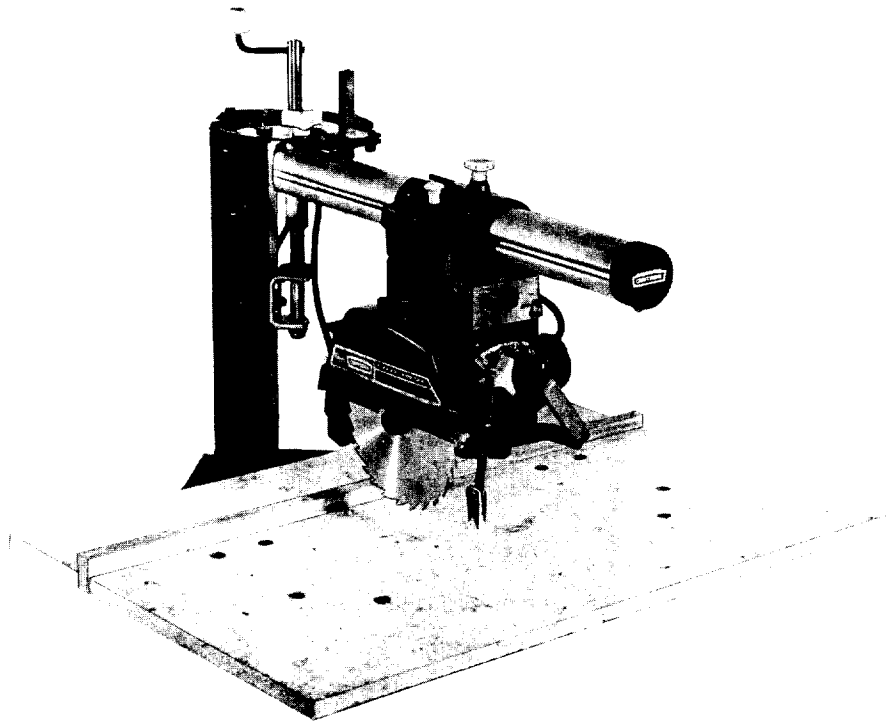
Sears

owners manual

CRAFTSMAN
8-INCH RADIAL ARM SAW

MODEL No.
113.29220

CAUTION:
Read Safety Rules and Instructions Carefully



- Assembly
- Operating
- Repair Parts

SEARS, ROEBUCK AND CO. U.S.A.
SIMPSONS-SEARS LIMITED, CANADA

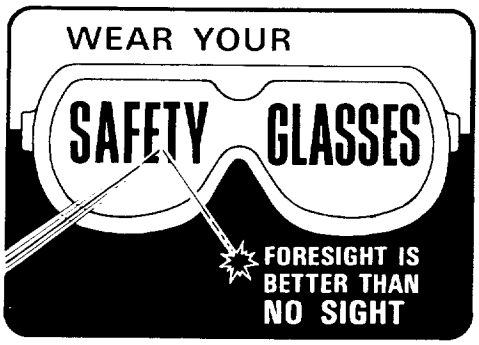
Part No. 63291

Printed in U.S.A.

CRAFTSMAN

SAFETY RULES FOR POWER TOOLS

1. **KNOW YOUR POWER TOOL**
   Read the owner's manual carefully. Learn its application and limitations as well as the specific potential hazards peculiar to this tool.
2. **GROUND ALL TOOLS**
   If tool is equipped with three-prong plug, it should be plugged into a three-hole receptacle. If adapter is used to accommodate two-prong receptacle, the adapter wire must be attached to a *known ground*. Never remove third prong.
3. **KEEP GUARDS IN PLACE**
   and in working order.
4. **REMOVE ADJUSTING KEYS AND WRENCHES**
   Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning on tool.
5. **KEEP WORK AREA CLEAN**
   Cluttered areas and benches invite accidents.
6. **AVOID DANGEROUS ENVIRONMENT**
   Don't use power tools in damp or wet locations. Keep work area well illuminated.
7. **KEEP CHILDREN AWAY**
   All visitors should be kept a safe distance from work area.
8. **MAKE WORKSHOP KID PROOF**
   — 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 it was not designed for.
11. **WEAR PROPER APPAREL**
    No loose clothing or jewelry to get caught in moving parts.
12. **USE SAFETY GLASSES**
    Also use face or dust mask if cutting operation is dusty.
13. **SECURE WORK**
    Use clamps or a vise to hold work when practical. It's safer than using your hand, frees both hands to operate tool.
14. **DON'T OVERREACH**
    Keep your 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.
17. **AVOID ACCIDENTAL STARTING**
    Make sure switch is "OFF" before plugging in cord.
18. **USE RECOMMENDED ACCESSORIES**
    Consult the owner's manual. Use of improper accessories may be hazardous.



The operation of any power tool can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields before commencing power tool operation. We recommend **Wide Vision Safety Mask** for use over spectacles, or standard safety glasses . . . available at Sears retail or catalog stores.

SAFETY SEAL pti power tool institute

THIS SAFETY SEAL OF THE POWER TOOL INSTITUTE ASSURES YOU . . .

1. That the manufacturer's power tools, including the particular tool associated with the Seal, are produced in accordance with applicable Standards For Safety of Underwriters' Laboratories and American National Standards (ANSI).
2. That compliance with applicable safety standards is assured by independent inspection and testing conducted by Underwriters' Laboratories (UL).
3. That every motorized tool is inspected under power.
4. That every tool has with it adequate instructions and a list of safety rules for the protection of the user.
5. That the tool manufacturer is a member of the Power Tool Institute and is a sponsor of the Institute's Consumer Safety Education Program.

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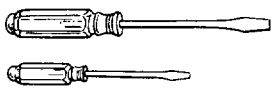
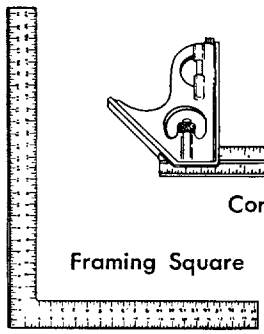
TOOLS NEEDED



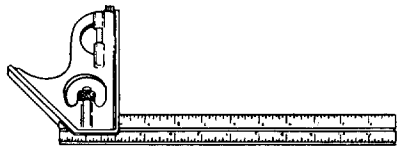
Screwdriver (medium)
Screwdriver (small)

Pliers

Pencil

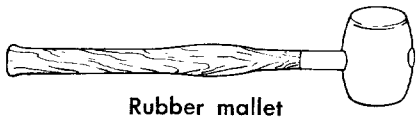


Framing Square



Combination Square

3/8-inch wrench
7/16-inch wrench
1/2-inch wrench



Rubber mallet

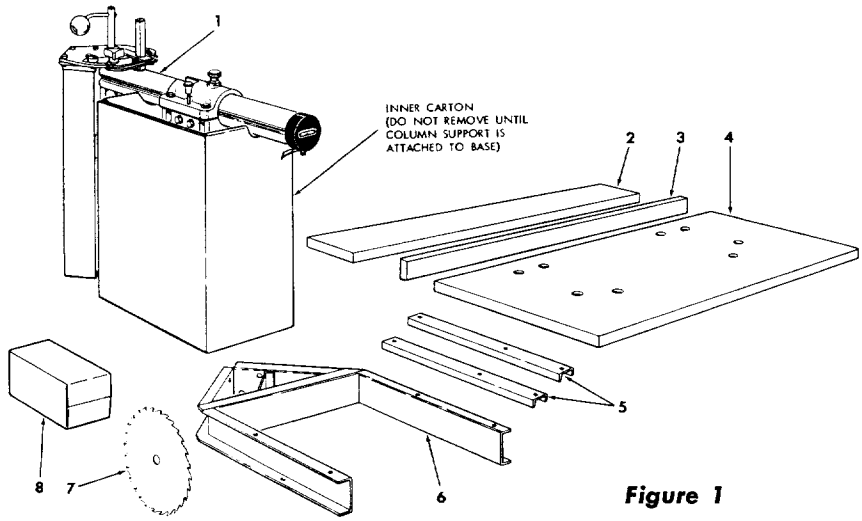


Figure 1

UNPACKING AND ASSEMBLY

1. Unpacking and Checking Contents.

a. Separate all "loose" parts from packaging materials and check each item with figure 1 and "Table of Loose Parts", making sure all items are accounted for before discarding any packing material.

Key No. (Fig. 1)	Table of Loose Parts	Qty.
1	Basic saw assembly	1
2	Rear table	1
3	Rip fence	1
4	Front table	1
5	Rear table support	2
6	Base assembly	1
7	Saw blade (8-inch, chisel-tooth)	1
8	Loose parts carton (containing the following items)	
	Screw, hex-head, 5/16-18 x 3/4-inch	6
	Lockwasher, 5/16-inch	6
	Nut, hex, 5/16-18	6
	Bushing	4
	Screw, pan-head, 1/4-20 x 1-1/2-inch	4
	Screw, pan-head, 1/4-20 x 3/4-inch	6
	Flat washer, 17/64-inch, (1/32-inch thick)	8
	Lockwasher, 1/4-inch	8
	Nut, hex., 1/4-20	8
	Table clamp	2
	Wrench	1
	Screw, type 23, pan-head, No. 8-32 x 5/16-inch	1
	Cord clamp	1
	Nut, square, 1/4-20	2
	Key (switch-locking)	2
	Wrench, hex-L, 5/32-inch	1
	Wrench, hex-L, 3/32-inch	1
	Anti-kickback assembly	1
	Screw, wing (long)	1
	Sawdust chute	1
	Screw, wing (short)	1
	Flat washer, 17/64-inch (1/16-inch thick)	1
	Retaining clip	1

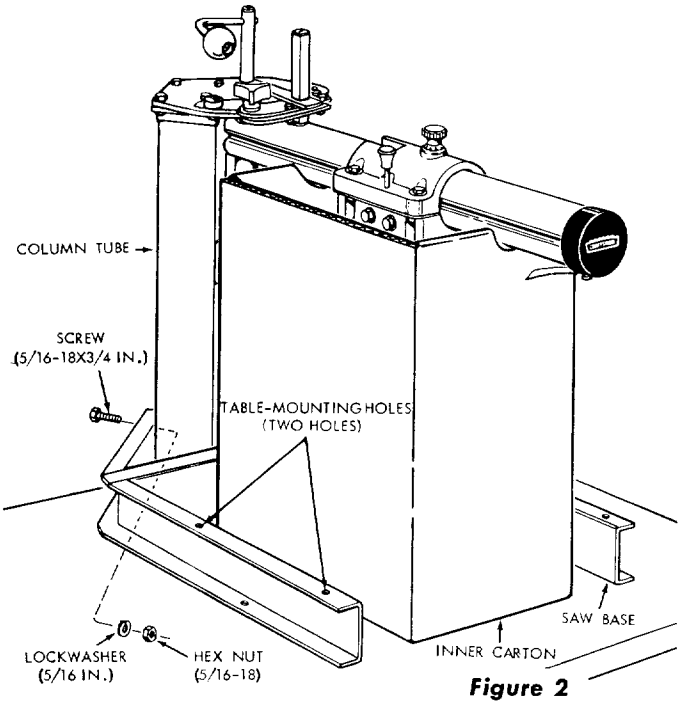


Figure 2

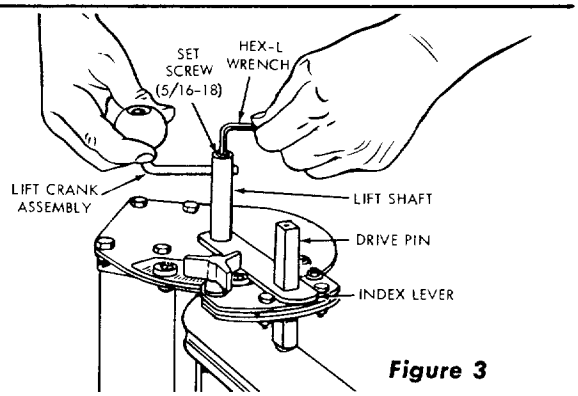


Figure 3

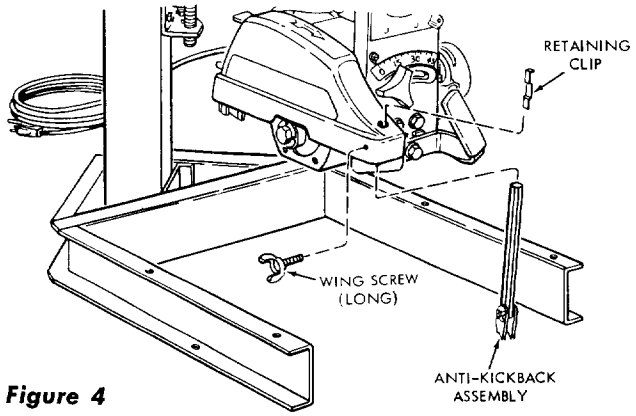


Figure 4

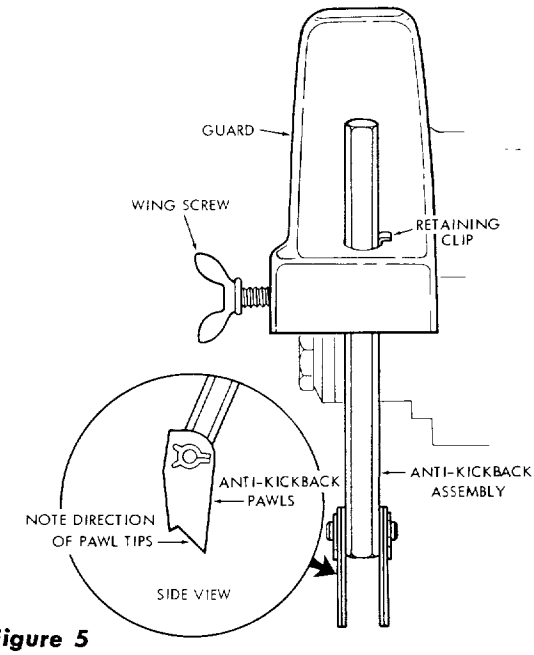


Figure 5

b. Assemble and adjust your saw as outlined in instructions that follow.

2. Attaching Column Tube to Base Assembly.

a. Set the saw base on a work bench or table, leaving the rear of base extending out over the edge of the bench. (See figure 2.) Make sure the base is positioned so the two front table attaching holes are up, as shown in figure 2.

b. Set the basic saw assembly, **with inner carton still in place** on the bench (or table) and slide the column tube just inside the rear triangular portion of the base. (See figure 2.) The inner carton will serve as a support while attaching the column tube to the base.

c. Insert six 5/16-18 x 3/4-inch hex-head screws (figure 2) through matching holes in the base and column tube. (Two of these screws must pass through the welded reinforcement at rear of base.) Then, install six 5/16-inch lockwashers and six 5/16-18 hex nuts. Tighten all nuts firmly.

d. Using the 5/16-inch hex-L wrench, loosen the set screw in upper end of the lift shaft, rotate the lift crank assembly to a vertical position and tighten the set screw securely. (See figure 3.)

e. Raise the radial arm to the highest position by rotating the lift crank and remove the inner carton from the basic saw assembly.

f. Grasp the caution tag at outer end of radial arm and pull it off the carriage stop screw. Read the tag before discarding it.

3. Installing Anti-Kickback Assembly.

a. Insert the retaining clip into the anti-kickback hole in the guard, positioning it as shown in figure 4. This clip fits between the anti-kickback rod and bore of guard to prevent the anti-kickback assembly from "dropping" through the bore when the wing screw is loosened. (See figure 5.)

b. Insert anti-kickback rod into the hole from the bottom (figure 4) and tighten the wing screw. Make sure the

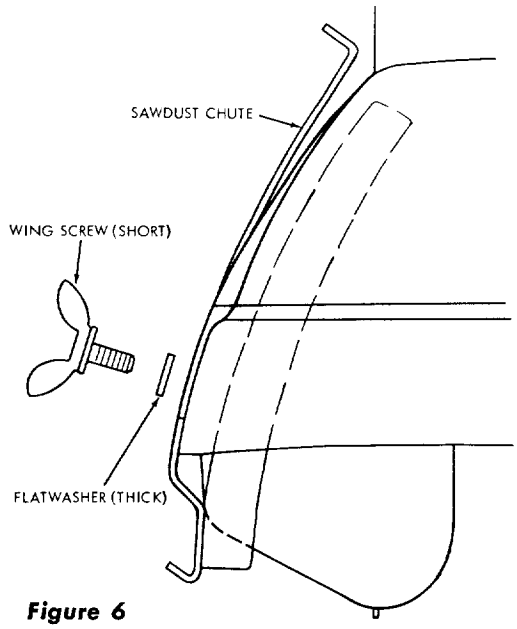


Figure 6

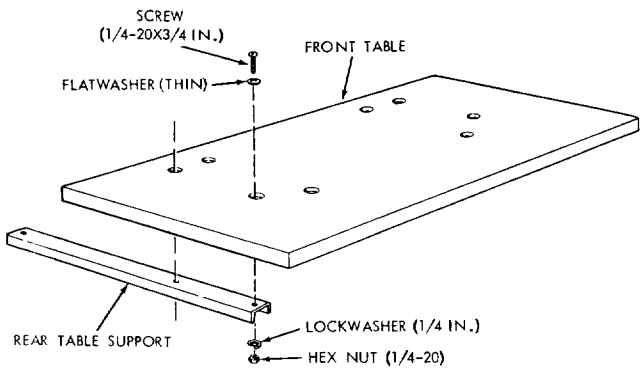


Figure 7

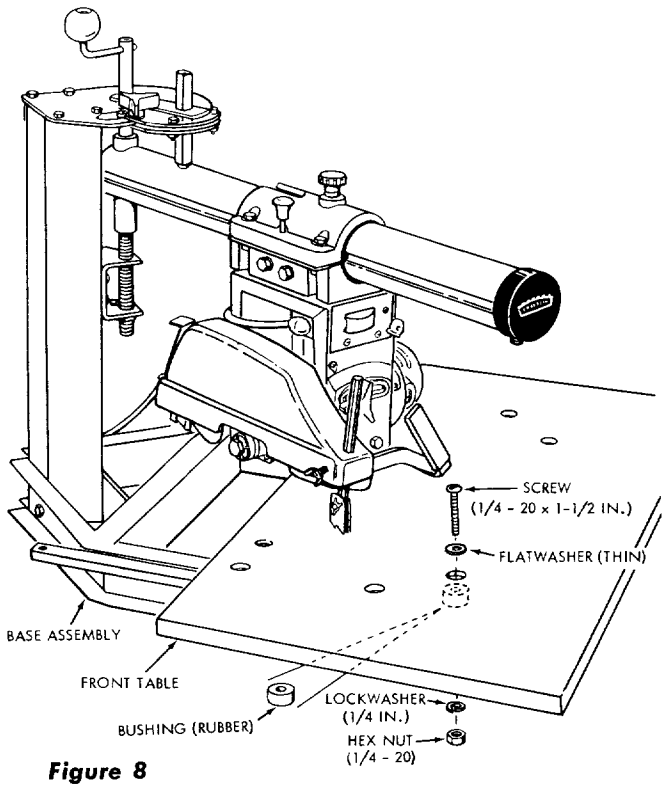


Figure 8

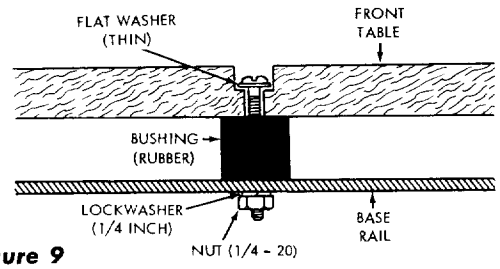


Figure 9

sharpened tips on anti-kickback pawls are positioned as shown in figure 5. The anti-kickback pawls are to be adjusted to proper height when ripping.

