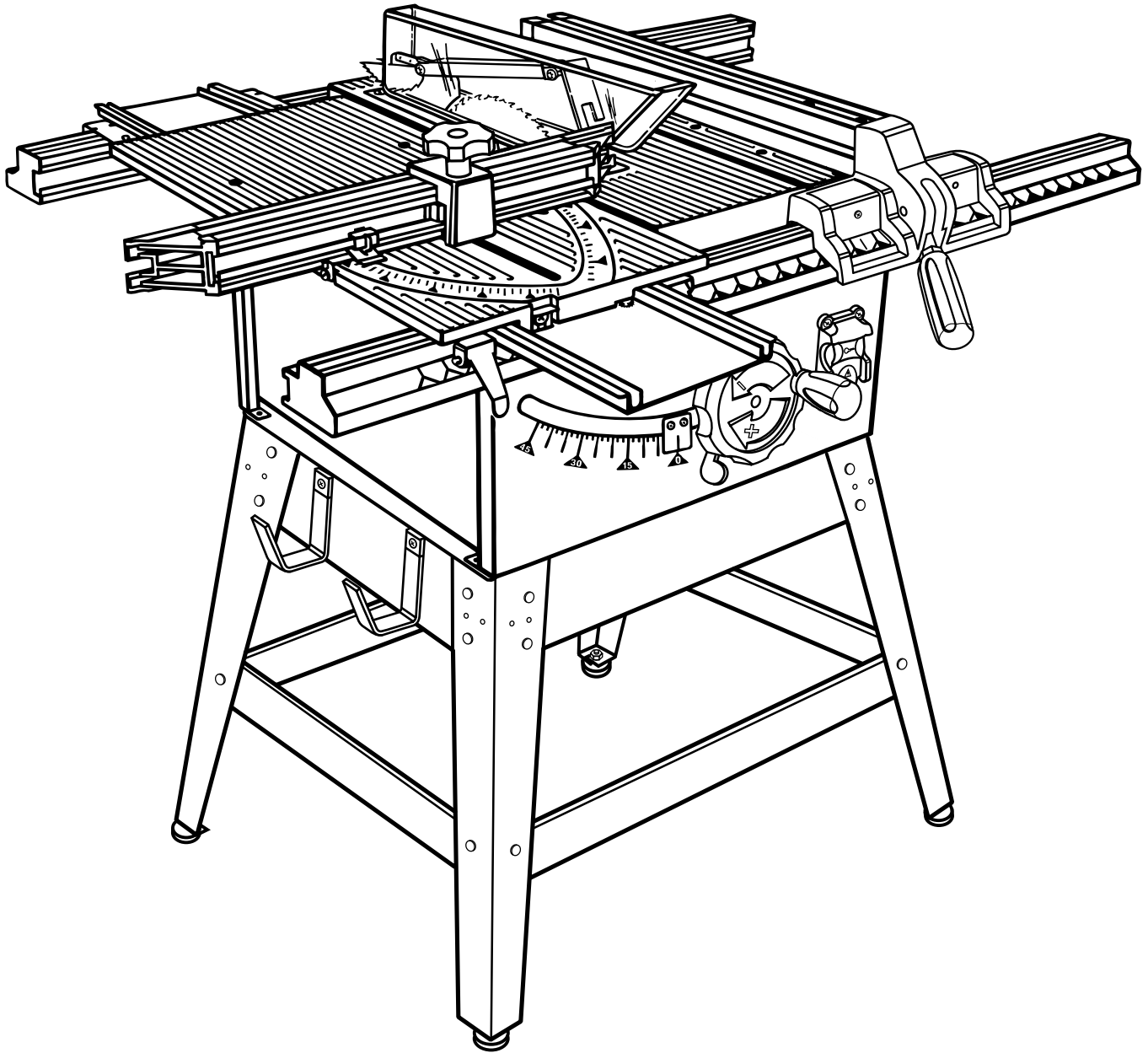




# OPERATOR'S MANUAL

## 10 in. (254 mm) TABLE SAW

### BT3100-1



Your new Table Saw has been engineered and manufactured to Ryobi's high standards for dependability, ease of operation, and operator safety. Properly cared for, it will give you years of rugged, trouble-free performance.

**WARNING:** To reduce the risk of injury, the user must read and understand the operator's manual.

Thank you for buying a Ryobi Table Saw.

**SAVE THIS MANUAL FOR FUTURE REFERENCE**

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## PRODUCT SPECIFICATIONS

Blade Diameter	10 in. (254 mm)
Blade Arbor	5/8 in. (16 mm)
Cutting Depth at 0°	3-9/16 in. (90.5 mm)
Cutting Depth at 45°	2-1/2 in. (63.5 mm)
Rating	120 Volts, 60 Hz-AC Only, 15 Amperes
Output Speed	4,800 RPM
Net Weight Without Workstand	75 lbs. (34.1 kg.)
Net Weight With Workstand	107 lbs. (48.6 kg.)

# RULES FOR SAFE OPERATION

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and the explanations with them, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

Symbol	Meaning
	<b>DANGER:</b> Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	<b>WARNING:</b> Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	<b>CAUTION:</b> Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices that may cause property damage.
<b>NOTE:</b>	Advises you of information or instructions vital to the operation or maintenance of the equipment.

## IMPORTANT

Servicing requires extreme care and knowledge and should be performed only by a qualified service technician. For service we suggest you return the tool to your nearest Ryobi **AUTHORIZED SERVICE CENTER** for repair. When servicing, use only identical Ryobi replacement parts.

### **WARNING:**

Do not attempt to use the tool until you have read thoroughly and understand completely the operator's manuals. Pay close attention to the safety rules, including Dangers, Warnings, and Cautions. If you use this tool properly and only for what it is intended, you will enjoy years of safe, reliable service.

### **WARNING:**

Do not attempt to use the tool until you have read thoroughly and understand completely the operator's manual. Pay close attention to the safety rules, including Dangers, Warnings, and Cautions. If you use this tool properly and only for what it is intended, you will enjoy years of safe, reliable service.

### **WARNING:**

Observe all normal safety precautions related to avoiding electrical shock.

### **WARNING:**



The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning tool operation, always wear safety goggles or safety glasses with side shields and a full face shield when needed. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always wear eye protection which is marked to comply with ANSI Z87.1.



**Look for this symbol to point out important safety precautions. It means attention!!! Your safety is involved.**

# RULES FOR SAFE OPERATION

Safe operation of this power tool requires that you read and understand this operator's manual and all labels affixed to the tool. Safety is a combination of common sense, staying alert, and knowing how your table saw works.

## READ ALL INSTRUCTIONS

- **KNOW YOUR POWER TOOL.** Read the operator's manual carefully. Learn the saw's applications and limitations as well as the specific potential hazards related to this tool.
- **GUARD AGAINST ELECTRICAL SHOCK BY PREVENTING BODY CONTACT WITH GROUNDED SURFACES.** For example; pipes, radiators, ranges, refrigerator enclosures.
- **KEEP GUARDS IN PLACE** and in working order. Never operate the tool with any guard or cover removed. Make sure all guards are operating properly before each use.
- **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents. **DO NOT** leave tools or pieces of wood on the saw while it is in operation.
- **AVOID DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations or expose to rain. Keep work area well lit.
- **KEEP CHILDREN AND VISITORS AWAY.** All visitors should wear safety glasses and be kept a safe distance from work area. Do not let visitors contact tool or extension cord while operating.
- **MAKE WORKSHOP CHILDPROOF** with padlocks or master switches, or by removing starter keys.
- **DON'T FORCE TOOL.** It will do the job better and safer at the feed rate for which it was designed.
- **USE RIGHT TOOL.** Don't force tool or attachment to do a job it was not designed for. Don't use it for a purpose not intended.
- **MAKE SURE YOUR EXTENSION CORD IS IN GOOD CONDITION.** When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. A wire gage size (A.W.G.) of at least 14 is recommended for an extension cord 25 feet or less in length. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.
- **DRESS PROPERLY.** Do not wear loose clothing, gloves, neckties, or jewelry. They can get caught and draw you into moving parts. Rubber gloves and nonskid footwear are recommended when working outdoors. Also wear protective hair covering to contain long hair.
- **ALWAYS WEAR SAFETY GLASSES WITH SIDE SHIELDS.** Everyday eyeglasses have only impact-resistant lenses; they are **NOT** safety glasses.
- **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.
- **DON'T OVERREACH.** Keep proper footing and balance at all times.
- **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories.
- **DISCONNECT TOOLS.** When not in use, before servicing, or when changing attachments, blades, bits, cutters, etc., all tools should be disconnected.
- **AVOID ACCIDENTAL STARTING.** Be sure switch is off when plugging in.
- **USE RECOMMENDED ACCESSORIES.** The use of improper accessories may cause risk of injury.
- **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
- **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged must be properly repaired or replaced by an authorized service center to avoid risk of personal injury.
- **USE THE RIGHT DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of blade or cutter only.
- **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
- **PROTECT YOUR LUNGS.** Wear a face or dust mask if the cutting operation is dusty.
- **PROTECT YOUR HEARING.** Wear hearing protection during extended periods of operation.
- **DON'T ABUSE CORD.** Never yank cord to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
- **USE OUTDOOR EXTENSION CORDS.** When tool is used outdoors, use only extension cords with approved ground connection that are intended for use outdoors and so marked.
- **ALWAYS KEEP THE BLADE GUARD AND RIVING KNIFE (SPLITTER) IN PLACE** and in working order.
- **KEEP BLADES CLEAN AND SHARP.** Sharp blades minimize stalling and kickback.
- **KEEP HANDS AWAY FROM CUTTING AREA.** Keep hands away from blades. Do not reach underneath work or around or over the blade while blade is rotating. Do not attempt to remove cut material when blade is moving.

