

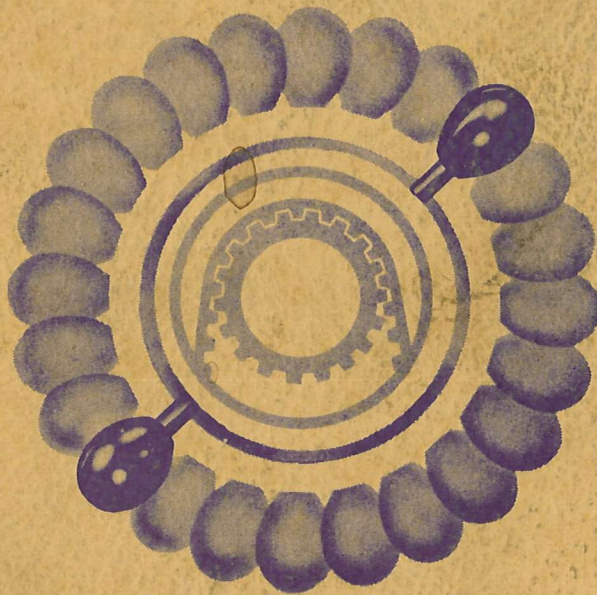
Serial #

530829

PARTS MANUAL

CLAUSING

12-inch LATHES-5930-series



CLAUSING
CORPORATION

2019 N. PITCHER ST., KALAMAZOO, MICH. 49007

Your Warranty IS NOT EFFECTIVE UNLESS THIS CARD IS RETURNED

MACHINE SERIAL NO: _____ MODEL NO: _____

NAME OF PURCHASER _____

STREET _____

CITY, ZONE, STATE _____

BOUGHT FROM _____

DATE PURCHASED _____

COMPLETE
And Return
NOW

COMPLETE
And Return
NOW

MACHINE IS USED PRIMARILY FOR _____

WHAT IS YOUR PRINCIPAL PRODUCT _____

NUMBER OF PEOPLE EMPLOYED _____

WHAT LED YOU TO CONSIDER THIS MACHINE?

Please check one:

☐ Previous experience

☐ Saw in dealer's display

☐ trade show

☐ Machine ad.

☐ friend's shop.

WARRANTY

The Clausing Corporation, Kalamazoo, Michigan, warrants that each Product will be free from defects in material and workmanship for one year from the date of delivery to the User.

Clausing will correct any defects without charge. Parts will be repaired or replaced at Clausing's option. Warranty work will normally be performed at the User's plant, but at the option and expense of Clausing, the Product, or any part thereof, may be returned to Clausing for the service. User shall provide access to the Product during regular business hours and shall provide such other assistance as determined necessary by Clausing.

Clausing shall not be responsible for expenditures made or incurred by the User for repairs of the Product. The warranty is void for any Product that has been subjected to neglect, misuse, accident, or improper operation, or that has been tampered with or altered in any way.

The foregoing warranty is exclusive and in lieu of all other warranties, express or implied, except as to title, including any implied warranty of MERCHANTABILITY or of FITNESS FOR A PARTICULAR PURPOSE.

The liability of Clausing under this warranty, or for any loss or damage to the equipment, whether the claim is based on contract or negligence, shall not in any case exceed the cost of correcting defects in the equipment as herein provided and upon the expiration of the warranty period all such liability shall terminate. The foregoing shall constitute the exclusive remedy of the User and the exclusive liability of Clausing.

In no event, whether as a result of breach of contract or warranty, or alleged negligence, shall Clausing be liable for special or consequential damages including, but not limited to, loss of profits or revenue, loss of use of the equipment or any associated equipment, cost of capital, cost of substitute equipment, facilities or services, down-time costs, or claims of customers of the User for such damages.

No one other than an officer of Clausing acting in writing is authorized to assume any liability on behalf of Clausing or impose any obligation upon it in connection with the sale of any product other than as stated above.

CLAUSING CORPORATION
KALAMAZOO, MICHIGAN 49007

This Manual Applies To Clausing 12" Lathes Step Drive Models

JANUARY, 1976

From Serial No. 530612 To 530830

Model # 5936

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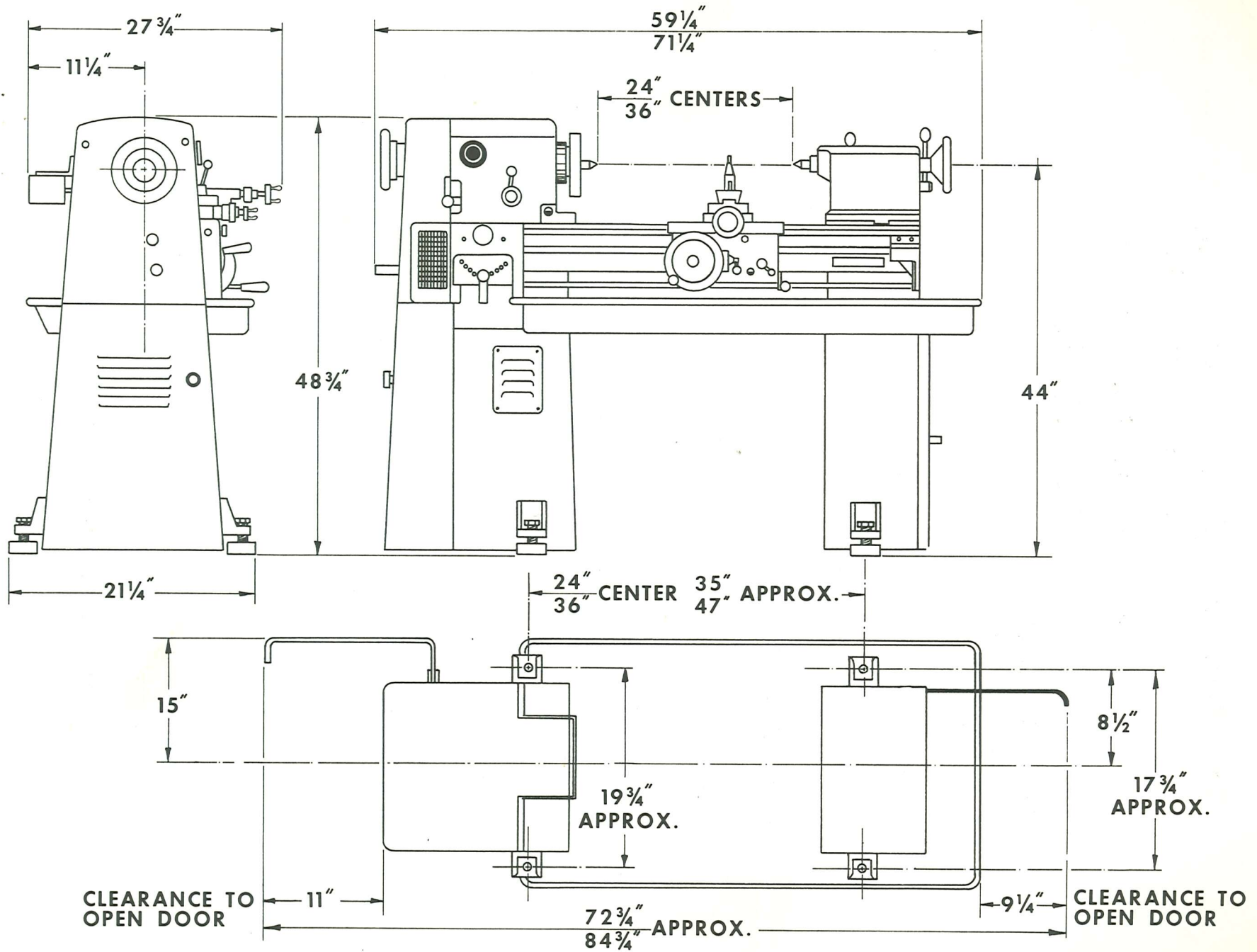
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GENERAL DIMENSIONS — 5900-series STEP PULLEY DRIVE CLAUSING LATHES



INSTALLATION

FOUNDATION

Your Clausing lathe is a precision machine tool, and requires a solid foundation. The floor must be heavy enough to support the weight of the machine without noticeable deflection, and it must be level. If the floor does not meet these important requirements, a special foundation should be built.

CONCRETE FLOORS -- A reinforced concrete floor is the best foundation: it provides a rigid base, minimizes vibration from adjacent machines, and resists deflection.

WOOD FLOORS should be carefully checked for strength -- place a precision level on floor where lathe is to be located, and move a hand truck with average load past it. If bubble in level shows noticeable movement, the floor should be reinforced, or cut away and a concrete foundation installed.

CLEANING

Before moving carriage or tailstock along the ways, use a good grease solvent to remove the rust-proof coating applied to all polished and unpainted surfaces.

Do not use an air hose -- it could force dirt or grit picked up during transit into bearing surfaces.

Use a stiff bristle brush to clean lead screw.

When thoroughly cleaned, cover the unpainted surfaces with a light coating of "Way Lubricant" for proper lubrication.

Frequent cleaning and lubrication is essential to long service life -- see page 5 for instructions.

MOVING AND LIFTING

Leave lathe on skid -- simplifies moving to final location.

IMPORTANT: *DO NOT slide lathe along floor.
DO NOT USE fork lift under chip pan.*

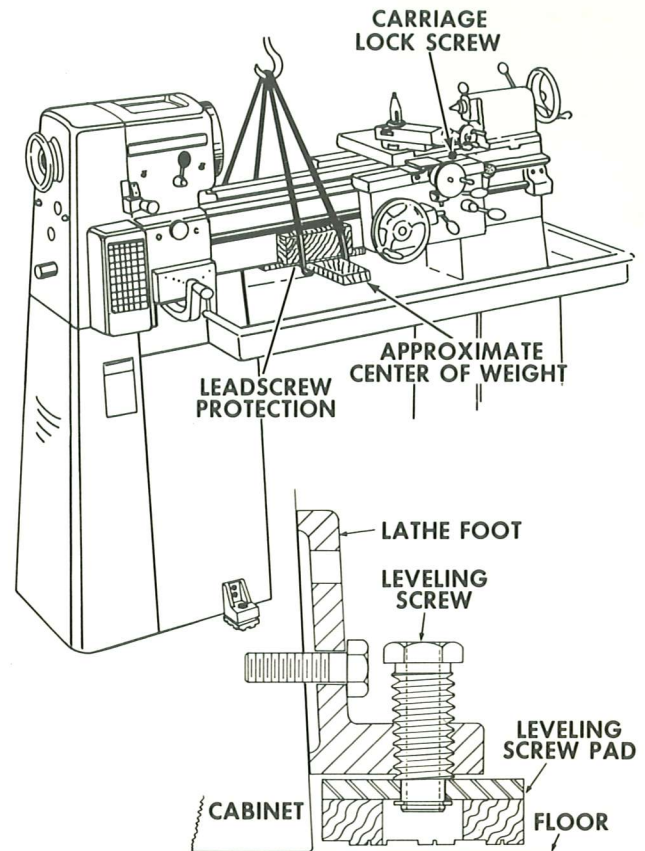


Figure 1

CAUTION: *DO NOT LOWER LEVELING SCREW PADS UNTIL LATHE IS READY TO BE LEVELED -- refer to figure 1.*

When using a sling -- clean bed ways, move tailstock to the right-hand end of the bed and lock it in place. To protect lead screw and bed, place a 3/4" thick hardwood board under approximate center of weight load, insert sling as shown in figure 1, and raise machine about one inch off floor. Make any necessary adjustments for balance by moving carriage along bed. -- *Before moving carriage, loosen lock screw -- located on top right side of the carriage.*

If a fork lift is used, place 3/4" thick hardwood board under the bed so that the clutch rod will not be bent when the lathe is raised -- *do not pick up by chip pan.*

Mounting pads do not require anchoring.

Leveling screws are equipped with non-slip mounting pads which eliminate the need for anchoring or bolting machine to floor. Floor must be clean and free of oil.

ELECTRICAL CONNECTIONS

The machine is wired at factory -- merely connect power supply to line leads in junction box on back of headstock cabinet. **IMPORTANT:** To reverse rotation of motor interchange any two line leads -- see **WIRING INSTRUCTIONS**.

Before connecting motor, make sure that voltage and other current requirements of the motor correspond with your power supply. If there is any question, verify your current and voltage by calling your power company.

ANCHORING LATHE TO FLOOR

CAUTION: DO NOT SLIDE LATHE ALONG FLOOR.

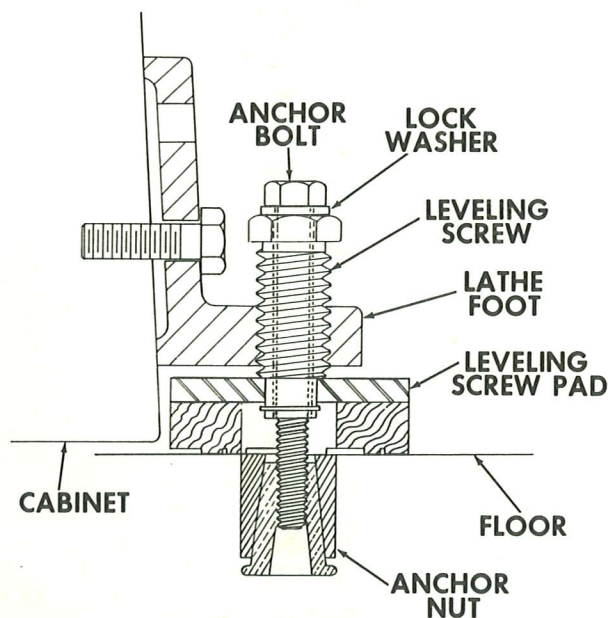


Figure 2

Use anchor bolts to secure lathe to concrete floor -- use lag screws to secure lathe to wood floor -- refer to figure 2.

With a hoist or lift, lower the lathe into position and mark the four leveling screw locations. **DO NOT LOWER LEVELING SCREW PADS.**

Lift machine out of the way, drill holes for anchor nuts and install anchor nuts -- for lag screws drill pilot holes.

Position and lower machine. Turn leveling screws until *no portion* of the lathe cabinet touches the floor -- shim under pads, if necessary.

Start anchor bolts or lag screws -- **DO NOT** tighten until lathe is level -- see **Leveling Instructions**.

LEVELING

The lathe should be kept perfectly level at all times. When carelessly mounted, the bed may become twisted. Even a slight amount of twist will move centers out of alignment and result in inaccurate work and excessive wear. Make it a habit to regularly check the level of the bed.

THIS IS IMPORTANT:

Use *one* precision level at least 6" long -- level should show a distinct bubble movement when a .003" shim is placed under one end.

Clean the bed ways thoroughly.

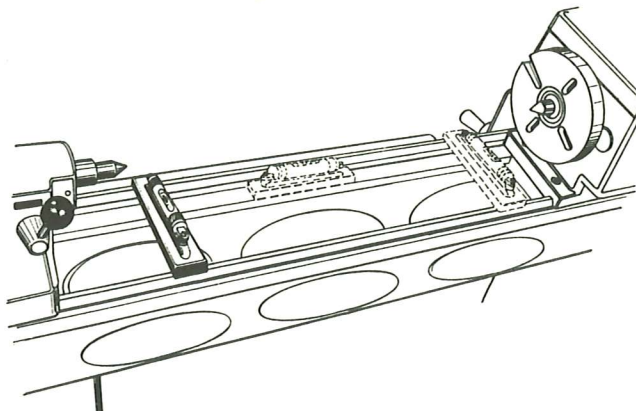


Figure 3

1. First level bed longitudinally, compensate for variations of bubble readings by turning the leveling screws on the cabinet base until bed is level -- refer to figure 3 for level positions.

2. Next level both ends of the bed. The headstock and the tailstock -- must be checked with the level placed at right angles to the bed. Refer to figure 3. Use a square to align the level. *Do not turn level end for end.*

Level reading at headstock and tailstock must be identical. Compensate for variations of bubble readings by turning the leveling screws until lathe is level.

NOTE: Avoid excessive adjustment of leveling screws by inserting shims between pads and floor.

3. Tighten the four anchoring bolts *not more than* finger-tight, or until the lock washers start to compress -- lag screws should be tightened, then backed off about one-quarter turn.

4. Recheck the level of the lathe -- unequal tightening of anchoring bolts may have pulled the bed out of level. Recheck leveling in 5 days.

Check level of bed at frequent intervals. Chatter -- turning taper -- boring taper -- facing convex or concave is the general result of an improperly leveled lathe.

LUBRICATION CHART - - - 5900-series CLAUSING LATHES

CODE

D - DAILY oil with SHELL TONNA 33 or equivalent.
WEEKLY

W1 - Oil with SHELL TONNA 33 or equivalent.

W2 - Check oil level in window. Remove pipe plug and fill to mark with SHELL TELLUS 27 oil or equivalent.

W3 - Check oil level in window. Remove filler plug and fill to mark with SHELL TELLUS 33 or equivalent.

W4 - Fill countershaft fitting and grease the two fingers with SHELL ALVANIA 2 grease or equivalent.

