

Save This Manual  
For Future Reference

**Sears**

***owners  
manual***

**MODEL NO.  
113.190600  
SAW ONLY**

**113.190650  
SAW WITH LEGS**

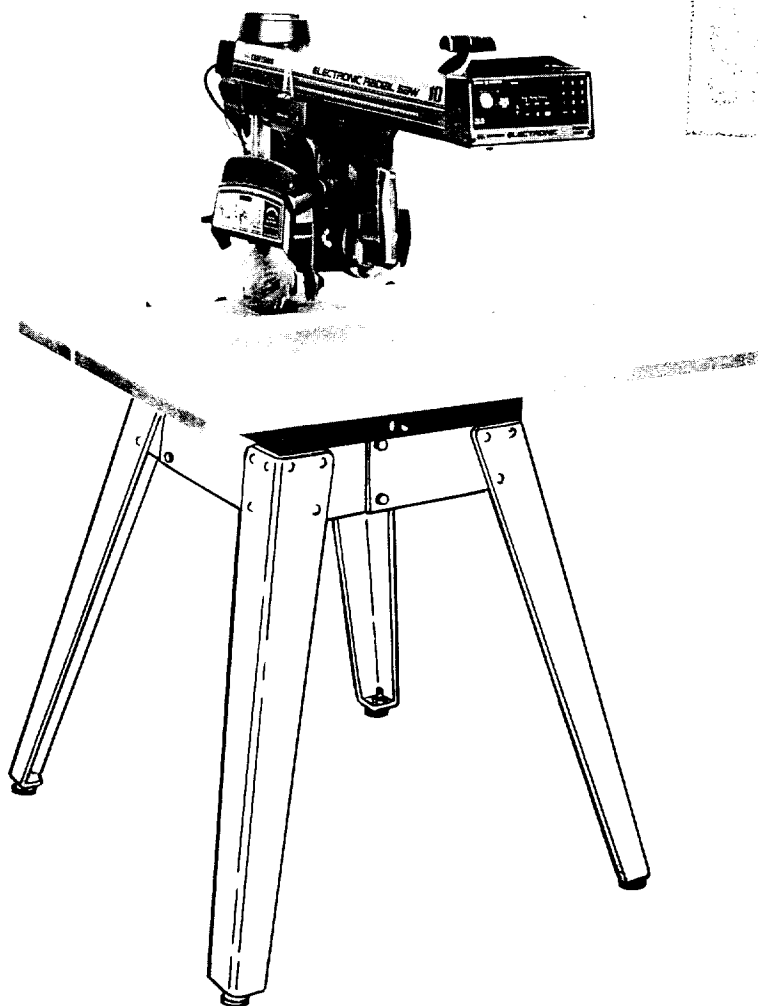
Serial  
Number \_\_\_\_\_

Model and serial  
numbers may be found  
at the front of the base

You should record both  
model and serial number  
in a safe place for future  
use.

## **CAUTION:**

**Read GENERAL  
and ADDITIONAL  
SAFETY  
INSTRUCTIONS  
carefully**



**Sears**

**CRAFTSMAN**

## ***ELECTRONIC 10-INCH RADIAL SAW***

- ***assembly***
- ***operating***
- ***repair parts***

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

## FULL ONE YEAR WARRANTY ON CRAFTSMAN RADIAL SAW

If within one year from the date of purchase, this Craftsman Radial Saw fails due to 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 IN USE IN THE UNITED STATES.

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

SEARS, ROEBUCK AND CO. DEPT., 698/731A Sears Tower, Chicago, IL 60684

## GENERAL SAFETY INSTRUCTIONS FOR POWER TOOLS

- 1. KNOW YOUR POWER TOOL**  
Read and understand the owner's manual and labels affixed to the tool. Learn its application and limitations as well as the specific potential hazards peculiar to this tool.
- 2. GROUND ALL TOOLS**  
This tool is equipped with an approved 3-conductor cord and a 3-prong grounding type plug to fit the proper grounding type receptacle. The green conductor in the cord is the grounding wire. Never connect the green wire to a live terminal.
- 3. KEEP GUARDS IN PLACE,**  
in working order, and in proper adjustment and alignment.
- 4. REMOVE ADJUSTING KEYS AND WRENCHES**  
Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- 5. KEEP WORK AREA CLEAN**  
Cluttered areas and benches invite accidents. Floor must not be slippery due to wax or sawdust.
- 6. AVOID DANGEROUS ENVIRONMENT**  
Don't use power tools in damp or wet locations or expose them to rain. Keep work area well lighted. Provide adequate surrounding work space.
- 7. KEEP CHILDREN AWAY**  
All visitors should be kept a safe distance from work area.
- 8. MAKE WORKSHOP CHILD-PROOF**  
— with padlocks, master switches, or by removing starter keys.
- 9. DON'T FORCE TOOL**  
It will do the job better and safer at the rate for which it was designed.
- 10. USE RIGHT TOOL**  
Don't force tool or attachment to do a job it was not designed for.
- 11. WEAR PROPER APPAREL**  
Do not wear loose clothing, gloves, neckties or jewelry (rings, wrist watches) to get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair. Roll long sleeves above the elbow.
- 12. USE SAFETY GOGGLES (Head Protection)**  
Wear Safety goggles (must comply with ANSI Z87.1) at all times. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses. Also, use face or dust mask if cutting operation is dusty, and ear protectors (plugs or muffs) during extended periods of operation.
- 13. SECURE WORK**  
Use clamps or a vise to hold work when practical. It's safer than using your hand, frees both hands to operate tool.
- 14. DON'T OVERREACH**  
Keep proper footing and balance at all times.
- 15. MAINTAIN TOOLS WITH CARE**  
Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 16. DISCONNECT TOOLS**  
before servicing; when changing accessories such as blades, bits, cutters, etc.
- 17. AVOID ACCIDENTAL STARTING**  
Make sure switch is in "OFF" position before plugging in.
- 18. USE RECOMMENDED ACCESSORIES**  
Consult the owner's manual for recommended accessories. Follow the instructions that accompany the accessories. The use of improper accessories may cause hazards.
- 19. NEVER STAND ON TOOL**  
Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.  
Do not store materials above or near the tool such that it is necessary to stand on the tool to reach them.
- 20. CHECK DAMAGED PARTS**  
Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may effect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- 21. DIRECTION OF FEED**  
Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
- 22. NEVER LEAVE TOOL RUNNING UNATTENDED**  
Turn power off. Don't leave tool until it comes to a complete stop.

# additional safety instructions for radial saws

**THIS SAW IS DESIGNED TO CUT AND SHAPE SOLID ROUGH SAWN OR PLANED WOOD, OR SOLID RECONSTITUTED WOOD PRODUCTS.**

**CAUTION:** Always disconnect the power cord before removing the guard, changing the cutting tool, changing the set-up or making adjustments. Shut off motor before performing layout work on the saw table.

**WARNING: DO NOT CONNECT POWER CORD, EXCEPT AS INSTRUCTED, UNTIL THE FOLLOWING STEPS HAVE BEEN SATISFACTORILY COMPLETED.**

- I. Assembly and alignment.
- II. Examination and operating familiarity with ON-OFF switch, elevation control, yoke index and lock, bevel index and lock, carriage lock, guard clamp screw, spreader and antikickback device, and miter index and lock.
- III. Review and understanding of all Safety Instructions and Operating Procedures thru-out manual.

## INSTALLATION

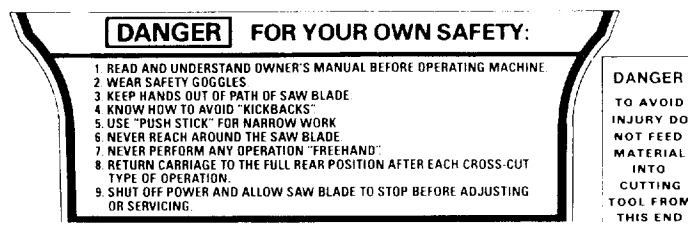
1. Set carriage lock before moving the saw.
2. Bolt the saw to the floor if it tends to slip, walk, or slide during normal operation.
3. Mount the saw so the table is approximately 39" above the floor.
4. Mount the saw so the arm slopes slightly downward to the rear so the carriage will not roll forward due to gravity.
5. If you attach any kind of table extensions over 24" wide to either end of the saw, make sure you either bolt the saw to the bench or floor as appropriate, or support the outer end of the extension from the bench or floor, as appropriate.

## MINIMIZE ACCIDENT POTENTIAL

Most accidents are caused by FAILURE TO FOLLOW setup and operating instructions:

### (A) GENERAL

- Avoid awkward hand positions, where a sudden slip could cause a hand to move into a sawblade or other cutting tool. Never reach in back of or around the cutting tool with either hand to hold down the workpiece, or for any other reason; DO NOT place fingers or hands in the path of the sawblade.
- Never saw, dado, mold, or rabbet unless the proper guard (complete with all its parts) is installed and set up as instructed.
- NOTE THE FOLLOWING DANGER LABELS WHICH APPEAR ON THE FRONT OF THE YOKE AND GUARD:



- If any part of this radial saw is missing, malfunctioning, or has been damaged or broken, such as the Motor Switch, Electronic Controls, or other operating control, a safety device or the

power cord ... cease operating immediately until the particular part is properly repaired or replaced.

-IF YOUR SAW MAKES AN UNFAMILIAR NOISE OR IF IT VIBRATES EXCESSIVELY CEASE OPERATING IMMEDIATELY UNTIL THE SOURCE HAS BEEN LOCATED AND THE PROBLEM CORRECTED.

- **WARNING: DO NOT ALLOW FAMILIARITY (GAINED FROM FREQUENT USE OF YOUR SAW) TO BECOME COMMON PLACE. ALWAYS REMEMBER THAT A CARELESS FRACTION OF A SECOND IS SUFFICIENT TO INFLICT SEVERE INJURY.**

-Before starting work, verify that no play exists between the column & column support, or in the carriage, and that arm, yoke, and bevel locks/clamps are tight.

-A large proportion of saw accidents are caused by use of the wrong type blade, dull, badly set, improperly sharpened cutting tools, by gum or resin adhering to cutting tools, and by sawblade misalignment with the fence. Such conditions can cause the material to stick, jam (stall the saw) or "KICKBACK" at the operator. NEVER ATTEMPT TO FREE A STALLED SAW BLADE WITHOUT FIRST TURNING THE SAW "OFF". If the sawblade is stalled or jammed, shut saw "OFF", remove workpiece, and check sawblade squareness to table surface and to the fence, and check for heel. Adjust as needed.

- **CAUTION: DO NOT cycle the motor switch "ON" and "OFF" rapidly, as this might cause the sawblade to loosen. In the event this should occur, allow the saw blade to come to a complete stop and re-tighten the arbor nut normally, not excessively**

-Do not leave a long board unsupported so the spring of the board causes it to shift on the table. Provide proper support for the workpiece, based on its size and the type of operation to be performed. Hold the work firmly against the fence.

-Never use a length stop on the free end or edge of the workpiece whether crosscutting or ripping. Never hang onto or touch the free end of a workpiece when crosscutting, or a free piece that is cut off while power is "ON" and/or the saw blade is rotating. In short, the cut-off piece in any "thru-sawing" operation must never be confined, but must be allowed to move laterally.

-Make sure your fingers do not contact the terminals when installing or removing the plug to or from a live power source.

-Never climb on the saw, or climb near the saw when power is "ON". Never leave the saw with power "ON", or before the cutting tool has come to a complete stop. Lock the motor switch and put away the key when leaving the saw.

-Do not use any blade or other cutting tool marked for an operating speed lower than 3450 RPM. Never use a cutting tool larger in diameter than the diameter for which the saw was designed. For greatest safety and efficiency when ripping, use the maximum diameter blade for which the saw is designed, since under these conditions the spreader is nearest the blade.

-Never turn your saw "ON" before clearing the table or work surface of all objects (tools, scraps of wood, etc.) except the workpiece and related feed or support devices for the operation planned.

-DO NOT perform layout, assembly, or setup work on the table while the cutting tool is rotating.

-Never perform any operation "FREE HAND". This term means feeding the sawblade into the workpiece or feeding the workpiece into the sawblade or other cutting tool without using the fence or some other device which prevents rotation or twisting of the workpiece during the operation. **Never "RIP" in the crosscut position. Never make a miter cut with the arm in the 90° crosscut position.**

-Never lower a revolving cutting tool into the table or workpiece without first locking the Carriage Lock Knob. Release the lock knob only after grasping the Yoke Handle. Otherwise the cutting tool may grab the workpiece and be propelled toward you.

-The sawblade, dado, or other cutting tool must be removed from the saw arbor before using the accessory shaft (rear end of the saw motor). NEVER operate the saw with cutting tools (including sanding accessories) installed on both ends of the saw arbor.

-Do not use fences made of chipboard - use 3/4" virgin lumber only, extending in one piece from end to end of the saw table.

-Wear safety goggles that comply with ANSI Z87.1 and a face shield, or dust mask if operation is dusty, wear ear plugs or muffs during extended periods of operation.

## (B) RIPPING

Ripping is cutting with the grain or the long way of the board — it is performed by pushing the workpiece along the fence and thru the sawblade (sawblade parallel to the fence).

1. Never apply the feed force to the section of the workpiece that will become the cut-off (free) piece. Feed force when ripping must always be applied between the saw blade and the fence ... use a "PUSH STICK" (see page 33 for narrow or short work).
2. Whenever possible, use the in-rip position —this provides minimum obstruction for feeding by hand or push stick as appropriate. When the width of rip (distance between sawblade and fence) is to be 6 inches or less, **ALWAYS** position the wider section of the workpiece between the sawblade and the fence.
3. Do not release the workpiece before operation is complete — push the workpiece all the way past the rear (outfeed or exit) of the sawblade.
4. Make sure by trial before starting the cut that the antikickback pawls will stop a kickback once it has started. Keep points of pawls SHARP!
5. Use a push stick when ripping short (under 12 inches) or narrow (under 6 inches wide) workpieces
6. **CAUTION: Never reposition the Guard or antikickback with power "ON".**
7. A "KICKBACK" occurs during a rip-type operation when a part or all of the workpiece is thrown back violently toward the operator. It

can occur when the workpiece closes in on the rear (outfeed side) of the sawblade (pinching), binds between the fence and the sawblade (heel), or is grabbed by the sawblade teeth (wrong-way feed) at the outfeed side. "PINCHING" is generally avoided by use of the spreader and a sharp sawblade of the correct type for the workpiece being cut. "HEEL" can be avoided by maintaining the sawblade exactly parallel to the fence. Grabbing by the sawblade teeth can be caused by heel or by feeding from the wrong direction (see "DANGER" warning on guard). It can be avoided by maintaining parallelism of sawblade to fence, feeding into the sawblade from the nose of the guard only, by positioning the spreader and antikickback pawls properly, and keeping the workpiece down on the table and against the fence.

8. Position the nose of the guard to just clear the workpiece, and position/adjust the antikickback and spreader devices as instructed.
9. NEVER cut more than one piece at a time by stacking workpieces vertically.
10. NEVER feed a workpiece thru the saw with another piece (butting second piece against trailing edge of piece being cut), even if they are the same thickness. Feed each workpiece individually thru the sawblade, and completely beyond the sawblade, before ripping the next workpiece. Use push stick if the rip cut is less than 6" wide.
11. **NEVER** use another person as a substitute for a table extension, or as additional support for a workpiece that is longer or wider than the basic saw table, or to assist in feeding or supporting or pulling the workpiece.
12. DO NOT pull the workpiece thru the sawblade— position your body at the nose (in-feed) side of the guard; start and complete the cut from that same side. This will require added table support for long or wide workpieces that extend beyond the length or width of the saw table.
13. Plastic and composition (like hardboard) materials may be cut on your saw. However, since these are usually quite hard and slippery, the antikickback pawls may not stop a kickback. Therefore, rip with the finished side down (next to the table) and be especially attentive to following proper set-up and cutting procedures. Do not stand, or permit anyone else to stand, in line with a potential kickback.
14. When sawing 1/4" or thinner materials, follow all normal ripping procedures except set sawblade into table top at least 1/8" DO NOT let go of or stop feeding the workpiece between the blade and fence until you have pushed it completely past the antikickback pawls. Otherwise the workpiece could get into the back of the sawblade and be thrown violently from the saw in the direction opposite to the feed direction. This is the same action that would occur if the instructions of the DANGER warning on the guard are not followed. Do not stand, or permit anyone else to stand, in line with the path of a workpiece that may be thrown from the saw in this manner.
15. Position the saw so neither you nor a casual observer is forced to stand in line with the sawblade.

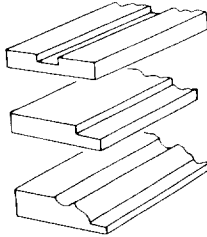
- 16 Use extra care when ripping wood that has a twisted grain or is twisted or bowed — it may rock on the table and/or pinch the sawblade.
- 17 Shaping of wood with a dado head or a molding head can be performed "top-side" (cutting tool basically vertical and employing sawblade guard), or "edge" (saw arbor vertical — cutting tool horizontal - and employing the Accessory molding head guard).

#### Ploughing

(Grooving with the grain),

#### Top side rabbeting,

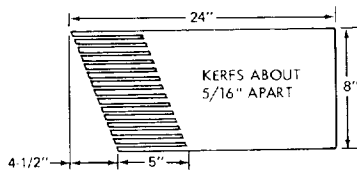
#### Top side molding (shaping . . . .)



Resawing, gaining, coving, with the grain, are examples of rip-type cuts. The same basic setup procedures including rotation of the guard and adjusting and positioning of the AKB/Spreader device as for in-rip or out-rip cutting, apply. However, since none of these operations involve thru-sawing (sawing through the workpiece), there is no kerf. Therefore the spreader and AKB pawls can only be lowered to a position where the spreader just clears the workpiece.

**CAUTION: The AKB/Spreader device will not stop kickback in this position, but will act as a hold-down and as a guard of the out-feed side of the sawblade.**

18. For rip or rip-type cuts, the following end of a workpiece to which a push stick or push board is applied must be square (perpendicular to the fence) in order that feed pressure applied to the workpiece by the push stick or block does not cause the workpiece to come away from the fence, and possibly cause a kickback.
19. During rip and rip-type cuts, the workpiece must be held down on the table and against the fence with a push stick, push block and featherboards as required. A featherboard is made of solid lumber (at least 3/4" thick) per sketch.



### (C) CROSSCUTTING

1. ALWAYS RETURN THE CARRIAGE TO THE FULL REARWARD POSITION AT CONCLUSION OF EACH CROSSCUT TYPE OPERATION. Never remove your hand from the Yoke Handle unless the carriage is in this position. Otherwise the cutting tool may climb up on the workpiece and be propelled toward you.

2. Place guard in horizontal position and adjust antikickback pawls to just clear the top of the fence or workpiece, whichever is higher. This provides additional guarding.
3. NEVER gang crosscut — lining up more than one workpiece in front of the fence — stacked vertically, or horizontally outward on the table — and then pulling saw thru: the blade could pick up one or more pieces and cause a binding or loss of control and possible injury.
4. Do not position the Arm so the operation you are performing permits the cutting tool to extend beyond the edges of the Table.
5. Top-side dadoing or molding across the grain are examples of crosscut-type cuts. The same basic procedures including positioning of the AKB/Spreader device as for crosscutting, apply.

### (D) ACCESSORIES

1. Use only recommended accessories as listed on page 45.
2. Never operate this saw when equipped with a dado head or molding head unless the molding head guard is installed — see listing of recommended accessories. The only exception is when "top-side" dadoing or molding, when the sawblade guard must be used. See detailed instructions that accompany the dado head, molding head, and molding head guard.
3. The use of grinding wheels, abrasive or cut-off wheels, or wire wheels, can be dangerous and is not recommended. (Abrasive or cut-off wheels are used to saw many different materials including metals, stone, and glass.)
4. Drill Chuck: Do not install or use any twist drill larger than 1/2-inch in dia., or longer than 7 inches in length or extending more than 6 inches beyond the chuck jaws. Do not install or use any reduced shank drill except of the spade type (1 inch dia. or smaller). "Use for drilling **WOOD** and **PLASTIC** only."

**NOTE:** Do not overtighten arbor nut. Use arbor wrenches to just "snug" it.



The operation of any power tool can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety goggles complying with ANSI Z87.1 (shown on Package) before commencing power tool operation. Safety Goggles are available at Sears retail or catalog stores.

**WARNING: DO NOT UNDER ANY CIRCUMSTANCE ATTEMPT TO SERVICE, REPAIR, DISMANTLE OR DISASSEMBLE ANY OF THE ELECTRICAL OR ELECTRONIC (COMPUTER, ETC.) PARTS. REPAIRS ARE TO BE PERFORMED BY SEARS SERVICE PERSONNEL ONLY.**

# electrical connections

## POWER SUPPLY

### 1. Motor Specifications

The A-C motor used in this saw is a capacitor-start non-reversible type having the following specifications:

Voltage	120
Amperes	11
Hertz (cycles)	60
Phase	Single
RPM	3450
Rotation as viewed from saw blade end	Clockwise

**CAUTION:** Your saw is wired for 120V operation. Connect to a 120V, 15-Amp. branch circuit and use a type S 15-Amp time delay dual element fuse or circuit breaker.

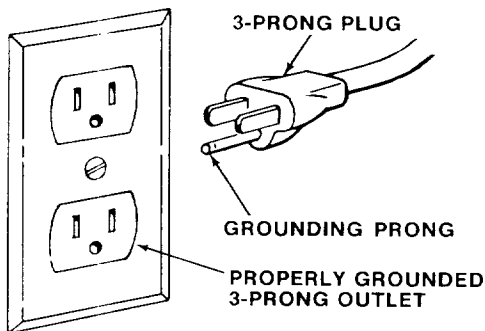
This machine must be grounded while in use to protect the operator from electrical shock.

IF YOU ARE NOT SURE THAT YOUR OUTLET IS PROPERLY GROUNDED, HAVE IT CHECKED BY A QUALIFIED ELECTRICIAN.

**WARNING: DO NOT PERMIT FINGERS TO TOUCH THE TERMINALS OF PLUGS WHEN INSTALLING OR REMOVING THE PLUG TO OR FROM THE OUTLET.**

**WARNING: IF NOT PROPERLY GROUNDED THIS POWER TOOL CAN HAVE THE POTENTIAL HAZARD OF ELECTRICAL SHOCK. PARTICULARLY WHEN USED IN DAMP LOCATIONS CLOSE TO PLUMBING. IF AN ELECTRICAL SHOCK OCCURS THERE IS THE CHANCE OF A SECONDARY HAZARD SUCH AS YOUR HANDS CONTACTING THE SAWBLADE.**

IF POWER CORD IS WORN OR CUT, OR DAMAGED IN ANY WAY, HAVE IT REPLACED IMMEDIATELY.



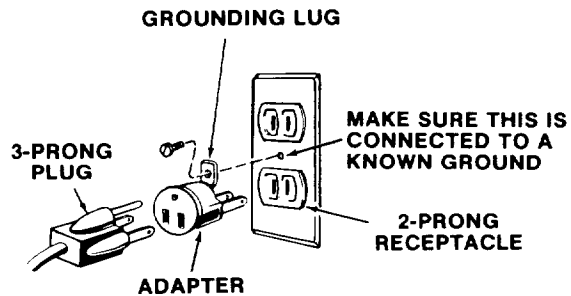
This power tool is equipped with a 3-conductor cord and grounding prong, listed by Underwriter's Laboratories. The ground conductor has a green jacket and is attached to the tool housing at one end and to the ground prong in the attachment plug at the other end.

This plug requires a mating 3-conductor grounded type outlet as shown.

If the outlet you are planning to use for this power tool is of the two prong type DO NOT REMOVE OR ALTER THE GROUNDING PRONG IN ANY MANNER. Use an adapter as shown and always connect the grounding lug to known ground.

It is recommended that you have a qualified electrician replace the TWO prong outlet with a properly grounded THREE prong outlet.

An adapter as shown below is available for connecting plugs to 2-prong receptacles. The green grounding lug extending from the adapter must be connected to a permanent ground such as to a properly grounded outlet box.

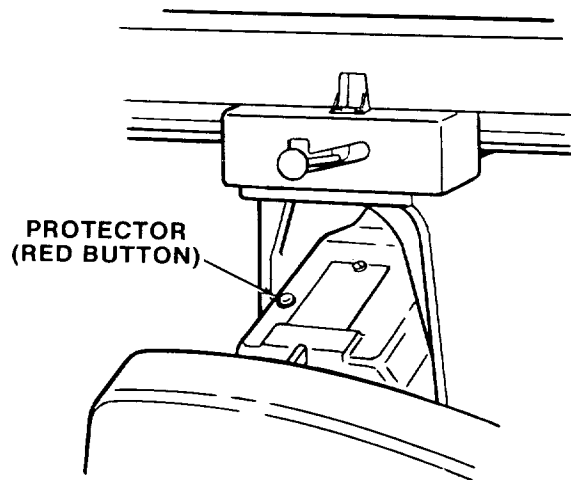


**NOTE:** The adapter illustrated is for use only if you already have a properly grounded 2-prong receptacle.

## MOTOR SAFETY PROTECTION

**NOTE:** This motor should be blown out, or "vacuumed", frequently to prevent sawdust interference with normal motor ventilation.

Your saw motor is equipped with a manual-reset, thermal-overload protector designed to open the power-line circuit when the motor temperature exceeds a safe value.



1. If the protector opens the line and stops the saw motor, immediately press the saw switch to the "OFF" position, and allow the motor to cool.
2. After cooling to a safe operating temperature, the overload protector can be closed manually by pushing in the red button on the top of the motor. If the red button will not snap into place immediately, the motor is still too hot and must be allowed to cool for a while longer. In some cases this will take 20-30 minutes. (An audible click will indicate protector is closed.)
3. As soon as the red button will snap into running position, the saw may be started and operated normally, by pulling out the saw switch to the "ON" position.

4. Frequent opening of fuses or circuit breakers may result if motor is overloaded, or if the motor circuit is fused differently from recommendations. Overloading can occur if you feed too rapidly or if your saw is misaligned so that the blade heels. Do *not* use a fuse of greater capacity without consulting a qualified electrician.
5. Although the motor is designed for operation on the voltage and frequency specified on motor nameplate, normal loads will be handled safely on voltages not more than 10% above or below the nameplate voltage. Heavy loads, however, require that voltage at motor terminals equals the voltage specified on nameplate.
6. Most motor troubles may be traced to loose or incorrect connections, overloading, reduced input voltage (such as small size wires in the supply circuit) or to an overly-long supply circuit. Always check the connections, the load and the supply circuit, whenever the motor fails to

perform satisfactorily. Check wire sizes and lengths with the table following.

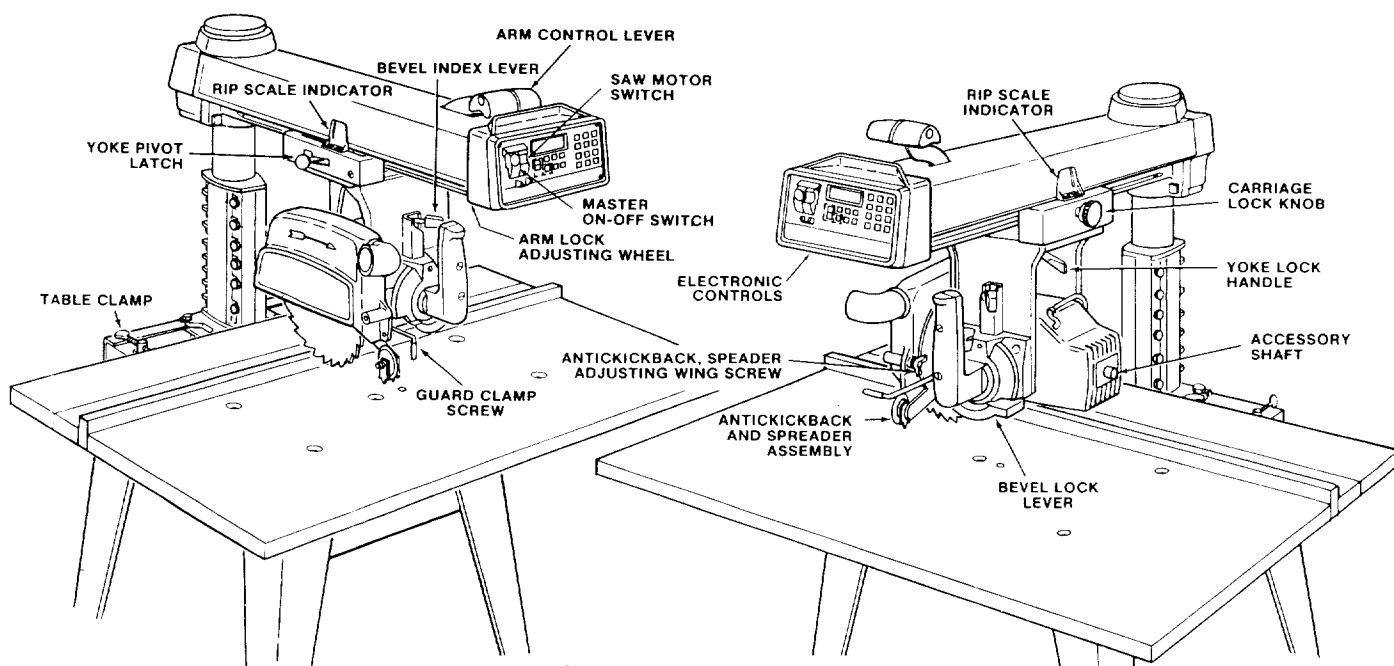
## WIRE SIZES

The use of any extension cord will cause some loss of power. To keep this to a minimum and to prevent over-heating and motor burn-out, use the table below to determine the minimum wire size (A.W.G.) extension cord. Use only 3 wire extension cords which have 3 prong grounding type plugs and 3-pole receptacles which accept the tools plug.

