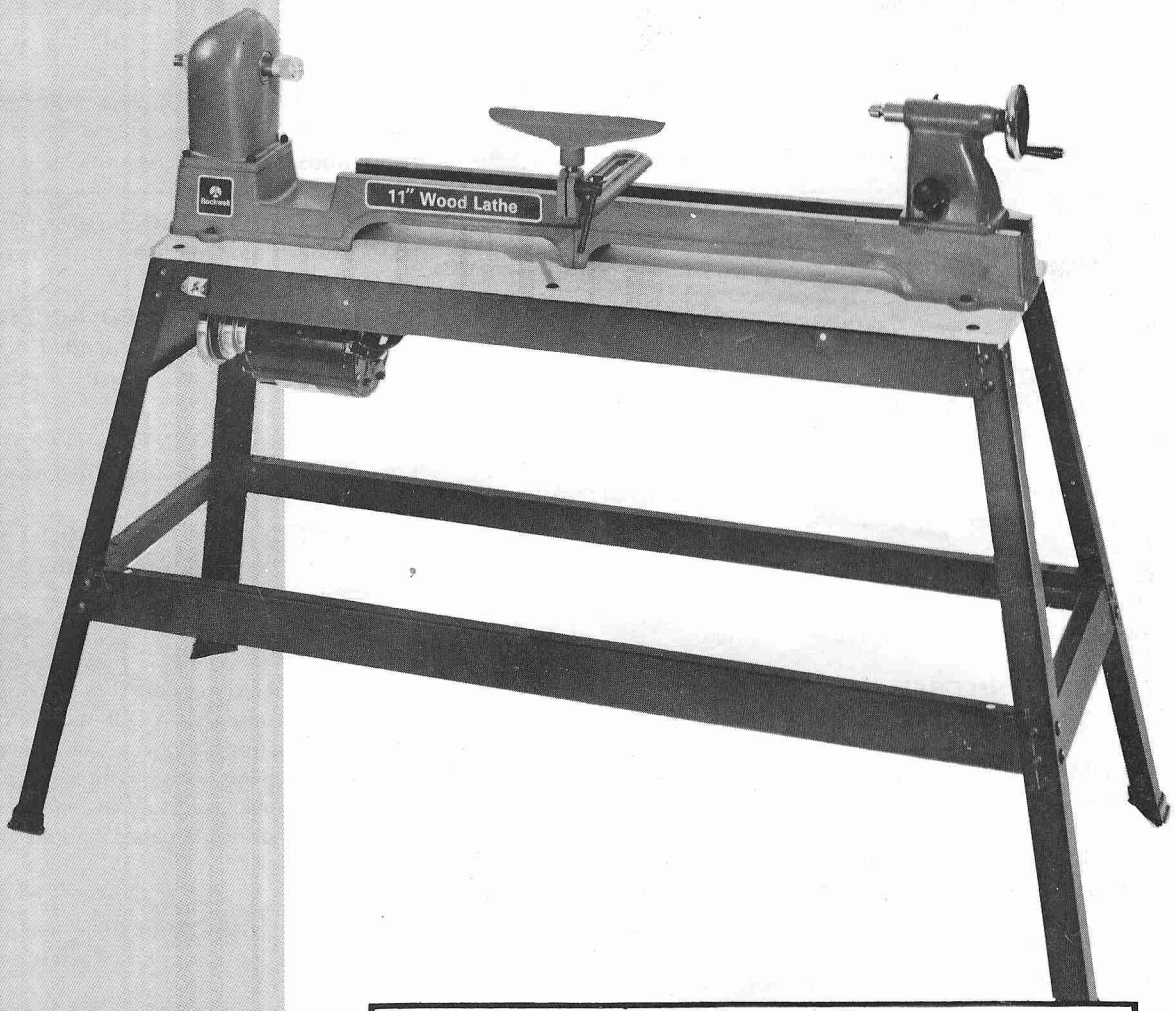
Instruction manual

11" Wood Lathe With Stand



Rockwell

The Serial No./Model No. plate is attached to the headstock end of the lathe bed. Locate this plate and record the Serial No. and Model No. plus the date of purchase in your manual for future reference.

Serial No. _____

Model No. _____

Date of Purchase _____

PART NO. 425-99-651-0013

DATED 12-1-83

SAFETY RULES FOR ALL TOOLS

As with all power tools there is a certain amount of hazard involved with the operator and his use of the tool. Using the tool with the respect and caution demanded as far as safety precautions are concerned will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or completely ignored, personal injury to the operator can develop.

There are also certain applications for which this tool was designed. Rockwell strongly recommends that this tool NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the tool until you have written Rockwell and we have advised you.

ROCKWELL INTERNATIONAL
MANAGER OF PRODUCT SAFETY
POWER TOOL DIVISION
400 NORTH LEXINGTON AVENUE
PITTSBURGH, PENNSYLVANIA 15208

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE TOOL.** Learn the tool's application and limitations as well as the specific hazards peculiar to it.

2. **KEEP GUARDS IN PLACE** and in working order.

3. **GROUND ALL TOOLS.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accomodate a two-prong receptacle, the adapter lug must be attached to a known ground. Never remove the third prong.

4. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on"

5. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.

6. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.

7. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.

8. **MAKE WORKSHOP CHILDPROOF** - with padlocks, master switches, or by removing starter keys.

9. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.

10. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.

11. **WEAR PROPER APPAREL.** No loose clothing, gloves, neckties, rings, bracelets, or other jewelry to get caught in moving parts. Nonslip foot wear is recommended. Wear protective hair covering to contain long hair.

12. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operations is dusty. Everyday eyeglasses only have impact resistant lenses; they are NOT safety glasses.

13. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

14. **DON'T OVERREACH.** Keep proper footing and balance at all times.

15. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. **DISCONNECT TOOLS** before servicing and when changing accessories such as blades, bits, cutters, etc.

17. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.

18. **AVOID ACCIDENTAL STARTING.** Make sure switch is in "OFF" position before plugging in power cord.

19. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.

20. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function — check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

21. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.

22. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

23. **DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drugs, alcohol or any medication.

24. **MAKE SURE TOOL IS DISCONNECTED FROM POWER SUPPLY** while motor is being mounted, connected or reconnected.

ADDITIONAL SAFETY RULES FOR WOOD LATHES

1. **MAKE SURE** the tool rest height is adjusted properly.

2. **KEEP** tool rest as close to the work as possible.

3. **REMOVE** the tool rest before sanding or polishing.

4. **EXAMINE** set-up carefully before turning on the power.

5. **ROTATE** workpiece by hand to check clearance before engaging power.

6. **WHEN TURNING** between centers **MAKE SURE** the tailstock center is snug against the workpiece and locked. Tailstock center should be lubricated if it is not a ball bearing center.

7. **MAKE SURE** screw fasteners do not interfere with the turning tool at the finished dimension of the workpiece when faceplate turning.

8. **EXAMINE** workpiece for flaws and test glue joints before placing workpiece in lathe.

9. **WHEN** roughing off, **DO NOT** jam tool into workpiece or take too big a cut.

10. **CHECK AND SELECT** proper speed before turning lathe on.

11. **NEVER** drive wood into drive center when it is in headstock. Set drive center into wood with a soft mallet prior to installing it in the lathe.

12. **NEVER** loosen tailstock spindle while work is turning.

13. **NEVER** adjust tool rest while work is turning.

14. **WHEN** faceplate turning, be sure material is securely fastened to the faceplate.

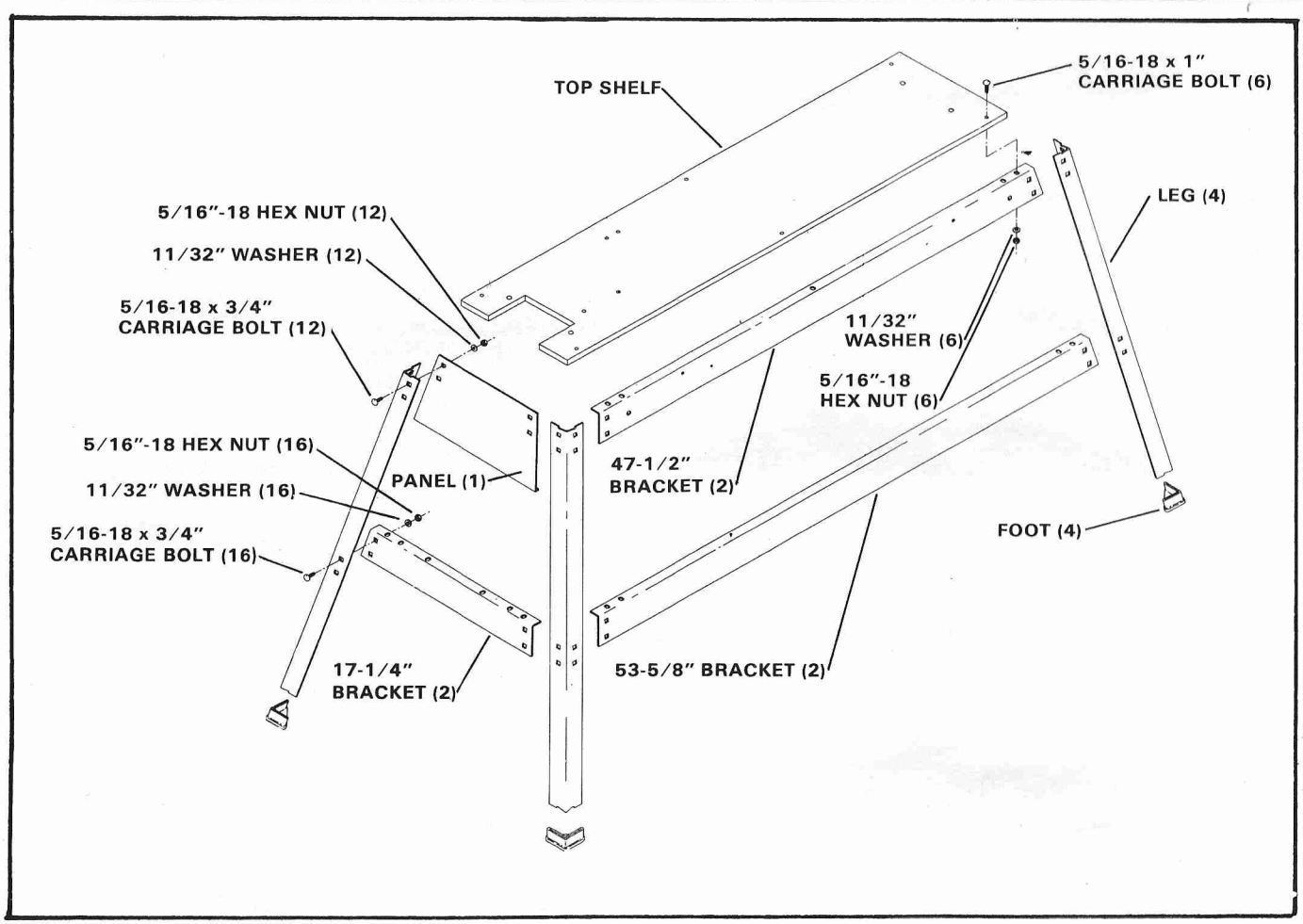


Fig. 2

UNPACKING AND CLEANING

The lathe, stand and all hardware required for assembly are shipped in one carton. Carefully unpack and account for all items before disposing of any packing material. Remove the protective coating from the machined surfaces of the lathe. This coating may be removed with a soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose).

ASSEMBLING STAND

Assemble the top shelf, support brackets, legs and end panel of the stand, as shown in Fig. 2. The correct size and quantity of hardware required for assembly of the stand is illustrated in Fig. 2. NOTE: The six 5/16-18 x 1" carriage bolts are used to bolt the top shelf to the stand. Press a rubber foot onto the bottom of each of the four legs, as shown.

MOTORS FOR YOUR LATHE

The Rockwell motors available for your lathe are:

62-142, 1/2 H.P., ball bearing, capacitor start, 1725 RPM, 115 Volt with remote control toggle switch and cord.

62-138, 1/2 H.P., sleeve bearing, split phase, 1725 RPM, 115 Volt with remote control toggle switch and cord.

These motors have been specially selected to best supply power to your machine and the relative safety of the machine is enhanced by their use. We therefore strongly suggest that only these motors be used as the use of other motors may be detrimental to the performance and safety of your lathe.

ASSEMBLING MOTOR MOUNTING HINGE BRACKET

Assemble the motor mounting hinge bracket, as shown in Fig. 3, using two 5/16-18 x 5/8" hex head cap screws and two 5/16"-18 hex lock nuts.

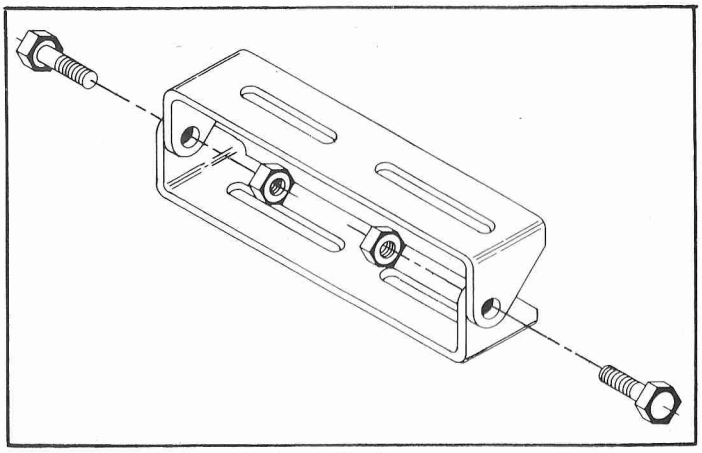


Fig. 3

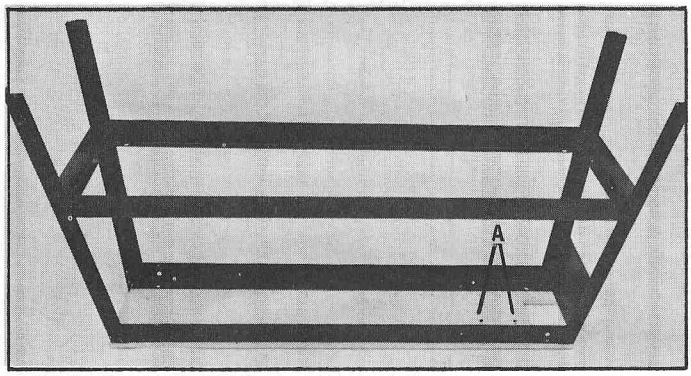


Fig. 4

ASSEMBLING HINGE BRACKET TO STAND

1. Turn stand upside down with top shelf of stand on floor, as shown in Fig. 4.

2. Insert two 5/16"-18 x 1" carriage bolts up through the two holes (A) Fig. 4.


5/16-18 x 1" Carriage Bolt

3. Place the motor mounting hinge bracket (B) Fig. 5, on the two carriage bolts which were inserted in STEP 2. Fasten, as shown in Fig. 5, using two 5/16" flat washers and two 5/16"-18 hex nuts (C).


