

Save This Manual
For Future Reference

SEARS

**owner's
manual**

**MODEL NO.
113.234701**

**8 $\frac{1}{4}$ -INCH
RADIAL SAW**

Serial
Number _____

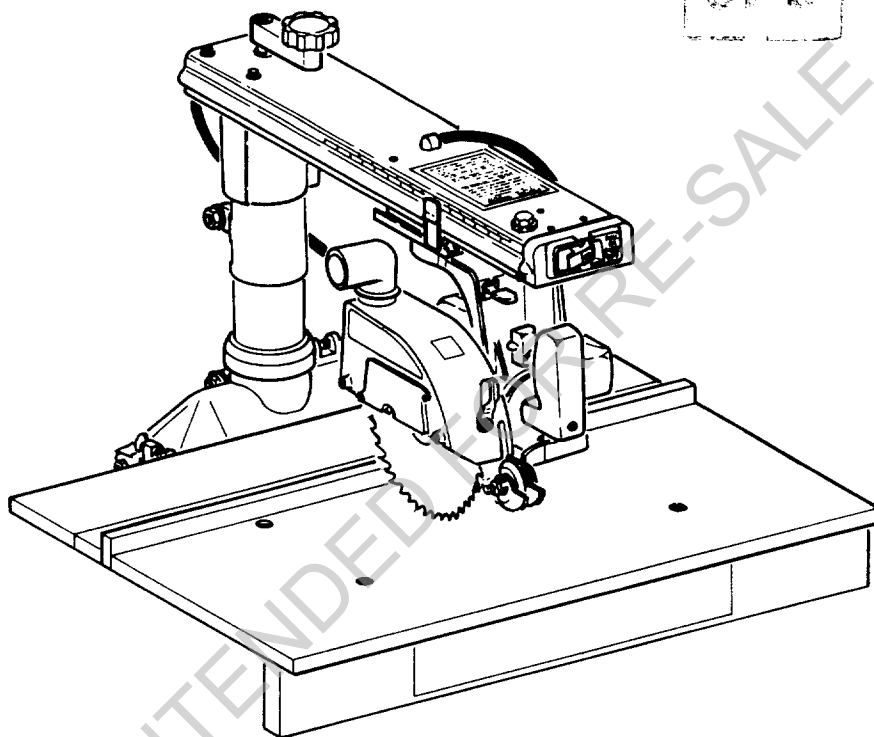
Model and serial numbers
may be found on the side
of the support-arm.
You should record both
model and serial number in
a safe place for future use.

**FOR YOUR
SAFETY:
READ ALL
INSTRUCTIONS
CAREFULLY**

SEARS / CRAFTSMAN®

**8 $\frac{1}{4}$ -INCH
RADIAL SAW**

- assembly
- operation
- repair parts



Sold by SEARS, ROEBUCK AND CO., Chicago, IL 60684 U.S.A.

Part No. SP5570

Form No. SP5570

Printed in USA

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FULL ONE YEAR WARRANTY ON CRAFTSMAN RADIAL ARM SAW

If within one year from the date of purchase, this Craftsman Radial Saw fails due to a defect in material or workmanship, Sears will repair it, free of charge.

**WARRANTY SERVICE IS AVAILABLE BY SIMPLY CONTACTING THE
NEAREST SEARS SERVICE CENTER/DEPARTMENT THROUGHOUT THE
UNITED STATES.**

This warranty applies only while this product is used in the United States.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

**SEARS, ROEBUCK AND CO. DEPT. 698/731A SEARS TOWER,
CHICAGO, IL 60684**

This manual has safety information and instructions to help users eliminate or reduce the risk of accidents and injuries, including:

1. Severe cuts, and loss of fingers or other body parts due to contact with the blade
2. Eye impact injuries, and blindness, from being hit by a thrown workpiece, workpiece chips or pieces of blade
3. Bodily impact injuries, broken bones, and internal organ damage from being hit by a thrown workpiece
4. Shock or electrocution
5. Burns.

Safety Symbol and Signal Words

An exclamation mark inside a triangle is the safety alert symbol.

It is used to draw attention to safety information in the manual and on the saw. It is followed by a signal word, DANGER, WARNING, or CAUTION, which tells the level of risk:

⚠ DANGER: means if the safety information is not followed someone **will** be seriously injured or killed.

⚠ WARNING: means if the safety information is not followed someone **could** be seriously injured or killed.

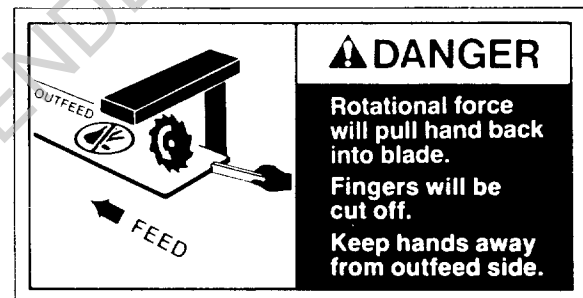
⚠ CAUTION: means if the safety information is not followed someone **may** be injured.

Read and follow the safety information and instructions.

Major Hazards

Three major hazards are associated with using the radial arm saw for ripping. They are outfeed zone hazard, kickback, and wrong way feed. This section only briefly explains these hazards. Read the ripping and crosscutting safety sections for more detailed explanations of these and other hazards.

Outfeed Zone Hazard



If you reach around the blade to the outfeed side when ripping, and try to hold down or pull the workpiece through to complete a cut, the rotational force of the blade will pull your hand back into the blade.

Fingers will be cut off.

Read and follow the information and instructions under ripping safety.

Safety

Kickback Hazard

Kickback is the uncontrolled propelling of the workpiece back toward the user during ripping.

The cause of kickback is the binding or pinching of the blade in the workpiece. Several conditions can cause the blade to bind or pinch.

When a workpiece kicks back, it can hit hard enough to cause internal organ injury, broken bones, or death.

Read and follow the information and instructions under ripping safety .



Wrong Way Feed Hazard

Wrong way feed is ripping by feeding the workpiece into the outfeed side of the blade.

The rotational force of the blade will grab and pull the workpiece.

Before you can let go or pull back, the force can pull your hand along with the workpiece into the blade. Fingers or hand could be cut off.

The propelled workpiece could hit a bystander, causing severe impact injury or death.

Read and follow the information and instructions under ripping safety.

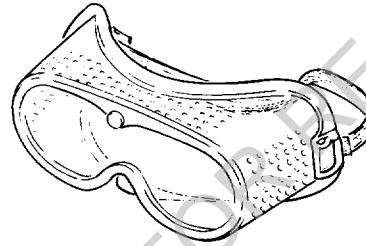


Safety Instructions

Read and follow these safety instructions.

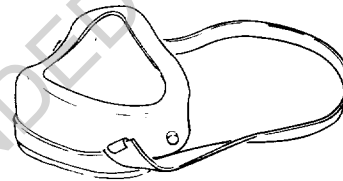
Personal Safety Instructions

1. Wear safety goggles labeled "ANSI Z87.1" on the package. It means the goggles meet impact standards set by the American National Standards Institute. Regular eyeglasses are not safety goggles.



Safety Goggles

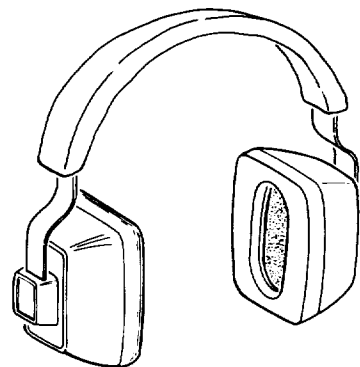
2. Wear close fitting clothes, short sleeved shirts, and non-slip shoes. Tie up long hair. Do not wear gloves, ties, jewelry, loose clothing, or long sleeves. These can get caught in the spinning blade and pull body parts into the blade.



Dust Mask

3. Wear dust mask to keep from inhaling fine particles.

4. Wear ear protectors, plugs or muffs if you use saw daily.



Ear Protectors

5. Keep good footing and balance; do not over-reach.

Work Area Safety Instructions

1. Keep children, pets, and visitors out of work area.



Safety

2. Turn saw off, remove yellow key, and unplug before leaving work area. Do not leave saw until blade has stopped spinning.

3. Make work area child-proof: remove yellow key to prevent accidental start-up; store key out of sight and reach; lock work area.

4. Keep floors clean and free of sawdust, wax and other slippery materials.

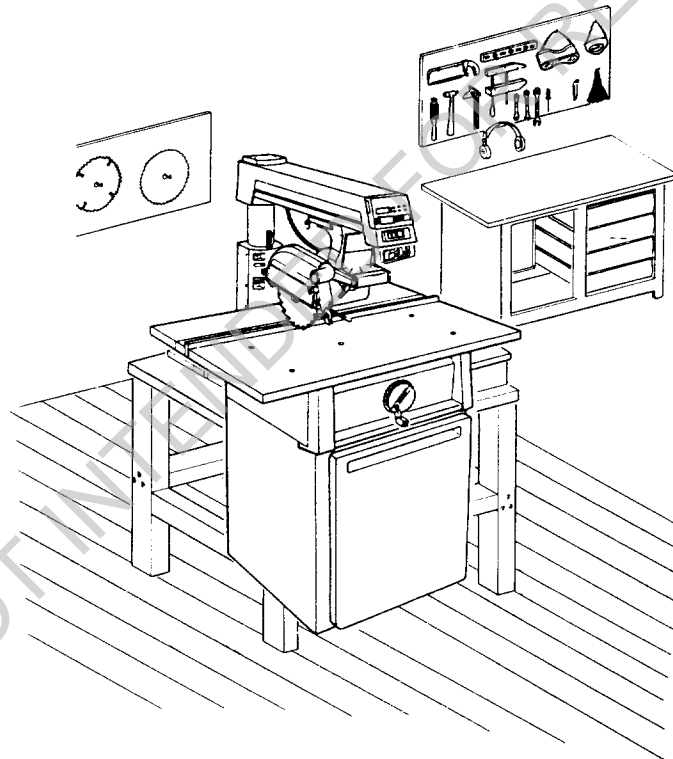
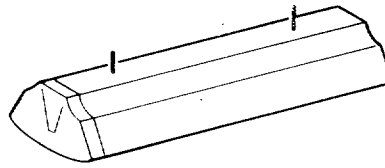
5. Keep work area well lighted and uncluttered.

6. Use saw only in dry area. Do not use in wet or damp areas.

7. Keep saw table clean and clear of all objects except workpiece to be cut and necessary fixtures, clamps, or featherboards before turning saw on.

8. Do not layout, assemble, or setup work with saw on, or while blade is spinning.

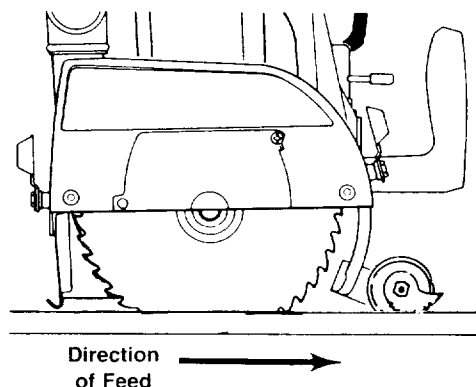
9. Store items away from saw. Do not climb on saw or stand on saw table to reach items because saw can tip over.



Saw Safety Instructions

1. Use guard, hold down, pawls and spreader according to instructions. Keep them in working order.

2. Routinely check saw for broken or damaged parts. Repair or replace damaged parts before using saw. Check new or repaired parts for alignment, binding, and correct mounting.



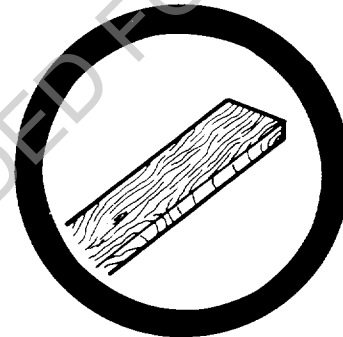
3. Unplug saw before doing maintenance, making adjustments, correcting alignment, or changing blades.

4. Do not force saw. Use saw, blades and accessories only as intended.

5. Have yellow key out and saw switched "off" before plugging in power cord.



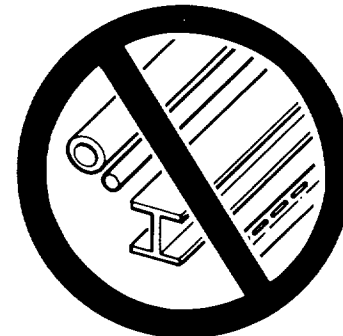
6. Cut only wood, woodlike or plastic materials. Do not cut metal.



7. Secure saw to workbench, table, or leg set.

8. Lock all locks before moving saw to a new location.

9. If blade jams, turn saw off immediately, remove yellow key, then free blade. Do not try to free blade with saw on.



10. Turn saw off if it vibrates too much or makes an odd sound. Correct any problem before restarting saw.

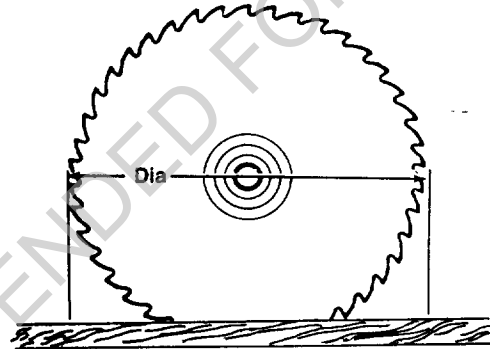
Safety

Workpiece Safety Instructions

1. Cut only one workpiece at a time. Do not stack workpieces or lay them edge to edge.



2. Rip only workpieces longer than the diameter of the blade. Do not rip workpieces that are shorter than the diameter of the blade.



3. Workpieces that extend beyond the saw table can shift, twist, rise up from the table, or fall as they are cut or afterwards. Support workpiece with table extensions the same height as the saw table.

4. To prevent tipping, support outer ends of extensions with sturdy legs or an outrigger.



5. Other persons can be hit by a thrown workpiece, workpiece chips or pieces of blade. Do not allow other persons in the work area.

6. Do not use another person to help support workpieces or to aid by pushing or pulling on workpieces, because these actions can cause kickback. Use table extensions.



7. Use clamps or vice to hold workpiece. It's safer than using your hands.

Blade Safety Instructions

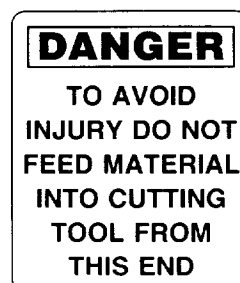
1. Use only blades marked for at least 5500 rpm.
2. Use only blades 8¼ inches in diameter.
3. Use blades for their recommended cutting procedures.
4. Keep blade sharp and clean.
5. Do not overtighten nut when securing blade to saw because blade collar could warp.
6. Do not turn saw on and off in rapid sequence because blade can loosen.
7. Blade should stop within 15 seconds after saw is switched "off". If blade takes longer than 15 seconds to stop, the motor needs repair. Contact Sears Service Center.

On-Product Safety Labels

There are several safety labels on the saw. They alert the user to hazards explained in the manual and remind the user how to avoid the hazard.

Note where they are located on the saw. Read and follow the safety information and instructions in these labels. Refer to the manual for detailed explanations and instructions.

On the **outfeed side of the guard** are these two safety labels to alert you to **wrong way feed**:

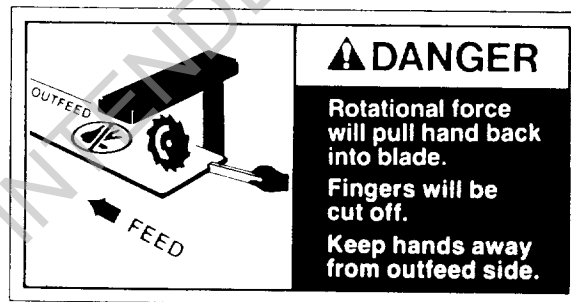


Safety

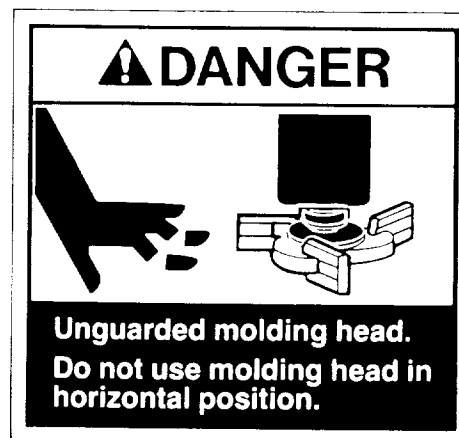
On the **infeed side of the guard** is this safety label to alert you to **kickback**:



On the **side surface of the motor**, visible from the infeed side when the saw is in a rip position, is this safety label to alert you to **outfeed zone hazard**:



On the **bottom surface of the motor**, visible when the blade is horizontal is this safety label to alert you to **unguarded molding head**:



Near the saw handle is this safety label to alert you to **thrown objects** and to remind you to **wear safety goggles**:



On the **top of the radial arm** is this **general safety instruction label**:

Safety Instructions

1. Read manual before using saw.
2. Wear safety goggles that meet ANSI Z87.1 Standards.
3. Do not do freehand cuts.
4. Push carriage to full rear position after each cross cut.
5. Know how to reduce the risk of kickback. See instructions for ripping.
6. When ripping, use push stick when blade is set 2 inches or more from fence.
7. When ripping, use push block and auxiliary fence when blade is set between $\frac{1}{2}$ and 2 inches from fence. Do not make rip cuts narrower than $\frac{1}{2}$ inch.
8. Keep hands out of path of blade.
9. Do not reach around saw blade.
10. Turn power off and wait for blade to stop before adjusting or servicing.

Assembly

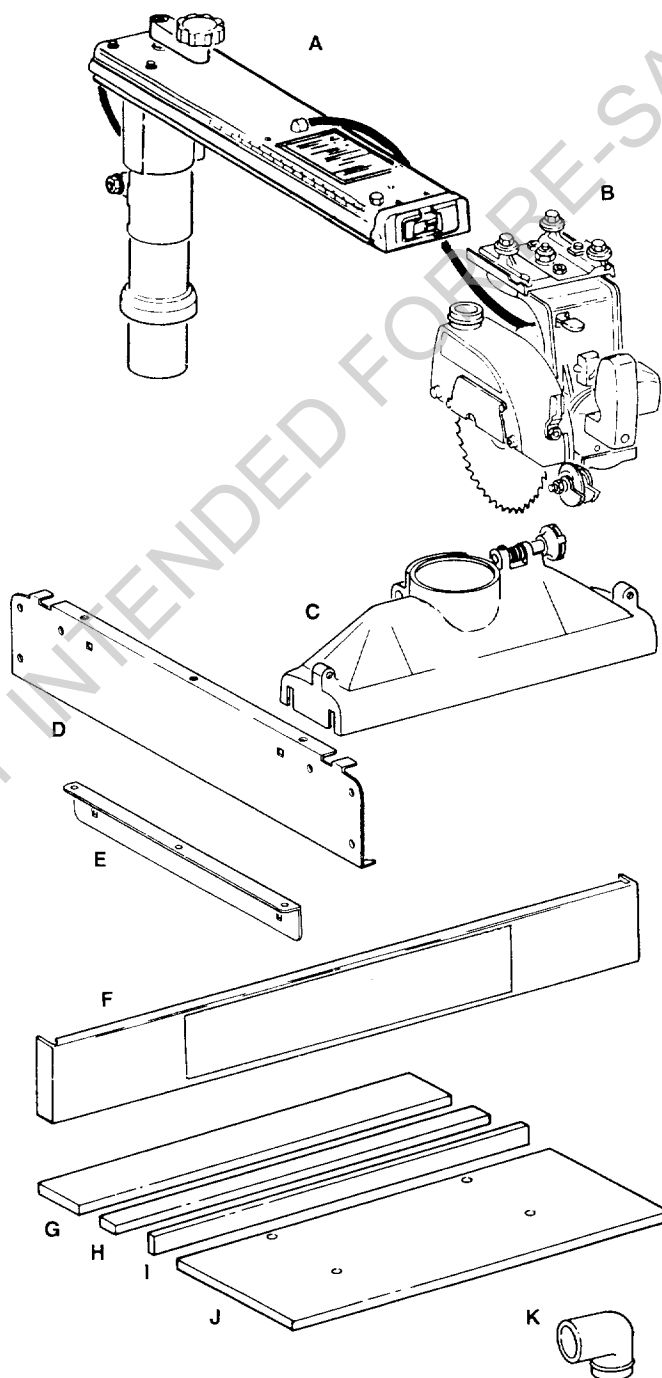
It is important for your safety and to get accurate cuts that you put the saw together according to these instructions.

Identifying Parts

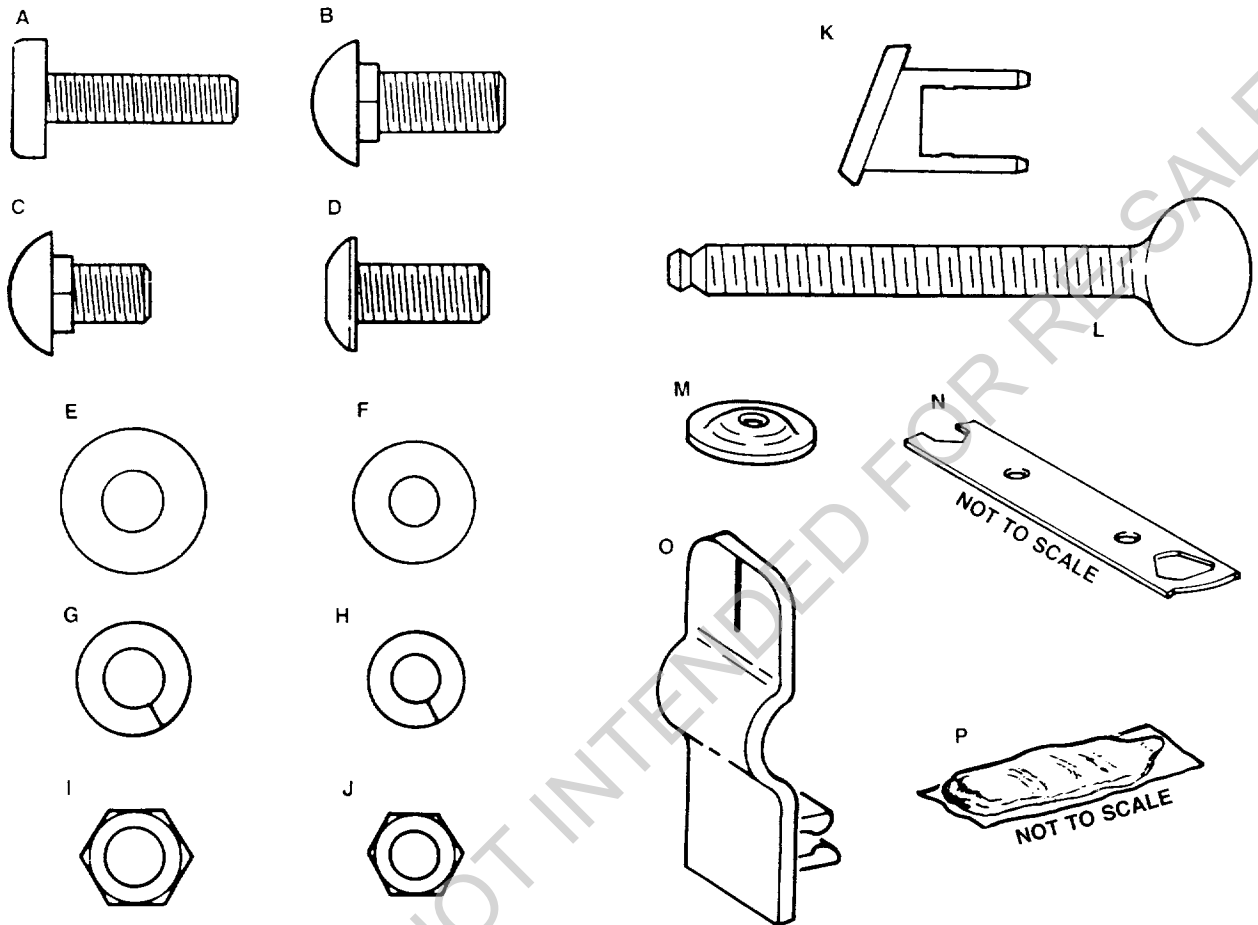
The following parts are included:

Note: Before beginning assembly, check that all parts are included. If you are missing any part do not assemble saw. Contact your Sears Service Center or Retail Store and get the missing part. Sometimes small parts can get lost in packaging material. Do not throw away any packaging until saw is put together. Check packaging for missing parts before contacting Sears. A complete parts list (Repair Parts) is at the end of the manual. Use the list to identify the number of the missing part.

| | |
|--------------------------|---|
| A. Radial Arm | 1 |
| B. Blade Carriage | 1 |
| C. Base | 1 |
| D. Side Frame | 2 |
| E. Table Support | 2 |
| F. Front Stiffener | 1 |
| G. Rear Table | 1 |
| H. Spacer Table | 1 |
| I. Rip Fence | 1 |
| J. Front Table | 1 |
| K. Dust Elbow | 1 |



Assembly



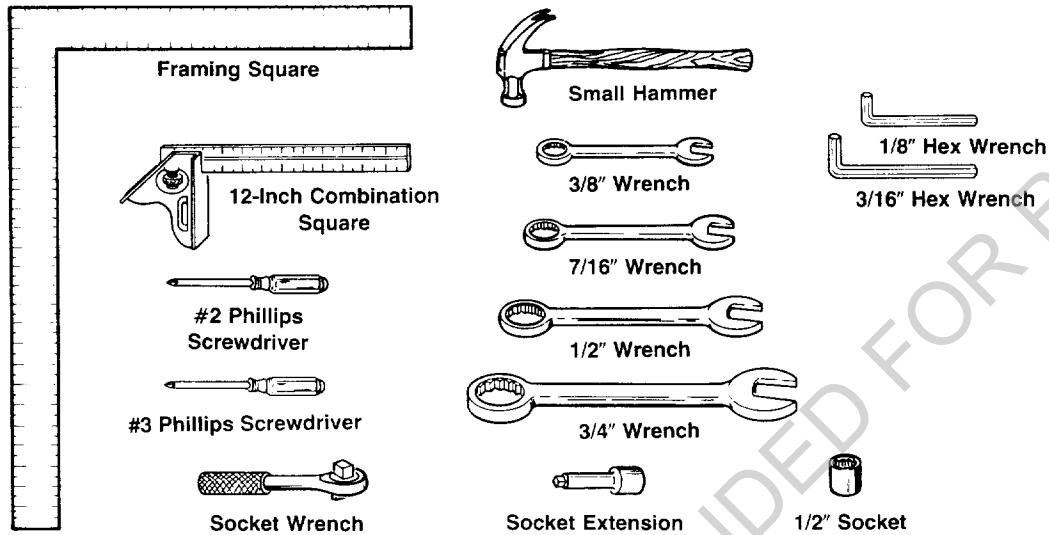
The following hardware is included:

| | |
|------------------------------------------------------------------------|----|
| A. Phillips Pan Head Screw, $\frac{1}{4}$ " diameter by 1" | 4 |
| B. Carriage Bolt, $\frac{5}{16}$ " diameter by $\frac{3}{4}$ " | 4 |
| C. Carriage Bolt, $\frac{5}{16}$ " diameter by $\frac{1}{2}$ " | 4 |
| D. Truss head bolt, $\frac{5}{16}$ " diameter by $\frac{5}{8}$ " | 4 |
| E. Flat Washer, $\frac{5}{16}$ " diameter | 12 |
| F. Flat Washer, $\frac{1}{4}$ " diameter | 4 |

| | |
|-------------------------------------------------|----|
| G. Lock Washer, $\frac{5}{16}$ " diameter | 12 |
| H. Lock Washer, $\frac{1}{4}$ " diameter | 4 |
| I. Nut, $\frac{5}{16}$ " | 12 |
| J. Nut, $\frac{1}{4}$ " | 4 |
| K. Yellow Key | 1 |
| L. Table Clamp Screw | 2 |
| M. Table Clamp Washer | 2 |
| N. Blade Wrench | 2 |
| O. Rip Scale Indicator | 2 |
| P. Grease Packet | 1 |

Assembly

Tools Needed for Assembly and Alignment



Assembly Steps

Follow these steps in order.

