ASSEMBLY, OPERATING INSTRUCTIONS AND PARTS LIST FOR

CRAFTSMAN 12-INCH

REG. TRADE-MARK

METAL TURNING LATHE

MODEL NUMBERS

101.27580	101.28940
101.27590	101.28950
101.28930	101.28970

Sewl 389

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 SIMPSON-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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129581

Printed in U.S.A.

ASSEMBLY AND OPERATING INSTRUCTIONS FOR
CRAFTSMAN TWELVE-INCH METAL TURNING LATHE

This lathe is designed to be run by a ½ or ¾ HP 1725-1750 RPM motor. We recommend a motor of the type shown in our catalog.

After removing the lathe from the crate, be sure to remove all parts from the carton and cloth bags. Remove the rust-proof coating from the bed ways with a cloth soaked in kerosene.

HORIZONTAL COUNTERSHAFT LATHE MOUNTING

Floor legs and table boards make an ideal stand for the lathe—see Figure 1. If the lathe is to be mounted on a wooden bench, it must have a clear semi-hard or hardwood top at least 1 5/8" thick, cleated or well doweled to form a rigid table. Do not use softwoods or boards not cleated together. Bench legs should be of heavy construction, preferably 4" x 4" lumber, well braced and securely anchored to bench top. Provide legs with lugs for bolting bench securely to floor. Overall height of bench should be approximately 30 or 32 inches.

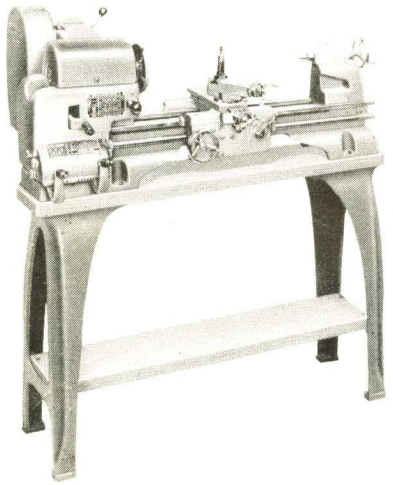


Figure 1

Level the floor stand or bench before mounting lathe, this will omit excessive shimming when leveling lathe bed. Use a precision machinists level, placing shims as required between bench legs and floor to accurately level bench top.

Bench must be bolted to floor — otherwise vibration will result.

Mount the lathe on the floor stand or bench. If bench is used, mark and drill five 3/8" diameter holes in bench top under corresponding holes in lathe legs. DO NOT bolt lathe securely in position.

Turn 3" long square head set screw and jam nut into countershaft bracket so that square end can be adjusted against the bed (see Figure 2) and mount countershaft assembly on stand or bench — make sure pin (item 9, page 13) is inserted in countershaft arm and rests on rocker shaft (see Figure 3) and countershaft is parallel with the spindle and the pulleys are in line. Adjust square set screw against bed and lock with jam nut.

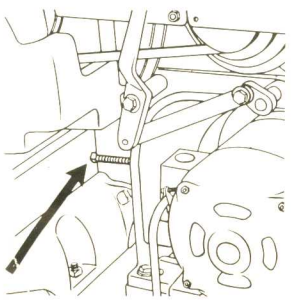


Figure 2

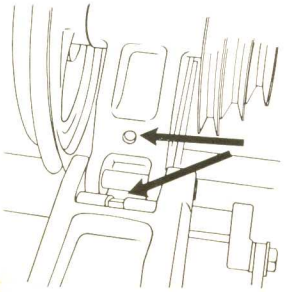


Figure 3

Place the spindle belt over the four-step countershaft pulley and adjust the tension by means of the square head set screw in the countershaft arm (item 8, page 13). Make this adjustment with the belt tension lever in the back position so that the center of the belt can be pushed in about one-half inch with a moderate amount of pressure.

Attach the headstock guard unit to the bracket (item 22, page 14) on the left end of the headstock with the 3/8" cap screws furnished.

To mount the motor base remove one knurled collar and washer (items 32 and 26, page 13) from the motor base-adjusting screw and insert the hinge pin (item 30, page 13) through the countershaft and motor base. Replace washer and collar. Install motor and motor pulley (small step of pulley toward motor) so that large countershaft pulley and motor pulley are in proper alignment. Place belt over pulleys and adjust motor base up or down for proper belt tension. Wire switch and motor so that motor rotates in a clockwise direction when facing the pulley end of the shaft.

Install countershaft belt guard by sliding hinge pin (item 3, page 14) through headstock guard unit and hinge bracket.

UNDERNEATH DRIVE LATHE MOUNTING

Mount cabinet on a concrete floor or base whenever possible — if a wood floor is used, it should be well braced, capable of absorbing vibration and withstanding the load. Make sure cabinet rests solidly on the floor.

Fasten cabinet 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 cabinet to a wood floor.

Cabinet must be bolted to floor, otherwise vibration will result.

Level the cabinet — use a precision machinists level. Place shims as required between pads and floor, to accurately level the top. Shims should be of hardwood or metal and bear under the cabinet pads as shown in Figure 4.

Mount and bolt the lathe to the cabinet as shown in Figure 5, using bolts furnished — DO NOT tighten bolts securely.

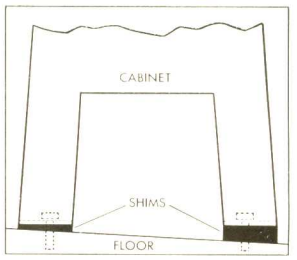


Figure 4

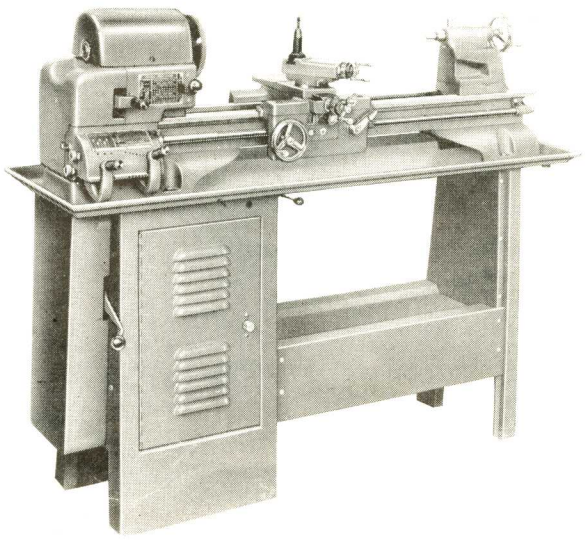


Figure 5

Place the spindle belts under the two-step pulley on the spindle drive shaft — adjust tension and tighten bracket mounting bolts—see Figure 6.

The long belt supplied with the lathe is installed over the four-step pulley on the spindle drive shaft and four-step pulley on the countershaft. Adjust the tension by means of the two hex nuts on the lever rod as shown in Figure 6. Make this adjustment with the belt tension lever in the lowest position.

Place motor mounting bolts with washers in motor and lock in place with hex jam nuts (item 6, page 16) as shown in Figure 7.

Install motor and motor pulley (large step toward motor) so that large countershaft pulley and motor pulley are in proper alignment. Place motor belt over pulleys and raise motor for proper belt tension —adjust with lever in lowest position — tighten mounting bolts securely. Belts should be tensioned so that the center of the belt can be pushed in about one-half inch with a moderate amount of pressure.

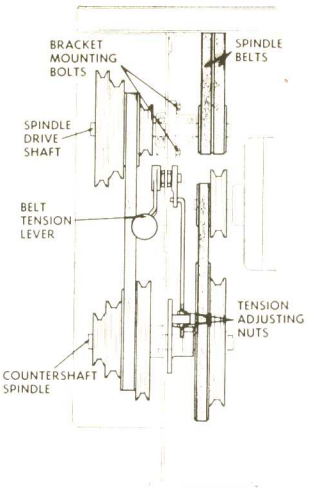


Figure 6

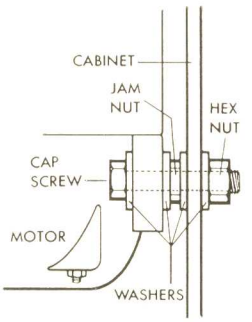


Figure 7

LEVELING THE LATHE

It is your responsibility to properly level the lathe — it is the first essential for accurate work and long service life. Satisfactory performance is impossible if the lathe bed is out of level as little as one thousandths of an inch.

Using only a precision machinists spirit level, check level readings at the positions shown in Figure 8. *A very sensitive level must be used.* A sensitive level should move the bubble approximately 1/8" when a .003" shim is placed under one end of lathe.

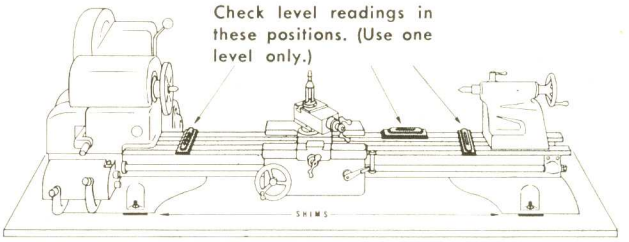


Figure 8

Level readings in the three positions must be identical. Compensate variations of bubble readings with thin metal shims placed around bolts between lathe legs and bench top until bubble readings are identical. See Figure 9 for approximate size of shim.

Shim should be the only contact point with the bench top. If outer or inner edges of bench legs bear on bench top, bed is apt to be bowed or twisted when lathe is bolted down.

Bolt lathe securely in position and recheck level readings.

For lathes equipped with horizontal countershaft, insert shims between bench top and mounting hole in the center of the left lathe leg — see Figure 10. Bolt securely and recheck level readings. Variations in bolt pressure may twist the lathe bed out of level.

The levelness of the lathe should be inspected at frequent intervals especially before and after machining heavy work.

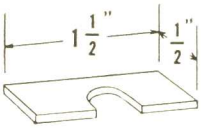


Figure 9

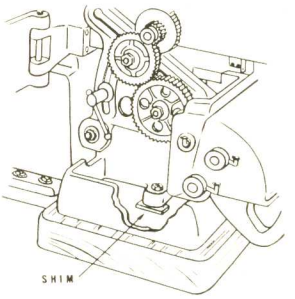


Figure 10

IMPORTANT — LUBRICATE LATHE BEFORE OPERATING

CODE

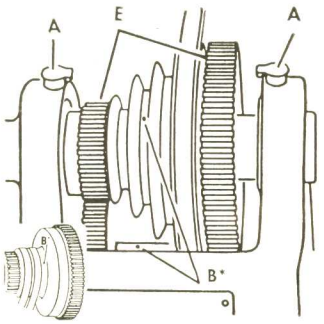
A — OIL DAILY with S.A.E. No. 20 oil

B — OIL WEEKLY with S.A.E. No. 20 oil

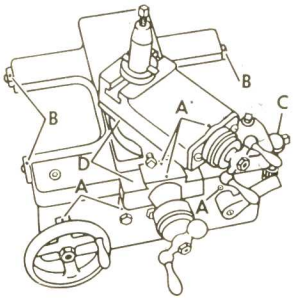
C — OIL MONTHLY with S.A.E. No. 20 oil

D — KEEP CLEAN and well oiled at all times

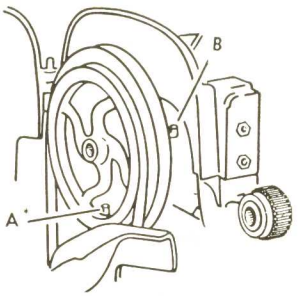
E — LUBRICATE gear teeth with Keystone No. 122 gear lubricant, or equivalent, to obtain smoother, more quiet operation. Remove oil and dirt before applying grease.