5/16"-18 Hex Nut


5/16" Flat Washer

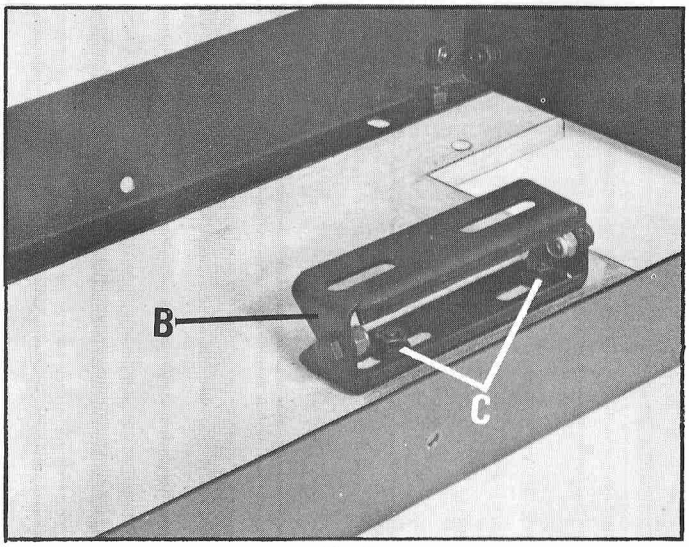


Fig. 5

ASSEMBLING MOTOR PULLEY TO MOTOR SHAFT

Assemble motor pulley (A) to motor shaft with smallest groove of motor pulley toward the motor, as shown in Fig. 6. Tighten set screw (B) against key in motor shaft.

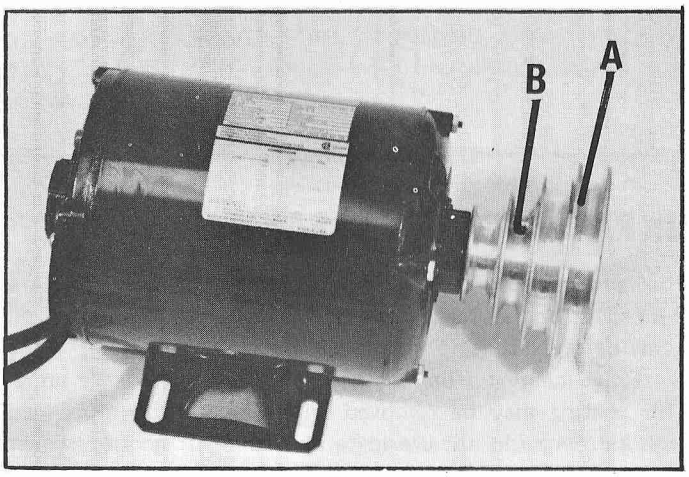
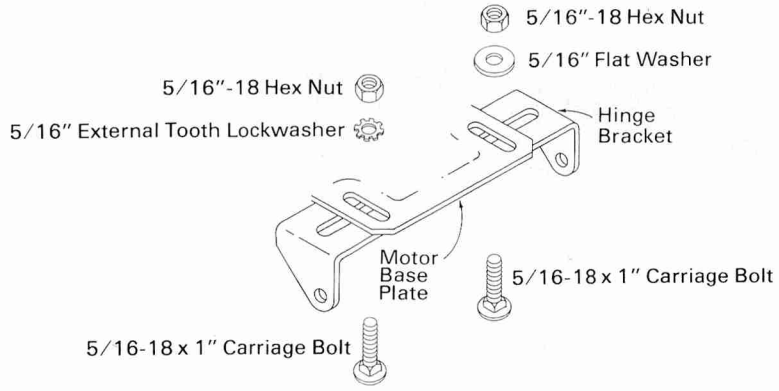


Fig. 6

ASSEMBLING MOTOR TO HINGE BRACKET

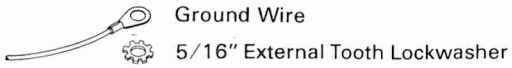
Assemble motor to the hinge bracket, as shown in Figs. 7 and 8.

Bolt motor base plate to hinge bracket using two 5/16-18 x 1" carriage bolts (A), one 5/16" flat washer (B), one 5/16" external tooth lockwasher (C) and two 5/16"-18 hex nuts (D), as shown in Fig. 8. **IMPORTANT:** The proper grounding of the motor to prevent electric shock hazard, depends on the use of the external tooth lockwasher (C), as shown.



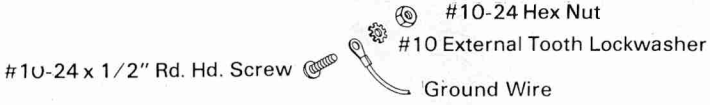
ASSEMBLING GROUND WIRE TO MOTOR AND STAND

1. Place 5/16" external tooth lockwasher (A) and ground wire (B) on carriage bolt, as shown in Fig. 9.



2. Fasten ground wire (B) to carriage bolt using the 5/16 - 18 hex nut (C) as shown in Fig. 10.

3. Fasten remaining end of the ground wire (B) to the stand using the #10-24 x 1/2" round head screw (D), external tooth lockwasher (E) and hex nut (F), as shown in Fig. 11. **IMPORTANT:** The proper grounding of the motor to prevent electric shock hazard, depends on the use of the external tooth lockwashers (A) Fig. 9, and (E) Fig. 11, as shown.



4. Replace stand to the upright position.

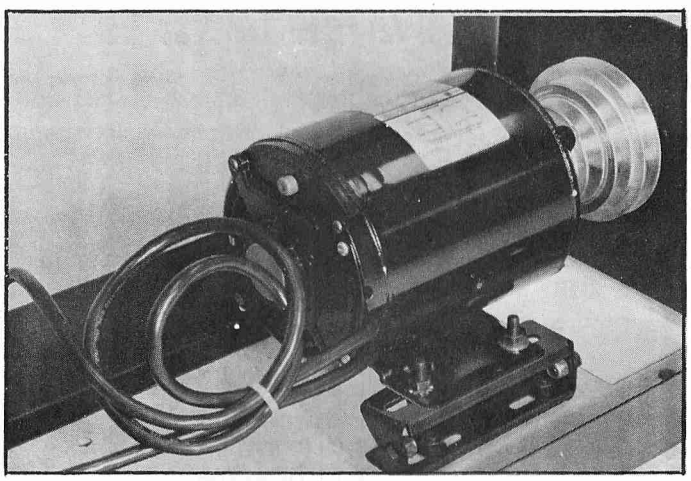


Fig. 7

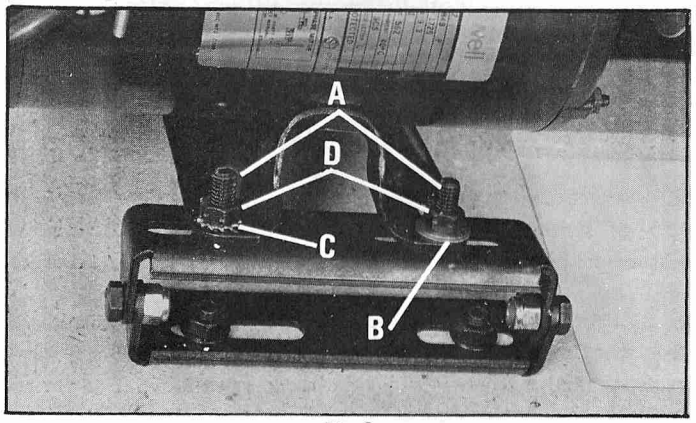


Fig. 8

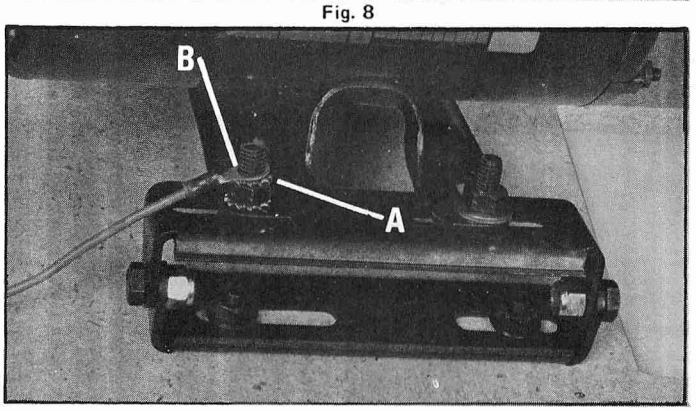


Fig. 9

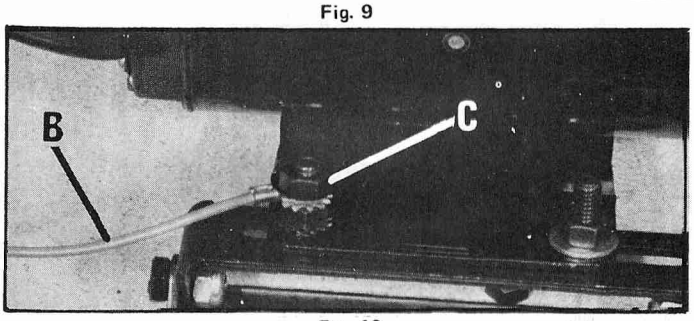


Fig. 10

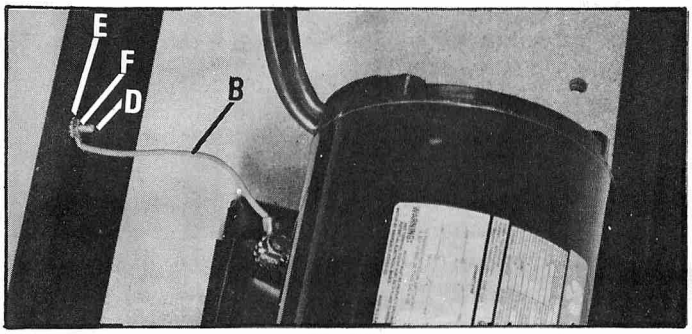


Fig. 11

ASSEMBLING SWITCH TO STAND

If you purchased one of the Rockwell motors recommended for use with your lathe, you received a switch and power cord set connected to the motor. Assemble the switch to the lathe stand as follows:

1. **IMPORTANT:** When assembling the switch to the stand, **MAKE SURE** the motor power cord is not connected to the power source.

2. Remove outer hex nut (A) Fig. 12, from the switch stem. Leave external tooth lockwasher (B) and inner hex nut (C) on switch stem. **IMPORTANT:** The proper grounding of the switch to prevent electric shock hazard, depends on the use of the external tooth lockwasher (B) in the manner shown.

3. Insert switch stem through hole in front of stand, as shown in Fig. 13. Make sure keyway in switch stem is at the bottom.

4. Place switch bracket (D) Fig. 13, on switch stem with key of switch bracket engaged in keyway of switch stem. Fasten in place with hex nut that was removed in STEP 2.

5. **IMPORTANT:** We suggest that when the lathe is not in use, the switch be locked in the "OFF" position using a padlock. Catalog No. 49-031 Padlock is available as an accessory.

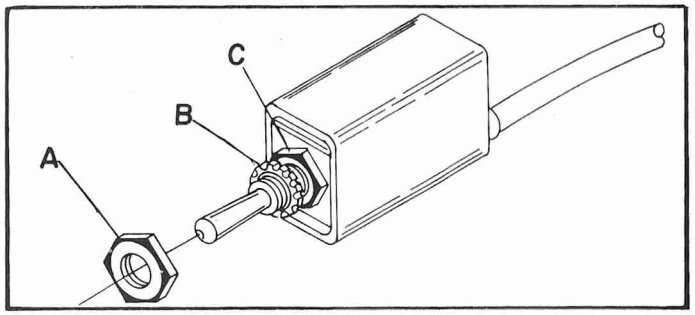


Fig. 12

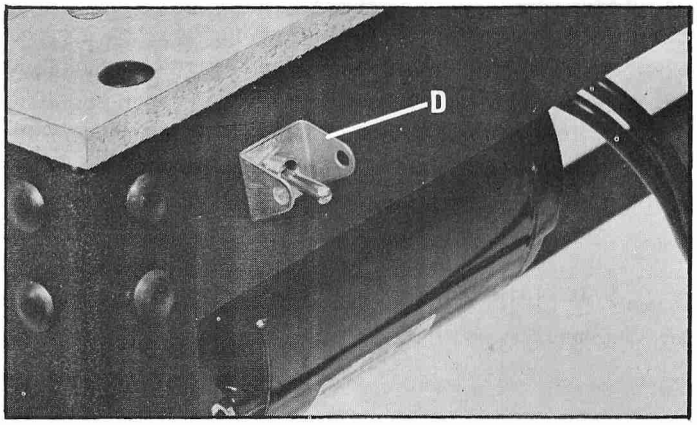
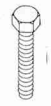


Fig. 13

ASSEMBLING LATHE ON THE STAND

1. Assemble the lathe on the stand, as shown in Fig. 14, using four 5/16-18 x 1-1/2" hex head cap screws, 5/16" flat washers and 5/16"-18 hex nuts. Two of the hex head cap screws are shown at (A) Fig. 14.


5/16-18 x 1-1/2" Hex Hd. Cap Screw


5/16" Flat Washer


5/16"-18 Hex Nut

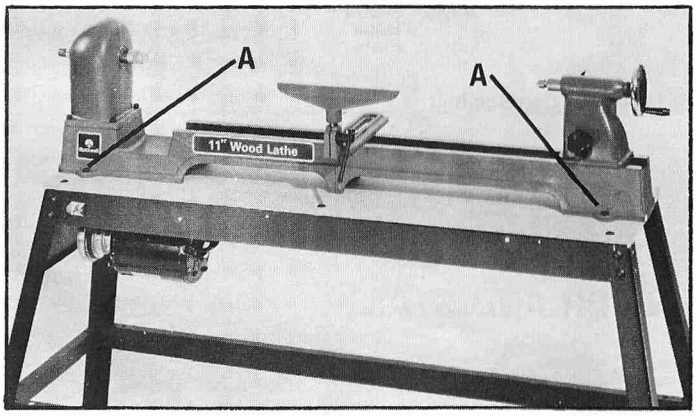


Fig. 14

ASSEMBLING BELT AND ALIGNING MOTOR PULLEY TO SPINDLE PULLEY

1. Lift up on motor and hold in place, as shown in Fig. 15, using support tool supplied.

2. Assemble belt to motor pulley (A), as shown in Fig. 15.

3. Make sure motor pulley (A) Fig. 15, is aligned to spindle pulley (B). If necessary, loosen set screw and slide motor pulley (A) in or out on motor shaft. NOTE: If additional adjustment is required the motor can be moved on the hinge bracket.

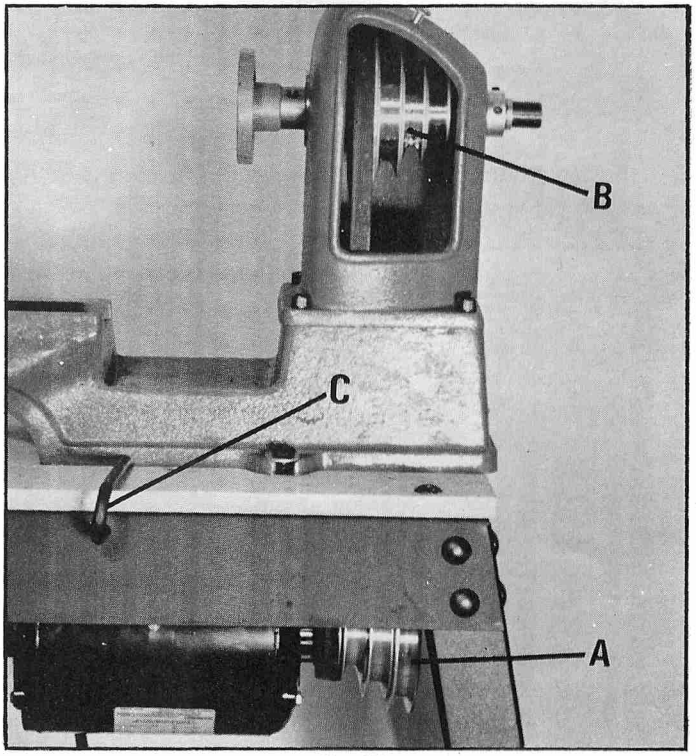


Fig. 15

CONNECTING LATHE TO POWER SOURCE

POWER CONNECTIONS

A separate electrical circuit should be used for your power tools. This circuit should not be less than #12 wire and should be protected with a 20 AMP time lag fuse. If an extension cord is used, use only 3-wire extension cords which have 3-prong grounding type plugs and 3-pole receptacles which accept the tools plug. For distances up to 100 feet use #12 wire. For distances up to 150 feet use #10 wire. Replace or repair damaged or worn cord immediately. Before connecting the motor to the power line, make sure the switch is in the "OFF" position and be sure the electric current is of the same characteristics as stamped on motor nameplate. All line connections should make good contact. Running on low voltage will injure the motor.