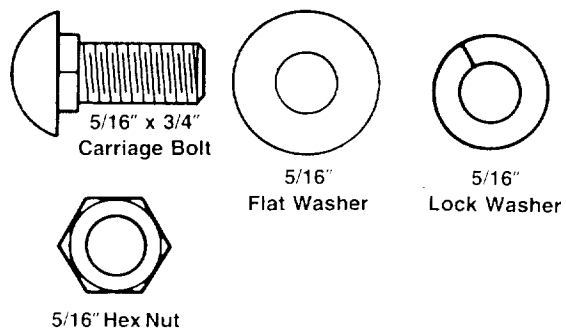
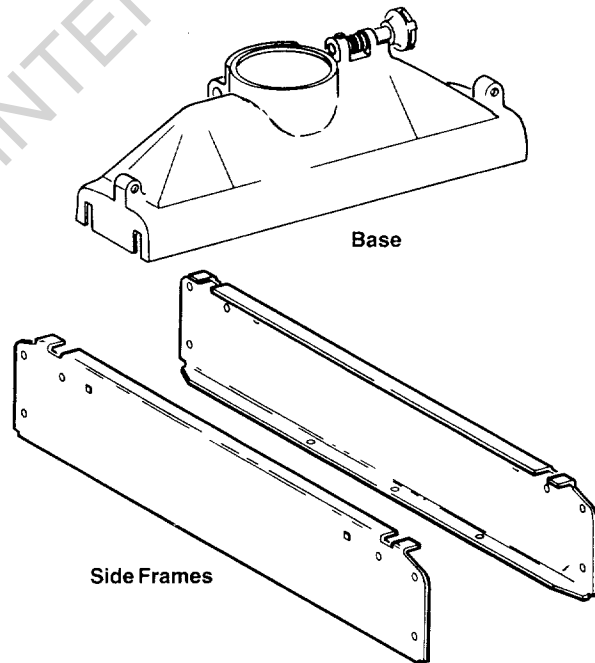
WARNING:

Plugging in saw during assembly can result in electrical shock, or severe cuts from contact with spinning blade.

Do not plug in saw at any time during assembly. Plug in saw only when it is to be used.

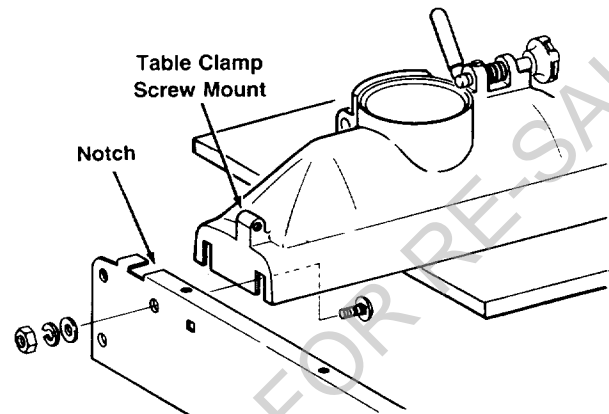
Base Assembly

1. Set out:
 - base
 - two side frames
 - four carriage bolts, $\frac{5}{16}$ " diameter by $\frac{3}{4}$ "
 - four $\frac{5}{16}$ " diameter flat washers
 - four $\frac{5}{16}$ " diameter lock washers
 - four $\frac{5}{16}$ " diameter nuts.



Assembly

2. Position base so that edge is off work surface.
3. From inside surface, put carriage bolt through slot in base and hold in place at highest point.
4. Slide side frame into place on base so that table clamp screw mount fits into notch on side frame.
5. On end of bolt put flat washer, then lock washer, then nut and finger tighten.
Note: Later in assembly, these will be wrench tightened.
6. Repeat for other slot of base.
7. Repeat for other side frame.



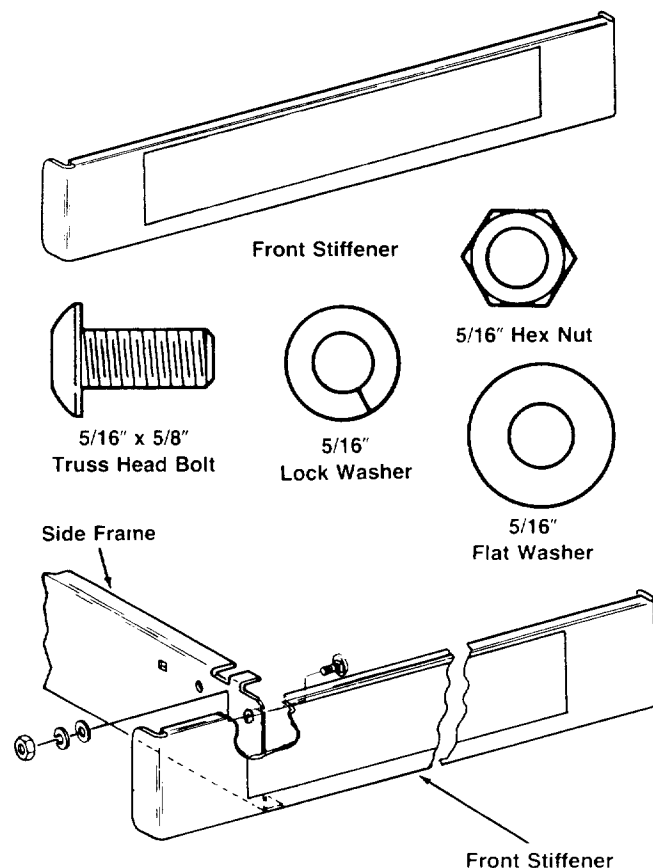
8. Set out:
 - front stiffener
 - four truss head bolts $\frac{5}{16}$ " diameter by $\frac{5}{8}$ "
 - four $\frac{5}{16}$ " diameter flat washers
 - four $\frac{5}{16}$ " diameter lock washers
 - four $\frac{5}{16}$ " diameter nuts.

9. Place front stiffener between side frames so that tabs of stiffener stay on inside of side frames.

10. Put bolt through hole in front stiffener tab and through side frame.

11. On end of bolt put flat washer, then lock washer, then nut and wrench tighten.

12. Repeat for other 3 holes.



Assembly

Blade Carriage to Radial Arm Assembly

Note: It may be easier to do this assembly with the parts still in the box because they are connected by a cord; otherwise you may need help to lift both parts out of the box at the same time.

1. Set out:
 - radial arm
 - blade carriage.

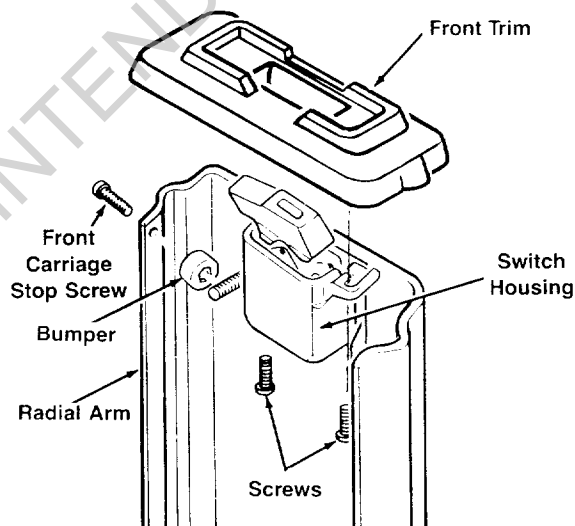
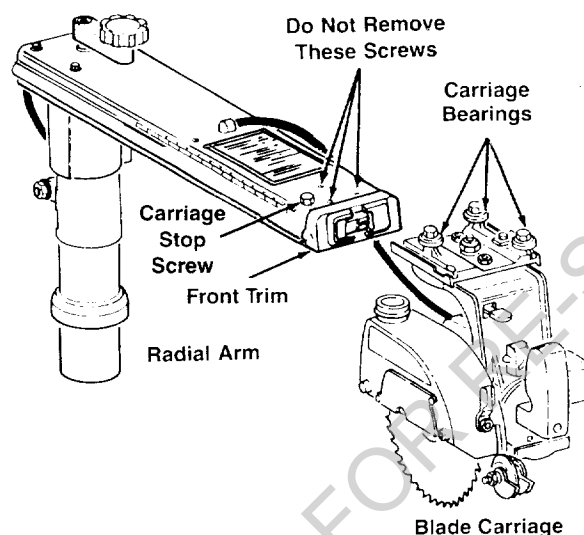
2. Look inside arm towards switch housing to locate two screws that hold front trim to switch housing. Remove these two screws and front trim.

WARNING:

Do not remove screws on top of radial arm. Removal of these screws affects integrity of switch assembly and can create an electrical hazard.

3. Use a No. 3 Phillips screwdriver to remove front carriage stop screw and bumper from end of arm.

4. Use $\frac{1}{2}$ " wrench to loosen carriage stop screw on top of radial arm about $\frac{3}{4}$ " (enough to let blade carriage clear when inserted).



3. Use a No. 3 Phillips screwdriver to remove front carriage stop screw and bumper from end of arm.
4. Use $\frac{1}{2}$ " wrench to loosen carriage stop screw on top of radial arm about $\frac{3}{4}$ " (enough to let blade carriage clear when inserted).

Assembly

5. Position radial arm so that arm is straight up in air.

6. Slide blade carriage onto radial arm, so that carriage bearings fit into radial arm track. **NOTE:** *In correct orientation, single bearing is on left, two bearings are on right as you look down radial arm.* Insure that the wrench is in the disengaged position, and spread the rip lock plates such that one rip lock plate is on the left side of the arm, and one is on the right side (see illustration).

NOTE: *If the carriage can be moved by pushing and pulling on the saw handle when the rip lock is locked, the lock needs adjustment. To adjust:*

- Lock rip lock. Use screwdriver to pop out "e" ring.
- Remove rip lock handle and use as wrench to tighten nut.
- Test for desired locked/unlocked condition. Repeat step b if necessary.
- Re-insert "e" ring.

7. Push rip lock lever clockwise to lock blade carriage in place on radial arm.

8. Re-install front carriage stop screw and bumper, making sure that nut is still in bumper and that larger opening of bumper faces switch housing. Wrench tighten.

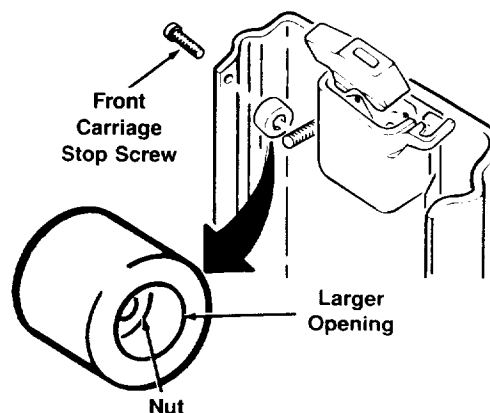
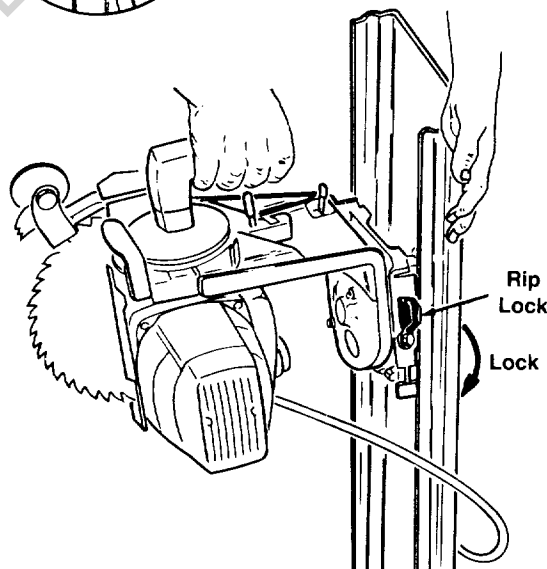
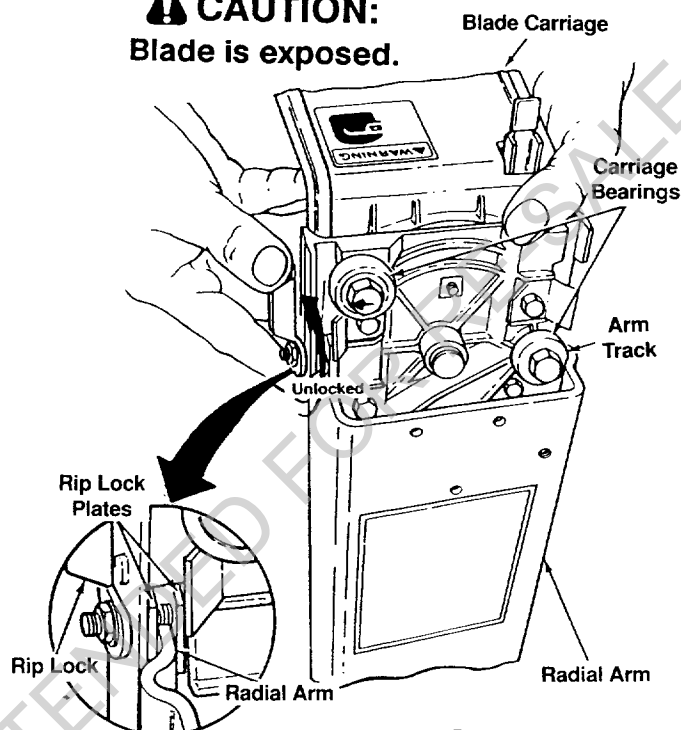
9. Re-install front trim.

⚠ DANGER:

Re-install carriage stop screws and bumper, and tighten. These stop screws are necessary to insure that the carriage stays on the arm at all times. Never operate the saw without stop screws firmly tightened in position.

10. Wrench tighten carriage stop screw on top of radial arm.

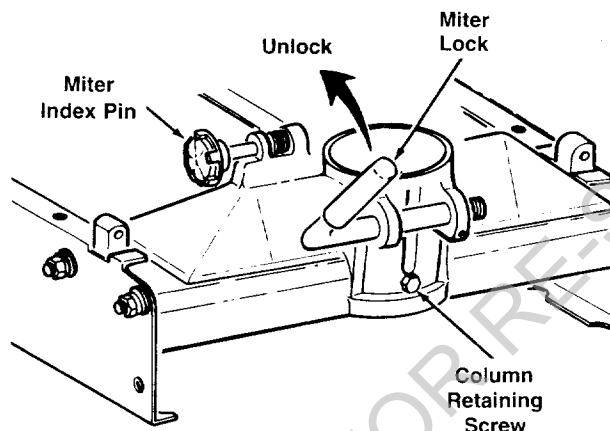
⚠ CAUTION:
Blade is exposed.



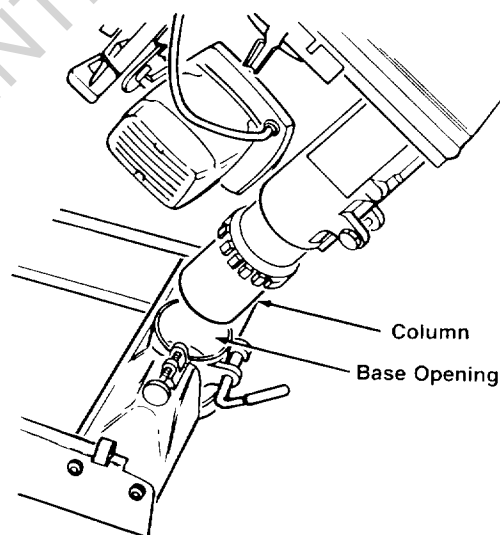
Assembly

Radial Arm to Base Assembly

1. Remove column retaining screw from base enough so column can clear when inserted.
2. Unlock miter lock. Pull out miter index pin and turn 90° to lock out.
3. Get grease packet. Being careful of sharp edges which may be present in base opening, evenly spread grease around inside of base opening. Notice shoulder at bottom of base.



4. Insert column into base opening, pushing down until column goes all the way down to rest on shoulder at bottom of base.

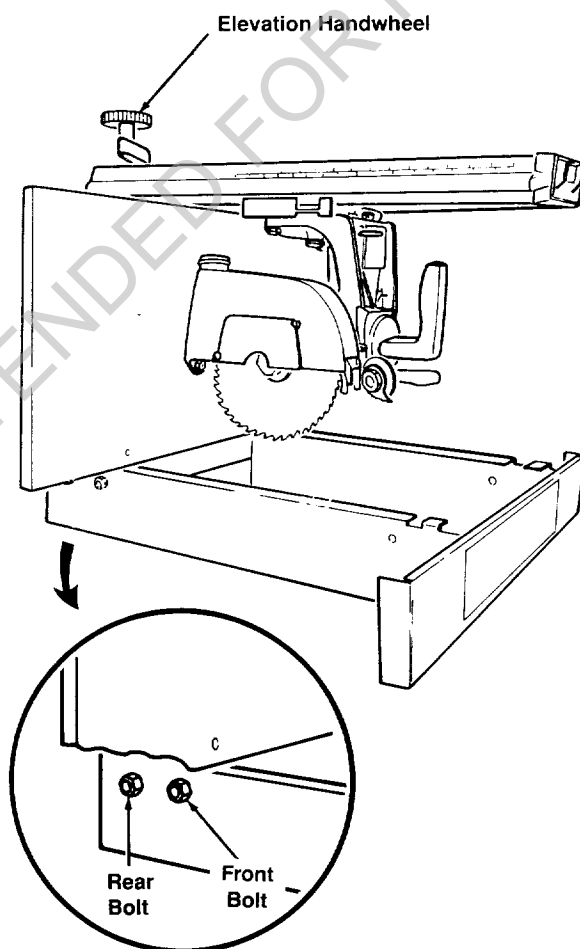


5. Use a wrench to re-install column retaining screw and tighten securely.
6. Turn miter index pin 90° to allow it to engage indexed position.
7. Lock miter lock.

Making Radial Arm Parallel to Frame

The radial arm must be parallel to the frame so that when lowered onto the table, the blade will be the same distance from the table at all points.

1. Lock miter lock.
2. Unlock rip lock. Pull blade carriage to mid-way position along radial arm. Lock rip lock.
3. Turn elevation handle to raise radial arm. Lift front end of radial arm and slide front table between radial arm and frame, towards rear.
4. Continue to support front end of radial arm while using elevation handle to lower radial arm until it just rests on edge of front table. **Note:** *You will have to remove table without changing radial arm elevation.*

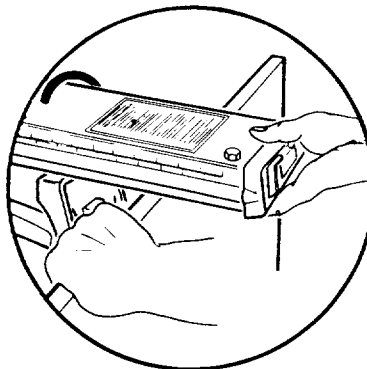


5. Leave front table in place. Wrench tighten, until just snug, front bolt on each side where side frame attaches to base.

6. Without changing elevation of radial arm, remove front table.

Assembly

7. Lift front end of radial arm and slide front table between radial arm and frame, towards front. Do not let table edges rest in notches of side frame.



8. Leave front table in place. Wrench tighten rear bolt on each side where side frame attaches to base.

9. Further tighten front bolt.

10. Remove front table.

11. Check that distance between radial arm and frame is approximately same at front and rear. Re-adjust if necessary.

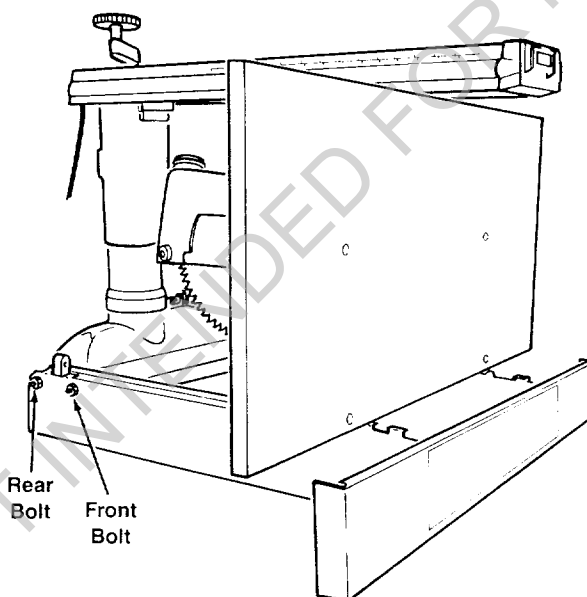


Table Support Assembly

- Set out:
 - two table supports
 - four carriage bolts $\frac{5}{16}$ " diameter by $\frac{1}{2}$ "
 - four $\frac{5}{16}$ " diameter flat washers
 - four $\frac{5}{16}$ " diameter lock washers
 - four $\frac{5}{16}$ " diameter nuts.

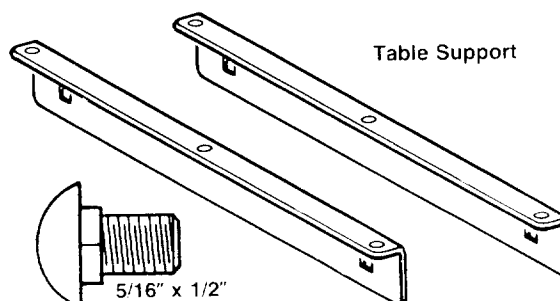
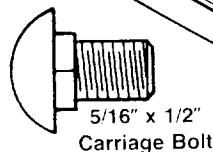
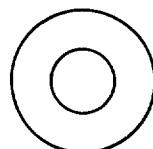


Table Support



$\frac{5}{16}$ " x $\frac{1}{2}$ "
Carriage Bolt



$\frac{5}{16}$ "
Flat Washer



$\frac{5}{16}$ "
Lock Washer



$\frac{5}{16}$ " Hex Nut

2. Place table support against side frame so that rectangular openings line up with square openings in side frame, and narrow edge is on top and outside.

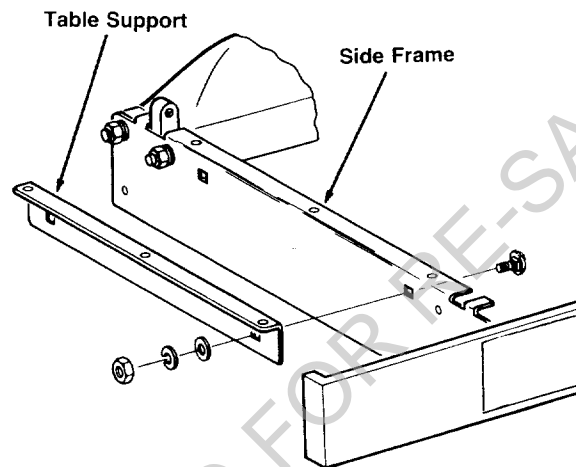
3. Put bolt through square opening in side frame from inside surface.

4. On end of bolt put flat washer, then lock washer, then nut and finger tighten.

Note: Later, in alignment, these will be wrench tightened.

5. Repeat for other opening.

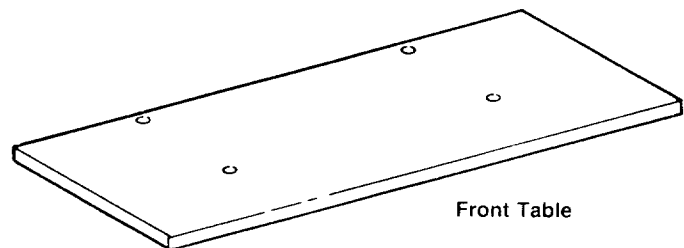
6. Repeat for other table support.



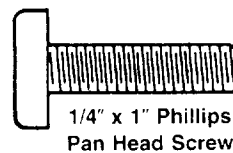
Front Table Assembly

1. Set out:

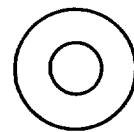
- front table
- four phillips pan head screws $\frac{1}{4}$ " diameter by 1"
- four $\frac{1}{4}$ " diameter flat washers
- four $\frac{1}{4}$ " diameter lock washers
- four $\frac{1}{4}$ " diameter nuts.



Front Table



$\frac{1}{4}$ " x 1" Phillips
Pan Head Screw



$\frac{1}{4}$ "
Flat Washer



$\frac{1}{4}$ "
Lock Washer

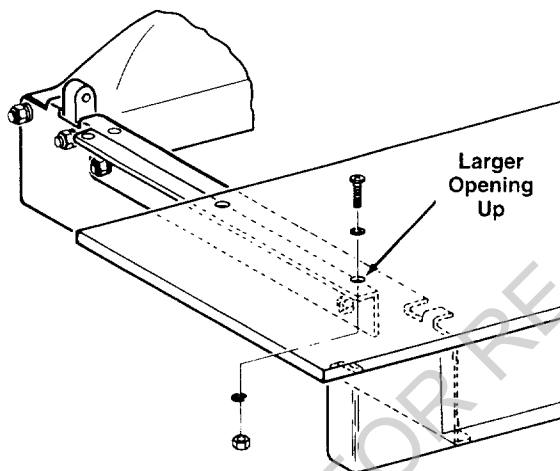


$\frac{1}{4}$ " Hex Nut

Assembly

2. Place table so that larger holes face up. Align table over middle and front holes in table supports. **Note:** Table will extend over front edge of frame.

3. Drop flat washer into each hole, then insert screw. From underneath surface, on end of each screw put lock washer, then nut. Hold in place and tighten with screw driver.



Miter Lock Assembly

The miter lock is factory assembled, but it may need adjustment. Follow these steps to see if adjustment is needed and how to make adjustment.