4. Installing Sawdust Chute.

a. Place the sawdust chute in position at rear of guard. (See figure 6.)

b. Install the wing screw (short) and (thick) flat washer (figure 6) and tighten the wing screw to hold the chute temporarily in place. The chute is adjusted to just clear the surface of the board during ripping operations.

5. Mounting the Saw.

a. The saw must be placed on a suitable, sturdy work bench, table, or Craftsman Power Tool Bench. The base of the saw contains holes in the lower flange for mounting.

b. The saw should be mounted with the front slightly higher than the rear in order to prevent the motor from creeping forward on radial arm when the motor is running and the carriage lock knob loose.

c. Make sure the saw base is not distorted whenever mounting bolts are tightened.

6. Installing the Front Table.

a. Attach the two rear table supports to the front table. (See figure 7.) Use the counterbored holes nearest each side of front table and use hardware shown in figure 7. Adjust each rear support parallel to outside edge of table and tighten all four screws securely.

b. Place the front table in position on the base assembly, aligning holes in table with holes in base rails. (See figure 8.)

c. Raise the front table and slide a rubber bushing (figure 9) between the table and base rails at each of the four attaching holes. Align holes in bushings with holes in table and base rails. (See figure 8.)

d. Insert a 1/4-20 x 1-1/2-inch screw (with flat washer) through each hole.

e. Place a 1/4-inch lockwasher and a 1/4-20 hex nut on each screw, but do not tighten the nuts at this time.

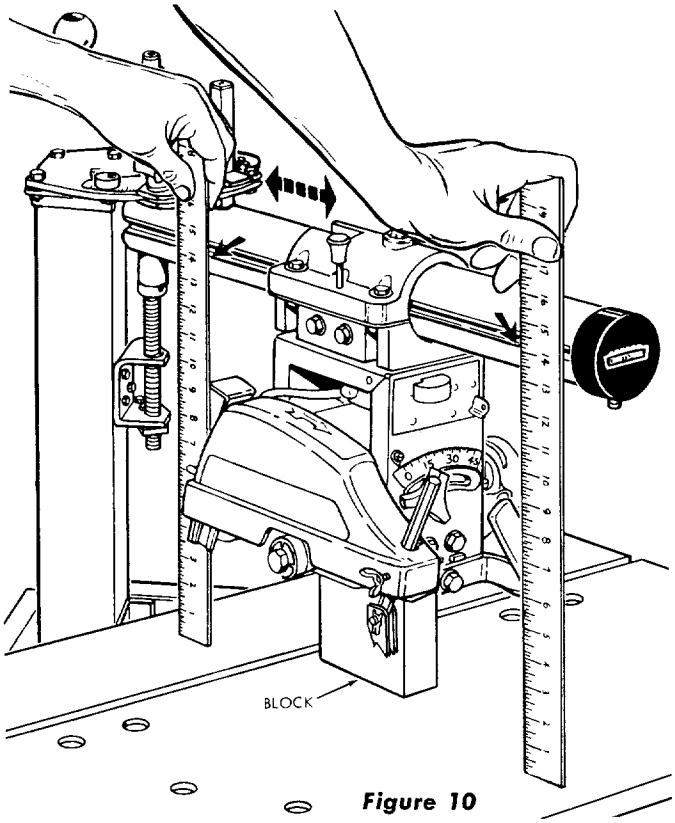


Figure 10

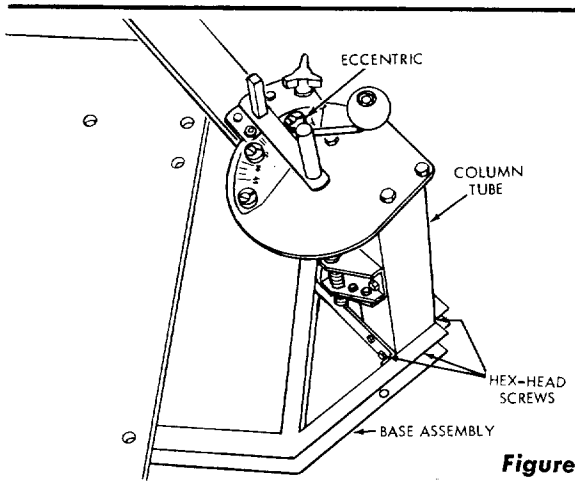


Figure 11

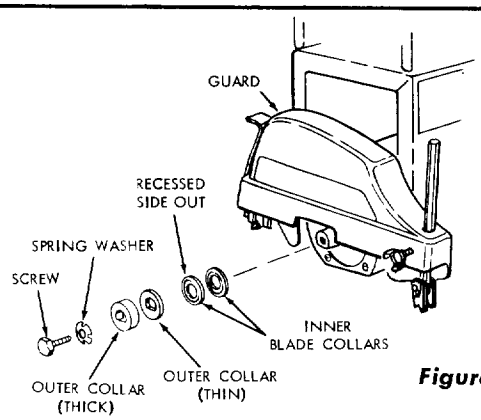


Figure 12

7. Squaring the Column to the Base.

a. Elevate the radial arm to near its upper limit by rotating the lift crank (figure 8).

b. Measure from the lower edge of the bearing groove in one side of the radial arm, to the table surface — at a point near the end of the arm and again at a point near the rear edge of front table, as shown in figure 10. These two measurements must be the same within 1/8 inch. If they vary more than 1/8 inch, proceed as follows:

(1) Loosen the six hex-head screws (figure 11) that secure the column tube to the base.

(2) Place a wood block (approximately three-inches thick) under the motor, as shown in figure 10.

(3) Lower the motor onto the block, by rotating the lift crank, until some tension exists on the block.

(4) Measure again at the two locations described in preceding step b, in order to determine if the two measurements are the same.

(5) Continue to rotate the lift crank and measure until both measurements are the same (within 1/8-inch), then tighten the six hex-head screws that secure the column tube to the base assembly — tightening the two front screws first, followed by the four rear screws.

(6) After all six screws have been tightened securely, raise the motor (by rotating the lift crank) and remove the wood block.

8. Installing Saw Blade.

a. Raise the saw to near the upper limit by rotating the lift crank.

b. Rotate the hex-head screw at saw end of motor shaft (figure 12) clockwise and remove the screw and spring washer. If the screw is tight, grasp the outer collars with pliers to keep from turning.

NOTE: This screw has left-hand threads.

c. Lift off the two keyed (outer) blade collars. Leave the two inner collars on the motor shaft.

d. Check the inner collar (that contacts the blade) to make sure the recessed side is facing outward. (See figure 12.)

e. Place the saw blade on the motor shaft with saw teeth pointing in direction of saw rotation (clockwise). (See figure 13.)

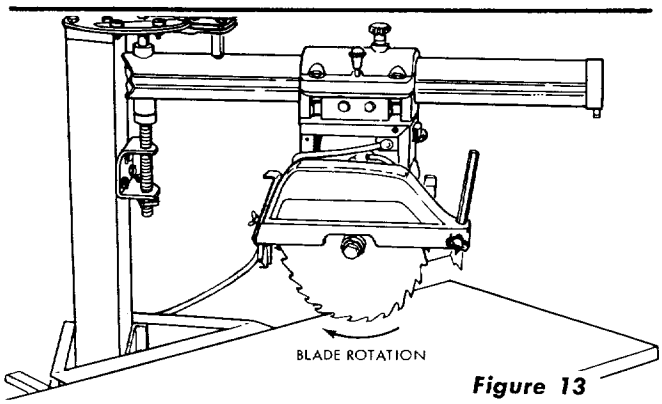


Figure 13

f. Install the thin outer collar on motor shaft, with recessed side against the blade. (See figure 14.)

g. Install the thick outer collar, with recess toward the blade, the spring washer (cupped toward the blade) and hex-head screw. Tighten the screw as tight as possible with fingers.

h. Wedge the saw blade with a block of wood at forward edge of blade (figure 15) and, with the wrench supplied, tighten the arbor (hex-head) screw until the spring washer flattens. Then back the screw off 1/6-turn (one flat on the hex-head screw). (See figure 15.) This allows the blade to slip on the spindle if it should jam in the work.

i. Remove the wood block and wrench.

CAUTION: If, when the saw is operated, the blade jams, the saw should be stopped immediately. Before resuming operation, recheck the adjustment (described in step h, above) to make sure the setting did not change when the jam occurred.

9. Attaching the Cord Clamp.

a. Loosen the carriage lock knob (figure 15) and move the carriage out to the end of radial arm.

b. Loosen the yoke clamp handle (figure 16), lift up on the swivel index knob (figure 15) and rotate the yoke clockwise 90° (viewed from above), to position it as shown in figure 16.

c. Remove all slack from the power cord (figure 16) and attach it to the arm at location shown with the cord clamp and screw from loose parts carton. Tighten the screw securely.

d. Index the yoke to place the saw blade parallel to the radial arm (as shown in figure 15), move the carriage to the approximate mid point of radial arm and tighten the yoke clamp handle and carriage lock knob.

ALIGNMENT INSTRUCTIONS

1. Squaring the Crosscut Travel.

a. Loosen the arm lock knob (figure 17), if not already loose, and move the radial arm to the left until the index lever stops against the miter (0°) index stop. Hold the arm lightly against the stop and tighten the arm lock knob.

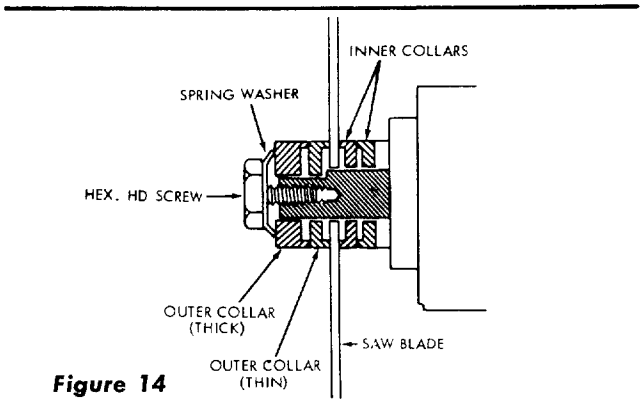


Figure 14

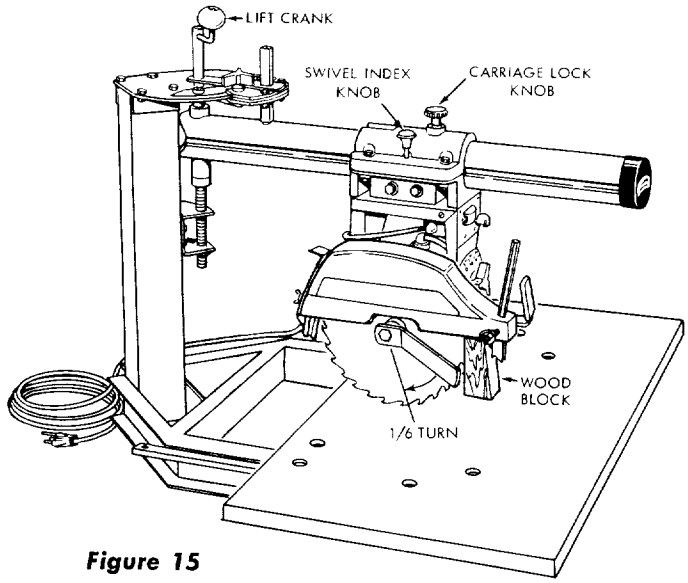


Figure 15

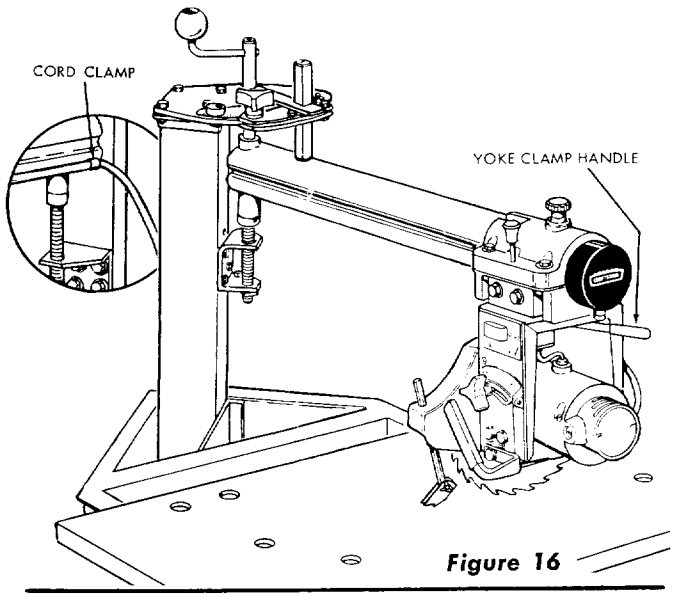


Figure 16

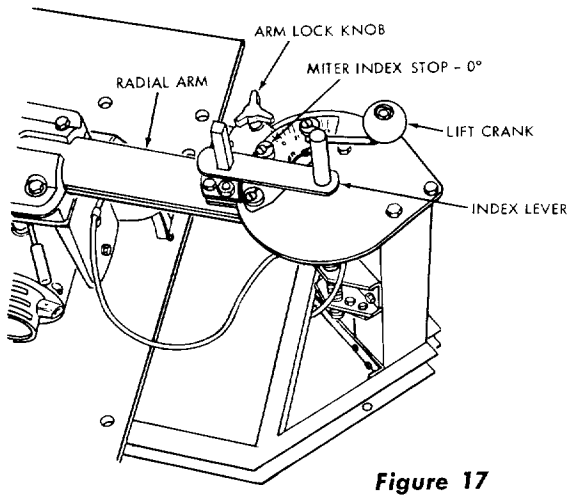


Figure 17

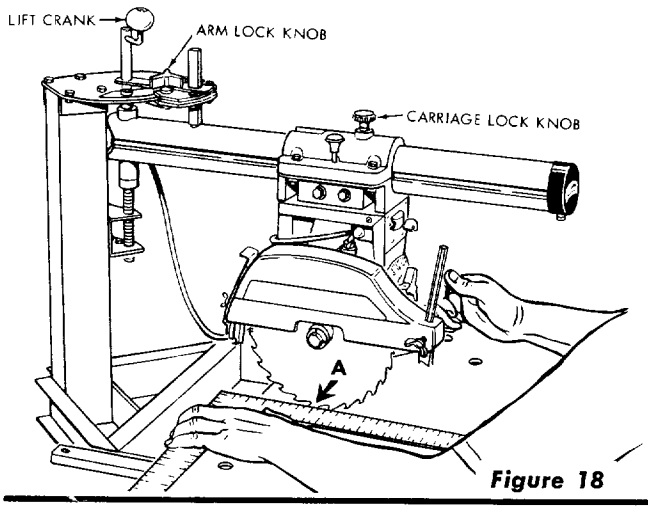


Figure 18

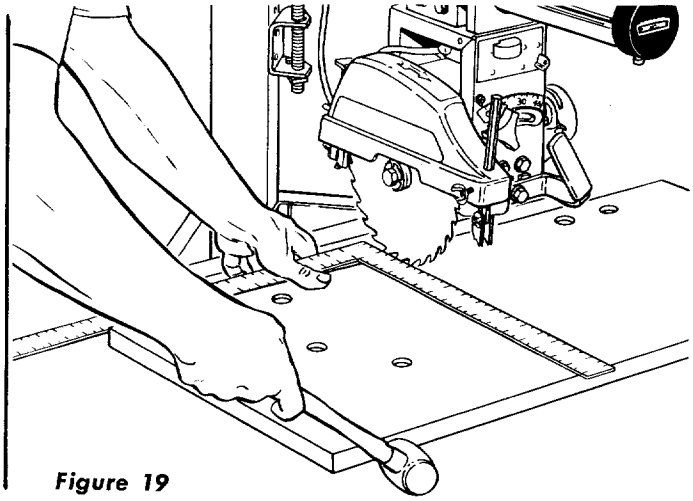


Figure 19

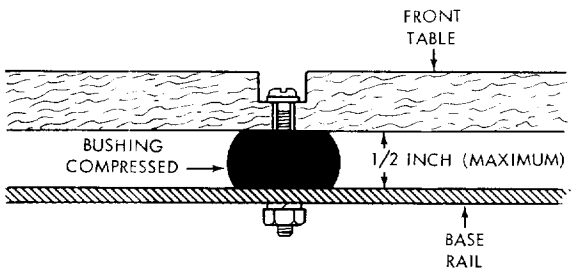


Figure 20

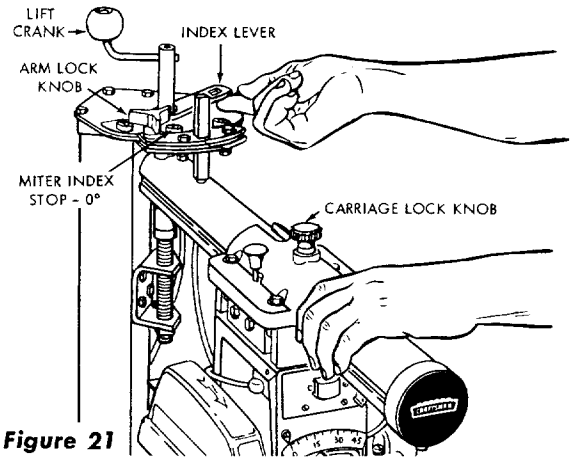


Figure 21

b. Lower the saw blade, by rotating the lift crank, until the blade just clears the front table.

c. Loosen the carriage lock knob (figure 15) and move the carriage to position the saw blade near rear edge of front table.

d. Place the short leg of a framing square against the rear edge of front table, as shown in figure 18, and the other leg touching a saw tooth at point "A". (Be sure to select a tooth with the "set" toward the square.) Mark the tooth with a soft pencil.

e. When the carriage is moved back and forth on the radial arm, the saw tooth "A" should just touch the square at all positions. If saw tooth "A" does not touch the square at all points, make the following adjustments:

(1) If the saw tooth ("A", figure 18) moves into the square when moving the blade from the rear to the front of table, tap the left-hand front edge of table (figure 19) with the mallet. Continue to shift the table until the adjustment is correct. If this, or the next operation cannot be made as described, refer to "Squaring the Crosscut Travel by Adjusting the 0° (Crosscut) Miter Index Stop", under "Trouble Shooting".