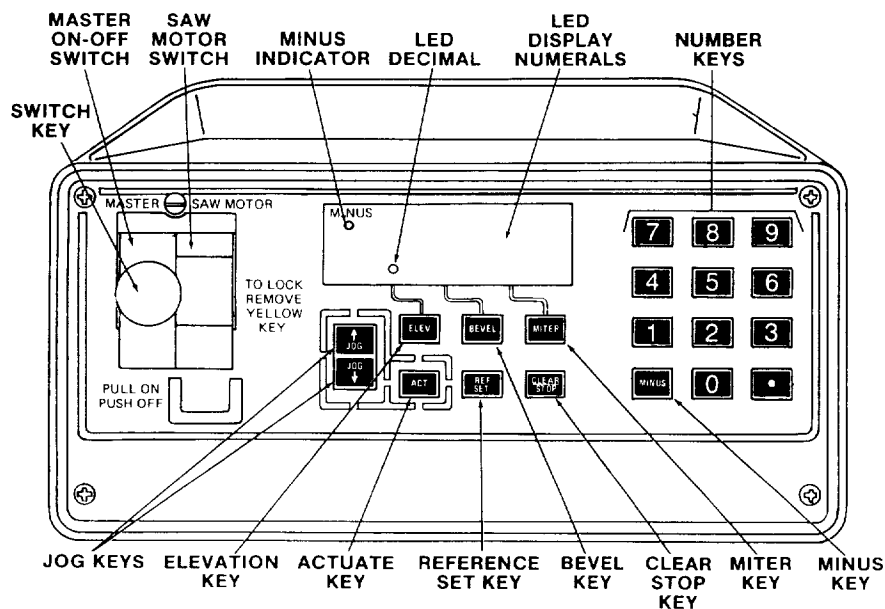
**NOTE:** For circuits of greater length, the wire size must be increased proportionately in order to deliver ample voltage to the saw motor.

Length of the Conductor	Wire Size Required (American Wire Gauge Number) 120 Volt Lines
Up to 100 feet	No. 12
100 feet to 200 feet	No. 8
200 feet to 400 feet	No. 6

## location and function of controls



### Location and function of electronic controls



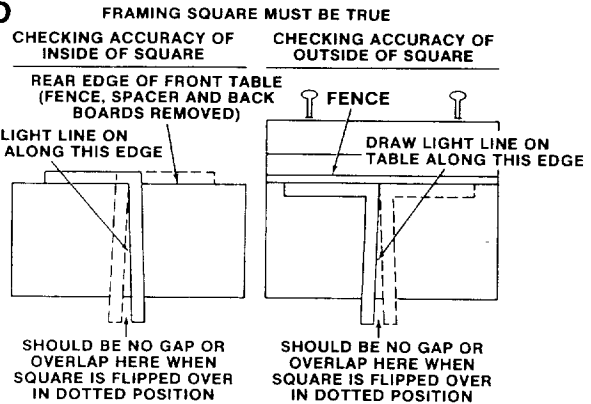
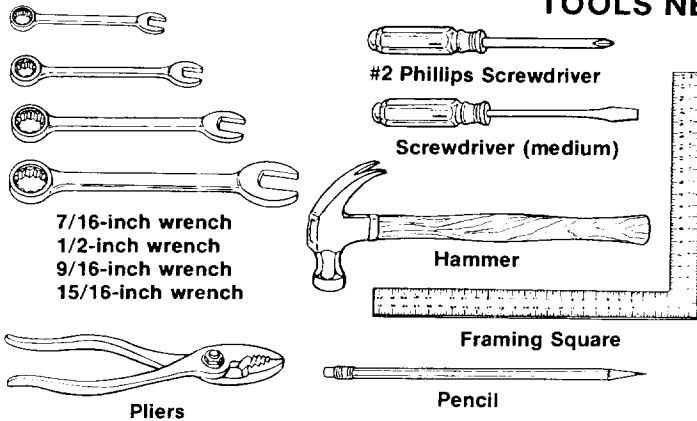
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## assembly and alignment

### TOOLS NEEDED



### UNPACKING AND PREASSEMBLY

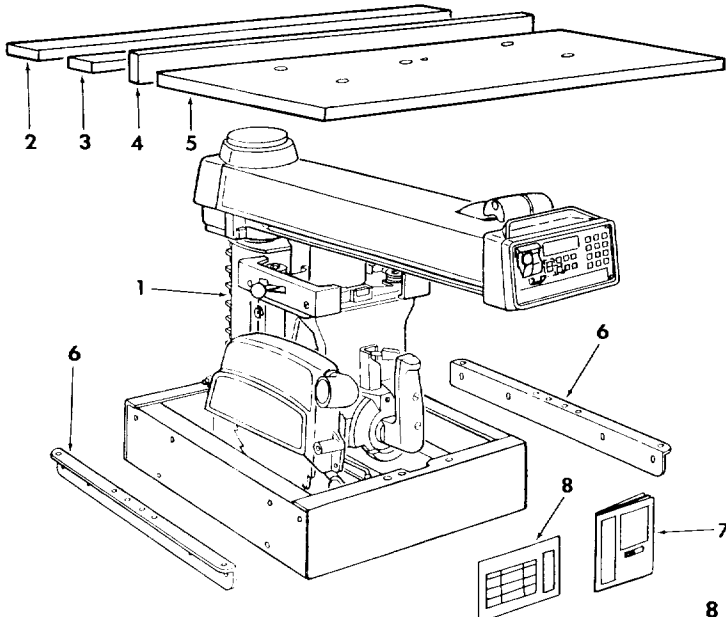
**WARNING: DO NOT CONNECT THE POWER CORD TO A SOURCE OF POWER. THIS CORD MUST REMAIN UNPLUGGED WHENEVER YOU ARE WORKING ON THE SAW.**

Model 113.190600 Radial Saw is shipped complete in one carton but DOES NOT INCLUDE Steel Legs.

Model 113.190650 Radial Saw is shipped complete in one carton and INCLUDES Steel Legs.

#### 1. Unpacking and Checking Contents

Separate all "loose" parts from packing materials and check each item with "Table of Loose Parts" to make sure all items are accounted for before discarding any packing material.



If any parts are missing, do not attempt to assemble radial saw, plug in the power cord, or turn the switch on until the missing parts are obtained and are installed correctly.

#### MODELS 113.190600 AND 113.190650

#### Key

No.	Table of Loose Parts	Qty.
1	Basic Saw Assembly .....	1
2	Rear Table .....	1
3	Table Spacer .....	1
4	Rip Fence .....	1
5	Front Table .....	1
6	Channel, Table Mtg. ....	2
7	Owner's Manual .....	1
8	Owner Information Card .....	1

#### Loose Parts Bag Part No. 75098

(Containing the following items):

—Indicator, Rip .....	2
—Twin Nut (for attaching Rip Scale Indicator) .....	2
—Screw, Pan Hd. 6-32 x 1/2 .....	4
—Wrench, Arbor .....	1
—Wrench, Shaft .....	1
—Wrench, Hex "L" 1/4 .....	1
—Wrench, Hex "L" 3/16 .....	1
—Wrench, Hex "L" 5/32 .....	1

#### \*Loose Parts Bag Part No. 63894

(Containing the following items):

—Setscrew, cup pt. 1/4-20 x 3/8 ..	1†
—Machine Screw, Pan Hd. 1/4-20 x 1" .....	4
—Washer, Steel (Flat), 17/64 x 5/18 x 1/32" .....	5



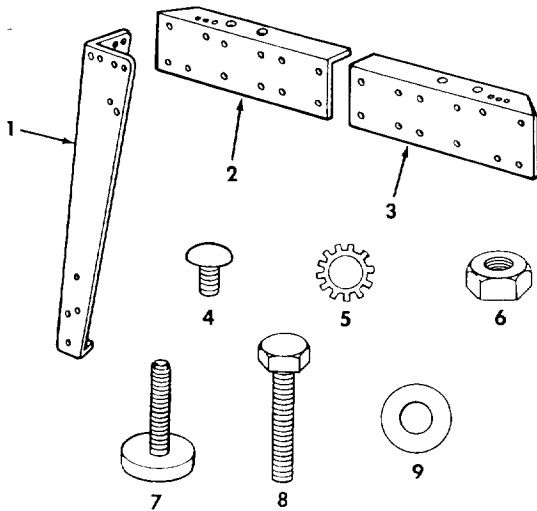
—Nut, "Tee" .....	1
—Screw, Pan Hd. 1/4-20 x 1-3/4 ...	1
—Nut, Hex 1/4-20 .....	4
—Lockwasher, 1/4 .....	4
—Table Clamp .....	2
*Loose Parts Bag Part No. 63796 (Containing the following items):	
—Hex "L" Wrench, 1/8 .....	1
—Switch Key .....	1
—Lockwasher, 5/16" .....	4
—Washer, Flat 11/32 x 7/8 x 1/16" ..	4
—Set Screw, Cup Pt. 1/4-20 x 1 ...	1
—Nut, Lock 5/16-18 .....	2
—Bolt, Sq. Hd. 5/16-18 x 3/4" .....	4
—Washer, 21/64 x 9/16 x 1/16" ...	2
—Nut, Hex 5/16-18 .....	4

\* This Bag Included in Loose Parts Bag No. 75098

† This part not required on this model

### THE FOLLOWING PARTS ARE INCLUDED WITH MODEL 113.190650 ONLY

Key No.	Table of Loose Parts	Qty.
1	Leg .....	4
2	Stiffener, L.H. ....	4
3	Stiffener, R.H. ....	4
Loose Parts Bag Part No. 63752 (Containing the following items):		
4	—Screw, Truss Hd. 1/4-20 x 5/8 .....	40
5	—Lockwasher, 1/4 External .....	40
5	—Lockwasher, 5/16 External .....	4
6	—Nut, Hex 1/4-20 .....	40
6	—Nut, Hex Jam 5/16-18 .....	4
6	—Nut, Hex 1/2-13 .....	8
7	—Foot, Leveling .....	4
8	—Screw, Hex Hd. 5/16-18 x 5/8 .....	4
9	—Washer, 11/32 x 11/16 x 1/16 .....	8



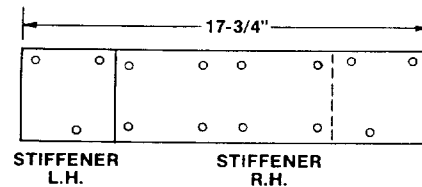
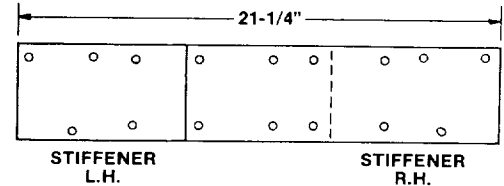
## ASSEMBLING STEEL LEGS

**NOTE:** Steel Legs are furnished with Model 113.190650. From among loose parts, find the following Hardware:

- 40 Truss Head Screws, 1/4-20 x 5/8
- 40 Lockwashers, 1/4-External
- 40 Hex Nuts, 1/4-20
- 8 Hex Nuts, 1/2-13
- 4 Leveling Feet

Assemble the Legs as shown.

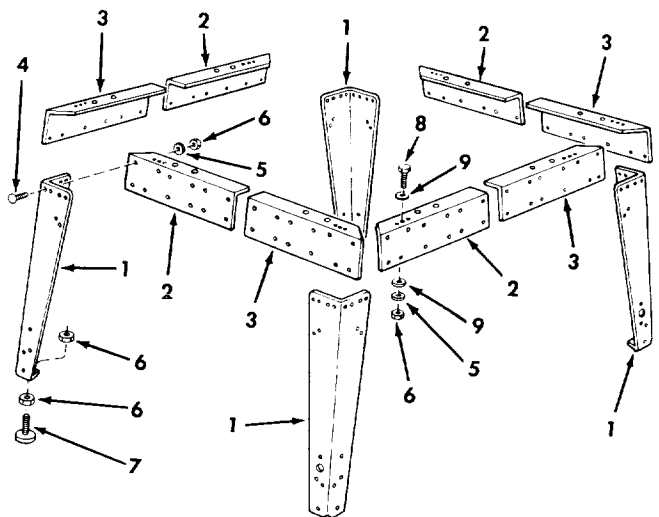
1. Assemble Two (2) each of right and left hand Stiffeners to the length shown using 1/4-20 x 5/8" truss head screws, lockwashers and hex nuts.



2. Attach the four (4) legs to the Stiffeners using 1/4-20 screws, lockwashers and nuts.
3. Install leveling feet as shown. To level steel legs, loosen nut on inside of leg and turn nut on outside to raise or lower feet. Adjust all four levelers if necessary, and then tighten nuts on inside of leg.

**NOTE:** These levelers are not intended for height adjustment.

**CAUTION:** Leveling feet must be adjusted so the saw does not rock AND so that the arm slopes slightly downward to the rear so the carriage will not roll forward due to gravity.



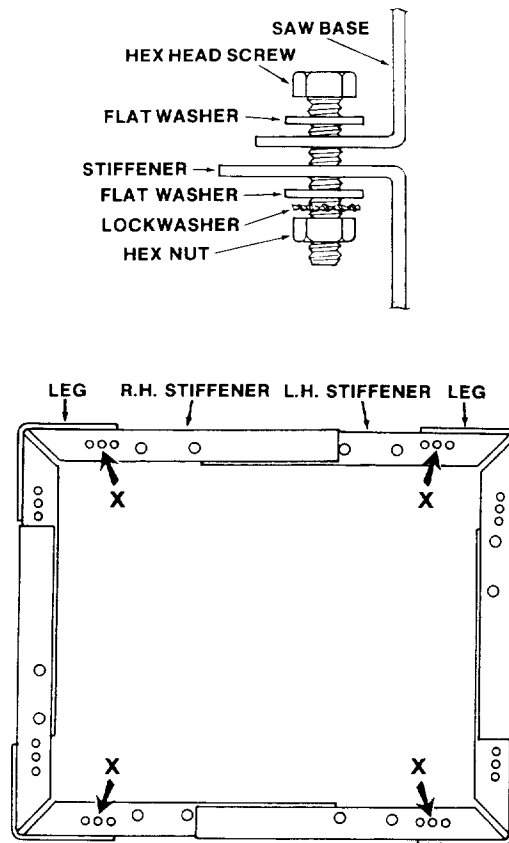
# assembly and alignment

## REMOVE SKIDS FROM BASE

### MOUNTING SAW

1. From among the loose parts, find the following hardware:
  - 4 Hex Head Screws, 5/16-18 x 5/8
  - 4 Lockwasher, 5/16 in. External Type
  - 8 Washers, 11/32 ID
  - 4 Hex Jam Nuts, 5/16-18
2. Place saw on legs so that holes in bottom of saw line up with holes marked X in top of legs.
3. Install screws, washers and nuts as shown.

If you mount the saw on any other Craftsman base or flat bench the saw must be bolted down. Position saw to slope slightly rearward, so when the carriage is installed it will not roll forward due to gravity.



**WARNING: STAND IN FRONT OF SAW. DO NOT REACH BLIND TO TURN MASTER OR SAW MOTOR SWITCH ON, OR TO PUSH ANY KEY.**

Plug saw into power outlet. **Do not turn "SAW MOTOR" switch on.**

Insert yellow key into "MASTER" switch and turn "ON".

Press **ELEV** key.

Press **REF SET** key. Display will show

Press and hold jog key to raise arm about 4".

Release key.

Turn master switch "OFF".

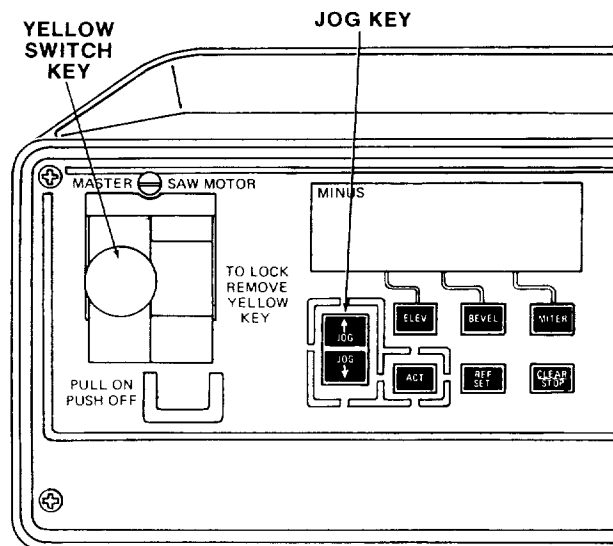
Remove yellow key.

Unplug saw from power source.

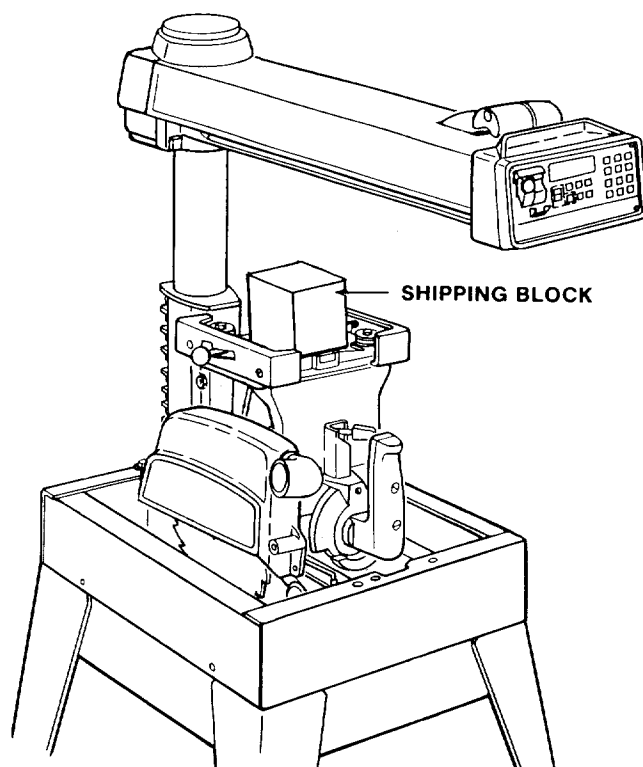
**NOTE:** Anytime power to the saw is interrupted it will be necessary to reset the computer. This is done by turning the "master" switch "on" and pressing

the **ELEV** key. If this step is not done, the display

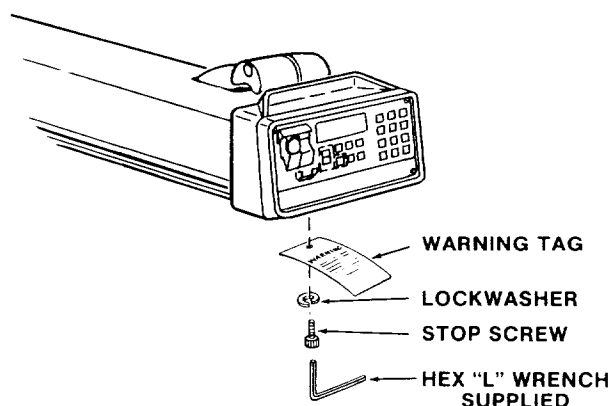
may momentarily flash, even with the "master" switch "off". This flash of the display in no way affects the operation of the saw.



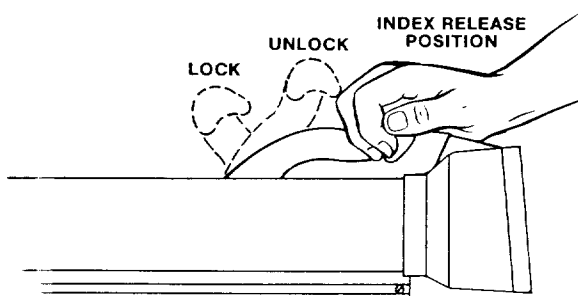
Remove shipping block and discard.



**REMOVE CARRIAGE STOP SCREW, LOCK-WASHER AND TAG.** Read and understand warning tag before discarding.



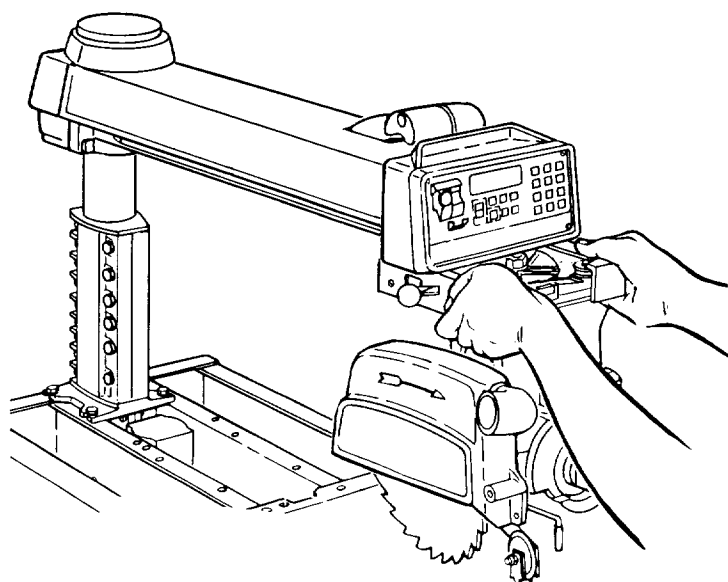
## LOCK ARM BEFORE PROCEEDING



HOLDING CARRIAGE ASSEMBLY WITH BOTH HANDS, CAREFULLY START AND SLIDE THE CARRIAGE ONTO THE TRACKS. The assembly must be held parallel with the arm so that all four bearings slide smoothly onto the track, preventing any excessive strain on bearings and track.

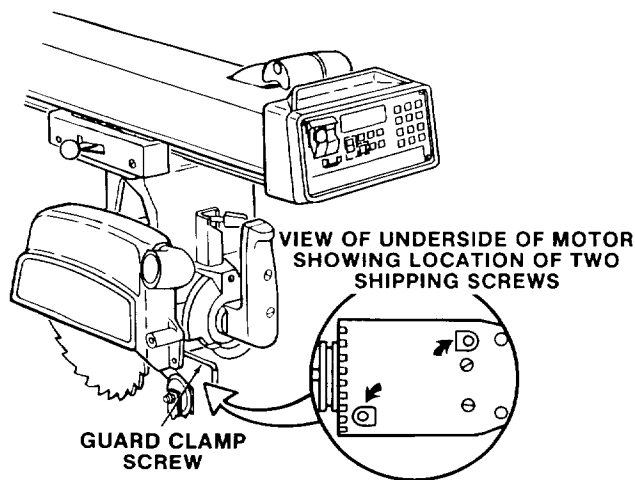
**WARNING: REINSTALL CARRIAGE STOP SCREW AND LOCKWASHER TO PREVENT CARRIAGE FROM ROLLING OFF ARM.**

Check for looseness of carriage bearings. Refer to "Adjusting Carriage Bearings" in "Adjustments to Compensate for Wear" Section, page 38.



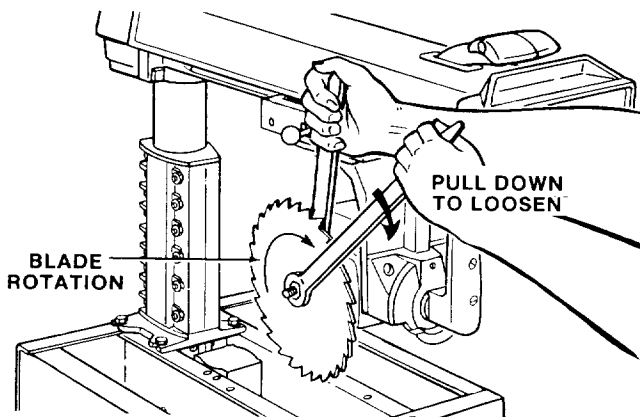
### REMOVE SHIPPING SCREWS FROM BOTTOM SIDE OF MOTOR AND DISCARD.

Use of pliers may be necessary.



### REMOVE SAW BLADE

1. Tighten carriage lock knob.
2. Loosen guard clamp screw, remove guard.
3. Motor shaft has left hand threads. Hold shaft wrench and rotate arbor wrench down (clockwise).
4. Remove shaft nut, outer collar, saw blade, and inner collar. Set aside and out of the way.



## ALIGNMENT PROCEDURE

### IMPORTANT:

**IN ORDER TO OBTAIN MAXIMUM CUTTING ACCURACY, THE FOLLOWING SIX STEPS MUST BE CAREFULLY FOLLOWED. BECOME THOROUGHLY FAMILIAR WITH THESE STEPS SO THAT YOU CAN ALWAYS MAINTAIN YOUR SAW IN PROPER ALIGNMENT. THE ACCURACY OF EACH ADJUSTMENT IS ALWAYS DEPENDENT UPON THE ACCURACY OF THE PRECEDING ADJUSTMENT.**

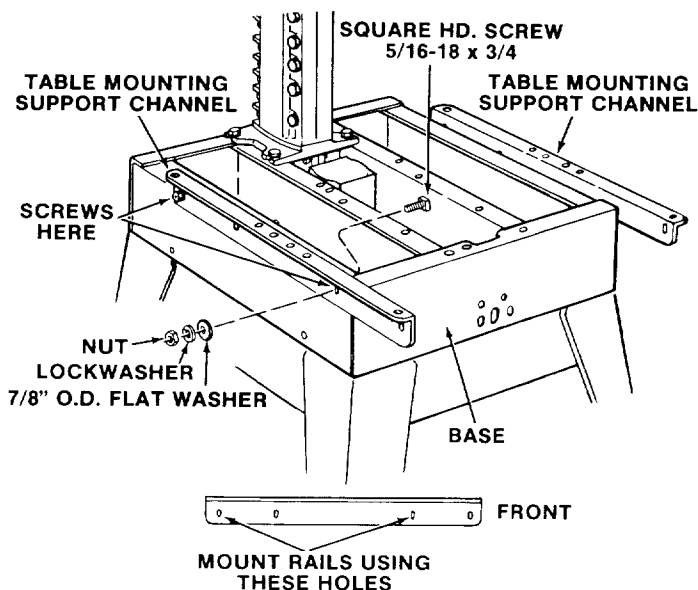
After following the 6 step assembly alignment procedure and the Basic Saw operation section refer to Trouble Shooting section if any difficulty is experienced when performing any sawing operation.

#### STEP ONE

**NOTE:** The following adjustment, performed properly, will result in the work table being parallel to the arm.




#### ATTACHING AND LEVELING TABLE MOUNTING SUPPORT CHANNELS

1. Attach table mounting support channels with four square head 5/16-18 x 3/4 screws, lockwashers and flat washers and nuts. POSITION SCREWS IN CENTER OF CHANNEL SLOTS, finger tighten to permit channels to "slip" against the base when leveling.

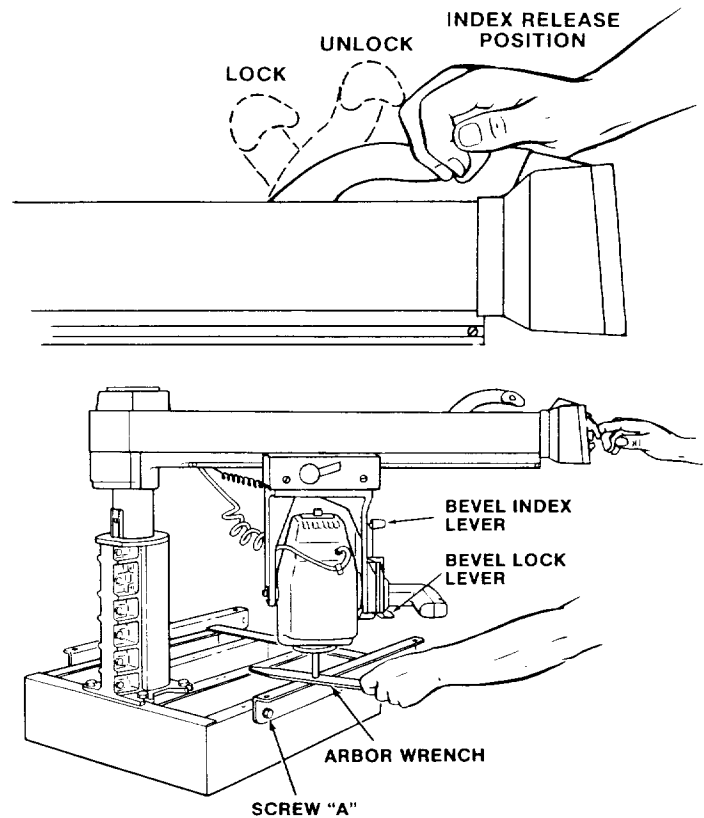


2. Release bevel lock lever, move bevel index lever to the left and rotate the motor to position saw blade end of shaft down. Lock bevel lock lever.
3. Unlock and hold arm control lever in index release position as shown. Position arm against left stop (approximately 50° miter). Loosen carriage lock knob and position carriage directly over left hand channel.

**NOTE:** For safety reasons stops have been provided to prevent 360° rotation of the radial arm.

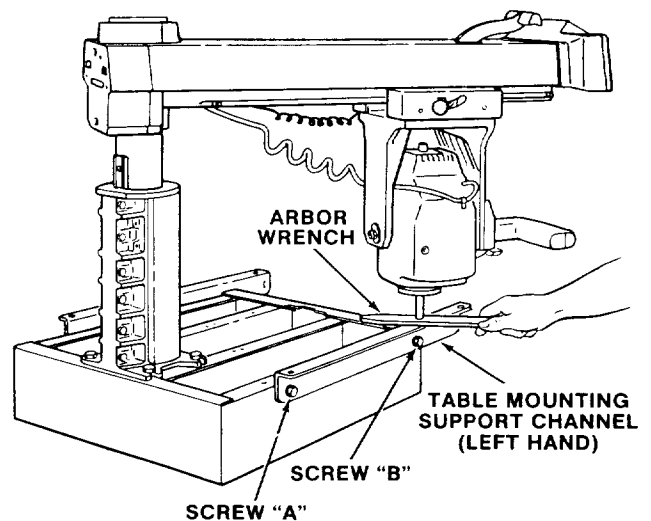
4. Plug saw into power source.
5. Insert yellow key into master switch and turn "ON".
6. Press  key.
7. Press and hold  key to lower the motor to where the end of the shaft is approximately 1/4" above the channel.
8. Slide the arbor wrench handle between end of motor shaft and mounting channel to act as a feeler gauge. Carefully lower the motor using  key until the end of shaft is just touching the arbor wrench. The wrench should slide back and forth with only slight resistance. Tighten screw "A". Turn master switch "OFF" and remove yellow key.

