

**OPERATING INSTRUCTIONS  
AND PARTS LIST FOR  
DUNLAP  
NINE INCH WOOD LATHE**

**— MODEL NUMBER 534.0601 —**

This is the Model Number of your lathe. It will be found on the plate on the rear side of the bed. Always mention this Model Number when communicating with us regarding your lathe or when ordering parts.

This list is valuable. It will assure your being able to obtain proper parts service at all times. We suggest you keep it with other valuable papers.

**SEARS, ROEBUCK AND CO.**

# OPERATING INSTRUCTIONS

## IMPORTANT — LUBRICATION

Oilless Bronze Bearings are used in the headstock of this lathe and lubrication takes place by oil seepage through the porous bushing wall thus assuring a filtered lubricant. **DO NOT DRILL HOLES THRU THE BUSHINGS.**

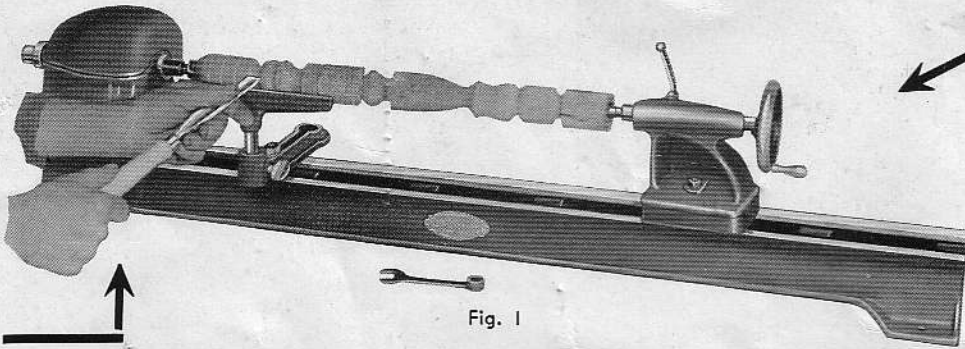


Fig. 1

## IMPORTANT — LUBRICATION

The two oilers in the headstock should be lubricated frequently with light machine oil to insure maximum life of the bearings. The tailstock spindle and the screw should be oiled occasionally.

Each Dunlap lathe is packed in a separate crate. The motor and any other extra attachments are packed separately. When unpacking, be sure to go through all the papers carefully so as not to miss any parts.

This lathe is designed to be used with a 1750 R.P.M. motor and when so used will have four speeds of: 714, 1305, 2287 and 3952 R.P.M. Using the smallest step on the motor pulley gives the slowest speed.

In setting up the Dunlap Bench Lathe use a good sturdy, level table. If the legs do not rest at all points, place shims or washers under those which do not touch; then clamp securely to the bench with lag screws or machine bolts. This is Important — as failure to observe these instructions may result in a twisted bed.

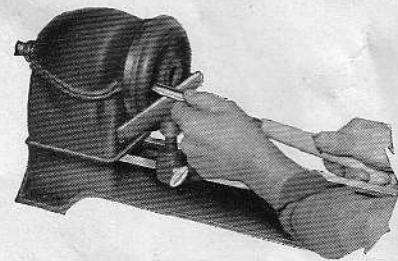


Fig. 2

The direction of rotation of the motor must be clockwise facing the pulley end. If it is otherwise, use the other end — if a double-end motor — or reverse the direction according to the manufacturer's instructions. Now place the motor pulley on the shaft with the smallest step toward the motor and tighten the set screw securely. Line up the motor pulley with the spindle pulley so that the large step on one corresponds with the small step on the other. Use a long straight-edge to line these up accurately. Adjust the belt tension until it is just tight enough to prevent slipping; then clamp the motor securely to the bench. Note: — Undue wear on the bearings will result if the belt is too tight.

## WOOD TURNING

When work is to be mounted between centers, such as, table legs, etc. the center points of the ends are located by drawing diagonal lines across the ends from corner to corner.