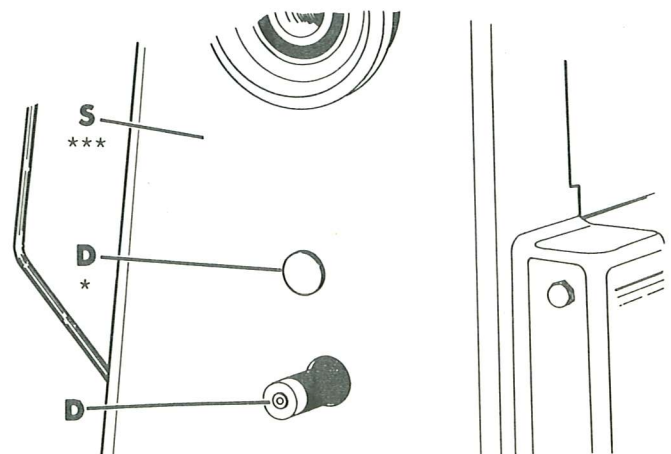
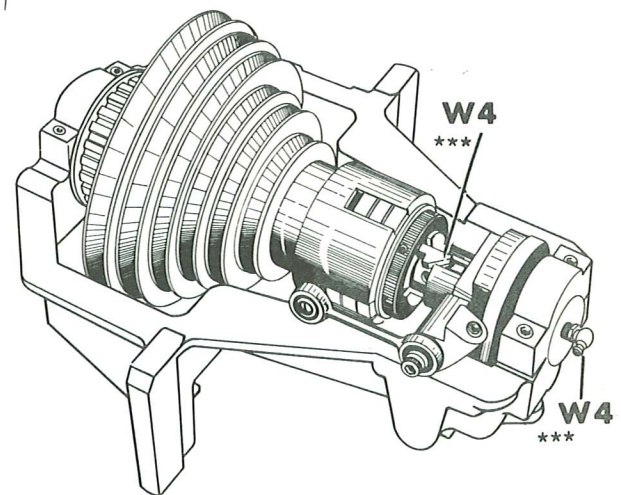
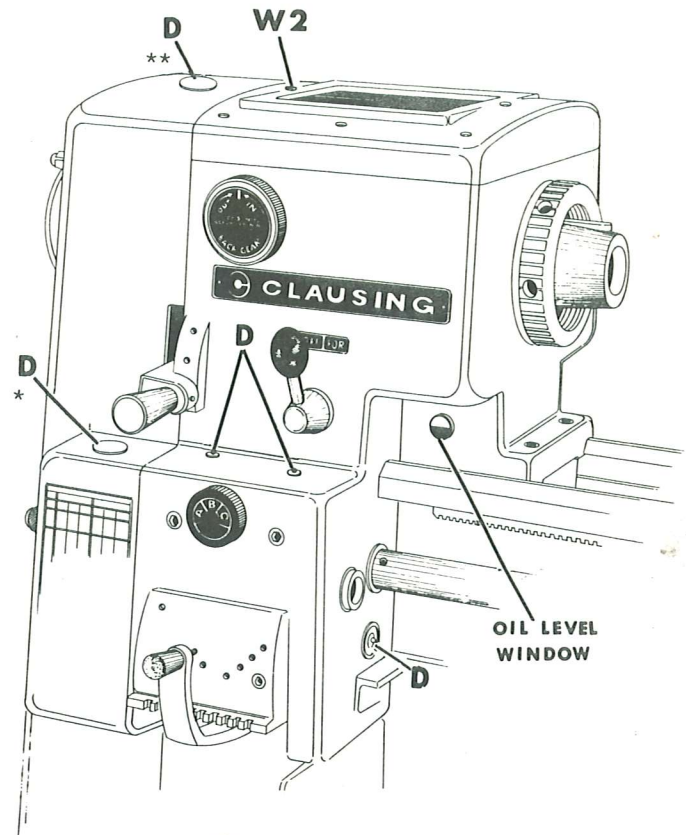
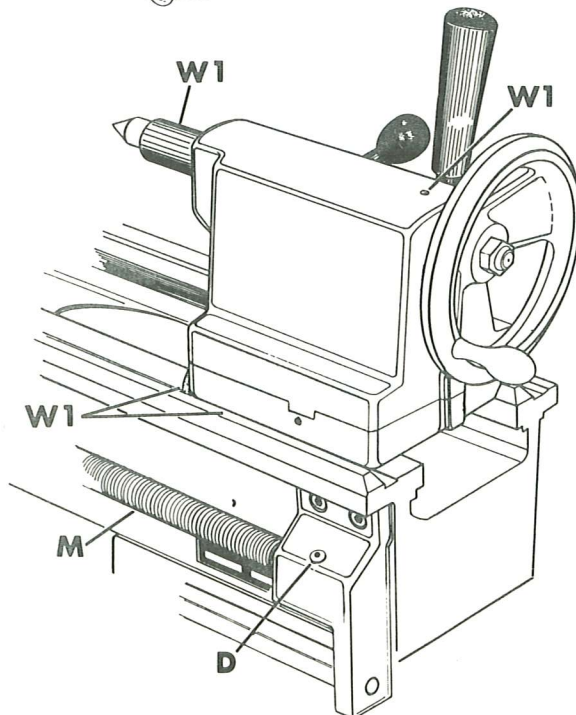
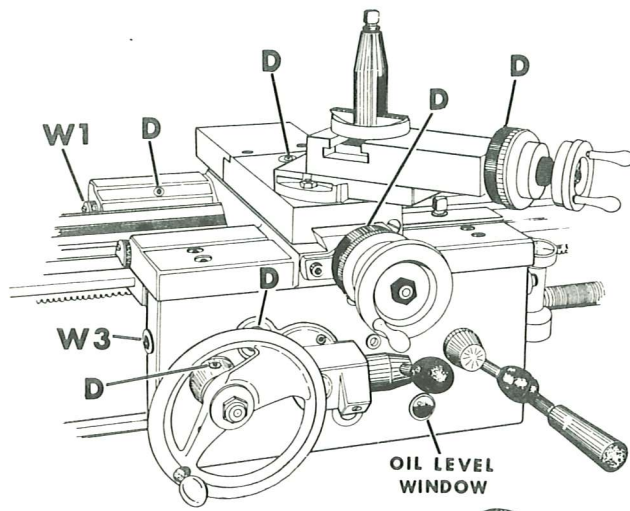
M - MONTHLY clean with kerosene, then oil with SHELL TONNA 33 or equivalent.

S - SEMI ANNUALLY lubricate quadrant gear teeth with SHELL ALVANIA 2 or equivalent. Remove oil and dirt before applying.

*Remove plug.

**Remove plug and turn spindle until oiler shows.

***Remove cover.



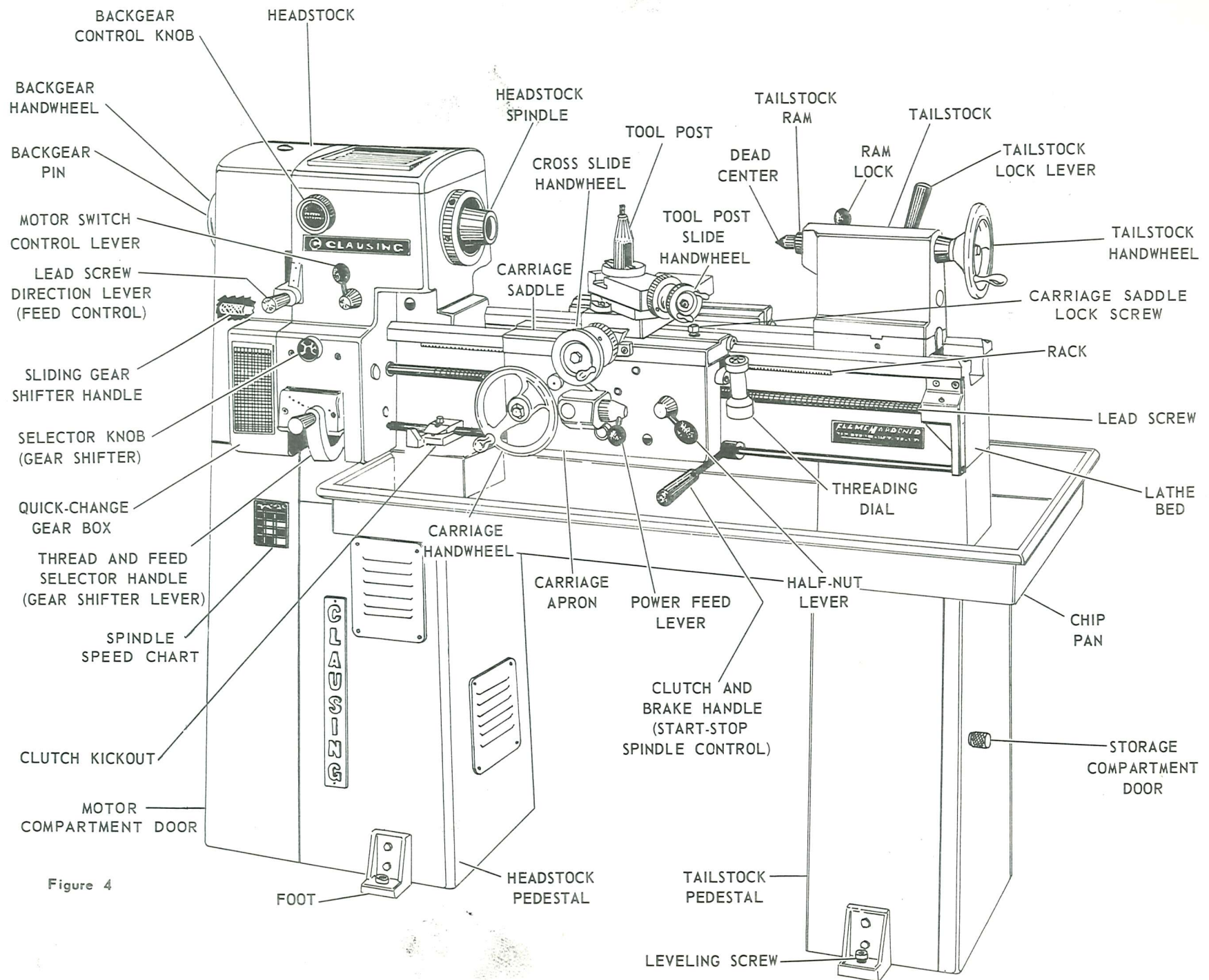


Figure 4

CONTROLS AND OPERATION

Do not operate the lathe until you are thoroughly familiar with all controls and their functions. Read the instructions carefully. Then, operate the lathe in back gear -- get the "feel" of the controls -- set up different threads and feeds -- engage the power feeds -- get acquainted with the lathe before you start a job -- it will save time and produce better work.

BACK GEAR CONTROLS

BACK GEAR DRIVE provides the slow spindle speeds from 52 to 237 rpm required for heavy cuts and correct surface speeds for large diameter work.

IMPORTANT: The back gear knob should not be moved from one position to another unless motor is in "OFF" position. Spindle must come to a complete stop before changing drives.

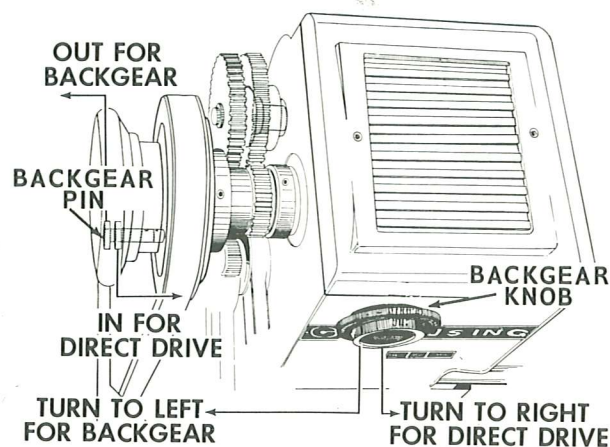


Figure 5

To engage the back gear drive:

1. Stop lathe spindle.
2. Disengage back gear pin (figure 5) from drive pulley by pulling pin away from headstock.
3. Move back gear knob to the left -- *Rotate spindle by hand if gears will not mesh.*

DIRECT DRIVE provides high spindle speeds from 370 to 1700 rpm.

To engage direct drive:

1. Move back gear knob to the right.
2. Engage the back gear pin with drive pulley by pushing pin towards headstock -- rotate wheel if necessary.

CHANGING SPINDLE SPEEDS

1. Move motor switch control lever to stop position -- refer to figure 4.
2. Open motor compartment door on end of headstock cabinet.

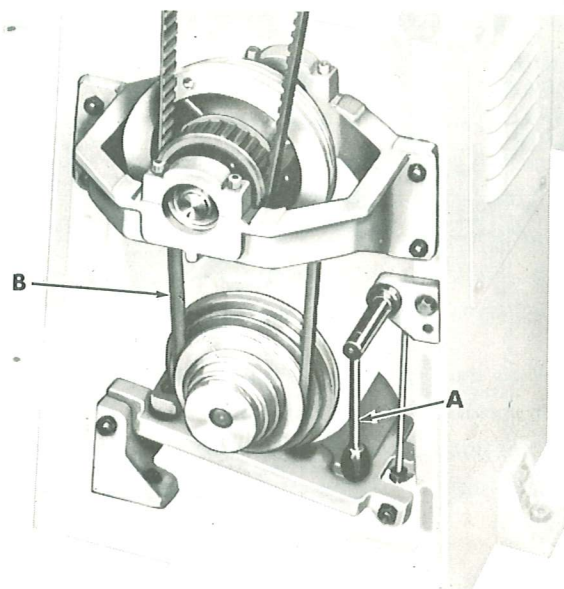


Figure 6

3. Raise belt tension lever (A, figure 6) to slacken belt (B).

SPINDLE SPEED IN R. P. M.

	OPEN BELT	BACK GEAR	
A	370	52	
B	450	62	
C	540	75	
D	900	125	
E	1250	174	
F	1700	237	
MOTOR 1800 R.P.M.			

Figure 7

4. Shift belt to position for speed desired, as indicated on Spindle Speed Chart -- figure 7.

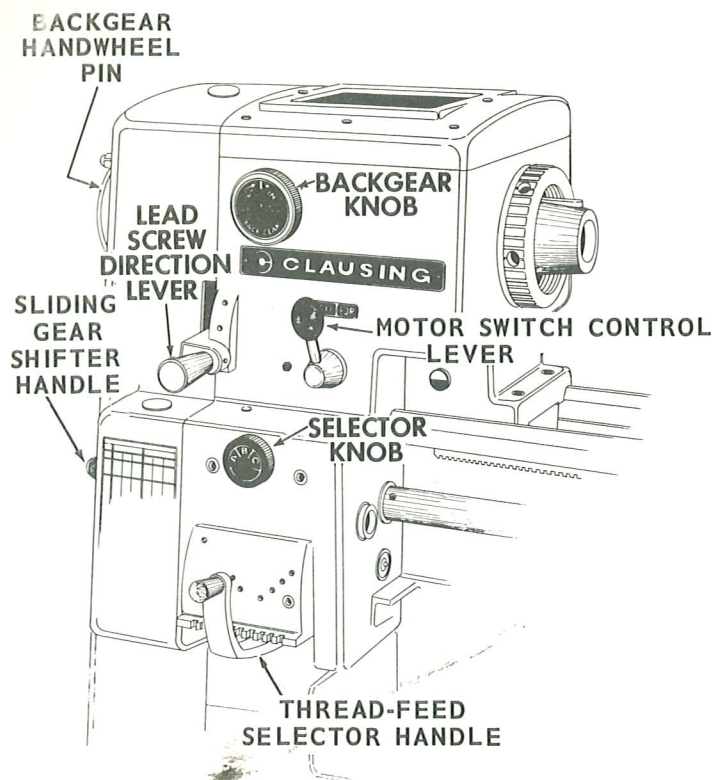


Figure 8

MOTOR CONTROL LEVER located on front of headstock controls rotation of lathe spindle. It has three positions -- REVERSE, OFF, and FORWARD -- refer to figure 8.

To reverse rotation of motor and spindle:

1. Move lever to "OFF" position and allow spindle to stop.
2. Move lever to FORWARD or REVERSE position.

Caution: Always allow spindle to stop before reversing rotation.

LEAD SCREW DIRECTION LEVER, located on front of headstock, has three positions. Center position is neutral -- gear train is disengaged, lead screw does not turn. Lower position moves carriage toward tailstock. Upper position moves carriage toward headstock.

Caution: Always stop spindle before shifting lead screw direction lever.

QUICK-CHANGE GEAR BOX

The quick-change gear mechanism determines the rate of rotation of lead screw in relation to the rpm of the spindle for threading, and for turning and facing operations.

See figure 8 for the location of the controls described below. Their positions for thread or feed selected are shown on chart.

SLIDING GEAR SHIFTER HANDLE changes the ratio between the spindle and lead screw. There are two positions -- IN and OUT. *Do not shift while spindle is turning.*

THREAD AND FEED SELECTOR HANDLE. To shift, pull out on handle, drop lever, slide to position desired, raise lever and push in the handle to engage lock pin. If selector handle does not slide easily, turn sliding gear handle while shifting.

SELECTOR KNOB has three positions -- A, B, and C. Engaged position is vertical. If knob doesn't shift easily, place lead screw direction lever in neutral (center position), and turn sliding gear handle until knob can be engaged -- *do not force.*

CLUTCH AND BRAKE COUNTERSHAFT MODELS

Countershaft has friction clutch and brake for starting, stopping and jogging of spindle without stopping the motor. Moving clutch and brake handle up engages spindle drive -- down disengages drive, engages brake, and stops the spindle. Clutch Kickout can be positioned to automatically disengage clutch -- refer to figure 9.

To set clutch kickout, determine stopping point then clamp to clutch control bar so clutch will be completely disengaged at stopping point.

CARRIAGE

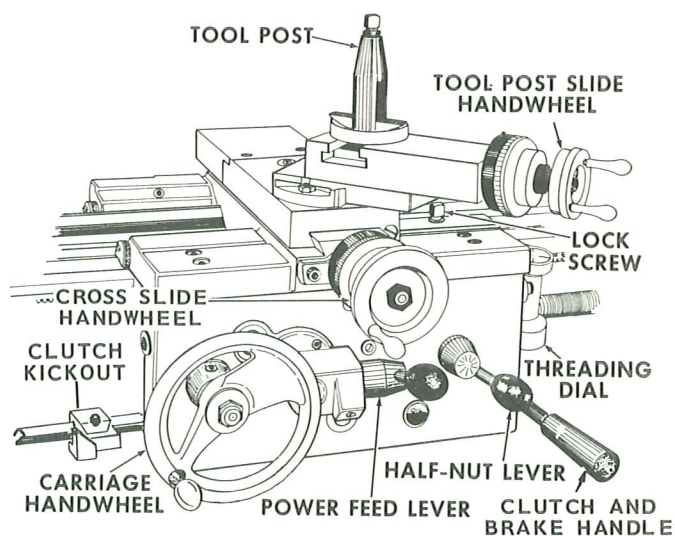


Figure 9

The function of the carriage is to rigidly support the cutting tool, and to move it along or across the bed -- refer to figure 9.

CARRIAGE SADDLE LOCK SCREW locks carriage to bed for facing or cut-off operations. *Caution:* Be sure to release lock before moving carriage.

CARRIAGE HANDWHEEL moves carriage along the bed manually.

CROSS SLIDE AND TOOL POST SLIDE HANDWHEELS move the cross slide and tool post slide in and out.

POWER FEED LEVER controls the operation of both power longitudinal feed and power cross feed. Lever has three positions: center is disengaged (neutral for hand feeding), to the left and down engages power cross feeds, to the right and up engages power longitudinal feeds.



Caution: The power feed lever and the half-nut lever are interlocked. Half-nuts must be disengaged (half-nut lever in down position) before power feeds can be engaged.

NOTE: Cross feed is $\frac{1}{2}$ of the rate of longitudinal feed.

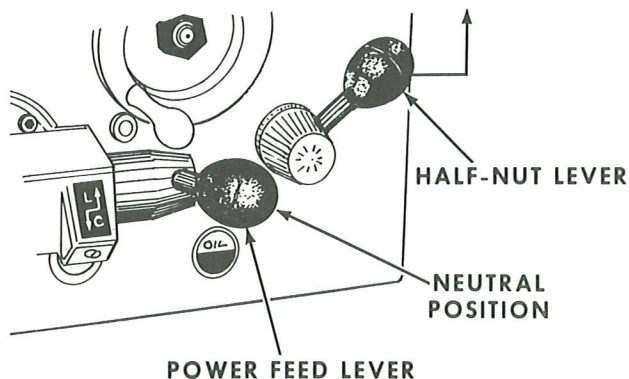


Figure 10

HALF-NUT LEVER engages half-nuts with lead screw for threading -- refer to figure 10.

To engage half-nuts:

1. Move power feed lever to center (disengaged or neutral position).
2. Move half-nut lever to up position.

NOTE: Safety lock prevents engaging feeds and half-nuts at same time -- *do not force levers.*

Important: Never use half-nuts for power feeds. Using half-nuts for threading only will maintain the accuracy of the lead screw.