(2) If saw tooth ("A", figure 18) moves away from the square when moving the blade from the rear toward the front of table, tap the right-hand front edge of table with the mallet to make corrections.

f. Tighten all four front table screws to compress each of the four rubber bushings (figure 20) to a height not exceeding 1/2 inch. (If not compressed to 1/2 inch or less, the saw blade could not be positioned to a full 45° bevel without striking the table.)

NOTE: This is a temporary setting, since each screw will have a final adjustment when the table is adjusted parallel to the radial arm.

g. **Recheck above adjustments to make sure tightening front table screws did not change the setting.**

2. Adjusting Front Table Parallel to Radial Arm.

a. Loosen the arm lock knob (figure 21) lift up on the index lever and rotate it completely clear of the square index post, as shown in figure 21. Move the radial arm to the left. Position the saw adjacent to the left front table mounting screw. (See figure 22.)

b. Spin the saw blade by hand, while lowering it to the table surface slowly with the lift crank. Stop lowering

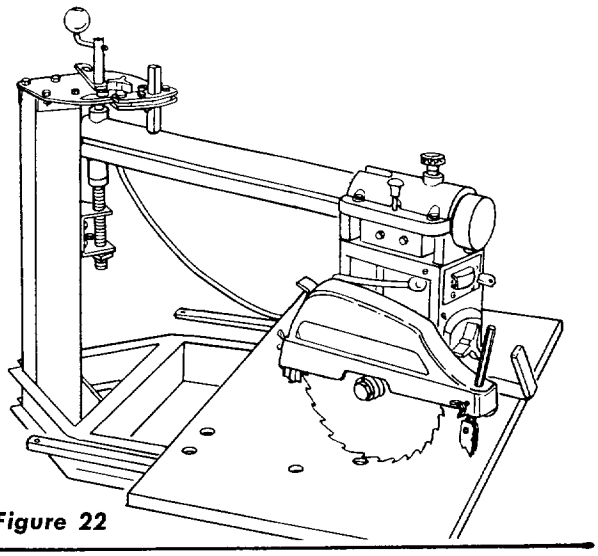


Figure 22

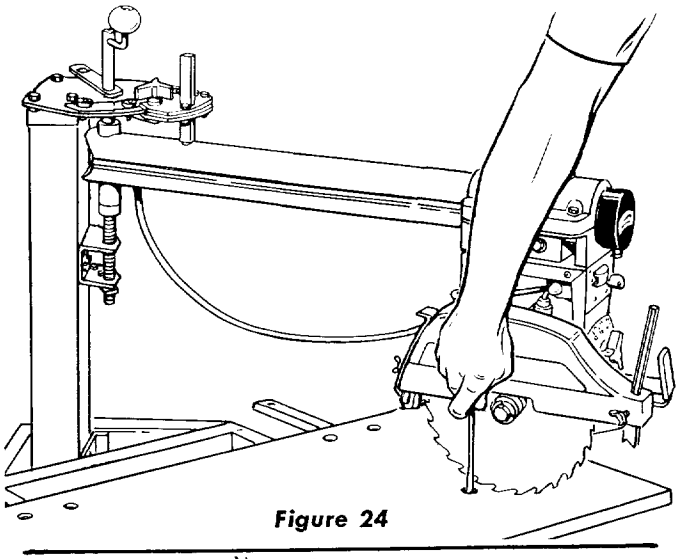


Figure 24

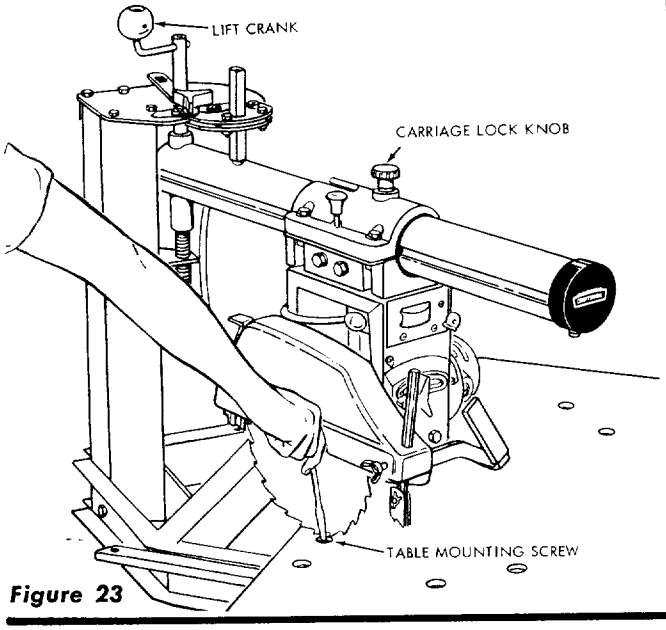


Figure 23

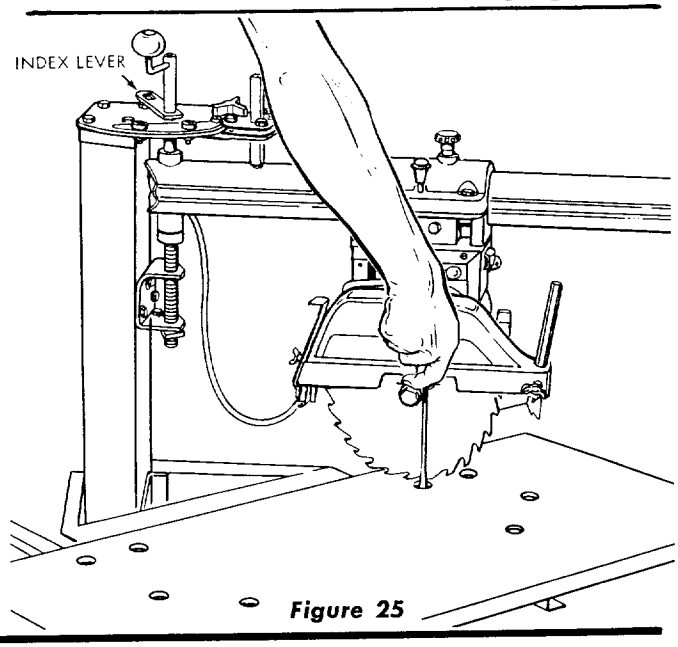


Figure 25

the blade when a slight "pinging" sound is heard as the saw teeth touch the table during rotation. Do not allow the blade to cut into the table.

NOTE: This is the starting point of the adjustment, therefore, do not change this setting until the remaining three table screws have been adjusted.

c. Position the radial arm and carriage on the arm to place the saw blade adjacent to the left rear table screw. (See figure 23.)

NOTE: If, when approaching this and remaining two locations, the saw should start to bind on the table, tighten the table screw enough for the blade to clear the table. Also, hold the lift crank when moving the radial arm to right- or left-hand positions to keep it from turning, as this would change the elevation setting of the saw blade and render the settings inaccurate.

d. Spin the blade by hand and rotate the left-rear table screw (figure 23) until the same "pinging" sound is evident.

e. Rotate the radial arm to the right side of saw table.

f. Position the saw adjacent to the right front screw location (figure 24) and adjust the table screw as described in preceding instructions.

g. Move the saw to a position adjacent to the right rear table screw (figure 25) and adjust as described in preceding instructions.

h. Move the index lever back into normal position on the square index post.

i. Elevate the saw slightly with the lift crank, to clear the table, move the radial arm to the crosscut (0°) position and tighten the arm lock knob. (See figure 26.)

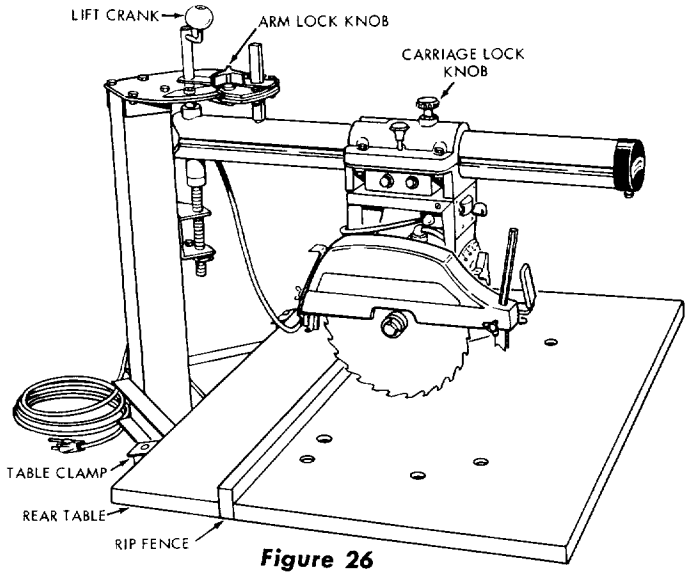


Figure 26

j. Place the rear table and rip fence in position (figure 26), with ends even with front table.

k. Install the two table clamps (figure 26) on ends of the table supports with one 1/4-20 x 3/4-inch screw, and 1/4-20 square nut in each clamp. (See figure 27.)

i. Make sure each table clamp is positioned at the angle shown in figure 27 and tighten the screws firmly to secure the rear table boards.

3. Squaring Saw Blade To Table.

a. Loosen the carriage lock knob (if not loosened already) and move the carriage rearward until the saw blade is just forward of the fence. Tighten the carriage lock knob. (See figure 28.)

b. In order to make sure the 0° bevel setting is against its stop, loosen the bevel lock knob (figure 28), grasp the handle and rotate it clockwise until it stops. Tighten the bevel lock knob.

c. Place a combination square (or try square) on the front table and against the saw blade, as shown in figure 29.

Do not allow base of square to be held away from face of saw by a tooth.

d. When the blade is square (perpendicular) to the table the base of the square will contact the blade throughout its full height, and no adjustment is needed.

e. If a gap can be seen at the top or bottom of the square, proceed as follows:

(1) Loosen three hex-head screws (figure 28) just enough to permit the motor to slip on the yoke.

(2) Hold the square as shown in figure 29, and shift the motor enough to square the saw blade with table top.

(3) Tighten the three hex-head screws. (See figure 28.)

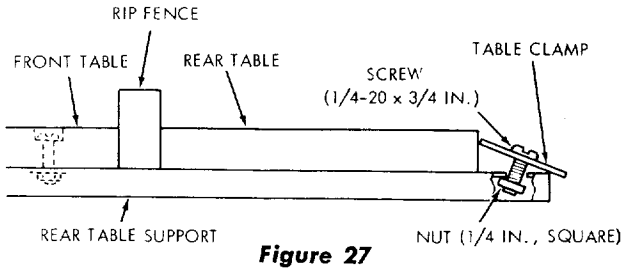


Figure 27

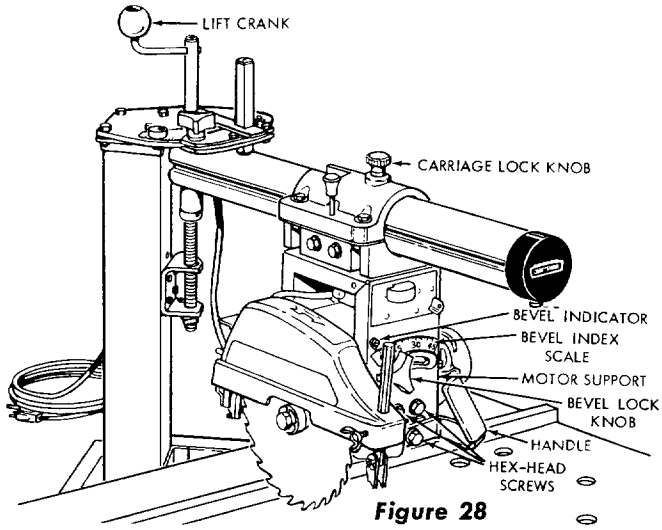


Figure 28

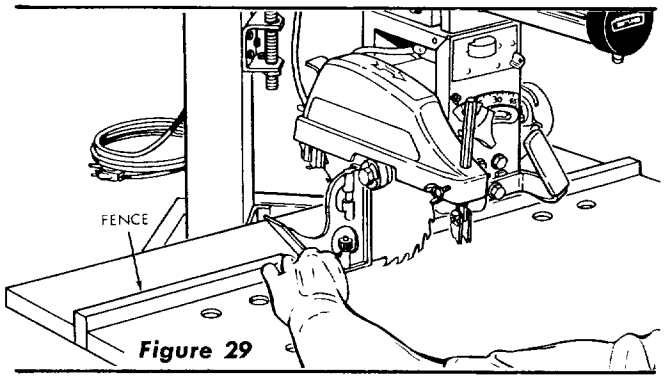


Figure 29

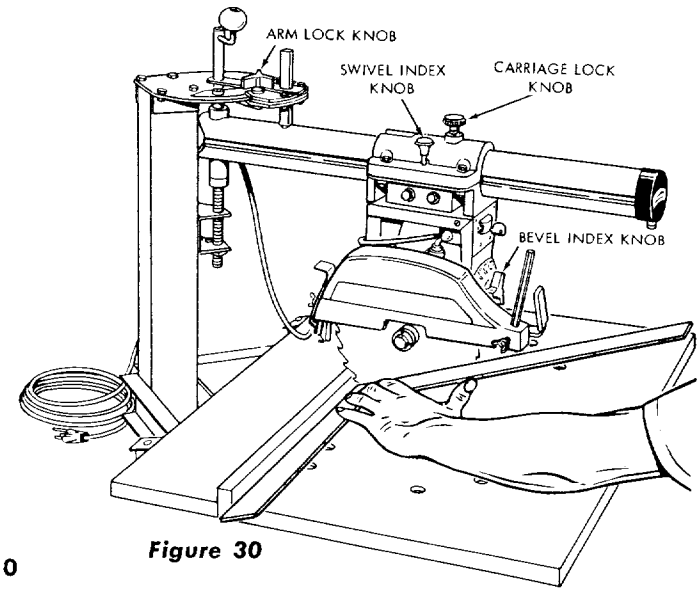


Figure 30

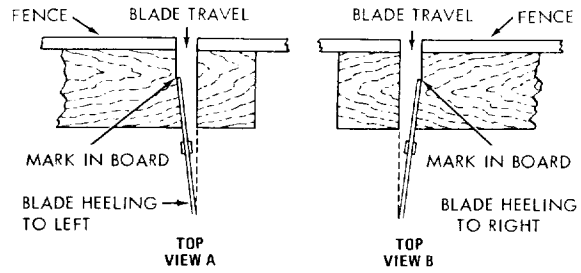


Figure 31

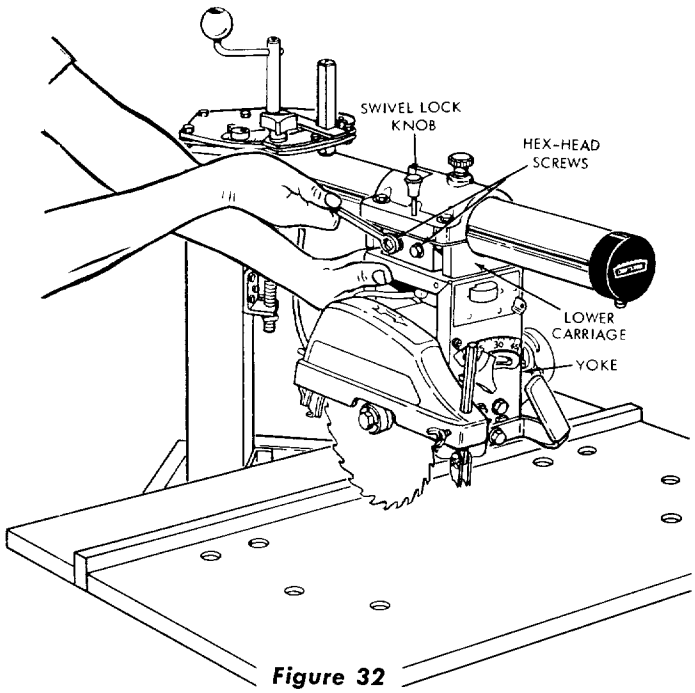


Figure 32

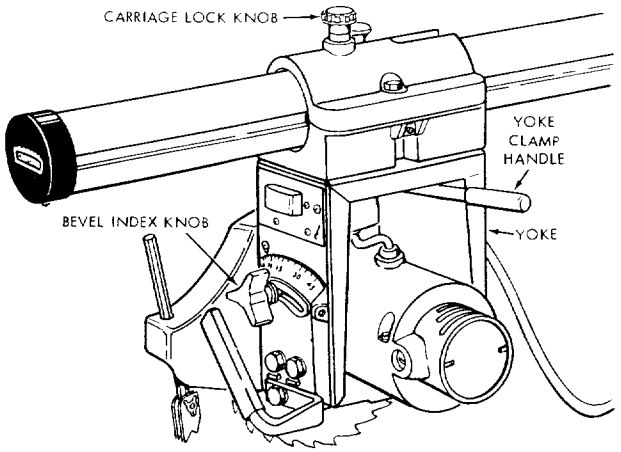


Figure 33

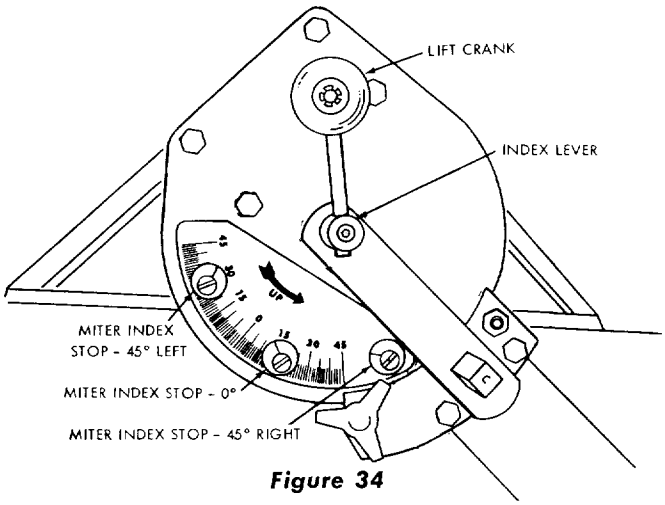


Figure 34

(4) Recheck as shown in figure 29 and make corrections if any shifting occurred while screws were being tightened. Several trials may be required.