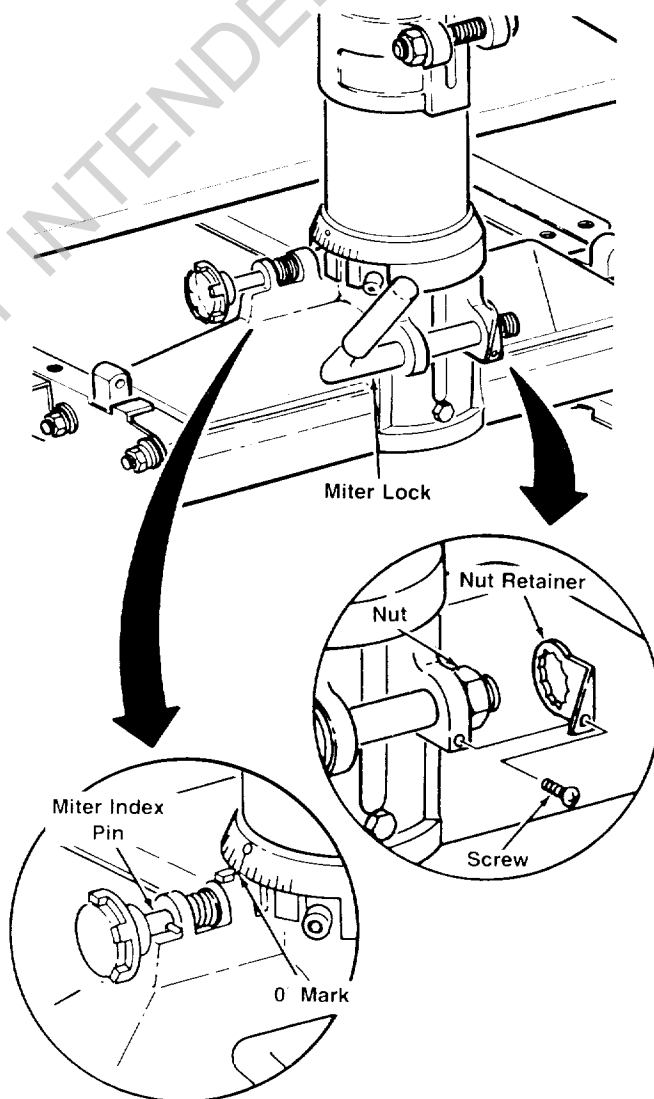
1. Pull out miter index pin and turn 90° to lock out.

2. Unlock miter lock. It should feel loose when unlocked. Move radial arm to right and left, through miter range. It should move freely.

3. Lock miter lock. It should feel tight when locked. Try to move radial arm through miter range. It should not move.

4. If step 3 is not met, remove screw and nut retainer. Tighten nut as needed. Replace nut retainer and screw. Repeat steps 2, 3, and 4 until lock is adjusted.

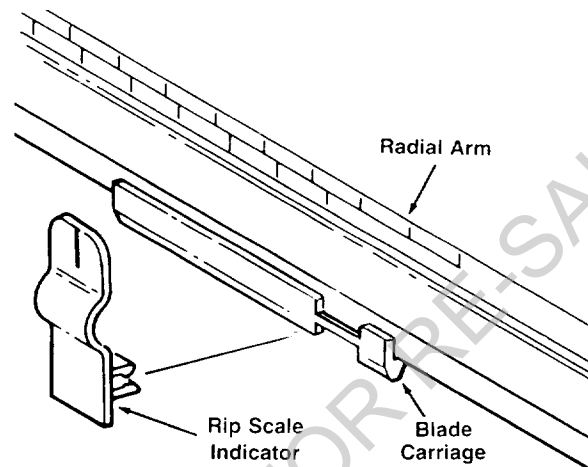
5. Turn miter index pin 90° to allow it to engage 0° indexed position. Rotate miter scale to line up 0 with arrow.



Install Rip Scale Indicators, Table Clamp Screws, and Dust Elbow

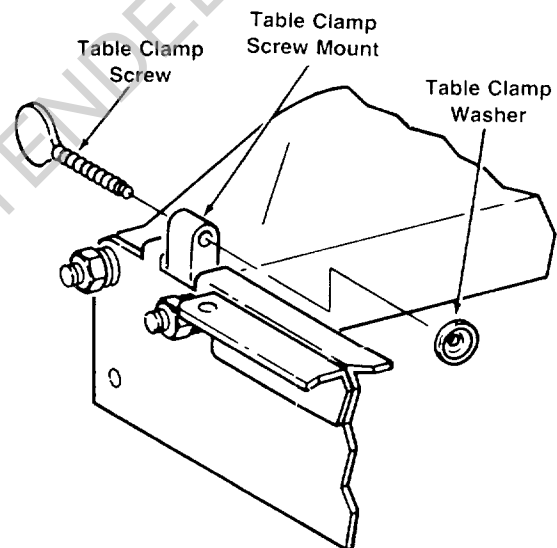
1. Set out:

- two rip scale indicators
- two table clamp screws
- two table clamp washers
- dust elbow.



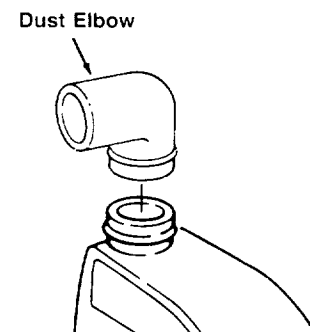
2. Snap one indicator onto each side of blade carriage.

3. From rear, screw table clamp screws through holes in table clamp mounts, until screw protrudes enough to tap on washer. **Note:** *Concave side of washer faces table edge.*

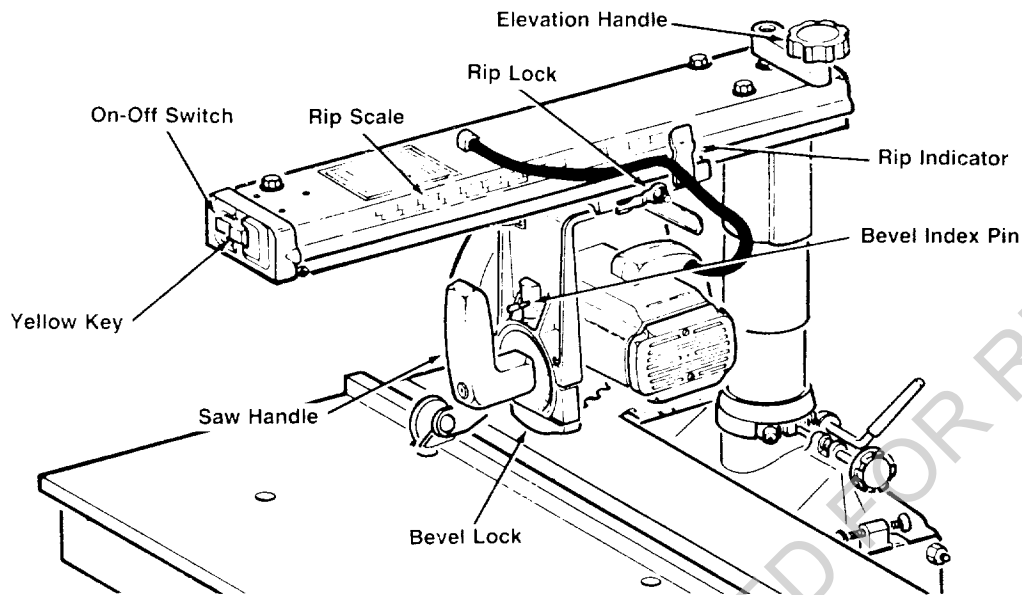


4. Push dust elbow onto opening on top of guard.

You cannot use the saw until it is aligned. Go to Alignment and Adjustment Section and follow all instructions. It may be helpful to read the Controls Section before proceeding with alignment and adjustment.

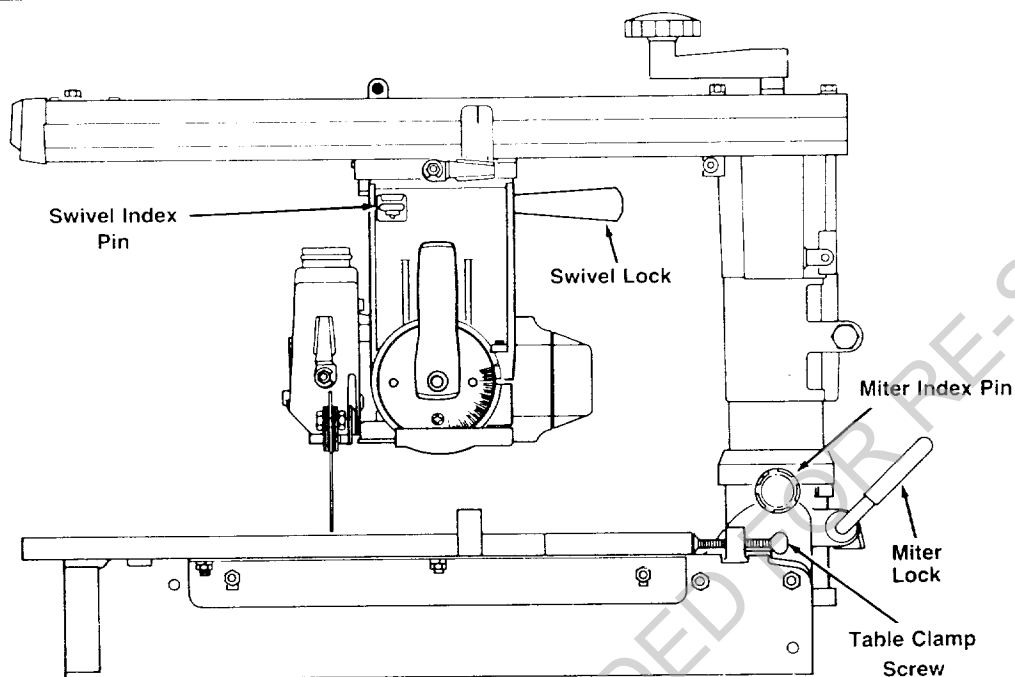


Controls



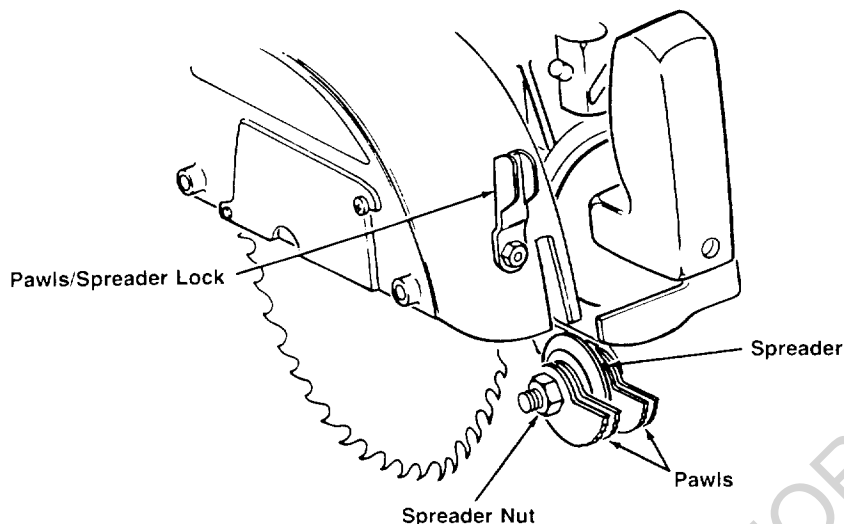
| <u>Control</u> | <u>Function</u> | <u>Operation/Comments</u> |
|--------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| On-off Switch | Turns motor on/off | Pull on, push off <i>Requires yellow key</i> |
| Yellow Key | Allows saw to be switched on | Insert into on-off switch, remove after turning saw off |
| Elevation Handle | Lowers/raises radial arm | Turn clockwise to lower, counterclockwise to raise |
| Rip Scale and Rip Indicator | Tells distance between blade and fence when saw is in rip position | Move blade carriage along arm to align line on indicator with desired number on scale |
| Rip Lock | Frees carriage to move along radial arm; locks at desired position | Move clockwise to lock, counterclockwise to unlock <i>Lock before ripping</i> |
| Bevel Lock | Frees motor to rotate; locks in desired position | Pull to unlock, push to lock <i>Works with bevel index pin</i> |
| Bevel Index Pin | After bevel lock is unlocked, allows motor to rotate to in- dexed positions at 0°, 45°, 90° | Push to right and hold while rotating motor, then release. <i>Then lock bevel lock</i> |

Controls

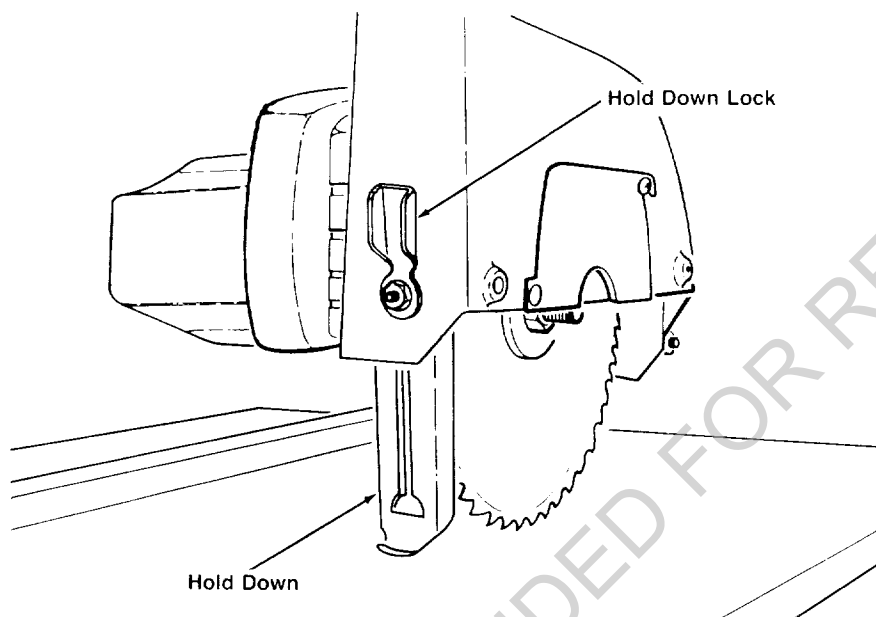


| <u>Control</u> | <u>Function</u> | <u>Operation/Comments</u> |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Swivel Lock | Frees blade carriage to rotate between crosscut and rip position; locks in place | Pull to unlock; push to lock <i>Works with swivel index pin</i> |
| Swivel Index Pin | After swivel lock is unlocked, allows carriage to rotate to indexed positions for crosscut, in-rip, out-rip | Push down and hold while rotating carriage, then release <i>Then lock swivel lock</i> |
| Miter Lock | Frees radial arm and column to rotate into desired miter position | Move clockwise to lock, counterclockwise to unlock <i>Works with miter index pin</i> |
| Miter Index Pin | Locates radial arm and column in indexed miter positions at 0°, 22.5° right and left, and 45° right; allows arm to be set at any miter position | Pull out and hold while moving arm to any indexed position, then release. To set to a non-indexed position, pull out, turn 90° and release to lock out; move arm to any miter position <i>Then lock miter lock</i> |
| Table Clamp Screw | Frees table sections to allow fence changing | Turn clockwise to tighten, counterclockwise to loosen |

Controls



| <u>Control</u> | <u>Function</u> | <u>Operation/Comments</u> |
|---------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pawls/spreader Lock | Frees pawls/spreader to move to desired position | Move counterclockwise to unlock, clockwise to lock <i>Set pawls/spreader before ripping</i> |
| Pawls/spreader | Reduce kickback by keeping kerf open (spreader function); slow or stop kickback by digging into workpiece (pawls function) | Set as unit. See ripping set-up for details and illustrations. With blade in table kerf, place workpiece alongside blade so part of it extends beyond pawls. Move unit until pawl rests level on workpiece and spreader hangs below workpiece surface, in line with blade, then lock. Test by pulling workpiece in kickback direction to see that pawls grab into and stop workpiece. Re-set if needed. <i>Set pawls/spreader before ripping</i> |
| Spreader Nut | Frees spreader to move side to side | Loosen to make adjustment, then tighten <i>Spreader must be in line with blade. If it is not, kickback can occur</i> |



| <u>Control</u> | <u>Function</u> | <u>Operation/Comment</u> |
|----------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hold Down Lock | Frees hold down to move to desired position; locks in place | Move counterclockwise to unlock, clockwise to lock <i>Set hold down before ripping</i> |
| Hold Down | Keeps workpiece from fluttering; acts as partial barrier to blade; acts as sawdust deflector | With blade in table kerf and workpiece against blade, move hold down until it just clears workpiece, then lock <i>Set hold down before ripping</i> |

Alignment and Adjustment

The saw and blade must be aligned correctly for two reasons:

- 1) to make cuts accurate
- 2) to prevent binding of the blade and workpiece, which can cause jams, kick-backs, or thrown workpieces.

Alignment and Adjustment Steps

The following adjustments **must be made in order** before using the saw for the first time. If you miss an adjustment, you must go back, make the missed adjustment, and repeat all steps from that point on.

These adjustments are like fine tuning a piece of equipment. Often, a series of steps must be repeated more than once in order to get the adjustment right.

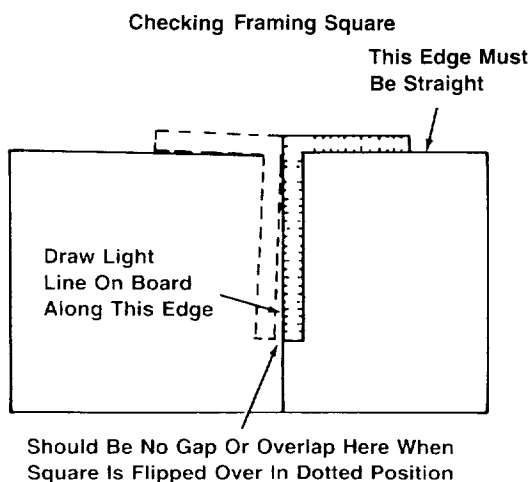
WARNING:

Plugging in saw during alignment can result in severe cuts from contact with spinning blade.

Do not plug in saw at any time during alignment or adjustment.

Plug in saw only when it is to be used.

You will need the tools listed in the Assembly section. Before you start, make sure the framing square is true.

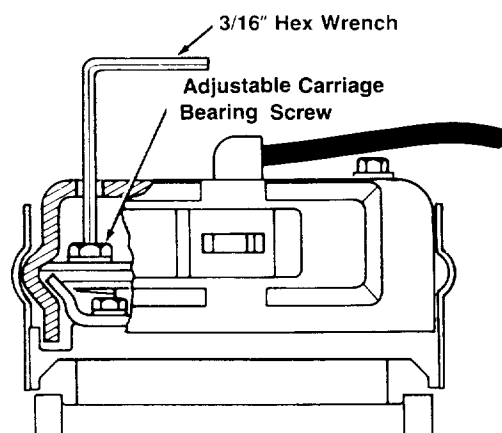
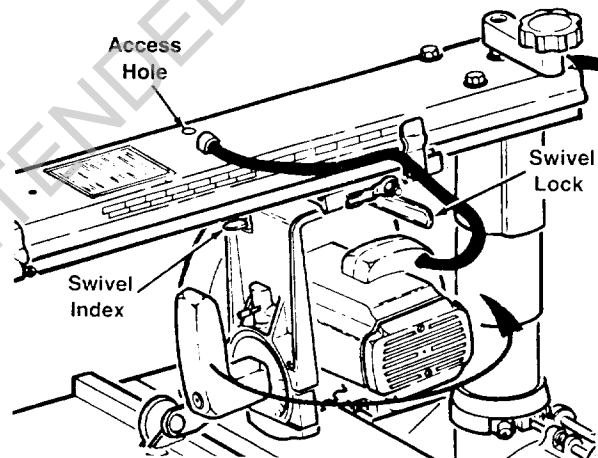
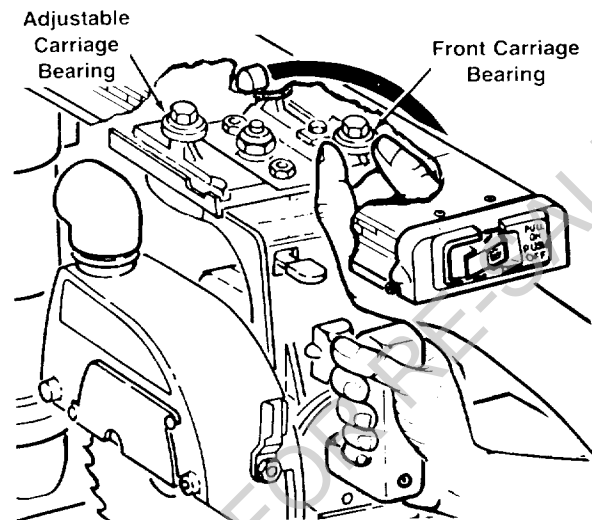


Alignment and Adjustment

Adjusting Carriage Bearings

The goal of this adjustment is to eliminate looseness between the carriage bearings and the radial arm. The blade carriage should roll freely along the entire length of the radial arm, but with some resistance.

1. Unlock rip lock and push blade carriage to rearward position.
2. Grasp front carriage bearing between thumb and index finger. Apply force to bearing and at same time, pull blade carriage forward. If you can stop bearing from turning while carriage is moving, bearing needs adjustment--go to step 3. If you cannot stop bearing from turning while carriage is moving, no adjustment is needed. Go on to Adjusting Column Support.
3. Unlock swivel lock, press and hold swivel index pin to set blade to out-rip position (motor toward rear). Release swivel index pin and lock swivel lock.
4. Push blade carriage to rear. Insert $\frac{3}{16}$ " hex wrench into access hole in top of radial arm. Look up under radial arm and pull blade carriage forward until hex wrench lines up with and fits into adjustable carriage bearing screw. Lock rip lock.



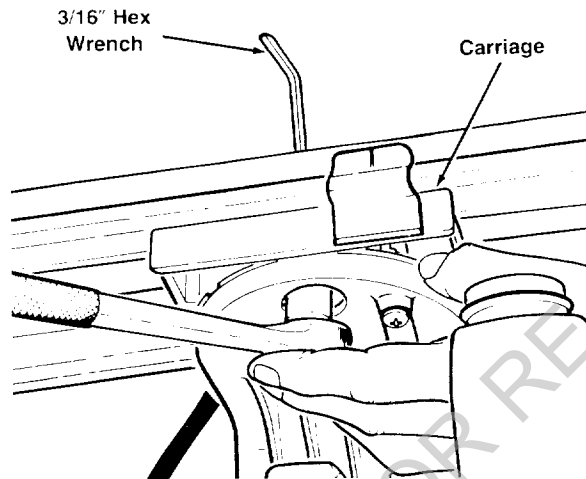
Alignment and Adjustment

5. Hold hex wrench in place and use $\frac{1}{2}$ " socket wrench to loosen nut on underside of carriage just enough to allow adjustable carriage bearing screw to turn. (Nut is accessible through hole in direct line with hex wrench.)

6. Turn adjustable carriage bearing screw partial turn to take up looseness.

7. Hold hex wrench in place and tighten nut.

8. Put saw in crosscut position, lock swivel lock, and repeat steps 1 and 2.



Adjusting Column Support

The combined goal of this adjustment is a) to eliminate movement (looseness) between the column and arm support, and b) to make raising and lowering the radial arm a smooth and firm action.

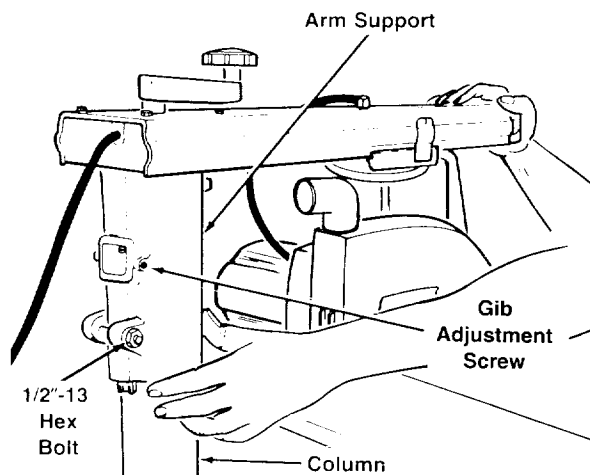
1. Index arm at 0° miter position and lock miter lock.

2. Use elevation handle to raise radial arm to maximum height. If elevation handle is difficult to turn, slightly loosen gib adjustment screw and $\frac{1}{2}$ -13 hex bolt.

3. Hold end of radial arm with one hand, and place fingers of other hand against column and arm support.

4. Feel for movement between column and arm support as you push radial arm up and down. If there is movement, go to step 5. If there is no movement, go to step 6.

5. If you have not already done so, slightly loosen gib adjustment screw. Slightly tighten $\frac{1}{2}$ -13 hex bolt. Repeat steps 3 and 4.



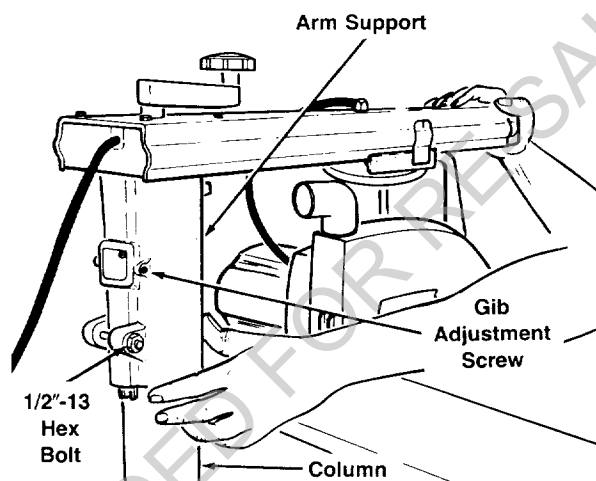
Alignment and Adjustment

6. Use elevation handle to raise and lower radial arm a few turns in each direction. Movement should be smooth but firm. If movement seems difficult, slightly loosen 1/2-13 hex bolt.

7. Position hands as in step 3. Feel for movement between column and arm support as you push radial arm side to side. If there is movement, slightly tighten gib adjustment screw. If there is no movement, go to step 8.

8. Use elevation handle to raise and lower radial arm a few turns to make sure this movement is still smooth and firm. If movement is difficult, slightly loosen gib adjustment screw.

9. Re-check for up and down and side to side movement between column and arm support. Adjustment is finished when radial arm raises and lowers smoothly, and there is no movement between arm support and column.



Leveling the Front Table

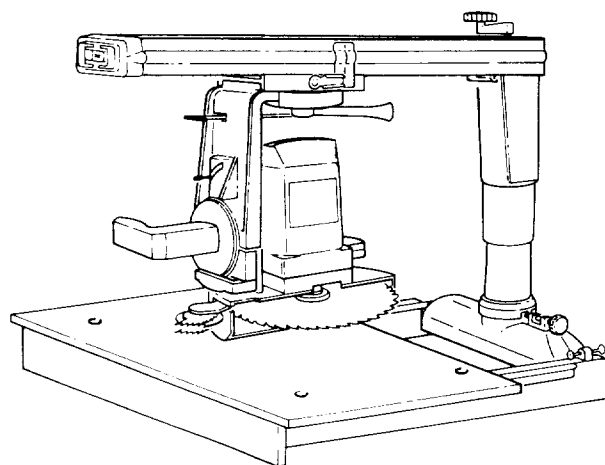
The goal in leveling the front table is to make the clearance between the blade and table the same at all points.

1. Unlock rip lock and pull blade carriage out to end of radial arm.

2. Unlock miter lock. Pull out miter index pin and turn it 90° to lock it out.

3. Turn elevation handle to raise radial arm until the blade is approximately one inch above front table.

4. Unlock bevel lock, push bevel index pin to right and hold in place, turn motor so blade is parallel to table. Release bevel index pin and lock bevel lock.