GROUNDING INSTRUCTIONS

This tool must be grounded while in use to protect the operator from electric shock hazard. The recommended motors are shipped wired for use for 115 Volt, single phase and are equipped with an approved 3-conductor cord and 3-prong grounding type plug to fit the proper grounding type receptacle, as shown in Fig. 16. The green conductor in the cord is the grounding wire. Never connect the green wire to a live terminal.

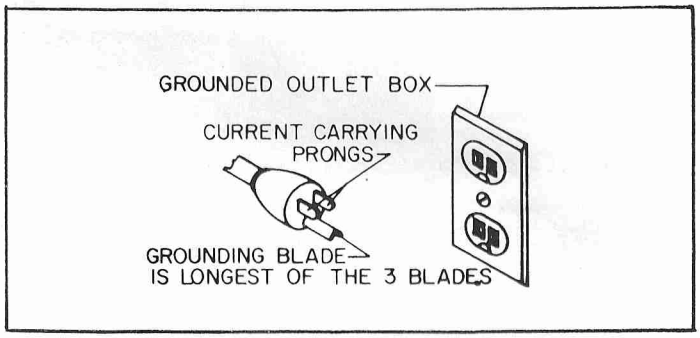


Fig. 16

An adapter, shown in Fig. 17, is available for connecting 3-prong grounding type plugs to 2-prong receptacles. **THIS ADAPTER IS NOT APPLICABLE IN CANADA.** The green-colored rigid ear, lug, etc., extending from the adapter is the grounding means and must be connected to a permanent ground such as to properly grounded outlet box, as shown in Fig. 17.

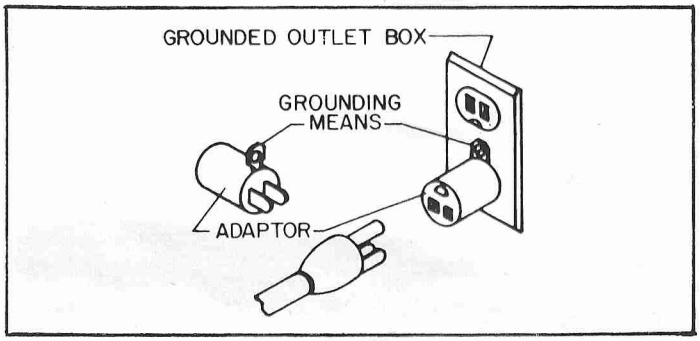


Fig. 17

IMPORTANT: IN ALL CASES MAKE SURE THE RECEPTACLE IN QUESTION IS PROPERLY GROUNDED. IF YOU ARE NOT SURE HAVE A CERTIFIED ELECTRICIAN CHECK THE RECEPTACLE.

SPINDLE SPEEDS

Spindle speeds of 800, 1350, 2200 and 3700 RPM are available when your machine is equipped with a 1725 RPM motor. The highest speed is obtained when the belt is on the largest step of the motor pulley and the smallest step of the spindle pulley, as shown in Fig. 18. NOTE: Refer to the speed chart on page 11, for Suggested Spindle Speeds.

CAUTION: ALWAYS DISCONNECT MACHINE FROM THE POWER SOURCE WHEN CHANGING SPEEDS.

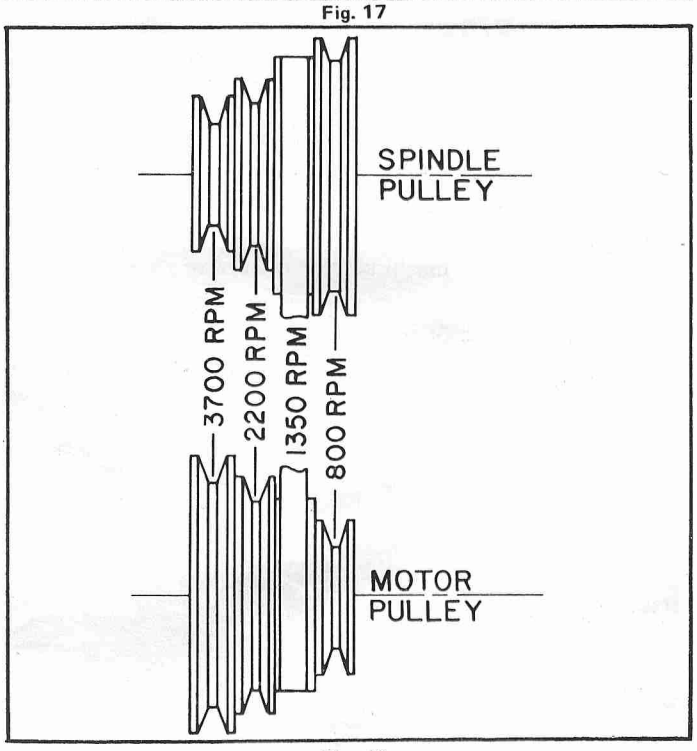


Fig. 18

CHANGING SPINDLE SPEEDS

When changing speeds on your wood lathe, proceed as follows:

1. **DISCONNECT THE MACHINE FROM THE POWER SOURCE.**

2. Loosen screw (A) Fig. 19, and remove headstock rear guard (B).

3. Release the belt tension by lifting up on the motor. Use support tool (B) Fig. 20, to hold the motor in the raised position while positioning the belt.

4. Position belt on the desired steps of the spindle and motor pulleys and remove support tool (B) Fig. 20.

5. Replace rear headstock guard (B) Fig. 19.

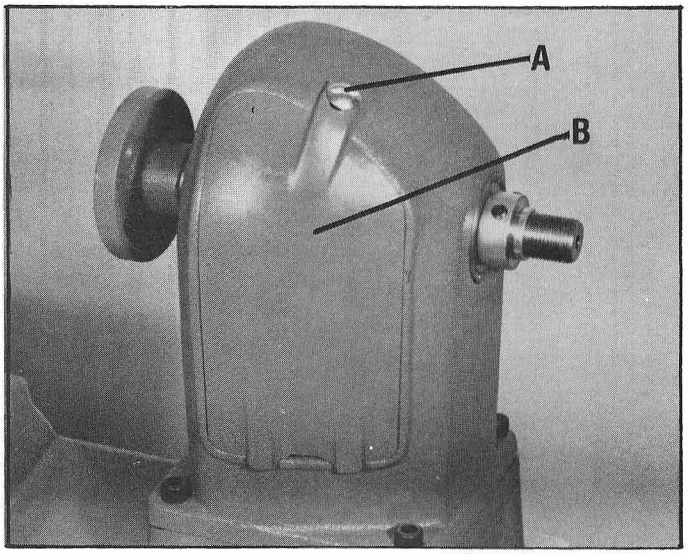


Fig. 19

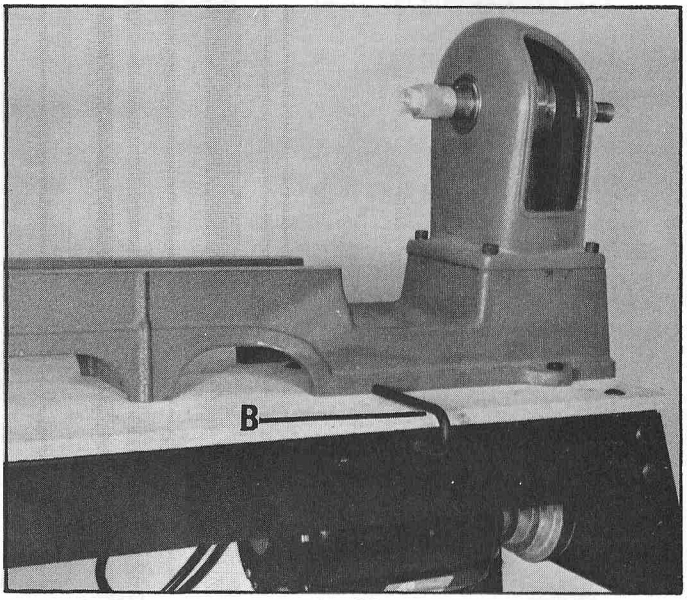


Fig. 20

ASSEMBLING HEADSTOCK ACCESSORIES

The 46-083 Spur (Drive) Center and the 46-091 3" diameter Face Plate are supplied as standard equipment with your lathe. The Spur Center is shipped assembled to the headstock. To remove and install headstock accessories, proceed as follows:

1. Disconnect the machine from the power source.

2. Insert one end of support tool (A) Fig. 21, into hole in spindle, as shown, and remove drive center (B) using wrench (C).

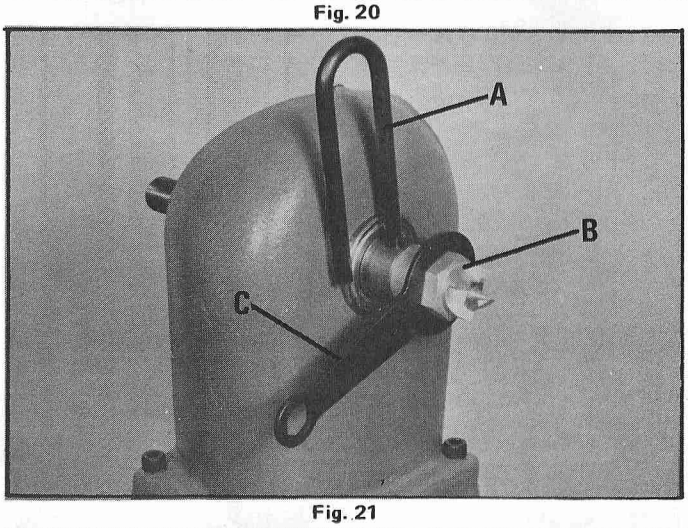


Fig. 21

3. Fig. 22, illustrates the 46-091 3" Diameter face plate assembled to the spindle.

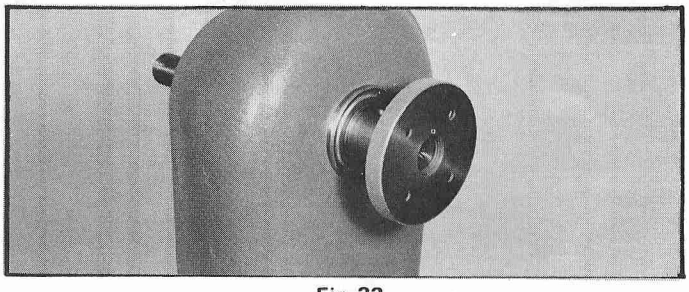


Fig. 22

TOOL REST ADJUSTMENTS

To move the tool rest support along the lathe bed, loosen bolt (A) Fig. 23, and slide tool rest support (B) to the desired position on the bed. When in position, tighten bolt (A).

For most normal lathe operations, the tool rest (C) Fig. 23, should be positioned about 1/8" away from the work and 1/8" above the work centerline. This position can be varied to suit the work and the operator. To adjust the height of the tool rest (C) loosen lock lever (D) and position tool rest to the desired height. Then tighten lock lever (D).

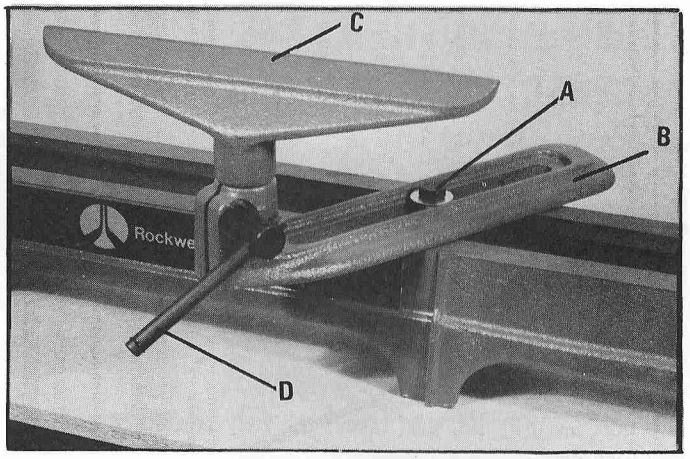


Fig. 23

TAILSTOCK ADJUSTMENTS

To slide the tailstock along the lathe bed, loosen lock handle (D) Fig. 24, slide tailstock to desired position and tighten lock handle (D). To move the ram (A) Fig. 24, in or out, loosen lock knob (B) and turn handwheel (C). When ram is in desired position, tighten lock knob (B).

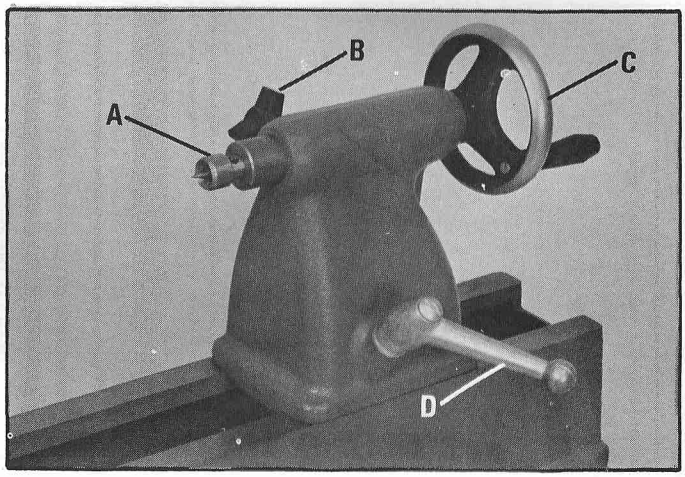


Fig. 24

ASSEMBLING THE 46-100 ACCESSORY SHELF EXTENSION

The 46-100 Shelf Extension Kit is available as an accessory to extend the top shelf of the lathe stand in conjunction with use of the 46-146 accessory 16" bed section.

1. Assemble bracket (A) Fig. 25, to the stand as shown using four 5/16-18 x 3/4" carriage bolts (B). Fasten with four 11/32" flat washers and four 5/16"-18 hex nuts. Do not tighten at this time.

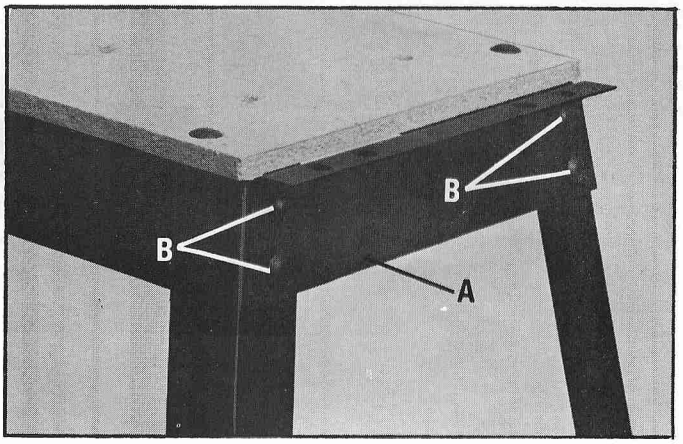


Fig. 25

5/16" - 18 Hex Nut
11/32" Flat Washer

5/16 x 3/4" Carriage Bolt

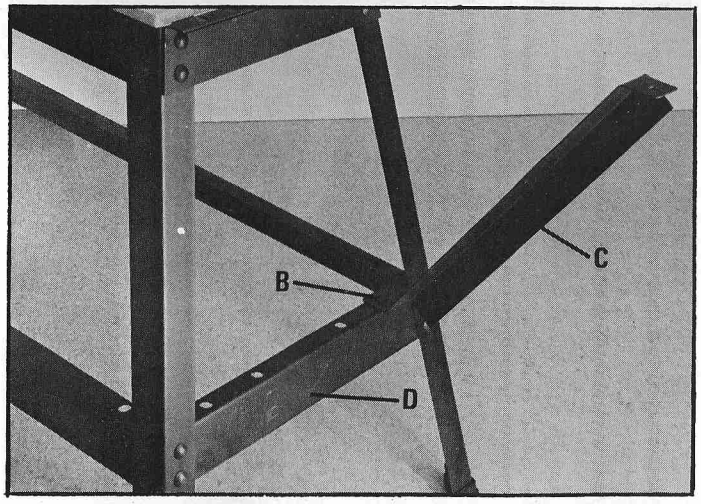


Fig. 26

2. Assemble each of the two diagonal brackets (C) Fig. 26, to leg bracket (D) using a 5/16-18 x 3/4" carriage bolt (B). Fasten each of the diagonal brackets with an 11/32" flat washer and a 5/16-18" hex nut. Do not tighten at this time.

