

OPERATING INSTRUCTIONS
and
PARTS LIST



12-inch METAL TURNING LATHES

MODEL NUMBERS

101.28900

101.28910

SEARS, ROEBUCK AND CO. — U.S.A.
SIMPSONS - SEARS LIMITED — CANADA

ASSEMBLY, OPERATING INSTRUCTIONS AND PARTS LIST FOR



12-INCH

REG. TRADE-MARK

METAL TURNING LATHE

MODEL NUMBERS ————— CATALOG NUMBERS

101.28900

2890

101.28910

2891

The Model Number will be found on a plate attached to the right end of the bed. Always mention the Model Number in all correspondence regarding the CRAFTSMAN LATHE or when ordering repair parts.

— HOW TO ORDER REPAIR PARTS —

All parts listed herein may be ordered through SEARS, ROEBUCK AND CO. or SIMPSONS-SEARS LIMITED. When ordering parts by mail from the mail order house which serves the territory in which you live, selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The PART NUMBER.
2. The PART NAME.
3. The MODEL NUMBER.
4. The NAME of item—12" LATHE

— COAST TO COAST NATION-WIDE SERVICE FROM SEARS FOR YOUR CRAFTSMAN METAL LATHE



SEARS, ROEBUCK AND CO. and SIMPSONS-SEARS LIMITED in Canada back up your investment with quick, expert mechanical service and genuine CRAFTSMAN replacement parts.

If and when you need repairs or service, call on us to protect your investment in this fine piece of equipment.

SEARS, ROEBUCK AND CO. — U.S.A.
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This Manual Applies To  12" Lathes

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CAUTION: READ THIS! --

BEFORE TURNING HANDWHEELS OR CRANKS --
avoid damaging precision surfaces and parts.

Carriage and tailstock are **LOCKED TO BED** and should not be moved until bed is cleaned.

Leave the lathe on the skid -- easier to move.

Check bags and cartons for parts.

Read all instructions -- a few minutes now may save hours later.

Clean the lathe -- machined surfaces are coated with rust preventive which must be removed -- see **CLEANING**.

Handle with care -- this lathe is a precision machine.

CLEANING

Leave carriage and tailstock locked in position until exposed bed ways are cleaned.

Using a good grease solvent, thoroughly remove the rust-preventive from exposed bed ways -- tops, sides, bottoms -- and from all other machined surfaces.

Next, loosen the carriage lock screw (located on top of carriage at right side) and move carriage to a clean section of bed. Then, loosen tailstock clamp lever -- move tailstock -- and finish cleaning bed ways.

Use a stiff bristle brush (not wire) to clean lead screw and carriage rack.

Apply a light coating of machine oil to all machined surfaces -- for protection.

Don't use an air hose -- it could blow dirt or grit into bearing surfaces.

For long service life -- make it a habit to clean and lubricate regularly.

MOVING AND LIFTING

Leave lathe bolted on skid, it is easier to move to final location.

After cleaning, move carriage toward tailstock end for better balance.

If skid has been removed -- lift by bed feet or underside of bed -- **DO NOT** use lead screw, handwheels or levers.

CAUTION

ALWAYS WEAR SAFETY GLASSES WHEN OPERATING ANY MACHINE.

MOUNTING LATHE ON BENCH

A rigid bench is essential for precision work.

A wood bench built to the following specifications will provide a solid foundation for the lathe.

Bench must have a clear hardwood top at least $1\frac{5}{8}$ " thick, cleated or well doweled to form a rigid table. Bench should be built using bolted construction.

Bench legs should be solid 4" x 4"s, well braced and securely anchored to bench top -- provide legs with lugs for bolting securely to floor.

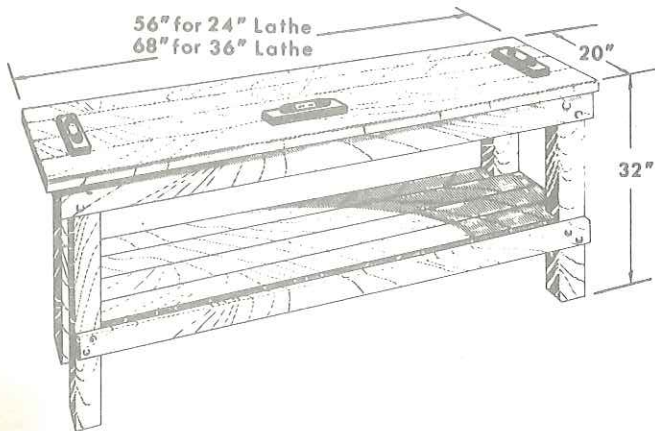


Figure 1

See Fig. 1 for recommended dimensions of bench.

ANCHORING BENCH TO FLOOR

Bench must be bolted to floor.

A reinforced concrete floor is the best foundation. Wood floor should be rigid and capable of supporting the weight of the lathe without deflection -- if the floor is not solid, it should be reinforced, or cut away and a concrete foundation installed.

Make sure the legs rest solidly on the floor.

Place wood bench in final location -- to provide working room, back leg should be 3 feet from wall. Mark the location of mounting holes.

Use anchor bolts to secure bench to concrete floor -- use lag screws to secure to wood floor.

Move bench, drill holes and install anchor nuts in concrete floor -- drill pilot holes for lag screws in wood floor.

Reposition bench and start anchor or lag screws -- DO NOT TIGHTEN until bench is level.

LEVELING THE BENCH

Use one precision level at least 6" long -- place level on bench top -- refer to Fig. 1 for level positions.

Place shims as required between bench legs and floor until the bench is approximately level.

NOTE: Doing this eliminates excessive shimming between top of bench and bed legs when leveling the lathe bed.

NOTE: Shims should be of hardwood or metal and bear under the cabinet pads -- refer to Fig. 2.

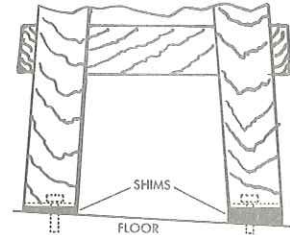


Figure 2

Tighten the anchoring bolts or lag screws securely.

Recheck the level of bench -- unequal tightening of anchoring bolts may have pulled the bench out of level.

POSITION LATHE ON BENCH

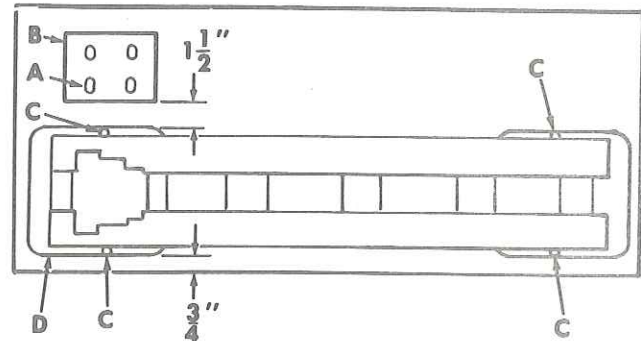


Figure 3

Remove bolts from skid and place the lathe on the bench in the position shown in Fig. 3 with front edge of the lathe leg (D) about $\frac{3}{4}$ " from the front of the bench. Mark the position of four mounting holes (C).

Move lathe and drill four holes in bench top. Reposition lathe and start bolts -- DO NOT TIGHTEN bolts securely until after lathe has been leveled.

POSITION COUNTERSHAFT BRACKET ASSEMBLY ON BENCH

Position countershaft bracket assembly (B, Fig. 3) $1\frac{1}{2}$ " away from lathe bed leg (D) and make sure that countershaft pulley is in line with and parallel to spindle pulley. Mark and drill four holes (A) in bench.

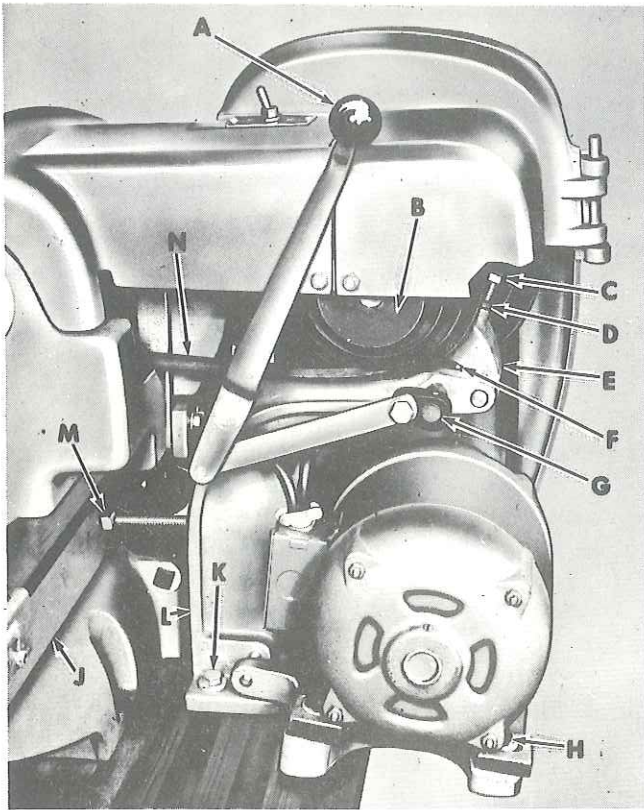


Figure 4

Turn $\frac{3}{8}$ -16 x 3" square head set screw (M, Fig. 4) and jam nut into countershaft bracket (L).

Raise countershaft arm (E) and install pin (F) in hole under adjusting screw (C). Lower countershaft arm until pin (F) rests on rocker shaft (G).

Bolt countershaft in place with four hex cap screws (K).

Adjust square head set screw (M) against bed (J) and lock with jam nut.

Place spindle belt (N) over the 4-step countershaft pulley (B).

TENSIONING SPINDLE BELT

1. Move belt tension lever (A, Fig. 4) to back position and tighten square head set screw (C) until belt is properly tensioned.

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

2. Tighten lock nut (D).

3. Mount headstock guard unit (B, Fig. 5) to bracket with two $\frac{3}{8}$ " hex cap screws (C).

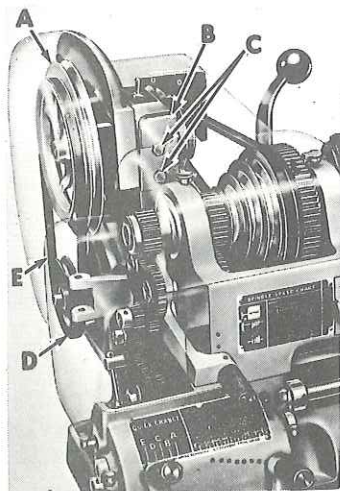


Figure 5

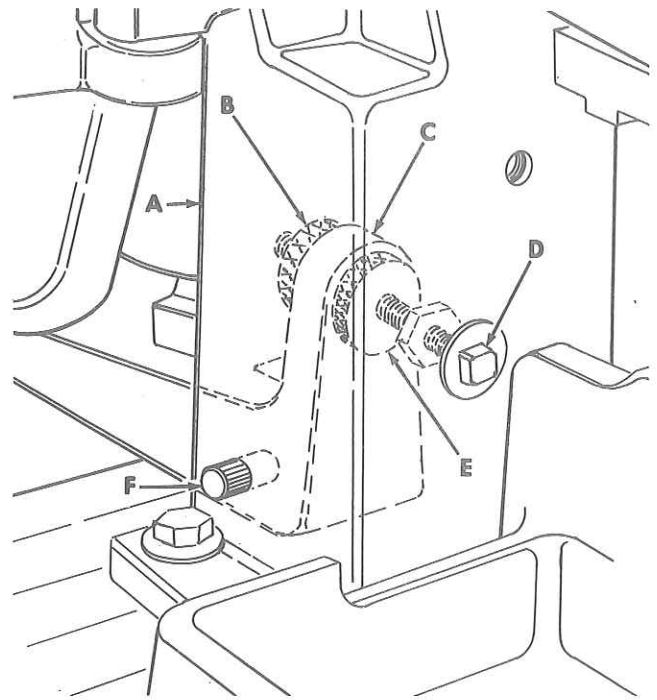


Figure 6

INSTALLING MOTOR BASE

1. Remove knurled collar (B, Fig. 6) and washer from the motor base adjusting screw (D).
2. Insert hinge pin (F) through the countershaft (A) and motor base (C).
3. Replace washer and knurled collar (B) on motor base adjusting screw (D).

MOUNTING MOTOR

1. Mount motor pulley (D, Fig. 5) on motor (small step towards motor).

NOTE: The lathe is designed for a $\frac{1}{2}$ or $\frac{3}{4}$ hp 1725-1750 rpm motor -- of the type shown in our catalog.

2. Place motor on motor base, align motor pulley (D) with and parallel to countershaft pulley (A); then bolt motor in place with screws (H, Fig. 4) (furnished).
3. Place belt (E, Fig. 5) on pulleys.
4. Loosen motor base adjusting screw (D, Fig. 6).
5. Move motor base up or down for proper belt tension by adjusting knurled collars (B and E).
6. Tighten motor base adjusting screw.

ELECTRICAL CONNECTIONS

Before connecting motor, make sure that line voltage corresponds with the requirements of the motor. If there is any question, call your power company.

Wire switch and motor so that pulley rotates in a clockwise direction.

DO NOT OPERATE THE LATHE UNTIL

- the bed has been leveled, see page 6.
- the lathe has been lubricated, see page 7.
- the operating instructions have been read, see pages 8-11.

LEVELING THE BED

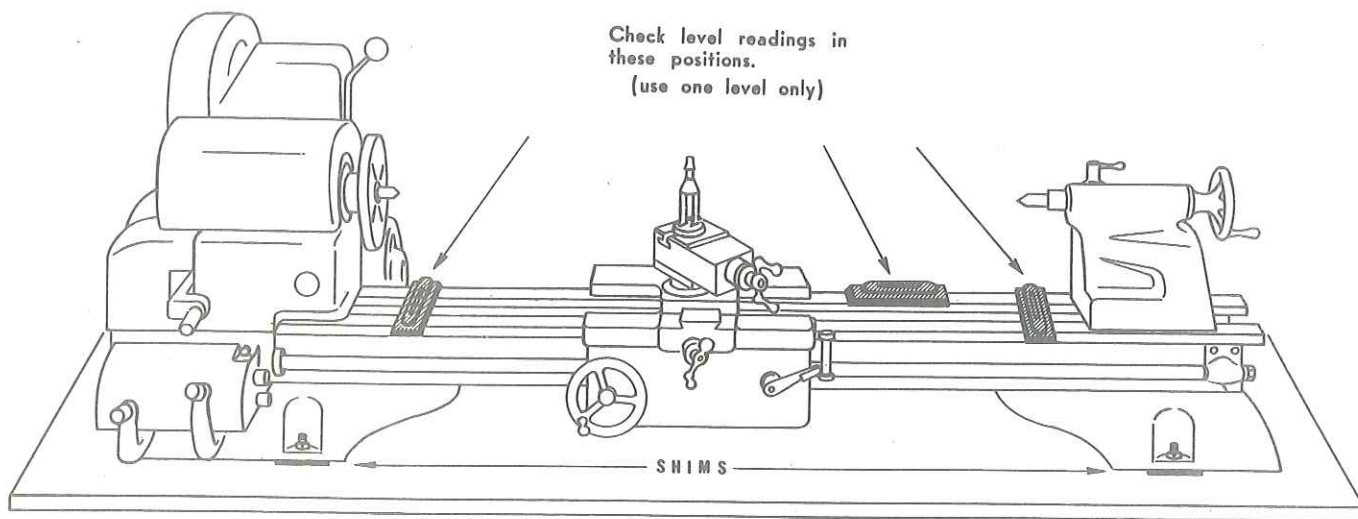


Figure 7

The bed should be kept perfectly level at all times. When carelessly leveled, 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.