**NOTE:** Do not change this elevation setting until



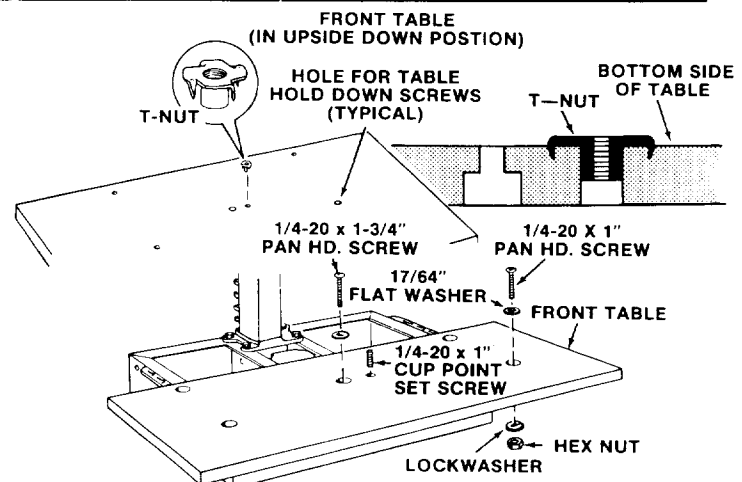
both left and right hand table support channels have been adjusted.

9. Move arm and carriage to screw "B" and adjust table mounting channel to where the arbor wrench slides back and forth between the channel and the arbor shaft. Tighten screw "B".
10. Without changing elevation, move arm and carriage to right hand support channel and level in the same manner you adjusted the left hand support channel.
11. Recheck both support channels to make sure that tightening screws did not affect the accuracy of the adjustment.
12. Release bevel lock lever, move bevel index lever to the left and rotate the motor back to the 0° bevel position. Lock bevel lock lever.



## INSTALLATION OF FRONT (WORK) TABLE

1. Place front table board upside down on a workbench or on the floor. Drive T-nut into the hole that is not counterbored.
2. Align the counterbored holes with matching holes in support channels. Install the five 17/64 inch flat washers, and four 1/4 - 20 x 1 inch Pan-Head machine screws. Just barely start the cup point set screw and the one (1) 1/4 - 20 x 1-3/4 inch Pan Head machine screw in table center holes.
3. Install one 1/4 lockwasher and Hex Nut on each of the four (4) screws in the support channels and tighten.

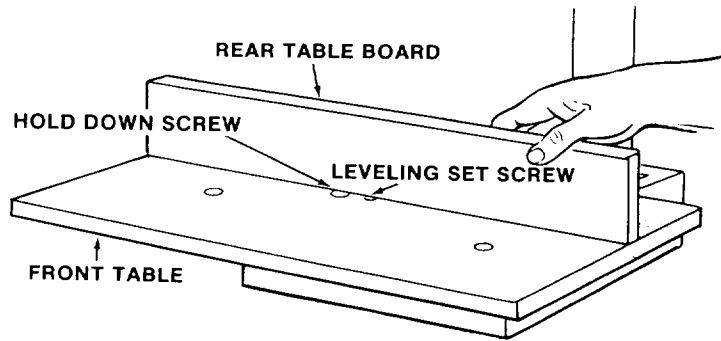


4. Lay the rear table board on edge across the front table to serve as a straightedge. Sight under this straightedge to determine whether the front table board is high or low at its center.

5. If the front table is high at center, first tighten the center (1/4 - 20 x 1-3/4 inch) hold down screw until the table is level - then tighten the leveling screw until this screw is snug.

If table is low at center, first tighten the leveling screw until the table is level - then tighten the hold down screw.

If table is not high or low, tighten leveling screw and center hold down screw snug.



## STEP TWO

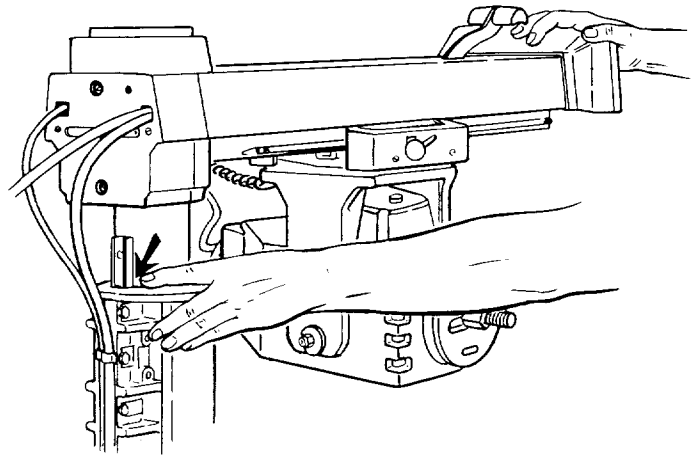
### ADJUSTING COLUMN TUBE IN COLUMN SUPPORT

**NOTE:** The following adjustment is very CRITICAL. All future alignment procedures rely on this adjustment being performed correctly. ALL LOOSENESS MUST BE REMOVED.

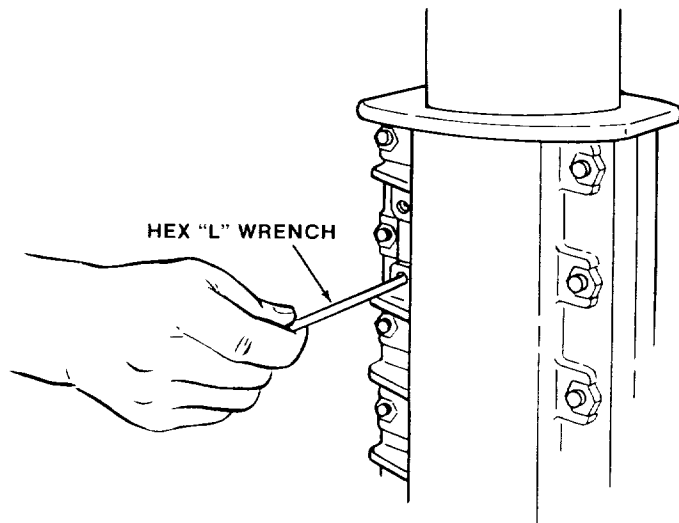
1. Index and lock arm at 0° Miter.

While holding the arm with one hand, hold fingers of other hand as shown, between column tube and column support. Apply **gentle** side pressure to the arm in opposing directions. Any side to side or rotational movement (indicated by arrow) can be felt with finger.

If looseness exists the following adjustments are required.



2. Loosen (2) 1/4-20 Gib set screws on the left side at the rear of column support.

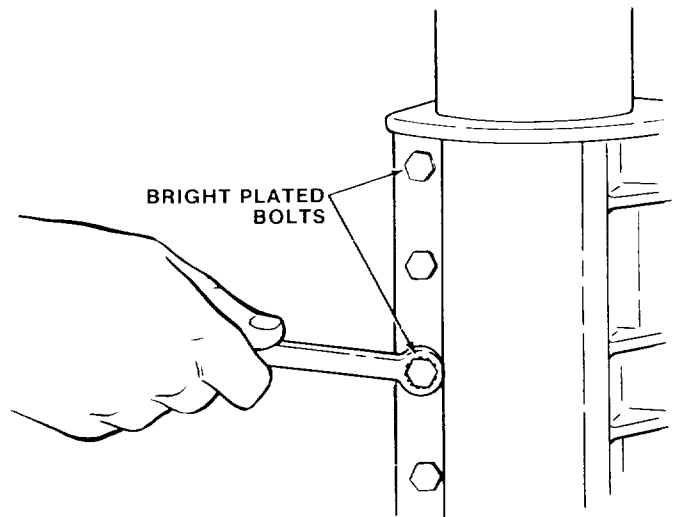


**NOTE: THE FOLLOWING ADJUSTMENT, IF COMPLETED IMPROPERLY MAY CAUSE ELEVATION MOTOR TO JAM. CARE SHOULD BE TAKEN TO ASSURE PROPER ADJUSTMENTS**

3. Insert yellow key and turn master switch "ON". Elevate, and then lower the Arm by pressing jog buttons: (a) if the column binds and elevation is difficult, slightly loosen two 5/16-18 plated bolts on front side of the column support until you achieve smooth elevation. (b) If the column moves side-to-side within the column support, tighten the two 5/16-18 plated bolts until movement disappears - elevation should be smooth and firm.

**CAUTION: Overtightening may cause the column to bind to the point where the elevation motor will not easily raise the arm and/or will jam.**

4. Now tighten the (2) 1/4-20 Gib set screws until no noticeable rotational play exists between Column Tube and Column Support.
5. Recheck elevation and re-adjust if necessary.

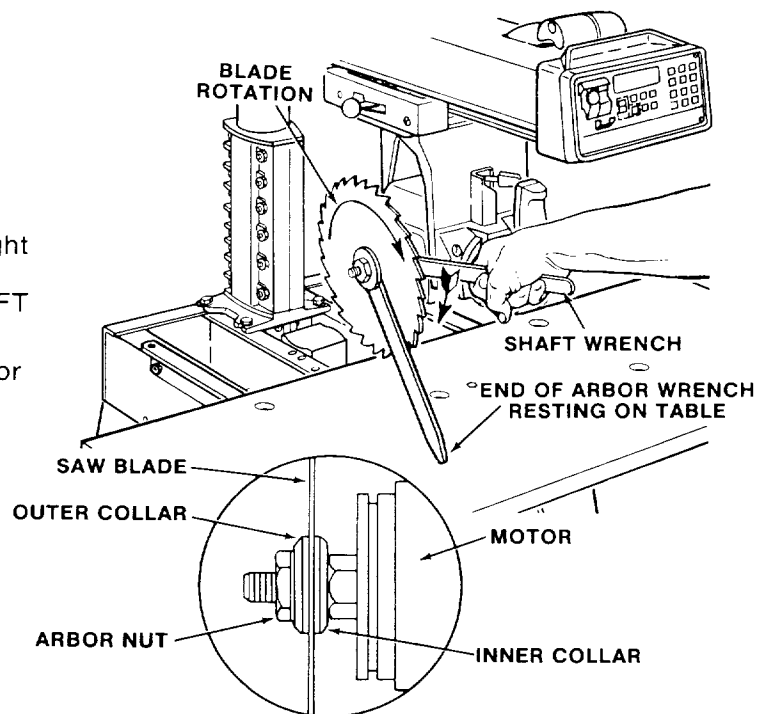


### STEP THREE

#### SQUARING CROSS CUT TRAVEL (CARRIAGE TRAVELS IN A STRAIGHT LINE).

1. Index but do not lock arm at 0° miter (arm straight ahead).
2. Install saw blade as shown. Motor shaft has LEFT HAND threads.

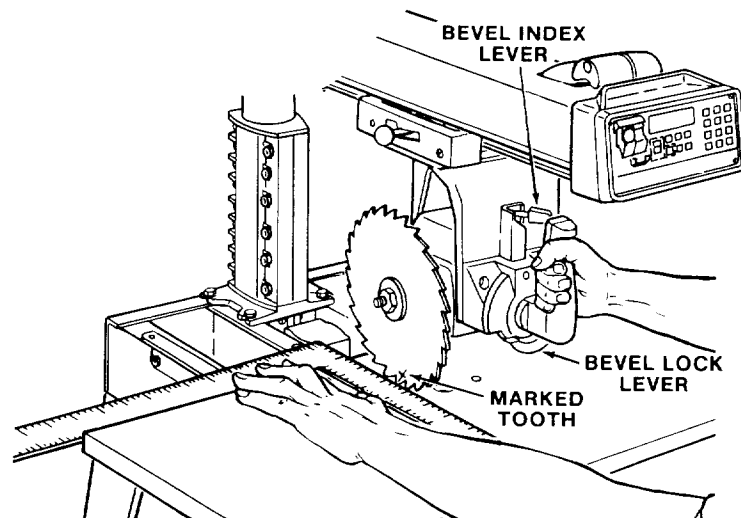
**NOTE:** Do not overtighten arbor nut. Use the arbor wrench to just "snug" it.



3. Turn master switch on and press ELEV key.
4. Press jog button JOG  
↓ to lower arm until saw blade just clears the front table. Lock the yoke clamp handle and bevel lock lever.
5. Turn master switch off and remove yellow key.
6. Place a framing square on the table as shown and position the blade and square until the leg of the square just contacts a tooth of the blade. Mark this tooth

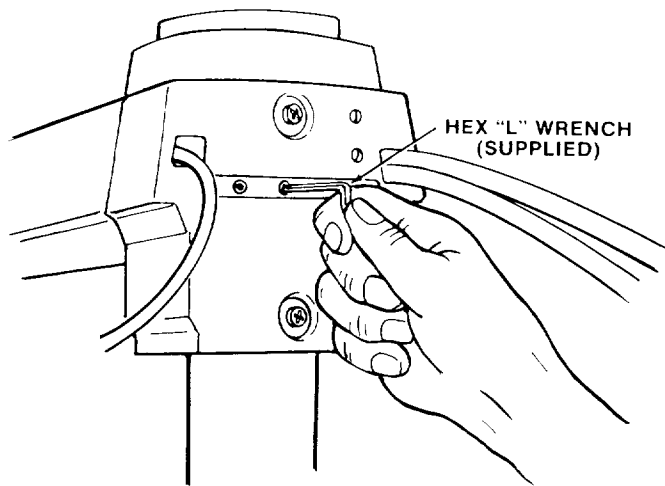
**NOTE:** The framing (or combination) square must be "true" - see start of "Assembly and Alignment" section on page 8 for checking method.

7. When the carriage is moved back and forth on the arm the marked tooth should just touch the square at all points. If marked tooth moves into square or away from square the following adjustments are required.



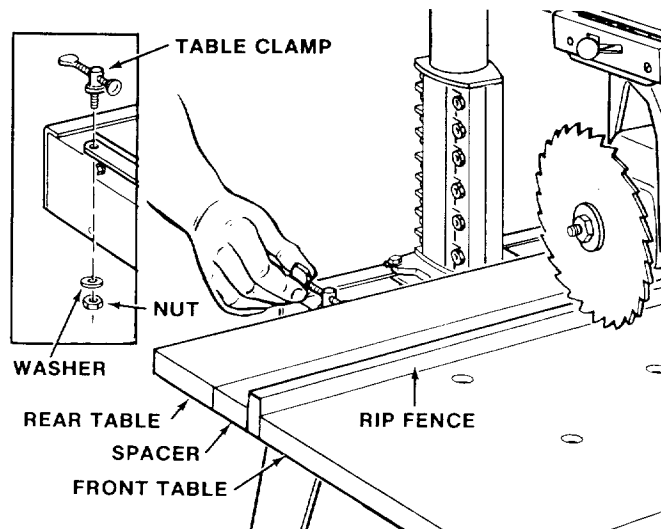
- a. Loosen (3) 3/8-16 set screws in arm latch at rear of arm.
- b. Move the arm in proper direction to make marked tooth follow edge of square when the saw blade is moved along arm in a "cross cut" manner.
- c. Lock arm control lever.
- d. **RETIGHTEN** (3) setscrews in arm latch as tight as possible and recheck "cross cut" travel.

**NOTE:** This squaring of the cross cut travel will simultaneously set **BOTH** of the 45° miter index positions.



8. Install the two table clamps in the holes provided for them at the rear of the table mounting support channels, and tighten them securely.
9. Position the rip (guide) fence, spacer board and rear table board behind the front table board as shown.

**NOTE:** The life of your saw table will be lengthened considerably if you will cover the front table with a fitted piece of 1/4 inch plywood. This should be tacked in place for easy replacement. Use of such a cover will allow you to do all cutting into the cover, rather than your table top.

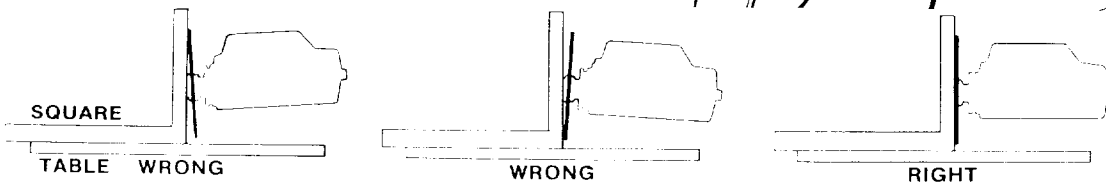
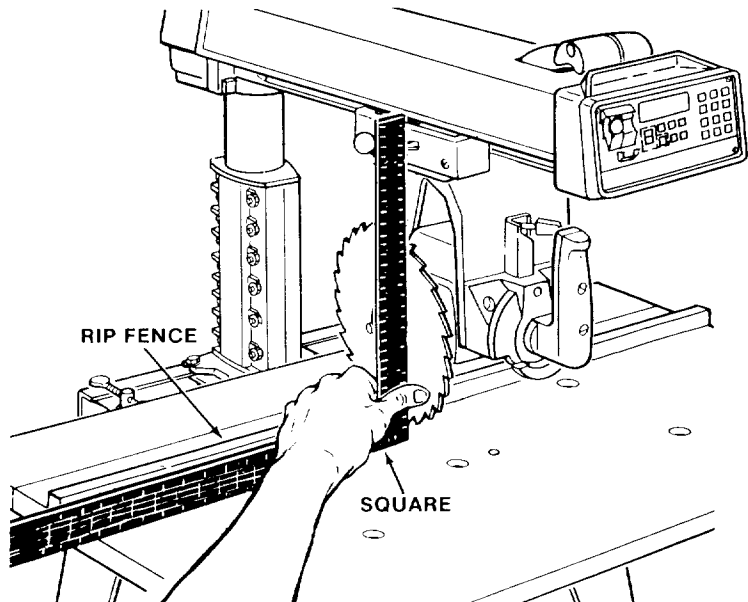


## STEP FOUR



### SQUARING SAW BLADE TO (WORK) TABLE

**NOTE:** If alignment procedure step one was not performed this adjustment cannot be accomplished.

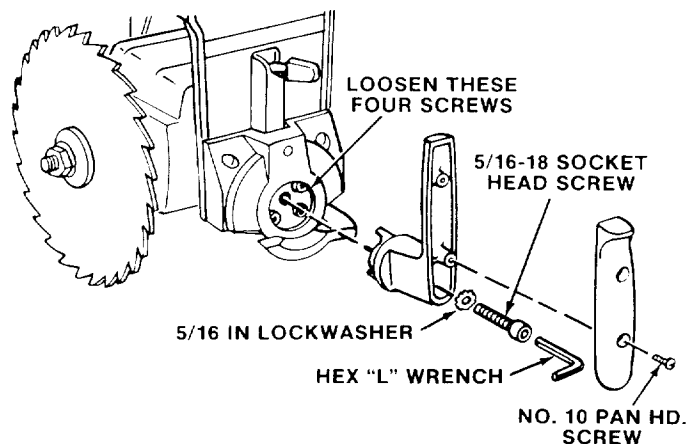
1. Place a framing square on the table with the short leg against the saw blade. Do not allow the square to rest against a "set-out" tooth; it must rest flat against the blade side.
2. If the saw blade is square with the table top (no visible gap appears between the saw blade and square) no adjustment is required. If the square does not touch the saw blade as shown (with square leg held firmly against the table top), perform the following adjustments:





**NOTE:** It may be necessary to raise arm slightly to obtain clearance for adjustment. Install yellow key into MASTER switch and turn "ON". Press  key then use  key to raise arm approximately 1/4". Turn "OFF" and remove key.

- Tighten carriage lock knob.
- Remove handle cover by removing two #10 Pan Head Screws. Remove handle by removing 5/16 -18 socket head screw and lockwasher.
- Loosen the four socket head screws with 5/32" Hex "L" Wrench. Rotate motor while holding square firmly against blade and table top.
- Slightly tighten each of the four screws and recheck . . . Now tighten each screw tight.
- Reinstall handle.
- Loosen carriage lock knob.

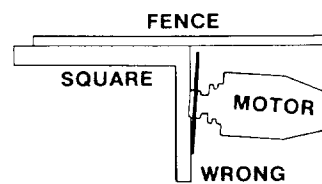
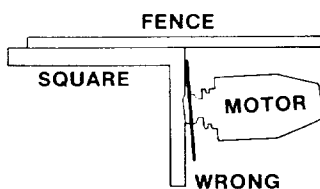
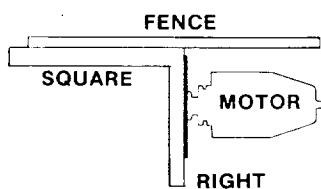
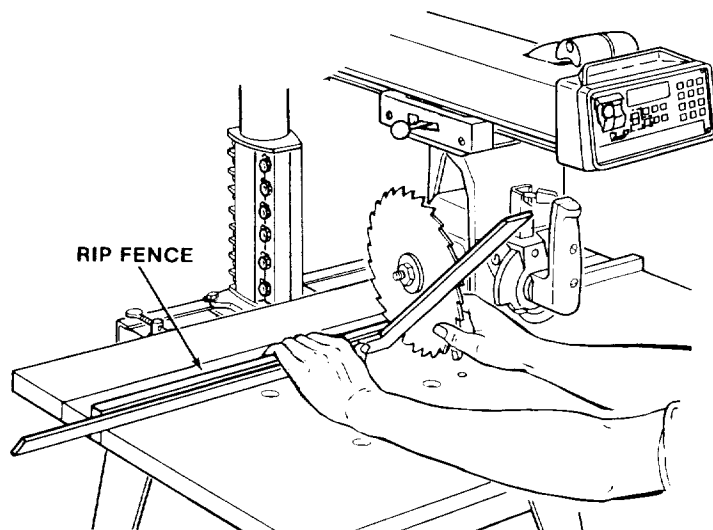


## STEP FIVE

### SQUARING BLADE TO RIP (GUIDE) FENCE — BLADE HEEL ADJUSTMENT

**NOTE:** If alignment procedure steps two and four were not performed, this alignment step cannot be accomplished.

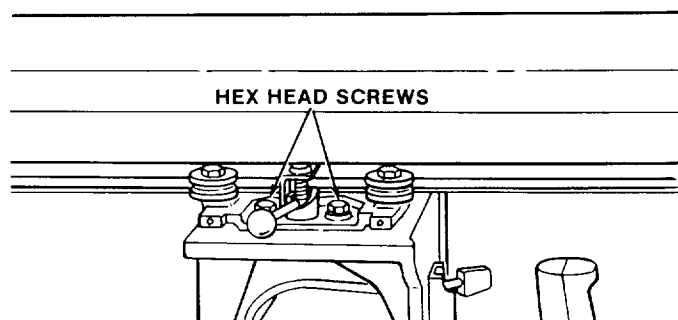
- Position carriage near front of arm as shown and tighten carriage lock knob. Place a framing square against the rip fence and the saw blade, as shown. The long leg of the square must be held firmly against both the fence and the table top, and the short leg must not touch any of the teeth on the saw blade. Check at several points of blade rotation.
- If the square does not touch the blade at both of the two points as shown, a heel condition exists.



- To correct "heel" condition proceed as follows:

- Remove left hand carriage cover.
- Loosen the yoke lock handle.
- Loosen (slightly) the two hex-head screws.
- Rotate the yoke assembly until gap between the saw blade and square is eliminated.
- Lock yoke lock handle and retighten the two hex-head screws.
- Recheck for "heel".
- Loosen carriage lock knob.

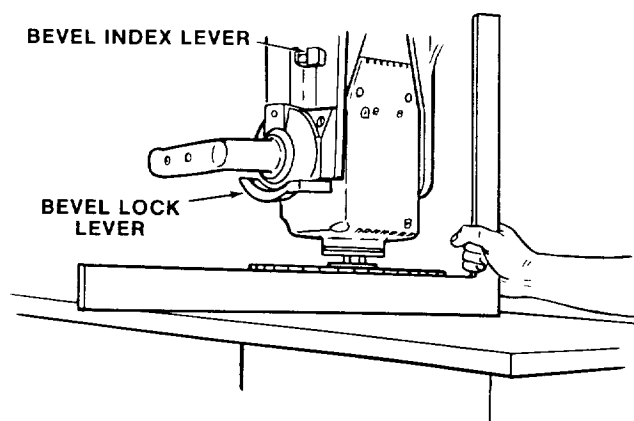
**NOTE:** This alignment procedure will simultaneously set both yoke indexing positions for blade in and out rip.



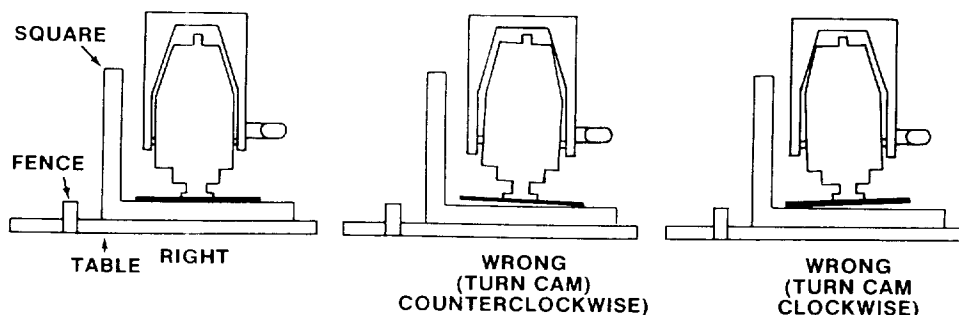
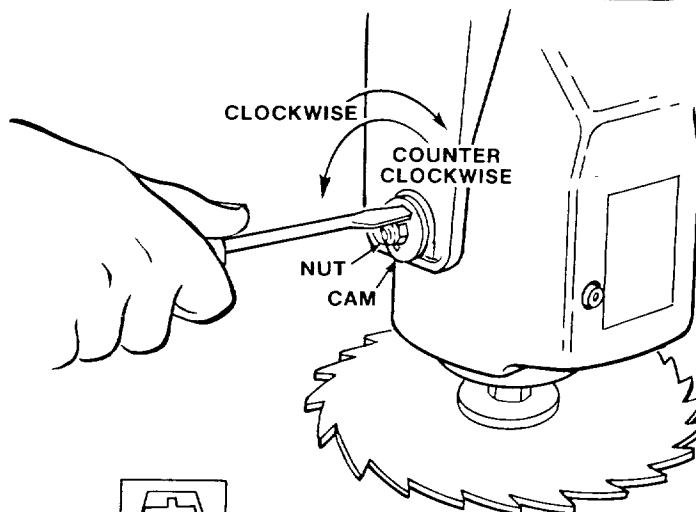
LEFT SIDE OF CARRIAGE

## VERTICAL HEEL ADJUSTMENT

1. Insert yellow key into MASTER switch and turn on. Press **ELEV** key, then press **JOG** key to elevate arm so motor can be rotated to a vertical position. (about 2 inches)
2. Release bevel lock lever and bevel index lever to rotate motor to a vertical position (blade horizontal) and check for heel. Make sure bevel lock lever is locked.
3. Position square perpendicular to fence and between blade and table, as shown use **JOG** and **JOG** keys to raise or lower the arm as required. Do not allow the square to rest against a "set-out" tooth., it must rest flat against blade side.



4. If the saw blade is parallel with the table (no visible gap appears between the saw and square), no adjustment is required.
5. If there is a visible gap between saw blade and square, a bevel heel condition exists and adjustment is required.
  - a. Turn master switch off and remove yellow key.
  - b. To correct, unlock bevel lock lever, loosen the rear motor mount 3/8-16 nut until you can rotate Cam, and then rotate Cam as shown until gap between saw blade and square is eliminated.
  - c. Tighten nut and bevel lock lever and recheck.
  - d. Reposition motor in crosscut position.

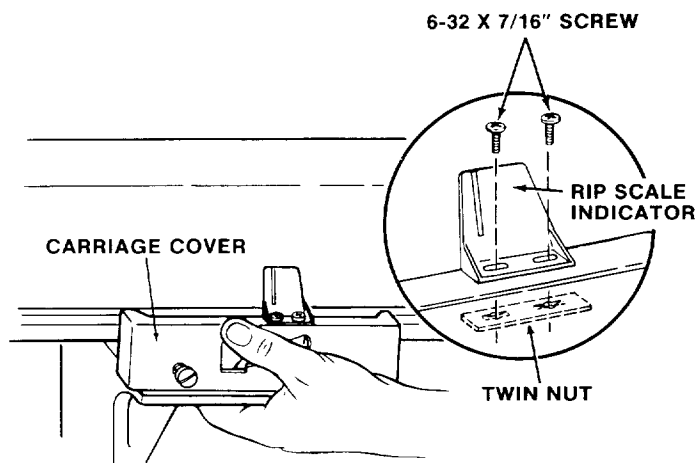


## STEP SIX

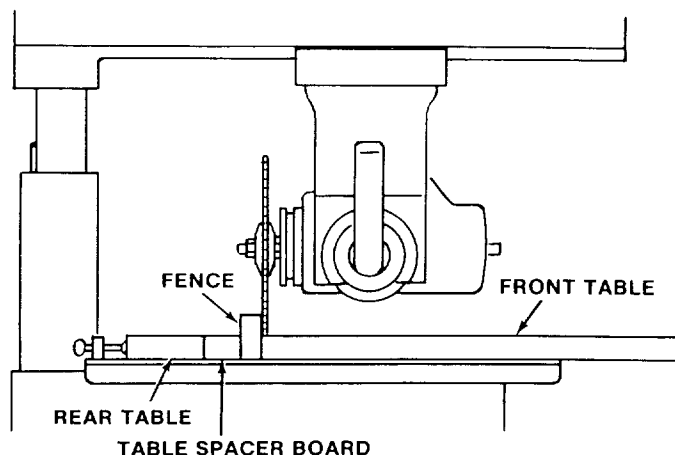
### INSTALLING AND ADJUSTING RIP SCALE INDICATORS.