Alignment and Adjustment

5. Find out which point on table is the highest by positioning blade as close as possible over each of the four mounting holes in table top. It will be necessary to use elevation handle to slowly lower radial arm until blade starts to make contact with edge of framing square.

6. Start with blade over highest point of table as found in Step 5. Once again use elevation handle to slowly lower radial arm until blade touches edge of framing square.

7. Adjust table support so blade is in full contact with edge of framing square as much as possible.

8. Tighten table support bolt that is in line with blade. (If blade is over rear table hole, tighten rear table support bolt on that side.)

9. Without changing elevation of radial arm, position blade over other hole on same side of table.

10. Adjust table support so blade is in full contact with edge of framing square as much as possible.

11. Tighten table support bolt that is in line with blade.

12. Repeat steps 7 and 8 for holes on other side of table.

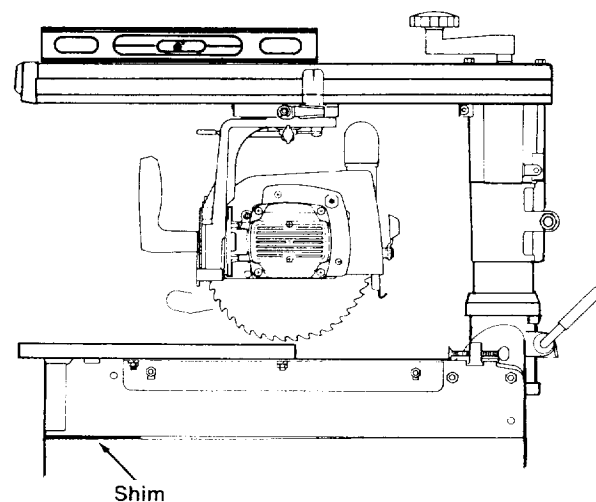
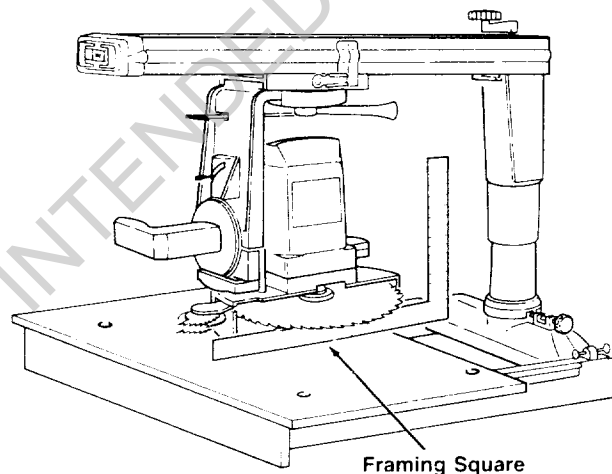
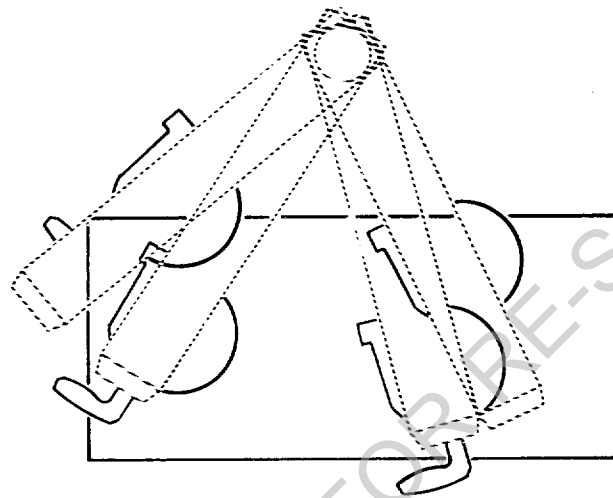
13. Check for equal clearance at all points between blade and table. Re-adjust table supports as needed.

14. Rest level on radial arm. If needed, put shim under front frame to make saw slant slightly toward rear.

WARNING:

Saw must slant slightly toward rear to keep blade carriage from rolling forward. Whenever saw is moved, check to be sure it is slightly lower in rear.

15. Bolt frame to mounting surface. (These bolts are not provided.)



Alignment and Adjustment

Squaring Blade Crosscut Travel

The goal of this adjustment is to make accurate crosscuts. To do so, the blade must travel along the radial arm, perpendicular to the fence, otherwise, there will be a slight miter angle in all crosscuts.

1. Set radial arm to 0° miter (crosscut) position. Turn miter index pin 90° and release it to index arm. Lock miter lock. Check that bevel and swivel locks are locked.

2. Position blade slightly above rear edge of front table.

3. Place square on front table, so that long side of square is off rear edge of table, and short side of square just touches a blade tooth. Mark this tooth.

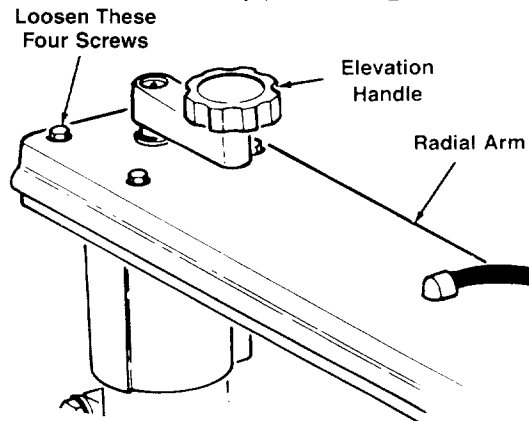
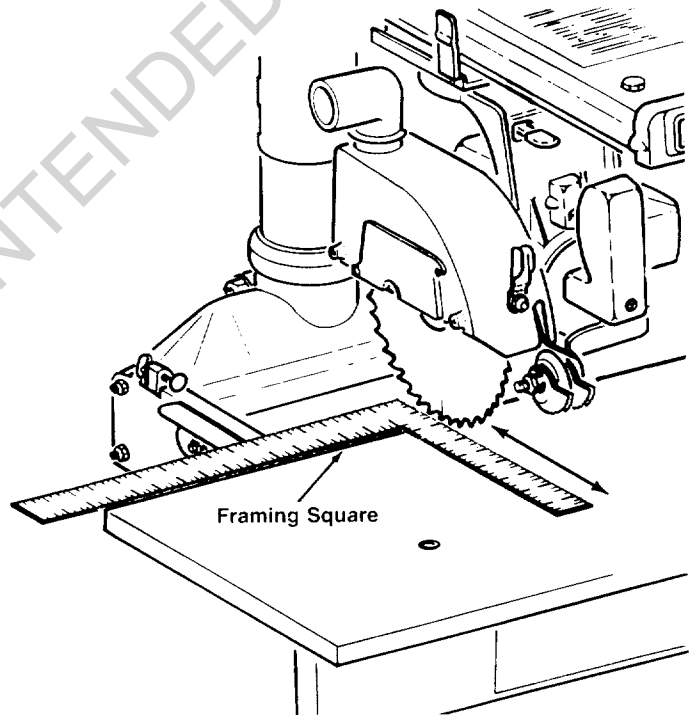
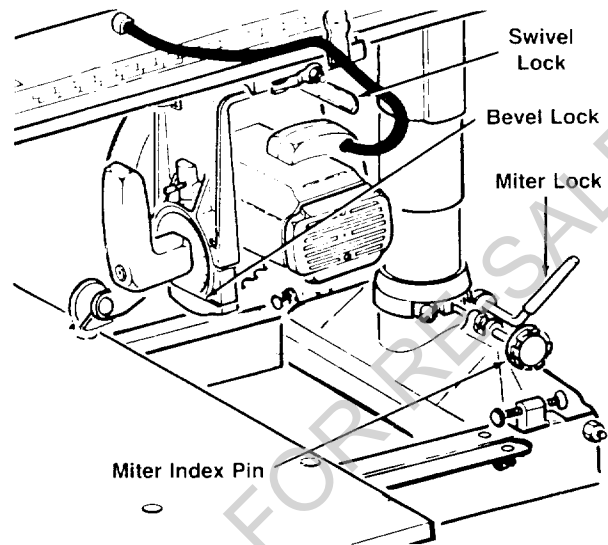
4. Move blade carriage all along radial arm to see if marked tooth just touches square at all points. If it does, no adjustment is needed. If tooth moves into or away from square, go to step 5.

5. Slightly loosen four screws on arm near elevation handle. Move arm to make adjustment. Tighten screws. Repeat step 4.

6. If additional movement is necessary or in order to make a more precise adjustment the gibb screws located on the back of the arm support can be adjusted.

If the *saw blade* tried to move away from the square, slightly loosen the left gibb screw with a 3/16" hex wrench and tighten the right screw maintaining column support adjustment to move the *arm* to the left.

If the *saw blade* tried to "walk" on the square, slightly loosen the right gibb screw with a 3/16" hex wrench and tighten the left gib screw maintaining column support adjustment to move the *arm* to the right.



Alignment and Adjustment

Squaring Blade to Table

The goal of this adjustment is to make the blade perpendicular to the table so that cuts will be accurate; otherwise all cuts will have a slight bevel angle. The bevel scale will also be adjusted.

1. Position blade carriage so that rear $\frac{3}{4}$ of blade is beyond rear edge of front table. Lock rip lock.

2. Loosen coverplate screw and rotate coverplate out of way.

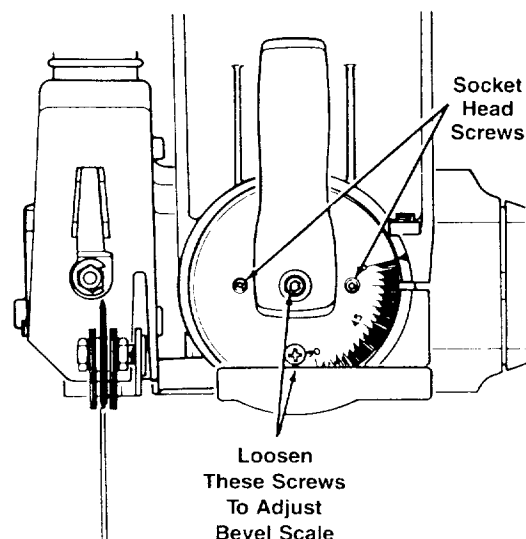
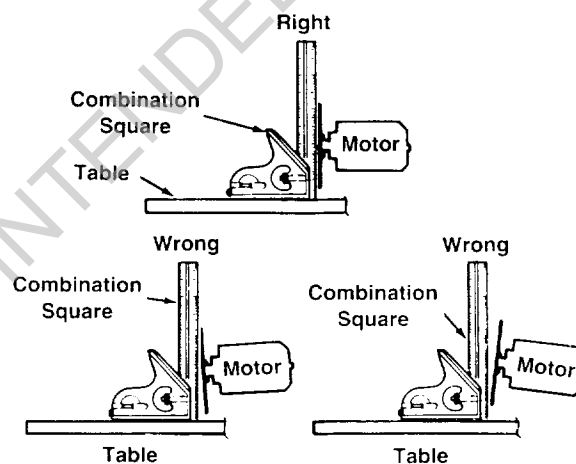
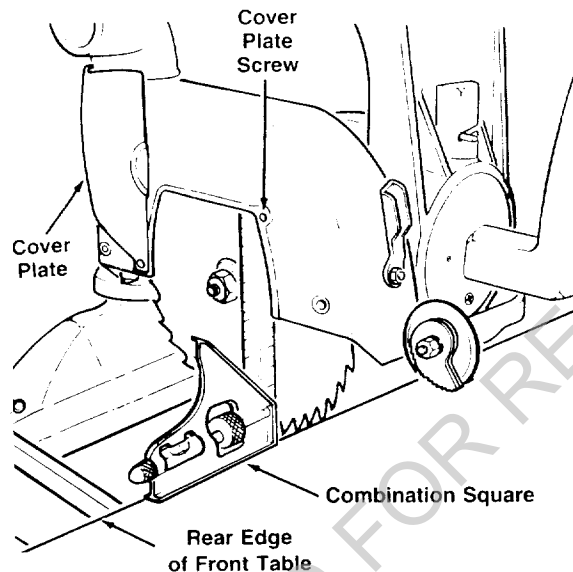
3. Rest combination square on table and against blade so that short edge of square rests on table and long edge rests against blade. Make sure edge of square is against blade surface, not on a tooth.

4. Look to see if space between blade and square stays same at all points. Check different points along blade surface by making quarter turns and looking for gaps each time. If space stays same at all points, no adjustment is needed--go to step 7. If space varies, go to step 5.

5. Use $\frac{3}{16}$ " hex wrench to loosen socket head screws on either side of saw handle, behind bevel scale. (Make sure bevel lock stays locked.) Make adjustment by turning motor. *Note: Not all blades are perfectly flat. Find best position for whole blade.* Tighten screws.

6. Repeat steps 3 and 4.

7. Use $\frac{3}{16}$ " hex wrench to slightly loosen screw in saw handle. Slightly loosen small screw below saw handle. Rotate bevel scale to line up 0 with arrow. Tighten screws.

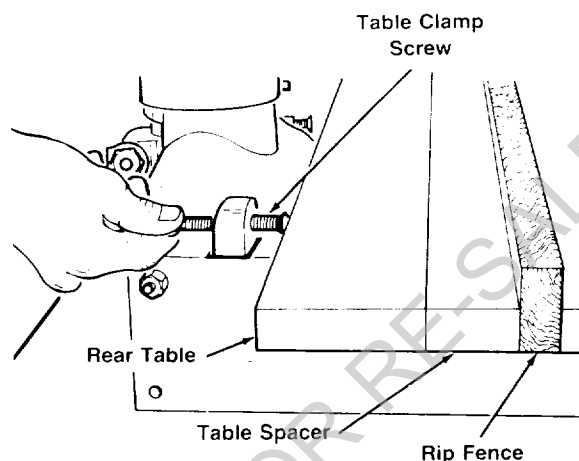


Alignment and Adjustment

Squaring Blade to Fence

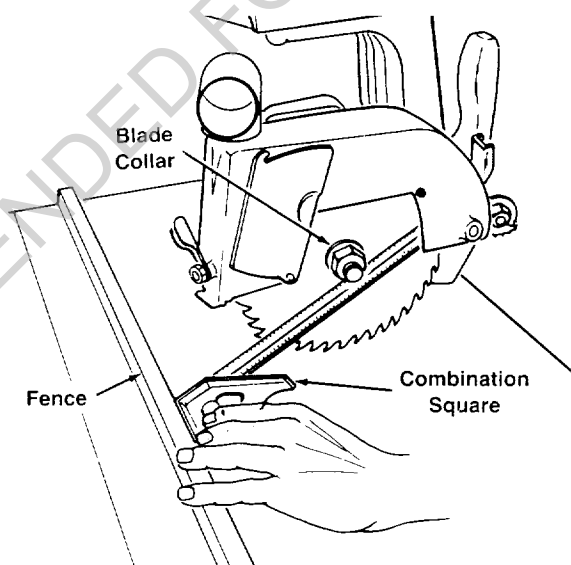
The goal in setting the blade perpendicular to the fence is to reduce the risk of kickback when ripping. This adjustment will also reduce splintering of the workpiece and burning of the kerf during ripping and crosscutting.

1. Insert rip fence, then table spacer, then rear table, and tighten in place with table clamp screws.

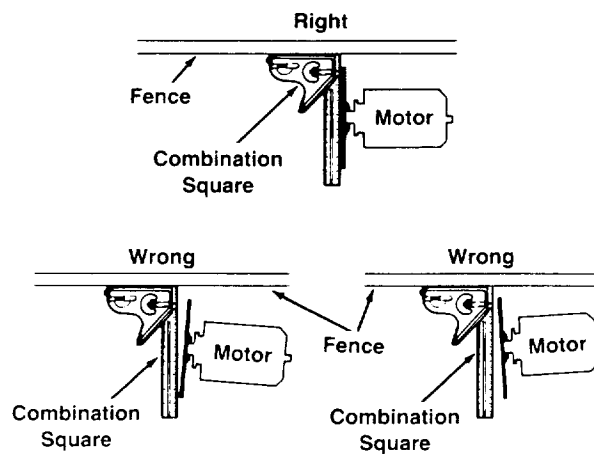


2 Position blade carriage in front of fence and lock rip lock.

3. Place combination square so that short edge is against fence and table, and long edge is against flat surface of blade, just below blade collar. Make sure edge of square is against blade surface, not on a tooth.



4. Look to see if space between blade and square stays same at all points. Check different points along blade surface by making quarter turns, and looking for gaps each time. If space stays same at all points, no adjustment is needed--go to step 7. If space varies, go to step 5.

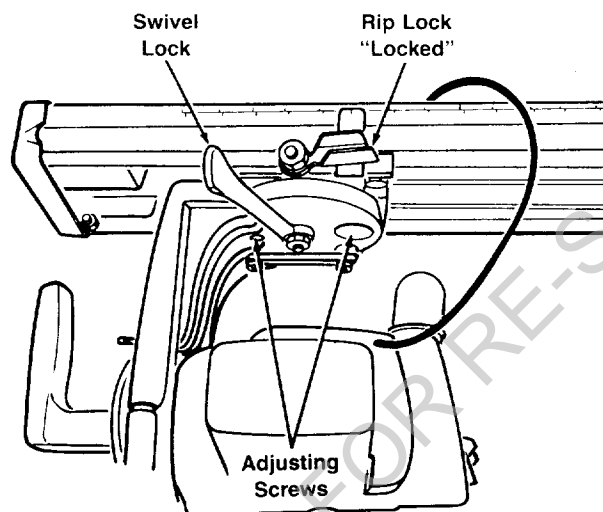


Alignment and Adjustment

5. Unlock swivel lock, but do not move swivel index pin. Use $\frac{3}{16}$ " hex wrench to loosen two adjusting screws under carriage. (There are two access holes to these screws, one on each side of swivel handle.) Make adjustment by rotating motor. **Note:** *Not all blades are perfectly flat. Find best position for whole blade.* Tighten two adjusting screws and lock swivel lock.

6. Repeat steps 3 and 4.

7. Return coverplate to original position and tighten coverplate screw.



Aligning Spreader to Blade

The goal of this adjustment is to make the spreader directly in line with the blade. The spreader has an important safety role. It rides in the kerf of the cut workpiece during ripping to help keep the two sides of the workpiece from pinching on the blade. Blade pinching is a cause of kickback.

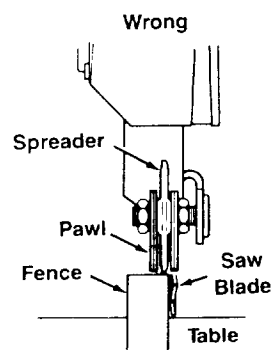
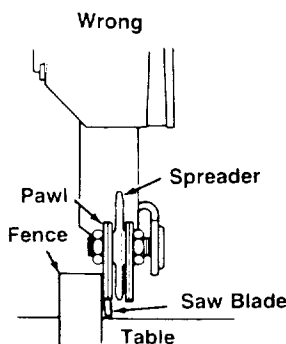
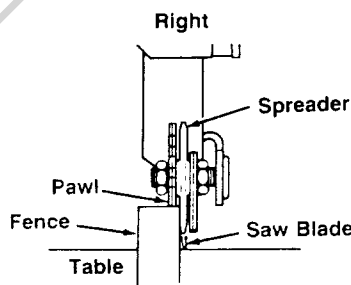
1. Unlock swivel lock, depress swivel index pin, and move blade carriage to in-rip position (motor towards table front). Lock swivel lock.

2. Lower radial arm until blade just clears table.

3. Unlock rip lock and move blade carriage back until blade touches fence. Lock rip lock.

4. Unlock pawls/spreader lock and lower pawls/spreader until pawl on left side of spreader rests on top of fence. Lock pawls/spreader lock.

5. If spreader rests flat against fence, no adjustment is needed--go to step 7. If

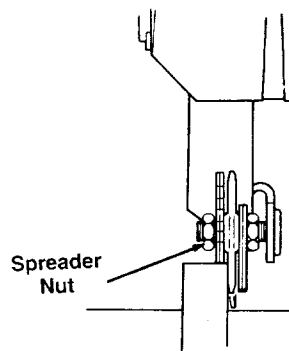


Alignment and Adjustment

spreader does not rest flat against fence, go to step 6.

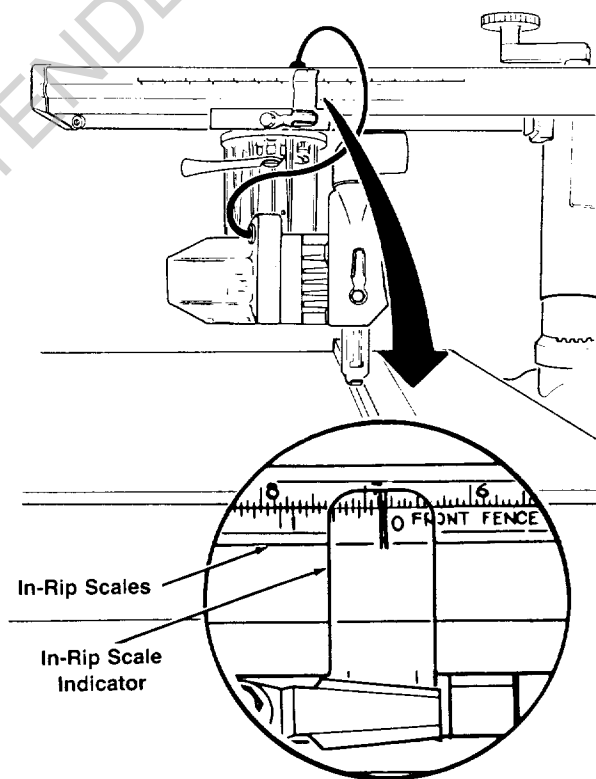
6. Use $\frac{1}{2}$ " wrench to loosen both spreader nuts. Slide spreader against fence. Tighten spreader nuts.

7. Unlock pawls/spreader lock, raise pawl/spreader unit up to guard and lock in place. Leave saw in this position to adjust in-rip scale indicator.



Adjusting In-Rip Scale Indicator

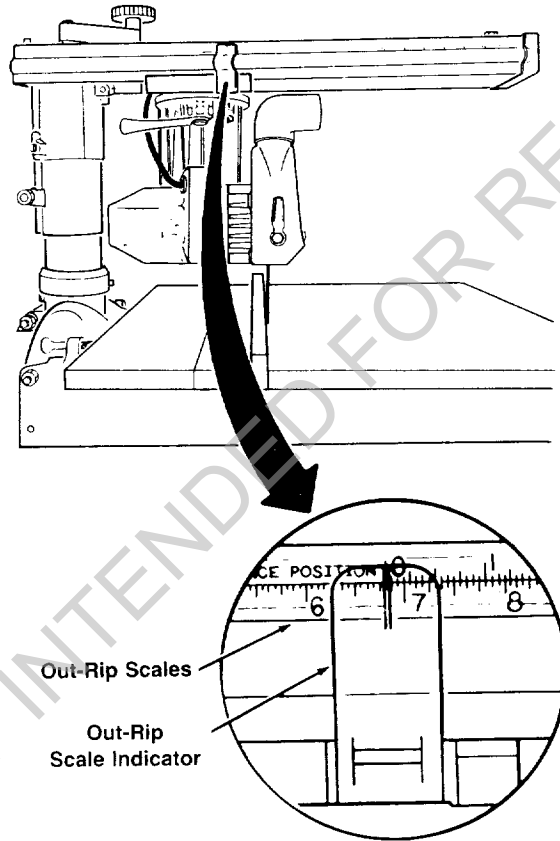
1. With saw in in-rip position and blade against fence, align in-rip scale indicator with 0.



Alignment and Adjustment

Adjusting Out-Rip Scale Indicator

1. Unlock rip lock and pull blade carriage forward. Unlock swivel lock, depress swivel index pin, and set blade carriage in out-rip position (motor towards fence). Lock swivel lock.
2. Push blade carriage back until blade is against fence. Lock rip lock.
3. Align out-rip scale indicator with 0.



The saw is aligned and ready to use for cutting. It is important that you periodically check alignment and adjustment to insure accurate cuts and improve the safety of cutting procedures.

Electrical Connections

Motor Specifications

The double insulated motor used in this saw has the following specifications:

| | |
|-----------------------------|-----------|
| Rated H.P. | 1.0 |
| Maximum Developed H.P. | 2.5 |
| Voltage | 120 |
| Amperes | 13 |
| Hertz (cycles) | 60 |
| RPM | 5100 |
| Arbor Shaft Rotation | Clockwise |

Power Supply

WARNING:

The saw is factory wired for 120V operation. Connect to 120V, 15-AMP branch circuit and use 15-AMP time delay fuse or circuit breaker. Failure to connect in this way can result in injury from electric shock or fire.

WARNING:

To avoid electric shock or fire, immediately replace worn, cut, or damaged power cord.

If an electrical shock occurs, your reaction to the shock may bring your hands into contact with the blade.

This tool is equipped with a two wire cord and two prong plug which can be used in standard 120 volt A.C. outlets. No grounding of the tool is necessary.

The housing is a dielectric material. This helps protect you in case of failure of the standard functional insulation within the electrical system.

Use only identical replacement parts when service is required. This tool is intended for residential use only.

Extension Cords

The use of any extension cord will cause some loss of power. Replace damaged or worn cords immediately.

The following table shows the correct size cord to use. If in doubt, use the next heavier gauge. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. **Note:** *The smaller the gauge number, the heavier the cord.*

Wire Gauge Chart (AWG #) for 120 Volt Lines

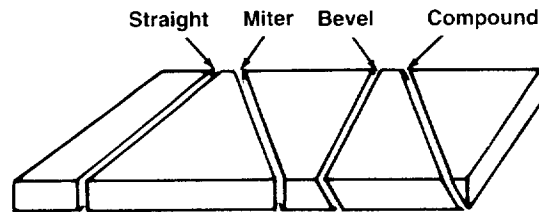
| Cord Length (feet) | AWG # |
|--------------------|--------|
| 0-25 | No. 16 |
| 26-50 | No. 12 |
| 51-100 | No. 10 |

For circuits that are farther away from electrical circuit box, the wire size must be increased proportionately in order to deliver ample voltage to the saw motor.

Crosscutting

Crosscutting Defined

Crosscutting is cutting a workpiece to length. The workpiece is held firmly against the fence, and the blade is pulled through the workpiece to make the cut. Straight, miter, bevel, and compound cuts can be made.



Basic Crosscuts

Crosscutting Safety

The hazards associated with crosscutting include: exposed blade teeth, rolling carriage, thrown chips, and thrown workpiece. This section explains these hazards and tells how to avoid them or reduce the risk of their happening.