After locating the center, make two saw cuts about  $\frac{1}{8}$ " deep in the headstock end of the work. These grooves will intersect at the center. In hardwood, drill a small hole, about  $\frac{1}{16}$ ", at each end for center points. These holes will facilitate inserting the centers.

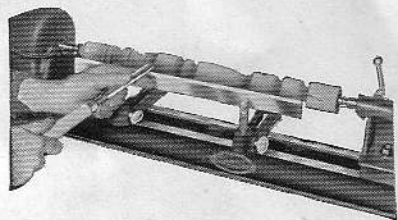


Fig. 3

With the work resting on the bench, drive the spur center into the saw cuts with a mallet. Never drive the work against the spur center in the lathe — never force the work into the spur center by advancing the tailstock.

Mount the spur center in the headstock and the cup center in the tailstock. Set the work against the spur center and bring the tailstock up close to the end of the piece to be turned. Clamp the tailstock securely to the bed by tightening the clamp nut. Now screw the cup center into the work by means of the hand-wheel just far enough to provide a firm bearing. Revolve work by hand to see if it turns freely. Place several drops of oil on the rim of the cup center.

The beginner should practice turning scrap stock between centers before attempting more difficult operations with expensive woods.

The tool rest should be set parallel with the work and at such a height that the turning chisel makes a slight angle with the

horizontal when the cutting edge is slightly above center. (See Fig. 1.) Clamp the tool rest slide firmly to the bed and tighten the tool rest clamp screw after this adjustment has been made. After setting the tool rest, always revolve the work by hand to check for sufficient clearance. **Never adjust tool rest while lathe is running.**

Use only the slowest speed for starting and higher speeds for finishing operations. As a general rule, the proper tool motion is parallel with the grain of work. Always cut from the center toward the ends of cylindrical work. Move the tool rest forward for each cut as the diameter of the work decreases.

The large gouge chisel is used to "rough down" the stock to slightly larger than its maximum diameter when finished. The ground face is always ground flat or even with a slight curve outward, never hollow ground. When honing the gouge, always hold the chisel and the stone free in the hands. Continue honing until a feather edge is felt, then remove this edge by honing lightly on the inside with a slip stone.

Figures 4A and 4B show the proper method of holding the large gouge against the work. Grasp the chisel firmly, with one hand guiding the handle and the other holding the blade just behind the tool rest. Move the gouge evenly along the work with the point of the tool ahead of the handle end. Take light cuts, and use the slower lathe speeds, especially while stock is still irregular in shape.

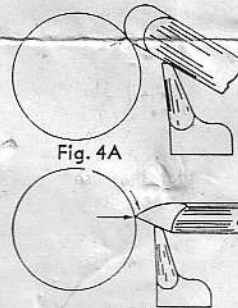


Fig. 4A

Fig. 4C

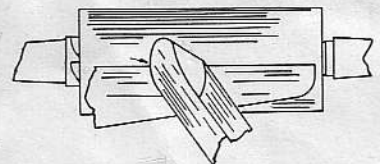


Fig. 4B

Experiment to find the best chisel position. Figure 4A shows how the gouge is held just past the point where the ground side rubs on the work. Raise the handle to obtain this position. Never hold the gouge as shown in Fig. 4C. This position quickly dulls the cutting edge, produces rough work, and is very likely to split the stock.

The parting tool is used for two purposes: (1) for taking sizing cuts which serve as a guide in turning to size, and (2) for cutting

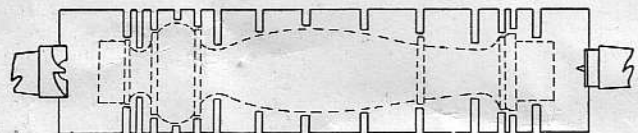


Fig. 5

off operations. The parting tool is a double wedge, wide at the center to provide clearance. The point is ground so that the cutting edge is on the exact center line of the tool.

Fig. 5 shows how the parting tool is used to cut grooves at various points when turning work to a required shape. Each groove is cut nearly as deep as the finish-diameter, allowing between  $\frac{1}{16}$ " and  $\frac{3}{32}$ " for finishing. Do not cut too deep.