(5) Check the bevel indicator (figure 28) which should be aligned with the 0° mark on bevel index scale. If not, loosen the indicator attaching screw, adjust the indicator and tighten the screw.

4. Checking and Adjusting Saw Blade for Heel (Left or Right).

a. Position the saw as shown in figure 30 and make sure the carriage lock knob (figure 30), bevel index knob and yoke clamp handle are tight. Also, make sure the radial arm is still indexed at 0° and the arm lock knob is tight.

b. Place a framing square against the forward face of the fence and saw blade, as shown in figure 30.

Do not allow the square to be held away from the face of saw blade by contacting a tooth.

c. If a gap exists between the square and blade at front or rear positions, one of two types of "heel" exists. The two types of "heel" are shown at "view A" and "view B", figure 31. To correct for either type of "heel" proceed as follows:

(1) Loosen the two hex head screws (figure 32), on left-hand side of lower carriage.

(2) Loosen the yoke clamp handle (figure 33) and rotate the yoke enough to eliminate "heel". While holding the yoke securely to keep it from moving, tighten the yoke clamp handle.

(3) Tighten the two hex-head screws (figure 32) and recheck with the square to make sure that tightening screws did not alter the setting. More than one trial may be required to obtain an accurate setting.

5. Adjusting Miter Index 45° Stops (Right and Left).

NOTE: Stops are provided for rapid indexing of the radial arm at 0°, 45° left and 45° right. (See figure 34.) The 0° stop is adjusted at the factory but both 45° stops must be checked and adjusted.

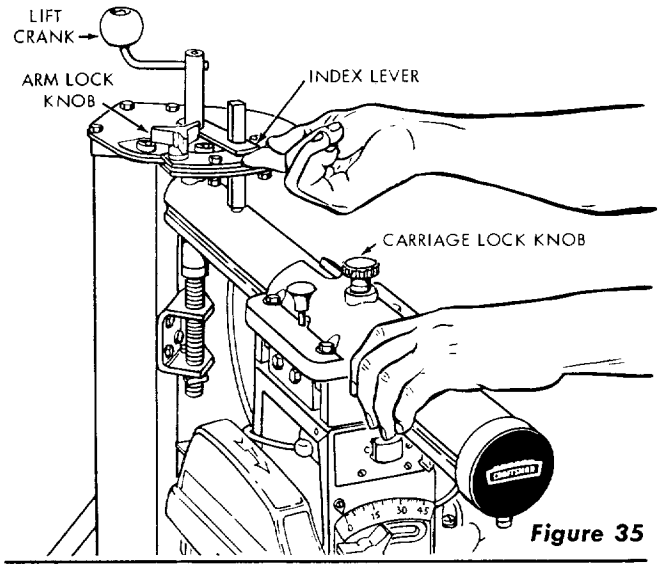


Figure 35

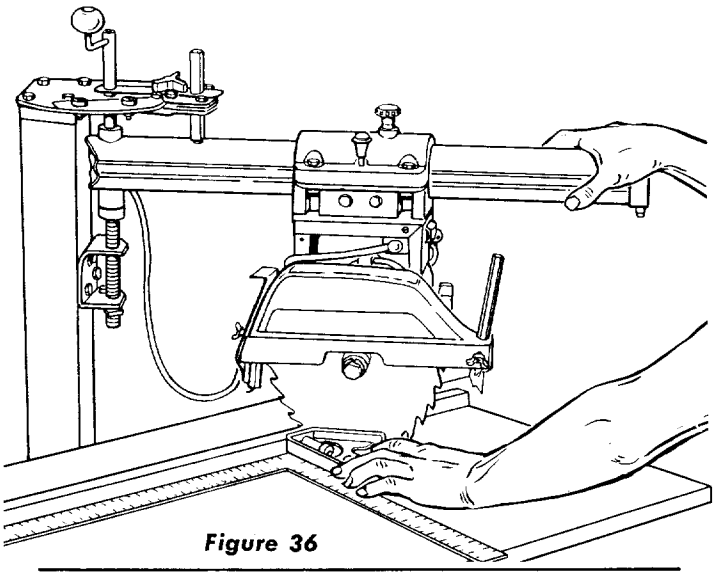


Figure 36

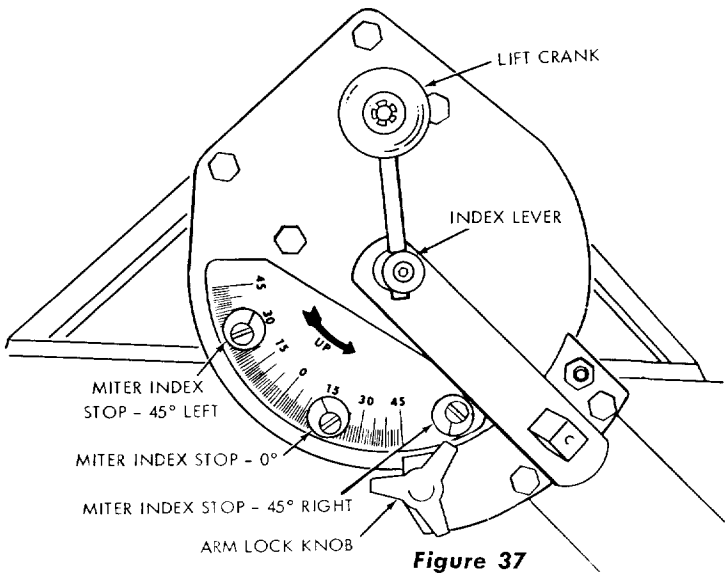


Figure 37

a. Adjust the 45° right miter index stop as follows:

(1) Loosen the arm lock knob (figure 35), raise the index lever as shown and move the radial arm to the right until the index lever has passed over the right-hand 45° stop and release the index lever.

(2) Move the radial arm to the left until the index lever is resting against the 45° right index stop (figure 37). Hold the arm against the stop and tighten the arm lock knob (figure 35).

(3) Move the carriage on radial arm until the saw blade is just forward of the rip fence and tighten the carriage lock knob.

(4) Remove the base from a combination square and place the base and framing square in the position shown in figure 36.

(5) If the setting is correct, check the screw that secures the 45° right miter index stop (figure 34) to make sure it is tight. Hold the nut underneath and tighten the screw securely.

(6) If an adjustment is needed, loosen the screw in the 45° right miter index stop (figure 34) and rotate the stop to the position shown in figure 37.

(7) Loosen the arm lock knob (figure 37) and, with the squares in place as shown in figure 36, move the arm until the saw blade is positioned at 45° (as measured with the squares) and tighten the arm lock knob.

(8) Rotate the 45° right miter index stop clockwise with a screwdriver. As the screw is rotated, the eccentric will also rotate until it contacts the index lever where it will stop and the screw will then tighten to secure the eccentric.

(9) Loosen the arm lock knob (figure 37), move the radial arm a short distance to the right, then back against the 45° stop. Hold it against the stop, tighten the arm lock knob and recheck for accuracy of the setting by measuring with the squares as shown in figure 36. Normally, the setting will be correct, but if not, make additional trial adjustments in small increments until the 45° angle is correct.

(10) Loosen the arm lock knob (figure 37), lift up on the index lever and move the radial arm to the left until it stops against the left-hand 45° stop. Tighten the arm lock knob.

(11) Using the base of the combination square, positioned as shown in figure 38, check for a correct 45° angle of the saw blade with the fence.

(12) If an adjustment is required proceed as described in preceding instructions for setting the right-hand 45° stop.

NOTE: After setting the 45° stops, a final check for accuracy can be made by actually sawing a board at each setting and checking the result for accuracy.

6. Adjusting the 45° Bevel Position.

a. Index the radial arm at the crosscut (0°) position and tighten the arm lock knob.

b. Elevate the saw, by rotating the lift crank, until it stops at the highest position.

c. Loosen the bevel lock knob and rotate the motor in the yoke until it stops at the 45° bevel position. Then lower the radial arm until the blade just clears the table surface.

d. Place the base of the combination square between the blade and table surface as shown in figure 39. If an adjustment is required, proceed as follows:

(1) Hold the base of the square in position and rotate the set screw with the 3/32-inch hex-L wrench (figure 39) until the blade is at 45° with the table surface.

(2) **Tighten the bevel lock knob and recheck.**

(3) Remove the square, loosen the bevel lock knob, index the motor to the 0° bevel position and tighten bevel lock knob.

NOTE: The saw alignment is now complete. If any inaccuracies are encountered during, or after, extensive operation, refer to the section entitled "Trouble Shooting".

POWER SUPPLY AND ELECTRICAL CONNECTIONS

1. Motor Specifications.

The AC motor used in this saw is a universal type, with the following specifications:

Horsepower	2 (developed)
Voltage	120
Amperes	12
Hertz	60
Phase	Single
RPM	5000
Rotation (viewed from saw blade end)	Clockwise

CAUTION: Connect the motor through a 15-ampere, time-delay fuse.

2. Grounding.

This saw is equipped with an Underwriters Laboratories approved three-prong plug. If the outlet is grounded the saw will be grounded automatically when plugged in. If the receptacle has two-prong socket, the adapter must be used and the grounding lead attached to a known ground. (See figure 40.)

3. Extension Cords.

The use of any Extension Cord will cause some loss of power. To keep this to a minimum and to prevent overheating and motor burn-out, use the table below to determine the minimum wire size (A.W.G.) Extension Cord. All cords should be three-wire, grounded.

Extension Cord Length	Wire Size A.W.G.
27 - 50 Feet	14
50 - 75 Feet	12
75 - 100 Feet	10
100 - 200 Feet	8

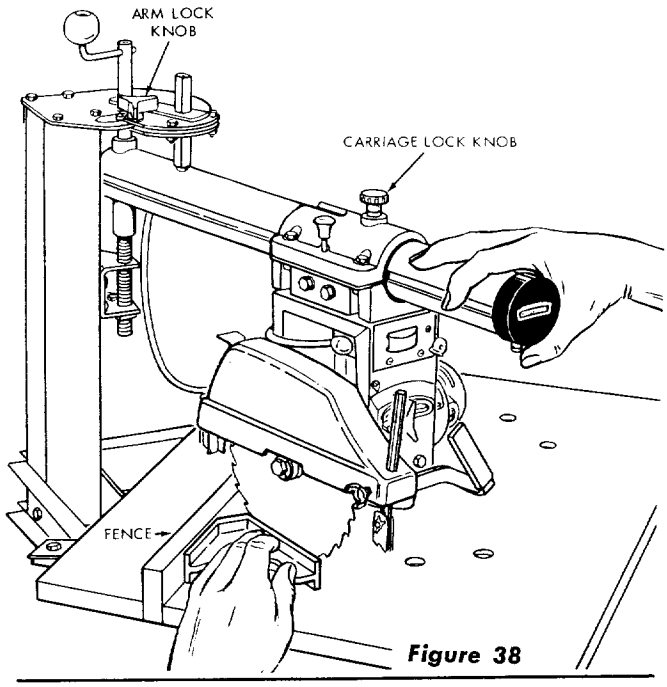


Figure 38

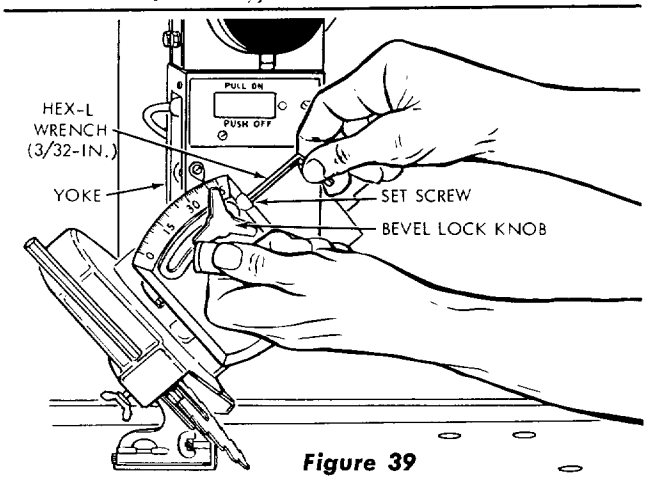
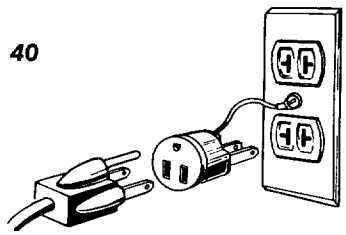


Figure 39

Figure 40

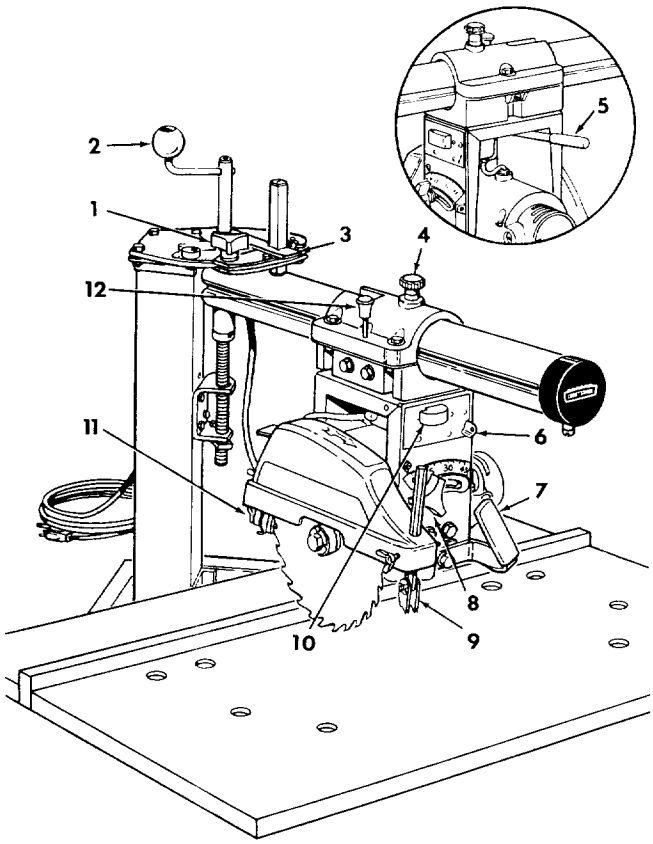


4. Checking Motor Brushes.

a. Under normal operating conditions, motor brushes should be inspected for wear once each month (more frequently under abnormal conditions).

b. Refer to paragraph, "Installing New Motor Brushes", in the "Trouble Shooting" section, for instructions on removing and installing the brushes.

c. If brushes are worn to 1/8-inch in length, they should be replaced.



1. Arm lock knob
2. Lift crank
3. Index lever
4. Carriage lock knob
5. Yoke clamp handle
6. Switch lock and key
7. Handle
8. Bevel lock knob
9. Anti-kickback assembly
10. ON-OFF switch
11. Sawdust chute
12. Swivel index knob

Figure 41

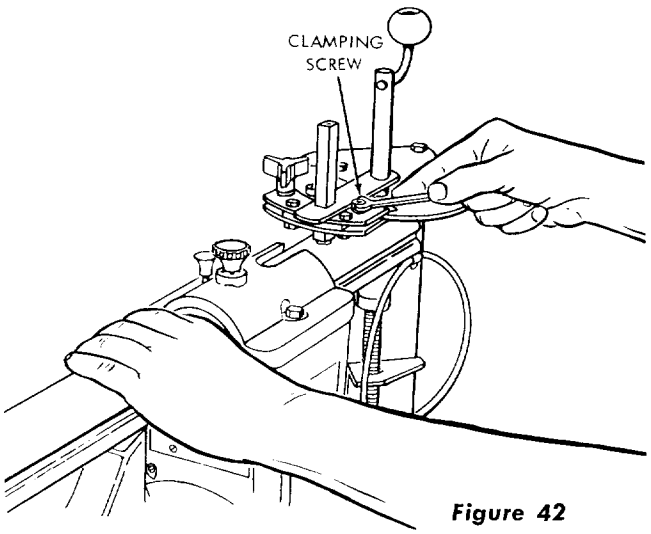


Figure 42

LOCATION AND FUNCTION OF CONTROLS

Controls for operating the saw are shown in figure 41. The operator should become familiar with instructions that follow before operating the saw.

1. "Depth of Cut".

a. The lift crank (2, figure 41) is used to raise and lower the saw blade.

b. Clockwise rotation lowers the blade . . . counterclockwise rotation raises it.

2. "Angle of Cut".

a. Two controls are involved in releasing, securing and indexing the angle of the radial arm. These are: arm lock knob (1, figure 41) and index lever (3).

b. The arm is unlocked from any position by a slight counterclockwise rotation of the arm lock knob (1, figure 41) and is locked in any desired angular position by tightening the arm lock knob. The radial arm has positive stops at 0° and 45° left and right, and is released from these index positions by loosening the arm lock knob (1) and lifting the index lever (3) to clear the stops.

c. When making repeated miter cuts at one setting of the radial arm, it may be locked securely in any position by tightening the hex-head clamping screw, located at the right of the index lever. (See figure 42.) This screw must be loosened before re-positioning the radial arm. If the arm tends to swing more freely than desired by the operator, any degree of friction can be exerted by adjusting the screw to individual preference.

d. For positive and accurate settings of the radial arm the following is recommended:

(1) If the arm is already set to the approximate miter angle desired, loosen the arm lock knob, rotate the arm toward the right a few degrees. Then move the arm to the left until the index lever (3, figure 41) strikes the stop (firmly but not severely).