**NOTE:** The rip scales and pointers are intended to be used for quick settings. For greater accuracy, take direct measurement between blade and fence.

1. Pre-assemble indicator and twin nut, loosen but do not remove the two screws which attach left hand carriage cover.
2. Tilt carriage cover and install rip indicator as shown. Tighten carriage attaching screws.
3. Loosen but do not remove carriage lock knob in right hand carriage cover. Install rip indicator in the same manner. Tighten carriage attaching screws.

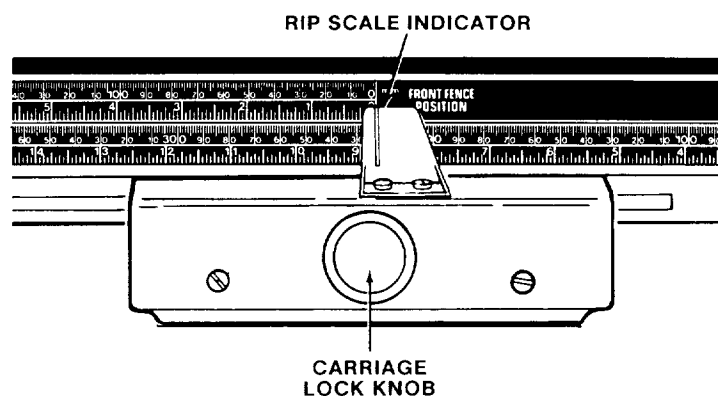


6. With the fence in its normal position (next to the front table), loosen the yoke lock handle, pull on yoke pivot latch knob and rotate the yoke as shown to index the yoke 90° from the cross cut position. This will locate the saw blade between the motor and the fence. Lock the yoke by tightening the yoke lock handle.



7. Position carriage until the edge of the blade, when spun by hand, just touches the front face of the fence. The rip-scale indicator (on the right hand side of radial arm) should now read "0" inches on upper portion of the blade "In-Rip" scale. If not, loosen the two screws and slide the indicator to line up with the "O" mark. Retighten screws.

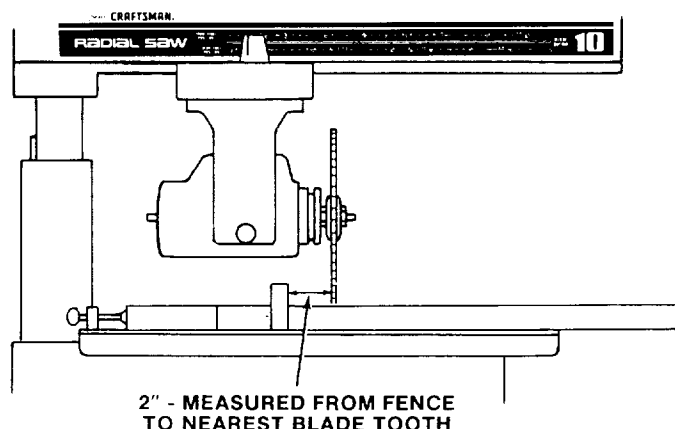
**NOTE:** With the saw blade and fence in the position shown, the upper portion of the blade "In-Rip" scale is used. If the fence is re-located at the extreme rear position, the lower portion of the "In-Rip" scale would be used.



8. The blade "Out-Rip" scale indicator on the left hand side of the radial arm is adjusted in essentially the same manner as the blade "In-Rip" indicator, except the blade should be as shown. With 2 inches measured between the fence and the face of saw blade, the rip-scale indicator should be positioned to read 2 inches on the upper portion of the blade "Out-Rip" scale.

**NOTE:** With the saw blade and fence in the position shown, the upper portion of the blade "Out-Rip" scale is used. If the fence is moved to rear position (at the rear of rear table) the lower portion of the blade "Out-Rip" scale is used.

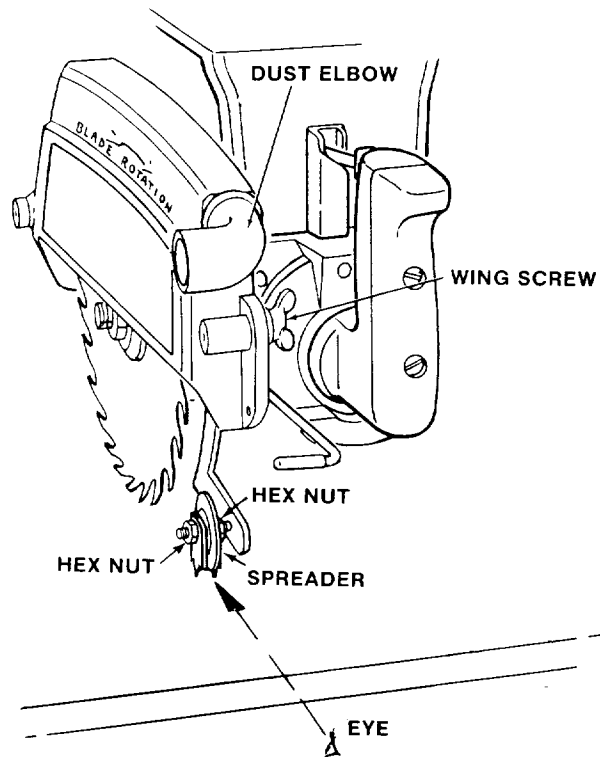
9. Loosen the yoke lock handle, pull on the yoke pivot latch knob and return the blade to the 90° position.



## ALIGNMENT OF SPREADER FOR RIPPING

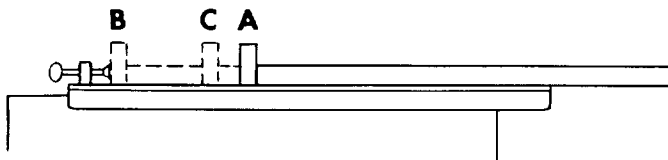
**WARNING: NEVER POSITION THE GUARD OR ANTIKICKBACK ASSEMBLY WITH POWER ON. NEVER POSITION ANTIKICKBACK PAWLS BY GRASPING PAWLS OR SPREADER**

1. Install Blade Guard and Dust Elbow.
2. Lower the spreader assembly by loosening the wing screw and sight (visually) to check for proper alignment of spreader with the sawblade as shown. If the spreader is not aligned, adjust it as follows:
  - (a) Loosen two hex nuts, one on each side of spreader.
  - (b) Rotate hex nuts with 1/2" wrench until the spreader is directly in line with saw blade.
  - (c) Retighten the assembly by holding one nut and tightening the other.



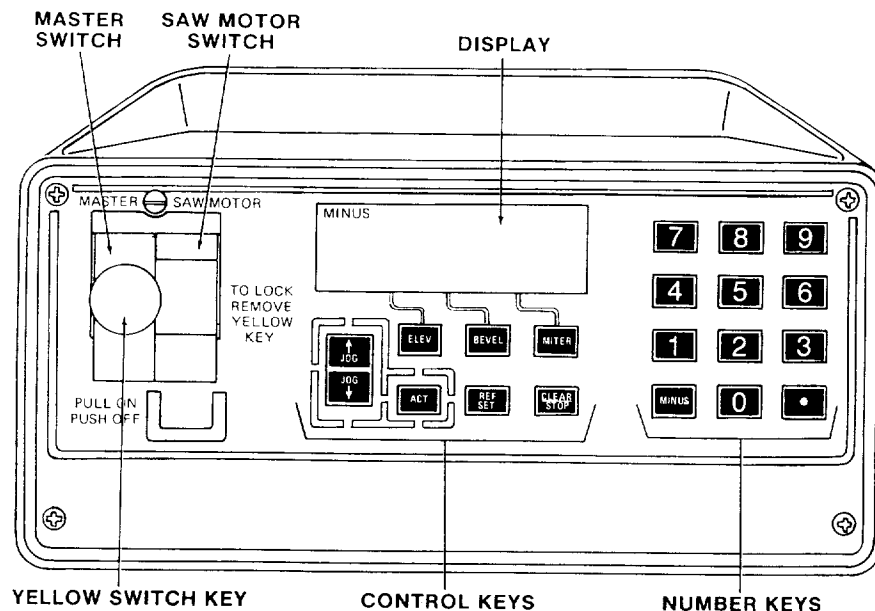
## FENCE LOCATIONS

Position (A) is used for most cutoff and narrow ripping operations. Position (B) is used for maximum width ripping. Position (C) is used to achieve maximum crosscut capacity in thin work.



# getting to know your saw

## LOCATION AND FUNCTION OF ELECTRONIC CONTROLS



### MASTER SWITCH

**CAUTION:** Before turning switch on, make sure the blade guard is correctly installed and operating properly.

This is the power on-off switch for the computer's display and keyboard functions. (The computer's memory has constant power as long as saw is plugged into a 120V live power supply.) Turning this switch off will shut off power to the saw motor as well as the computer functions.

#### To turn switch on:

Insert yellow key.

Insert finger under bottom of lever and pull out.

#### To turn switch off:

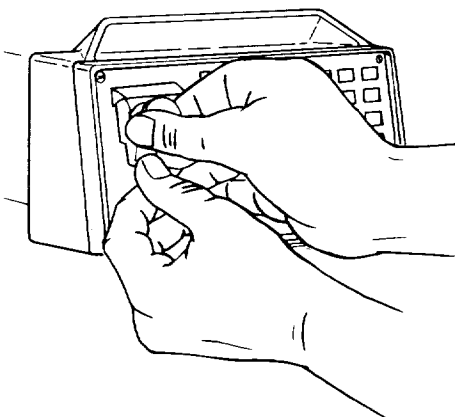
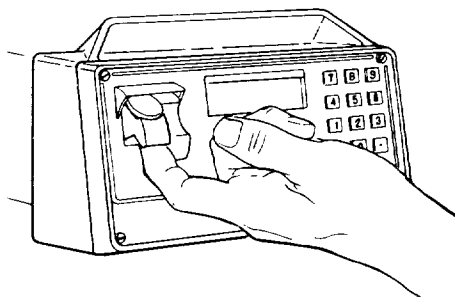
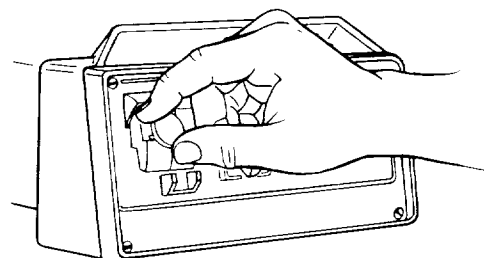
Push lever in.

#### To lock switch:

Hold lever in with one hand while removing yellow key with the other hand.

**WARNING: THIS LOCKING FEATURE IS PROVIDED TO PREVENT UNAUTHORIZED USE OF YOUR SAW. ALWAYS REMOVE THE KEY AND KEEP IT IN A SAFE PLACE. TO REMOVE KEY, HOLD THUMB ON END OF LEVER TO KEEP SWITCH IN "OFF" POSITION AND PULL KEY STRAIGHT OUT.**


**WARNING: FOR YOUR OWN SAFETY ALWAYS LOCK THE SWITCH "OFF" WHEN SAW IS NOT IN USE. REMOVE KEY AND KEEP IT IN A SAFE PLACE . . . ALSO IN THE EVENT OF A POWER FAILURE (ALL YOUR LIGHTS GO OUT) TURN SWITCH OFF. LOCK IT AND REMOVE THE KEY. THIS WILL PREVENT THE SAW FROM STARTING UP AGAIN WHEN THE POWER COMES BACK ON.**



## 2. SAW MOTOR SWITCH:

This switch is used to turn the saw motor ON and OFF.

**NOTE:** Pushing OFF either the Saw Motor Switch or the Master Switch will shut off power to the saw motor.

**NOTE:** Only the  and JOG keys will work when the Saw Motor Switch is "ON". The elevation only is displayed as long as this switch is "ON".

Operation of this switch is the same as the Master Switch except for the yellow key.

After turning switch ON, always allow the blade to come up to full speed before cutting.


Do not cycle the motor switch on and off rapidly, as this may cause the sawblade to loosen. In the event this should ever occur, allow the sawblade to come to a complete stop and retighten the arbor nut normally, not excessively. Never leave the saw while the power is "ON".

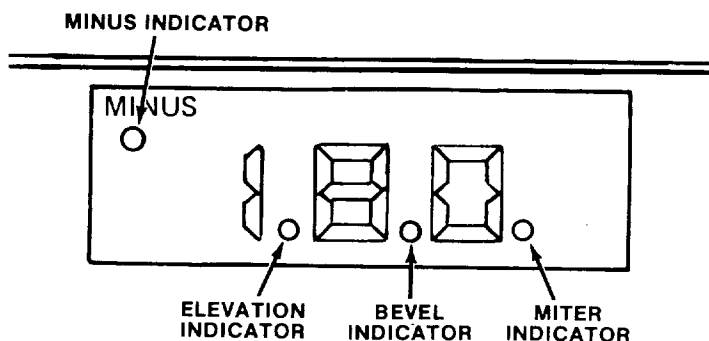
TO turn saw OFF . . . PUSH lever in. Never leave the saw until the cutting tool has come to a complete stop.

## 3. DISPLAY:

**NOTE:** Readout on display is in decimals. There is a conversion chart for converting fractions to decimals on page 55 of this manual.

The display gives the user three pieces of information:

1. The decimal point shows what function, either **ELEV**, **BEVEL**, or **MITER** is being displayed.
2. The numbers show the present position of the blade, or the desired destination when entering a programmed operation.
3. The minus indicator in the upper left hand corner lights when the displayed number is negative (less than the "zero" position) or when the minus key is pressed after a number is entered in .





## 4. CONTROL KEYS



The two rows of keys directly under the display are the control keys. They are how to tell the computer what you want it to do.

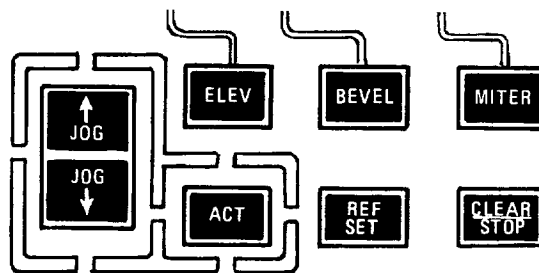
- A. Jog key is a rocker type switch that when pushed up and held in causes the blade to elevate when in ELEV. The motion is the opposite when the key is pushed down and held in.


When the jog key is pressed and immediately released it will cause the blade to change elevation by .005". This "tapping" of the jog key can be repeated as many times as desired to move blade into position.


- B. Elevation, Bevel and Miter keys are used to select the desired function.


Pressing  will display current elevation and cause any programmed or jogging operation to be performed in the elevation mode. A lighted decimal above  indicates that the elevation function is active.

The  and  keys will display the current position of the blade in the mode selected. A lighted decimal in the display above the key indicates which function is being read.



- C. The Actuate key,  when pressed, will start a programmed motion.

- D. The Reference Key  will set the display to a "zero" point other than at the table top, or when using a cutting tool less than 10 inches in diameter.

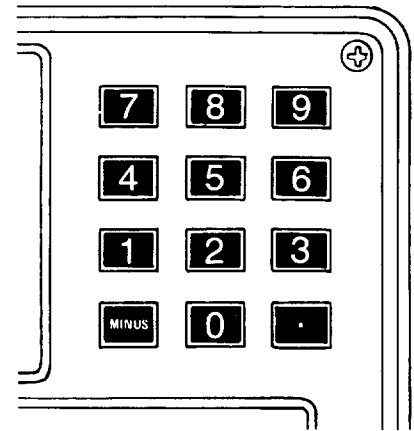
- E. The Clear/Stop key  will clear the display if an error is made in a programmed entry and return the display to the current position. This key will also stop a programmed motion once begun and clear the entered destination.

## 5. NUMBER KEYS:

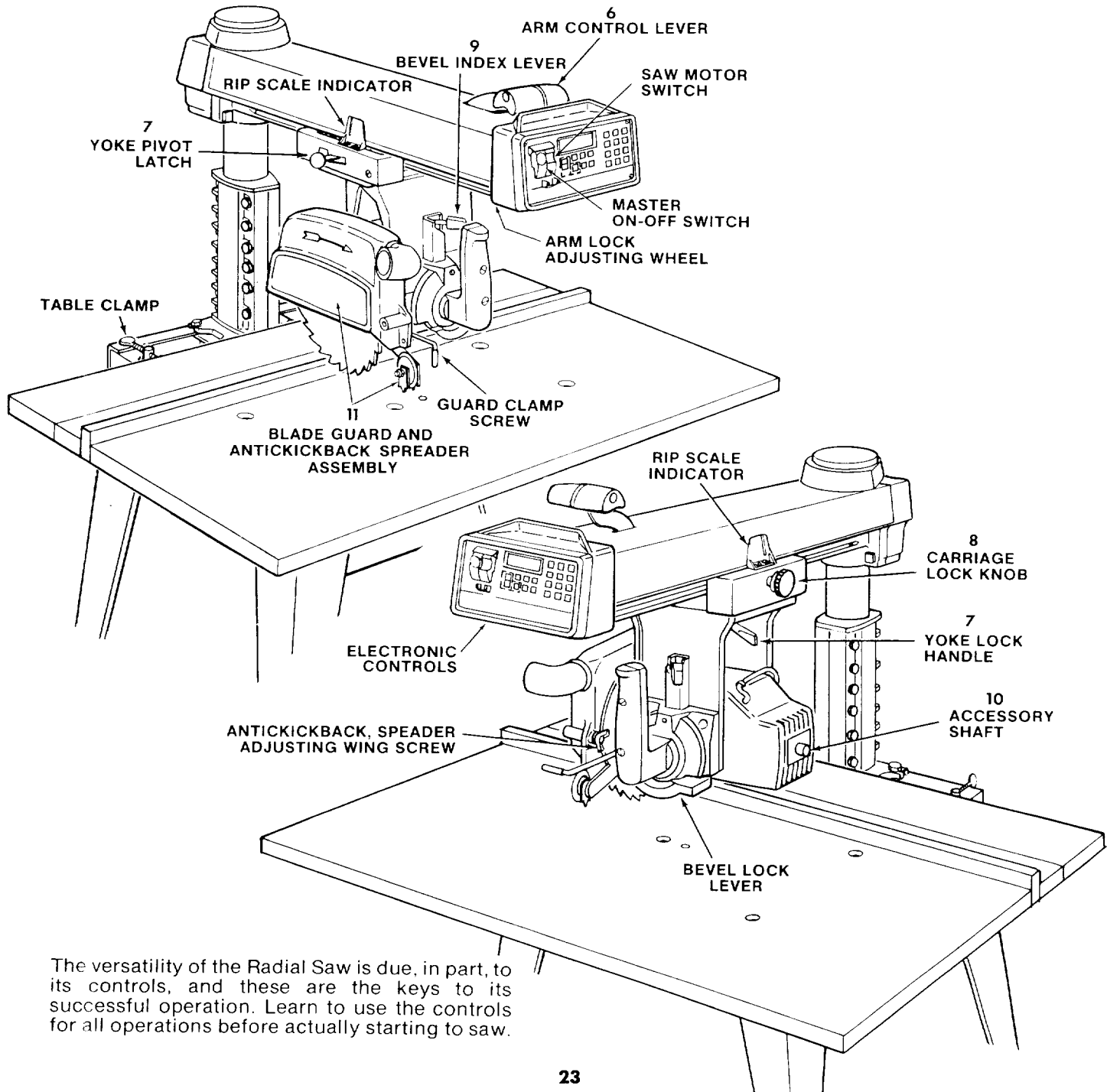
These keys include the number keys **0** through **9** and the decimal point and minus keys. The number keys are used to enter a destination for programmed motion. The decimal point is used when entering the decimal part of the number.

The **MINUS** key is pressed after the numbers are entered if a destination is desired below the "zero" location.

A lighted dot in the upper left hand corner of the display indicates "minus".



## LOCATION AND FUNCTION OF MECHANICAL CONTROLS



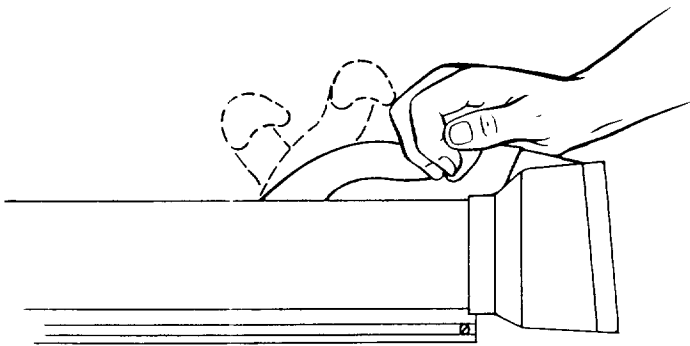
The versatility of the Radial Saw is due, in part, to its controls, and these are the keys to its successful operation. Learn to use the controls for all operations before actually starting to saw.

## 6. ANGLE OF CUT (MITER)

**Proper Indexing Method** - Experienced operators of woodworking equipment, such as this Craftsman Radial Saw, acquire the habit of indexing in one direction only, whenever a new setting is made in preparation for a different operation.

Example: When moving the arm to a miter index position move it slightly past the desired index position, then return to the index position carefully to index and lock. Yoke indexing and bevel indexing can be accomplished in a similar manner. This indexing technique tends to neutralize any stresses imparted upon saw components and contributes to the high degree of accuracy the saw is capable of producing when operated expertly.

- The arm control lever locks, unlocks and indexes the arm for Left and Right Miter cuts.
- The digital readout indicates the angular position of the arm from "0" to approximately 90° Right and "0" to approximately 50° Left.
- The radial arm has positive index positions at 0° and 45° Left and Right. The arm is rotated by pulling arm control lever to index release position. With arm control lever released the arm will automatically index 0° and 45° Left or Right. After positioning arm to the desired miter angle, push arm control lever to locked position.



## 7. YOKE PIVOT (RIPPING)

- Two controls are used in this operation. They are: the yoke pivot latch and the yoke lock handle.
- The pivot latch lever automatically indexes the yoke at each 90° position. Pull the spring-loaded yoke pivot latch forward to release the pin.
- The yoke lock handle locks the yoke to the carriage in any position. Pull the handle forward to release the yoke; push the handle rearward to secure the yoke.

## 8. CARRIAGE LOCK

- The carriage lock knob is rotated clockwise to lock the carriage on the radial arm, and counterclockwise to release it.
- When performing crosscutting operations the carriage lock knob must be rotated counterclockwise until the carriage is free to travel along the arm. This knob should be tightened until the operator is ready to grasp the bevel index handle and make a cut.

## 9. BLADE ANGLE (BEVEL)

- The two controls used in angular positioning and indexing of the motor, to provide the desired saw-blade (bevel) angle, are: bevel lock lever and bevel-index lever.
- The digital readout indicates the angular position of the motor with respect to horizontal, from 0° to 90° in either vertical position.
- The bevel index lever automatically indexes the motor at 0°, 45° and 90°. Move bevel index lever to the left while positioning the blade, then release it. At any other position it does not engage.
- The bevel lock lever locks the motor to the yoke when the motor is in any position. Pull lever to release and push to lock.

**WARNING: FOR YOUR OWN SAFETY ALWAYS LOCK THE MASTER SWITCH "OFF" WHEN SAW IS NOT IN USE. REMOVE KEY AND KEEP IT IN A SAFE PLACE . . . ALSO IN THE EVENT OF A POWER FAILURE (ALL YOUR LIGHTS GO OUT) TURN SWITCH OFF. LOCK IT AND REMOVE THE KEY THIS WILL PREVENT THE SAW FROM STARTING UP AGAIN WHEN THE POWER COMES BACK ON.**

## 10. ACCESSORY SHAFT

Use only the following recommended accessories:

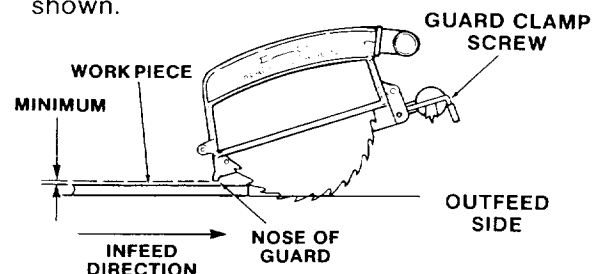
Drill Chuck or Sanding Drum.

**CAUTION: The sawblade, dado, or cutting tool must be removed from the saw arbor before using the accessory shaft. NEVER operate the saw with cutting tools (including sanding accessories) installed on both ends of the saw arbor.**

## 11. BLADE GUARD & ANTIKICKBACK/SPREADER ASSEMBLY — Positioning for Ripping

**WARNING: NEVER POSITION THE GUARD OR ANTIKICKBACK/SPREADER ASSEMBLY WITH THE SAW RUNNING. NEVER POSITION THE ANTIKICKBACK/SPREADER ASSEMBLY BY GRASPING THE PAWLS OR SPREADER; USE THE TAB LOCATED ON THE ANTIKICKBACK BAR.**

- The Blade Guard is positioned by loosening the guard clamp screw and rotating the guard so that the "nose" just clears the workpiece as shown.

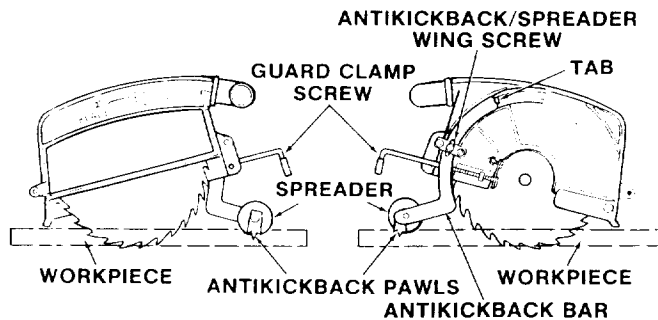


This adjustment is necessary to:

- Protect the operator from accidentally contacting the sawblade from the "infeed" direction.
- Prevent the workpiece from being lifted from the table by the sawblade thus minimizing lifting or fluttering (particularly with thin and/or light workpieces).



- 3) Minimize sawdust from being thrown toward the operator.
  - 4) Minimize the possibility of a thin pusher board from riding up on top of the workpiece leading to loss of control of the workpiece.
- B The antikickback and spreader assembly is used during ripping operations and is adjustable to accommodate the thickness of the board being ripped.



The antikickback and spreader assembly is positioned by loosening the wing screw and with the tab provided, positioning the antikickback and spreader assembly until the pawl assumes approximately the position shown above. Tighten the wing screw.

Make sure by trial— **without saw running** — before starting the cut that the antikickback pawls will stop a kickback once it has started. Insert workpiece alongside spreader under outer set of pawls by approaching pawls in the feed direction. Push workpiece sharply in the direction of a kickback (opposite to direction of feed). Readjust Pawls if they do not stop the kickback motion by biting into the workpiece.

These adjustments when properly made will:

#### Antikickback Pawls

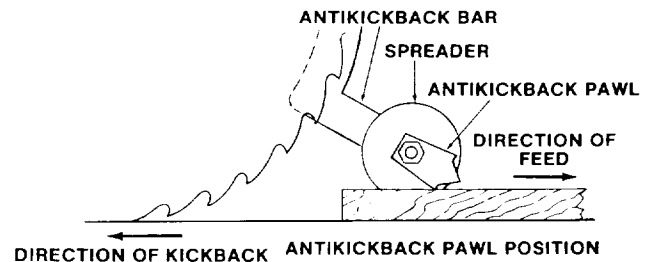
1. Stop a kickback if generated.

#### Spreader

1. Reduce possibility of kickback by preventing the kerf from closing on the sawblade.
2. Prevent "wrong-way feed". "Wrong-way feed" is feeding the workpiece - when the sawblade is in a rip position - into the out feed side of the cutting tool (sawblade, dado, molding head, etc.), the side containing the antikickback/spreader. This can be extremely hazardous because the sawblade may grab the workpiece and throw it violently toward the nose of the guard (infeed side of the tool). See DANGER label on the outfeed side of the guard just below the dust elbow.

"Wrong-way feed" differs from "kickback." A "kickback" is generated by the sides (one or both) of the teeth, because of binding between the fence (heel), pinching of the sides of the sawblade (failure to use spreader), a dull blade, and/or inadequate set of teeth of sawblade.

3. Act as a partial guard regarding accidental contact with the sawblade at the outfeed side when ripping, and the leading edge when crosscutting."




## CHECKING AND SETTING THE ANGLE ENCODERS




**NOTE:** The accuracy of readouts are dependent upon proper calibration of the angle encoders.

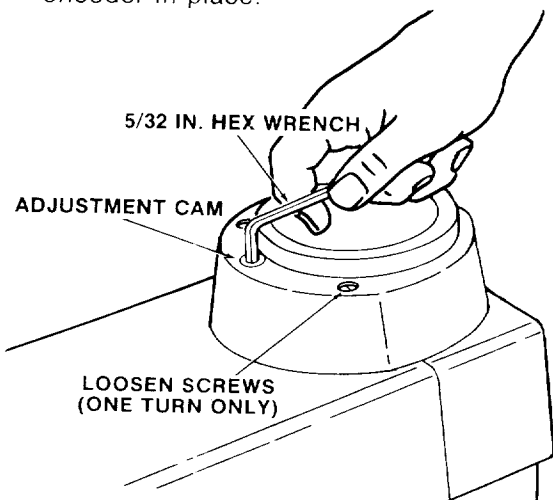
**NOTE:** The encoders-and thus the digital readout-for miter and bevel displays read from the miter or bevel index mechanisms. Thus, in order to obtain cutting accuracy in accord with the readout, it will be necessary to complete alignment steps three and four as indicated.