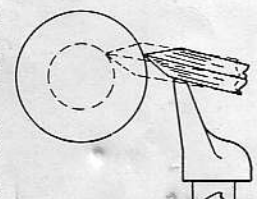


Fig. 6



## OPERATING INSTRUCTIONS (Continued)

The parting tool must be held carefully to prevent binding or "hogging-in". Fig. 6 shows proper tool position. Hold the chisel firmly and advance it into the work at right angles to the center line of work. Never force the tool in too fast—the harder woods may burn the point of the tool and spoil the temper.

When using the parting tool for cutting off the waste ends of the work, cut grooves at both ends so that the diameter is about  $\frac{1}{4}$ " at these points. Then cut down the tailstock groove to another  $\frac{1}{8}$ " or slightly deeper. Now cut entirely through the headstock end and catch the work as it drops.

The large skew chisel is used for finishing straight and convex work. The cutting edge is "askew", or at an angle, and both side faces are ground to permit cuts to both right and left.

When sharpening the skew, the sides are ground off equally to an angle, approximately equal to that shown in Fig. 8. A finer cutting edge results in a cleaner cut, but becomes dull quicker than a large cutting angle. The ground surfaces should be flat—hollow grinding makes it difficult to hold the tool in the correct position. Hone the edge carefully to a sharp point.

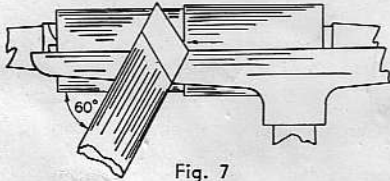


Fig. 7

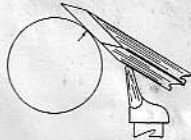


Fig. 8

Fig. 7 and 8 show the proper way to hold the large skew when taking a cut. Lift the handle just enough to allow the edge to cut, so that the lower ground side of the chisel rubs lightly on the work and prevents "hogging-in". On long work the 18" Hand Tool Rest will be found very convenient. (See Fig. 3.)

Flat work, such as, lamp bases, etc., should be mounted on the face plate. (See Fig. 2.) To accomplish this, use small flat-head wood screws and insert them from the back side of the face plate through the holes provided for that purpose. If there is any likelihood of the screws projecting through, the work should first be glued to a backing piece of soft wood. Always place a piece of paper between the backing piece and the work to facilitate taking them apart after turning.

Place the tool rest parallel with the face when performing facing operations; such as, hollowing bowls, etc. (See Fig. 2.) The face plate is threaded with both right and left hand threads so that it may be screwed on the opposite end of the spindle for turning large flat work which cannot be accommodated over the bed.

In finishing the work, a speed one step faster than that used for general turning is usually fast enough for sanding operations. The lathe speed should not be so fast as to burn the wood or paper. Never wrap the sandpaper around the work and grasp it with your fingers. Tear the paper in strips and hold the ends only, or hold an end in one hand and the other end against the bottom of the work with the fingers of the other hand. Hold the paper lightly against the work. Always remove the entire tool rest before sanding a piece of work.

### INDEXING

The spindle pulley is provided with 60 indexing holes which may be engaged by means of the knurled pin on the upper right end of the headstock. These indexing holes are useful for such operations as spacing, fluting, reeding, etc.

#### INDEXING TABLE

Divisions Desired .	1	2	3	4	5	6	10	12	15	20	30	60
No. of Spaces . .	60	30	20	15	12	10	6	5	4	3	2	1
Degrees of Arc .	360	180	120	90	72	60	36	30	24	18	12	6

#### WOOD TURNING SPEEDS IN R.P.M.

Size Diameter	Roughing Cuts	General Finish Cuts	Fine Finish Cuts - Sanding
Up to 2"	2,297	3,952	3,952
2" to 3"	1,305	1,305	2,297
3" to 4"	714	1,305	2,297
4" to 5"	714	1,305	1,305
5" to 6"	714	714	1,305
6" to 7"	714	714	1,305
7" to 8"	714	714	714
9" to 10"	714	714	714

## METAL TURNING

This lathe can be made into a metal turning lathe by equipping it with the compound tool rest.