1. First level bed longitudinally, compensate for variations of bubble readings with thin metal shims placed around bolts between bed legs and bench top until bed is level -- refer to Fig. 7 for leveling positions.

Shim should be the only contact point between bench top and bed legs.

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

Refer to Fig. 8 for approximate size of shim.

If the outer or inner edges of legs bear on bench top, bed may be twisted or bowed.

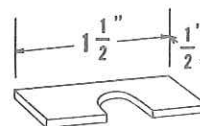


Figure 8

2. Next, level the bed at headstock and tailstock -- see Fig. 7. Place level at right angles to the bed -- use a square to align the level. *Do not turn level end for end.*

Level readings at headstock and tailstock must be identical. Compensate for variation of bubble readings by placing shims between bed legs and bench top at the bolt holes.

3. Tighten the four mounting bolts securely and recheck level readings.

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

LUBRICATION CHART -- 12" METAL TURNING LATHES

CODE

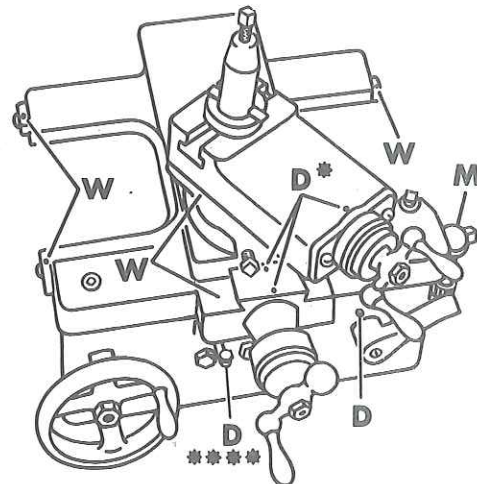
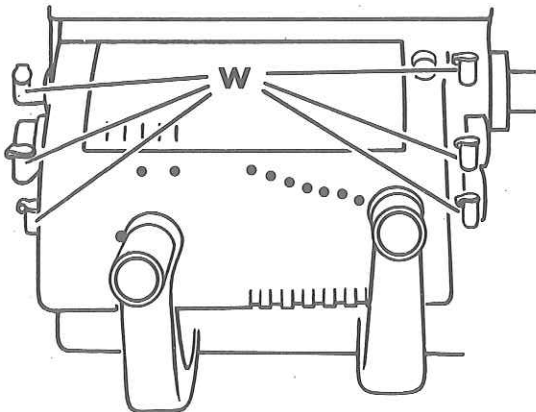
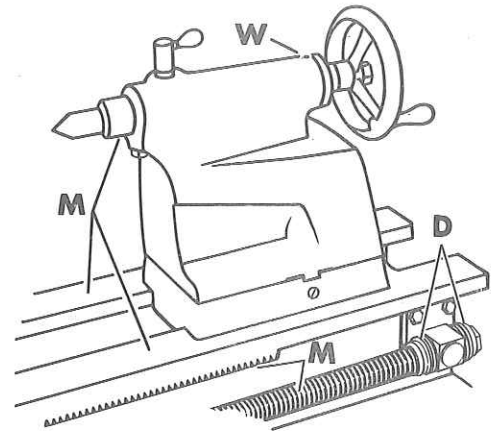
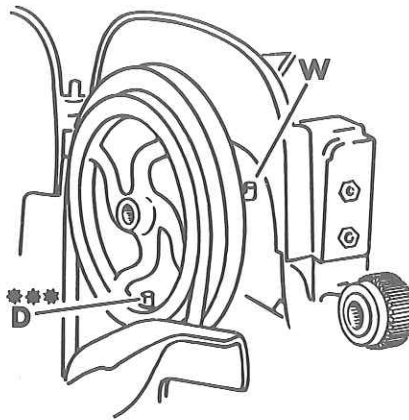
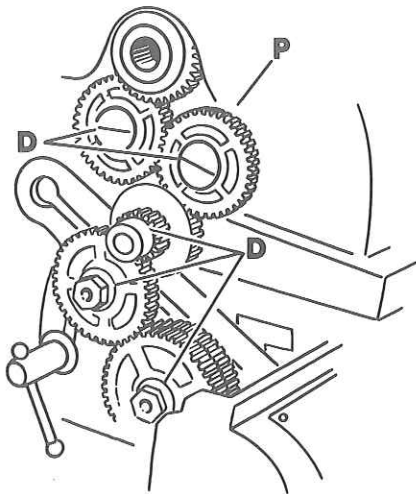
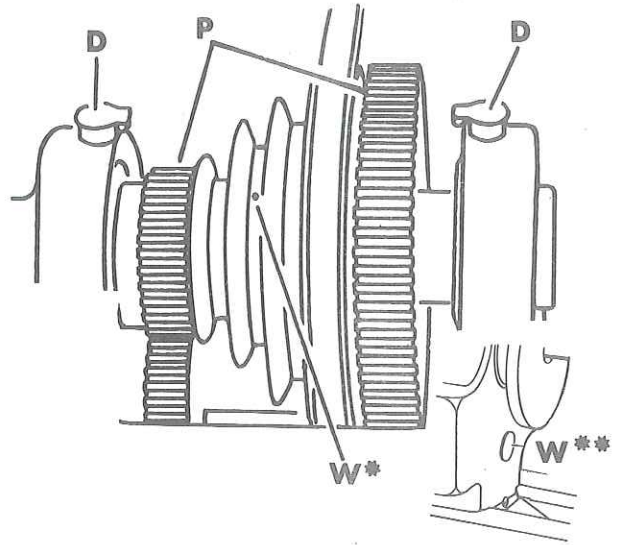
D-DAILY oil with S.A.E. No. 20 oil.

W-WEEKLY oil with S.A.E. No. 20 oil.

M-MONTHLY clean with kerosene, then oil with S.A.E. No. 20 oil.

P-PERIODICALLY lubricate gear teeth with Keystone No. 122 gear lubricant or equivalent. Remove oil and dirt before applying grease.

- * Remove SCREW.
- ** Remove PLUG.
- *** Lubricate rocker shaft pin at this point.
- **** Fill to TOP.



IMPORTANT — LUBRICATE LATHE BEFORE OPERATING

CAUTION: ALWAYS WEAR SAFETY GLASSES WHEN OPERATING ANY MACHINE

CONTROLS AND OPERATION

DON'T TURN ON MOTOR UNTIL YOU'VE READ THESE INSTRUCTIONS. As you read, make a dry run with each of the controls -- start with BACK GEAR CONTROLS.

BACK GEAR CONTROLS

BACK GEAR DRIVE provides the slow spindle speeds -- 28 to 345 rpm -- required for heavy cuts and large diameter work.

To engage the BACK GEAR DRIVE:

1. Turn off motor.

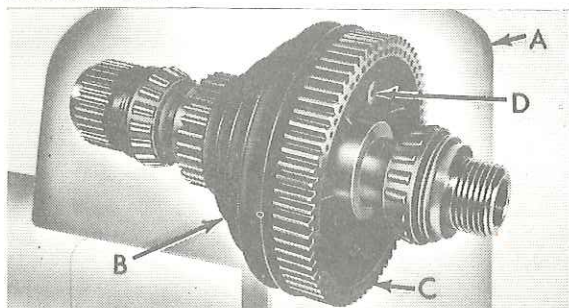


Figure 9

2. Raise headstock cover (A, Fig. 9) and pull out lock pin (D), disengaging bull gear (C) from pulley (B).

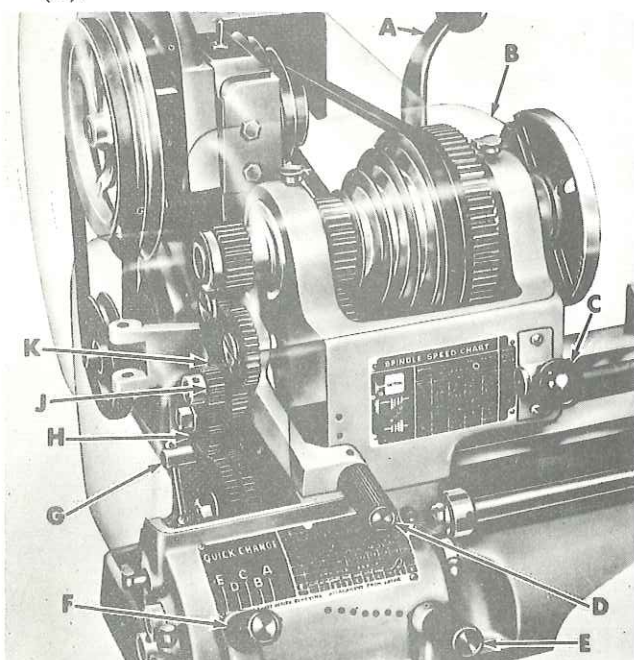


Figure 10

3. Move back gear lever (C, Fig. 10) to 'IN' (engaged position) by pulling on knob, then pushing down and in. It may be necessary to rotate spindle pulley by hand so gears will mesh.

CAUTION: The position of the back gear lever (C, Fig. 10) should not be changed unless motor is "OFF" and spindle has stopped turning.

DIRECT DRIVE provides high spindle speeds from 164 to 2072 rpm.

To engage DIRECT DRIVE:

1. Turn off the motor.
2. Raise headstock cover (A, Fig. 9). Push on lock pin (D), and turn spindle pulley by hand until pin slides in, locking bull gear and pulley together.
3. Move back gear lever (C, Fig. 10) to "OUT" (disengaged position) by pulling on knob, then pushing up and in.

CHANGING SPINDLE SPEEDS:

1. Stop motor.
2. Raise headstock guard (B, Fig. 10).
3. Move belt tension lever (A) forward to relieve belt tension.
4. Shift countershaft and motor belts to positions required for desired speed, as indicated on "SPINDLE SPEED CHART."
5. Move lever backward, tightening the belts.

HEADSTOCK

LEAD SCREW DIRECTION LEVER (D, Fig. 10) has three positions. Center position is neutral -- gear train is disengaged and lead screw does not turn. Upper position moves carriage toward tailstock. Lower position moves carriage toward headstock.

CAUTION: Always turn off motor and let spindle stop before shifting lead screw direction lever.

QUICK-CHANGE GEAR BOX

Quick-change mechanism determines the rate of rotation of lead screw in relation to the rpm of the spindle.

The left LEVER (F, Fig. 10) on quick-change box shifts to five positions -- A, B, C, D and E.

LEVER (E) on right side of quick-change box shifts to nine positions, numbered on bottom of chart. The indexing holes for this lever are directly below the thread or feed desired.

SLIDING GEAR (H) has two positions. IN position is toward headstock and meshed with the 32-tooth compound gear (K). OUT position is away from the headstock and meshes with the 16-tooth compound gear (J). The position of the sliding gear (IN or OUT) is shown on the chart in the same row as thread or feed desired.

Loosen QUADRANT LOCK (G) to mesh sliding gear with compound gear. After gears are properly meshed, tighten the lock. Be sure to allow sufficient clearance between the two meshing gears.

CAUTION: Always stop motor and spindle before changing feeds. If quick-change levers do not index, do not force, merely rotate spindle by hand until levers slide easily into position.

CARRIAGE

Carriage moves along the bed by hand or by power feed and supports the cross slide, compound rest, tool post and cutting tool. The apron, anchored to front of carriage, contains the power cross and longitudinal feed controls.

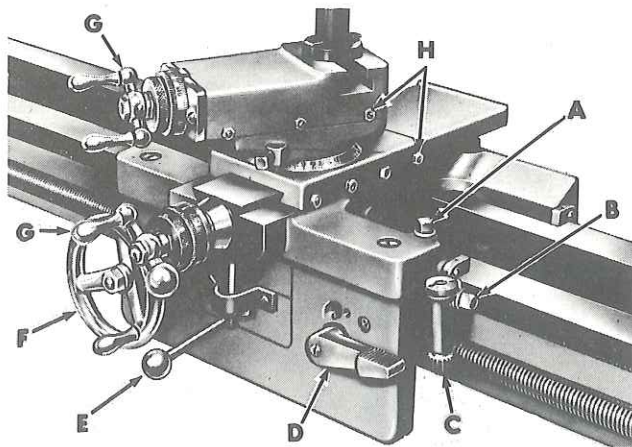


Figure 11

HANDWHEEL (F, Fig. 11) manually moves carriage along the lathe bed.

CROSS FEED AND TOOL POST SLIDE CRANKS (G) move the cross slide and tool post slide in and out.

Crank collars are graduated in thousandths of an inch.

12SB & AB

CARRIAGE LOCK SCREW (A) locks carriage to bed for facing or cutoff operations.

HALF-NUT LEVER (D) engages half-nuts with lead screw for threading and longitudinal feeding. When lever is moved down, it engages half-nuts with lead screw -- carriage travels along bed as lead screw turns. **CAUTION:** Always loosen carriage lock screw before engaging half-nuts.

CROSS FEED LEVER (E) controls power feed of cross slide. Move cross feed lever down to engage, up to disengage.

THREADING DIAL (C) 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 avoid excessive wear of threading dial gear, loosen clamp screw (B) and swing gear away from lead screw when not threading.

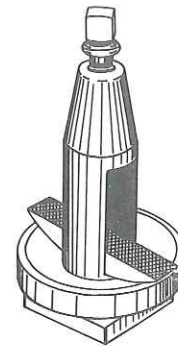


Figure 12

The tool post holds the tool rigidly in position for cutting operations -- refer to figure 12.

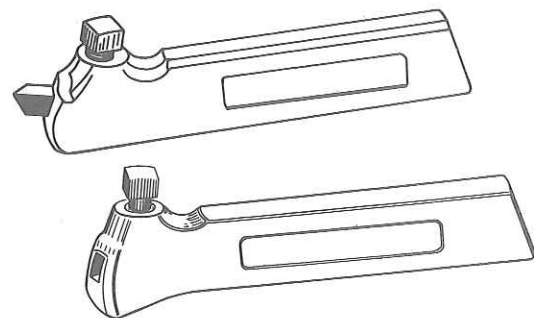


Figure 13

Tool bit holders permit the use of small, inexpensive and replaceable tool bits ---refer to figure 13.

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.

TAILSTOCK

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

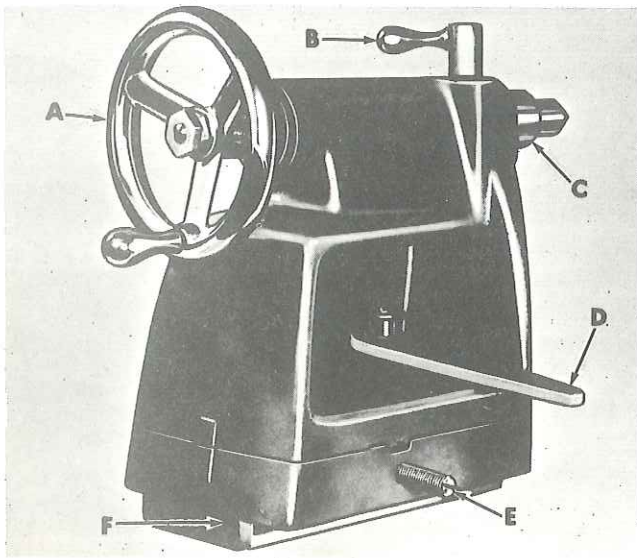


Figure 14

RAM LOCK LEVER (B, fig. 14) locks ram in place. **NOTE:** Before attempting to move ram, loosen ram lock.

HANDWHEEL (A) moves the tailstock ram (C). To advance ram, turn handwheel clockwise; to retract ram or eject center, turn counterclockwise.

BED CLAMP LEVER (D) locks tailstock to lathe bed.

The tailstock may be set over for taper turning by loosening the bed clamp lever and adjusting the two setover screws (E).

