



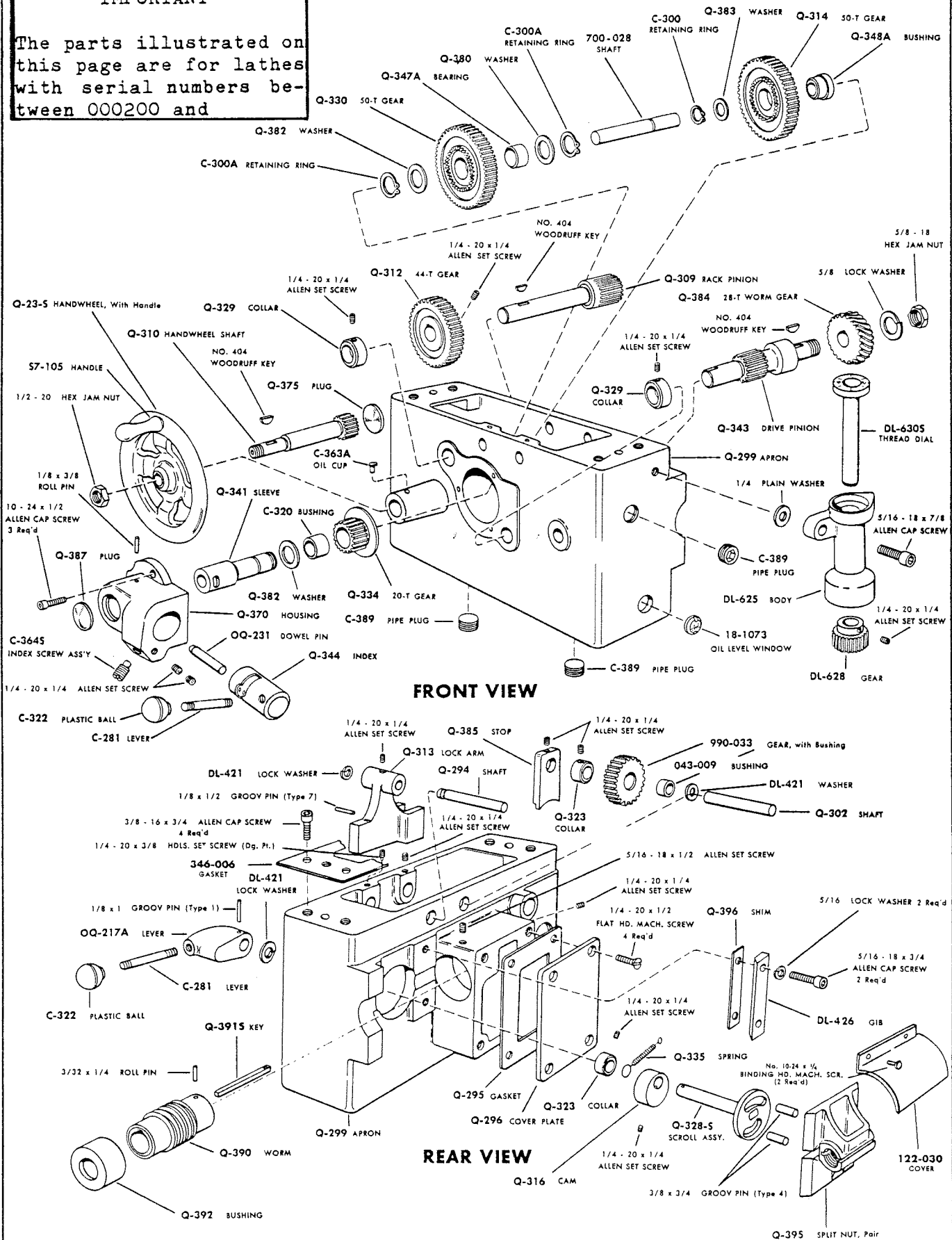


# CARRIAGE APRON ASSEMBLY Q-299-S

(LESS THREADING DIAL)

## IMPORTANT

The parts illustrated on this page are for lathes with serial numbers between 000200 and

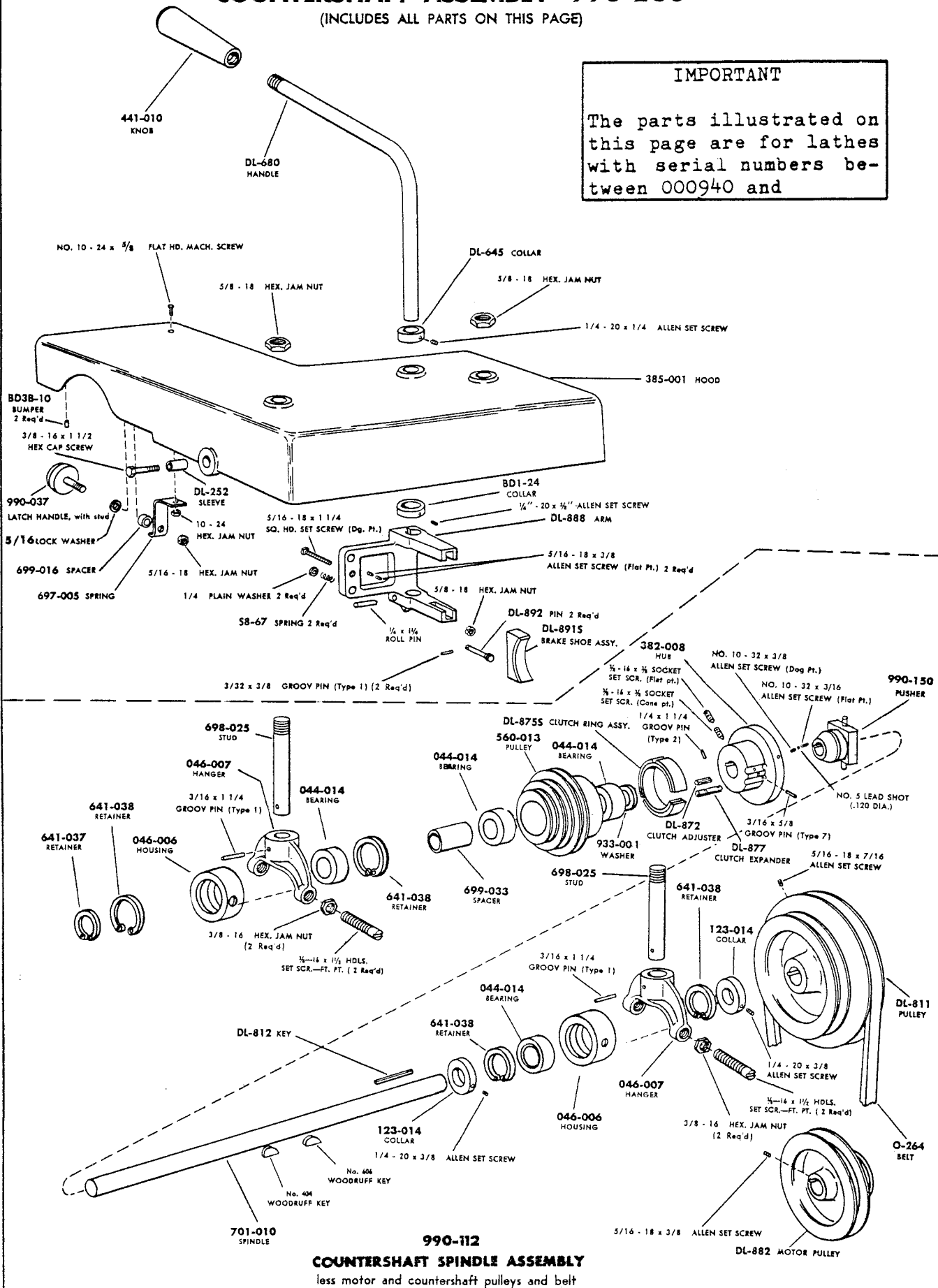


# COUNTERSHAFT ASSEMBLY 990-208

(INCLUDES ALL PARTS ON THIS PAGE)

