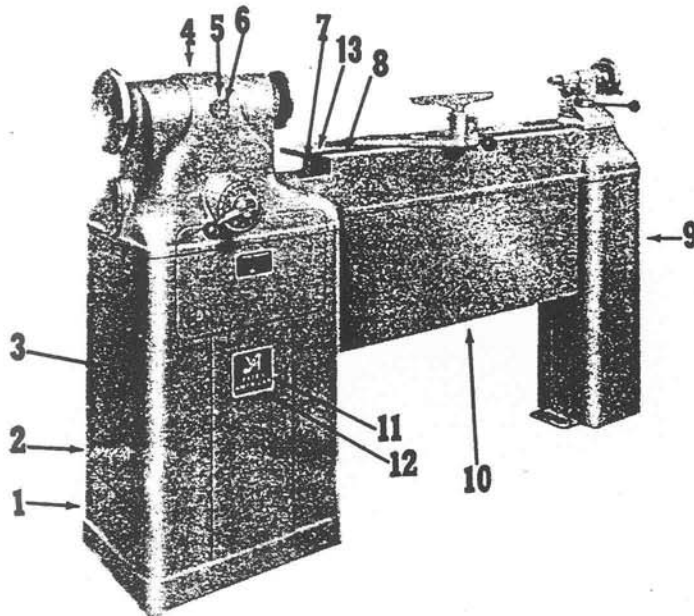




# INSTRUCTION and PARTS LIST MANUAL

## FOR J-170 12" LATHE



Main Castings and Miscellaneous Parts (Figure 1)

positive and quick-acting. Maximum rigidity and accuracy have been obtained through providing the longest possible center distance between head stock spindle bearings. Further stability is offered in the basic design; bed and head stock base are a solid one-piece casting. Even the lip on the tool rest is specially hardened. You will find safety incorporated into this J-Line machine; starting speed is positively controlled by the operator. In addition, the spindle lock cannot be engaged while the machine is running.

### INSTALLATION

Reasonable care must always be used in handling the machine. Although the machine is sturdily constructed there are certain parts which can be damaged if given rough treatment. The skids on which the machine is mounted should be left on the machine until it has been moved to place of installation.

When your J-170 Lathe was accepted for shipment by the transportation company it was in perfect condition. Before you accept it from the transportation company check carefully for damage in transit. If damage has been incurred do not accept the machine until the freight agent makes a damaged notation on your freight bill. You should thoroughly inspect the machine as soon as it is received. If any concealed damage or loss is discovered notify your freight agent at once and request that he make an inspection. This must be done within 15 days from date of delivery. Unless you do this the transportation company will not entertain a claim for loss or damage. If the agent will not make an inspection, then you should make an affidavit that you notified him on a certain date and he failed to do so. The American will not be responsible for loss or damage, but will be glad to assist in every possible manner in collecting claims for loss or damage.

Before shipment all machined surfaces were coated with a rust preventative compound. This must be removed, before using, by wiping with rags saturated with kerosene.

After the machine has been removed to its desired location it should be jacked up, the skids removed, and the machine placed on the foundation. Level the machine both lengthwise and crosswise using a spirit level on the bed. Be sure the base is evenly supported, so it will not be distorted when the bolts are tightened down.

### INSTALLING THE MOTOR

The motor for your machine is a heavy-duty type with sealed lubricated-for-life bearings, designed to give long satisfactory service. After removing it from the cart clean the motor shaft using a rag saturated in kerosene. Place the motor pulley on the motor shaft, but do not tighten the setscrew in the motor pulley. Now remove the motor connection box cover and connect the power cord as required for the operating voltage, following carefully the diagram located on the connection box cover. The motor must

Item	Part No.	Description	Qty. Reqd.
1	1143 TR	Headstock Cabinet Assembly.....	1
2	P2208	1/4 x 3/8 Round Head Machine Screws.....	4
3	1148 TR	Removable Panel.....	1
4	TR 831	Head Stock.....	1
5	P5208	#8-32 x 3/8 Self Tap Screw.....	1
6	978 TR	Cover—Stop Pin.....	1
7	TR 1160	Solid Bed.....	1
8	TR 1159	Gap Bed.....	1
9	1163 TR	Tail Stock Column Assembly.....	1
10	1157 TR	Skirt.....	1
11	2082	YA Nameplate.....	1
12	P5203	#2 Type U Drive Screws.....	4
13	880 TR	Shelf.....	1

