm	9 1/2 to 961 rpm	6 to 555 rpm	6 to 555 rpm
Number of spindle speeds	24	24	24	24	24	24
Centers, Morse taper	No. 4	No. 4	No. 4	No. 5	No. 5	No. 6
Diameter of face plate	16"	18 1/4"	18 1/4"	22"	27 1/2"	32 1/4"
Diameter of drive plate	8 1/2"	8 1/2"	8 1/2"	12 1/2"	12 1/2"	12 1/2"
Length of bearing on bed	29 3/4"	29 3/4"	29 3/4"	31 5/8"	40"	12"
CARRIAGE						
Length of bearing on ways	25 7/8"	26 3/4"	26 3/4"	32"	38"	44"
Width of cross slide	8 1/8"	8 7/8"	8 7/8"	10 1/8"	11 1/8"	14 7/8"
Travel of cross slide	9 5/8"	10 5/8"	11 3/4"	14 5/8"	16 3/4"	19"
Width of tool slide	6 1/8"	6 1/2"	6 1/2"	8 3/8"	9 1/8"	11 3/4"
Travel of tool slide	4 3/4"	4 3/4"	4 3/4"	6 1/2"	8"	8"
***TAPER ATTACHMENT**						
Length of taper turned at one setting	15 1/4"	15 1/4"	15 1/4"	16"	24"	24"
Maximum taper per foot (included)	4"	4"	4"	4"	5"	5"
Maximum taper in degrees (with center line)	9 1/2°	9 1/2°	9 1/2°	9 1/2°	12°	12°
STEADY REST						
Capacity, standard	5"	5"	5"	6"	8 3/4"	8 3/4"
*Capacity, No. 1 oversize	4 1/2" to 8 3/4"	4 1/2" to 8 3/4"	5 1/2" to 10 1/2"	5 1/2" to 10 1/2"	6" to 14 3/4"	7 1/4" to 16"
*Capacity, No. 2 oversize		8" to 12"		10 1/4" to 15"	14" to 19 3/4"	14 1/4" eo 23"
***FOLLOW REST**						
Capacity	3 1/4"	3 1/4"	3 1/4"	3 1/4"	5 3/8"	6"
WEIGHT						
Base weight, approximate	5165 lb.	6000 lb.	7200 lb.	9400 lb.	16,350 lb.	19,900 lb.

Complete information on chucks and other accessories available upon request.

*Extra equipment.

Axelson Lathes

ADJUSTMENTS

HEADSTOCK CLUTCH ADJUSTMENT

Clutch adjustment should be made in accordance with the instruction on the metal plate (Fig. 10) attached to the rear of the headstock adjacent to the clutch cover. Access to the clutch is had by removing the clutch cover which is at the rear of the headstock near the motor flange. When replacing this cover, care should be used to see that the gasket is in good condition, as otherwise oil leakage might occur.

The clutch should be adjusted just tightly enough to prevent slipping under load. Too tight an adjustment will result in hard operation of the clutch control levers. Never operate the lathe with a slipping clutch—excessive heat will be generated and the clutch parts may be damaged to the extent of requiring replacement.

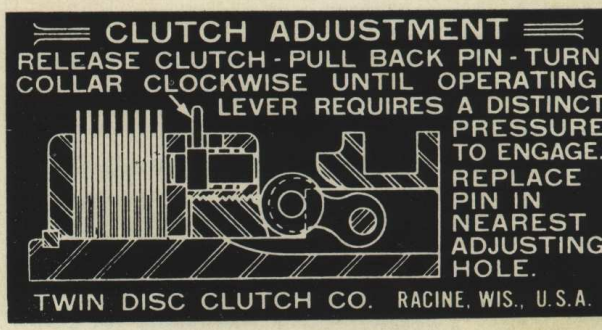


Fig. 10

HYDRAULIC BRAKE ADJUSTMENT

The multiple disc hydraulic brake is entirely automatic, being released by the same movement of the operating lever that engages the clutch. Shifting the clutch to neutral automatically applies the brake. This unit is constructed to allow a considerable amount of wear without the necessity of making adjustments.

If adjustment is necessary, remove the largest of the two round headed plugs on the cover of the headstock. To tighten the brake, tighten the hex socket set screw directly inside this hole, and to loosen the brake, the same set screw should be loosened.

SPINDLE BEARING ADJUSTMENT

The headstock spindles in Axelson Lathes are carried on two Timken #0 precision bearings, each bearing unit being composed of two cups and two cones. The arrangement is such that the front bearing carries all of the thrust load, in either direction, and the rear bearing is free to float longitudinally to compensate for temperature changes in the spindle or the headstock case. At the time the lathe is built, these bearings are preloaded to the proper point, and because of the exceptional capacity of the bearing, no adjustment should normally be required.

Should adjustment become necessary for any reason it should be made only by an experienced mechanic who is thoroughly familiar with precision bearings. Front bearings should be preloaded to between 40 and 45 inch-pounds of torgue, and rear bearings should have 35 to 40 inch-pounds of preload. Access to the front bearing adjusting nut can be had by removing the headstock cover. The rear bearing adjusting nut can be reached by removing the gear guard and the auxiliary gear housing at the end of the spindle.

APRON AND CARRIAGE ADJUSTMENT

The feed clutches in the apron are of the cone type with a positive stop in the release position. As the cones wear, the travel of the clutch levers will gradually increase. There is, however, a positive stop for the levers in the engaged position, but this stop should never be reached in normal operation. If it is reached, or if the clutch seems to be slipping, adjustment is required. For this purpose it is only necessary to remove the small cover on the front end of the clutch cam housing, and take up several notches on the castellated nut. The adjustment should be made with the clutch in the released position, and the action of the clutch should be tried before replacing the cover.

The carriage is securely held down on the bed both front and rear. Gibs holding the front of the carriage are

of the adjustable type, and should be inspected periodically to see that they are in proper adjustment. The gibs are in correct relation to the underside of the bed when they are set up just tight enough to prevent lifting of the carriage, and not tight enough to drag on the contacting surfaces. The front gibs, (one at each end of the apron), are of the taper type, held in position by a screw having a shoulder which fits into a cross slot in the gib. Turning the screw in the correct direction will move the gib as desired. At the rear of the carriage, contact with the bed is maintained by a guide plate which fits against the sloping undersurface of the rear flat-way. By loosening the clamping screws the plate can be moved into proper relation with its mating surface on the bed. Here again the proper adjustment is had when the plate just contacts the bed, but does not drag.

Both the cross slide and the compound, or tool slide, have tapered gibs provided for maintaining the proper adjustment. These gibs have shoulder screws similar to those mentioned in relation to the carriage hold-down gibs, and the adjustment is made in the same manner. To insure rigidity, these gibs are locked in place with three screws projecting through the side of the slide. These screws should be loosened a little before attempting to move the gib, and they should be tightened before testing the effect of the adjustment.

On all Axelson Lathes, the nut in which the cross feed screw operates is of the compensated type. This construction allows the nut to be kept tight on the screw even though a consicerable amount of wear has taken place. Adjustment is made as described below.

Immediately to the rear of the compound rest swivel there are four hexagon socket cap screws, the one closest to the swivel being the largest. This cap screw should be loosened just enough to remove all strain. It should not be backed out far enough to allow the head to unseat more than ten or fifteen thousandths of an inch. The bolt next to the one just loosened should then be tightened slightly. After tightening the first bolt, loosen and tighten second bolt again to relieve strain. The cross feed handwheel is then turned to check the backlash. If all of the backlash has not been eliminated, the process should be repeated. After completing the adjustment it is advisable to run the cross slide to both extremes of its travel to be sure that there are no tight spots.

LEAD SCREW ADJUSTMENT

The lead screw is provided at both ends with ball thrust bearings that are preloaded on assembly. For proper operation the lead screw should always be under tension regardless of the direction of cut. Under normal operation there will seldom be any occasion for changing the lead screw thrust bearing adjustment, but if such adjustment does become necessary it may be made by means of the adjustable locknut provided at the tail end.

The lever for controlling the split nut (See D, Fig. 5, Page 10) is designed to permit adjustment of the depth of engagement of the split nut with the lead screw. Adjustment is accomplished by turning the set screw located within the hub of the lever.

A slight degree of backlash is permissible, yet there should be no "drag" between split nut and lead screw. After adjustment, the set screw should be firmly secured by means of the lock screw provided.

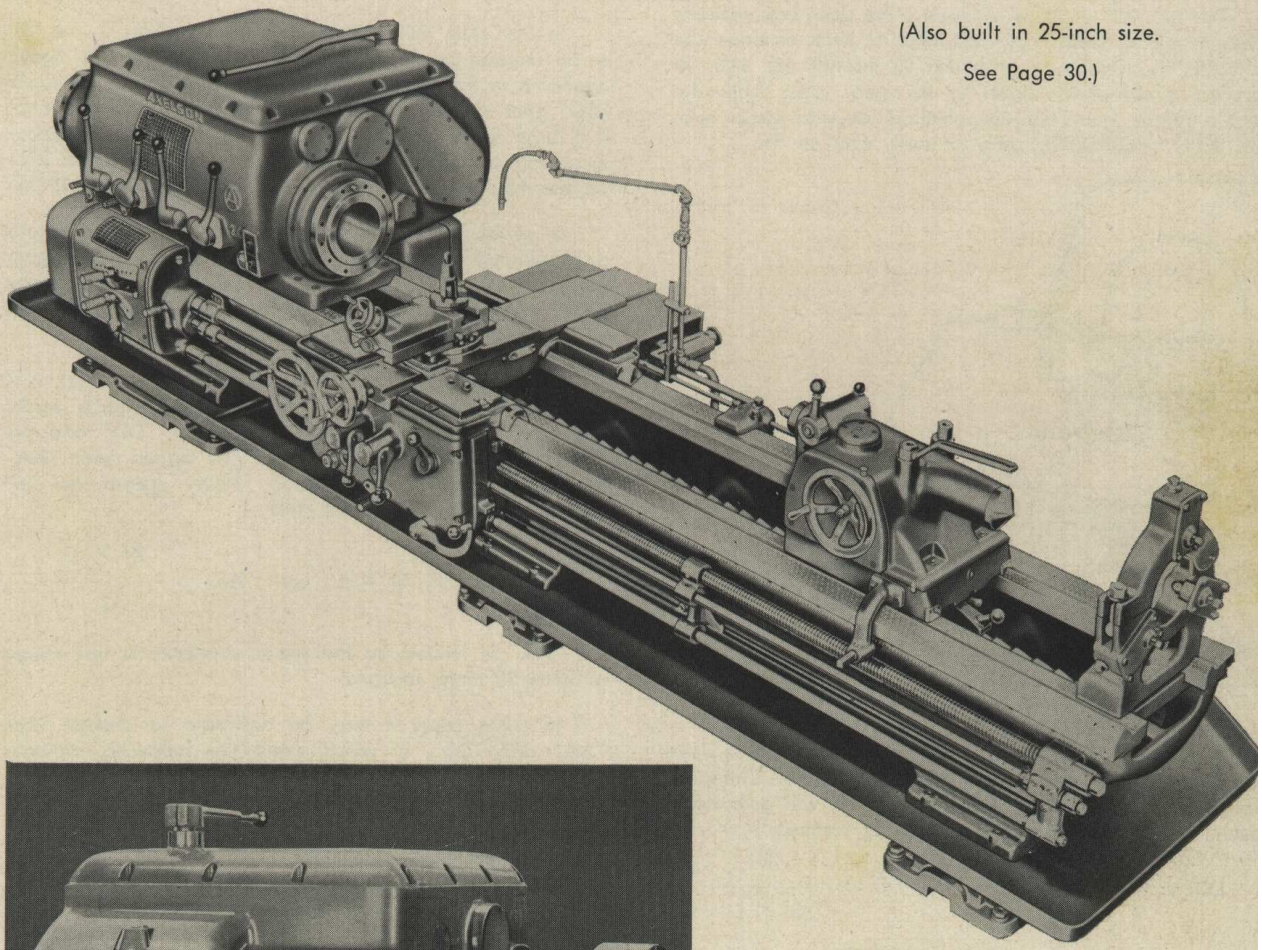
TAPER ATTACHMENT ADJUSTMENT

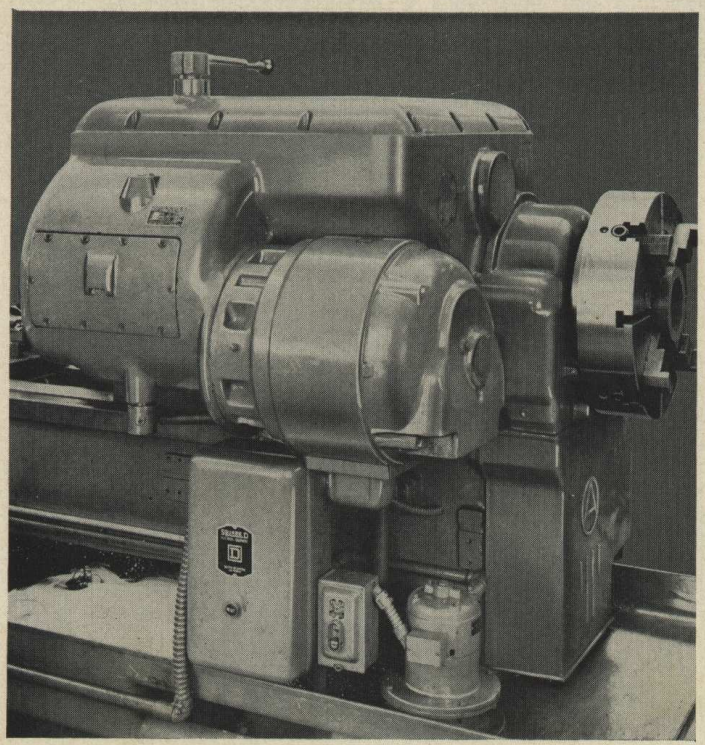
The taper attachment slides are equipped with adjustable taper gibs to compensate for wear. Adjustment is made in the same manner as described under "Apron and Carriage Adjustment."

Axelson Lathes

AXELSON 20-INCH HOLLOW SPINDLE LATHE

(Also built in 25-inch size.
See Page 30.)





Axelson 20-inch heavy duty Hollow Spindle oil country type Engine Lathes are designed right and built throughout of the best quality material for each specific purpose. These lathes, like every Axelson lathe, conform to the exceptionally high standards established by Axelson's more than fifty years of precision manufacturing experience.

The 20-inch model shown here has an 8⅞ inch hole through the spindle and will swing 22½ inches over the bedways and carriage wings. Motor drive is direct (see photo at left). Recommended HP of motor is 20-25. Write for Bulletin 4702-A, which gives complete specifications.

Axelson Lathes

COMPUTING SPECIAL LEADS OR THREADS PER INCH ON AXELSON 14" AND 16" HEAVY DUTY LATHES, AND 20" WESTERNER LATHE

The 14", 16" & 20"W Axelson lathe gear box contains ratios to cut 54 leads, covering those in most common use between 1½ threads per inch and 92 threads per inch. In addition, provision is made in the gear train from the spindle to the gear box to substitute or add gears such that many additional threads or leads may be cut.

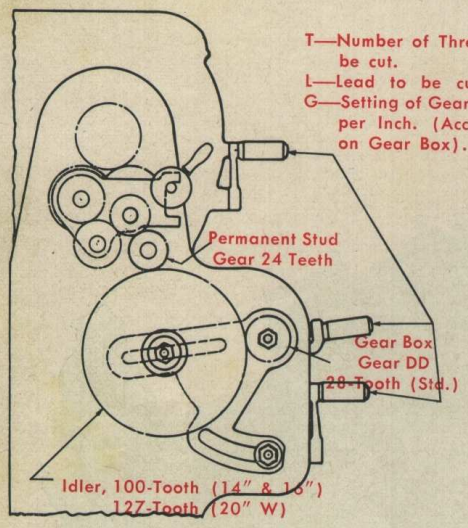


Fig. 10

In selecting change gears for special leads it is always desirable to use as few special gears as possible. Changing the gear box gear "DD" only (See Fig. 10) will give many special leads according to the following formula:

$$DD = \frac{28 \times T}{G} \quad \text{or} \quad DD = \frac{28}{G \times L}$$

In this case "G" will usually be 1¾, 3½, 7, 14, 28, or 56 threads per inch. Also "D" is limited by the space available to the range of 14 to 41 teeth inclusive. 72 tooth "DD" gear may be used by removing gear guard and stud. If a larger gear for "DD" is called for, it will be necessary to substitute a smaller idler, but in no case should this idler be less than 50 teeth on 14" & 16", and 80 teeth on 20"W.

In certain cases it may be of more advantage to use an additional gear "AA" on the stud instead of changing the gear box gear "DD" (See Fig. 11). This is particularly useful when the desired thread is expressed as a decimal or fractional lead rather than in threads per inch.

When an added gear "AA" is used on the stud, it is necessary to reverse the idler gear so that its hub is inside, and also to remove the gear box gear "DD" and re-assemble it with its spacer inside. The added gear "AA" replaces the spacer on the stud. Never distrub the permanent 24-tooth gear on the stud.

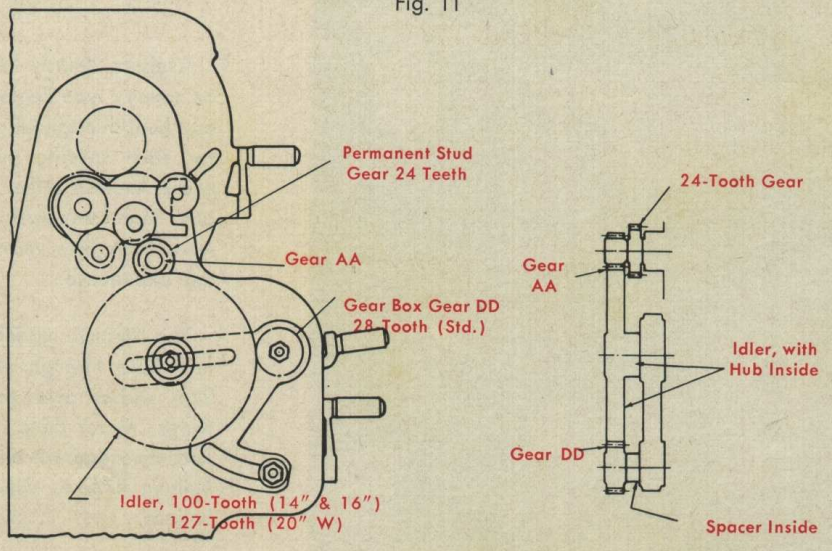
$$AA = 24 \times G \times L \quad \text{or} \quad AA = \frac{24 \times G}{T}$$

"AA" is limited by the space available to the range of 15 to 33 teeth, inclusive.

In some cases it may be desirable to change both "AA" and "DD", in which event the following formulas are used.

$$\frac{AA}{DD} = \frac{G \times 24}{T \times 28} \quad \text{or} \quad \frac{AA}{DD} = \frac{G \times 24 \times L}{28}$$

Fig. 11



If none of these formulas give the desired lead with gears that come within the space limitations, it is possible to use compound gearing by substituting for the idler two gears ("BB" and "CC") keyed together. (See Fig. 12).

$$\frac{AA}{BB} \times \frac{CC}{DD} = \frac{G \times 24}{T \times 28} \quad \text{or} \quad \frac{AA}{BB} \times \frac{CC}{DD} = \frac{G \times 24 \times L}{28}$$

The space limitations for these arrangements are as follows:

(1) AA + BB must not be less than 70 teeth on 14" & 16", and not less than 97 on 20"W.

(2) AA + BB also must not be less than CC plus 27 teeth.

(3) CC + DD must not be more than 145 teeth with gear guard in place, and 172 teeth without guard.

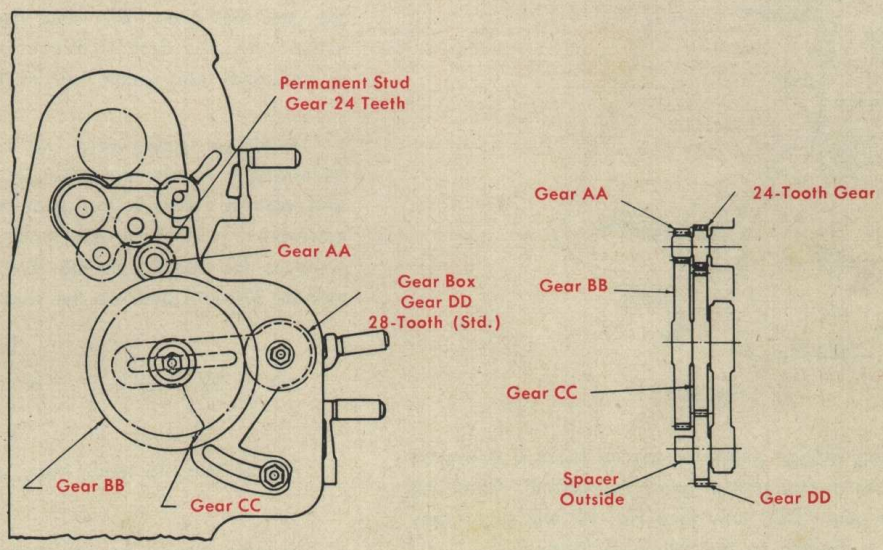
(4) CC + DD — BB must not be more than 153 teeth.

(5) AA can only vary between 15 and 33 teeth, inclusive.

In some few cases these limitations can be exceeded, but any such variation would have to be checked by actual measurement on the particular machine involved.

These formulas and space limitations provide for all the leads that can be cut on a standard machine. Other leads require changes in brackets and quadrants and/or additional idlers or compounding gears.

Fig. 12



STANDARD THREAD-CUTTING RANGE OF GEAR BOX

Axelson 14", 16" and 20" W Lathes

Lever Set At	*THREADS PER INCH*								
AC	92	88	80	72	64	56	54	52	48
AD	46	44	40	36	32	28	27	26	24
AE	23	22	20	18	16	14	13½	13	12
AF	11½	11	10	9	8	7	6¾	6½	6
BE	5¾	5½	5	4½	4	3½	3⅜	3¼	3
BF	2⅞	2¾	2½	2¼	2	1¾	1 11/16	1⅝	1½

Axelson Lathes

COMPUTING SPECIAL LEADS OR THREADS PER INCH ON AXELSON 20" HEAVY DUTY LATHES

The 20-inch Axelson Lathe gear box contains ratios to cut 54 leads covering those in most common use between 1½ threads per inch and 92 threads per inch. In addition, provision is made in the gear train from the spindle to the gear box to substitute or add gears such that many additional threads or leads may be cut.

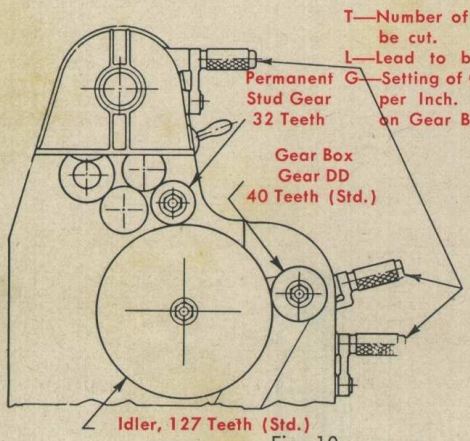


Fig. 10

In selecting change gears for special leads it is always desirable to use as few special gears as possible. Changing the gear box gear "DD" only (See Fig. 10) will give many special leads according to the following formula:

$$DD = \frac{40 \times T}{G} \quad \text{or} \quad DD = \frac{40}{G \times L}$$

DD = Min., 18 teeth; Max., 57 teeth

In this case "G" will usually be 2½, 5, 10, 20, 40, or 80 threads per inch. If a larger gear for "DD" is called for, it will be necessary to substitute a smaller idler, but in no case should this idler be less than 120 teeth.

In certain cases it may be of more advantage to use an additional gear "AA" on the stud instead of changing the gear box gear "DD" (See Fig. 11). This is particularly useful when the desired thread is expressed as a decimal or fractional lead rather than in threads per inch.

When an added gear "AA" is used on the stud, it is necessary to reverse the idler gear so that its hub is inside, and also to remove the gear box gear "DD" and reassemble it with its spacer inside. This added gear "AA" replaces the spacer on the stud. Never distrub the permanent 32-tooth gear on the stud.

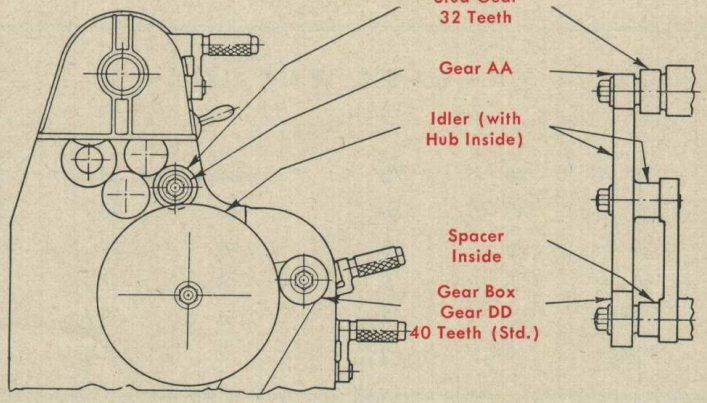
$$AA = 32 \times G \times L \quad \text{or} \quad AA = \frac{32 \times G}{T}$$

AA = Min., 18 teeth; Max., 40 teeth.

In some cases it may be desirable to change both "AA" and "DD", in which event the following formulas are used:

$$\frac{AA}{DD} = \frac{G \times 0.8}{T} \quad \text{or} \quad \frac{AA}{DD} = G \times 0.8 \times L$$

Fig. 11



All space limitations of both previous cases must be observed in determining gears for this case.

If none of these formulas give the desired lead with gears that come within the space limitations, it is possible to use compound gearing by substituting for the idler two gears "BB" and "CC") keyed together. (See Fig. 12).

The space limitations for this arrangement are as follows:

$$\frac{AA}{BB} \times \frac{CC}{DD} = \frac{G \times 0.8}{T} \quad \text{or} \quad \frac{AA}{BB} \times \frac{CC}{DD} = G \times 0.8 \times L$$

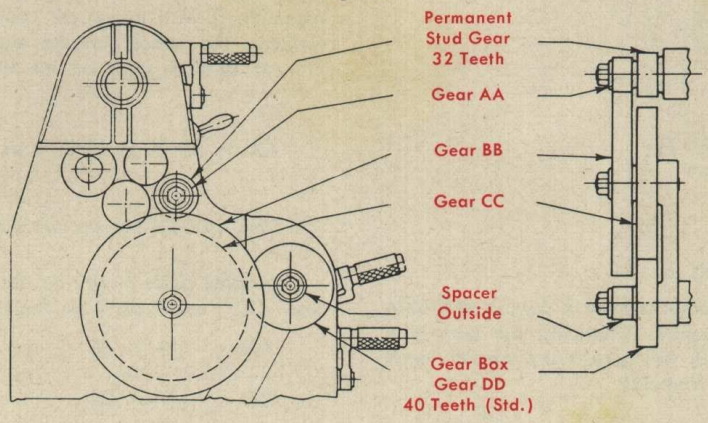
AA = Min., 18 teeth; Max., 57 teeth.*
BB = Min., 86 teeth; Max., 163 teeth.
CC = Min., 63 teeth; Max., 145 teeth.
DD = Min., 18 teeth; Max., 74 teeth.*

(1) AA + BB must lie between 143 and 181 teeth.
(2) AA + BB must not be less than CC + 35 teeth.
(3) CC + DD must lie between 81 and 160 teeth.
*(4) AA must lie between 18 and 57 teeth.
(5) BB must lie between 86 and 163 teeth.
(6) CC must lie between 63 and 145 teeth.
(7) DD must lie between 18 and 74 teeth.

In some few cases these limitations can be exceeded, but any such variation would have to be checked by actual measurement on the particular machine involved.

These formulas and space limitations provide for all the leads that can be cut on a standard machine. Other leads require changes in brackets and quadrants and/or additional idlers or compounding gears.

Fig. 12



STANDARD THREAD-CUTTING RANGE OF GEAR BOX
Axelson 20" Lathe

Lever Set At	THREADS PER INCH								
AC	92	88	80	72	64	56	54	52	48
AD	46	44	40	36	32	28	27	26	24
AE	23	22	20	18	16	14	13½	13	12
AF	11½	11	10	9	8	7	6¾	6½	6
BE	5¾	5½	5	4½	4	3½	3⅜	3¼	3
BF	2⅞	2¾	2½	2¼	2	1¾	1 11/16	1⅝	1½

(* Max. dia. AA and DD, at which gear cover can be replaced, is 40 teeth.)

Axelson Lathes

COMPUTING SPECIAL LEADS OR THREADS PER INCH ON AXELSON 25" AND 32" HEAVY DUTY LATHES

The 25 and 32-inch Axelson lathe gear box contains ratios to cut 45 leads, covering those in most common use between 1 thread per inch and 30 threads per inch. In addition, provision is made in the gear train from the spindle to the gear box to substitute or add gears such that many additional threads or leads can be cut.

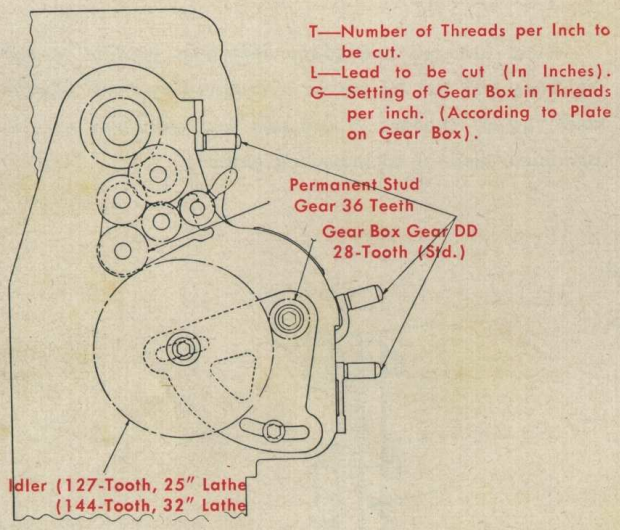


Fig. 10

In selecting gears for special leads it is always desirable to use as few gears as possible. Changing the gear box gear "DD" only (See Fig. 10) will give many special leads according to the following formulas:

$$DD = \frac{28 \times T}{G} \quad \text{or} \quad DD = \frac{28}{G \times L}$$

In this case "G" will usually be 1¾, 3½, 7, 14, or 28 threads per inch. Also "DD" is limited by the space available to the range of 18 to 57 teeth inclusive on the 25" lathe and to 18 to 40 teeth inclusive on the 32" lathe. If a larger gear for "DD" is called for, it will be necessary to substitute a smaller idler, but in no case should this idler be less than 69 teeth on the 25" lathe or 117 teeth on the 32" lathe.

In certain cases it may be of more advantage to use an additional gear "AA" on the stud instead of changing the gear box gear "DD" (See Fig. 11). This is particularly useful when the desired thread is expressed as a decimal or fractional lead rather than in threads per inch.

When an additional gear "AA" is used on the stud, it is necessary to reverse the idler gear so that its hub is inside, and also to remove the gear box gear "DD" and assemble it with its spacer inside. The added gear "AA" replaces the spacer on the stud. Never disturb the permanent 36-tooth gear on the stud.

$$AA = 36 \times G \times L \quad \text{or} \quad AA = \frac{36 \times G}{T}$$

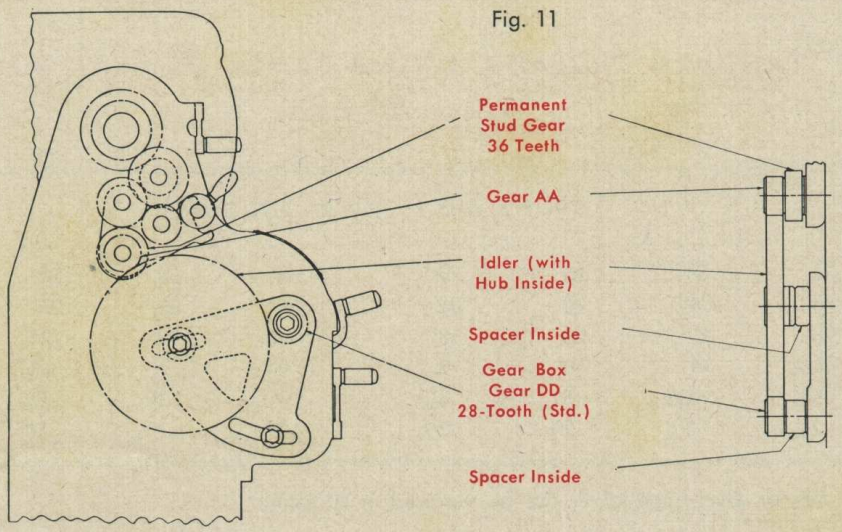
"AA" should not be less than 18 teeth.

In some cases it may be desirable to change both "AA" and "DD", in which event the following formulas are used:

$$\frac{AA}{DD} = \frac{G \times 36}{T \times 28} \quad \text{or} \quad \frac{AA}{DD} = \frac{G \times 36 \times L}{28}$$

All space limitations of both previous cases must be observed in determining gears for this case.

Fig. 11



If none of these formulas give the desired lead with gears that come within the space limitations, it is possible to use compound gearing by substituting for the idler two gears ("BB" and "CC") keyed together. (See Fig. 12).

$$\frac{AA}{BB} \times \frac{CC}{DD} = \frac{G \times 36}{T \times 28}$$

or

$$\frac{AA}{BB} \times \frac{CC}{DD} = \frac{G \times 36 \times L}{28}$$

The space limitations for this arrangement are as follows:

(1) AA + BB must lie between 132 and 186 teeth on the 25" lathe or 160 and 223 on the 32" lathe.

(2) AA + BB must not be less than CC + 39 teeth.

(3) CC + DD must lie between 130 and 183 teeth.

(4) AA must lie between 18 and 90 teeth.

(5) BB must lie between 43 and 160 teeth on 25" lath or 70 and 160 on 32" lathe.

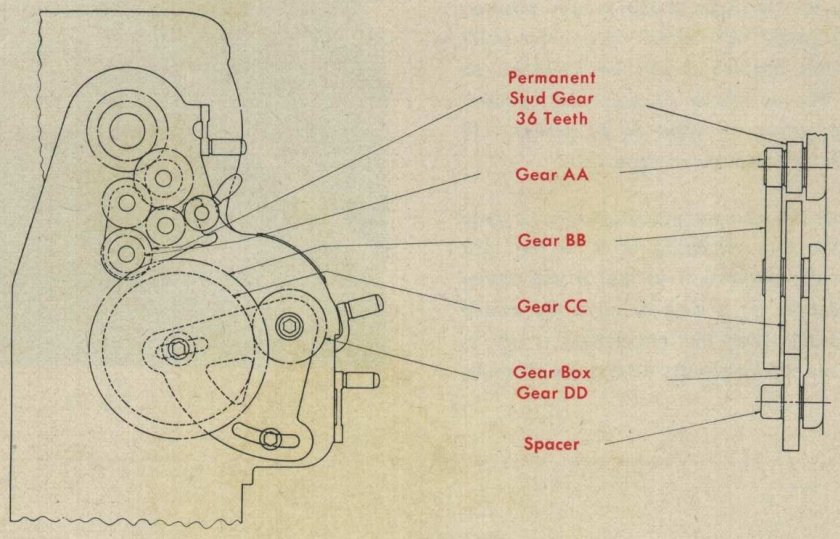
(6) CC must lie between 71 and 139 teeth on 25 lathe or 71 and 166 on 32" lathe.

(7) DD must lie between 18 and 57 teeth.

In some few cases these limitations can be exceeded but any such variation would have to be checked by actu measurement on the particular machine involved.

These formulas and space limitations provide for a the leads that can be cut on a standard machine. Othe leads require changes in brackets and quadrants and/o additional idlers or compounding gears.

Fig. 12



STANDARD THREAD-CUTTING RANGE OF GEAR BOX

Axelson 25" and 32" Lathes

Lever Set At	*THREADS PER INCH*								
AC	30	28	26	24	23	22	20	18	16
AD	15	14	13	12	11½	11	10	9	8
AE	7½	7	6½	6	5¾	5½	5	4½	4
AF	3¾	3½	3¼	3	2⅞	2¾	2½	2¼	2
BF	1⅞	1¾	1⅝	1½	1 7/16	1⅜	1¼	1⅛	1

Axelson Lathes

EXTRA EQUIPMENT

OPERATION OF TAPER ATTACHMENT

To use the Axelson taper attachment (Fig. 13), the clamping bolts at each end of the swivel should be loosened, and the swivel set to the selected taper as indicated on the scale. This movement is acomplished by turning the knurled knob at the rear of the scale bracket. The swivel bolts should then be tightened. The two bolts which clamp the lock bracket to the bed should also be tightened at this time after locating the carriage in the proper position for taking the cut. The single bolt which clamps the small diameter rod in the lock bracket should be loosened so that the rod will be free to travel through the bracket. Traversing the carriage, either by hand or by power, will cause the tool to cut the predetermined taper.

To render the taper attachment inoperative, it is only necessary to release the two clamping bolts in the lock bracket, and to tighten the single bolt so that it will clamp the long rod in the bracket. It is best to have the swivel entirely within the housing when the attachment is not in use in order to protect the working parts from dirt and chips.

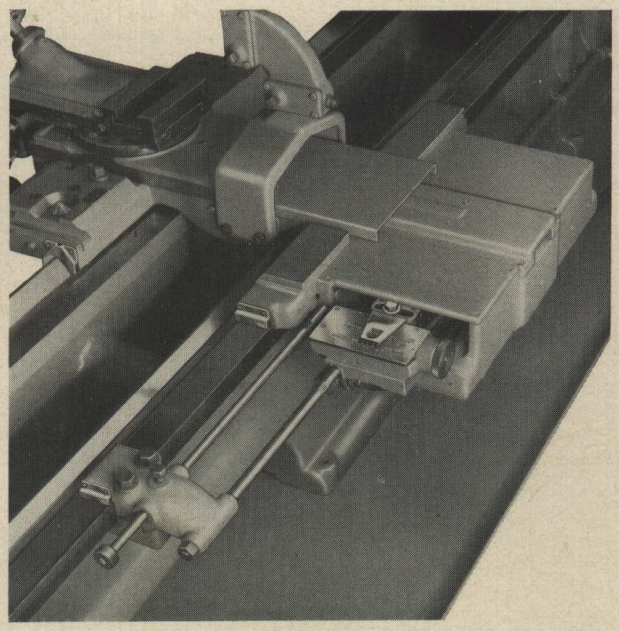


Fig. 13

AXELSON MICROMETER CARRIAGE STOP

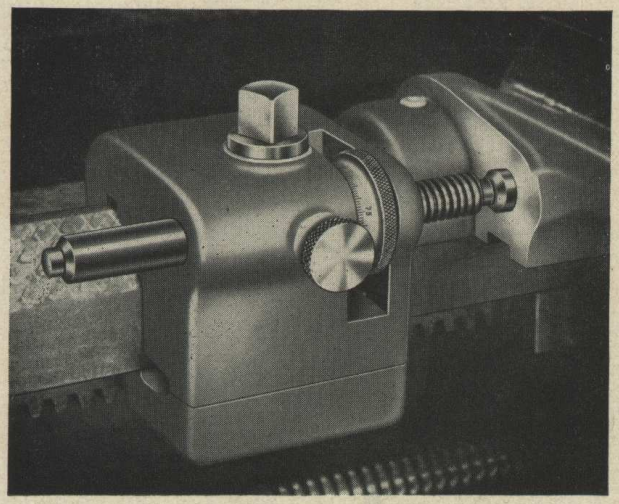


Fig. 14

The Axelson Micrometer Carriage Stop (Fig. 14) is manufactured in a range of sizes to fit all Axelson Lathes. In use, the carriage should be set at the point where stoppage is desired and the micrometer stop unit, designed to operate on either side of the apron, is clamped tightly to the bed way.

The adjusting dial, graduated to read in thousandths of an inch of carriage travel, permits accurate setting, and the knurled lock screw prevents accidental movement of the stop pin.

Fig. 16 (14", 16" and 20"W Lathes)

Both of these supports are operated automatically, being picked up and moved by the apron along the track provided on the bed. On the return trip the support is released at its original point of setting, insuring required rigidity at all times.

(For Double Type Supports, see page 57.)

AXELSON AUXILIARY FEED ROD AND LEAD SCREW SUPPORTS

Auxiliary Supports for Feed Rod, Lead Screw ar Clutch Control Rod are available for all Axelson Lathes wi long beds. Through the use of these supports, sag or war ing is eliminated.

Lathes having beds from 14 to 22 feet long should b equipped with the special Axelson Single Auxiliary Suppor shown in Figure 16, while for beds 24 feet and longer th Axelson Double-Type Supports are used.

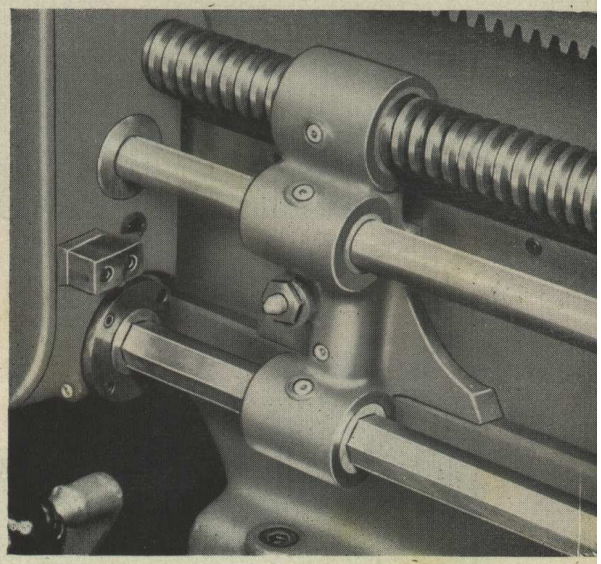


Fig. 16 (20", 25" and 32" Lathes)

AXELSON PLAIN REAR REST

The Axelson Plain Rear Compound Rest (Fig. 17), mounted on a special extended cross slide, makes possible the use of two tool set-ups at the same time. The Adjustable Rear Rest, positioned manually, is firmly bolted to the cross slide and is controlled by the cross feed handwheel.

Cutting tools used on the rear rest are inverted and fed into the work by backing the cross slide toward the operator. The use of this attachment will enable two diffet- ent cuts to be made without change of set-up.

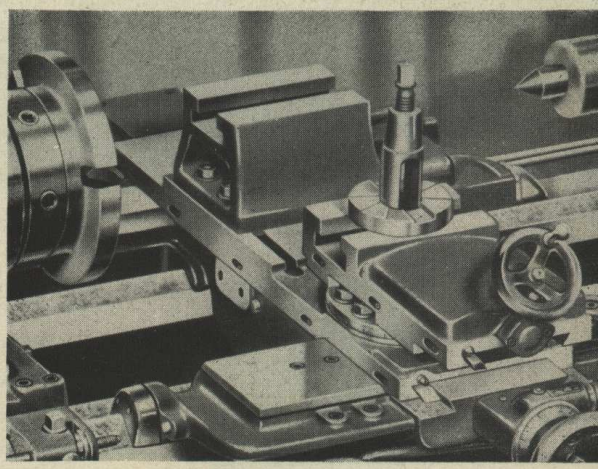


Fig 17

AXELSON RAPID TRAVERSE

On lathes with long beds it is often desirable to move the carriage quickly in either direction to save valuable production time. The Axelson Rapid Traverse successfully does this job.

Lathes having this feature are equipped with a special control lever above and at the right hand end of the lathe apron (Fig.18). Pulling this lever toward the operator disengages the apron handwheel and causes the carriage to travel rapidly to the left. Pushing the lever in toward the lathe reverses this motion. The unit is operated by an independent motor as shown in Figure 19.

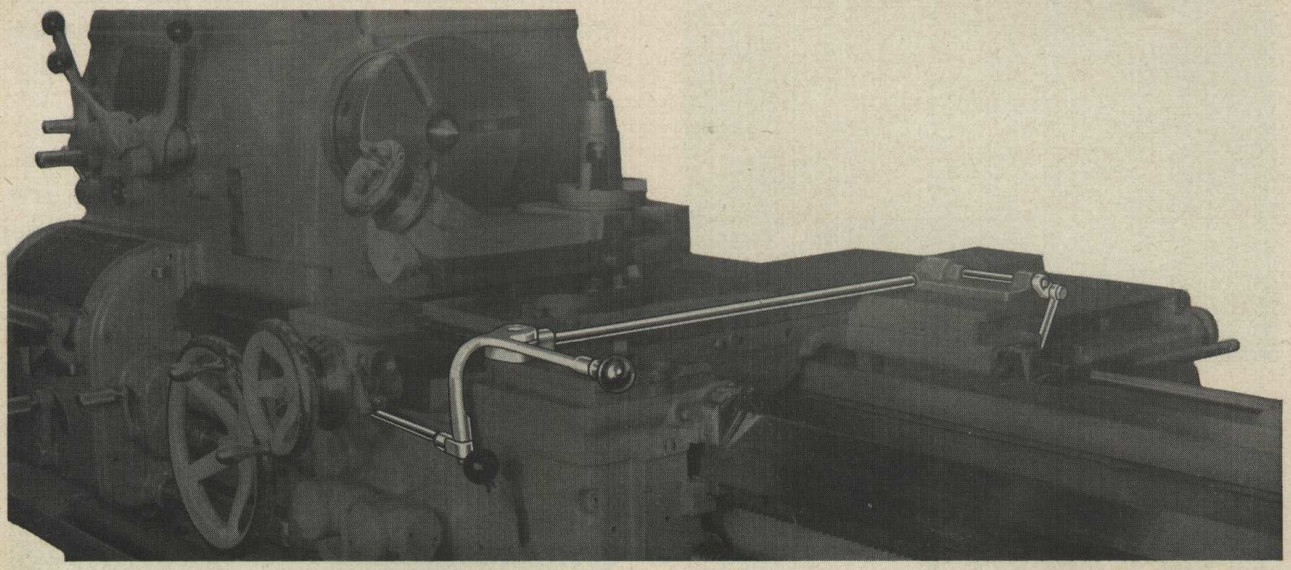


Fig. 18

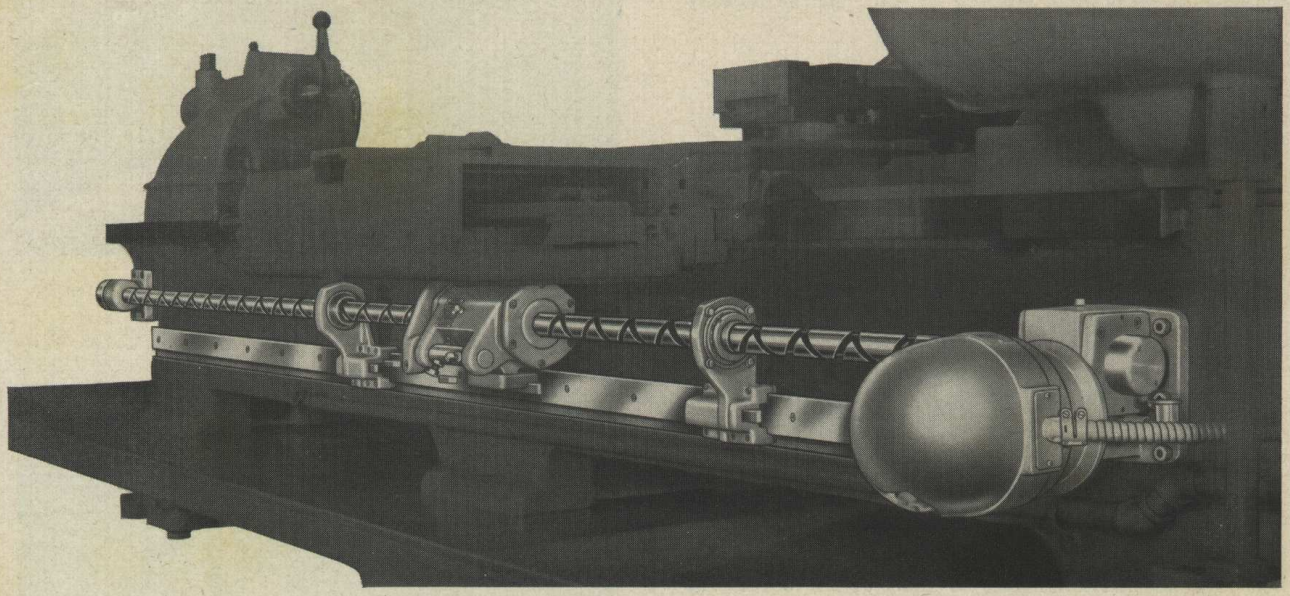


Fig. 19

Lubrication of Rapid Traverse screw bearing should be in accordance with recommendation on Page 6 for Feed Rod and Lead Screw Bearings. Special attention is required for lubrication of Rapid Traverse Clutches. See special instruction plate reproduced at left.