SEQUENCE OF ENGAGING CONTROLS FOR OPERATING LATHE

After trying out each of the controls, do a practice setup, following these steps:

1. Engage back gears.
2. Shift belts to low speed position -- see chart.
3. Move lead screw direction lever to neutral (center position).
4. Engage quick-change levers -- left hand in position 1, right in position 7.
5. Move sliding gear to out position.
6. Unlock carriage lock screw.
7. Move half-nut lever up (disengaged position).
8. Move cross feed lever up (disengaged position).

NOW TURN ON MOTOR -- only spindle should be turning.

To engage lead screw and quick-change gear box: Stop motor, move lead screw direction lever to bottom position and start motor -- lead screw should be turning very slowly. Now engage half-nut lever, causing carriage to travel toward headstock.

Set up different threads and feeds -- engage power feeds -- get familiar with the controls. This will save time later and help you produce better work.

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.

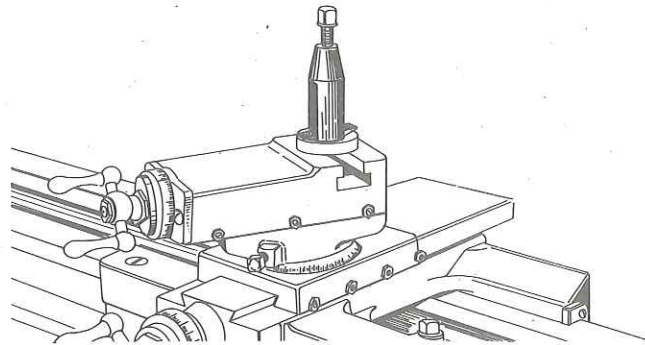


Figure 15

RIGHT -- Tool post slide is flush with front end of the upper swivel, therefore provides maximum tool support -- refer to figure 15.

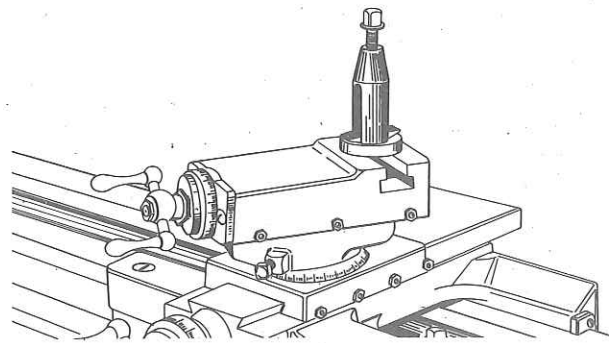


Figure 16

WRONG -- Unnecessary overhang of tool post slide will result in tool chatter, and could cause the tool post slide to break -- refer to figure 16.

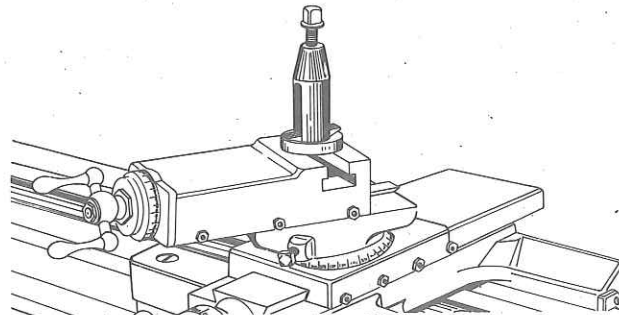


Figure 17

WRONG -- Tool post slide is too far back -- tool overhang is excessive -- refer to figure 17.

MOUNTING CHUCKS AND FACE PLATES

1. Carefully wipe face of hub and threads clean of dirt and chips.
2. Carefully clean spindle threads and shoulder.
3. Cover spindle threads with a light film of clean oil. Nicks, burrs, chips or dirt on the lathe spindle threads, pilot or shoulder--or on the chuck pilot, threads or shoulder--will throw the chuck out of alignment and result in inaccurate work.
4. Place lathe in back gear to keep spindle from turning.
5. Screw chuck or face plate on spindle--do not force, it should thread on easily. Turn it rapidly as it nears spindle shoulder so hub will seat firmly against spindle shoulder face.

CAUTION -- Do not turn power on with the spindle locked.

TO REMOVE CHUCK OR FACE PLATE

1. Place board under chuck to protect bed ways, rotate chuck until wrench hole is on top. Lock spindle by engaging back gears. 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 and tap slot in face plate with a lead or brass hammer in a counterclockwise direction. Remove face plate carefully to prevent damaging spindle threads. Disengage back gears.

CAUTION -- Never remove chuck or face plate while lathe is running.

MAINTENANCE AND ADJUSTMENTS

PREVENTIVE MAINTENANCE

- Keep lathe clean and properly lubricated.
- Don't use lathe for a work bench or leave tools on the bed ways.
- Always shut off power before leaving lathe.
- Recheck level of the bed frequently.
- Lock tailstock to bed ways before turning between centers.
- Keep lead screw threads clean, and oil lightly.
- Securely lock cutting tool in position before taking a cut.

CHUCK CARE

INSPECT YOUR CHUCK PERIODICALLY. If used properly, a chuck will give good service for a long period.

OIL CHUCK 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 SAE No. 10 machine oil. **CAUTION:** Do not apply too much oil -- it collects dust and chips.

PROTECT CHUCK 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.

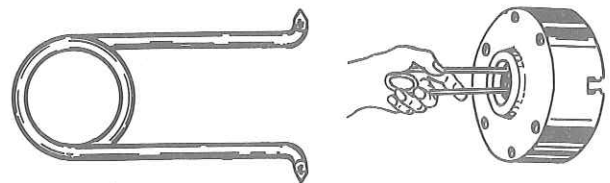


Figure 18

Use a tooth brush to clean spindle threads. A bent wire filed on ends to a V-shape should be used to remove dirt and chips from chuck threads ---refer to figure 18.

To maintain chuck accuracy, NEVER abuse your chuck.

KEEP THE LATHE CLEAN. Oil and dirt form an abrasive compound which can easily damage bearing surfaces. Wipe the bed and all machined surfaces with a clean oily cloth at frequent intervals. Use a brush to clean spindle, gear teeth, lead screw threads, etc.

TAILSTOCK GIB ADJUSTMENT

Two gib screws (F, fig. 14), one on each of the tailstock gibs, regulate the tightness of tailstock between the bed ways.

To adjust:

Tighten both gib screws until both ends of the gib bear evenly against bed way with equal pressure, and tailstock slides smoothly.

CARRIAGE BEARING PLATE ADJUSTMENT

Carriage bearing plates, which bear on underside of front and back ways, hold the carriage firmly to the bed. Plates have shims of varying thickness for wear adjustment.

ADJUSTING SPINDLE BEARINGS

Spindle bearings have been preloaded at factory and seldom require adjusting. If spindle spins too freely or play is noticeable when spindle is pushed back and forth, follow these instructions:

To adjust:

1. Make adjustment only when spindle is at operating temperature -- run spindle at medium speed for about one hour.
2. Stop motor.

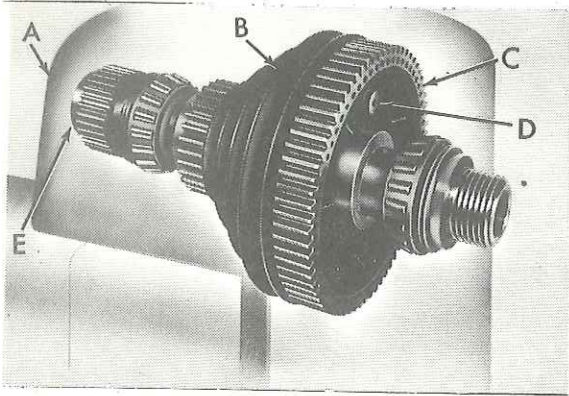


Figure 19

3. Raise headstock cover (A, Fig. 19) and pull out lock pin (D) disengaging bull gear (C) from pulley (B).
4. Release belt tension and slip belt off spindle pulley -- belt should hang loosely around spindle.
5. Loosen set screw in bearing adjusting nut (E) and tighten nut until spindle end play has been eliminated.
6. Give bull gear (C) a sharp spin with your hand -- bull gear should rotate about a half turn. If it doesn't, adjust nut (E) and recheck.
7. Tighten set screw in adjusting nut.
8. Place belts on pulleys, and check belt tension.

CROSS AND TOOL POST SLIDE GIB ADJUSTMENT

1. Loosen Gib Screw Lock Nuts (H, Fig. 11).
2. Adjust Gib Screws evenly until slide moves with a slight drag.
3. Tighten the Gib Screw Lock Nuts -- hold Gib Screw with screw driver while tightening nuts.

CARRIAGE GIB ADJUSTMENT

If horizontal play develops between carriage and bed, tighten the four gib screws at rear of carriage.

To adjust:

1. Loosen gib screw lock nuts.
2. Turn gib screws evenly until carriage moves with a slight drag.
3. Hold screws with screw driver and tighten the lock nuts.

COMPOUND AND CROSS FEED CRANK ADJUSTMENT

1. Hold crank and loosen lock nut on end of screw.
2. Hold crank and tighten the $\frac{7}{8}$ " nut to remove end play in cross feed or compound handle assembly.
3. Hold crank and *securely tighten* lock nut against crank.

LEAD SCREW SAFETY CLUTCH ADJUSTMENT

Clutch is preset at factory. If adjustment is necessary, it should be set at 5 foot pounds.

To adjust:

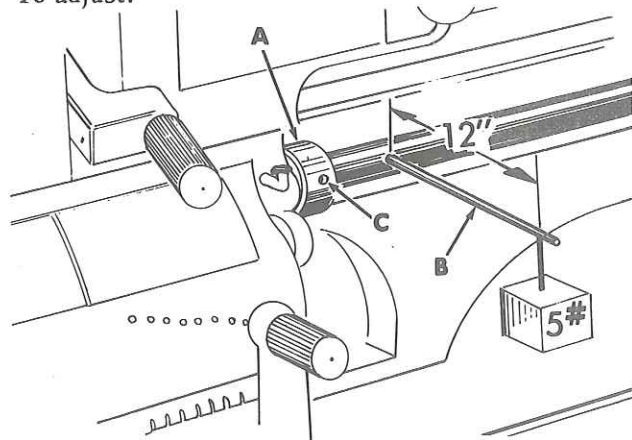


Figure 20

1. Insert $\frac{1}{4}$ " rod (B, fig. 20) in the hole in lead screw near clutch.
2. Hang a 5 lb. weight on rod 12 inches from lead screw.
3. While holding quadrant gears, insert $\frac{1}{8}$ " rod in hole (C) and tighten collar (A) until clutch is properly adjusted.

NOTE: When lead screw safety clutch is properly adjusted, the 5 lb. weight will move slowly down. If it moves too fast, tighten collar (A). If it doesn't move, loosen collar (A).

IMPORTANT: Clutch collar is self-locking.

CHECKING LEAD SCREW ALIGNMENT

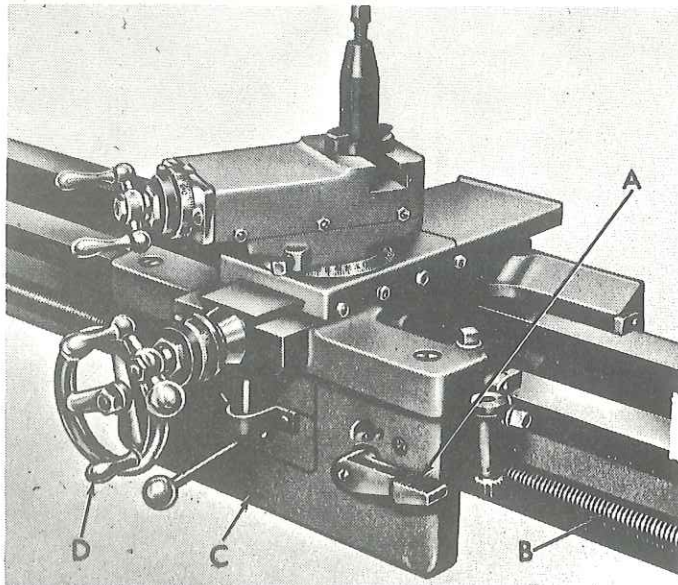


FIGURE 21

1. Raise half nut lever (A, Fig. 21) disengaging half nuts from lead screw (B).

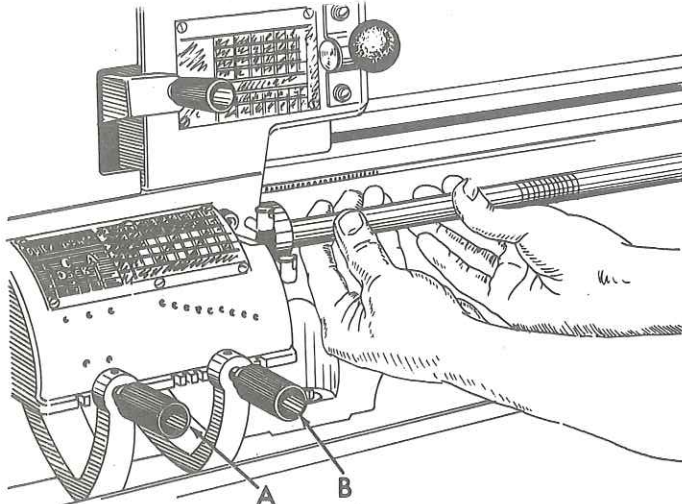


FIGURE 22

2. Disengage quick change levers (A and B, Fig. 22).

Lead screw should turn freely when rotated with fingers as shown in figure 22.

If lead screw binds or turns hard, adjustment of lead screw alignment is necessary.

ADJUSTING LEAD SCREW ALIGNMENT

1. Move tailstock to extreme end of lathe bed and lock.
2. Move carriage (C, Fig. 21) to tailstock end of lathe.
3. Loosen but do not remove socket cap screws (A, Fig. 23).
4. Loosen but do not remove hex cap screw (C), or socket set screw on some lathes.
5. Lower half nut lever (D) as shown above to engage half nuts.

CAUTION: WHEN ENGAGING HALF NUTS BE SURE HALF NUTS AND LEAD SCREW THREADS MESH

ADJUSTING LEAD SCREW ALIGNMENT

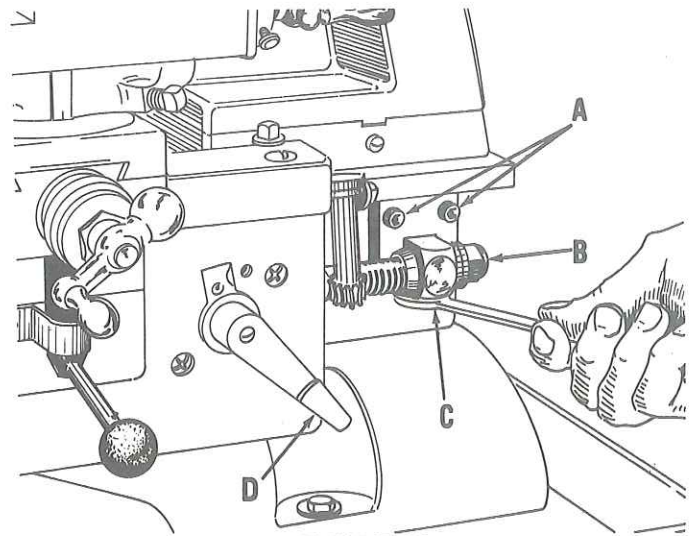


FIGURE 23

FULLY — IT MAY BE NECESSARY TO MOVE CARRIAGE (C, FIG. 28) SLIGHTLY WITH HANDWHEEL (D) WHILE ENGAGING HALF NUTS.

6. Tighten screws (A, Fig. 23).
7. Tighten screw (C, Fig. 23).
8. Rock carriage back and forth using handwheel (B, Fig. 21) and check lead screw end play.
9. If end play is evident, tighten cone lock nut (B, Fig. 23) just enough to eliminate play—do not over-tighten.

CAUTION: DO NOT OVER-TIGHTEN CONE LOCK NUT (B).