# RULES FOR SAFE OPERATION

- **BLADES COAST AFTER TURN OFF.**
- **NEVER USE IN AN EXPLOSIVE ATMOSPHERE.** Normal sparking of the motor could ignite fumes.
- **INSPECT TOOL CORDS PERIODICALLY.** If damaged, have repaired by a qualified service technician at an authorized service facility. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Repair or replace a damaged or worn cord immediately. Stay constantly aware of cord location and keep it well away from the rotating blade.
- **INSPECT EXTENSION CORDS PERIODICALLY** and replace if damaged.
- **KEEP TOOL DRY, CLEAN, AND FREE FROM OIL AND GREASE.** Always use a clean cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products, or any solvents to clean tool.
- **STAY ALERT AND EXERCISE CONTROL.** Watch what you are doing and use common sense. Do not operate tool when you are tired. Do not rush.
- **DO NOT USE TOOL IF SWITCH DOES NOT TURN IT ON AND OFF.** Have defective switches replaced by an authorized service center.
- **GUARD AGAINST KICKBACK.** Kickback occurs when the blade stalls rapidly and workpiece is driven back towards the operator. It can pull your hand into the blade resulting in serious personal injury. Stay out of blade path and turn switch off immediately if blade binds or stalls.
- **USE RIP FENCE.** Always use a fence or straight edge guide when ripping.
- **SUPPORT LARGE PANELS.** To minimize risk of blade pinching and kickback, always support large panels.
- **BEFORE MAKING A CUT, BE SURE ALL ADJUSTMENTS ARE SECURE.**
- **USE ONLY CORRECT BLADES.** Do not use blades with incorrect size holes. Never use blade washers or bolts that are defective or incorrect. The maximum blade capacity of your saw is 10 in. (254 mm).
- **AVOID CUTTING NAILS.** Inspect for and remove all nails from lumber before cutting.
- **NEVER TOUCH BLADE** or other moving parts during use.
- **NEVER START A TOOL WHEN ANY ROTATING COMPONENT IS IN CONTACT WITH THE WORKPIECE.**
- **DO NOT OPERATE THIS TOOL WHILE UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR ANY MEDICATION.**
- **GROUND ALL TOOLS.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle.
- **WHEN SERVICING** use only identical Ryobi replacement parts. Use of any other parts may create a hazard or cause product damage.
- **REMOVE ALL FENCES AND AUXILIARY TABLES** before transporting saw. Failure to do so can result in an accident causing possible serious personal injury.
- **ALWAYS USE BLADE GUARD, RIVING KNIFE, AND ANTI-KICKBACK PAWLS** on all "through-sawing" operations. Through-sawing operations are those in which the blade cuts completely through the workpiece as in ripping or crosscutting. Keep the blade guard down, the anti-kickback pawls down, and the riving knife in place over the blade.
- **ALWAYS SECURE WORK** firmly against rip fence or miter fence.
- **ALWAYS USE A PUSH STICK FOR RIPPING NARROW STOCK.** A push stick is a device used to push a workpiece through the blade instead of using your hands. Size and shape can vary but the push stick must always be narrower than the workpiece to prevent the push stick from contacting the saw blade. When ripping narrow stock, always use a push stick, so your hand does not come close to the saw blade. Use a featherboard and push blocks for non-through cuts.
- **NEVER** perform any operation "freehand" which means using only your hands to support or guide the workpiece. Always use either the rip fence or miter fence to position and guide the work.
- **NEVER** stand or have any part of your body in line with the path of the saw blade.
- **NEVER** reach behind, over, or within three inches of the blade or cutter with either hand for any reason.
- **MOVE THE RIP FENCE** out of the way when crosscutting.
- **NEVER** use rip fence as cutoff gage when crosscutting.
- **NEVER** attempt to free a stalled saw blade without first turning the saw **OFF** and disconnecting the saw from the power source.
- **PROVIDE ADEQUATE SUPPORT** to the rear and sides of the saw table for wide or long work pieces. Use a sturdy "outrigger" support if a table extension more than 24 inches long is attached to the saw.
- **AVOID KICKBACKS** (work thrown back toward you) by:
  - A. Keeping blade sharp.
  - B. Keeping rip fence parallel to the saw blade.
  - C. Keeping riving knife, anti-kickback pawls, and blade guard in place and operating.
  - D. Not releasing the work before it is pushed all the way past the saw blade using a push stick.
  - E. Not ripping work that is twisted or warped or does not have a straight edge to guide along the fence.
- **AVOID AWKWARD OPERATIONS AND HAND POSITIONS** where a sudden slip could cause your hand to move into the cutting tool.

# RULES FOR SAFE OPERATION

- **CHECK WITH A QUALIFIED ELECTRICIAN** or service personnel if the grounding instructions are not completely understood or if in doubt as to whether the tool is properly grounded.
- **USE ONLY CORRECT ELECTRICAL DEVICES:** 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
- **DO NOT MODIFY** the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician.
- **USE ONLY RECOMMENDED ACCESSORIES** listed in this manual or addendums. Blades must be rated for at least 5,500 rpm. Use of accessories that are not listed may cause the risk of personal injury. Instructions for safe use of accessories are included with the accessory.
- **DOUBLE CHECK ALL SETUPS.** Make sure blade is tight and not making contact with saw or workpiece before connecting to power supply.
- **SECURE THE SAW TO THE LEG STAND OR A WORK-BENCH** capable of supporting the load of the saw plus any workpiece. This is necessary to avoid any risk of the saw tipping over.
- **MAKE SURE THE WORK AREA HAS AMPLE LIGHTING** to see the work and that no obstructions will interfere with safe operation **BEFORE** performing any work using the table saw.
- **ALWAYS TURN OFF SAW** before disconnecting it, to avoid accidental starting when reconnecting to power supply.
- **SAVE THESE INSTRUCTIONS.** Refer to them frequently and use to instruct other users. If you loan someone this tool, loan them these instructions also.

## **WARNING:**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

## SAFETY AND INTERNATIONAL SYMBOLS

This operator's manual describes safety and international symbols and pictographs that may appear on this product. Read the operator's manual for complete safety, assembly, operating and maintenance, and repair information.

### SYMBOL



### MEANING

- Do not expose to rain or use in damp locations.



### NO HANDS SYMBOL

- Failure to keep your hands away from the blade will result in serious personal injury.

## SAVE THESE INSTRUCTIONS

# ELECTRICAL

## EXTENSION CORDS

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. When using a power tool at a considerable distance from the power source, use an extension cord heavy enough to carry the current that the tool will draw. An undersized extension cord will cause a drop in line voltage, resulting in a loss of power and causing the motor to overheat. Use the chart provided below to determine the minimum wire size required in an extension cord. Only round jacketed cords listed by Underwriter's Laboratories (UL) should be used.

Length of Extension Cord	Wire Size (A.W.G.)
Up to 25 feet	14
26-50 feet	12

When working with the tool outdoors, use an extension cord that is designed for outside use. This is indicated by the letters **WA** on the cord's jacket.

Before using an extension cord, inspect it for loose or exposed wires and cut or worn insulation. Repair or replace a damaged or worn cord immediately.

### **⚠ CAUTION:**

Keep the cord away from the cutting area and position the cord so that it will not be caught on lumber, tools, or other objects during cutting.

## ELECTRICAL CONNECTION

Your Ryobi Table Saw is powered by a precision built electric motor. It should be connected to a **power supply that is 120 volts, 60Hz, AC only (normal household current)**. Do not operate this tool on direct current (DC). A substantial voltage drop will cause a loss of power and the motor will overheat. If the saw does not operate when plugged into an outlet, double check the power supply.

## GROUNDING INSTRUCTIONS

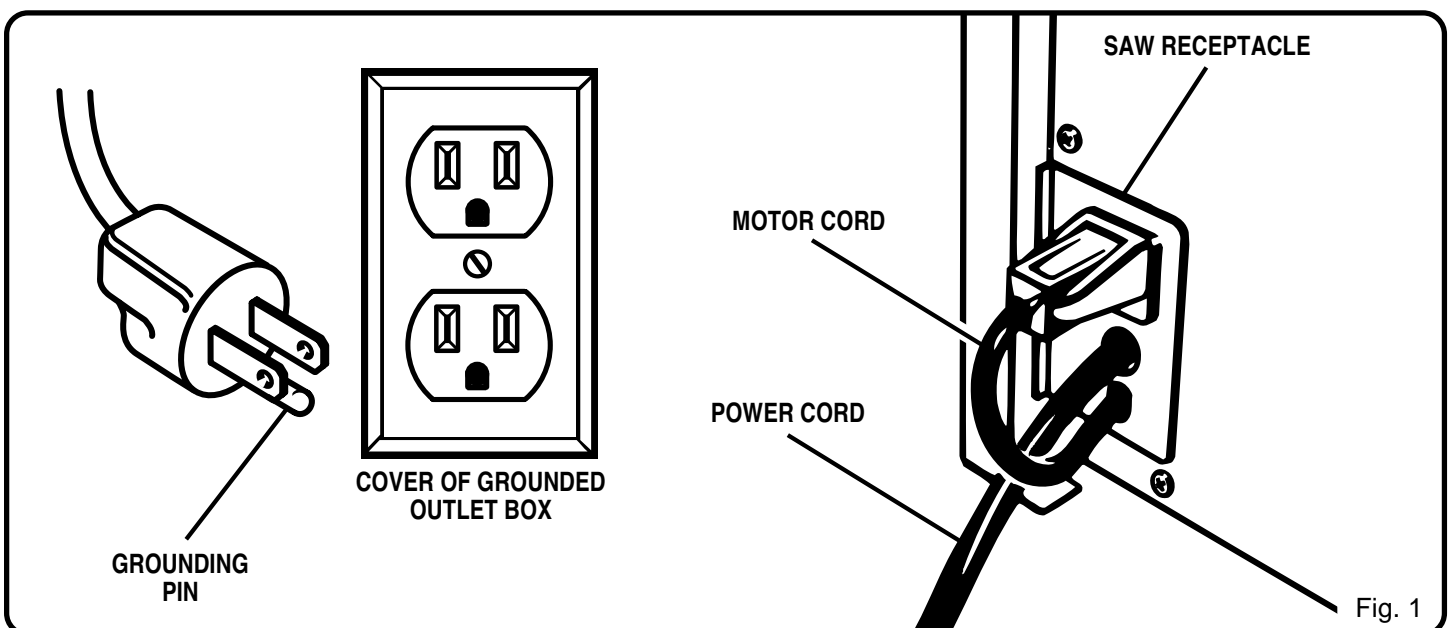
In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Repair or replace a damaged or worn cord immediately.