3. Assemble shelf (E) Fig. 27, to brackets (A) and (D) using four 5/16-18 x 1" carriage bolts (F). Fasten with four 11/32" flat washers and four 5/16-18" hex nuts. Do not tighten at this time.

4. Use a straight edge to align shelf (E) Fig. 27, with the main shelf of the stand and tighten all hex nuts.

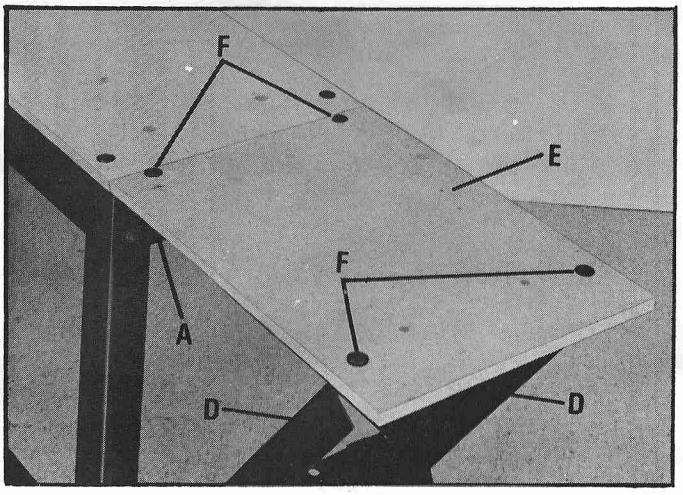


Fig. 27

ASSEMBLING THE 46-146 ACCESSORY 16" BED SECTION

The 46-146, 16" Bed Section is an accessory which increases the distance between centers from 36 inches to 52 inches for turning extra long stock. To assemble the accessory 46-146 Bed Section to your lathe, proceed as follows:

1. Remove the lathe from the stand.

2. Remove hex nut (D), lockwasher (C), flat washer (B) and bolt (A) Fig. 28, that fasten the two sections of the lathe bed together.

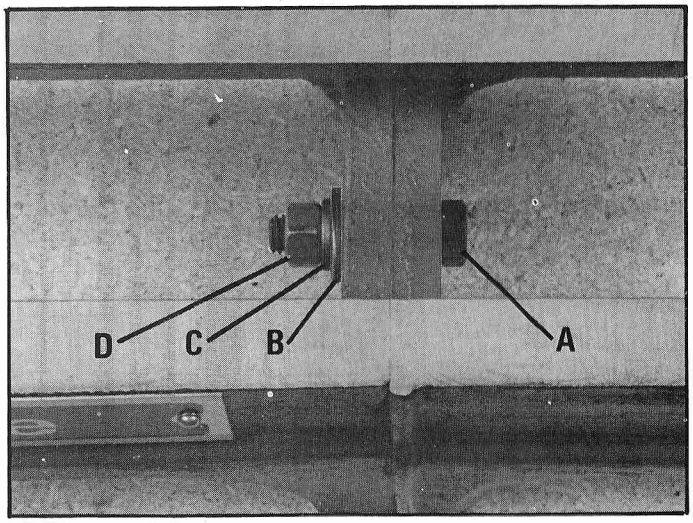


Fig. 28

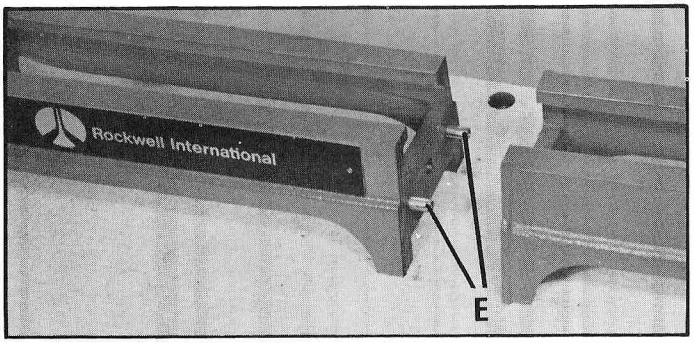


Fig. 29

3. Separate the sections of the lathe bed and remove the two roll pins (E) Fig. 29.

4. Make certain that mating surfaces of the lathe bed and accessory bed section are free of paint, rust or burrs. Clean with steel wool if necessary.

5. Align accessory bed section (G) Fig. 30, to headstock end of lathe bed as shown, and assemble bolt (A) that was removed in STEP 2, and an additional flat washer (F) provided. Fasten using flat washer (B), lockwasher (C) and hex nut (D) Fig. 30, that were removed in STEP 2. Do not tighten at this time.

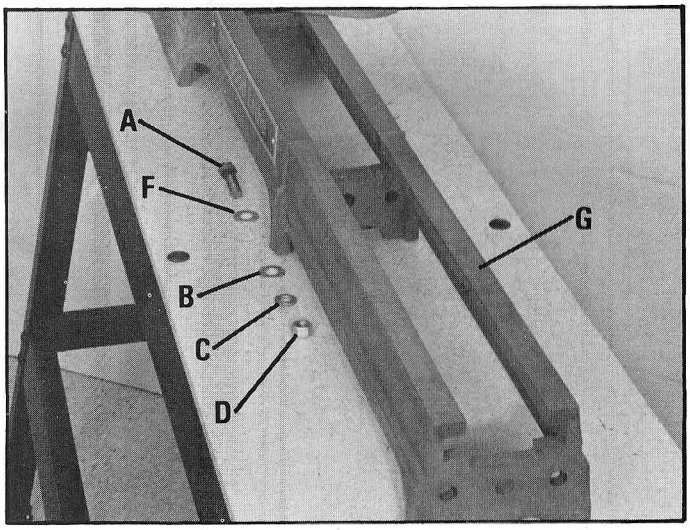
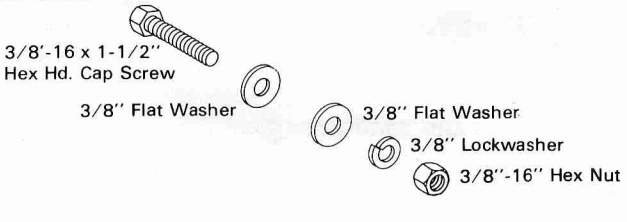
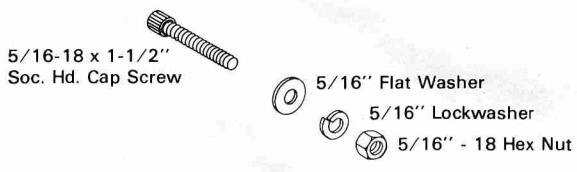


Fig. 30



6. Insert two 5/16-18 x 1-1/2" socket head cap screws (H) Fig. 31, in place of the two roll pins and assemble the two 5/16" flat washers, lockwashers and hex nuts (K). Do not tighten at this time.



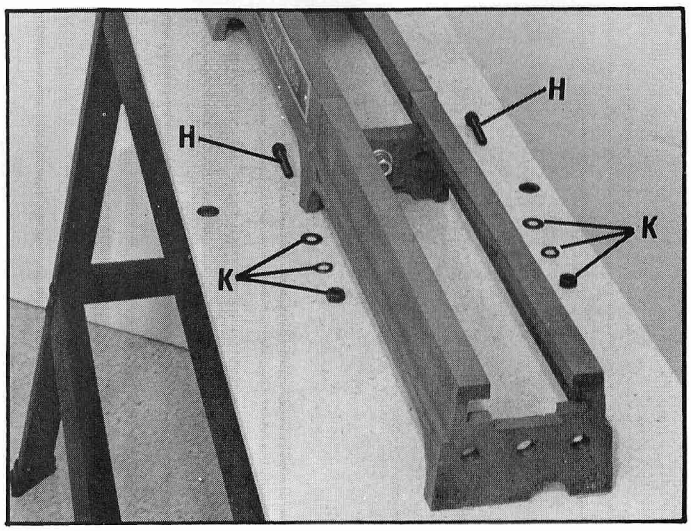


Fig. 31

7. Place the gage block (L) Fig. 32, over the joint between the headstock section and the accessory section and clamp it to the bed ways with four C-clamps, as shown. Place the lathe on its side and tighten the center 3/8"-18 hex nut. Then tighten the two 5/16"-18 hex nuts.

8. The tailstock end of the lathe should be assembled to the accessory bed section in a similar manner. Support bracket (N) should also be assembled to the center bolt as shown in Fig. 33. The necessary hardware is supplied as follows:

Qty.	Description
2	5/16-18 x 1-1/2" Socket Hd. Cap Screw
2	5/16" Flat Washer
2	5/16" Lockwasher
2	5/16"-18 Hex Nut
1	3/8-16 x 1-1/2" Hex Hd. Cap Screw
2	3/8" Flat Washer
1	3/8" Lockwasher
1	3/8"-18 Hex Nut
1	Bracket

9. The lathe bed should be aligned so that the tool rest and the tail stock slide freely on the bed ways. Should there be any mismatch on the underside of the bed, the effect of this can be minimized by further loosening the tool rest or tailstock clamp, or by hand filing or grinding the mismatched surfaces.

10. After the lathe has been mounted to the stand, adjust the bracket (N) Fig. 33, so that it rests on the top shelf of the stand.

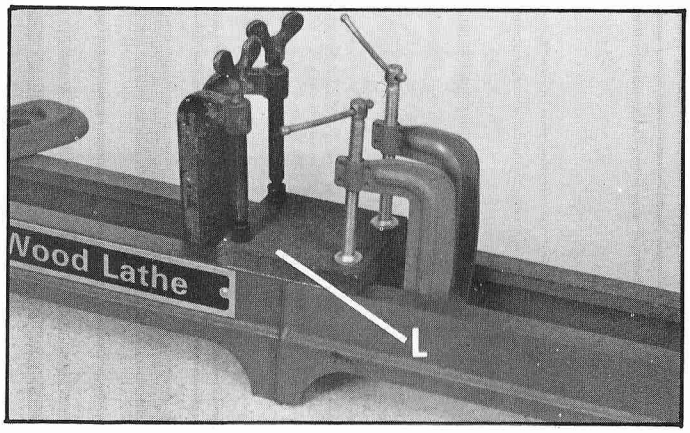


Fig. 32

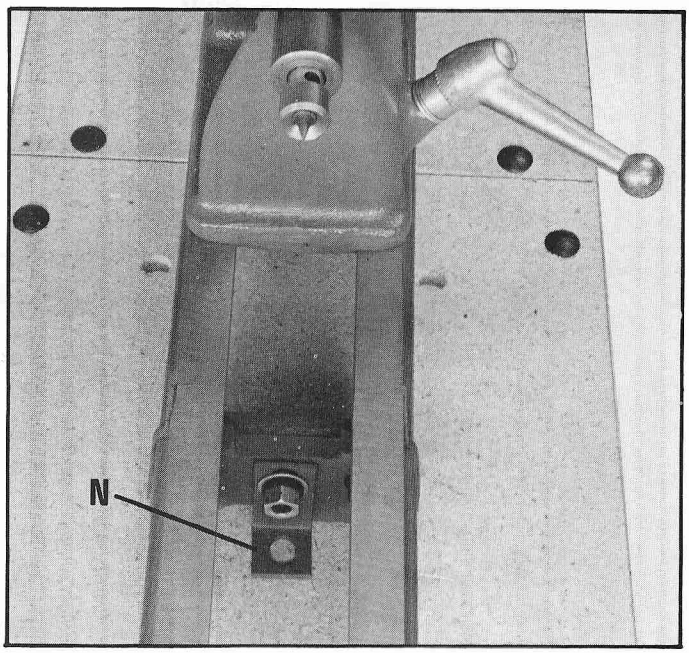


Fig. 33

SUGGESTED SPINDLE SPEEDS

WOOD-TURNING SPEEDS

Diameter Of Work	SUGGESTED SPINDLE SPEED - RPM Rough Cutting	General Cutting	Finish Cutting And Sanding
Under 2"	1350	2220	3700
2" to 4"	800	2220	3700
4" to 4"	800	1350	2220
6" to 8"	800	800	1350
Over 8"	800	800	800

FREE-HAND TURNING SPEEDS WITH TUNGSTEN-ALLOY-TIPPED CHISELS.

Diameter Of Work - Inch	SUGGESTED SPINDLE SPEED - RPM Thermoset Plastics (Bakelite, Micarta, Etc.)	Thermoplastics* (Plexiglas, Lucite, Etc.)	Aluminum, Brass, Bronze, Mild Steel
1/4	3700	2220	3700
1/2	3700	1350	2220
3/4	2220	800	1350
1	1350		1350
1-1/4	1350		800
1-1/2	800		800
2	800		

*Thermoplastics may also be turned with conventional wood-turning chisels, or with a compound slide rest, at the speeds shown in this chart.

METAL-TURNING SPEEDS WITH COMPOUND SLIDE REST AND HIGH-SPEED STEEL TOOL BITS

Diameter Of Work - Inch	SUGGESTED SPINDLE SPEED - RPM Aluminum	Brass	Mild Steel And Bronze
1/4	3700	3700	1350
1/2	2220	1350	800
3/4	1350	800	
1	800		
1-1/4	800		

WOOD-BORING SPEEDS (WITH ROCKWELL MACHINE SPUR BITS)

1/4", 5/16", 3/8", and 7/16" - 1350 RPM

1/2", 9/16", 5/8", and 3/4" - 800 RPM

DRUM-SANDING SPEEDS

For long abrasive life, 1350 RPM is recommended for all sanding drums up to 3-inch diameter, for sanding either wood or metal. Drums may be operated at 2220 RPM to produce a finer finish, but the higher speed will shorten abrasive life. Garnet abrasive is recommended for wood, aluminum oxide for metal.

DISC-SANDING SPEED

1350 RPM is recommended for the 12" sanding disc available as an accessory for this lathe.

WIRE, FIBER, AND BUFFING WHEEL SPEED

The highest spindle speed, 3700 RPM, is recommended for wire, fiber, and buffing wheels up to 6" diameter with 1/2" center holes. Wheels must be properly mounted on the screw-on arbor accessory available for this lathe.

CAUTION: TO AVOID INJURY, DO NOT USE GRINDING WHEELS ON THE LATHE.

OPERATION

The following directions will give the inexperienced operator a start on the common lathe operations. Use scrap material for practice to get the feel of the machine before attempting regular work.

LATHE TOOLS

The standard set of tools used in wood turning comprises five different shapes as shown in Fig. 38. Most important of these is the gouge, a roundnose, hollow chisel which is use for roughing cuts, cove cutting and other operations. Next in importance is the skew chisel, a double-ground, flat chisel, with the end ground to an angle instead of being square across. This tool is used for smoothing cylinders, for cutting shoulders, beads, vee-grooves, etc. The spear or diamond-point chisel and the round-nose chisel are scraping tools which are used where their shape fits the contour of the work. The parting tool is a double-ground chisel, and is used for cutting-off and for making straight incisions or sizing cuts to any required diameter.