When preparing work for insertion between centers, locate the center points of the ends with a pair of dividers. Then using a centering tool, drill holes in each end to accommodate the centers. Now slip a dog over one end and insert between the 60 degree metal-turning centers using the regular face plate for driving means. (See Fig. 9.) With the compound tool rest in the extreme right-hand position, clamp the carriage to the bed so that the tool is to the right of the point where you wish to begin cutting. Set the tool holder so that the tool bit is on center (see cuts below), then clamp securely. Now to take a cut parallel with the work, feed in the cross feed handle to the desired depth and use the longitudinal feed handle to take the cut. For facing operations (cuts at right angles to the spindle) use the cross feed for feeding and the longitudinal feed for setting to the proper depth. Important: Use only the slowest speed and take light cuts. (These slower speeds can be obtained by our Jackshaft, see Cat.). For long, slender work the Steady Rest, shown in our catalog, will be found invaluable because it prevents chatter and springing the work. (See Fig. 9.)

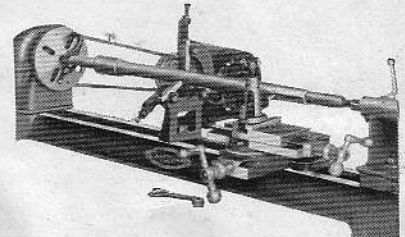


Fig. 9

The jackshaft should be mounted as shown in Fig. 10. If a single step pulley with a diameter of approximately 2" is used on the motor shaft and the belt is mounted as shown from motor to jackshaft, the following approximate spindle speeds will be obtained: 1740, 1130, 670, 430.

If a 4-step pulley is used on the motor (as shown in dotted lines) 8 speeds lower and 8 speeds higher than the standard 4 speeds can be obtained. The 8 higher speeds, however, are not practical and should not be used. If the belt is used in Step No. 1 the spindle speeds will be the same as above. If in No. 2 Step, the spindle speeds will be approximately 2600, 1730, 1000, 665.

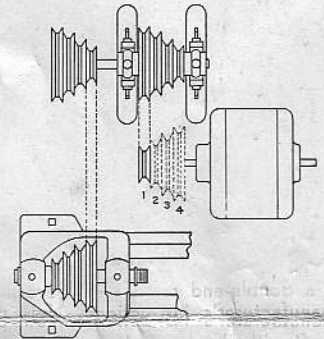


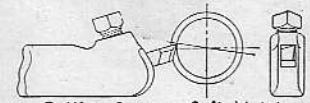
Fig. 10

### CUTTING TOOL BITS

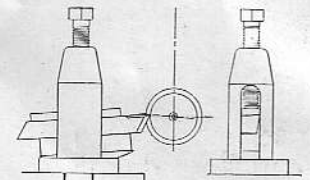
It is wise for the unskilled worker to purchase already formed tools for the particular operations he wishes to perform. Tool bits are not expensive and the purchase of a set of these will probably prove the cheapest and most satisfactory way out in the long run.

#### ANGLE OF TOOL TO WORK.

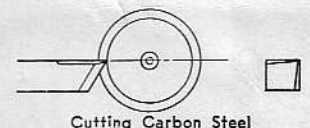
The angle of the cutting tool to the work varies according to hardness of the metal being cut. The accompanying drawings show in general the proper angles to be used for the different classes of metals. Refer to these drawings before taking a cut until you are sure you know the proper angle for each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