**NOTE:** Rotating the arm or motor rapidly may cause a loss of display. If this should happen, reindex arm

or motor at the 0° position, lock and push  key.




### CHECKING MITER ANGLE READOUT

1. Insert yellow key into master switch and turn "ON".
2. Press  key.
3. Make certain arm is indexed in to 90° cutoff position and arm control lever is in lock position.
4. Press  key.  will show on display.
5. Rotate arm by pulling arm control lever to index release position. Move arm 45° right index... arm will automatically index. Display should read "45.0".
6. Rotate arm 45° left index... arm will automatically index. Display should read "45.0".
7. If both left and right 45° index positions read correctly, no further adjustment is required. Return arm to 90° cutoff position and lock.
8. If the readings at both right and left index position are not 45.0, then adjust the miter angle encoder as follows:
  - a. Loosen **one turn** the two screws holding the encoder in place.



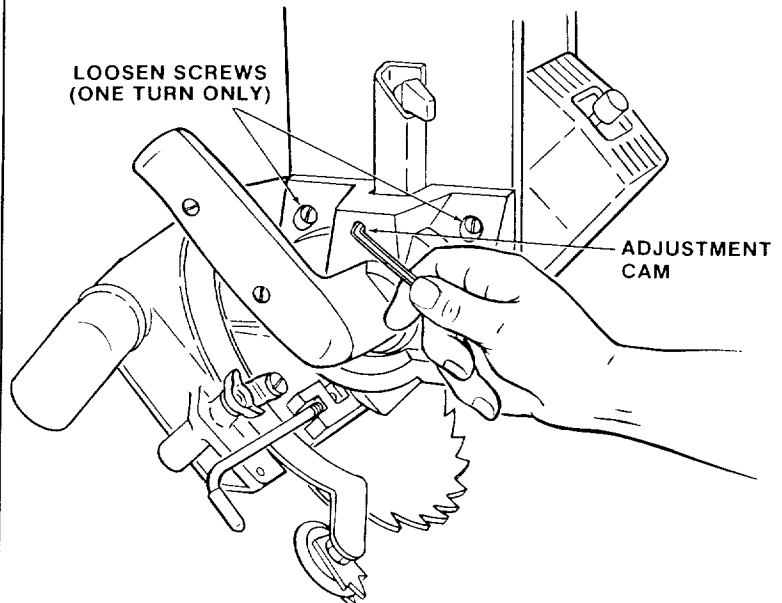
- b. Insert a 5/32" Hex L Wrench into the adjustment cam hole located in the top, front, center of the encoder.
- c. Index Arm to 45° Right Miter position. Rotate the adjustment cam until the display reads 45.0.
- d. Recheck readings at 0° and 45° left index positions.
- e. If readings are correct, tighten the two mounting screws.
- f. Recheck readings at all three index positions. Readjust as needed.


### CHECKING BEVEL ANGLE READOUT

1. Insert yellow key into master switch and turn "ON".
2. Press  key.
3. Make certain motor is in 0° bevel index position and bevel lock lever is locked.
4. Press  key and  will show on display.
5. Rotate motor by releasing bevel lock lever and bevel index lever. Rotate motor to 45° bevel...
 

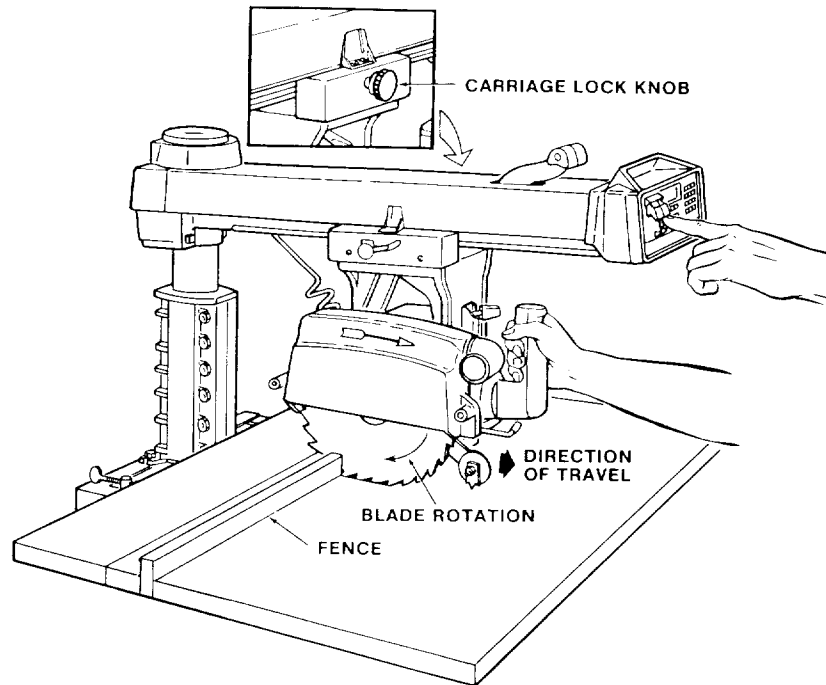
**NOTE:** It may be necessary to elevate blade in order to rotate motor to 45°.

Motor will automatically index. Lock bevel lock lever. Display should read "45.0".
6. If 45° bevel reads correctly, no further adjustment is required. Return motor to 0° bevel position.
7. If the reading at the 45° bevel index position is not "45.0", then adjust the bevel angle encoder according to the following instructions:
  - a. Loosen **one turn** the two screws holding the encoder to the Yoke.



- b. Insert the 5/32" Hex L Wrench into the adjustment cam hole located in the front, top face of the encoder.
- c. Index the Motor to the 45° bevel index position. Rotate the adjustment cam until the display reads 45.0.
- d. Recheck reading at 0° position (blade vertical).
- e. If reading is  then tighten two mounting screws.
- f. Recheck the readings at both index positions. Readjust as needed.

## CUTTING TABLE KERF



Before performing any sawing operations it will be necessary to make some cuts into the table. This "kerf" gives the blade clearance to cut completely through the workpiece. The sawblade should cut into the table approximately 1/32 inch (.03) to 1/16 inch (.06).

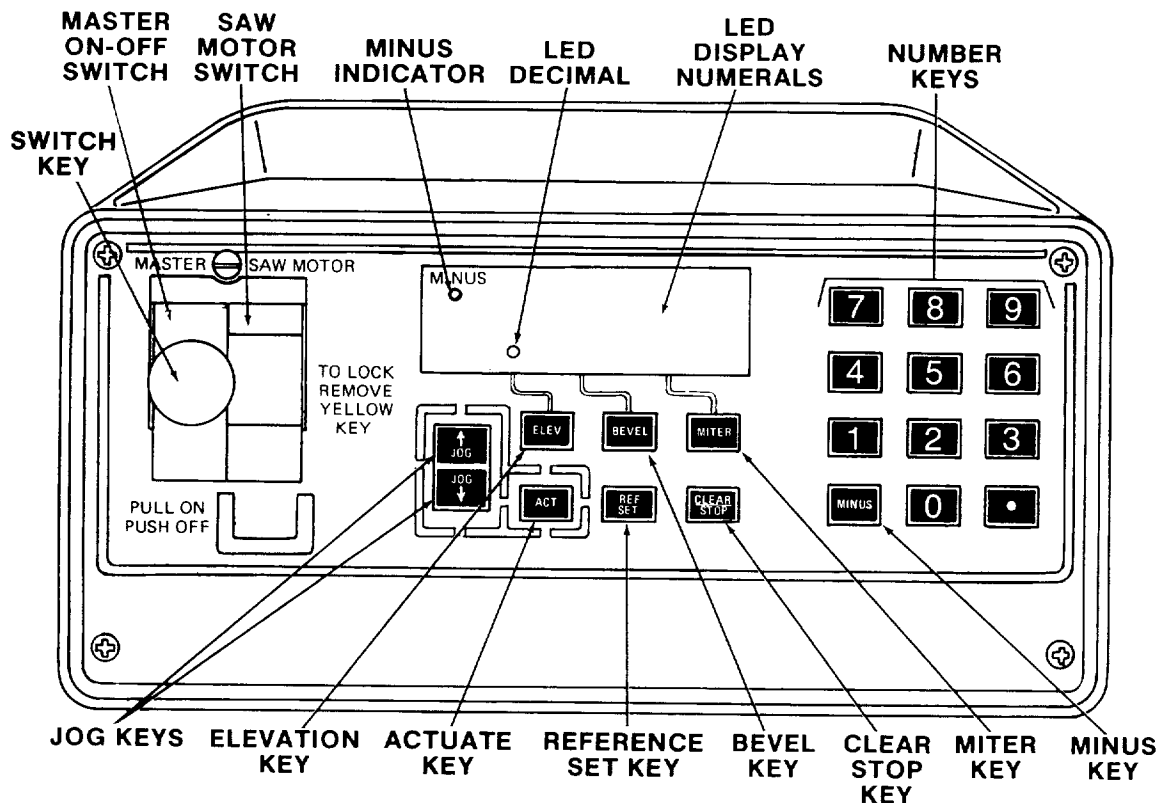
1. Position carriage to where sawblade is just in front of the fence and turn carriage lock knob to lock carriage.
2. Insert yellow key into master switch and turn "ON".
3. Press ELEV key. Press JOG key to lower the blade to where it is just above but not touching the table top.
4. Press the REF SET key to set display to 0.0000
5. Turn SAW MOTOR switch "ON" and allow blade to come up to speed.
6. With carriage still locked, press and release JOG key until blade has cut into the table between 1/32 and 1/16 inch (".03" to ".06" on the display)/ **NOTE:** The dot in the upper left corner of the display indicates a negative number.
7. While holding the Yoke Handle, release Carriage Lock Knob.
8. Pull the Yoke Handle forward to cut a kerf in the table board and then push back allowing the blade to cut a kerf through the fence and into the rear table boards.
9. Turn Motor Switch "OFF".
10. Turn Master Switch "OFF" and remove Yellow key.

**NOTE:** Anytime a new blade position is used in making a miter, bevel, or rip cut a kerf will have to be cut into the table using this procedure.

**NOTE:** If the arm of the saw is programmed to move down and jams to a stop, it will automatically reverse and elevate approximately 1-1/2 inches to relieve the jam.

**WARNING: SEVERE FORCES WILL OCCUR DURING A JAM. CHECK TO INSURE THAT NOTHING WILL BE TRAPPED UNDER THE ARM, BLADE OR MOTOR AS THE ARM MOVES DOWN. IF A JAM DOES OCCUR, RECHECK ALL ALIGNMENTS AND ADJUSTMENTS.**

# basic saw operations



Basic saw operations are summarized into six categories, explained and illustrated in the following paragraphs. A book entitled "Power Tool Know How Radial Saw" is available at your nearest Sears Retail Store or Catalog Store. This book contains considerable data applicable to the radial saw.

## BEFORE PERFORMING CUTTING OPERATIONS

**STEP 1** - Plug power cord into wall receptacle. Insert yellow key into master switch and turn "ON". Display shows flashing zeros.

**STEP 2** - Press **MITER** key. Display shows flashing decimal. Make certain arm is in the indexed 90° cut-off position and arm control lever is in lock position.

Press **REF SET** . Display shows

**STEP 3** - Press **BEVEL** key. Display shows flashing decimal. Make certain motor is in 0° bevel index and bevel lock lever is in lock position.

Press **REF SET** . Display shows

**STEP 4** - Press **ELEV** key. Display shows flashing decimal. Press jog keys to lower blade to where tip of teeth just barely touch the top of the table.

Press **REF SET** . Display shows

## REQUIREMENTS FOR OPERATIONS 1 THROUGH 4

Board held stationary against rip fence and laying flat on table top.

1. Arbor nut must be tight and saw blade guard installed in horizontal position.
2. Arm control lever must be in locked position.
3. Adjust the antikickback assembly so the pawls just clear the workpiece or the fence, whichever is higher.
4. Work must be held firmly against table and fence. For workpieces thicker than the fence is high, install a higher fence (at least workpiece thickness). Always place the fence in the most forward position (farthest from the column support) compatible with the workpiece being processed and the operation being performed. With the carriage fully retracted, the blade must not contact the workpiece when placed against the fence, within the stated capacities of your saw.
5. Blade should be sharp and correctly set.
6. Hands must be kept well away from saw blade.
7. Yoke lock handle must be in locked position.
8. Bevel index lever must be locked.
9. Blade should cut into the table 1/32 to 1/16 inch.
10. Saw should be pulled forward just far enough to sever the lumber and then returned to behind the fence. It is dangerous if the blade has been pulled too far out beyond the piece being cut. When it is returned it can pick up the right hand piece and throw it over the fence.
11. For operations No. 3 and No. 4, observe additional instructions under paragraph "Operating Controls" "Blade Angle".

## OPERATION No. 1 — CROSSCUT

Crosscutting is the process of sawing the workpiece by pulling the saw blade through it and using the fence as a support for the edge of the workpiece. Never crosscut free-hand. Return carriage to its full rear position and allow sawblade to come to a complete stop before removing workpieces from the saw.

**WARNING: BEFORE CROSSCUTTING, MAKE SURE THE ARM CONTROL LEVER, BEVEL LOCK LEVER AND YOKE LOCK HANDLE ARE ALL LOCKED. NEVER USE A LENGTH STOP OR A FIXED GUIDE ON THE FREE END OR EDGE OF A WORKPIECE. DO NOT CROSSCUT WORKPIECES THAT PLACE YOUR HANDS CLOSE TO THE PATH OF THE SAW BLADE. WHEN PULLING THE SAW TOWARD YOU DURING CROSS CUTTING, THE BLADE TENDS TO FEED ITSELF THROUGH THE WORK DUE TO THE ROTATION OF THE BLADE AND THE DIRECTION OF THE FEED. THEREFORE, YOU SHOULD DEVELOP THE HABIT OF HOLDING YOUR RIGHT FOREARM IN LINE WITH THE SAW ARM DURING PULL THROUGH AND RETURN.**

### REPETITIVE CROSSCUTTING

Clamp a "C" clamp (min. 6 inch) using a wood block on each side of the arm. This will limit the carriage travel to the position necessary to complete the crosscut operation.

IN THIS EXAMPLE A 1" x 6" BOARD WILL BE CUT ON A 90° ANGLE TO ITS EDGE.

**NOTE:** A 1" THICK BOARD IS ACTUALLY 3/4 OF AN INCH THICK.

STEP 1 - Position carriage in front of fence. Insert yellow key into master switch and turn "ON".

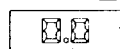
STEP 2 - Set and lock arm in the zero miter position.

Press **MITER** key. Displays shows

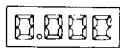


STEP 3 - Set and lock motor in the zero bevel position.

Press **BEVEL** key. Display shows



STEP 4 - Press **ELEV** key. Displays shows



Press **JOG** key lower blade teeth into table kerf. Push carriage to rear of arm.

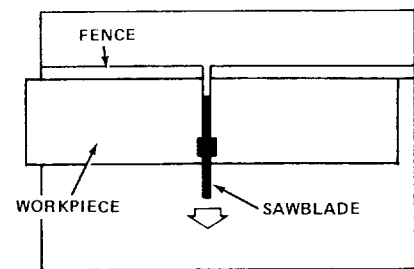
**NOTE:** If kerf has not been cut into the table, refer to "Cutting Table Kerf" page 27 before proceeding.

STEP 5 - Draw a line on the board at the cut-off point.

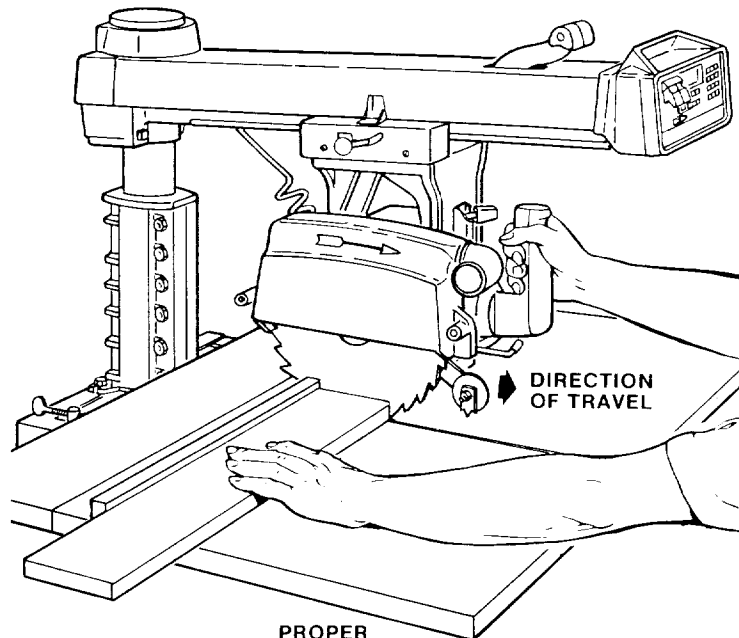
STEP 6 - Position board firmly against the fence.

STEP 7 - Adjust guard and anti-kickback pawls.

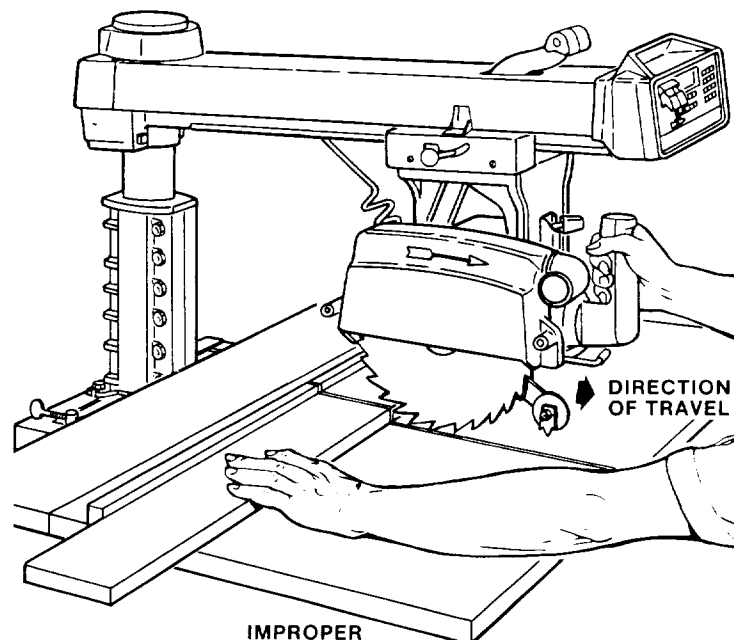
STEP 8 - Turn saw motor switch "ON". Pull the saw through the board only far enough to complete cut, then push saw to the rear of the arm. Turn saw motor switch "OFF".



TOP VIEW



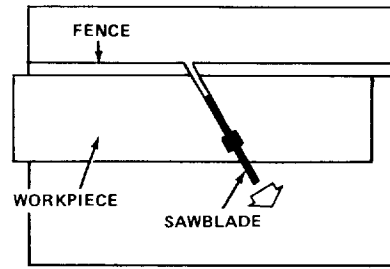
PROPER  
(SEE ITEM "10")



IMPROPER  
(SEE ITEM "10")

## OPERATION No. 2 — MITER CROSSCUT

Miter crosscutting is the process of sawing a board at an angle other than 90° (square) to the fence. The 45° miter angle is a popular one, since two boards cut to 45° can be assembled to form a 90° corner for producing a square or a rectangular frame. The radial arm is set to the desired angle of cut. The yoke and bevel settings are indexed at 0° (and locked) as in square crosscutting. The board being cut is held firmly against the fence (guide) and the carriage pulled forward along the radial arm to perform the desired cut. As in "Operation No. 1", the carriage should be returned to full rear position and the saw blade allowed to come to a complete stop before removing the workpieces from saw table.



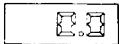
TOP VIEW

IN THIS EXAMPLE A 1" x 6" BOARD WILL BE CUT ON A 30° MITER ANGLE.

STEP 1 - Position carriage to rear of arm. Insert yellow key into master switch and turn "ON".

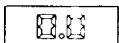
STEP 2 - Set and lock arm in the zero position.

Press **MITER** key. Display shows



STEP 3 - Set and lock motor in the zero bevel position.

Press **BEVEL** key. Display shows



STEP 4 - Press **ELEV** key. Press jog key to raise blade teeth out of table kerf.

STEP 5 - Press **MITER** key. Release arm lock.

Move arm to desired miter angle. The angle will be displayed as the arm swings. When the display reads the desired angle, lock the arm.

STEP 6 - Press **ELEV** key.

Press **JOG** key to lower blade teeth into table kerf.

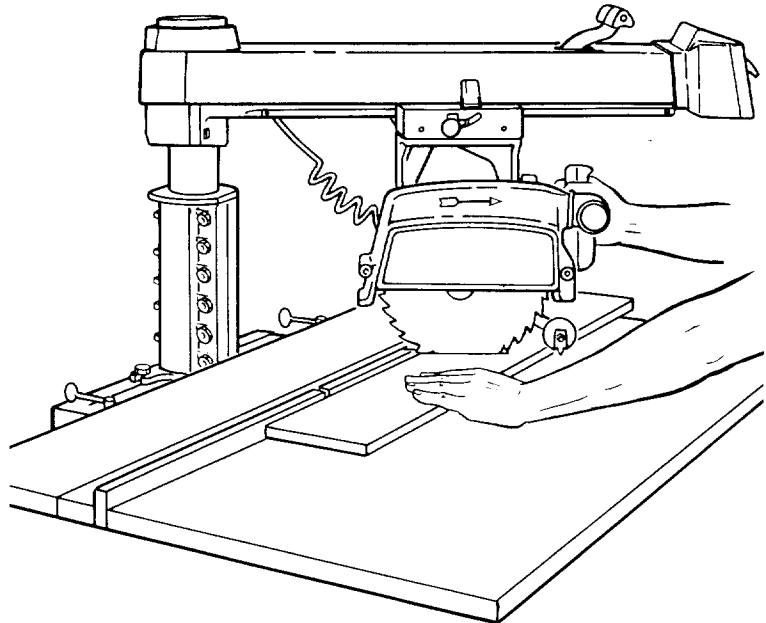
**NOTE:** If kerf has not been cut into the table at this angle, refer to "Cutting Table Kerf" page 27 before proceeding.

STEP 7 - Draw a line on the board at the cut-off point.

STEP 8 - Position board firmly against the fence.

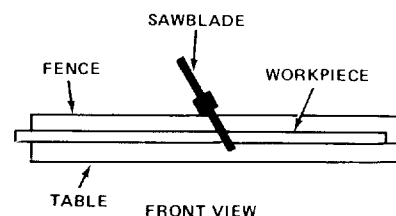
STEP 9 - Adjust guard and anti-kickback pawls.

STEP 10 - Turn saw motor switch "ON". Pull the saw through the board only far enough to complete cut, then push saw to the rear of the arm. Turn saw motor switch "OFF".



## OPERATION No. 3 — BEVEL CUTTING

Bevel cutting is the process of sawing 90° (square) across the board with the saw blade set at an angle other than 90° to the saw table. The radial arm and yoke are indexed at 0° and locked, but the bevel is set to the desired angle of cut. The board is held firmly against the fence and the carriage pulled forward along the radial arm to produce the cut. The carriage should be returned to a full rearward position and the saw blade allowed to come to a complete stop before removing the workpieces from the saw table.



IN THIS EXAMPLE A 1" x 6" BOARD WILL BE CUT ON A 30° BEVEL ANGLE.

STEP 1 - Position carriage to rear of arm. Insert yellow key into master switch and turn "ON".

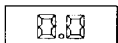
STEP 2 - Set and lock arm in the zero position.

Press **MITER** key. Display shows



STEP 3 - Set and lock motor in the zero bevel position.

Press **BEVEL** key. Display shows



STEP 4 - Press **ELEV** key.

Press number keys **2** **.** **3**

Press **ACT** key. The blade will automatically rise 2.3 inches to give clearance to set blade at bevel angle.

STEP 5 - Press **BEVEL** key. Release bevel lock lever and turn motor to desired bevel angle. The angle will be displayed as the motor swings. When the display reads the desired angle, lock bevel lock lever.

STEP 6 - Press **ELEV** key.

Press **JOG** key to lower blade teeth into table kerf.

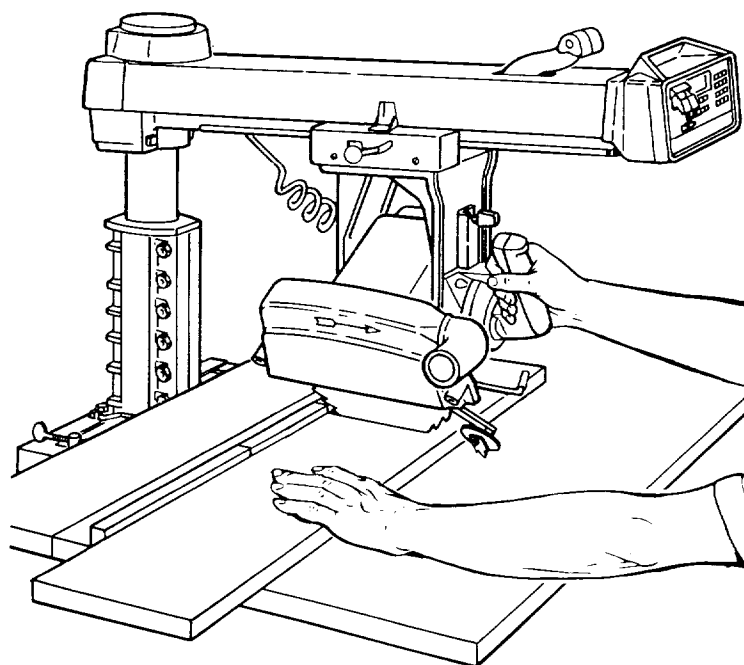
**NOTE:** If kerf has not been cut into the table at this angle, refer to "Cutting Table Kerf" page 27 before proceeding.

STEP 7 - Draw a line on the board at the cut-off point.

STEP 8 - Position board firmly against the fence.

STEP 9 - Adjust guard and anti-kickback pawls.

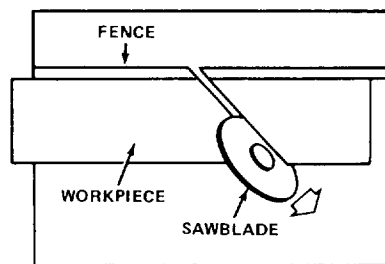
STEP 10 - Turn saw motor switch "ON". Pull the saw through the board only far enough to complete cut, then push saw to the rear of the arm. Turn saw motor switch "OFF".



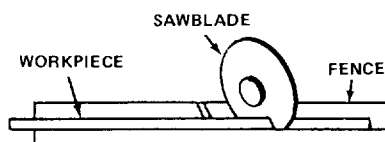
## OPERATION No. 4 — COMPOUND MITER CUTTING

Compound miter cutting is the combination of miter and bevel crosscuts. The radial arm and bevel are set to produce the desired cut; the yoke is indexed at 0° and locked. The board is held firmly against the fence and the carriage pulled forward along the radial arm to produce the cut. Again, the carriage should be returned to full rearward position and the saw blade allowed to come to a complete stop before removing workpieces from saw table.

IN THIS EXAMPLE A 1" X 6" BOARD WILL BE CUT ON A 45° MITER ANGLE WITH A 30° BEVEL ANGLE.



TOP VIEW

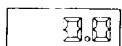


FRONT VIEW

STEP 1 - Position carriage to rear of arm. Insert yellow key into master switch and turn "ON".

STEP 2 - Set and lock arm in the zero position.

Press **MITER** key. Display shows



STEP 3 - Set and lock motor in zero bevel position.

Press **BEVEL** key. Display shows



STEP 4 - Press **ELEV** key.

Press number keys **2** **.** **3**

Press **ACT** key. The blade will

automatically rise 2.3 inches to give clearance to set blade at bevel angle.

STEP 5 - Press **MITER** key. Release arm lock.

Move arm to desired miter angle. The angle will be displayed as the arm swings, when the display reads the desired angle, lock bevel lock lever.

STEP 6 - Press **BEVEL** key. Release bevel lock

lever and turn motor to desired bevel angle. The angle will be displayed as the motor swings. When the display reads the desired angle, lock bevel lock lever.

STEP 7 - Press **ELEV** key.

Press **JOG** key to lower blade teeth into table kerf.

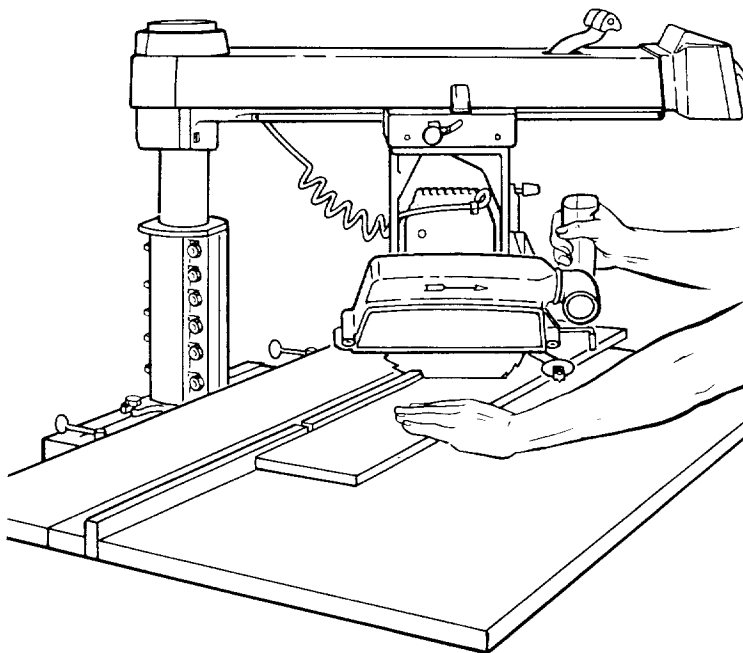
**NOTE:** If kerf has not been cut into the table at this angle, refer to "Cutting Table Kerf" page 27 before proceeding.