## IMPORTANT

The parts illustrated on this page are for lathes with serial numbers between 000940 and

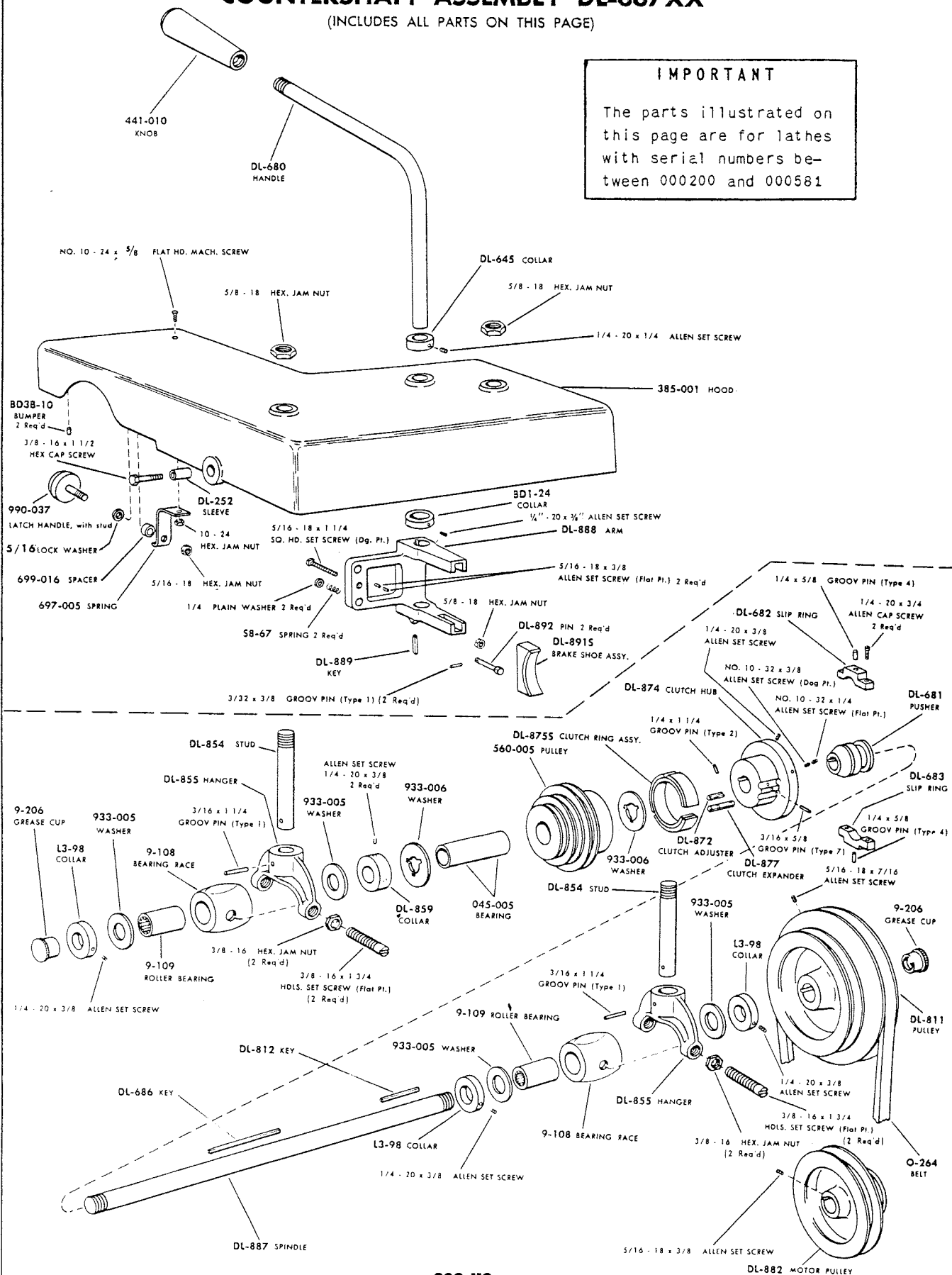


# COUNTERSHAFT ASSEMBLY DL-887XX

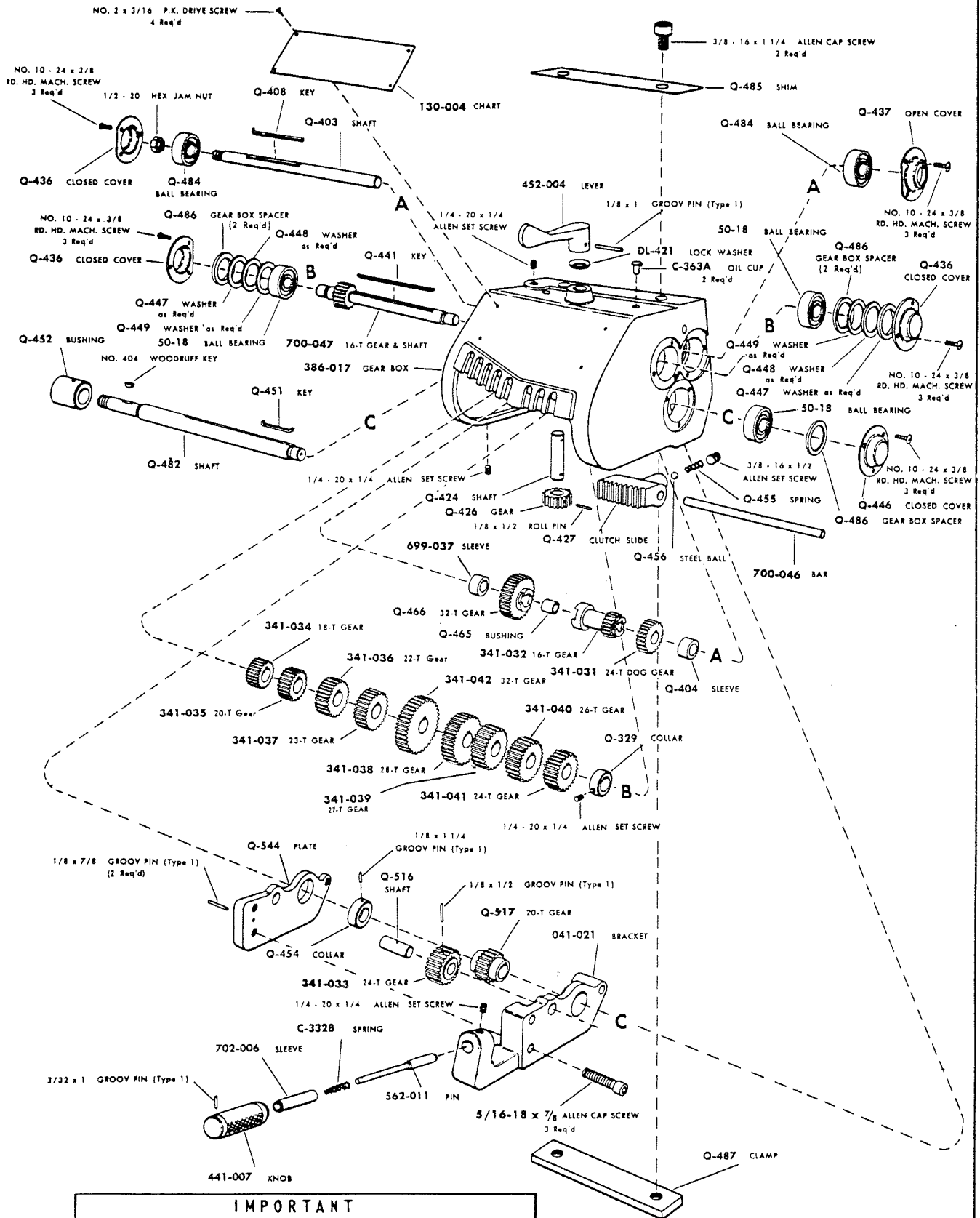
(INCLUDES ALL PARTS ON THIS PAGE)