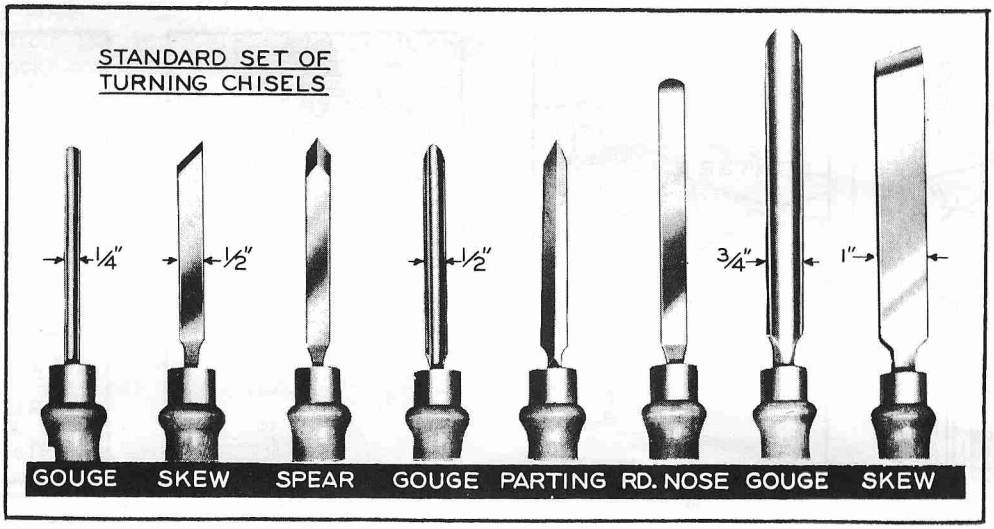


Fig. 38

HOW TO TURN SPINDLES

Any turning which is worked between lathe centers is called a spindle turning. This is the principal type of wood turning, as typified by chair and table legs, lamp stems, etc. The turning of spindles can be done with either a scraping or cutting technique, the cutting technique by virtue of faster wood removal and a cleaner surface being almost a must for good work.

CENTERING THE WORK. Wood stock for any spindle turning should be approximately square, and the ends should be square with the sides. Two common methods of determining the center are shown in Fig. 39 and 40. In Fig. 39 a distance a little more or a little less than one-half the width of the stock is set off from each of the four sides. The small square thus set off in the center can then be used in marking the true center. The diagonal method, Fig. 40, consists of drawing lines from corner to corner, the intersection marking the center of the work.

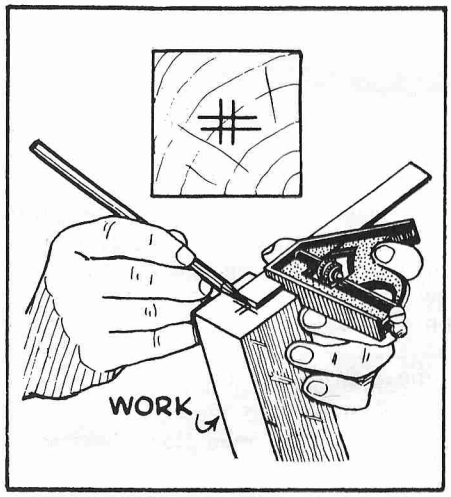


Fig. 39

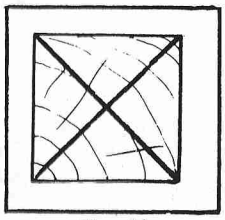


Fig. 40

After marking each end, the true center should be definitely marked with a punch awl or dividers, as shown in Fig. 41. If the stock is hardwood, the centers should be drilled to a depth of about 1/8", as shown in Fig. 42. The spur or live center is then placed against one end of the work and seated by striking with a mallet, as shown in Fig. 43. In hardwood, it is advisable to make a starting seat for the spur center, this being done by sawing on the diagonal lines, as shown in Fig. 44, and drilling a small hole at the intersection. After driving the center, it is best to hold center and work together and fit immediately to headstock spindle. If you are not using a ball bearing center the end of work at tailstock center should be oiled, placing the lubricant on the wood either before or after it is put in the lathe, see Fig. 45. Many turners use beeswax, tallow, or a wax-and-oil mixture as a lubricant. The ideal method is to use a ball bearing center, which eliminates lubricating entirely. If the work is to be removed from the lathe before completion, an index mark should be made as a guide for recentering, as shown in Fig. 46. A permanent indexer can be made by grinding off one corner of one of the spurs.

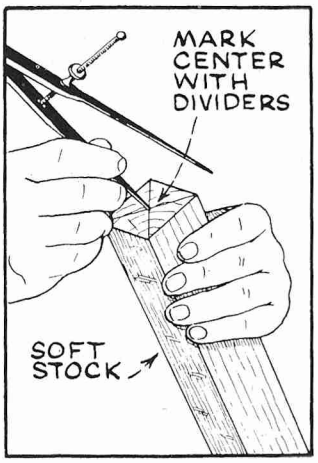


Fig. 41

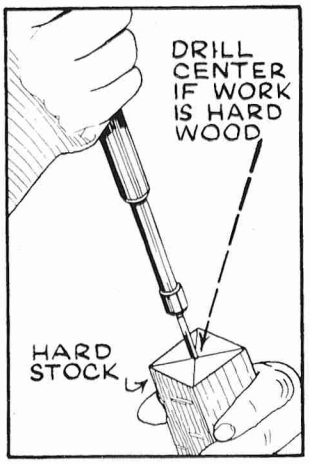


Fig. 42

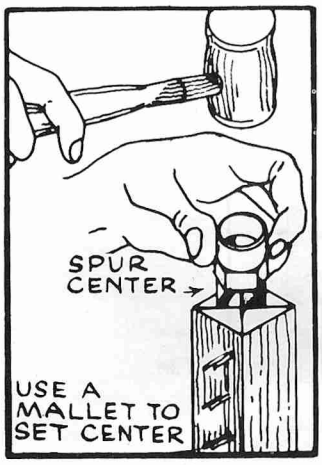


Fig. 43

Fig. 44

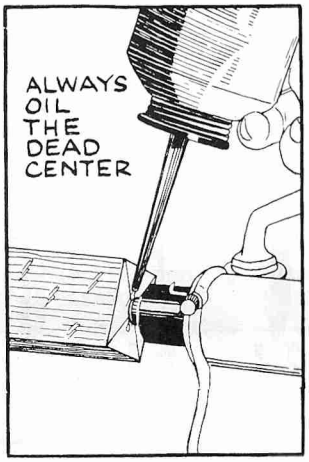


Fig. 45

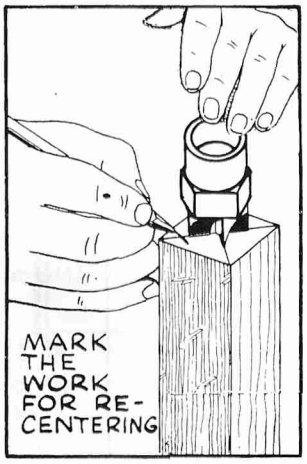


Fig 46

MOUNTING. Mounting the work is done by moving the tailstock up to a position about 1 or 1½" from the end of the stock, and locking it in this position. Advance the tailstock center by turning the feed handle until the center makes contact with the work. Continue to advance the center while slowly rotating the work by hand. After it becomes difficult to turn the work, slack off on the feed about one-quarter turn and lock the tailstock spindle.

TOOL REST POSITION. The tool rest is now mounted in place, about 1/8" away from the work and 1/8" above the work centerline, as shown in Fig. 47. This position may be varied to suit the work and the operator. A guide mark to show the most suitable working position can be placed on the tool rest shank as an aid to quick and accurate re-setting. Once some experience has been obtained, the setting of the tool rest will become almost second-nature.

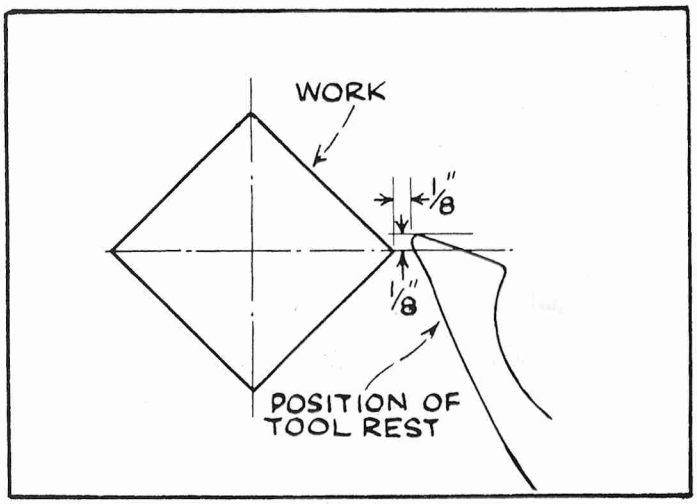


Fig 47

ROUGHING A CYLINDER. The large gouge is used in the first turning operation of roughing-off the sharp corners of the work. Run the lathe at low speed and hold the gouge in the manner shown in Fig. 48. The cut starts about 2 inches from the tailstock end, and continues from this point towards and off the tailstock end. A second bite is then taken about 2 or 3" to the left of the first cut, advancing again towards the tailstock to merge with the cut previously made. The procedure continues until a point about 2" from the live center is reached where the gouge is rolled in the opposite direction to carry the final cut off the live center end of the work. The roughing cut should not be carried out with one continuous movement as this tends to tear long slivers from the corners of the work; neither should the cut be started directly at the end of the stock for the same reason. The cut can be safely carried from the center of the stock towards and off either end once the first roughing cut has been made.

The position of the gouge in relation to the work involves two or three important angles. First of all, the tool may be advanced along the work either from right to left or from left to right. From left to right or from headstock towards tailstock is preferable, since this throws the chips clear of the operator. The gouge is rolled over slightly in the same direction it is advancing, as shown in Fig. 49. The tool is held well up on the work, with the bevel or grind tangent to the revolving surface, as shown in Fig. 50. In this position it will make a clean, shearing cut. When pushed straight into the work, like Fig. 51, the gouge has a scraping action, which is normally poor practice in spindle turning. The roughing cut is continued until the work approaches 1/8" of the required diameter, stepping up to second or third speed (1475 to 2220 RPM) once a barely cylindrical form has been obtained.

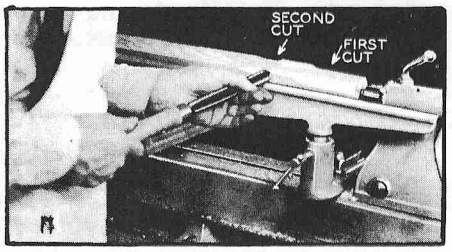


Fig 48

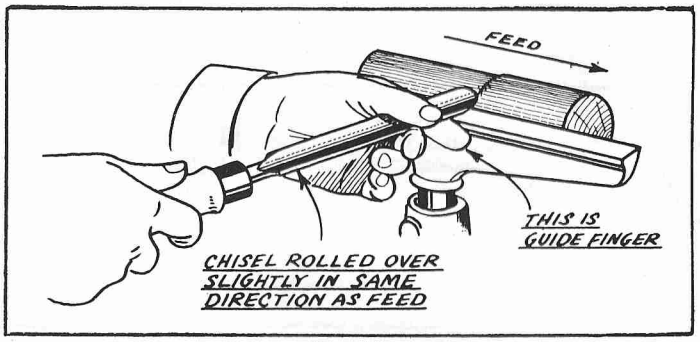


Fig 49

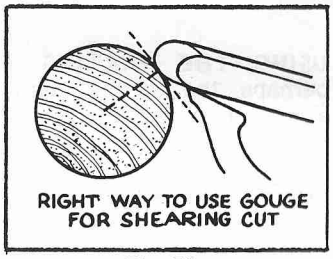


Fig 50

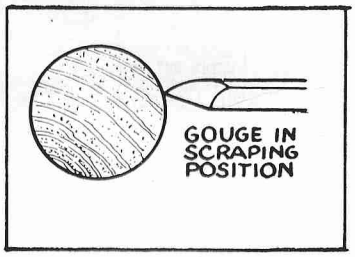


Fig 51

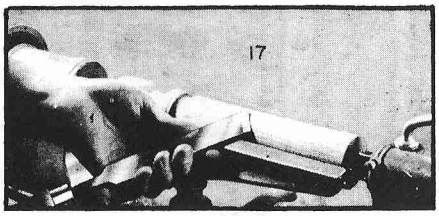


Fig 52

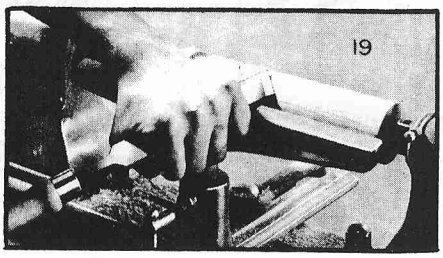


Fig 53

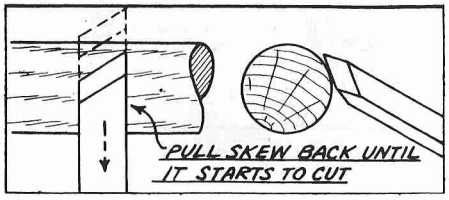


Fig 54

POSITION OF HANDS. In all tool handling, the handle hand takes a natural position, being nearer or further from the end of chisel depending on the amount of leverage required. The position of the tool rest hand is more a matter of individual liking rather than any set or "proper" position. However, a palm-up grip, as illustrated with the gouge, is generally considered the best practice. In this position, the first finger acts as a guide, as shown in Fig. 52, sliding along the tool rest as the cut is made. The alternate position is a palm-down grip, which is shown in Fig. 53. In this position, the heel of the hand or the little finger serves as a guide. The palm-down position is solid and positive-excellent for roughing or heavy cutting. Most beginners start with the palm-down grip, switching later to the palm-up position for better manipulation of the chisel.

SMOOTHING A CYLINDER. This operation is done with the large skew chisel. It demands a little practice, but should be mastered thoroughly because it is one of the most important cuts in turning. Fig. 52 and 53 show how the chisel is held, using either grip as desired. The cutting point is near the center of chisel and high on the work, as shown in Fig. 54. The chisel must be supported by the tool rest at all times - in striving for a certain position in relation to the work, the beginner often overlooks this all-important point. Beginners often use the method shown in Fig. 54 to locate the proper tool position. To do this, you place the skew well over the work and riding-flat against it.

Pulling back slowly on the tool will eventually put it into position where it will bite into the wood. Raising the handle increases the depth of cut; lowering the handle makes the cut less. As with the gouge, the skew can be advanced in either direction. The part of the skew which does the actual cutting is the center portion and toward the heel. It is worthwhile to stop a test cut in progress and note just how the skew cuts. You will note that the back portion of the grind or bevel supports the tool, and the handle hand controls the depth of cut by rocking the chisel on this pivot point. For this reason it is important that the skew bevel be kept perfectly flat, not a double bevel nor rounded.