GEAR MESH ADJUSTMENT

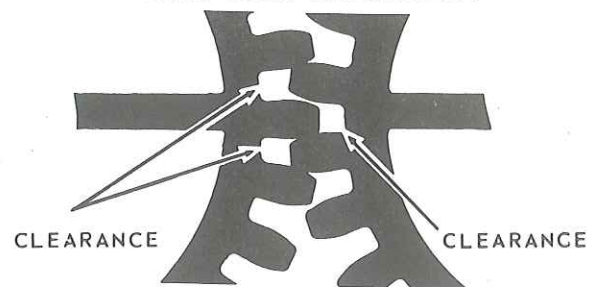


FIGURE 24

A suggested method to obtain proper clearance is:

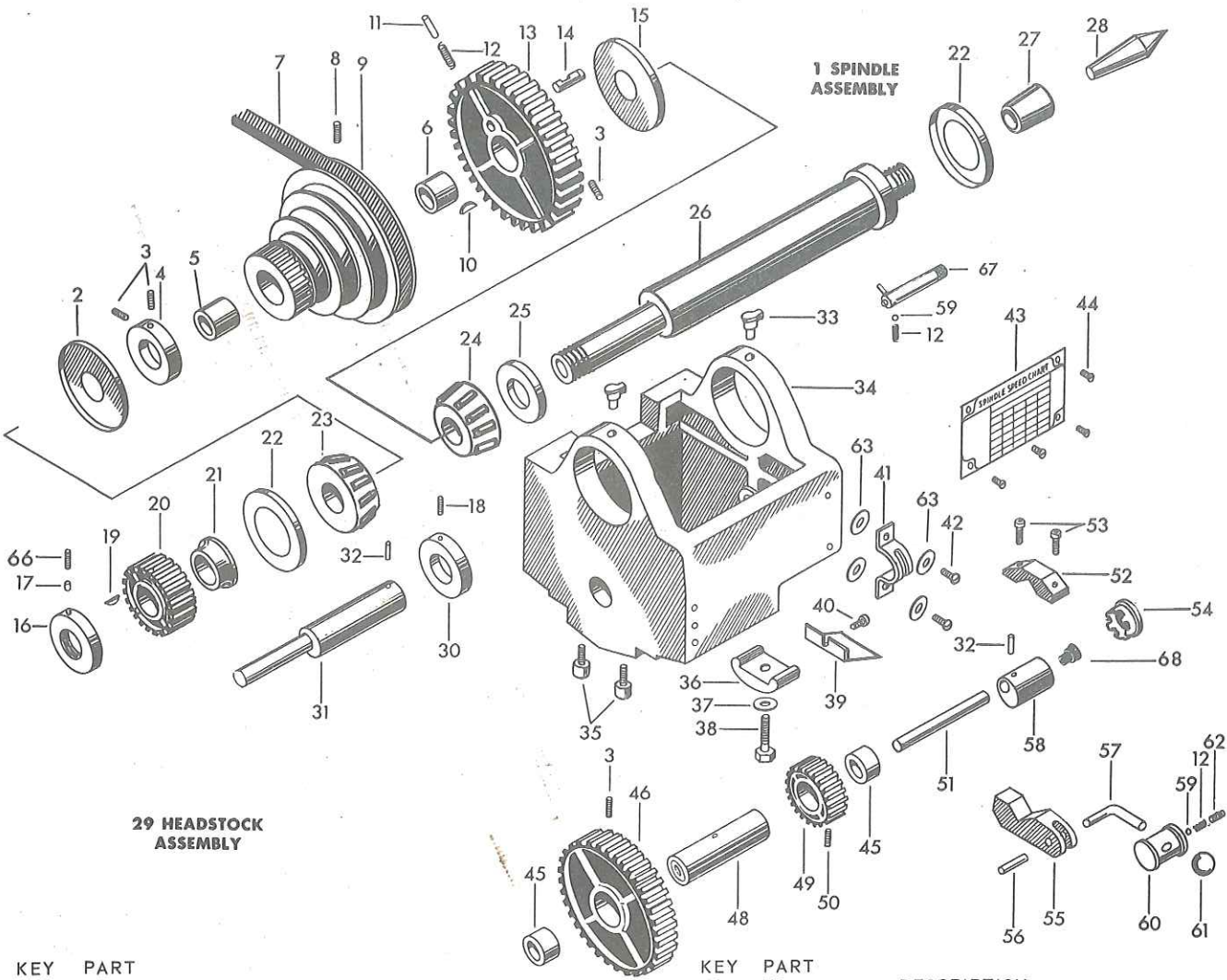
1. Place a strip of thick wrapping paper between the teeth of two meshing gears.
2. Tighten gears in position.
3. Remove paper.

Clean gears occasionally to remove any chips which become lodged in gear teeth. Chips in gear teeth result in inaccuracies when cutting screw threads. A small amount of grease, preferably a "cling type outer gear" lubricant applied to gear teeth, will aid in obtaining smoother, more quiet operation.

NOTE: Remove all oil, grease and dirt before applying lubricant.

A REPRESENTATIVE GEAR SET-UP for 36 threads per inch.

CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910



KEY PART NO. NO. DESCRIPTION

SPINDLE ASSEMBLY		
1	990-280	Spindle Assembly (for Horizontal Countershaft)
2	10A-8	Baffle
3	102570	*1/4-20 x 3/8" Hex Socket Set Screw
4	10A-89	Collar with Set Screw
5	043-018	Bushing
6	10-258	Bushing
7	S8-95A	Belt (1/2" x 37" lg.)
8	10-257	Oil Screw
9	990-359	Pulley, Gear and Bushing Assembly
10	442-010	Key
11	9-60	Plunger
12	9-61	Spring
13	10-241	Back Gear with Pin & Plunger
14	10-256	Pin
15	10A-7	Baffle
16	9-32	Collar with Set Screw
17	9-124	Plug
18	102705	*1/4-20 x 1/4" H'dless Set Screw
19	106751	*#9 Woodruff Key
20	9-100-32	Spindle Gear
21	10A-6	Spacer
22	10A-3	Dust Cover
23	10A-11C	Bearing
24	10A-9C	Bearing
25	10A-5	Collar
26	10-31T	Spindle
27	9-138	Sleeve
28	9-88	Center
66	456813	*1/4"-20 x 3/16" H'dless Set Screw

HEADSTOCK ASSEMBLY		
29	990-281	Headstock Assembly (Horizontal Countershaft Lathe)

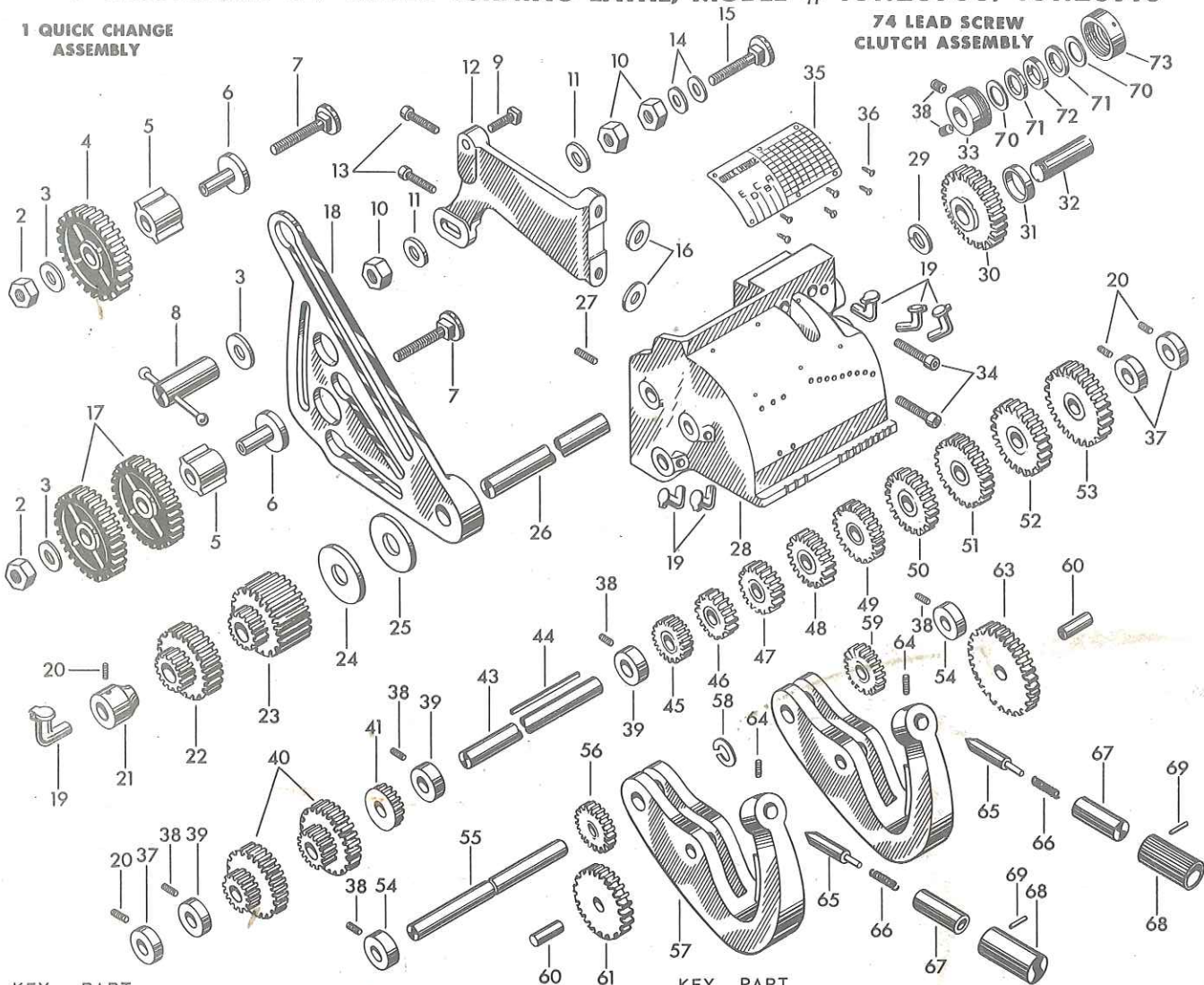
KEY PART NO. NO. DESCRIPTION

1	990-280	Spindle Assembly
30	10-253	Collar with Set Screw
31	271-006	Eccentric
32	142486	*1/8 x 3/4" Groove Pin
33	9-204	Oil Cup
34	383-003	Headstock with Oilers
35	138202	*5/16-18 x 1" Socket Cap Screw
36	9-97	Clamp
37	10-262	Washer
38	100161	*1/2-13 x 1-3/4" Hex Cap Screw
39	122-044	Cover
40	981-158	*10-24 x 3/16" Rd. Hd. Mach. Screw
41	556-035	Plate
42	110486	*10-24 x 3/8" Fill. Hd. Mach. Screw
43	130-008	Speed Chart
44	145366	*#2 x 3/16" P. K. Drive Screw
45	10-249	Bushing
46	10-243	Back Gear
48	10-248	Sleeve with Bushings
49	10-244	Back Gear
50	140856	*8-32 x 3/8" Soc. Set Screw
51	700-074	Shaft
52	126-018	Clamp
53	138203	*1/4-20 x 1-1/2" Socket Cap Screw
54	557-006	Plug
55	126-017	Clamp
56	456636	5/32 x 7/16" Roll Pin
57	700-073	Shaft
58	271-005	Eccentric
59	9-210	Ball
60	046-015	Bearing
61	51-56	Ball
62	102569	*1/4-20 x 1/4" Socket Set Screw
63	9414401	#10 Washer
67	10-42A	Index Pin
68	DB4-35	Oiler

*Standard hardware item - may be purchased locally

CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910

1 QUICK CHANGE ASSEMBLY



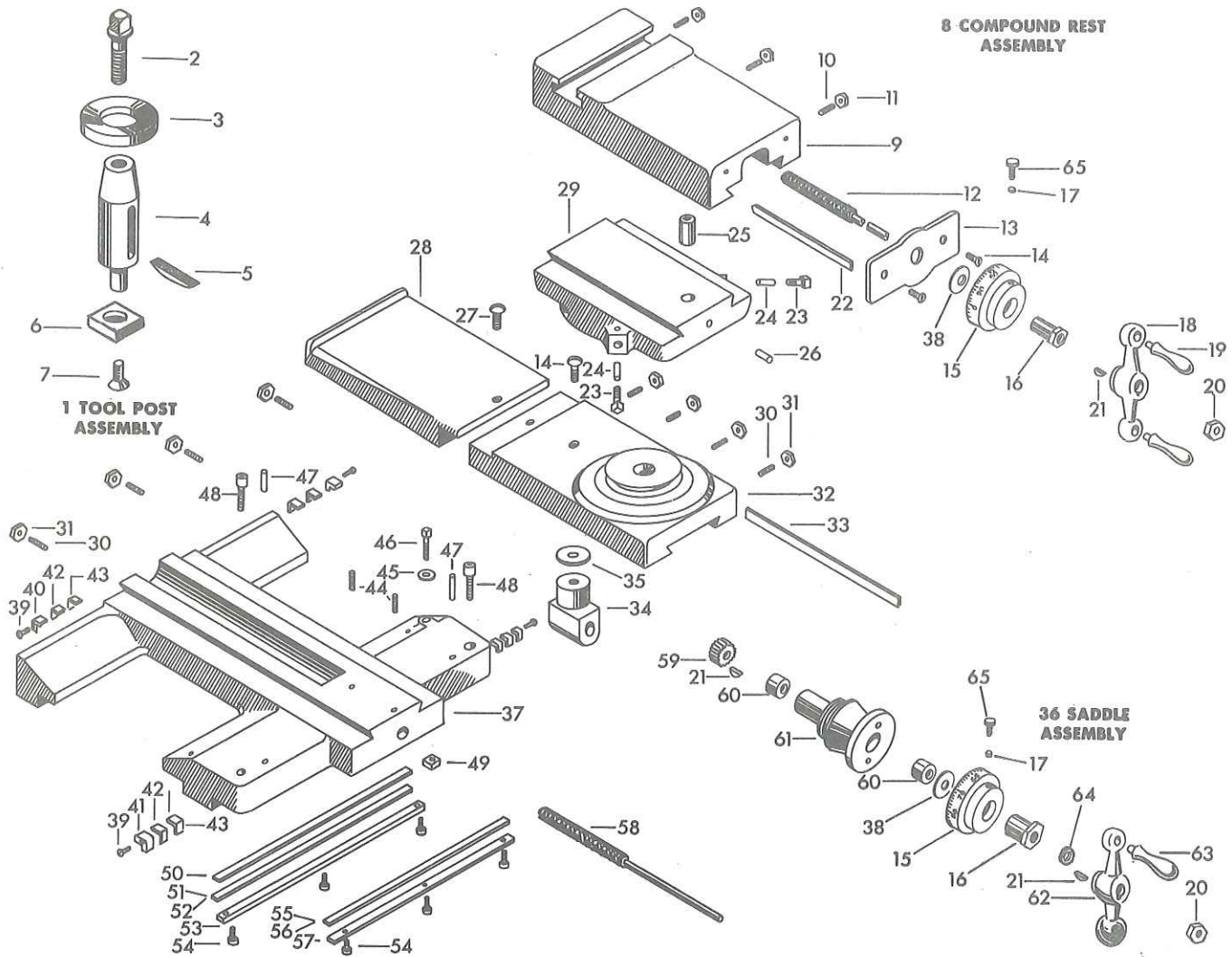
74 LEAD SCREW CLUTCH ASSEMBLY

KEY NO.	PART NO.	DESCRIPTION
QUICK CHANGE ASSEMBLY		
1	990-290	Quick Change Assembly
2	102635	*3/8" - 16 Hex Nut
3	9-93	Washer
4	9-101-40A	40T Gear
5	9-70A	Bushing
6	9-73A	Sleeve
7	9-69A	Bolt
8	10-1548X	Handle
9	109186	*3/8 - 16 x 1-3/4" Sq. Hd. Mach. Bolt
10	9-190	Nut
11	446200	*3/8" Washer
12	L6-1002	Bracket
13	151241	*1/4 - 20 x 1" Phillips Hd. Cap Screw
14	9414321	*5/16" Washer
15	S7-207	Bolt
16	446142	*3/16" Washer
17	9-101-48A	48T Gear
18	L6-1007	Quadrant
19	S7-217	Oiler
20	102569	*1/4 - 20 x 1/4" Socket Set Screw
21	10-1534	Collar with Set Screw
22	10-1551X	Compound Gear with Bushing
23	10-1550X	Compound Gear with Bushing
24	L6-1057	Spacer
26	10-1508	Shaft
27	140869	*10 - 24 x 5/16" Socket Set Screw
28	386-031	Gear Box
29	L6-1056	Snap Ring
30	L6-1030	30T Gear
31	9-53	Shim
32	700-194	Shaft
34	138227	*5/16 - 18 x 2-1/4" Socket Cap Screw
35	130-007	Thread Chart
36	100736	*6 - 32 x 1/4" Rd. Hd. Mach. Screw
37	10-1225	Collar with Set Screw
38	221183	*1/4 - 20 x 3/16" Socket Set Screw
39	10-1533	Collar with Set Screw