## IMPORTANT

The parts illustrated on this page are for lathes with serial numbers between 000200 and 000581



# QUICK-CHANGE GEAR BOX ASSEMBLY

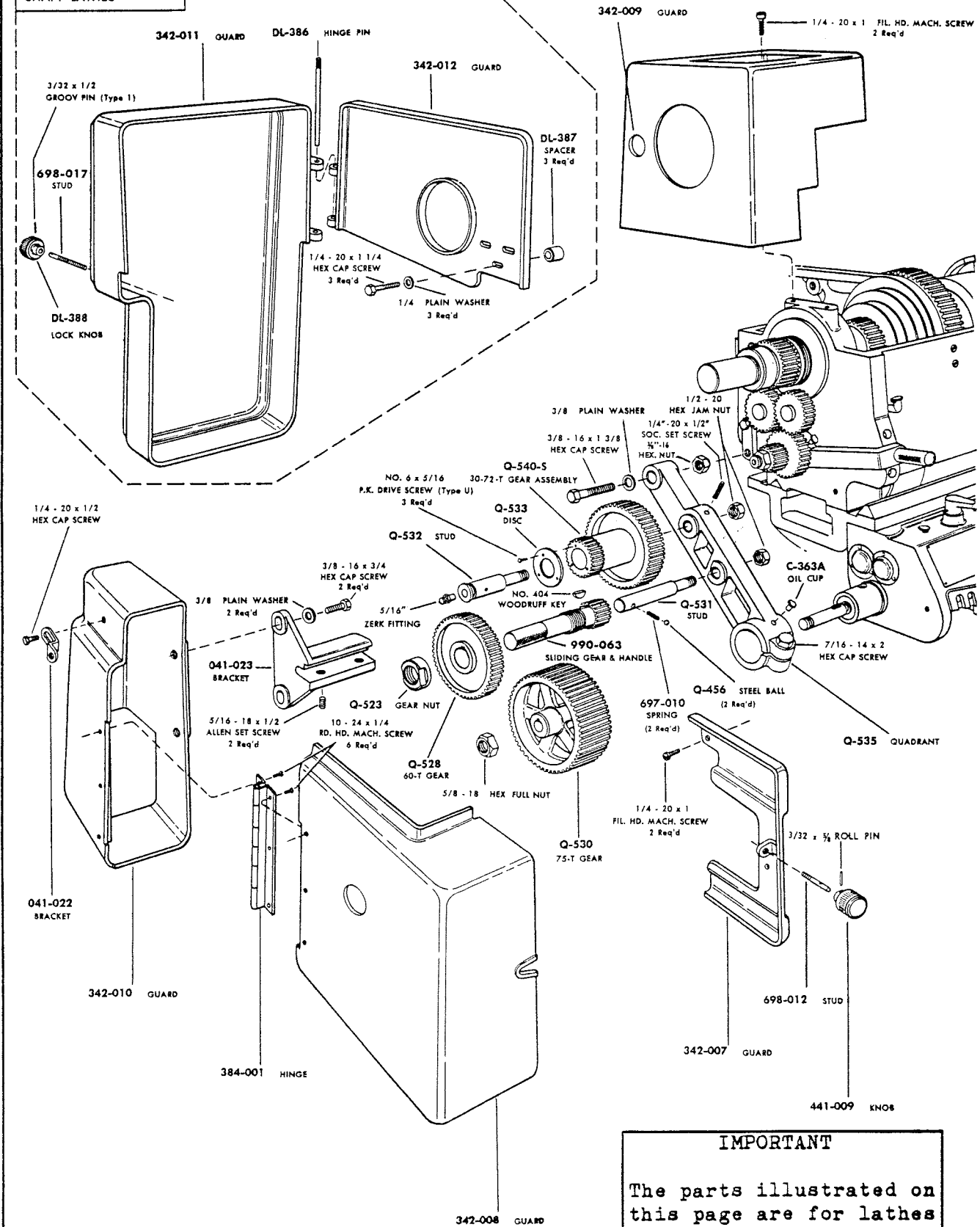


## IMPORTANT

The parts illustrated on this page are for lathes with serial numbers between 000674 and