This tool is intended for use on a circuit that has an outlet like the one shown in *Figure 1*. It also has a grounding pin like the one shown.



# GLOSSARY OF TERMS

## **Anti-Kickback Pawls (Fingers)**

Device which, when properly installed and maintained, is designed to stop the workpiece from being kicked back toward the front of the saw during a ripping operation.

## **Arbor**

The shaft on which a blade or cutting tool is mounted.

## **Bevel Cut**

A cutting operation made with an angled blade.

## **Compound Cut**

A cut with both a miter angle and a bevel angle.

## **Crosscut**

A cutting or shaping operation made across the grain of the workpiece.

## **Dado**

A non-through cut which produces a square sided notch or trough in the workpiece.

## **Featherboard**

A device used to help control the workpiece by guiding it securely against the table or fence during any rip cut operation.

## **Freehand**

Performing a cut without using a fence, miter gauge, fixture, hold down clamp, or other proper device to keep the workpiece from twisting during the cut.

## **Gum**

A sticky, sap based residue from wood products.

## **Heel**

Misalignment of the blade.

## **Kerf**

The amount of material removed by the blade in a through cut or the slot produced by the blade in a non-through or partial cut.

## **Kickback**

An uncontrolled grabbing and throwing of the workpiece back toward the front of the saw. Associated with the workpiece closing the kerf and pinching the blade or otherwise placing tension on the blade.

## **Leading End**

The end of the workpiece which, during a rip type operation, is pushed into the cutting tool first.

## **Miter Cut**

A cutting operation made with the wood at any angle other than 90 degrees.

## **Molding**

A cut which produces a special shape in the workpiece, used for joining or decoration.

## **Non-Through Cuts**

Any cutting operation where the blade does not extend completely through the thickness of the workpiece.

## **Push Block**

A device used to feed the workpiece through the saw, except during narrow ripping type operations where a push stick should be used. It also helps keep the operator's hands well away from the blade.

## **Push Stick**

A device used to feed the workpiece through the saw to help keep the operator's hands well away from the blade.

## **Rabbet**

A notch in the edge of a workpiece.

## **Resin**

A sticky, sap base substance that has hardened.

## **Ripping Or Rip Cut**

A cutting or shaping operation made along the length or with the grain of the workpiece.

## **Riving Knife**

Also known as a spreader or splitter. A metal piece, slightly thinner than the saw blade which helps keep the kerf open and prevent kickback.

## **Revolutions Per Minute (RPM)**

The number of turns completed by a spinning object in one minute.

## **Saw Blade Path**

The area over, under, behind, or in front of the blade. As it applies to the workpiece, that area which will be, or has been, cut by the blade.

## **Set**

The distance that the tip of the sawblade tooth is bent (or set) outward from the face of the blade.

## **Throw-Back**

Throwing of a workpiece in a manner similar to a kickback. Usually associated with a cause other than the kerf closing, such as a workpiece being dropped onto the blade or being placed inadvertently in contact with the blade.

## **Through Sawing**

Any cutting operation where the blade extends completely through the thickness of the workpiece.

## **Trailing End**

The workpiece end last cut by the blade in a ripping operation.

## **Workpiece**

The item on which the cutting operation is being done. The surfaces of a workpiece are commonly referred to as faces, ends, and edges.



# UNPACKING

Your Model BT3100-1 Table Saw is shipped complete in one carton and includes two table extensions, a rip fence, a miter fence with adjusting clamp, a blade guard, rails, and leg stand.

Separate all parts from packing materials and check each one with the illustration and the list 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 the table saw, plug in the power cord, or turn the switch on until the missing parts are obtained and are installed correctly. Call 1-800-525-2579 for assistance if any parts are missing or damaged.

**The saw is factory set for accurate cutting.** After assembling it, check for accuracy. If shipping has influenced the settings, refer to specific procedures explained in the operation and maintenance sections of this manual.

## **⚠ WARNING:**

If any parts are missing, do not operate this tool until the missing parts are replaced. Failure to do so could result in possible serious personal injury.