### DESCRIPTION

The J-Line 12 inch lathe, Model J-170, has been designed to give extremely accurate performance while at the same time offering easy operation. You will find that the locks on tail stock, toolrest and toolrest base are both

connected to run counter-clockwise when viewed from the end opposite the shaft extension. The panel on the left side of the headstock cabinet is now removed by taking out the four machine screws which secure it in position. Looking into the cabinet you will see the motor support bracket which is secured to the cabinet by two hexagon head cap-screws at the front and the back. For NEMA frame 182 motors this bracket must be supported through the top set of holes at each end of the bracket. For NEMA frame 56 motors this bracket must be supported through the lower set of holes at each end of the bracket. Locate the motor support bracket as required for the frame size of the motor being used and tighten securely in position. Place the motor on the motor support bracket and locate so the holes in the motor line up approximately with the corresponding holes in the support bracket. Raise the motor slightly and place the belt hanging from the vari-speed pulley over the motor pulley. Lower the motor and place the four carriage bolts through the holes in the motor and through the corresponding holes in the motor support bracket. Place a flat washer, lock washer and nut on each carriage bolt and tighten slightly. Now, align the motor pulley by moving it on the motor shaft and tension the belt by sliding the motor on the motor support bracket while rotating the spindle slowly by turning the combination handwheel and faceplate on the outboard side of the headstock. When both belts have approximately the same tension and the belts are aligned, lock the motor pulley in position by tightening its setscrew securely against the motor shaft. Secure the motor to the motor support bracket by tightening the nuts on each of the four carriage bolts which hold the motor to the motor support bracket. As a final check on the alignment and belt tension, rotate the spindle ten complete revolutions and again check the alignment. If both belts are not properly aligned, loosen the motor pulley and adjust as required. If the belts are not uniformly tensioned, move the motor on the motor support base until uniform tension is obtained. The belts should be tensioned only as required to eliminate slippage. Excessive tension decreases bearing and belt life and may cause vibration.

## STARTING

Check all face plates and centers to see that they are securely in position.

Rotate the spindle by hand. It should turn freely with no drag.

Start the motor. If it runs in the wrong direction, correct as required.

## LUBRICATION

Lubricate the machine throughout before starting.

The spindle and motor shaft are mounted in lubricated-for-life bearings and require no supplementary lubricant.

All sliding surfaces, bed ways and screws should be lubricated once a week using a good grade of light machine oil that penetrates well. All other finished surfaces should be oiled as required to prevent rusting.

Lubricate the vari-drive pulley, through the end of its shaft, once every 40 hours of machine operation, using a good grade of light machine oil that penetrates well.

## CARE OF BED

The bed of your lathe has been accurately finished to provide a smooth and true surface for supporting the tail stock and toolrest assemblies. Care must be exercised to avoid marring this surface through careless handling of tools.

Keep the bed clean and wipe it frequently with an oily rag to insure easy operation of the toolrest and tail stock and also to prevent rust.

## WIRING THE MOTOR

You have a choice of motors which can be used on your J-170 Lathe— $\frac{3}{4}$  H.P. single phase,  $\frac{3}{4}$  H.P. three phase, 1 H.P. single phase, or 1 H.P. three phase. Select the proper motor for the work to be done and see that it is properly installed. In making the installation, be sure to follow all state and local electric codes and comply with all the ordinances covering wiring.

Shown below and to the right are the wiring diagrams for both single and three phase installations. They are simple and easy to follow. In making the three phase installation, it is best to employ the services of a licensed electrician. The single phase installation are more simple to make, usually requiring only the use of an extension cord with a plug.