(2) Hold the arm against the stop with light, but firm, force and tighten the arm lock knob.

(3) The radial arm can be set for any desired miter cut by use of the miter scale.

3. "Yoke Pivot".

a. Two controls are used in this operation. They are: yoke clamp handle (5, figure 41) and swivel index knob (12).

b. The yoke clamp handle (5, figure 41) locks the yoke to the carriage in any position. Pull the handle forward to release the yoke. Push the handle rearward to secure the yoke. It should lock the yoke effectively when moved all the way rearward.

c. The swivel index automatically indexes the yoke at the 90° positions, for ripping. Lift the spring-loaded knob to release it. Tap the knob after releasing it to insure proper seating of the swivel index pin in its detent.

4. "Carriage Lock".

a. The carriage lock knob (4, figure 41) is rotated clock-

wise to securely position the carriage on the radial arm, and counterclockwise to release it.

b. When performing a square crosscut or miter cut, the carriage lock knob must be loosened until the carriage is free to travel along the radial arm.

c. The carriage lock knob should be tightened except when the operator is ready to grasp the handle (7, figure 41) and make a cut.

d. When ripping, the carriage lock knob must be tight to lock the carriage on the arm.

5. "Blade Angle".

a. The bevel lock knob (8, figure 41) is used to lock the saw blade in an angular position.

b. The bevel index scale indicates the angular position of the saw blade with respect to the table from 0° to 45°.

c. The bevel lock knob (8, figure 41) locks the motor to the yoke in any position on the scale. Rotate it clockwise to lock; counterclockwise to unlock.

6. "Power Switch and Key".

a. This saw cannot be operated without the key (6, figure 41), and likewise, the key cannot be removed from the lock while the saw motor is running.

b. To release the switch lever (10, figure 41) insert the key in the slot and turn it counterclockwise until it stops. Rotate the key clockwise to lock the switch.

c. To start the saw, engage the forefinger under left side of ON-OFF switch lever (10, figure 41) and pull it outward.

d. To stop the saw, simply "push" the switch lever with finger or thumb — pushing it inward.

WARNING: When leaving the saw unattended, lock the ON-OFF switch and remove the key.

7. The Anti-Kickback Assembly.

a. The anti-kickback assembly (9, figure 41) is used during ripping operations and is adjustable to accommodate the thickness of the board being ripped.

b. A wing screw in the saw guard secures the anti-kickback rod.

8. The Sawdust Chute.

a. The sawdust chute (11, figure 41) is used to help propel sawdust from the cut and provide a hold-down for boards during ripping operations.

b. The chute is secured to the guard with a wing screw (figure 43) and is adjustable to accommodate various board thicknesses.

POSITIONING THE ANTI-KICKBACK ASSEMBLY AND SAWDUST CHUTE FOR RIPPING

WARNING: Never position the anti-kickback assembly or the sawdust chute with the power ON, nor position the anti-kickback pawls by grasping the pawls.

1. For all crosscutting operations (those operations in which the carriage is traveled along the radial arm to feed the saw blade to the workpiece) both the sawdust chute (11, figure 41) and the anti-kickback assembly (9) must be elevated to the upper limit and secured.

2. For all rip-cutting operations (those in which the carriage is locked and the workpiece is fed along the rip fence to the saw blade) both the sawdust chute (figure 43) and the pawls of the anti-kickback assembly must be lowered to help keep the workpiece flat on the table — and to prevent kickback (which could otherwise occur should the blade bind in the workpiece).

3. Position the anti-kickback as follows:

a. Position the saw for either in-rip or out-rip as desired, with the radial arm indexed at 0° and locked. (Figure 43 shows the saw in the out-rip position.)

b. Tighten the carriage lock knob (4, figure 41) and yoke clamp handle (5).

c. Plug in the power cord and turn on the saw by pulling the ON-OFF switch (10, figure 41) outward.

d. Rotate the lift crank (2, figure 41) slowly and carefully clockwise until the saw blade cuts into the table to a depth of approximately 1/32 inch.

e. Stop the saw by pushing in the ON-OFF switch and allow the saw blade to come to a complete stop. Disconnect the power cord.

f. Place the board to be ripped (workpiece) alongside the saw blade (figure 43).

g. Grasp the anti-kickback rod near the top and loosen the wing screw that secures the rod in the guard. (See figure 43.) Raise or lower the assembly until the anti-kickback pawl nearest the saw blade rests on the top surface of the workpiece, with the bottom edge of the pawls angled slightly downhill to the top surface of the workpiece, as shown in figure 43. Tighten the wing screw.

h. Pull the workpiece, in the direction opposite to that from which it would be fed through when ripping, to test the anti-kickback setting. If the setting is correct, the pawls should grab and hold the workpiece but release it when pushed in the ripping direction. Readjust the anti-kickback if necessary.

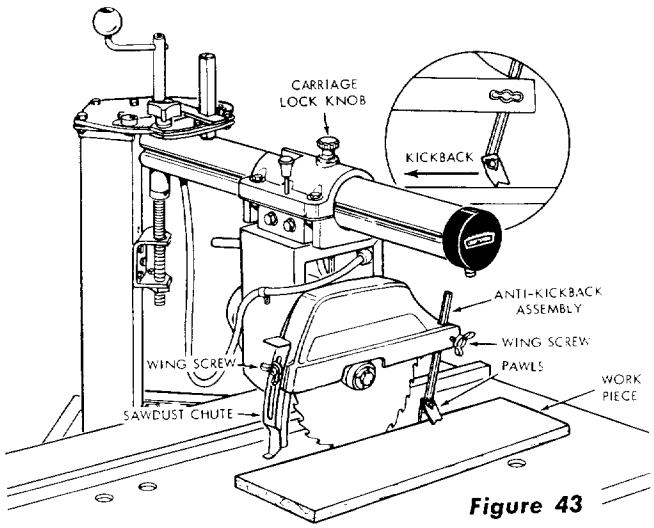


Figure 43

4. Position the Sawdust Chute as follows:

   a. Grasp the tab (figure 44) at the upper end of the sawdust chute, loosen the wing screw and raise or lower the chute to just clear the top surface of the workpiece.

   b. Tighten the wing screw (figure 44).

   NOTE: Before repositioning the yoke to the crosscut position, raise the anti-kickback assembly and sawdust chute to their upper limits and secure them.

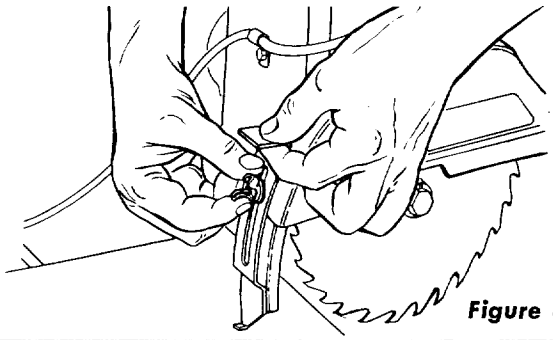


Figure 44

BASIC SAW OPERATIONS

Your Craftsman 8-inch Radial Saw is a versatile tool, capable of performing numerous accurate cuts when adjusted as described in preceding instructions. Basic saw operations are summarized into six categories which should be understood before the saw is turned on. These operations are explained and illustrated in the following paragraphs. A manual entitled "The Radial Saw" is available at your nearest Sears Retail Store or Catalog Order House and contains considerable data and project ideas applicable to the radial saw.

NOTE: Refer to paragraphs under "Operating Controls" for illustrations and description of controls.

REQUIREMENTS FOR CROSSCUT
(OPERATIONS 1 THROUGH 4)

1. Arm lock knob must be tight.
2. Work must be held firmly against table and fence.
3. Saw blade should be sharp and correctly set.
4. Hands must be kept well away from saw blade.
5. Yoke clamp handle must be in locked position.
6. Bevel lock knob must be tight.

OPERATION No. 1—CROSSCUT

Crosscutting is the process of sawing a 90° *(square)* cut as shown in figure 45. The radial arm and bevel settings are indexed at 0° and locked. The yoke is indexed with blade parallel to radial arm and locked. The board being cut (usually across the grain) is held firmly against the fence and the carriage is pulled forward along radial arm to perform the desired cut. The carriage should be returned to the full rearward position and the saw blade allowed to come to a complete stop before removing the boards from the saw table.

OPERATION No. 2—MITER CROSSCUT

Miter crosscutting is the process of sawing a board at any angle other than a 90° (square) cut. (See figure 46.) The 45° miter angle is a popular one, since two boards cut to 45° can be assembled to form a 90° corner for producing a square or rectangular frame. The radial arm is set to the desired angle of cut, bevel setting is indexed at 0° (and locked) as in square crosscutting and the yoke is indexed with blade parallel to radial arm and locked. The board being cut is held firmly against the fence and the carriage pulled forward along the radial arm to perform the desired cut. The carriage should be returned to full rearward position and the saw blade allowed to come to a complete stop before removing the boards from the saw table.

OPERATION No. 3—BEVEL CROSSCUT

Bevel crosscutting is the process of sawing at 90° (square) across the board with the saw blade set at an angle other than 90° to the saw table. (See figure 47.) The radial arm must be elevated fully to permit a maximum bevel setting of 45°. It is then indexed at 0° and locked. The yoke is indexed with blade parallel to radial arm and locked, but the bevel is set to the desired angle of cut. The board is held firmly against the fence and the carriage pulled forward along the radial arm to produce the cut. The carriage should be returned to full rearward position and the saw blade allowed to come to a complete stop before removing the boards from the saw table.

NOTE: The yoke must be locked before setting the saw for a bevel cut, as the yoke clamp handle will not be accessible when in the bevel position.

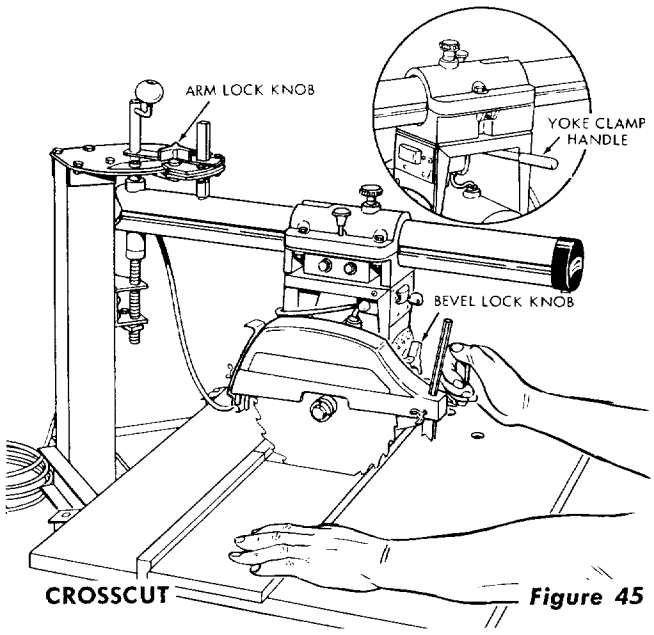
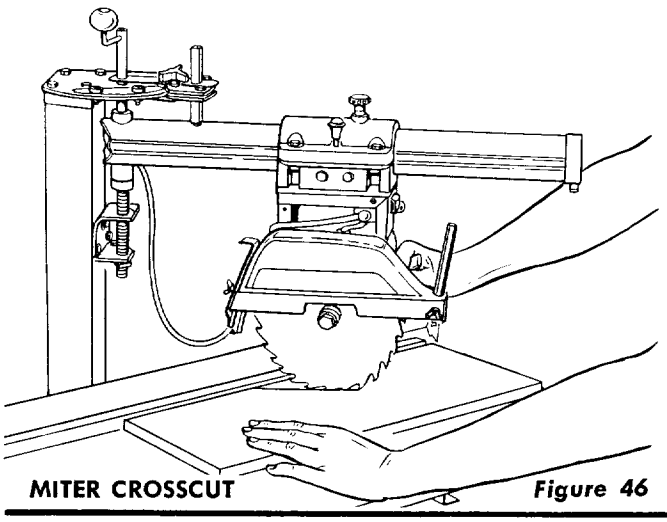
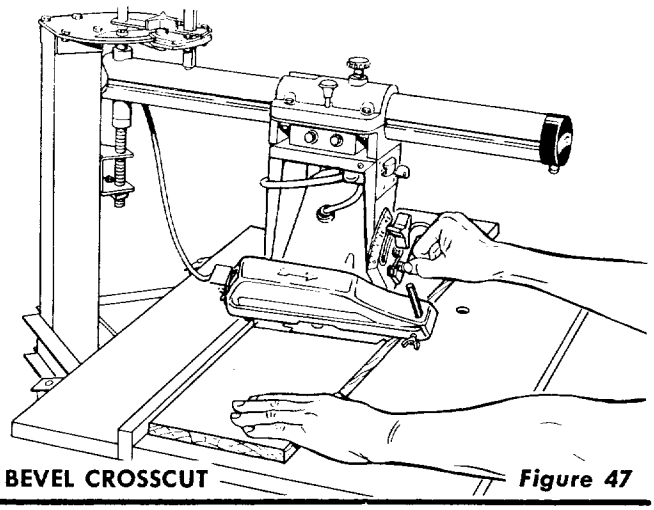


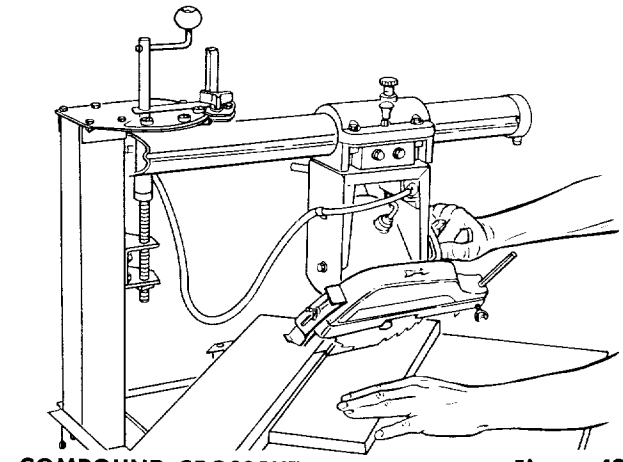
Figure 45



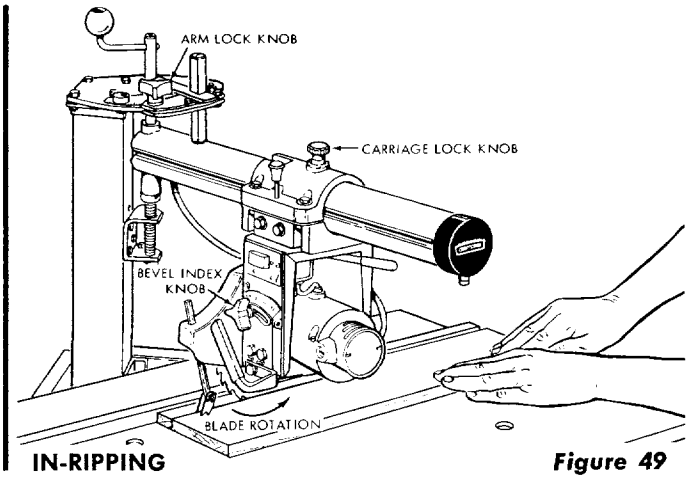
MITER CROSSCUT *Figure 46*



BEVEL CROSSCUT *Figure 47*



COMPOUND CROSSCUT *Figure 48*



IN-RIPPING *Figure 49*

OPERATION No. 4—COMPOUND CROSSCUT

Compound crosscutting is the combination of miter and bevel crosscuts. (See figure 48.) The radial arm and bevel are set to produce the desired cut and locked; the yoke is indexed with blade parallel to radial arm and locked. The board is held firmly against the fence and the carriage pulled forward along the radial arm to produce the cut. The carriage should be returned to full rearward position and the saw blade allowed to come to a complete stop before removing boards from the saw table.

REQUIREMENTS WHEN RIPPING AND PLOUGHING

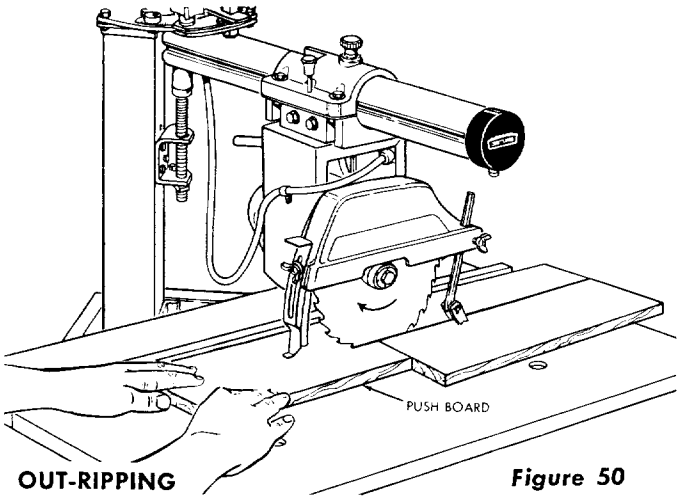
(OPERATIONS 5 AND 6)

1. Carriage lock knob must be tight.
2. Radial arm must be locked in 0° position by tightening the arm lock knob.
3. Work must be held firmly against table and fence while feeding through.
4. Sawdust chute and anti-kickback assembly must be properly set. Observe instructions in paragraph "Setting Anti-Kickback and Sawdust Chute for Ripping".
5. Blade should be sharp and correctly set.
6. Hands must be kept well away from saw blade.
7. When ripping narrow or short stock, always use a pushboard.