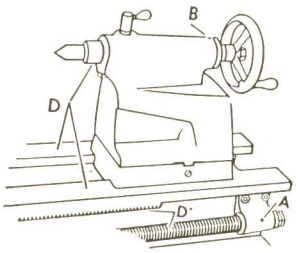
HEADSTOCK AND BACK GEARS
**Remove screw to oil bearings.*



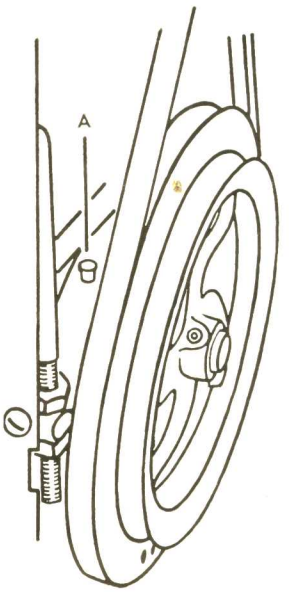
CARRIAGE
**Remove screw to oil bearings and cross feed gears.*



HORIZONTAL COUNTERSHAFT
**Lubricate rocker-shaft pin at this point.*

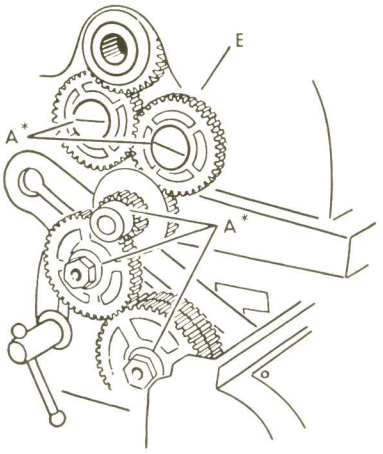


TAILSTOCK-LEADSCREW — LEADSCREW BEARING-RACK
**About once a month clean with kerosene and a brush, then cover with oil.*



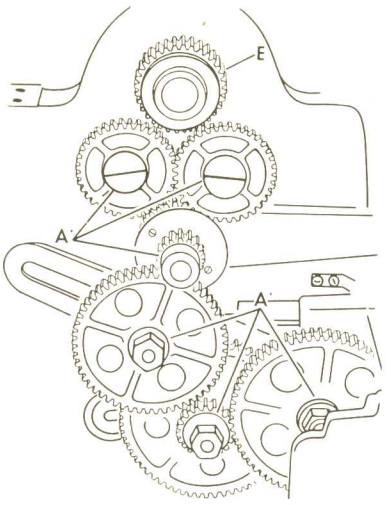
UNDERNEATH DRIVE COUNTERSHAFT

Note: Spindle drive shaft ball bearings are sealed and need no further attention.



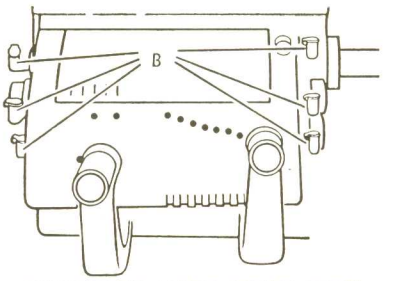
QUICK-CHANGE GEAR TRAIN

**Lubricate gear bearings at these points*

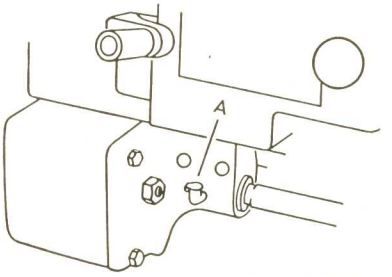


STANDARD GEAR TRAIN

**Lubricate gear bearings at these points*



QUICK-CHANGE GEAR BOX



STANDARD GEAR BRACKET

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.

OPERATION AND CONTROLS

The following controls should be tested until the operator is thoroughly familiar with their use. (See Figure 11)

(1) The large handwheel on the front of the carriage propels the carriage along the bed. The ball crank is used for cross feeding and the two-handle crank operates the compound rest. Both are graduated in thousandths of an inch. The compound can be turned in a complete circle, by simply loosening the two square head set screws. It is graduated in degrees from 0 to 180° so that any angle can be cut.

(2) The lever on the right front side of the carriage operates the half-nut mechanism. When this lever is moved into the downward position, it engages the half-nut with the lead screw causing the carriage to travel along the bed. *Caution:* Before engaging the half-nut with the lead screw, be sure that the square head cap screw (item 46, page 9) on the right top side of the carriage is loose; otherwise the carriage is locked and serious damage may result.

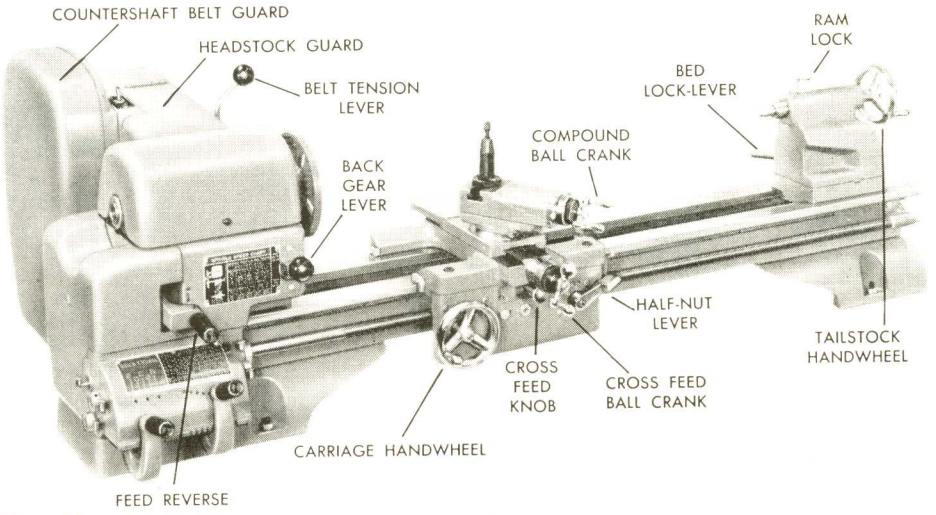


Figure 11

(3) The knob directly below the ball crank is used to engage the power cross feed. Pulling the knob turns the cross feed screw either clockwise or counterclockwise depending upon the rotation of the lead screw.

(4) The tumbler lever (item 10, page 12) with the small knob, located at the headstock end of the lathe, is the feed reverse lever. Ths lever is used to reverse or stop the rotation of the lead screw. Three holes are drilled in the headstock providing three positions for the lever. The center hole is neutral and the upper and lower holes are either forward or reverse positions, depending upon the gear setup. *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.*

(5) The round knob on the right side of the headstock engages the back gears. FOR DIRECT DRIVE turn spindle pulley until lock pin can be reached and engage lock pin with the pulley, locking pulley to the bull gear and spindle. Raise back gear lever to the disengaged, or "out", position. FOR BACK GEAR DRIVE pull out lock pin disengaging bull gear from pulley. Lower back gear lever to the "in" position, meshing back gears with spindle gears — it may be necessary to rotate spindle pulley to mesh gears. *Caution: Always stop motor before changing from one drive to another.*

(6) The belt tension lever located on the horizontal countershaft regulates the tension of the spindle belt. To tighten the belt move the lever backward. Move forward to loosen the tension, thereby allowing the belt to be easily changed to the different pulley steps.

The belt tension lever located on the underneath drive countershaft (see Figure 6, page 3) regulates tension of the countershaft belt. To tighten the belt move the lever downward. Move upward to loosen the tension when changing the belt to the different pulley steps.

(7) The handwheel on the tailstock operates the tailstock ram. To advance the ram, turn the handwheel in a clockwise direction. Turn counterclockwise to eject the center.

(8) The small lever at the top of the tailstock is the tailstock ram clamp handle. It locks the ram in place when tightened. *Note:* Before attempting to move the ram, loosen the ram clamp.

(9) The lever on the rear of the tailstock locks the tailstock to the lathe bed.

SELECTION OF THREADS AND FEEDS

QUICK CHANGE LATHE: Study the chart on the gear box — it lists the threads and feeds available and indicates the position of the controls for thread or feed desired. Figure 12 illustrates and names these controls.

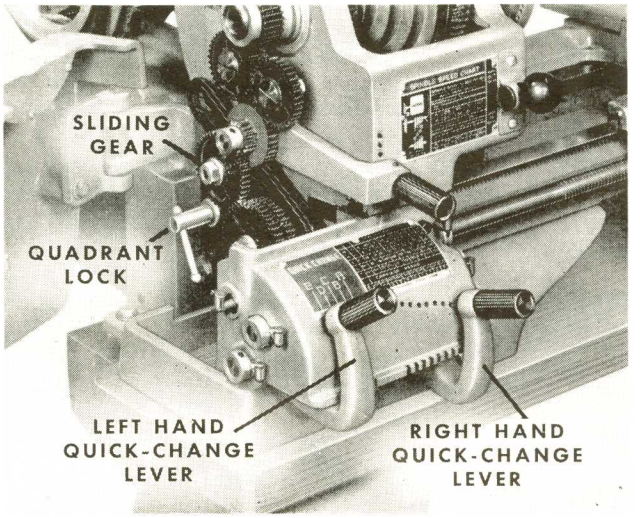


Figure 12

1. Left Hand Quick-Change Lever — shifts to five positions — A, B, C, D, and E — shown on left end of chart. The position of the lever is indicated at the left end of the row of numbers in which you find the thread or feed desired.

2. Right Hand Quick-Change Lever — shifts to nine positions, numbered on bottom row of chart beneath carriage feeds. The indexing position of the lever is always directly below the thread or feed desired.

3. Sliding Gear — has two positions — "IN" and "OUT" as shown on the chart. "IN" position is towards headstock and meshes with the 32 tooth compound gear—see Figure 13. "OUT" position, Figure 14, is away from headstock and meshes with the 16 tooth compound gear. The position of the sliding gear (IN or OUT) is shown on the chart in the same row as the thread or feed desired.

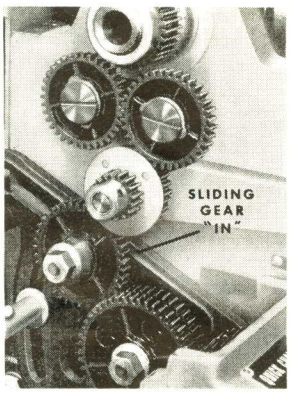


Figure 13

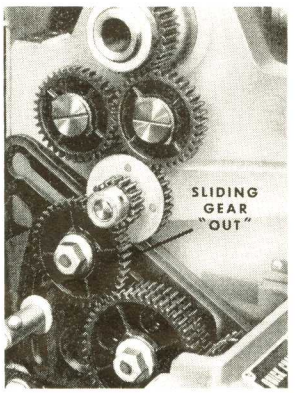


Figure 14

4. Quadrant Lock — controls the gear quadrant. Loosen to mesh sliding gear with the compound tumbler gear. Be sure to allow sufficient clearance between the two meshing gears.