**Suggestions for Single Phase Installations.** To protect your line in single phase installations, do not use the ordinary type house fuse. Instead we recommend a time delay fuse such as "fusatron", "fusestat" or similar type unit. When the motor is temporarily overloaded such as when stock is pushed through hurriedly, extensive current is used. An ordinary fuse will blow under these conditions whereas a "fusatron" or "fusestat" will accept this overload for a short period and still protect the line against any serious overload.

**Recommended Extension Cords.** Motors will work satisfactorily on voltages 10% above or below normal. Thus a motor for 115 volts service will work from 105 to 125 volts.

Low voltage causes the greatest amount of trouble and damage the first indication being slow starting or failure to start. High voltage on the other hand will only cause a slight rise in temperature which is often beneficial, and no harm is done.

Low voltage is often the result of too long or not adequate (size) extension cord. It is important, therefore, that when an extension cord must be used, to see that it is of proper size wire, per this table.

### WIRE SIZE FOR 115 AND 230 VOLT SINGLE PHASE CIRCUITS

Motor H.P.	DISTANCE—MOTOR TO FUSE OR METER BOX							
	100 Ft.		200 Ft.		300 Ft.		500 Ft.	
	115 V	230 V	115 V	230 V	115 V	230 V	115 V	230 V
$\frac{3}{4}$	No. 10	No. 12	No. 6	No. 10	No. 4	No. 8	No. 2	No. 6
1	No. 8	No. 10	No. 6	No. 8	—	No. 6	—	No. 6

If you are certain the motor is in running condition and the extension cord is in accordance with this table, yet starting is slow or motor hums and does not start, indications are that there is improper voltage at the service entrance box. In this case be sure to contact your local electric company and have them supply the correct voltage to you.

