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

CRAFTSMAN

12-INCH

METAL TURNING LATHE

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**MODEL NUMBERS**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>101.28900</td>
<td>2890</td>
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<tr>
<td>101.28910</td>
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</tbody>
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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.

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**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

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**COAST TO COAST NATION-WIDE**

ERVICE 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.

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SEARS, ROEBUCK AND CO. — U.S.A.

SIMPSONS - SEARS LIMITED — CANADA
This Manual Applies To CRAFTSMAN 12" Lathes

MODEL NUMBERS
101.28900
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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 FLOOR STAND

Floor legs with table boards make ideal lathe stand.

ASSEMBLING THE STAND
Mount shelf to legs with four short bolts (furnished) -- tighten securely -- refer to Fig. 1.
Place bench top on legs and slip four long bolts thru top to hold in place temporarily--DO NOT tighten nuts.
Place stand in final location--to provide working room, back leg anchor should be 3 feet from wall.

ANCHORING STAND TO FLOOR
Stand 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 and mark the location of mounting holes.
Use anchor bolts to secure floor stand to concrete floor -- use lag screws to secure to wood floor.
Move stand, drill holes and install anchor nuts in concrete floor -- drill pilot holes for lag screws in wood floor. Reposition stand and start anchor or lag screws -- DO NOT tighten until stand has been leveled.

LEVELING THE FLOOR STAND

Use one precision lever at least 6" long -- place level on stand top -- see Fig. 2, for level positions.
Place shims, as required, between leg pad and floor until the stand top is approximately level.

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

NOTE: Shims should be of hardwood or metal and bear under the leg pads -- see Fig. 3.

Tighten the anchoring bolts or lag screws securely.
Recheck the level of stand -- unequal tightening of anchoring bolts may have pulled the stand out of level.

MOUNTING THE LATHE
Remove long bolts from stand top.
Remove bolts from skid and place lathe on stand -- bolt lathe, stand top and legs together with four long bolts. DO NOT TIGHTEN nuts securely until lathe has been leveled.
Bolt countershaft bracket foot (see Fig. 1) on rear of left floor leg using adjusting bolt (B, Fig. 4) and mounting bolts (A) (furnished).
TENSIONING SPINDLE BELT

Move belt tension lever (A, Fig. 5) to back position, tighten square head set screw (C) and adjust bolt (B, Fig. 4) until belt is properly tensioned.

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

Tighten lock screw (C) and lock nut (D, Fig. 5).

Mount headstock guard unit (B, Fig. 6) to bracket (F) with two 3/8" hex cap screws (C).

INSTALLING MOTOR BASE

1. Remove knurled collar (B, Fig. 7) 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. 6) on motor shaft (small step towards motor).

NOTE: The lathe is designed for a 1/2 or 3/4 hp 1725-1750 rpm motor -- of 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 (furnished).
3. Place belt (E) on pulleys.
4. Loosen motor base adjusting screw (D, Fig. 7).
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 8.
- the lathe has been lubricated, see page 9.
- the operating instructions have been read, see pages 10-13.
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 1/4" 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.

LEVELING THE BENCH

Use one precision level at least 6" long -- place level on bench top -- refer to Fig. 8 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. 9.

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.

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.

POSITION LATHE ON BENCH

See Fig. 8 for recommended dimensions of bench.

Removing bolts from skid and place the lathe on the bench in the position shown in Fig. 10 with front edge of the lathe leg (D) about 1/4" 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. 10) 1 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.
LEVELING THE BED

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. 14 for leveling positions.

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

Refer to Fig. 15 for approximate size of shim.

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

2. Next, level the bed at headstock and tailstock -- see Fig. 14. 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.

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.
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.

2. Raise headstock cover (A, Fig. 16) and pull out lock pin (D), disengaging bull gear (C) from pulley (B).

3. Move back gear lever (C, Fig. 17) 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. 17) 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. 16). 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. 17) 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. 17).

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. 17) 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. 17) 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.

HANDWHEEL (F, Fig. 18) 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.

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 19

The tool post holds the tool rigidly in position for cutting operations -- refer to figure 19.

Figure 20

Tool bit holders permit the use of small, inexpensive and replaceable tool bits -- refer to figure 20.

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 21

RAM LOCK LEVER (B, fig. 21) 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 22

RIGHT -- Tool post slide is flush with front end of the upper swivel, therefore provides maximum tool support -- refer to figure 22.

Figure 23

WRONG -- Unnecessary overhang of tool post slide will result in tool chatter, and could cause the tool post slide to break -- refer to figure 23.

Figure 24

WRONG -- Tool post slide is too far back -- tool overhang is excessive -- refer to figure 24.
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 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 does not 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.

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 25

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 25.

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.

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.

TAILOSTOCK GIB ADJUSTMENT

Two gib screws (F, fig. 21), one on each of the tailstock gib, 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 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.