Cutting Brass or Soft Metal  
Fig. 11



Cutting Mild Steel or Cast Iron  
Fig. 12



Cutting Carbon Steel

**CUTTING SPEEDS.** The speed a cut is taken 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.

### ADJUSTING SPINDLE END PLAY

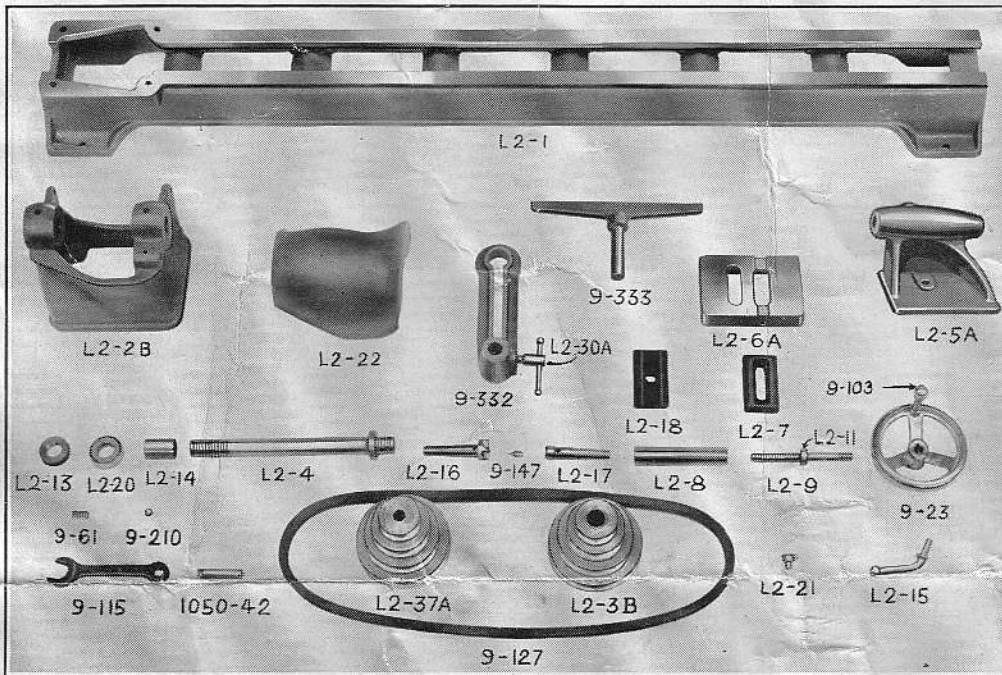
If end play develops in the spindle it may be removed by loosening the set screws in the collars on the left end of the spindle and securing the collar adjacent the headstock bearing until snug against the headstock face. The other collar should then be brought against the first collar and both set screws tightened securely. Important: Do not tighten collar so that spindle binds when turned by hand.

# HOW TO ORDER PARTS FOR DUNLAP 9-INCH WOOD LATHE MODEL NO. 534.0601

All parts listed here may be ordered through any Sears retail store or the mail order store which serves the territory in which you live. When ordering, always give the following:

1. Part number in this list.
2. Part name and price in this list.
3. Model number, which is 534.0601 and which will be found on the plate on the rear side of the bed.

**ALL PARTS ARE SHIPPED PREPAID**



Part No.	Part Name	Selling Price Each
<b>BED</b>		
L2-1	Bed	\$6.90
<b>HEADSTOCK</b>		
L2-28	Headstock	4.70
L2-38	Spindle Pulley	1.20
L2-4	Head Spindle (with collar)	1.65
L2-13	Thrust and Shoulder Collar (2 req.) each	.40
L2-14	Spindle Bushing (2 req.) each	.20
L2-20	Spindle Thrust Bearing	1.50
L2-21	Oiler (2 req.)	.20
L2-22	Spindle Pulley Guard	.95
1050-42	Pulley Index Pin	.30
9-61	Spring	.12
9-210	3/16" Steel Ball	.12
<b>TAILSTOCK</b>		
L2-5A	Tailstock	3.45
L2-6A	Tailstock Base	1.20
L2-7	Tailstock Clamp	.45
L2-8	Tailstock Ram	1.20
L2-9	Tailstock Ram Screw with collar	.55
L2-15	Tailstock Ram Lock	.40
9-23	Hand Wheel with handle	2.10
9-103	Hand Wheel Handle	.25
9-190	3/8-16x3/16 Thick Jam Nut (2 req.) (not illustrated) each	.06
<b>HAND TOOL REST</b>		
L2-18	Hand Tool Rest Clamp	.55
L2-30A	Hand Tool Rest Lock Screw Assem.	.55
9-332	Hand Tool Rest Slide	.95
9-333	Hand Tool Rest	.95
<b>MISCELLANEOUS</b>		
L2-16	Spur Center	1.05
L2-17	Cup Center	1.05
L2-37A	Motor Pulley	1.25
9-115	Wrench	.55
9-127	Belt (44 5/32" o. c.)	1.50
9-147	Center Point (2 req.)	.25