THREADING DIAL

The threading dial performs the important function of indicating the proper time to engage the half-nut lever so that tool will enter the same groove of the thread on each successive cut.

To maintain the accuracy of the worm gear, loosen clamp screw and swing threading dial away from lead screw when not threading.

When cutting *even-numbered threads* (such as 12, 14, 16, 32, etc., per inch), engage the half-nut lever for the first cut when the stationary mark on the outside of the threading dial is in line with *any* of the marks on rotating portion of the dial. Any dial marking may be used for successive cuts.

When cutting *odd-numbered threads* (such as 7, 9, 11, 23, 27, etc., per inch), engage the half-nut lever for the first cut and all successive cuts when the stationary mark on the threading dial is in line with *any* of the numbered marks on the dial.

When cutting *half-numbered threads* (such as $4\frac{1}{2}$, $5\frac{1}{2}$, $6\frac{1}{2}$, $11\frac{1}{2}$, etc., per inch), engage the half-nut lever at the *same* number on the threading dial for *each* cut.

The threading dial cannot be used for metric threads. For these, the half-nut is closed on the lead screw, and remains engaged until the thread is completed. After each cut and tool withdrawal, the tool is brought back to starting point by reversing the spindle.

SEQUENCE OF ENGAGING CONTROLS FOR THREADS OR FEEDS

1. Disengage power feed and half-nut levers.
2. Set quick-change mechanism:
 - A. Move thread-feed selector handle to the number position indicated on chart -- refer to figure 8.
 - B. Position SLIDING GEAR.
 - C. Position SELECTOR KNOB to A, B, or C -- engaged position is vertical.
3. Shift LEAD SCREW DIRECTION LEVER for direction desired.
4. Select drive -- either direct or back gear -- according to spindle speed required.
5. Set belt in proper step -- see spindle speed chart figure 7, page 7.
6. Start motor.

7. Engage carriage controls -- longitudinal power feed lever for feeds, half-nut lever for threading.
8. With tool in position, make a "trial run" without touching work to make sure the setup is right.

NOTE: When threading, be sure threading dial is engaged with lead screw. Set clutch kickout to avoid interfering with threading cut.

FOR CLUTCH and BRAKE MODELS -- be sure clutch is disengaged (handle in down position) before starting motor.

TOOL POST

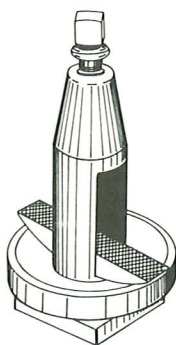


Figure 11

The tool post holds the tool rigidly in position for cutting operations -- refer to figure 11.

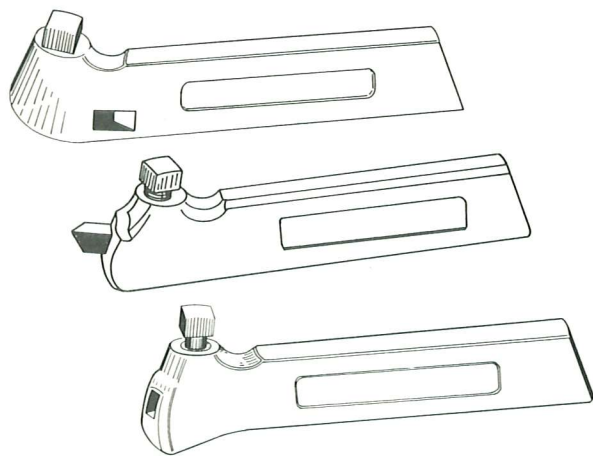


Figure 12

Tool bit holders permit the use of small, inexpensive and replaceable tool bits -- refer to figure 12.

In order to avoid undesirable overhang, tool bits should be clamped so the cutting end of the tool bit is as close to the holder as the work will permit, and, the tool holder should be as far back in the tool post as possible.

The cutting edge of the tool should be placed on lathe center line.

PROPER POSITION OF TOOL POST SLIDE

For maximum tool support, the front edge of the tool post slide should be positioned flush with the front end of the upper swivel.

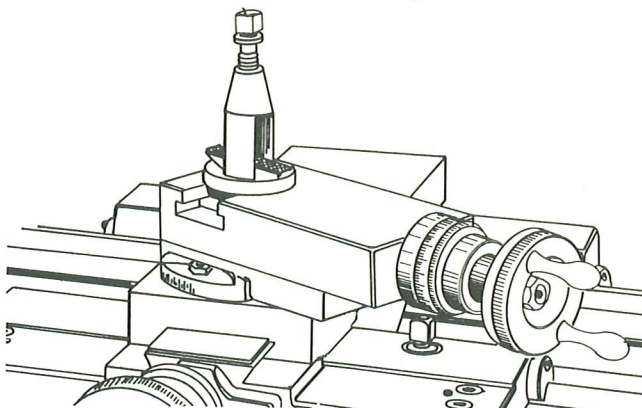


Figure 13

RIGHT -- Tool post slide is flush with front end of the upper swivel, therefore provides maximum tool support -- refer to figure 13.

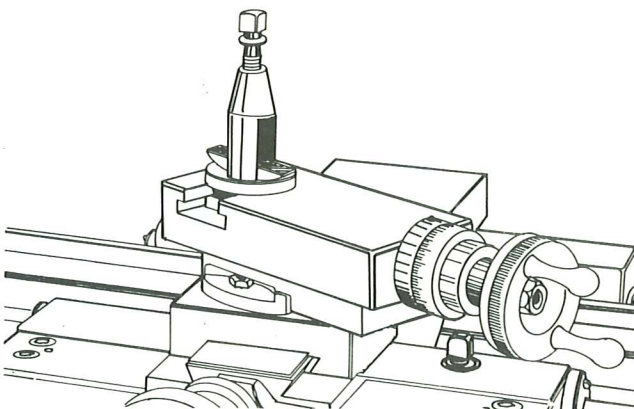


Figure 14

WRONG -- Unnecessary overhang of tool post slide will result in tool chatter, and could cause the tool post slide to break -- refer to figure 14.

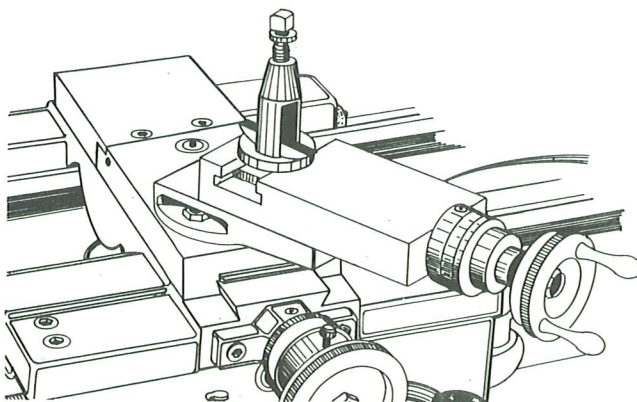


Figure 15

WRONG -- Tool post slide is too far back -- tool overhang is excessive -- refer to figure 15.

TAILSTOCK

The tailstock supports long work, and holds tools for drilling and reaming operations.

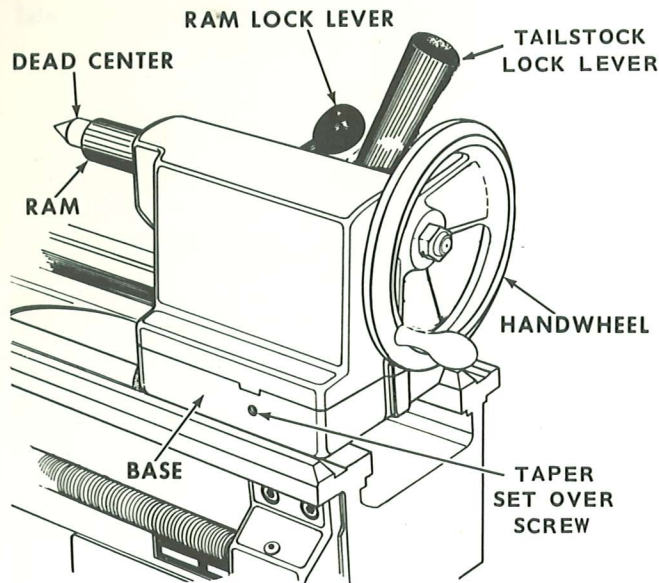


Figure 16

Base is fitted to bed ways to accurately align tailstock and headstock spindles, refer to figure 16. Tailstock slides along the ways, and may be anchored in any position by moving the tailstock lock lever.

Ram is actuated by handwheel -- graduations simplify drilling and boring. Lever locks ram in position. Before inserting center or tools in ram, clean both tapers thoroughly with a clean, dry cloth.

Tailstock may be set over for taper turning by loosening the bed clamp and adjusting the screws on front and rear of tailstock base.

MOUNTING CHUCKS AND FACE PLATES

Before mounting on lathe, carefully clean the following:

1. Taper on spindle nose.
2. Threads in spindle nose collar.
3. Taper in chuck or face plate.
4. Threads on chuck or face plate.

Caution: Chips and dirt may score mating surface causing an inaccurate fit.

To mount face plate or chuck:

1. Rotate spindle until key is up.

2. Lock spindle by:

- (A) Placing backgear knob in engaged position.
- (B) Pushing backgear pin in.

3. Lock chuck or face plate on spindle nose:

- (A) Slide chuck or face plate on to spindle nose.
- (B) Tighten collar by turning spanner wrench counter-clockwise.

4. Unlock spindle.

NEVER TURN ON POWER WHEN SPINDLE IS LOCKED.

TO REMOVE CHUCK OR FACE PLATE

1. Lock spindle.

- (A) Place backgear knob in engaged position.
- (B) Push backgear pin in.

2. Place heavy board across bed to protect ways if chuck is dropped.

3. Loosen collar by turning spanner wrench clockwise.

4. *Carefully* remove chuck or face plate.

5. Unlock spindle.

NEVER TURN ON POWER WHEN SPINDLE IS LOCKED.

CHUCK MAINTENANCE AND CARE

PROTECT -- when not in use, place chuck in a covered box -- don't leave it exposed to dirt or chips -- the accuracy of any chuck can be destroyed if dirt or chips collect in the scroll, threads, jaws, or slots.

CLEAN and OIL FREQUENTLY -- Most wear is due to dirt and lack of proper lubrication. Oil chuck jaws and scroll at regular intervals with a light film of clean No. 10 S.A.E. machine oil. *Caution:* Do not apply too much oil -- it collects dust and chips.

IMPORTANT

KEEP YOUR LATHE CLEAN -- Oil and dirt form an abrasive compound which will damage bearing surfaces. Using way lubricant wipe the bed and all machined surfaces with a clean rag at frequent intervals. Use a brush to clean spindle, gear teeth, lead screw threads, etc.

MAINTENANCE AND ADJUSTMENTS

PREVENTIVE MAINTENANCE

The lathe should be kept clean and properly lubricated at all times.

Don't use your lathe for a work bench. Don't leave tools on bed ways.

Always shut off power before leaving lathe.

Recheck level of the bed frequently.

Lock tailstock to bed ways before turning between centers.

Before threading, clean chips and dirt from lead screw, and oil lightly.

Securely lock tool in position before taking a cut.

CLUTCH ADJUSTMENT

Adjusting clutch -- if the countershaft clutch slips when spindle drive is engaged, adjust as follows:

1. Remove front cover.

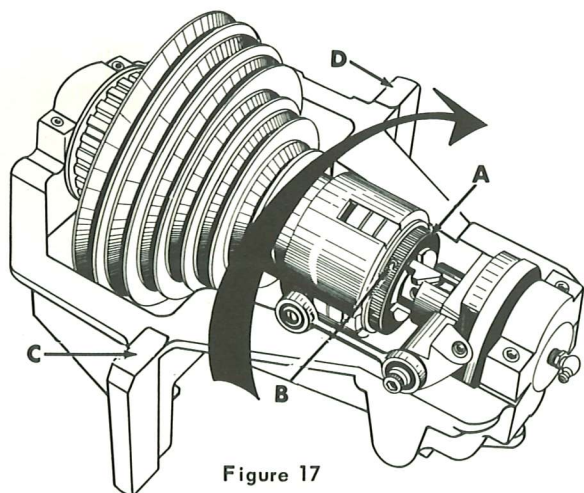


Figure 17

2. Loosen the lock screw (B, fig. 17) in the adjusting ring (A).
3. Turn the adjusting ring in a clockwise direction approximately 1/8 turn. **DO NOT OVER-TIGHTEN** -- just enough to prevent slipping.

NOTE: If adjusting ring is turned too tightly -- clutch will not engage when clutch lever is moved up.

4. Retighten lock screw.

ADJUSTING CARRIAGE BEARING PLATES

Bearing plates on the carriage, which bear on the underside of both the front and back bed ways, anchor the carriage firmly to the bed in a vertical direction. Bearing plates have shims of varying thickness for adjustment of possible wear.

CROSS SLIDE AND TOOL POST SLIDE GIB ADJUSTMENT

Gibs are properly adjusted, when tool post slide and cross slide move with a slight drag.

To adjust the tapered gibs:

1. Shift power feed lever to neutral position.
2. Loosen the rear adjusting screw several turns.

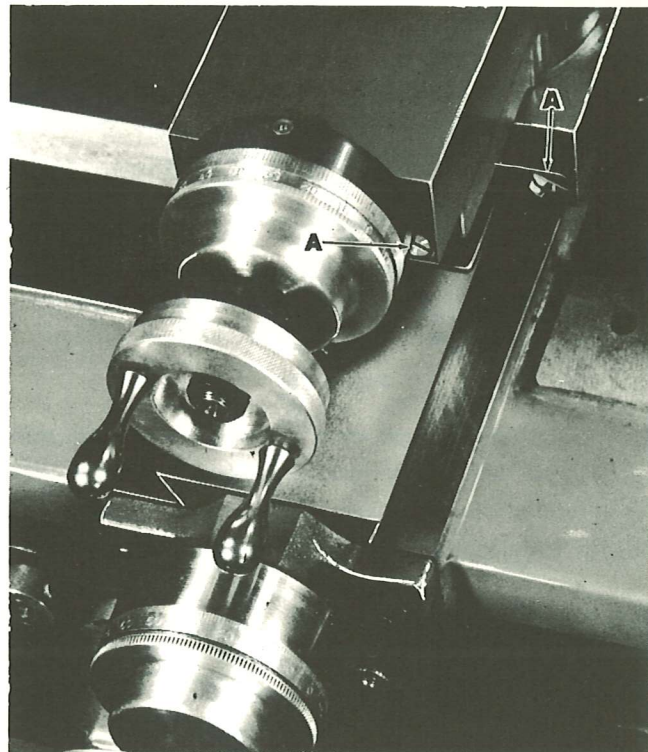


Figure 18

3. Turn front adjusting screw (A, fig. 18) until tight, then back off about one-half turn -- slide should move with a slight drag.
4. Retighten the rear adjusting screw.

TENSIONING TIMING BELT

1. Loosen slightly the four hex nuts holding the countershaft bracket to pedestal, refer to fig. 22 page 14.

2. With a soft hammer, tap on bottom or top of countershaft bracket until belt is properly tensioned.

NOTE: Properly tensioned, timing belt should depress approximately 1/2" with light finger pressure -- too much tension causes excessive wear.

3. Measure to make sure that points C & D, fig. 17 on countershaft bracket are the same distance from top of head pedestal.
4. Tighten the four hex nuts securely.
5. Recheck belt tension.

REPLACING SHEAR PIN IN LEAD SCREW

Shear pin, located at gear box end of lead screw (A, fig. 20), protects lead screw and gear box against overload. To replace broken shear pin:

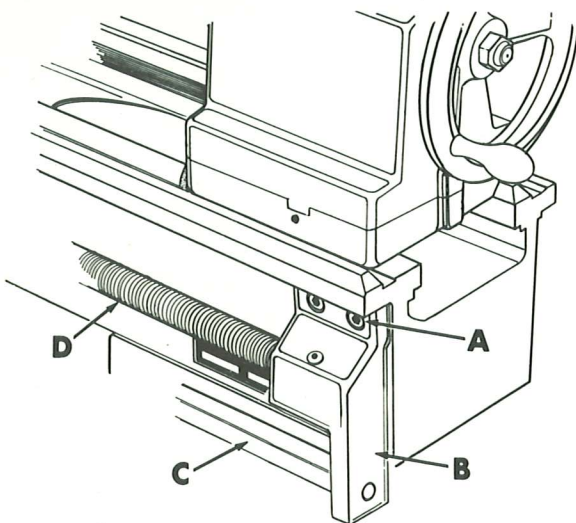


Figure 19

1. Remove two socket cap screws (A, fig. 19) from lead screw bracket (B). Remove bracket from lead screw (D) and clutch rod (C).
2. Engage half-nuts, turn carriage handwheel toward tailstock, pulling lead screw from gear box shaft. Disengage half-nuts and remove lead screw.

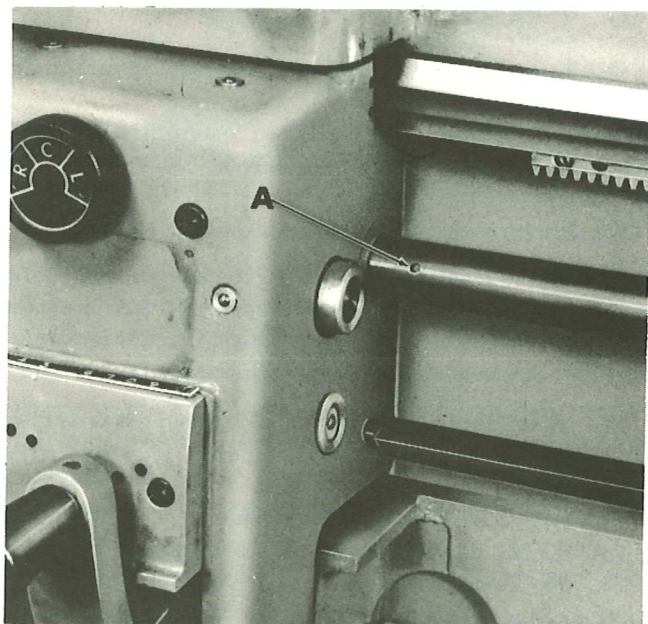


Figure 20

3. Remove sheared pin (A, fig. 20) from gear box shaft and lead screw.
4. Slide lead screw over gear box shaft – check alignment of shear pin holes with punch – turning lead screw 180° if necessary – install shear pin and secure with retainer. (use only shear pins supplied by factory – see parts list page 17 for part number).

5. Replace lead screw bracket -- CAUTION: Do not tighten the two socket cap screws.
6. Move carriage to tailstock end of bed, engage half-nuts to align lead screw and clutch rod, then tighten the two socket cap screws.

ADJUSTING SPINDLE BEARINGS

Spindle bearings have been preloaded at factory and seldom require adjusting. Follow these instructions should adjustment be necessary:

1. Make adjustment only when spindle is at operating temperature - - run spindle at medium speed for one hour with 6" chuck mounted on spindle.
2. Disengage backgear pin from drive pulley by pulling pin away from headstock.
3. Turn backgear knob to the right.
4. Move lead screw direction knob to vertical (NEUTRAL) position.
5. Give chuck a sharp spin with your hand.