STEP 8 - Draw a line on a board at the cut-off point.

STEP 9 - Position board firmly against the fence.

STEP 10 - Adjust guard and anti-kickback pawls.

STEP 11 - Turn saw motor switch "ON." Pull the saw through the board only far enough to complete cut, then push saw to the rear of the arm. Turn saw motor switch "OFF".

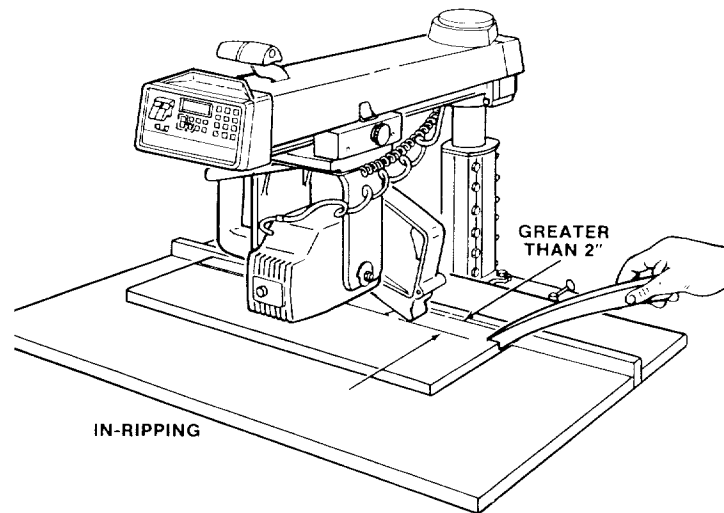
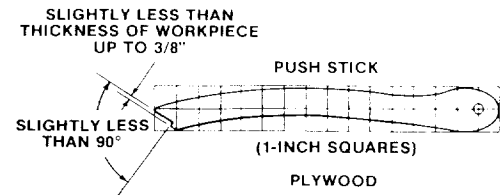




## REQUIREMENTS WHEN RIPPING (OPERATIONS 5 AND 6)

1. Carriage lock knob must be locked.
2. Radial arm must be locked in zero degree position.
3. Workpiece must be kept in firm contact with the fence and the table. For workpieces thicker than the fence is high, install a higher fence (at least the thickness of the workpiece).
4. **Guard spreader and antikickback (AKB) assembly must be properly set.** OBSERVE INSTRUCTIONS IN PARAGRAPH, "POSITIONING GUARD, AND ANTIKICKBACK AND SPREADER ASSEMBLY FOR RIPPING" UNDER "LOCATION AND FUNCTION OF CONTROLS".
5. Blade should be sharp and correctly set.
6. When ripping narrow stock, less than 6 inches but more than 2 inches between the guard and the fence (guide), use a "Push Stick" at least 1/4" thick and at least 16" long so the workpiece is clear of the blade before your hand contacts the guard.

**NOTE:** Do not attempt to make the "Push Stick" on the radial saw — use hand tools, or band saw, or saber saw.



7. When ripping stock 2 inches or less between the blade and fence use an Auxiliary Fence and Push Block. Make these work helpers to the dimensions shown.

Make the **Auxiliary Fence** using a piece of 3/8 in. and 3/4 in. plywood. Fasten together with glue and nails.

Make the **Push Block** using a piece of 3/8 in. and 3/4 in. plywood.

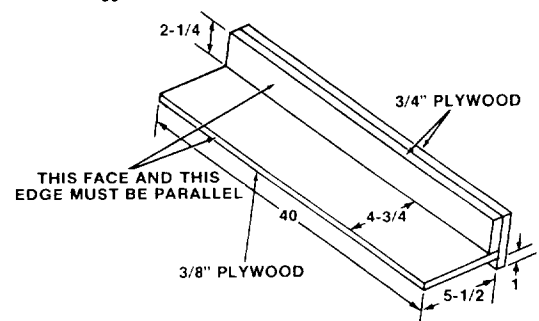
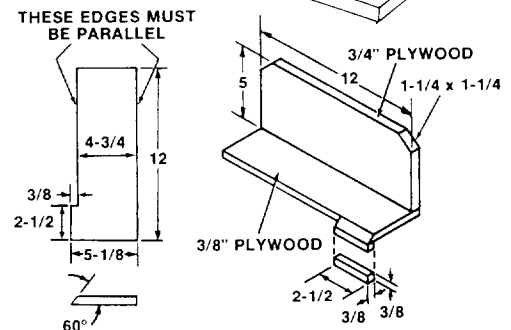
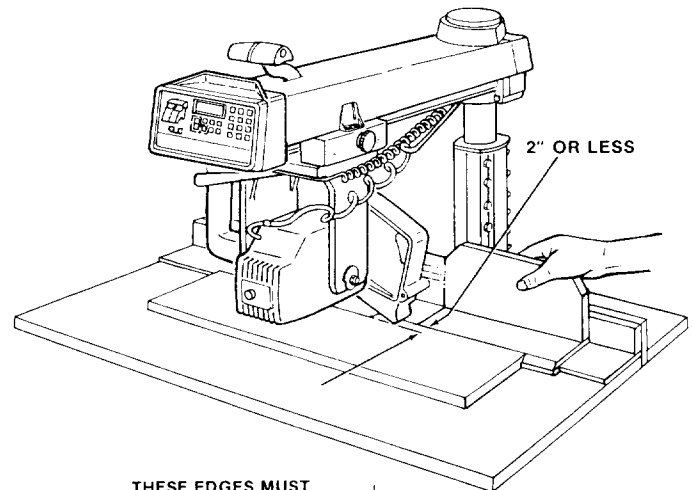
**NOTE:** Since the Push Block is used with the Auxiliary fence, the 4-3/4 in. dimensions must be held identical on both the pieces.

The small piece of wood 3/8 in. x 3/8 in. x 2-1/2 in. should be GLUED to the plywood . . . DO NOT USE NAILS. This is to prevent dulling the sawblade in the event you mistakingly cut into the push block.

Position the handle in the center of the plywood and fasten together with glue and woodscrews.

The push block should feed the stock being ripped until the stock is clear of the rear of the blade, and then pulled back with use of the grip.

8. Hands must be kept well away from saw blade.
9. Saw blade **MUST** be parallel to fence, to minimize possibility of kickbacks.
10. When ripping narrower than 3/8 in., position the sawblade to remove the narrow strip from edge of workpiece furthest from the fence. Follow procedures as above based on distance from blade to fence.



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

1. Ripping is the process of sawing the workpiece by feeding it into the saw blade when using the fence as a guide and as a positioning device to obtain the desired width of cut. The sawblade is parallel to the fence.
2. Since the work is pushed along the fence, it must have a straight edge in order to make sliding contact with the fence. Also, the work must make solid contact with the table, so that it will not wobble. Provide a straight edge, even if this means temporarily nailing an auxiliary straight-edged board to the work. If the workpiece is warped, turn the hollow side down.
3. Always use the saw guard and make sure the spreader is correctly aligned with the saw kerf and the antikickback pawls are properly adjusted. Wood cut with the grain tends to spring the kerf closed and bind the blade and a kickback could occur. Use of the spreader will keep the kerf open and will minimize the possibility of a kickback.
4. Stand a little to one side of center to be clear of work in case of kickback.
5. When ripping short or narrow work, always use a push stick or a push block (with auxiliary fence) applied to the section of the workpiece between the blade and fence . . . push the work past the

blade so it is clear of the blade. This procedure will minimize the possibility of kickbacks.

**WARNING: NEVER RIP FREE-HAND. BEFORE RIPPING, MAKE SURE THE GUARD AND ANTICKICKBACK/SPREADER ASSEMBLY ARE SET UP PROPERLY. ALSO, MAKE SURE THE SAW BLADE IS PARALLEL WITH THE FENCE. NEVER RIP WORKPIECES SHORTER THAN THE SAW BLADE DIAMETER.**

**In-Ripping.** The radial arm and bevel are indexed at zero degrees and locked, but the yoke is turned 90-degrees in a clockwise direction (viewed from above) from the crosscut position. Thus, when standing in front of the saw, the blade would be rotating counterclockwise. After positioning the guard and antikickback mechanism the workpiece is fed from the right-hand side of the saw. The "Blade In-Rip" scale is on the right-hand side of radial arm.

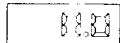
**Out-Ripping.** The radial arm and bevel are indexed at zero degrees and locked, but the yoke is turned 90-degrees in a counterclockwise direction (viewed from above), from the crosscut position. When standing in front of the saw, blade would be rotating clockwise. After positioning the guard and antikickback mechanism the workpiece is fed from the left-hand side of the saw. The "Blade Out-Rip" scale is on the left hand side of radial arm.

IN THIS EXAMPLE A 1" X 12" BOARD WILL BE CUT DOWN THE CENTER.

STEP 1 - Position carriage in front of fence. Insert yellow key into master switch and turn "ON".

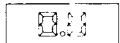
STEP 2 - Set and lock arm in the zero position.

Press **MITER** key. Display shows



STEP 3 - Set and lock motor in the zero bevel position.

Press **BEVEL** key. Displays shows



STEP 4 - Press **ELEV** key.

Press **JOG** key to raise blade teeth out of table kerf.

STEP 5 - Pull to release the yoke lock handle. Release yoke pivot latch and swivel the yoke to the indexed rip position (blade parallel to the fence). Push to lock the yoke lock handle.

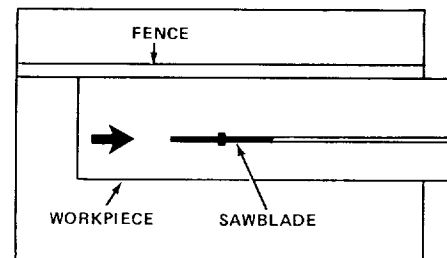
STEP 6 - Move carriage to desired rip width (6 in.) and lock carriage lock knob.

Press **JOG** key to lower blade into table kerf.

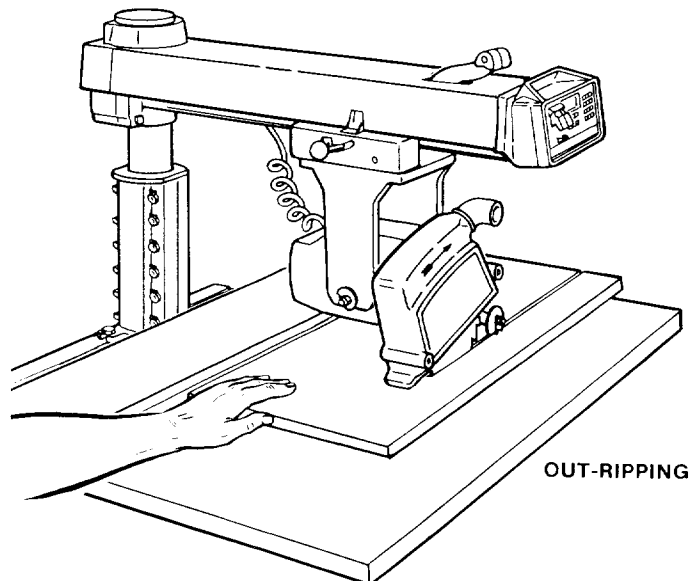
**NOTE:** If the kerf has not been cut into the table at this location, refer to "Cutting Table Kerf" page 27 before proceeding.

STEP 7 - Position guard and anti-kickback pawls.

STEP 8 - Turn saw motor "ON". Feed board through saw, from proper direction, until workpiece is clear of blade. Turn saw motor switch "OFF".



TOP VIEW



## OPERATION No. 6 — BEVEL RIPPING

Bevel ripping is either in-ripping or out-ripping as described above, except the saw blade is tilted with respect to the saw table surface. The radial arm is indexed at zero degrees and locked, the bevel is set to the desired bevel angle and the yoke is positioned for in-ripping (saw blade at rear) or out-ripping (saw blade at front), as required. All requirements and observations applicable to normal ripping operations also apply to bevel ripping.

STEP 1 - Position carriage in front of fence. Insert yellow key into master switch and turn "ON".

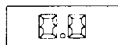
STEP 2 - Set and lock arm in the zero position.

Press **MITER** key. Display shows



STEP 3 - Set and lock motor in the zero bevel position.

Press **BEVEL** key. Display shows



STEP 4 - Press **ELEV** key.

Press number keys **2** **.** **3**

Press **ACT** key. The blade will automatically rise 2.3 inches to give clearance to set bevel angle.

STEP 5 - Press **BEVEL** key. Release bevel lock

lever and turn motor to desired bevel angle. The angle will be displayed as the motor swings. When the display reads the desired angle, lock bevel lock lever.

STEP 6 - Pull to release the yoke lock handle. Release yoke pivot latch and swivel the yoke to the indexed rip position. Push to lock the yoke lock handle.

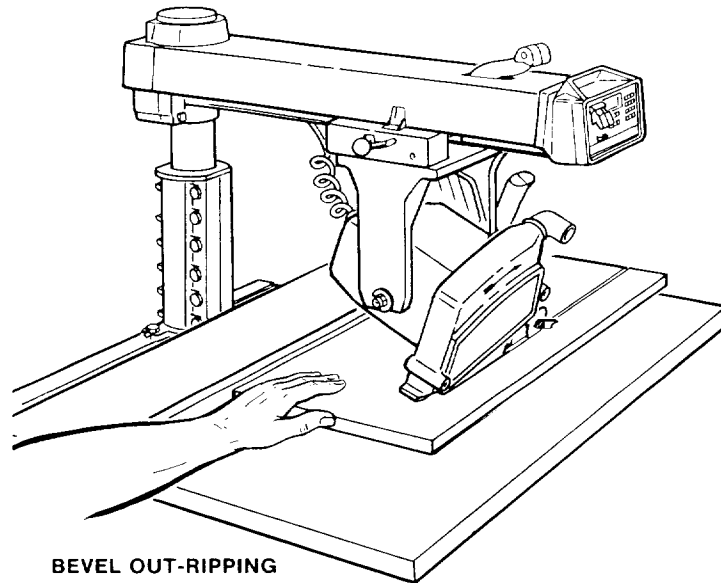
STEP 7 - Move carriage to desired rip width and lock carriage lock knob.

Press **JOG** key to lower blade into table kerf.

**NOTE:** If kerf has not been cut into the table at this location, refer to "Cutting Table Kerf" page 27 before proceeding.

STEP 8 - Position guard and anti-kickback pawls.

STEP 9 - Turn saw motor "ON". Feed board through saw, from proper direction, until workpiece is clear of blade. Turn saw motor switch "OFF".



BEVEL OUT-RIPPING

## DADOING

Instructions for operating the Dado Head are contained in booklet furnished with the Dado Head. The saw arbor is designed for dado heads up to 13/16 inches wide. Do not install a wider dado head on the arbor. Take several passes if required dado cut exceeds 13/16 inch.

When installing the dado head on the arbor, ALWAYS install the inside "loose collar" first. Be sure the teeth of the chippers are placed to fall in blade gullets, and chippers are approximately equally spaced around the arbor.

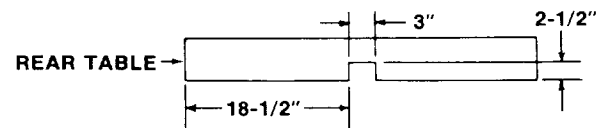
DO NOT install the outside loose collar. Make sure the arbor nut is tight. Install the arbor nut directly against the outer blade of dado head.

For best results and to avoid excessive load on the motor, NEVER CUT A 13/16" WIDE DADO, DEEPER THAN 3/4" IN ONE PASS.

## MOLDING/SANDING

Instructions for operating the Molding Head are contained in a booklet furnished with the Molding Head.

To use a Molding Head Cutter or Drum Sander with saw arbor vertical, the rear table requires an opening (next to rear face of fence) for clearance. Cut this opening as shown.



For top-side rabbeting or molding in the in-rip position, relieve the fence by positioning the cutting tool at the desired location on the arm, locking the Carriage Lock Knob, and lowering the cutting tool slowly into the fence - remove only as much material from the fence as is necessary.

**NEVER USE A DADO HEAD OR MOLDING HEAD WITH THE SAW ARBOR VERTICAL WITHOUT INSTALLING AND ADJUSTING A MOLDING HEAD/DADO GUARD. FOR TOP-SIDE DADOING OR MOLDING, INSTALL AND ADJUST THE SAWBLADE GUARD AND ANTICKICKBACK ASSEMBLY FOR RIPPING OR CROSSCUTTING AS APPROPRIATE.**

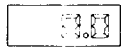
## SETTING TO A SPECIFIC DEPTH OF CUT.

(Cut does not go all the way through the workpiece).

STEP 1 - Position carriage in front of fence. Insert yellow key into master switch and turn "ON".

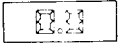
STEP 2 - Set and lock arm in the zero position.

Press **MITER** key. Display shows



STEP 3 - Set and lock motor in the zero position.

Press **BEVEL** key. Display shows

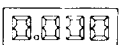


STEP 4 - Press **ELEV** key.

Press **JOG** key to raise blade teeth high enough to clear the top of board to be cut.

STEP 5 - Place board under saw blade. Press and hold **JOG** key to lower the blade to where it is just touching the surface of the board.

Press **REF SET** key. Display shows



Remove board.

STEP 6 - Set up for cut to be made (crosscut, miter etc.) Return carriage to full rear position. Press number keys to enter depth of cut in decimals.

Press **MINUS** key.

Press **ACT** key. The blade will automatically lower to the programmed depth.

STEP 7 - Draw a line on the board at the point where cut is to be made.

STEP 8 - Adjust guard and anti-kickback pawls.

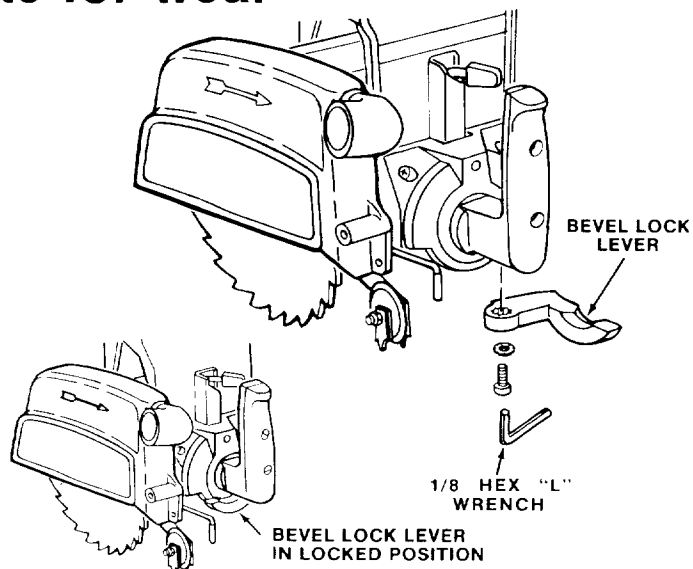
STEP 9 - Turn saw motor "ON". Make Cut. Turn saw motor "OFF".

## adjustments to compensate for wear

### ADJUSTING BEVEL LOCK LEVER

1. The purpose of this lever is to lock the motor at any angle. To adjust, remove the set screw with wrench as shown. Use the bevel lock lever as a wrench to tighten the clamp bolt. Do Not Over Tighten. Replace bevel lock lever in locked position and tighten the set screw.

**NOTE:** The clamp bolt has a left handed thread. Therefore, to increase the clamping effect, rotate the bevel lock lever - when used as a wrench - from right to left, or clockwise when viewed from above. If you accidentally rotate it the wrong way and disengage the bolt from the matching steel nut, it will be necessary to remove the Handle Trim, Yoke Handle, and Bevel Encoder, in order to reinstall the bolt in the nut.



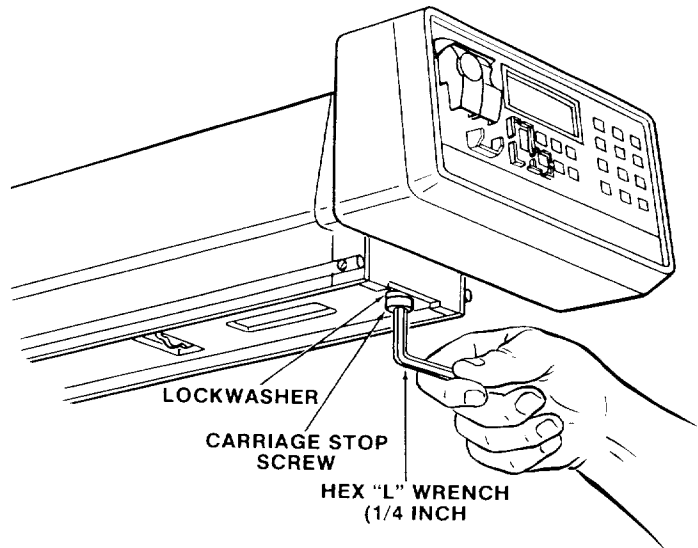
## YOKE LOCK HANDLE ADJUSTMENT

1. This handle provides a friction lock between the upper face of the yoke and the bottom face of the carriage.

It should eliminate any play or rotation between these two parts when locked. Its proper position for saw operation is approximately midway between the two sides of the yoke.

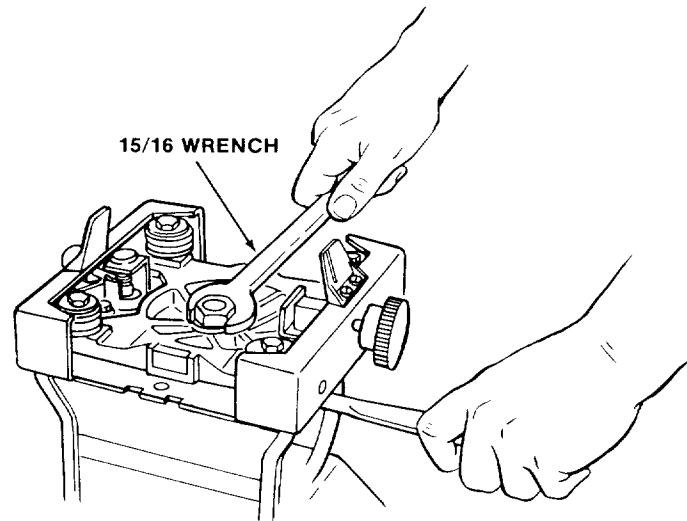
When sufficient wear has occurred to permit the handle to move to the rear, or strike the yoke before locking, the handle must be adjusted as follows:

2. Remove carriage stop screw and lockwasher with a 1/4 inch hex-L wrench.
3. Grasp the carriage assembly, move it carefully off the end of radial arm, holding it parallel to the radial arm until all carriage bearings are free of their tracks.
4. Rest the motor and carriage assembly on saw work table and re-install carriage stop screw and lockwasher.



### To Readjust

5. Set yoke lock handle at unlocked position. Tighten nut with 15/16 wrench, until lock handle locks mid-way between the two sides of the yoke. Remove carriage stop screw and lockwasher.
6. Hold the motor and carriage assembly parallel to radial arm and start the rear bearings onto the tracks. Continue to hold the assembly parallel to the tracks until the forward bearings are on the tracks.
7. Slide the carriage rearward on the radial arm and RE-INSTALL THE CARRIAGE STOP SCREW AND LOCKWASHER.

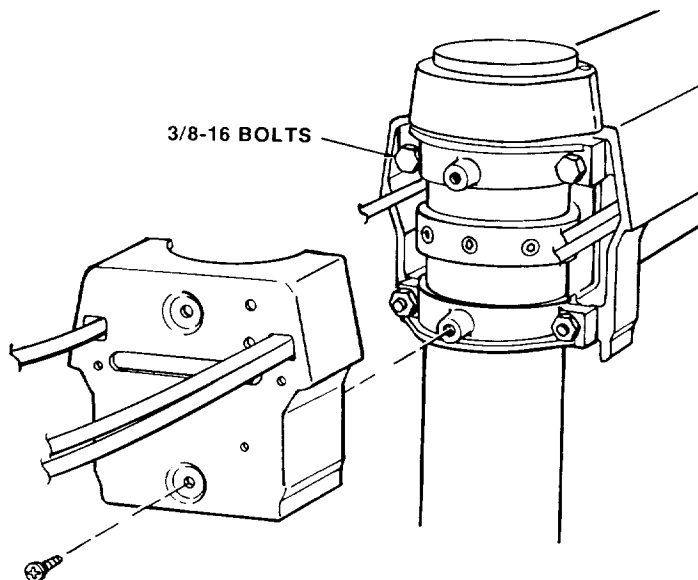


## ARM TO COLUMN

1. With the arm control lever unlocked and in index release position, the arm should move firmly with no vertical play in the arm. The arm should fit snugly on the column. If not, then adjust.

- a. Remove rear arm cover by removing two (2) screws. Tighten top two 3/8-16 bolts evenly until arm moves firmly and there is no vertical or horizontal movement in the arm when arm control lever is locked or unlocked.
- b. Bottom two nuts should be snugged evenly, but not nearly as tight as top two bolts.
- c. Re-install Rear Cover Plate. Be sure cords are pulled back through cover.

**NOTE:** Miter settings, blade cross cut travel, and blade heel should be rechecked.

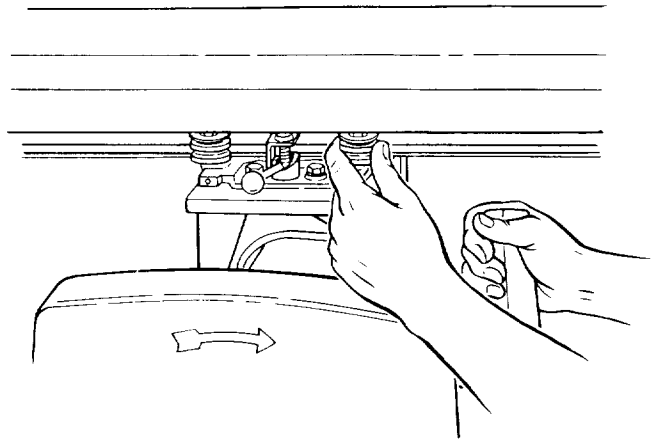


## ADJUSTING CARRIAGE BEARINGS

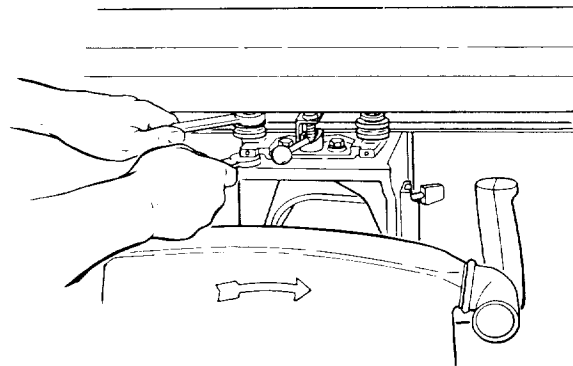
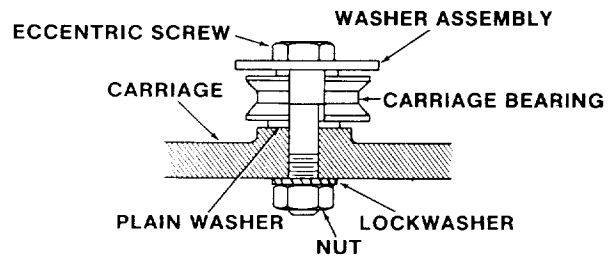
In proper adjustment the top and bottom radii of all four bearings should be in contact with the arm tracks for their entire length and carriage should roll smoothly but with some resistance.

To test for proper adjustment between bearings and tracks on radial arm, perform the following steps.

1. Remove left-hand carriage cover.
2. Push the carriage to its full rearward position.
3. Finger hold front carriage bearing as shown and grip as tightly as possible and at the same time pull carriage forward. If you can stop the bearing from turning it will require adjusting.



4. Check rear bearing in the same manner.
5. If adjustment is required:
  - a. Loosen nuts just enough to permit the eccentric screws to turn.
  - b. Rotate the eccentric screws a partial turn (left or right) as required to take up looseness.
  - c. Hold the heads of eccentric screws in the position established in the preceding step and tighten nuts on underside of carriage. Correct adjustment exists when you cannot keep the bearings from turning. However, excessive bearing pressure will cause difficult operation and rapid wear.
  - d. Install carriage cover.



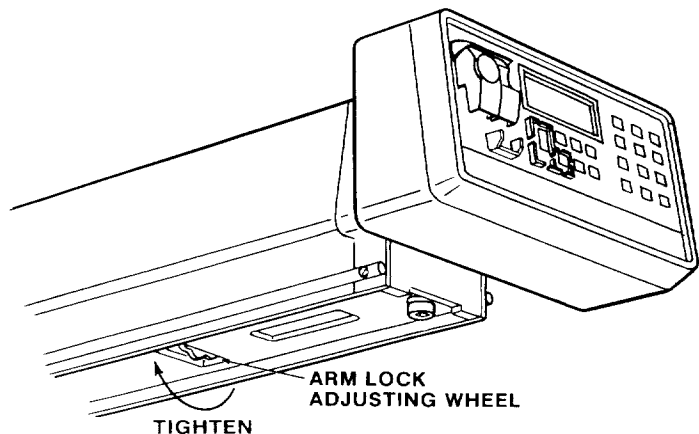
## ARM LOCK ADJUSTING WHEEL

Arm control lever operates a brake shoe that locks and releases the arm, and automatically releases the arm index pin for 0° & 45° miter settings.