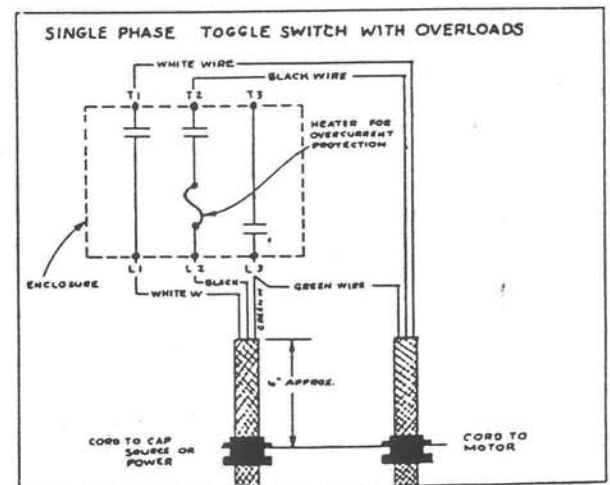


Figure 2

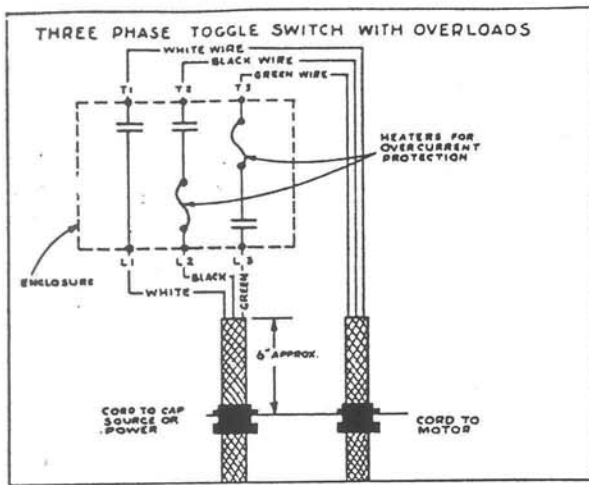


Figure 3

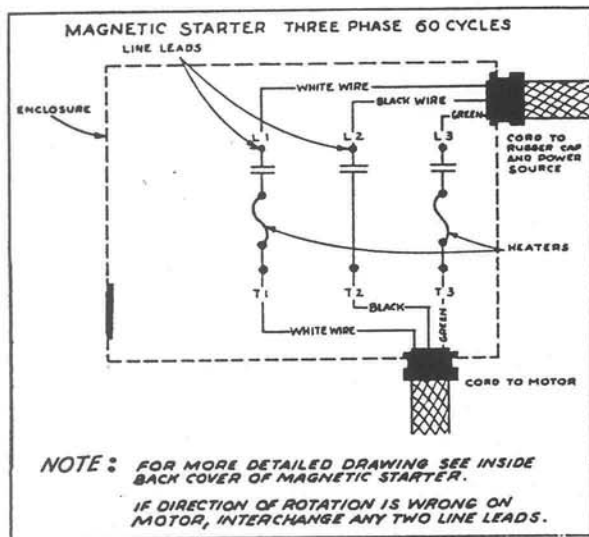


Figure 4

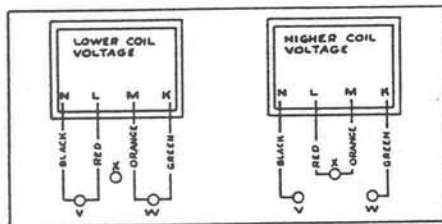


Figure 5

## VARI-SPEED DRIVE

The spindle is driven from the motor through a vari-speed pulley which allows the operator to obtain the spindle speed required for the work being performed, whether it be wood-working or metal spinning. Movement of the speed regulator, located in the center of the head stock, controls the spindle speed. Relative spindle speed is indicated, at all times, by a convenient scale on the speed regulator.

To insure adequate distribution of lubricant to all parts of the vari-drive pulley, run the machine through its entire speed range once a day. Attempting to move the speed control dial through its speed range when the motor is not functioning will result in damage to the machine.

To replace the vari-drive belts, loosen the four motor bolts and raise the motor slightly. The belt between the motor and vari-drive pulley can now be removed. Now remove the rear head stock cover which will allow removal of the belt between the spindle and vari-drive pulley.

After the vari-drive belts have been in use for a period of time they may dry out somewhat, resulting in noisy operation. To eliminate the noise and restore the pliability of the belts, take a stick of automotive belt dressing and hold it against the edges of the belts as you slowly rotate the spindle by hand. Do not over-lubricate the belts or slippage will result during operation. Before proceeding to lubricate the belts in this manner, it is advisable to disconnect the power.

## HEAD STOCK SPINDLE UNIT

The head stock spindle is threaded at both ends to receive chucks and face plates and is hollow to facilitate the ejection of centers. All centers with a #2 Morse taper shank will be received by the taper bore in the spindle on the bed side.

Large face plate work which cannot be accommodated over the bed can be mounted on the face plate at the out-board end of the spindle and turned using the floor mounted tool rest stand available as extra equipment.

## OPERATION OF THE TOOL REST ASSEMBLY

Your machine is equipped with a rapid positioning, quick-locking toolrest assembly. To lock the entire toolrest assembly to the bed turn the large ball handle to either the right or left from its free position. To lock or unlock the toolrest only, turn the small finger screw (above and to the right of the toolrest assembly lock handle) as required.