NOTE: If preload is correct --chuck should rotate about one turn.

To adjust:

1. Remove spindle handwheel and upper belt guard.

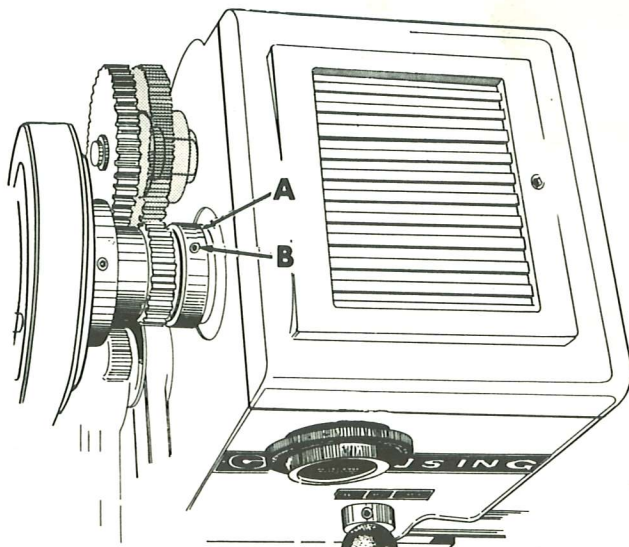


Figure 21

2. Loosen set screw (B) (fig. 21) in bearing adjusting nut (A) and tighten nut with spanner wrench until spindle end play has been removed.
3. Give chuck a sharp spin with your hand -- drive plate should rotate about one turn. If it doesn't, adjust nut (A) and recheck.
4. Tighten set screw (B) in adjusting nut.
5. Replace guard and handwheel.

REPLACING TIMING BELT

1. With motor turned off, remove spindle handwheel, upper belt guard and open motor door.

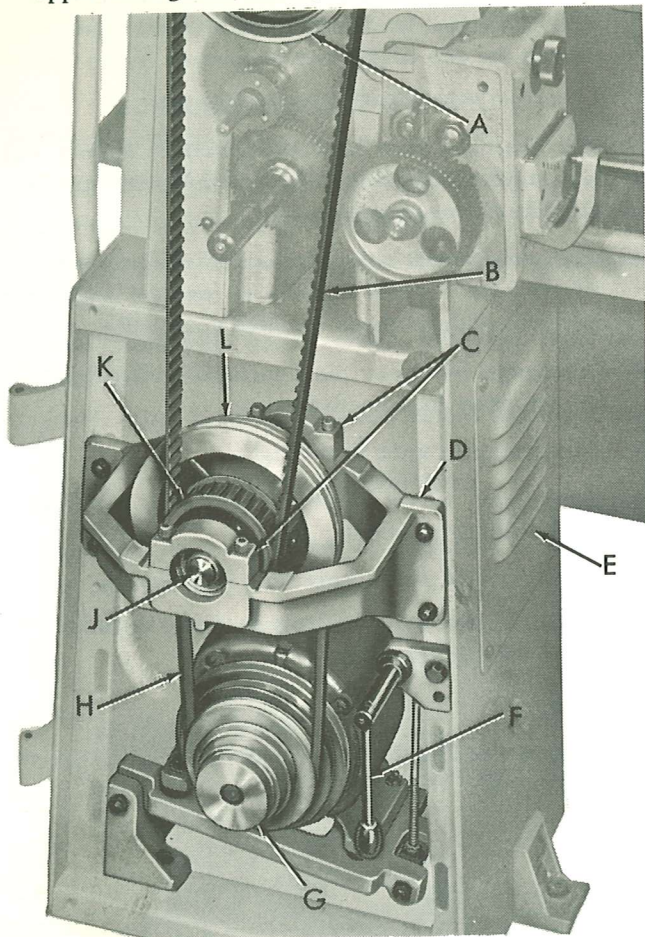


Figure 22

2. Remove clutch adjustment cover (E, fig. 22).
3. Raise belt tension lever (F).
4. Slip motor belt (H) off pulley (G).
5. Unscrew four socket cap screws holding front and rear bearing caps (C) on countershaft bracket (D).
6. Remove bearing caps (C).
7. Raise front of countershaft spindle assembly (J) out of countershaft bracket (D) just enough so timing belt (B) can be slipped off pulley (K) and countershaft spindle assembly (J).
8. Remove timing belt (B) from upper pulley (A).
9. Install new timing belt on upper pulley (A).
10. Repeat step 7 procedure and slip new belt on countershaft spindle assembly (J) and pulley (K).

CAUTION: Make sure snap rings at rear of spindle assembly (J) enter snap ring grooves in countershaft bracket (D) before replacing bearing caps (C).

11. Install bearing caps (C) and secure with socket cap screws.
12. Position motor belt (H) in step pulleys (L) and (G).
13. Lower belt tension lever (F).
14. Replace upper belt guard cover and spindle handwheel.
15. Install clutch adjustment cover (E).
16. Close motor door.

REPLACING MOTOR BELT

1. With motor turned off, open motor door.

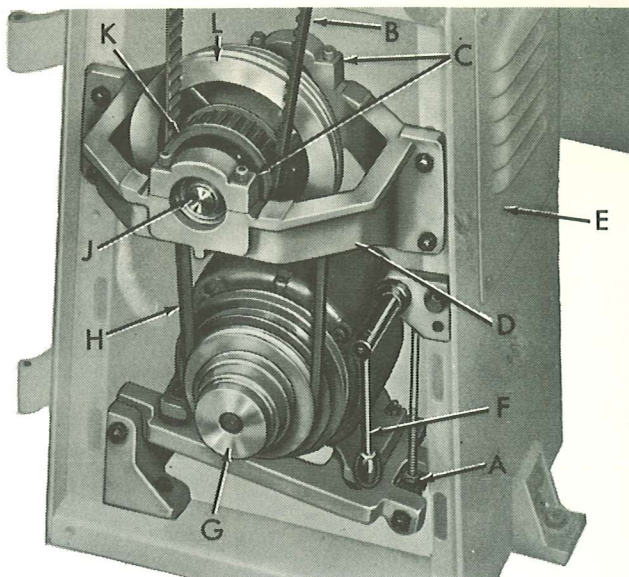


Figure 23

2. Remove clutch adjustment cover (E, fig. 23).
3. Raise belt tension lever (F).
4. Slip motor belt (H) off pulley (G).
5. Unscrew four socket cap screws holding front and rear bearing caps (C) on countershaft bracket (D).
6. Remove bearing caps (C).
7. Raise front of countershaft spindle assembly (J) out of countershaft bracket (D) just enough so timing belt (B) can be slipped off pulley (K) and spindle assembly (J).
8. Repeat step 7 procedure and remove motor belt (H).
9. Install new motor belt on countershaft spindle assembly (J) and place belt in desired groove of step pulley (L).
10. Replace timing belt (B) on pulley (K).

CAUTION: Make sure snap rings at rear of countershaft spindle assembly (J) enter snap ring grooves in countershaft bracket (D) before replacing bearing caps (C).

11. Install bearing caps (C) and secure with screws.
12. Position motor belt (H) in desired groove of pulley (G).
13. Lower belt tension lever (F).
14. Install clutch adjustment cover (E).
15. Close motor door.

TENSIONING MOTOR BELT

1. With motor turned off, open motor door.
2. With belt tension lever (F, fig. 23) engaged (down), adjust nuts (A) until proper tension is obtained.

NOTE: Properly tensioned belt should depress approximately 1/2" with light finger pressure--too much tension will cause excessive wear of bearings and shafts.

LATHE ATTACHMENTS

Lathe attachments fall into two general classes: (1) Those which increase speed and accuracy of general lathe operations: (2) Those which equip the lathe to handle work such as milling, grinding, etc., which usually require a single purpose machine.

NO. 7108 FOLLOWER REST

The follower rest provides support for long, slender work mounted between centers.

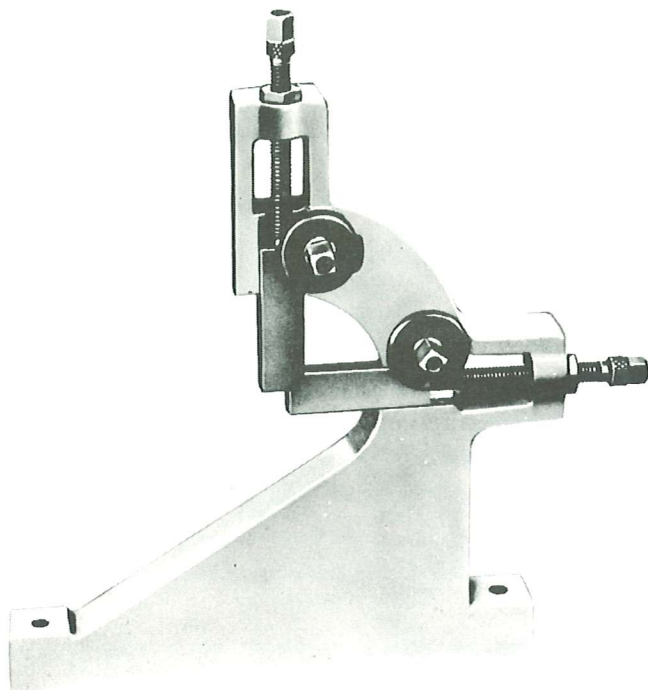


Figure 1

The two adjustable jaws hold the work in rigid position, preventing it from springing away from tool -- refer to figure 1.

The jaws must be accurately positioned to form a true bearing for the work, allowing it to turn freely but without play. The following method is recommended for most work: First, clean saddle dovetail ways. Mount work in lathe, remove the cross feed screw chip guard, and clamp the follower rest to the dovetail. Start the first cut and turn approximately one inch. Adjust both jaws to the turned diameter, making sure they do not bind or twist the work piece -- cellophane paper is sometimes inserted between jaws and work to obtain proper clearance. After both jaws have been properly adjusted, tighten the adjusting screw lock nuts and the jaw clamp screws.

During the cutting operation, apply plenty of lubricant on the work at the point of bearing with the jaws. After each cut the jaws must be adjusted to the new diameter being turned.

NO. 7109 STEADY REST

The steady rest supports long work during turning, boring or threading operations.

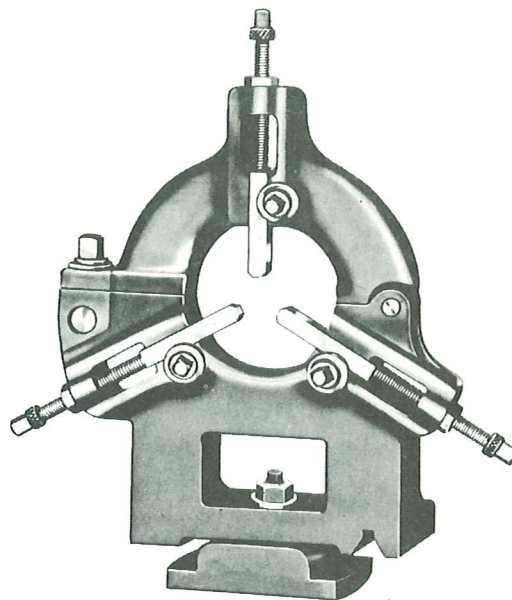


Figure 2

The base clamps to the lathe bed ways -- the adjustable jaws form a bearing for the work and hold it in exact position -- refer to figure 2.

Work that is less than $3/4$ " diameter and machined more than 5 or 6 inches away from headstock should be supported by a steady rest.

Accurate positioning of the steady rest jaws to the work is important. The jaws must form a true bearing for the work, allowing it to turn freely but without play. To install, clean the bed ways, mount work in lathe, then clamp steady rest to lathe bed close to headstock. Adjust bottom jaws first -- then bring top jaw into light contact with work -- cellophane paper is sometimes used between the jaws and the work to obtain proper clearance. After all three jaws have been properly adjusted, tighten the adjusting screw lock nuts and the jaw clamp screws. Slide the steady rest near the point where the work is to be machined and clamp it to the bed. During the cutting operation, apply plenty of lubricant on the work at the point of bearing with the jaws.

Scoring is usually caused by the top jaw being too tightly clamped, or by lack of oil. Chatter is caused by the top jaw being too loose.

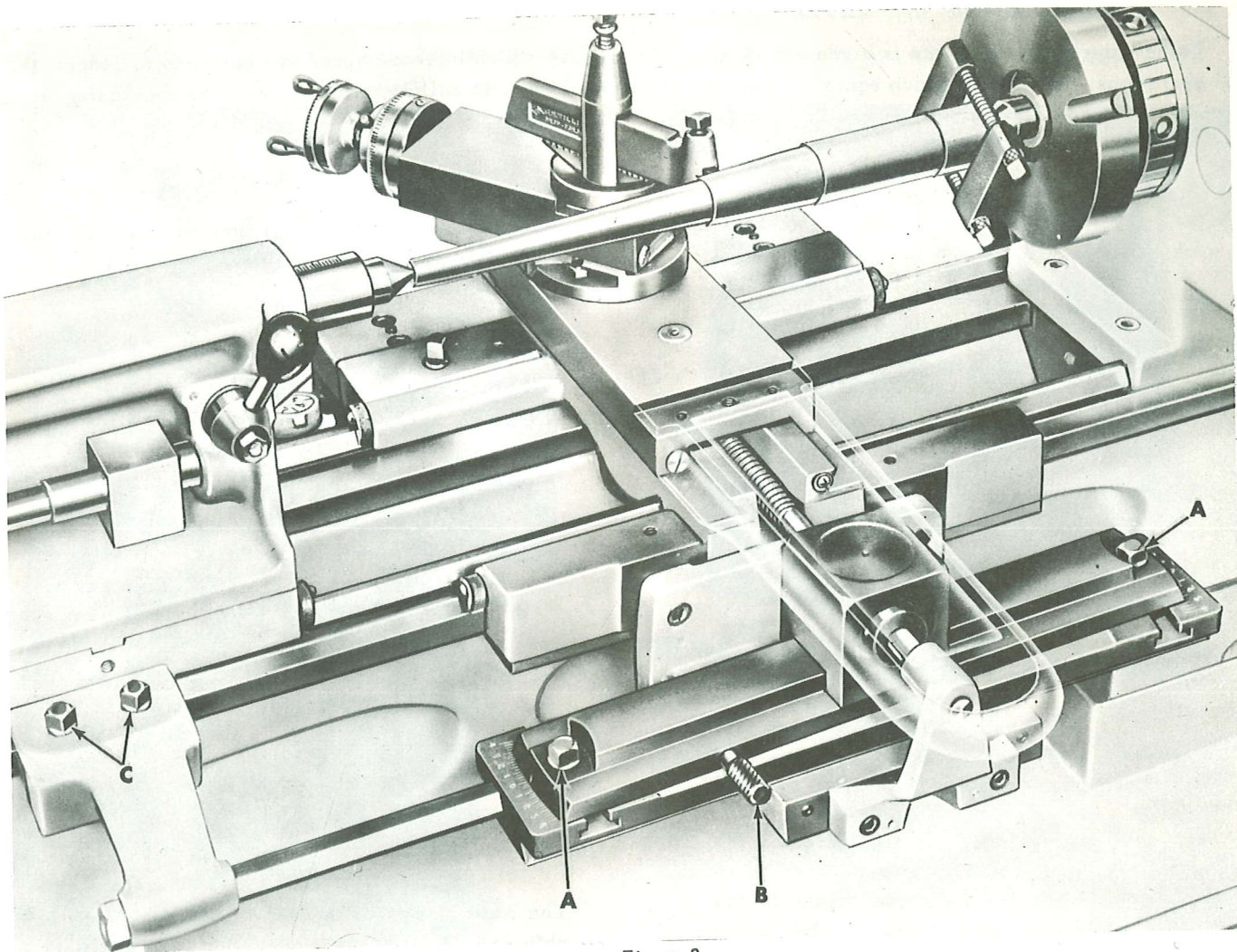


Figure 3

NO. 7114 TELESCOPIC TAPER ATTACHMENT

The Clausing telescopic taper attachment is of sturdy construction, precision machined and easy to operate. Capacity is 4" maximum taper per foot and 10" maximum travel at one setting.

TO OPERATE:

1. Mount work in the lathe – whenever possible the cut should be from the small diameter toward the large diameter.
2. Set point of tool bit on exact center line.
3. Lathe cross slide and taper slide should move freely, but with no up or down play. Adjust the tension with the gib screws in the cross slide and support bracket.
4. Position taper attachment so it is about in the center of the work. Lock clamp bracket to lathe bed.
5. Move the carriage by hand to make sure there is sufficient travel to complete the taper cut. If there isn't, adjust the compound rest, move the carriage or the taper attachment to a different position.
6. Set the taper bar to taper desired – graduations on left end of bar are marked in degrees (graduations indicate included angle) – the right end in inches per foot.
7. To set the attachment for taper desired –
 - A. Loosen the two lock screws (A, fig. 3) on each end of taper bar.
 - B. Turn taper adjusting screw (B) to taper desired.
 - C. Tighten the two taper bar lock screws (A).
 - D. Be sure clamp bracket (C) is locked to lathe bed.
8. Engage feed with tool approximately 1" away from beginning of cut to be sure backlash is removed before tool commences to cut.

Caution: When taper attachment is not in use, loosen clamp (C) so it will slide freely along lathe bed with the movement of the carriage and lock taper bar at zero degrees.

NO. 7118 MICRO CARRIAGE STOP

The carriage stop indicates the proper stopping point of the carriage for accurate duplicate work.

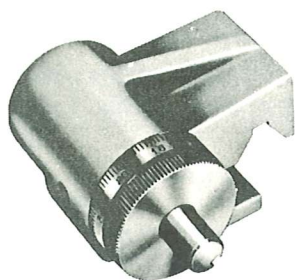


Figure 4

The stop clamps to front bed way of lathe -- clean ways before installing. Micrometer dial, graduated in thousandths, permits exact settings, refer to figure 4.

Micro carriage stop does not automatically disengage carriage feed -- carriage should always be fed manually the last part of the cut.

If carriage runs into the stop under power feed, it may break the stop or damage the lathe.

NO. 7529 THREAD CUTTING STOP

The thread cutting stop indicates the proper depth at which to stop the cross feed. It is especially valuable for threading and turning down a rough diameter. The thread cutting stop is mounted on the cross slide dovetail, either in front of or behind the compound rest.

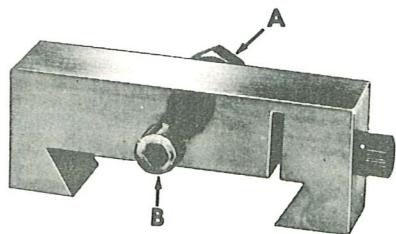


Figure 5

An adjustable screw (B, fig. 5) and lock nut (A) permit accurate setting. In mounting the cross slide stop on the cross slide dovetail, first remove the guard. Then clean the dovetail ways and clamp the stop in the approximate position required. Turn the adjusting screw into exact position and lock with the knurled nut. Place a small piece of paper or cardboard over the cross feed screw to keep it free from dirt and chips during the cutting operation.