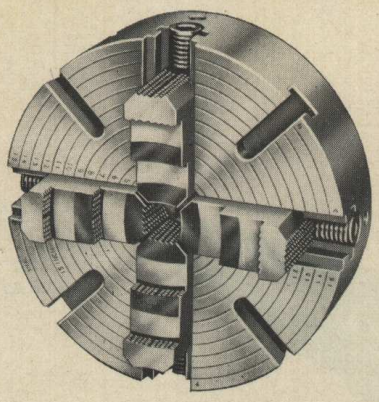


Fig. 21

INDEPENDENT 4-JAW CHUCK

The Independent 4-Jaw Chuck (Fig. 21) available fo Axelson Lathes is used for holding odd shapes and size as well as true cylindrical items. All chucks supplied b Axelson can be furnished to fit American Standard Spindl Noses, Type A-1 (Flange Bolted) or Type D-1 (Cam Lock).

UNIVERSAL 3-JAW CHUCK

The Universal 3-Jaw Chuck (Fig. 22) is so designed that all jaws operate in unison when the chuck wrench is turned. This chuck is intended for use when finished or semi-finished cylindrical items are to be machined, as it eliminates the centering operation necessary with chucks of the 4-Jaw independent type. These chucks are also made to accommodate American Standard spindle noses.

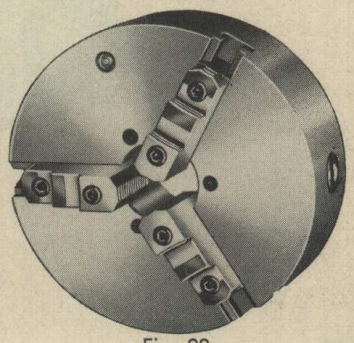


Fig. 22

AXELSON STEADY REST

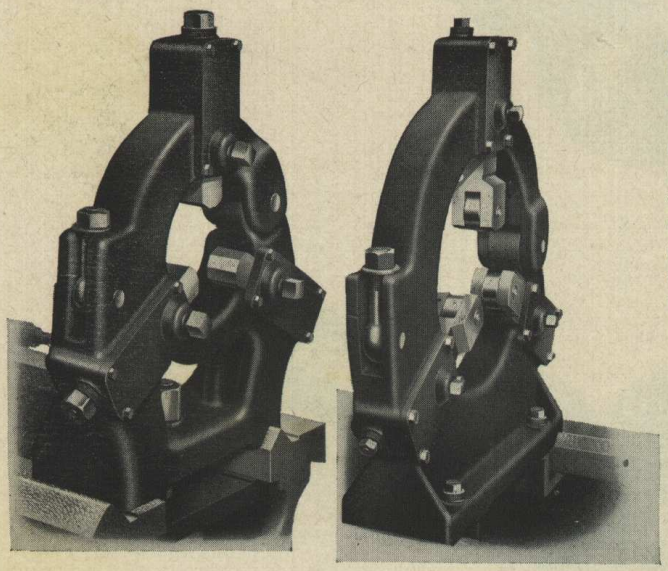


Fig. 23

Fig. 24

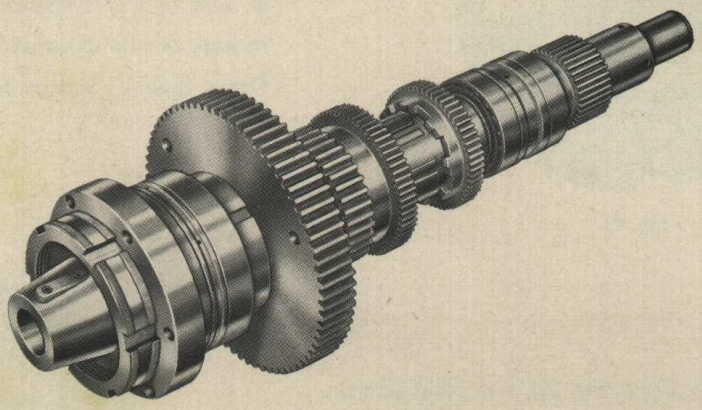
Axelson Steady Rests are designed and constructed to provide ample support of work with absolute rigidity. Clamped tightly to the front flat way and the rear Vee-way of the bed, the steady rest is supported by large bearing surfaces. Three readily adjusted jaws afford ample supporting area to the work. Construction is of the enclosed jaw type which provides more rigid and longer-wearing jaws. Regular equipment includes one steady rest of standard capacity (Fig. 23), Oversize capacity steady rests may be obtained, as noted in specifications. Roller type jaws (See Fig. 24) can be furnished instead of regular type.

SPECIFICATIONS

Size Lathe					
14″	16″	20″W	20″	25″	32″
Capacity, Standard					
5″	5″	6″	6″	8¾″	8¾″
Capacity, No. 1 oversize (extra equipment)					
4½″ to 8¾″	4½″ to 8¾″	5½″ to 10½″	5½″ to 10½″	6″ to 14¾″	7¼″ to 16″
Capacity, No. 2 oversize (extra equipment)					
			19¼″ to 15″	14¼″ to 19¾″	14¼″ to 23″

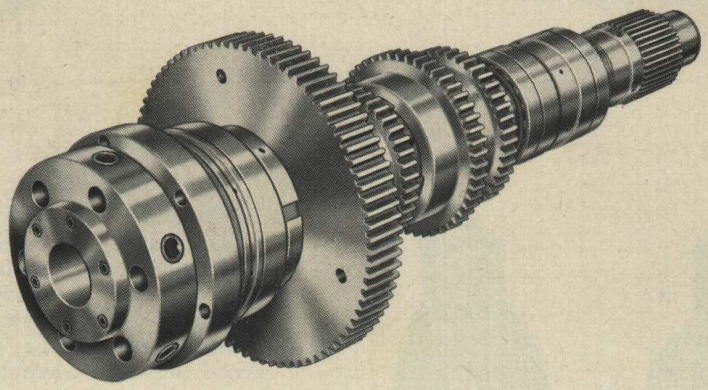
AXELSON SPINDLES

TAPER NOSE
TYPE L
AMERICAN STANDARD



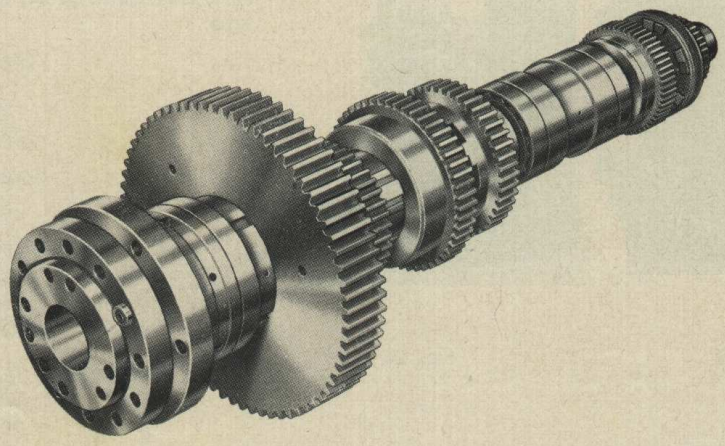
SPECIAL EQUIPMENT
ON ALL SIZES
L-1 on 14", 16" & 20"W
L-2 on 20"
L-3 ON 25",32".

CAM LOCK
TYPE D-1
AMERICAN STANDARD



STANDARD EQUIPMENT
on 14",16",20"W, 20",25"
SPECIAL EQUIPMENT
ON 32".

FLANGED
TYPE A-1
AMERICAN STANDARD



STANDARD EQUIPMENT
ON 32"
SPECIAL EQUIPMENT
ON 25"

AXELSON FOLLOW REST

The Axelson Follow Rest (Fig. 25) is designed to give complete support to long and comparatively slender work during machining. Clamped to the carriage, it follows the work during the process of cutting and eliminates chatter or vibration. Three enclosed type jaws are used in all sizes 20"W and up. In the 14" and 16", two jaws are used. Roller type jaws are also available.

Specification of Follow Rest (Extra Equipment)

14"	16"	20"W	20"	25"	32"
Capacity					
3¼"	3¼"	3¼"	3¼"	5⅜"	6"

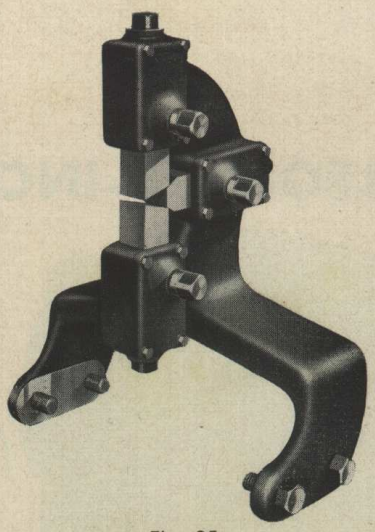


Fig. 25

SJOGREN SPEED COLLET CHUCK

The Sjogren Spee Collet Chuck (Fig. 26), supplied by Axelson, makes rapid chucking possible when machining small parts. No chuck wrench is required with this chuck as a turn of the handwheel tightens or releases the grip. A wide range of sizes in round, square or hexagonal collets makes this chuck exceptionally versatile in many applications. Available to fit any type spindle nose.

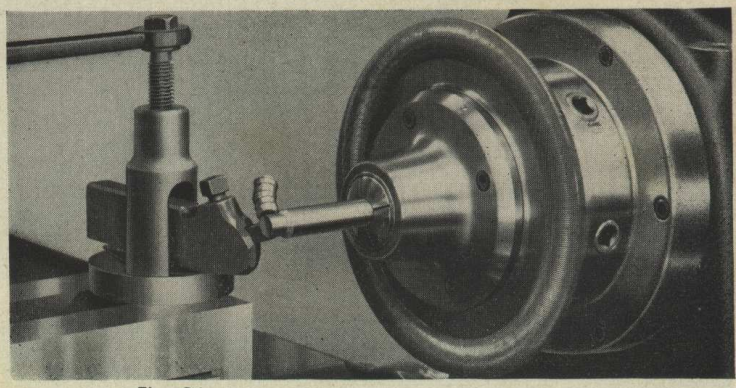


Fig. 26

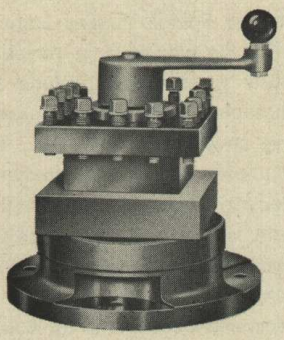


Fig. 27

AXELSON 4-WAY TOOL POST

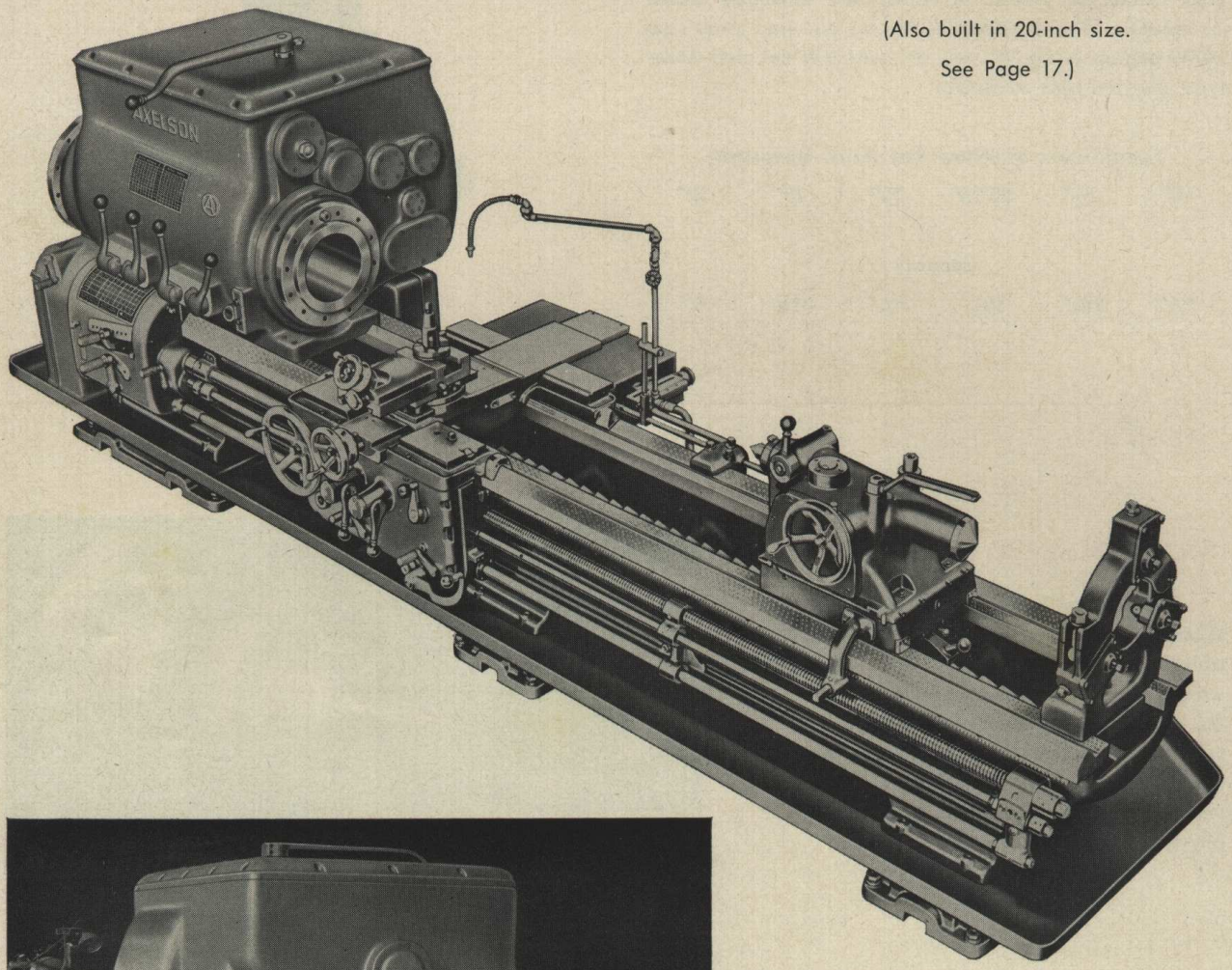
The Axelson 4-Way Tool Post (Fig. 27) is a rugged unit constructed to speed up lathe production. In installing this unit, the compound rest assembly is removed from the lathe and the 4-Way Tool Post bolted in its place.

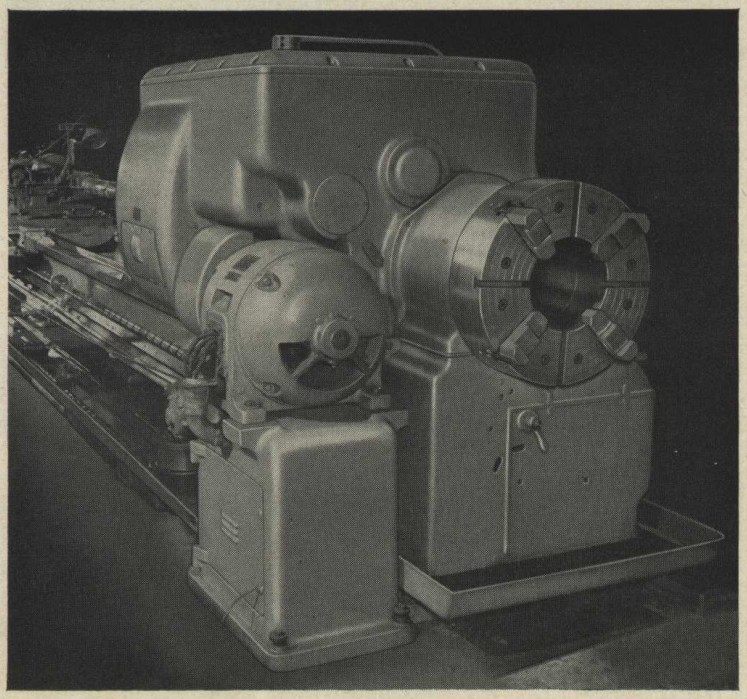
Designed to allow the operator to set up four different tools for four separate operations, the unit is free to swivel to any of its four positions when the control lever is pushed away from the operator. Positive locking in the desired position is obtained when the lever is pulled firmly towards the operator as far as possible.

Axelson Lathes

AXELSON 25-INCH HOLLOW SPINDLE LATHE

(Also built in 20-inch size.
See Page 17.)



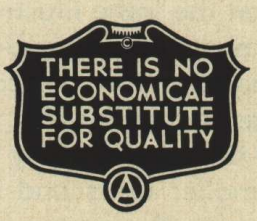


The Axelson 25-inch heavy duty oil country Hollow Spindle Engine Lathe is designed to offer the maximum in versatile turning work. Basic specifications include an 11-inch hole through the spindle with provision for mounting chucks at both ends. Bed lengths are available to suit requirements. Swing over bedways and carriage wings is 28¾ inches, with a swing over the cross-slide of 18¾ inches. Motor drive is direct (see photo at left) and a motor capacity of 40-50 HP is recommended. Write for Bulletin 4703, which contains complete specifications.

Axelson Lathes

PARTS SECTION

READ INSTRUCTIONS FOR FINDING CORRECT NAME AND NUMBER BEFORE ORDERING PARTS



Axelson Lathes

HOW TO FIND CORRECT PART NUMBER AND NAME WHEN ORDERING REPAIR PARTS

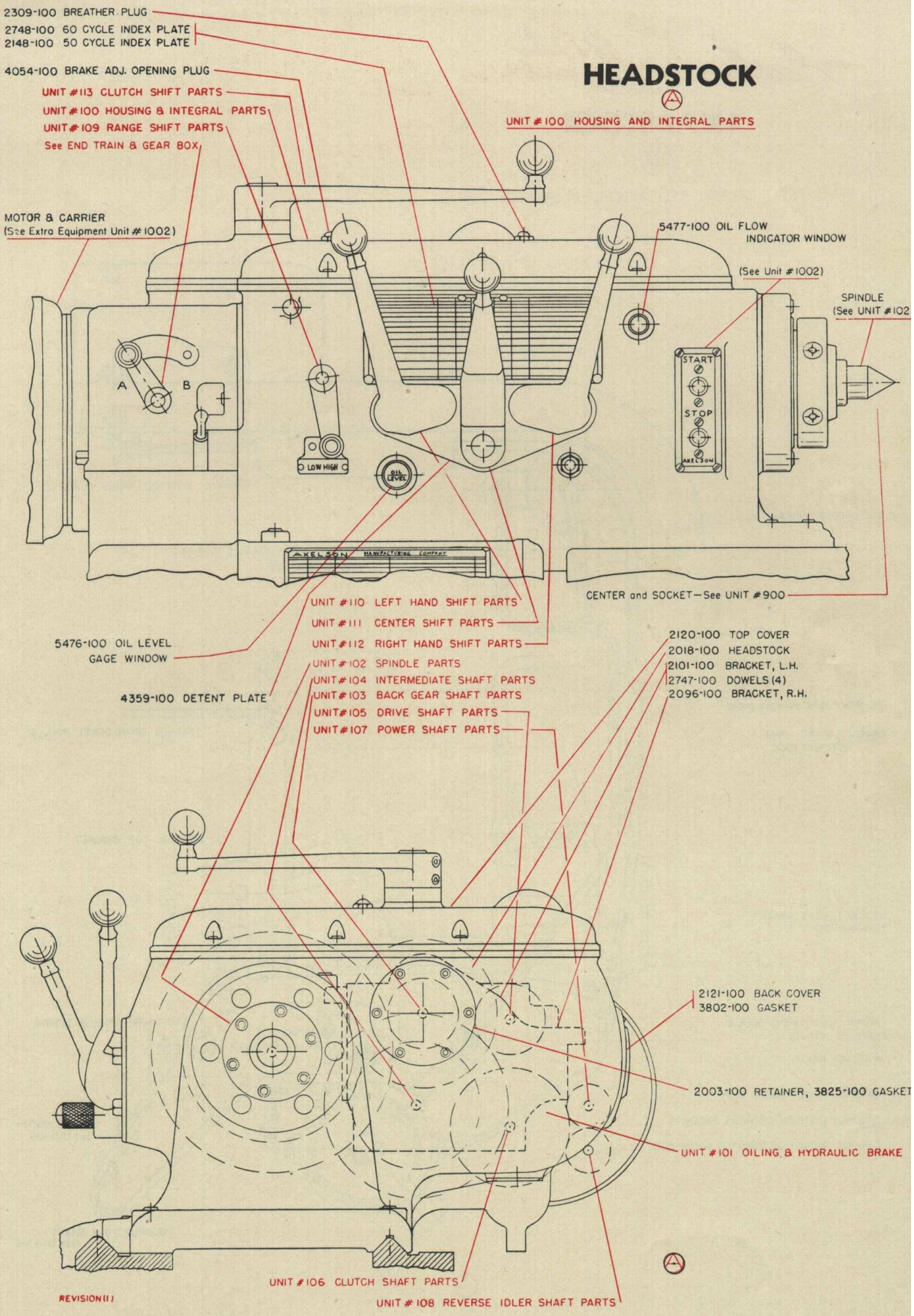
The following parts section for Axelson Lathes has been designed to assure ease in quickly finding the proper part number when ordering repair parts.

To eliminate the possibility of error, the serial number of your Axelson Lathe should always be given when replacement parts are ordered. This serial number is stamped on the gear box index plate on top of the gear box housing, and also on the extreme tailstock end of the bed casting.

In using this parts section to find the number and name of a specific part to be ordered, note Pages 33, 36, 43, 44, 45, etc. Names of various sub-assemblies are pointed out on the lathe illustrations. After finding the name of the sub-assembly in which the required part is located, turn to the first page headed by that name. Here you will find the sub-assembly to be broken down into smaller units and from one of these small units the part and its catalog number can easily be found.

HEADSTOCK

Ⓐ

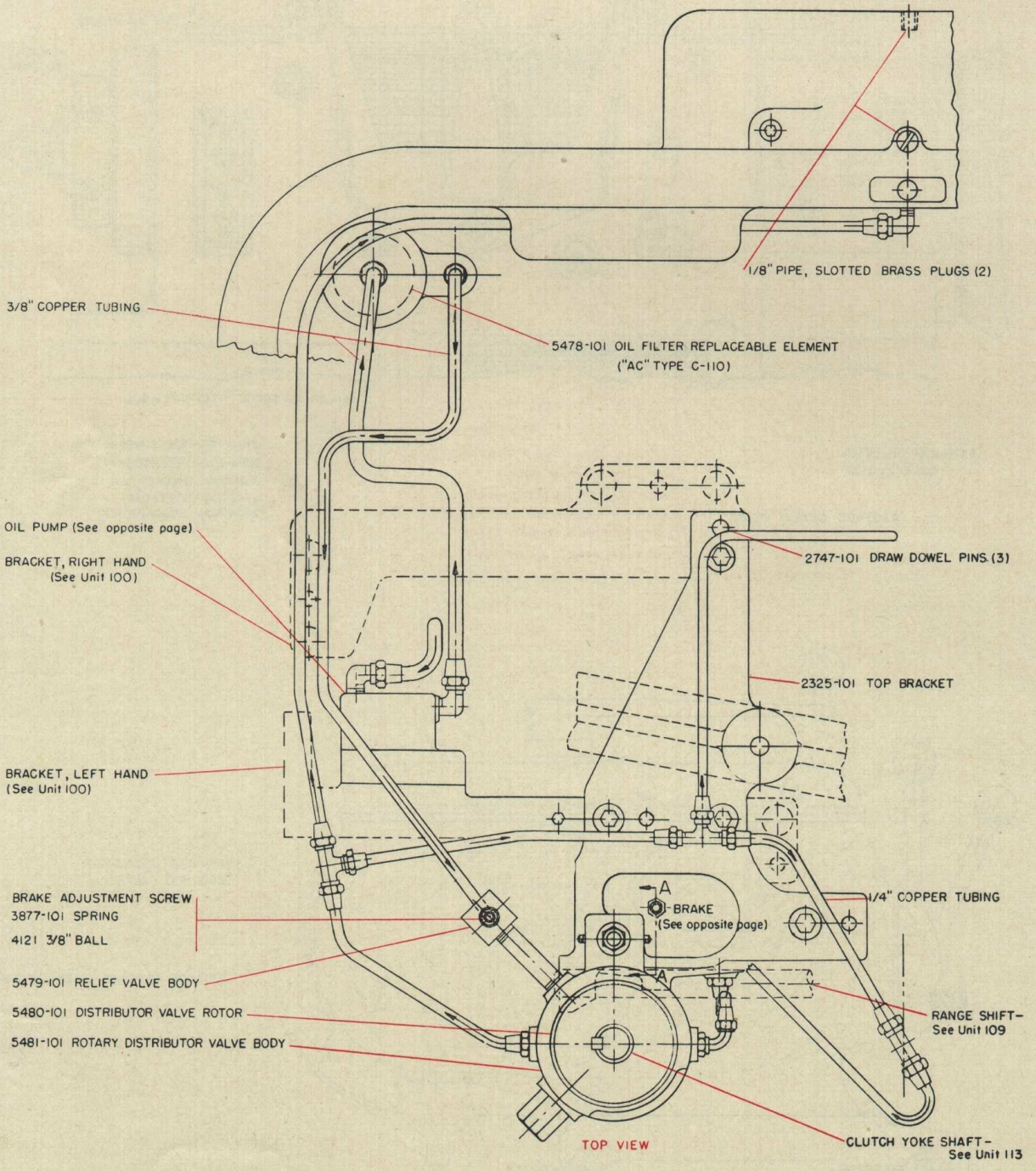


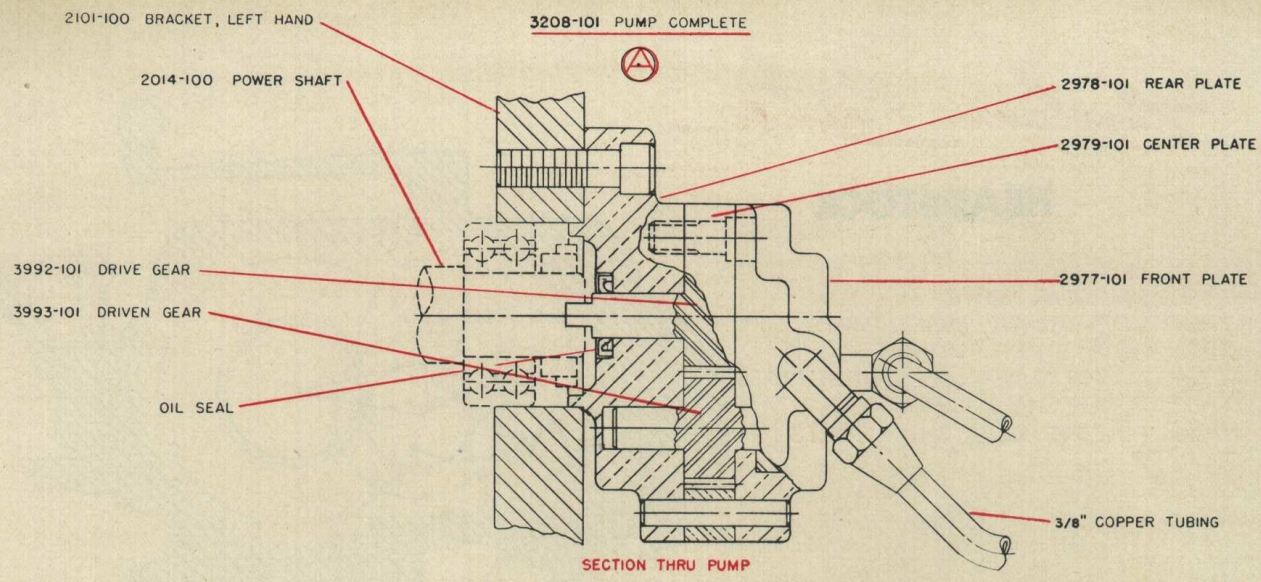
REVISION (1)

Axelson Lathes

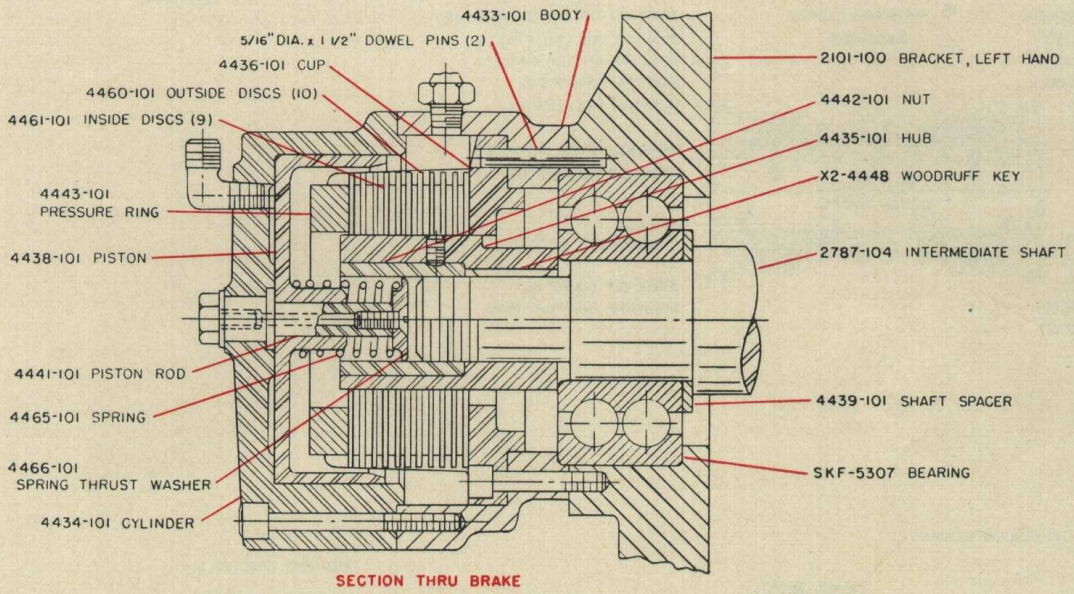
HEADSTOCK

UNIT 101 OILING AND HYDRAULIC BRAKE





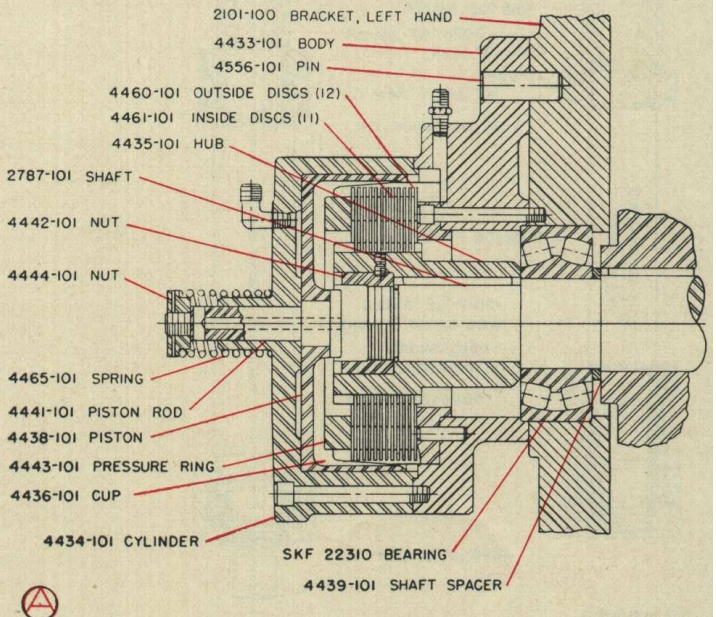
SECTION THRU PUMP



SECTION THRU BRAKE
(14", 16", 20"W & 20" Lathes)

When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.



SECTION THRU BRAKE
(25" & 32" LATHES)

Axelson Lathes

HEADSTOCK

UNIT 102 SPINDLE PARTS
UNIT 103 BACKGEAR PARTS
UNIT 104 INTERMEDIATE SHAFT PARTS
UNIT 105 DRIVE SHAFT PARTS
UNIT 106 CLUTCH SHAFT AND CLUTCH PARTS
UNIT 107 POWER SHAFT PARTS
UNIT 108 REVERSE IDLER SHAFT PARTS

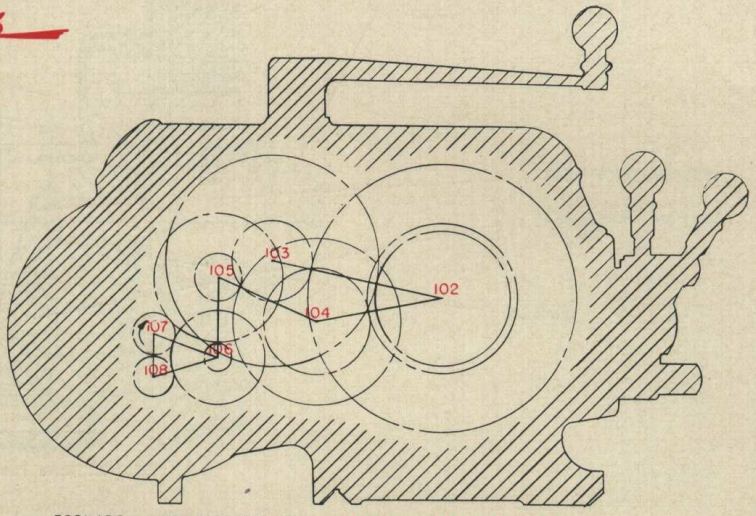
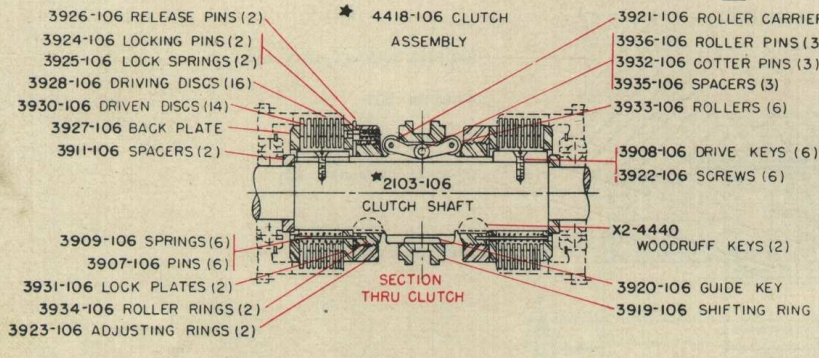
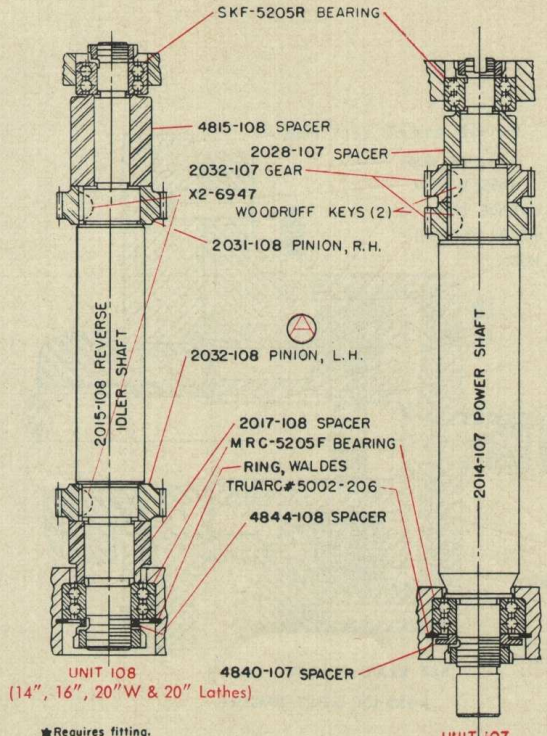


DIAGRAM SHOWING LOCATION OF SHAFT UNITS

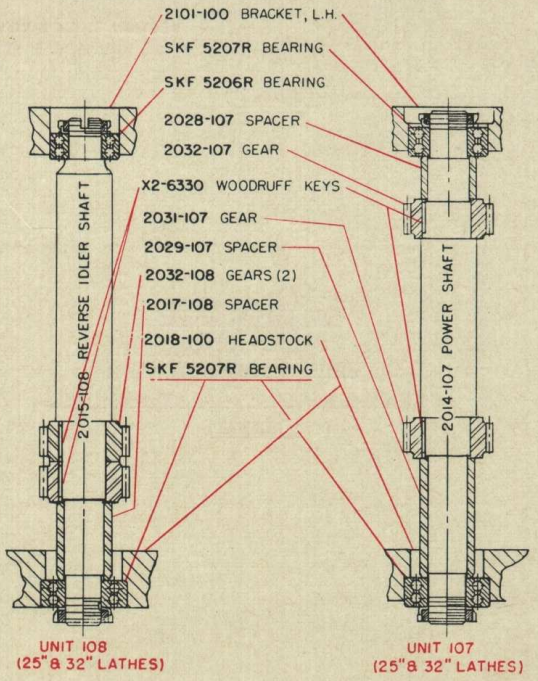




UNIT 108 (14", 16", 20"W & 20" Lathes)

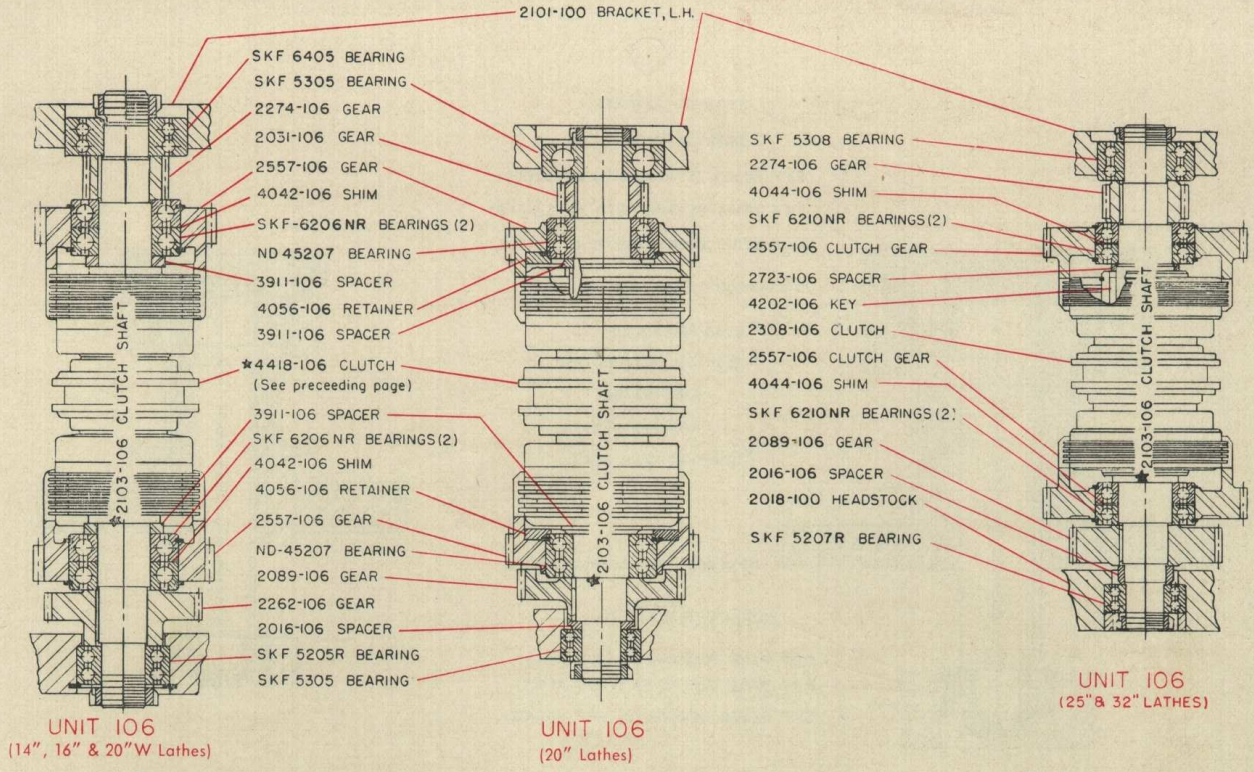
UNIT 107 (14", 16", 20"W & 20" Lathes)

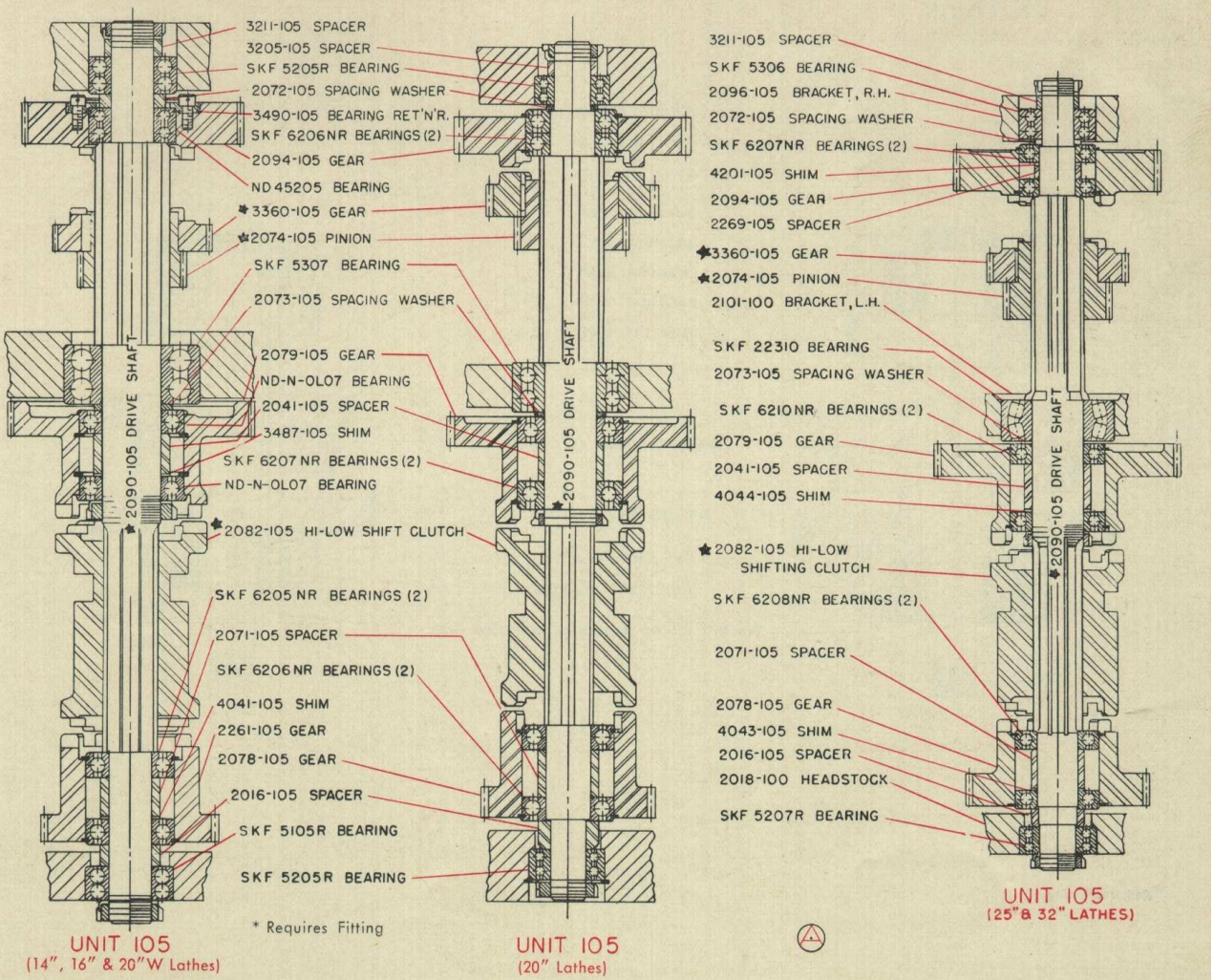
★Requires fitting.