KEY NO.	PART NO.	DESCRIPTION
40	10-1552X	Compound Gear with Bushing
41	10-1525X	16T Gear with Bushing
43	L6-1009	Shaft
44	L6-1036	Key
45	L6-1014	16T Gear
46	10-1515	18T Gear
47	10-1516	20T Gear
48	10-1517	22T Gear
49	10-1518	23T Gear
50	10-1519	24T Gear
51	10-1520	26T Gear
52	10-1521	28T Gear
53	10-1522	30T Gear
54	BD1-24	Collar with Set Screw
55	L6-1011	Shaft
56	10-1523	20T Gear
57	10-1586	Lever with Guide
58	L6-1054	Ring
59	10-1512	20T Gear
60	10-1588	Shaft
61	10-1524X	32T Gear with Bushing
63	10-1513X	45T Gear with Bushing
64	140867	*10 - 24 x 3/16" Socket Set Screw
65	10-1231	Plunger
66	S8-63	Spring
67	10-1244	Sleeve
68	441-029	Knob
69	142954	3/32 x 3/4" Groove Pin
LEAD SCR. CLUTCH ASSEMBLY		
74	3980-25	Lead Screw Clutch Assembly
33	386-091	Clutch Housing
38	221183	*1/4 - 20 x 3/16" Soc. Set Scr.
70	932-057	Washer
71	933-017	Washer
72	238-004	Driver Clutch
73	127-028	Cap

*Standard hardware item - may be purchased locally

CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910

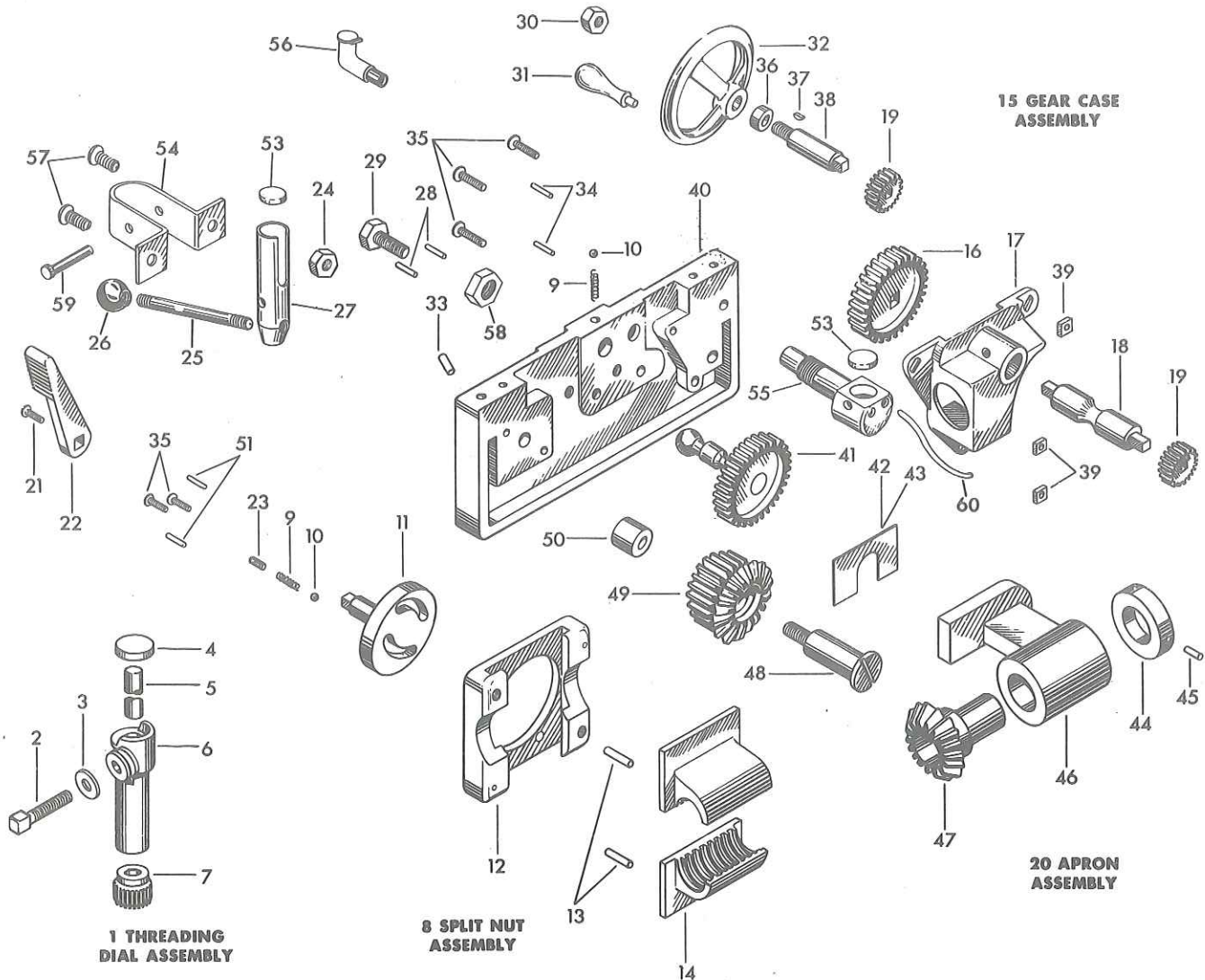


KEY NO.	PART NO.	DESCRIPTION
TOOL POST ASSEMBLY		
1	9-39X	Tool Post Assembly
2	9-148	Screw
3	9-40	Washer
4	9-39	Tool Post
5	9-41	Rocker
6	9-136A	Anchor
7	9-137A	Stud
COMPOUND REST ASSEMBLY		
8	990-282	Compound Rest Assembly
9	704-017	Tool Post Slide
10	981-169	*10-32 x 1-1/8" Headless Set Screw (Dg. Pt.)
11	10-226	Nut
12	696-048	Screw
13	046-016	Bearing
14	113955	*1/4-20 x 1/2" Rd. Hd. Mach. Screw
15	233-016	Dial
16	049-089	Bushing
17	557-028	Plug
18	10D-308	Crank with Handles
19	9-104	Handle
20	10D-262	Nut
21	106749	*#3 Woodruff Key
22	345-012	Gib
23	102897	*3/8-16 x 1-1/4" Sq. Hd. Set Screw
24	10-309	Pin
25	537-040	Nut
26	102569	*1/4-20 x 1/4" Socket Set Screw
27	110500	*10-24 x 1/2" Rd. Hd. Mach. Screw
28	122-046	Cover
29	704-016	Upper Swivel
30	981-173	*1/4-28 x 1" Headless Set Screw (Dg. Pt.)
31	10-225	Nut
32	704-015	Lower Swivel

KEY NO.	PART NO.	DESCRIPTION
33	10-56	Gib
34	537-041	Nut
35	9-87	Washer
SADDLE ASSEMBLY		
36	990-283	Saddle Assembly
37	719-001	Saddle
38	M6-255	Washer
39	100764	*#10-32 x 1/2" Rd. Hd. Mach. Screw
40	641-056	Retainer
41	641-055	Retainer
42	y38-003	Wiper
43	547-004	Felt Oiler
44	127554	*8-32 x 1/8" Headless Set Screw
45	9-155	Washer
46	696-049	Screw
47	142508	*3/16 x 1-1/4" Groove Pin
48	154101	*3/8-16 x 1-1/4" Phillips Hd. Cap Screw
49	9-14	Clamp
50	345-009	Gib
51	711-043	Shim (.003)
52	711-044	Shim (.002)
53	556-070	Bearing Plate
54	114353	*1/4-20 x 1/2" Fill. Hd. Mach. Screw
55	711-042	Shim (.002)
56	711-045	Shim (.003)
57	556-071	Bearing Plate
58	696-047	Screw
59	10F-33	Gear
60	10F-45	Bushing
61	046-017	Bearing with Bushings
62	L2-61A	Crank with Handle
63	9-103	Handle
64	114606	*3/8" Ext. Shakeproof Washer
65	M1-92	Lock Screw

*Standard hardware item - may be purchased locally

CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910

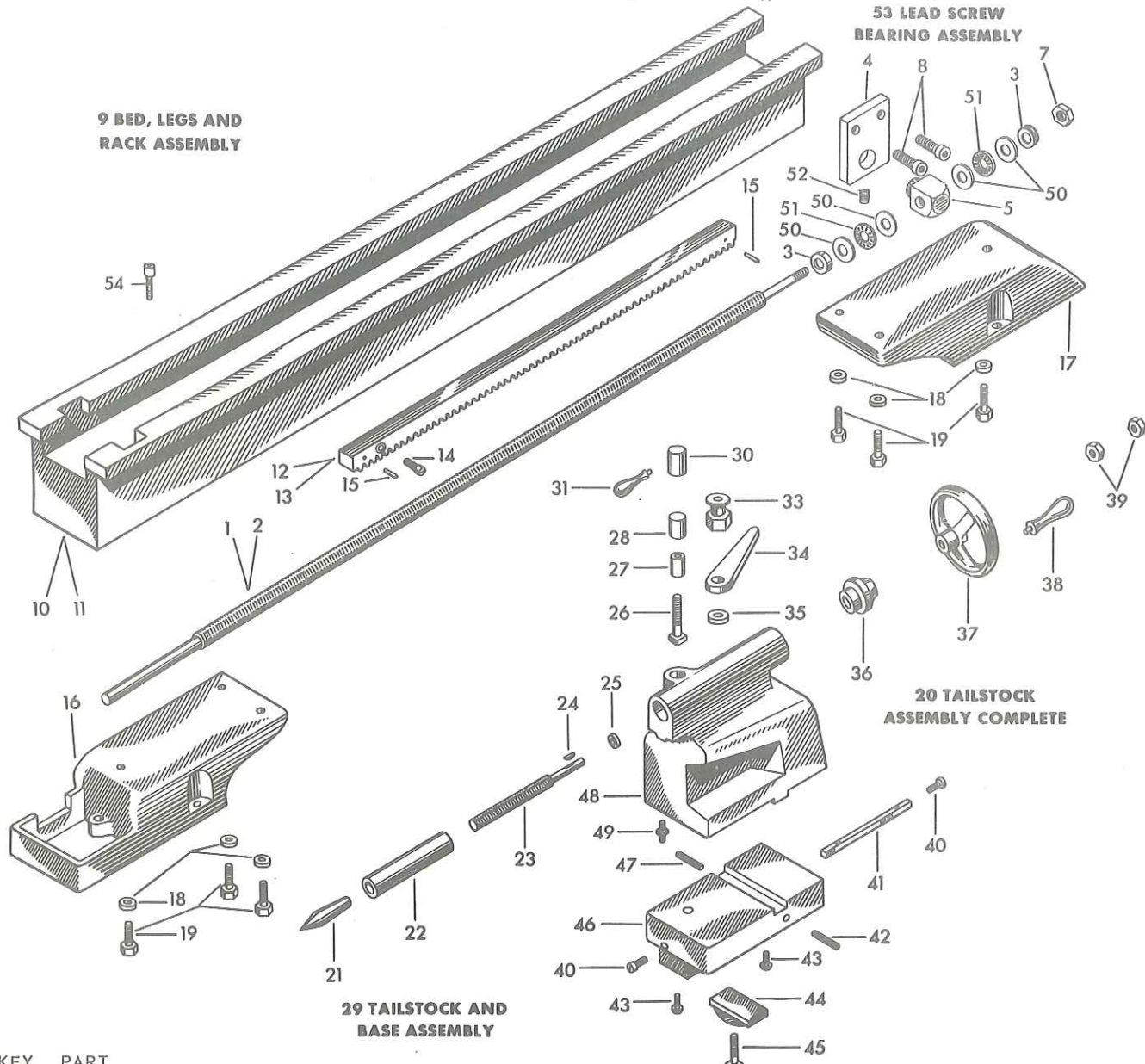


KEY NO.	PART NO.	DESCRIPTION
THREADING DIAL ASSEMBLY		
1	9-62X	Threading Dial Assembly
2	9-179	Screw
3	9-155	Washer
4	9-62	Dial
5	9-65	Shaft
6	9-63	Body
7	9-64	Gear
SPLIT NUT ASSEMBLY		
8	10F-12X	Split Nut Assembly
9	9-61	Spring
10	9-210	Ball
11	10D-38	Scroll
12	9-13	Guide
13	9-66	Stud
14	10F-12	Split Nut (1 Pair)
GEAR CASE ASSEMBLY		
15	990-285	Gear Case Assembly
16	341-057	Gear
17	10F-11	Gear Case
18	9-68	Shaft
19	9-102-125	Gear
APRON ASSEMBLY		
20	990-286	Apron Assembly
8	10F-12X	Split Nut Assembly
15	990-285	Gear Case Assembly
21	100856	*8 - 32 x 5/8" Oval Hd. Mach. Screw
22	381-026	Handle
23	102708	*1/4 - 20 x 5/8" Headless Set Screw
24	9-190	Nut
25	381-052	Lever
26	W30-20	Knob

KEY NO.	PART NO.	DESCRIPTION
27	002-056	Arm
28	107317	*3/16 x 1/2" Groove Pin
29	100133	*3/8 - 16 x 3/4" Hex Cap Screw
30	102635	*3/8 - 16 Hex Nut
31	9-103	Handle
32	9-23	Handwheel with Handle
33	W30-16	Oiler
34	142484	*1/8 x 1/2" Groove Pin
35	153801	*1/4 - 20 x 1-1/4" Phil. Hd. Cap Screw
36	10-264	Bushing
37	106749	*#3 Woodruff Key
38	9-67	Shaft
39	105604	*1/4 - 20 Square Nut
40	005-006	Apron with Oilers and Bushing
41	3980-24	Shaft Gear Assembly
42	711-005	Shim (.002)
43	711-006	Shim (.003)
44	10F-71	Collar with Set Screw
45	102569	*1/4 - 20 x 1/4" Socket Set Screw
46	046-036	Bearing with Bushing
47	341-051	Mitre Gear
48	698-108	Stud
49	990-264	Gear with Bushing
50	BD1-18	Bushing
51	142486	*1/8 x 3/4" Groove Pin
52	711-046	Shim (.010)
53	557-047	Plug
54	041-283	Bracket
55	150-002	Cup
56	S7-217	Oiler
57	113954	*1/4 - 20 x 3/8" Rd. Hd. Mach. Screw
58	271505	7/16 - 20 Hex Nut
59	104238	*3/16 x 7/8 Flat Hd. Rivet
60		*Pipe Cleaner