During threading operations or whenever the tool is feed in with the compound, the cross feed is used only to back the tool out of the end of each cut. The thread cutting stop, combined with the micrometer graduations of the cross feed control handle on the lathe, assure an accurate "zero" reading before the compound rest feed is advanced for the next cut.

Do not force cross slide against the stop.

NO. 7002 MILLING ATTACHMENT

Equips lathe for face milling, cutting keyways and slots, milling dovetails, squaring shafts, making dies and moulds, etc. Quickly and easily installed by removing compound rest and clamping base of milling attachment in its place.

The attachment can be swiveled to hold work at any angle -- loosening the two lock screws releases it for turning.

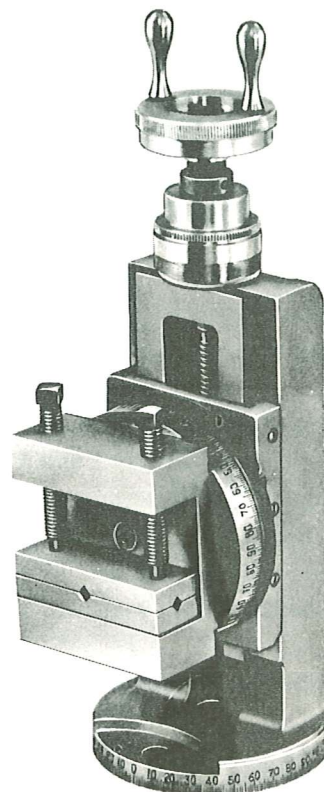


Figure 6

Position of vise is controlled by handwheel with micrometer graduated collar, refer to figure 6. Vise slide is graduated in degrees. Vise can be quickly set at any angle.

A milling cutter holder or collet attachment is recommended for holding the milling cutter -- chucks are not satisfactory for such use.

Cutting speeds for milling should be approximately $\frac{2}{3}$ of the speeds used for general turning. When milling, take light cuts and use a slow even feed. Never force the work into the cutter.

NO. 7651 TOOL POST GRINDER

tool post grinder is used for both external and internal finishing whenever precision and a polished surface are required. Grinder mounts in tool post slide of lathe compound rest.

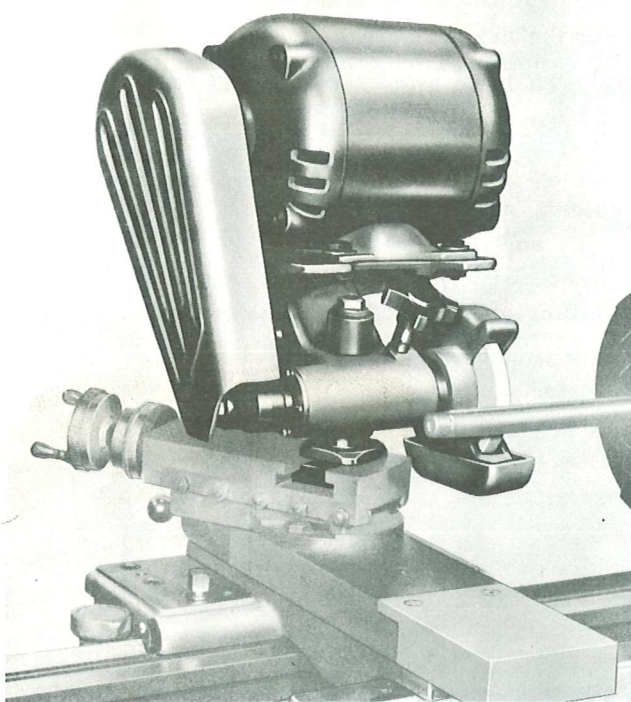


Figure 7

For most operations, grinder spindle is on the exact center line of lathe -- refer to figure 7.

When grinding a surface parallel to lathe center line, set the compound rest at 0 and feed the carriage back and forth by hand or by power feed. When grinding at an angle, the compound rest is set at the proper angle and the grinder is fed back and forth with the compound rest feed.

IMPORTANT: Protect the lathe from grinding dust.

Grinding dust is a mixture of abrasive dust and fine particles of steel. This dust is extremely abrasive -- when allowed to remain on the lathe bed ways and cross slide it can cause rapid wear. Always cover the bed ways and cross slide during grinding operations. After grinding, thoroughly clean the bed ways and carriage dovetails, and apply plenty of clean oil.

Before grinding, dress the wheel.

The dressing tool mounts in a holder clamped to lathe bed.

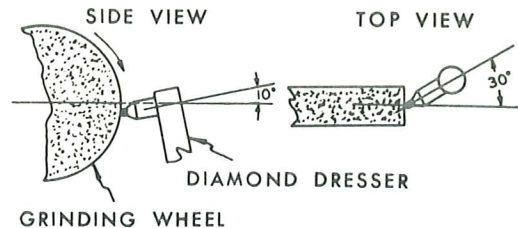


Figure 8

The diamond point should be at an angle and slightly below center as shown in figure 8. Run the wheel back and forth, taking light cuts until the diamond cuts evenly and has removed the glazed surface from the wheel. For a fine, accurate finish, the grinding wheel must be dressed before each operation.

The grinder has two spindle speeds, low speed for external grinding and high speed for internal grinding.

WARNING: *Never run the large grinding wheel at the higher speed -- this speed is for internal grinding wheels only.*

When grinding, work must rotate in a direction opposite that of the grinding wheel.

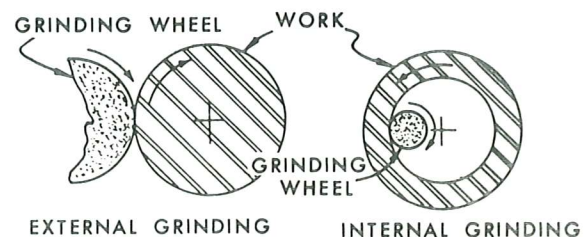


Figure 9

The rotation of the lathe spindle shown in figure 9 must be clockwise (reverse) for external grinding, and counterclockwise (forward) for internal grinding.

External Grinding -- the work should be turned as close to the final finish size as possible before the grinding operation is begun -- grinding is a finishing operation.

With work and grinder in proper position, take light cuts across the entire length of work. The finishing cut should be less than .001 inch.

Internal Grinding -- be sure to remove the external wheel before mounting internal grinding wheel. When grinding internally, take light cuts and feed in very slowly because of overhang of grinding wheel and arbor. After the last cut, allow the wheel to pass back and forth across work several times without advancing feed.



CLAUSING CORPORATION
KALAMAZOO, MICHIGAN 49007

WIRING INSTRUCTIONS

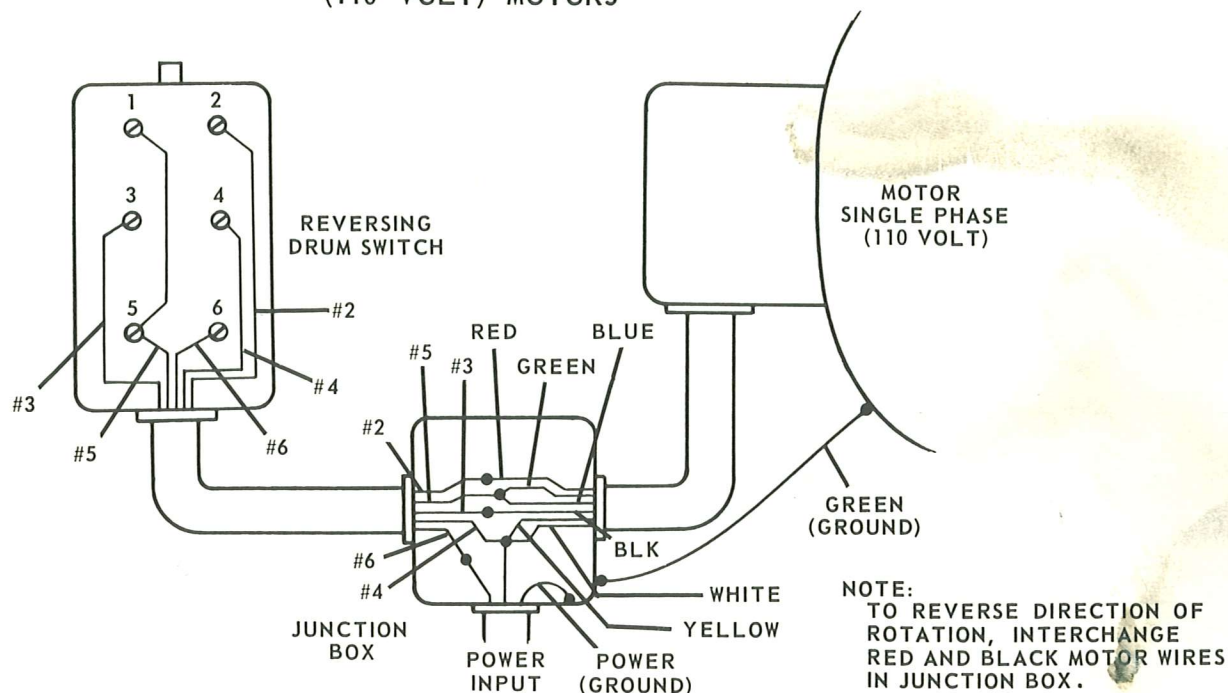
for
5900 CLAUSING LATHES

SERIAL NUMBERS FROM 530556
(STEP DRIVE, SINGLE PHASE)
SERIAL NUMBERS FROM 530557
(STEP DRIVE, THREE PHASE)
SERIAL NUMBERS FROM 511482
(VARI DRIVE, SINGLE PHASE)
SERIAL NUMBERS FROM 511474
(VARI DRIVE, THREE PHASE)

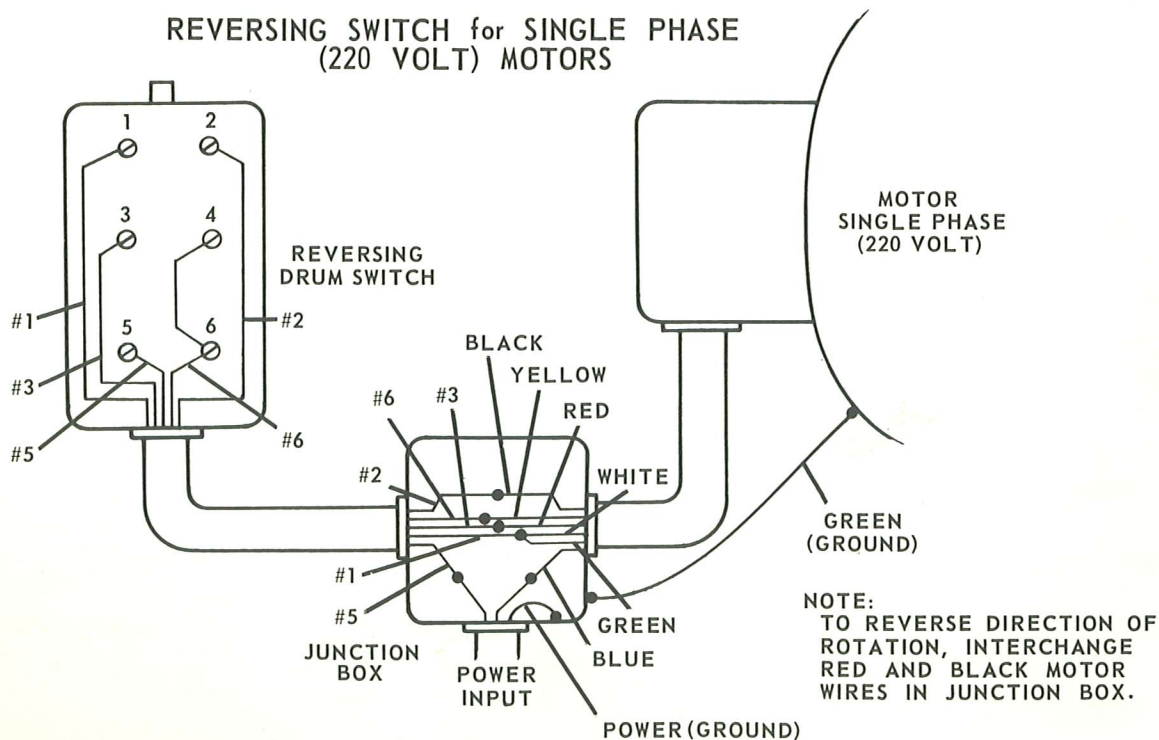
JANUARY, 1976

2

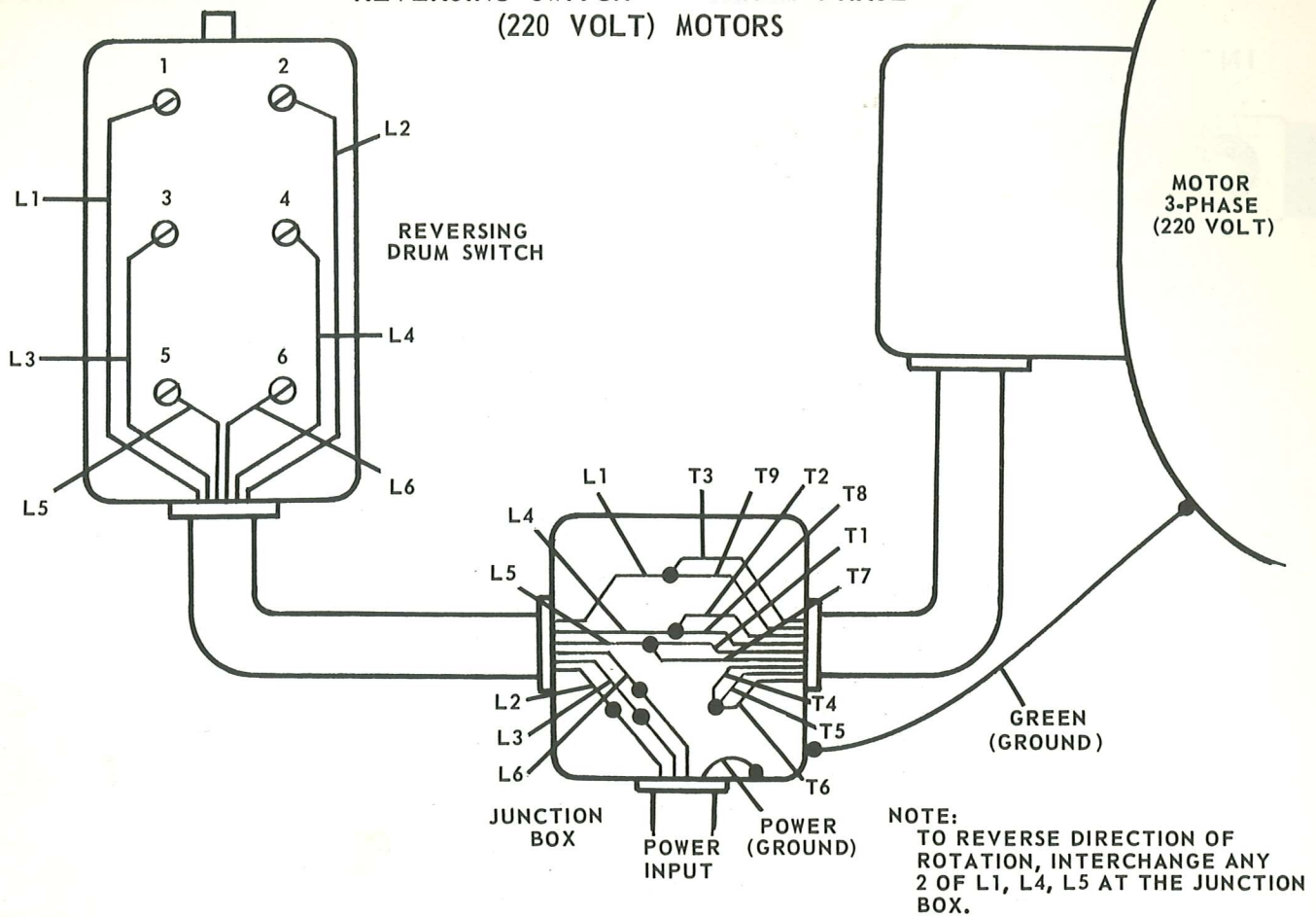
REVERSING SWITCH for SINGLE PHASE (110 VOLT) MOTORS



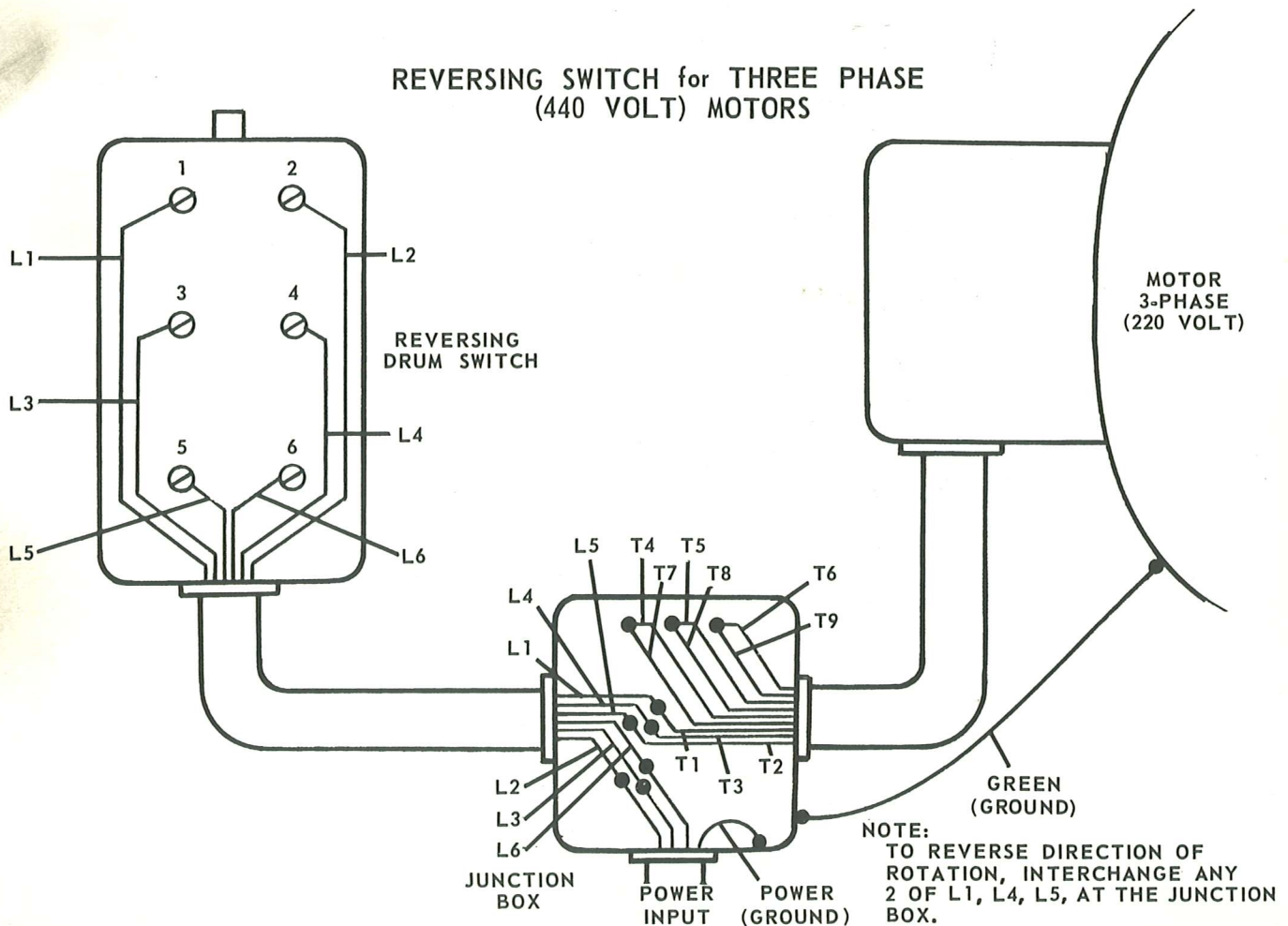
REVERSING SWITCH for SINGLE PHASE (220 VOLT) MOTORS



REVERSING SWITCH for THREE PHASE (220 VOLT) MOTORS



REVERSING SWITCH for THREE PHASE (440 VOLT) MOTORS



JANUARY, 1976

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INSTRUCTIONS FOR ORDERING REPAIR PARTS

It is important to furnish the following information in addition to QUANTITY required:

1. PART NUMBER
2. PART NAME
3. MODEL and SERIAL NUMBER of machine tool – you'll find both on the metal plate attached to machine – note illustration below.