3. Raise headstock cover (A, Fig. 26) 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. 18).
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 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:
1. Insert 1/4” rod (B, fig. 27) 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 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.
CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910

SPINDLE ASSEMBLY

1 990-280 Spindle Assembly (for Horizontal Countershaft)
2 10A-9 Knuckle
3 10B-20 Collar with Set Screw
4 10B-30 Collar with Set Screw
5 04B-018 Bushing
6 10-258 Bushing
7 58-95A Belt (1/2" x 37" long)
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 10B-705 *1/4" - 20 x 3/16" H'I'dless Set Screw
19 106751 *49 Woodruff Key
20 9-100-32 Spindle Gear
21 10A-0 Spacer
22 10A-1 Dust Cover
23 10A-11C Bearing
24 10A-9C Bearing
25 10A-5 Collar
26 10-31T Spindle
27 9-130 Sleeve
28 9-88 Center
66 456813 *1/4" - 20 x 3/16" H'I'dless Set Screw

HEADSTOCK ASSEMBLY

29 990-281 Headstock Assembly (Horizontal Countershaft Lathe)

KEY PART NO. PC NO. DESCRIPTION

1 990-280 Spindle Assembly
30 10-253 Collar with Set Screw
31 271-006 Eccentric
32 142485 *1/8" x 3/4" Groove Pin
33 9-204 Oil Cap
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
40 991-156 *10-24 x 3/16" Rd. Hd. Mach. Screw
41 556-035 Plate
42 116100 Toolpost Stud
43 136-008 Sawed Shaft
44 145506 *92 x 3/16" P.K. Drive Screw
45 10-249 Bushing
46 10-223 Back Gear
47 10-248 Sleeve with Bushings
48 10-244 Back Gear
49 10-244 Back Gear
50 140856 *8 - 32 x 3/8" Sec. Set Screw
51 706-074 Shaft
52 126-018 Clamp
53 138203 *1/4" - 20 x 1/2" Socket Cap Screw
54 557-026 Plug
55 126-017 Clamp
56 456816 5/32 x 7/16" Roll Pin
57 706-273 Shaft
58 271-005 Eccentric
59 9-210 Ball
60 546-015 Bearing
61 51-55 Ball
62 102569 *1/4" - 20 x 1/4" Socket Set Screw
63 9414401 +10 Washer
67 10-42A Index Pin
68 084-135 Oil 

*Standard hardware item — may be purchased locally
### Quick Change Assembly

<table>
<thead>
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<th>KEY PART NO.</th>
<th>DESCRIPTION</th>
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<td>L6-1002  Bracket</td>
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<td>151241  &quot;1/4-20 x 1&quot; Phillips Hd, Cap Screw</td>
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<td>14</td>
<td>9414321 &quot;5/16&quot; Washer</td>
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<td>15</td>
<td>57-207  Bolt</td>
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<td>446142  &quot;3/16&quot; Washer</td>
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<td>9-10-148A  4BT Gear</td>
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<td>21</td>
<td>10-1324  Collar with Set Screw</td>
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<tr>
<td>22</td>
<td>10-1551X  Compound Gear with Bushing</td>
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<td>10-1550X  Compound Gear with Bushing</td>
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<td>140897  &quot;10-24 x 5/16&quot; Socket Set Screw</td>
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<td>386-031  Gear Box</td>
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<td>28</td>
<td>L6-1056  Snap Ring</td>
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<td>29</td>
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<td>31</td>
<td>700-194  Shaft</td>
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<td>126227  &quot;5/16-18 x 2-1/4&quot; Socket Cap Screw</td>
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<td>100736  &quot;6 - 32 x 1/4&quot; Rd, Hd. Mach. Screw</td>
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<td>35</td>
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<td>221183  &quot;1/4-20 x 3/16&quot; Socket Set Screw</td>
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### Lead Scr. Clutch Assembly

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<td>L6-1036  Key</td>
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<td>10-1523  20T Gear</td>
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<td>10-1586  Lever with Guide</td>
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<td>66</td>
<td>44-029  Knob</td>
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*Standard hardware item — may be purchased locally*
# CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910

## TOOL POST ASSEMBLY

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## COMPOUND REST ASSEMBLY

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## SADDLE ASSEMBLY

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*Standard hardware item – may be purchased locally*
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**SPLIT NUT ASSEMBLY**

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<td>Guide</td>
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<td>Stud</td>
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<td>Split Nut (1 Pair)</td>
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**GEAR CASE ASSEMBLY**

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<td>Gear Case Assembly</td>
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<td>17</td>
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**APRON ASSEMBLY**

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**15 GEAR CASE ASSEMBLY**

**20 APRON ASSEMBLY**
CRAFTSMAN 12" METAL TURNING LATHE, MODEL # 101.28900, 101.28910

9 BED, LEGS AND RACK ASSEMBLY

LEAD SCR. BEARING ASSEMBLY

LEAD SCR. BEARING ASSEMBLY

20 TAILSTOCK ASSEMBLY COMPLETE

29 TAILSTOCK AND BASE ASSEMBLY

KEY PART NO. NO. DESCRIPTION
1 696-148 Lead Screw (42" Lathe)
2 696-149 Lead Screw (54" Lathe)
53 853-002 Tailstock
54 521502 3/16-18 x 7/8" Ssc. Cap Scr.,