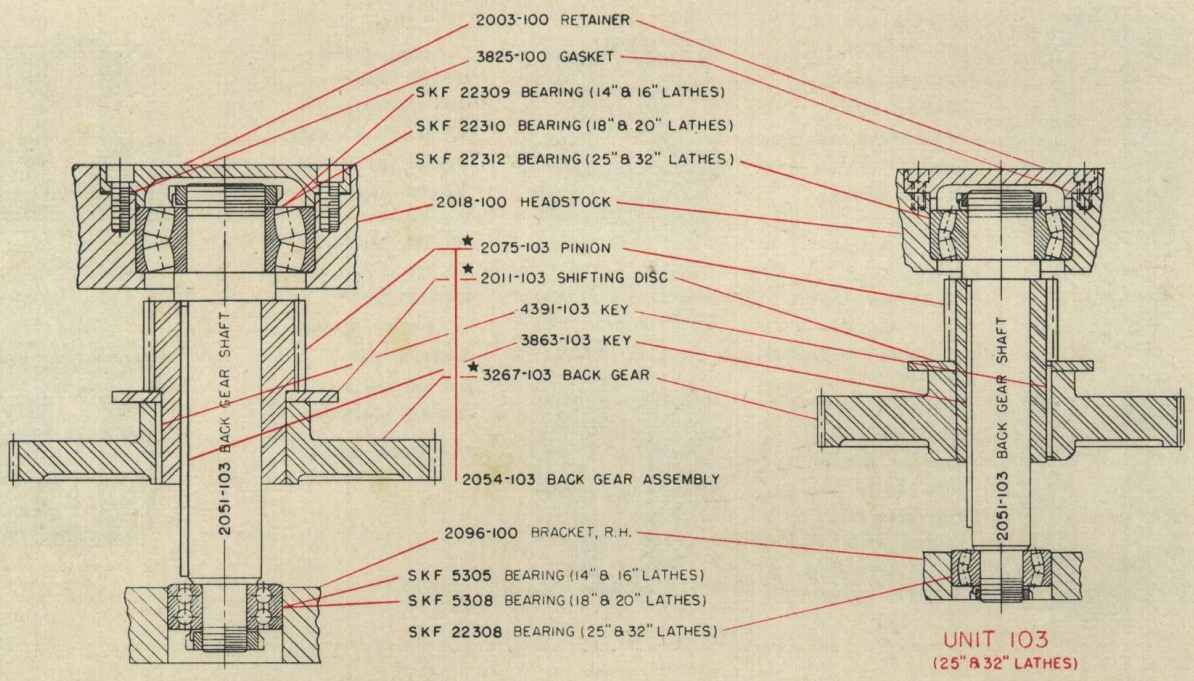


UNIT 108 (25" & 32" LATHES)

UNIT 107 (25" & 32" LATHES)

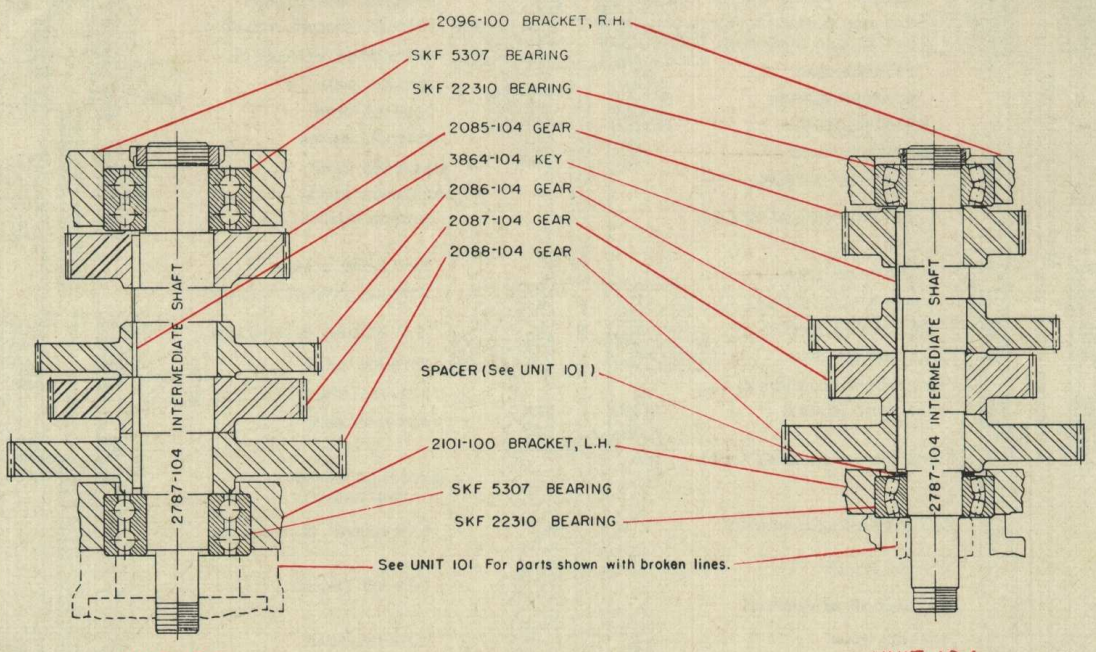

2101-100 BRACKET, L.H.
SKF 6405 BEARING
SKF 5305 BEARING
2274-106 GEAR
2031-106 GEAR
2557-106 GEAR
4042-106 SHIM
SKF-6206NR BEARINGS (2)
ND 45207 BEARING
3911-106 SPACER
4056-106 RETAINER
3911-106 SPACER
★4418-106 CLUTCH
(See preceeding page)
3911-106 SPACER
SKF 6206 NR BEARINGS (2)
4042-106 SHIM
4056-106 RETAINER
2557-106 GEAR
ND-45207 BEARING
2089-106 GEAR
2262-106 GEAR
2016-106 SPACER
SKF 5205R BEARING
SKF 5305 BEARING
★2103-106 CLUTCH SHAFT
UNIT 106
(14", 16" & 20"W Lathes)
★2103-106 CLUTCH SHAFT
UNIT 106
(20" Lathes)
SKF 5308 BEARING
2274-106 GEAR
4044-106 SHIM
SKF 6210NR BEARINGS (2)
2557-106 CLUTCH GEAR
2723-106 SPACER
4202-106 KEY
2308-106 CLUTCH
2557-106 CLUTCH GEAR
4044-106 SHIM
SKF 6210NR BEARINGS (2)
2089-106 GEAR
2016-106 SPACER
2018-100 HEADSTOCK
SKF 5207R BEARING
★2103-106 CLUTCH SHAFT
UNIT 106
(25"& 32" LATHES)


3211-105 SPACER
3205-105 SPACER
SKF 5205R BEARING
2072-105 SPACING WASHER
3490-105 BEARING RET'N'R.
SKF 6206NR BEARINGS (2)
2094-105 GEAR
ND 45205 BEARING
★3360-105 GEAR
★2074-105 PINION
SKF 5307 BEARING
2073-105 SPACING WASHER
2079-105 GEAR
ND-N-0L07 BEARING
2041-105 SPACER
3487-105 SHIM
SKF 6207 NR BEARINGS (2)
ND-N-0L07 BEARING
★2082-105 HI-LOW SHIFT CLUTCH
SKF 6205 NR BEARINGS (2)
2071-105 SPACER
SKF 6206 NR BEARINGS (2)
4041-105 SHIM
2261-105 GEAR
2078-105 GEAR
2016-105 SPACER
SKF 5105R BEARING
SKF 5205R BEARING
★2090-105 DRIVE SHAFT
UNIT 105
(14", 16" & 20"W Lathes)
* Requires Fitting
★2090-105 DRIVE SHAFT
UNIT 105
(20" Lathes)
3211-105 SPACER
SKF 5306 BEARING
2096-105 BRACKET, R.H.
2072-105 SPACING WASHER
SKF 6207NR BEARINGS (2)
4201-105 SHIM
2094-105 GEAR
2269-105 SPACER
★3360-105 GEAR
★2074-105 PINION
2101-100 BRACKET, L.H.
SKF 22310 BEARING
2073-105 SPACING WASHER
SKF 6210NR BEARINGS (2)
2079-105 GEAR
2041-105 SPACER
4044-105 SHIM
★2082-105 HI-LOW SHIFTING CLUTCH
SKF 6208NR BEARINGS (2)
2071-105 SPACER
2078-105 GEAR
4043-105 SHIM
2016-105 SPACER
2018-100 HEADSTOCK
SKF 5207R BEARING
★2090-105 DRIVE SHAFT
UNIT 105
(25"& 32" LATHES)



UNIT 103
(14", 16", 20"W & 20" Lathes)

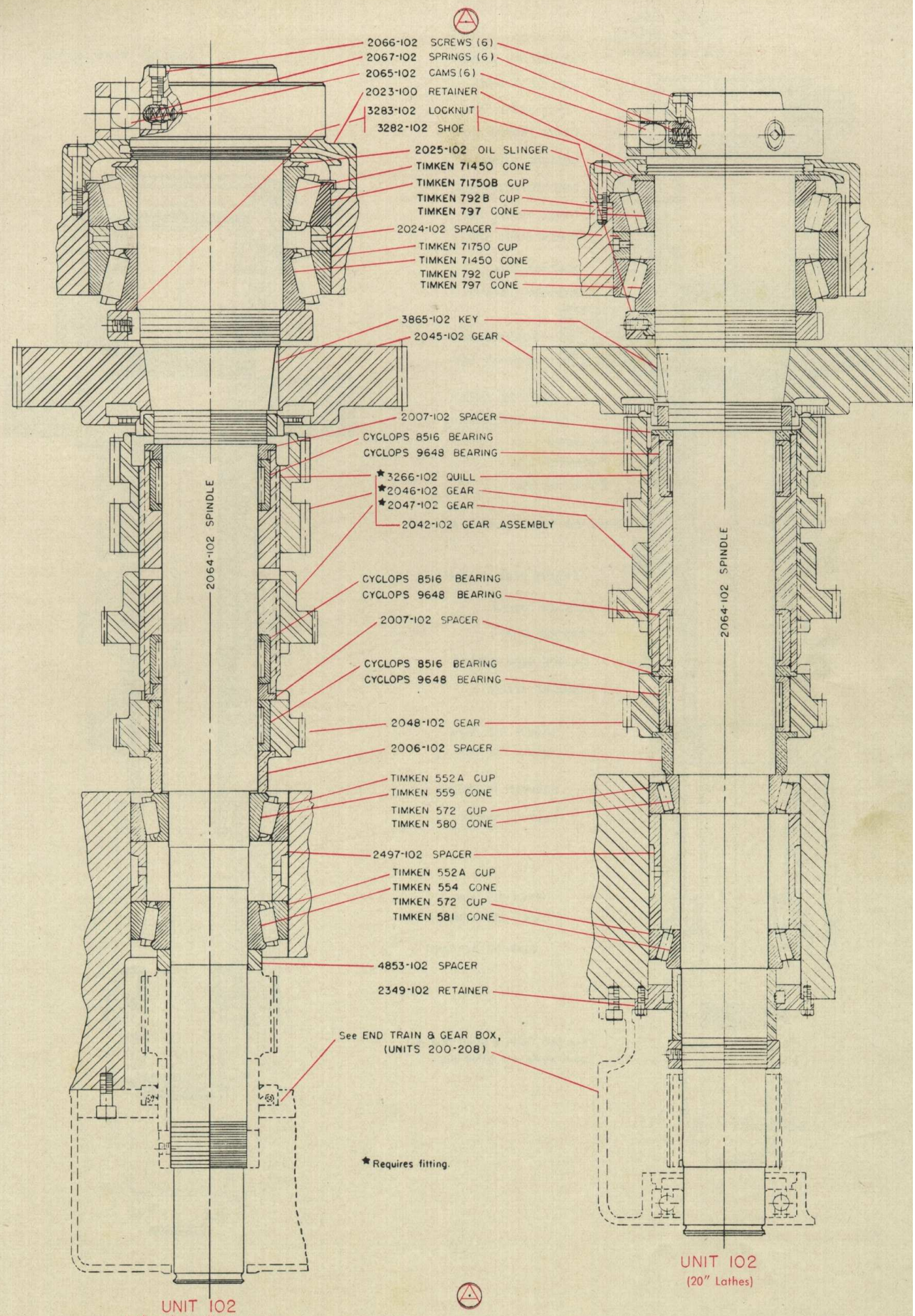
UNIT 103
(25" & 32" LATHES)

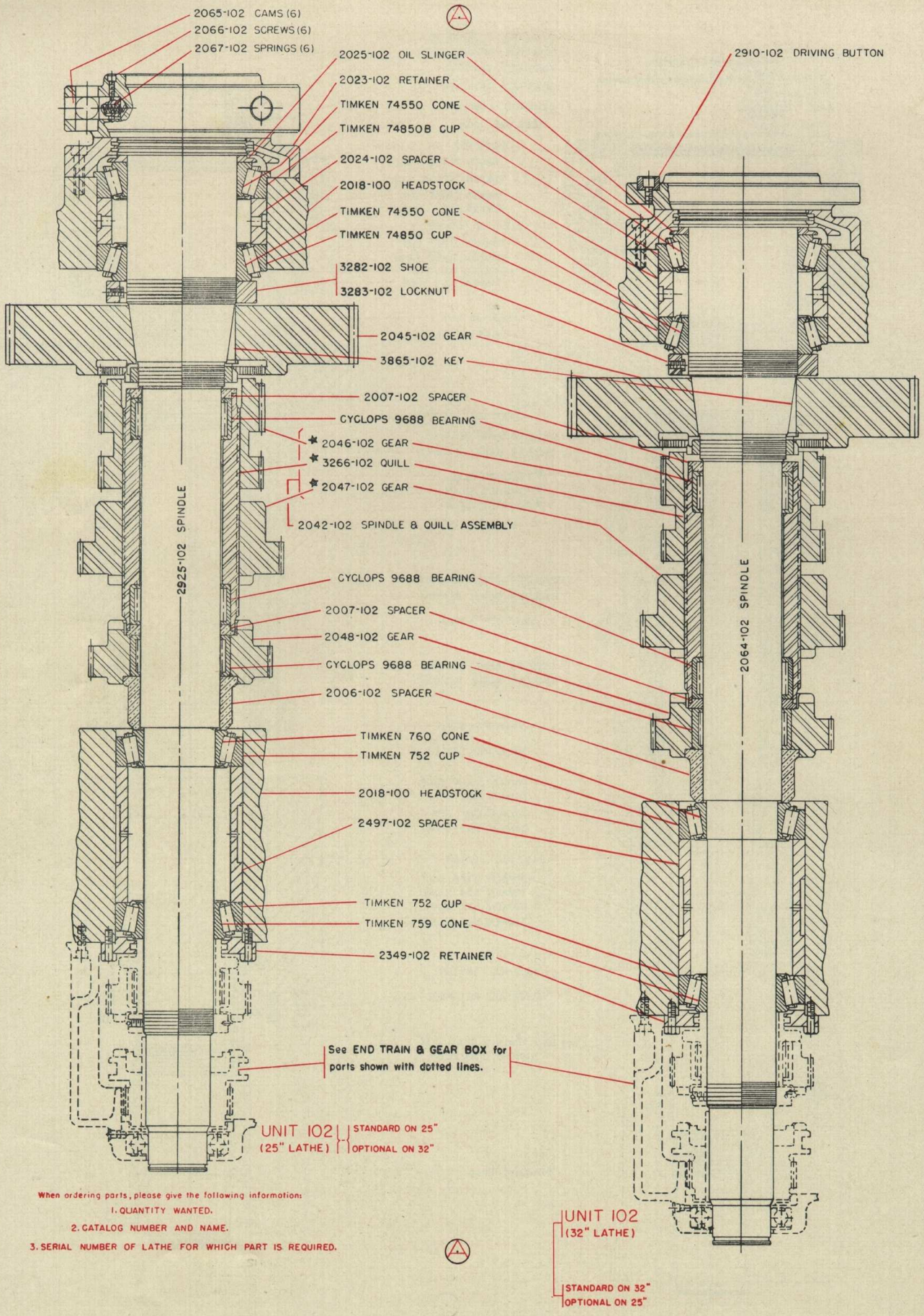


UNIT 104
(14", 16", 20"W & 20" Lathes)

UNIT 104
(25" & 32" LATHES)

★Requires fitting.


2066-102 SCREWS (6)
2067-102 SPRINGS (6)
2065-102 CAMS (6)
2023-100 RETAINER
3283-102 LOCKNUT
3282-102 SHOE
2025-102 OIL SLINGER
TIMKEN 71450 CONE
TIMKEN 71750B CUP
TIMKEN 792B CUP
TIMKEN 797 CONE
2024-102 SPACER
TIMKEN 71750 CUP
TIMKEN 71450 CONE
TIMKEN 792 CUP
TIMKEN 797 CONE
3865-102 KEY
2045-102 GEAR
2007-102 SPACER
CYCLOPS 8516 BEARING
CYCLOPS 9648 BEARING
★3266-102 QUILL
★2046-102 GEAR
★2047-102 GEAR
2042-102 GEAR ASSEMBLY
2064-102 SPINDLE
CYCLOPS 8516 BEARING
CYCLOPS 9648 BEARING
2007-102 SPACER
CYCLOPS 8516 BEARING
CYCLOPS 9648 BEARING
2048-102 GEAR
2006-102 SPACER
TIMKEN 552A CUP
TIMKEN 559 CONE
TIMKEN 572 CUP
TIMKEN 580 CONE
2497-102 SPACER
TIMKEN 552A CUP
TIMKEN 554 CONE
TIMKEN 572 CUP
TIMKEN 581 CONE
4853-102 SPACER
2349-102 RETAINER
See END TRAIN & GEAR BOX, (UNITS 200-208)
★Requires fitting.
UNIT 102
(14", 16" & 20"W Lathes)
2064-102 SPINDLE
UNIT 102
(20" Lathes)



When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

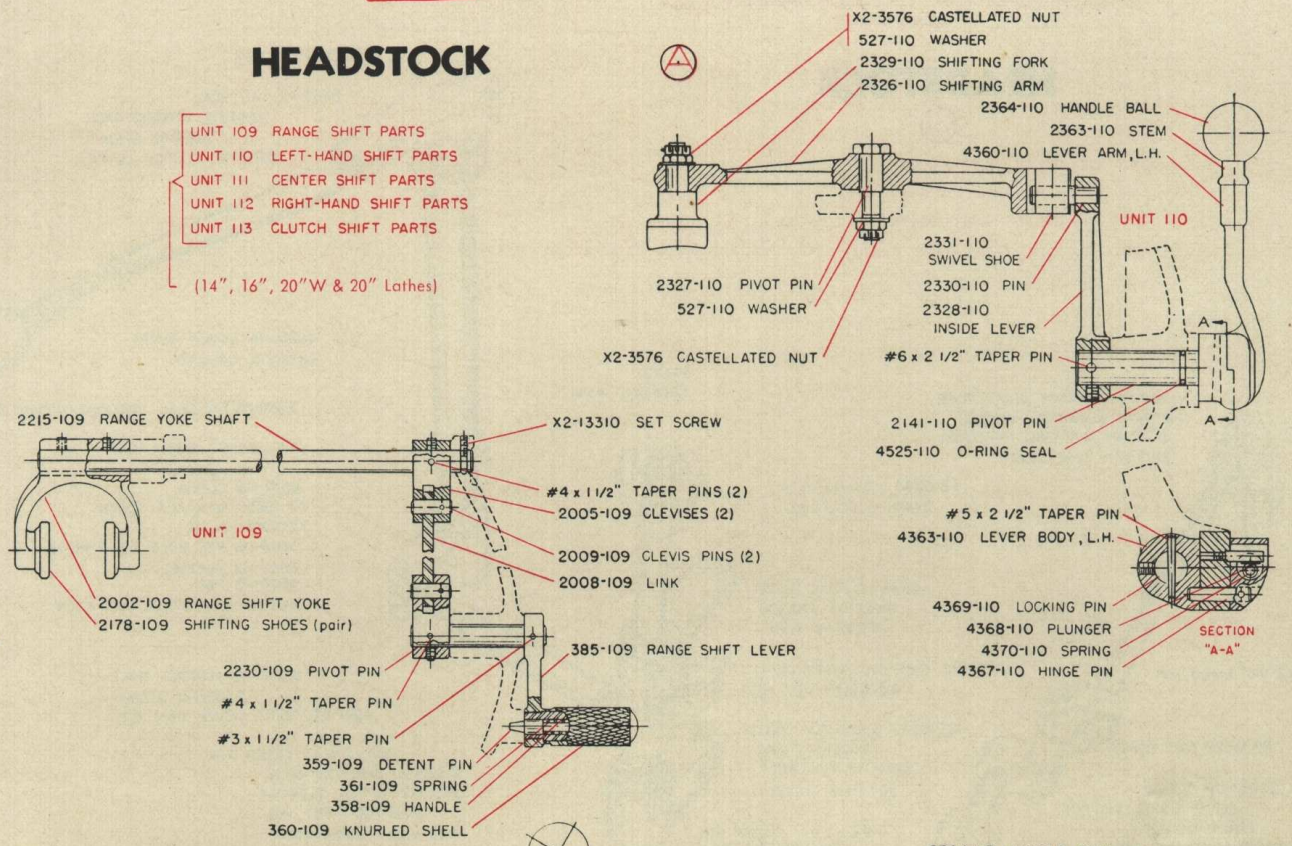
* Requires Fitting

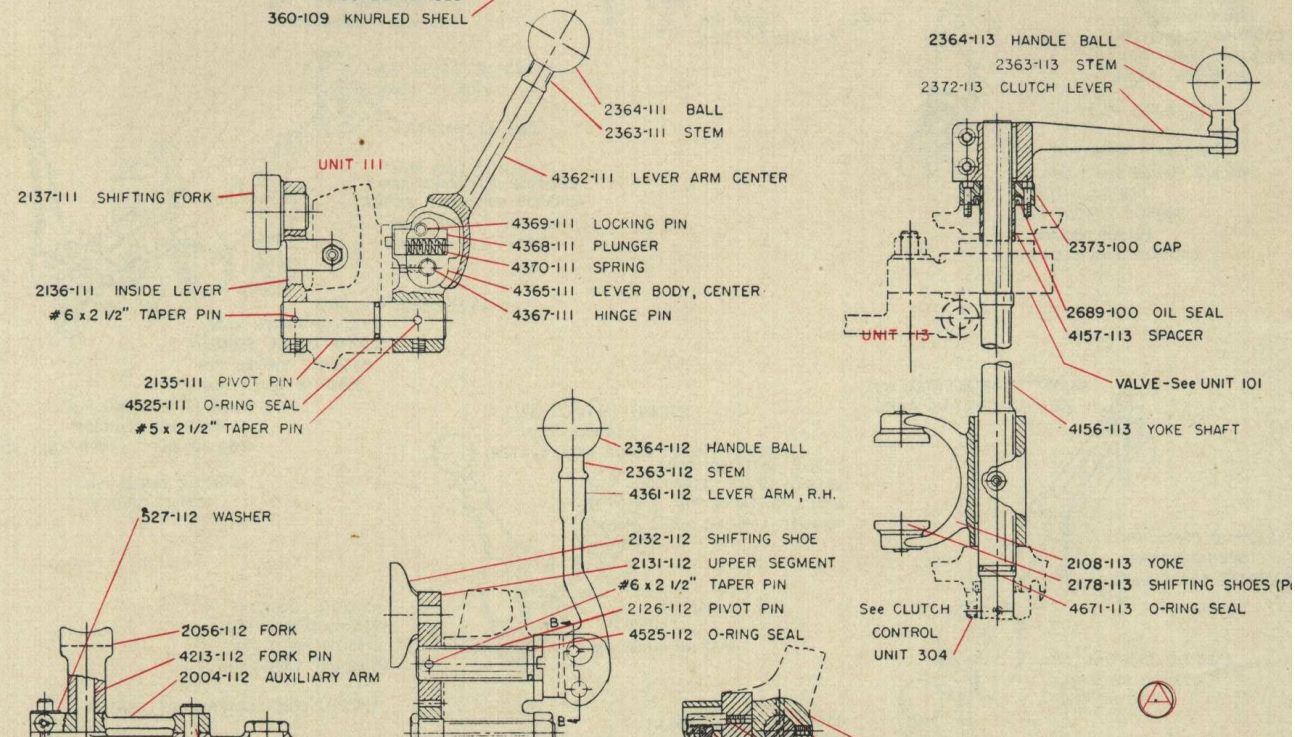
Acelson Lathes

HEADSTOCK

UNIT 109 RANGE SHIFT PARTS
UNIT 110 LEFT-HAND SHIFT PARTS
UNIT 111 CENTER SHIFT PARTS
UNIT 112 RIGHT-HAND SHIFT PARTS
UNIT 113 CLUTCH SHIFT PARTS

(14", 16", 20"W & 20" Lathes)

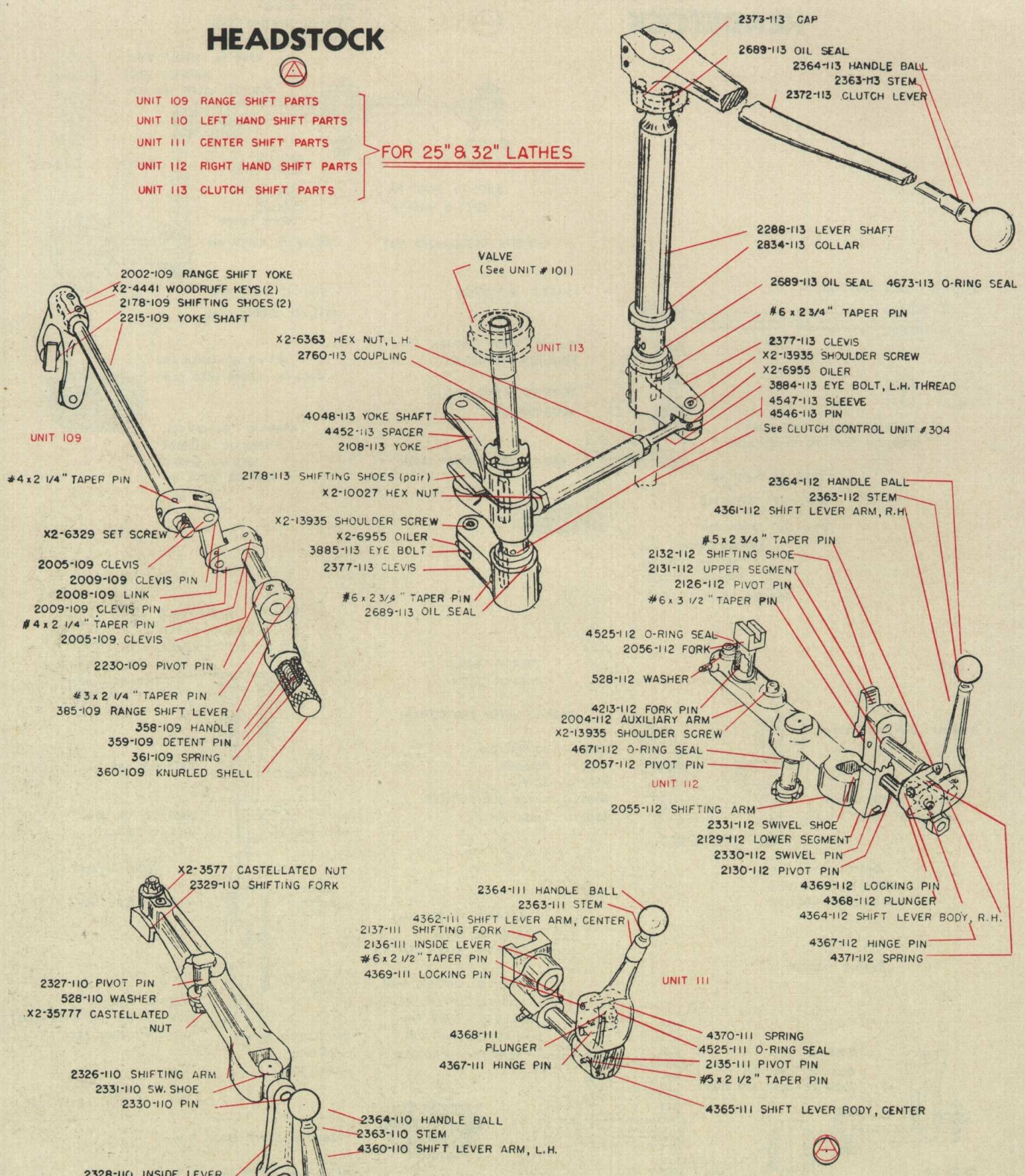




Axelson Lathes

HEADSTOCK

UNIT 109 RANGE SHIFT PARTS
UNIT 110 LEFT HAND SHIFT PARTS
UNIT 111 CENTER SHIFT PARTS
UNIT 112 RIGHT HAND SHIFT PARTS
UNIT 113 CLUTCH SHIFT PARTS
} FOR 25" & 32" LATHES



Axelson Lathes

END TRAIN AND GEAR BOX

UNIT 208 INTERMEDIATE SHAFT PARTS

UNIT 207 CLUSTER SHAFT AND "C-D-E-F" SHIFT PARTS

UNIT 205 TUMBLER SHAFT AND TUMBLER PARTS

UNIT 206 CONE SHAFT PARTS

UNIT 202 END "A-B" SHIFT PARTS

UNIT 204 CHANGE GEAR QUADRANT PARTS

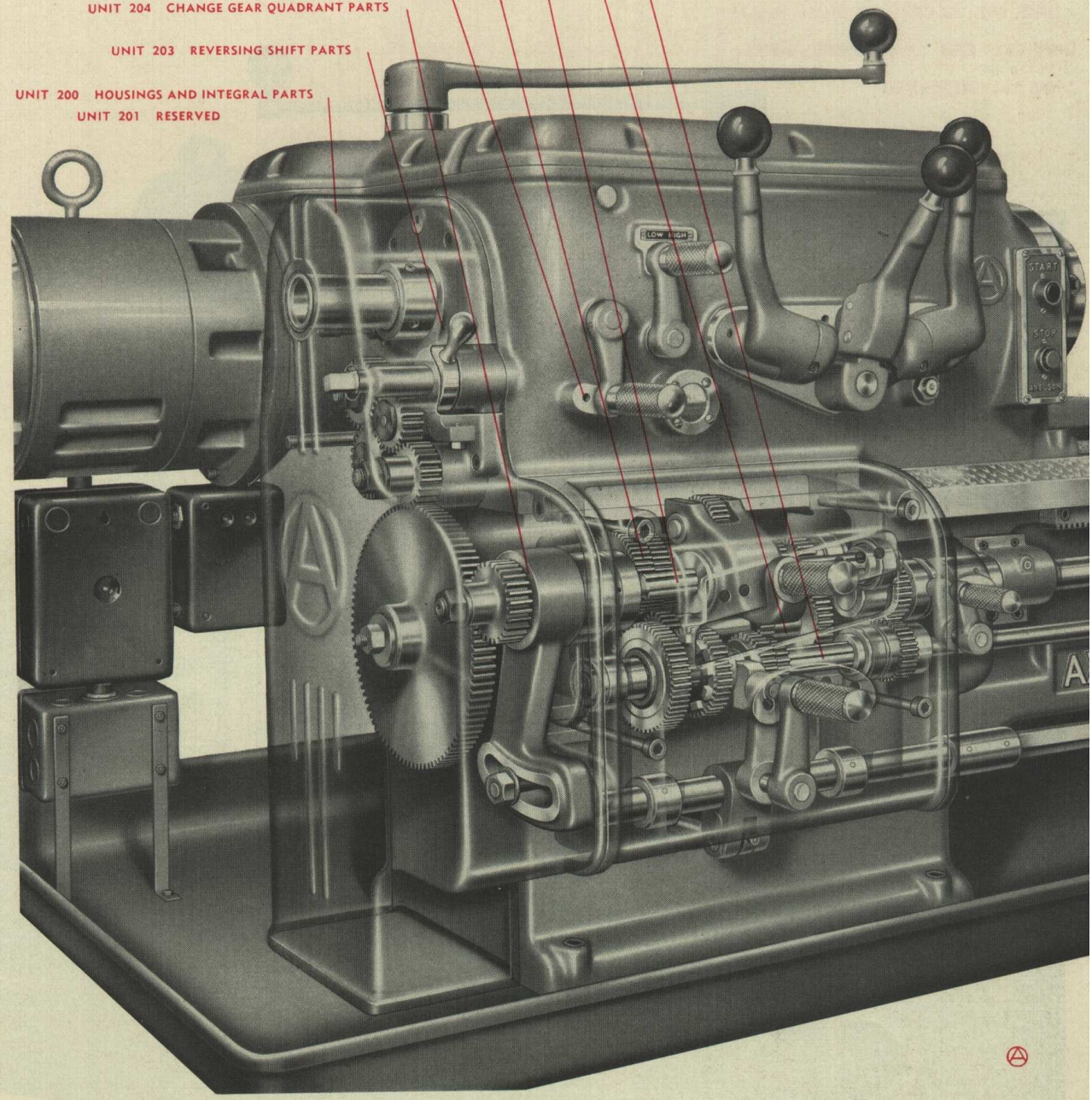
UNIT 203 REVERSING SHIFT PARTS

UNIT 200 HOUSINGS AND INTEGRAL PARTS

UNIT 201 RESERVED

NOTE:—

This Illustration for 14", 16" and 20" W Lathes.

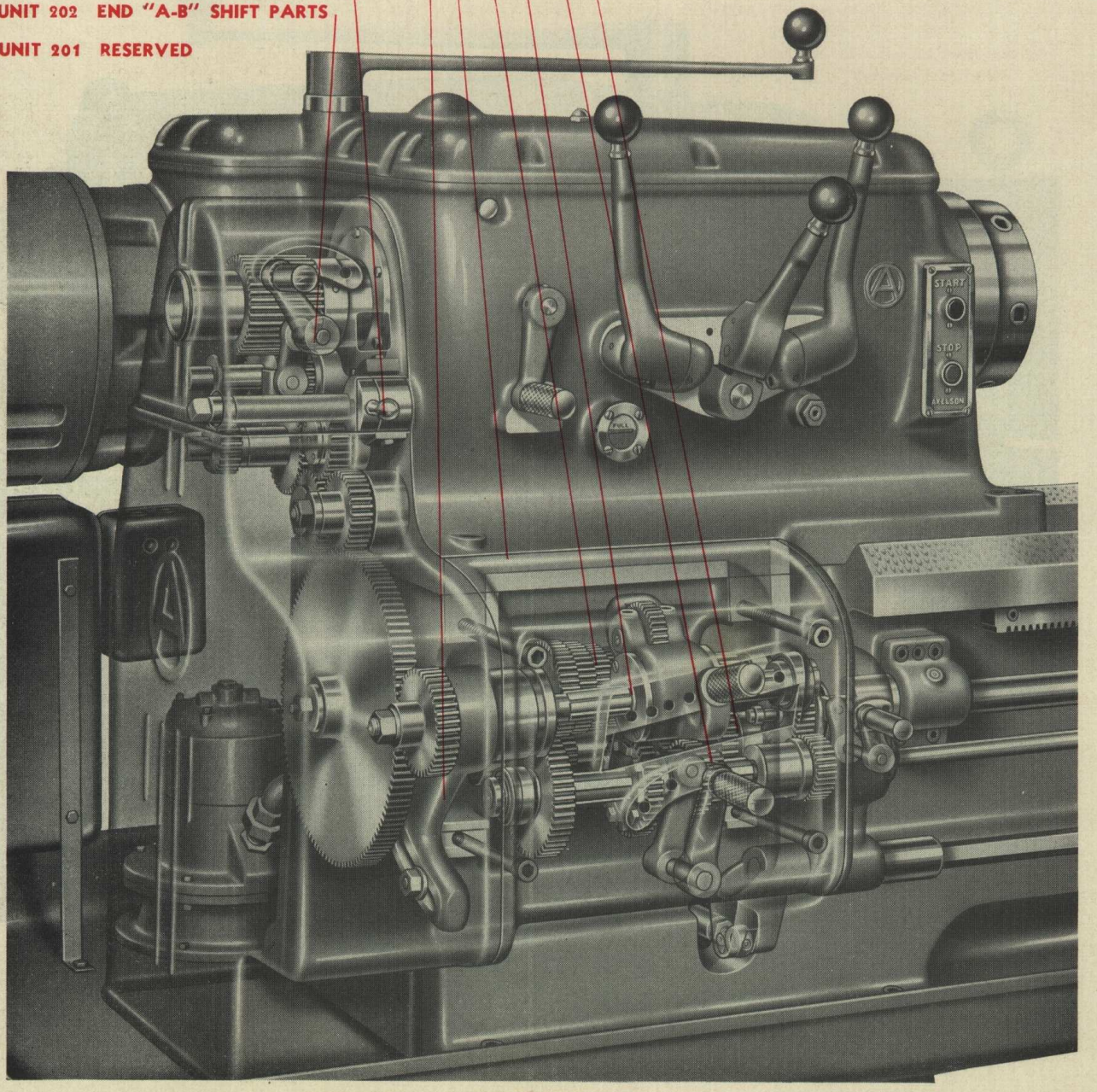


Axelson Lathes

END TRAIN AND GEAR BOX

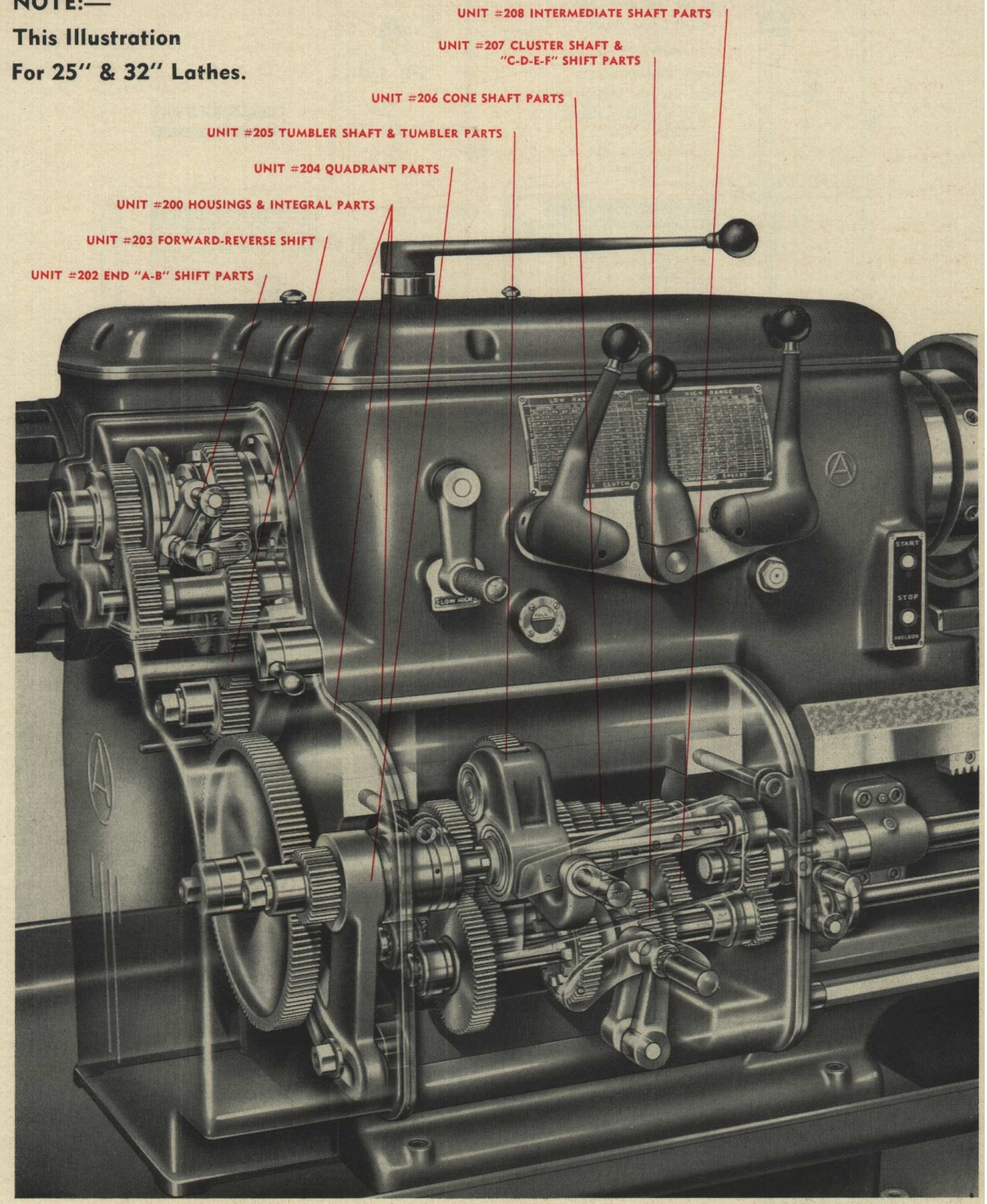
UNIT 208 INTERMEDIATE SHAFT PARTS
UNIT 207 CLUSTER SHAFT AND "C-D-E-F" SHIFT PARTS
UNIT 205 TUMBLER SHAFT AND TUMBLER PARTS
UNIT 206 CONE SHAFT PARTS
UNIT 200 HOUSINGS AND INTEGRAL PARTS
UNIT 204 CHANGE GEAR QUADRANT PARTS
UNIT 203 REVERSING SHIFT PARTS
UNIT 202 END "A-B" SHIFT PARTS
UNIT 201 RESERVED

NOTE:—
This Illustration For 20" Lathe.



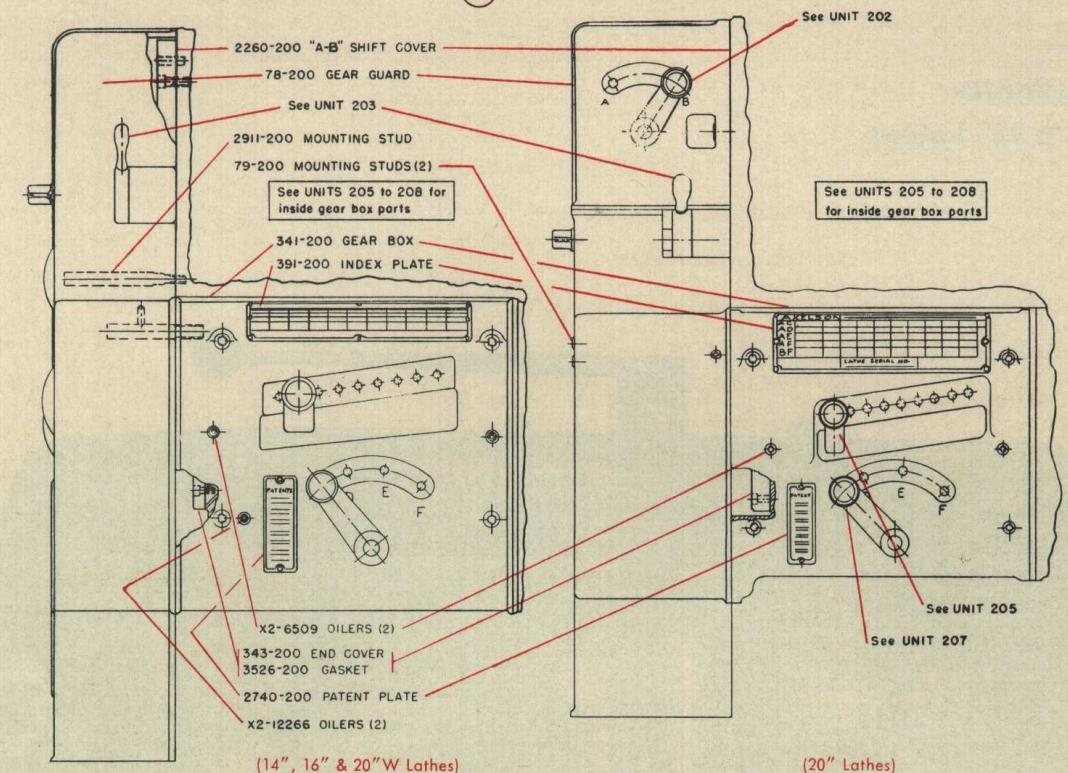
END TRAIN AND GEAR BOX

NOTE:—
This Illustration
For 25" & 32" Lathes.



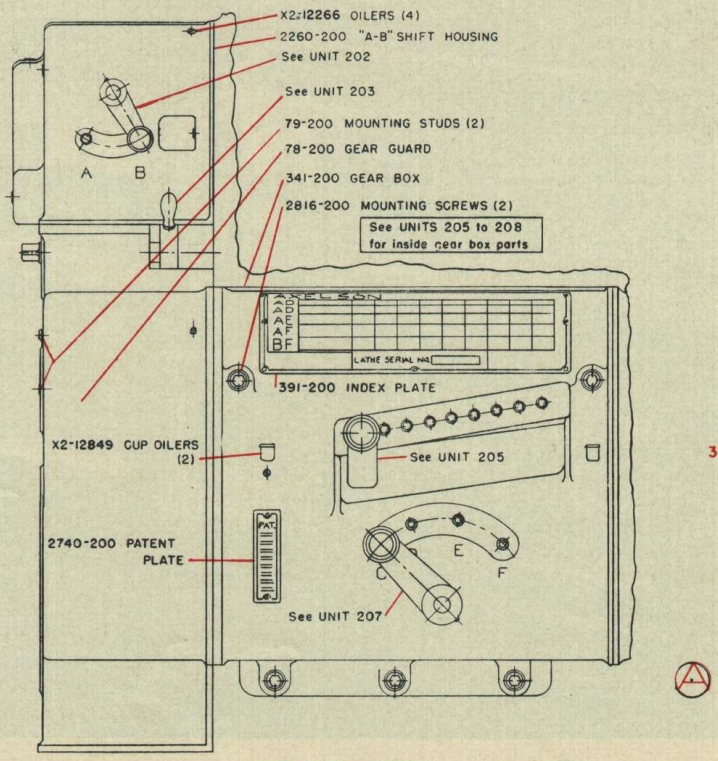
Axelson Lathes

END TRAIN AND GEAR BOX



(14", 16" & 20"W Lathes) (20" Lathes)

UNIT 200 HOUSING & INTEGRAL PARTS



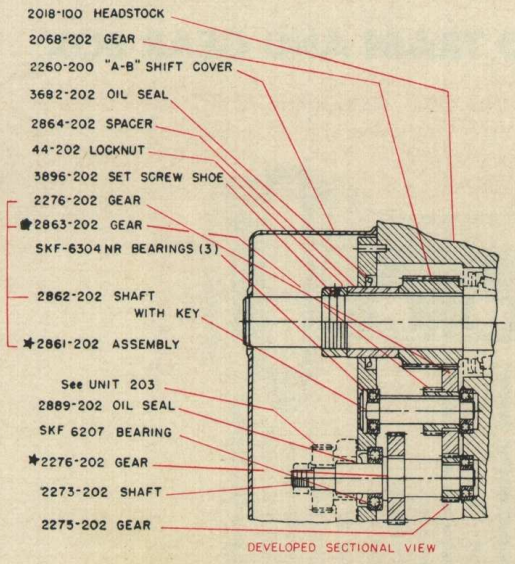
(25" & 32" LATHES)

When ordering parts, please give the following information:

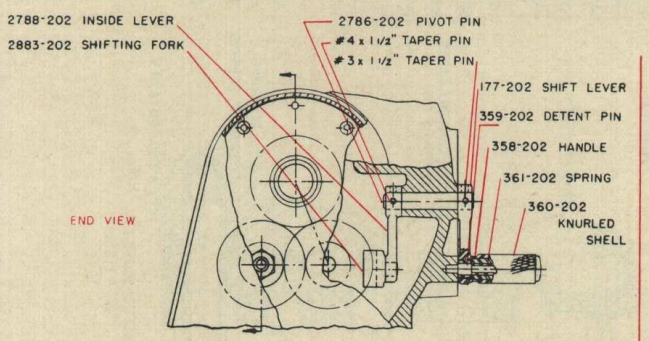
1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQ'D.