The lock action should feel tight and secure. Considerable amount of effort must be applied to the lever to lock the arm.

**NOTE:** Lever must be in unlocked position while making adjustment.

If adjustment is required, turn arm lock adjusting wheel under front of the arm clockwise to tighten, counterclockwise to loosen.

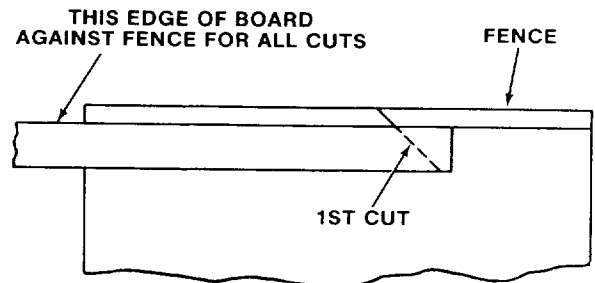


# trouble-shooting

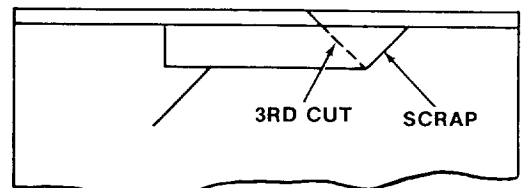
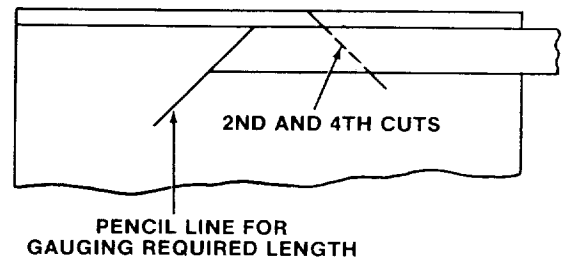
## **HAVE YOU FOLLOWED ALL SIX STEPS OF THE ALIGNMENT PROCEDURE? IF YOU HAVE NOT FOLLOWED THEM IN THEIR PROPER SEQUENCE, YOU CANNOT EXPECT ACCURATE CUTTING RESULTS.**

In addition to the proper alignment of your saw, you must also become familiar with the following practices in order to expect the best results.

1. Edge of workpiece which is placed against fence must be as straight as the long side of your framing square.
2. Workpiece must be as flat as the front table board on your saw.
3. There must be no sawdust or other wood chips between the fence and front table board.
4. There must be no sawdust or other wood chips underneath workpiece or between workpiece and fence.
5. Workpiece must be held tightly against fence . . . this is especially important when making angle cuts because the workpiece has a tendency to move.
6. Always use the correct Sawblade for the Job . . . Always keep it sharp.
7. When making a four sided frame:
  - a. The two side pieces must be exactly the same length.
  - b. The top and bottom pieces must be exactly the same length.
  - c. Always place the same edge of the workpiece against, the fence . . . turn the workpiece end for end for the successive cuts and mark a pencil line of the table for gauging the required length.



**Turn workpiece over end for end . . . keep same edge against fence when making successive cuts.**



**Deviations from any of the above practices will have an effect on the accuracy of the cuts that you make.**

**WARNING: REMOVE POWER CORD FROM POWER SOURCE BEFORE TROUBLE SHOOTING.**

**NOTE:** Changing one adjustment will effect another, so it is best to perform all of the alignment procedures when correcting any one problem. The usual operating "troubles" are listed in the following paragraphs with the necessary corrections listed.

**1. RADIAL SAW DOES NOT MAKE ACCURATE 0° or 45° MITER CROSSCUTS.**

**a. Looseness between column tube and column support.**

Align as described in Alignment Procedure Section Step Two.

**b. Crosscut travel not properly adjusted.**

Refer to Step Three in Alignment Procedure Section Squaring Crosscut Travel.

**c. Column is Loose in Support.**

Refer to Step Two in Alignment Procedure.

**d. Arm Not Indexing Properly.**

Refer to Arm Lock Adjusting Wheel in Adjustments to Compensate for Wear section.

**e. Carriage Assembly Loose on Arm**

Refer to Carriage Bearing Adjustment in Adjustment to Compensate for Wear Sections.

**f. Looseness between Yoke and Carriage Assembly.**

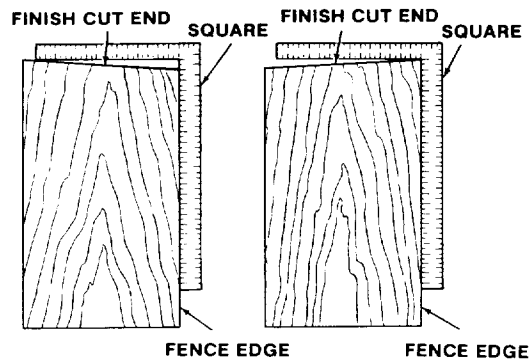
Refer to "Yoke Lock Handle" adjustment in adjustment to Compensate for Wear Section.

**g. Sawdust between Work Piece and Fence.**

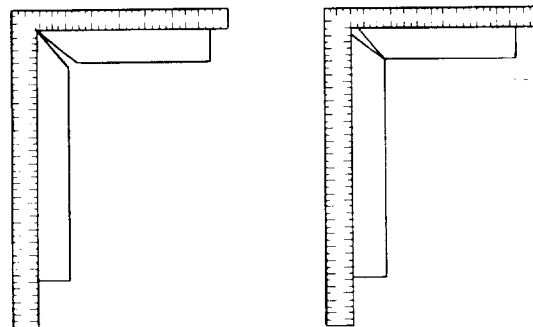
Keep Front Work Table Clean.

**h. Rip Fence Not Straight.**

Replace Fence.



**FINISH LOOKS LIKE THIS - 0° CROSSCUT**



**OR LIKE THIS - 45° MITER.**

**2. SAW CUTS AT ANGLE — NOT 90° TO TABLE TOP.**

**a. Table support channels not properly leveled.**

Refer to Step One under Alignment Procedure Section.

**b. Blade not square to work table top.**

Refer to Step Four in Alignment Procedure Section.

**3. BLADE ANGLE (BEVEL) CUTS NOT ACCURATE.**

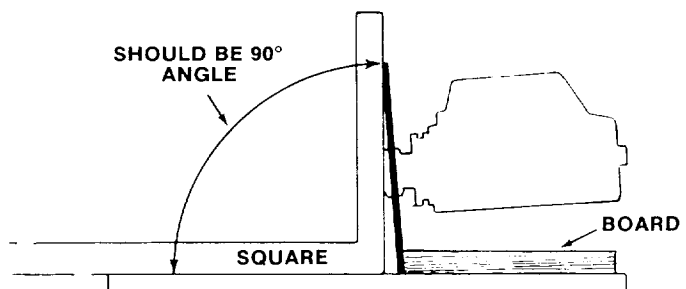
**a. Corrective Action is the same as paragraph 2a and b above.**

**b. Carriage Bearings Loose.**

Refer to adjusting carriage bearing in adjustments to compensate for wear section.

**c. Bevel Lock Handle Loose.**

Refer to Adjustment Bevel Lock Handle in Adjustment to Compensate for Wear Section.





**4. CUT EDGE OF WORKPIECE IS ROUGH — WITH TOOTH MARKS LEFT ON EDGE OF SAW KERF.**

**NOTE:** This condition is commonly called "HEEL".

**a. Crosscutting or Miter Cutting**

"Heeling" will tend to slide the workpiece along the fence, as the cut is being made, and make a square cut almost impossible.

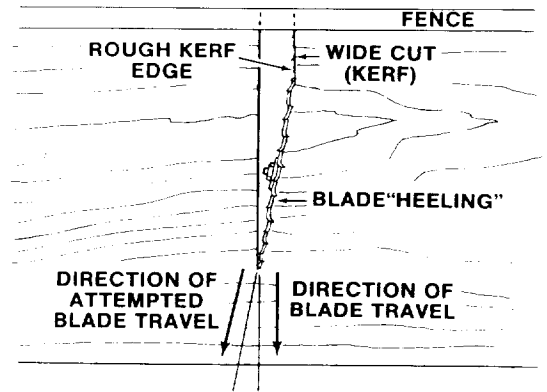
Refer to step 5 under Alignment Procedure Section — "Squaring Blade to Rip Fence."

**b. Bevel Crosscutting Or Bevel Ripping.**

Refer to Step 5 under Alignment Procedure Section "Vertical Heel Adjusting."

**c. Using Improper Blade for the Finish Cut Desired.**

Use Proper Smooth Cutting Blade.



**5. WOOD BINDS, SMOKES AND MOTOR SLOWS DOWN OR STOPS WHEN RIPPING.**

**a. Dull blade or warped board.**

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

**b. Feed rate too fast.**

Slow Feed Rate.

**c. Saw Blade heels.**

Check and align as described in Alignment Procedure Section, Step Five.

**d. Fence not straight.**

Replace fence.

**e. Carriage Assembly Loose on Arm.**

Refer to "Adjusting Carriage Bearings" in "Adjustments To Compensate For Wear" Section.

**6. BOARD PULLS AWAY FROM FENCE WHEN RIPPING**

**a. Saw Blade has heel.**

Corrective action is the same as preceding instructions explained in paragraph 5c.

**7. WORKPIECE STRIKES SPREADER WHEN RIPPING.**

**a. Adjust spreader per instructions in Step Six under "Alignment of Spreader for Ripping".**

**8. SAW DOES NOT TRAVEL SMOOTHLY ON ARM TRACKS.**

**a. Dirty tracks.**

Clean Tracks.

**b. Bad Bearing.**

Replace Bearing.

**c. Worn Tracks.**

Replace Tracks.

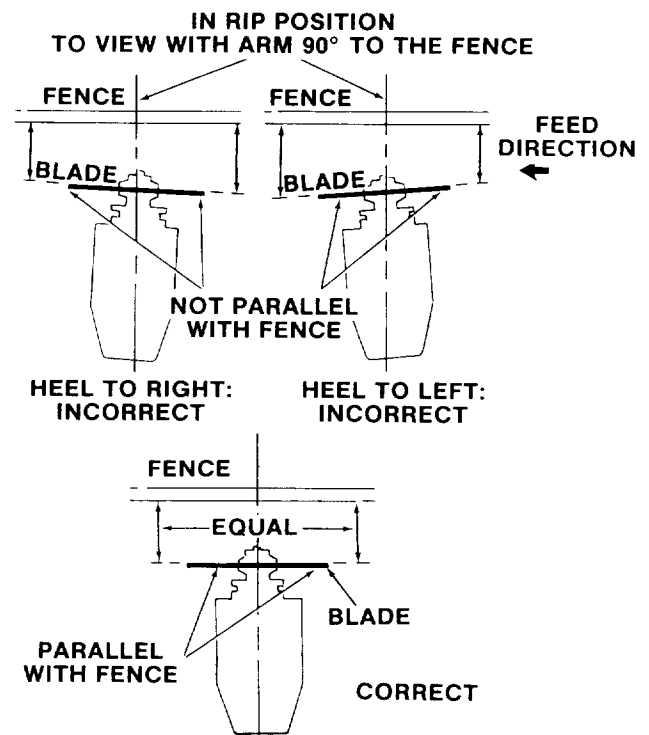
**d. Bearings Too Tight.**

Adjust Bearings.

**9. CLAMPING FORCE NOT SUFFICIENT AT MITER ANGLES OTHER THAN 45°.**

**a. Arm Control Lever requires Adjustment.**

Refer to Arm Lock Adjusting Wheel in Adjustments to Compensate for Wear Section.



**10. CLAMPING FORCE NOT SUFFICIENT AT BEVEL ANGLES OTHER THAN 45°.**

**a. Bevel Lock Lever Requires adjusting.**

Refer to Adjusting Bevel Lock Lever in Adjustments to Compensate for Wear Section.

**11. DEPTH OF CUT VARIES FROM ONE END OF WORKPIECE TO THE OTHER.**

**a. Table Top not parallel with Arm.**

Refer to Attaching and Leveling table Mtg. Support Channels in Step One Alignment Section.

**12. BLADE TENDS TO ADVANCE THROUGH LUMBER TOO FAST.**

**a. Dull Blade.**

Replace or sharpen blade.

**b. Not advancing Saw Blade properly.**








Draw Saw Blade across lumber with a slow and steady pull. Keep forearm in line with the saw arm during pull through and return.

## MOTOR TROUBLE - SHOOTING CHART

**NOTE:** Motors used on wood-working tools are particularly susceptible to the accumulation of sawdust and wood chips and should be blown out or "vacuumed" frequently to prevent interference with normal motor ventilation.

TROUBLE	PROBABLE CAUSE	SUGGESTED REMEDY
<b>Motor will not run.</b>	<ol style="list-style-type: none"> <li>1. Protector open; circuit broken.</li> <li>2. Low voltage.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset protector by pushing on red button, located on top of motor (indicated by audible check).</li> <li>2. Check power line for proper voltage.</li> </ol>
<b>Motor will not run and fuses "BLOW".</b>	<ol style="list-style-type: none"> <li>1. Short circuit in line, cord or plug.</li> <li>2. Short circuit in motor or loose connections.</li> <li>3. Incorrect fuses in power line.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inspect line, cord and plug for damaged insulation and shorted wires.</li> <li>2. Inspect all terminals in motor for loose or shorted terminals or worn insulation on wires.</li> <li>3. Install correct fuses.</li> </ol>
<b>Motor fails to develop full power.</b> (Power output of motor decreases rapidly with decrease in voltage at motor terminals. For example: a reduction of 10% in voltage causes a reduction of 19% in maximum power output of which the motor is capable, while a reduction of 20% in voltage causes a reduction of 36% in maximum power output.)	<ol style="list-style-type: none"> <li>1. Power line overloaded with lights, appliances and other motors.</li> <li>2. Undersize wires or circuit too long.</li> <li>3. General overloading of power company's facilities (In many sections of the country, demand for electrical power exceeds the capacity of existing generating and distribution systems.)</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce the line load.</li> <li>2. Increase wire sizes, or reduce length of wiring.</li> <li>3. Request a voltage check from power company.</li> </ol>
<b>Motor overheats.</b>	<ol style="list-style-type: none"> <li>1. Excessive feed rate when crosscutting or ripping.</li> <li>2. Improper cooling. (Air circulation restricted through motor due to sawdust, etc.)</li> <li>3. Saw blade has "heel".</li> </ol>	<ol style="list-style-type: none"> <li>1. Slow down rate of feed.</li> <li>2. Clean out sawdust to provide normal air circulation through motor.</li> <li>3. Refer to Alignment Procedure Section of manual Step Five.</li> </ol>
<b>Motor starts slowly or fails to come up to full speed.</b>	<ol style="list-style-type: none"> <li>1. Low Voltage - will not trip starting switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Correct low voltage condition.</li> </ol>
<b>Motor stalls</b> (resulting in blown fuses or tripped circuit breakers).	<ol style="list-style-type: none"> <li>1. Voltage too low to permit motor to reach operating speed.</li> <li>2. Fuses or circuit breakers do not have sufficient capacity.</li> </ol>	<ol style="list-style-type: none"> <li>1. Correct the low line voltage condition.</li> <li>2. Replace fuses or circuit breakers with proper capacity units.</li> </ol>
<b>Frequent opening of fuses or circuit breakers.</b>	<ol style="list-style-type: none"> <li>1. Motor overloaded.</li> <li>2. Fuses or circuit breakers do not have sufficient capacity.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce motor load.</li> <li>2. Replace fuses or circuit breakers.</li> </ol>

## TROUBLE SHOOTING - ELECTRONICS

TROUBLE	PROBABLE CAUSE	SUGGESTED REMEDY
<b>All zeros flashing</b>	1. Unit just plugged in or power interrupted	1. See "Before Performing Cutting Operations" on p. 28.
<b>Decimal point flashing</b>	1. Zero point not set or lost 2. Miter or bevel encoder lost position.	1. Index or position to desired zero point and press  key. 2. Index to "0" position and press  key.
<b>Numbers flashing</b> (elevation only) Elevation motor tries to run and stops.	1. Elevation motor jammed against stop.	1. Check adjustment of Column Tube Supports. 2. Check alignment if blade jammed into table or workpiece. 3. Jog away from stop.
<b>Saw elevates slowly or will not elevate.</b>	1. Column binding in column support. 2. Saw in miter or bevel function. 3. Positioning motor overheated.	1. Repeat step two. "Adjusting column tube in column support" page 14 2. Press  key. 3. Allow to cool for at least 10 minutes.
<b>No display or failure of electronic function.</b>	1. No power to unit. 2. Master switch "OFF". 3. Electronics failure.	1. Check plug, fuse, or circuit breakers, inspect line, cord and plug for damaged insulation and shorted wires. 2. Turn master switch "ON". 3. Have electronics checked by qualified service technician. Repair service is available at your nearest Sears store.
<b>Display does not read 0° or 45° at bevel or miter indexes.</b>	1. Encoder out of adjustment.	1. See "Checking and Setting the Angle Encoders" on p. 26.
<b>Blade will not elevate when jogged.</b>	1. Saw in miter or bevel function.	1. Press  key.
<b>Elevation motor stops or will not run. Saw is not jammed.</b>	1. Positioning motor overheated.	1. Allow to cool for at least 10 minutes.
 <b>key does not function.</b>	1. Saw in miter or bevel function. 2. No elevation keyed in or saw already at desired elevation. 3. Elevation greater than plus or minus 7.935 inches.	1. Press  key. 2. Key in desired elevation. 3. Press  key. Enter desired elevation.
<b>Display does not respond correctly to keys</b>	1. Static Electricity	1. Turn "MASTER" switch "OFF" then "ON". If still not right, unplug saw from power supply momentarily. See "Before Performing Cutting Operation" p. 28.

If you require further help on operating your new Craftsman Electronic Radial Saw call 800-325-1184. In Missouri call 314-595-2500

# maintenance and lubrication

## MAINTENANCE

**WARNING: FOR YOUR OWN SAFETY, TURN SWITCH "OFF" AND REMOVE PLUG FROM POWER SOURCE OUTLET BEFORE MAINTAINING OR LUBRICATING YOUR SAW.**

When you receive your new Craftsman radial saw, it requires no lubrication. The radial saw has been partially aligned and all bearings are lubricated and sealed for life. In time, however, in order to keep your saw in perfect working order and accurate, it will be necessary to lubricate and realign. In fact, your radial saw needs more of a cleaning than a lubrication.

Make sure the teeth of the ANTIKICKBACK pawls are always sharp. If they become dull, remove 5/16 hex nut (Key #8 on p. 53) of antikickback assembly and flip Pawls so a new sharp point is in working position (see section titled "Positioning Guard, Antikickback and Spreader Assembly, For Ripping", sketch of Par. 2). Reassemble Pawls and Spreader to antikickback Bar. Check Spreader for proper alignment - correct if indicated. Replace Pawls when second set of teeth are no longer sharp.

## LUBRICATION

Your saw is precision built and should be kept clean and properly lubricated. Before describing the various points which may periodically require lubrication, IT IS MORE IMPORTANT TO FIRST MENTION THE VARIOUS POINTS WHICH SHOULD NOT BE LUBRICATED.

### NO LUBRICATION REQUIRED

Do not lubricate carriage ball bearings or motor bearings as these are sealed ball bearings and require no added lubrication.

Do not lubricate between radial arm cap and radial arm.

### PERIODICALLY LUBRICATE THESE POINTS

Use SAE No. 10W-30 automotive engine oil and refer to Parts List for locations. Apply a few drops of oil along the yoke pivot latch and bevel index pin only if the pin has a tendency to stick. Remove the left-hand carriage cover and use oil sparingly to prevent it from getting on the ball bearings or races. A light film of oil should be wiped on the face of the column tube to lubricate the fit between the column tube, and column support.

The thread on the elevation shaft assembly can be lubricated through the oil hole in the center of the radial arm cap.

**CAUTION: Excessive oil at any location will attract airborne dust particles and sawdust.**

# recommended accessories

ITEM	CAT. NO.
Sawblades (10" dia. w/ 5/8" bore) . See Catalog	
Stand .....	9-22205
Steel Legs .....	9-22238
Casters .....	9-22221 or 9-22222
Drill Chuck & Key .....	9-2980
*Molding Head Guard - 7-inch .....	9-29524
*Molding Head Guard - 8-inch .....	9-29523
Rotary Surface Planer - Carbide Tip ..	9-29513
Sanding Wheel - 8 inch .....	9-2274
Sanding Wheel - 10 inch .....	9-22723
Dust Collector .....	9-16997

ITEM	CAT. NO.
Taper Jig .....	9-3233
*Satin Cut Dado - 7-inch .....	9-3257
*Satin Cut Dado - 8-inch .....	9-3253
*Molding Head Single Cutter .....	9-3215
*Molding Head Three Cutter .....	9-3221
Sanding Drum — 3-inch .....	9-25246
•Lower Retractable Guard (for 90° crosscutting only) .....	9-29009
"Power Tool Know How Handbook" Radial Saw .....	9-2917

\*Before purchasing or using any of these accessories, read and comply with additional safety instructions No. "(D)2" on p. 5 of this manual.

•Meets OSHA Requirements as of 8-73

**NOTE:** This lower retractable guard is designed to provide additional protection to the operator in an axial direction to the sawblade (perpendicular to the plane of the sawblade):

- (a) When NOT in the cut (guards in full down position (touching the table) and carriage in full rear position behind fence):
- (b) When saw is set up to perform 90° crosscut operations (sawblade 90° to table surface and arm in 90° crosscut position).

The lower retractable guard will NOT provide protection to the operator, either crosscutting or ripping:

- (a) Axially when in the cut, because the inner and outer guards ride on top of the fence or workpiece during the cutting operation, exposing the teeth of the sawblade;

- (b) Radially (in direction in line with the cutting teeth);
- (c) Obliquely (at an angle to the guard and sawblade), between the axial and the radial directions.

Potential risks of injury may be introduced if the lower retractable guard is used for other than 90° crosscut operations, including:

- (a) Becoming caught or jammed in prior kerfs in the fence or table;
- (b) Giving the operator a false sense of security when performing miter, bevel, and rip cuts;
- (c) Jamming when starting up, and while operating, for bevel and compound miter cuts.
- (d) Jamming for certain in-rip cuts.

The following warning appears on the Lower Outer Guard:

**WARNING:**

**TO AVOID INJURY**

**SHUT OFF POWER**

**BEFORE CLEARING A**

**JAMMED LOWER GUARD**

The above recommended accessories are current and were available at the time this manual was printed.

PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL NUMBERS 113.190600 AND 113.190650

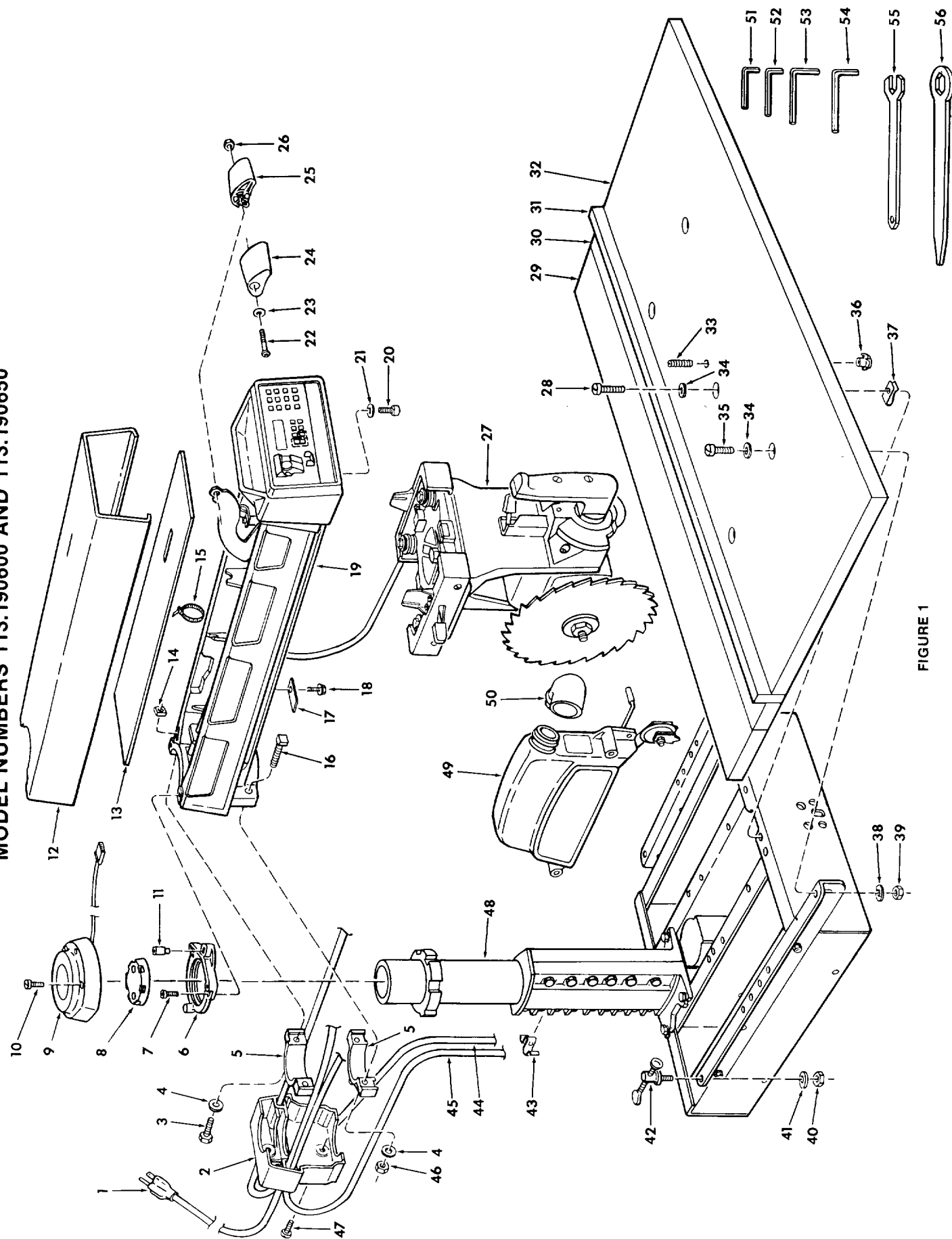


FIGURE 1

**PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL NUMBERS 113.190600 AND 113.190650**

**Always order by Part Number - Not by Key Number.**

**FIGURE 1**

Key No.	Part No.	Description	Key No.	Part No.	Description
1	75089	Cord, with Plug	30	63949	Table, Spacer
2	75090	Cover, Rear Arm	31	63432	Fence, Rip
3	60339	Bolt, Hex Hd. Locking 3/8 x 2-1/4	32	63947	Table, Front
4	60353	High Strength	33	102711	Screw, Set SL. Cup 1/4-20 x 1
5	63879	Washer, .380 x 47/64 x 1/8	34	STD551025	*Washer, 17/64 x 5/8 x 1/32
6	75092	Bearing, Arm	35	STD512510	*Screw, Pan Hd. 1/4-20 x 1
7	60474	Mount, Encoder	36	37384	Nut, Tee
8	75091	Screw, Fill. Rec. Type "T" 10-32 x 1/2	37	37530	Nut, "U" Clip
9	75093	Cap, Mounting	38	STD551125	*Lockwasher, 1/4
10	STD510807	Encoder, Miter	39	STD541025	Nut, Hex 1/4-20
11	75073	*Screw, Pan Rec. Type "T" 8-32 x 3/4	40	STD541431	*Nut, Lock 5/16-18
12	75094	Pin, Eccentric	41	STD551031	*Washer, 21/64 x 9/16 x 1/16
13	63686	Trim, Arm	42	63536	Clamp, Table
14	STD541037	Pad, Arm Trim	43	75095	Clip, Cord
15	60475	*Nut, Square 3/8-16	44	75096	Cord, Sensor
16	60342	Tie, Wire	45	75097	Cord, Motor
17	63881	Bolt. Sq. Hd. 3/8-16 x 2-1/4	46	STD541437	*Nut, Lock 3/8-16
18	9420417	Clamp, Cord	47	STD601103	*Screw, Pan Rec. Type "T" 10-32 x 3/8
19		Screw, Type "T" Hex Washer Hd. 1/4-20 x 5/8	48		Base Assembly, See Fig. 3
20	STD551131	Arm Assembly, See Fig. 4	49		Guard Assembly, See Fig. 5
21	9421620	*Lockwasher, 5/16	50	63258	Elbow, Dust
22	436594	Screw, Soc. Hd. Cap 5/16-18 x 1/2	51	30505	*Wrench, Hex "L" 1/8
23	STD551010	*Screw, Pan Rec. Hd. 10-32 x 1-1/2	52	63683	Wrench, Hex "L" 3/16
24	63884	*Washer, 13/64 x 7/16 x 1/16	53	63682	Wrench, Hex "L" 1/4
25	63885	Knob, L.H. Lever Arm	54	37837	Wrench, Hex "L" 5/32
26	STD541110	Knob, R.H. Lever Arm	55	63062	Wrench, Shaft
27		*Nut, Hex 10/32	56	3540	Wrench, Arbor
28	STD512520	Yoke Assembly, See Fig. 2		75098	Bag, Loose Parts (Not Illustrated)
29	63948	*Screw, Pan Hd. 1/4-20 x 1-3/4		63796	Bag, Loose Parts (Not Illustrated)
		Table, Rear		63894	Bag, Loose Parts (Not Illustrated)
				75106	Card Instructions (Not Illustrated)
				75100	Owners Manual (Not Illustrated)