ORDER REPAIR PARTS FROM
CLAUSING SERVICE CENTER
811 EISENHOWER DRIVE SOUTH
GOSHEN, INDIANA 46526

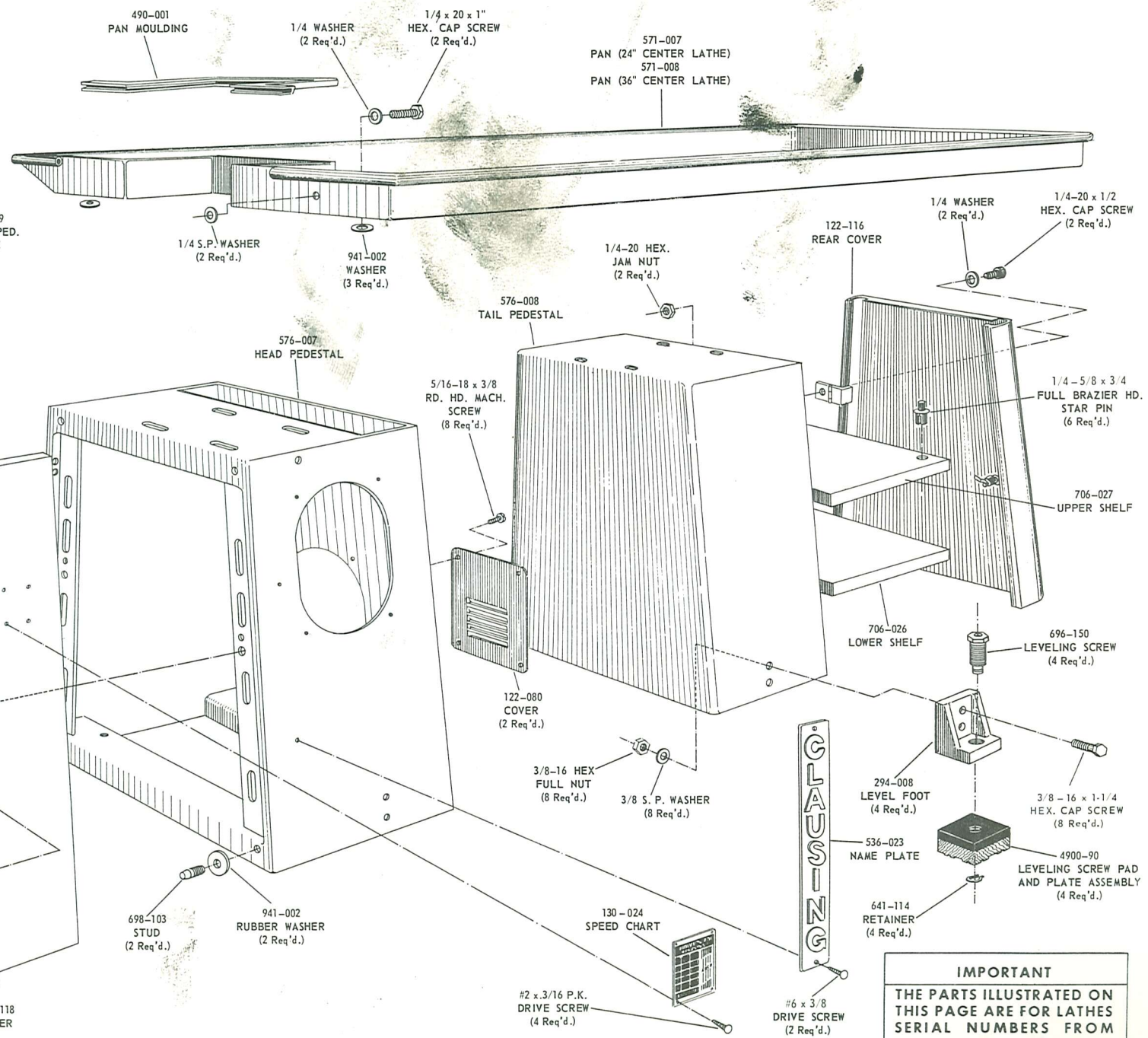


NOTE: Screws and nuts shown without part numbers should be purchased locally.
We reserve the right to make changes in design and specifications without notice.

CABINET ASSEMBLY

16

5930
3

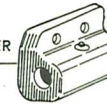


IMPORTANT
THE PARTS ILLUSTRATED ON THIS PAGE ARE FOR LATHES SERIAL NUMBERS FROM 530200 TO

BED ASSEMBLY

058-021 BED (24" Center Lathe)
058-022 BED (36" Center Lathe)

IMPORTANT
FOR LATHES WITHOUT
CLUTCH AND BRAKE, ORDER
4900-35 LEAD SCREW
BRACKET ASSEMBLY
W/BUSHING AND OILER



5900-35
LEAD SCREW
BRACKET W/BUSHING
& OILER

DB4-35
OILER

10-249
BUSHING

5/16-18 x 1" SOC.
CAP SCREW
(2 req'd.)

556-141
MODEL PLATE

10-249
BUSHING

#2 x 3/16
P.K. DR. SCREW
(Type U)
(2 req'd.)

294-011
REAR PEDESTAL FOOT

346-039
FOOT GASKET

294-012
HEAD PEDESTAL FOOT

646-007 RACK
(24" Center Lathe)
646-008 RACK
(36" Center Lathe)

3/16 x 3/4
ROLL PIN
(2 req'd.)

L3-202 SCREW
(24" Center Lathe) (6 req'd.)
(36" Center Lathe) (8 req'd.)

696-097
LEAD SCREW (24" Center Lathe)
696-098
LEAD SCREW (36" Center Lathe)

641-120
RETAINER

562-101
SHEAR PIN

3/8-16 x 1"
HEX. CAP SCREW
(8 req'd.)

3/8 LOCK WASHER
(8 req'd.)

932-092
WASHER
(8 req'd.)

3/8-16 HEX.
FULL NUT
(8 req'd.)

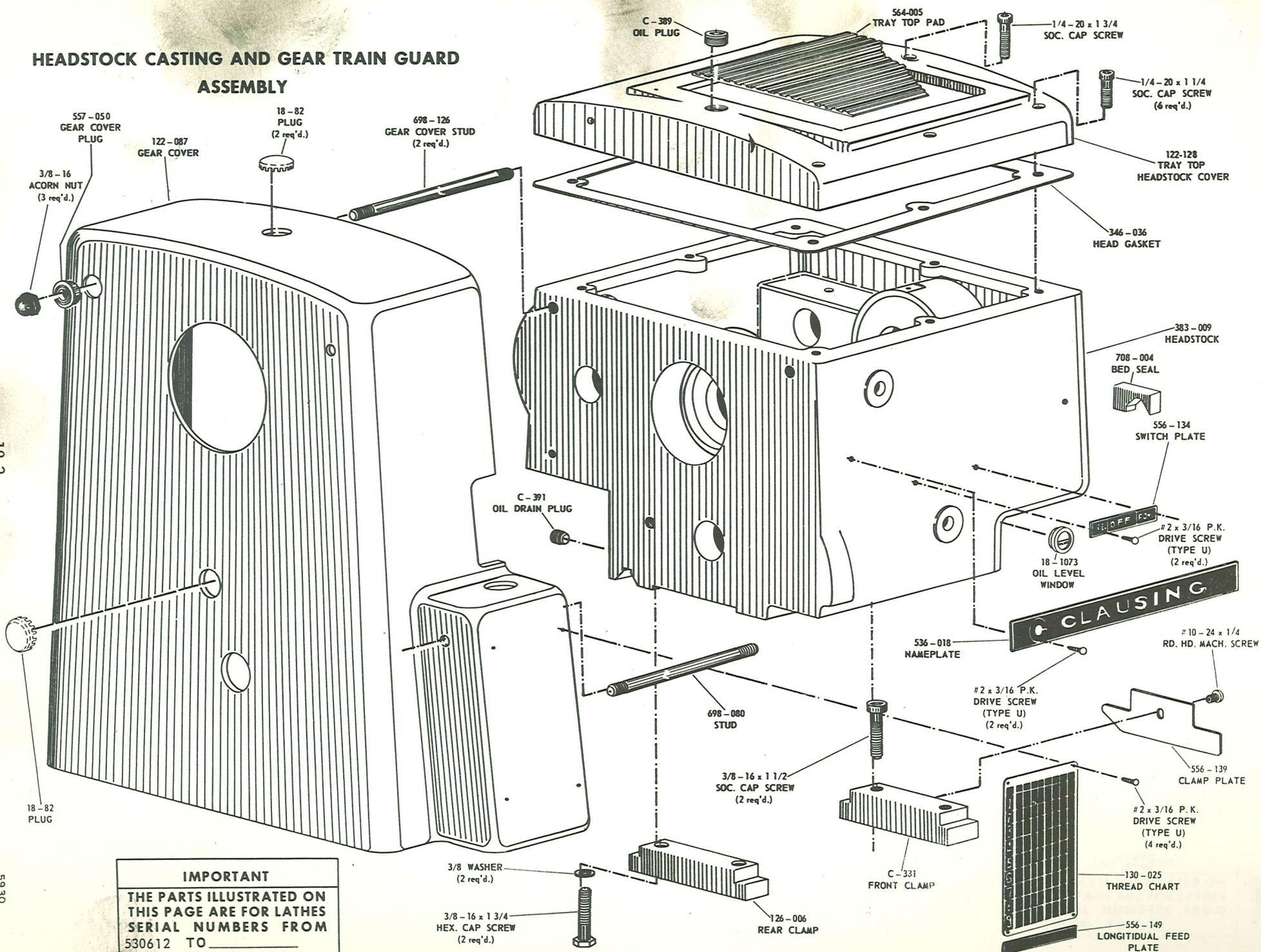
698-071
STUD
(8 req'd.)

1/4-20 x 3/8
RD. HD. MACH. SCREW
(2 req'd.)

122-115
GUARD COVER

IMPORTANT
THE PARTS ILLUSTRATED ON
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SERIAL NUMBERS FROM
530200 TO _____

HEADSTOCK CASTING AND GEAR TRAIN GUARD ASSEMBLY



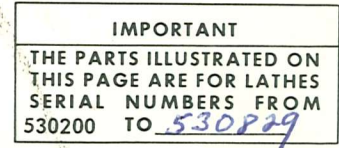
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SERIAL NUMBERS FROM
530612 TO _____