Caution: Do not shift sliding gear when lathe is in motion or either of the Quick-Change gear levers when lathe is turning at high speeds or under heavy loads. If Quick-Change levers do not index, do not force, merely rotate spindle by hand, until levers slide easily into position.

STANDARD CHANGE GEAR LATHE: Comes equipped with change gears for cutting various feeds and threads — standard threads are shown on the threading chart on the inside of the change gear guard. To simplify gear setups the different gear bracket positions have been assigned letters A, B, C, and D as shown in Figure 15. One representative gear setup is given in detail in Figure 15 — "back position" means the position Toward the headstock. "Front position" is the position Away from the headstock.

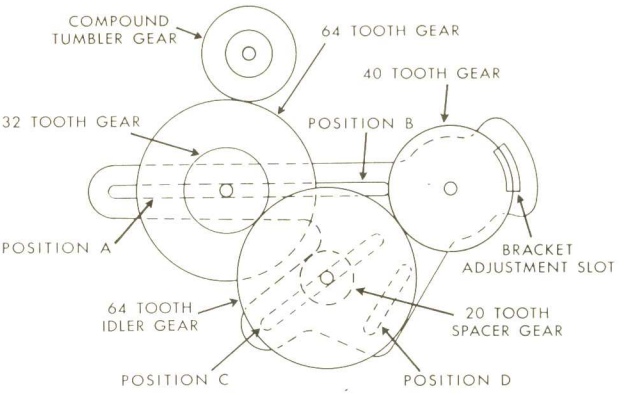


Figure 15

Gear Setup for 20 Threads Per Inch

(1) Place 40 tooth gear on front position of screw stub.

(2) Place 20 tooth gear and 64 tooth gear on sleeve and mount in Position C on gear bracket with 20 tooth gear in back position. Tighten so that 64 tooth gear meshes with gear in screw position. The 20 tooth gear is a spacer.

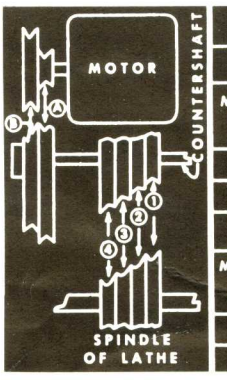
(3) Place 64 tooth gear and 32 tooth gear on bushing and mount in Position A with 64 tooth gear in back position. Tighten so that 32 tooth gear meshes with 64 tooth gear in Position C.

(4) Swing entire gear bracket upward and tighten with bolt passing through "Bracket Adjustment Slot" so that 64 tooth gear in Position A meshes with 32 tooth compound gear.

When setting up the gear train be sure to allow sufficient clearance between two meshing gears. Gear clearance does not reduce the accuracy of a thread cutting operation because all the back lash in the gears is taken up in one direction.

PROPER CUTTING SPEEDS

Much of the success in metal cutting depends upon the choice of the cutting speeds. Too slow a speed not only wastes time but leaves a rough finish — too high a speed burns the tool. The chart below shows the different speeds available and the setup for each.



SPINDLE SPEED IN REV. PER MIN.				
BACK GEAR DRIVE				
MOTOR BELT POS.	SPINDLE BELT POSITION			
	1	2	3	4
A	28	45	70	112
B	83	134	211	345
DIRECT CONE DRIVE				
MOTOR BELT POS.	SPINDLE BELT POSITION			
	1	2	3	4
A	164	266	418	685
B	500	805	1270	2072

MOUNTING THE WORK

Whenever practicable, the work is held between centers. There are two steps in mounting work between centers: locating the center points at each end of the work, and countersinking and drilling the ends to accomodate the lathe centers.

On round work, centers are usually located with either the hermaphrodite caliper or the center head attachment for a steel square. On the centering of square, hexagon, and other regular-sided stock, lines are scribed across the ends from corner to corner. The work is then center punched at the point of intersection. A little chalk rubbed over the end of the work before scribing makes the marks easily seen.

After the ends have been countersunk, the work is mounted between centers. Be sure that the "tail" or bent portion of the lathe

dog fits into the face plate slot without resting on the bottom of the face plate slot.

Bring the tailstock up close to the end of the stock and lock in place. Turn the tailstock center into the countersunk hole and lock in such a position that the play is taken up between centers but not so tight that the work will not freely rotate. Place plenty of lubricant such as white lead at point of bearing on tailstock center.

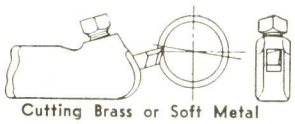
Much of the work to be turned or threaded on the lathe is not of a size or shape which permits mounting between centers. In such cases it is customary to mount the work on a face plate or hold it in a chuck, a device with jaws which grip the work rigidly while it is being machined.

If only one chuck is to be purchased, it should be the four-jaw independent chuck. The four jaws are adjusted separately and are reversible so that work of any shape can be clamped from the inside or the outside.

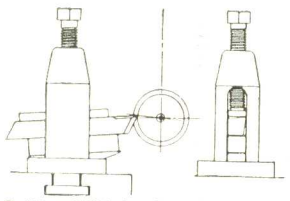
Mounting work in the four-jaw chuck is largely a matter of centering. Determine the portion of the rough work that is to run true, then clamp the work as closely centered as possible, using as a guide the concentric rings on the face of the chuck. Test for trueness, marking the high spots with chalk rested against the tool post or tool bit mounted in the tool post. The chuck jaws should be adjusted until the chalk or tool bit contacts the entire circumference of the work.

CUTTING TOOL BITS

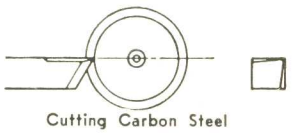
It is wise for the unskilled worker to purchase already-formed tools for the particular operations he wishes to perform. Tool bits are not expensive and the purchase of a set of these will probably prove the cheapest and most satisfactory way out in the long run.



Cutting Brass or Soft Metal



Cutting Mild Steel or Cast Iron



Cutting Carbon Steel

The angle of the cutting tool to the work varies according to hardness of the metal being cut. The accompanying drawings show in general the proper angles to be used for the different classes of metals. Refer to these drawings before taking a cut until you are sure you know the proper angle for each metal.

The speed of a cut varies according to the kind of metal being cut and the kind of cut — whether roughing or finishing. Brass may be cut faster than steel and a light cut faster than a heavy one.

Boring operations require only slightly different tools and methods than those for external turning. With the round tool shank parallel to the lathe center line, set the boring tool into the work with the shank below the center line. Then by putting the cutting edge on exact center line, the correct amount of back rack is provided. The general rules for the use of the external tools apply to boring tools. For maximum rigidity, choose the largest possible boring tool. Take several light cuts rather than a heavy one when boring.

SETTING THE TOOL TO THE WORK

Cuts, especially heavy ones, should always be made toward the headstock. In this way most of the pressure is toward the live center which revolves with the work. Cutting toward the tailstock puts a heavy additional pressure on the tailstock center and is quite likely to damage the center.

The type of tool holder, and the way it is set into the work, should always be such that it tends to swing away from the work on heavy cuts. When cutting at an angle with the compound rest, the tool should be set at a right angle to the surface of the cut, not at a right angle to the center line of the lathe.

Facing cuts represent different cutting relations and tool angles, and tools should be special ground, for that purpose.

Smoother cutting and a finer finish can be obtained generally by cutting from the center to the outside.

If the tool is ground properly, the point of the tool will not have to be set above or below the center line of the work, but should be set on the center line.

THREADING

After the work has been properly prepared for threading, set the compound rest at a 29 degree angle so that the tool bit faces in the direction the carriage will travel. Mount the tool holder in the tool post so that the point of the tool is exactly on the lathe center line — tighten the tool post screw just enough to hold the tool holder. Then, use a center or thread gauge to set the tool point at an exact right angle to the work. Tap lightly on the back of the tool holder when bringing into position. With the tool point at an exact right angle to the work, recheck center line position and tighten tool post screw.

Check the tumbler gear lever position so that the carriage will move in the proper direction. Adjust lathe for lowest possible speed.

Set the compound rest approximately in the center of its ways and advance the cross feed so that it is set at 0 with the tool close to the work. With the point of the tool about an inch to the right of the start of the thread, advance the tool with the compound rest so that the first cut will be about .003".

Start the lathe and engage the half nut lever on the carriage. Apply plenty of cutting oil to the work. When the tool point has traveled the desired length along the work, raise the half nut lever, back out the cross feed a turn or two, and return the carriage by hand to the starting point. Advance the cross feed to its original position at 0, advance the compound rest for the desired depth of cut, and engage the half-nut lever for the second cut. All feeding is done with the compound rest. Follow the same procedure on all succeeding cuts.

ADJUSTMENTS

(1) Spindle Bearing Adjustment: Adjustment of the Timken bearings is not often necessary, but if the spindle spins too freely or play is noticeable when the spindle is pushed back and forth, the following simple procedure will adjust the headstock bearings:

Run the lathe between thirty minutes and an hour to warm up the spindle. Then, loosen the set screw on the thrust nut at the extreme left end of the spindle, and turn it up to a point where no play can be detected in the spindle. Advance this thrust nut 1/16 turn past that point (equal to two teeth on the spindle gear) in order to provide the correct preload. Tighten the set screw.

(2) Carriage adjustments: If any horizontal play develops between the carriage and the bed, it can be taken up by screwing the four gib screws at the rear of the carriage up tighter against the gib that bears against the rear of the bed way. These screws should be tightened just enough to give a firm sliding fit between the carriage and the bed.

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

The gibs on the cross feed slide and the compound feed slide should be adjusted at regular intervals. The cross feed gib should always fit snugly because the cross slide is in almost continual use.