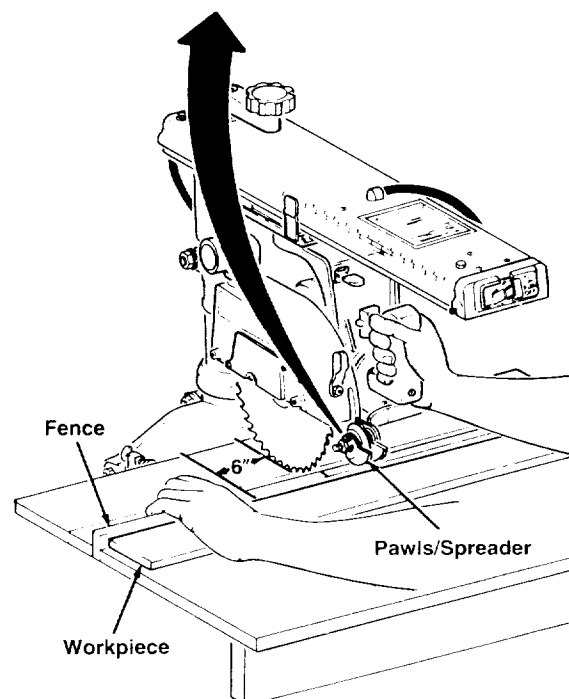
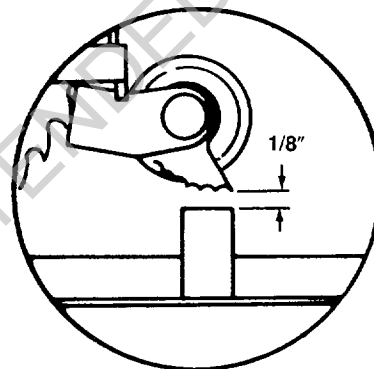
Read the crosscutting safety information and instructions before making any type of crosscut. Follow these steps every time you make a crosscut.

Exposed Blade Teeth

WARNING:

During crosscutting, blade teeth can be exposed. To reduce risk of having fingers, hand or arm cut off :

1. Lower pawls to clear fence or workpiece, whichever is higher, by $\frac{1}{8}$ ". Lowered pawls will cover most front teeth of blade.
2. Keep hands away from blade and out of blade path. Keep hand holding down workpiece at least 6" from blade.
3. Do not cut freehand. You will not be able to control workpiece.
4. If blade jams, turn off saw, remove yellow key, wait for blade to stop spinning, then free blade.



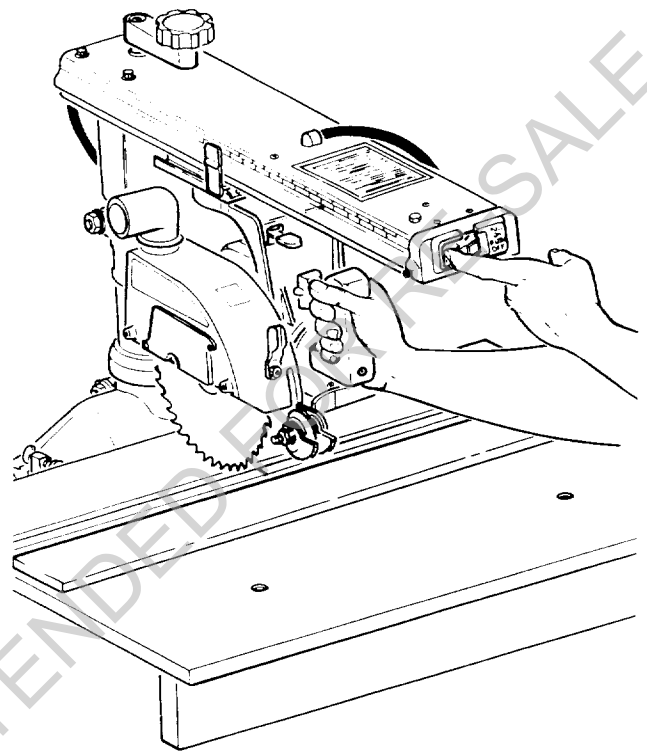
Crosscutting

Rolling Carriage

WARNING:

When saw is turned on, blade can suddenly come toward you. To reduce risk of this happening:

1. Keep one hand on saw handle when turning saw on.
2. Make sure saw slants slightly toward rear. If needed, put shim under front frame.
3. Whenever saw is moved, check to be sure that it is slightly lower in rear.



Thrown Chips

WARNING:

The saw can violently throw workpiece chips. Pieces of blade can break off and be thrown violently. To reduce risk of eye injury and blindness:

1. Wear safety goggles labeled "ANSI Z87.1" on package. Regular eyeglasses are not safety goggles.
2. Check blades for damage.
3. Keep saw table clean and clear of all objects except workpiece to be cut and necessary fixtures or clamps.



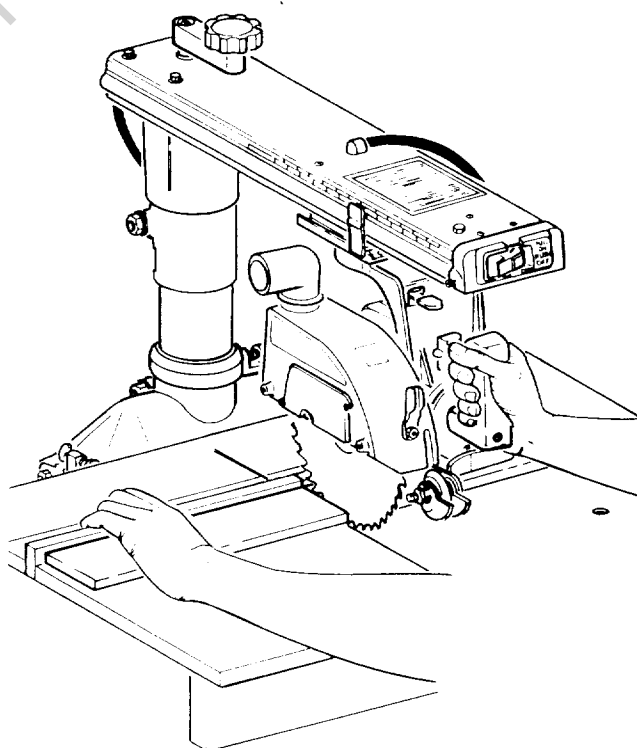
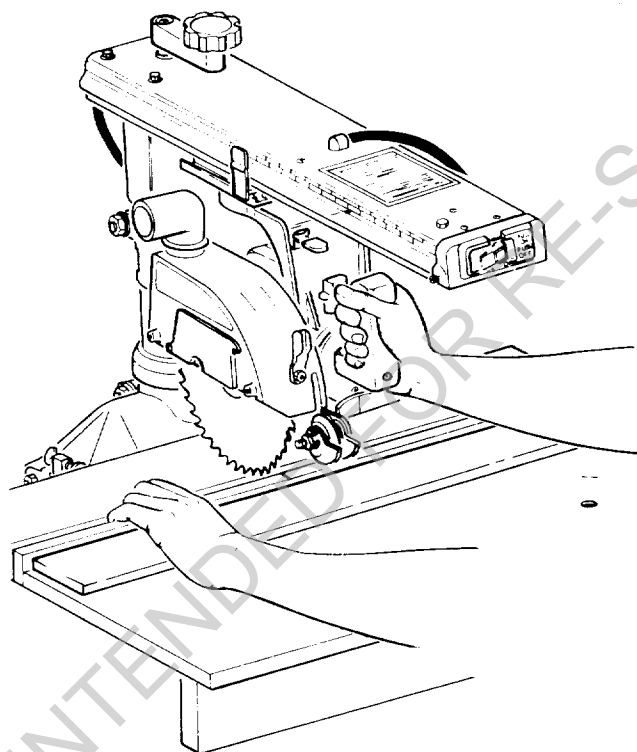
Crosscutting

Thrown Workpiece

CAUTION:

Workpiece could be picked up by spinning blade and thrown. You could be hit by thrown workpiece, or your fingers or hand could be pulled into blade. To reduce risk of thrown workpiece:

1. Make sure installed fence is at least half as high as the workpiece, and never less than $\frac{3}{4}$ ".
2. Start cut with blade in rearmost position, behind fence.
3. Firmly hold workpiece flat on table and up against fence. Cut only one workpiece at a time. Stacking or placing workpieces edge to edge can cause user to lose control of workpiece.
4. Pull blade through workpiece only distance needed to complete cut, and never more than half diameter of blade.
5. Push blade carriage to rearmost position, behind fence, after each cut.
6. Do not reach for or touch cut off end of workpiece until cut is complete, blade is behind fence, saw is turned off, and blade has stopped spinning.
7. Do not use length stop on cut-off end of the workpiece because it can cause cut-off end to be thrown and hit user. Use length stop only on end of workpiece which is held down.
8. Use table extensions to support workpieces that extend beyond table.



Crosscutting Checklist

Refer to the following checklist before making crosscut kerfs or crosscutting. It will remind you of things to do to make your cutting safer.

Crosscutting Checklist

1. Prevent accidental start-up. Saw unplugged, switch "off", yellow key out until ready to make actual cut.
2. Safety goggles on.
3. Blade sharp and correctly installed.
4. Fence secured between front table and table spacer; at least half as high as workpiece, and never less than $\frac{3}{4}$ ".
5. Pawls lowered to $\frac{1}{8}$ " above fence or workpiece, whichever is higher.
6. Hold down raised and locked.
7. Swivel, miter, and bevel locks locked; table clamps tightened.
8. One hand always on saw handle when saw is on to keep blade from coasting towards you.
9. Blade pulled through workpiece only distance to complete cut, and never more than half diameter of blade.
10. Blade carriage pushed to rearmost position, behind fence, after each cut.
11. Saw "off" and blade stopped spinning before reaching for cut-off end of workpiece.

Crosscutting Hints

1. To extend the life of the table top, make an additional top out of $\frac{1}{4}$ " plywood or masonite. Clamp or nail to original table top, section by section. If you use nails, nail in the four corners to make sure the blade will not contact the nails.
2. Instead of using one fence for all cutting paths, make several fences, each with only a few kerfs. (See Cutting Aides--Fences.) Too many kerfs in a fence weaken it.
3. When making miter or bevel cuts, use extra force in holding the workpiece down because it tends to move during these types of cuts.
4. When cutting hard woods, like oak, pull blade through more slowly.
5. Keep table clean of chips and sawdust.
6. Use the right blade for each job.
7. Use sharp blades.
8. To keep cut line accurate, periodically check blade alignment by following instructions in Alignment and Adjustment section.
9. Do not cut severely warped or crooked workpieces.
10. For workpieces with one smooth and one rough surface, cut with smooth surface down on table.

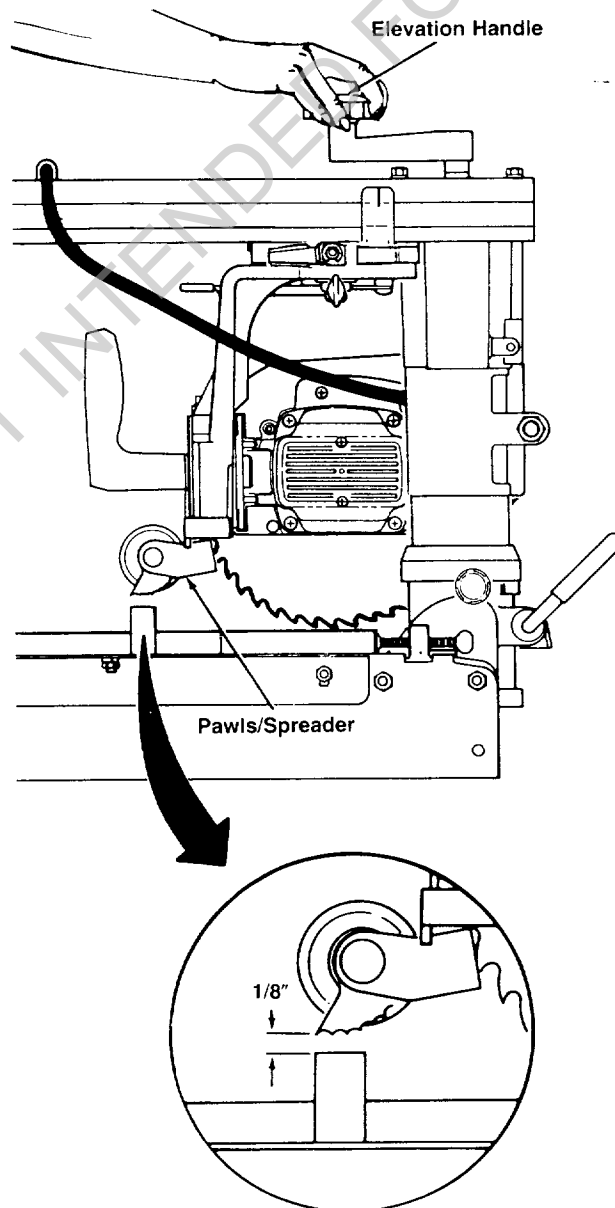
Crosscutting

Kerfs

A kerf or shallow cut is needed in the table and fence to serve as a path for the blade and to ensure that the blade cuts all the way through the workpiece. A kerf is needed for each different cutting path.

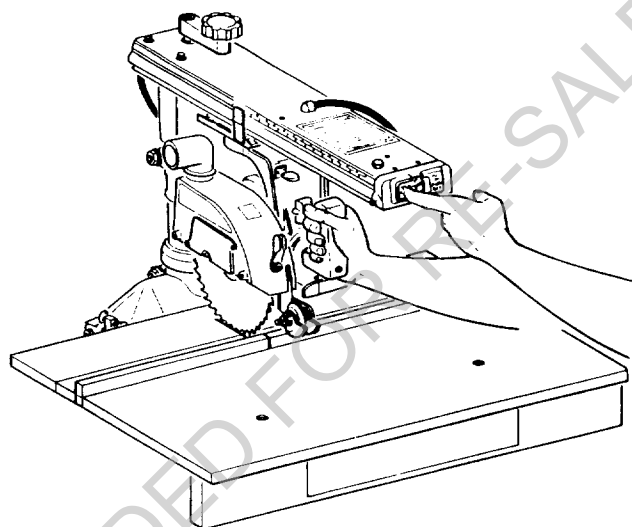
Follow these steps to make approximately $\frac{1}{16}$ " deep kerf:

1. Check that saw is unplugged, switch is "off" and yellow key is out.
2. Put fence between front table and spacer board. Tighten table clamps.
3. Set desired bevel angle. Move arm to desired miter position. Lock bevel, miter and swivel locks.
4. Unlock rip lock and push blade carriage to rearmost position, behind fence.
5. Turn elevation handle clockwise to lower radial arm until blade just clears table.
6. Lower paws to clear fence by $\frac{1}{8}$ ".

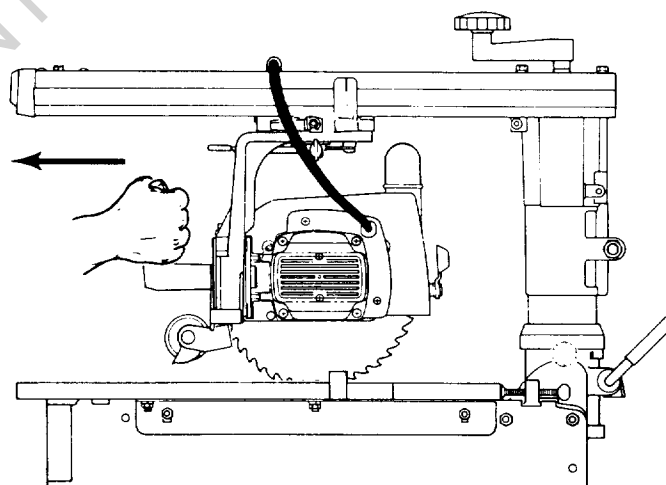


Crosscutting

7. Plug saw in.
8. Put yellow key in switch.
9. Grasp and hold onto saw handle, then turn saw on.
10. Slowly turn elevation handle clockwise to lower radial arm until blade touches table, then continue to lower by half turn of elevation handle.



11. Hold hand in straight line with saw handle and pull blade through fence and across table as far as it will go.



12. Push blade carriage to rearmost position, behind fence, and turn saw off. Continue to hold saw handle until blade stops spinning.
13. Remove yellow key and unplug saw.

Crosscutting

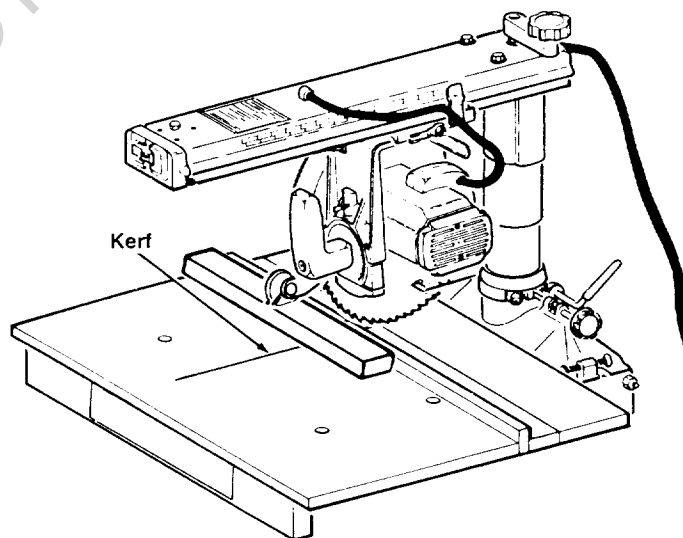
Making Straight and Miter Crosscuts

Follow these steps to make straight and miter crosscuts. **Note:** *There are four indexed miter positions, 0°, 22½° right and left, and 45° right. To move to an indexed position, unlock miter lock and pull and hold out miter index pin while moving arm to desired angle. Release miter index pin and lock miter lock. To move to a non-indexed position, unlock miter lock, pull out miter index pin and turn it 90° to lock it out. Move arm to desired angle and lock miter lock.*

1. Check that saw is unplugged, switch is "off" and yellow key is out.
2. Put fence between front table and spacer board. Tighten table clamps.
3. Move arm to desired miter position. Lock miter, bevel and swivel locks.
4. Unlock rip lock and push blade carriage to rearmost position, behind fence.

5. Lower blade into kerf, but not touching kerf bottom. Blade should move freely. If there is no kerf in table for path you want to cut, make one following instructions for kerfs.

6. Place workpiece against fence.
7. Lower pawls to clear fence or workpiece, whichever is higher, by ⅛".



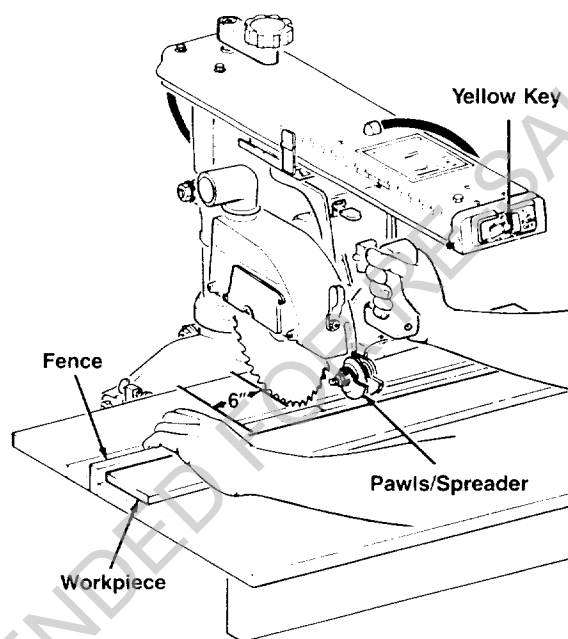
Crosscutting

8. Plug saw in.

9. Put yellow key in switch.

10. Grasp and hold onto saw handle, then turn saw on.

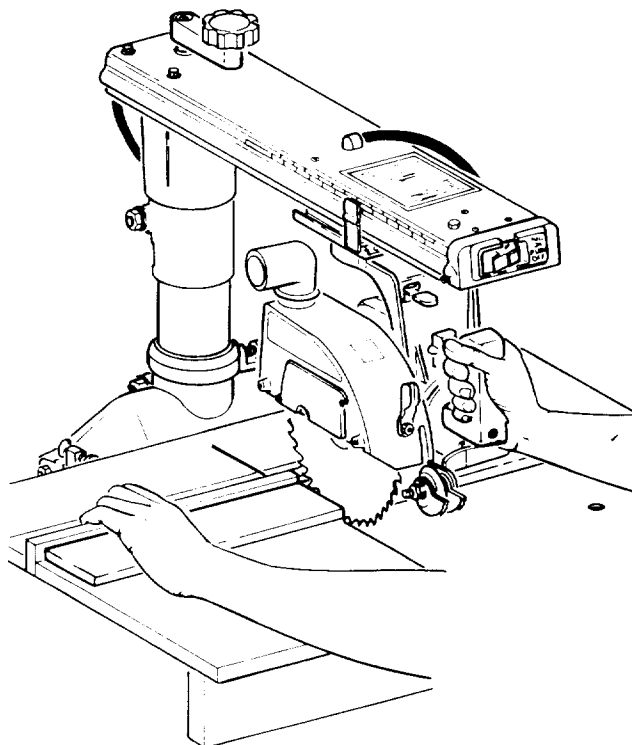
11. Hold workpiece down and against fence, keeping hand at least 6" away from blade.



12. Hold hand in straight line with saw handle and pull blade through fence and workpiece only far enough to complete cut, and never more than half diameter of blade.

13. Push blade carriage to rearmost position, behind fence, and turn saw off. Continue to hold saw handle until blade stops spinning.

14. Remove yellow key and unplug saw.

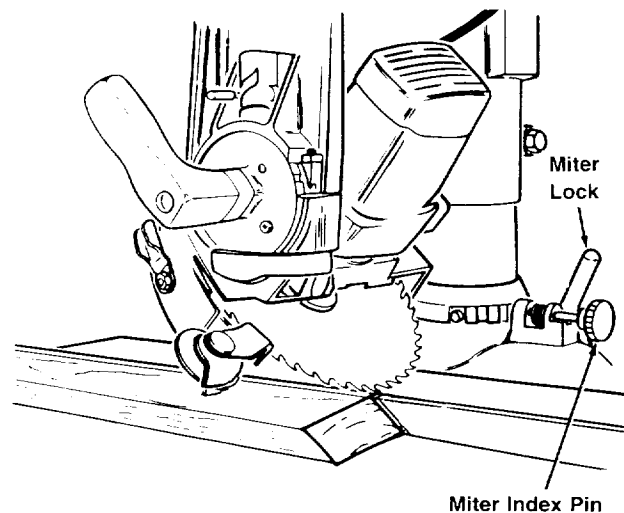
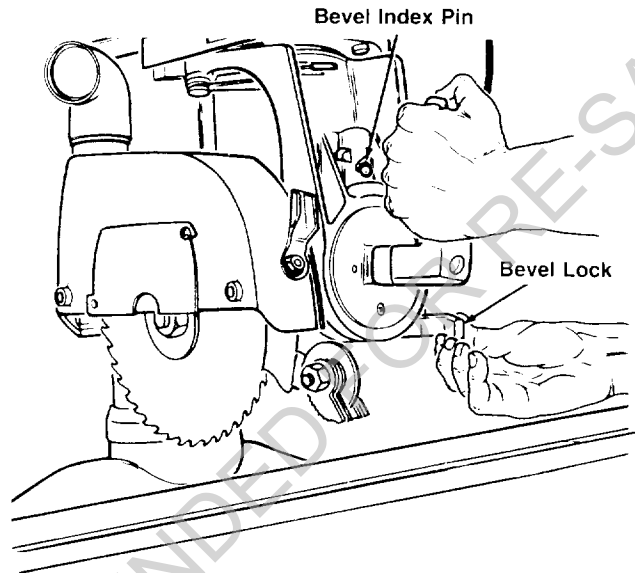


Crosscutting

Making Bevel and Compound Crosscuts

Follow these steps to make bevel and compound crosscuts.

1. Check that saw is unplugged, switch is "off" and yellow key is out.
2. Put fence between front table and spacer board. Tighten table clamps.
3. Turn elevation handle counter-clockwise to raise radial arm so blade will not jam into table top when bevel is set.
4. Unlock bevel lock. Slide bevel index pin to right and set bevel angle. Release pin and lock bevel lock.
5. Move arm to desired miter position. Lock miter and swivel locks.
6. Unlock rip lock and push blade carriage to rearmost position, behind fence.
7. Lower blade into kerf, but not touching kerf bottom. Blade should move freely. If there is no kerf in table for path you want to cut, make one following instructions for kerfs.
8. Place workpiece against fence.



Crosscutting

9. Lower pawls to clear fence or workpiece, whichever is higher, by $\frac{1}{8}$ ".

10. Put yellow key in switch.

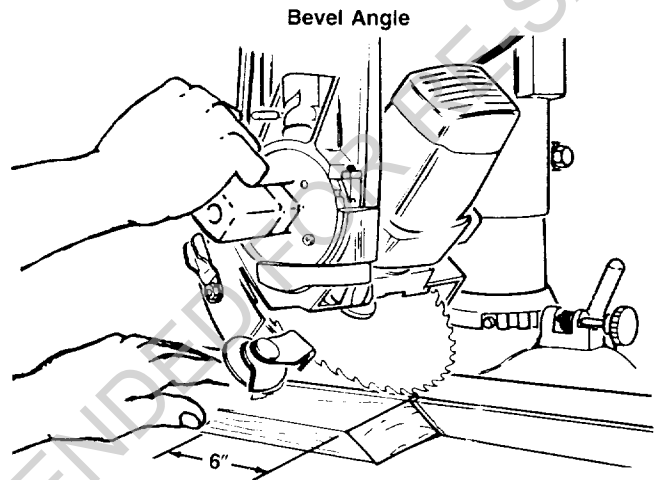
11. Grasp and hold onto saw handle, then turn saw on.

12. Hold workpiece down and against fence, keeping hand at least 6" away from blade.

13. Hold hand in straight line with saw handle and pull blade through fence and workpiece only far enough to complete cut, and never more than half diameter of blade.

14. Push blade carriage to rearmost position, behind fence, and turn saw off. Continue to hold saw handle until blade stops spinning.

15. Remove yellow key and unplug saw.



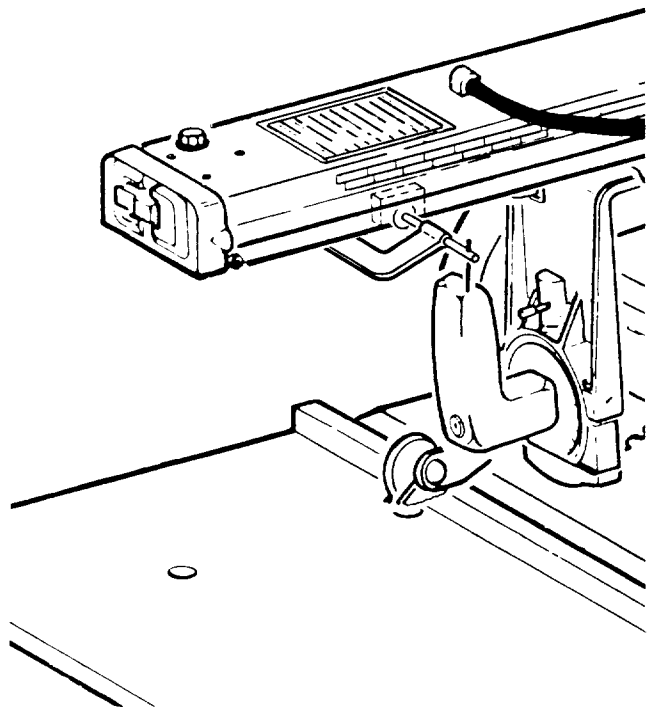
Repetitive Crosscutting

Repetitive crosscutting is the repeated and continuous cutting of many pieces of lumber to the same length with the saw placed in the crosscut position.

See Accessories for information on a lower blade guard for use in repetitive 90° (0 miter) crosscutting.