# TOOLS NEEDED

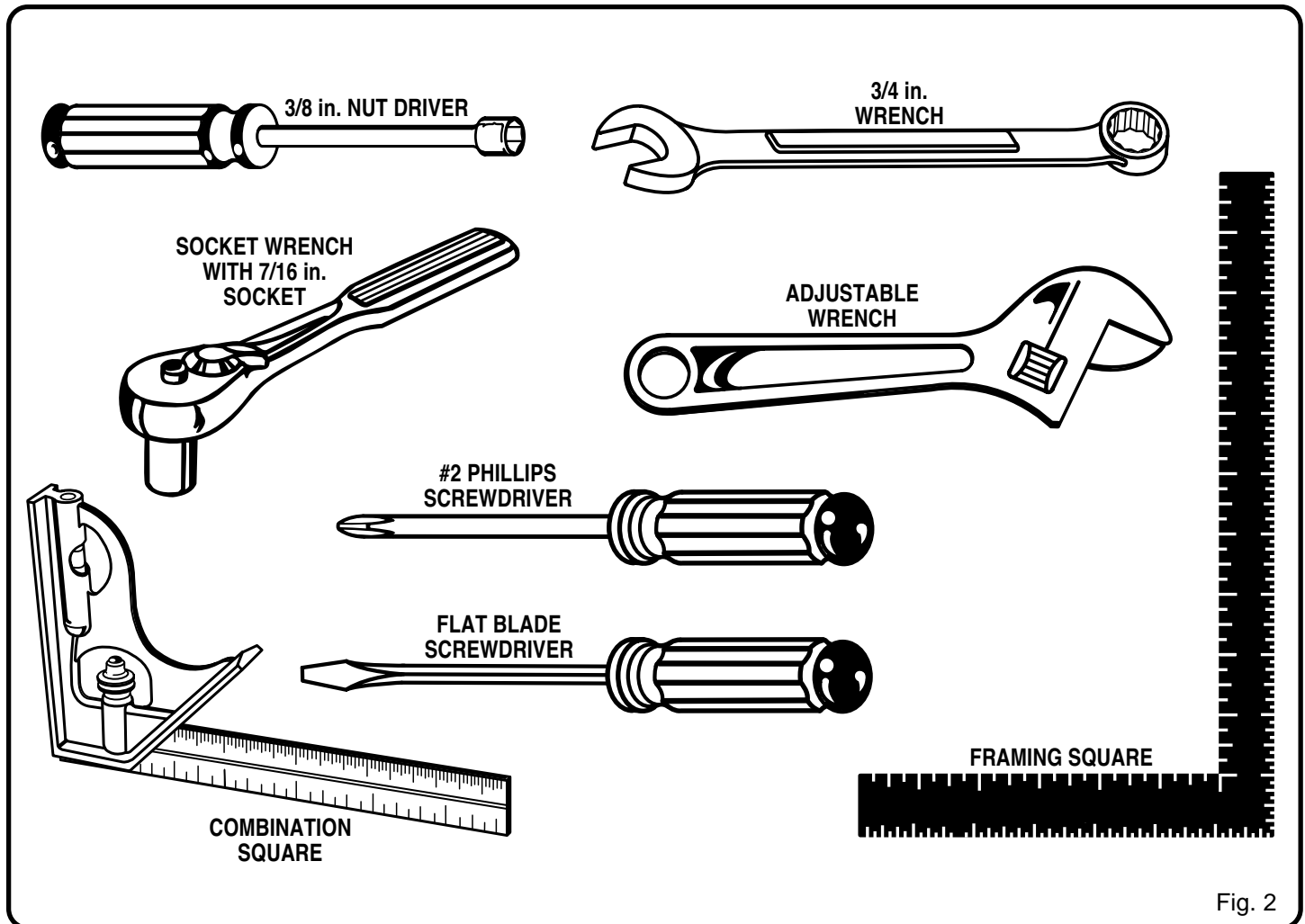


Fig. 2

# LOOSE PARTS LIST

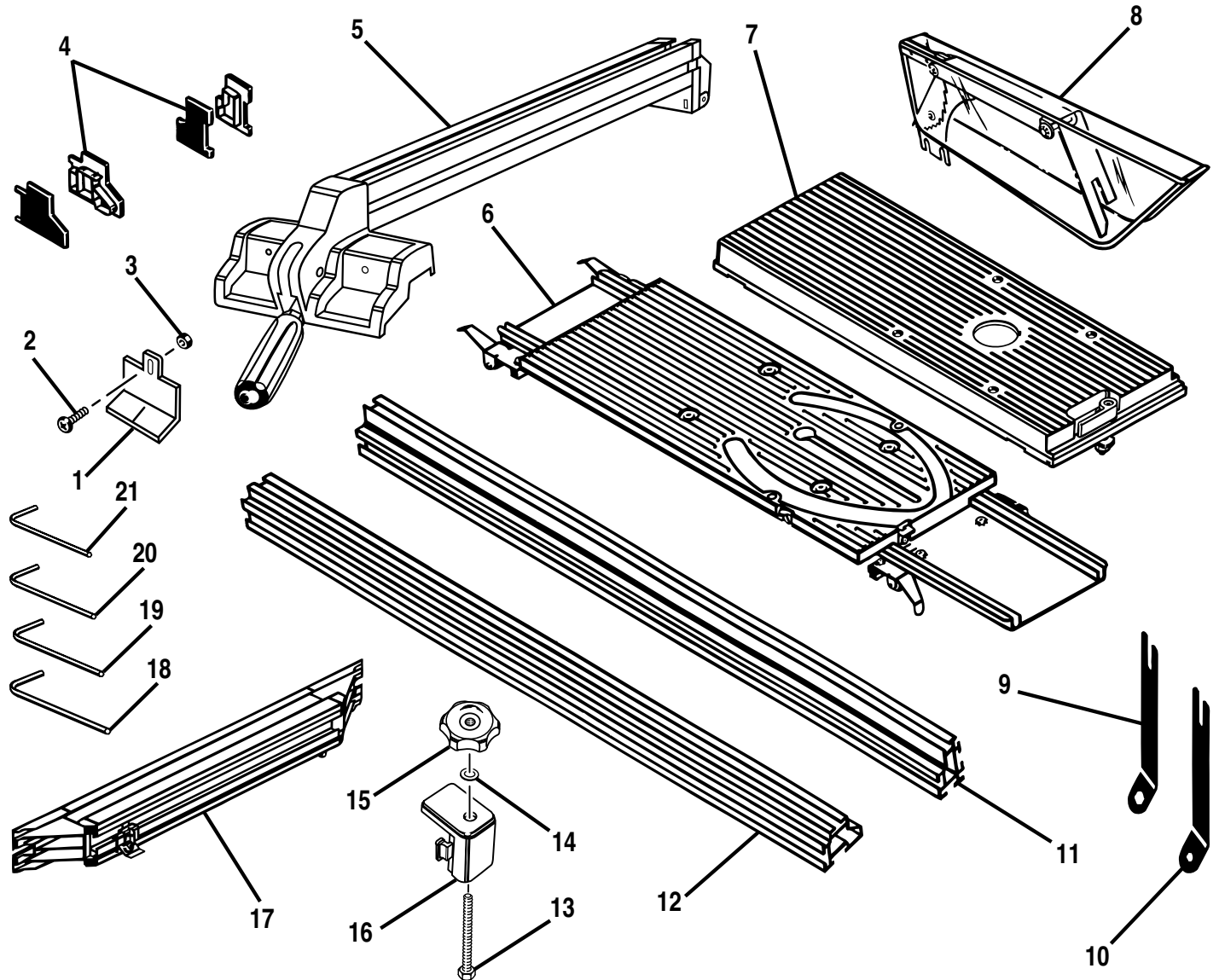


Fig. 3

Key No.	Description	Quan.
1	Rip Scale Indicator .....	1
2	Screw .....	1
3	Hex Nut .....	1
4	End Plug .....	4
5	Rip Fence .....	1
6	Sliding Miter Table .....	1
7	Accessory Table .....	1
8	Blade Guard With Riving Knife and Anti-Kickback Pawls .....	1
9	Large Wrench .....	1
10	Small Wrench .....	1
11	Rear Rail .....	1
12	Front Rail .....	1

Key No.	Description	Quan.
13	Screw .....	1
14	Washer .....	1
15	Knob .....	1
16	Adjusting Clamp .....	1
17	Miter Fence With Miter Indicator and Locator Pin Pivot .....	1
18	3/32 in. Hex Key (Included) .....	1
19	1/8 in. Hex Key (Included) .....	1
20	5/32 in. Hex Key (Included) .....	1
21	3/16 in. Hex Key (Included) .....	1
22	Instructional Video (Not Shown)	
23	Operator's Manual (Not Shown)	
24	Warranty Registration Card (Not Shown)	

# LOOSE PARTS LIST

The following items are included with your table saw leg stand.

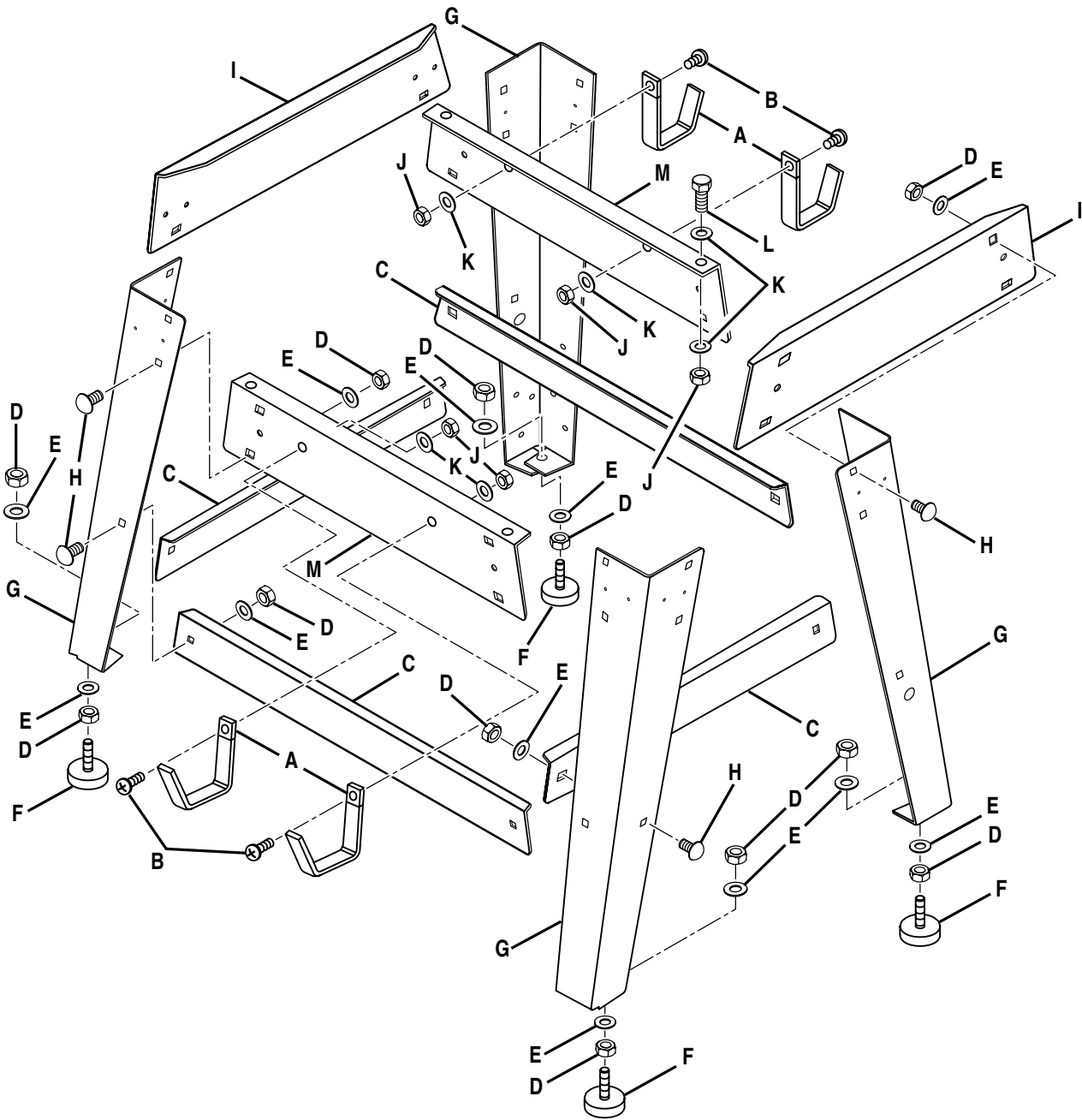


Fig. 4

A. Storage Bracket .....	4	H. Carriage Bolt (5/16-18 x 3/4 in.) .....	24
B. Screw (1/4-20 x 1/2 in. Pan Hd.).....	4	I. Upper Brace .....	2
C. Lower Brace .....	4	J. Hex Nut (1/4-20) .....	8
D. Hex Nut (5/16-18) .....	32	K. Washer (1/4 in.).....	12
E. Washer (5/16 in.).....	32	L. Bolt (1/4-20 x 3/4 in. Hex Hd.) .....	4
F. Leveling Foot .....	4	M. Upper Side Brace.....	2
G. Leg .....	4		

# FEATURES

Your saw is designed to perform as a versatile, accurate, precision cutting tool that is easy to operate.

It is equipped with the following features for convenience, ease of use, and high-quality performance:

- a combination saw blade
- a bevel indicator to set the exact angle of the blade, with locking lever
- an adjustable and reversible sliding miter table
- an adjustable miter fence with miter indicator
- an adjustable accessory table
- an adjustable rip fence with scale indicator
- an adjustable riving knife (splitter) and blade guard with anti-kickback pawls

- front and rear guide rails with an easy-to-read scale on front rail
- a dust exhaust that can be adapted to a standard shop vacuum
- blade adjusting handle to set depth of cut
- switch with lockable cover plate to help prevent unauthorized use

These features provide ease of cutting with all types of wood.

## **⚠ WARNING:**

Before attempting to use your table saw, familiarize yourself with all operating features and safety requirements.