*Standard hardware item - may be purchased locally

CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910

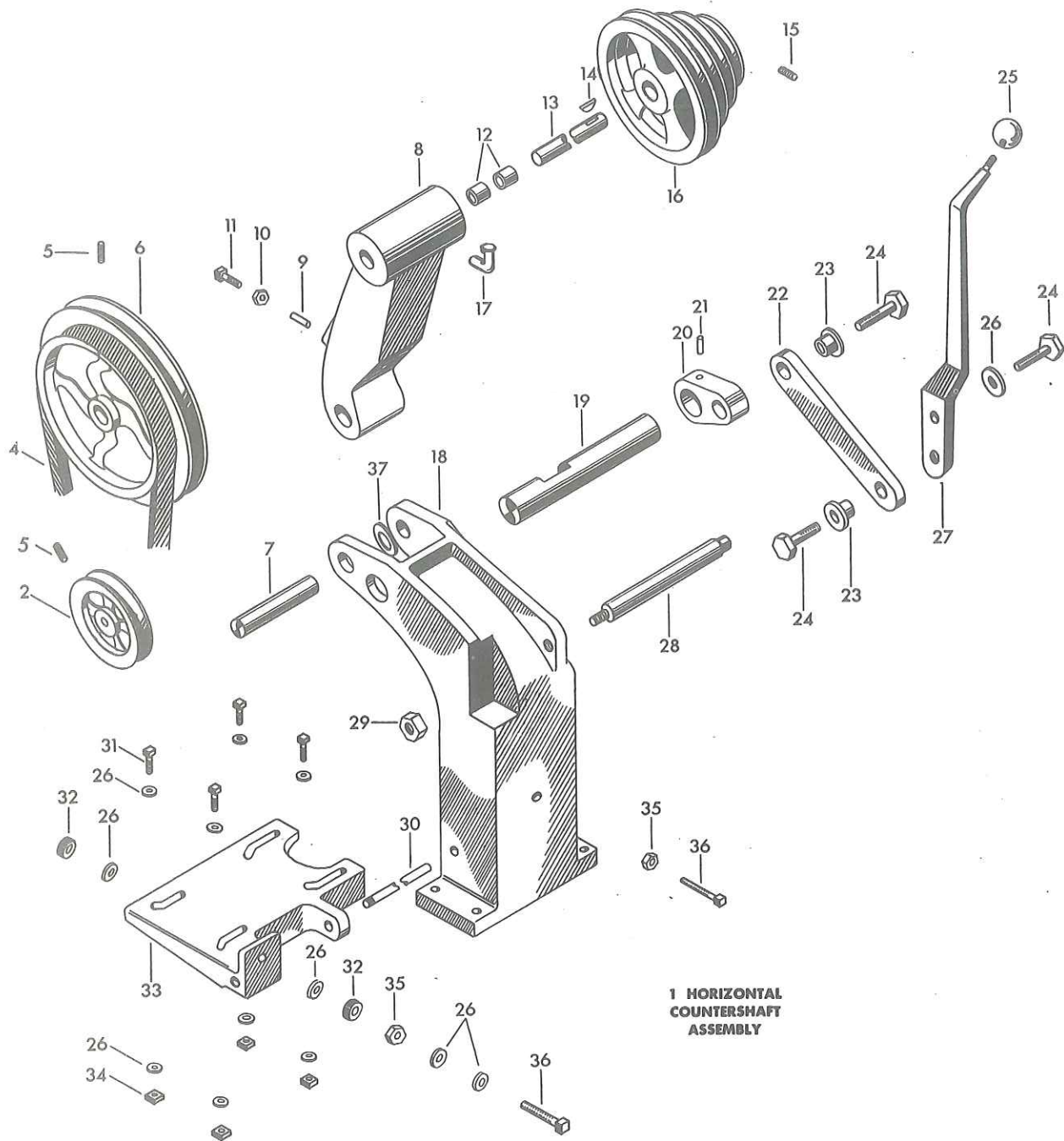


KEY NO.	PART NO.	DESCRIPTION
1	696-148	Lead Screw (42" Lathe)
2	696-149	Lead Screw (54" Lathe)
54	217908	*5/16 - 18 x 7/8" Soc. Cap Scr.
LEAD SCR. BEARING ASSEMBLY		
53	3980-27	Lead Screw Bearing Assembly
3	10F-74	Collar
4	041-284	Bracket
5	046-040	Bearing
7	9415992	*1/2"-20 Hex Conelok Nut
8	138202	*1/4 - 20 x 1" Soc. Cap Screw
50	556-166	Plate
51	044-028	Bearing
52	102569	*1/4 - 20 x 1/4" Soc. Set Scr.
BED, LEGS, AND RACK ASSEMBLY		
9	990-287	Bed, Legs, and Rack Assembly (42" Lathe)
9	990-288	Bed, Legs, and Rack Assembly (54" Lathe)
10	058-015	Bed (42" Lathe)
11	058-016	Bed (54" Lathe)
12	9-86-42	Rack (42" Lathe)
13	9-86-54	Rack (54" Lathe)
14	L3-202	*8 - 32 x 1/2" Fill. Hd. Mach. Screw
15	187733	*3/16 x 5/8" Groove Pin
16	294-004	Leg
17	294-005	Leg
18	981-022	*5/16" Katlink Washer
19	100122	*5/16 - 18 x 1" Hex Cap Screw
TAILSTOCK AND BASE ASSEMBLY		
29	3980-11	Tailstock and Base Assembly
40	10D-60	Gib Screw
41	345-010	Gib

KEY NO.	PART NO.	DESCRIPTION
42	102396	*5/16 - 18 x 2" Headless Set Screw
43	110502	*10 - 24 x 3/4" Rd. Hd. Mach. Screw
46	050-035	Base
47	981-177	*5/16 - 18 x 3" Headless Set Screw
48	831-002	Tailstock
TAILSTOCK ASSEMBLY		
20	990-289	Tailstock Assembly Complete
29	3980-11	Tailstock and Base Assembly
21	9-88	Center
22	9-8	Ram
23	10D-34	Screw
24	106749	*#3 Woodruff Key
25	9-90	Washer
26	109151	*1/4 - 20 x 1-3/4" Sq. Hd. Mach. Bolt
27	M6-44	Lock
28	M6-45	Lock Sleeve
30	9-42A	Lock Nut with Handle
31	9-104	Handle
33	537-042	Nut with Washer
34	937-006	Wrench
35	9414321	*5/16" Washer
36	10D-30	Bearing
37	9-23	Handwheel
38	9-103	Handle
39	9414201	3/8 x 16 Hex Conelok Nut
44	9-7	Clamp
45	109192	*3/8 - 16 x 3-1/4" Sq. Hd. Mach. Bolt
49	9-165A	Screw with Nut

*Standard hardware item - may be purchased locally.

CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910



**1 HORIZONTAL
COUNTERSHAFT
ASSEMBLY**

KEY NO.	PART NO.	DESCRIPTION
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COUNTERSHAFT ASSEMBLY

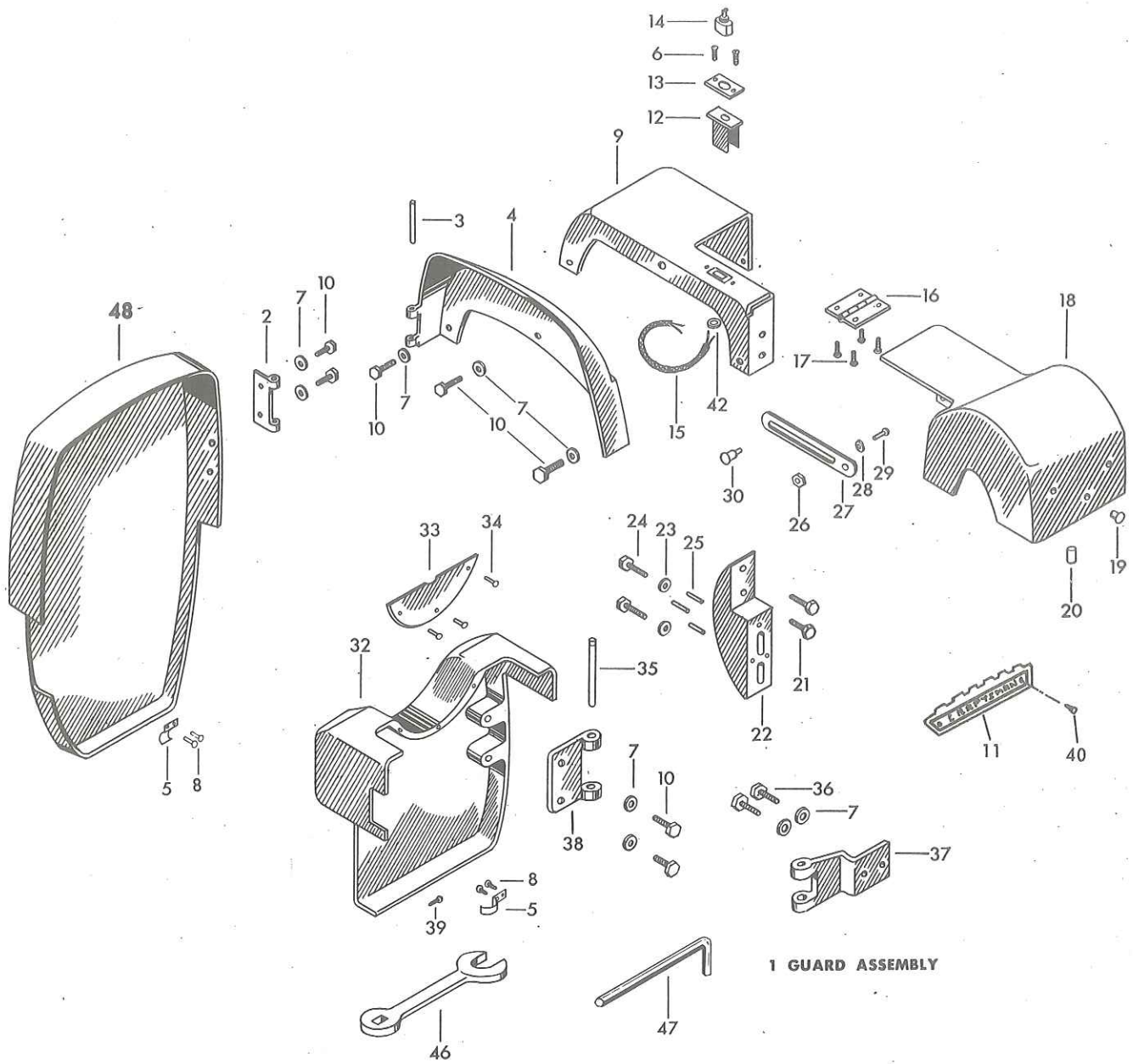
1	990-293	Countershaft Assembly
2	10-428	Motor Pulley with Set Screw (5/8" bore)
4	S8-95A	Belt (1/2" x 37" Lg.)
5	102582	*5/16 - 18 x 1/2" Socket Set Screw
6	560-060	Pulley with Set Screw
7	562-041	Pin
8	002-019	Arm
9	562-040	Pin
10	114503	*3/8 - 16 Hex Jam Nut
11	102899	*3/8 - 16 x 1-3/4" Sq. Hd. Set Screw
12	L3-109	Bushing
13	701-019	Spindle
14	106749	*#3 Woodruff Key
15	120680	*1/4 - 20 x 1/2" Socket Set Screw
16	10-80	Pulley with Set Screw
17	9-644	Oiler
18	041-122	Bracket

KEY NO.	PART NO.	DESCRIPTION
---------	----------	-------------

19	700-071	Rocker Shaft
20	10-77	Lever
21	142359	*3/16 x 1" Groove Pin
22	451-012	Link
23	S7-80	Bushing
24	106329	*3/8 - 16 x 5/8" Hex Cap Screw
25	51-56	Ball
26	9414321	*5/16 Washer
27	381-025	Handle
28	699-061	Spacer
29	102635	*3/8 - 16 Hex Nut
30	562-042	Pin
31	109168	*5/16 - 18 x 1-1/2" Sq. Hd. Mach. Bolt
32	MH-18	Nut
33	050-034	Motor Base
34	105605	*5/16 - 18 Square Nut
35	9-190	Nut
36	102902	*3/8 - 16 x 3" Sq. Hd. Set Screw
37	9-683	Washer

*Standard hardware item - may be purchased locally

CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910



1 GUARD ASSEMBLY

KEY PART
NO. NO. DESCRIPTION

KEY PART
NO. NO. DESCRIPTION

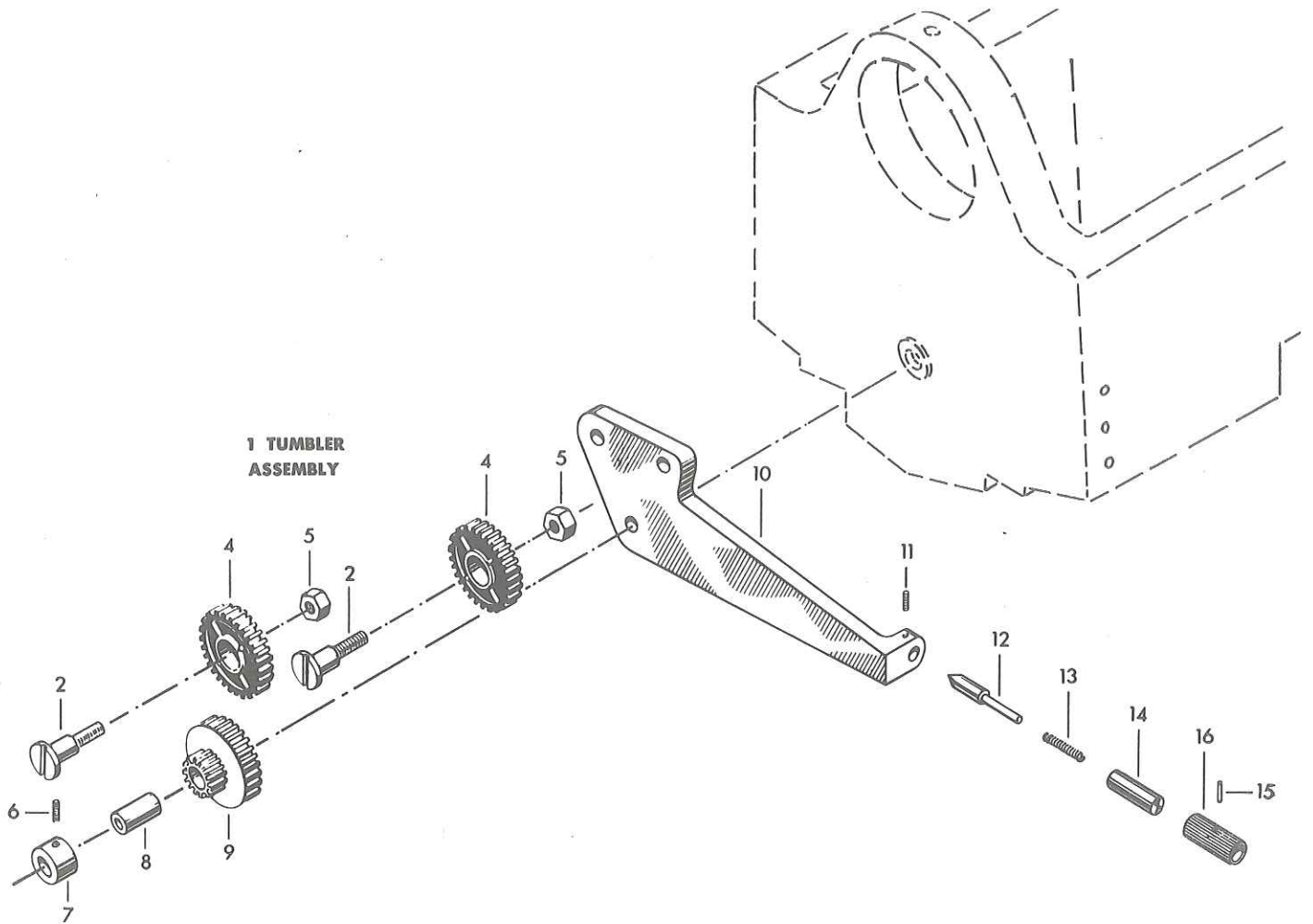
GUARD ASSEMBLY

1	3980-10	Guard Assembly
2	041-116	Hinge Bracket
3	562-044	Pin
4	342-029	Guard
5	M1-53	Spring Clip
6	100736	*#6-32 x 1/4" Rd. Hd. Mach. Screw
7	446178	*1/4" Washer
8	110498	*10-24 x 1/4" Rd. Hd. Mach. Screw
9	041-123	Bracket
10	100121	*5/16-18 x 3/4" Hex Cap Screw
11	536-027	Nameplate
12	423-001	Insulator
13	41-43A	Switch Plate
14	41-44A	Switch
15	9-214	Cord
16	384-004	Hinge
17	112873	*#10-24 x 5/16" Rd. Hd. Mach. Screw
18	342-032	Guard
19	9-729	Knob
20	BD3B-10	Bumper
21	100133	*3/8-16 x 3/4" Hex Cap Screw
22	041-119	Bracket