Use a carriage stop to define distance needed to pull blade through to complete each cut. To make a carriage stop:

1. Cut piece of 1x1 lumber to 2" long.
2. Clamp piece on right inside surface of the radial arm, so that blade carriage stops at distance needed to complete cut. Check that clamp does not interfere with hand grip on saw handle. Re-adjust if needed.



Ripping

Ripping Defined

Ripping is changing the width of a workpiece by cutting along its length. The workpiece is fed into the blade, which rotates in a fixed position, parallel to the fence, a set distance from the fence. A solid fence (no kerfs) serves as a guide for the workpiece.

Place the fence the in front, middle, or rear position. Generally, the front position is for narrower workpieces, the rear for wider workpieces.

In-Rip and Out-Rip Positions

In-rip and out-rip refer to blade position.

In-rip: the blade is toward the fence, and the motor is toward the table front. In-rip is recommended because this position allows better visibility of the workpiece and your hands.

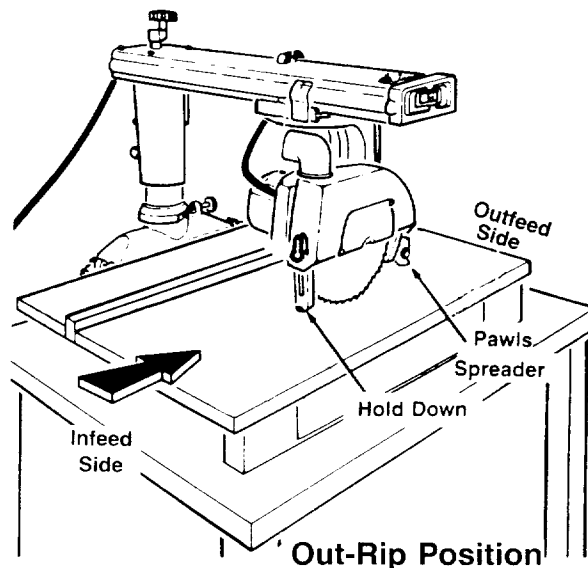
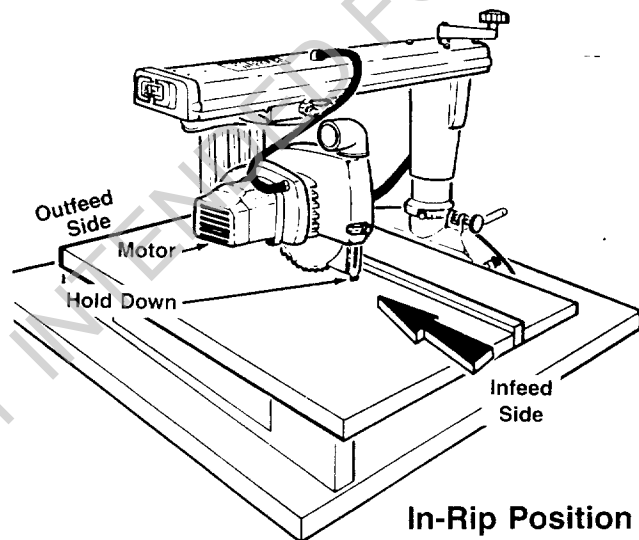
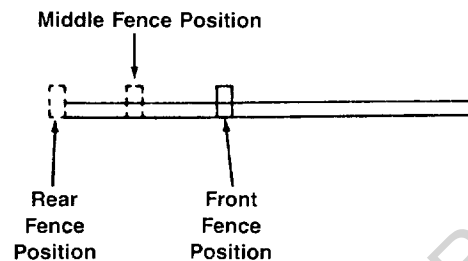
Out-rip: the blade is toward the table front, and the motor is toward the fence. Use out-rip only for cutting workpieces wider than 13".

Infeed and Outfeed Directions

Infeed and outfeed refer to sides of the blade.

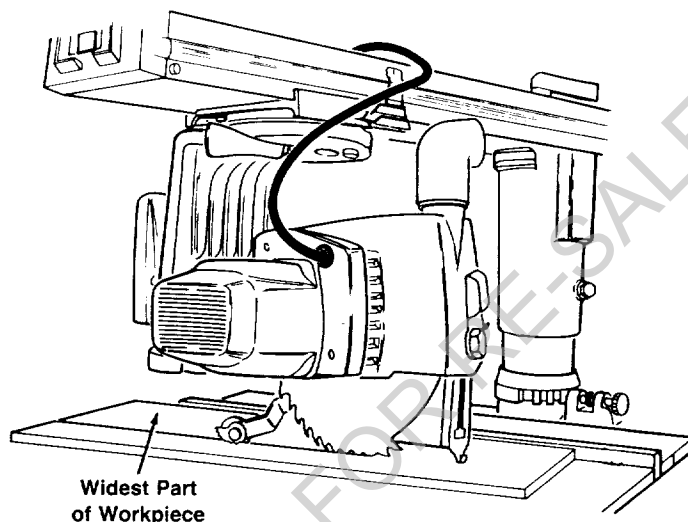
Infeed: the side of the blade where the hold down is. Always start a rip cut at the infeed side and push the workpiece through to the outfeed side.

Outfeed: the side of the blade where the pawls and spreader are. Never start a rip cut at the outfeed side. This is wrong way feed.



Workpiece Positioning

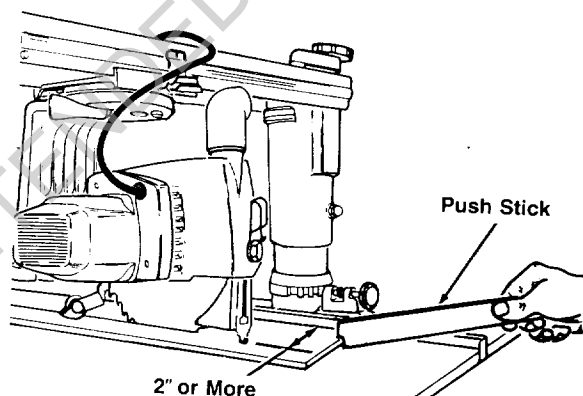
Always set up so that the widest part of the workpiece is between the blade and fence. For example, if you want to rip 1" off a 10" wide workpiece, set the saw blade 9" from the fence.



Push Sticks and Push Blocks

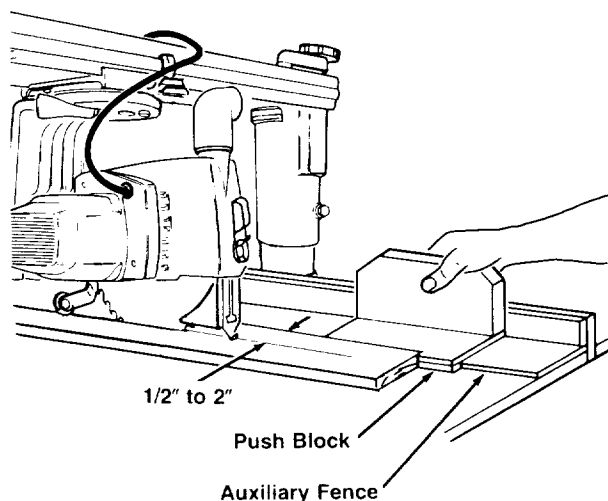
Push sticks and push blocks are used instead of the hands to push the workpiece through to complete the cuts. A push block is used with an auxiliary fence. See Cutting Aides.

Use a push stick when the space between the blade and fence is 2" or more.



Use a push block and auxiliary fence when the space between the blade and fence is $\frac{1}{2}$ to 2".

Do not make rip cuts when space between blade and fence is narrower than $\frac{1}{2}$ ".



Ripping

Ripping Safety

The hazards associated with ripping are outfeed zone hazard, kickback, wrong way feed, and thrown chips. This section explains these hazards and tells how to avoid them or reduce the risk of their happening. **Read the ripping safety information and instructions before making any type of rip cut. Follow these steps every time you make a rip cut.**

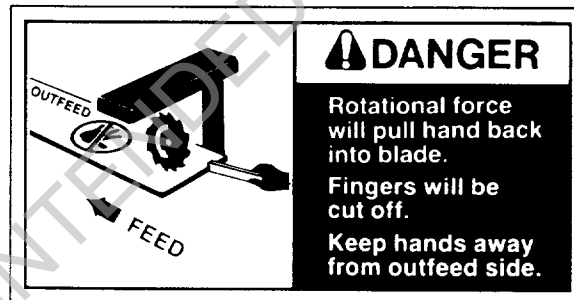
Outfeed Zone Hazard

DANGER:

Rotational force of blade will pull hands and fingers back into blade. Touching, holding, or pulling on outfeed side of workpiece can result in fingers, hand or arm being cut off.

To reduce risk of outfeed hazard:

1. Lower and correctly set pawls and spreader. They act as a partial barrier to outfeed side.
2. Start and finish cut from infeed side of blade.
3. Keep both hands on infeed side of blade.
4. Keep hands away from outfeed side of blade.
5. Push workpiece through to complete cut. Do not pull workpiece.
6. If blade jams, turn saw off, remove yellow key, wait for blade to stop spinning, then free blade.



Kickback

Kickback is the uncontrolled propelling of the workpiece back toward the user during ripping.

WARNING:

Kickback can happen when blade is pinched or bound by workpiece. Pinching or binding can happen when:

- pawls and spreader are not used or not set correctly
- spreader is not aligned with blade
- blade is not parallel to rip fence
- edge of workpiece is not in contact with rip fence at all points, or is not straight
- workpiece is twisted or warped and rocks on table top
- feed pressure is put on part of workpiece away from fence
- workpiece is released before being pushed past the pawls and spreader
- user reaches for, touches, or tries to pull the workpiece through the outfeed side of the saw
- making non-through cuts



Ripping

To reduce risk of kickback:

1. Correctly set pawls and spreader. Spreader keeps workpiece from binding or pinching blade; pawls grab into workpiece to stop or slow kickback if one happens.
2. Check that spreader is in line with blade. See Alignment and Adjustment.
3. Cut only straight workpieces so surface will lie flat on table and edge will stay tight against fence. If you must cut an irregular workpiece, attach a straight edge. See Cutting Aides.
4. Apply feed pressure to part of workpiece next to fence.
5. Push workpiece through from infeed to outfeed side until it passes pawls and spreader.
6. Keep hands away from outfeed side of blade.
7. If blade jams, turn saw off, remove yellow key, wait for blade to stop spinning, then free blade.
8. When cutting composition materials, put rough side up so pawls will grab.
9. Avoid cutting through very hard areas like knots.
10. Use featherboard. See Cutting Aides.
11. Stand out of workpiece path.

Wrong Way Feed

Wrong way feed is ripping by feeding the workpiece into the outfeed side of the blade.

WARNING:

Rotational force of blade will pull workpiece through violently if workpiece is fed in same direction as blade rotates (wrong way feed). Hands and fingers can be pulled along with workpiece into spinning blade before you can let go or pull back. Fingers, hand or arm could be cut off. Propelled workpiece could hit bystander.

To eliminate risk of wrong way feed:

1. Feed workpiece against blade rotation.
2. Set pawls and spreader. They act as a partial barrier to outfeed side.

Thrown Workpiece or Blade Chips

WARNING:

The saw can violently throw workpiece chips. Pieces of blade can break off and be thrown violently.

To reduce risk of eye injury and blindness:

1. Wear safety goggles labeled "ANSI Z87.1" on package. Regular eyeglasses are not safety goggles.
2. Check blades for damage.
3. Keep saw table clean and clear of all objects except workpiece to be cut and necessary fixtures, clamps or featherboards.



Ripping

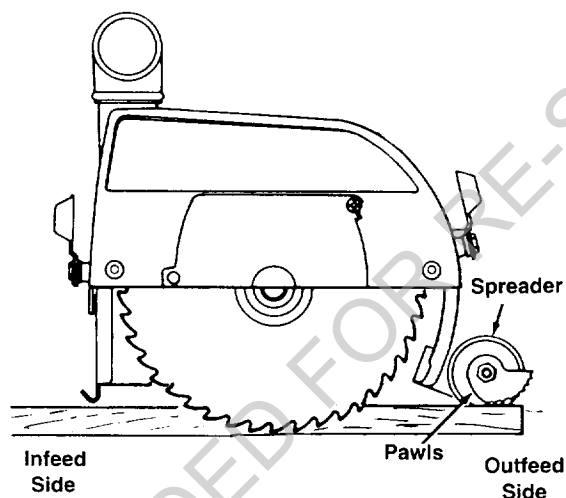
Pawls and Spreader Function

The pawls and spreader must be set correctly during ripping to reduce the risk of kickback, to prevent wrong way feed, and to act as a partial barrier to the hazardous outfeed side of the blade.

The spreader rides in the workpiece kerf to keep it open. This reduces the chances that the cut workpiece will spring closed and pinch the blade. Pinching the blade is a cause of kickback.

The pawls rest level on the upper surface of the workpiece. During cutting they allow the workpiece to pass freely from the infeed to the outfeed side, but help stop the kickback motion from outfeed to infeed side by grabbing into the workpiece surface.

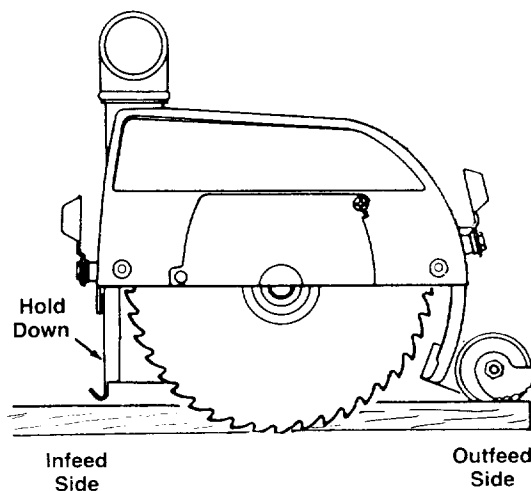
The spreader and pawls must be re-set each time a different thickness workpiece is cut. Follow the Ripping Set-Up Procedure to correctly set the pawls and spreader.



Hold Down Function

The hold down must be set correctly during ripping to act as a partial barrier against the infeed side of the blade, and to help keep the workpiece flat on the table. It must be lowered and set to just clear the workpiece.

The hold down must be re-set each time a different thickness workpiece is cut. Follow the Ripping Set-Up Procedure to correctly set the hold down.



Ripping Checklist

Refer to the following checklist before making rip kerfs or ripping. It will remind you of things to do to make your cutting safer.

Ripping Checklist

1. Prevent accidental start-up. Saw unplugged, switch "off", and yellow key out until ready to make actual cut.
2. Safety goggles on.
3. Blade sharp and correctly installed.
4. Fence solid (no kerfs), and secured in slot. Workpiece can snag on a fence kerf.
5. Installed fence at least half as high as workpiece, and never less than $\frac{3}{4}$ ".
6. Follow ripping set-up procedure.
7. Pawls set to rest level on workpiece.
8. Spreader in line with blade and set to ride in workpiece kerf.
9. Hold down lowered to just clear workpiece.
10. Swivel, rip, miter, and bevel locks locked; table clamps tightened.
11. Both hands always on infeed side.
12. Use push block and auxiliary fence when space between blade and fence is $\frac{1}{2}$ to 2". Do not make rip cuts when space between blade and fence is narrower than $\frac{1}{2}$ ".
13. Use push stick when space between blade and fence is 2" or more.
14. Push until workpiece is past pawls and spreader.
15. Use table supports for long workpieces.
16. Use featherboard.
17. Saw off and blade stopped spinning before reaching for cut workpiece.

Ripping Hints

1. To extend the life of the table top, make an additional top out of $\frac{1}{4}$ " plywood. Clamp or nail to original table top, section by section. If you use nails, nail in four corners where blade cannot contact nails.
2. Keep table clean of chips and sawdust.
3. Use sharp blades.
4. Use the right blade for each job.
5. For workpiece with one smooth and one rough surface, cut with rough surface up so pawls will grab better.
6. To keep cut line accurate, periodically check blade alignment.
7. If you must cut an irregular workpiece, attach a straight edge. See Cutting Aides.

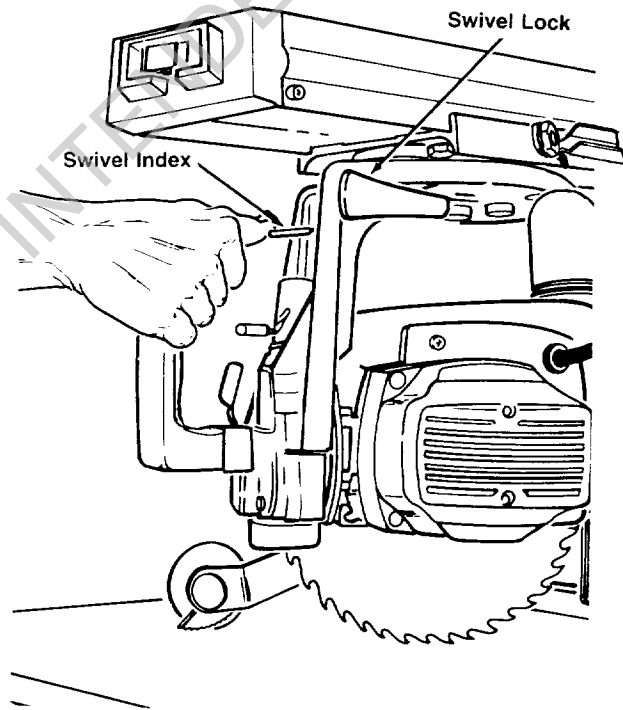
Ripping

Kerfs

A kerf or shallow cut is needed in the table to serve as a path for the blade and to ensure that the blade cuts all the way through the workpiece. A kerf is needed for each different cutting position.

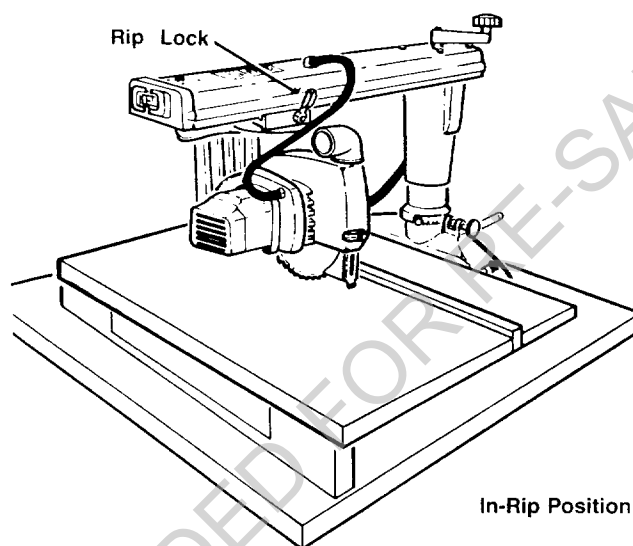
Follow these steps to make a kerf:

1. Check that saw is unplugged, switch is "off", and yellow key is out.
2. Put solid (no kerfs) fence in desired position and tighten table clamps.
3. Index arm to 0° miter position. Lock miter lock.
4. Set desired bevel angle and lock bevel lock.
5. Unlock swivel lock, press and hold swivel index pin and set blade to rip position. Release swivel index pin, and lock swivel lock.



Ripping

6. Unlock rip lock, position blade desired distance from fence, and lock rip lock.



7. Turn elevation handle clockwise to lower blade until it just clears table.

8. Plug in saw, put yellow key in switch and turn saw on.

9. Slowly turn elevation handle clockwise until blade touches table, then continue to turn another half turn.

⚠ WARNING:

For workpieces $\frac{1}{4}$ " thick or less, turn elevation handle a full turn after the blade just touches table. Deeper kerf will keep saw blade from rising up on top of workpiece and violently throwing it.

10. Turn switch off, remove yellow key, unplug saw.

Ripping

Ripping Set-up Procedure

Follow these steps **before** ripping. **These steps must be repeated each time a different thickness workpiece is ripped.**

1. Check that saw is unplugged, switch is "off", and yellow key is out.

2. Put solid (no kerfs) fence in desired position and tighten table clamps. (Insert auxiliary fence if space between blade and fence will be $\frac{1}{2}$ to 2".)

3. Index arm to 0° miter position and lock miter lock. Set desired bevel angle and lock bevel lock.

4. Unlock swivel lock, press and hold swivel index pin, and set blade to in-rip position. Lock swivel lock. (Set to out-rip position only if overall workpiece is wider than 13".)

5. Unlock rip lock, set blade desired distance from fence, lock rip lock. **Always set blade so wider part of workpiece will be between blade and fence.**

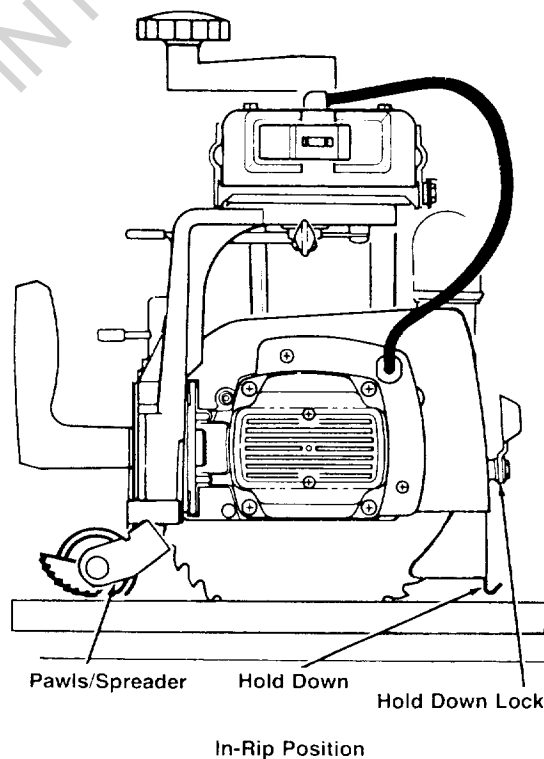
6. Ready push stick if space between blade and fence is 2" or more. Ready push block if using auxiliary fence.

7. Lower blade into kerf, but not touching kerf bottom. Blade should move freely. If there is no kerf, make one following instructions for kerfs.

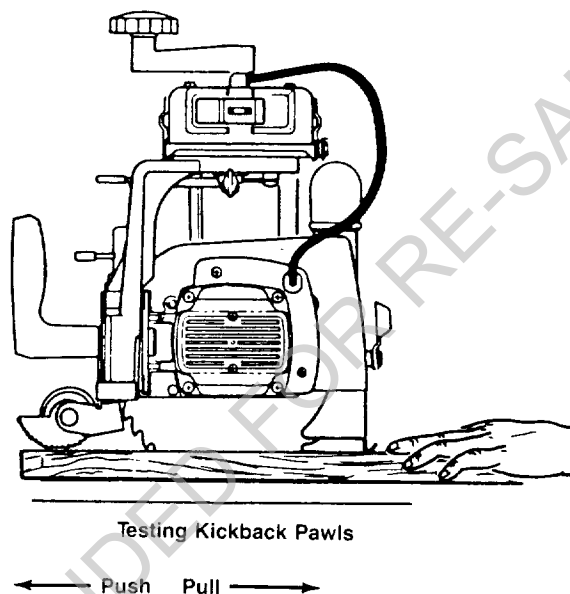
8. Place workpiece on saw table, parallel to and up against blade.

9. Unlock and set hold down to just clear workpiece surface, then lock.

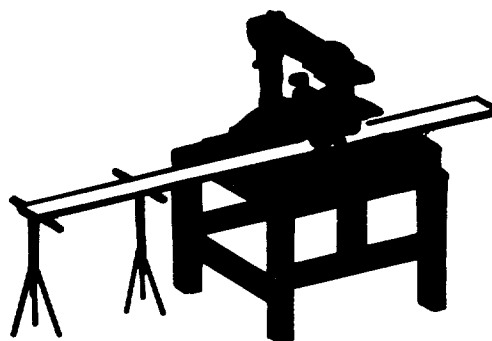
10. Unlock and set pawls/spreader so spreader hangs along side of workpiece, in line with blade, and pawl rests level on workpiece surface, then lock.



11. Test spreader/pawl setting by pushing workpiece toward outfeed side to see that workpiece moves freely, then pulling toward infeed side to see that pawl grabs. **If these conditions are not met, repeat steps 10 and 11 until they are. Correct setting of pawls/spreader reduces risk of kickback.**



12. Use table extension of same height as saw table to support cut workpiece. If you do not, cut workpiece will sag and could put binding pressure on blade, a cause of kickback. Support outer ends of extensions. **Do not use another person to support workpieces because this can cause kickback.**



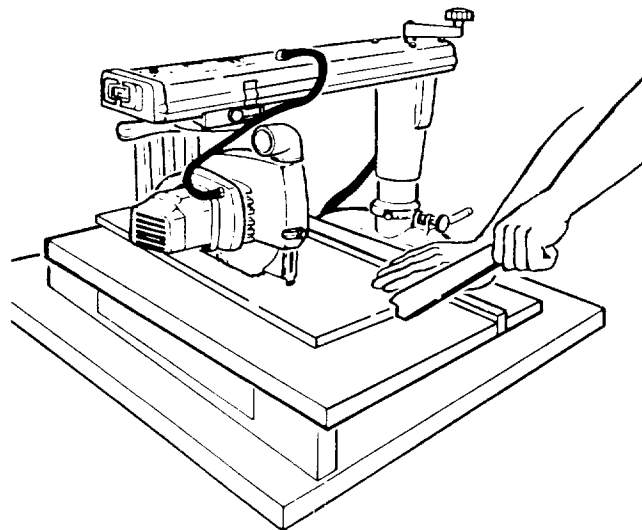
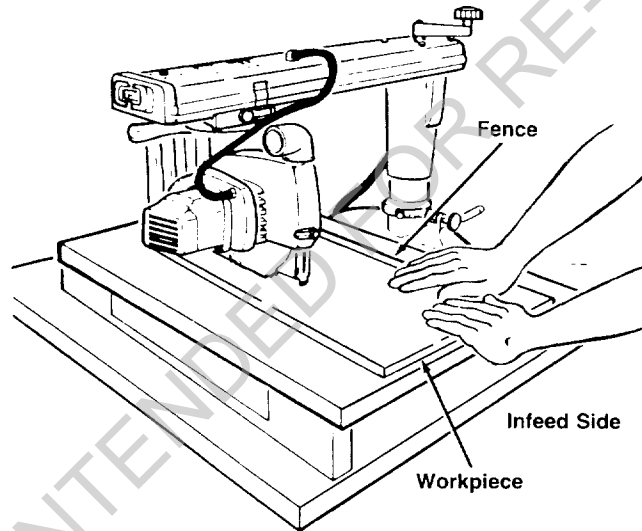
13. Remove workpiece from table.

Ripping

Making Rip Cuts

Follow these steps to make rip cuts:

1. Follow ripping set-up procedure.
2. Plug in saw, insert yellow key and turn saw on.
3. Stand at infeed side and out of line of workpiece, in case of kickback. Start and finish cut from infeed side.
4. Place workpiece on table, keeping workpiece edge against fence.
5. Place one hand flat on workpiece and next to fence.
6. Place other hand behind first so fingers are out of blade path, and as close to fence as possible.
7. Push workpiece under hold down and into blade, putting pressure on part of workpiece between blade and fence. If you put pressure on part of workpiece between blade and table front, blade could be pinched and workpiece will kickback.
8. As end of workpiece approaches hold down, use push stick or push block on section between blade and fence, to push until workpiece is completely past pawls/spreader.
9. Turn saw off and wait for blade to stop spinning before touching workpiece.
10. Remove yellow key and unplug saw.