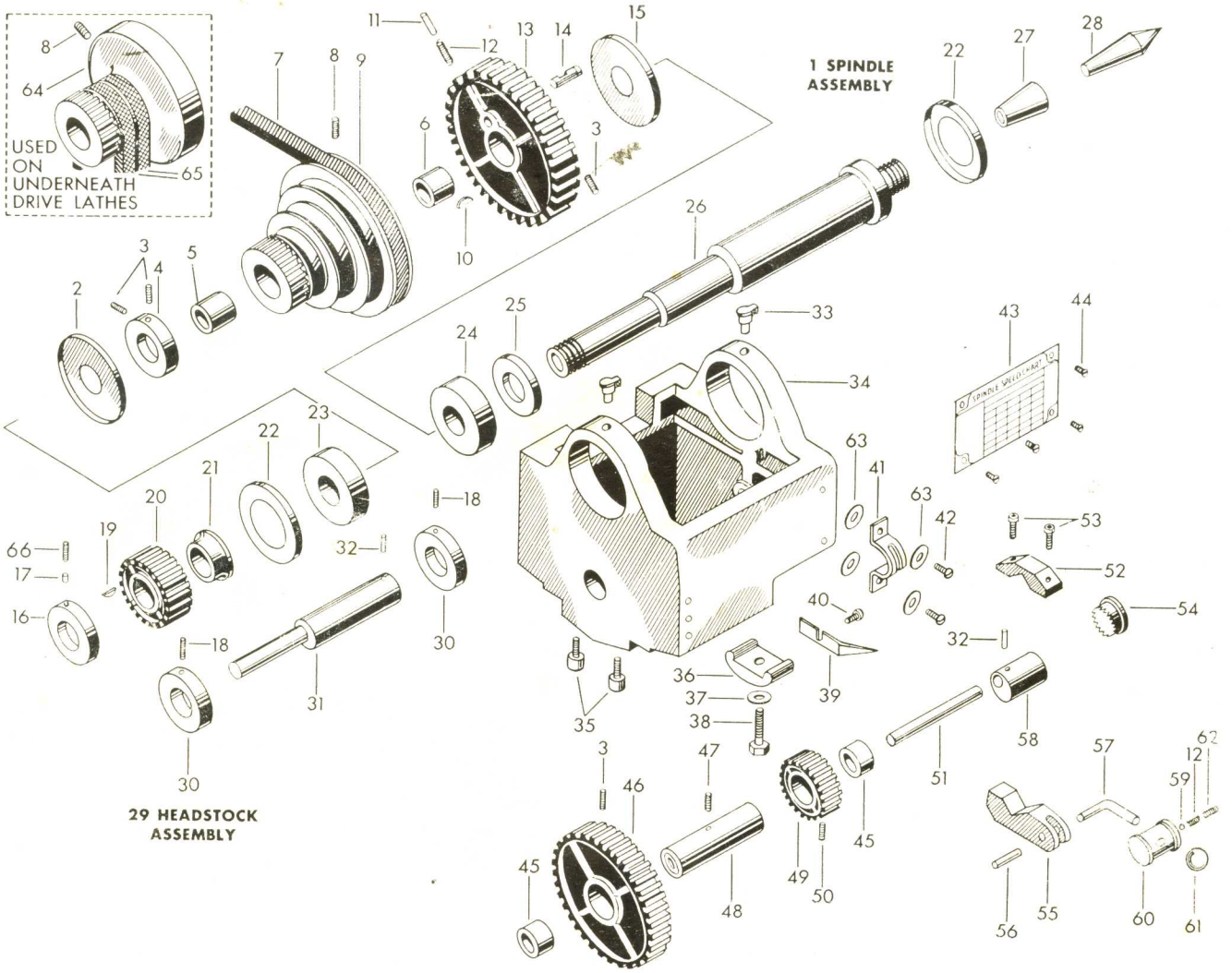
The ball and crank handles on the cross feed screw and the compound feed screw can be adjusted for play as follows. Tighten the knurled collar against the dial while holding the dial to keep it from turning. Now turn the dial and collar to remove end play in the cross feed screw assembly and then hold the crank and securely tighten the nut on the hub. An extremely tight fit is likely to result in a jerky feed — the turning force keeps these slides firm against the screw, and play in the handles does not affect the accuracy of the work. A nice working, snug fit is ideal.

(3) Tailstock Adjustments: Two gib screws are provided, one on each end of the gib, which regulates the tightness of the tailstock between the bed ways. These two screws should be adjusted evenly so that both ends of the gib will bear against the way with the same amount of pressure.

The tailstock can be set over 3/4" for turning tapers. This is done by simply adjusting the two headless screws after loosening the tailstock clamp.

NOTE: For more complete information regarding operation, thread cutting, coil winding, etc., refer to the Manual of Lathe Operation furnished with the lathe.

CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.27580, 101.27590, 101.28930, 101.28940, 101.28950, 101.28970



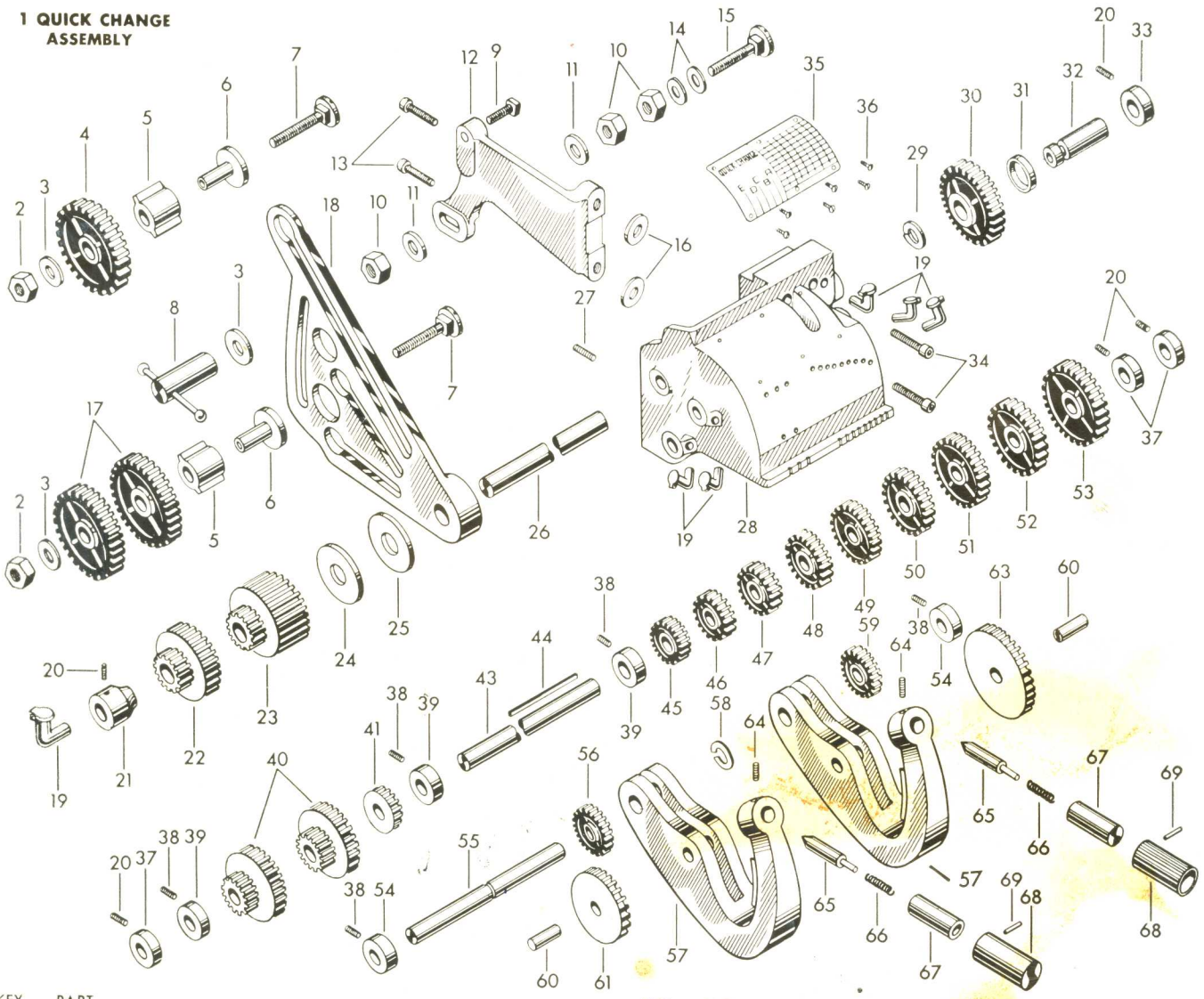
KEY NO.	PART NO.	DESCRIPTION
		SPINDLE ASSEMBLY
1	990-280	Spindle Assembly (for Horizontal Countershaft)
1	990-328	Spindle Assembly (for Underneath Drive Lathe)
2	10A-8	Baffle
3	981-122	*1/4 - 20 x 3/8" Socket Set Screw
4	10A-89	Collar with Set Screw
5	043-018	Bushing
6	10-258	Bushing
7	S8-95A	Belt (½" 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	981-170	*1/4 - 20 x 1/4"H'dless Set Screw
19	981-195	*#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
64	990-360	Pulley, Gear and Bushing Assembly
65	BD3M-34	Belt (½" x 43" lg.)
66	981-112	*1/4" - 20 x 3/16" Headless Set Screw
		HEADSTOCK ASSEMBLY
29	990-281	Headstock Assembly (Horizontal Countershaft Lathe)
29	990-329	Headstock Assembly (Underneath Drive Lathe)

KEY NO.	PART NO.	DESCRIPTION
1	990-280 or 990-328	Spindle Assembly
30	10-253	Collar with Set Screw
31	271-006	Eccentric
32	981-188	*1/8 x 3/4"Groov Pin
33	9-204	Oil Cup
34	383-003	Headstock with Oilers
35	981-149	*5/16 - 18 x 1" Socket Cap Screw
36	9-97	Clamp
37	10-262	Washer
38	981-147	*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	981-099	*10 - 24 x 3/8" Fill. Hd. Mach. Screw
43	130-008	Speed Chart
44	981-012	*#2 x 3/16* P.K. Drive Screw
45	10-249	Bushing
46	10-243	Back Gear
47	981-110	*8 - 32 x 1/8" H'dless Set Screw
48	10-248	Sleeve with Bushings
49	10-244	Back Gear
50	981-168	*8 - 32 x 3/8" H'dless Set Screw
51	700-074	Shaft
52	126-018	Clamp
53	981-200	*1/4 - 20 x 1-1/2" Socket Cap Screw
54	557-006	Plug
55	126-017	Clamp
56	981-194	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	981-044	*1/4 - 20 x 1/4" Socket Set Screw
63	981-215	*#8 Washer

* Standard hardware item — may be purchased locally

CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.28930, 101.28940, 101.28950, 101.28970

1 QUICK CHANGE ASSEMBLY



KEY NO.	PART NO.	DESCRIPTION
		QUICK CHANGE ASSEMBLY
1	990-290	Quick Change Assembly
2	981-125	*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	981-166	*3/8 - 16 x 1-3/4" Sq. Hd. Mach. Bolt
10	9-190	Nut
11	981-186	*3/8" Washer
12	L6-1002	Bracket
13	981-151	*1/4 - 20 x 1" Phillips Hd. Cap Screw
14	981-019	*5/16" Washer
15	S7-207	Bolt
16	981-089	*3/16" Washer
17	9-101-48A	48T Gear
18	L6-1007	Quadrant
19	S7-217	Oiler
20	981-044	*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
25	932-022	Spacer
26	10-1508	Shaft
27	981-181	*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	700-072	Shaft
33	10F-71	Collar with Set Screw

KEY NO.	PART NO.	DESCRIPTION
34	981-148	*5/16 - 18 x 2-1/4" Socket Cap Screw
35	130-007	Thread Chart
36	981-154	*6 - 32 x 3/16" Rd. Hd. Mach. Screw
37	10-1225	Collar with Set Screw
38	981-121	*1/4 - 20 x 3/16" Socket Set Screw
39	10-1533	Collar with Set Screw
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	10-1558	Shaft
61	10-1524X	32T Gear with Bushing
63	10-1513X	45T Gear with Bushing
64	981-120	*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	981-199	3/32 x 3/4" Groov Pin