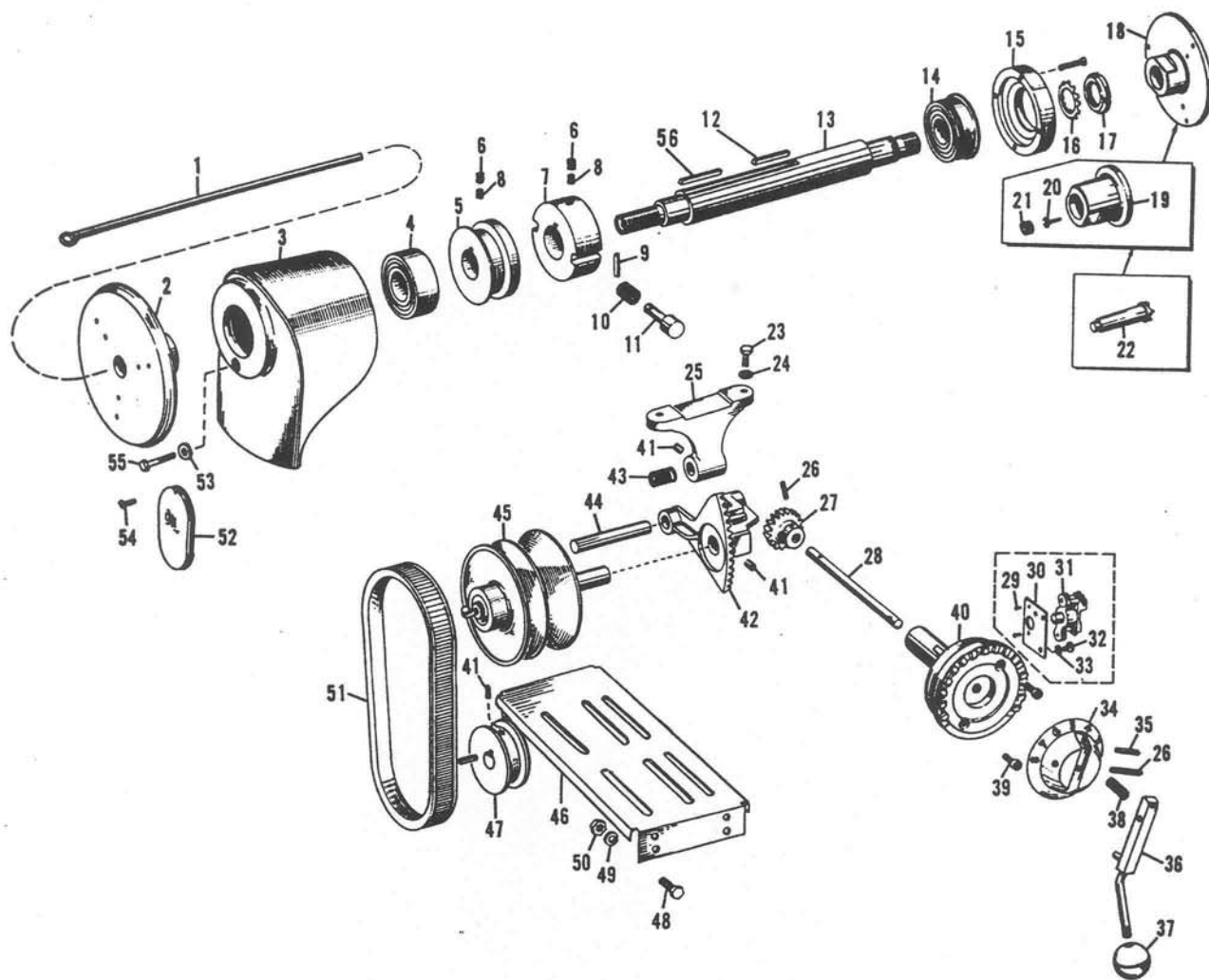
If the toolrest assembly does not lock in position, tighten the lock by turning the spring locknut, under the clamp block, to the right as required. If the toolrest assembly does not unlock sufficiently to move it freely, loosen the lock by turning the spring locknut to the left as required.

## OPERATION OF THE TAIL STOCK

The movement of the tail stock spindle is controlled by the handwheel at the rear of the tail stock. Turning the handwheel toward the right moves the tail stock spindle towards the workpiece. The tail stock spindle is removed by running it ahead as far as it will go. The tail stock spindle is locked or unlocked by turning the finger screw at the front end of the spindle as required. The spindle must be unlocked at all times before attempting to move it in or out by means of the handwheel.

The tail stock assembly is locked to the bed by turning the large ball handle to the left. If the tail stock does not lock or unlock properly, adjust the lock by removing the large handle from the end clamp block, adjusting the end clamp block as required, and turning the large handle into the correct hole in the end clamp block. If finer adjustment is required, the capscrew which connects the end clamp block and the lower clamp block can be moved with respect to the lower clamp block.

All centers with a #2 Morse taper shank will be received by the taper bore in the tail stock spindle. Before inserting end centers make sure they are free from burrs, rust and dirt. Place a few drops of oil on the shanks of all centers before inserting into position. The center can be ejected from the spindle by running the spindle back as far as it will go.