## COMPOUND TOOL REST PARTS ASSEMBLY

Part No.	Part Name	Selling Price Each	Part No.	Part Name	Selling Price Each
L2-18	Clamp	.55	L2-58	Tool Post Slide Nut	.80
9-37A	Carriage Slide Guard	.45	L2-59	Carriage Slide Nut	.80
9-39	Tool Post	1.90	L2-60A	Ball Crank (large) with handle	1.50
9-39A	Tool Post Assembly Complete	3.15	L2-61A	Ball Crank (small) with handle	1.05
9-40	Tool Post Washer	.40	L2-62	Grad'd Collar (2 req.) ea.	.55
9-41	Tool Post Rocker	.30	9-103	Ball Cr. Handle (2 req.) ea.	.25
L2-51	Carriage	3.75	9-136	Tool Post Anchor	.50
L2-52	Swivel Slide (upper)	3.75	9-137	Tool Post Anchor Stud	.40
L2-53	Tool Post Slide	3.45	9-148	Tool Post Set Screw	.40
L2-54	Feed Screw (2 req.) ea.	1.35	9-301	Compound Rest Swivel	6.60
L2-55	Feed Screw Thrust Collar (2 req.) each	.30	9-309	Compound Rest Swivel Clamp Bolt	.25
L2-56	Tool Post Slide Gib	.25	9-310	Compound Rest Wrench	.40
9-56	Cross Feed Gib	.40			
L2-57	Feed Screw Sleeve	.60			

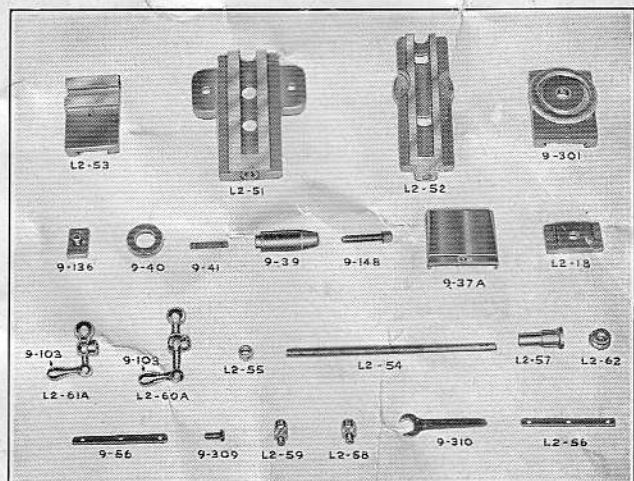
We suggest that you write your orders for repair parts like this sample:

Sears, Roebuck and Co.

Enclosed find my check for \$4.00 for which please send me by parcel post the following parts for my Dunlap Bench Lathe Model Number 534.0601.

1 each	L2-53	Tool Post Slide	\$3.45
1 each	L2-18	Clamp	.55
			<b>\$4.00</b>

Yours truly,  
John Martin,  
Box 128, Richmond, Ind.



*All Prices Are Subject to Change Without Notice*

NOTICE: This is NOT a packing slip. The parts shown and listed include accessories that are not necessarily part of this tool.  
NOTE: Standard parts, such as bolts, nuts, washers, etc., are not listed above as such parts can be obtained locally.

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