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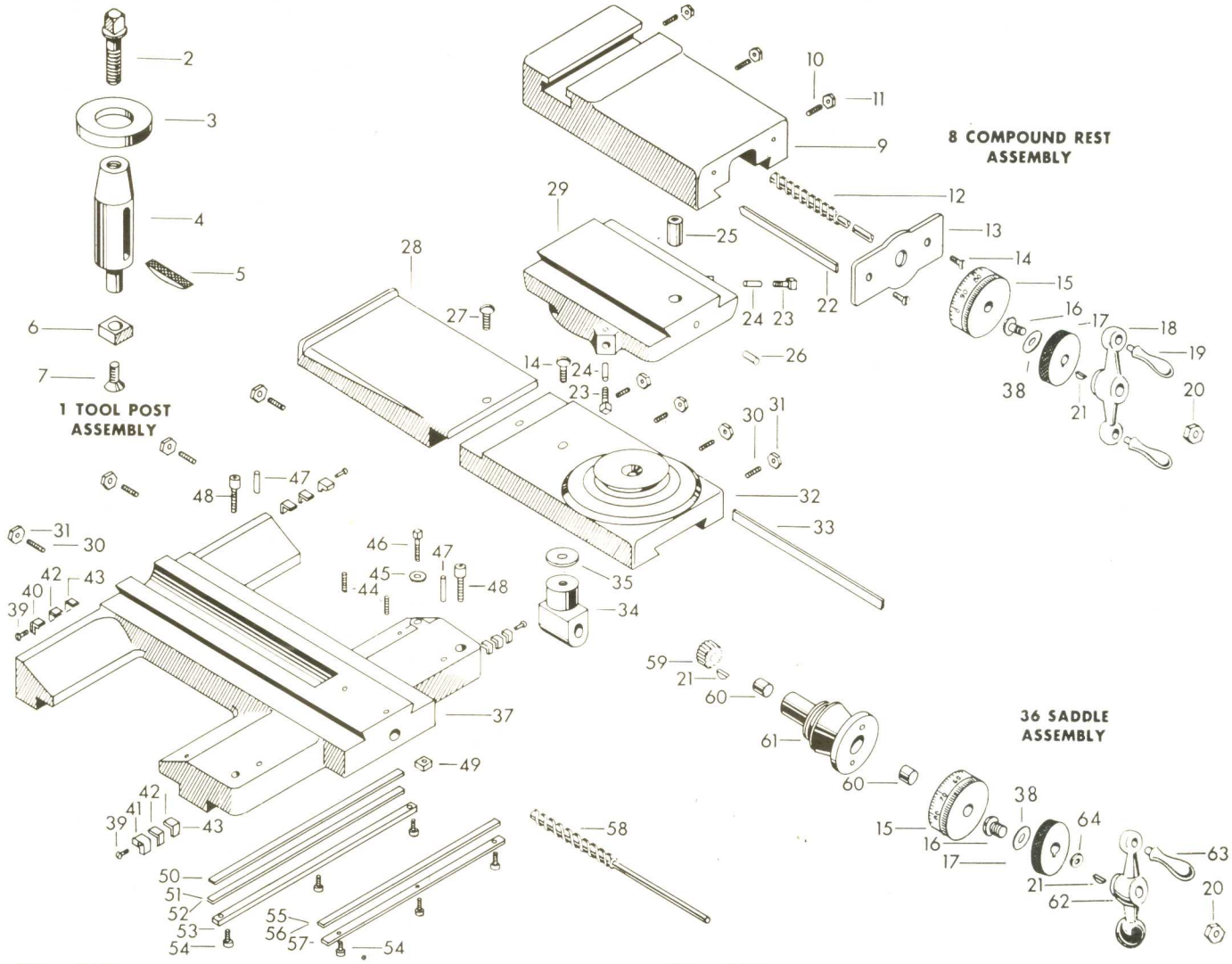
CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.27580, 101.27590, 101.28930, 101.28940, 101.28950, 101.28970

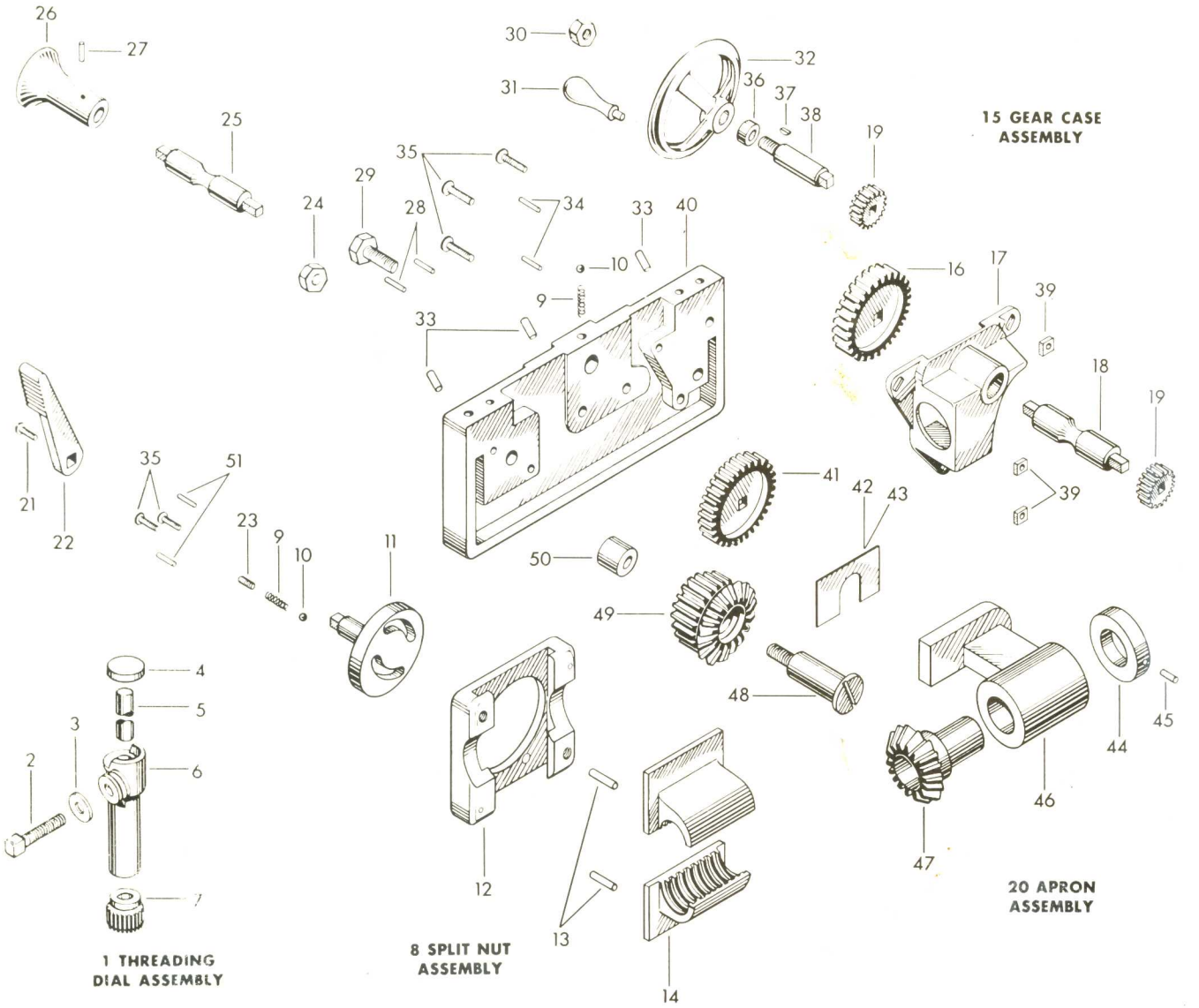


KEY NO.	PART NO.	DESCRIPTION
		TOOL POST ASSEMBLY
1	9-39X	Tool Post Assembly
2	9-148	Screw
3	9-40	Washer
4	9-39	Tool Post
5	9-41	Rocker
6	9-136A	Anchor
7	9-137A	Stud
		COMPOUND REST ASSEMBLY
8	990-282	Compound Rest Assembly
9	704-017	Tool Post Slide
10	981-169	*10 - 32 x 1" Headless Set Screw (Dg. Pt.)
11	10-226	Nut
12	696-048	Screw
13	046-016	Bearing
14	981-098	*1/4 - 20 x 1/2" Rd. Hd. Mach. Screw
15	233-007	Dial
16	049-032	Bushing
17	537-015	Nut
18	10D-308	Crank with Handles
19	9-104	Handle
20	10D-262	Nut
21	981-055	*#3 Woodruff Key
22	345-012	Gib
23	981-178	*3/8 - 16 x 1-1/4" Sq. Hd. Set Screw
24	10-309	Pin
25	537-040	Nut
26	981-044	*1/4 - 20 x 1/4" Socket Set Screw
27	981-160	*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

KEY NO.	PART NO.	DESCRIPTION
32	704-015	Lower Swivel
33	10-56	Gib
34	537-041	Nut
35	9-87	Washer
		SADDLE ASSEMBLY
36	990-283	Saddle Assembly
37	719-001	Saddle
38	932-043	Washer
39	981-156	*6 - 32 x 1/2" Rd. Hd. Mach. Screw
40	641-056	Retainer
41	641-055	Retainer
42	938-003	Wiper
43	547-004	Felt Oiler
44	981-110	*8 - 32 x 1/8" Headless Set Screw
45	9-155	Washer
46	696-049	Screw
47	981-192	*3/16 x 1-1/4" Groov Pin
48	981-153	*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	981-100	*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	981-226	*3/8" Int. Shakeproof Washer

* Standard hardware item — may be purchased locally

CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.27580, 101.27590, 101.28930, 101.28940, 101.28950, 101.28970



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	9-102-12S	Gear
		APRON ASSEMBLY
20	990-286	Apron Assembly
8	10F-12X	Split Nut Assembly
15	990-285	Gear Case Assembly
21	981-163	*8 - 32 x 5/8" Oval Hd. Mach. Screw

KEY NO.	PART NO.	DESCRIPTION
22	381-026	Handle
23	981-171	*1/4 - 20 x 5/8" Headless Set Screw
24	9-190	Nut
25	10F-129	Shaft
26	10F-84	Knob
27	981-133	*3/32 x 1/2" Groov Pin
28	981-190	*3/16 x 1/2" Groov Pin
29	981-001	*3/8 - 16 x 3/4" Hex Cap Screw
30	981-125	*3/8 - 16 Hex Nut
31	9-103	Handle
32	9-23	Handwheel with Handle
33	W30-16	Oiler
34	981-135	*1/8 x 1/2" Groov Pin
35	981-152	*1/4 - 20 x 1-1/4" Phil. Hd. Cap Screw
36	10-264	Bushing
37	981-055	*#3 Woodruff Key
38	9-67	Shaft
39	981-128	*1/4 - 20 Square Nut
40	005-001	Apron with Oilers and Bushing
41	341-058	Gear
42	711-005	Shim (.002)
43	711-006	Shim (.003)
44	10F-71	Collar with Set Screw
45	981-044	*1/4 - 20 x 1/4" Socket Set Screw
46	10F-81	Bearing with Bushing
47	341-051	Mitre Gear
48	10F-17	Stud
49	990-264	Gear with Bushing
50	BD1-18	Bushing
51	981-188	*1/8 x 3/4" Groov Pin