# QUICK CHANGE GEAR TRAIN

NOTE: FOR USE WITH HORIZONTAL COUNTER-SHAFT LATHES



## IMPORTANT

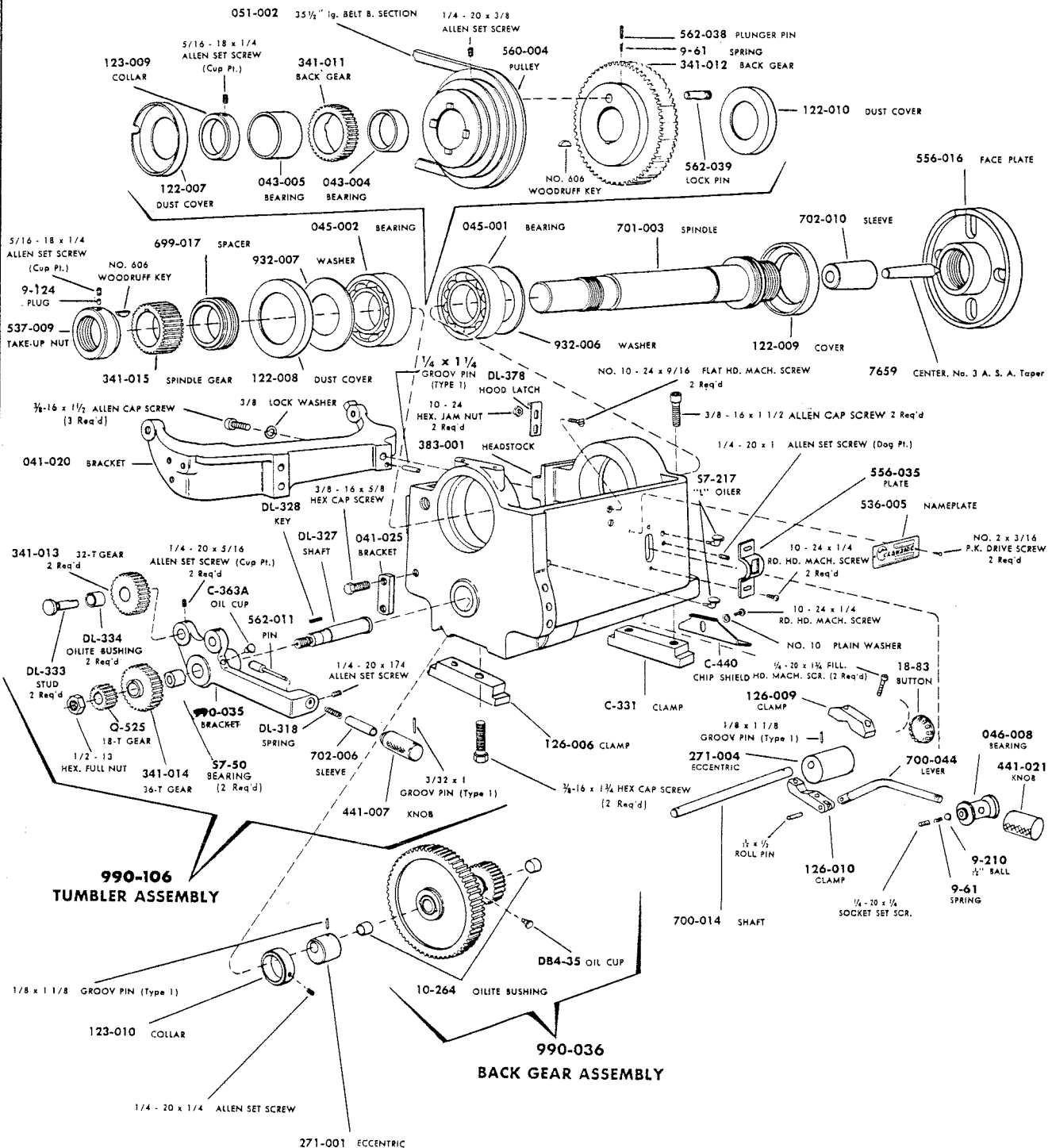
The parts illustrated on this page are for lathes with serial numbers between 000728 and

# HEADSTOCK ASSEMBLY 990-038

(LESS 556-016 AND 041-020)

## IMPORTANT

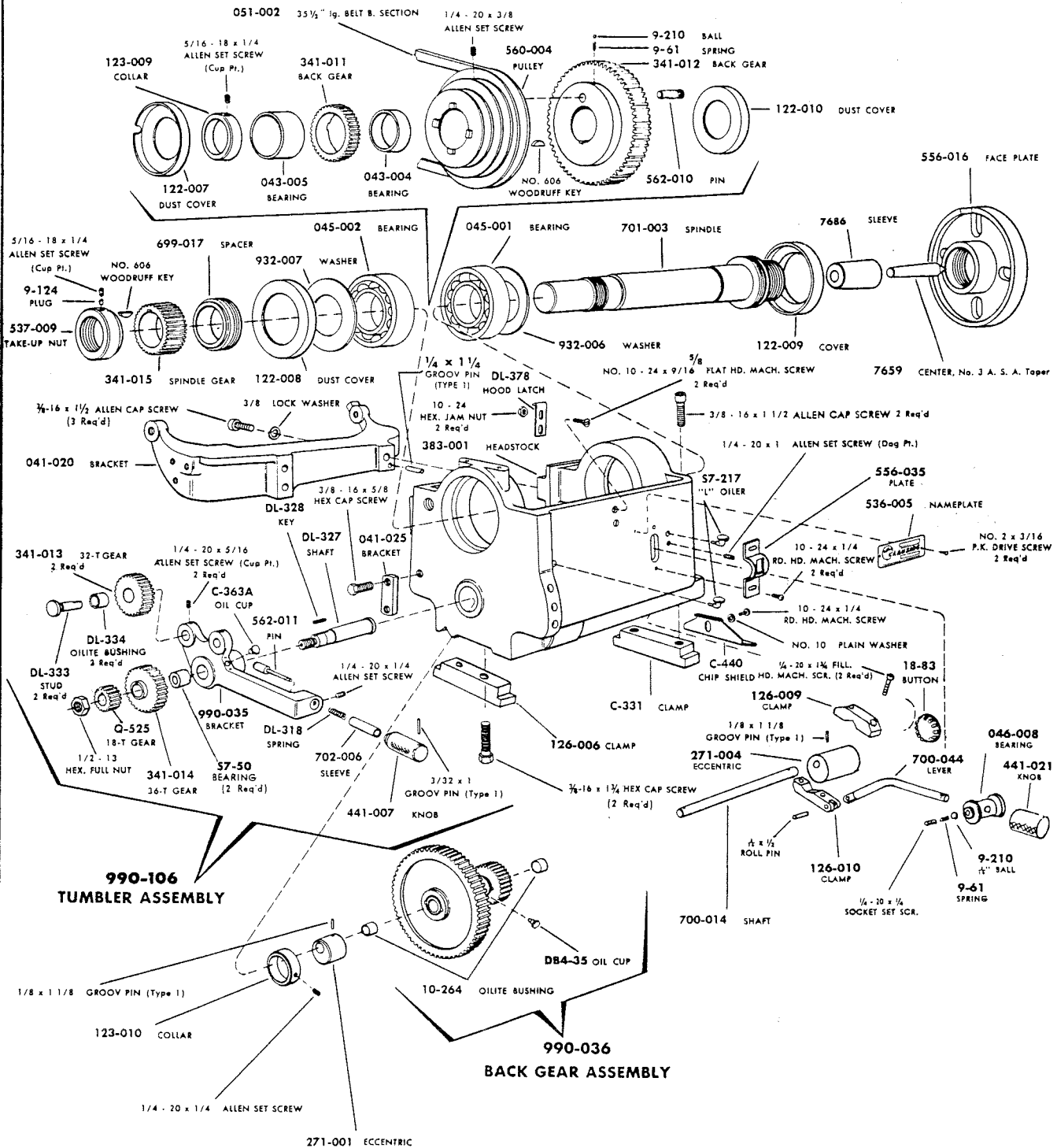
The parts illustrated on this page are for lathes with serial numbers between 001078 and