END TRAIN AND GEAR BO

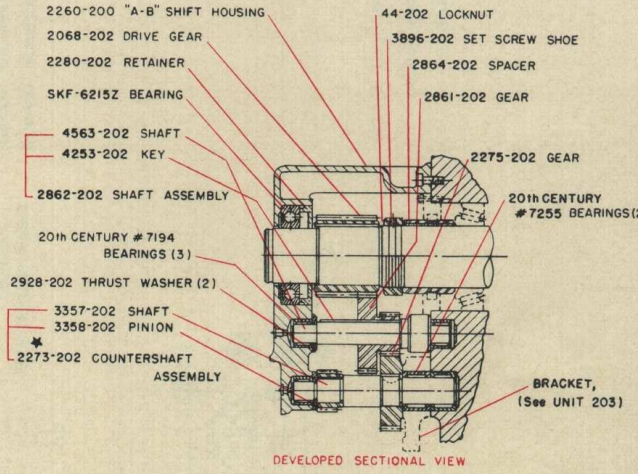
UNIT 202 END "A-B" SHIFT PARTS



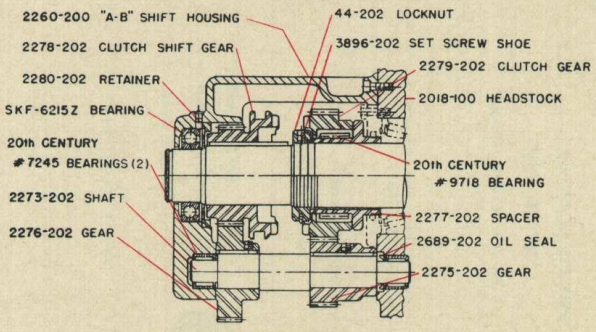
DEVELOPED SECTIONAL VIEW



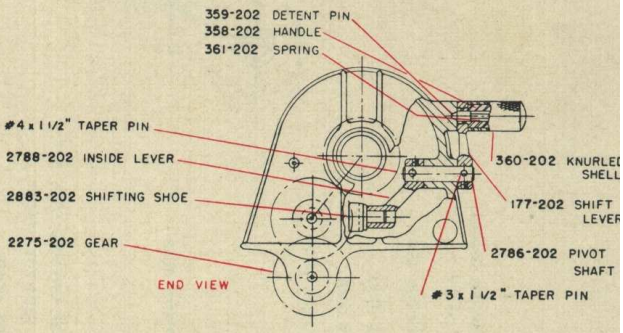
(14", 16" & 20"W Lathes)



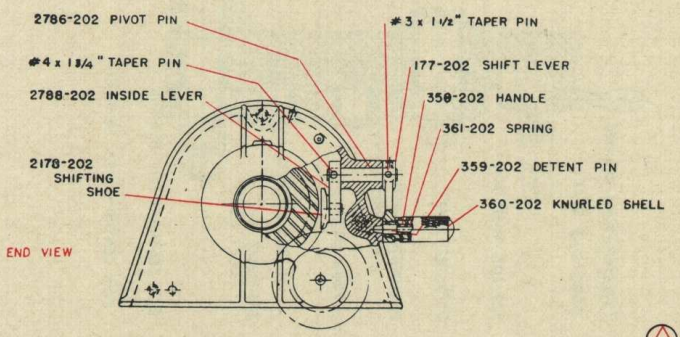
DEVELOPED SECTIONAL VIEW



SECTIONAL VIEW



(20" Lathes)



FOR 25" & 32" LATHES

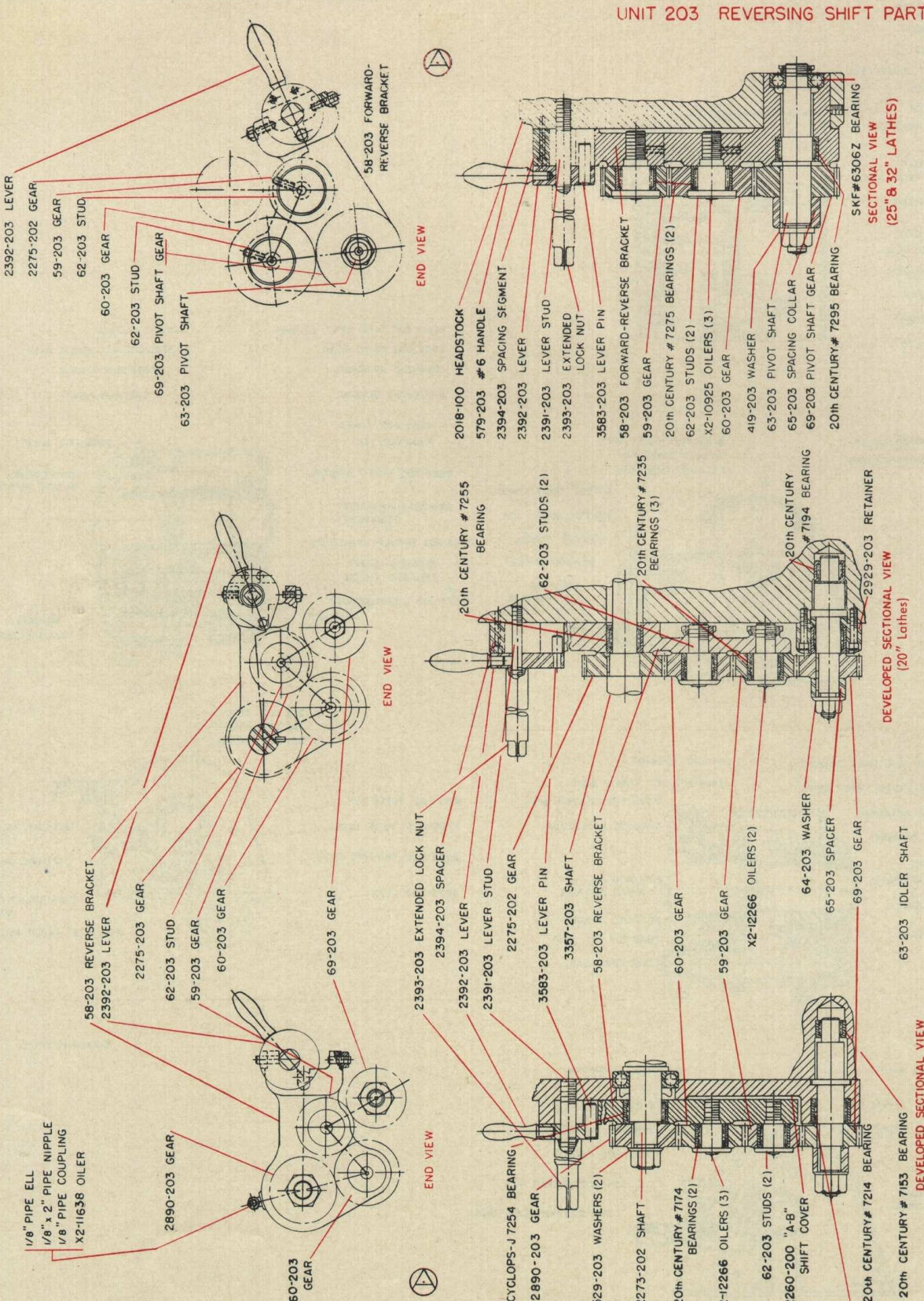
* Requires fitting.

When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

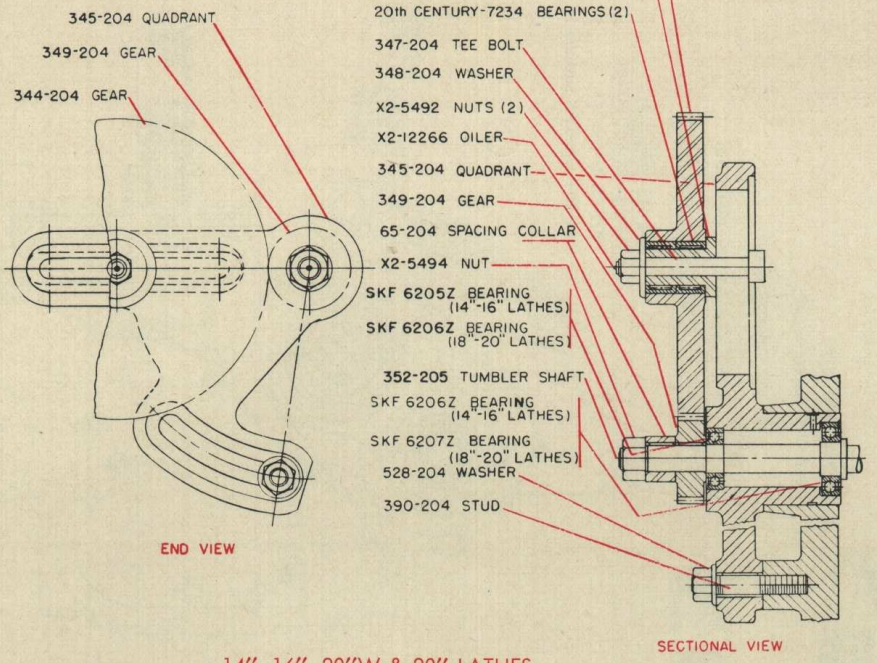
END TRAIN AND GEAR BOX

UNIT 203 REVERSING SHIFT PARTS

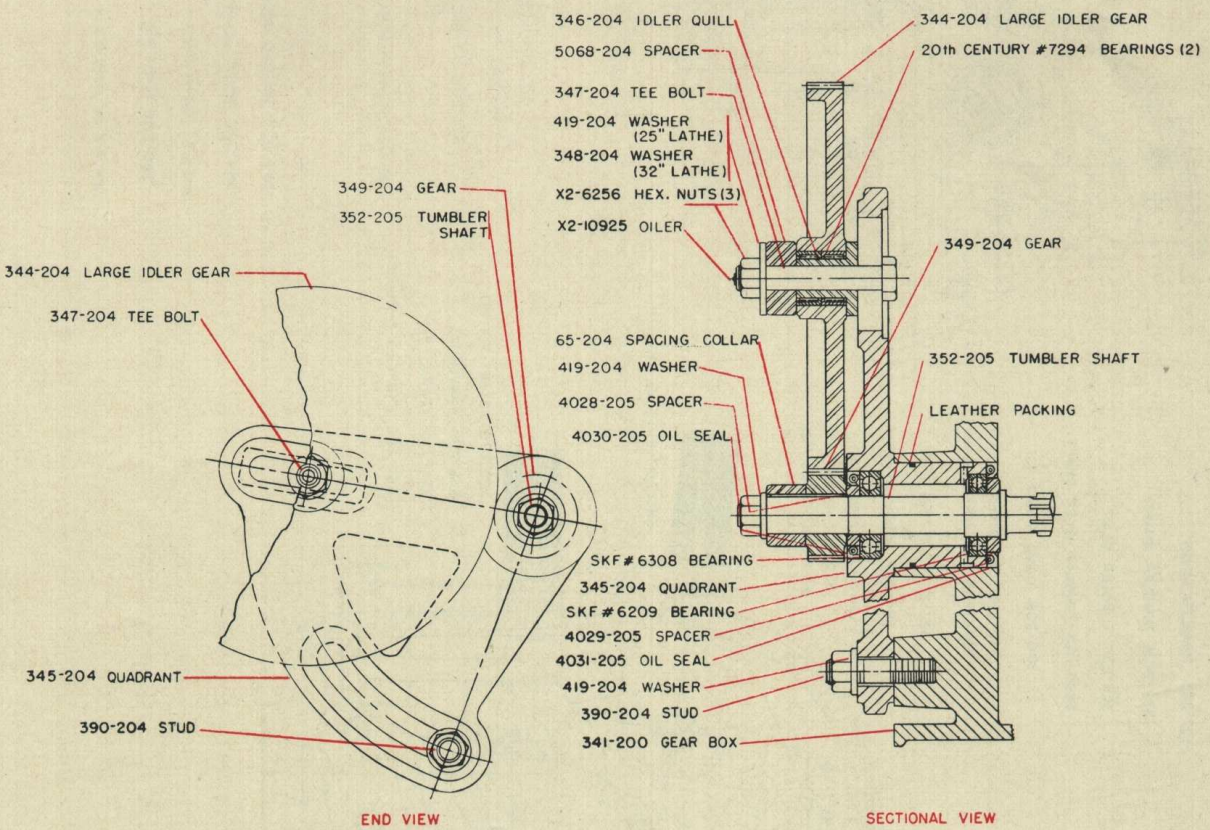


END TRAIN AND GEAR BOX

UNIT 204 QUADRANT PARTS



14", 16", 20"W & 20" LATHES



25"&32" LATHES

Axelson Lathes

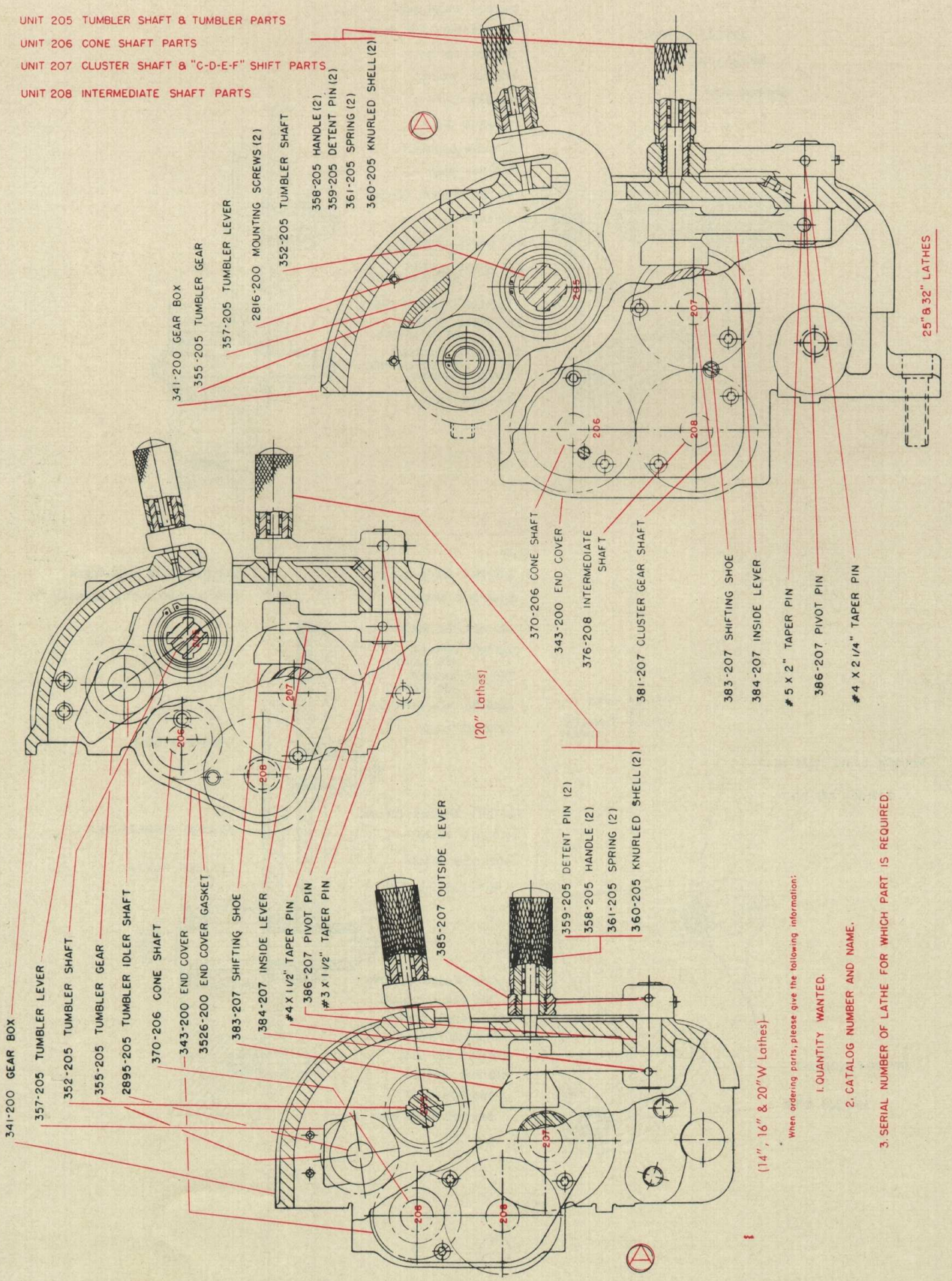
END TRAIN AND GEAR BOX

UNIT 205 TUMBLER SHAFT & TUMBLER PARTS

UNIT 206 CONE SHAFT PARTS

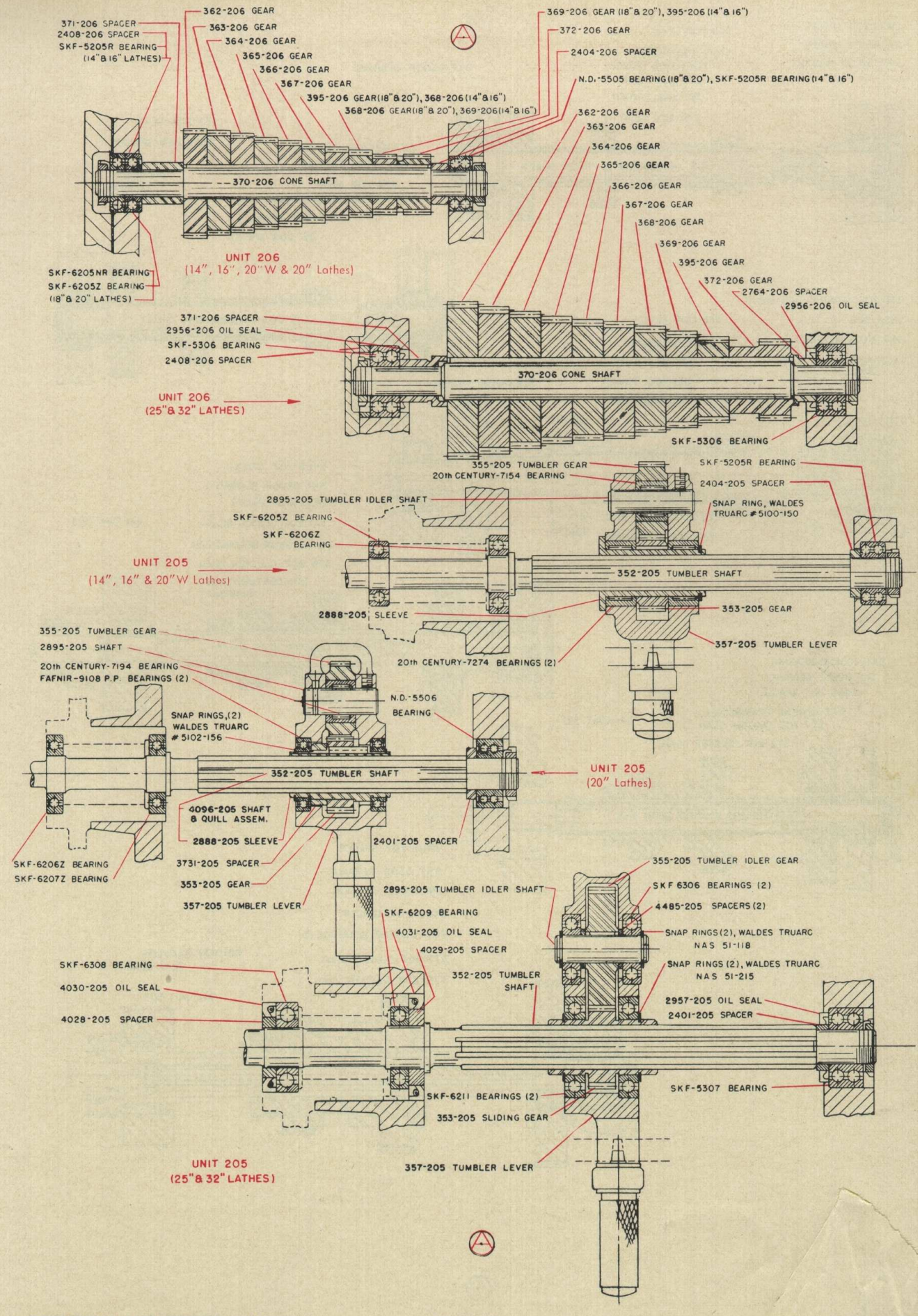
UNIT 207 CLUSTER SHAFT & "C-D-E-F" SHIFT PARTS

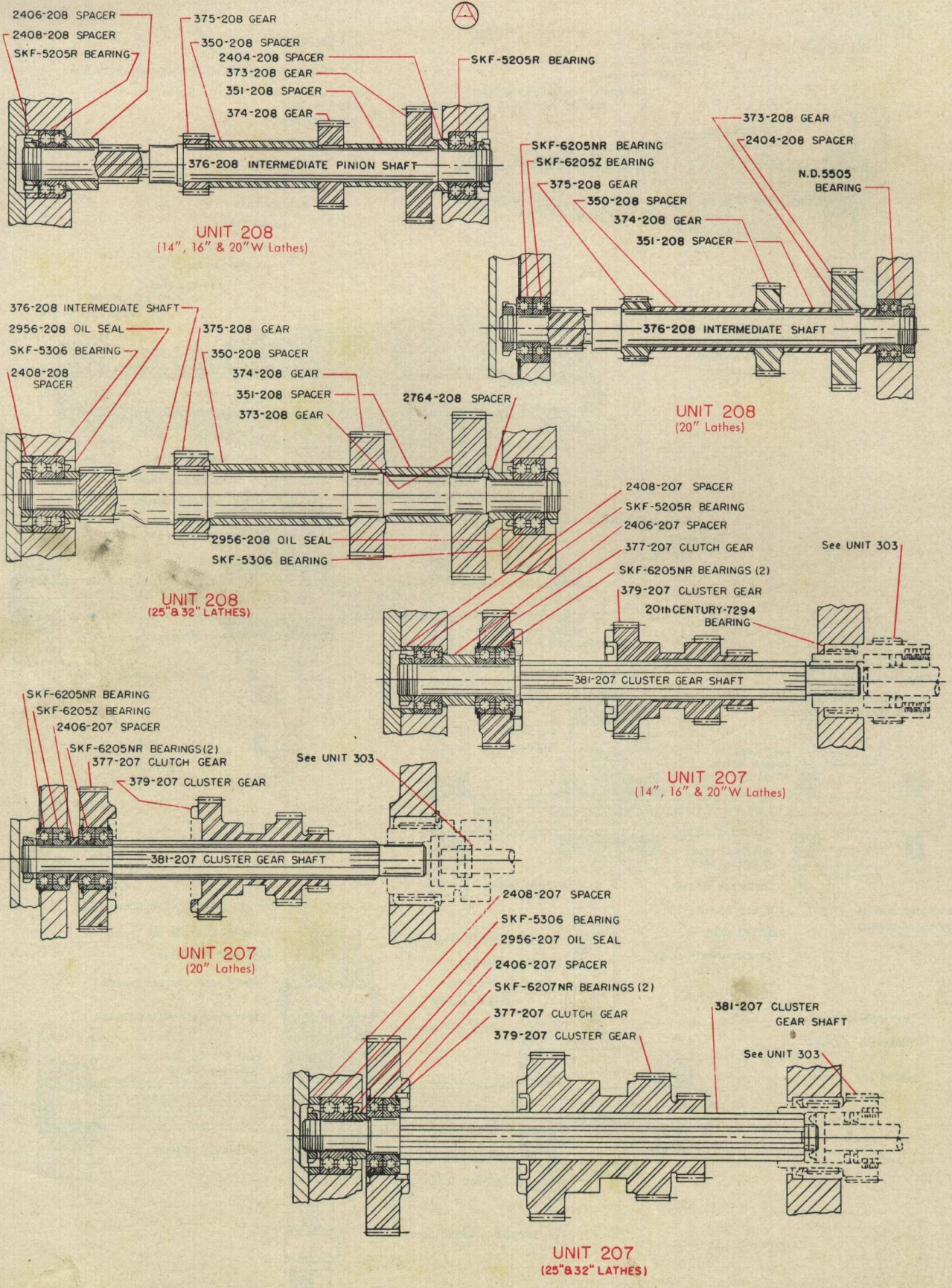
UNIT 208 INTERMEDIATE SHAFT PARTS



When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.


371-206 SPACER
2408-206 SPACER
SKF-5205R BEARING (14"&16" LATHES)
362-206 GEAR
363-206 GEAR
364-206 GEAR
365-206 GEAR
366-206 GEAR
367-206 GEAR
395-206 GEAR(18"&20"), 368-206(14"&16")
368-206 GEAR(18"&20"), 369-206(14"&16")
369-206 GEAR (18"&20"), 395-206 (14"&16")
372-206 GEAR
2404-206 SPACER
N.D.-5505 BEARING(18"&20"), SKF-5205R BEARING(14"&16")
370-206 CONE SHAFT
UNIT 206
(14", 16", 20" W & 20" Lathes)
SKF-6205NR BEARING
SKF-6205Z BEARING
(18"&20" LATHES)
2764-206 SPACER
2956-206 OIL SEAL
371-206 SPACER
2956-206 OIL SEAL
SKF-5306 BEARING
2408-206 SPACER
UNIT 206
(25"&32" LATHES)
SKF-5306 BEARING
355-205 TUMBLER GEAR
20th CENTURY-7154 BEARING
SKF-5205R BEARING
2404-205 SPACER
2895-205 TUMBLER IDLER SHAFT
SNAP RING, WALDES TRUARC #5100-150
SKF-6205Z BEARING
SKF-6206Z BEARING
UNIT 205
(14", 16" & 20"W Lathes)
352-205 TUMBLER SHAFT
2888-205 SLEEVE
353-205 GEAR
357-205 TUMBLER LEVER
20th CENTURY-7274 BEARINGS (2)
355-205 TUMBLER GEAR
2895-205 SHAFT
20th CENTURY-7194 BEARING
FAFNIR-9108 P.P. BEARINGS (2)
N.D.-5506 BEARING
SNAP RINGS,(2) WALDES TRUARC #5102-156
352-205 TUMBLER SHAFT
UNIT 205
(20" Lathes)
4096-205 SHAFT & QUILL ASSEM.
2888-205 SLEEVE
2401-205 SPACER
SKF-6206Z BEARING
SKF-6207Z BEARING
3731-205 SPACER
353-205 GEAR
357-205 TUMBLER LEVER
355-205 TUMBLER IDLER GEAR
2895-205 TUMBLER IDLER SHAFT
SKF 6306 BEARINGS (2)
4485-205 SPACERS (2)
SKF-6209 BEARING
4031-205 OIL SEAL
4029-205 SPACER
SNAP RINGS (2), WALDES TRUARC NAS 51-118
SNAP RINGS (2), WALDES TRUARC NAS 51-215
SKF-6308 BEARING
4030-205 OIL SEAL
4028-205 SPACER
352-205 TUMBLER SHAFT
2957-205 OIL SEAL
2401-205 SPACER
SKF-5307 BEARING
SKF-6211 BEARINGS (2)
353-205 SLIDING GEAR
357-205 TUMBLER LEVER
UNIT 205
(25"&32" LATHES)


2406-208 SPACER
2408-208 SPACER
SKF-5205R BEARING
375-208 GEAR
350-208 SPACER
2404-208 SPACER
373-208 GEAR
351-208 SPACER
374-208 GEAR
SKF-5205R BEARING
376-208 INTERMEDIATE PINION SHAFT
UNIT 208
(14", 16" & 20"W Lathes)
373-208 GEAR
2404-208 SPACER
SKF-6205NR BEARING
SKF-6205Z BEARING
N.D.5505 BEARING
375-208 GEAR
350-208 SPACER
374-208 GEAR
351-208 SPACER
376-208 INTERMEDIATE SHAFT
UNIT 208
(20" Lathes)
376-208 INTERMEDIATE SHAFT
2956-208 OIL SEAL
SKF-5306 BEARING
2408-208 SPACER
375-208 GEAR
350-208 SPACER
374-208 GEAR
351-208 SPACER
373-208 GEAR
2764-208 SPACER
2956-208 OIL SEAL
SKF-5306 BEARING
UNIT 208
(25"&32" LATHES)
2408-207 SPACER
SKF-5205R BEARING
2406-207 SPACER
377-207 CLUTCH GEAR
SKF-6205NR BEARINGS (2)
379-207 CLUSTER GEAR
20th CENTURY-7294 BEARING
See UNIT 303
381-207 CLUSTER GEAR SHAFT
UNIT 207
(14", 16" & 20"W Lathes)
SKF-6205NR BEARING
SKF-6205Z BEARING
2406-207 SPACER
SKF-6205NR BEARINGS(2)
377-207 CLUTCH GEAR
379-207 CLUSTER GEAR
See UNIT 303
381-207 CLUSTER GEAR SHAFT
UNIT 207
(20" Lathes)
2408-207 SPACER
SKF-5306 BEARING
2956-207 OIL SEAL
2406-207 SPACER
SKF-6207NR BEARINGS (2)
377-207 CLUTCH GEAR
379-207 CLUSTER GEAR
381-207 CLUSTER GEAR SHAFT
See UNIT 303
UNIT 207
(25"&32" LATHES)

Adelson Lathes

LEAD SCREW, FEED ROD AND CLUTCH CONTROL

(14", 16" & 20"W LATHES, ONLY)

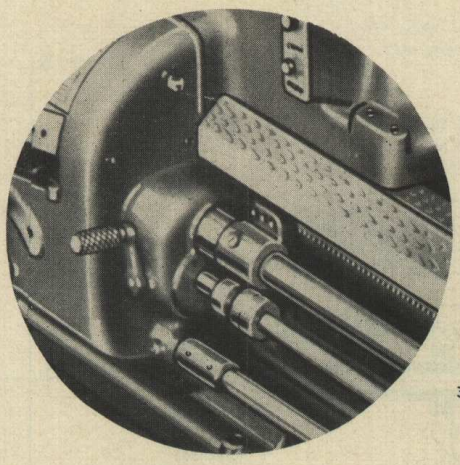
UNIT 300 SHIFT HOUSING AND BEARING HOUSINGS

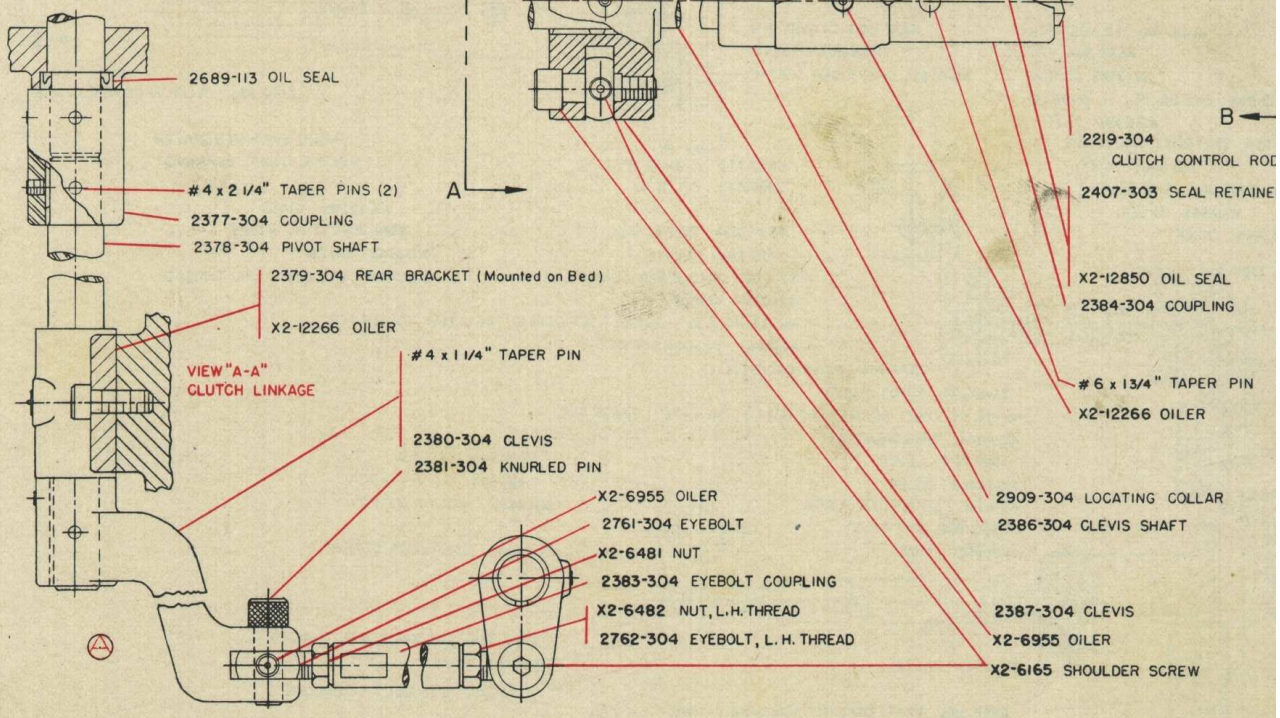
UNIT 302 LEAD SCREW PARTS

UNIT 303 FEED ROD PARTS

UNIT 304 CLUTCH CONTROL PARTS

UNIT 305 AUXILIARY SUPPORT





Axelson Lathes

LEAD SCREW, FEED ROD AND CLUTCH CONTROL

20" LATHES, ONLY

UNIT 300 SHIFT HOUSING AND BEARING HOUSINGS

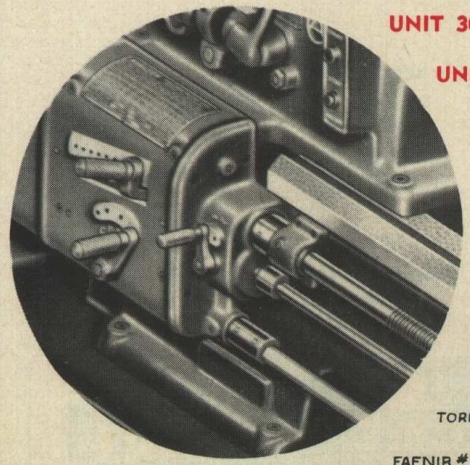
UNIT 301 RESERVED

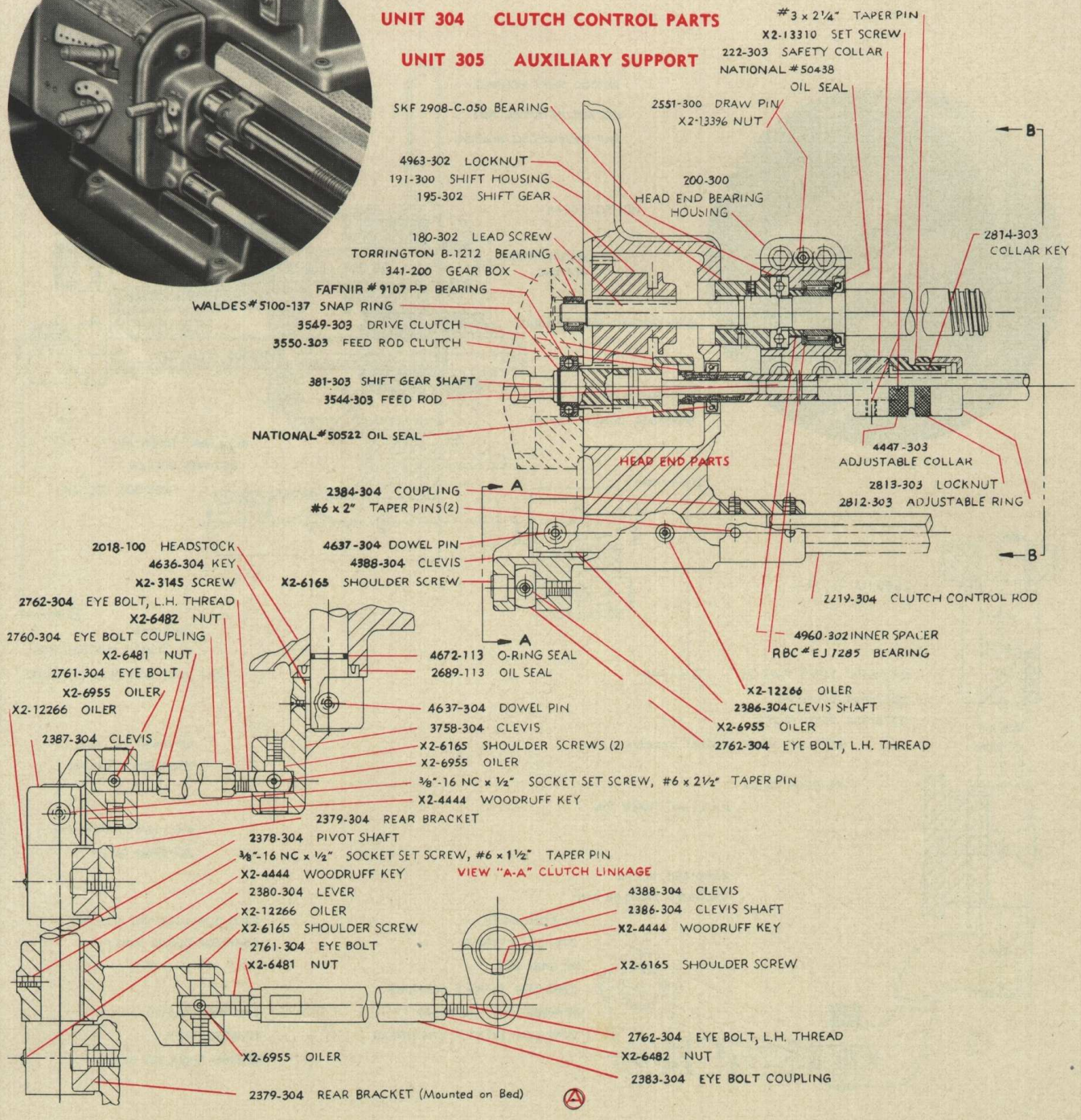
UNIT 302 LEAD SCREW PARTS

UNIT 303 FEED ROD PARTS

UNIT 304 CLUTCH CONTROL PARTS

UNIT 305 AUXILIARY SUPPORT



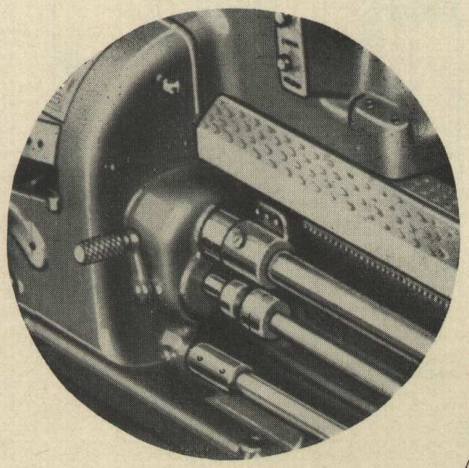


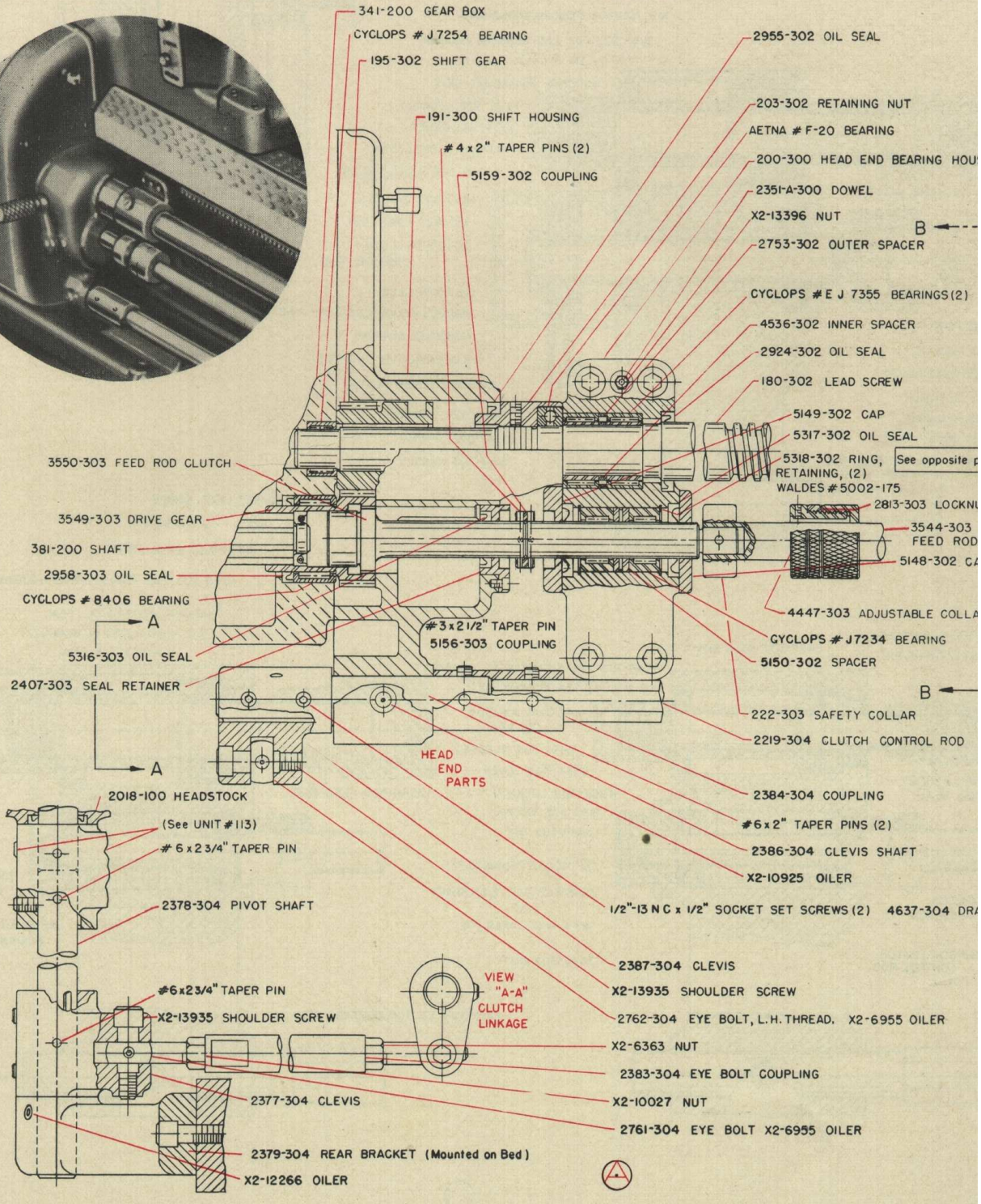
Axelson Lathes

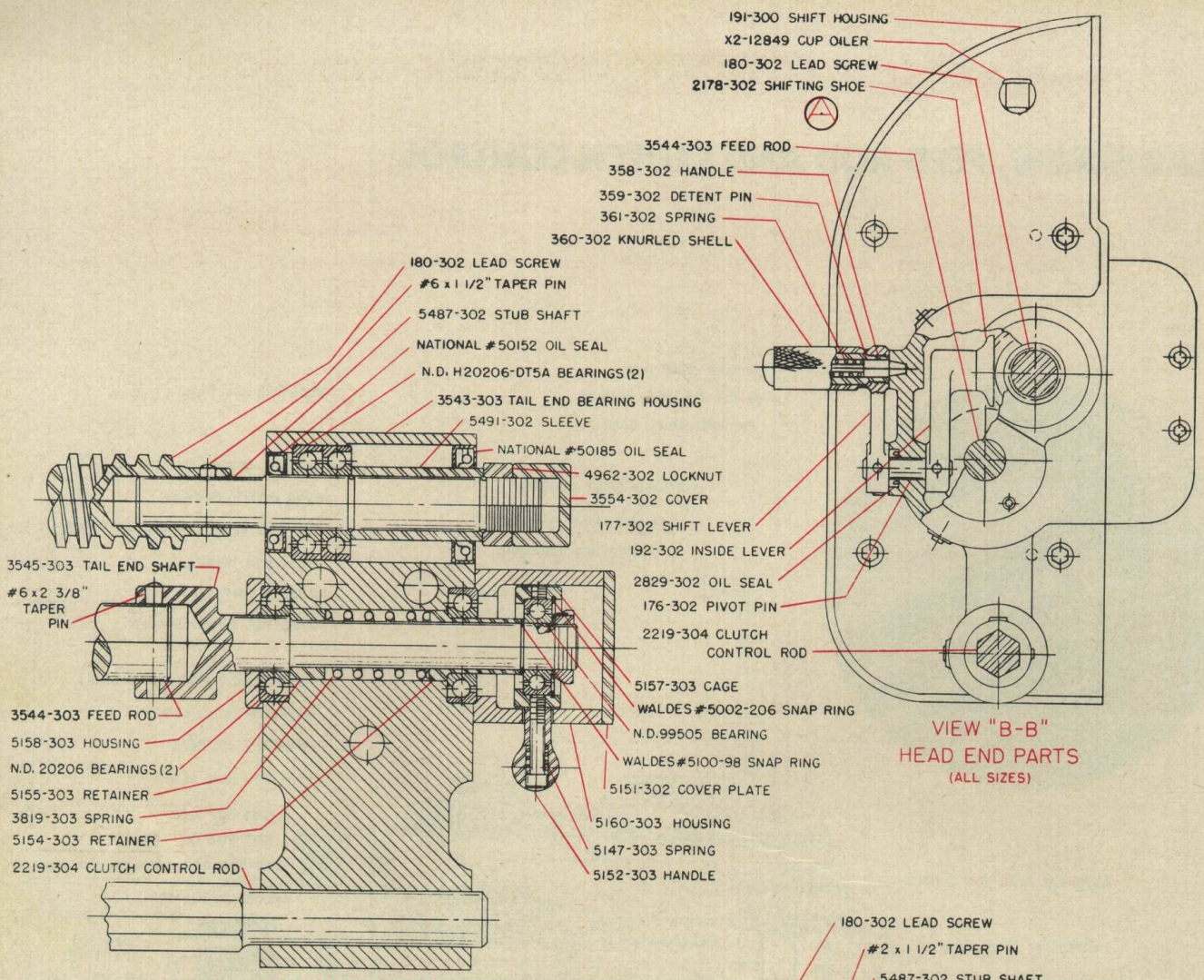
LEAD SCREW, FEED ROD AND CLUTCH CONTROL

(25" & 32" LATHES ONLY)

UNIT # 300 SHIFT HOUSING & BEARING HOUSINGS
UNIT # 302 LEAD SCREW PARTS
UNIT # 303 FEED ROD PARTS
UNIT # 304 CLUTCH CONTROL PARTS

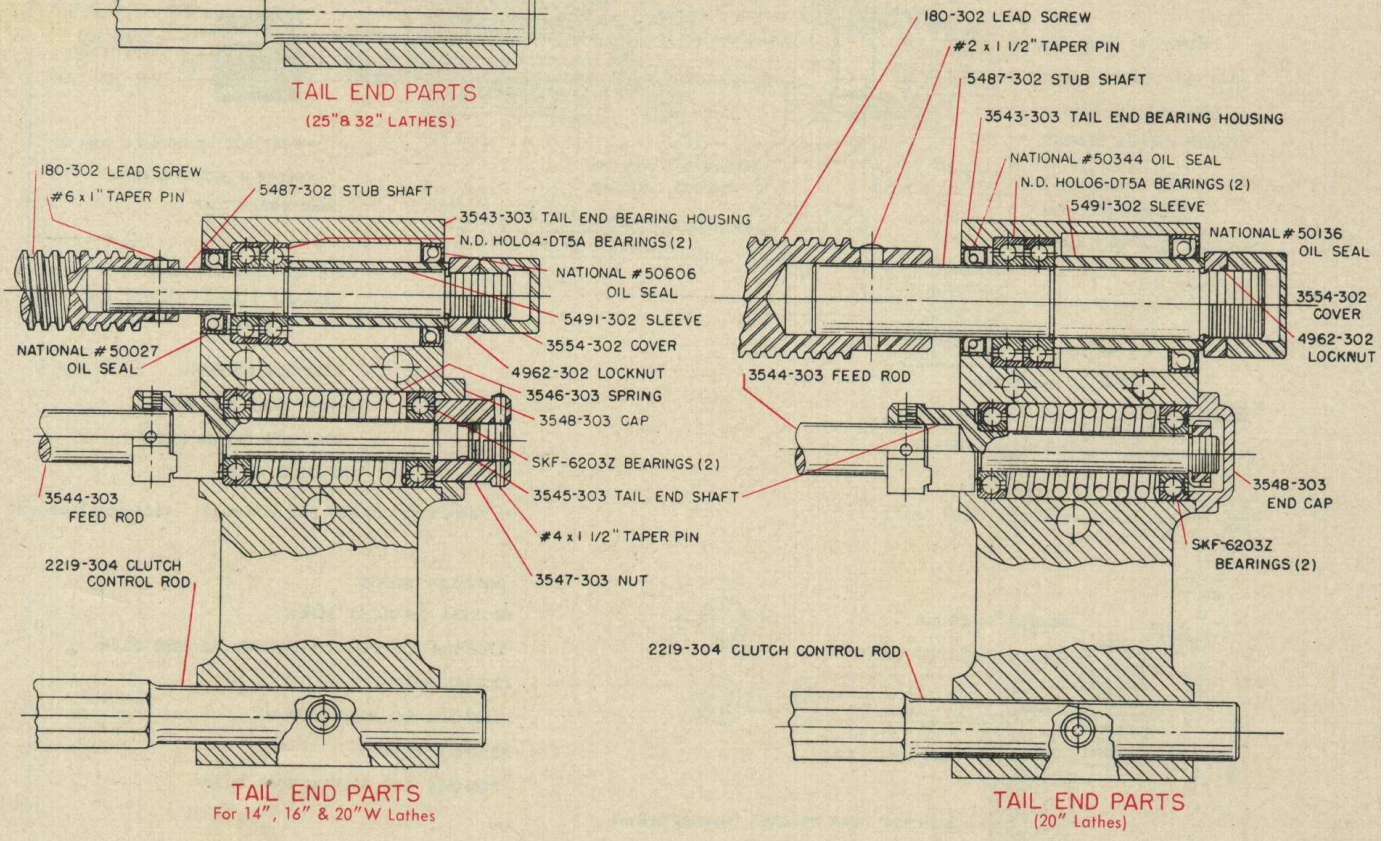






VIEW "B-B"
HEAD END PARTS
(ALL SIZES)

TAIL END PARTS
(25" & 32" LATHES)



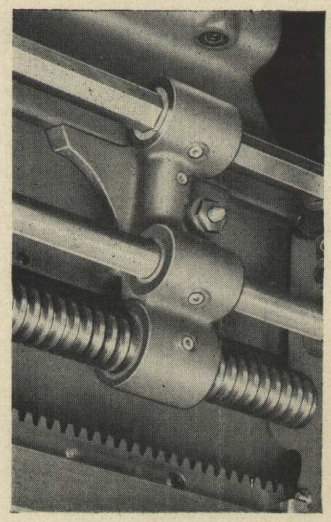
TAIL END PARTS
For 14", 16" & 20"W Lathes

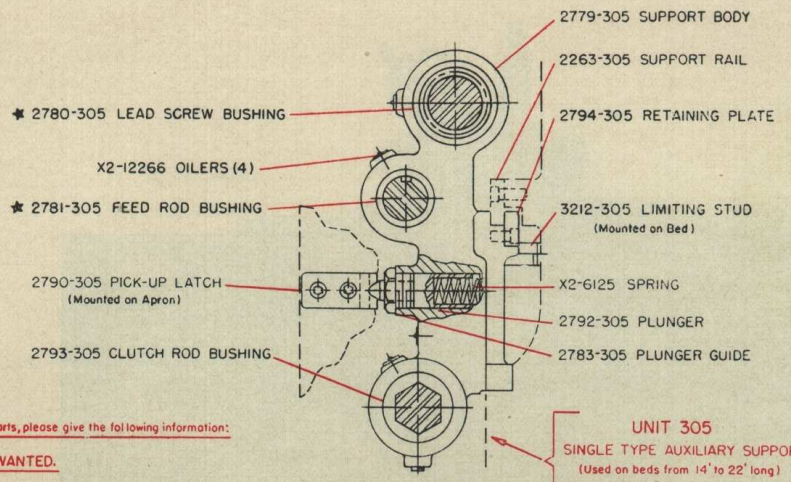
TAIL END PARTS
(20" Lathes)

LEAD SCREW, FEED ROD AND CLUTCH CONTROL

UNIT 305 SINGLE TYPE AUXILIARY SUPPORT

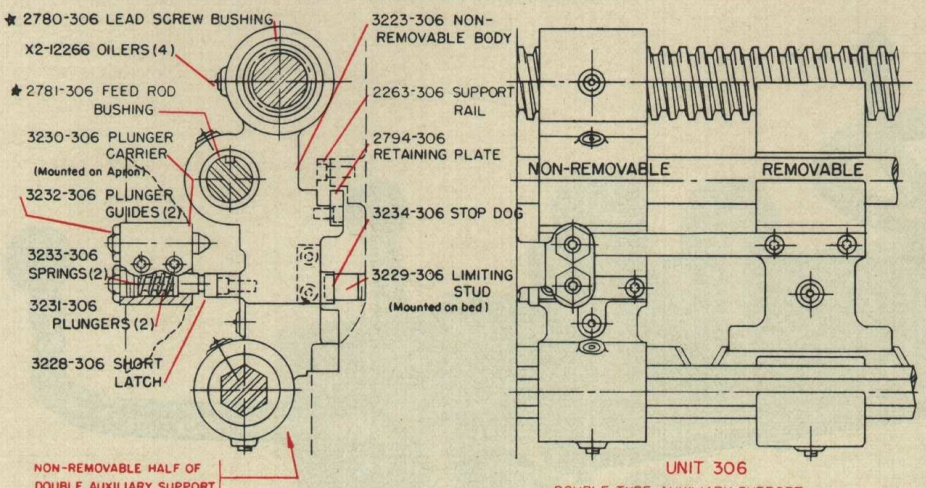
UNIT 306 DOUBLE TYPE AUXILIARY SUPPORT





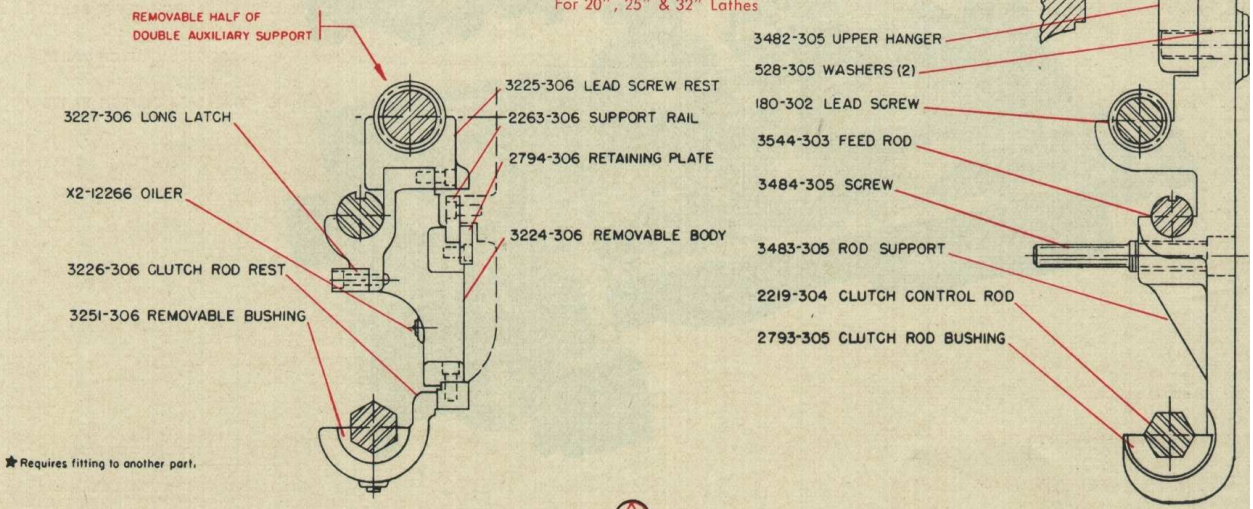
When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.