## GETTING TO KNOW YOUR SAW

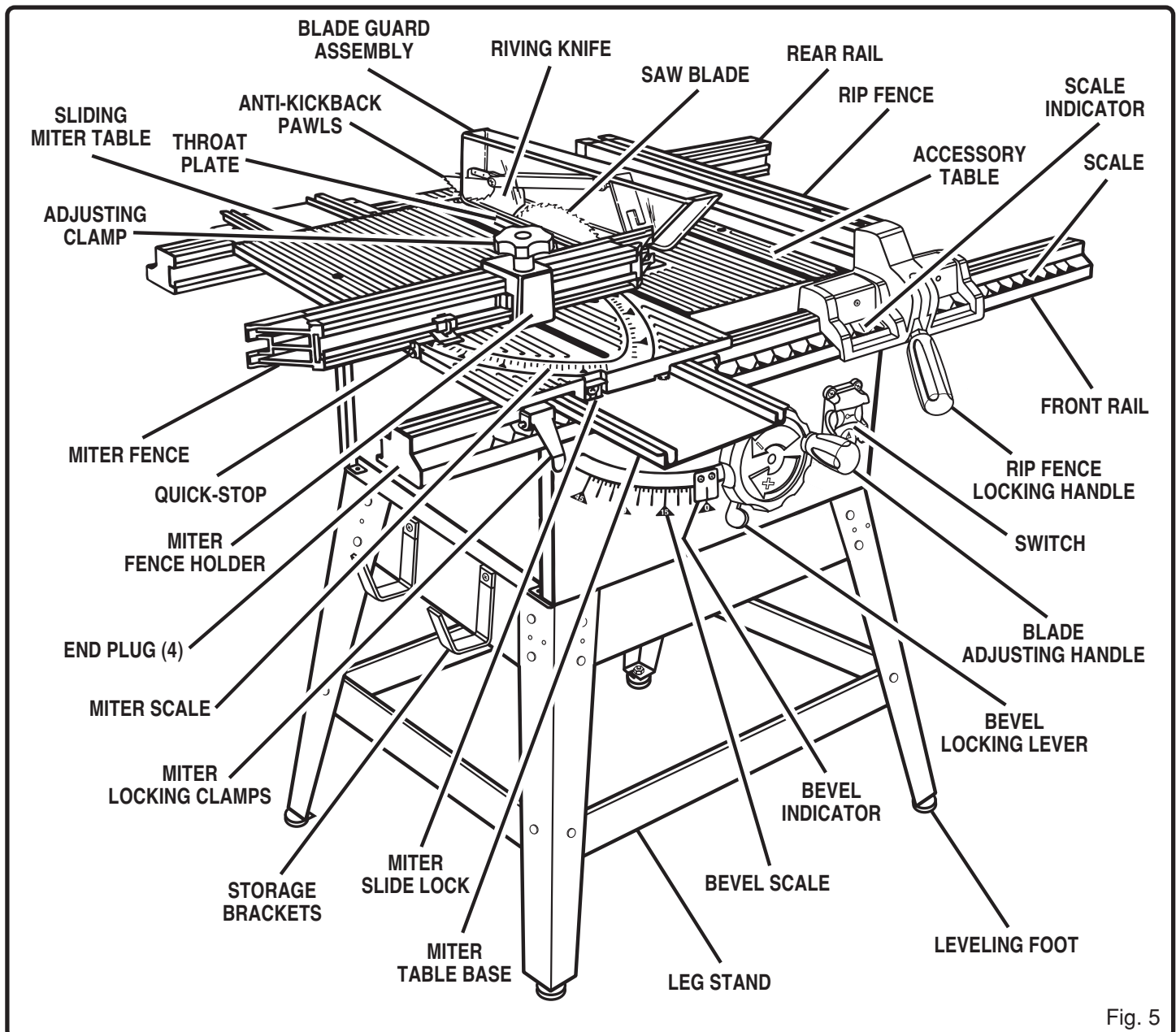


Fig. 5

# FEATURES

## **⚠ WARNING:**

Although some of the illustrations in this manual are shown with the blade guard removed for clarity, do not operate the saw without the blade guard unless specifically instructed to do so.

## OPERATING COMPONENTS

The upper portion of the blade projects up through the table, surrounded by an insert called the throat plate. To cut wood at a bevel, the blade must be tilted, using the blade adjustment handle, scale, and bevel indicator found on the front of the cabinet. Inside the cabinet, adjustable positive stops are provided for 0° and 45°.

The sliding miter table assembly is used for all crosscutting operations. The miter fence is easily adjusted to cut wood at an angle by loosening the adjusting clamp, setting the fence to the miter scale, and retightening the clamp. The sliding miter table, which rests on a base mounted on the rails, can be repositioned along the rails for wide work. It can be reversed so the projecting base is in the back. It can also be moved from the right side to the left side as needed. With the miter fence removed the miter table offers additional support for other operations such as ripping.

Your saw includes a rip fence and an accessory table. The accessory table can be moved from the right side of the saw to the left side as needed. The rip fence is used to position work that will be cut lengthwise. A scale on the front rail shows the distance between the rip fence and the blade.

The riving knife is a metal device directly behind and above the blade. It is used to help keep the cut wood from binding together and causing possible kickback. It is very important to use the riving knife for all through-sawing operations. The anti-kickback pawls are toothed plates mounted on the riving knife. Their teeth point away from the work in case the work should be pulled back, toward the operator. Then the teeth dig into the wood to help prevent or reduce the possibility of kickback.

Your Ryobi BT3100-1 table saw features a receptacle on the right side of the cabinet that permits use of accessories. Use only accessories that are listed for use with this tool. When using a listed accessory, unplug the saw motor cord and use the receptacle and BT3100-1 main power switch to operate the accessory.

## POWER SWITCH

Your table saw is equipped with a power switch that has a built-in locking feature. This feature is intended to prevent unauthorized and possible hazardous use by children and others.

### TO TURN YOUR SAW ON:

1. With the switch key inserted into the switch, lift the switch button to turn on (⚠).

### TO TURN YOUR SAW OFF:

1. Press the switch button down to turn off (⚡).

### TO LOCK YOUR SAW :

1. Press the switch button down.
2. Remove the switch key from the switch and store in a safe, secure location.

## **⚠ WARNING:**

Always remove the switch key when the tool is not in use and keep it in a safe place. In the event of a power failure, turn the switch off (⚡) and remove the key. This action will prevent the tool from accidentally starting when power returns.

## **⚠ WARNING:**

ALWAYS make sure your workpiece is not in contact with the blade before operating the switch to start the tool. Failure to heed this warning may cause the workpiece to be kicked back toward the operator and result in serious personal injury.

## **⚠ WARNING:**

To reduce the risk of accidental starting, ALWAYS make sure the switch is in the off (⚡) position before plugging tool into the power source .

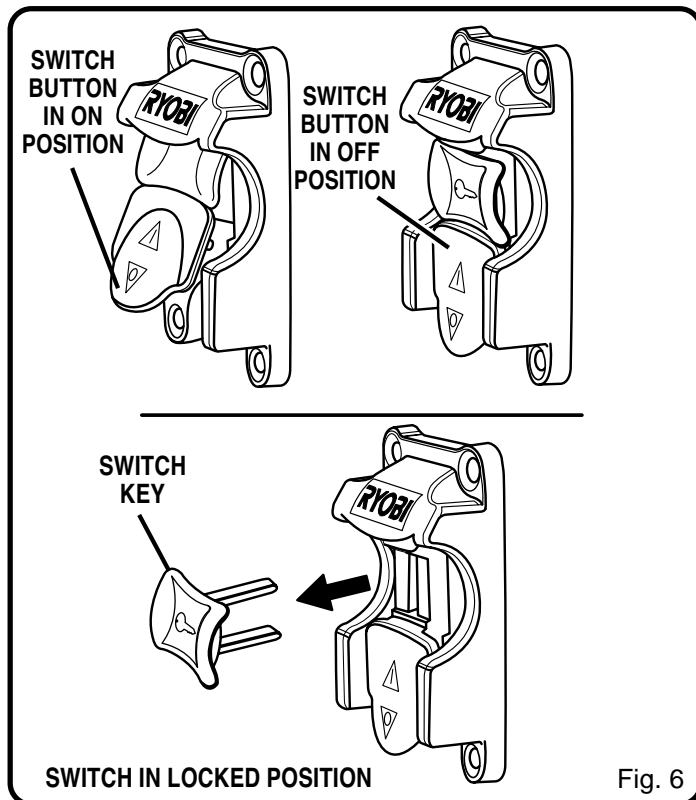


Fig. 6

# FEATURES

## BLADES

It is recommended that you use only the RYOBI 10 in. (254 mm) Combination Blade, which is for use with the BT3100 Table Saw. You will get maximum performance with the following features:

- 36 precision ground, micro-grain carbide teeth
- laser-cut expansion slots
- kerf width of 2.5 mm  $\pm$  .02
- tensioning for 4,800 rpm

This blade is provided with the saw. Additional blade styles of the same high quality are available for specific operations such as ripping. Your local RYOBI dealer can provide you with complete information.

### **⚠ CAUTION:**

Be sure to use only blades that are rated for at least 5,500 RPM and recommended for use on this saw.

PRECISION GROUND  
MICRO-GRAIN  
CARBIDE TEETH

LASER-CUT BODY  
AND EXPANSION SLOTS

BLADE ROTATION

Fig. 7

## SPEED AND WIRING

The no-load speed of your table saw is approximately 4,800 rpm. The speed will not remain constant but will be less under a load. The wiring in a shop is as important as the motor's horsepower rating. A line intended for lights only **WILL NOT PROPERLY CARRY A POWER TOOL MOTOR.** Wire that is heavy enough for a short distance will be too light for a greater distance. A line that can support one power tool may not be able to support two or three tools.

### **⚠ WARNING:**

To prevent possible electrical hazards, have a qualified electrician check the line if you are not certain that it is properly wired.