Cutting aides include fences, push sticks, auxiliary fences, push blocks, featherboards, and straight edges.

Fences

Fences are required for all saw operations.

Crosscutting requires fences with kerfs (slots) to match the path of the saw, because the saw blade is pulled through the kerf in the fence to cut the workpiece.

Ripping requires a solid fence with no kerfs or slots, because the fence serves as a guide for the workpiece being pushed into the saw blade.

WARNING:

If workpiece is pushed along fence with kerfs, workpiece can get caught on kerf, pinch blade and cause kickback. Do not use crosscutting fence for ripping.

It is a good idea to have more than one crosscutting fence on hand, because if you use the same fence with too many kerfs, the fence will weaken. Depending on the angle, bevel kerfs can be very broad, and may overlap other kerfs.

To make a fence:

1. Use $\frac{3}{4}$ " knot free lumber cut to 30". Do not use particle board or other composite materials because they are not strong enough. **Note:** *Installed fence must be at least half as high as the workpiece, and never less than $\frac{3}{4}$ ". The fence can be as high or higher than the workpiece.*

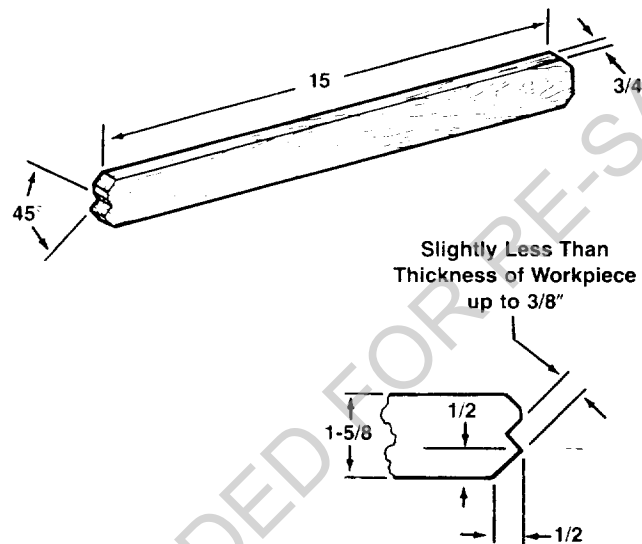
Cutting Aides

Push Sticks

Push sticks must be used during ripping to push the workpiece through to complete cuts that would bring your hands too close to the blade. **Use a push stick when the blade is set 2" or more from the fence.**

To make a push stick:

1. Use $\frac{3}{4}$ " solid (knot free) lumber.
2. Cut a piece 15" by $1\frac{5}{8}$ ".
3. Cut a 45° notch in one end.

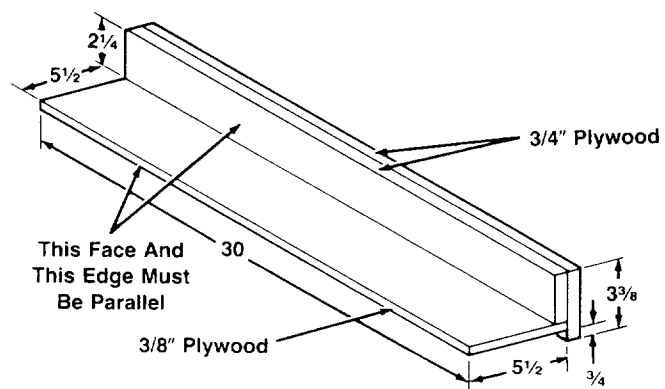


Auxiliary Fence and Push Block

An auxiliary fence must be used when making very narrow rip cuts that don't allow enough room for a push stick without bringing it too close to the blade. **Use an auxiliary fence when the blade is set $\frac{1}{2}$ " to 2" from the fence. Do not make rip cuts when the space between the blade and fence is narrower than $\frac{1}{2}$ ". An auxiliary fence must always be used with a push block.**

To make an auxiliary fence:

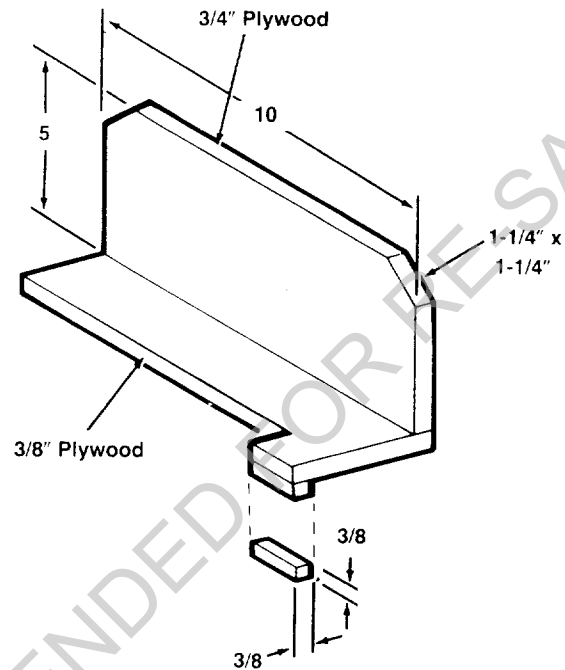
1. Use one piece of $\frac{3}{8}$ " plywood and two pieces of $\frac{3}{4}$ " plywood.
2. Cut the $\frac{3}{8}$ " plywood to 30" by $5\frac{1}{2}$ ".
3. Cut one piece of $\frac{3}{4}$ " plywood to 30" by $3\frac{3}{8}$ ", and the other to 30" by $2\frac{1}{4}$ ".
4. Glue two $\frac{3}{4}$ " plywood pieces together so they line up square on an edge.
5. Glue the $\frac{3}{8}$ " plywood piece at right angle to and flush against edge of the $2\frac{1}{4}$ " wide $\frac{3}{4}$ " plywood.
6. Reinforce with nails.



Cutting Aides

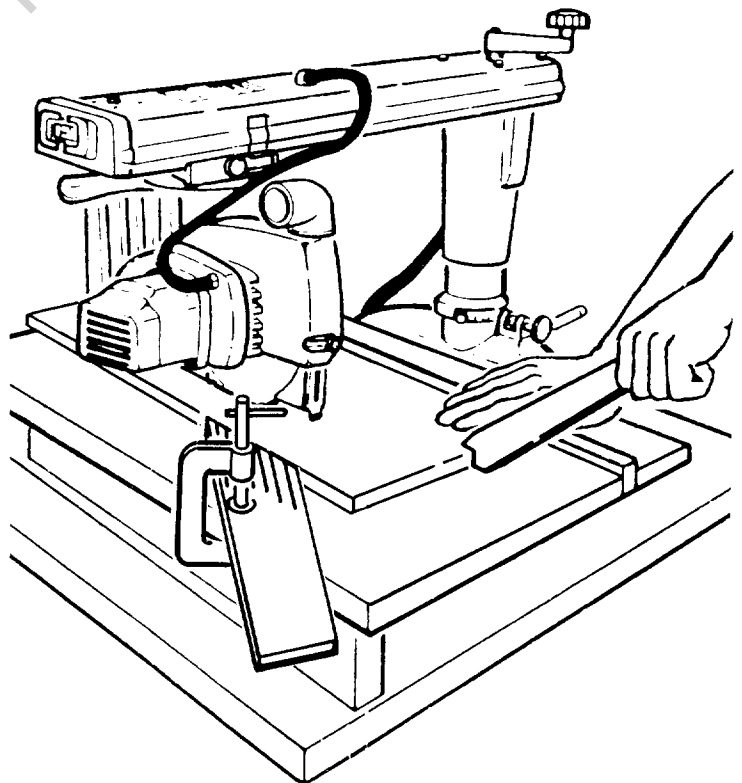
To make a push block:

1. Use one piece of $\frac{3}{4}$ " plywood and one piece of $\frac{3}{8}$ " plywood.
2. Cut the $\frac{3}{4}$ " plywood to 10" by 5".
3. Cut a triangular piece off each of two corners by marking with a pencil in and down $1\frac{1}{4}$ " from the corners and cutting along the diagonal formed by joining the points.
4. Cut the $\frac{3}{8}$ " plywood to 10" by $5\frac{1}{8}$ ".
5. Cut out an 8" by $\frac{3}{8}$ " notch from the 10" side of the $\frac{3}{8}$ " plywood.
6. Glue the $\frac{3}{4}$ " plywood on top of the $\frac{3}{8}$ " plywood so that their 10" sides are square.
7. From notch cut out in step 5, cut a piece of $\frac{3}{8}$ " plywood to 2", and glue it to underside of the $\frac{3}{8}$ " plywood, in line with edge that sticks out. Do not use nails because if you accidentally cut into push block with saw blade, nails will dull blade.
8. Lay the push block on top of auxiliary fence to make sure their widths match exactly, and are each $4\frac{3}{4}$ ".



Featherboard

Use a featherboard during ripping to help keep the workpiece against the fence. Clamp the featherboard to the front table, so that the angled edge of the featherboard is against the workpiece on the infeed side of the blade. **Do not clamp the featherboard against the cut off part (outfeed side) of the workpiece. If clamped to the outfeed side, the featherboard can squeeze the**

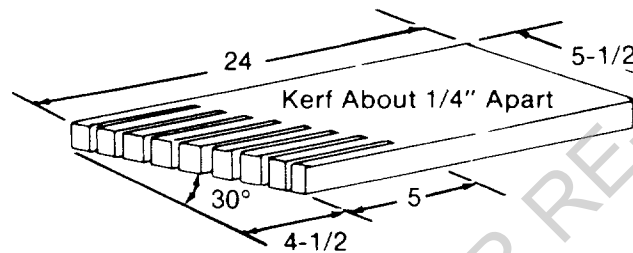


Cutting Aides

kerf closed, put binding pressure on the blade, and cause kickback.

To make a featherboard:

1. Use solid (knot free) $\frac{3}{4}$ " lumber $5\frac{1}{2}$ " wide.
2. Miter crosscut at a 30° angle to 24".
3. Rip to make 5" long cuts about $\frac{1}{4}$ " apart.



Straight Edge for Irregular Workpiece

If the workpiece you want to rip does not have a straight edge, attach a straight edged board to the workpiece.

WARNING:

If you try to rip an irregular workpiece, it could bind blade and cause kickback.

To attach a straight edge:

1. Place irregular side of workpiece against fence.
2. Place straight edged board on top of workpiece and against fence.
3. Tack straight edged board to workpiece. Straight edged board must not extend beyond leading end of workpiece and should cover workpiece width only enough to pass between blade and fence.
4. Use fence at least as high as combined heights of workpiece and straight edged board.

Accessories Safety

1. Use only accessories listed in this section. Use of any other accessory or attachment might increase the risk of injury to you or others.
2. Follow accessory manufacturer's instructions on proper and intended use.

DANGER:

Use of grinding wheels, abrasive or cut off wheels, or wire wheels is dangerous because they can break explosively and throw pieces. You can be blinded or receive a life threatening puncture wound. Do not use grinding wheels, abrasive/cut off wheels or wire wheels.

Lower Blade Guard

The following safety information and instructions apply to all blades and accessories.

The lower blade guard is required by the Occupational Safety and Health Administration (OSHA) if the radial saw is used commercially. The lower blade guard is intended for use only in repetitive 90° crosscutting.

Repetitive 90° crosscutting is the repeated and continuous cutting of many pieces of lumber to the same length with the saw placed in the 90° crosscut position.

In repetitive 90° crosscutting, the guard may reduce the chance of accidentally touching the blade from the side. This protection is possible **ONLY** when:

- the blade is in its rearmost position and
- the guard is resting on the table so the leading and trailing teeth of the blade are not exposed from the sides.

The lower guard **ONLY** provides protection against minor lacerations and bruises that occur from contact with the flat sides of the spinning blade.

WARNING:

Lower blade guard will not provide any protection if blade is pulled over your hand, or your hand enters blade path from front or rear of blade. Fingers or hand can be cut or cut off.

WARNING:

Remove lower blade guard for ALL other types of cuts except repetitive 90° crosscutting. Using lower guard other than for repetitive 90° crosscutting will increase risk of certain hazards:

- During rip and bevel cuts, the workpiece or narrow cut-off pieces can be pinched between the guard and the blade. Workpiece or cut-off pieces can kickback.
- In the bevel position the blade teeth are fully exposed. Fingers or hand can be cut off.
- Cut off pieces can jam between the guard and blade. Turn saw off and wait for blade to stop before freeing a jammed guard or blade.

Accessories

- Workpiece or cut-off pieces can be violently thrown by the blade. Wear safety goggles

CAUTION:

Lower blade guard can get caught or jam in fence or table kerfs.

Read and follow the warning on the lower outer guard:



WARNING:

To avoid injury shut off power before clearing a jammed lower guard

Accessories for this Saw

These accessories are designed to fit this saw. Read and follow instructions that come with accessory.

Item.....Catalog No:

Saw blades (8 1/4" diameter with 5/8" hole).....See Catalog
Taper JigSee Catalog
Dado SetSee Catalog
Leg Set.....9-22244

Books

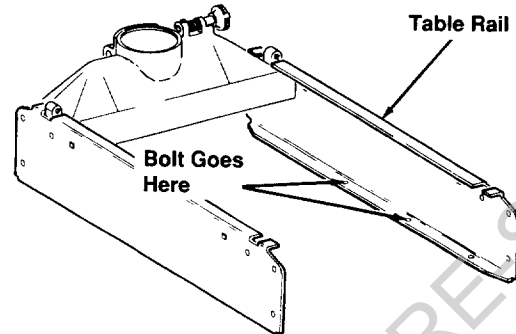
Power Tool Know How Handbook.....
.....9-29117

Guards

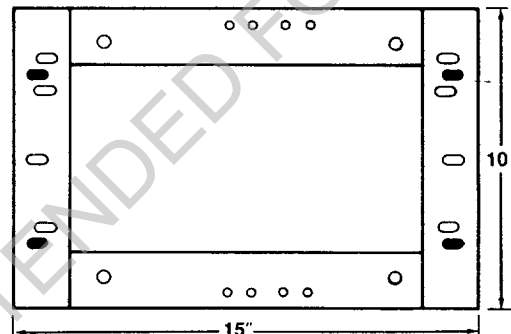
Lower Retractable Guard* For 90° Repetitive Crosscut Only.....9-23473

*See the information and instructions about the lower retractable guard in this section.

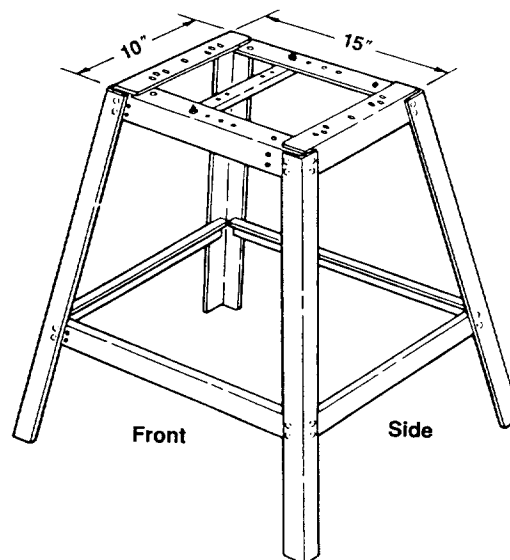
Mounting Radial Saw to Leg Set No. 9-22244



Note: Bolts pass thru the second and third holes in the table rails. Do not use the first hole.



FRONT OF RADIAL SAW



CATALOG NO. 9-22244 LEG SET

(not included with radial saw)

Recommended hardware (not included) for Mounting Radial Saw to Legset:

- 4 — 1/4-20 x 1-1/2 hex head bolts
- 4 — 1/4-20 hex nuts
- 4 — 1/4 lock washers
- 4 — 1/4 flat washers

Attach radial saw to holes indicated.

WARNING:

To avoid shock, burns, or lacerations from accidental start up of saw, turn power switch off and unplug saw before doing maintenance or servicing saw.

General Information

When new, the saw requires no lubrication. The saw has been partially aligned and all bearings are lubricated and sealed for life. In time, in order to keep the saw in good working order, it will be necessary to clean, lubricate and realign.

Replacing Pawls

Make sure the teeth of the antikickback pawls are always sharp. If they become dull they must be replaced. To replace:

1. Use $\frac{1}{2}$ " wrench or socket to remove $\frac{5}{16}$ " hex nut and old pawls.
2. Assemble new antikickback pawls and spreader to bar.
3. Align spreader to blade according to instructions in Alignment and Adjustment.

Cleaning

Periodically remove any heavy build-up of sawdust that may accumulate on the saw. The absorbing tendency of sawdust will draw lubricants away from the areas where they are needed. Wipe the carriage bearings and track surfaces with a dry or lightly oiled cloth.

To avoid motor damage due to sawdust build-up, which interferes with normal motor ventilation, blow out or vacuum the motor often.

Lubrication

Do not lubricate motor bearings. Motor bearings are sealed and do not need added lubrication.

You can lubricate other points if necessary, but only when sticking or binding occurs.

Adjustments for Wear

Bevel Lock

The bevel lock needs adjustment if the motor can be moved by hand when the bevel lock is locked. To make adjustment:

1. Use $\frac{1}{8}$ " hex wrench to loosen screw under right corner (pivot point) of bevel lock just enough to allow bevel lock lever to drop down. (See figure 2, Repair Parts.)
2. Use bevel lock lever as wrench to increase locking characteristics.
3. Test lock for desired locked/unlocked condition. Repeat step 2 if necessary.
4. Tighten screw.

Swivel Lock

The swivel lock is a friction lock that prevents play between the yoke and carriage (#41 and #12, figure 2, Repair Parts). It needs adjustment if the lock handle has to be moved more than 90° to lock. To make adjustment:

1. Use $\frac{15}{16}$ " wrench to tighten nut (#1, figure 2, Repair Parts).
2. Test lock, and repeat step 1 as needed.

Maintenance

Carriage Bearings

The carriage should roll freely but with some resistance for the entire length of travel. If the carriage moves too freely or with too much resistance, the bearings need adjustment. To adjust, follow the instructions under Carriage Bearings in Alignment and Adjustment.

Miter Lock

If the radial arm can be moved by hand when the miter lock is locked in an undexed position, the lock needs adjustment. To adjust, follow the instructions under Miter Lock Assembly.

Hold Down and Pawls/Spreader Locks

If the hold down or the pawl/spreader do not hold when locked, or if the lock lever has to be turned more than 90° to lock, the lock needs adjustment. To make adjustment:

1. Lock hold down or pawls/spreader lock. Use screwdriver to pop out "e" ring.
2. Remove lock handle and re-position at 90°.
3. Re-insert "e" ring.
4. Check that hold down or pawls/spreader move freely when lock is unlocked.

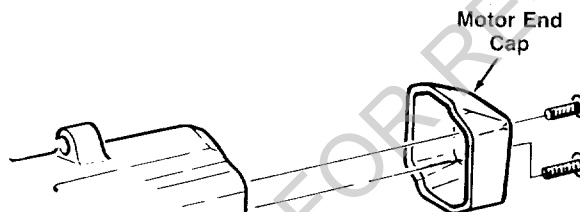
Motor

To avoid motor damage due to sawdust buildup, which interferes with normal motor ventilation, blow out or vacuum the motor often.

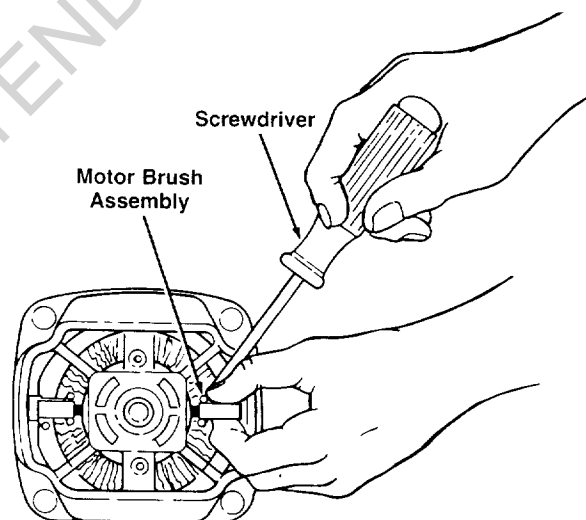
Motor Brush Assemblies

The motor brush assemblies that come with the saw will last about 100 cutting hours. Replace both carbon brushes when either has $\frac{1}{4}$ " length or less of carbon left. To inspect brushes:

1. Check that saw is unplugged, switch is "off", and yellow key is out.
2. Remove two screws that hold motor end cap in place, and take off end cap.

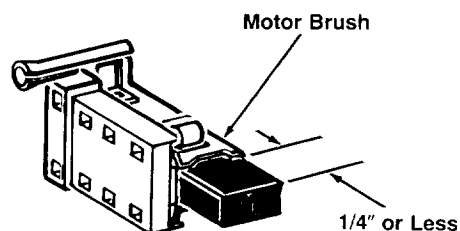


3. Use flat head screwdriver to gently pry each motor brush assembly forward. Rotate slightly to remove.



4. Inspect length of brush. If length of either brush is $\frac{1}{4}$ " or less, replace both with new assemblies; otherwise, put back same assemblies.

5. Re-install motor end cap and screws.



Maintenance

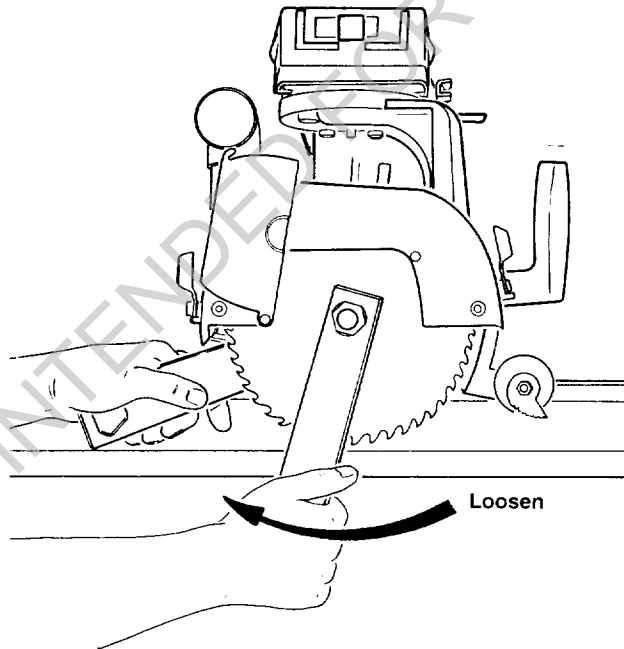
Blade Changing

To change the saw blade, follow these steps:

1. Check that saw is unplugged, switch is "off", and yellow key is out.
2. Unlock rip lock, pull blade carriage out to end of radial arm, and lock rip lock.
3. Unlock swivel lock, depress swivel index pin, and put blade in out-rip position (motor toward fence). Lock swivel lock.
4. Loosen coverplate screw and rotate coverplate out of way.
5. Use both blade wrenches in scissor action to loosen blade nut. **Note:** *Nut has left hand threads.*
6. Remove nut, blade collar, and blade. Insert new blade, making sure that blade rotation arrow points in same direction as arrow on guard points.
7. Re-install blade collar and nut. Tighten nut. **Note:** *Do not overtighten nut because this can cause blade collar to warp and blade to wobble during cutting.*
8. Rotate coverplate back into position and tighten coverplate screw.

WARNING:

Never use the saw without the coverplate securely in place. It keeps the nut from falling off if it accidentally loosens, and prevents the spinning blade from coming off the machine.