# HEADSTOCK ASSEMBLY 990-038

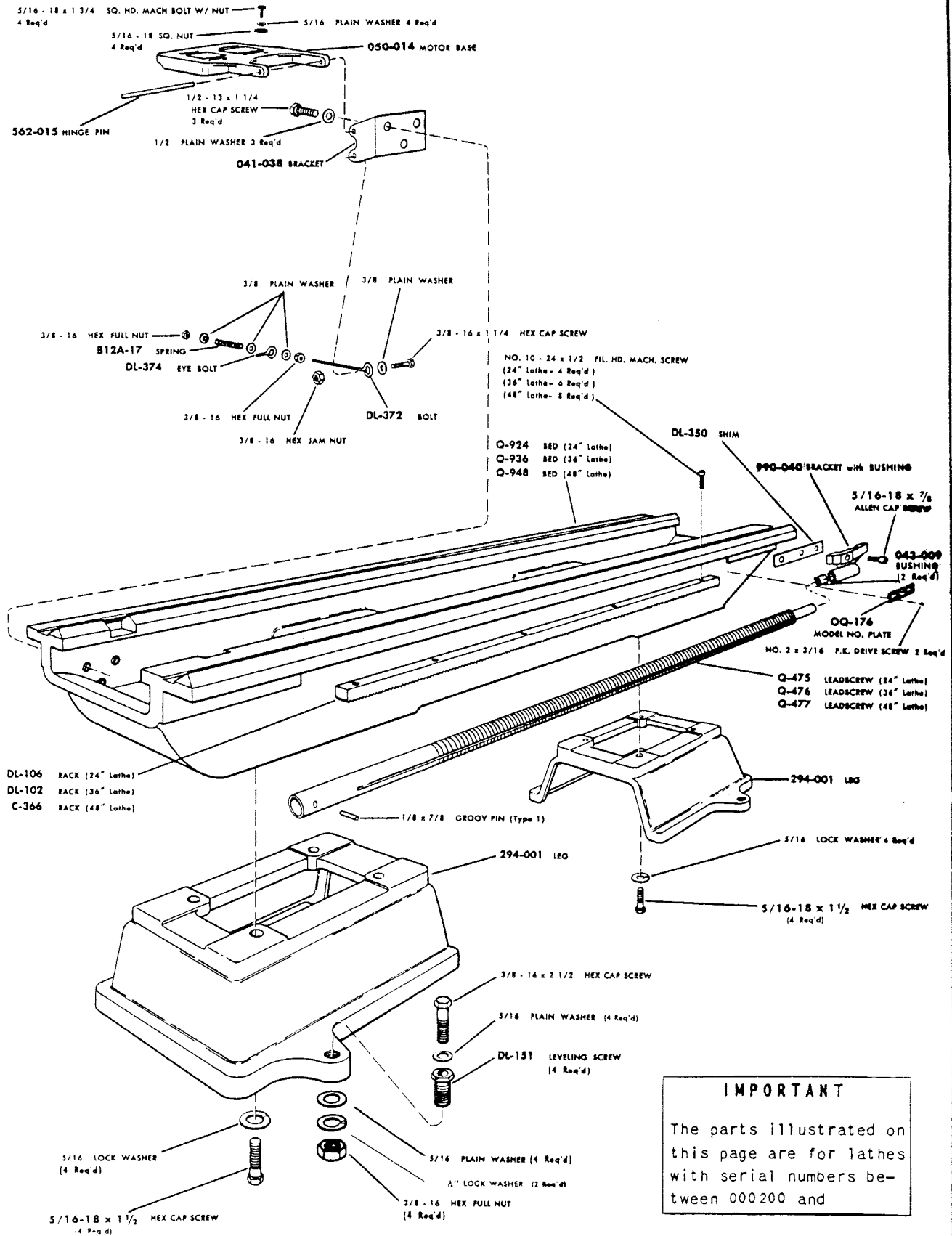
(LESS 556-016 AND 041-012)



**IMPORTANT**

The parts illustrated on this page are for lathes with serial numbers between 000200 and 000581

# BED AND LEADSCREW ASSEMBLY



## IMPORTANT

The parts illustrated on this page are for lathes with serial numbers between 000200 and

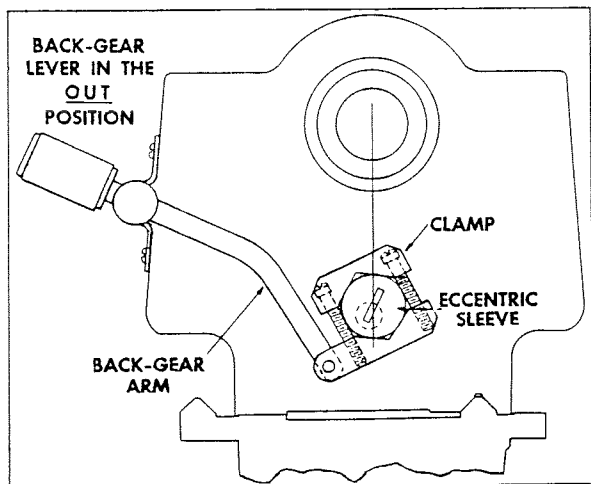
## HOW TO REMOVE BACK GEARS

(See Figure 19)

1. Remove headstock spindle — see instructions "HOW TO REMOVE HEADSTOCK SPINDLE", page 11.
2. Place back-gear lever in the OUT position.
3. Loosen lock screws in collars "G" and "H" — see Figure 19.
4. Drive out groove pin "F" that holds back-gear shaft to eccentric sleeve.
5. **IMPORTANT:** Mark the position of the back-gear lever clamp on the right eccentric sleeve, then loosen clamp screws. Marking position of clamp will make it easier to position clamp in its original place on the eccentric sleeve when parts are replaced.
6. Now, with a brass rod or drift, drive out the back-gear shaft and eccentric sleeve through front of headstock.
7. Remove back-gears from headstock.

## RE-ASSEMBLING THE BACK-GEARS

1. Lightly file all burrs from the back-gear shaft.
2. Replace the left back-gear eccentric sleeve and collar "G" — hole in eccentric should be straight down.
3. Slide back-gear shaft, with right eccentric sleeve, through front of headstock, replacing collar "H", back-gear lever clamp and back-gears. Continue sliding shaft through headstock and into left eccentric sleeve.
4. Line up groove pin hole in left eccentric with shaft and replace groove pin "F".
5. Replace headstock spindle — see RE-ASSEMBLING THE HEADSTOCK SPINDLE, steps 1 through 3.
6. Now position the back-gears to line up with the spindle gears and tighten collars "G" and "H" lightly against sides of headstock.
7. Place back-gear lever in the out position. Line up marks on clamp and right eccentric sleeve and tighten clamp screws.
8. Assemble remainder of headstock spindle parts — steps 4 through 14.

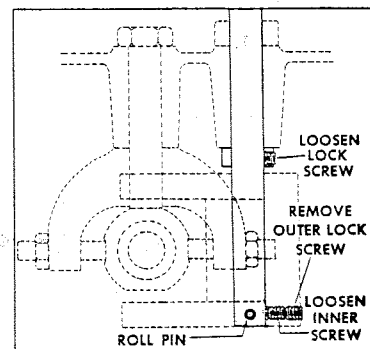


20. When replacing the back-gear shaft, make sure shaft is positioned as shown.

9. Run lathe in back-gear drive to check the mesh of the back-gears. If lathe runs noisy, or if there's too much play between the gears, stop motor and shift right eccentric sleeve — see BACK-GEAR ADJUSTMENT, below.