# ASSEMBLY

Assembly is best done in the area where the saw will be used. When you remove the table saw base, loose parts, and hardware from the packing materials, check all items with the loose parts list and drawing. If you are unsure about the description of any part, refer to the drawing. If any parts are missing, delay assembling until you have obtained the missing part(s).

## ASSEMBLING LEG STAND

See Figures 8 and 9.

- Take the following hardware from the leg stand hardware bag:

- 24 carriage bolts (5/16-18 x 3/4 in.)
- 4 leveling feet
- 32 flat washers (5/16 in.)
- 32 hex nuts (5/16-18)

**Note:** Remaining hardware from this bag is used for mounting leg stand on the table saw base and mounting storage brackets to upper brace.

- Take 4 legs and 8 braces from loose parts.
- Place an upper side brace inside two of the legs, with the legs wide end up. (Upper side braces have two large holes in each end.) Make sure the two posts on the leg align with the small holes on the brace.

- Align the two large holes on the brace and the legs. Insert the carriage bolts. Add flat washers and hex nuts and hand tighten. Repeat for the other upper brace. These are the front and back sets.
- For the side sets, install an upper brace on two legs. Add hardware and finger tighten. Repeat for the other upper brace.
- Use the same steps to install the lower braces. Tighten all hex nuts with a wrench.
- Place a hex nut and flat washer on each leveling foot. Install the leveling feet from the bottom of each leg with the bolts pointing up. Cap with the remaining flat washers and hex nuts but do not tighten.
- Move the leg set to desired location. Adjust the leveling feet with a wrench, then tighten the top hex nut.

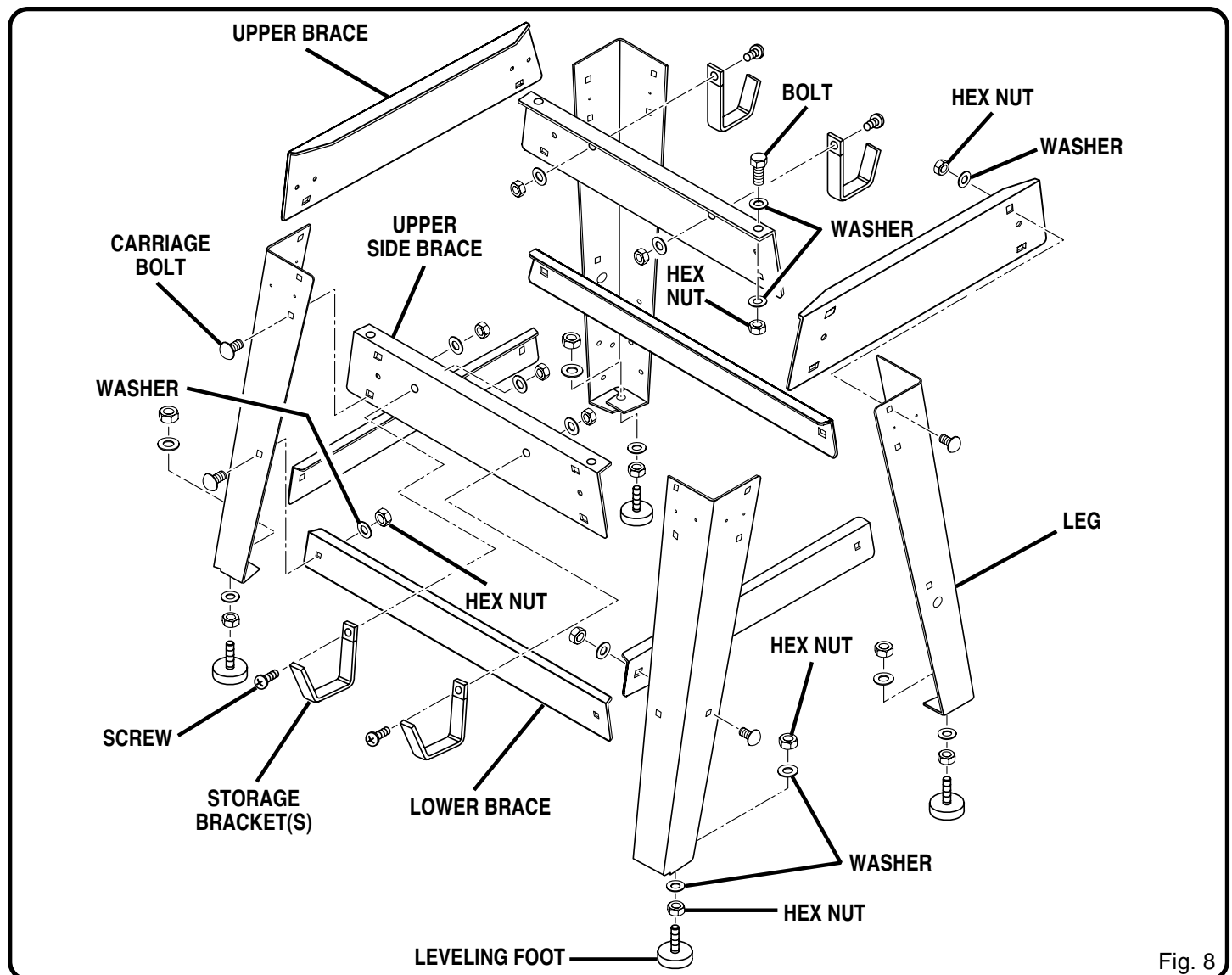


Fig. 8

# ASSEMBLY

## ASSEMBLING STORAGE BRACKETS

See Figure 9.

- Take storage brackets from loose parts.
- Take the following hardware from the leg stand hardware bag:
  - 4 screws (1/4-20 x 1/2 in. Pan Hd.)
  - 4 hex nuts (1/4-20)
  - 4 washers (1/4 in.)
- Secure storage brackets to upper braces of leg stand as shown in figures 8 and 9.

## MOUNTING THE LEG STAND ON THE TABLE SAW BASE

See Figure 10.

- Take the following from a small hardware bag:
  - 4 hex bolts (1/4-20 x 3/4 in.)
  - 4 hex nuts (1/4-20)
  - 8 flat washers (1/4 in.)
- Note:** This hardware was in the bag with hardware for assembling the leg stand and leveling feet.

### **⚠ WARNING:**

Do not lift the saw without help. The saw base weighs approximately 75 lbs. Hold it close to your body. Keep your knees bent and lift with your legs, not your back. Ignoring these precautions can result in back injury.

- Place the leg stand on the table saw base. Align the holes in the table with the holes in the end braces.
- Place a flat washer on a bolt and insert through hole. Add a flat washer and a hex nut. Hand tighten. See Figure 10.
- Repeat for three remaining holes. Tighten all hardware with a wrench. You may find it helpful to use one wrench to hold the head of the bolt and one to tighten the hex nut.

### **⚠ WARNING:**

Do not connect to power supply until assembly is complete. Failure to comply could result in accidental starting and possible serious injury.

## TO INSTALL FRONT AND BACK RAILS

See Figures 11 and 12.

- Position end plugs on both rails and secure in place by tapping with a block of wood or a rubber mallet.
- Loosen the front rail clamps one half turn from the tightened position. Loosen the square rail holder nut one-fourth (1/4) turn to allow the front rail to slide over it. See Figures 11 and 12.
- Mount the front rail with the scale facing the outside toward the operator.