UNIT 306
DOUBLE TYPE AUXILIARY SUPPORT
(Used on beds from 24' to 48' long)
For 20", 25" & 32" Lathes

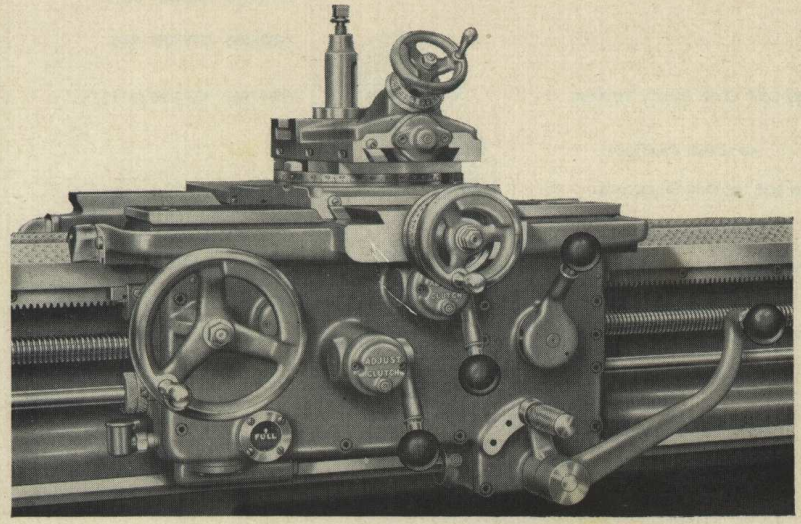
UNIT 305
SINGLE TYPE AUXILIARY SUPP
(14", 16" & 20" W Lathes)



★ Requires fitting to another part.

APRON

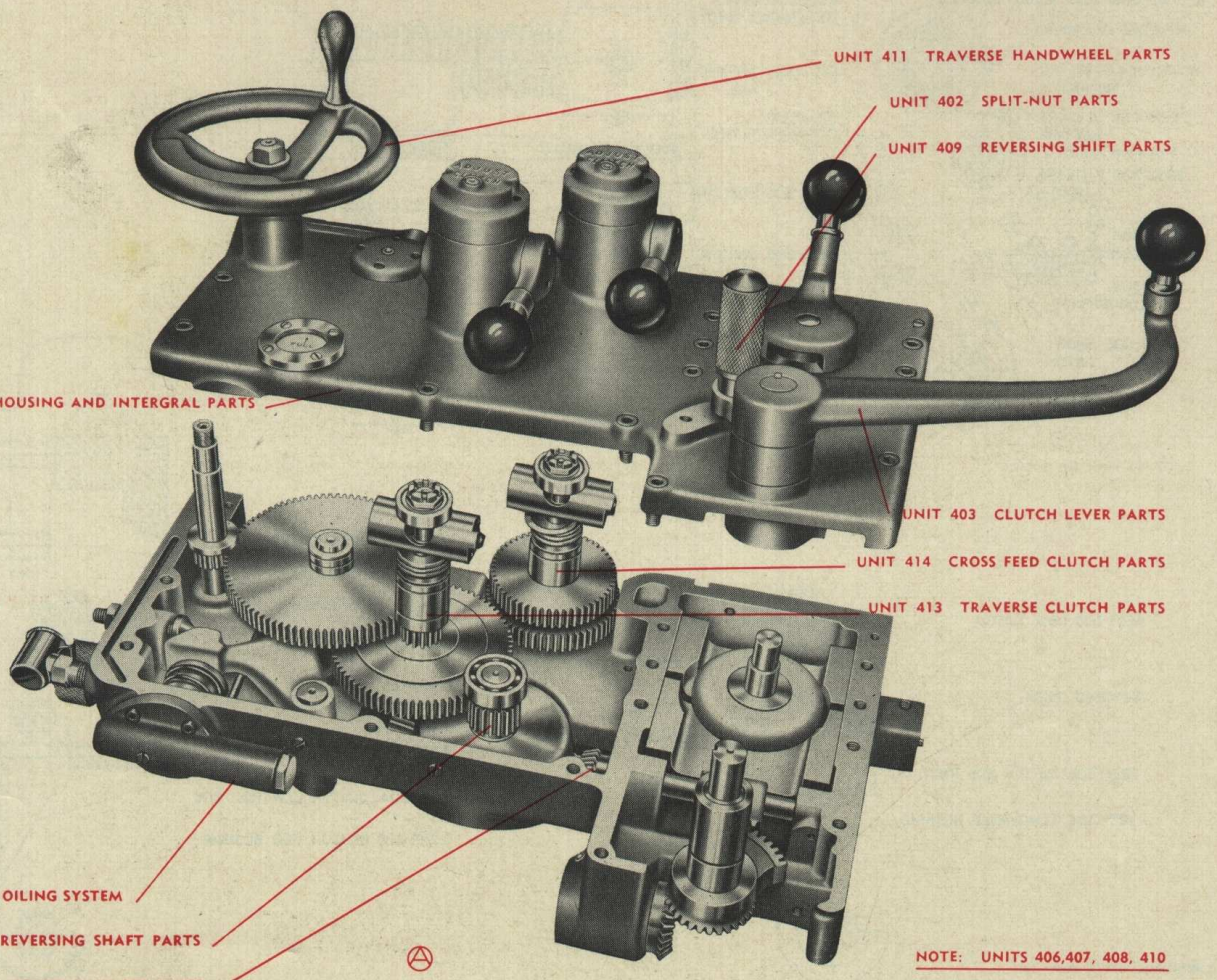
Axelson Lathes



14", 16" & 20" W MODELS ONLY

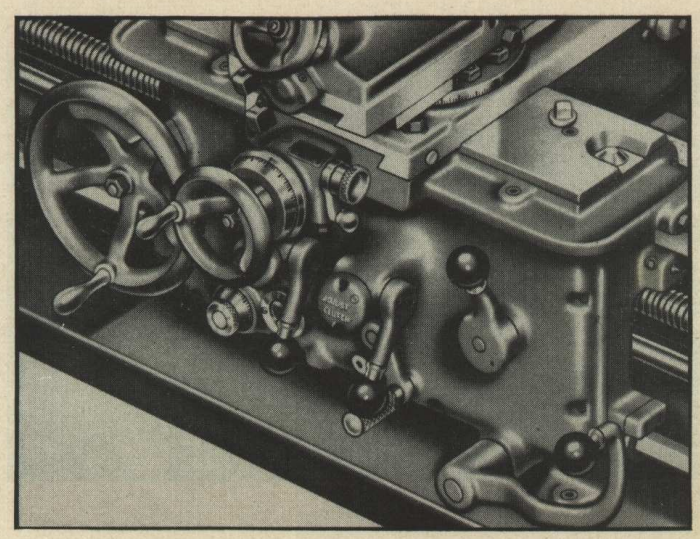
When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.



NOTE: UNITS 406,407, 408, 410 AND 415 ARE RESERVED.

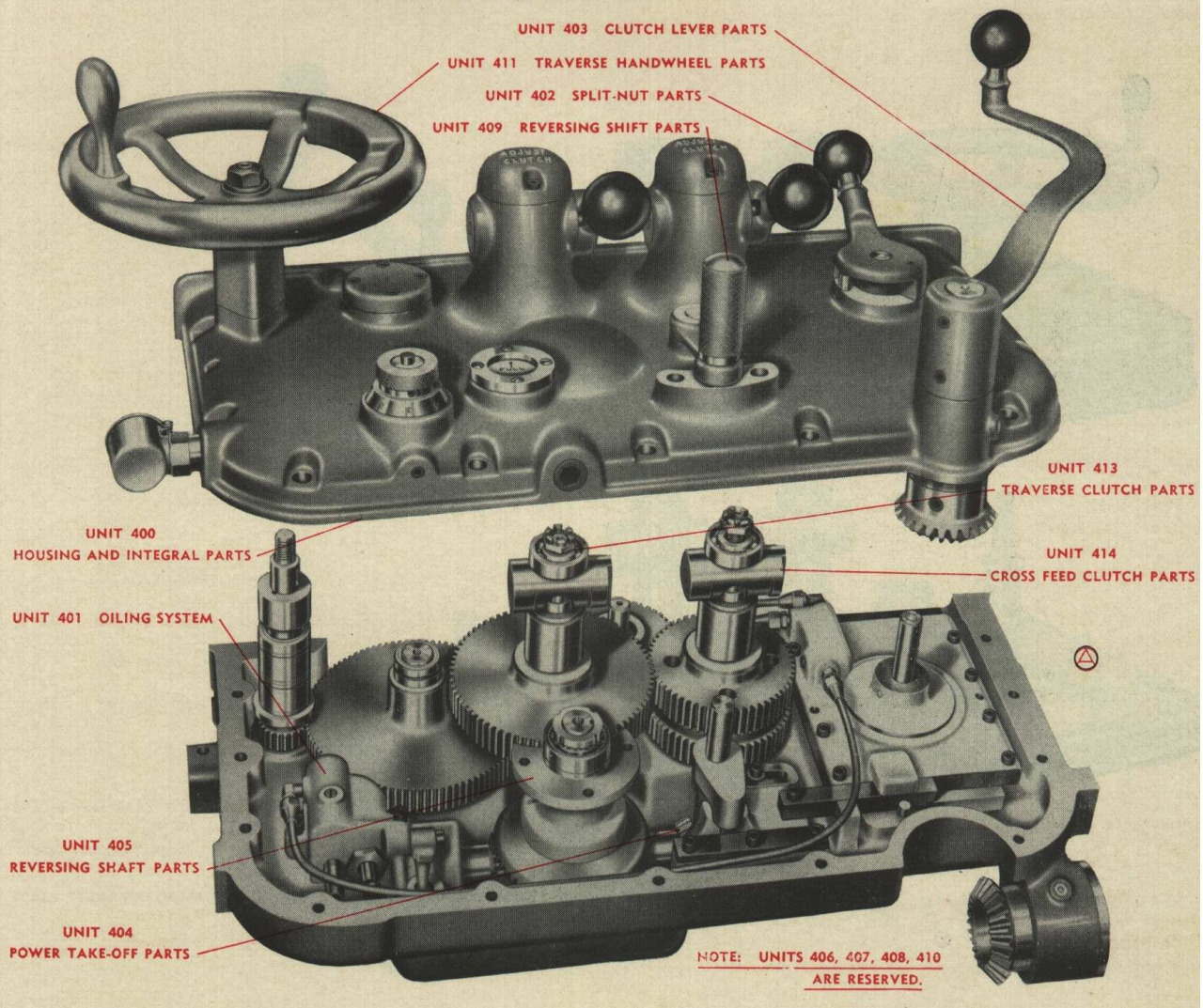
APRON



20" MODELS ONLY

When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

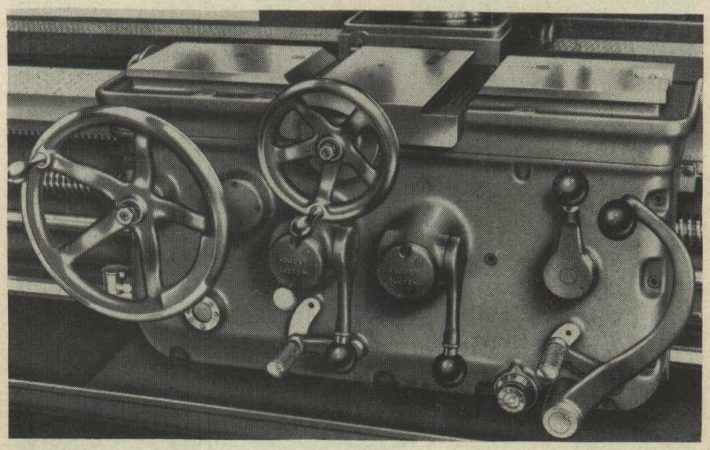


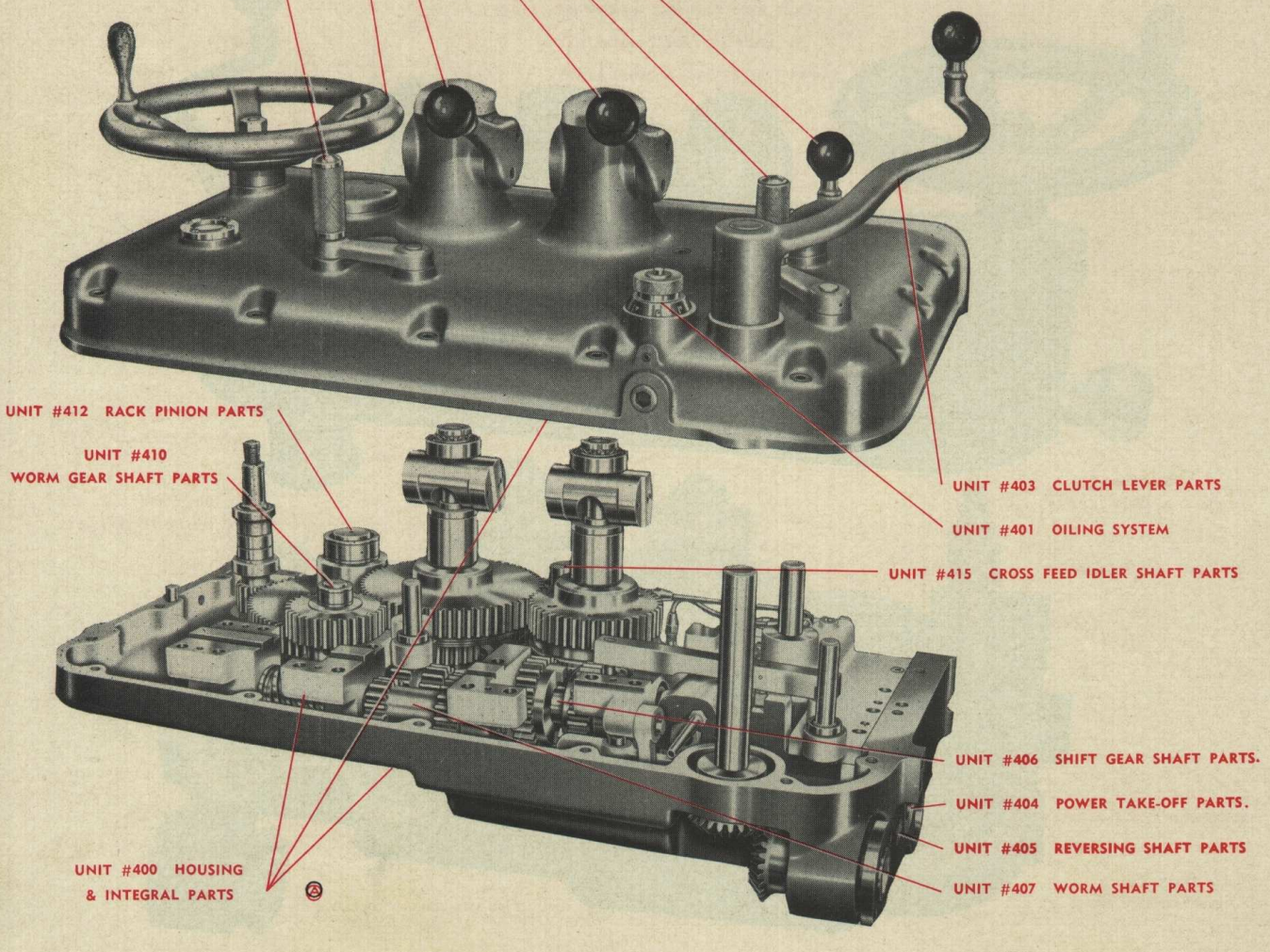
NOTE: UNITS 406, 407, 408, 410 ARE RESERVED.

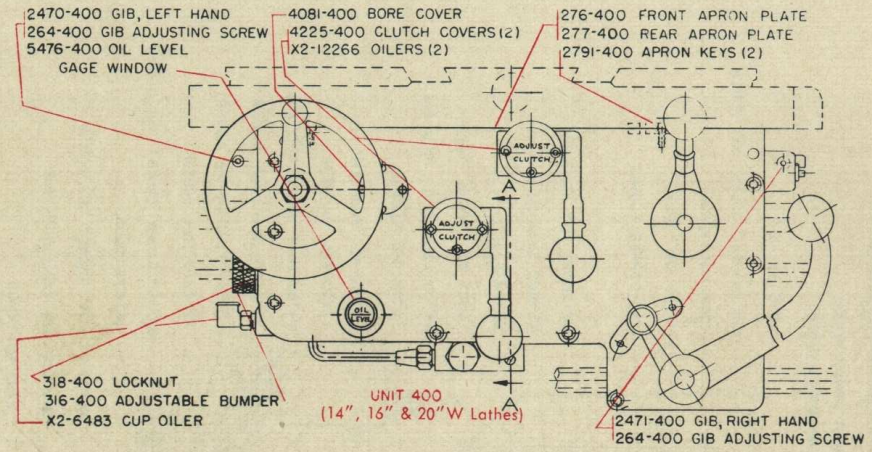
Axelson Lathes

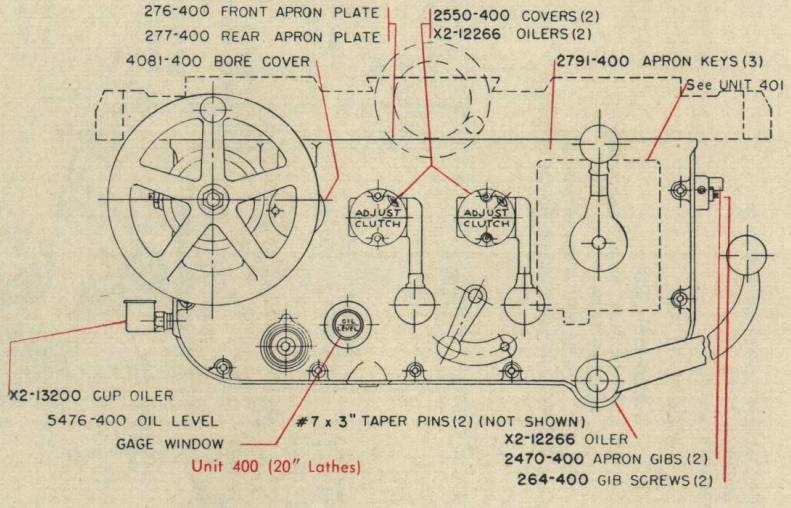
APRON

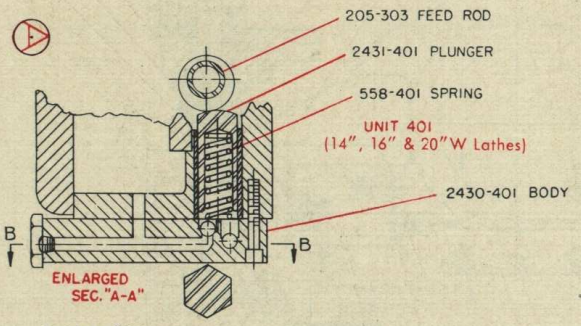
25" & 32" MODELS ONLY

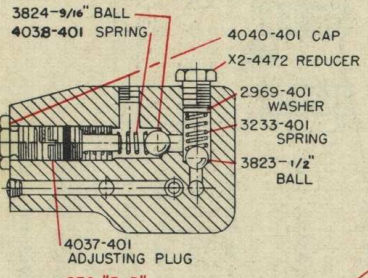


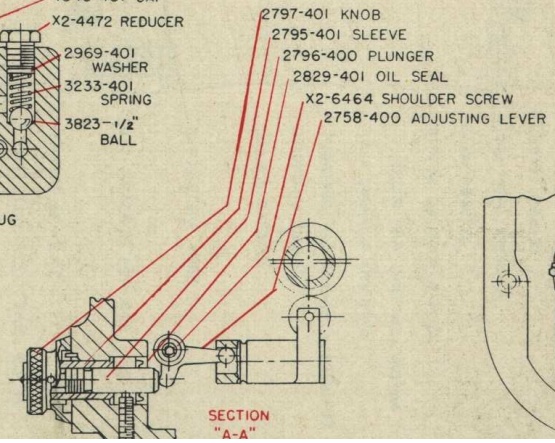


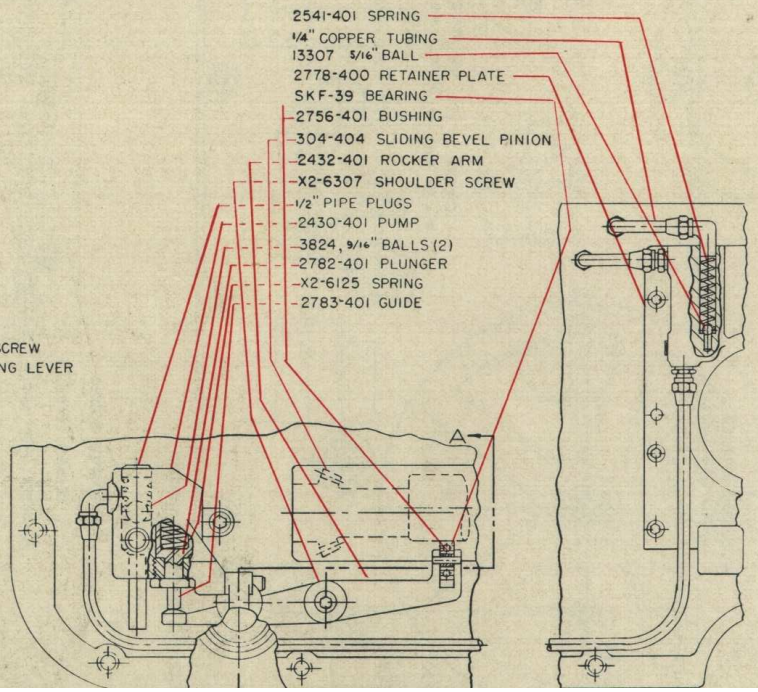










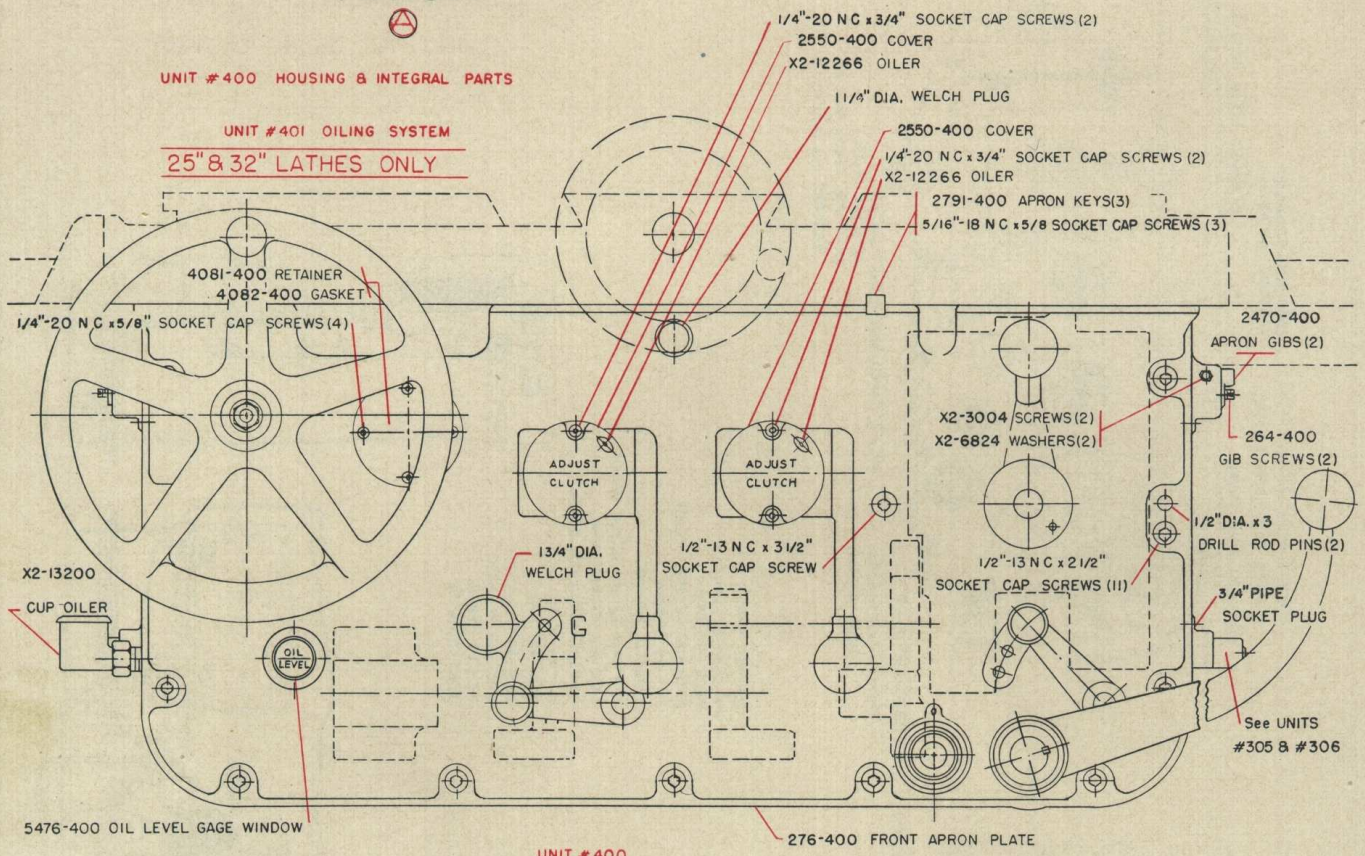


APRON

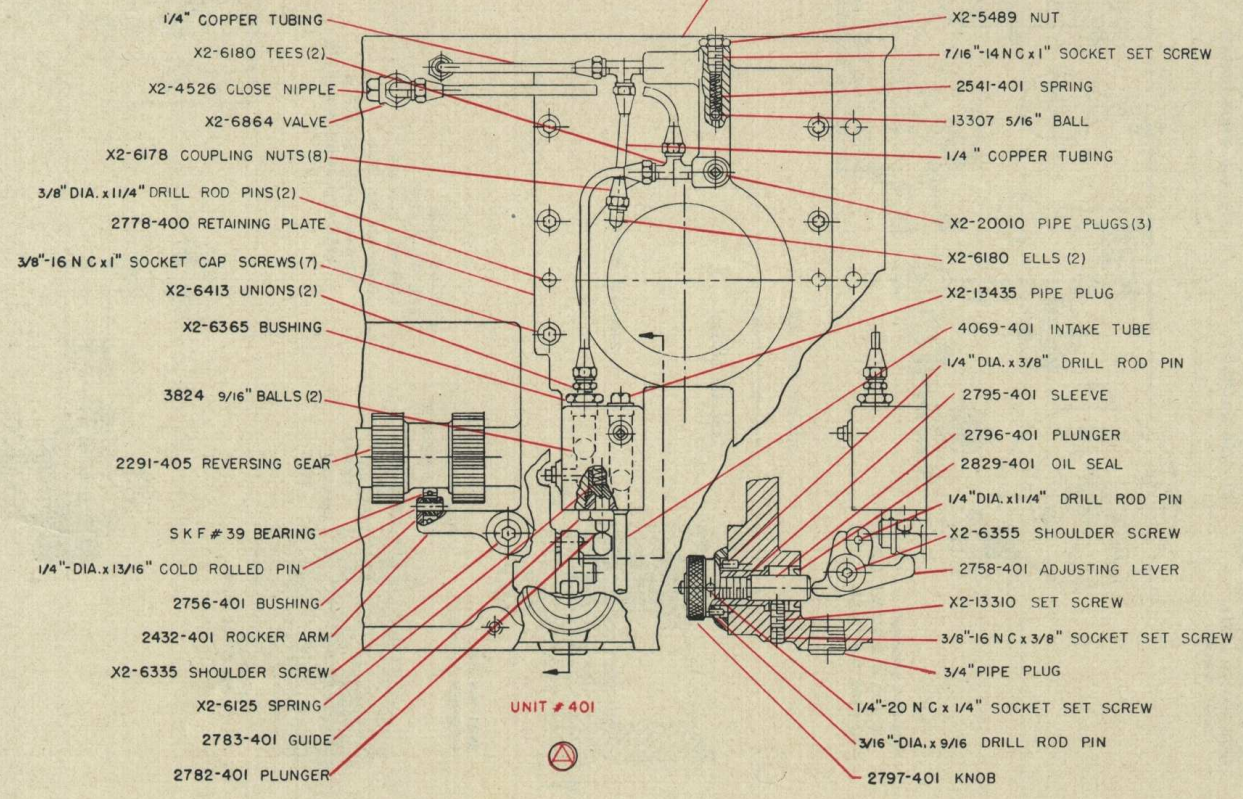
UNIT 400 HOUSING AND INTEGRAL PA

UNIT 401 OILING SYSTEM

APRON



UNIT #400

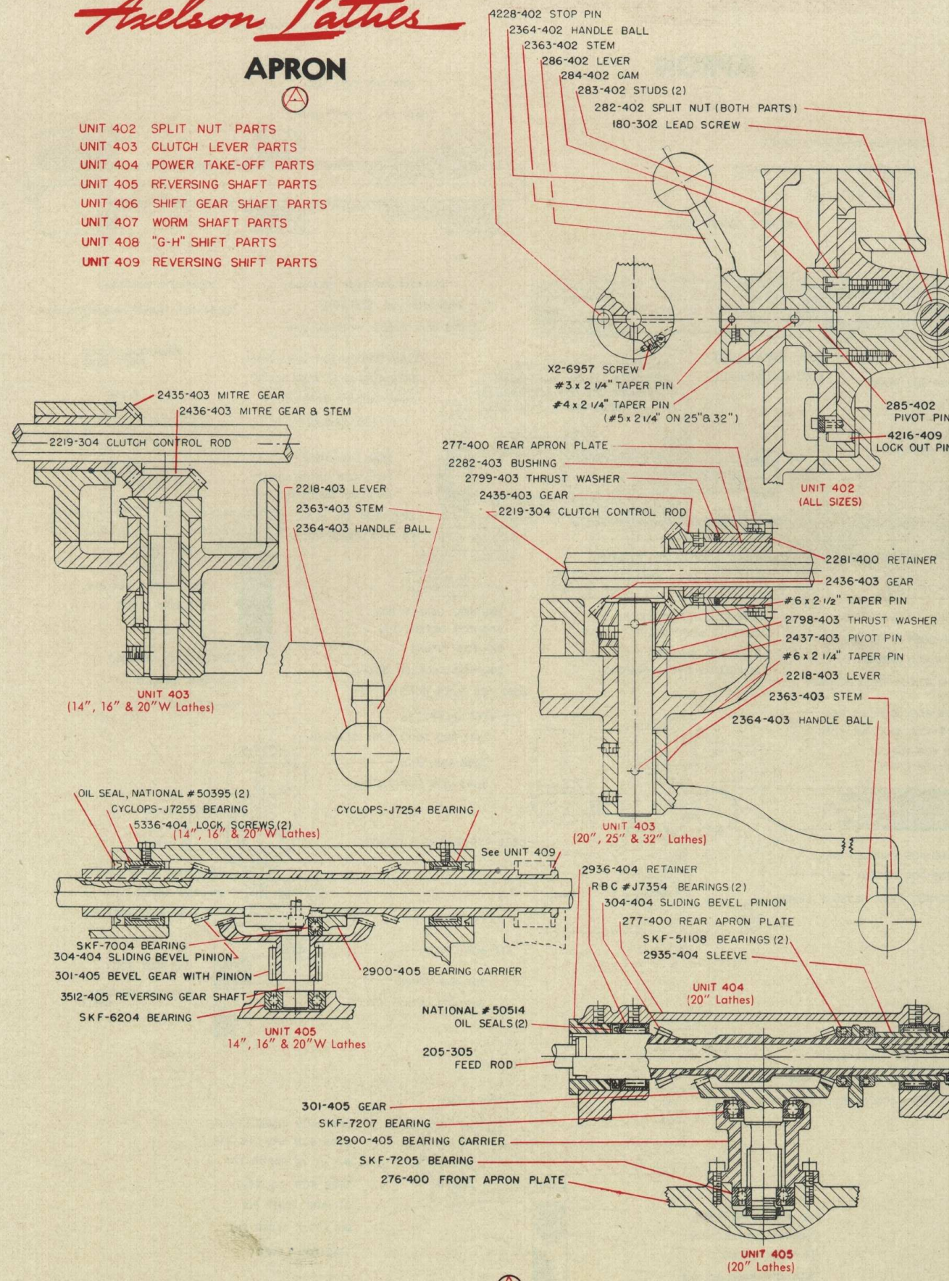


UNIT #401

Axelson Lathes

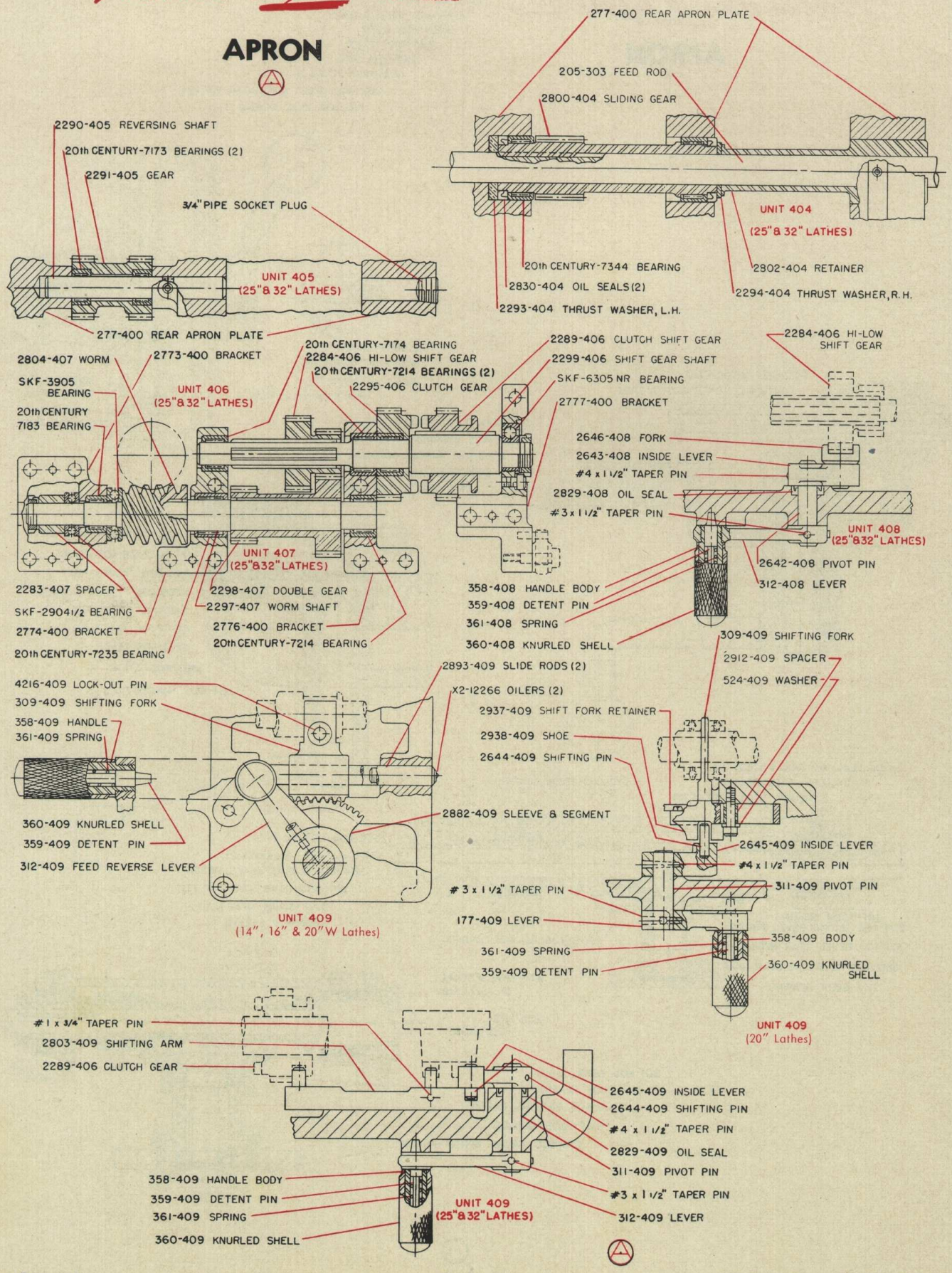
APRON

UNIT 402 SPLIT NUT PARTS
UNIT 403 CLUTCH LEVER PARTS
UNIT 404 POWER TAKE-OFF PARTS
UNIT 405 REVERSING SHAFT PARTS
UNIT 406 SHIFT GEAR SHAFT PARTS
UNIT 407 WORM SHAFT PARTS
UNIT 408 "G-H" SHIFT PARTS
UNIT 409 REVERSING SHIFT PARTS



Axelson Lathes

APRON



APRON

UNIT 410 WORM GEAR SHAFT PARTS (SEE NEXT PAGE)