23	981-019	*5/16" Washer
24	100134	*3/8-16 x 1" Hex Cap Screw
25	102390	*5/16-18 x 3/4" H'dless Set Screw (Oval Pt.)
26	274856	*1/4-20 Esna Nut
27	714-003	Latch
28	446142	*3/16" Washer
29	100109	*1/4-20 x 3/4" Hex Cap Screw
30	696-050	Special Screw
32	342-030	Guard
33	556-068	Plate
34	112865	*#8-32 x 3/16" Rd. Hd. Mach. Screw
35	562-043	Hinge Pin
36	106325	*5/16-18 x 7/8" Hex Cap Screw
37	041-118	Bracket
38	041-117	Hinge Bracket
39	145367	*#4 x 3/16" P.K. Drive Screw
40	145366	*#2 x 3/16" P.K. Drive Screw
42	9-149	Grommet
46	9-115	Wrench
47	937-022	*5/16" Socket Wrench
48	342-031	Guard

*Standard hardware item - may be purchased locally

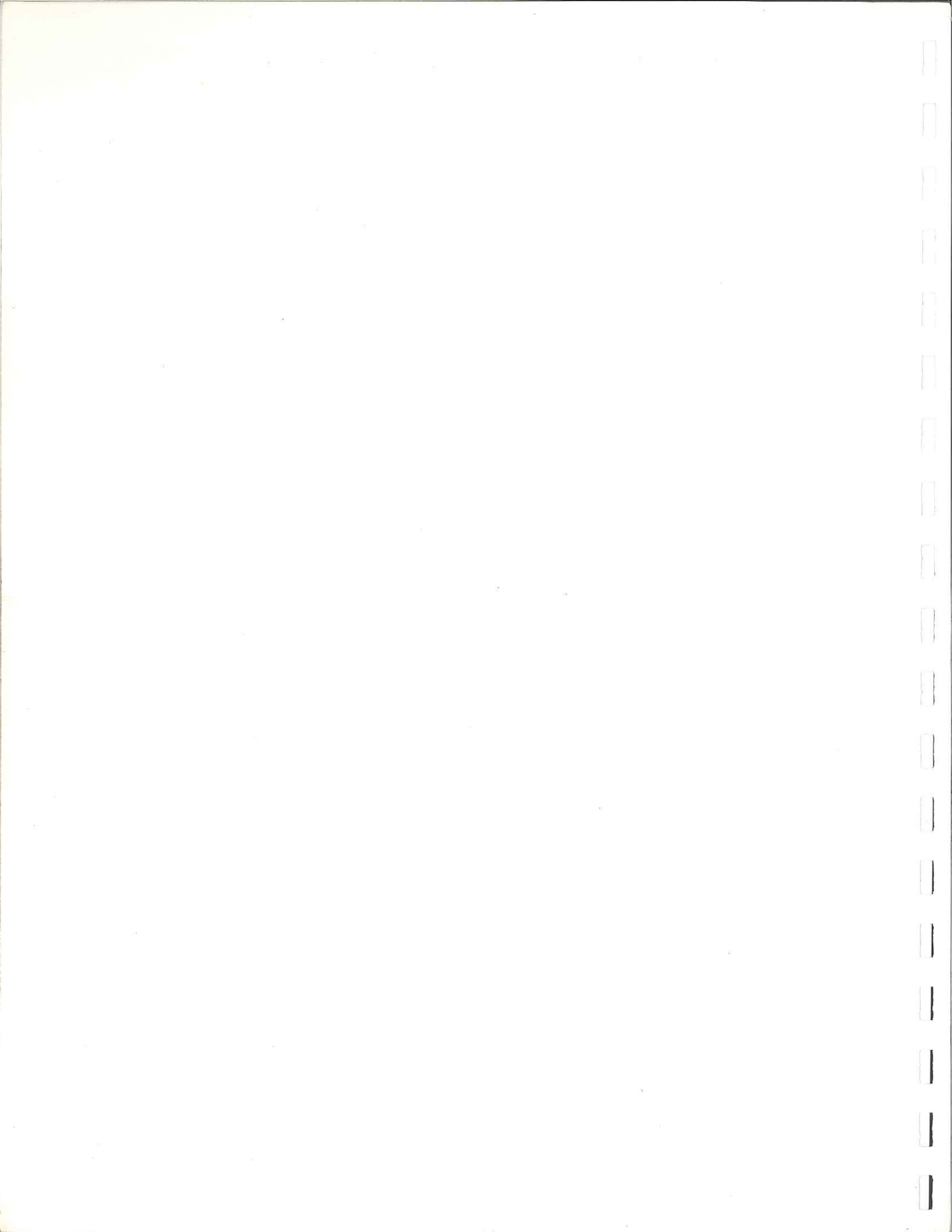
CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910

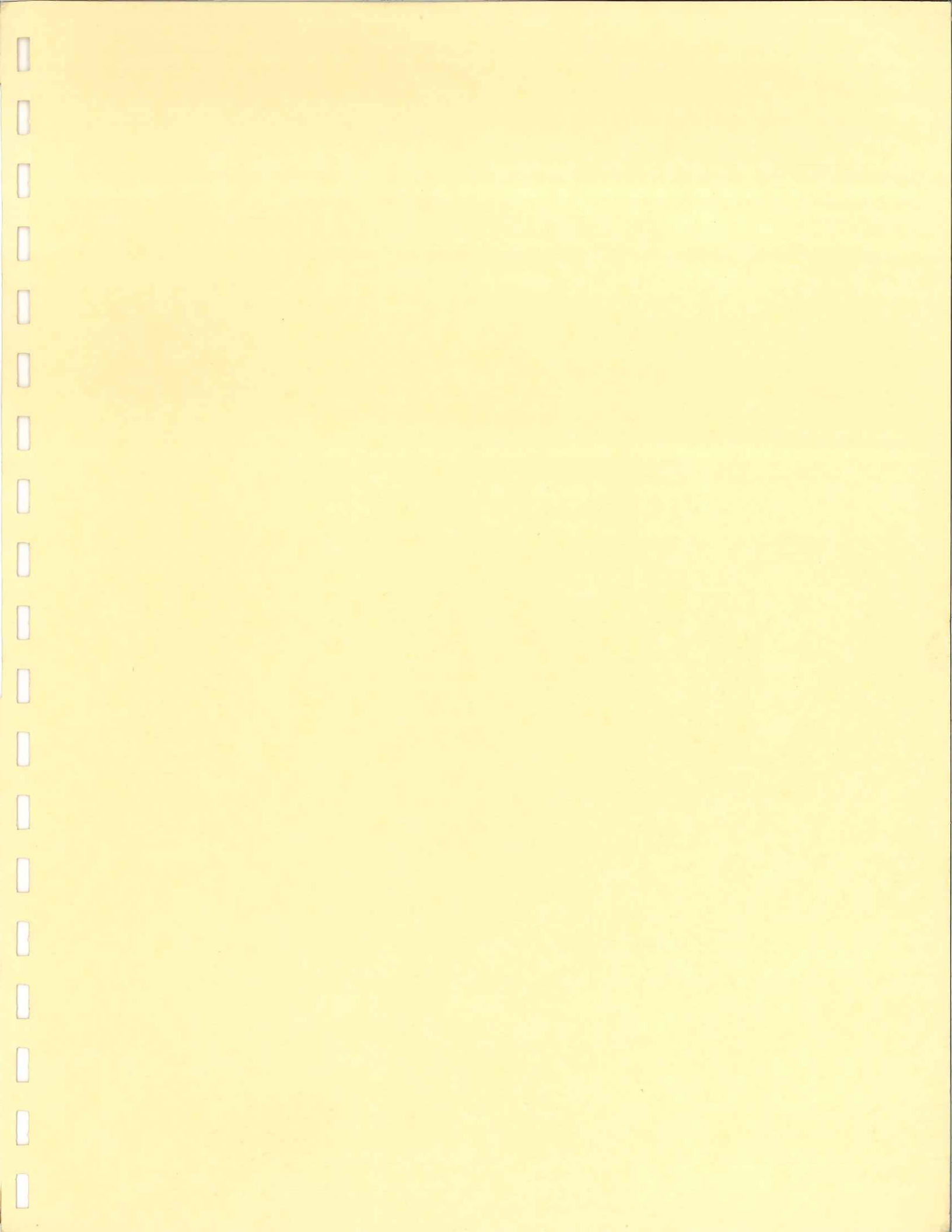


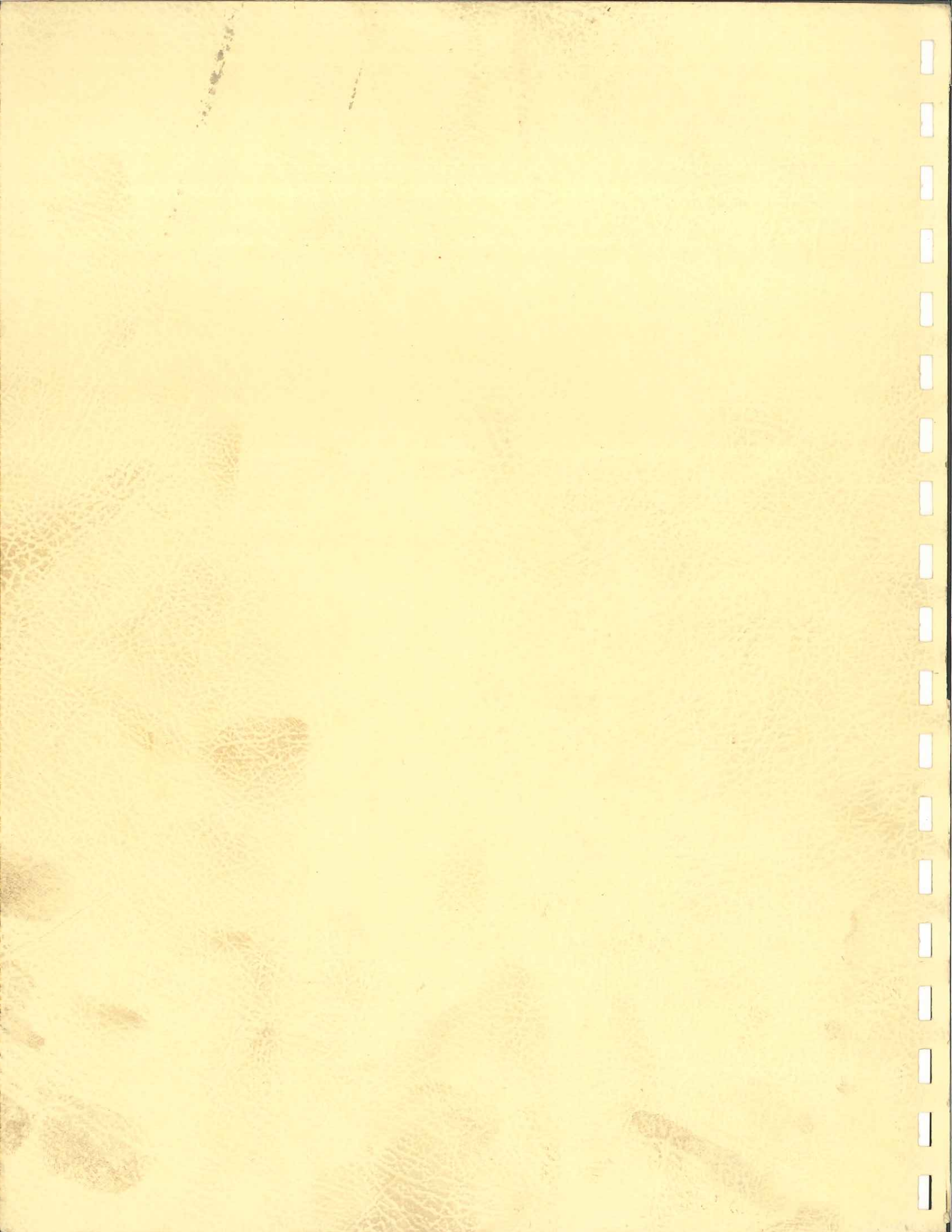
KEY NO.	PART NO.	DESCRIPTION
TUMBLER ASSEMBLY		
1	990-291	Tumbler Assembly
2	698-039	Stud
4	341-063	36T Gear
5	9-190	Nut
6	102569	*1/4 - 20 x 1/4" Socket Set Screw
7	10-1225	Collar with Set Screw
8	10-264	Bushing
9	10-1546	Compound Gear with Plate and Bushing
10	041-120	Tumbler
11	140867	*10 - 24 x 3/16" Socket Set Screw
12	10-1231	Plunger
13	S8-63	Spring
14	10-1244	Sleeve
15	142954	*3/32 x 3/4" Groov Pin
16	441-029	Knob

*Standard hardware item - may be purchased locally

KEY NO.	PART NO.	DESCRIPTION
10	041-120	Tumbler
11	140867	*10 - 24 x 3/16" Socket Set Screw
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14	10-1244	Sleeve
15	142954	*3/32 x 3/4" Groov Pin
16	441-029	Knob