Head Stock and Drive Assembly (Figure 6)

## REPAIR PARTS

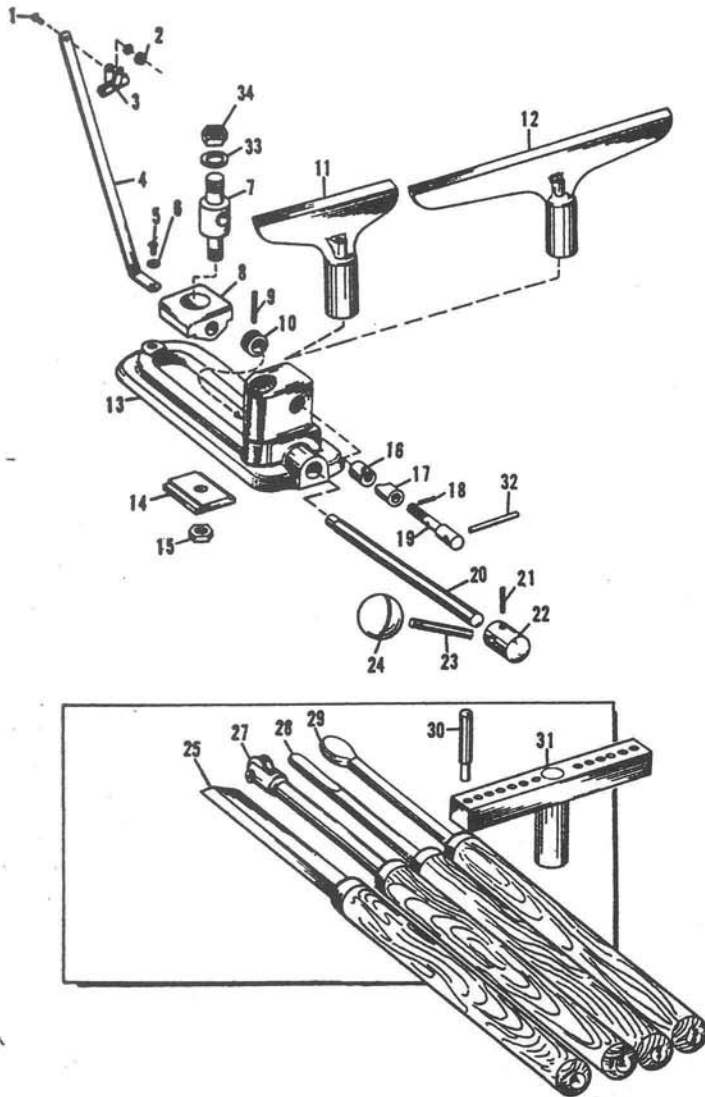
WHEN ORDERING REPAIR PARTS ALWAYS GIVE THE PART NUMBER AS SPECIFIED IN THE PARTS LIST AS WELL AS THE SERIAL NUMBER OF THE MACHINE FOR WHICH THE PART IS DESIRED.