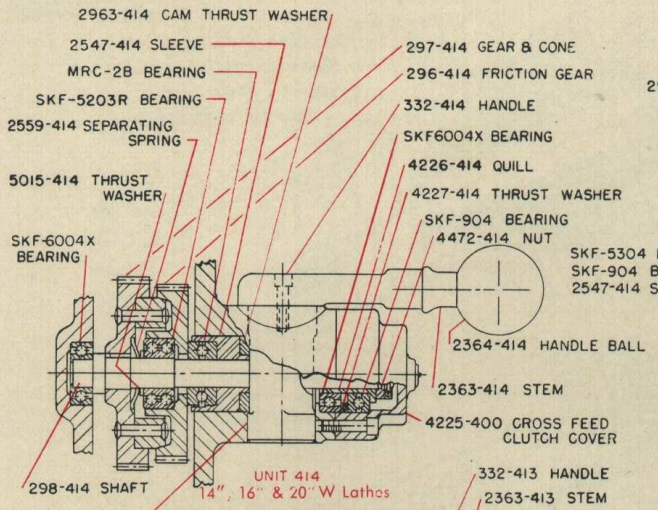
UNIT 411 TRAVERSE HANDWHEEL PARTS

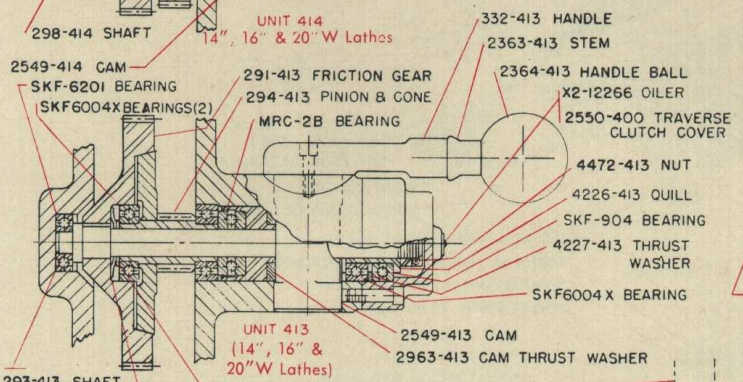
UNIT 412 RACK PINION PARTS

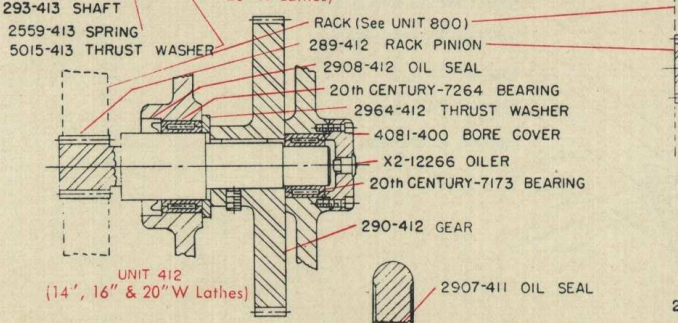
UNIT 413 TRAVERSE CLUTCH PARTS

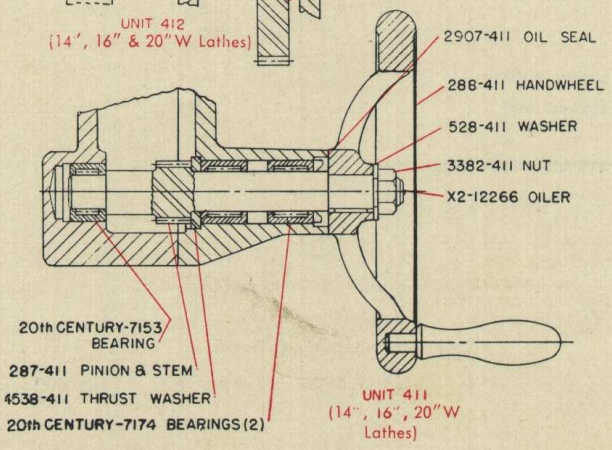
UNIT 414 CROSS FEED CLUTCH PARTS

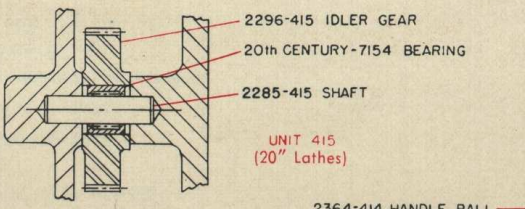
UNIT 415 CROSS FEED IDLER SHAFT PARTS

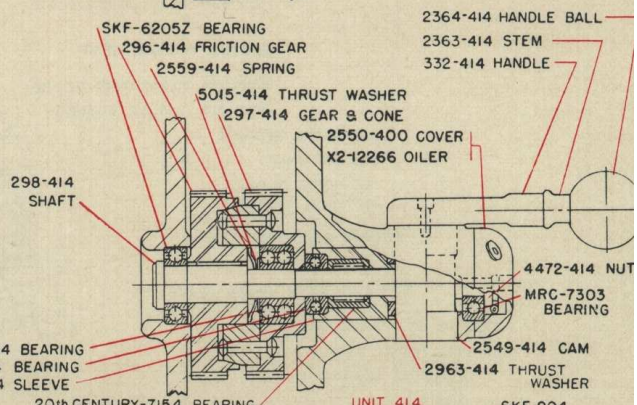


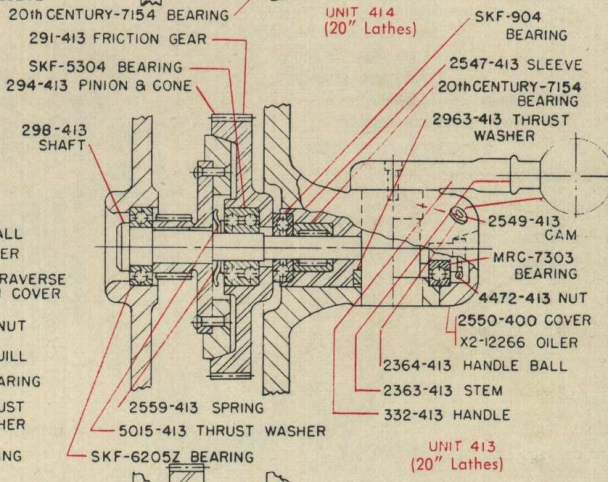


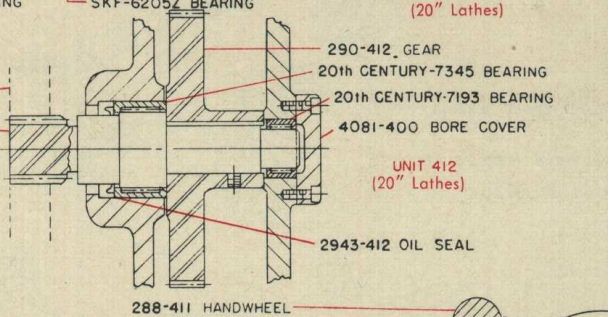


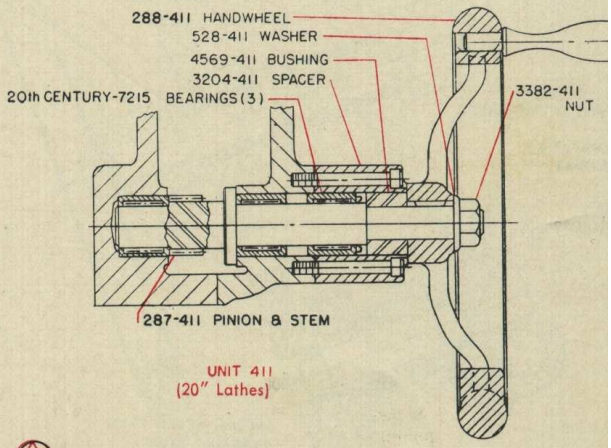




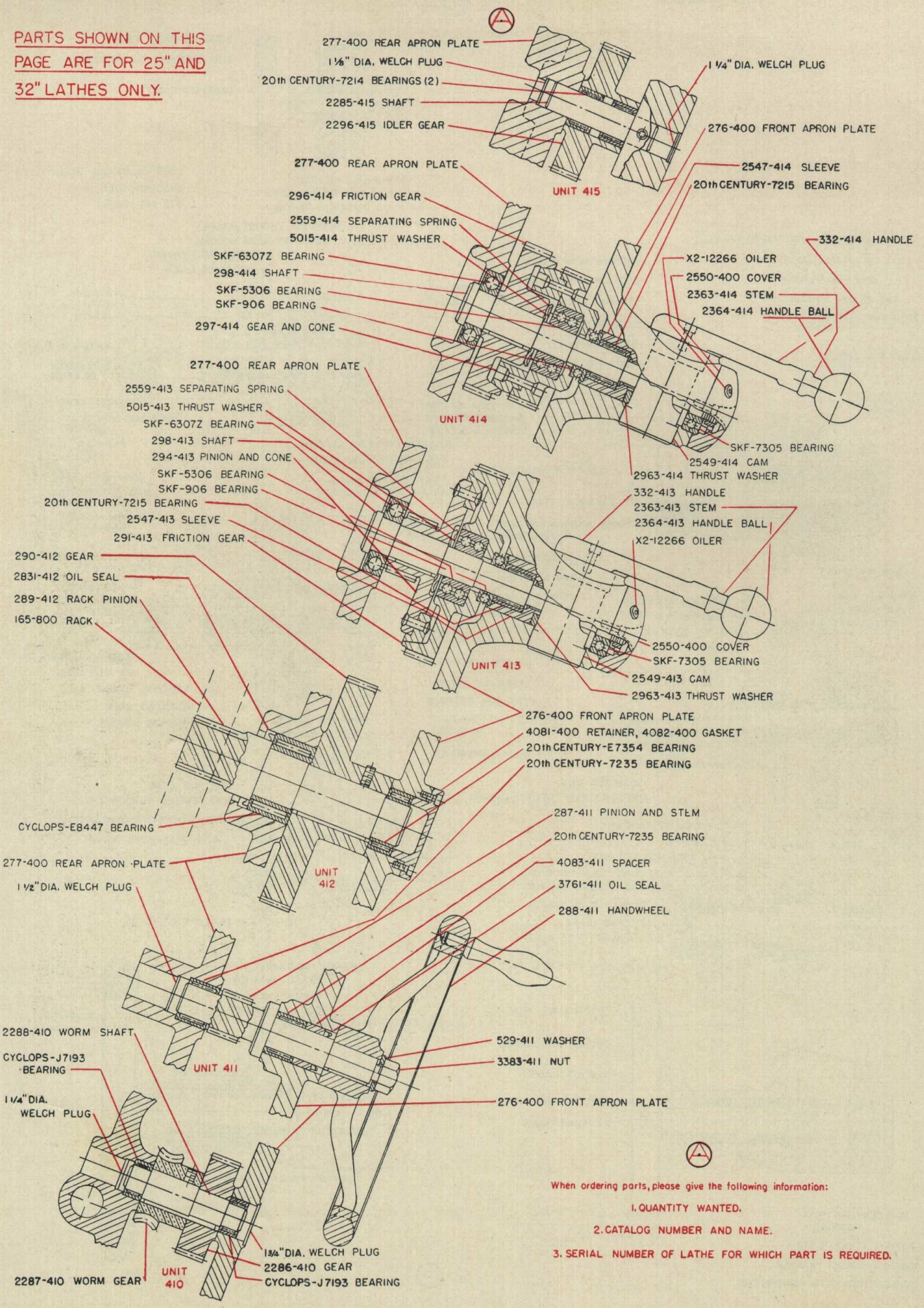








PARTS SHOWN ON THIS PAGE ARE FOR 25" AND 32" LATHES ONLY.



When ordering parts, please give the following information:

1. QUANTITY WANTED.

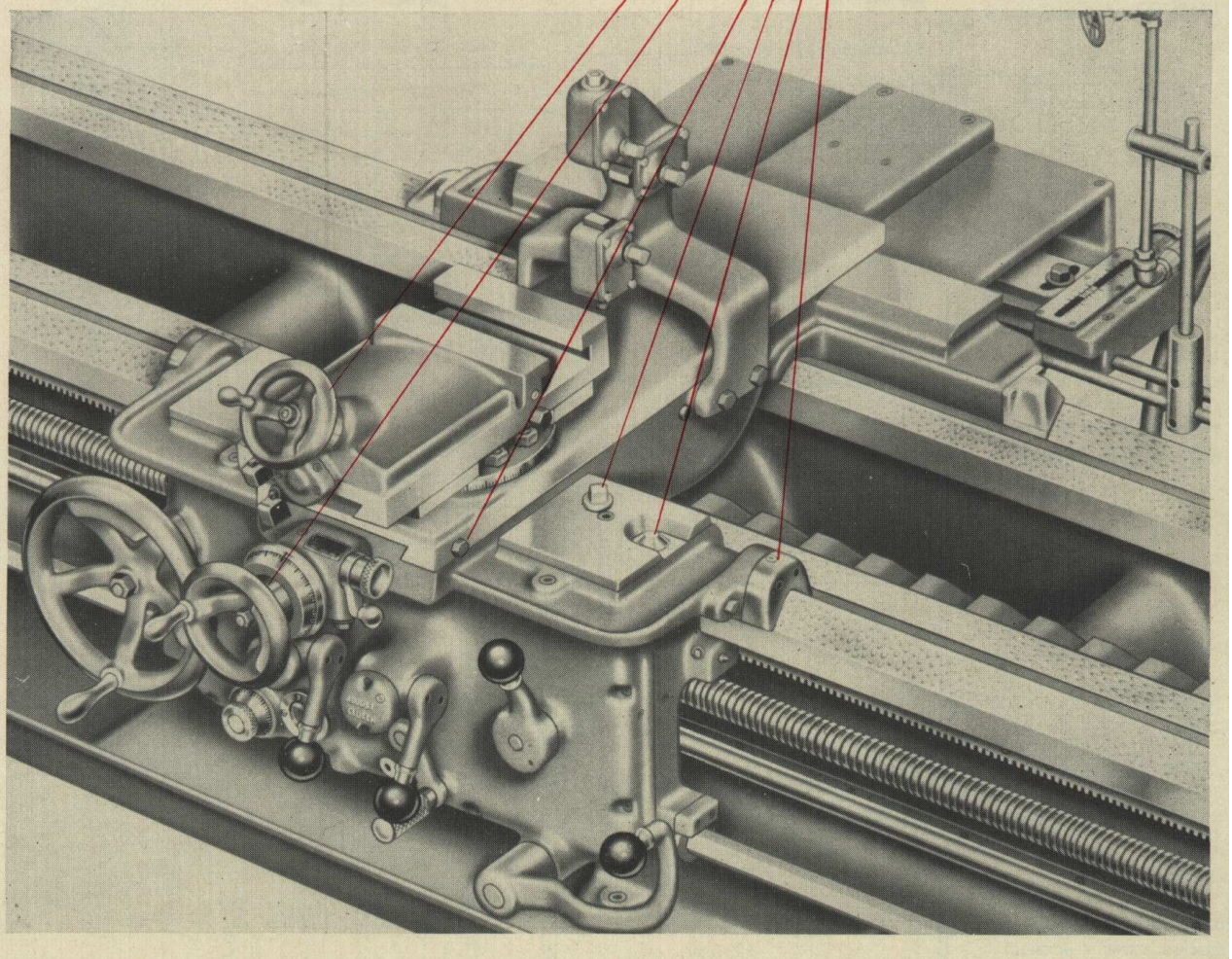
2. CATALOG NUMBER AND NAME.

3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

Axelson Lathes

CARRIAGE AND CROSS SLIDE

NOTE: See UNIT 900 for TOOL POST.



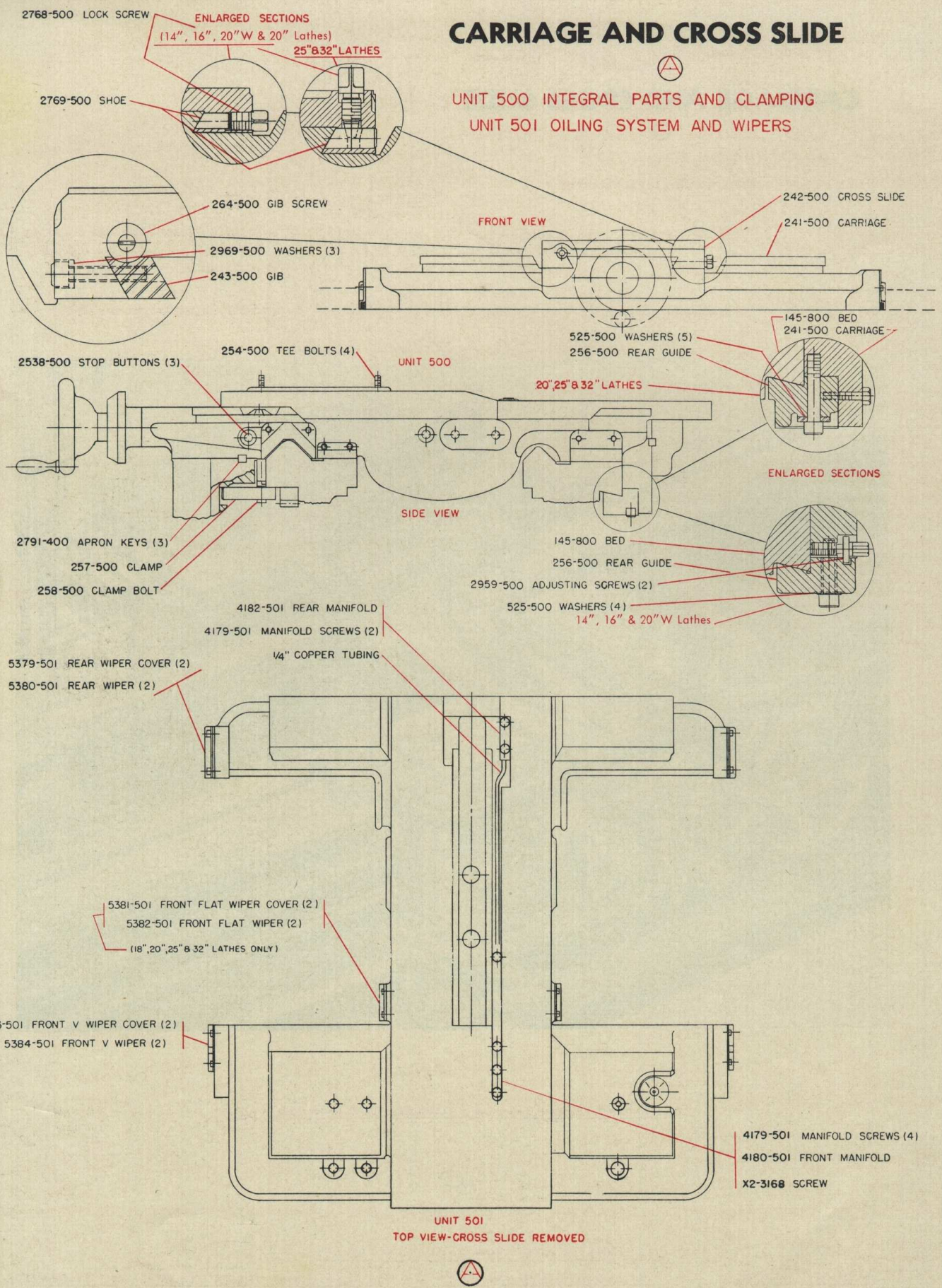
Other CARRIAGE attachments are shown in EXTRA EQUIPMENT UNITS 1003 to 1011.

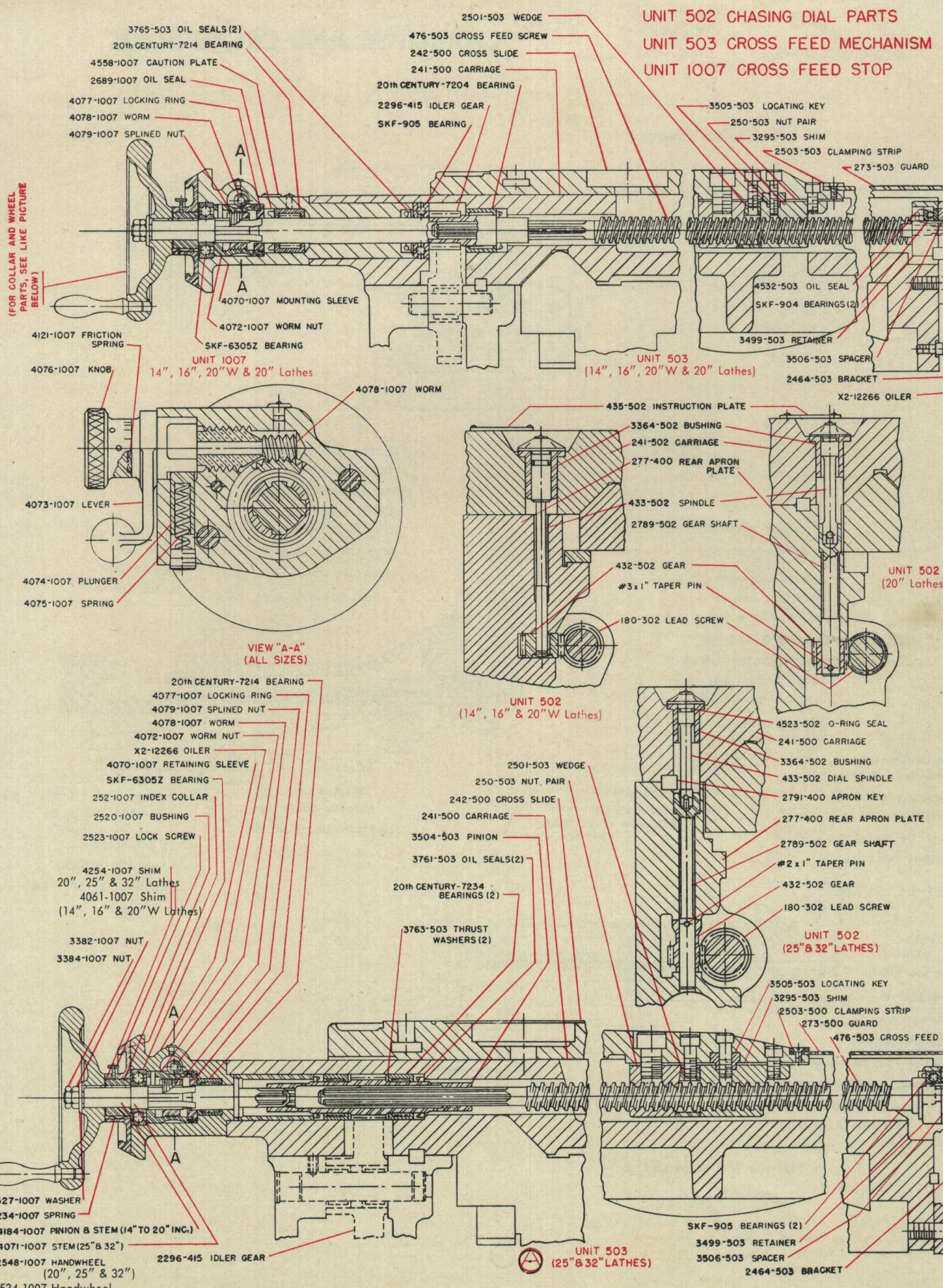
When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

CARRIAGE AND CROSS SLIDE

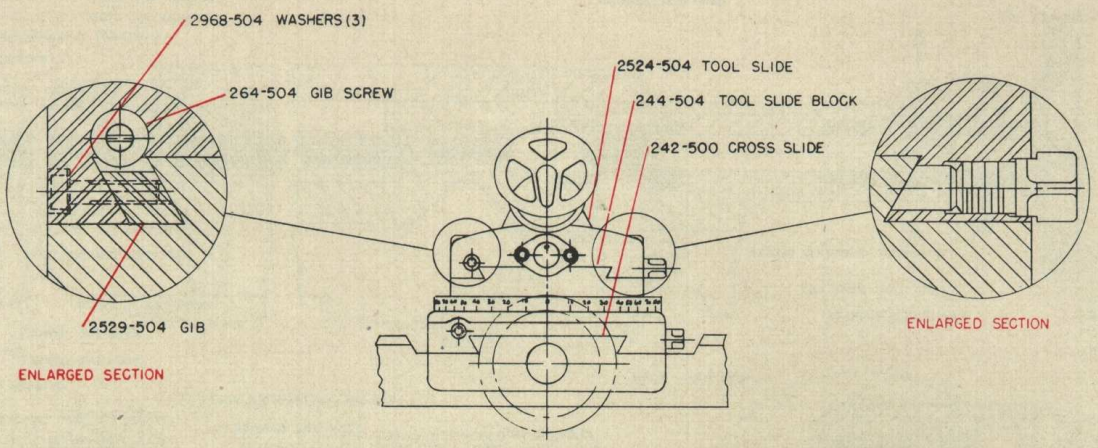
UNIT 500 INTEGRAL PARTS AND CLAMPING
UNIT 501 OILING SYSTEM AND WIPERS

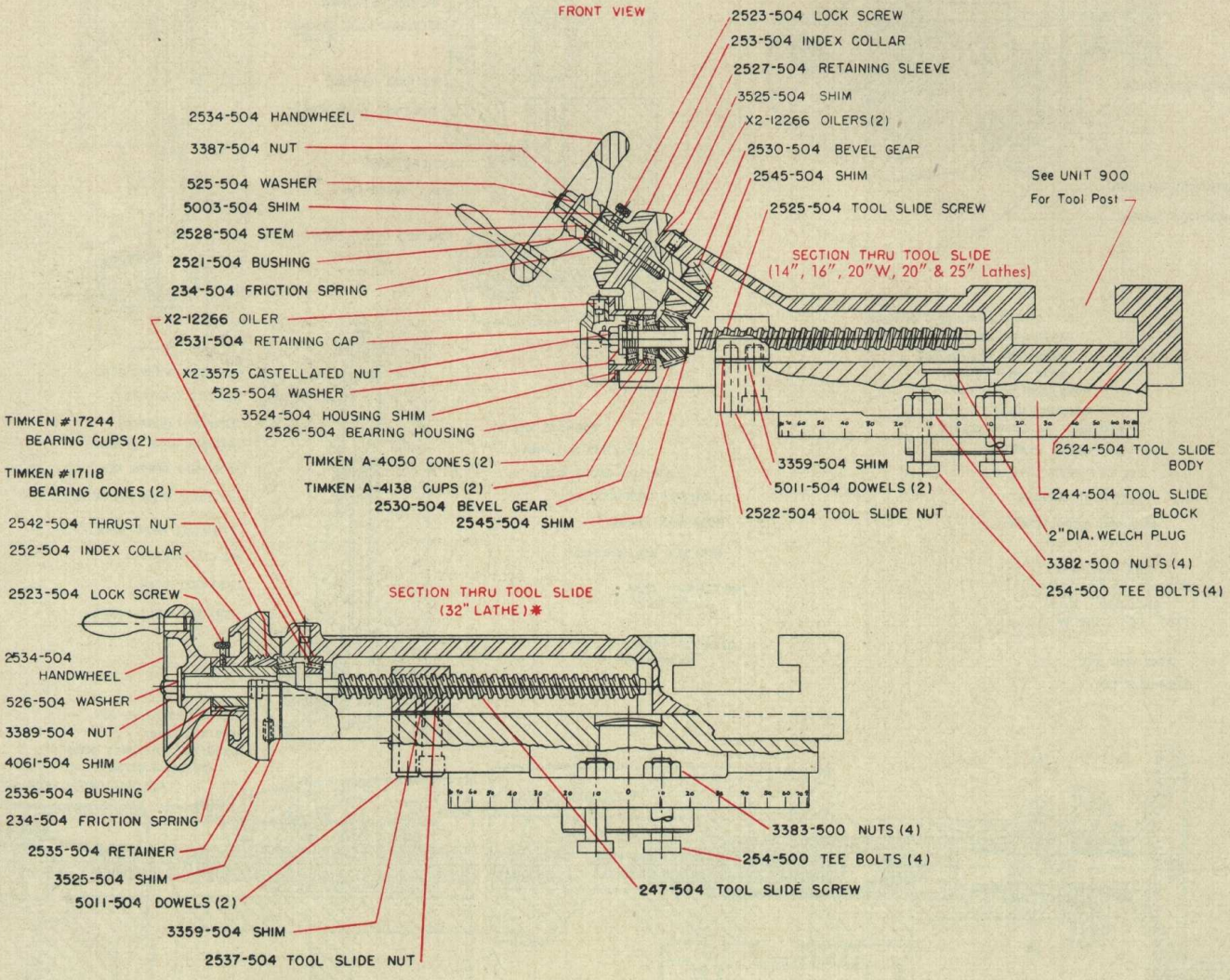



UNIT 502 CHASING DIAL PARTS
UNIT 503 CROSS FEED MECHANISM
UNIT 1007 CROSS FEED STOP
3765-503 OIL SEALS (2)
20th CENTURY-7214 BEARING
4558-1007 CAUTION PLATE
2689-1007 OIL SEAL
4077-1007 LOCKING RING
4078-1007 WORM
4079-1007 SPLINED NUT
2501-503 WEDGE
476-503 CROSS FEED SCREW
242-500 CROSS SLIDE
241-500 CARRIAGE
20th CENTURY-7204 BEARING
2296-415 IDLER GEAR
SKF-905 BEARING
3505-503 LOCATING KEY
250-503 NUT PAIR
3295-503 SHIM
2503-503 CLAMPING STRIP
273-503 GUARD
(FOR COLLAR AND WHEEL PARTS, SEE LIKE PICTURE BELOW)
4070-1007 MOUNTING SLEEVE
4072-1007 WORM NUT
SKF-6305Z BEARING
4121-1007 FRICTION SPRING
4076-1007 KNOB
UNIT 1007
14", 16", 20"W & 20" Lathes
4532-503 OIL SEAL
SKF-904 BEARINGS (2)
3499-503 RETAINER
3506-503 SPACER
2464-503 BRACKET
UNIT 503
(14", 16", 20"W & 20" Lathes)
4078-1007 WORM
4073-1007 LEVER
4074-1007 PLUNGER
4075-1007 SPRING
VIEW "A-A"
(ALL SIZES)
435-502 INSTRUCTION PLATE
3364-502 BUSHING
241-502 CARRIAGE
277-400 REAR APRON PLATE
433-502 SPINDLE
2789-502 GEAR SHAFT
432-502 GEAR
#3 x 1" TAPER PIN
180-302 LEAD SCREW
X2-12266 OILER
UNIT 502
(20" Lathes
UNIT 502
(14", 16" & 20"W Lathes)
20th CENTURY-7214 BEARING
4077-1007 LOCKING RING
4079-1007 SPLINED NUT
4078-1007 WORM
4072-1007 WORM NUT
X2-12266 OILER
4070-1007 RETAINING SLEEVE
SKF-6305Z BEARING
252-1007 INDEX COLLAR
2520-1007 BUSHING
2523-1007 LOCK SCREW
4254-1007 SHIM
20", 25" & 32" Lathes
4061-1007 Shim
(14", 16" & 20"W Lathes)
3382-1007 NUT
3384-1007 NUT
2501-503 WEDGE
250-503 NUT PAIR
242-500 CROSS SLIDE
241-500 CARRIAGE
3504-503 PINION
3761-503 OIL SEALS (2)
20th CENTURY-7234 BEARINGS (2)
3763-503 THRUST WASHERS (2)
4523-502 O-RING SEAL
241-500 CARRIAGE
3364-502 BUSHING
433-502 DIAL SPINDLE
2791-400 APRON KEY
277-400 REAR APRON PLATE
2789-502 GEAR SHAFT
#2 x 1" TAPER PIN
432-502 GEAR
180-302 LEAD SCREW
UNIT 502
(25"&32"LATHES)
3505-503 LOCATING KEY
3295-503 SHIM
2503-500 CLAMPING STRIP
273-500 GUARD
476-503 CROSS FEED
527-1007 WASHER
234-1007 SPRING
4184-1007 PINION & STEM (14" TO 20" INC.)
4071-1007 STEM (25"&32")
2548-1007 HANDWHEEL
(20", 25" & 32")
2534-1007 Handwheel
(14", 16" && 20"W)
2296-415 IDLER GEAR
UNIT 503
(25"&32"LATHES)
SKF-905 BEARINGS (2)
3499-503 RETAINER
3506-503 SPACER
2464-503 BRACKET

CARRIAGE AND CROSS SLIDE

UNIT 504 TOOL SLIDE AND BLOCK COMPLETE

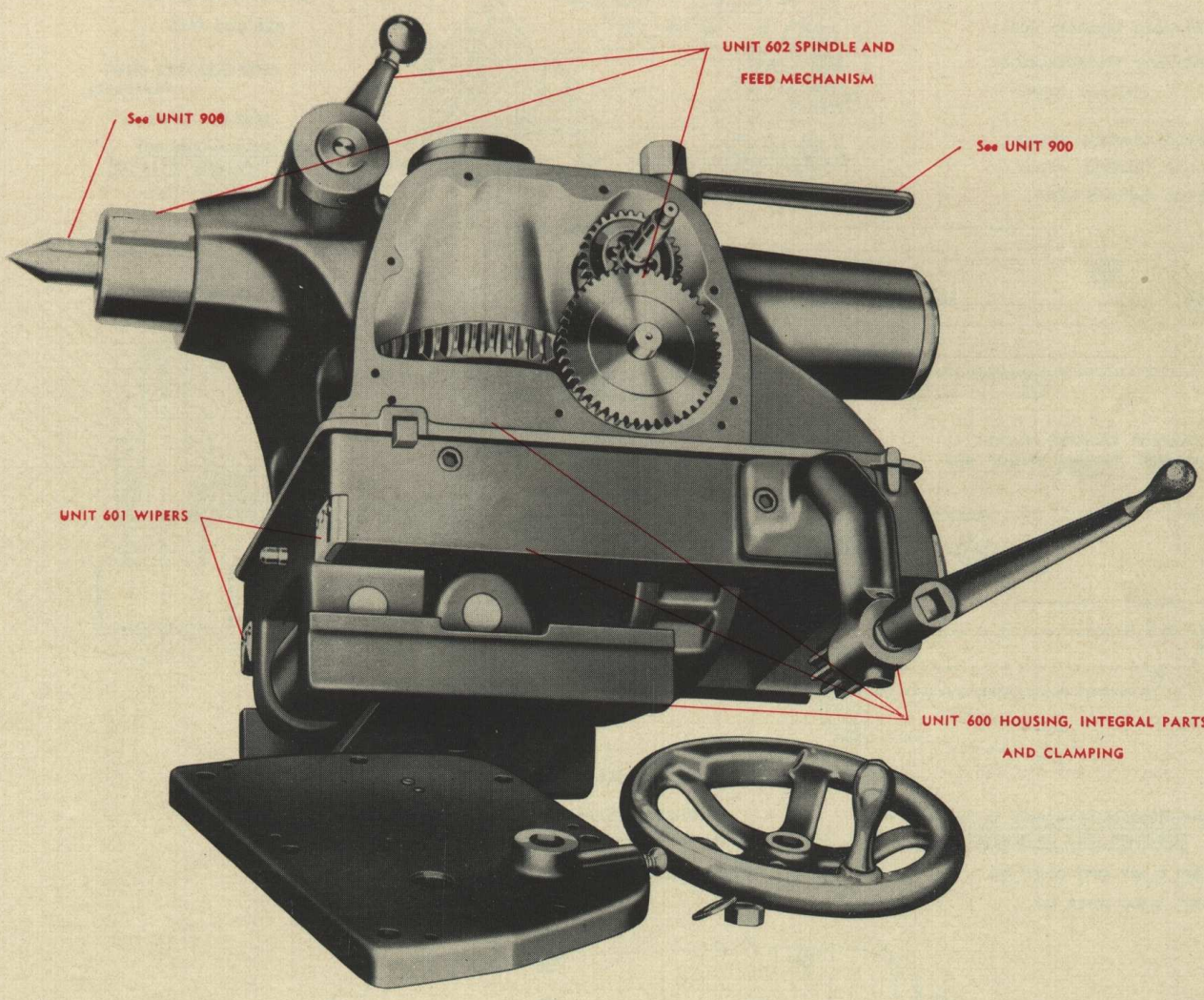




* ANGULAR COMPOUND CAN BE FURNISHED ON 32" LATHE AS EXTRA EQUIPMENT.

Axelson Lathes

TAILSTOCK



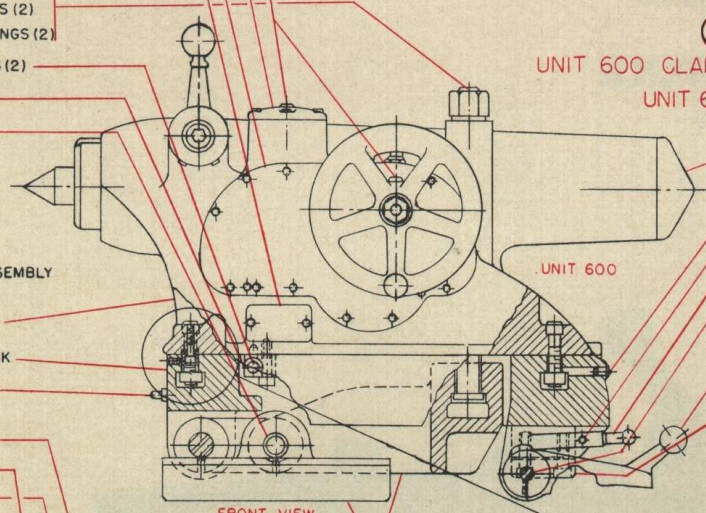
When ordering parts, please give the following information:

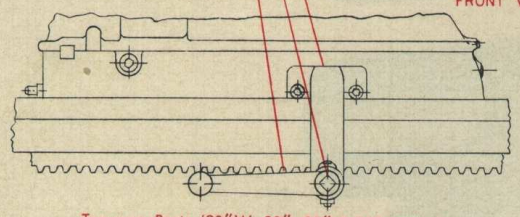
1. QUANTITY WANTED. 2. CATALOG NUMBER AND NAME. 3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

Axelson Lathes

TAILSTOCK

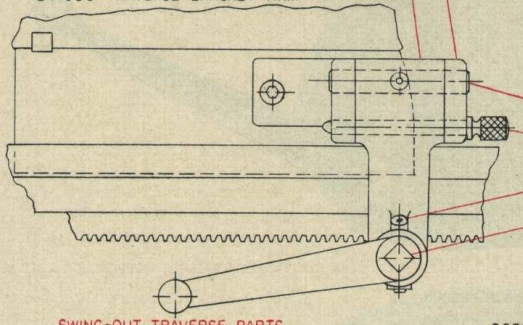
UNIT 600 CLAMPING & INTEGRAL PARTS
UNIT 601 WIPERS





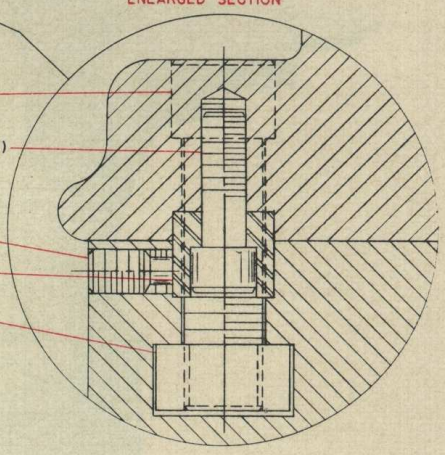
Traverse Parts (20"W, 20", 25" & 32" Lathes)

2865-600 TRAVERSE BRACKET
424-600 TRAVERSE BRACKET ARM



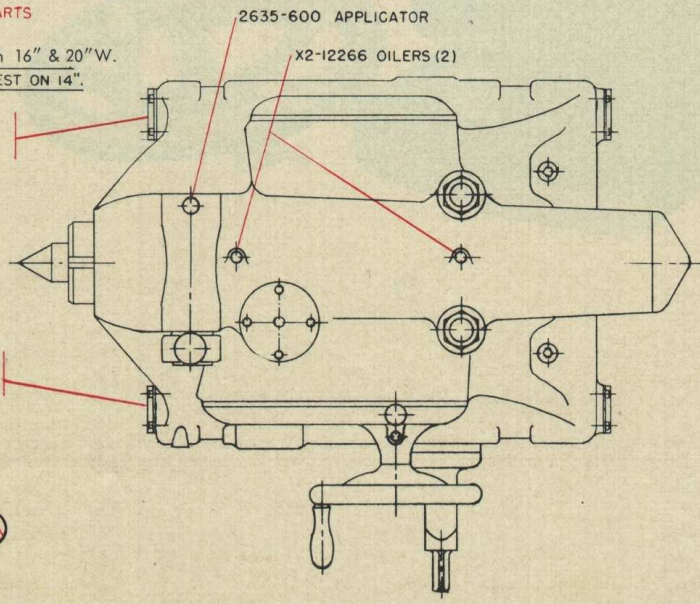
SWING-OUT TRAVERSE PARTS

ENLARGED SECTION



Note--Standard Equiupment on 16" & 20"W. FURNISHED ONLY ON REQUEST ON 14".

5385-601 V-WAY WIPER COVER (2).
5386-601 V-WAY WIPER (2)

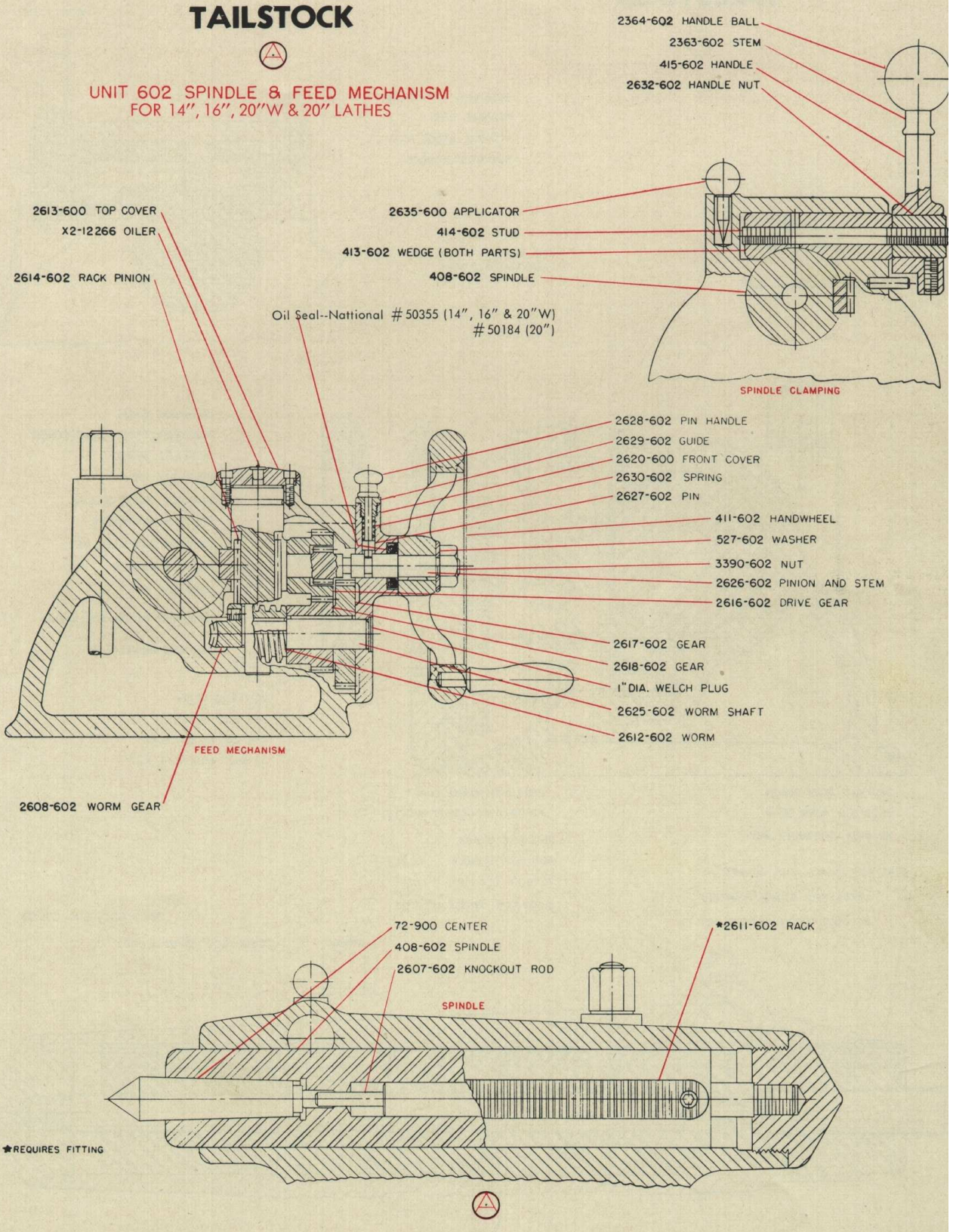


★ Requires fitting to another part.