## BACK-GEAR ADJUSTMENT

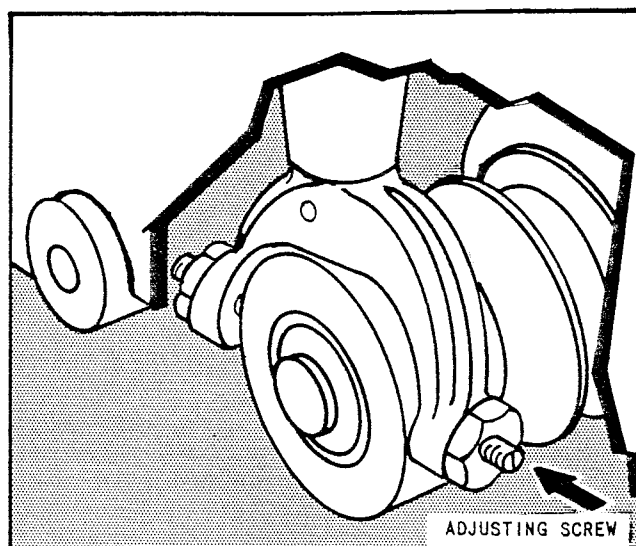
To adjust gear mesh, or gear play, between the back-gears and spindle-gears, shift back-gear lever upward to the OUT position. Next loosen back-gear lever clamp screws — see Figure 20. Remove cap in right end of headstock, and with a screwdriver turn the eccentric sleeve slightly. Tighten clamp screws, and check gear mesh by placing lever in back-gear position. Repeat adjustment if necessary until gears are in proper mesh.



21. Loosen lock screws in collar and shift yoke when removing the countershaft spindle assembly.

## REMOVING HORIZONTAL COUNTERSHAFT SPINDLE ASSEMBLY

1. Remove motor belt and loosen lock screw in countershaft pulley and remove pulley.
2. Remove the two lock screws and roll pin that holds clutch lever in shift yoke — see Figure 21.
3. Next loosen the lock screw in clutch lever located directly under hood.
4. Remove clutch lever. It may be necessary to drive it out — use a 1/2" brass rod and hammer. Catch the shift yoke, and collar as lever is removed.
5. Loosen the nuts on the two rear countershaft hanger adjusting screws (Figure 22) and then loosen adjusting screws just enough to remove complete countershaft spindle assembly.



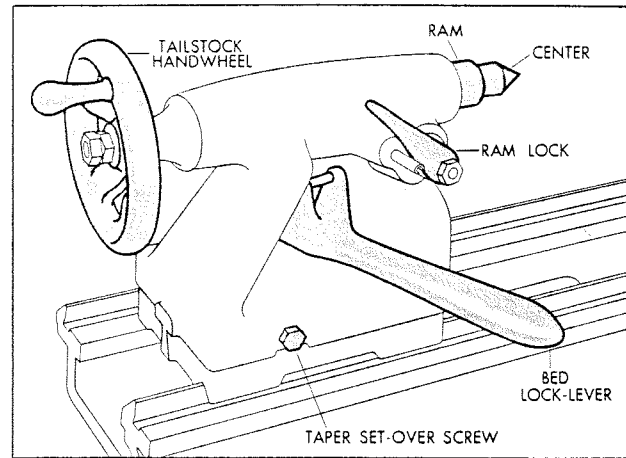
22. Loosen the rear adjusting screws on each hanger to remove countershaft spindle assembly.

## TAILSTOCK

(See Figure 18)

Tailstock is securely locked to the bed with the lever-controlled bed lock located on the rear of the tailstock. Graduations on the ram simplify accurate boring and drilling. Ram is locked in place with the lock handle located on top of tailstock. Before inserting the center in the tailstock ram, clean both tapers thoroughly with a dry cloth.

Tailstock can be set over 1" for taper turning by first loosening the bed clamp and then adjusting the screws on front and back of tailstock base.



18. Controls on the lathe tailstock.

## MOUNTING CHUCKS AND FACE PLATES

1. Carefully wipe face of chuck hub and threads (or face plate) clean of dirt and chips.
2. Carefully wipe spindle threads and shoulder clean of any dirt and chips.
3. Oil lathe spindle threads with a light film of clean oil — chuck or face plate will thread more freely on spindle.
4. Tighten belt, or place lathe in back gear to hold spindle firmly in position.
5. Screw chuck or face plate on spindle, turning it rapidly as it nears spindle shoulder so it will seat firmly against spindle shoulder face. Make sure threads are not crossed — chuck or face plate should thread on spindle easily.

## TO REMOVE CHUCK OR FACE PLATE

1. To remove chuck, rotate chuck until wrench hole is on top. Lock spindle by engaging back gears without pulling out lock pin. Now place chuck wrench in chuck and pull. If chuck doesn't release, tap BASE OF WRENCH lightly with a mallet. Remove chuck carefully so as not to damage spindle threads. Disengage back gears.
2. To remove face plate, lock spindle by engaging back gears without pulling out lock pin, tap slot in face plate with a lead or brass hammer in a counterclockwise direction. Remove face plate carefully so as not to damage spindle threads. Disengage back-gears.

**CAUTION** — Do not turn power on with the spindle locked — never remove chuck or face plate while lathe is running.

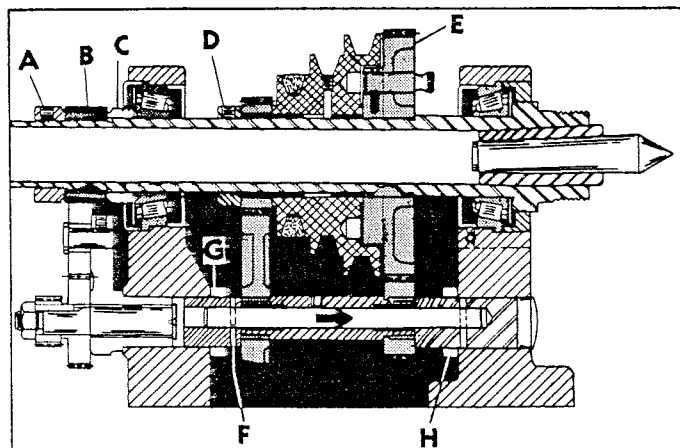
# Service and Adjustments

## SPINDLE BEARING ADJUSTMENT

If the spindle turns too freely, or if play is noticeable when spindle is pushed back and forth, adjust the bearing as follows:

1. Loosen lock screw in take-up collar "A" (Figure 19) and tighten collar until all spindle play has been removed.
2. To determine correct bearing preload, give spindle pulley a sharp spin with your hand — pulley should rotate about one turn. If it doesn't, adjust collar "A", then recheck.