## Parts List for Head Stock and Drive Assembly

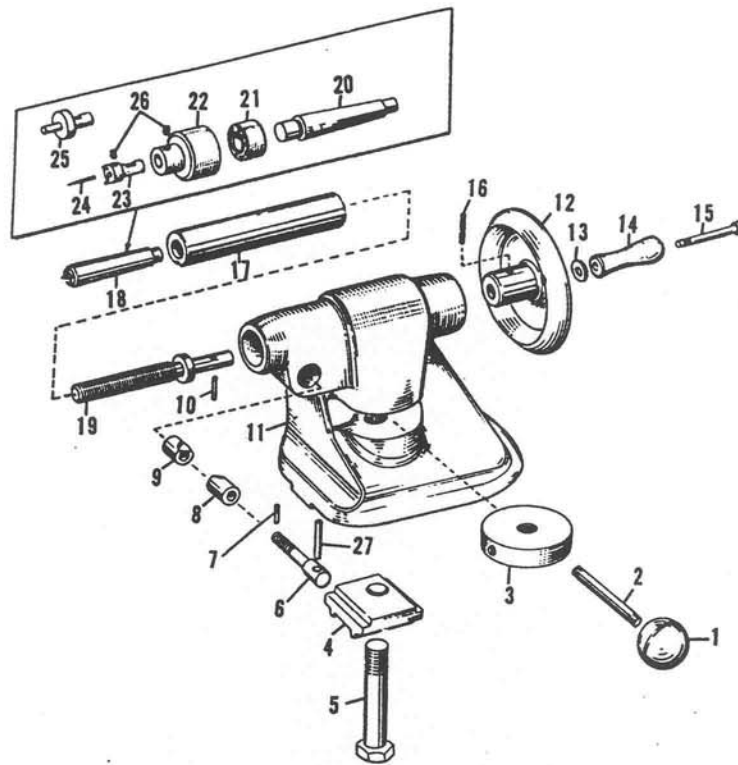
Item	Part No.	Description	Qty. Reqd.	Item	Part No.	Description	Qty. Reqd.
1	Q16 TR	Chuck Rod Assembly.....	1	28	991 TR	Pin—Pinion.....	1
2	TR 921	Handwheel—8".....	1	29	P2201	#8 x 3/8 Rd. Hd. Mach. Screw....	2
3	TR 832	Cover—Head Stock.....	1	30	838 TR	Plate—Push Button.....	1
4	81PP	Bearing.....	1	31	1370 PP	Push Button.....	1
5	944PP	Sheave—Spindle.....	1	32	P2208	1/4 x 3/8 Mach. Screw.....	3
6	P3213	3/8 x 3/16 Lock Set Screw.....	2	33	P5002	1/4 Lock Washer.....	3
7	875 TR	Collar—Spindle Lock.....	1	34	TR 1113	Dial—Speed Change.....	1
8	P3212	3/8 x 3/16 Set Screw.....	2	35	P5317	Pin—1/4 x 1 1/4.....	1
9	P5304	3/16 x 7/8 Roll Pin.....	1	36	996 TR	Handle.....	1
10	85 TR	Spring—Spindle Lock.....	1	37	786 PP	Ball.....	1
11	821 TR	Pin—Spindle Lock.....	1	38	193 BW	Spring—Dial Stop.....	1
12	P5402	Key—3/8 x 3/8 x 1 1/2.....	1	39	P3411	3/8 x 1 1/2 Hex. Soc. Cap Screw...	2
13	819 TR	Spindle.....	1	40	TR 985	Bearing—Pinion.....	1
14	82PP	Bearing.....	1	41	P3215	3/8 x 3/8 Hex. Socket Set Screw...	3
15	TR 868	Cover—Ball Bearing.....	1	42	TR 1112	Gear—Speed Change.....	1
16	758PP	Washer.....	1	43	1135 TR	Spring—Motor Hinge.....	1
17	738PP	Nut.....	1	44	840 TR	Pin—Gear.....	1
18	TR 527	Faceplate—6".....	1	45	4317 PP	Pulley.....	1
19	50 L 267	Rosette Chuck—3".....	1	46	1168 TR	Bracket—Motor Assembly.....	1
20	P8024	#14 x 1" Wood Screw.....	1	47		Sheave (specify bore).....	1
21	P3214	3/8 x 1/2 Socket Set Screw.....	1	48	P2201	3/8 x 3/8 Hex. Hd. Cap Screw....	4
22	1786PP	Spur Center #2 Morse Taper 1" dia. Hd.....	1	49	P5000	3/8 Lock Washer.....	4
23	P2004	3/8 x 1" Hex. Hd. Cap Screw....	2	50	P4404	3/8 Hex. Nut.....	4
24	P5000	3/8 Lock Washer.....	2	51	1750PP	Belt 1 1/2 x 30".....	2
25	TR 836	Hanger—Speed Change.....	1	52	TR 1154	Oil Cover.....	1
26	P5316	Pin—1/4 x 1 3/4.....	2	53	P4804	3/8 Common Washer.....	1
27	TR 981	Pinion—Speed Change.....	1	54	P2207	1/4 x 3/4 Rd. Hd. Mach. Screw....	1
				55	P2022	3/8 x 1 3/4 Hex. Hd. Cap Screw....	1
				56	P5403	3/8 x 3/8 x 1 Key.....	1