LUBRICATION CHART -- 12" METAL TURNING LATHES

CODE

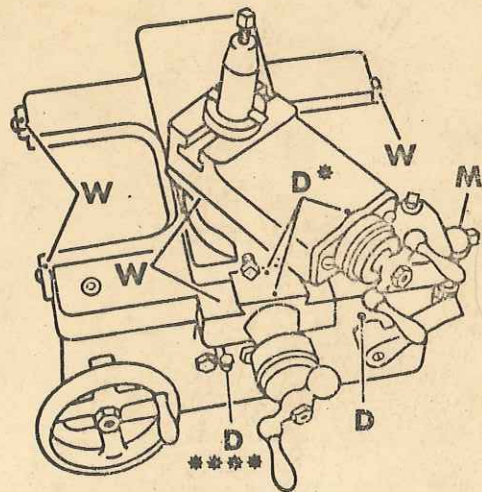
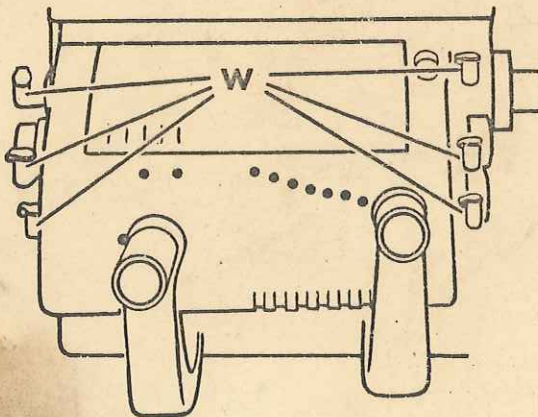
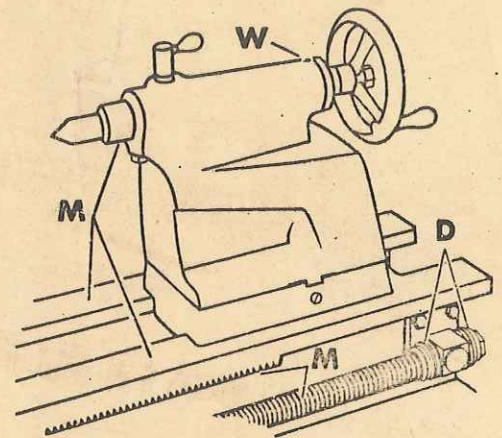
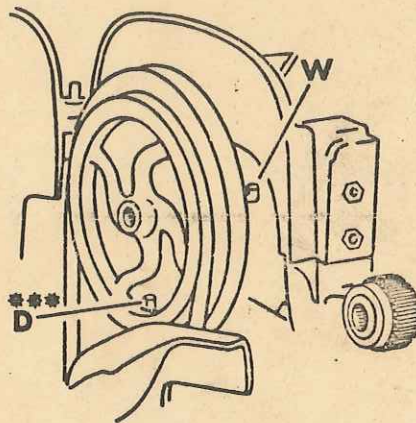
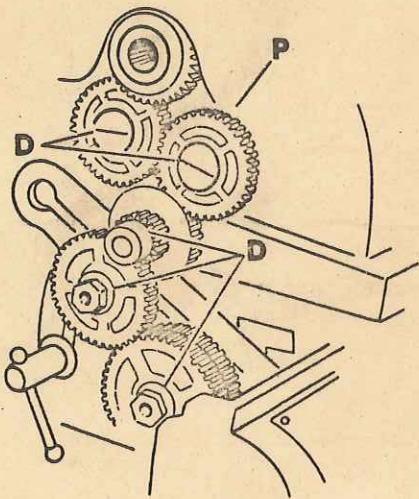
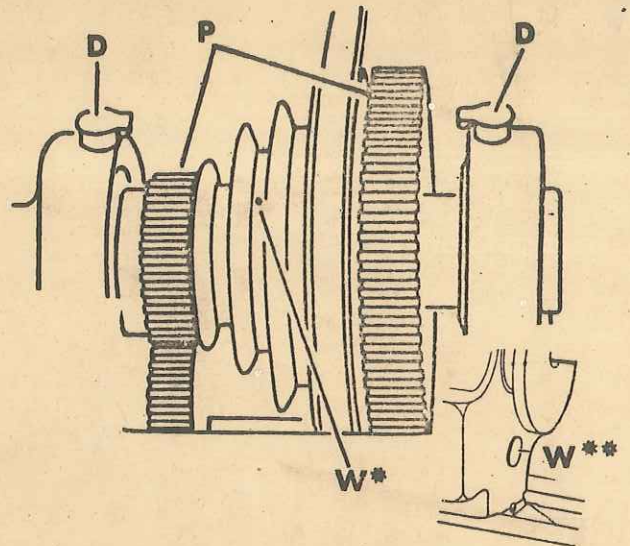
D-DAILY oil with S.A.E. No. 20 oil.

W-WEEKLY oil with S.A.E. No. 20 oil.

M-MONTHLY clean with kerosene, then oil with S.A.E. No. 20 oil.

P-PERIODICALLY lubricate gear teeth with Keystone No. 122 gear lubricant or equivalent. Remove oil and dirt before applying grease.

- Remove SCREW.
- Remove PLUG.
- Lubricate rocker shaft pin at this point.
- Fill to TOP.



MOUNTING INSTRUCTIONS

UNIVERSAL CHUCK

The function of a Universal Chuck is to center round and hexagonal work quickly and with reasonable accuracy. For extremely accurate work, check for trueness with chalk, and place shims over one of the jaws until work runs true, or, use a four-jaw Independent Chuck.

This chuck has been carefully checked at the factory to hold work within .005" total indicator reading (for concentricity) 1" away from jaws.

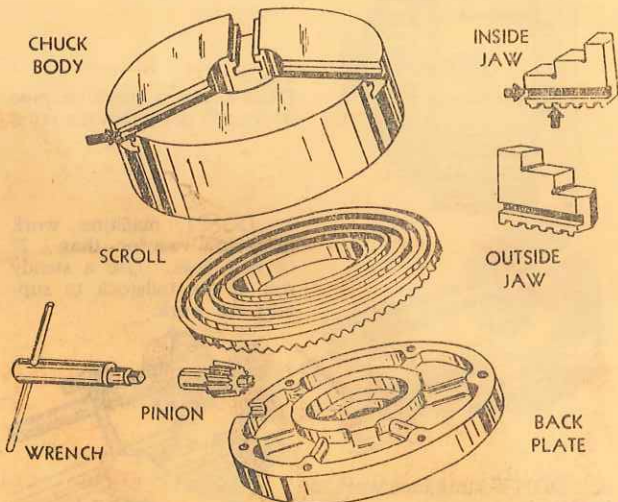
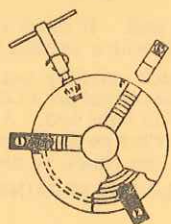


Fig. 1 — PARTS OF A UNIVERSAL CHUCK

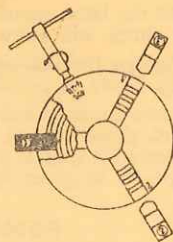
TO CHANGE JAWS—

1. Remove jaws from chuck slots with chuck wrench. Wipe jaws with a clean cloth, and cover with a light film of oil. Place jaws in a covered box.
2. Clean scroll, chuck slots and new jaws, then apply a light film of oil. Do not use too much oil.
3. The jaws and chuck jaw slots are numbered 1, 2 and 3. Jaws must be inserted in the slot having the corresponding number. **DO NOT INTERCHANGE JAWS FROM ONE CHUCK TO ANOTHER.**
4. Turn scroll so that first thread on outside edge of scroll does not quite enter jaw slot No. 1 (See Figure 2, step 1).
5. Repeat process for jaws 2 and 3. (See Figure 2, steps 2, 3.)

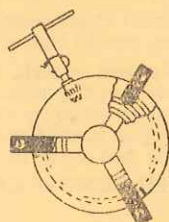
IMPORTANT : Jaw must slide into chuck easily—never use force. If jaw must be forced, it is because jaw is misaligned or dirt is lodged in jaw or scroll. Remove jaw and carefully clean jaw and scroll.



STEP 2. Enter Jaw No. 2 in Slot No. 2 when scroll is in this position.



STEP 1. Enter Jaw No. 1 in Slot No. 1 when scroll is in this position.



STEP 3. Enter Jaw No. 3 in Slot No. 3 when scroll is in this position.

Fig. 2 — MOUNTING JAWS IN UNIVERSAL CHUCK

INDEPENDENT CHUCK

The function of an Independent Chuck is to center irregular, round, hexagonal, flat and square stock with absolute accuracy. The four jaws are adjusted separately and are reversible so that work may be clamped on either its outside or inside diameter.

When mounting work, use the concentric rings on the face of the chuck as a guide for centering stock. Check for trueness with chalk, adjusting jaws until chalk mark contacts entire surface of work (see Figure 4). For absolute accuracy, check with dial test indicator until the work runs true.

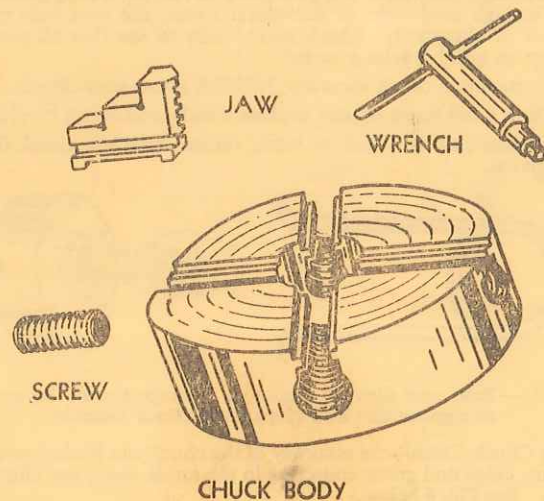


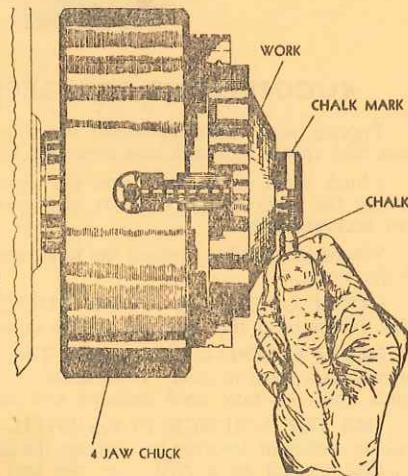
Fig. 3 — PARTS OF AN INDEPENDENT CHUCK

TO REVERSE JAWS—

1. Remove jaws from chuck slots using the chuck wrench.
2. Clean jaws, jaw screws and chuck slots, then apply a light film of oil. Do not use too much oil—it collects dirt and chips which eventually clog the jaws and jaw screws.
3. Reverse jaws, inserting them and the jaw screws into the chuck slots. Turn wrench until screw threads engage chuck body.

IMPORTANT : Jaw screws must thread into the chuck easily—never use force. If screw must be forced, it is because jaw or screw is misaligned, or dirt and chips are lodged in the jaw or screw. Remove jaw and carefully clean both jaw and screw.

Fig. 4
USING CHALK
TO CHECK
FOR TRUENESS



Maintaining Chuck Accuracy is Your Responsibility

SUGGESTIONS FOR MAINTENANCE AND CARE

- * **OIL CHUCK 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 SAE No. 10 machine oil. **CAUTION** : Do not apply too much oil — it collects dust and chips.
- * **PROTECT CHUCK WHEN NOT IN USE** — Don't leave your chuck where dirt or chips can get into it. Place the chuck in a covered box.
- * **INSPECT YOUR CHUCK PERIODICALLY** — If used properly, this chuck will give good service for a long period. Through long wear or accidental strain, the jaws may get out of alignment. Check periodically to see that all parts are in good working order.
- * To maintain chuck accuracy, **NEVER** abuse your chuck.
- * Use a tooth brush or wire to clean spindle and chuck threads.
- * If parts are damaged or worn, return complete chuck for service.

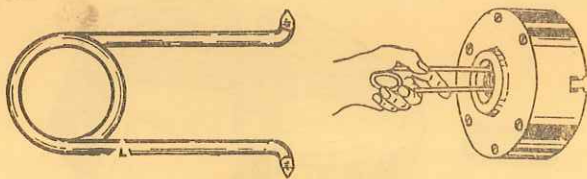
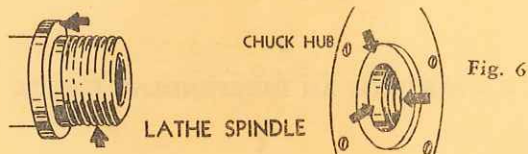


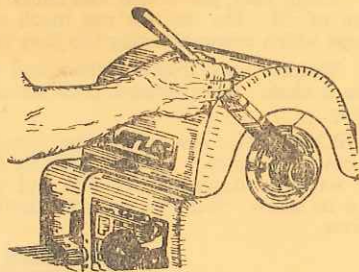
Fig. 5 — Bent wire filed on ends to a V-shape should be used to remove dirt and chips from chuck threads.

Keep Chuck Clean—the accuracy of the chuck can be destroyed by dirt, chips and grime collecting in the scroll, jaws, and chuck slots. See Fig. 6 below.



Nicks, burrs, chips, or dirt on the lathe spindle threads, pilot or shoulder—or on the chuck pilot, threads or shoulder—will throw the chuck out of alignment and result in inaccurate work.

Fig. 7—Clean and oil the Lathe Spindle with a tooth brush or paint brush before mounting chuck.



SUGGESTIONS FOR OPERATION

1. Tighten work carefully — too much pressure on a light piece may spring the work and affect the accuracy.
2. Chuck work as far back into the chuck jaws as possible turning the work as the jaws are tightened—it will assure a firm accurate grip.
3. Whenever possible, tighten the jaws, around the solid part of the work.
4. **DON'T OVERLOAD YOUR CHUCK**—Do not chuck work larger than the diameter of the chuck.
5. **DON'T POUND OR HAMMER THE JAWS**—Never use force if jaws seem to jam. Find cause of obstruction or take chuck apart—it may need cleaning and oiling.
6. **USE THE WRENCH FURNISHED**.—It is designed to provide sufficient leverage to tighten the jaws. **NEVER** use a larger wrench or a pipe over the end of the wrench to increase the leverage. Adjust jaws so they seat firmly against the work.

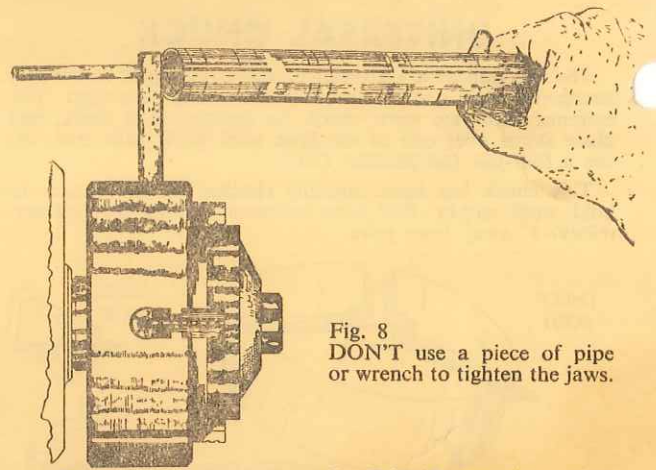
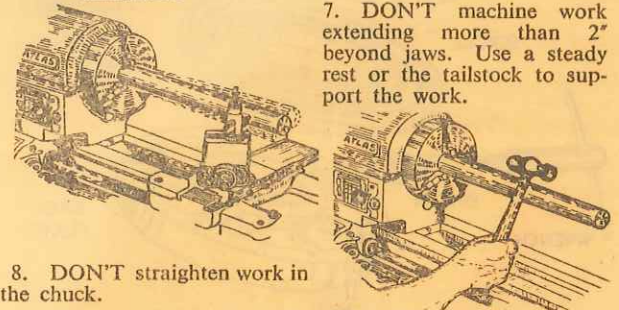


Fig. 8 **DON'T** use a piece of pipe or wrench to tighten the jaws.



7. **DON'T** machine work extending more than 2" beyond jaws. Use a steady rest or the tailstock to support the work.

8. **DON'T** straighten work in the chuck.

9. Never extend jaws beyond outside diameter of chuck.

10. When checking stock in chuck, make sure jaws are tightened securely.

11. Align work before tightening jaws securely—tapping work with jaws tight may crack the jaws or shift headstock out of alignment.

MOUNTING INSTRUCTIONS

IMPORTANT : Before mounting chuck, remove lathe headstock spindle center and sleeve.

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

REMOVING CHUCK

1. Turn the chuck until wrench hole is at the top.
 2. Tighten the belt or place lathe in back gear to hold the spindle firmly in position.
 3. Insert chuck wrench in chuck and pull. If chuck doesn't release, tap the base of the wrench lightly with a wooden mallet.
 4. Remove wrench, and unscrew chuck carefully until it is completely off spindle. **CAUTION** : Be careful not to damage threads or let chuck drop from spindle to lathe bed. A block of wood or board fitted to lathe bed ways can be used to prevent nicking bed ways or chuck in event the chuck is dropped.
- NEVER REMOVE CHUCK WHILE LATHE IS RUNNING.**

ORDERING INFORMATION

When writing regarding your chuck, be sure to mention the number stamped on chuck face.

If scroll or jaws of *universal chuck* must be serviced or replaced, they must be returned *with* the chuck for proper fitting of parts.