53 3980-27 Lead Screw Bearing Assembly
3 10F-76 Collar
4 641-284 Bracket
5 866-060 Bearing
7 9435992 \(\frac{1}{2}^\prime\) 20 Hex Conelok Nut
8 138202 1/4-20 x 1 1/2" Ssc. Cap Screw
55 556-166 Plate
51 444-028 Bearing
52 102559 \(\frac{1}{4}-\frac{20}{20} x 1/4^\prime\) Scc. Set Scr.,

BED, LEGS, AND RACK ASSEMBLY

BED, LEGS, AND RACK ASSEMBLY

TAILSTOCK AND BASE ASSEMBLY

KEY PART NO. NO. DESCRIPTION
42 102396 3/16-18 x 2" Headless Set Screw
46 050-035 Base
47 981-177 3/16-18 x 3" Headless Set Screw
48 453-002 Tailstock

TAILSTOCK ASSEMBLY

20 990-289 Tailstock Assembly Complete
29 990-11 Tailstock and Base Assembly
21 9-68 Center
22 9-8 Ram
23 100-34 Screw
24 106740 9/33 Woodruff Key
25 9-00 Washer
26 109151 1/4-20 x 1-3/4" Sq. Hd. Mach. Bolt
27 86-44 Lock
28 96-45 Lock Nut with Washer
29 9-42A Handle
30 9-104 Handle
31 9-104 Handle
33 537-042 Nut with Washer
34 937-006 Wrench
35 9414221 5/16" Washer
36 100-30 Bearing
37 9-23 Handwheel
38 9-103 Handle
39 9414201 3/8 x 16 Hex Conelok Nut
44 9-7 Clamp
49 9-155A Screw with Nut

*Standard hardware item - may be purchased locally.
CRAFTSMAN 12" METAL TURNING LATHE, MODEL #101.28900, 101.28910

**KEY** | **PART NO.** | **DESCRIPTION**
--- | --- | ---
1 | 990-293 | Countershaft Assembly
2 | 10-428 | Motor Pulley with Set Screw (5/8" bore)
4 | 58-95A | Bolt (1" x 2 3/4"") Lg.
5 | 102582 | *5/16-18 x 1/2" Socket Set Screw
6 | 560-060 | Pulley with Set Screw
7 | 563-041 | Pin
8 | 300-019 | 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 | 701-219 | Spindle
14 | 106749 | *3/4 Weadruff 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** | **PART NO.** | **DESCRIPTION**
--- | --- | ---
19 | 700-071 | Rocker Shaft
20 | 10-77 | Lever
21 | 142239 | *3/16 x 1" Groove Pin
22 | 451-012 | Link
23 | 57-60 | Bushing
24 | 106-329 | *3/8-16 x 5/8" Hex Cap Screw
25 | 51-50 | Ball
26 | 914121 | *5/16 Washer
27 | 381-025 | Handle
28 | 699-061 | Spacer
29 | 102632 | *3/8-16 Hex Nut
30 | 562-042 | Pin
32 | MH-18 | Nut
33 | 050-034 | Motor Base
34 | 105005 | *5/16-18 Square Nut
35 | 9-190 | Nut
36 | 102920 | *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

**Diagram of 1 Tumbler Assembly**

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<td>Knob</td>
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</table>

*Standard hardware item - may be purchased locally*
1. Loosen tailstock lock and slide tailstock assembly from bed.
2. Move carriage assembly to center of bed.
3. Remove screws from lead screw bearing, type A or B Fig. 1.

4. Lower split nut lever (D, Fig. 2) and turn handwheel (F) clockwise drawing lead screw (G) out of gear box.
5. Raise lever (D).
6. Loosen screw (B) and swing threading dial (C) away from lead screw.
7. Pull lead screw to the right and out of apron.
8. Slide carriage off end of lathe bed until split nut is exposed.
9. Loosen spring tension screw (A).
10. Remove screws (E).

11. Pry split nut assembly away from back of apron (L, Fig. 3).
   CAUTION: Small steel ball (G) may drop out when guide (F) is removed.
12. Remove studs (K) and split nuts (J) out of guide (F).
13. Clean and oil guide (F).
14. With a file, bevel edges of split nuts as shown in Fig. 4.
15. Remove all burrs, clean and oil split nuts and slide nuts into guide.
16. Insert studs (K) and tighten.
17. Pack hole (H) with grease and insert steel ball (G).
18. Hold split nut assembly in position and insert screws (E) – tighten screws.
19. Tighten screw (A) until distinct, detent action is felt when lever (D) is moved up and down.
20. Raise lever (D) and move carriage to center of bed.
21. Clean and oil lead screw and install screw in apron and gear box making sure key in apron bevel gear and key in gear box line-up with keyway in lead screw.
22. Start lead screw bearing screws (Fig. 1) – tighten finger tight.
23. Move carriage to tailstock end and lower lever (D). This will position lead screw bearing correctly tighten bearing screws.
24. Position threading dial (C) and secure.
25. Clean lathe bed ways and bottom of tailstock assembly.
26. Replace tailstock on bed. Oil bed and move tailstock back and forth then position tailstock.
27. Clean and oil wipers.