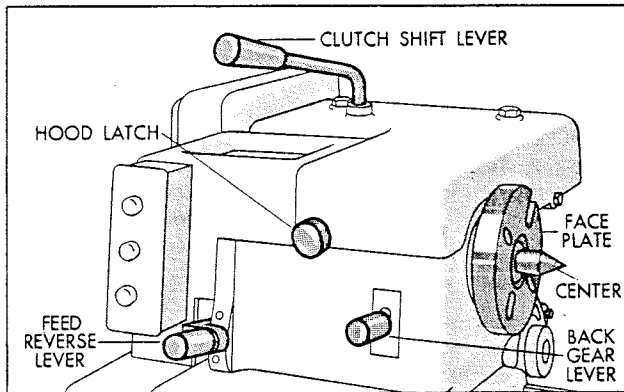
**CAUTION** — Do not tighten collar too tightly — spindle should rotate freely.



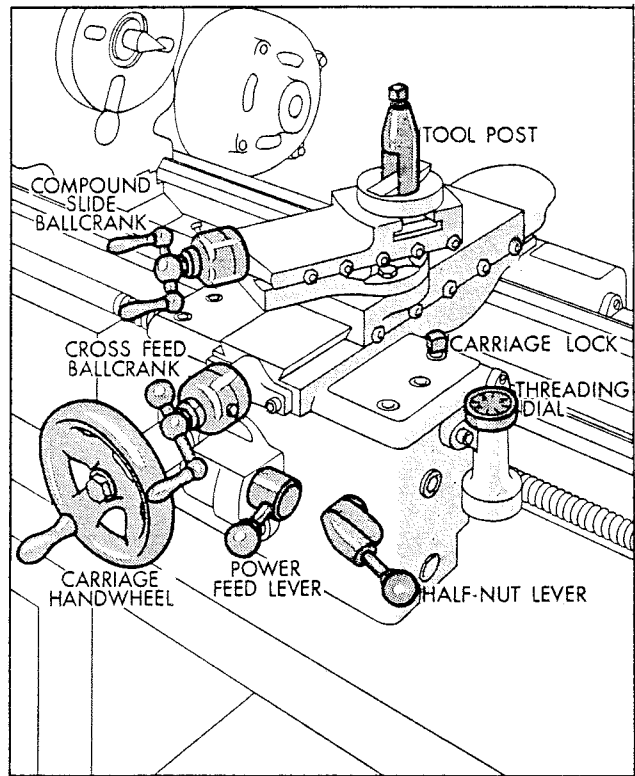
19. Sectional view of the lathe headstock showing spindle and back-gear arrangement.

## FEED REVERSE LEVER

The feed reverse lever, or lead screw direction lever, is located on left side of headstock, Figure 11. Lever has three positions. Center position is neutral and disengages gear train. Upper position moves carriage toward tailstock. Lower position moves carriage toward headstock. *This lever should not be moved while lathe is operating at high speeds — it may strip the gears or result in serious damage to the lathe.* It is possible to quickly reverse lead screw at lower speeds if desired.



11. Lathe headstock and controls.



12. Controls on the lathe carriage.

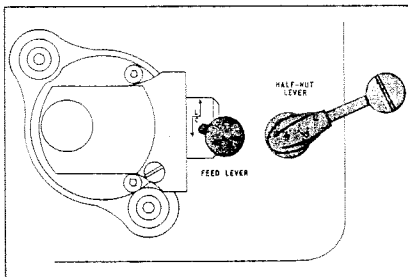
## AUTOMATIC APRON

Figure 12 gives the names and positions of the carriage controls. The carriage handwheel moves the carriage along the lathe bed. The cross feed and compound slide ball cranks move the carriage slide and tool rest in and out.

The carriage lock screw is used to lock the carriage to the bed — use it for facing or cut-off operations only.

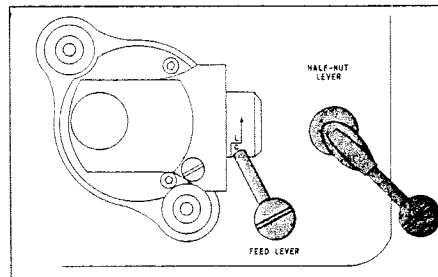
**IMPORTANT** — Use the half-nut lever for threading only — never for feeds. It will prolong the life of the lead screw, and preserve its accuracy for threading operations.

The power feed lever controls the operation of both power longitudinal and power cross feeds — the half-nut lever engages the half-nuts with the lead screw.



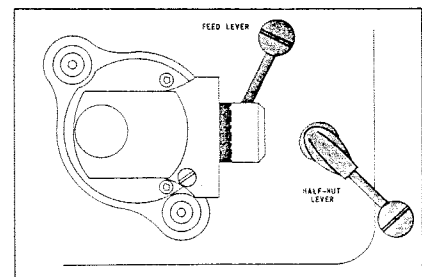
13. THREADING

Place feed lever at the horizontal position. Shift half-nut lever upwards to engage half-nuts with lead screw. Use the half-nuts for threading only — never for feeds.



14. POWER CROSS FEED

To engage power cross feed, place half-nut lever in the down position — the feed handle cannot be moved until half-nut lever is in this position. Move feed handle downward to the vertical position.

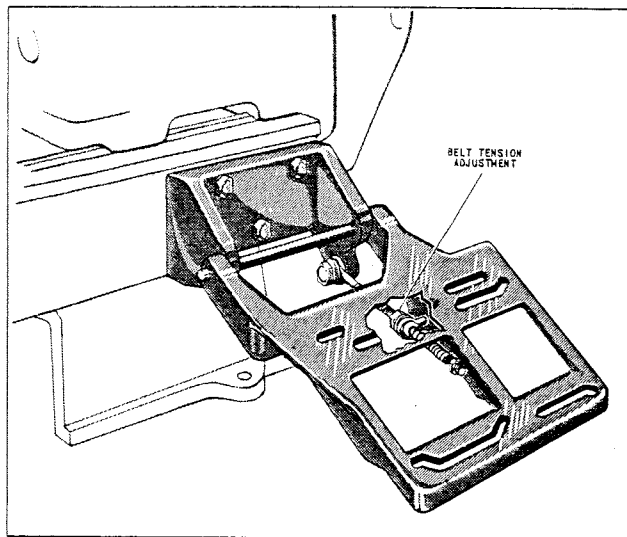


15. LONGITUDINAL FEED

To engage longitudinal feed, first make sure half-nut lever is in the down position. Shift feed lever sideways to the right about  $\frac{1}{4}$ " , and then upwards to the vertical position.

## MOUNTING THE MOTOR ON HORIZONTAL COUNTERSHAFT LATHES

1. Mount motor base assembly to the lathe bed with the three screws furnished.
2. Slide pulley on motor with large step next to motor.
3. Mount motor on motor base and fasten in place with the four bolts furnished.
4. Place belt over pulleys and shift motor until pulleys are aligned and belt is straight, then tighten motor mounting bolts.
5. Adjust spring to obtain proper belt tension — see Figure 8. Belt should be just tight enough to prevent slipping.