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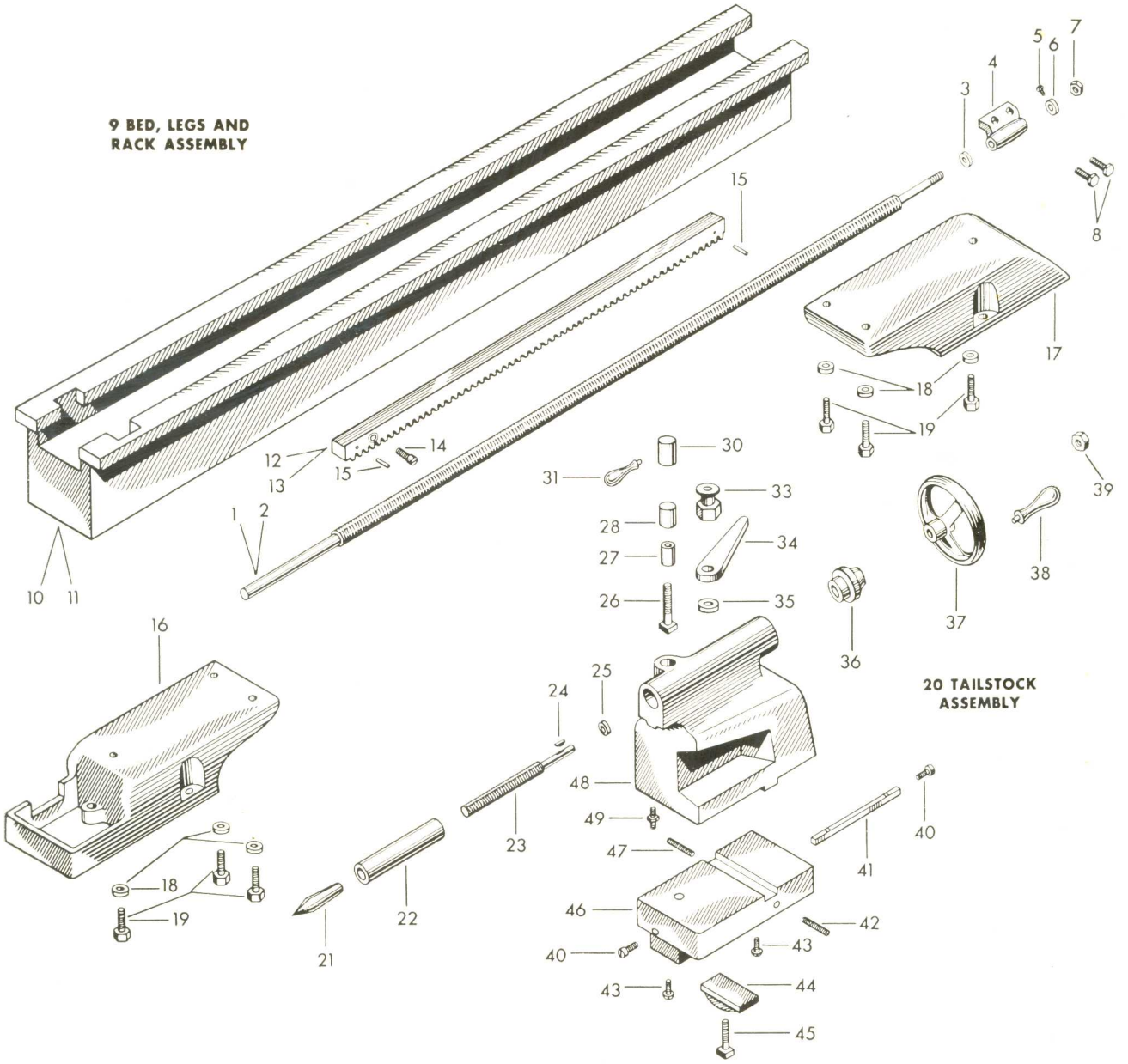

KEY NO.	PART NO.	DESCRIPTION
1	L5-35-42A	Lead Screw (42" Lathe)
2	L5-35-54A	Lead Screw (54" Lathe)
3	10F-74	Collar
4	10F-16	Bearing
5	981-183	*#2 x 1/4" P.K. Drive Screw
6	10F-75	Collar with Screw
7	981-224	*1/2" - 20 Hex Conelok Nut
8	981-030	*1/4 - 20 x 3/4" Hex Cap Screw
		BED, LEGS, AND RACK ASSEMBLY
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	981-191	*3/16 x 5/8" Groov Pin
16	294-004	Leg
17	294-005	Leg
18	981-022	*5/16" Katlink Washer
19	981-224	*5/16 - 18 x 1" Hex Cap Screw
		TAILSTOCK ASSEMBLY
20	990-289	Tailstock Assembly
21	9-88	Center
22	9-8	Ram

KEY NO.	PART NO.	DESCRIPTION
23	10D-34	Screw
24	981-055	*#3 Woodruff Key
25	9-90	Washer
26	981-164	*1/4 - 20 x 1-5/8" 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	981-019	*5/16" Washer
36	10D-30	Bearing
37	9-23	Handwheel
38	9-103	Handle
39	981-223	3/8 x 16 Hex Conelok Nut
40	10D-60	Gib Screw
41	345-010	Gib
42	981-176	*5/16 - 18 x 2" Headless Set Screw
43	981-161	*10 - 24 x 3/4" Rd. Hd. Mach. Screw
44	9-7	Clamp
45	981-167	*3/8 - 16 x 3-1/4" Sq. Hd. Mach. Bolt
46	050-035	Base
47	981-177	*5/16 - 18 x 3" Headless Set Screw
48	831-002	Tailstock with Bearing
49	9-165A	Screw with Nut

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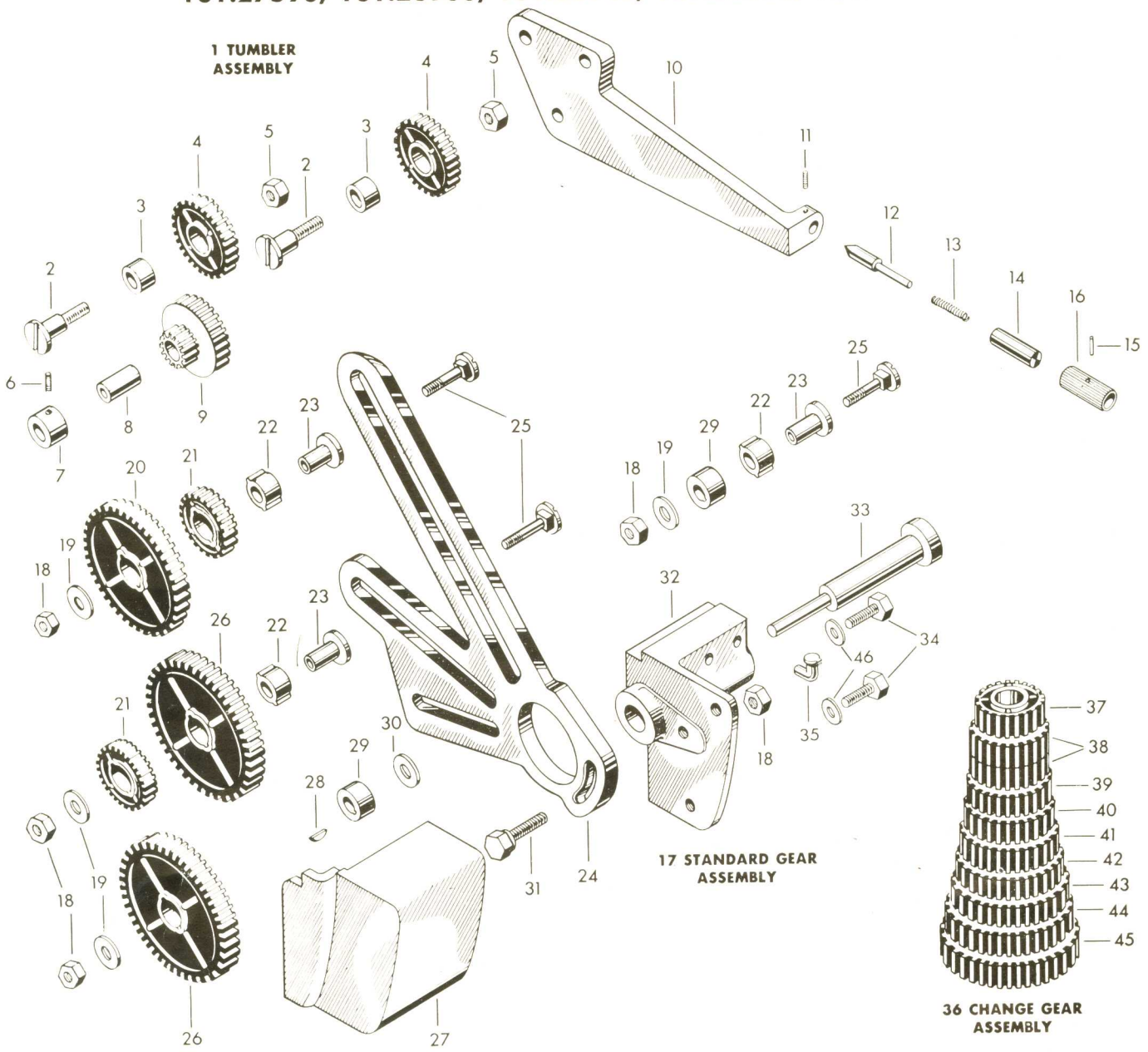
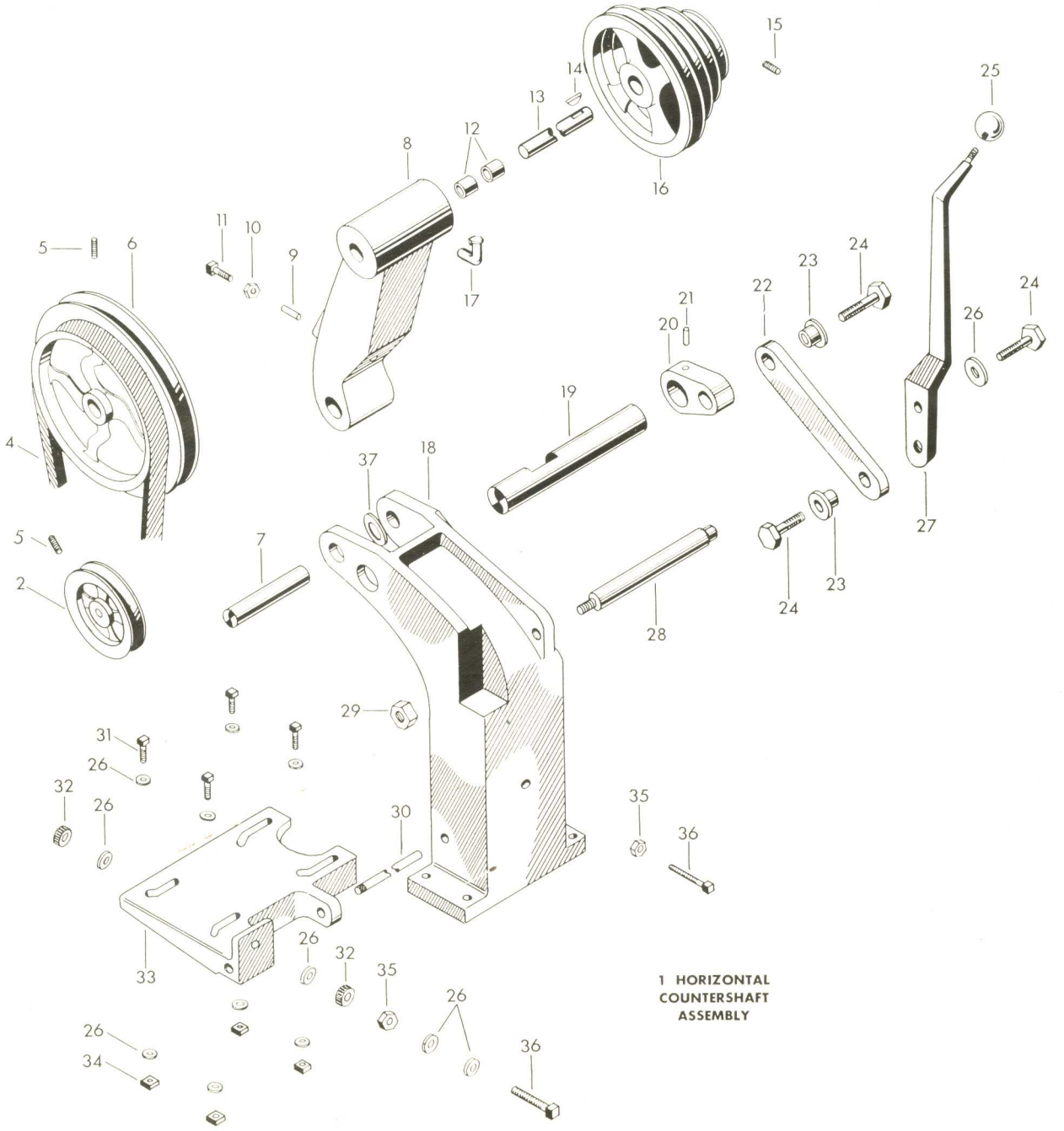