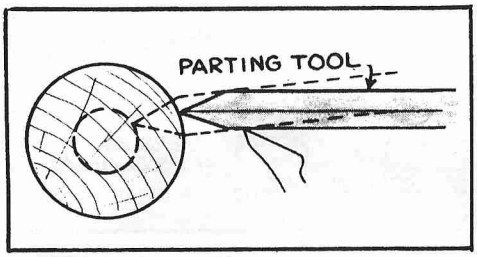


Fig 55

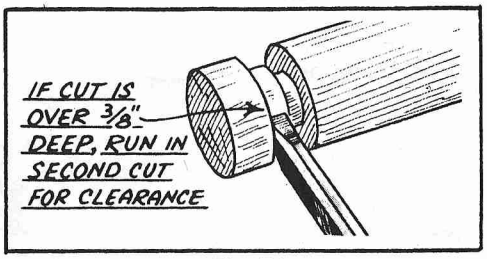


Fig 56

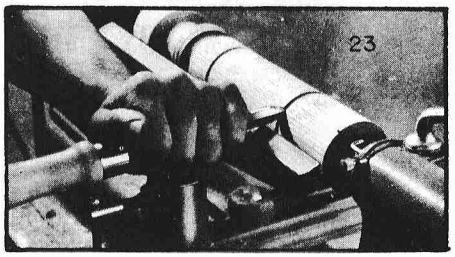


Fig 57

USING THE PARTING TOOL. The parting tool is perhaps the easiest turning chisel to handle. It is a scraping tool, and is simply pushed into the work, as shown in Fig. 55, 56 and 57. A somewhat better cutting action is obtained if the handle is held low, raising gradually as the work diameter decreases, as shown in Fig. 55. The tool is frequently used with one hand, the other hand holding calipers in the groove being cut. When parting tool cuts are deep, a clearance cut should be made along-side the first cut, as shown in Fig. 56, to prevent burning the tool point.

SQUARING AN END. This operation can be done with parting tool. However, the parting tool is a rough cutter, so that ultimately the skew must be used in cleaning the cut. The whole operation can be done with the skew, and this technique is illustrated by the drawings in Fig. 58, 59 and 60. The first movement is a nicking cut with the toe of the skew, as shown in Fig. 58. This cut cannot be made very deep without danger of burning the chisel, so a clearance cut is made by inclining the skew away from the first cut and again pushing the tool into the work. This procedure of side cut and clearance cut is continued as often as needed. The important point to note is that while the skew can be pushed into the wood in any direction, the cutting edge itself must be inclined a little away from this plane, see Fig. 60. Note that if the full cutting edge of skew bears against the cut surface, the tool will have a tendency to run. Now, observe the proper way to make the cut, as shown at left end of Fig. 60. The chisel is pushed straight into the work, but the cutting edge is inclined away from the cut surface - only the extreme toe cuts. This is the most important principle in skew handling, and you will run into it repeatly in making shoulders, beads and vee cuts.

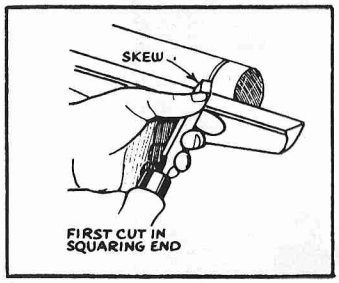


Fig 58

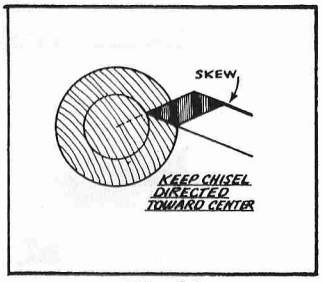


Fig 59

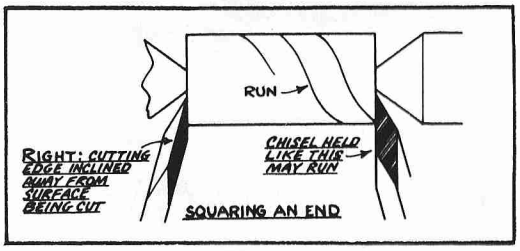


Fig 60

CUTTING A SHOULDER. The parting tool is first used to reduce the wood to within 1/16" of the required shoulder and diameter, as shown in Fig. 61. The waste stock is then cleaned out with the gouge, Fig. 62. Actual cutting of the shoulder is done with the skew, as shown in Fig. 63, and is a duplication of squaring end. The horizontal cut is also made with the skew, but in a little different manner from that used in doing plain cylinder work. If the shoulder is long, the ordinary skew position can be used for the outer portion of the cut, but at the angle between the horizontal and vertical cuts, the heel of the chisel moves into a position tangent between the skew and the cylinder, as shown in Fig. 64. In this position, the handle of the chisel is raised slightly to allow it to cut as the tool moves along the rest. A very light cut should be taken in order to produce smooth work. The heel of the skew can be used for making the entire cut, if desired, but the cut, whether in this position or any other position, should not be picked up directly at the end of the stock. It is quite evident that any horizontal cut started directly from the end of the work will have a tendency to bite into the wood, often ruining the entire piece. Always run off the end and not into it. Where a very short shoulder makes this impossible, it is best to use the skew flat in a scraping position. If the cutting technique is used, engage only with the heel of skew in a very light cut.

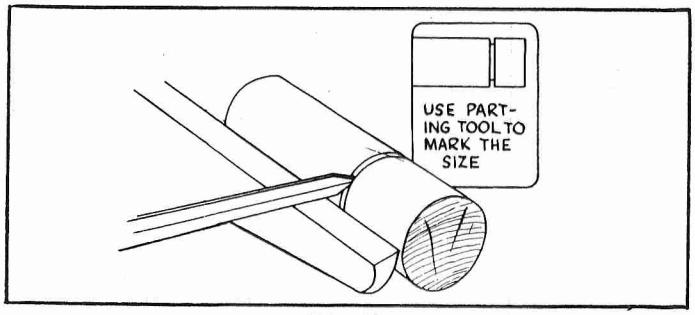


Fig 61

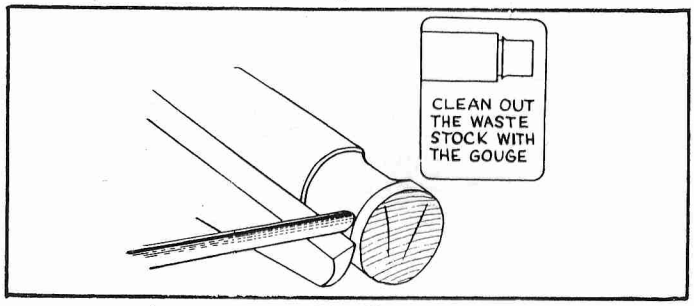


Fig 62

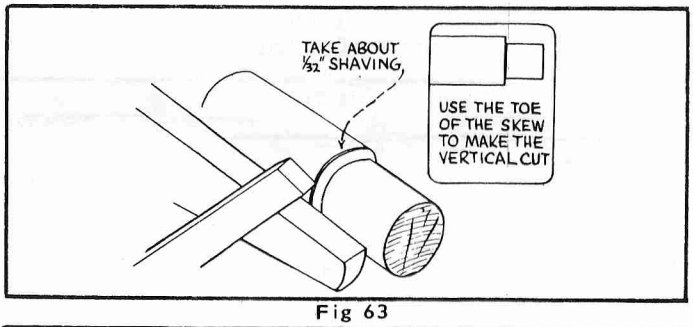


Fig 63

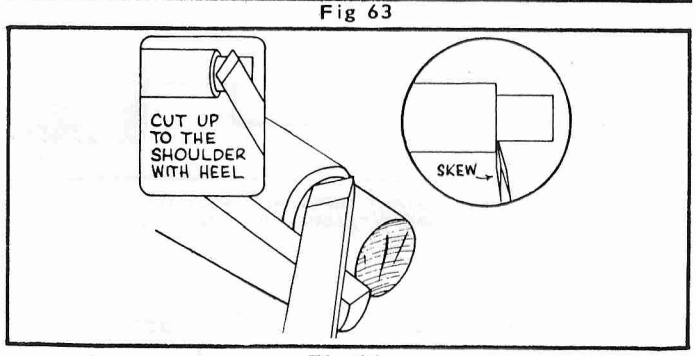


Fig 64

CUTTING SMALL BEADS. Beads can be scraped or cut. The easy method of scraping is done with the spear chisel, and works to best advantage on beads separated by parting tool cuts, as shown in Fig. 65. Scraping is slower and less productive of clean work than cutting, but it has the advantage of perfect safety - you won't spoil the work with long gash runs.

Cutting beads quickly and accurately with the small skew is one of the most difficult lathe operations. Various working methods can be used, the usual system being as shown in Fig. 66 , 67 and 68. The first cut is a vertical incision at the point where the two curved surfaces will eventually come together. This cut can be made with either heel or toe of skew, Fig. 69 showing the toe being used. Now, place the skew at right angles to the work and well up on the cylinder, as shown in Fig. 66. The chisel is flat on its side at the start, and is evenly rotated through the successive stages of the cut, as shown in Fig. 66 , 67 and 68. At the same time, the chisel is pulled slightly backwards to maintain the cutting point. The entire cut is made with the heel of chisel. The opposite side of the bead is cut in the same manner, one cut serving to produce the full shape in each instance. Beads cut in this manner are beautifully smooth and polished, and the technique is well worth mastering.

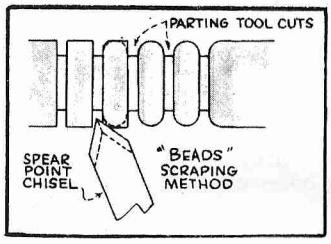


Fig 65

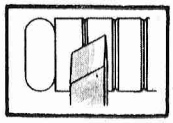


Fig 66

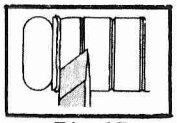


Fig 67

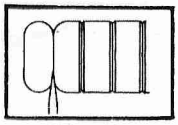


Fig 68

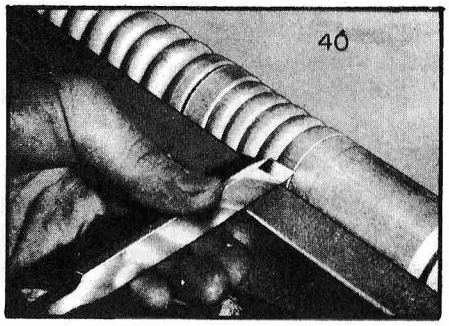


Fig 69

VEE GROOVES. Cutting the vee groove demands much the same technique as the bead, except the skew is hinged straight into the work without rotation, as shown in Fig. 70. Only one-half of the vee is made at a time, and one, two or more cuts may be needed on each side to obtain the desired shape. As in all cutting with the skew, the bevel next to the cut must be used as a fulcrum, without at the same time allowing the full edge of the chisel to catch and cause a run. Vee grooves can also be made with the toe of the shew, in the manner already described for squaring an end.

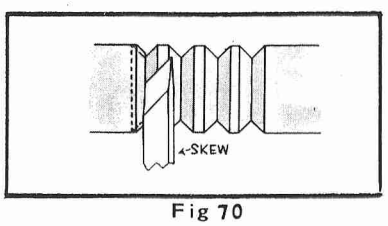


Fig 70

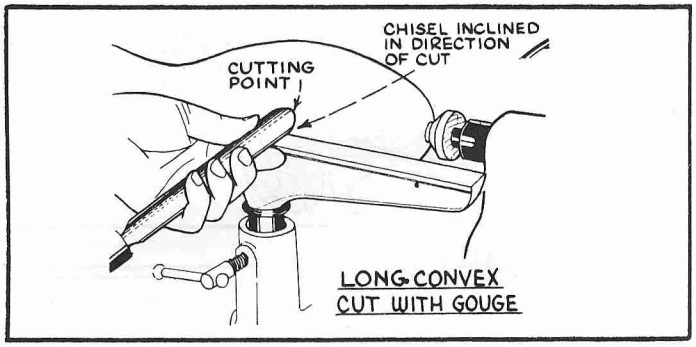


Fig 71

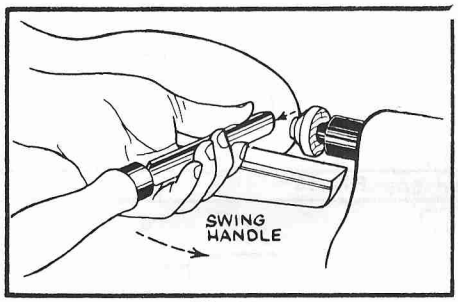


Fig 72

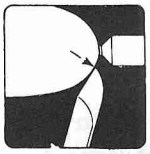


Fig 73

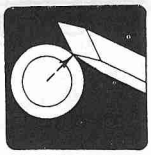


Fig 74

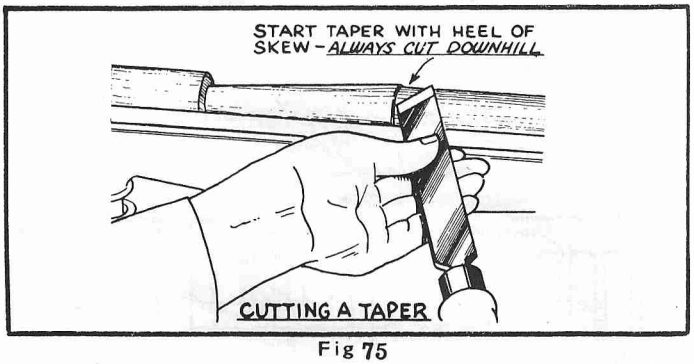


Fig 75

LONG CUTS. Long cuts are usually either convex or straight-tapered surfaces. With a convex surface, the method used in making the finishing cut is shown in Fig. 71 and 72. The gouge is turned on the tool rest so that it will be inclined considerably in the direction in which it is about to move. The grind is tangent to the work, and the center point of the cutting edge is the contact point with the wood. As the cut progresses towards and around the end of the curve, the handle is gradually raised and swung to the right, as shown in Fig. 72, in order to maintain the tangency between the grind and the surface being cut, as shown in Fig. 73.

Figs. 74 and 75 show the cutting of a long taper. The skew is used, and the operation differs from smoothing a cylinder only as regards the start of the cut. The starting cut should be made with the heel, as shown in Fig. 75, to prevent the tool from digging into the work. As the tool runs down the work, the chisel can be pulled back to allow the center point of the cutting edge to cut. However, the full taper can be made with the heel. There will be a tendency to cut too deeply at the center of the taper which should be guarded against. The direction of cutting is always downhill.

COVE CUTS. Second to forming a perfect bead, the cove or concave cut is the most difficult to master. This cut is made with the gouge, the size of the tool depending upon the size of the cut. The size of the intended cove is first laid out, and the gouge is pushed directly into the work to remove the surplus stock, as pictured in Fig. 76. The cove cut can now be made.

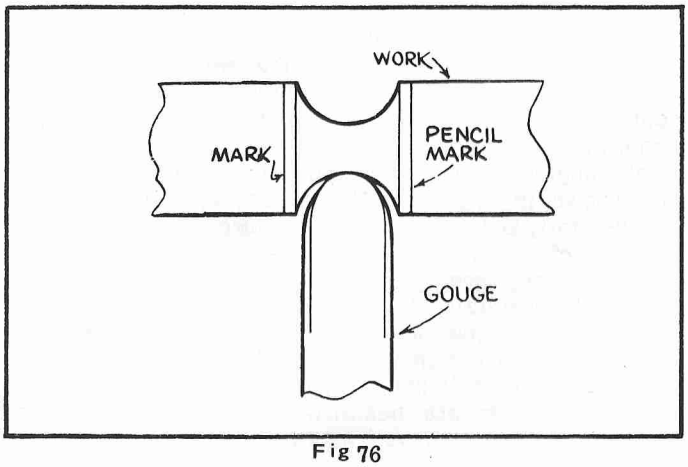


Fig 76

The gouge is placed on edge on the tool rest in such a position that the grind of the chisel forms an approximate right angle with the work, as shown in Figs. 77 and 78. The chisel contacts the work at the center of the cutting edge, the tool being held so that the centerline of the gouge is pointing directly towards the center of the revolving stock, as shown in Fig. 79. This starting position is important; otherwise the gouge will have a tendency to run along the surface of the work.