INDIVIDUAL FEED
PLATE



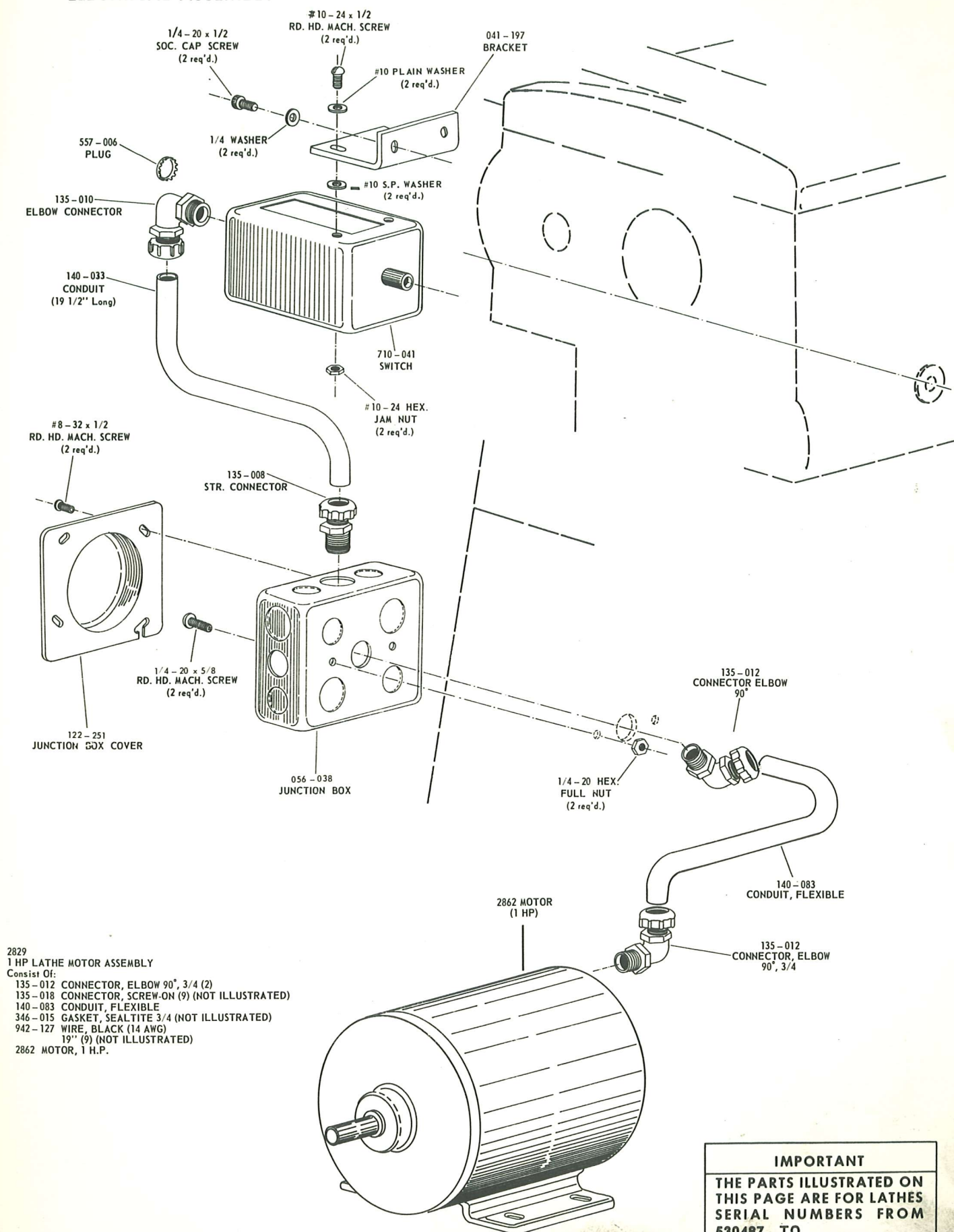
530612 TO -

20



Model # 5936

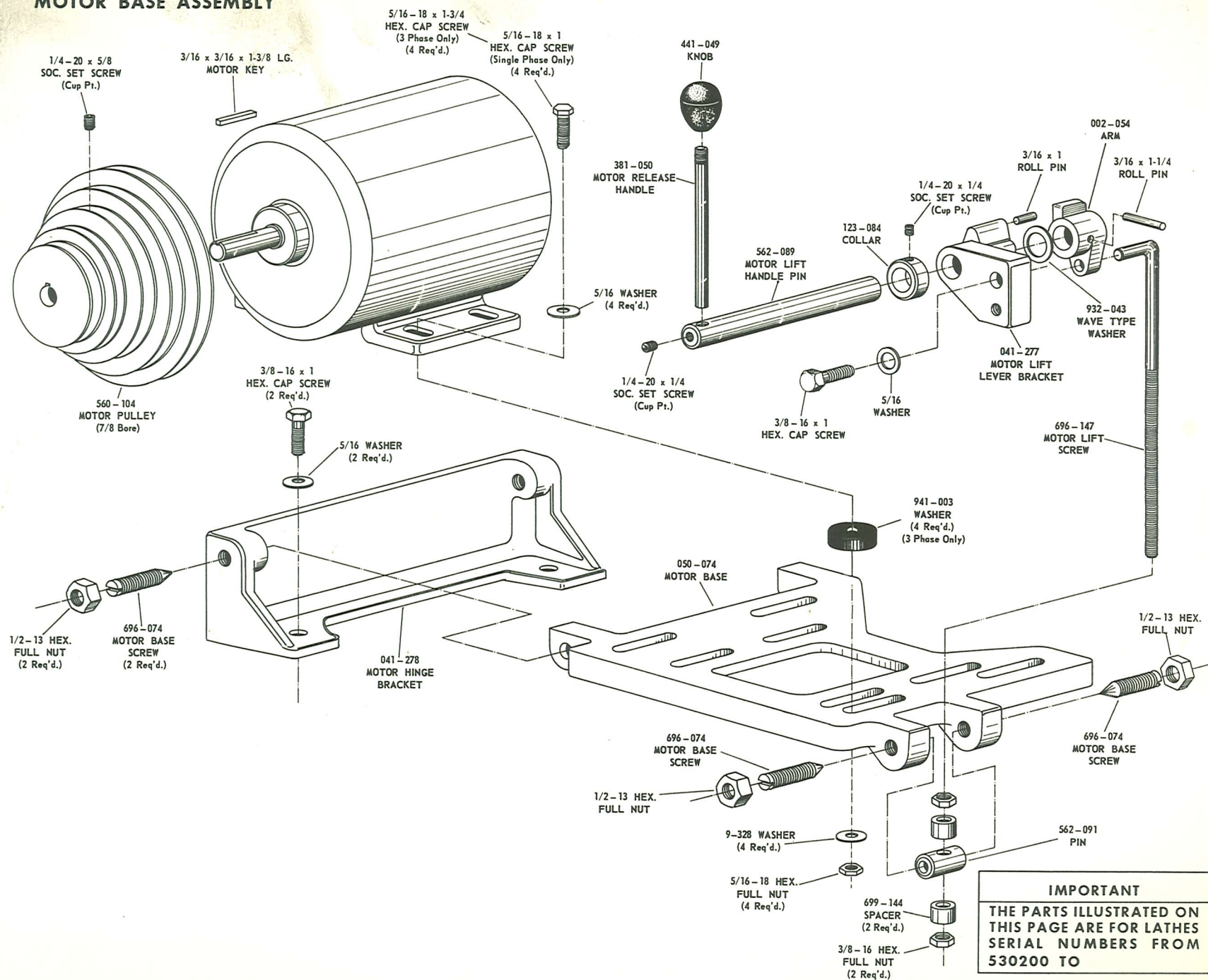
ELECTRICAL ASSEMBLY



IMPORTANT

THE PARTS ILLUSTRATED ON THIS PAGE ARE FOR LATHES SERIAL NUMBERS FROM 530487 TO _____

MOTOR BASE ASSEMBLY



IMPORTANT
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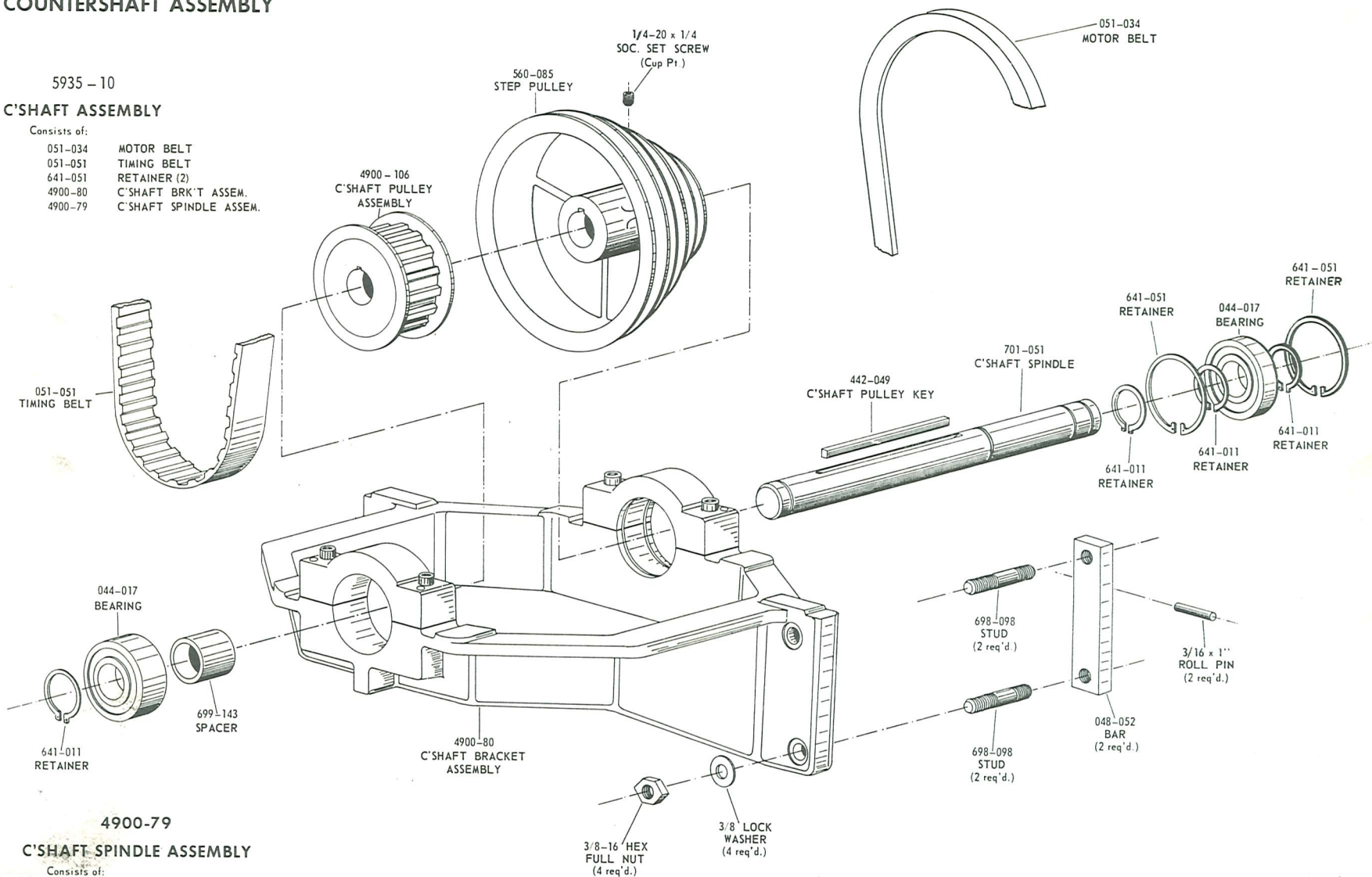
COUNTERSHAFT ASSEMBLY

5935 - 10

C'SHAFT ASSEMBLY

Consists of:

051-034	MOTOR BELT
051-051	TIMING BELT
641-051	RETAINER (2)
4900-80	C'SHAFT BRK'T ASSEM.
4900-79	C'SHAFT SPINDLE ASSEM.



4900-79

C'SHAFT SPINDLE ASSEMBLY

Consists of:

044-017	BEARING (2)
442-049	KEY
560-085	STEP PULLEY
641-011	RETAINER (4)
699-143	SPACER
701-051	SPINDLE
4900-106	C'SHAFT PULLEY ASSEM.
1/4-20 x 1/4	SOC. SET SCREW

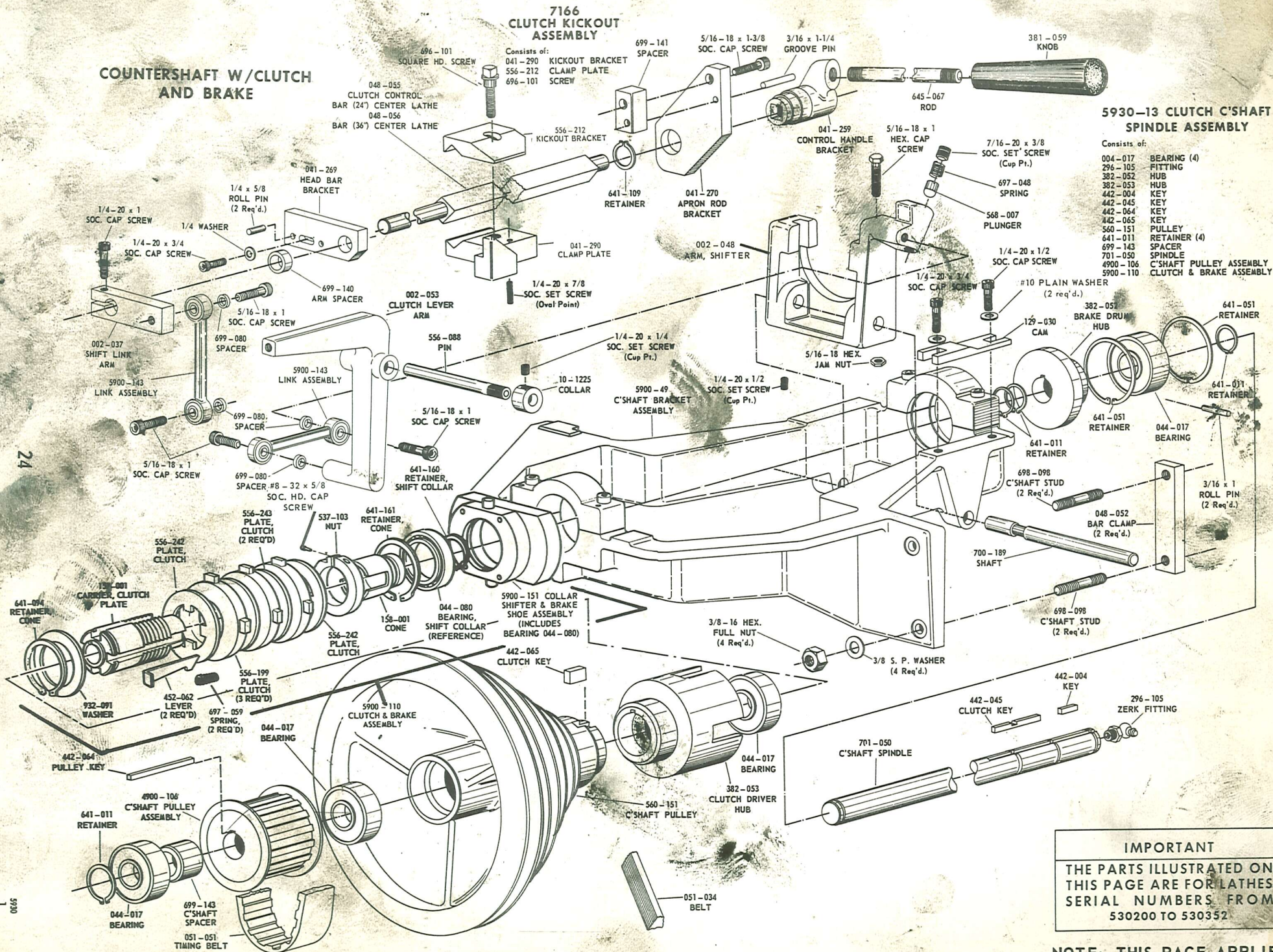
IMPORTANT

THE PARTS ILLUSTRATED ON
THIS PAGE ARE FOR LATHES
SERIAL NUMBERS FROM
530200 TO _____

COUNTERSHAFT W/CLUTCH AND BRAKE

7166 CLUTCH KICKOUT ASSEMBLY

5930-13 CLUTCH C'SHAFT SPINDLE ASSEMBLY



IMPORTANT
THE PARTS ILLUSTRATED ON THIS PAGE ARE FOR LATHES SERIAL NUMBERS FROM 530200 TO 530352

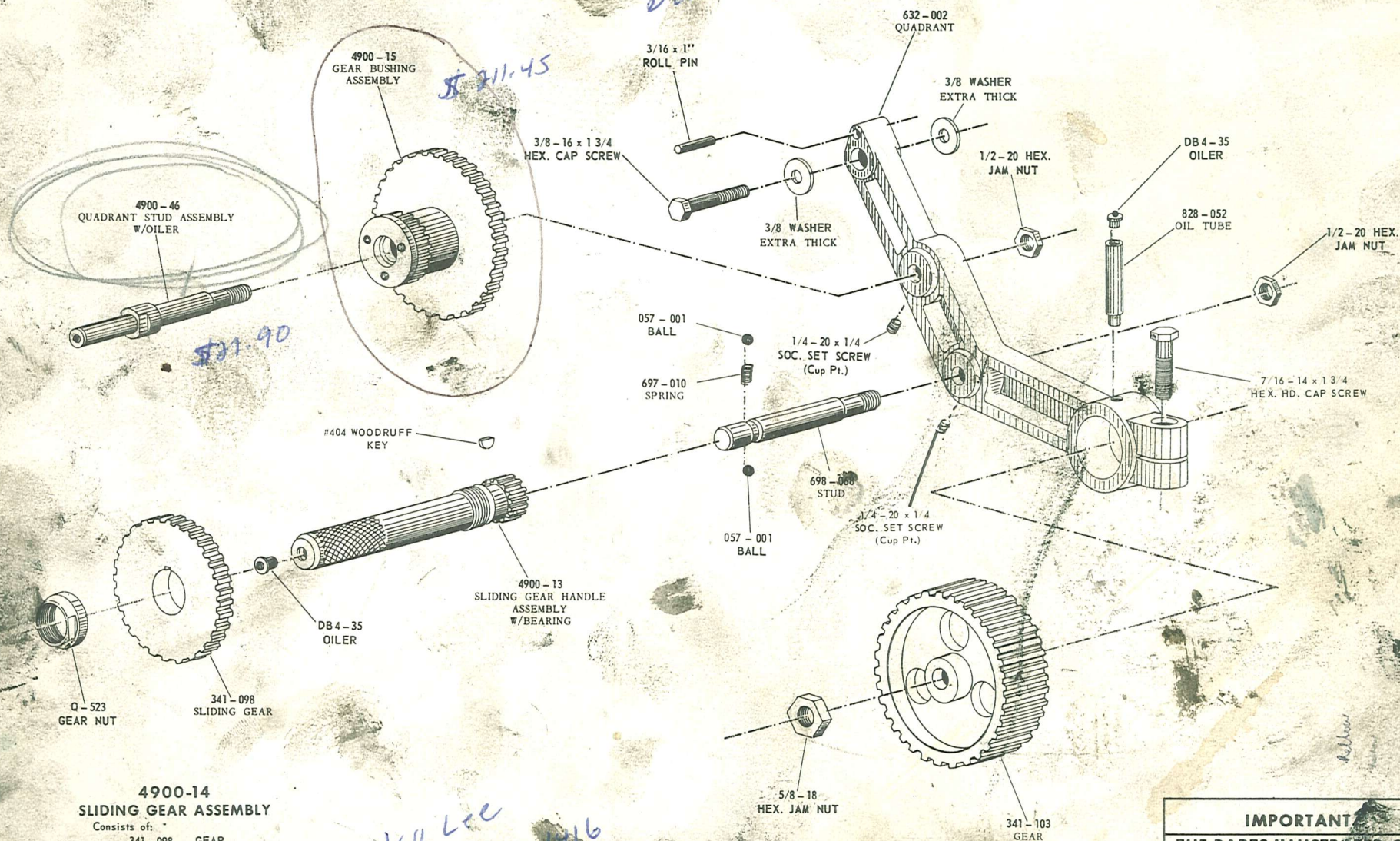
NOTE: THIS PAGE APPLIES TO 5930, 5931, 5932 & ONLY

QUADRANT ASSEMBLY NO. 4900-29

Richard Ives
744-1205
1220 So. Lapan
Down 80223

n B0B4

BRONT



4900-14 SLIDING GEAR ASSEMBLY

Consists of:

341-098	GEAR
4900-13	GEAR ASSEMBLY
DB 4-35	OILER
Q-523	NUT
#404	WOODRUFF KEY

IMPORTANT
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THIS PAGE ARE FOR LATHES
SERIAL NUMBERS FROM
530200 TO

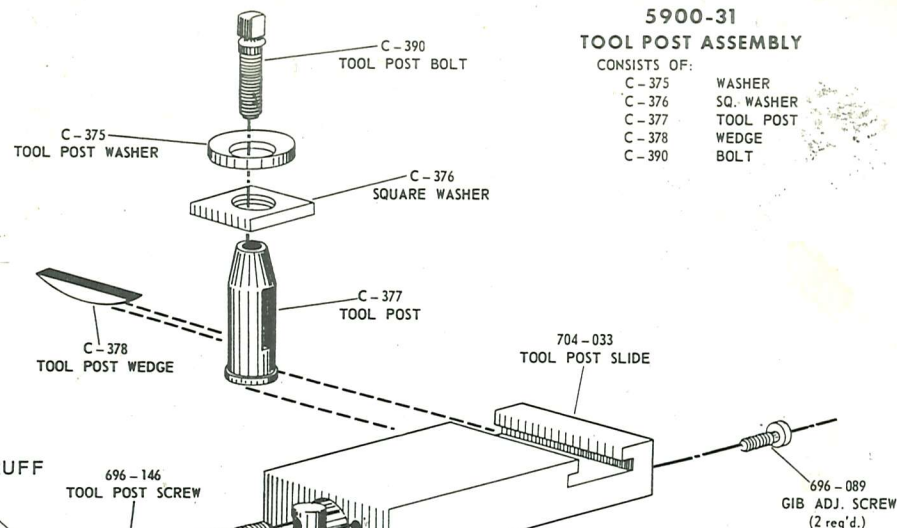
K. O. Lee
PO Box 1416
Abbeville, S.C.
53402

COMPOUND AND CROSS SLIDE ASSEMBLY

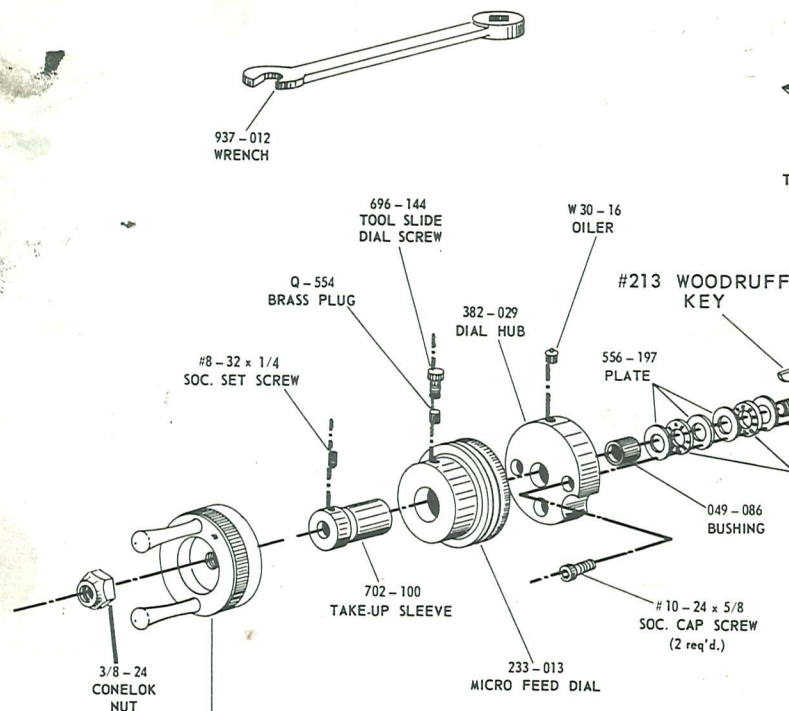
5900-31 TOOL POST ASSEMBLY

CONSISTS OF:

C-375	WASHER
C-376	SQ. WASHER
C-377	TOOL POST
C-378	WEDGE
C-390	BOLT



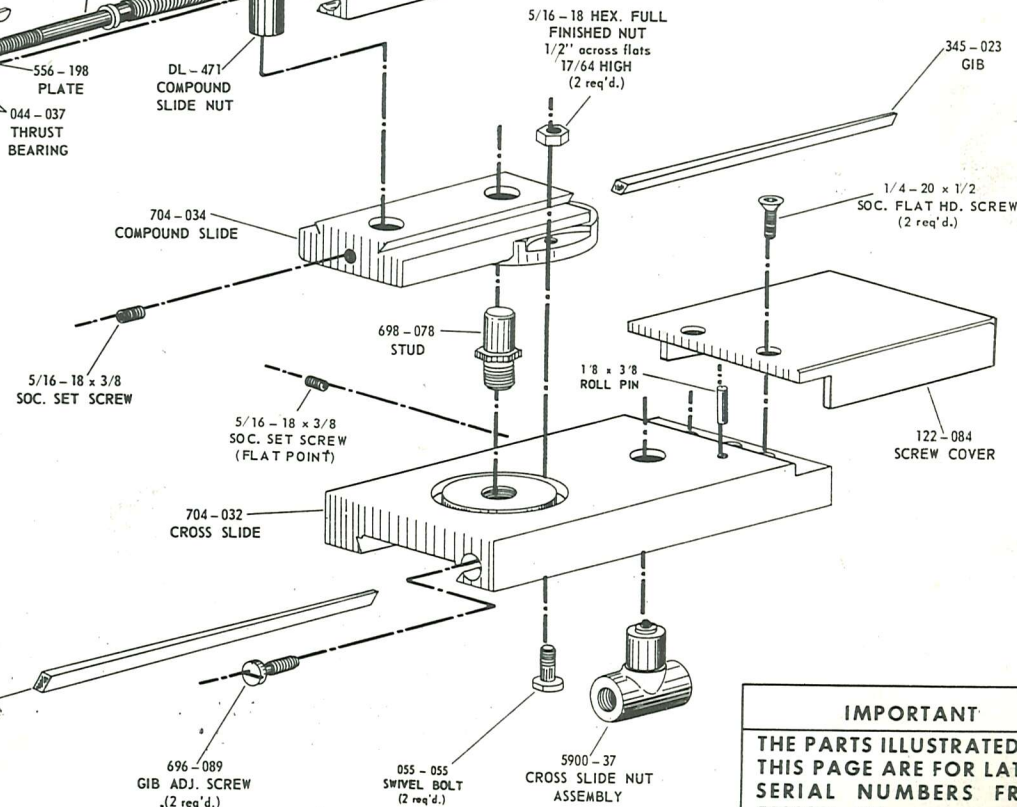
26



5900-30 COMPOUND ASSEMBLY

Consists of:

704-034	SLIDE
704-033	SLIDE
702-100	SLEEVE
696-089	SCREW (2)
696-146	SCREW
4900-52	HANDWHEEL ASSEMBLY
382-029	HUB
345-023	GIB
233-013	DIAL
049-086	BUSHING
W30-16	OILER
Q-554	PLUG
696-144	DIAL SCREW
DL-471	NUT
#213	WOODRUFF KEY
3/8-24	CONELOCK NUT
5/16-18 x 3/8	SOC. SET SCREW
#8-32 x 1/4	SOC. SET SCREW
#10-24 x 5/8	SOC. CAP SCREW (2)
044-037	BEARING (2)
556-197	PLATE (3)
556-198	PLATE



IMPORTANT

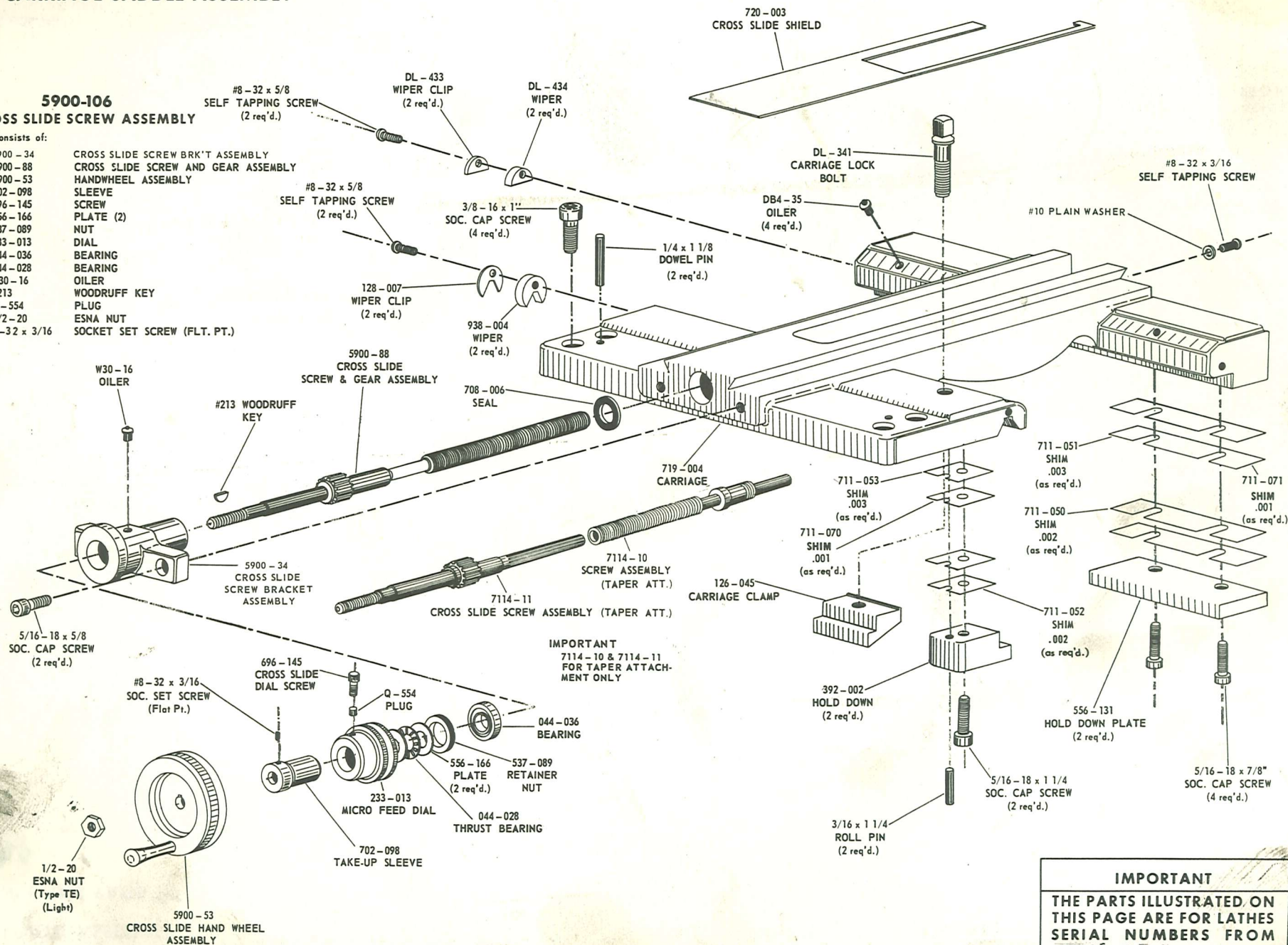
THE PARTS ILLUSTRATED ON THIS PAGE ARE FOR LATHES SERIAL NUMBERS FROM 530200 TO

CARRIAGE SADDLE ASSEMBLY

5900-106
CROSS SLIDE SCREW ASSEMBLY

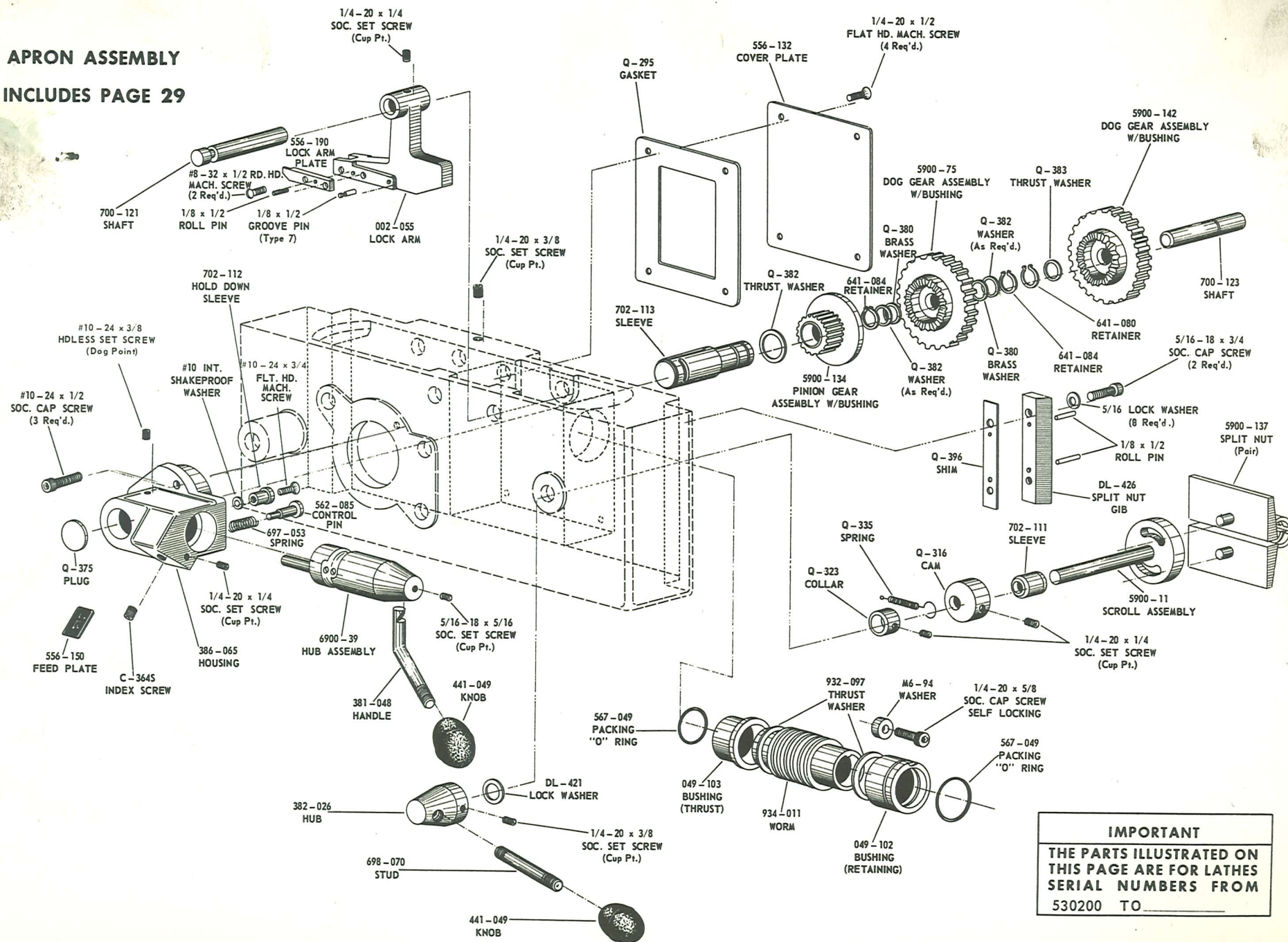
Consists of:

5900-34 CROSS SLIDE SCREW BRKT ASSEMBLY
 5900-88 CROSS SLIDE SCREW AND GEAR ASSEMBLY
 5900-53 HANDWHEEL ASSEMBLY
 702-098 SLEEVE
 696-145 SCREW
 556-166 PLATE (2)
 537-089 NUT
 233-013 DIAL
 044-036 BEARING
 044-028 BEARING
 W30-16 OILER
 #213 WOODRUFF KEY
 Q-554 PLUG
 1/2-20 ESNA NUT
 8-32 x 3/16 SOCKET SET SCREW (FLT. PT.)



IMPORTANT
 THE PARTS ILLUSTRATED ON
 THIS PAGE ARE FOR LATHES
 SERIAL NUMBERS FROM
 530200 TO

APRON ASSEMBLY INCLUDES PAGE 29

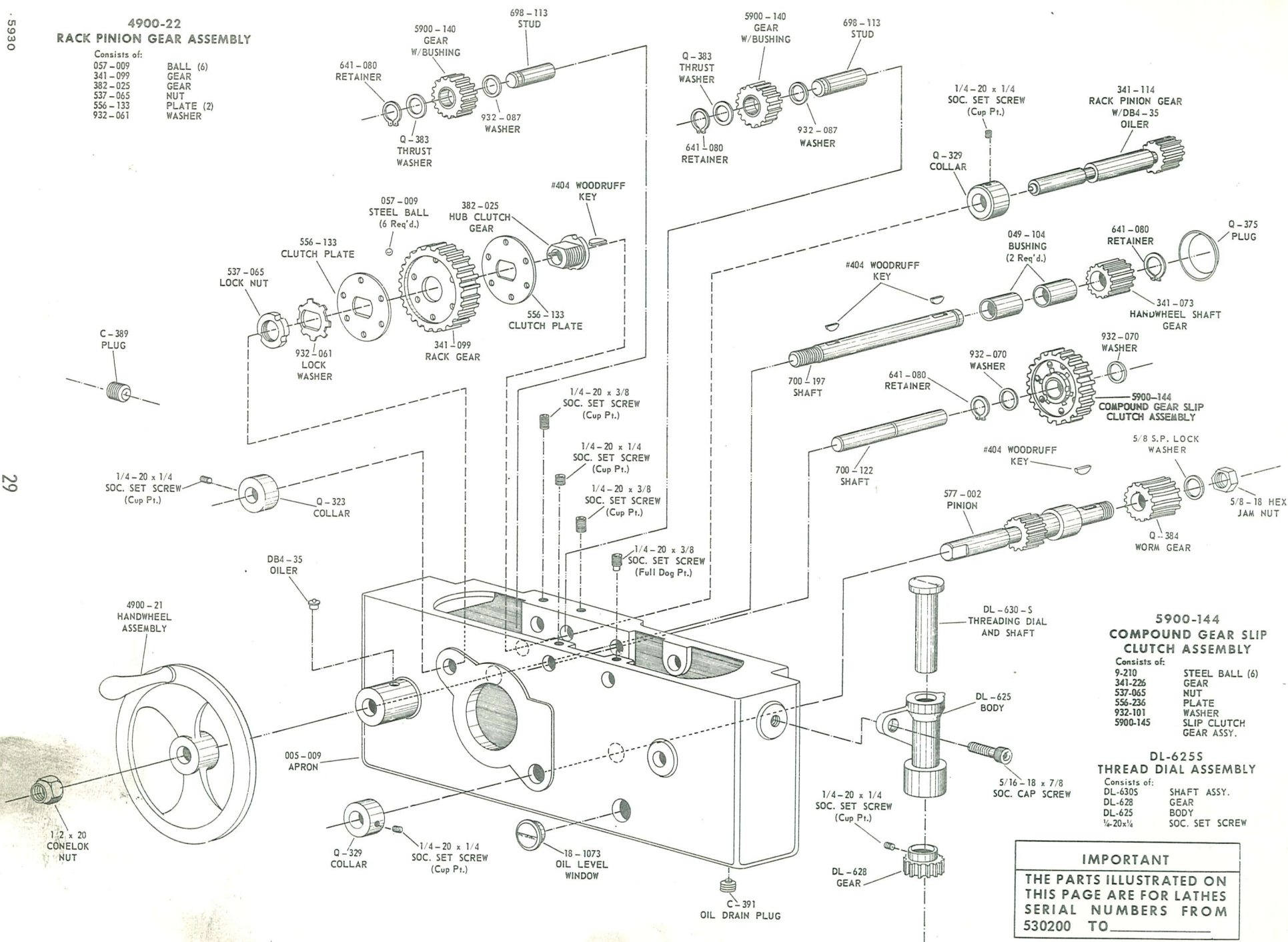


IMPORTANT
THE PARTS ILLUSTRATED ON
THIS PAGE ARE FOR LATHES
SERIAL NUMBERS FROM
530200 TO _____

4900-22 RACK PINION GEAR ASSEMBLY

Consists of:

057-009	BALL (6)
341-099	GEAR
382-025	GEAR
537-065	NUT
556-133	PLATE (2)
932-061	WASHER

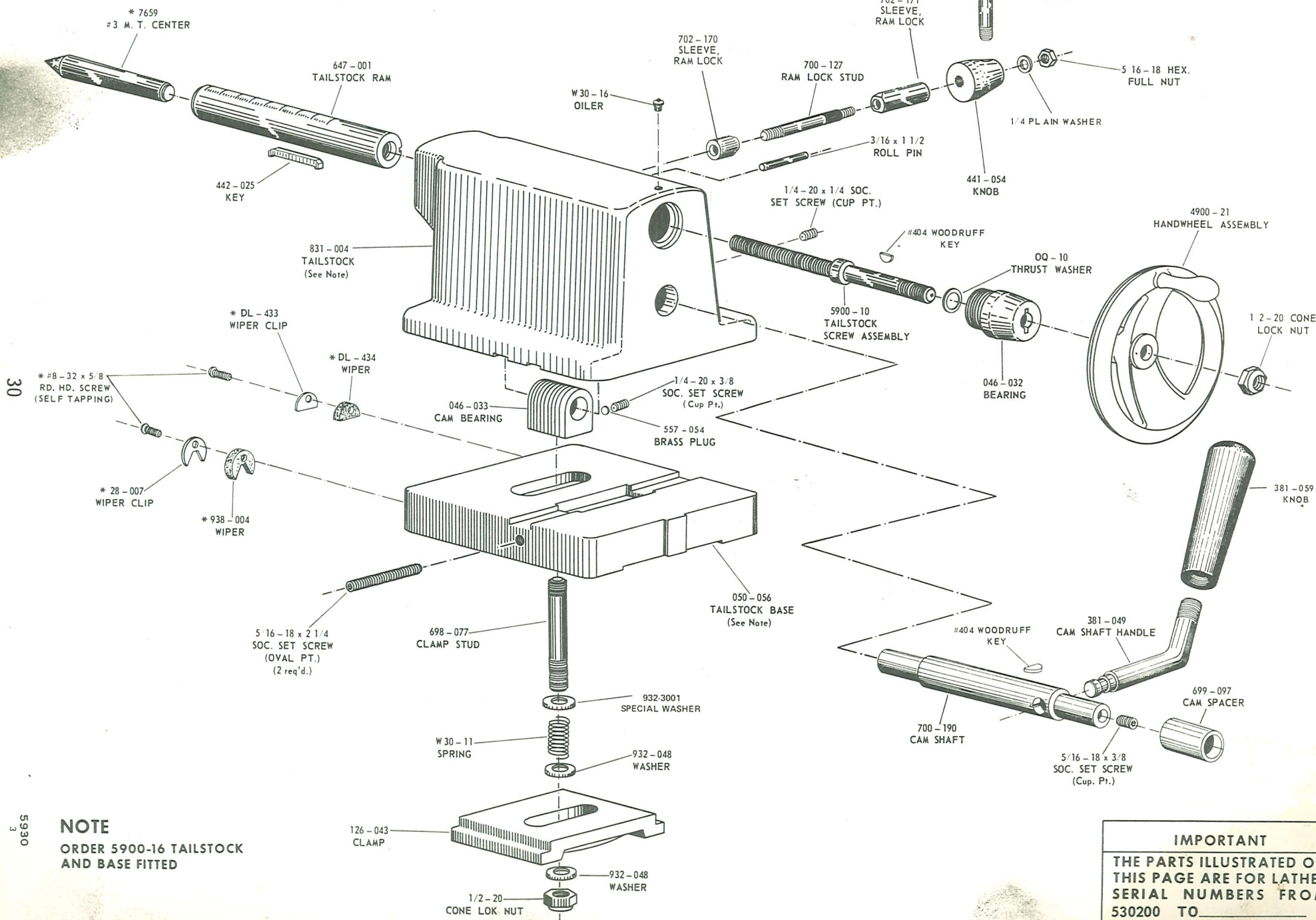


IMPORTANT

THE PARTS ILLUSTRATED ON THIS PAGE ARE FOR LATHES SERIAL NUMBERS FROM 530200 TO _____

TAILSTOCK ASSEMBLY NO. 5900-57

* PARTS NOT PART OF THIS ASSEMBLY



NOTE

ORDER 5900-16 TAILSTOCK AND BASE FITTED

IMPORTANT

THE PARTS ILLUSTRATED ON THIS PAGE ARE FOR LATHES SERIAL NUMBERS FROM 530200 TO _____