\*Standard Hardware Item - May be purchased locally

**PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL NUMBERS 113.190600 AND 113.190650**

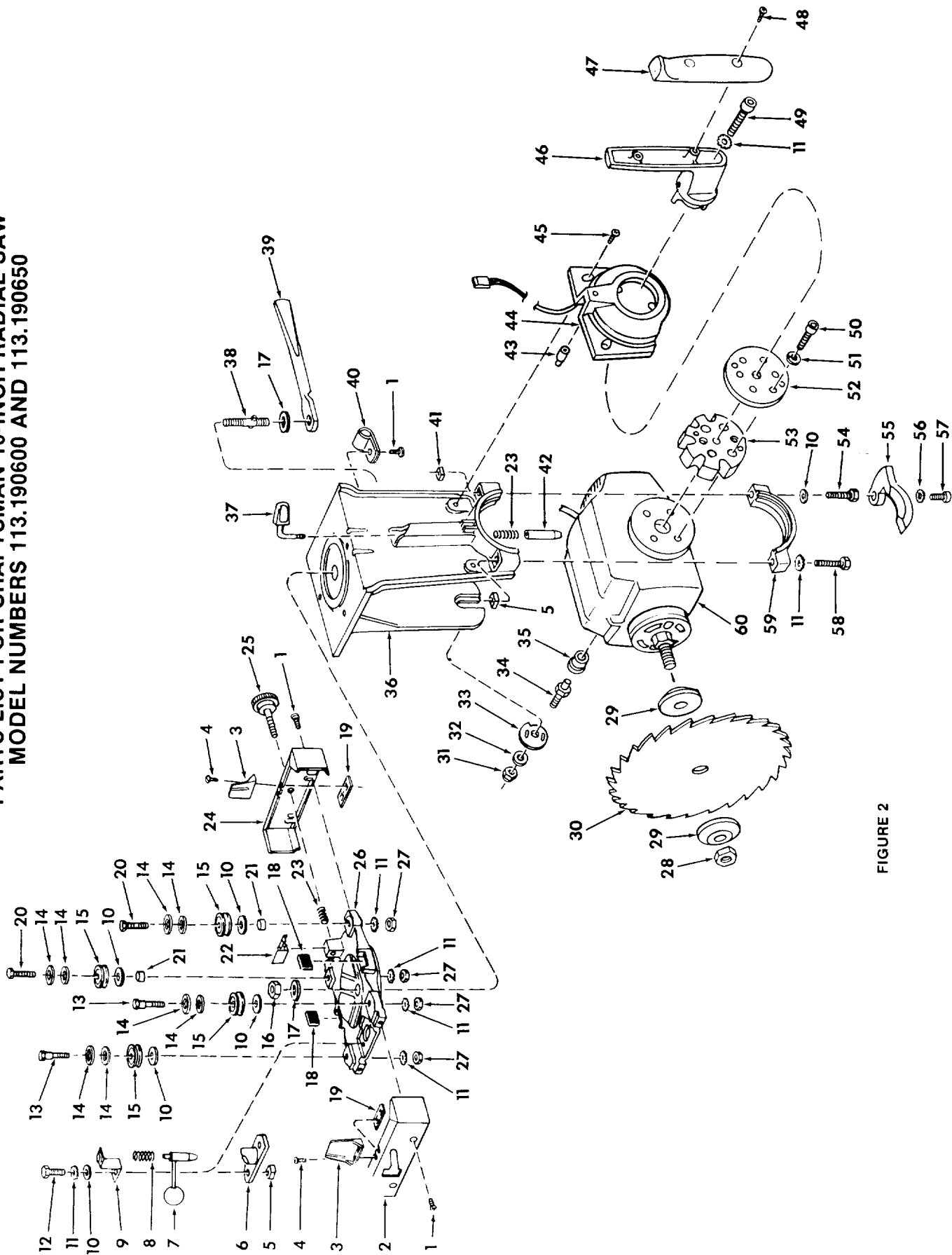


FIGURE 2



**PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL NUMBER 113.190600 AND 113.190650**

**FIGURE 2 - YOKE ASSEMBLY**

Key No.	Part No.	Description	Key No.	Part No.	Description
1	STD601105	*Screw, Pan Rec. Hd. Type "T" 10-32 x 1/2	31	STD541437	*Nut, Lock 3/8-16
2	63661	Cover, L.H. Carriage	32	STD551037	*Washer, .380 x 47/64 x 1/16
3	63786	Indicator, Rip	33	63652	Cam, Motor
4	STD510605	*Screw, Pan Rec. Hd. 6-32 x 1/2	34	63651	Stud, Motor
5	120399	Nut, Square 5/16-18	35	63469	Bushing, Rubber
6	63657	Housing, Index Pin	36	75072	Yoke
7	63893	Pin Assembly, Index	37	63648	Knob Assembly, Bevel Index
8	63658	Spring, Index	38	63643	Stud, Yoke Clamp
9	63656	Bracket, Spring	39	63644	Handle, Yoke Lock
10	STD551031	*Washer, 5/16 x 3/4 x .062	40	75107	Clamp, Cord
11	STD551231	*Lockwasher, 5/16, Ext. Tooth	41	60333	Nut, Square L.H. 5/16-18
12	STD523107	*Screw, Hex Hd. 5/16-18 x 3/4	42	63645	Pin, Index
13	63778	Screw, Eccentric	43	75073	Pin Eccentric
14	63782	Washer Assembly, Carriage Bearing	44	75076	Encoder, Bevel
15	63777	Bearing, Carriage	45	60337	*Screw, Pan Rec. Hd. Type "T" 10-32 x 7/8
16	STD541462	*Nut, Lock 5/8-11	46	63653	Handle, Yoke
17	STD551062	*Washer, .630 x 1.1125 x .093	47	63654	Trim, Handle
18	30567	Bumper	48	60338	*Screw, Pan Rec. Hd. Type "T" 10-32 x 1-1/4
19	30530	Nut, Speed	49	9421628	Screw, Soc. Cap 5/6-18 x 2
20	60336	Bolt, Hex 5/16-18 x 1-1/2 High Strength	50	60451	Screw, Soc. Cap 5/16-18 x 1-1/4
21	63779	Bearing, Sleeve	51	STD551131	*Lockwasher, 5/16
22	63528	Shoe, Rip Lock	52	63650	Plate, Retainer
23	30521	Spring, Swivel Latch	53	63649	Ring, Index
24	63659	Cover, R.H. Carriage	54	60335	Screw, Hex Hd. L.H. 5/16-18 x 2
25	63660	Knob, Carriage Lock	55	63647	Lever, Bevel Lock
26	63641	Carriage	56	STD551210	*Lockwasher, Ext. Tooth No. 10
27	STD541231	*Nut, Hex Jam 5/16-18	57	60334	Screw, Hex Soc. Button Hd. Cap 10-32 x 5/8
28	30495	Nut, Shaft	58	STD523120	*Screw, Hex Hd. 5/16-18 x 2
29	62498	Collar	59	63646	Cap, Yoke
30	60175	†Blade, Saw	60	75065	Motor

\*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.

**PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL NUMBER 113.190600 AND 113.190650**

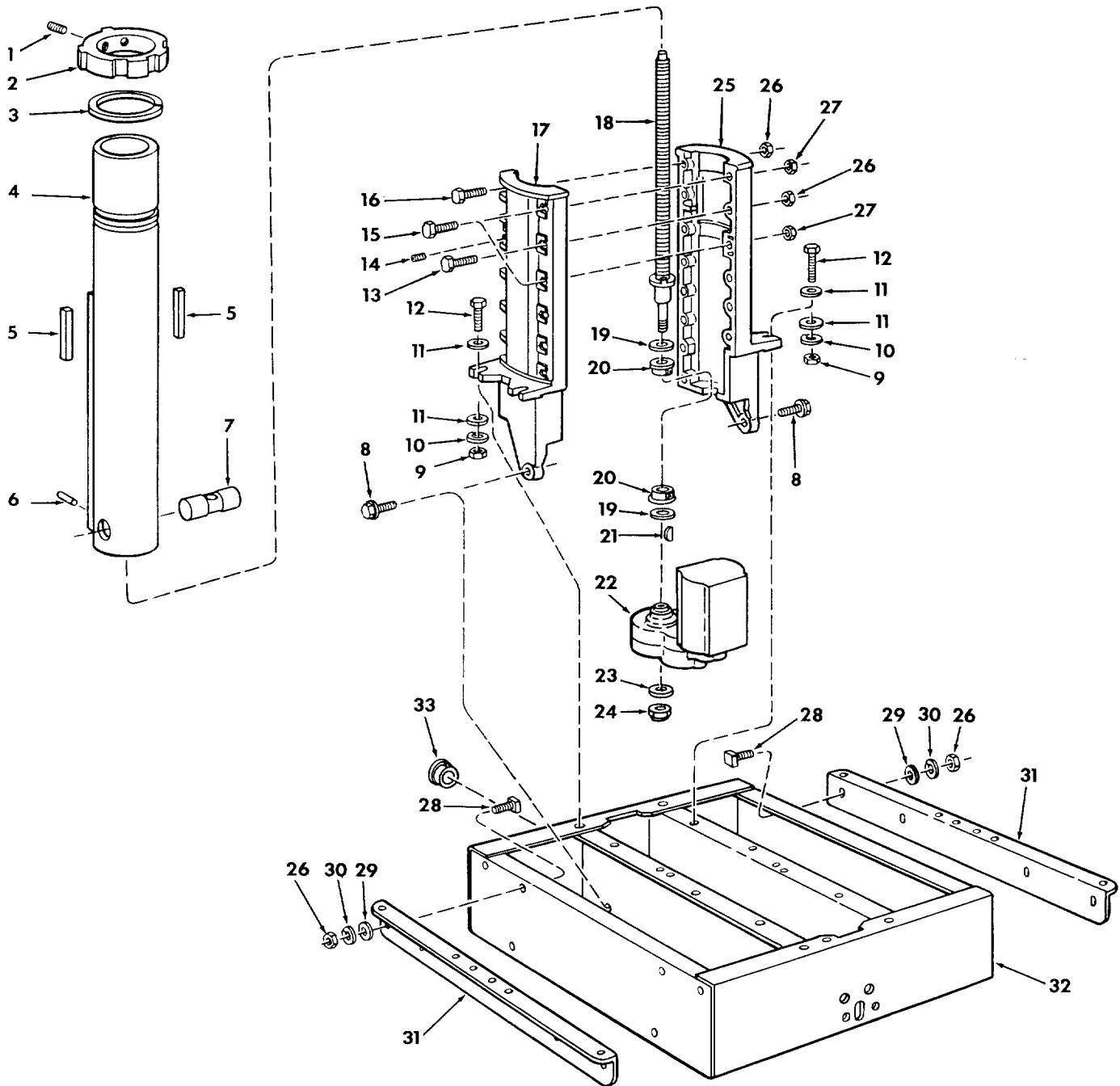


FIGURE 3

**PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL NUMBERS 113.190600 AND 113.190650**

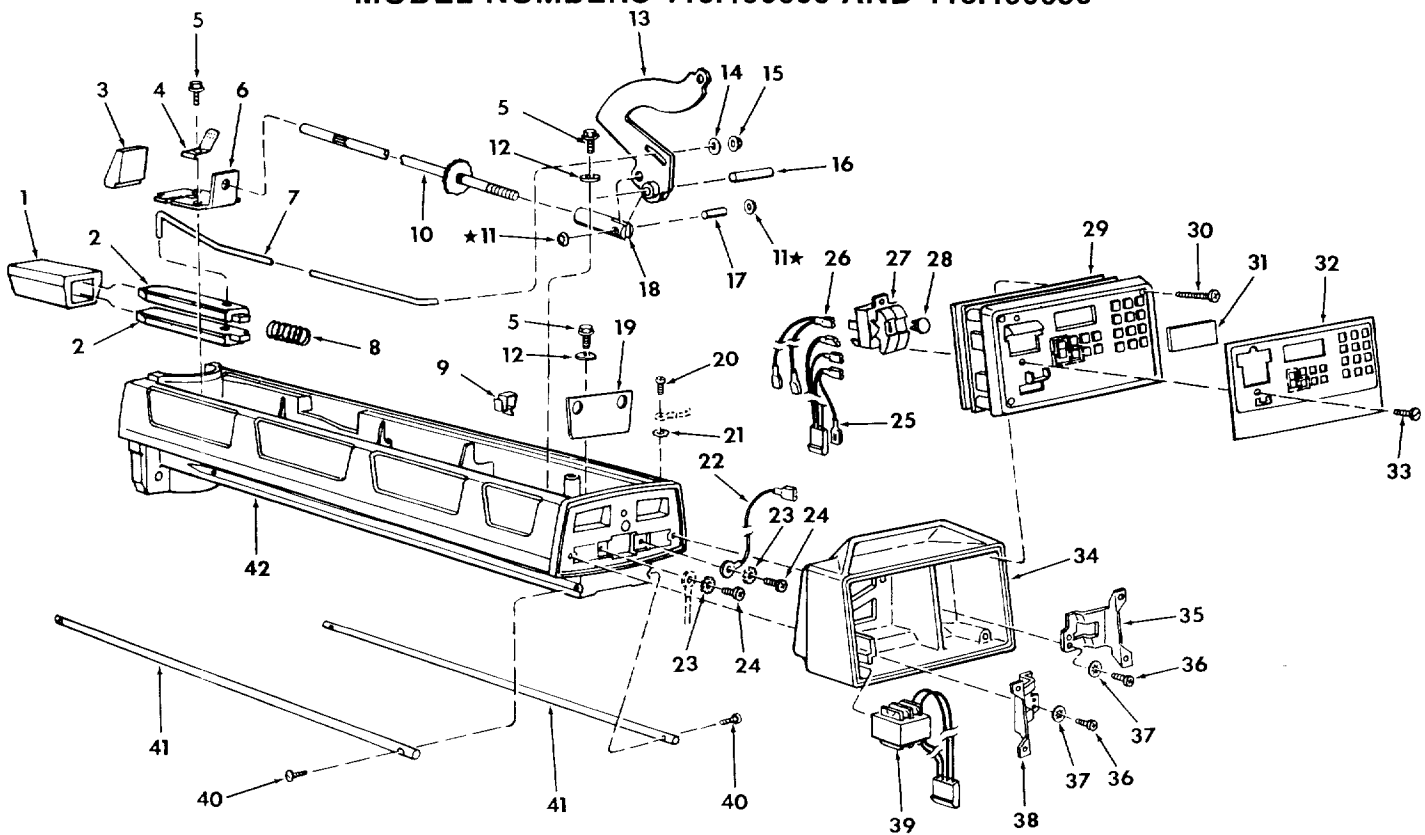
**FIGURE 3 - BASE ASSEMBLY**

Key No.	Part No.	Description
1	STD503705	*Screw, Soc. Set 3/8-16 x 1/2
2	63623	Latch, Arm
3	60330	Ring, Retaining
4	63611	Tube Assembly
5	63610	Gib, Column Tube
6	STD572510	*Pin, Roll 1/4 x 1
7	63612	Nut, Elevation
8	9416187	Screw, Type "T" Hex Washer, Hd. 5/16-18 x 3/4
9	STD541037	*Nut, Hex 3/8-16
10	STD551137	*Lockwasher, 3/8
11	60340	*Washer, .380 x 7/8 x 1/8
12	STD523712	*Screw, Hex Hd. 3/8-16 x x 1-1/4
13	186648	Screw, Hex Hd. 5/16-18 x 1-7/8
14	60329	Screw, Locking Set 1/4-20 x 3/8
15	60367	Bolt, Hex Hd. 5/16-18 x 1-7/8 High Strength

Key No.	Part No.	Description
16	60336	Bolt, Hex Hd. 5/16-18 x 1-1/2 High Strength
17	75101	Support, L.H.
18	75103	Shaft Assembly, Elevating
19	63500	Washer, Thrust
20	63614	Bearing, Lift Shaft
21	STD580013	*Key, Woodruff #2 3/32 x 1/2
22	75104	Transmission Assembly
23	STD551037	*Washer, .380 x 47/64 x 3/32
24	STD541437	*Nut, Lock 3/8-16
25	75102	Support, R.H.
26	STD541031	*Nut, Hex 5/16-18
27	STD541431	*Nut, Lock 5/16-18
28	109163	Bolt, Square Hd. 5/16-18 x 3/4
29	STD551031	*Washer, 11/32 x 7/8 x 1/16
30	STD551131	*Lockwasher, 5/16
31	63673	Channel, Table Mounting
32	75105	Base Assembly
33	60476	Bushing, Open/Closed

\*Standard Hardware Item - May be Purchased Locally.

**PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL NUMBERS 113.190600 AND 113.190650**



**FIGURE 4 - ARM ASSEMBLY**

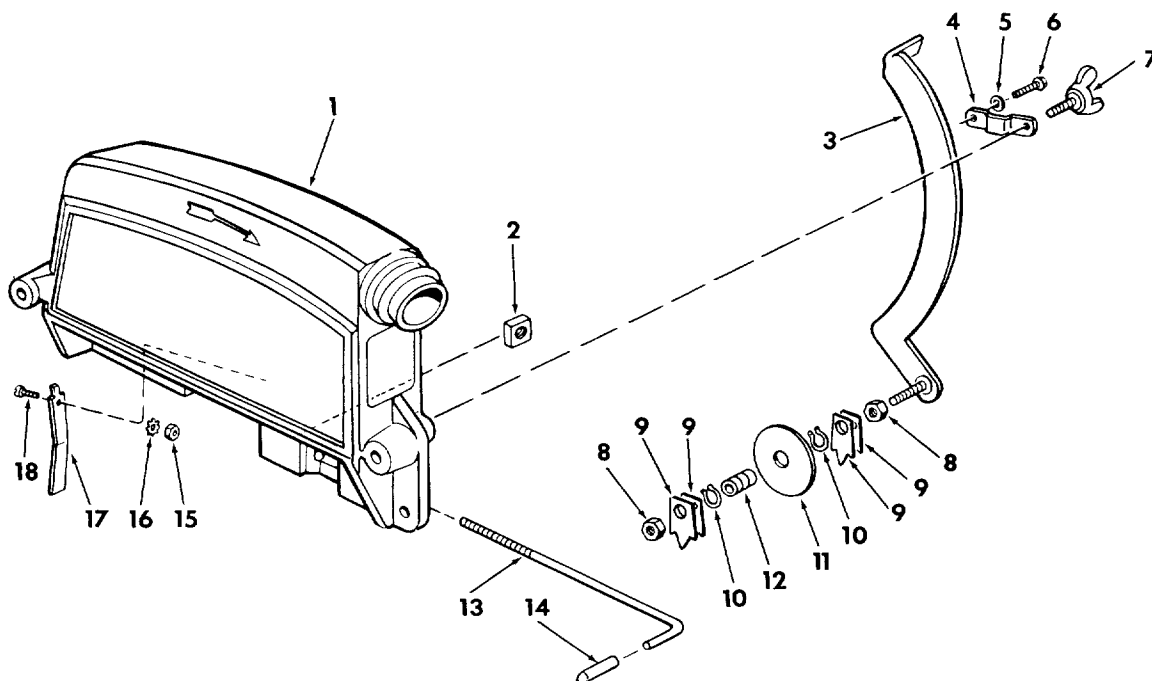
Key No.	Part No.	Description
1	63626	Housing, Pin
2	63629	Pin, Arm Index
3	63631	Pawl, Arm Lock
4	63628	Spring, Tension
5	9420417	*Screw, Type "T" Hex Washer Hd. 1/4-20 x 5/8
6	63883	Guide
7	63632	Rod, Index
8	63630	Spring, Arm Lock
9	65110	Clip, Hose
10	63633	Rod Assembly, Arm Lock
11	60240	†Nut, Push 1/4
12	60332	Washer, 21/64 x 1 x 1/8
13	63872	Lever, Assembly
14	STD551025	*Washer, 17/64 x 5/8 x 1/32
15	60208	*Nut, Push
16	63638	Pin, Lever
17	63637	Pin
18	63636	Pin, Clevis
19	75079	Baffle, Wiring
20	STD601105	*Screw, Pan Rec. Type "T" 10-32 x 1/2
21	STD551210	*Lockwasher, Ext. Tooth N10
22	75080	Lead, Grounding
23	STD551208	*Lockwasher, External No. 8
24	STD600805	*Screw, Pan Cross Type "T" 8-32 x 1/2

Key No.	Part No.	Description
25	75081	Lead
26	75082	Lead, with Terminals
27	62830	Switch, Locking
28	60256	Key, Switch
29	75083	Controls Electronic Radial Saw Includes Key 25, 26, 27, 31, 32
30	75084	Screw, Pan Hd. Plastite No. 6 x 2-1/4
31	62826	Lens, Display
32	75085	Panel, Trim
33	STD510605	*Screw, Pan Hd. No. 6-32 x 1/2
34	75108	Housing, Bezel (Includes Key #35 & 38)
35	75088	Bracket, Grounding R.H.
36	60337	Screw, Pan Rec. Type "T" 10-32 x 7/8
37	STD551206	*Lockwasher, Internal #6
38	75087	Bracket, Grounding L.H.
39	62832	Transformer
40	448337	Screw, Type "T" Rd. Rec. Hd. 10-32 x 5/8
41	63639	Track
42	63878	Arm, Radial

\*Standard Hardware Item - May be Purchased Locally.

†If this part is removed, discard and replace with a new Push Nut.

**PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL NUMBER 113.190600 AND 113.190650**



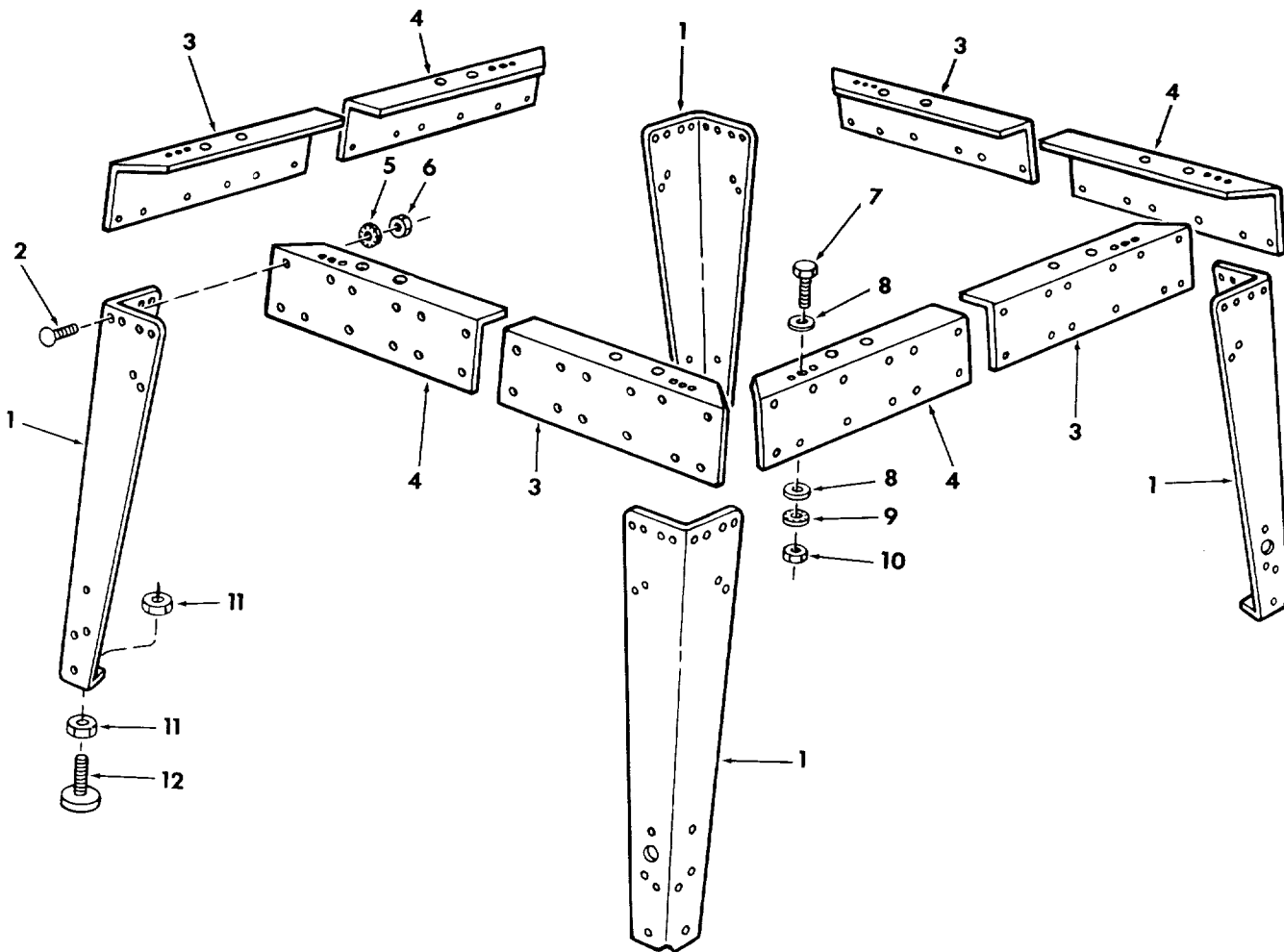
**FIGURE 5 - GUARD ASSEMBLY**

Key No.	Part No.	Description
1	63681	Guard
2	120399	*Nut, Square 5/16-18
3	63541	Bar, Antikickback
4	63540	Guide, Antikickback
5	STD551010	*Washer, 13/64 x 5/8 x 1/32
6	STD601103	*Screw, Type "T" Pan Hd. 10-32 x 3/8
7	60219	Screw, Wing 5/16-18 x 1/2
8	STD541231	*Nut, Hex., 5/16-18
9	63271	Pawl, Antikickback

Key No.	Part No.	Description
10	STD582043	*Ring, Retaining 7/16
11	63270	Spreader
12	63269	Bearing
13	63539	Screw, Guard Clamp (Includes Key No. 14)
14	60435	Grip
15	STD541008	*Nut, Hex, 8-32
16	STD551208	*Lockwasher, External Tooth No. 8
17	63538	Clamp, Guard
18	STD510805	*Screw, Pan Hd., 8-32 x 1/2

\*Standard Hardware Item - May be Purchased Locally.

**PARTS LIST FOR CRAFTSMAN 10-INCH RADIAL SAW  
MODEL 113.190600 AND 113.190650**



**FIGURE 6 - LEG SET**

Key No.	Part No.	Description
1	63749	Leg
2	60314	Screw, Truss Hd. 1/4-20 x 5/8
3	63751	Stiffener, R.H.
4	63750	Stiffener, L.H.
5	STD551225	*Lockwasher, External 1/4
6	STD541025	*Nut, Hex 1/4-20
7	STD523106	*Screw, Hex Hd. 5/16-18 x 5/8
8	STD551031	*Washer, 11/32 x 11/16 x 1/16
9	STD551131	*Lockwasher, External 5/16
10	STD541231	*Nut, Hex Jam 5/16-18
11	STD541250	*Nut, Hex Jam 1/2-13
12	803835	Foot, Leveling
-	63752	Bag of Loose Parts (Not Illustrated)

\*Standard Hardware Item - May be Purchased Locally.

# **DANGER**

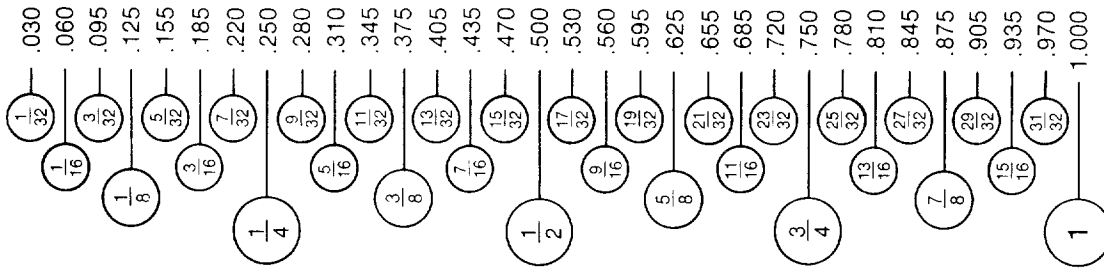
## **ELECTRONIC RADIAL SAW CONTROL PANEL OPERATIONS**

DO NOT OPERATE SAW WITHOUT FIRST READING AND UNDERSTANDING OWNER'S MANUAL. YOUR MANUAL CONTAINS SAFETY INSTRUCTIONS AND DETAILED EXPLANATIONS OF KEYBOARD FUNCTIONS AND BASIC SAW OPERATIONS.

RESULT DESIRED	ACTION REQUIRED	DISPLAY
1. To turn on display	Plug in saw; Turn Master Switch "ON"	Flashing
2. To "ZERO" elevation	Press  key; "JOG" blade to "ZERO" position	Flashing
3. To "JOG" blade up	Press  key	Steady
4. To "JOG" blade down	Press  key Press  key	Read current position
5. To program to a desired elevation	Press  key Press  key	Read current position
	Press number keys for position desired	Current position
	Press  key	Desired position
		Current position
6. To "ZERO" bevel angle	Press  key; Index motor with blade vertical	Flashing
7. To set a bevel angle	Press  key	Steady
	Press  key; Rotate motor to desired angle	Read current angle
8. To "ZERO" miter angle	Press  key; Index arm to center position	Flashing
9. To set a miter angle	Press  key	Steady
	Press  key; Rotate arm to desired angle	Read current angle

**NOTE:** To stop a programmed motion press key or push MASTER switch "OFF"

### **DECIMAL EQUIVALENTS**



**NOTE:** All decimals are rounded to the nearest .005 inch.

# Sears

## *owners manual*

### SERVICE

**MODEL NO.  
113.190600**

SAW ONLY

**113.190650**

SAW WITH LEGS

### HOW TO ORDER REPAIR PARTS

## 10-INCH ELECTRONIC RADIAL SAW

Now that you have purchased your 10-inch electronic 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 10-inch electronic radial saw will be found on a label attached to your saw, at the left hand side of the base.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION:

PART NUMBER

PART DESCRIPTION

MODEL NUMBER

113.190600 or

113.190650

NAME OF ITEM

10-INCH ELECTRONIC

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.**