Axelson Lathes

TAILSTOCK

UNIT 602 SPINDLE & FEED MECHANISM
FOR 14", 16", 20"W & 20" LATHES



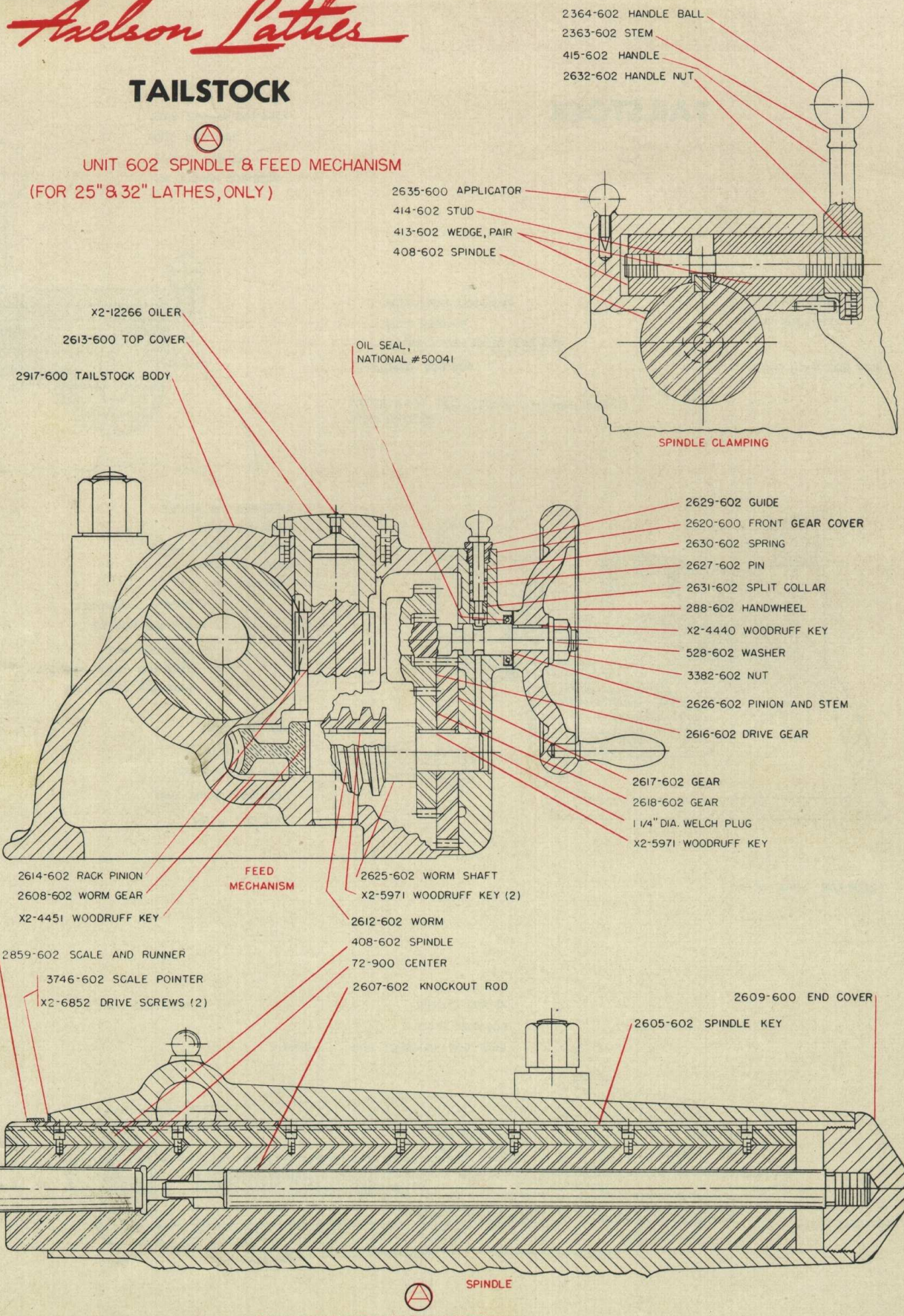
When ordering parts, please give the following information:

1. QUANTITY WANTED. 2. CATALOG NUMBER AND NAME. 3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

Axelson Lathes

TAILSTOCK

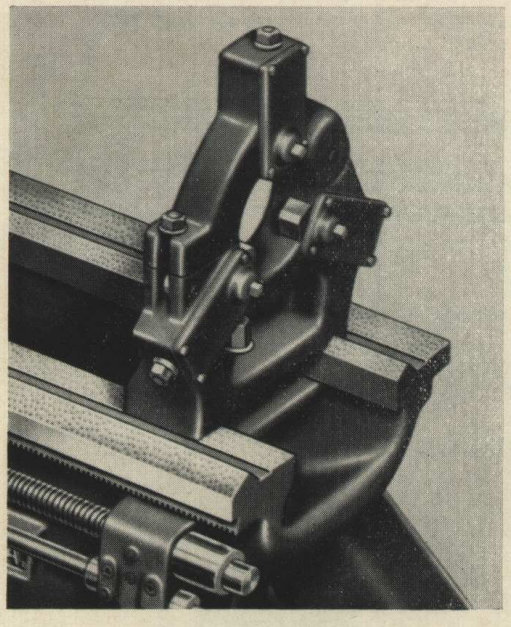
UNIT 602 SPINDLE & FEED MECHANISM
(FOR 25" & 32" LATHES, ONLY)



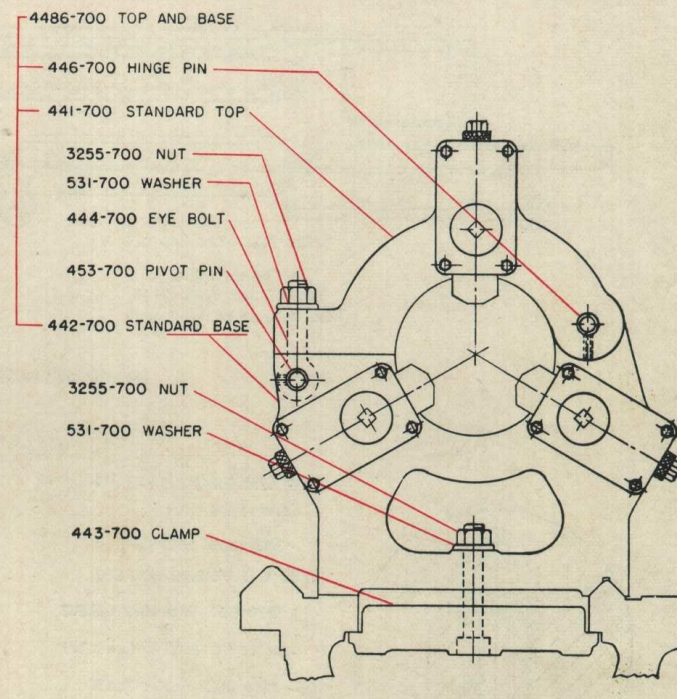
When ordering parts, please give the following information:

1. QUANTITY WANTED. 2. CATALOG NUMBER AND NAME. 3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

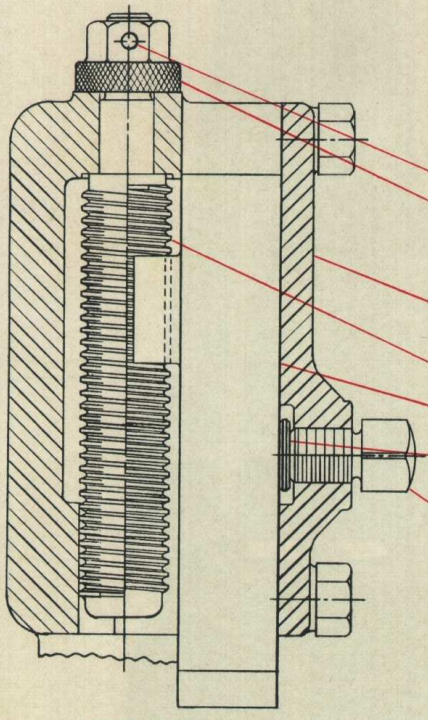
EXTRA EQUIPMENT — STEADY REST



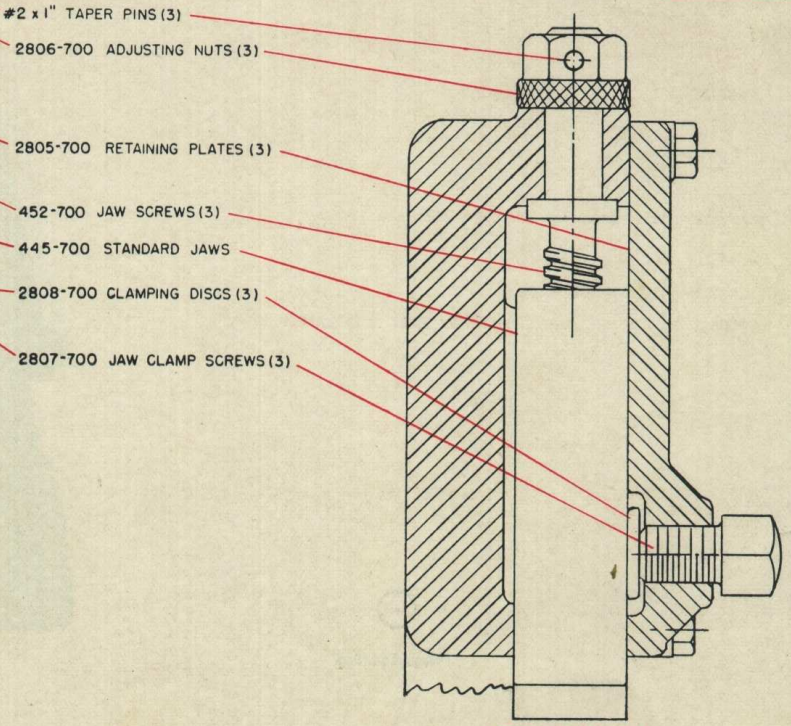
UNIT 700 STANDARD STRAIGHT JAW TYPE



See UNITS 1004 and 1005 for FOLLOW RESTS and SPECIAL STEADY RESTS



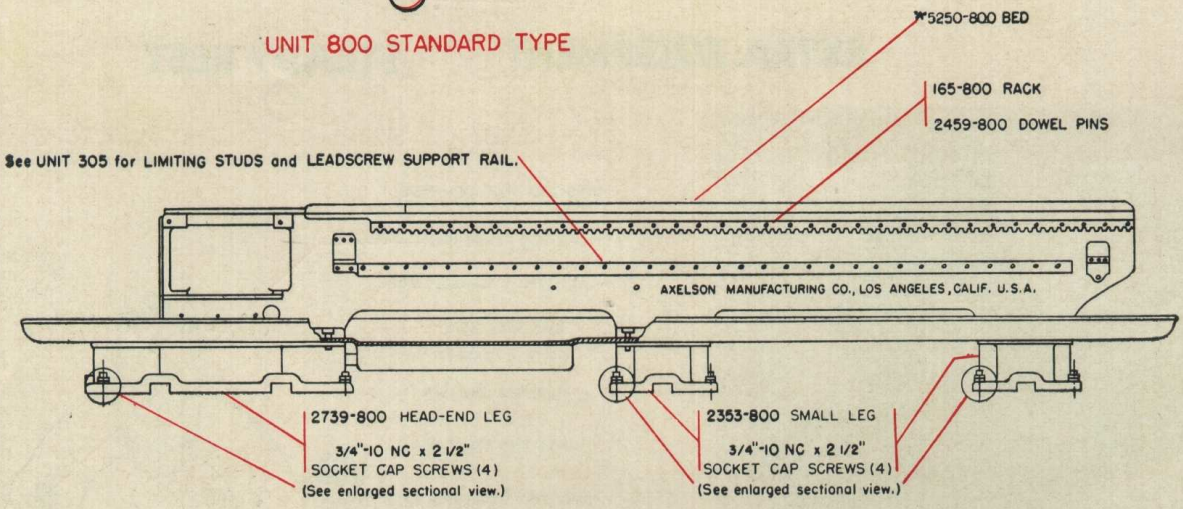
SECTION THRU JAW
(25" & 32" LATHES)



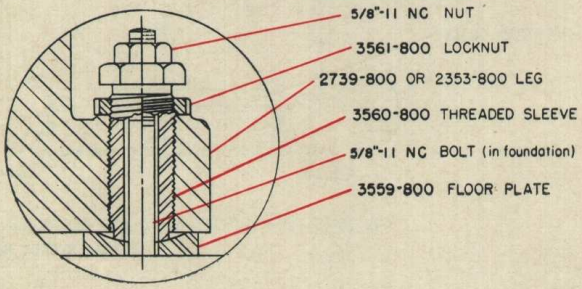
SECTION THRU JAW
(14", 16", 20"W & 20" Lathes)

BED

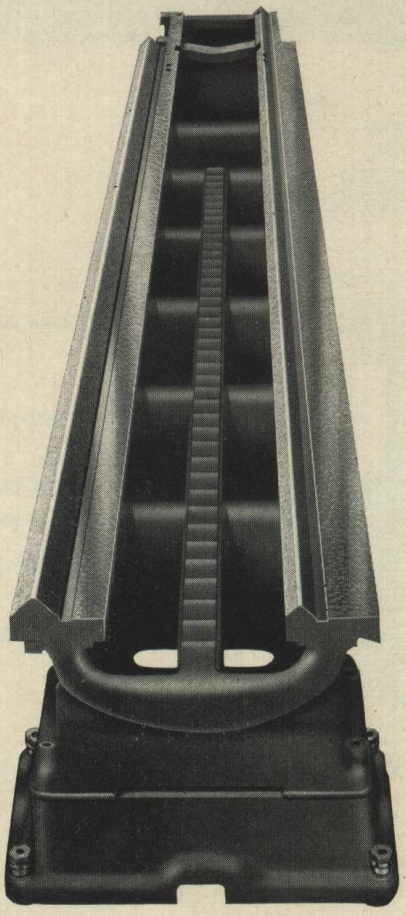
UNIT 800 STANDARD TYPE



See UNIT 1001 for COOLANT PAN and GASKETS.



ENLARGED VIEW OF LEVELING SCREW



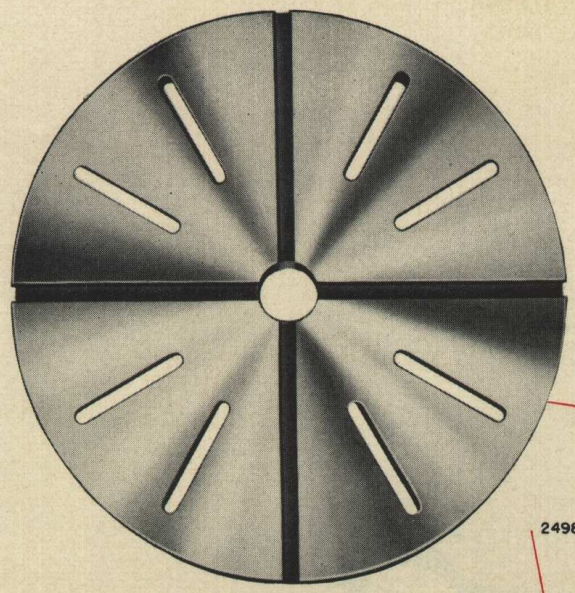
When ordering parts, please give the following information:

1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

*Requires fitting.

ACCESSORIES

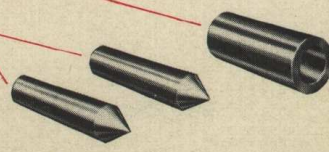
UNIT 900 STANDARD FURNISHED PARTS



FACE PLATE

41-900 SPINDLE SOCKET

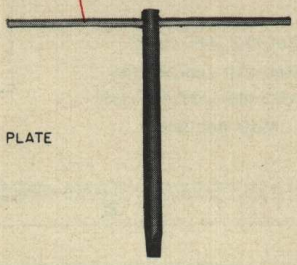
72-900 CENTERS (2)



259-900 POST

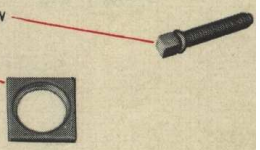
261-900 FIVE STEP RING

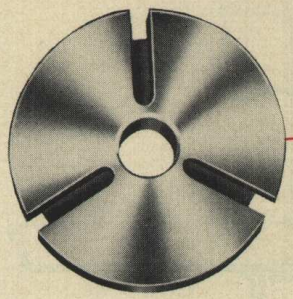
2498-900 CAM-LOCK WRENCH



262-900 SCREW

260-900 BLOCK

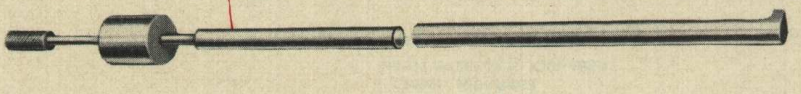




76-900 DRIVE PLATE

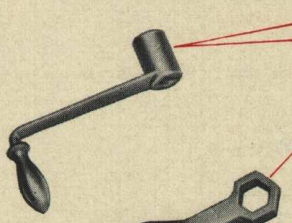
2858-900 TOOL SLIDE WRENCH

3747-900 SOCKET KNOCKOUT

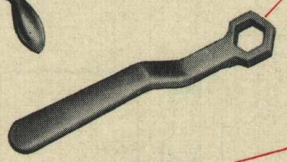


427-900 (25"-32")

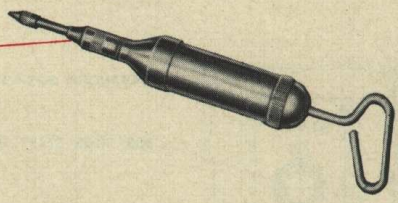
(14", 16", 20"W & 20") Tailstock Traverse Handle



421-900 TAILSTOCK WRENCH

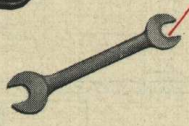


2499-900 OIL GUN



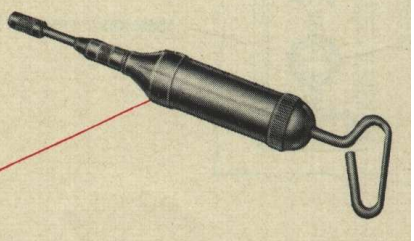
265-900 TOOL POST WRENCH

2960-900 CARRIAGE REAR GUIDE WRENCH



2990-900 CARRIAGE SLIDES LOCK WRENCH

2967-900 GREASE GUN

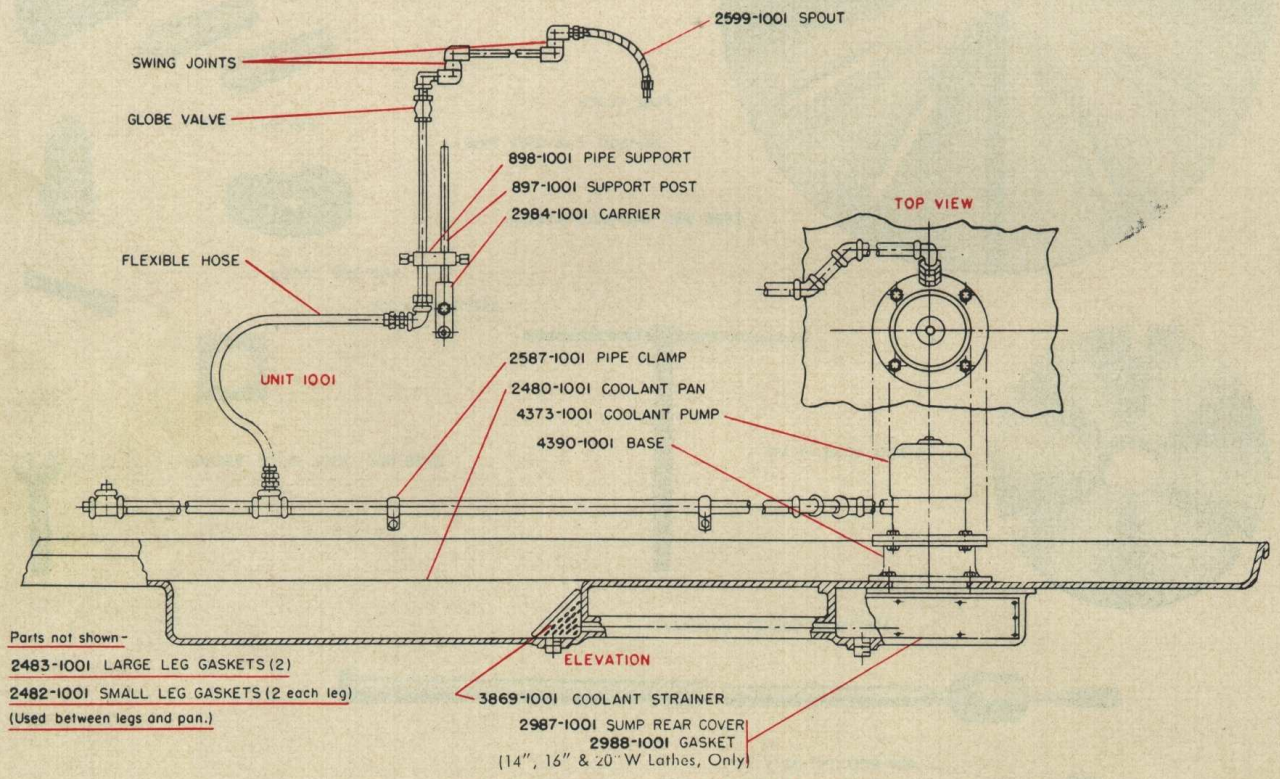


Axelson Lathes

EXTRA EQUIPMENT

UNIT 1001 COOLANT SYSTEM AND PAN

UNIT 1002 MOTOR, CONTROLS AND WIRING



Parts not shown-

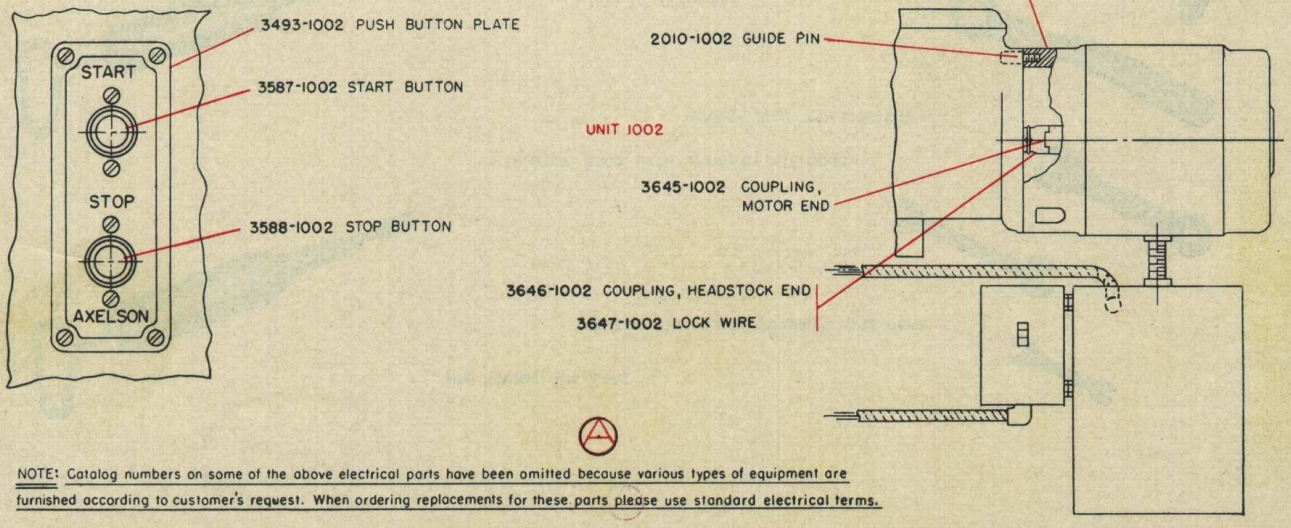
2483-1001 LARGE LEG GASKETS (2)

2482-1001 SMALL LEG GASKETS (2 each leg)

(Used between legs and pan.)

When ordering parts, please give the following information:

1. QUANTITY WANTED. 2. CATALOG NUMBER AND NAME. 3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.



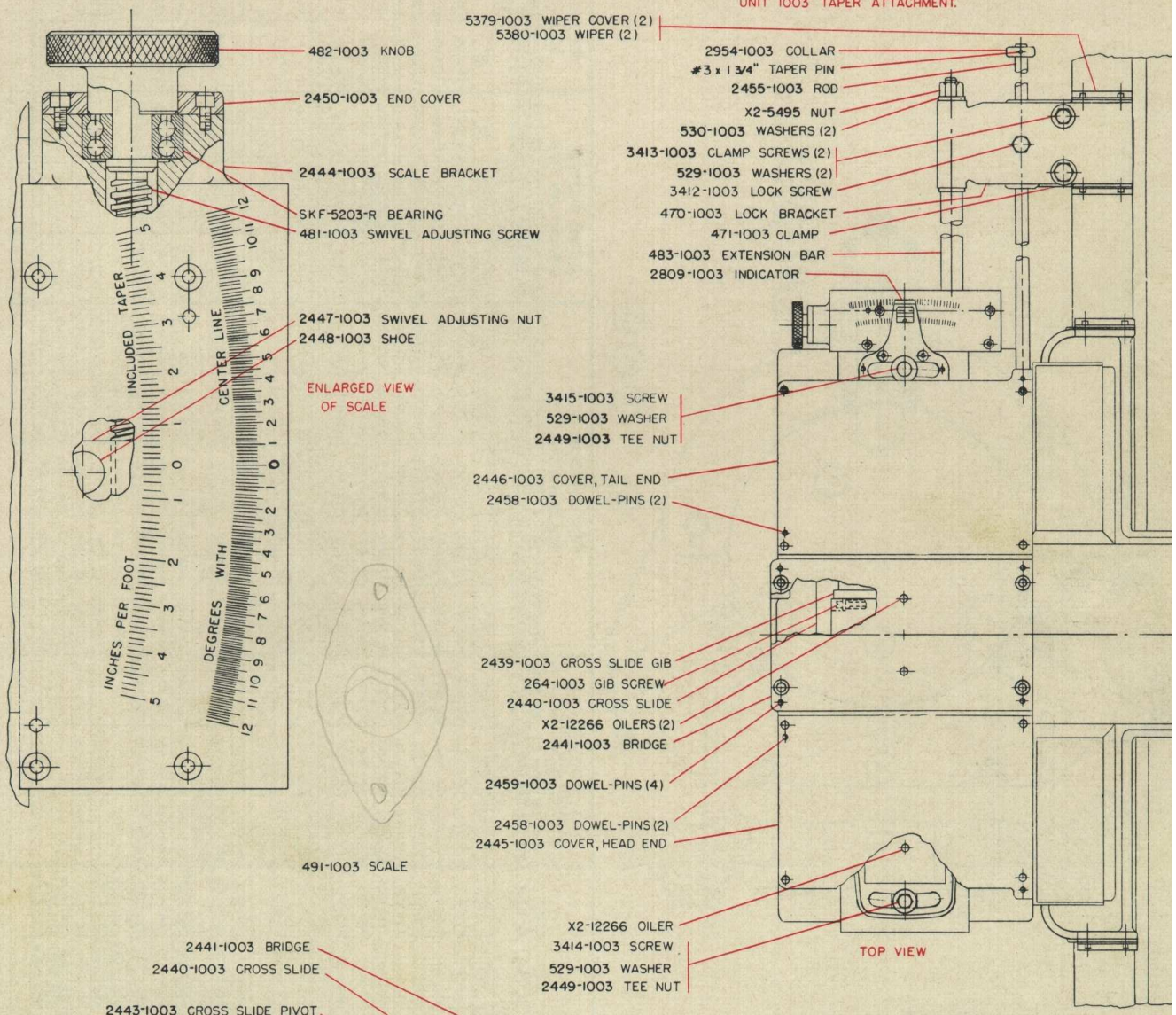
NOTE: Catalog numbers on some of the above electrical parts have been omitted because various types of equipment are furnished according to customer's request. When ordering replacements for these parts please use standard electrical terms.

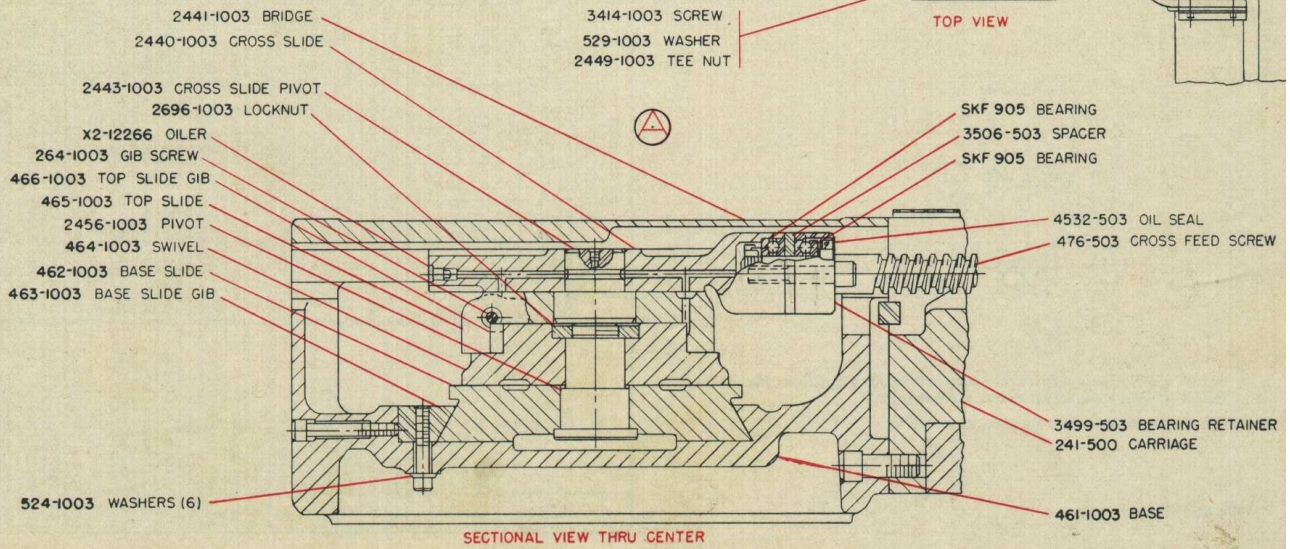
When ordering parts, please give the following information:

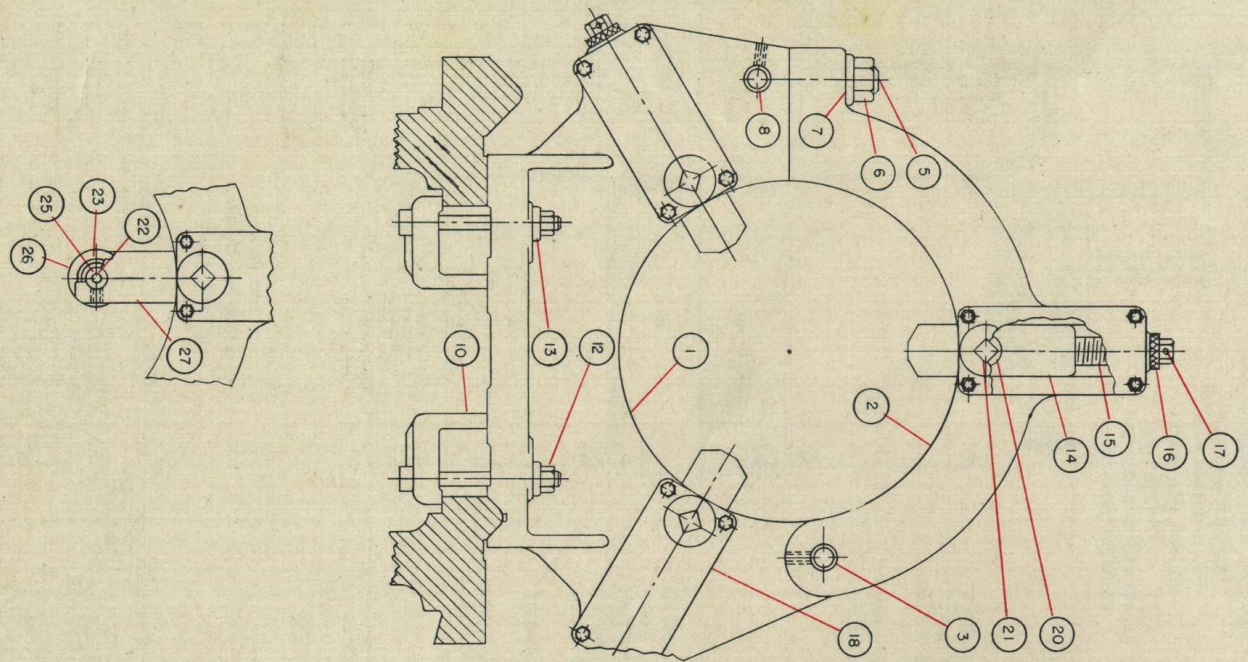
1. QUANTITY WANTED.
2. CATALOG NUMBER AND NAME.
3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

Adelson Lathes

EXTRA EQUIPMENT







REVISION (1)

* Denotes special 2" jaws, non-interchangeable with regular straight jaw. Requires special retaining plate, screws, rollers and bearings.

NOTE: For standard straight jaw type, see page 75.

ITEM	NAME OF PART	STANDARD ROLLER JAW TYPE					FIRST OVERSIZE STRAIGHT JAW TYPE			FIRST OVERSIZE ROLLER JAW TYPE					SECOND OVERSIZE STRAIGHT JAW TYPE			SECOND OVERSIZE ROLLER JAW TYPE		
		LATHE SIZE	14-16	20	25	32	LATHE SIZE	14-16 20W	20	25	32	LATHE SIZE	14-16	20	25	32	LATHE SIZE	16	20	25	32	LATHE SIZE	16	20	25	32
		JAW CAPAC.	0-5	0-6	0-7 3/4	0-8 3/4	JAW CAPAC.	4½-6¾	5½-10½	6-14¾	7¼-16	JAW CAPAC.	4 1/2-8 3/4	5 1/2-10 1/2	6-14 3/4	7 1/4-16	JAW CAPAC.	8-12	10¼-15	14-19¾	14¼-23	JAW CAPAC.	8-12	10¼-15	14-19¾	14¼-23
		LATHE SIZE					LATHE SIZE					LATHE SIZE					LATHE SIZE					LATHE SIZE				
		14"	16"	20"	25"	32"	14-16-20W-20	25"			32"	14"	16"	20"	25"	32"	16"	20"-25"			32"	16"	20"			25"-32"
1	BASE	442-1005	442-1005	442-1005	442-1005	801-1005	801-1005	801-1005			801-1005	801-1005	801-1005	801-1005	801-1005	801-1005	776-1005	776-1005			776-1005	776-1005	776-1005			776-1005
2	TOP	441-1005	441-1005	441-1005	441-1005	802-1005	802-1005	802-1005			802-1005	802-1005	802-1005	802-1005	802-1005	802-1005	777-1005	777-1005			777-1005	777-1005	777-1005			777-1005
3	HINGE PIN	446-1005	446-1005	446-1005	446-1005	446-1005	446-1005	446-1005			446-1005	446-1005	446-1005	446-1005	446-1005	446-1005	446-1005	446-1005			446-1005	446-1005	446-1005			446-1005
5	EYE BOLT	444-1005	444-1005	444-1005	444-1005	444-1005	444-1005	444-1005			444-1005	444-1005	444-1005	444-1005	444-1005	444-1005	444-1005	444-1005			444-1005	444-1005	444-1005			444-1005
6	NUT	X2-5492	X2-5492	420-1005	3255-1005	3255-1005	X2-5492 420-1005	3255-1005			3255-1005	X2-5492	X2-5492	420-1005	3255-1005	3255-1005	X2-5492	420-1005 3255-1005			3255-1005	X2-5492	420-1005			3255-1005
7	WASHER	528-1005	528-1005	2634-1005	531-1005	531-1005	528-1005 2634-1005	531-1005			531-1005	528-1005	528-1005	2634-1005	531-1005	531-1005	528-1005	2634-1005 531-1005			531-1005	528-1005	2634-1005			531-1005
8	EYE BOLT PIN	453-1005	453-1005	453-1005	453-1005	453-1005	453-1005	453-1005			453-1005	453-1005	453-1005	453-1005	453-1005	453-1005	453-1005	453-1005			453-1005	453-1005	453-1005			453-1005
10	BASE CLAMPS (2)	443-1005(1)	804-1005(1)	443-1005(1)	443-1005(1)	443-1005(1)	443-1005(1) 804-1005(2)	804-1005(2)			804-1005(2)	443-1005(1)	804-1005(1)	804-1005(2)	804-1005(2)	804-1005(2)	804-1005(1)	804-1005(2)			804-1005(2)	804-1005(1)	804-1005(2)			804-1005(2)
12	NUTS (4)	420-1005(1)	420-1005(1)	420-1005(1)	3255-1005(1)	3255-1005(1)	420-1005(1) 2806-1005(4)	2806-1005(4)			2806-1005(4)	420-1005(1)	420-1005(1)	2806-1005(4)	2806-1005(4)	2806-1005(4)	420-1005(1)	2806-1005(4)			2806-1005(4)	420-1005(1)	2806-1005(4)			2806-1005(4)
13	WASHERS (4)	529-1005(1)	529-1005(1)	2634-1005(1)	531-1005(1)	531-1005(1)	529-1005(1)	———			———	529-1005(1)	529-1005(1)	———	———	———	529-1005(1)	———			———	529-1005(1)	———			———
14	JAWS (3)	———	SEE LINE 27				445-1005	445-1005			445-1005	———	———	SEE LINE 27		———	445-1005	778-1005			445-1005	———	SEE LINE 27			———
15	JAW SCREWS (3)	452-1005	452-1005	452-1005	452-1005	452-1005	452-1005	4842-1005			452-1005	452-1005	452-1005	452-1005	452-1005	452-1005	452-1005	3394-1005			452-1005	452-1005	3394-1005			3394-1005(2*) 452-1005(3*)
16	ADJUSTING NUTS (3)	2806-1005	2806-1005	2806-1005	2806-1005	2806-1005	2806-1005	2806-1005			2806-1005	2806-1005	2806-1005	2806-1005	2806-1005	2806-1005	2806-1005	2806-1005			2806-1005	2806-1005	2806-1005			2806-1005
17	TAPER PINS (3)	#1x1"	#2x1"	#2x1"	#2x1"	#2x1"	#1x1"(14"-16") #2x1"(20W-20)	#2x1"			#2x1"	#1x1"	#1x1"	#2x1"	#2x1"	#2x1"	#1x1"	#2x1"			#2x1"	#1x1"	#2x1"			#2x1"
18	RETAINING PLATES (3)	4398-1005	4398-1005	4398-1005	4398-1005* 2805-1005	4398-1005* 2805-1005	2805-1005	2805-1005			2805-1005	4398-1005	4398-1005	4398-1005	4398-1005* 2805-1005	4398-1005	2805-1005	3393-1005			3393-1005	4398-1005	3393-1005			4517-1005
20	CLAMPING DISCS (3)	2808-1005	2808-1005	2808-1005	2808-1005	2808-1005	2808-1005	2808-1005			2808-1005	2808-1005	2808-1005	2808-1005	2808-1005	2808-1005	2808-1005	2808-1005			2808-1005	2808-1005	2808-1005			2808-1005
21	CLAMPING SCREWS (3)	2807-1005	2807-1005	2807-1005	2807-1005	2807-1005	2807-1005	2807-1005			2807-1005	2807-1005	2807-1005	2807-1005	2807-1005	2807-1005	2807-1005	2807-1005			2807-1005	2807-1005	2807-1005			2807-1005
22	ROLLER PINS (3)	3899-1005	3899-1005	3899-1005	3564-1005 4520-1005*	3564-1005 4520-1005*	———	———			———	3899-1005	3899-1005	3899-1005	3564-1005 4520-1005*	4520-1005	———	———			———	3899-1005	L-33-96			4520-1005
23	ROLLER BEARINGS (3)	TORR.B-57-X	RBC 7153	RBC 7194	RBC EJ-7234 RBC EJ-7235*	RBC EJ-7234 RBC EJ-7235*	———	———			———	TORR.B-57-X	RBC-7153	RBC-7194	RBC EJ7234 RBC EJ7235*	RBC EJ7235	———	———			———	RBC 7153	BANTAM G-322-Q (10)			RBC EJ-7235
25	OILERS (3)	X2-12266	X2-12266	X2-12266	X2-12266	X2-12266	———	———			———	X2-12266	X2-12266	X2-12266	X2-12266	X2-12266	———	———			———	X2-12266	X2-12266			X2-12266
26	ROLLERS (3)	3794-1005	3900-1005	3900-1005	3565-1005 4519-1005*	3565-1005 4519-1005*	———	———			———	3794-1005	3900-1005	3900-1005	3565-1005 4519-1005*	4519-1005	———	———			———	3900-1005	L-33-95			4519-1005
27	ROLLER JAWS (3)	3897-1005	3897-1005	3897-1005	3563-1005 4521-1005*	3563-1005 4521-1005*	———	———			———	3897-1005	3897-1005	3897-1005	3563-1005 4521-1005*	4521-1005	———	———			———	3897-1005	L-33-97			4521-1005

EXTRA EQUIPMENT

UNIT 1004 FOLLOW RESTS

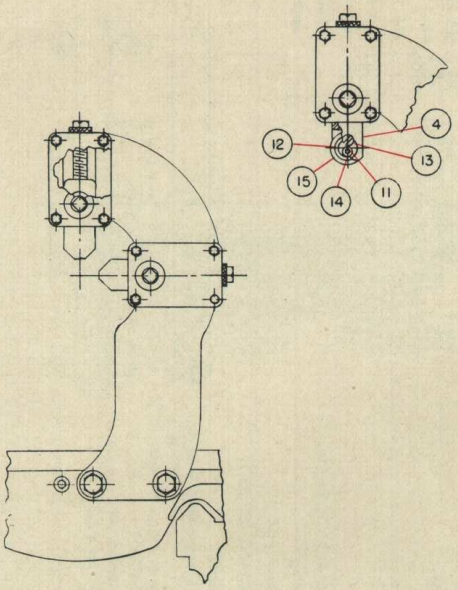


FIG. 1.

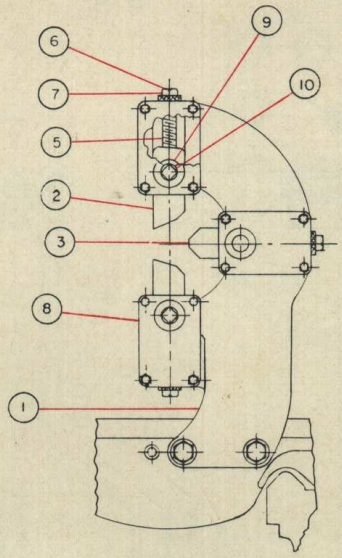


FIG. 2.

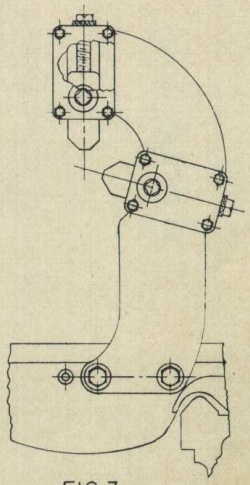


FIG. 3.

NOTES:

Fig. 1, 2 jaws at 90°, is type furnished as standard for 14" & 16" lathes. (Typical body number is 501-1004)

Fig. 2, 3 jaws at 90°, is type furnished as standard for 20"W, 20" & 25" lathes. (Typical body number is 501-1004)

Fig. 3, 2 jaws at 105°, is typical of 16" lathe roller jaw job, (body number 4324-1004) and also special follow rests as follows:

* 20" lathe, special 3 1/4" – 6" capacity, 2" jaw. (Body # L-31-4)

* 25" lathe, special 4 1/4" – 8" capacity, 2" jaw. (Body # L-31-6)

When ordering parts, please give the following information:

1. QUANTITY WANTED. 2. CATALOG NUMBER AND NAME. 3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

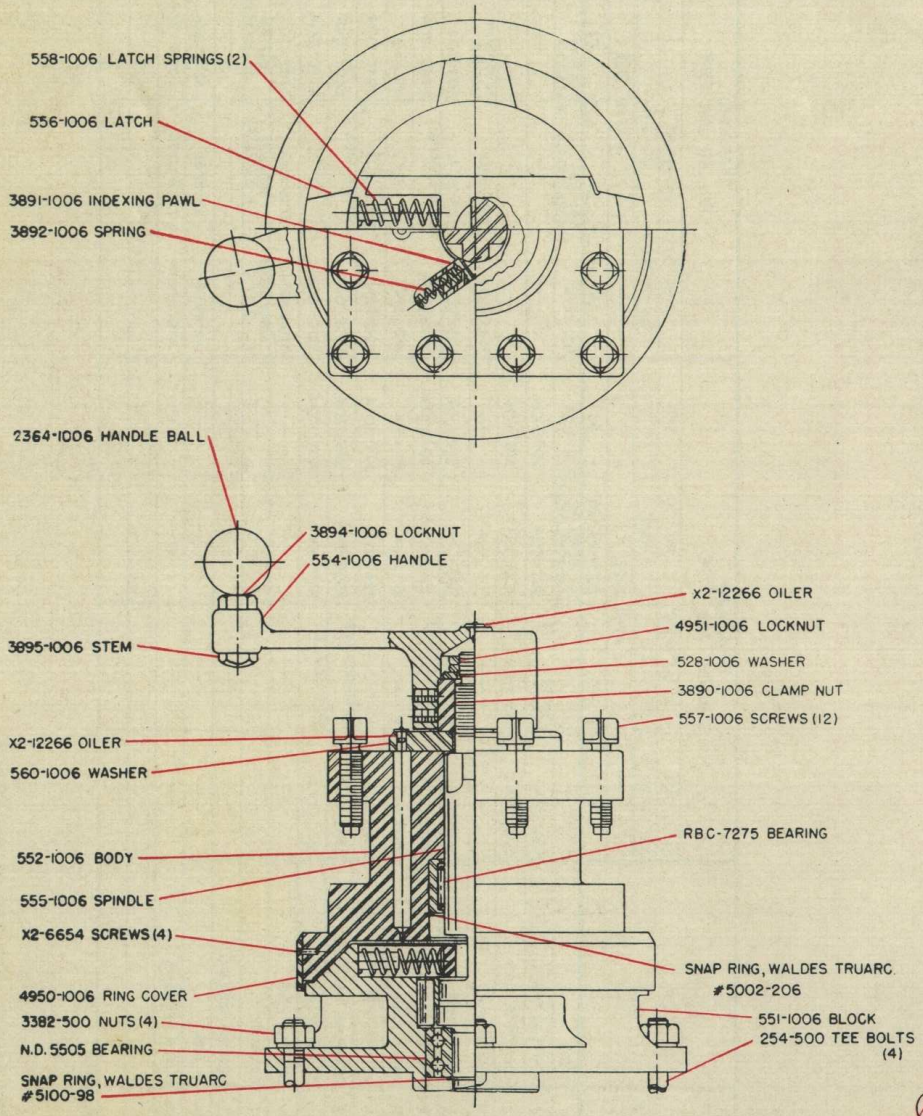
ITEM	NAME OF PART	STANDARD STRAIGHT JAW TYPE				STANDARD ROLLER JAW TYPE			
		LATHE SIZE	14"-16"-20"W-20"	25"	32"	LATHE SIZE	14"-16"-20"	25"	
		JAW CAPACITY	0"–3 1/4"	0"–5 3/8"	0"–6"	JAW CAPACITY	0"–3 1/4"	0"–5 3/8"	
		LATHE SIZE				LATHE SIZE			
		14"	16"	20"W-20"-25"	32"	14"	16"	20"	25"
1	BODY	501-1004	501-1004	501-1004 * L-31-4(20) L-31-6(25)	501-1004	501-1004	501-1004 4324-1004(16")*	501-1004 L-31-4 *	501-1004 L-31-6 *
2	VERTICAL JAW	502-1004	502-1004 505-1004(18")	505-1004	505-1004	—	—	—	—
3	HORIZONTAL JAW	502-1004	502-1004	502-1004	502-1004	—	—	—	—
4	ROLLER JAW	—	—	—	—	3793-1004	3793-1004	3793-1004 L-31-5 *	3793-1004 L-31-7 *
5	JAW SCREWS	503-1004	503-1004	503-1004	503-1004	503-1004	503-1004	503-1004	503-1004
6	ADJUSTING NUTS	3502-1004	3502-1004(16") 2948-1004	2948-1004	2948-1004	3502-1004	3502-1004(16")	2948-1004	2948-1004
7	TAPER PINS	#0 x 3/4"	#1 x 3/4"	#1 x 3/4"	#1 x 3/4"	#0 x 3/4"	#1 x 3/4"	#1 x 3/4"	#1 x 3/4"
8	RETAINING PLATES	2947-1004	2947-1004	2947-1004	2947-1004	2947-1004	2947-1004 4325-1004 *	2947-1004	2947-1004
9	CLAMPING DISCS	3509-1004	3509-1004(16")	2808-1004	2808-1004	3509-1004	3509-1004(16")	2808-1004	2808-1004
10	CLAMPING SCREWS	3510-1004	3510-1004(16")	2770-1004	2770-1004	3510-1004	3510-1004(16")	2770-1004	2770-1004
11	BEARING PINS	—	—	—	—	3795-1004	3795-1004	3795-1004	3795-1004
12	BEARINGS	—	—	—	—	TORRINGTON B-57-X	BANTAM H-22-Q(34)	BANTAM H-22-Q(34)	BANTAM H-22-Q(59)
13	LOCKING SCREWS	—	—	—	—	—	—	—	3796-1004
14	OILERS	—	—	—	—	X2-12266	X2-12266	X2-12266	X2-12266
15	OUTER ROLLERS	—	—	—	—	3794-1004	3794-1004	3794-1004	3794-1004

REVISION(1)

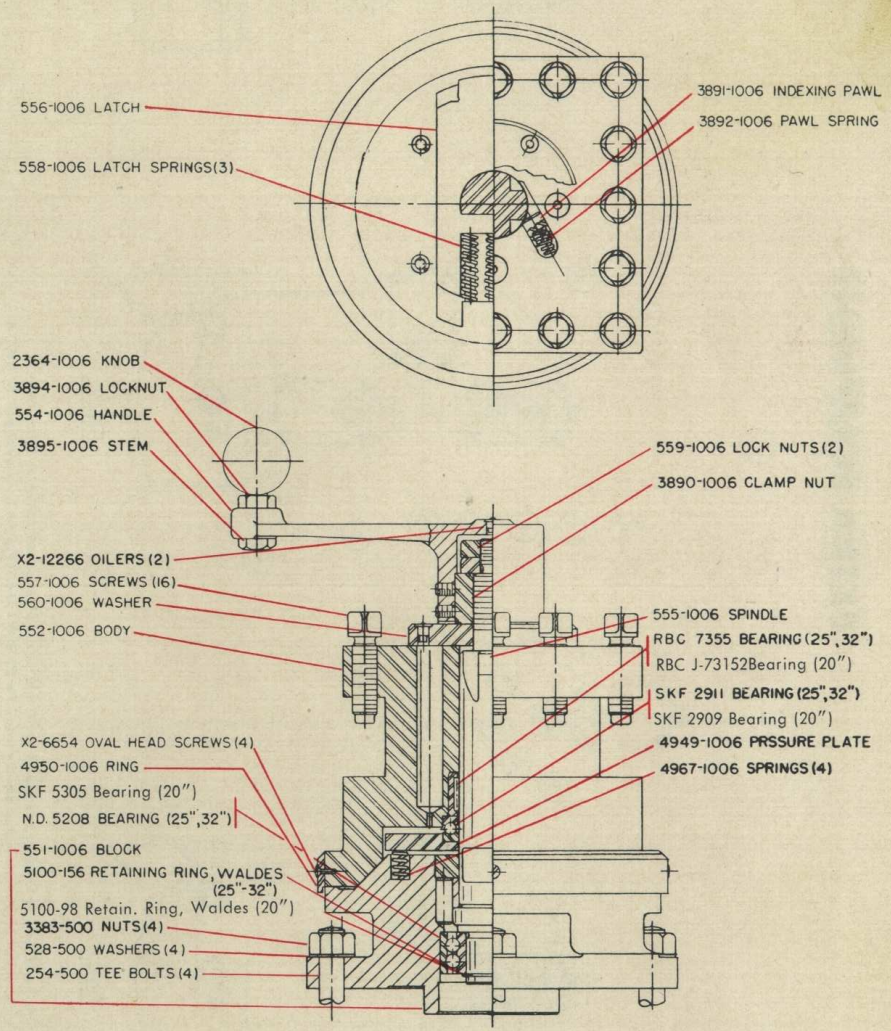
EXTRA EQUIPMENT

UNIT 1006 FOUR WAY TOOL POST

14", 16" & 20"W LATHES



20",25"&32" LATHES

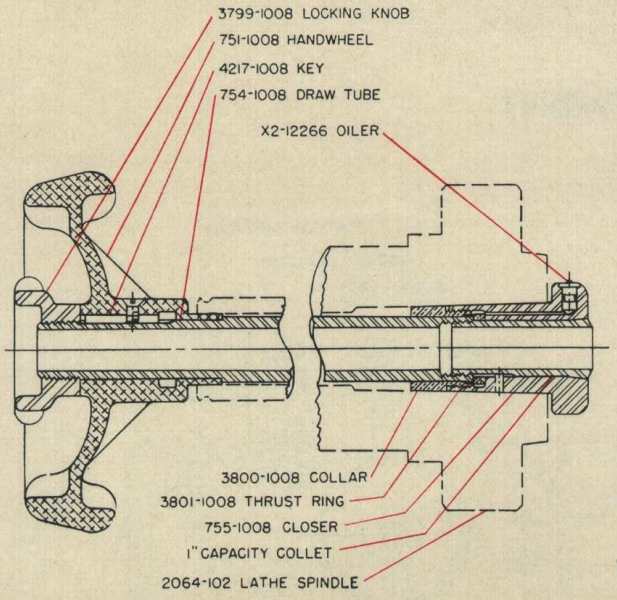


EXTRA EQUIPMENT

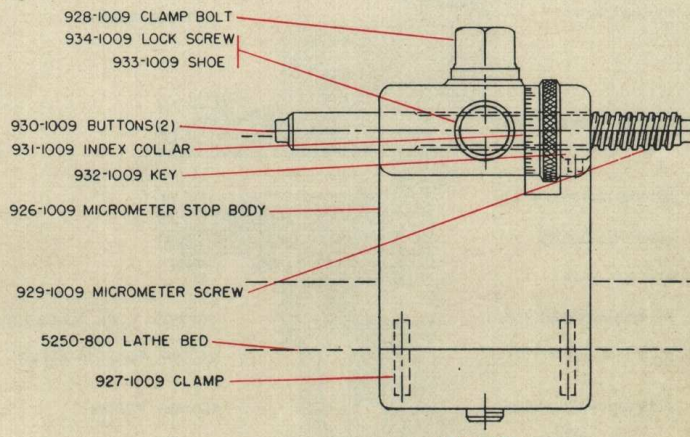
UNIT 1008 COLLET DRAW-IN ATTACHMENT

UNIT 1009 MICROMETER CARRIAGE STOP

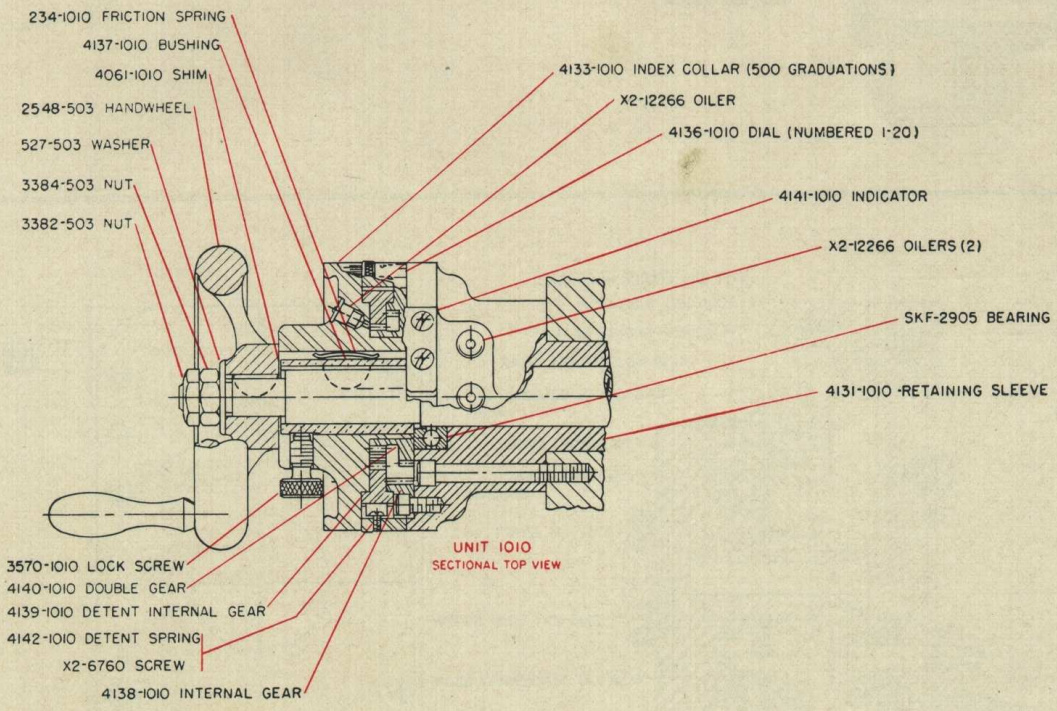
UNIT 1010 CROSS FEED DIRECT READING DIAL