Troubleshooting

Motor Problem

Motor overheats or stalls

Possible Cause(s)

Excessive feed rate when crosscutting or ripping

Improper motor cooling

Undersized extension cord

Inadequate house wiring

What to Do

Slow rate of feed

Clean out sawdust from motor to allow normal air circulation

Check wire gauge chart in Electrical Connections

Call your electrician

Blown fuses or tripped circuit breakers

Need 15 amp circuit

Check that house has adequate wiring. Call your electrician

Motor overload

Check blade alignment
Slow rate of feed

Low voltage

Check voltage. Normal loads can be safely handled at 10% above or below nameplate voltage; heavy loads need same voltage at motor terminal as on nameplate

Cutting Problem

Inaccurate cut

Possible Cause(s)

Loose locks

Saw blade out of alignment

What to Do

Check miter, rip, bevel, and swivel locks. See Adjustments for Wear

Check alignment

Troubleshooting

| Cutting Problem | Possible Cause(s) | What to Do |
|-----------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------|
| Crosscuts not accurate at miter indexed positions. | Crosscut travel not square with fence | See Squaring Blade Crosscut Travel |
| | Arm not indexing properly | See Miter Lock Assembly |
| | Carriage assembly loose on arm | See Swivel Lock or Carriage Bearings Adjustment |
| | Sawdust between workpiece and fence | Keep front table clean |
| | Fence not straight | Replace fence |
| Depth of cut varies from one end of workpiece to other | Table not parallel with radial arm | See Leveling the Front Table |
| Saw cuts at slight bevel | Blade not square to table | See Squaring Blade to Table |
| | Table not parallel to radial arm | See Leveling the Front Table |
| | Bevel lock loose | See Adjustment, Bevel Lock |
| | Work table not flat | Replace table |
| Workpiece kerf rough with tooth marks from blade | Blade not square to fence | See Squaring Blade to Fence |
| | Using improper blade for desired finish cut | Use proper smooth-cutting blade |
| Blade tends to advance through workpiece too fast during crosscutting | Blade dull | Sharpen or replace blade |
| | User pulls blade through workpiece too fast | Pull blade slowly and steadily through workpiece |

Troubleshooting

Cutting Problem

Board pulls away from fence during ripping

Possible Cause(s)

Blade out of alignment

What to Do

Check alignment

Workpiece strikes spreader during ripping

Spreader not in line with blade

See Alignment, Spreader

Workpiece binds, smokes, and motor slows or stops when ripping

Saw blade out of alignment

Check alignment

Dull or incorrect blade

Sharpen or replace blade

Fence not straight

Replace fence

Warped workpiece

Do not cut severely warped pieces

Carriage assembly loose

See Adjustment, Carriage Bearings

Feed rate too fast

Slow feed rate

Saw Problem

Radial arm moves when locked in an un-indexed miter position

Possible Cause(s)

Miter lock needs adjustment

What to do

See Miter Lock Assembly

Motor moves when bevel lock is locked

Bevel lock needs adjustment

See Adjustment, Bevel Lock

Troubleshooting

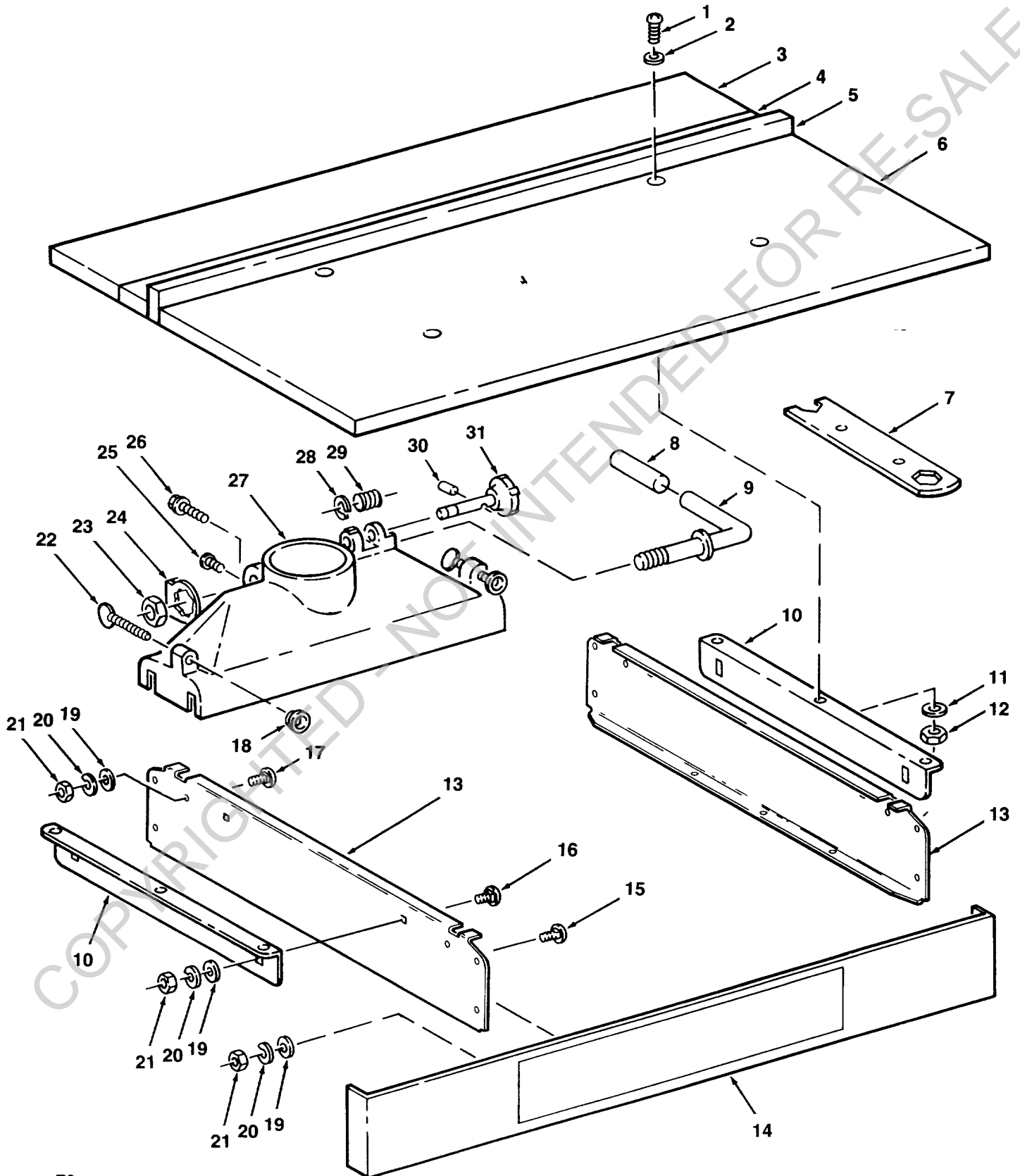
| Saw Problem | Possible Cause(s) | What to Do |
|------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blade carriage does not travel smoothly on arm | Dirty track | Clean track |
| | Bad bearing | Replace bearing |
| | Bearing set too tight | See Adjustment, Carriage Bearings |
| | Worn arm track | Replace radial arm |
| | Rip lock too tight | See Adjustment, Rip Lock |
| Table cannot be leveled | Base has shifted on frame | Remove front table. Loosen four bolts that hold base to frame. Follow steps under Making Radial Arm Parallel to Frame in Assembly section. Then re-align saw |
| Blade does not stop spinning within 15 seconds after saw is turned off | Blade nut loose | Tighten blade nut |
| | Internal damage | Take saw back to Sears for service |

Note: This page intentionally left blank.

Repair Parts

PARTS LIST FOR 8 1/4" RADIAL ARM SAW MODEL NO. 113.234701

FIGURE 1



Repair Parts

PARTS LIST FOR 8 1/4" RADIAL ARM SAW MODEL NO. 113.234701

Always order by Part Number — Not by Key Number

FIGURE 1

| Key No. | Part No. | Description |
|---------|-----------|----------------------------------------|
| 1 | STD512510 | *Screw-Pan Hd 1/4-20 x 1 |
| 2 | 60128 | Washer-17/64 x 5/8 x 1/32 |
| 3 | 818745 | Table-Rear |
| 4 | 818703 | Table-Spacer |
| 5 | 818693 | Fence-Rip |
| 6 | 818744 | Table-Front |
| 7 | 3540 | Wrench |
| 8 | 819447 | Grip |
| 9 | 818746 | Lever-Tube Locking |
| 10 | 818928 | Mount-Table Angle |
| 11 | STD551125 | *Lockwasher- 1/4 |
| 12 | STD541025 | *Nut-Hex 1/4-20 |
| 13 | 818747 | Rail-Table |
| 14 | 818929 | Stiffener Rail |
| 15 | 806150-2 | Screw-Truss Hd 5/16-18 x 5/8 |
| 16 | 809019-1 | Bolt-Rd Hd Short Neck 5/16-18 x 1/2 |
| 17 | 455722 | Bolt-Rd Hd Short Neck 5/16-18 x 3/4 |

| Key No. | Part No. | Description |
|---------|-----------|-------------------------------------|
| 18 | 818161 | Shoe-Table Clamp |
| 19 | 9418304 | Washer-21/64 x 3/4 x 1/32 |
| 20 | STD551131 | *Lockwasher-5/16 |
| 21 | STD541031 | *Nut-5/16-18 |
| 22 | 818162 | Screw-Clamp |
| 23 | STD541050 | *Nut-Hex Jam 1/2-13 |
| 24 | 818702 | Retainer-Nut |
| 25 | 816333-2 | Screw-Pan Hd TY "TT" 10-32 x 3/8 |
| 26 | 815865-1 | Screw-Hex Wash Hd 1/4-20 x 3/4 |
| 27 | 818762 | Base |
| 28 | STD581037 | *Ring-Retaining 5133-37 |
| 29 | 818719 | Spring-Miter Index |
| 30 | STD571207 | *Pin-Roll 1/8 x 3/4 |
| 31 | 820005 | Pin-Miter Index |
| - | SP5570 | Owners Manual (Not Illustrated) |

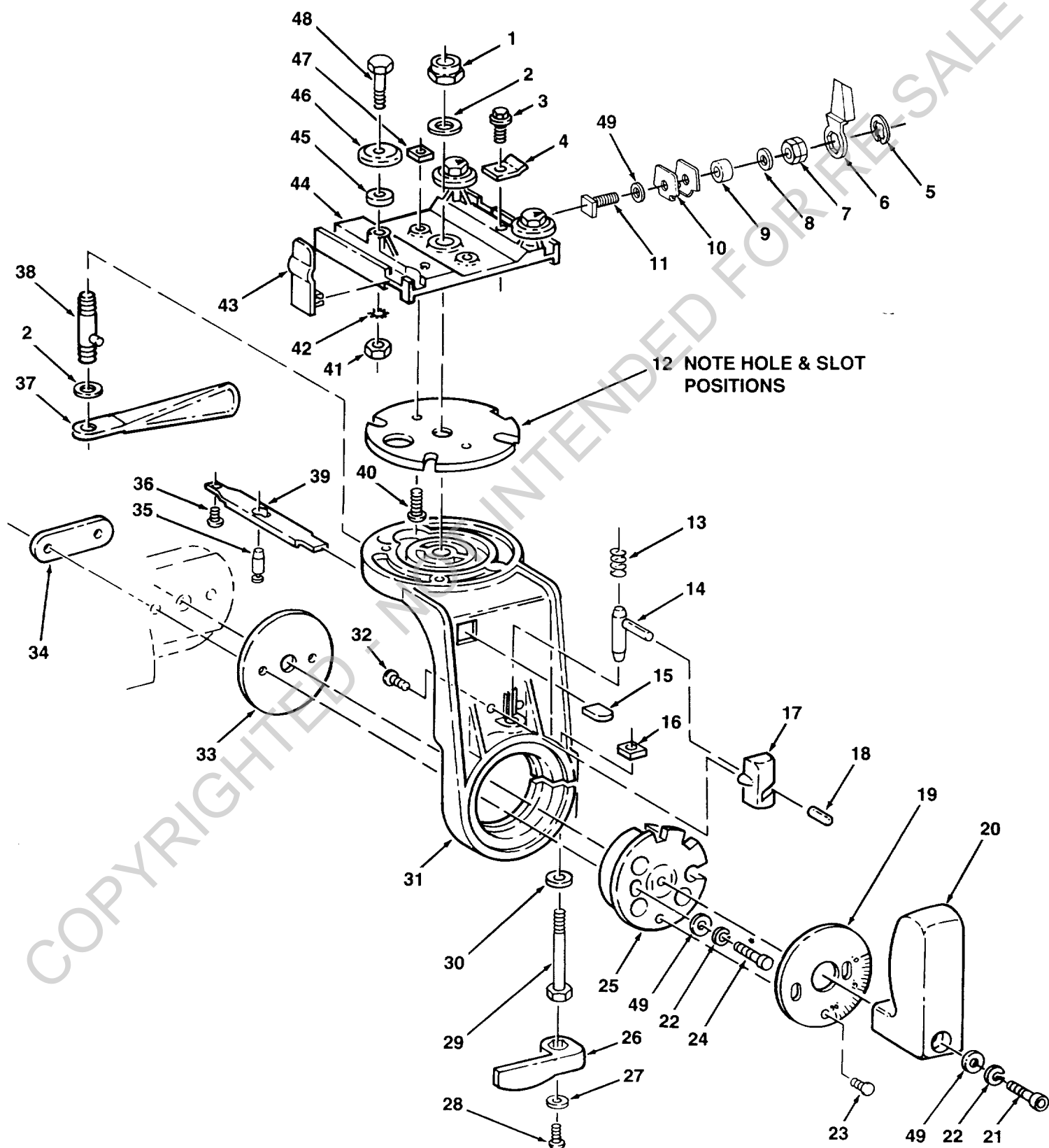
* Standard Hardware Item — May Be Purchased Locally.

+Stock Item — May Be Secured Through The Hardware Department Of Most Sears Retail Stores Or Catalog Order Houses.

Repair Parts

PARTS LIST FOR 8 1/4" RADIAL ARM SAW MODEL NO. 113.234701

FIGURE 2



Repair Parts

PARTS LIST FOR 8 1/4" RADIAL ARM SAW MODEL NO. 113.234701

Always order by Part Number — Not by Key Number

FIGURE 2

| Key No. | Part No. | Description | Key No. | Part No. | Description |
|---------|-----------|-------------------------------------|---------|-----------|---------------------------------------|
| 1 | STD541462 | *Nut-Lock 5/8-11 | 26 | 818711 | Lever-Bevel Lock |
| 2 | 60047 | Washer-.630 x 1 x 1/32 | 27 | STD551210 | *Lockwasher-Int N10 |
| 3 | 815865 | Screw-Hex Washer Hd 1/4-20 x 1/2 | 28 | 806214 | *Screw-Soc Button Cap 10-32 x 5/8 |
| 4 | 818883 | Catch-Safety | 29 | 805797-1 | Screw-Hex L.H. 5/16-18 x 2-3/4 |
| 5 | 805644-6 | *Ring-Retaining 5131-43 | 30 | 9418304 | Washer-21/64 x 3/4 x 1/32 |
| 6 | 818900 | Wrench | 31 | 818765 | Yoke |
| 7 | 818902 | Nut-Hex Double Lead 1/4-20 | 32 | 808380-7 | Screw-Pan Hd 10-14 x 1/2 |
| 8 | STD551012 | *Washer-17/64 x 9/16 x 1/16 | 33 | 818714 | Plate-Bevel |
| 9 | 802279-11 | Bushing | 34 | 818722 | Nut-Double |
| 10 | 821186 | Lock-Rip | 35 | 818708 | Pin-Yoke Index |
| 11 | 818901-1 | Screw-Rip Lock | 36 | 806828 | Screw-Round Hd TY"TT" 1/4-20 x 1/2 |
| 12 | 818749 | Plate-Index | 37 | 818712 | Lever |
| 13 | 63658 | Spring-Index | 38 | 818886 | Stud-Yoke Clamp |
| 14 | 818713 | Pin-Index | 39 | 818717 | Spring-Yoke Index |
| 15 | 818710 | Grip | 40 | 817398-1 | *Screw-Soc Cap Lock 1/4-20 x 5/8 |
| 16 | 820013 | Nut-Square L.H. 5/16-18 | 41 | 134556-1 | Nut-Hex Jam 5/16-18 |
| 17 | 818733 | Cam-Bevel Index | 42 | STD551131 | *Lockwasher-Ext 5/16 |
| 18 | 802884-25 | Grip | 43 | 818882 | Indicator-Rip |
| 19 | 818726 | Scale-Bevel | 44 | 821188 | Carriage |
| 20 | 810232-1 | Handle-Yoke | 45 | STD551031 | *Washer 21/64 x 5/8 x 1/32 |
| 21 | 141594-47 | *Screw-Soc Cap 1/4-20 x 2 | 46 | 37386 | Bearing-Carriage |
| 22 | STD551225 | *Lockwasher- 1/4 | 47 | 62636 | Nut-Square 1/4-20 |
| 23 | 816333-2 | Screw-Pan Hd TY"T" 10-32 x 3/8 | 48 | 818887 | Eccentric |
| 24 | 431957 | *Screw-Soc Cap 1/4-20 x 1-5/8 | 49 | 60442 | Washer-17/64 x 7/16 x 1/16 |
| 25 | 818757 | Ring-Index | | | |

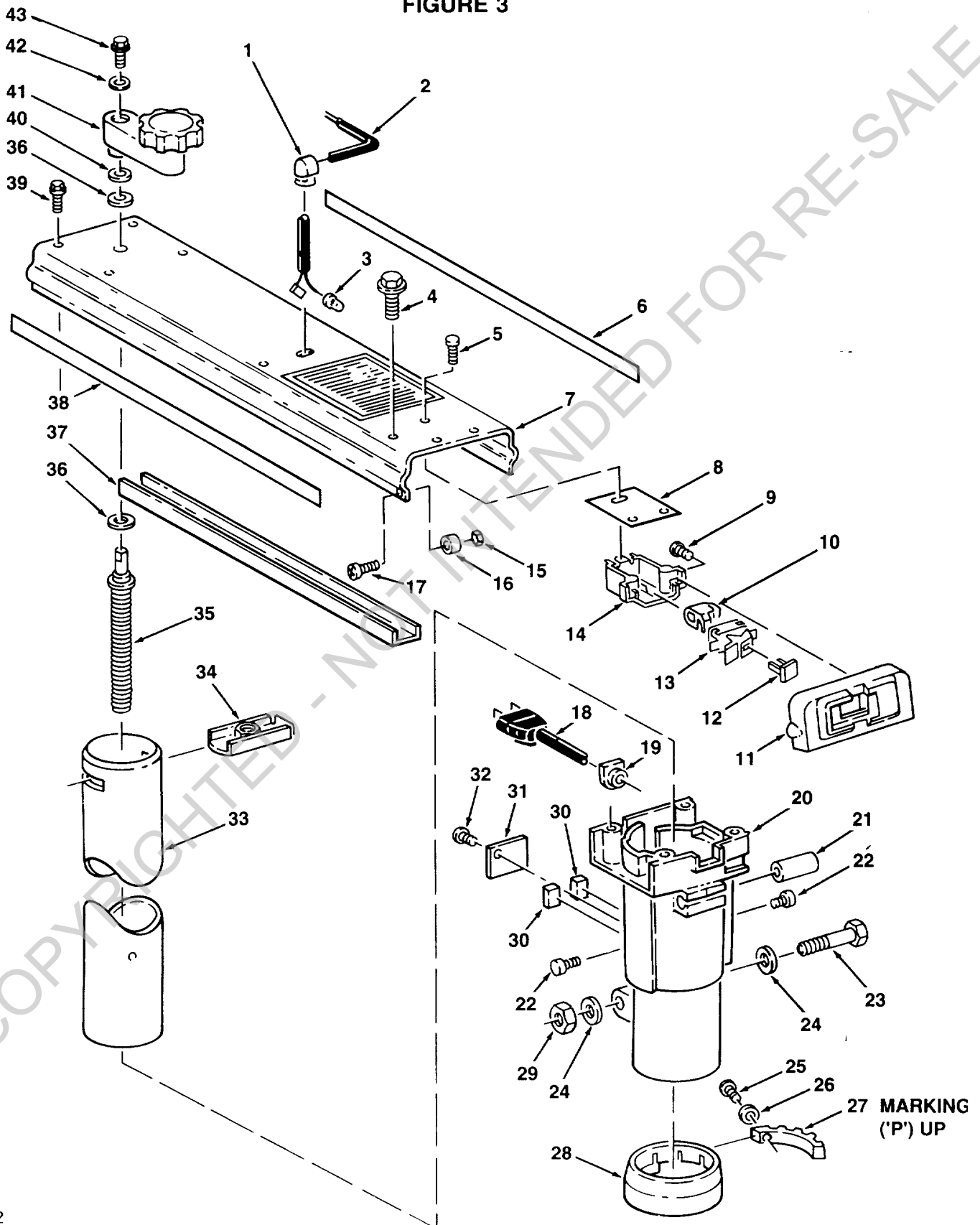
* Standard Hardware Item — May Be Purchased Locally.

+ Stock Item — May Be Secured Through The Hardware Department Of Most Sears Retail Stores Or Catalog Order Houses.

Repair Parts

PARTS LIST FOR 8 1/4" RADIAL ARM SAW MODEL NO. 113.234701

FIGURE 3



Repair Parts

PARTS LIST FOR 8 1/4" RADIAL ARM SAW MODEL NO. 113.234701

Always order by Part Number — Not by Key Number

FIGURE 3

| Key No. | Part No. | Description |
|---------|-----------|-----------------------------------------------|
| 1 | 818754 | Relief-Strain |
| 2 | 818697 | Cord-Motor |
| 3 | STD375006 | *Connector-Wire |
| 4 | 819449 | Screw-Hex Washer Hd TY"TT" 5/16-18 x 1-1/2 |
| 5 | 808380-5 | Screw-Pan Cr #8 |
| 6 | 818758 | Label Trim R.H. |
| 7 | 818921 | Arm |
| 8 | 818718 | Insulator |
| 9 | 808380 | Screw-Pan Hd 8-16 x 1/2 |
| 10 | 63467 | Cap-Flag Terminal |
| 11 | 818879 | Trim-Front Arm |
| 12 | 9-22256 | +Key-Switch |
| 13 | 816113 | Switch-Locking |
| 14 | 818934 | Housing-Switch |
| 15 | STD541008 | *Nut-Hex 8-32 |
| 16 | 818881 | Bumper-Front |
| 17 | STD510807 | *Screw-Pan Hd 8-32 x 5/8 |
| 18 | 820092 | Cord w/Plug |
| 19 | 815868 | Relief Strain |
| 20 | 818773 | Support-Arm |
| 21 | 818880 | Bumper-Rear |
| 22 | 817398 | Screw-Soc Cap Locking 1/4-20 x 3/4 |
| 23 | STD525025 | *Bolt-Hex 1/2-13 x 2-1/2 |

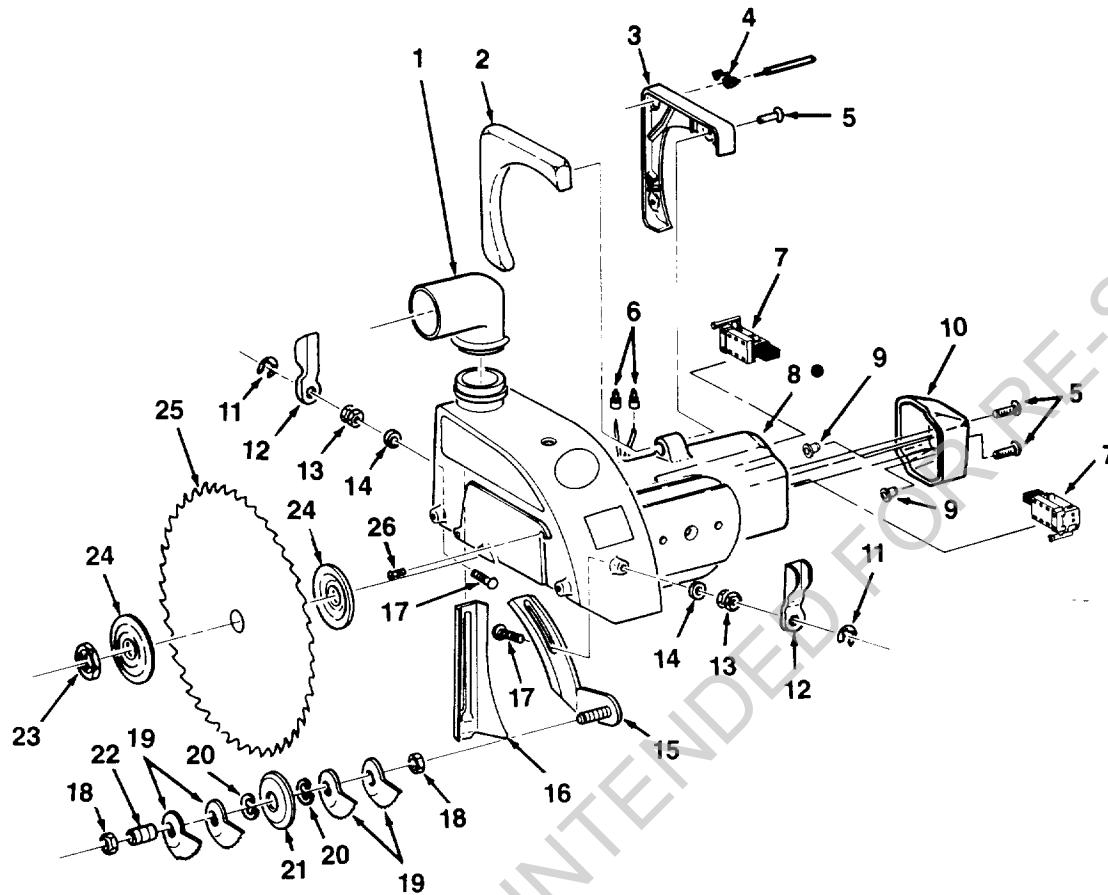
| Key No. | Part No. | Description |
|---------|-----------|--------------------------------------------|
| 24 | STD551050 | *Washer-17/32 x 1 x 1/16 |
| 25 | 815992-1 | Screw-Soc Cap TY"TT" 1/4-20 x 3/4 |
| 26 | STD551225 | *Lockwasher-1/4 |
| 27 | 818737 | Latch-Arm |
| 28 | 818926 | Scale-Miter |
| 29 | STD541450 | *Nut-Hex Lock 1/2-13 |
| 30 | 818706 | Gib |
| 31 | 818731 | Cover Plate-Gib |
| 32 | 816333-2 | Screw-Pan Hd TY"TT" 10-32 x 3/8 |
| 33 | 818705 | Tube |
| 34 | 818224 | Nut-Elevation |
| 35 | 818878 | Shaft-Elevation |
| 36 | 63500 | Washer-Thrust .502 x .927 x .031 |
| 37 | 818709 | Cover-Channel |
| 38 | 818759 | Label Trim L.H. |
| 39 | 815865-1 | Screw-Hex Wash Hd 1/4-20 x 3/4 |
| 40 | STD551043 | *Washer-15/32 x 47/64 x 1/16 |
| 41 | 818735 | Crank |
| 42 | STD551025 | *Washer-17/64 x 5/8 x 1/32 |
| 43 | 815865-2 | Screw-Hex Washer Hd TY"TT" 1/4-20 x 5/8 |

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+Stock Item — May Be Secured Through The Hardware Department Of Most Sears Retail Stores Or Catalog Order Houses.

Repair Parts

PARTS LIST FOR 8 1/4" RADIAL ARM SAW MODEL NO. 113.234701



Always order by Part Number — Not by Key Number

FIGURE 4

| Key No. | Part No. | Description |
|---------|-----------|----------------------------|
| 1 | 63258 | Elbow-Dust |
| 2 | 818741 | Cover-Connection L.H. |
| 3 | 818742 | Cover-Connection R.H. |
| 4 | 169123-11 | Relief-Strain |
| 5 | 808380-5 | Screw-Pan Hd #8 x 3/4 |
| 6 | 803709 | Connector-Wire |
| 7 | 355594 | Brush & Holder |
| 8 | 819029-1 | • Motor |
| 9 | 354653 | Bumper |
| 10 | 352813 | Cap End |
| 11 | 805644-6 | Ring-Retaining 5131-43 |
| 12 | 818900 | Wrench |
| 13 | 818902 | Nut-Hex 1/4-20 DBL Lead |
| 14 | STD551012 | *Washer-17/64 x 1/2 x 1/32 |

| Key No. | Part No. | Description |
|---------|-----------|----------------------------------|
| 15 | 818738 | Bar-Anti Kickback |
| 16 | 818756 | Guard-Hold Down |
| 17 | 818895 | Bolt-Crge DBL Lead 1/4-20 x 3/4 |
| 18 | STD541231 | *Nut-Hex Jam 5/16-18 |
| 19 | 815815 | Pawl |
| 20 | STD581050 | *Ring-Retaining |
| 21 | 63270 | Spreader |
| 22 | 816341 | Bearing |
| 23 | 819425 | Nut-Brass |
| 24 | 62498 | Collar-Blade |
| 25 | 9-32546 | † Blade-8-1/4" 44 Tooth |
| 26 | 816333-2 | Screw-Pan Hd TY "TT" 10-32 x 3/8 |

* Standard Hardware Item — May Be Purchased Locally.

† Item — May Be Secured Through The Hardware Department Of Most Sears Retail Stores Or Catalog Order Houses.

• Any Attempt To Repair This Motor May Create A Hazard Unless Repair Is Done By Qualified Service Technician. Repair Service Is Available At Your Nearest Sears Store.

Handwriting practice lines consisting of 28 horizontal lines within a rectangular frame.

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NOTES

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SEARS

**owner's
manual**

SERVICE

**MODEL NO.
113.234701**

**8¼-INCH
RADIAL SAW**

**HOW TO ORDER
REPAIR PARTS**

8¼-INCH RADIAL SAW

Now that you have purchased your 8¼-inch radial saw, should a need ever exist for repair parts or service, simply contact any Sears Service Center and most Sears, Roebuck and Co. stores. Be sure to provide all pertinent facts when you call or visit.

The model number of your 8¼-inch radial saw will be found on a plate attached to your saw, at the Rear of the base.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION:

PART NUMBER

PART DESCRIPTION

MODEL NUMBER

NAME OF ITEM

113.234701

8¼-INCH RADIAL SAW

All parts listed may be ordered from any Sears Service Center and most Sears stores. If the parts you need are not stocked locally, your order will be electronically transmitted to a Sears Repair Parts Distribution Center for handling.

Sold by SEARS, ROEBUCK AND CO., Chicago, IL 60684 U.S.A.