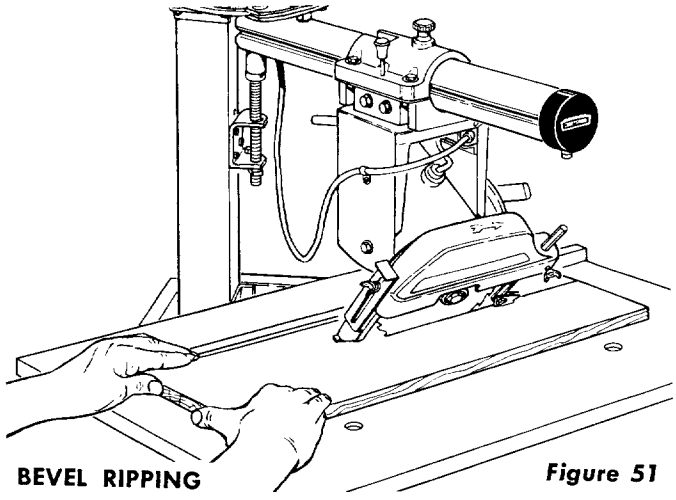
OPERATION No. 5—OUT-RIPPING AND IN-RIPPING

Ripping operations are performed with the saw blade parallel to the fence. When the yoke is positioned to place the saw blade between the motor and fence it is in the "in-rip" position. When the blade is at the front (motor between the blade and fence) it is in the "out-rip" position.

1. Before performing any ripping operation, be sure to adjust the anti-kickback assembly and sawdust chute as outlined in paragraph, "Positioning the Anti-Kickback Assembly and Sawdust Chute for Ripping", under "Operating controls".
2. **In-Ripping** (See figure 49.) The radial arm and bevel are indexed at 0° and locked, but the yoke is turned 90-degrees in a clockwise direction (viewed from above) from the crosscut position. Thus, when standing in front of the saw, the blade would be rotating counterclockwise. After positioning the sawdust chute and anti-kickback assembly, the workpiece is fed from the right-hand side of the saw, as shown in figure 49.



OUT-RIPPING *Figure 50*



BEVEL RIPPING *Figure 51*

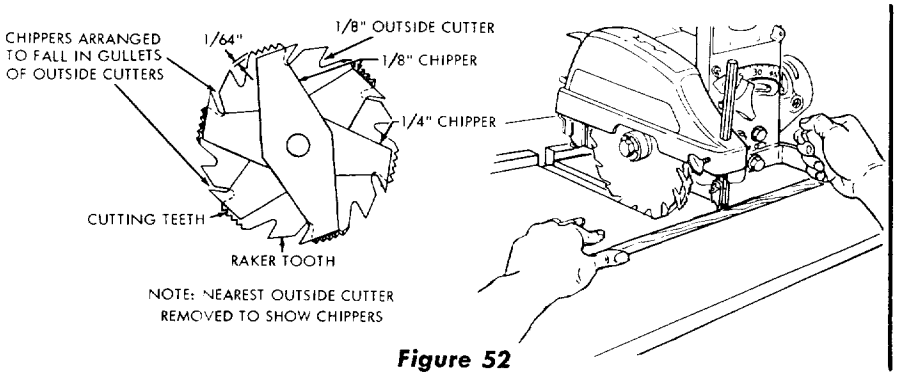


Figure 52

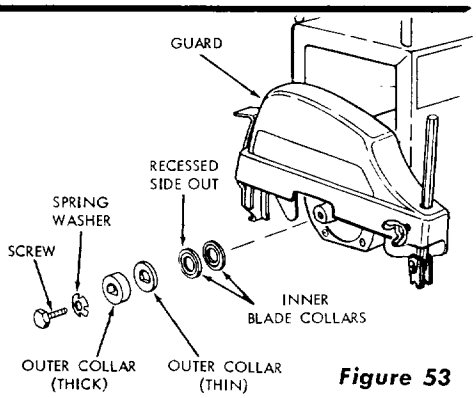


Figure 53

3. **Out-Ripping** (See figure 50.) The radial arm and bevel are indexed at 0° and locked, but the yoke is turned 90-degrees in a counterclockwise direction (viewed from above), from the crosscut position. When standing in front of the saw, blade would be rotating clockwise. After positioning the sawdust chute and anti-kickback assembly, the workpiece is fed from the left-hand side of the saw, as shown in figure 50.

   NOTE: WHEN RIPPING, PARTICULARLY ON NARROW BOARDS, USE A PUSHBOARD TO KEEP HANDS A SAFE DISTANCE FROM THE SAW BLADE. (FIGURE 50 SHOWS A TYPICAL PUSHBOARD BEING USED.)

OPERATION No. 6—BEVEL RIPPING

Bevel ripping is either in-ripping or out-ripping as described above, except the saw blade is tilted out of perpendicular to the saw table surface. Figure 51 shows a typical bevel out-ripping operation. The radial arm is indexed at 0° and locked, the bevel is set to the desired bevel angle and the yoke is positioned for in-rip or out-rip, depending upon which operation is being performed. All requirements and observations applicable to normal ripping operations also apply to bevel ripping.

USING THE DADO

1. The dado is a special set of blades for cutting grooves and rabbets with a radial saw. (See figure 52.) (Dado sets may be purchased at any Sears Retail Store or Catalog Order House.) The set consists of two outside cutters and a number of inside chippers. The outside cutters are 1/8-inch thick; there are one 1/4-inch, two 1/8-inch, and one 1/16-inch chippers. Grooves of 1/8-inch and 1/4-inch can be cut plus additional widths, increased in steps of 1/16-inch, up to a maximum of 13/16-inch. Outside cutters can be used alone, chippers cannot.

   WARNING: Do not use the Adjustable Dado (Catalog 9-3267) or dado sets larger than 6 inches in diameter.

2. To install the dado set proceed as follows:

   a. Remove the hex-head screw, collars and saw blade (figure 53) as described in paragraph, "Installing Saw Blade" under "Unpacking and Assembly".

   b. Determine the width of the groove to be cut (figure 52) and use the number of collars required to make the final stack extend slightly beyond the outer end of motor shaft. When using the full set of cutters (13/16-inch thick) it will be necessary to remove all collars (figure 53), thus allowing the spring washer to be compressed against the outer cutter.

   c. With the spring washer and screw (figure 53) in place, wedge the dado with a block of wood inserted between the dado and forward end of the guard and, using the wrench supplied, tighten the screw until the spring washer flattens out. Then back the screw

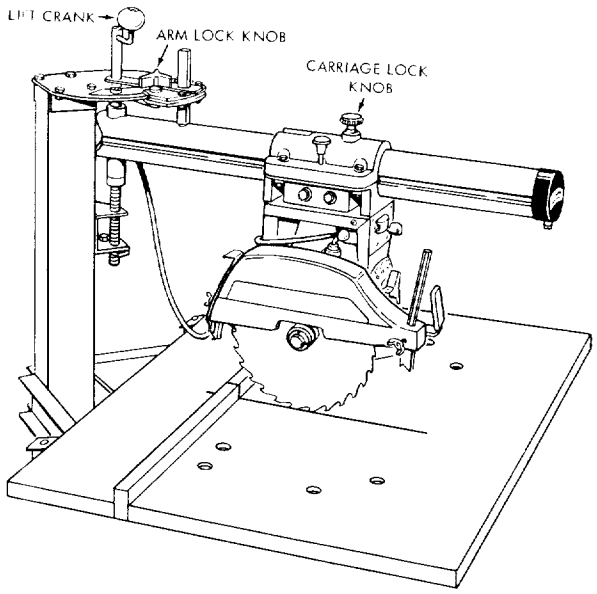


Figure 54

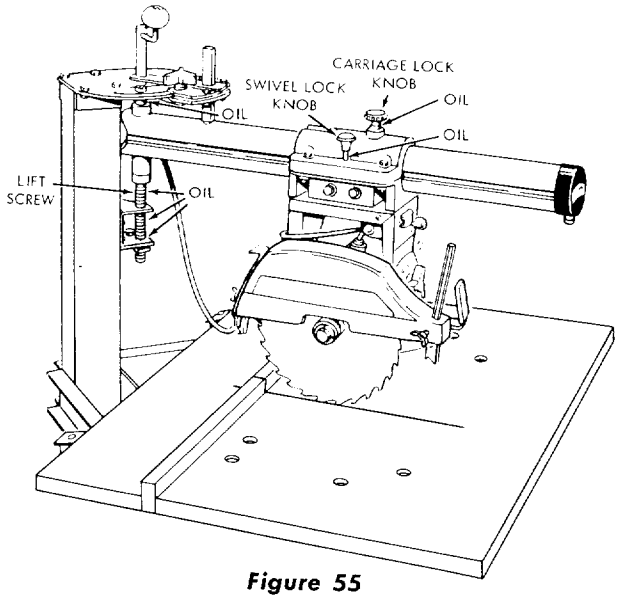


Figure 55

off 1/6 turn (clockwise). One-sixth turn is equal to one flat on the hex-head screw. This setting allows the dado blade to slip on the spindle if it should accidentally jam in the work.

CAUTION: Never "dado" more than 3/8-inch deep in one pass.

3. All requirements and observations applicable to ripping operations also apply to dadoing.

PRELIMINARY CROSSCUT AT THE 0° MITER POSITION

NOTE: Some operators prefer to cover the front table with thin plywood, which can be replaced when desired, thus preserving the original front table surface. Others prefer to cut the basic saw clearance kerfs directly into the table surface. These cuts should be approximately 1/32-inch deep, either in the table or protective cover board. Do not use a protective board on rear table (front table only).

1. Index the radial arm at 0° miter position and tighten the arm lock knob. (See figure 54.) Lower the blade just short of touching the table surface.
2. Loosen the carriage lock knob and move the saw blade rearward until it just clears the fence. Tighten the carriage lock knob.
3. Plug the power cord into a grounded outlet receptacle.
4. Insert the key and start saw motor by pulling out the OFF-ON switch.
5. Lower the radial arm, by rotating the elevation crank slowly, until the saw blade cuts into the table top (or protective board) surface to a depth of approximately 1/32-inch.
6. Complete the blade clearance kerf in the table and rip fence as follows:
   a. Grasp the handle (figure 54) and loosen the carriage lock knob.
   b. Slowly pull the carriage forward to the extreme end of its forward travel.
   c. Holding the handle firmly, push the carriage slowly rearward to the extreme end of its travel. This stroke will cut through the rip fence.
   d. Push the ON-OFF switch to "OFF" position.

LUBRICATION

1. Your saw is precision built and should be kept clean and properly lubricated.
2. Periodically lubricate with SAE No. 10W-30 automotive engine oil at locations shown in figure 55.
   a. Apply a few drops of oil along the swivel latch pin only if the pin has a tendency to stick. Use oil sparingly to prevent it from getting on the carriage bearings.
   b. A light film of oil should be applied to the lift shaft threads and other bearing points, when parts become "dry", or the shaft turns with noticeably increased resistance.
   c. Apply a drop of oil to the threads of the screw under the carriage lock knob occasionally.

   CAUTION: Excessive oil at any location will attract airborne dust particles and sawdust.
   d. Do not lubricate the following:
      (1) Carriage bearings.
      (2) Motor bearings.

INSTRUCTIONS TO OPERATOR

Be sure to read the following instructions carefully before operating the saw.

WARNING: Do not connect power cord until the following steps have been satisfactorily completed:

a. Assembly and Installation.

b. Examination and operating familiarity with ON-OFF switch, elevation control, bevel control, rip control, and miter control.

c. Review and understanding of the operating procedures.

CAUTION: Always disconnect the power cord when changing the cutting tool, changing the set-up, or making adjustments.

ALWAYS return the carriage to the full rear position after each crosscut type operation.

1. The saw must be bolted down to a stand or work bench. The saw table should be approximately 39 inches above the floor.
2. Set carriage lock before moving machine.
3. Position table with the front edge slightly higher than the rear, so the carriage will not creep forward with motor running and carriage lock knob loose.
4. Use only accessories that are designed for this machine.
5. The saw work area should have adequate overhead, non-glare light and adequate surrounding work space.
6. The saw should be positioned so neither the operator nor a casual observer is forced to stand in line with the saw blade.
7. A large proportion of saw accidents is caused by dull, badly set, improperly filed cutting tools, and by gum or resin adhering to cutting tools. Such conditions cause the material to stick, jam, stall the saw, or kick-back at the operator. Cracked saw blades should be discarded immediately. A saw blade can become cracked if it wobbles or if it is not in balance. Avoid potential injury by proper cutting tool and machine maintenance.

   CAUTION: Do not cycle the motor switch on and off in rapid succession, as this might cause the saw blade to loosen. In the event this should ever occur, allow the saw blade to come to a complete stop and re-tighten the hex-head screw in end of motor shaft as described in paragraph, "Installing Saw Blade", under "Unpacking and Assembly".
8. Gloves should not be worn while operating the saw. Loose flowing garments, jewelry (rings, wrist watches, etc.), and neckties should never be worn. Long sleeves should be rolled to above the elbows.
9. Goggles or an eye shield should always be used. Ear protectors (ear plugs or muffs) should be used during extended periods of operation.
10. Provide proper support for the workpiece, based on its size and the type of operation to be performed; hold the work firmly against the fence. Use a push stick when ripping short work (under 12 inches long), or narrow work.
11. **Never use a length stop or a fixed guide on the free end or edge of a workpiece. Never hang onto or touch the free end of the workpiece or a free piece that is cut off, while power is on and/or the sawblade rotating. In short, in any thru-sawing operation *the cut-off piece must never be confined* — it must be allowed to move laterally.**
12. Do not leave a long board unsupported so the spring of the board causes it to shift on the table. A support should be used to catch the end of the board you are not supporting.
13. Never climb on or near the saw when power is on, or when the saw blade is in a crosscut position. **Never leave the saw with power on, or before the cutting tool has come to a complete stop.**
14. Avoid awkward hand positions, where a sudden slip could cause a hand to move into a saw blade or other cutting tool. Never reach in back of or around the cutting tool with either hand to hold down the workpiece.

    CAUTION: Never reposition the sawdust chute with power **ON.**
15. Always position the sawdust chute and anti-kickback pawls for rip-type operations with the yoke in the in-rip or out-rip position only. Raise the chute immediately following completion of rip type operations. Also make sure the cutting tool, arbor collars and arbor nut are installed properly. Keep guards in place; use the proper guard.
16. Do not use any blade or other cutting tool marked for an operating speed in excess of the design speed of the saw. Never use a cutting tool larger in diameter than the diameter for which the saw was designed. For greatest safety and efficiency when ripping, use the maximum diameter blade for which the saw is designed, since under these conditions the spreader is nearest the blade.
17. The use of adjustable dados, abrasive or cut-off wheels, or wire wheels can be dangerous and is not recommended. (Abrasive or cut-off wheels are used to saw many different materials including metals, stone, and glass.)
18. Safety is a combination of operator common sense and alertness at all times when the saw is being used.

    WARNING: Do not allow familiarity (gained from frequent use of your saw) to become *commonplace*. Always remember that a careless fraction of a second is sufficient to inflict severe injury.

TROUBLESHOOTING

Even though quality materials and workmanship have been incorporated into your Craftsman saw, it is reasonable to expect some wear after long periods of use. Adjustment facilities have been built into the saw to compensate for this wear. Looseness due to wear, rough handling, or improper adjustments will usually be indicated by reduced accuracy or the inability of the saw to perform as intended. The usual operating "troubles" are listed in the following paragraphs with the necessary corrections described and illustrated.

1. LIFT CRANK IS HARD TO TURN.

a. Dirt or other material on lift shaft.

(1) Clean the lift shaft.

(2) Oil threads on shaft and in threaded lift nut. Also oil at bearing points on lift shaft.

b. Lift shaft threads dry from lack of lubrication. (Refer to paragraph, "Lubrication".)

(1) Oil threads on lift shaft.

(2) Oil at all bearing points on shaft.

2. BLADE DOES NOT MAKE SQUARE CUTS AND ACCURATE REPEAT CUTS CANNOT BE MADE.

If this condition exists the trouble might be due to one, or a combination of, the following conditions.

a. Crosscut travel not properly adjusted.

Refer to paragraph, "Adjusting Crosscut Travel." If crosscut travel cannot be adjusted as described, refer to paragraph h, below.

b. Table not adjusted parallel to radial arm.

Refer to paragraph "Adjusting Front Table Parallel to Radial Arm."

c. Saw blade not square with table.

Adjust as described in paragraph "Squaring Saw Blade to Table."

d. Carriage Bearings Loose in Tracks on Radial Arm.

Adjust carriage bearings as follows:

(1) Index the radial arm at 0° and tighten the arm lock knob.

(2) Loosen the carriage lock knob.

(3) Loosen the hex-head screw that secures the upper carriage to lower carriage. (See figure 56.) (This screw passes through the right-hand carriage bearing.)

(4) Using the 3/32-inch hex-L wrench, furnished, rotate the socket-head set screw (figure 56) clockwise to adjust the carriage bearing more firmly against the radial arm.

(5) Adjust in small increments, tightening the hex-head screw after turning the set screw. The adjustment is correct when there is no play between the carriage and radial arm, and yet the carriage moves relatively free along the arm.

(6) Tighten the hex-head screw securely and recheck.

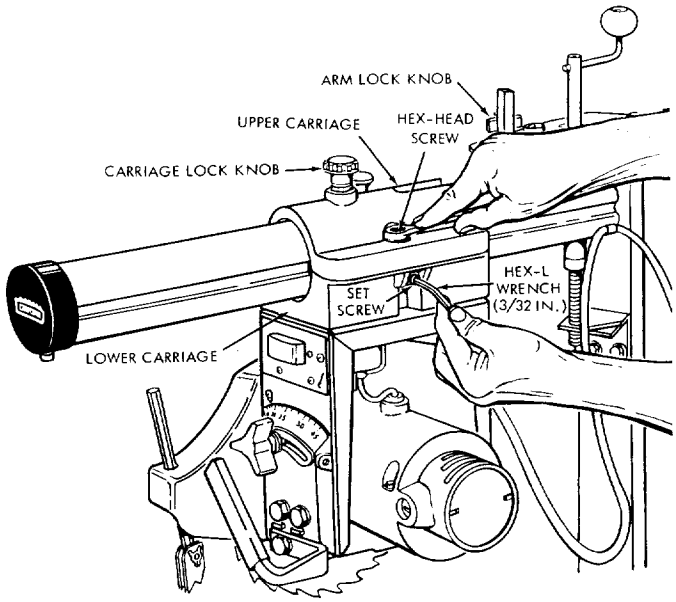


Figure 56

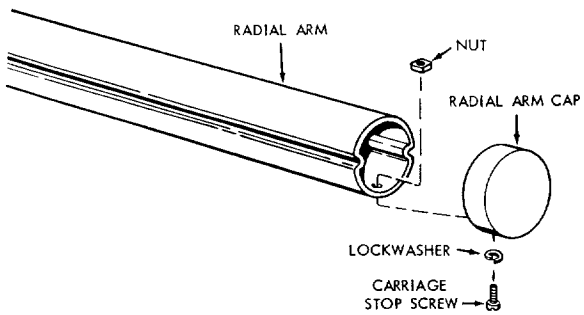


Figure 57

e. Yoke Does Not Index Properly.