From the starting position, the gouge is pushed into the revolving stock, and the tool is rolled on the rest. A triple action takes place here: First, the chisel is rolled to follow the shape of the cut; second, the handle is dropped slightly so that the portion already cut will force the lip of the chisel sidewise; third, the chisel is pushed forward so that at the end of the cut, Fig. 80, it will be well up on the work and tangent with the cut surface. Only one-half of the cut is made at one time, then the chisel is reversed to cut the other half. The occasional turner is advised to make cove cuts with a scraping technique, using either the small gouge or round nose chisel.

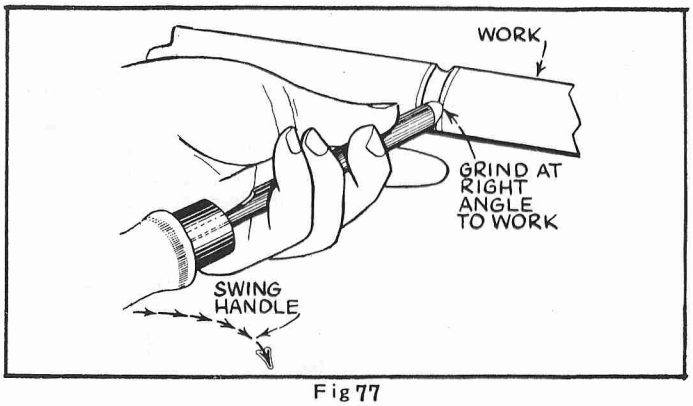


Fig 77

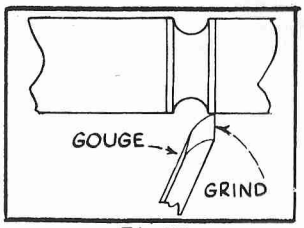


Fig 78

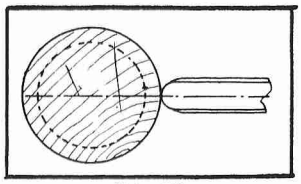


Fig 79

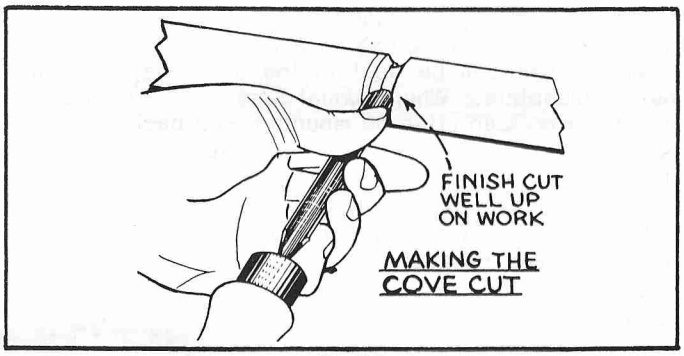


Fig 80

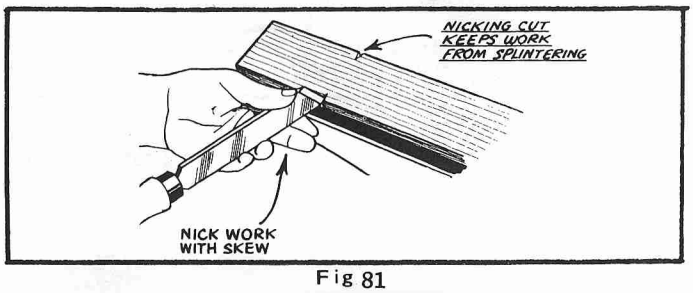


Fig 81

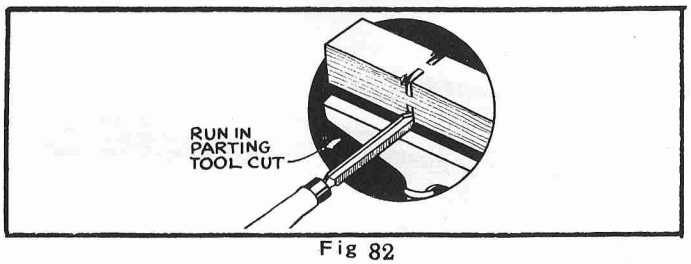


Fig 82

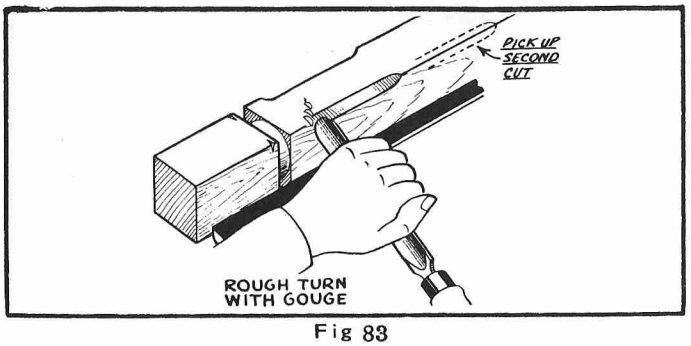


Fig 83

SQUARE SECTIONS. When the turning has a square section, the stock should be jointed before turning. Good centering is essential since any error will show at the shoulder where the round meets the square. Turning of the shoulder from square to round can be done in various ways, one method being pictured in Figs. 81, 82, 83 and 84. If the parting tool is sharp, the nicking cut with skew, Fig. 81, can be omitted. The final trimming operation Fig. 84, can be done with either the skew or spear chisels. This is a scraping operation. While the shoulder can be cut with the same technique used for cutting a bead, the simpler scraping method pictured does clean work and is easier to do.

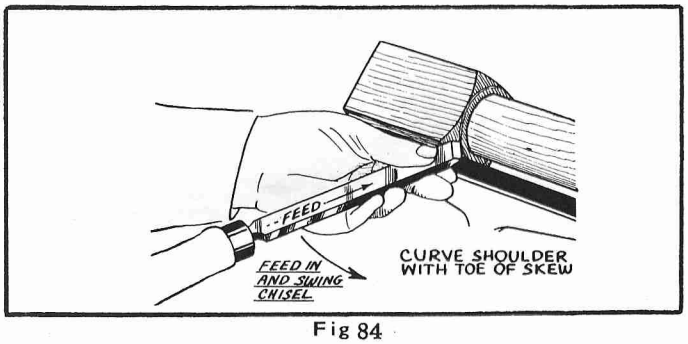


Fig 84

FACEPLATE TURNING

Turnings which cannot be worked between centers must be mounted on a faceplate or other work-holding device. The greater part of this type of turning is done with the faceplate mounting, although there are a number of jobs which require special chucks. All cutting in faceplate work is done by scraping; any attempt to use a cutting technique on the edge grain of large work will result in a hogging, gouging cut which may tear the chisel out of your hands. All work should be roughly band sawed a little oversize to eliminate heavy roughing cuts in turning.

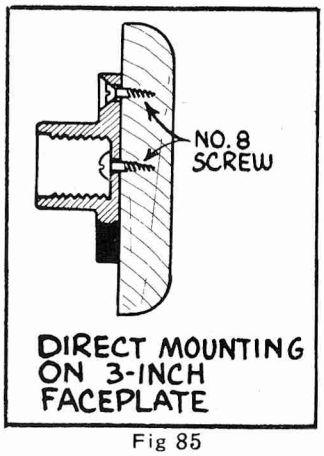


Fig 85

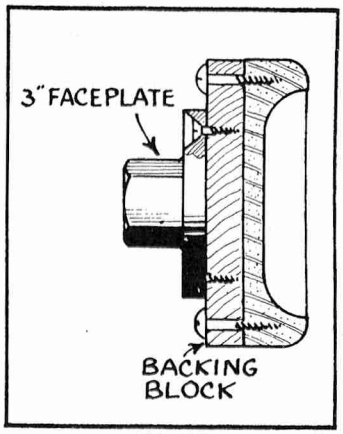


Fig 86

MOUNTING THE WORK. Fig. 85 shows direct mounting to the 3" faceplate. Because it is easy to set up, this mounting should be used whenever the work permits. Larger pieces can be held in the same way by using the 6" faceplate. When normal screw-fastenings interfere, the work can often be mounted on a backing block, as shown in Fig. 86. When screws are not permissible at all, the work is glued to the backing block, fitting a sheet of paper at the joint to allow later separation without damaging the wood. Some work can be screwed or nailed from the face side into backing block. Work less than 3" diameter can be mounted on the single screw center, as shown in Fig. 87.

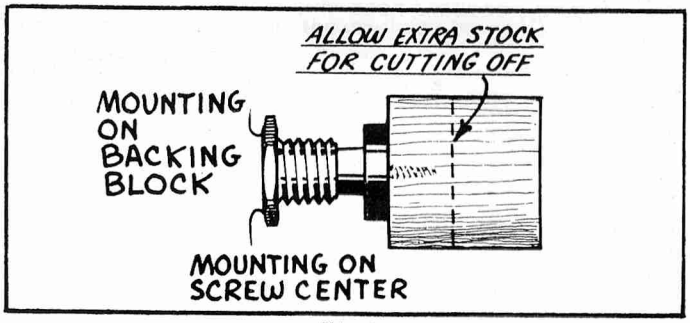


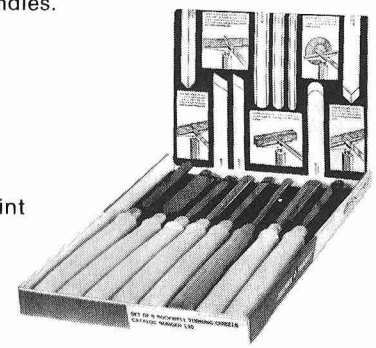
Fig 87

ACCESSORIES

Turning Tools

High-quality turning tools made of special alloy steel with precision ground cutting edges and fitted with 1¼" x 10½" extra long hardwood handles.

No. 46-121 1" Skew
No. 46-122 ¾" Gouge
No. 46-123 ¼" Gouge
No. 46-124 ½" Skew
No. 46-125 ⅛" Parting
No. 46-126 ½" Gouge
No. 46-127 ½" Spear-Point
No. 46-128 ½" Round



No. 46-130 Set of Above Eight Turning Tools.

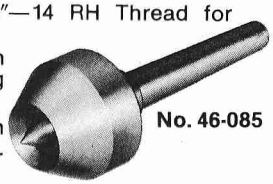
Centers

No. 46-083 Spur (Drive) Center. With ⅞"—14 RH Thread for Headstock.

No. 46-084 Screw Center. With ⅞"—14 RH Thread for Headstock.

No. 46-085 Ball Bearing Center. With No. 1 MT Shank. Eliminates marring or burning of stock.

No. 46-086 Cup (Dead) Center. With replacement point; No. 1 MT Shank.



No. 46-085

Wood Turning Duplicator

No. 46-840 For safe, accurate duplication of complex wood turnings. Takes only a few minutes to install on your Rockwell Lathe. Enables you to reproduce complicated turnings perfectly—patterns, balusters, lamps, table and chair legs—up to 4" (102 mm) diameter, 28½" (724 mm) long.

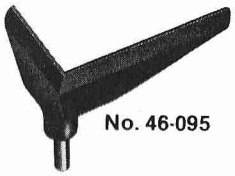
Tool Rests & Base

No. 46-094 10" Tool Rest. With ⅝" diameter shank.

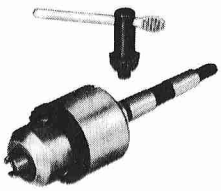
No. 46-095 Right Angle Tool Rest. With ⅝" diameter shank. For face plate work.

No. 46-096 24" Tool Rest. With two ⅝" diameter shanks. For long turnings. Requires extra No. 46-353 Base.

No. 46-097 Tool Rest Base. For mounting tool rests to lathe. One included as standard equipment with machine.



No. 46-095



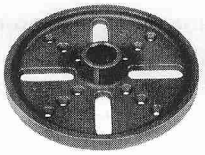
Chuck

No. 46-092 Drill Chuck. With Key and No. 1 MT Shank Adapter. 3-Jaw Type. 5/64" to ½" Capacity. For drilling on lathe.

Adapter

No. 46-093 ½" Spindle Adapter. With ⅞"—14 RH Thread for Headstock. For mounting ½" hole wire, fiber and buffing wheels.

Face Plates



No. 46-087

No. 46-087 10" Diameter Face Plate. With ¾"—16 LH thread for outboard face plate work.

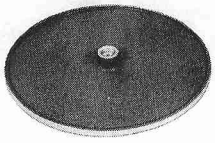
No. 46-088 Same as above except with ⅞"—14 RH thread for inboard face plate turning.

No. 46-089 6" Diameter Face Plate. With ¾"—16 LH thread for outboard medium-sized face plate work.

No. 46-090 Same as above except with ⅞"—14 RH thread for inboard face plate turning.

No. 46-091 3" Diameter Face Plate. With ⅞"—14 RH thread for small face plate work.

Sanding Discs



No. 46-098

No. 46-098 12" Diameter Sanding Disc. With ¾"—16 LH thread for outboard sanding work.

No. 46-099 Same as above except with ⅞"—14 RH thread for inboard sanding.

Sanding Disc Paper and Adhesive

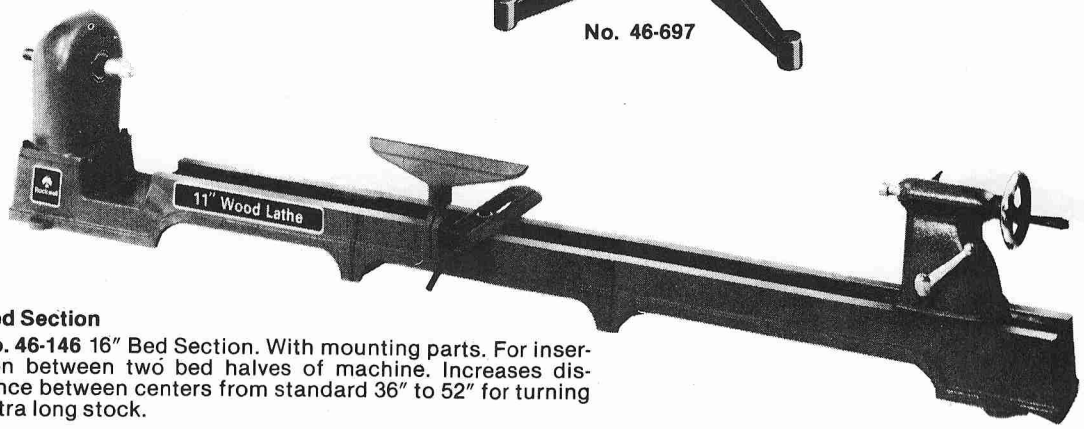
No. 31-427 Garnet for wood, 12" diameter, 50 grit, medium (½ doz.).

No. 49-503 Disc Adhesive for mounting above disc.

No. 46-697

Stand

No. 46-697 For outboard turning. Sturdy, heavy-duty construction. Accommodates tool rests with ½" to 1" diameter shank.



Bed Section

No. 46-146 16" Bed Section. With mounting parts. For insertion between two bed halves of machine. Increases distance between centers from standard 36" to 52" for turning extra long stock.