## Parts List for Tool Rest Assembly



Tool Rest Assembly (Figure 7)

Item	Part No.	Description	Qty. Reqd.
1	P2201	#8 x 3/8 Rd. Hd. Mach. Screw....	1
2	P4411	#8 Hex. Nut.....	1
3	1438PP	Bulldog Clip—1 1/4.....	1
4	923 TR	Blue Print Holder.....	1
5	P2213	1/4 x 1/2 Rd. Hd. Mach. Screw....	1
6	P5002	1/4 Lock Washer.....	1
7	1164 TR	Eyebolt Base Clamp.....	1
8	TR 1165	Bridge—Eyebolt.....	1
9	P5318	Pin—1/4 x 7/8.....	1
10	560 TR	Collar—Eccentric Shaft.....	1
11	TR 856	Toolrest—6".....	1
12	TR 859	Toolrest—12".....	1
13	TR 1103	Base—Toolrest.....	1
14	844 TR	Block—Base Clamp.....	1
15	3107PP	1/2-13 Lock Nut.....	1
16	870 TR	Plug—Clamp—Outer.....	1
17	871 TR	Plug—Clamp—Inner.....	1
18	P5300	Pin—3/32 x 1/2.....	1
19	869 TR	Handwheel—Spindle Lock.....	1
20	1106 TR	Shaft—Eccentric.....	1
21	P5317	Pin 1/4 x 1 1/4.....	1
22	842 TR	End—Clamp Lever.....	1
23	845 TR	Stud—Dial.....	1
24	786PP	Ball.....	1
25	1451PP	Pointed Tool.....	1
27	1453PP	Beading Roller.....	1
28	1450PP	Flat Tool.....	1
29	1452PP	Flat (Dutch) Ball Tool.....	1
30	685 TR	Pin—Fulcrum.....	1
31	683 TR	Toolrest Assembly (Metal Spinning).....	1
32	P5321	5/16 x 2 3/4 Pin.....	1
33		5/8 Special Washer.....	1
34		5/8 11 NC Hex Nut.....	1



Tail Stock Assembly (Figure 8)

### Parts List for Tail Stock Assembly

Item	Part No.	Description	Qty. Reqd.	Item	Part No.	Description	Qty. Reqd.
1	2560PP	Ball.....	1	14	2032	Handle—Rotating.....	1
2	1116 TR	Stud—End Clamp.....	1	15	2129	Pin—Rotating Handle.....	1
3	852 TR	End—Clamp Lever.....	1	16	P5320	Pin— $\frac{3}{16}$ x $1\frac{1}{8}$ .....	1
4	TR 1117	Block—Clamp.....	1	17	1153 TR	Spindle.....	1
5	P2023	$\frac{3}{8}$ x $4\frac{1}{2}$ Hex. Hd. Cap Screw...	1	18	1787PP	Cup—Center— $\frac{3}{4}$ dia. Head.....	1
6	869 TR	Handwheel—Spindle Lock.....	1	19	1115 TR	Screw—Spindle.....	1
7	P5300	Pin $\frac{3}{32}$ x $\frac{1}{2}$ .....	1	20	997 TR	Shank—Bearing.....	1
8	871 TR	Plug—Clamp—Inner.....	1	21	2691PP	Bearing.....	1
9	870 TR	Plug—Clamp—Outer.....	1	22	998 TR	Holder—Centers.....	1
10	P5319	Pin $\frac{3}{16}$ x $\frac{5}{8}$ .....	1	23	1084 TR	Cup Center.....	1
11	TR 833	Tailstock.....	1	24	1087 TR	Pin—Cup Center.....	1
12	TR 1128	Handwheel—Spindle.....	1	25	682 TR	Plug Center.....	1
13	P8004	Fiber Washer.....	1	26	P3216	$\frac{1}{4}$ x $\frac{1}{4}$ Socket Set Screw.....	1
				27	P5321	$\frac{3}{16}$ x $2\frac{3}{4}$ Pin.....	1