Check for proper yoke indexing noting that the swivel latch pin fits into its detent properly. If swivel latch pin housing screws (located on left-hand side of carriage) are loose, re-adjust blade for "heel" as described in paragraph "Checking and Adjusting Saw Blade for Heel (Left and Right)".

f. Yoke Clamp Handle Does Not Tighten the Yoke When in Full Rear Position.

If the yoke clamp handle strikes the yoke when pushed to the rear and the yoke is not tight on lower carriage, adjust the yoke pivot stud as follows:

g. Adjusting the Yoke Clamp Handle:

(1) Grasp the radial arm cap and pull it off end of radial arm carefully. (See figure 57.) The cap should be "stretched" off end of arm at the top, then lowered free of the carriage stop sleeve at lower edge of radial arm.

(2) Remove the carriage stop sleeve, lockwasher and nut (figure 57).

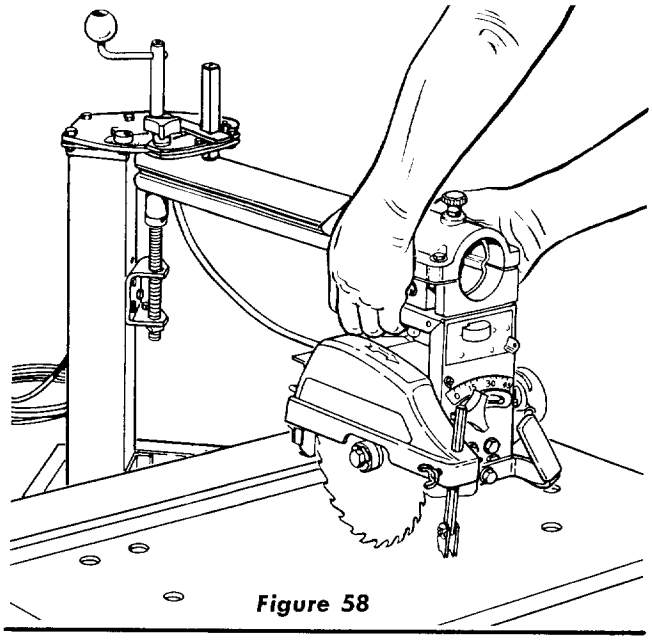


Figure 58

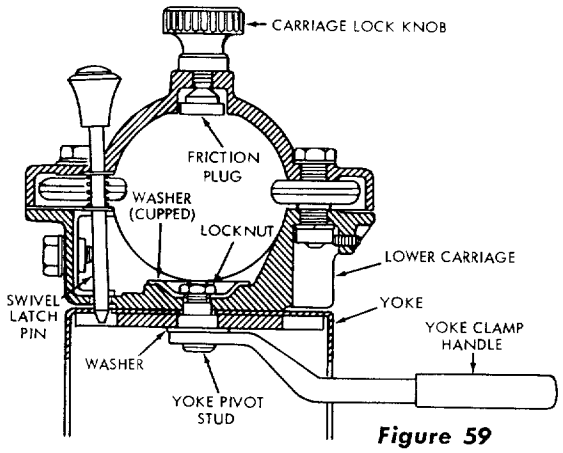


Figure 59

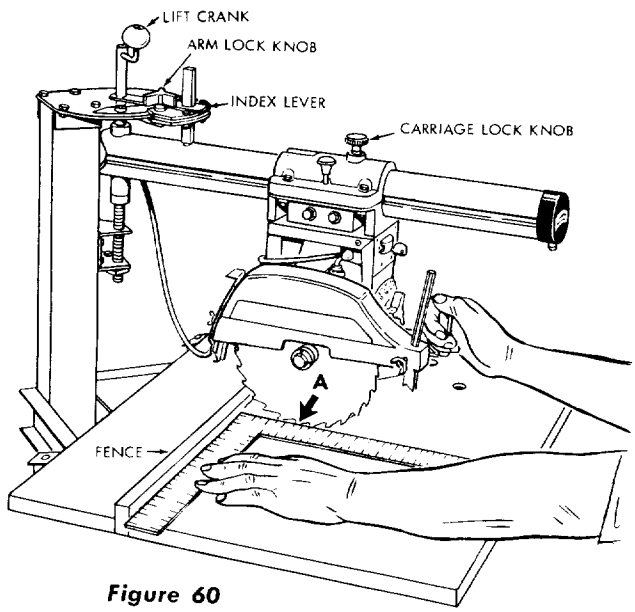


Figure 60

(3) Loosen the carriage lock knob, then grasp the motor and carriage assembly and slide it off the radial arm. (See figure 58.) Rest the motor and carriage assembly on the front table.

(4) Position the yoke clamp handle rearward until it rests against the yoke.

(5) Reach inside the carriage assembly and tighten the lock nut on the yoke pivot stud with a 9/16-inch wrench. (See figure 59.) Tighten the lock nut until snug (not over tight) for a trial setting.

(6) Loosen the yoke clamp handle, by pushing it toward the front of the carriage, then tighten it by pushing it rearward to check for correct adjustment.

(7) If the yoke clamp handle still strikes the yoke before the yoke is securely clamped to the carriage, tighten the lock nut (figure 59) and recheck. This adjustment is correct when the yoke clamp handle becomes noticeably tight just as it strikes the yoke (or is just short of touching the yoke). Several trial settings may be required to achieve a satisfactory adjustment.

(8) Install the carriage and motor assembly on the radial arm. (See figure 58.) Hold the assembly straight with the radial arm until all the bearings have entered the tracks. Make sure the friction plug (figure 59) remains in position.

(9) Move the carriage rearward and tighten the carriage lock knob.

(10) Install the carriage stop screw sleeve, lockwasher and nut. (See figure 57.)

(11) "Snap" the radial arm cap (figure 57) onto the end of the arm with the palm of one hand. Make sure the stop screw passes through the hole in edge of cap.

h. Squaring the Crosscut Travel by Adjusting the 0° (Crosscut) Miter Index Stop.

Adjusting the crosscut travel under "Alignment Instructions" was accomplished by installing the front table squarely with the saw blade, since the 0° miter index stop is set at the factory. After considerable use, should the crosscut travel require a minor correction, it would be more feasible to make the correction by adjusting the 0° miter stop.

This is accomplished as follows:

(1) Loosen the arm lock knob (figure 60), raise the index lever and index the radial arm at 0° (crosscut) position. Tighten the arm lock knob.

(2) Lower the saw blade, with the lift crank (figure 60) until the blade just clears the front table surface.

(3) Loosen the carriage lock knob and leave it loose for this adjustment.

(4) Move the carriage rearward until the saw blade is just forward of the fence.

(5) Place a framing square against the fence and one tooth of the saw blade, as shown in figure 60.

(6) Mark this tooth with a soft pencil as shown at "A", figure 60.

(7) Pull the carriage forward as in crosscutting.

(8) If the marked tooth does not follow the square from front to rear, loosen the screw in the 0° miter index stop and rotate the eccentric until the narrowest portion of the eccentric is next to the index lever.

(9) Loosen the arm lock knob and, with the square in position as shown in figure 60, shift the arm carefully to right or left until the saw blade follows the square throughout its full travel. While holding the arm securely in this position, tighten the arm lock knob.

(10) Rotate the screw in the 0° miter index stop (figure 61) clockwise. This should rotate the eccentric portion of the stop until it is tight against the index lever where it will stop and permit the screw to further rotate until tight.

(11) Loosen the arm lock knob and move the radial arm a short distance to the right. Then move it back against the 0° index stop, tighten the arm lock knob and re-check with the square, as shown in figure 60. If any slight correction is still required, adjust in small increments (checking after each adjustment) until the crosscut travel is correct.

NOTE: After completing this adjustment for crosscut travel, it will be necessary to check the 45° miter index stops at right- and left-hand positions. If an adjustment is required, proceed as described in paragraph "Adjusting Miter Index 45° Stops (Right and Left)" under "Alignment Instructions".

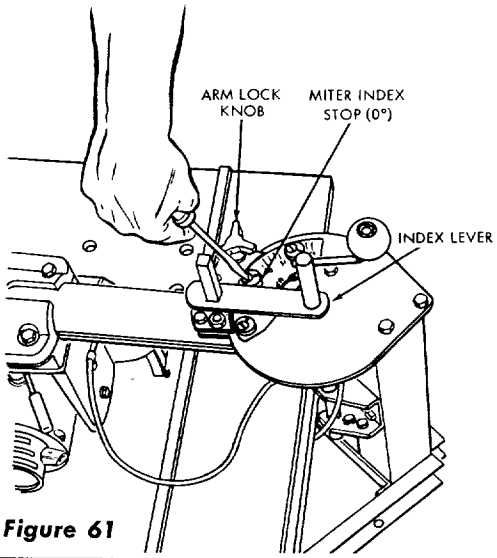


Figure 61

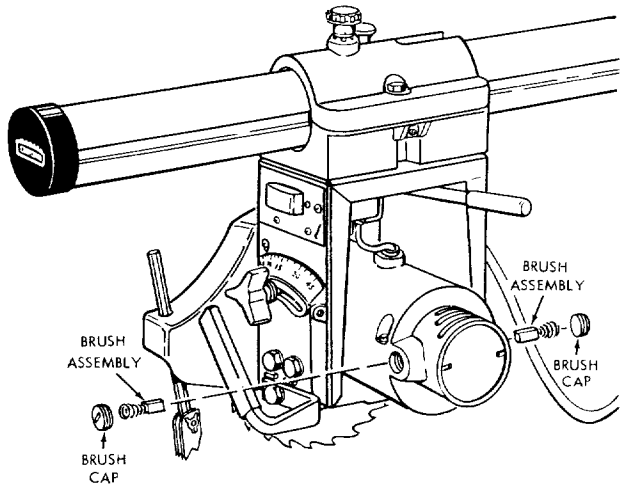


Figure 62

4. WOOD SMOKES AND MOTOR SLOWS DOWN OR STOPS WHEN RIPPING.

This condition can be caused by several conditions as follows:

a. Dull Blade or Warped Board.

Sharpen or replace the saw blade. Avoid the attempted use of severely warped material.

b. Crosscut Not Properly Squared.

Adjust as described in paragraph, "Squaring the Crosscut Travel", under "Alignment Instructions."

c. Radial Arm Not Securely Locked in 0° Position.

Loosen the arm lock handle, re-index the radial arm and tighten arm lock knob.

d. Blade Heels to the Right.

Refer to paragraph, "Checking and Adjusting Saw Blade for "Heel" (Left or Right)", under "Alignment Instructions".

5. BOARD BINDS, OR PULLS AWAY FROM FENCE, WHEN RIPPING.

Refer to "Checking and Adjusting Saw Blade for "Heel" (Left or Right)" under "Alignment Instructions".

6. MOTOR FAILS TO START WHEN ON-OFF SWITCH IS ON.

a. No Power to Motor.

Check power source for open circuit or blown fuse (or open circuit breaker).

b. Worn Brushes In Motor.

Remove one of the motor brushes and inspect for wear. If worn severely, replace the brushes as follows:

c. Installing New Motor Brushes.

(1) Disconnect power cord from power source.

(2) Remove brush caps (figure 62) with a small screwdriver and, by grasping brush pigtails, remove the brushes.

(3) If brushes are worn to 1/8-inch or less in length, they must be replaced.

(4) Blow out any dust that might be in motor housing, by directing air through brush holders.

(5) Install new brushes, making sure the curvature at the end of each brush matches the curved surface of motor commutator.

(6) Push each brush pigtail and spring into position and, while holding it with one finger, install and tighten the brush cap.

(7) Plug in the power cord, turn on the switch and allow the motor to run for a few minutes before sawing a board to permit the brushes to seat on the motor commutator.

7. MOTOR RUNS BUT SAW BLADE STOPS WHEN STARTING A CUT.

Disconnect power cord and adjust motor clutch as described in paragraph "Installing the Saw Blade".

8. FUSES "BLOW" WHEN SAW IS TURNED ON.

a. Short Circuit In Line Cord or Plug.

Inspect line cord and plug and eliminate the short circuit.

b. Fuses too Small.

Replace with correct fuses (15-ampere, "Fusestat" or "Fusetron").

9. MOTOR FAILS TO DEVELOP FULL POWER.

Power output of motor decreases rapidly with decrease in voltage at motor terminals. For example: a reduction of 10% in voltage causes a reduction of 19% in maximum power output of which the motor is capable, while a reduction of 20% in voltage causes a reduction of 36% in maximum power output.

a. Power Line Overloaded with Lights, Appliances and Other Motors.

Reduce the line load.

b. Undersize Wires or Circuit too Long.

Increase wire sizes, or reduce length of wiring.

c. General Overloading of Power Company's Facilities.

(In many sections of the country, demand for electrical power exceeds the capacity of existing generating and distribution systems.) Request a voltage check from the power supplier.

d. Incorrect Fuses in Power Line.

Replace with correct fuses.

10. MOTOR OVERHEATS.

a. Motor Overloaded.

Correct the overload condition.

b. Improper Cooling.

Air circulation restricted through motor due to sawdust, etc. Clean out sawdust to provide normal air circulation through the motor.

POWER TOOL GUARANTEE

During the first year, we will repair your Craftsman Radial Saw free of charge, if defective in material or workmanship.

This guarantee service is available by simply returning the saw to any Sears store throughout the United States.

FOR PARTS LISTS
SEE PAGES 26-31

CRAFTSMAN 8-INCH RADIAL ARM SAW, MODEL No. 113.29220

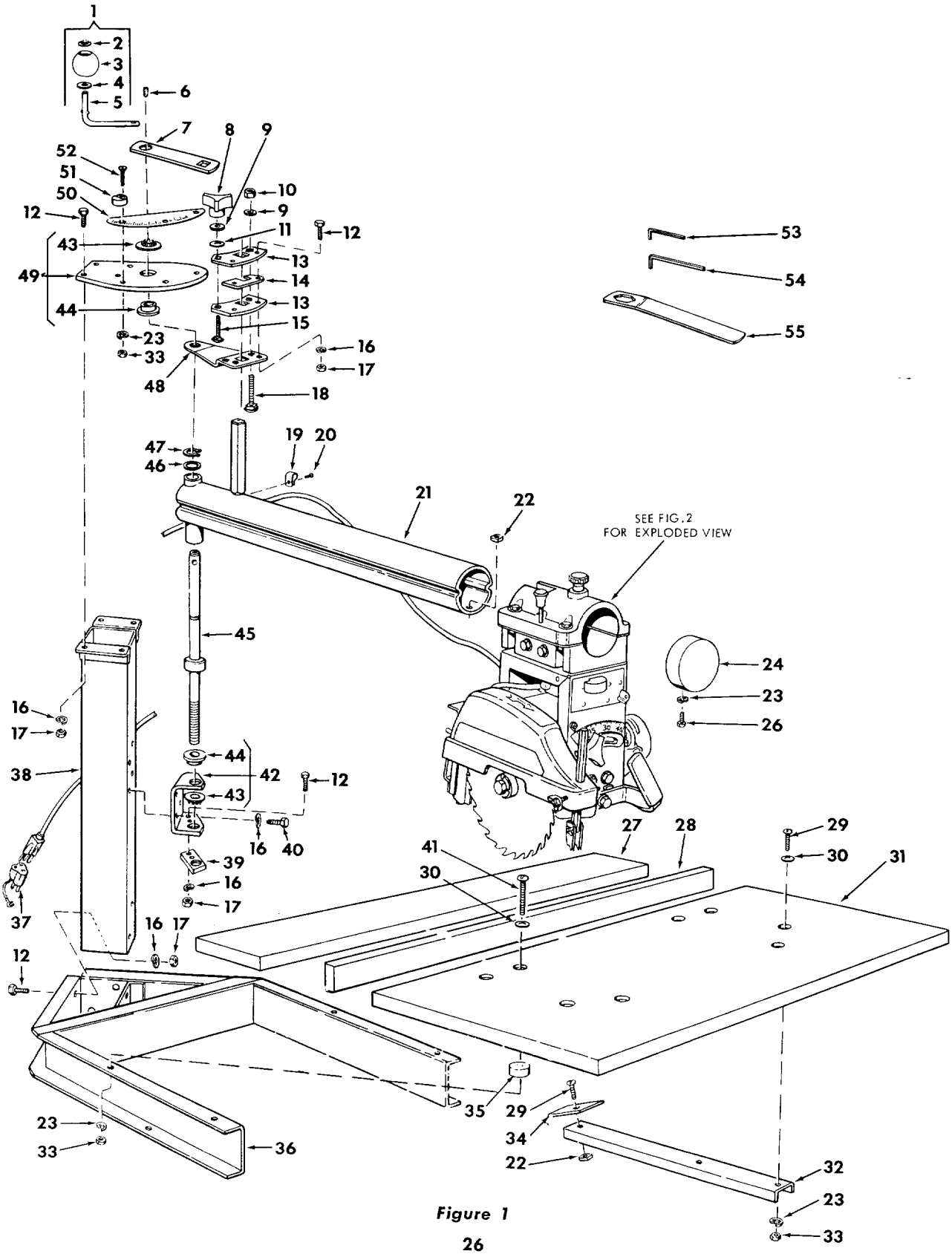


Figure 1

PARTS LIST

CRAFTSMAN 8-INCH RADIAL ARM SAW, MODEL No. 113.29220

All parts illustrated in Figures 1 through 3 and listed under part numbers may be ordered through any Sears retail store or Catalog order store. Order parts by mail from the Catalog order house which serves the territory in which you live. In several instances, part numbers are listed for COMPLETE ASSEMBLIES. All parts are shipped prepaid within the limits of the Continental United States.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN ON THIS LIST:

1. THE PART NUMBER
2. THE PART NAME
3. THE MODEL NUMBER 113.29220
4. THE NAME OF ITEM — 8-INCH RADIAL ARM SAW

Always order by Part Number — not by Key Number

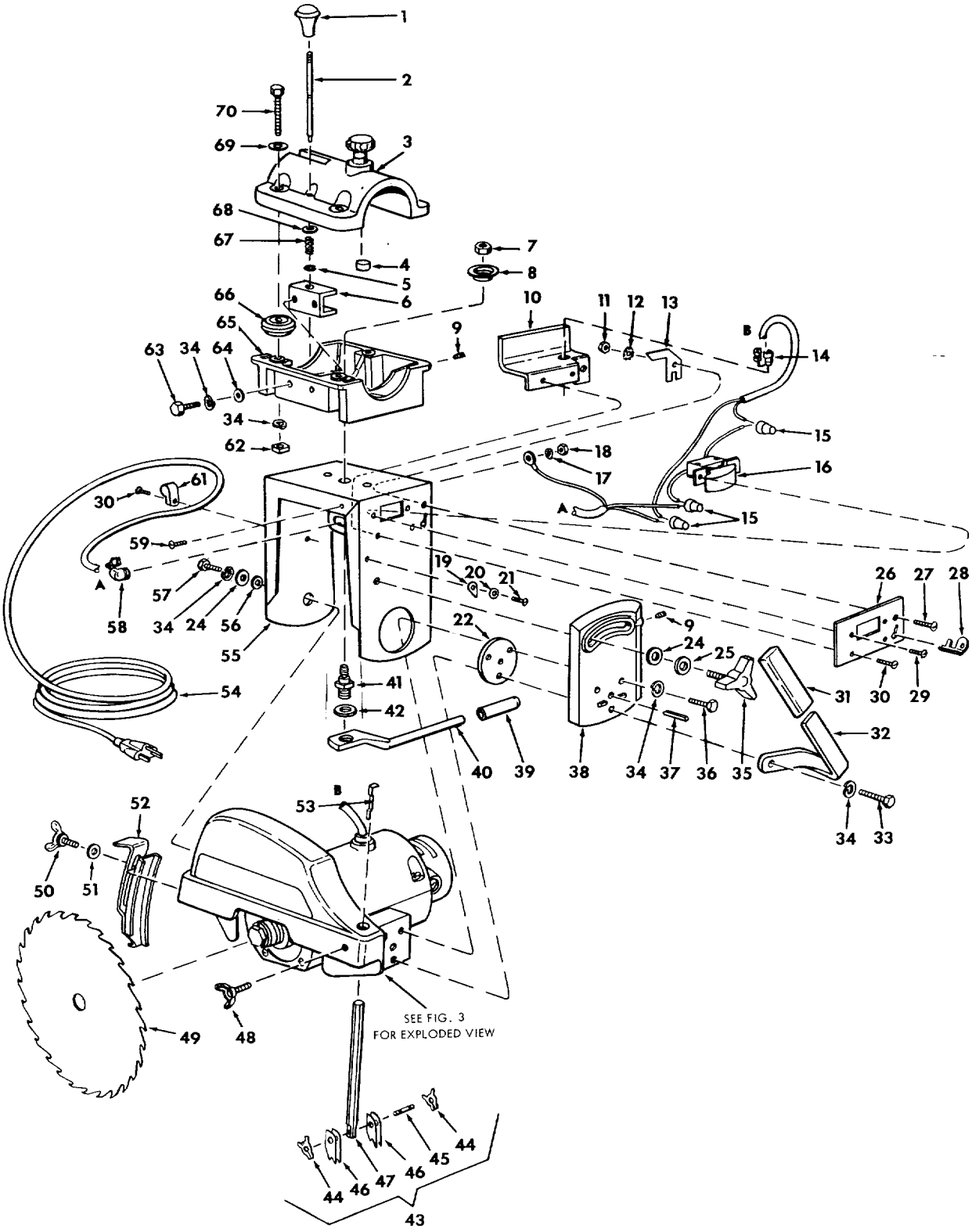
PARTS LIST FIGURE 1

Key No.	Part No.	Description
1	63288	Crank Assembly, Lift
2	60240	Nut, Push
3	63385	Knob, Lift Crank
4	60048	*Washer, Plain, .380 x 3/4 x 1/16, Stl.
5	63386	Crank, Lift
6	115321	*Screw, Hex. Socket Set, 5/16-18 x 3/8, Cup Pt.
7	63357	Lever, Index
8	63387	Knob
9	60040	*Washer, Plain, .328 x 3/4 x 1/16, Stl.
10	60236	*Nut, Hex. Lock, 5/16-18 x 1/2 x 17/64
11	63011	Washer, Nylon
12	9415812	*Screw, Mach., 5/16-18 x 7/8, Hex. Hd.
13	63389	Shoe, Arm Clamp
14	63402	Slide Arm Clamp
15	60237	*Bolt, Rd. Hd. Carriage, 5/16-18 x 1
16	131201	*Washer, Lock, 5/16 x .125 x .078
17	118614	*Nut, Hex., 5/16-18 x 1/2 x 17/64
18	60238	*Bolt, Rd. Hd. Carriage, 5/16-18 x 7/8
19	30613	Clamp, Cord
20	9404365	*Screw, 8-32 x 5/16, Type 23, Pan Hd. Sl.
21	63392	Arm Assembly
22	115120	*Nut, Square, 1/4-20 x 7/16 x 3/16
23	115109	*Washer, Lock, 1/4 x .109 x .062
24	63391	Cap, Arm
26	118783	*Screw, Mach., 1/4-20 x 3/4, Fil. Hd. Sl.
27	63283	Table, Rear
28	63021	Fence, Rip
29	453049	*Screw, Mach., 1/4-20 x 3/4, Pan Hd. Sl.
30	60128	*Washer, Plain, 17/64 x 5/8 x 1/32
31	63282	Table, Front
32	63281	Support, Rear Table
33	115120	*Nut, Hex., 1/4-20 x 7/16 x 3/16
34	63286	Clamp, Table
35	63285	Bushing
36	63393	Base
37	37568	†Adapter Plug
38	63395	Tube, Column
39	63458	Nut, Lift
40	9416187	*Screw, Hex. Ind. Wash. Hd., Type 23, 5/16-18 x 3/4
41	60007	*Screw, Mach., 1/4-20 x 1-1/2, Pan Hd. Sl.
42	63394	Bracket, Lift (includes Key Nos. 43 and 44)
43	63388	Retainer, Shaft
44	63398	Bearing, Flanged
45	63397	Shaft Assembly, Lift
46	60235	Washer, Plain
47	60242	Ring, Retaining
48	63390	Retainer, Clamp Shoe
49	63399	Plate, Support (Includes Key Nos. 43 and 44)
50	63400	Scale, Mitre
51	63401	Stop, Mitre Index
52	60239	*Screw, Mach., 1/4-20 x 3/4, Flat Hd.
53	37836	Wrench, hex-"L", 3/32
54	37837	Wrench, hex-"L", 5/32
55	63287	Wrench
Not Shown	63291	Owner's Manual for Craftsman 8" Radial Saw Model No. 113.29220

* Standard Hardware Item — May Be Purchased Locally.

† Not Supplied in Canada.

CRAFTSMAN 8-INCH RADIAL ARM SAW, MODEL No. 113.29220



CRAFTSMAN 8-INCH RADIAL ARM SAW, MODEL No. 113.29220

PARTS LIST FIGURE 2

Key No.	Part No.	Description
1	63360	Knob
2	63361	Pin, Latch
3	63362	Carriage Assembly, Upper
4	63459	Plug, Friction
5	60004	Ring, Retaining
6	63364	Guide, Latch Pin
7	60249	Nut, Lock, 3/8-16 x 9/16 x 1/4
8	60232	Washer
9	60233	Screw, Socket Set
10	63365	Bracket, Switch
11	60029	Nut, Lock, 8-32 x 11/32 x 3/16
12	60234	Washer, Spring
13	63366	Pawl, Switch Lock
14	37818	Relief, Strain
15	71046	Connector, Wire
16	63367	Switch
17	115543	Washer, Lock
18	144564	*Nut, Hex., 6-32 x 5/16 x 7/64
19	38724	Pointer
20	37935	Washer, Fibre, 140 x 250 1/32
21	178812	*Screw, No. 6 x 1/4, Type A, Pan Hd. Sl. Cad.
22	63368	Spacer, Motor
24	63011	Washer, Nylon
25	60040	Washer, Plain, .328 x 3/4 x 1/16
26	63369	Plate, Switch
27	448013	*Screw, Mach., No. 8-32 x 1/2, Pan Hd. Sl.
28	37861	Key
29	448001	*Screw, No. 6-32 x 1/4, Type 23, Pan Hd. Sl. Cad.
30	111688	Screw, No. 8 x 5/16, Type B, Pan Hd. Sl.
31	63371	Grip, Handle
32	63372	Handle
33	60038	*Screw, Mach., 5/16-18 x 1-1/4, Hex. Ind. Hd.
34	131201	Washer, Lock, 5/16 x .125 x .078
35	63370	Knob
36	60025	*Screw, 5/16-18 x 1, Hex. Ind. Hd.
37	456299	Pin, Roll
38	63373	Support, Motor
39	63376	Grip, Yoke Handle
40	63375	Handle, Yoke Clamp
41	63374	Stud, Yoke Pivot
42	60068	*Washer, Plain, .531 x 1-1/16 x 3/32
43	63289	Rod Assembly, Anti-Kickback
44	30542	Washer, "X"
45	63377	Pin, Cross
46	63378	Pawl, Anti-Kickback
47	63379	Rod, Anti-Kickback
48	37858	Screw, Thumb
49	63284	†Blade, "8"-Inch Chisel Tooth Saw
50	30540	Screw, Wing
51	60089	*Washer, Plain, 17/64 x 7/16 x 1/16, Stl.
52	63290	Chute, Sawdust
53	63300	Clip, Retaining
54	63380	Cord with Plug
55	63382	Yoke
56	63381	Bushing
57	9415812	*Screw, Mach., 5/16-18 x 5/8, Hex. Ind. Hd.
58	37875	Relief, Strain
59	436663	*Screw, Mach., No. 6-32 x 3/8, Pan Hd.
61	30613	Clamp, Cord
62	120399	*Nut, Square, 5/16-18 x 9/16 x 7/32
63	60078	*Screw, Mach., 5/16-18 x 1/2
64	60130	*Washer, Plain, .328 x 9/16 x .031
65	63383	Carriage, Lower
66	63384	Bearing, Carriage
67	63363	Spring
68	60128	*Washer, Plain, 17/64 x 5/8 x 1/32, Stl.
69	60157	*Washer, Plain, .328 x .562 x 3/64
70	9415819	*Screw, Mach., 5/16-18 x 1-1/2, Hex. Ind. Hd.

* Standard Hardware Item — May Be Purchased Locally.

† Stock Item — May be secured through the Hardware Departments of most Sears or Simpsons-Sears Retail Stores or Catalog Order Houses.

RADIAL ARM SAW MOTOR UNIT, MODEL No. 315.8000

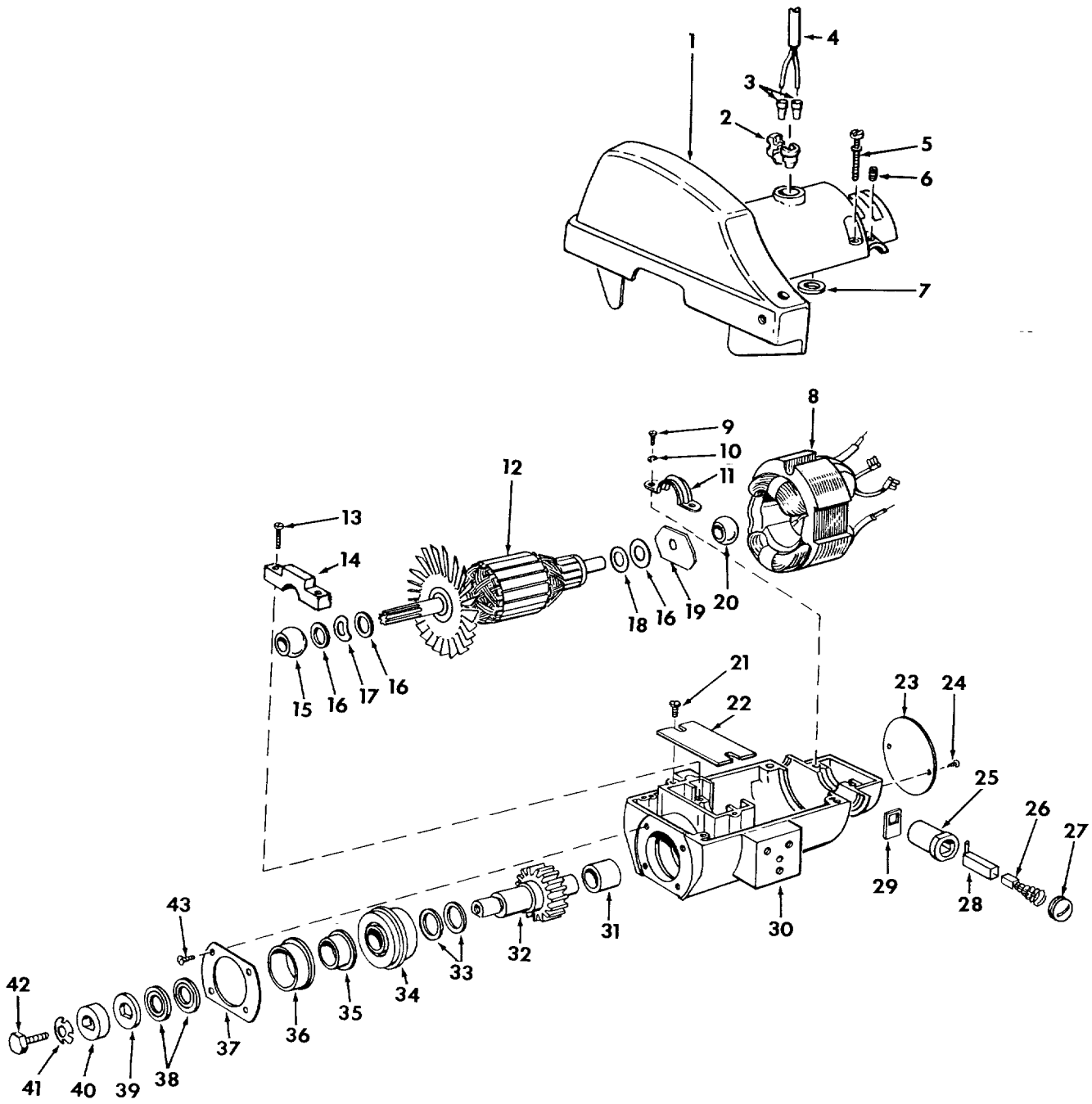


Figure 3

RADIAL ARM SAW MOTOR UNIT, MODEL No. 315.8000

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN ON THIS LIST:

1. THE PART NUMBER
2. THE PART NAME
3. THE MODEL NUMBER — 315.8000
4. THE NAME OF ITEM — RADIAL ARM SAW MOTOR

Always order by Part Number — not by Key Number

PARTS LIST FIGURE 3

Key No.	Part No.	Description
—	8000	Motor Assembly, Complete
1	5-616842-03	Cover, Main Housing
2	1-615272-01	Relief, Strain
3	1-623173-01	Connector, Wire
4	2-616964-01	Cord
5	1-622786-07	Screw, No. 10-24 x 1, Fil. Hd.
6	1-622175-17	*Screw, No. 10-24 x 5/16, Hex. Soc. Hd.
7	1-623552-01	Pad, Stator
8	3-616859-01	Field Core Assembly
9	1-622786-14	Screw, No. 10-24 x 1/2, Fil. Hd.
10	1-931055-11	Washer
11	2-616137-321	Retainer, Bearing
12	2-616860-02	Armature Assembly
13	1-622786-15	Screw, No. 10-24 x 7/8, Fil. Hd.
14	2-606519-01	Bearing Cap
15	1-616038-01	Bearing and Retainer Assy., Roller
16	1-706239-808	Washer
17	1-622347-03	Washer, Spring
18	1-703429-806	Washer
19	2-606474-01	Wear Plate
20	1-606332-01	Bearing and Retainer Assy., Roller
21	1-622786-02	Screw, No. 10-24 x 3/8, Fil. Hd.
22	1-623541-01	Cover, Gear Well
23	2-616974-01	Nameplate
24	1-795247-06	Screw, Drive
25	2-623436-01	Holder, Brush
26	2-730352-01	Brush Assembly
27	1-614008-01	Cap, Brush
28	2-730373-00	Tube, Brush
29	1-616601-01	Protector, Brush Tube
30	5-616839-05	Housing, Motor (Includes Brg. Sleeve) Key No. 28
31	1-621359-00	Sleeve, Bearing
32	2-616863-01	Gear with Spindle
33	1-706239-810	Washer
34	1-622526-01	Bearing, Ball (Hoover 7204-GSM1SL2)
35	2-623555-01	Spacer, Flanged
36	1-616976-03	Retainer, Bearing
37	2-623556-02	Plate, Bearing
38	1-623553-04	Washer, Blade Inner
39	1-623554-04	Washer, Blade Outer
40	1-616970-01	Washer, Blade Outer
41	1-623547-01	Washer, Spring
42	1-616957-01	Screw, 3/8-16 L.H., Hex. Hd.
43	1-703428-14	*Screw, No. 8-32 x 7/16, Flat Hd.

* Standard Hardware Item — May Be Purchased Locally.

Sears

owners manual

CRAFTSMAN 8-INCH RADIAL ARM SAW

MODEL No.
113.29220

The Model Number will be found on a plate attached to your saw, at the rear of the base. Always mention the Model Number when requesting service or repair parts for your 8-INCH RADIAL SAW.

HOW TO ORDER REPAIR PARTS

All parts listed herein may be ordered through SEARS, ROEBUCK AND CO. or SIMPSONS-SEARS LIMITED. When ordering parts by mail, selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST.

1. The PART NUMBER
2. The PART DESCRIPTION
3. The MODEL NUMBER
   BASIC SAW 113.29220
   MOTOR UNIT 315.8000
4. The NAME OF ITEM —
   8-INCH RADIAL ARM SAW

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Printed in U.S.A. 9/72