8. Motor base mounted to lathe. Adjust spring to obtain proper belt tension.

## Oiling the Lathe

*Use the lubrication chart furnished with the lathe as a guide for locating the oiling positions.*

**APRON** To fill oil reservoir in apron remove pipe plug on side of apron and use hole for supplying oil. Fill apron to level indicator on side of apron. Maintain this oil level at all times. Use S.A.E. No. 20 machine oil.

**GEAR TRAIN** Fill oil cup on reverse handle — add oil daily. Place oil in hole in end of sliding gear handle — lubricate weekly. Fill zerk fitting monthly with a light grease for quadrant gear lubrication.

**GEAR BOX** Apply oil frequently thru oil cups on top of gear box for general lubrication of all moving parts. Gear box bearings are sealed-for-life ball bearings and do not require lubrication.

**HEADSTOCK** Lubricate the spindle bearings thru the two oil cups on front of headstock. Lubricate back-gear bearings thru oiler in back gear shaft quill. To oil spindle pulley bearing, remove set screw in pulley.

**COUNTERSHAFT** All the ball bearings in the counter shaft are lubricated for life and permanently sealed against dust and dirt and need no further attention.

### OTHER PARTS TO OIL OCCASIONALLY ARE:

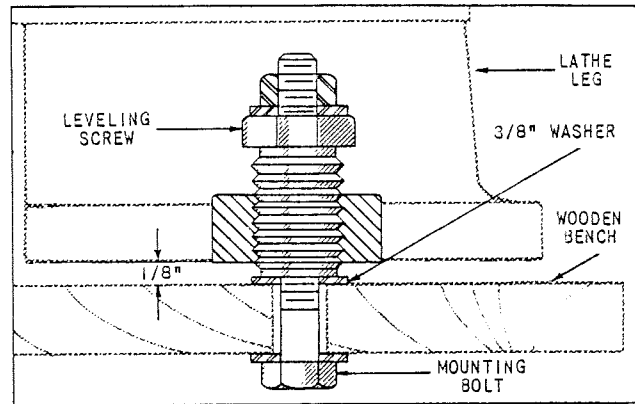
1. Right lead screw bearing.
2. Tailstock Ram
3. Tailstock Screw
4. Carriage handwheel shaft
5. Leadscrew
6. Carriage and compound dovetail ways
7. Lathe bed ways
8. Felt wipers on carriage saddle and tailstock.
9. Rim of threading dial

### KEEP YOUR LATHE CLEAN

Oil and dirt form an abrasive compound which can easily damage carefully fitted bearing surfaces. Wipe the bed and all polished parts with a clean oily rag at frequent intervals. Use a brush to clean spindle threads, gear teeth, lead screw threads, etc.

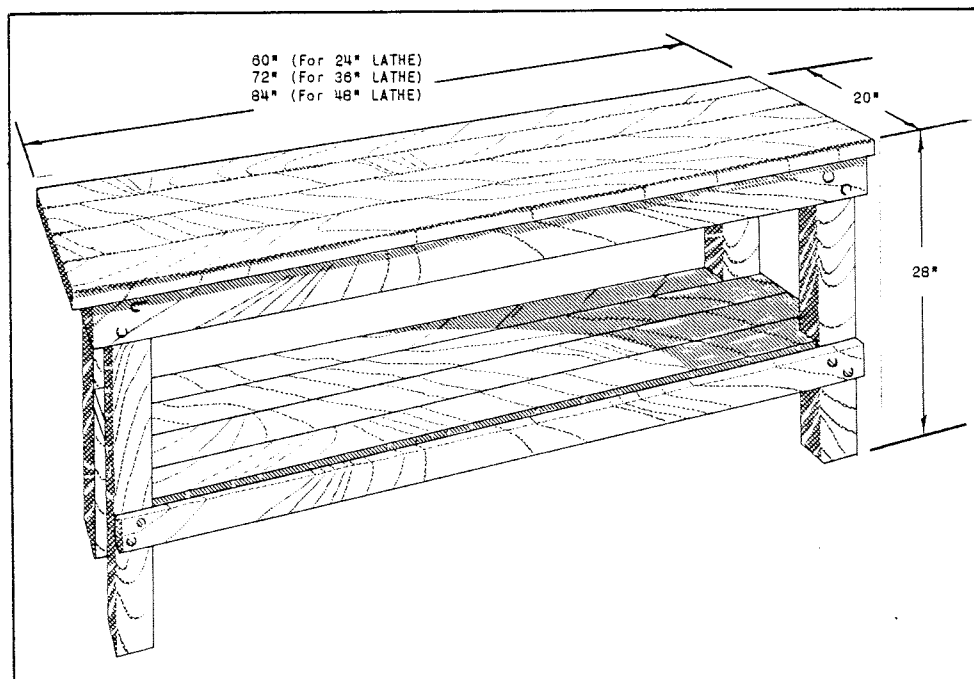
## WORK BENCH REQUIREMENTS and INSTALLATION

1. Bench top must be semi-hard or hard wood at least  $1\frac{3}{8}$ " thick, cleated or well doweled to form a rigid table. **DO NOT USE SOFTWOODS OR BOARDS NOT CLEATED TOGETHER.**
2. Legs should be of heavy construction — preferably 4" x 4" lumber, provided with lugs for bolting bench to floor. Overall height of bench should be about 28". See Figure 5.
3. Mount bench on a concrete floor or base if possible — if a wood floor is used, it should be well braced, capable of absorbing vibration and withstanding the load. Make sure stand rests solidly on the floor.
4. Fasten stand to concrete by marking location of mounting holes and drilling holes large enough to receive expansion bolts, or set studs or bolts in melted lead. Use lag screws or bolts to fasten bench to a wood floor.



4. Make sure a metal washer is placed between leveling screw and top when using a wood bench.
5. Level bench before mounting lathe — use a precision machinists level. Place shims as required between leg pads and floor to accurately level the top.
6. Mount the lathe. Mark and drill four  $7/16$ " dia. holes in bench top under corresponding holes in lathe legs. Bolt lathe to top using  $3/8$ " dia. bolts, placing a  $3/8$ " washer between lathe leg and bench top — see Figure 4. Bolts may be inserted from either top or underneath side. Do not tighten bolts securely.

**BE SURE YOU HAVE FOLLOWED THESE INSTRUCTIONS COMPLETELY BEFORE LEVELING THE LATHE.**



5. Wood bench dimensions for a Clausing 5300 Series Lathe.

## Do Not Operate The Lathe . . .

- **Until** it is properly mounted and leveled. Clausing lathes pass rigid inspection and operating tests before shipment – to maintain its built-in accuracy it must be properly installed.
- **Until** you are acquainted with the lathe and understand all the controls and their functions.
- **Until** you have oiled the lathe.
- **Until** you have carefully read all the instructions.

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 starting a job – doing that will save time and produce better work.

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## INSTRUCTIONS FOR ORDERING REPAIR PARTS

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

1. Model Number and Serial Number of your lathe. This is found on the plate attached to the bed.
2. Part Number and Name of part.
3. Quantity required.

Parts shown coded are standard parts and should be purchased locally.

*Parts prices will be quoted on request. We reserve the right to make changes in design and specifications without notice.*