KEY NO.	PART NO.	DESCRIPTION
		TUMBLER ASSEMBLY
1	990-291	Tumbler Assembly
2	698-039	Stud
3	L3-71A	Bushing
4	9-101-36A	36T Gear
5	9-190	Nut
6	981-044	*1/4 - 20 x 1/4" Socket Set Screw
7	10-1225	Collar with Set Screw
8	10-264	Bushing
9	10-101-16A	Compound Gear with Bushing (Standard Change Lathe)
9	10-1546	Compound Gear with Plate and Bushing (Quick Change Lathe)
10	041-120	Tumbler
11	981-120	*10 - 24 x 3/16" Socket Set Screw
12	10-1231	Plunger
13	S8-63	Spring
14	10-1244	Sleeve
15	981-199	*3/32 x 3/4" Groov Pin
16	441-029	Knob
		STANDARD CHANGE GEAR ASSEMBLY
17	990-292	Standard Gear Assembly
18	981-125	*3/8 - 16 Hex Nut
19	9-93	Washer
20	9-101-56A	56T Gear
21	9-101-20A	20T Gear

KEY NO.	PART NO.	DESCRIPTION
22	9-70A	Bushing
23	9-73A	Sleeve
24	L3-58M	Quadrant
25	9-69A	Bolt
26	9-101-64A	64T Gear
27	122-045	Gear Cover
28	981-055	*#9 Woodruff Key
29	9-113A	Spacer
30	9-114	Washer
31	L3-60	Stud
32	041-121	Bracket
33	L3-52A	Stud
34	981-144	*5/16 - 18 x 7/8" Hex Cap Screw
35	S7-217	Oiler
46	981-049	*1/4" Washer
		CHANGE GEAR ASSEMBLY
36	9-101A	Change Gear Assembly
37	9-101-24A	24T Gear
38	9-101-32A	32T Gear
39	9-101-36A	36T Gear
40	9-101-40A	40T Gear
41	9-101-44A	44T Gear
42	9-101-46A	46T Gear
43	9-101-48A	48T Gear
44	9-101-52A	52T Gear
45	9-101-54A	54T Gear

* Standard hardware item — may be purchased locally

CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.27580, 101.27590, 101.28930, 101.28940



1 HORIZONTAL COUNTERSHAFT ASSEMBLY

KEY NO.	PART NO.	DESCRIPTION
		COUNTERSHAFT ASSEMBLY
1	990-293	Countershaft Assembly
2	10-428	Motor Pulley with Set Screw (5/8" bore)
4	S8-95A	Belt (½" x 37" lg.)
5	981-182	*5/16 - 18 x 1/2" Socket Set Screw
6	9-427	Pulley with Set Screw
7	562-041	Pin
8	002-019	Arm
9	562-040	Pin
10	981-201	*3/8 - 16 Hex Jam Nut
11	981-179	*3/8 - 16 x 1-3/4" Sq. Hd. Set Screw
12	L3-109	Bushing
13	701-019	Spindle
14	981-055	*#3 Woodruff Key
15	981-123	*1/4 - 20 x 1/2" Socket Set Screw
16	10-80	Pulley with Set Screw
17	9-644	Oiler
18	041-122	Bracket
19	700-071	Rocker Shaft
20	10-77	Lever
21	981-140	*3/16 x 1" Groov Pin
22	451-012	Link
23	S7-80	Bushing
24	981-202	*3/8 - 16 x 5/8" Hex Cap Screw
25	51-56	Ball
26	981-019	*5/16 Washer
27	381-025	Handle
28	699-061	Spacer
29	981-125	*3/8 - 16 Hex Nut
30	562-042	Pin
31	981-165	*5/16 - 18 x 1-1/2" Sq. Hd. Mach. Bolt
32	MH-18	Nut
33	050-034	Motor Base
34	981-129	*5/16 - 18 Square Nut
35	9-190	Nut
36	981-180	*3/8 - 16 x 3" Sq. Hd. Set Screw
37	9-683	Washer

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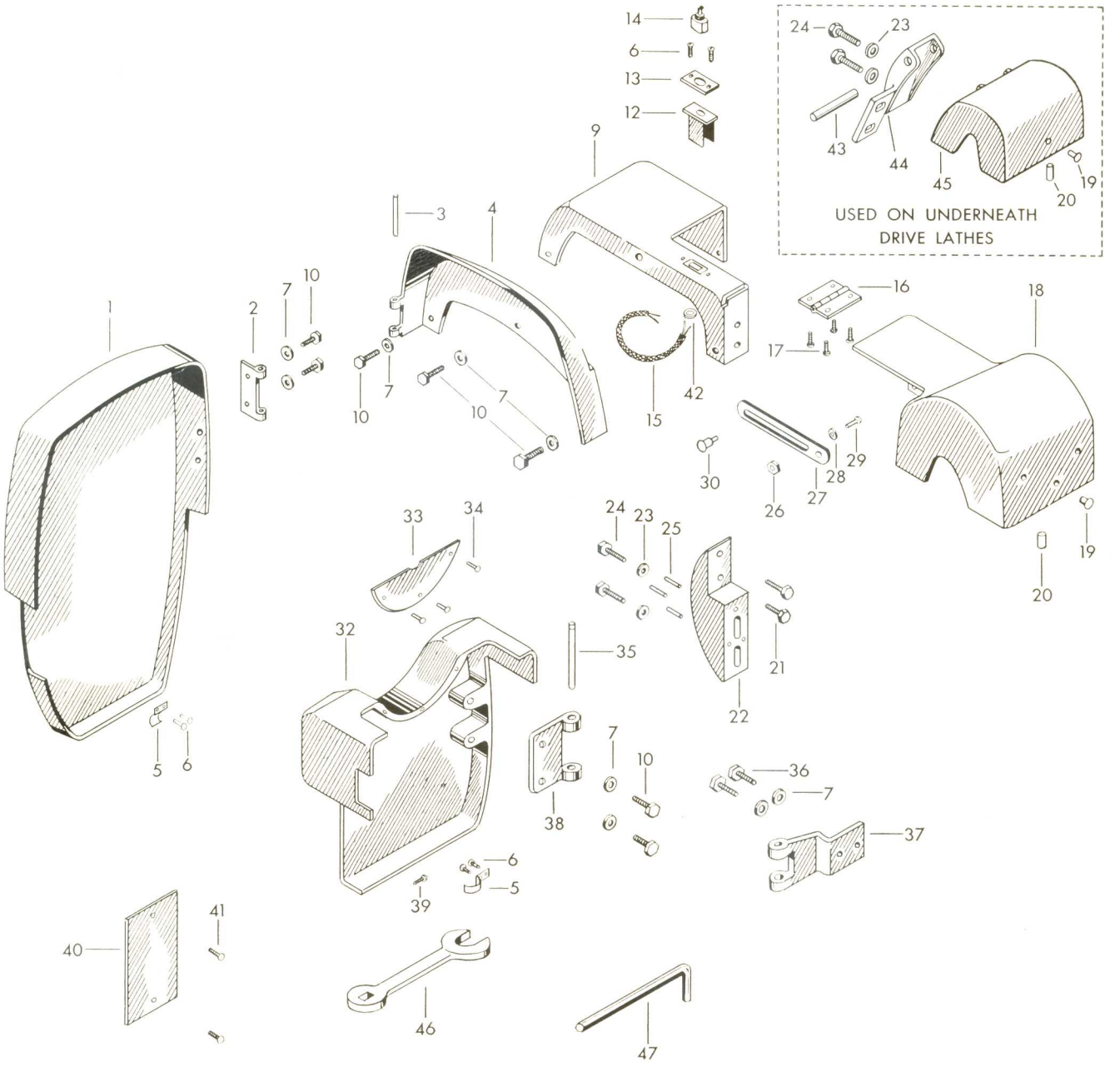
CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.27580, 101.27590, 101.28930, 101.28940, 101.28950, 101.28970