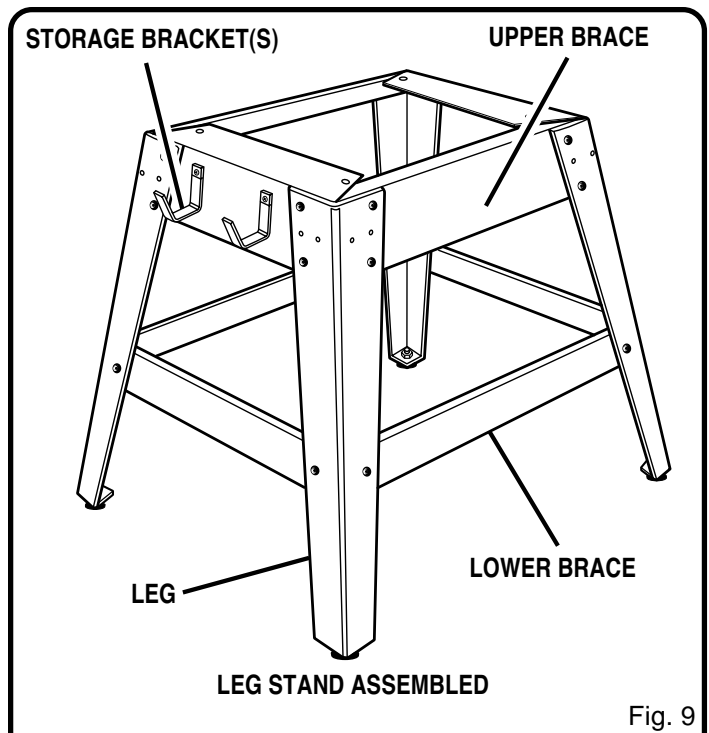


Fig. 9

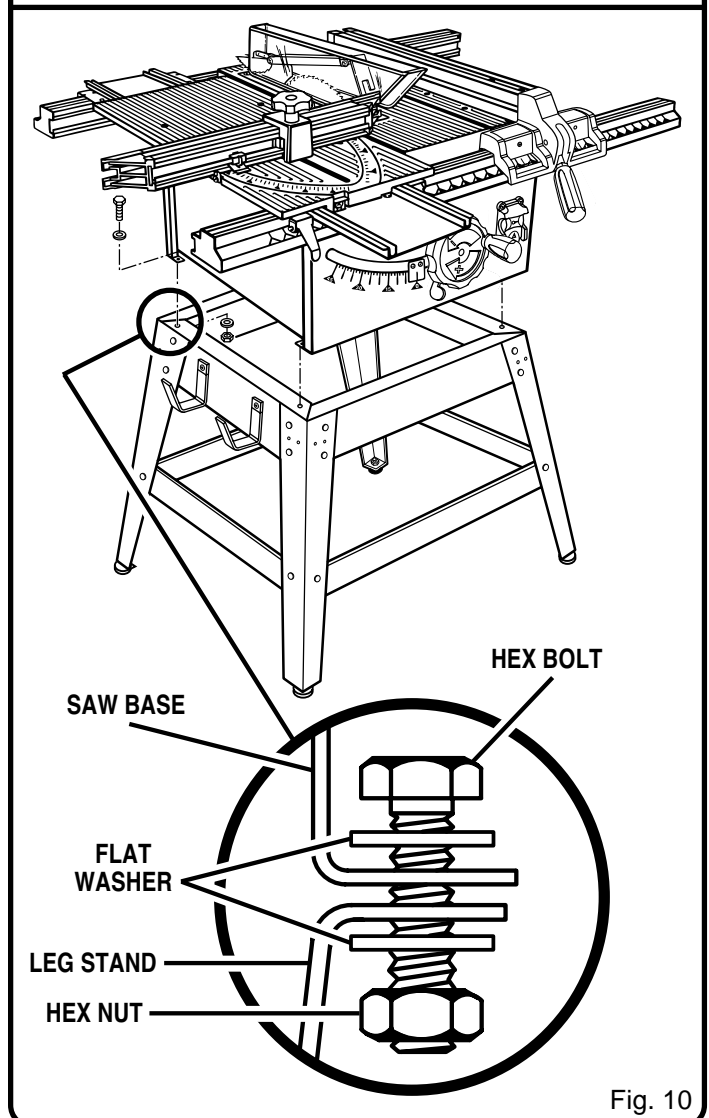


Fig. 10



# ASSEMBLY

- Check to make sure the rail clamps will securely clamp the rail before sliding the entire assembly into position. If not, tighten the square rail holder nut one-fourth (1/4) turn and recheck.
- Slide the rail into position over both clamps and secure.
- Mount the rear rail, following the same clamping procedure as shown for the front rail. Orient the rear rail as shown in Figure 12.

## TO INSTALL MITER TABLE AND FENCE

See Figures 13 and 14.

- Install the sliding miter table assembly over the front and rear rails. See Figure 13. Check that it slides easily on the rails. Push both front miter locking clamps down evenly on each side to secure. Repeat for both rear miter locking clamps.

**Note: DO NOT** force miter locking clamps fully down. Tighten only to flat "seated" position.

- To install the miter fence holder to the miter fence, loosen the attachment bolt by turning the adjusting clamp (the knob on top) counterclockwise. Make sure the adjusting clamp is loose enough so the bolt has enough clearance to slide in the table slot. Slide the tabs into the grooves in the miter fence. See Figure 14.
- Mount the miter fence to the miter table by installing the locator pin (below the miter fence) into hole "A" or "B". (Hole "A" is closest to the blade.) At the same time, place the attachment bolt in the slot. Secure the adjusting clamp, but do not tighten.
- Adjust the miter indicator to the scale.
- Securely tighten the adjusting clamp.

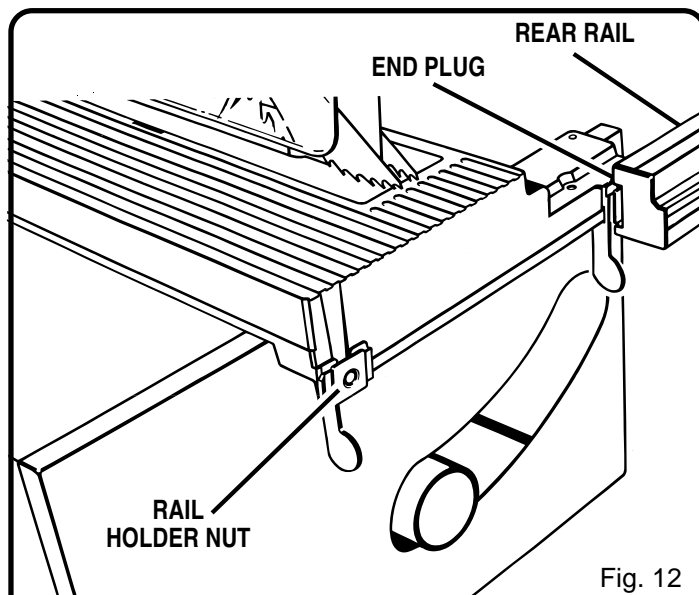


Fig. 12

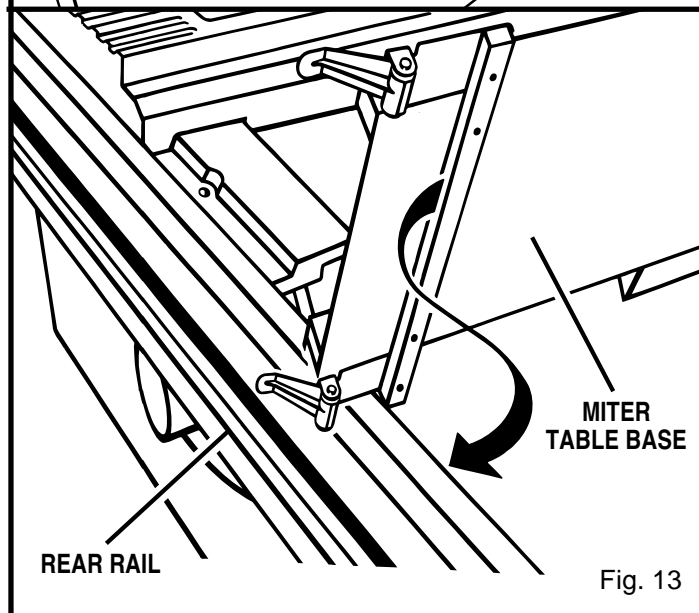


Fig. 13

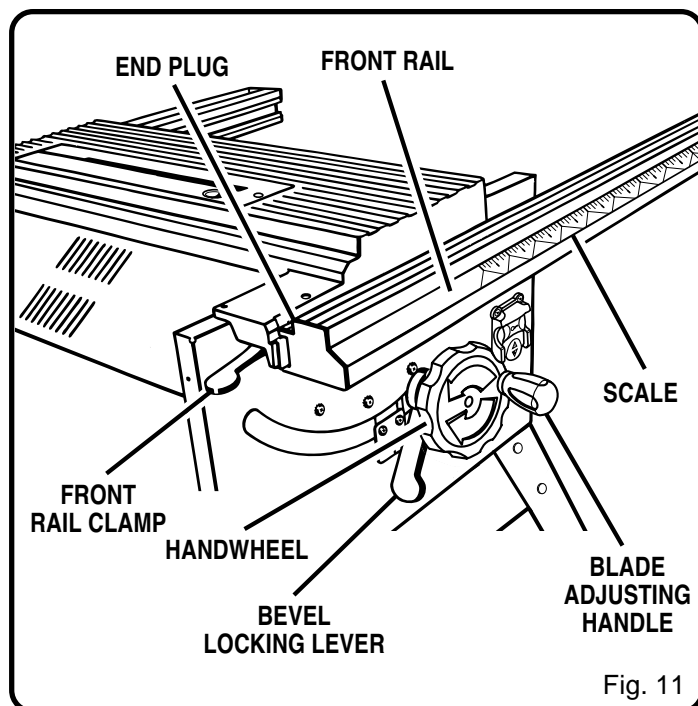


Fig. 11

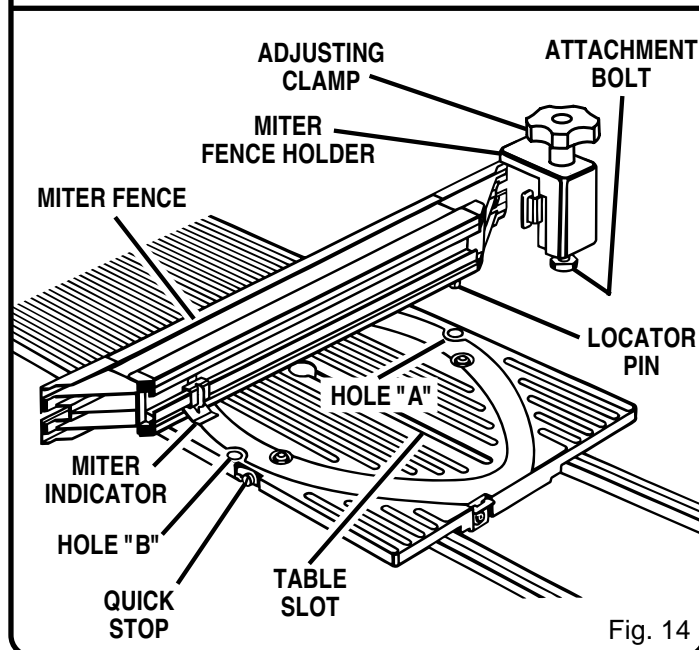


Fig. 14

# ASSEMBLY

## TO INSTALL ACCESSORY TABLE AND RIP FENCE

- Place the accessory table on the front and back rails, fitting the lips into the top slot of the rear rail. Position the slot on the underside of the accessory table onto the front rail and tighten the lever securely.
- Remove the scale indicator assembly from the plastic bag and install on either side of the rip fence. The pan head screw (#8-32 x 1/2 in.) goes on the outside of the front block. The scale indicator and hex nut (#8-32) go immediately behind the front lip of the front block.
- To install the rip fence, place the rear lip on the rear rail and pull slightly toward the front of the unit. Lower front end onto the guide surfaces on top of the front rail. Check for a smooth gliding action. Swing the locking handle down to automatically align and secure the fence.