UNIT 1008
SECTION THRU CENTER



UNIT 1009
FRONT VIEW



UNIT 1010
SECTIONAL TOP VIEW

4150-1010 DIRECT READING
CROSS FEED DIAL, COMPLETE

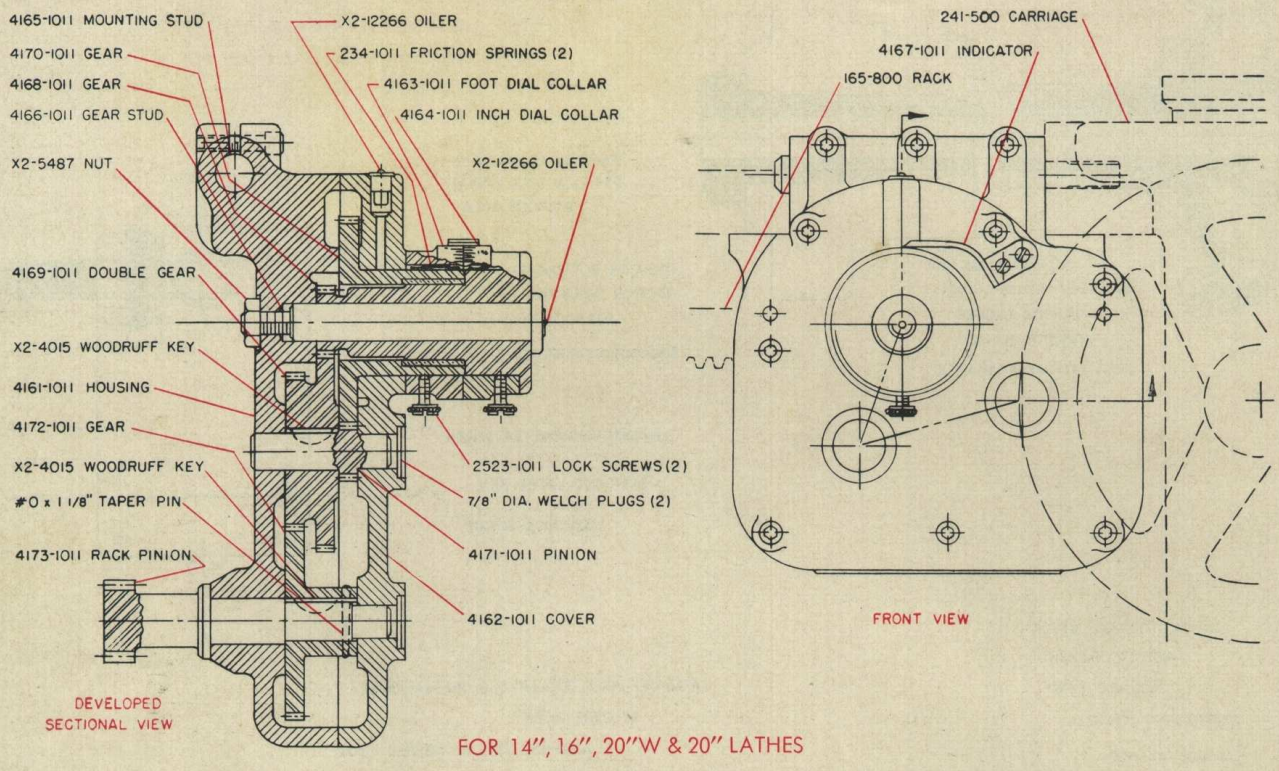
When ordering parts, please give the following information:

1. QUANTITY WANTED. 2. CATALOG NUMBER AND NAME. 3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

Axelson Lathes

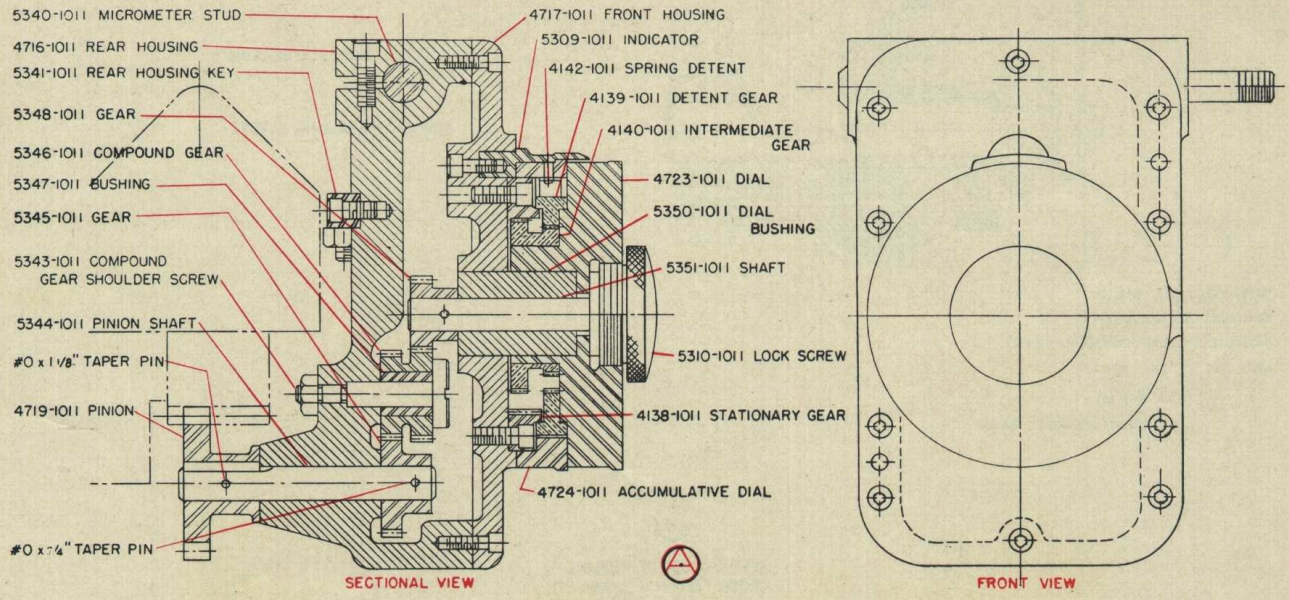
EXTRA EQUIPMENT

UNIT 1011 TRAVERSE DIRECT READING DIAL



FOR 14", 16", 20"W & 20" LATHES

FOR 25"&32" LATHES



When ordering parts, please give the following information:

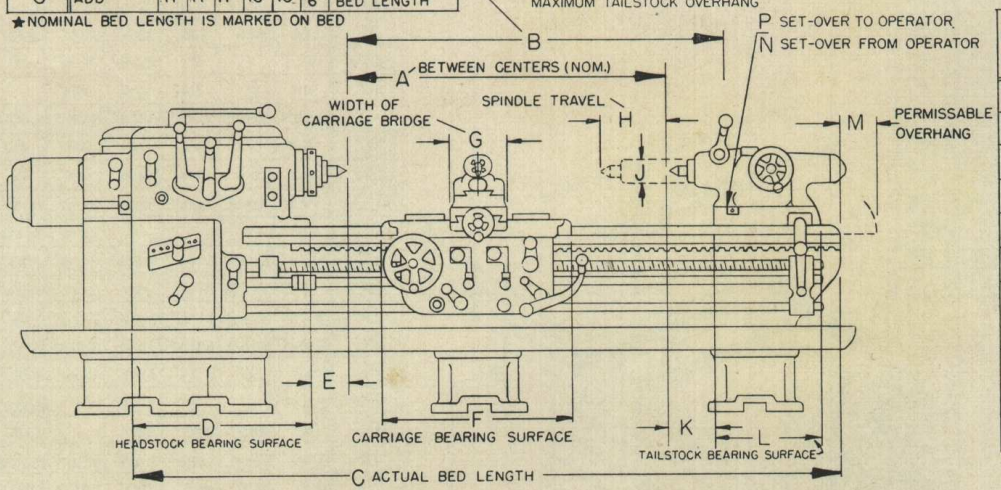
1. QUANTITY WANTED. 2. CATALOG NUMBER & NAME. 3. SERIAL NUMBER OF LATHE FOR WHICH PART IS REQUIRED.

DIMENSIONAL DATA

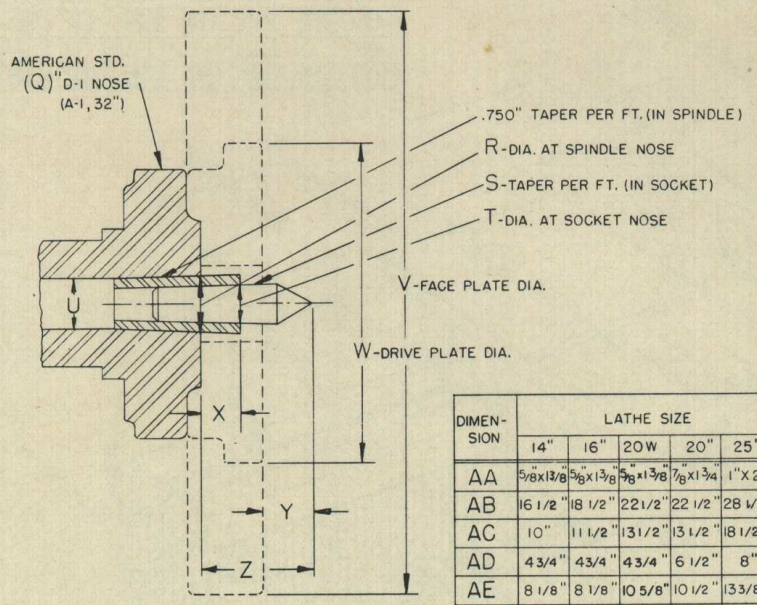
CAPACITY CHART

DIMEN-SION	RULE							
	LATHE SIZE→	14"	16"	20W	20"	25"	32"	
A	SUBTRACT	3'-7"	3'-7"	3'-7"	4'-0"	6'-0"	6'-0"	FROM ★ NOMINAL BED LENGTH
B	ADD	4"	4"	4"	7"	7 1/2"	10"	TO DIMENSION "A"
C	ADD	11"	11"	11"	16"	10"	1'-6"	TO ★ NOMINAL BED LENGTH

★NOMINAL BED LENGTH IS MARKED ON BED

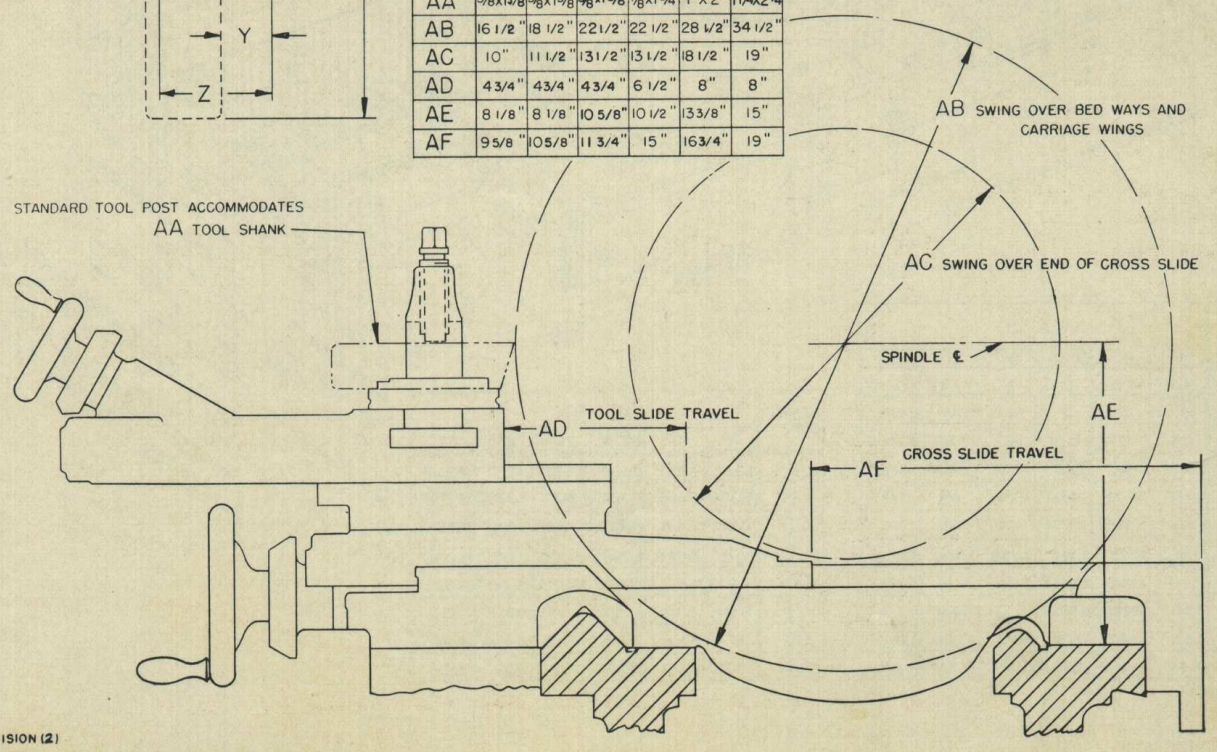


DIMEN-SION	LATHE SIZE					
	14"	16"	20W	20"	25"	32
D	29 3/4"	29 3/4"	29 3/4"	31 5/8"	40"	42
E	5 1/8"	5 1/8"	5 1/8"	5 5/8"	8 1/8"	7
F	25 7/8"	26 3/4"	26 3/4"	32"	38"	44
G	8 1/8"	8 7/8"	8 7/8"	10 1/8"	11 1/8"	14 7
H	9"	9"	9"	12 1/4"	16 3/4"	21
J	2 7/8"	2 7/8"	2 7/8"	4 1/4"	4 1/2"	5 1
K	5 3/4"	5 3/4"	5 3/4"	9"	9 1/2"	9 1
L	12 3/8"	12 3/8"	12 3/8"	17 3/4"	21 3/4"	2
M	4"	4"	4"	7"	7 1/2"	1
N	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	2
P	1"	1"	1"	1 1/8"	1 1/2"	2



DIMEN-SION	LATHE SIZE					
	14"	16"	20W	20"	25"	32"
Q	6"	6"	6"	8"	11"	11"
R	1.999"	1.999"	1.999"	2.500"	2.656"	3.501"
S	.6233"	.6233"	.6233"	.6315"	.6315"	.6256"
T	1.235"	1.235"	1.235"	1.754"	1.753"	2.4647"
U	1 9/16"	1 9/16"	1 9/16"	2 3/16"	2 5/16"	2 5/16"
V	16"	18"	18"	22"	27 1/2"	32 1/4"
W	8 1/2"	8 1/2"	8 1/2"	12 1/2"	12 1/2"	12 1/2"
X	1/4"	1/4"	1/4"	9/16"	1 11/16"	1/2"
Y	1 1/2"	1 1/2"	1 1/2"	2 1/4"	23/16"	2 5/16"
Z	2 3/4"	2 3/4"	2 3/4"	3 3/4"	4 7/8"	4 15/16"

DIMEN-SION	LATHE SIZE					
	14"	16"	20W	20"	25"	32"
AA	5/8"x13/8"	5/8"x13/8"	5/8"x13/8"	7/8"x13/4"	1"X2"	1 1/4"X2 1/4"
AB	16 1/2"	18 1/2"	22 1/2"	22 1/2"	28 1/2"	34 1/2"
AC	10"	11 1/2"	13 1/2"	13 1/2"	18 1/2"	19"
AD	4 3/4"	4 3/4"	4 3/4"	6 1/2"	8"	8"
AE	8 1/8"	8 1/8"	10 5/8"	10 1/2"	13 3/8"	15"
AF	9 5/8"	10 5/8"	11 3/4"	15"	16 3/4"	19"

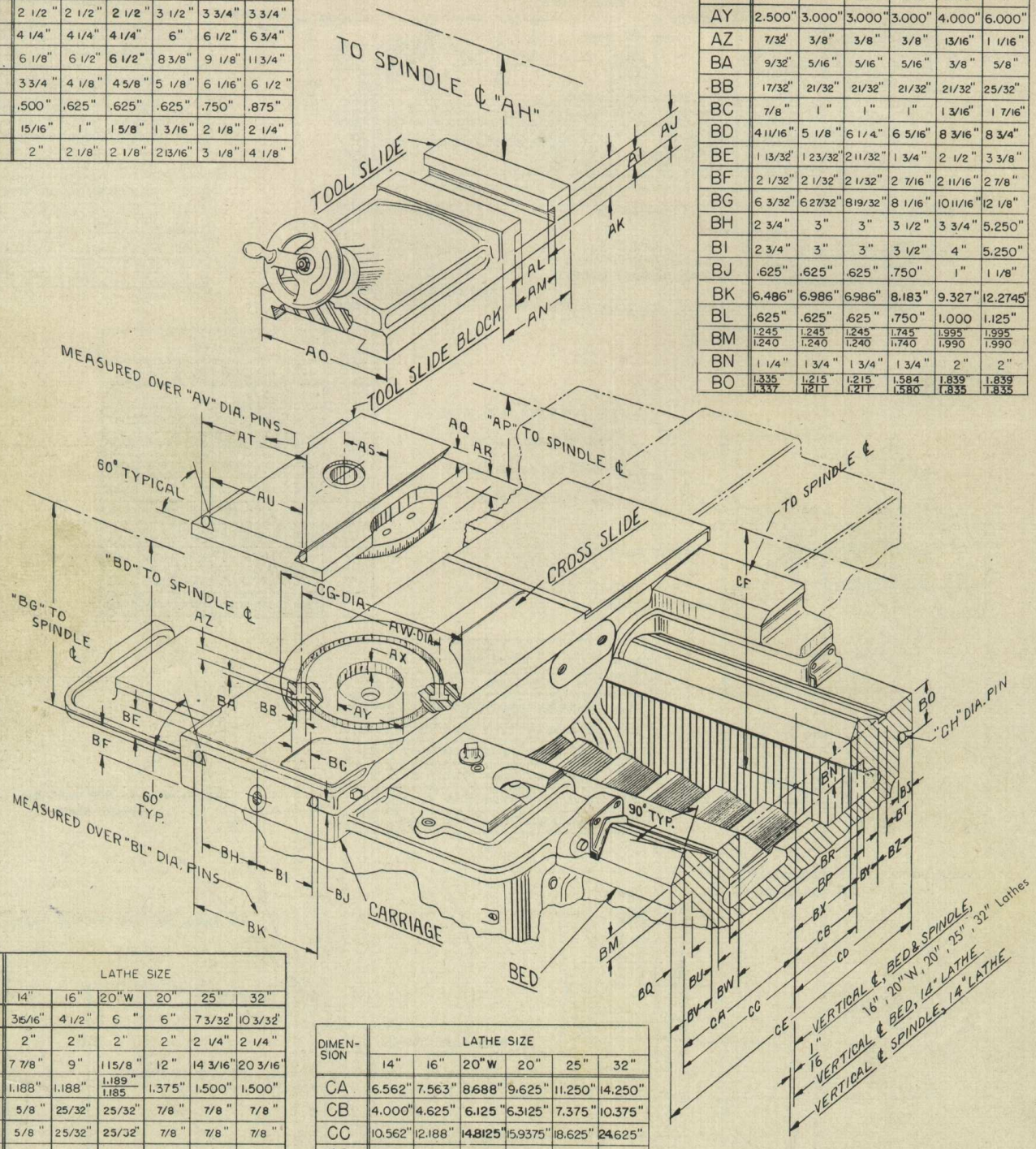


DIMENSIONAL DATA

DOVETAILS, V-WAYS AND T-SLOTS

DIMEN-SION	LATHE SIZE					
	14"	16"	20"W	20"	25"	32"
AH	2 3/32"	2 1/8"	2 1/8"	2 5/8"	2 7/8"	2 7/8"
AI	7/16"	9/16"	9/16"	3/4"	13/16"	13/16"
AJ	15/16"	1 1/16"	1 1/16"	1 1/2"	1 11/16"	1 11/16"
AK	1 21/32"	2"	2 1/2"	2 1/2"	3 3/16"	3 5/8"
AL	1 3/4"	1 3/4"	1 3/4"	2 1/8"	2 1/2"	2 1/2"
AM	2 1/2"	2 1/2"	2 1/2"	3 1/2"	3 3/4"	3 3/4"
AN	4 1/4"	4 1/4"	4 1/4"	6"	6 1/2"	6 3/4"
AO	6 1/8"	6 1/2"	6 1/2"	8 3/8"	9 1/8"	11 3/4"
AP	3 3/4"	4 1/8"	4 5/8"	5 1/8"	6 1/16"	6 1/2"
AQ	.500"	.625"	.625"	.625"	.750"	.875"
AR	15/16"	1"	1 5/8"	1 3/16"	2 1/8"	2 1/4"
AS	2"	2 1/8"	2 1/8"	2 13/16"	3 1/8"	4 1/8"

DIMEN-SION	LATHE SIZE					
	14"	16"	20"W	20"	25"	32"
AT	4.788	5.236	5.236	6.612	7.434	9.630
AU	4	4 1/4"	4 1/4"	5 5/8"	6 1/4"	8 1/4"
AV	.500"	.625"	.625"	.625"	.750"	.875"
AW	6 1/2"	7"	7"	8 1/8"	9 1/8"	12"
AX	9/16"	3/4"	3/4"	11/16"	13/16"	1"
AY	2.500"	3.000"	3.000"	3.000"	4.000"	6.000"
AZ	7/32"	3/8"	3/8"	3/8"	13/16"	1 1/16"
BA	9/32"	5/16"	5/16"	5/16"	3/8"	5/8"
BB	17/32"	21/32"	21/32"	21/32"	21/32"	25/32"
BC	7/8"	1"	1"	1"	1 3/16"	1 7/16"
BD	4 11/16"	5 1/8"	6 1/4"	6 5/16"	8 3/16"	8 3/4"
BE	1 13/32"	1 23/32"	2 11/32"	1 3/4"	2 1/2"	3 3/8"
BF	2 1/32"	2 1/32"	2 1/32"	2 7/16"	2 11/16"	2 7/8"
BG	6 3/32"	6 27/32"	8 19/32"	8 1/16"	10 11/16"	12 1/8"
BH	2 3/4"	3"	3"	3 1/2"	3 3/4"	5.250"
BI	2 3/4"	3"	3"	3 1/2"	4"	5.250"
BJ	.625"	.625"	.625"	.750"	1"	1 1/8"
BK	6.486"	6.986"	6.986"	8.183"	9.327"	12.2745"
BL	.625"	.625"	.625"	.750"	1.000	1.125"
BM	1.245" / 1.240	1.245" / 1.240	1.245" / 1.240	1.745" / 1.740	1.995" / 1.990	1.995" / 1.990
BN	1 1/4"	1 3/4"	1 3/4"	1 3/4"	2"	2"
BO	1.335" / 1.337	1.215" / 1.217	1.215" / 1.217	1.584" / 1.580	1.839" / 1.835	1.839" / 1.835



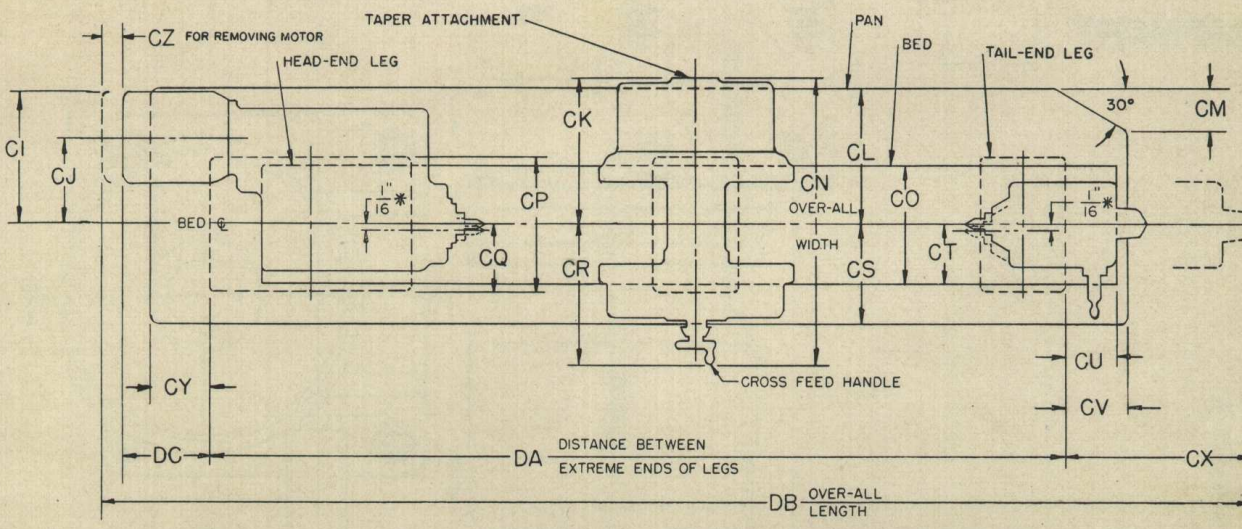
DIMEN-SION	LATHE SIZE					
	14"	16"	20"W	20"	25"	32"
BP	3 5/16"	4 1/2"	6"	6"	7 3/32"	10 3/32"
BQ	2"	2"	2"	2"	2 1/4"	2 1/4"
BR	7 7/8"	9"	11 5/8"	12"	14 3/16"	20 3/16"
BS	1.188"	1.188"	1.189" / 1.185"	1.375"	1.500"	1.500"
BT	5/8"	25/32"	25/32"	7/8"	7/8"	7/8"
BU	5/8"	25/32"	25/32"	7/8"	7/8"	7/8"
BV	2.000"	2.125"	2.125"	2.750"	3.500"	3.500"
BW	2 1/4"	2 19/32"	2 19/32"	2 7/8"	3 1/8"	3 1/8"
BX	3 5/16"	3 29/32"	5 13/32"	5 3/8"	6 3/8"	9 3/8"
BY	1.375"	1.438"	1.438"	1.875"	2.000"	2.000"
BZ	2 5/8"	2 29/32"	2 29/32"	3 3/4"	4 5/8"	4 5/8"

DIMEN-SION	LATHE SIZE					
	14"	16"	20"W	20"	25"	32"
CA	6.562"	7.563"	8.688"	9.625"	11.250"	14.250"
CB	4.000"	4.625"	6.125"	6.3125"	7.375"	10.375"
CC	10.562"	12.188"	14.8125"	15.9375"	18.625"	24.625"
CD	7.312"	8.625"	9.750"	11.000"	13.000"	16.000"
CE	14.875"	16.875"	19.500"	22.000"	26.000"	32.000"
CF	8 1/8"	8 7/8"	10 5/8"	10 1/2"	13 3/8"	15"
CG	8"	8 3/4"	8 3/4"	10 1/8"	10 15/16"	14 3/8"
CH	.500"	.500"	.500"	.500"	.750"	.750"

REVISION (1)

DIMENSIONAL DATA

SPACE REQUIREMENT FOR INSTALLATION

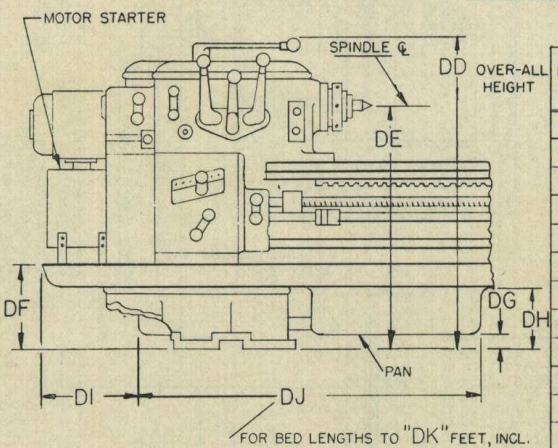


NOTE: DIMENSIONS SHOWN ON THIS PAGE ARE APPROXIMATE, AND SHOULD BE USED ONLY FOR DETERMINING SPACE REQUIRED FOR INSTALLING THE LATHE.

DUE TO CASTING VARIATIONS, GENERAL DIMENSIONS FOR HOLD-DOWN BOLTS CANNOT BE GIVEN. IF IT IS NECESSARY TO LOCATE BOLTS BEFORE LATHE IS RECEIVED, SEND FOR A CERTIFIED FOUNDATION PLAN.

* SPINDLE ℄ OFF-SET 1/16" FOREWARD OF BED ℄ ON 14" LATHE ONLY.

NOMINAL BED LENGTH	LATHE SIZE											
	14"		16"		20"W		20"		25"		32"	
	DA	DB	DA	DB	DA	DB	DA	DB	DA	DB	DA	
6'	7'-0"	10'-11"	6'-9"	10'-11"	6'-9"	10'-11"	———	———	———	———	———	———
8'	9'-0"	12'-11"	8'-9"	12'-11"	8'-9"	12'-11"	9'-6"	13'-9"	———	———	———	———
10'	11'-0"	14'-11"	10'-9"	14'-11"	10'-9"	14'-11"	11'-6"	15'-9"	11'-0"	16'-5"	11'-8"	17
12'	13'-0"	16'-11"	12'-9"	16'-11"	12'-9"	16'-11"	13'-6"	17'-9"	13'-0"	18'-5"	13'-8"	19
14'	15'-0"	18'-11"	14'-9"	18'-11"	14'-9"	18'-11"	15'-6"	19'-9"	15'-0"	20'-5"	15'-8"	2
16'	17'-0"	20'-11"	16'-9"	20'-11"	16'-9"	20'-11"	17'-6"	21'-9"	17'-0"	22'-5"	17'-8"	2
18'	19'-0"	22'-11"	18'-9"	22'-11"	18'-9"	22'-11"	19'-6"	23'-9"	19'-0"	24'-5"	19'-8"	2
20'	21'-0"	24'-11"	20'-9"	24'-11"	20'-9"	24'-11"	21'-6"	25'-9"	21'-0"	26'-5"	21'-8"	2
22'	———	———	———	———	22'-9"	26'-11"	23'-6"	27'-9"	23'-0"	28'-5"	23'-8"	2
24'	———	———	———	———	24'-9"	28'-11"	25'-6"	29'-9"	25'-0"	30'-5"	25'-8"	3
26'	———	———	———	———	26'-9"	30'-11"	27'-6"	31'-9"	27'-0"	32'-5"	27'-8"	3
28'	———	———	———	———	28'-9"	32'-11"	29'-6"	33'-9"	29'-0"	34'-5"	29'-8"	3
30'	———	———	———	———	30'-9"	34'-11"	31'-6"	35'-9"	31'-0"	36'-5"	31'-8"	3
32'	———	———	———	———	———	———	33'-6"	37'-9"	33'-0"	38'-5"	33'-8"	3
34'	———	———	———	———	———	———	35'-6"	39'-9"	35'-0"	40'-5"	35'-8"	4
36'	———	———	———	———	———	———	37'-6"	41'-9"	37'-0"	42'-5"	37'-8"	4
38'	———	———	———	———	———	———	39'-6"	43'-9"	39'-0"	44'-5"	39'-8"	4
40'	———	———	———	———	———	———	41'-6"	45'-9"	41'-0"	46'-5"	41'-8"	4
42'	———	———	———	———	———	———	43'-6"	47'-9"	43'-0"	48'-5"	43'-8"	4
44'	———	———	———	———	———	———	45'-6"	49'-9"	45'-0"	50'-5"	45'-8"	5
46'	———	———	———	———	———	———	47'-6"	51'-9"	47'-0"	52'-5"	47'-8"	5



DIMENSION	LATHE SIZE					
	14"	16"	20"W	20"	25"	32"
CI	20 1/2"	20 1/2"	20 1/2"	23"	30"	30"
CJ	13"	13"	13"	14 5/8"	19 1/4"	19 1/4"
CK	20"	21"	22 1/2"	25 1/2"	32"	35"
CL	21 1/2"	21 1/2"	24 1/4"	24 1/4"	30 1/2"	33 1/2"
CM	11"	11"	8"	8"	8"	11"
CN	42 1/2"	44"	46 1/4"	52"	64"	70"
CO	14 7/8"	16 7/8"	19 1/2"	22"	26"	32"
CP	19"	21 1/2"	21 1/2"	27 1/2"	31 1/2"	37 1/2"
CQ	9 1/2"	10 3/4"	10 3/4"	13 3/4"	15 3/4"	18 3/4"
CR	21"	22 1/2"	22"	26 1/2"	32"	35"
CS	17"	17"	18"	17 3/4"	22"	25"
CT	7 5/16"	8 5/8"	9 3/4"	11"	13"	16"
CU	3 1/4"	8 1/4"	8 1/4"	7 7/8"	9 1/2"	9 1/4"
CV	5"	9 1/4"	9 1/4"	10 5/8"	13 1/2"	13 1/4"
CW						

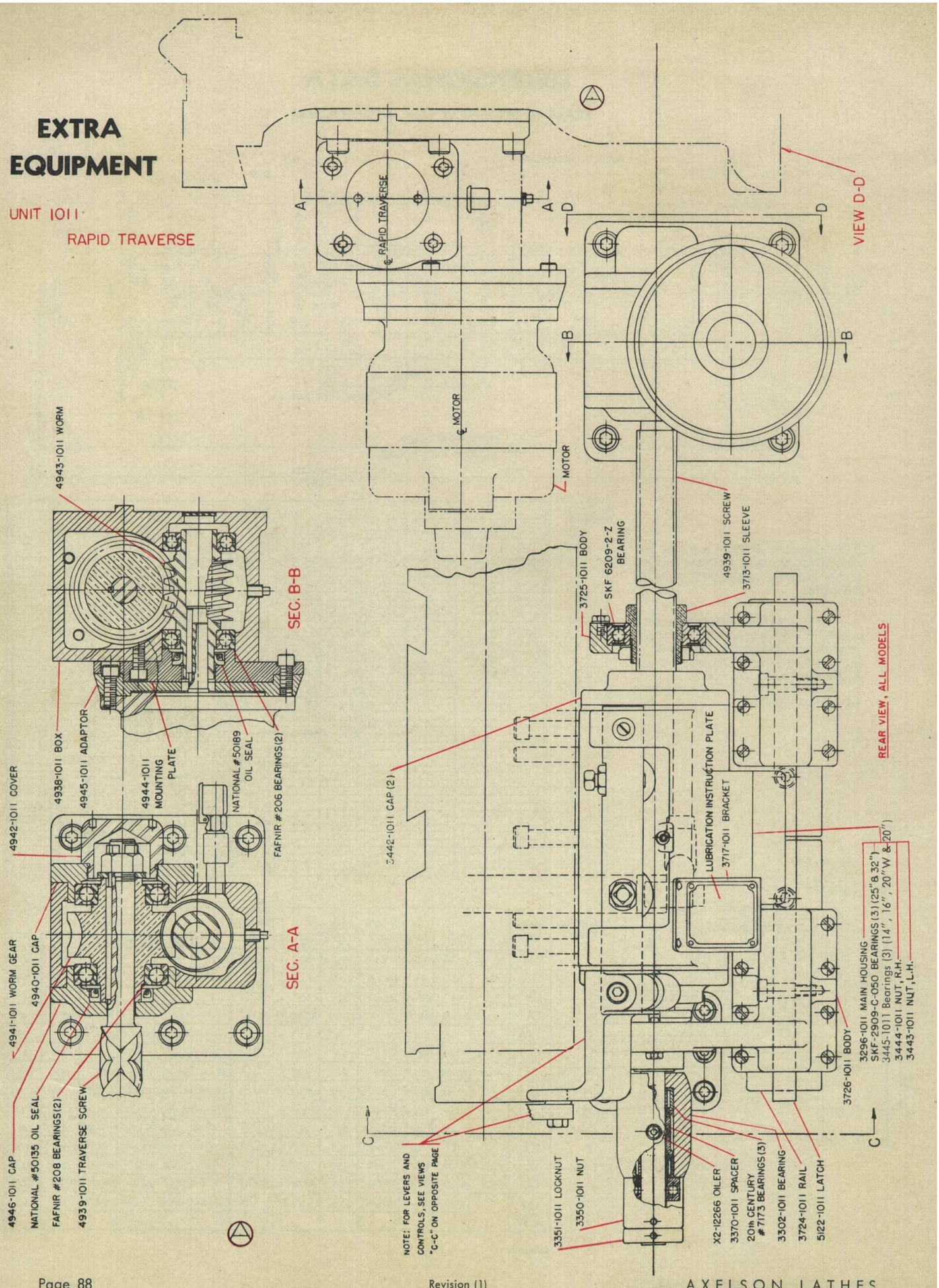
DIMENSION	LATHE SIZE				
	14"	16"	20"W	20"	25"
CX	24"	27"	27"	31"	42"
CY	9 3/8"	9 5/8"	9 5/8"	10 7/8"	13 3/8"
CZ	4"	4"	4"	4"	4"
DA	———	SEE LARGE TABLE ABOVE			
DB	———	SEE LARGE TABLE ABOVE			
DC	19"	16"	16"	16"	19"
DD	54 1/2"	54 1/4"	56"	55"	60"
DE	42 1/8"	41 5/16"	43 1/16"	41 11/16"	44 9/16"
DF	19 3/16"	16 7/16"	17 1/8"	15"	13 1/4"
DG	8 1/16"	5 1/4"	5 1/4"	4 3/8"	2 5/8"
DH	16 1/16"	13 1/4"	13 1/4"	11"	9 1/4"
DI	9"	9"	9"	11 3/4"	21"
DJ	61"	61"	63 1/4"	63 1/4"	75 7/8"
DK	———	———	———	26	30

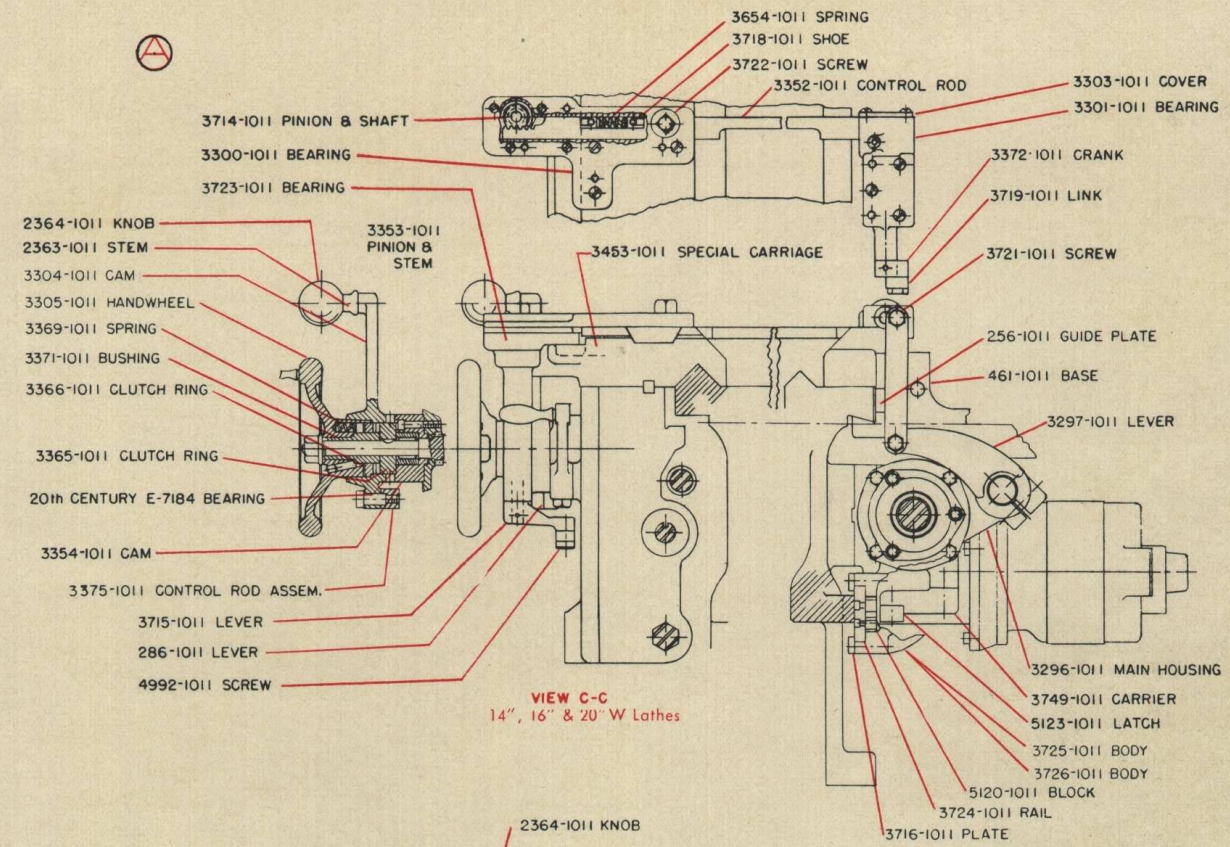
REVISION (1)

EXTRA EQUIPMENT

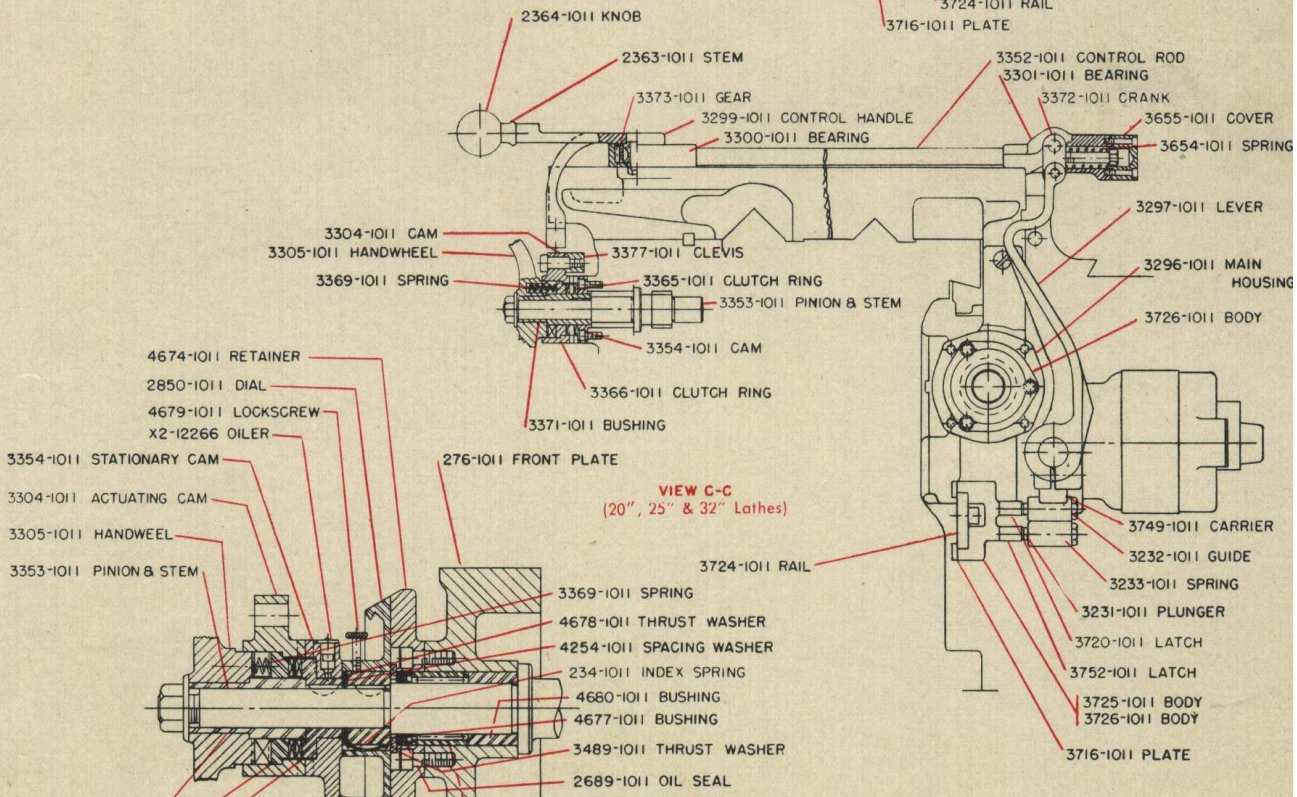
UNIT 1011

RAPID TRAVERSE





VIEW C-C
14", 16" & 20" W Lathes



VIEW C-C
(20", 25" & 32" Lathes)

TRAVERSE DIAL
FOR
RAPID TRAVERSE TYPE APRON