Shelf Extension Kit

No. 46-100 Extends lathe stand top shelf for use with 46-146 Bed Section

ROCKWELL AUTHORIZED SERVICE STATIONS

ALABAMA
Birmingham 35209—Porter-Cable Corporation,
131 W. Oxmoor Road, Suite 105
Phone: 205-942-6325

ALASKA
Anchorage 99501—Aero Services Co.,
201 Post Road
Phone: 907-272-5232

Fairbanks 99706—Fairbanks Aero Services Inc.,
Box 60590
Phone: 907-479-6666

ARIZONA
Phoenix 85014—Glenn's Tool Service,
4036 N. 13th Way
Phone: 602-264-6203

Tucson 85719—Electric Motor Company,
1028 Broadway
Phone: 602-622-8877

ARKANSAS
Little Rock 72202—Electric Tool Service,
1419 West 10th Street
Phone: 501-374-81804

CALIFORNIA
El Cajon 92021—Best Impact Service,
354 Walter Way
Phone: 714-442-5591

Eureka 95501—Senn Electric Co.,
1801 Fairfield Street
Phone: 707-443-0416

Fresno 93703—R&R Machinery & Electric Inc.,
1919 E. Home Avenue
Phone: 209-233-1213

Los Angeles 90007—Porter-Cable Corporation,
2400 S. Grand Avenue
Phone: 213-749-0386

Modesto 95351—Stanislaus Elec. Mtr. Wks.,
504 River Road
Phone: 209-523-8269

Orange 92668—Porter-Cable Corporation,
385 N. Anaheim Boulevard
Phone: 714-634-4111

Redding 96001—Electric Tool and Motor,
2710 Reservoir Lane
Phone: 916-243-7455

Sacramento 95814—Construction Indust. Serv. Co.,
1211 C. Street
Phone: 916-444-2525

San Leandro 94577—Porter-Cable Corporation,
3039 Teagarden Street
Phone: 415-357-9762

Santa Rosa 95401—Acme Electric Tool Repair,
742 Wilson Street
Phone: 707-546-5862

Truckee 95734—Ponderosa Saw Shop,
43 Pineneedle Way
Phone: 916-587-2254

Van Nuys 91406—Rockwell International Corp.,
16259 Stagg Street
Phone: 213-989-1242

COLORADO
Denver 80207—Porter-Cable Corporation,
4900 E. 39th Avenue
Phone: 303-388-5805

CONNECTICUT
Manchester 06040—Porter-Cable Corporation,
57 Tolland Turnpike
Phone: 203-646-1078

New Haven 06513—New Haven Elec. Mach. Co.,
190 Fulton Terrace
Phone: 203-469-1323

FLORIDA
Ft. Lauderdale 33334—Master Repair Inc.
1031 N.E. 43rd Place
Phone: 305-566-5833

Hialeah 33014—Porter-Cable Corporation,
16373 N. W. 57th Avenue
Phone: 305-624-2523

Jacksonville 32205—Porter-Cable Corporation,
517 Casset Avenue
Phone: 904-387-4455

Orlando 32803—Porter-Cable Corporation,
1807- 1/2 Winter Park Road
Phone: 305-644-8100

Pensacola 32581—Electric Mtr. Svc. Inc.,
3810 Hopkins Street
Phone: 904-433-5492

Tampa 33609—Porter-Cable Corporation,
4536 W. Kennedy Boulevard
Phone: 813-877-9585

GEORGIA
Forest Park 30050—Porter-Cable Corporation,
4017 Jonesboro Road
Phone: 404-363-8000

Savannah 31402—White Hdwe.,
Congress & Whitaker
Phone: 912-233-5777

HAWAII
Hilo 96720—Hawaii Planing Mill Ltd.,
380 Kanoelehua Avenue
Phone: 808-935-0875

Honolulu 96819—Rockwell International Corp.,
3209 Koapaka Street
Phone: 808-847-2048

Kahului 96732—Maui Power Tool Service,
251 H2 Lalo Street
Phone: 808-877-3440

IDAHO
Boise 83705—Air Equipment Company,
2350 S. Orchard Street
Phone: 208-342-2464

Idaho Falls 83401—Rossiters Electric Motor,
1501 S. Capital Avenue
Phone: 208-529-3665

Lewiston 83501—Wade Tool Service,
513 Thain
Phone: 208-746-2421

ILLINOIS
Melrose Park (Chicago) 60160—Porter-Cable
Corporation—4533 North Avenue
Phone: 312-345-8900

INDIANA
Elkhart 46515—Thunander Corporation,
1923 Markle Avenue
Phone: 210-295-4131

Goshen 46526—C&L Electric Motor Repair,
1405 Chicago Avenue
Phone: 219-533-2643

Indianapolis 46268—Porter-Cable Corporation,
5317 W. 86th Street
Phone: 317-875-9078

IOWA
Davenport 52803-Industrial Engr. Equipment Co.
1958 River Street
Phone: 319-323-9721

Des Moines 50309—Puckett Electric Tools Inc.,
1011 Keo Way
Phone: 515-244-4189

KANSAS
Wichita 67213—Richmond Electric Co.,
911 Maple
Phone: 316-264-2344

LOUISIANA
Kenner 70062—Porter-Cable Corporation,
2440-0 Veterans Memorial Hwy.
Phone: 504-469-7363

MAINE
Portland 04104—M and W Electric,
38 Portland Street
Phone: 207-772-2057

MARYLAND
Baltimore 21205—Porter-Cable Corporation,
4714 Erdman Avenue
Phone: 301-483-3100

Hyattsville 20781—Porter-Cable Corporation,
4811 Kenilworth Avenue
Phone: 301-779-8080

MONTANA
Billings 59101—Allen's Electric Tool Repair,
431 St. John's
Phone: 406-248-3865

Missoula 59806—City Electric,
Electro Service Center Div., 1919 Harve,
Phone: 406-549-4115

NEBRASKA
Omaha 68102—Thacker Electric Co.,
2209 Cuming Street
Phone: 402-341-2264

NEVADA
Las Vegas 89109—Tool Service Inc.,
3229 Industrial Road
Phone: 702-734-9161

Reno 89504—Landa Electric Co.,
140 Manuel Street
Phone: 702-329-0633

NEW HAMPSHIRE
Keene 03431—G&R Elec. Mtr. Repair,
453 Winchester Street
Phone: 603-352-3422

NEW JERSEY
Jersey City 07304—Rudolf Bass Inc.,
45 Halladay Street
Phone: 201-433-3800

Union 07083—Porter-Cable Corporation,
945 Ball Avenue
Phone: 201-964-1730

NEW MEXICO
Albuquerque 87108—J-M Tool Repair Company,
116 Tennessee N.E.
Phone: 505-255-2304

Albuquerque 87107—Telco Electric Inc.,
2906 Fourth Street N.W.
Phone: 505-345-2426

NEW YORK
Flushing 11365—Porter-Cable Corporation,
175-25 Horace Harding Expwy.
Phone: 212-225-2040

Kingston 12401—Fowler & Keith Supply Co.,
104 Smith Avenue
Phone: 914-331-0004

Manhattan 10013—Porter-Cable Corporation,
132 Lafayette Street
Phone: 212-966-2726

New York 10013—Rudolf Bass Inc.,
175 Lafayette Street
Phone: 212-226-4000

OHIO
Beavercreek (Dayton) 45432—Authorized Tool
Service Co., 3787 Dayton-Xenia Road
Phone: 513-429-5593

Cincinnati 45215—Professional Tool Service,
10265 Spartan Drive, Bldg. H
Phone: 513-772-1490

Columbus 43215—Porter-Cable Corporation,
4560 Indianola Avenue
Phone: 614-263-0929

North Canton 44720—N. Canton Repair Shop,
110 6th Street E.
Phone: 216-455-3529

Toledo 43606—Power Tool Sales & Service,
2934 Douglas Road
Phone: 419-473-0962

Youngstown 44512—Moff Master Power Tools,
5228 Market Street
Phone: 216-783-2130

OKLAHOMA
Oklahoma City, 73107—Porter-Cable Corporation,
3631 N. W. 23rd Street
Phone: 405-946-5437

OREGON
Eugene 97402—Jim's Tool Service,
515 Wilson Street
Phone: 503-344-1513

Medford 97501—Ken's Saw Shop,
1838 Delta Waters Road
Phone: 503-779-1490

Portland 97212—Porter-Cable Corporation,
51 N. E. Hancock
Phone: 503-288-6888

PENNSYLVANIA
Allentown 18103—Curio Electric Repair,
825 S. 5th
Phone: 215-432-9923

Bensalem 19020—Porter-Cable Corporation,
Expwy. 95 Ind. Ctr., 3599 Meadow Lanes
Phone: 215-638-4114

Harrisburg 17104—Harrisburg's Tool Center
1354 Howard Street
Phone: 717-232-4600

Monroeville 15146—Professional Tool Service,
Monroeville Ind. Pk., 700 Seco Road
Phone: 412-373-7440

Philadelphia 19106—Swanger Brothers,
116 N. 3rd Street
Phone: 215-925-6139

Dallas 75247—Porter-Cable Corporation,
3160 Commonwealth Dr.
Suite 180, Commonwealth Plaza
Phone: 214-631-7855

El Paso 79950—Francis Wagner Co.,
1225 Texas Avenue
Phone: 915-533-2235

Fort Worth 76111—Modern Tool Repair,
2704 E. Belknap
Phone: 817-834-1111

Haltom City 76117—C&D Tool Repair Service,
2532 Carson Avenue
Phone: 817-834-2277

Houston 77092—Porter-Cable Corporation,
5201 Mitchelldale, Suite B-9
Phone: 713-682-0334

Lubbock 79405—Lubbock Electric Co. Inc.,
1108 34th Street
Phone: 806-744-2336

Mission 78572—City Power Tool,
703 E. 9th
512-581-3272

Odessa 79763—W&W Tool Repair Shop,
614 S. Grant
Phone: 915-337-0663

San Antonio 78218—Porter-Cable Corporation,
2800 N. E. Loop 410
Phone: 512-654-1061

UTAH
Salt Lake City 84115—Porter-Cable Corporation,
2990 S. W. Temple
Phone: 801-487-4953

VIRGINIA
Norfolk 23517—Bryan Electric Company Inc.,
424 W. 25th Street
Phone: 804-625-0378

Richmond 23220—Porter-Cable Corporation,
1705 Dabney Road
Phone: 804-257-7348

Roanoke 24013—Roanoke Armature Co.,
110 8½ Street S. E.
Phone: 703-345-8741

WASHINGTON
Kennewick 99336—Tool Repair Company,
419A W. Entiat
Phone: 509-586-6145

Renton 98055—Porter Cable Corporation
268 Southwest 43rd Street
Phone: 206-251-6680

Spokane 99202—Spokane Power Tool,
E. 801 Trent Avenue
Phone: 509-489-4202

Yakima 98901—Cooper Elec. Mtr. Service,
205 S. 4th Avenue
Phone: 509-452-9550

WEST VIRGINIA
Huntington 25701—Lawter Electric Motor Co.
202 Adams Avenue
Phone: 304-522-8297

Wheeling 26003—Kennedy Hdwe.,
3300 McCulloch Street
Phone: 304-233-3600

WISCONSIN
Milwaukee 53222—Porter-Cable Corporation,
10700 W. Burleigh Street
Phone: 414-774-3650

WYOMING
Casper 82601—Casper Saw Shop,
147 S. McKinley
Phone: 307-237-3279

PUERTO RICO
Sierra Bayamon 00619—B&M Electric Tool
Repair Center, Calle 49, Bloque 51,
Casa 27 Avenue W. Main
Phone: 809-787-2287

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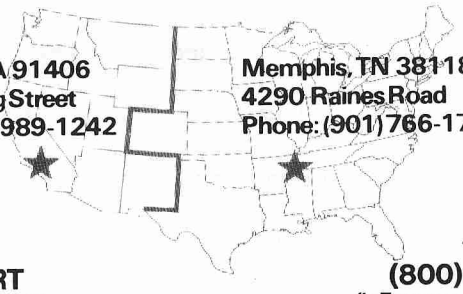

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16259 Stagg Street
Phone: (213) 989-1242

Memphis, TN 38118
4290 Raines Road
Phone: (901) 766-1700

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(In California (800) 235-PART)

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414 Cambridge Street
Phone: 617-782-1700

Springfield 01105—Saw Center,
472 Main Street
Phone: 413-734-2045

MICHIGAN
Grand Rapids 49506—Porter-Cable Corporation,
2750 Birchcrest Drive S.E.
Phone: 616-949-9040

Southfield (Detroit) 48075—Porter-Cable Corporation,
18650 W. 8 Mile Road
Phone: 313-569-4333

MINNESOTA
Minneapolis 55429—Porter-Cable Corporation,
4315 68th Avenue North
Phone: 612-561-9080

MISSISSIPPI
Jackson 39204—Flannigan Elec. Co. Inc.,
328 Oakdale Street
Phone: 601-354-2756

MISSOURI
North Kansas City 64116—Porter-Cable Corporation,
1141 Swift Avenue, P.O. Box 12393
Phone: 816-221-2070

St. Louis 63139—Porter-Cable Corporation,
2348 Hampton Avenue
Phone: 314-644-3166

Rochester 14608—Jackson Saw & Knife Co.,
517 State Street
Phone: 716-546-7485

Rochester 14609—O. G. Schwarz,
430 Atlantic Avenue
Phone: 716-482-9282

Schenectady 12303—Barrett Elec. Service Inc.,
112 Henry Street
Phone: 518-374-4416

Syracuse 13224—Porter-Cable Corporation,
2740 Erie Boulevard E.
Phone: 315-445-1922

Vestal 13850—Cascade Electric Inc.,
416 Commerce Road
Phone: 607-729-5278

NORTH CAROLINA
Charlotte 28209—Porter-Cable Corporation,
4612 South Boulevard
Phone: 704-525-4410

High Point 27260—A.I.M. Tools Incorporated,
2708 Kivett Drive
Phone: 919-886-2107

NORTH DAKOTA
Fargo 58107—Acme Electric Motor,
Box 2048
Phone: 701-235-8060

Grand Forks 58201—Acme Electric Motor, Inc.,
1705 13th Avenue North
701-746-6481

Bismarck 58501—Acme Electric Motor, Inc.,
1009 Basin Avenue
701-258-1267

RHODE ISLAND
Providence 02914—Porter-Cable Corporation,
1009 Waterman Avenue
Phone: 401-434-3620

SOUTH CAROLINA
Charleston 29407—Delta Electric Motors,
1906 Meeting Street
Phone: 803-577-5670

Columbia 29203—Mann Electric Repair Co.,
3600 Main Street
Phone: 803-252-7777

TENNESSEE
Knoxville 37917—Shop Equipment Serv. Co.,
2706 N. Broadway
Phone: 615-588-3574

Memphis 38116—Porter-Cable Corporation,
1004 E. Brooks Road
Phone: 901-332-1353

Nashville 37203—K&K Tools,
606 Demonbreun Street
Phone: 615-255-9541

TEXAS
Amarillo 79105—G. E. Jones Electric Co.,
204 N. Polk Street
Phone: 806-372-5505

Austin 78758—The Tool Box
9904 Gray Boulevard
Phone: 512-836-5483

Corpus Christi 78405—Otto Dukes Machinery Co.,
2588 Morgan Street
Phone: 512-883-0921

CANADA
ALBERTA
Calgary, T2G 4B9—Rockwell International Corp.,
4411 Manitoba Road, S. E.
Phone: (403) 287-0462

Edmonton T5P 3X6—Rockwell International Corp.,
10632 169th Street
Phone: (403) 489-5587

BRITISH COLUMBIA
Vancouver, V5Y 1L4—Rockwell International Corp.,
45 W. 7th Avenue
Phone: (604) 879-8622

MANITOBA
Winnipeg, R3H 0H2—Rockwell International Corp.,
1699 Dublin Avenue
Phone: (204) 633-9259

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Mississauga, L4V 1J2—Rockwell International Corp.,
6463 Northam Drive
Phone: (416) 677-5330

Guelph, N1H 6M7—Rockwell International Corp.,
644 Imperial Road
Phone: (519) 836-4390

Ottawa, K2A 3X2—Rockwell International Corp.,
851 Richmond Road
Phone: (613) 728-1124

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St. Laurent (Montreal), H4N 1W2—Rockwell
International Corp.—523 Rue Deslauriers
Phone: (514) 336-8772

Ste. Foy G1N 4L5—Rockwell International Corp.,
Suite 202, 2202 Rue Lavoisier
Phone: (418) 681-7305