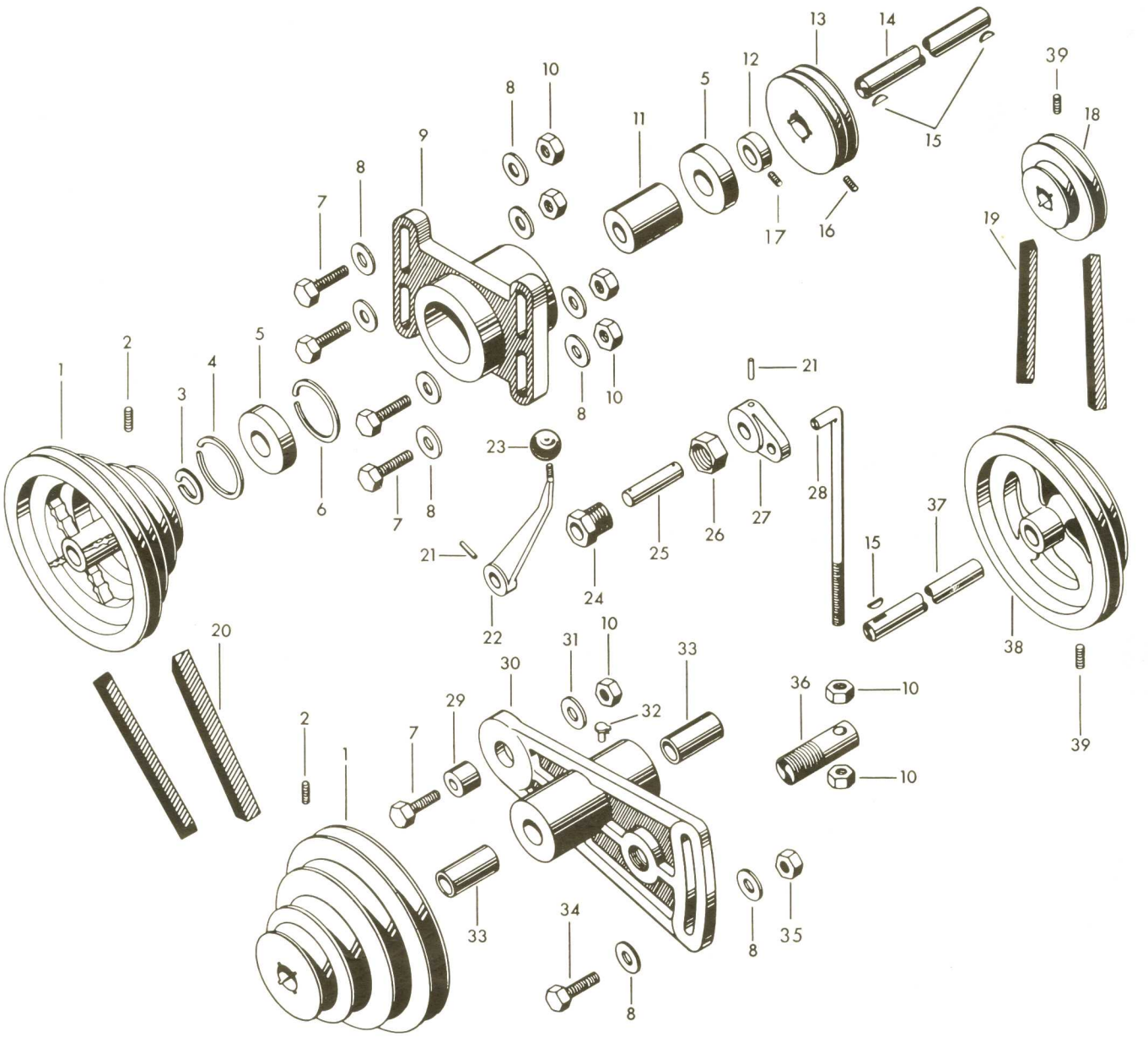


KEY NO.	PART NO.	DESCRIPTION
1	342-031	Guard
2	041-116	Hinge Bracket
3	562-044	Pin
4	342-029	Guard
5	MI-53	Spring Clip
6	981-155	*#6 - 32 x 1/4" Rd. Hd. Mach. Screw
7	981-049	*1/4" Washer
9	041-123	Bracket
10	981-143	*5/16 - 18 x 3/4" Hex Cap Screw
12	423-001	Insulator
13	41-43A	Switch Plate
14	41-44A	Switch
15	9-214	Cord
16	384-004	Hinge
17	981-159	*#10 - 24 x 5/16" Rd. Hd. Mach. Screw
18	342-032	Guard
19	9-729	Knob
20	BD3B-1C	Bumper
21	981-001	*3/8 - 16 x 3/4" Hex Cap Screw
22	041-119	Bracket
23	981-019	*5/16" Washer
24	981-146	*3/8 - 16 x 1" Hex Cap Screw
25	981-175	*5/16 - 18 x 3/4" H'dless Set Screw (Oval Pt.)

KEY NO.	PART NO.	DESCRIPTION
26	981-198	*1/4 - 20 Esna Nut
27	714-003	Latch
28	981-089	*3/16" Washer
29	981-030	*1/4 - 20 x 3/4" Hex Cap Screw
30	696-050	Special Screw
32	342-030	Guard
33	556-068	Plate
34	981-157	*#8 - 32 x 3/16" Rd. Hd. Mach. Screw
35	562-043	Hinge Pin (Horizontal Countershaft Lathe)
35	9-92A	Hinge Pin (Underneath Drive Lathe)
36	981-144	*5/16 - 18 x 7/8" Hex Cap Screw
37	041-118	Bracket
38	041-117	Hinge Bracket
39	981-203	*#4 x 3/16" P.K. Drive Screw
40	130-009	Thread Chart (Standard Change Lathe)
41	981-012	*#2 x 3/16" P.K. Drive Screw
42	9-149	Grommet
43	562-047	Hinge Pin
44	041-130	Bracket
45	342-033	Guard
46	9-115	Wrench
47	W44-3	*5/16" Socket Wrench
	421-086	Instruction Sheet and Parts List (Not Illustrated)

* Standard hardware item — may be purchased locally.

CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.28950, 101.28970

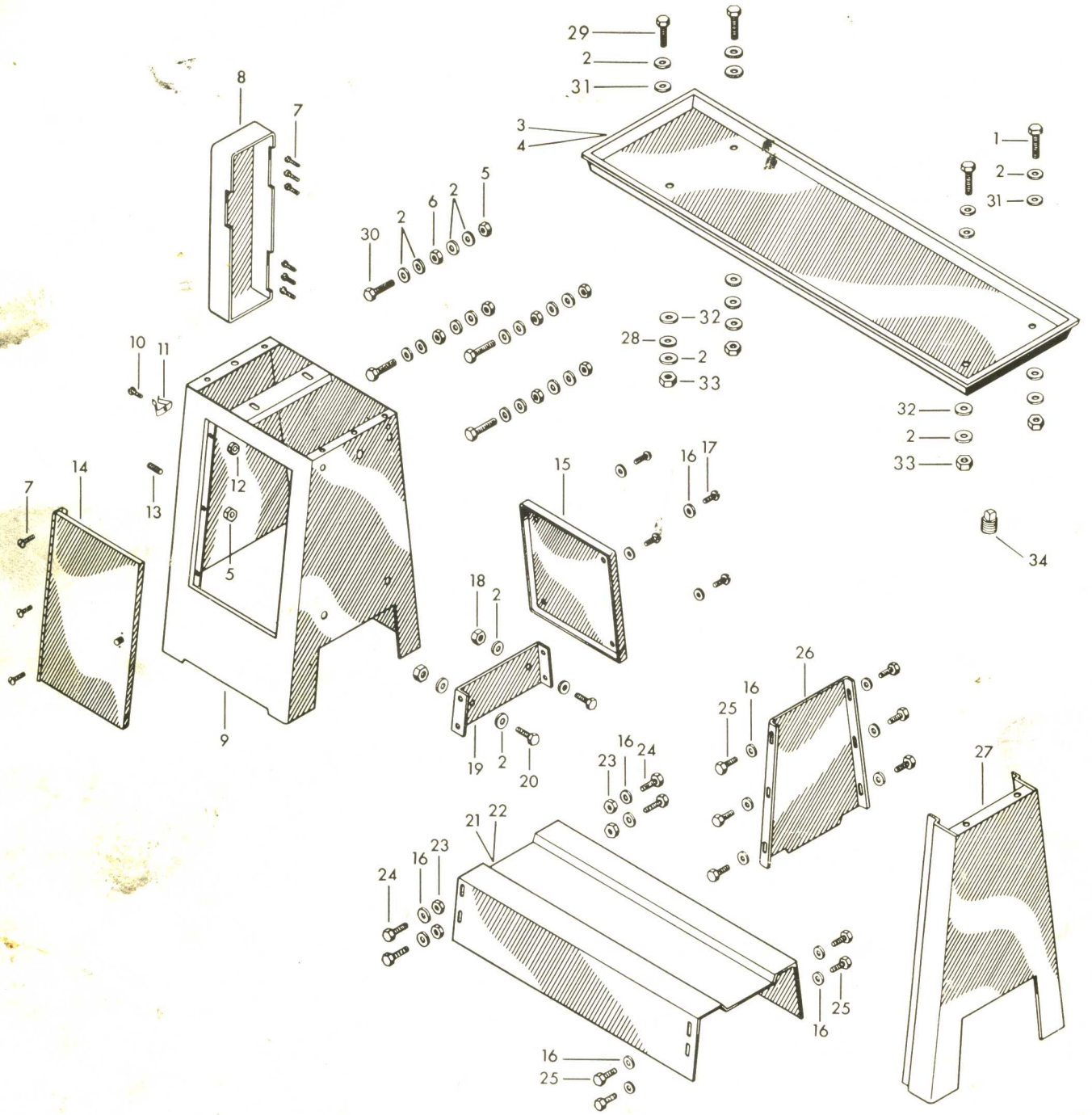


KEY NO.	PART NO.	DESCRIPTION
1	10-80	Pulley with Set Screw
2	981-123	*1/4" - 20 x 1/2" Socket Set Screw
3	C-300A	Retainer
4	641-047	Retainer
5	S2-17F	Bearing
6	641-010	Retainer
7	981-204	*3/8" - 16 x 1-1/2" Hex Cap Screw
8	981-019	*5/16" Washer
9	041-131	Bracket
10	981-125	*3/8" - 16 Hex Nut
11	699-067	Spacer
12	699-066	Spacer with Set Screw
13	560-051	Pulley with Set Screw
14	701-020	Spindle
15	981-055	*#3 Woodruff Key
16	981-122	*1/4" - 20 x 3/8" Socket Set Screw
17	981-044	*1/4" - 20 x 1/4" Socket Set Screw
18	10-428	Motor Pulley with Set Screw (5/8" bore)
19	S3-90	Belt (1/2" x 36" lg.)
20	051-023	Belt (1/2" x 41" lg.)

KEY NO.	PART NO.	DESCRIPTION
21	981-192	*3/16" x 1-1/4" Groov Pin
22	381-027	Handle
23	51-56	Ball
24	046-020	Bearing
25	700-077	Shaft
26	981-212	*7/8" - 14 Hex Nut
27	002-026	Arm
28	451-014	Link
29	699-068	Spacer
30	041-132	Bracket
31	932-040	Washer
32	9-644	Oiler
33	L3-109	Bushing
34	981-204	*3/8" - 16 x 1-1/2" Hex Cap Screw
35	981-223	3/8" - 16 Hex Conelok Nut
36	698-040	Stud
37	701-021	Spindle
38	9-427	Pulley with Set Screw
39	981-182	*5/16" - 18 x 1/2" Socket Set Screw

* Standard hardware item — may be purchased locally.

CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.28950, 101.28970



KEY NO.	PART NO.	DESCRIPTION
1	981-207	*5/16" - 18 x 1-1/2" Hex Cap Screw
2	981-019	*5/16" Washer
3	571-001	Oil Pan (42" Lathe)
4	571-002	Oil Pan (54" Lathe)
5	981-005	*5/16 - 18" Hex Nut
6	9-222	Nut
7	981-209	*1/4 - 20 x 3/8" Rd. Hd. Mach. Screw
8	342-034	Belt Guard
9	453-011	Left Leg
10	981-208	*10 - 24 x 3/8" Rd. Hd. Mach. Screw
11	S7-142	Clip
12	981-006	*10 - 24 Hex Nut
13	981-211	*5/16 - 18 x 1-3/4" Headless Set Screw
14	235-005	Door with Latch
15	122-049	Rear Cover
16	981-089	*3/16" Washer
17	981-210	*1/4 - 20 x 1" Rd. Hd. Mach. Screw

KEY NO.	PART NO.	DESCRIPTION
18	981-125	*3/8 - 16 Hex Nut
19	041-072	Bracket
20	981-146	*3/8 - 16 x 1" Hex Cap Screw
21	706-022	Shelf (42" Lathe)
22	706-023	Shelf (54" Lathe)
23	981-004	*1/4 - 20 Hex Nut
24	981-206	*1/4 - 20 x 5/8" Hex Cap Screw
25	981-094	*1/4 - 20 x 1/2" Hex Cap Screw
26	566-003	Panel
27	453-010	Right Leg
28	10-262	Washer
29	981-227	*5/16" - 18 x 1-3/4" Hex Cap Screw
30	981-165	*5/16" - 18 x 1-3/4" Sq. Hd. Mach. Screw
31	981-213	*7/16" Washer
32	049-031	Rubber Bushing
33	981-228	*5/16" - 18 Hex Conelok Nut
34	18-114	Pipe Plug

* Standard hardware item — may be purchased locally.