## REMOVING/REPLACING THE THROAT PLATE

See Figure 16.

### **⚠ WARNING:**

Make sure the switch is off and the plug is out of the outlet. Failure to do so could result in accidental starting, resulting in serious personal injury.

### **⚠ WARNING:**

Drop blade below saw table when reinstalling the throat plate. Failure to heed this warning could result in serious personal injury.

- To remove the throat plate, first remove the screw holding the throat plate with a phillips screwdriver and lift the front end. Pull throat plate out toward the front of the saw.
- To reinstall the throat plate, drop blade below saw table and place throat plate in the opening. Push throat plate toward the rear of saw base to engage the spring clip.
- Securely tighten throat plate screw.

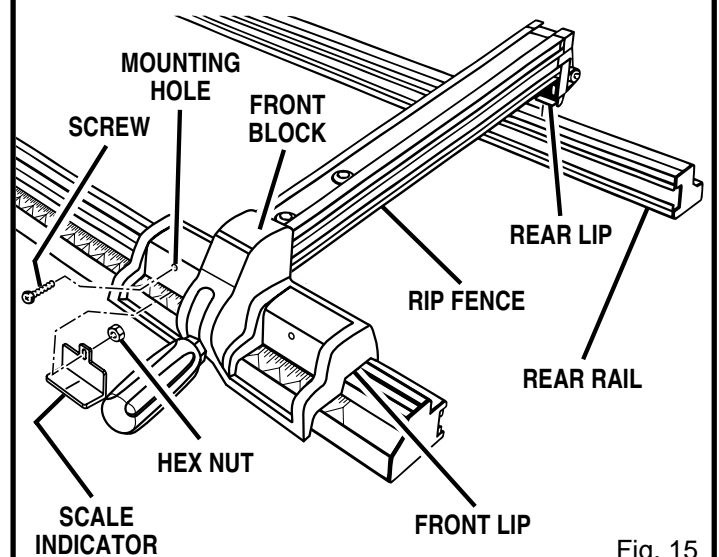
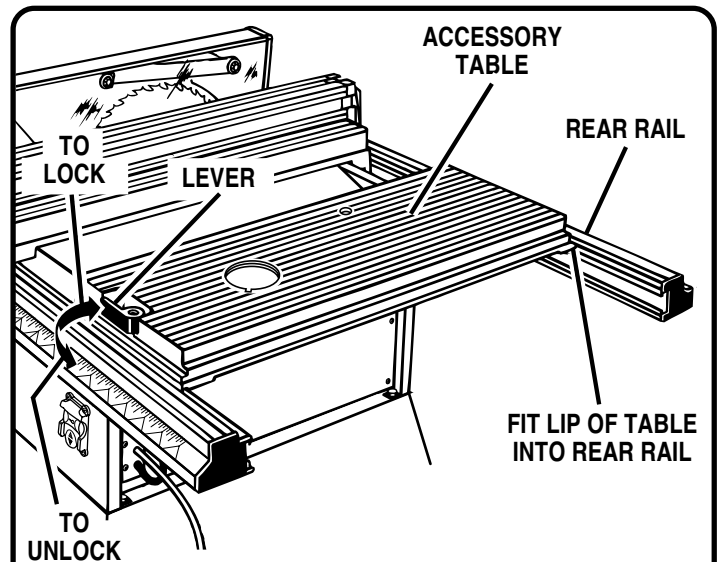


Fig. 15

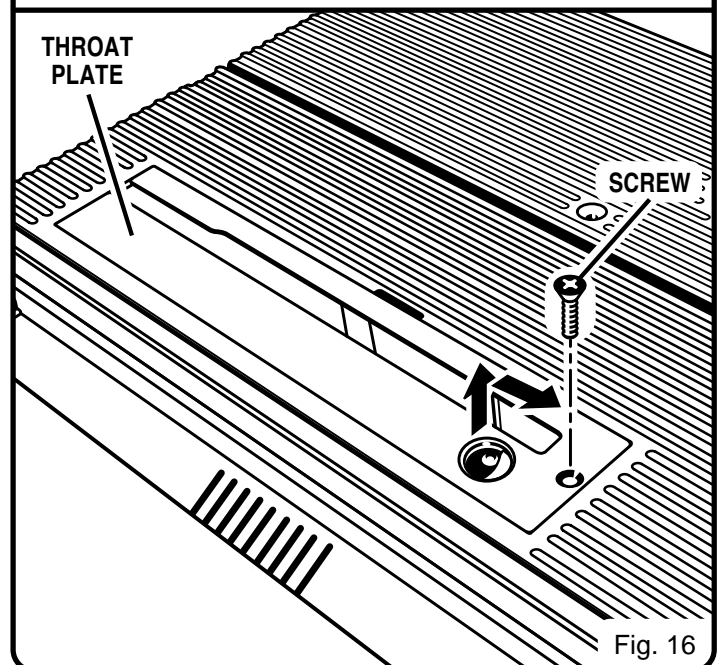


Fig. 16

# ASSEMBLY

## BLADE AND GUARD ASSEMBLY

### **WARNING:**

Do not connect to power supply until assembly is complete. Failure to comply could result in accidental starting and possible serious injury.

### TO CHECK SAW BLADE INSTALLATION

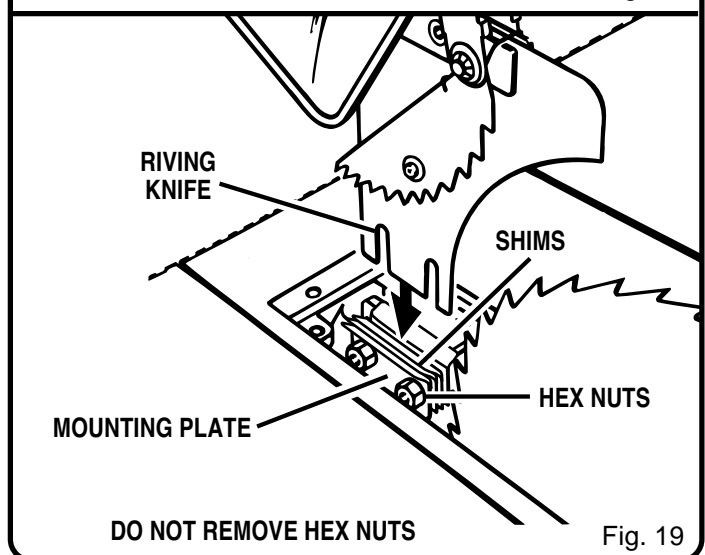
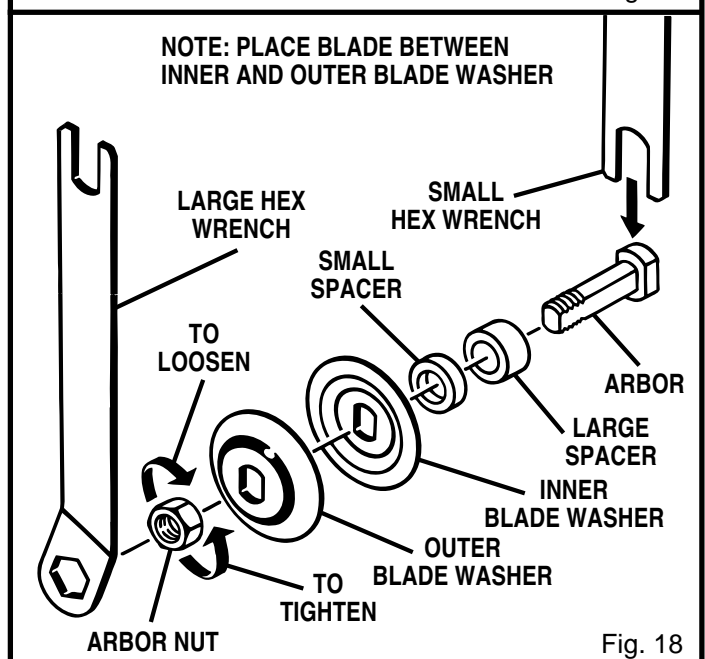
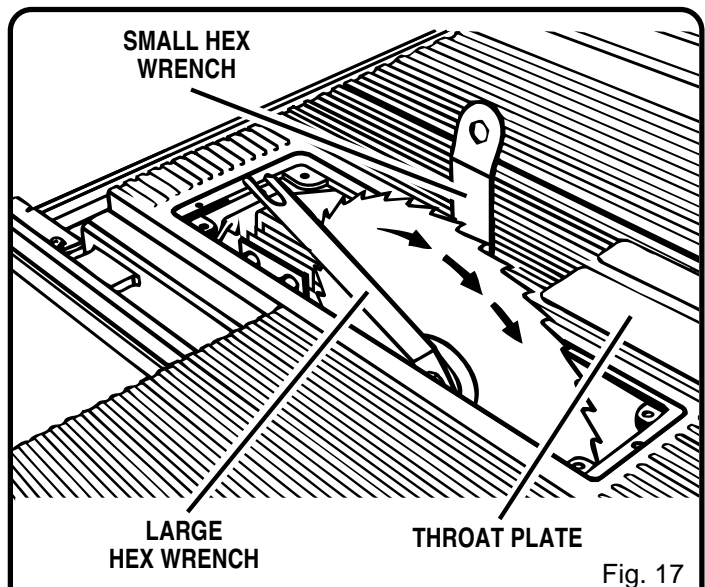
- To check the saw blade, first remove the screw holding the throat plate in place. Remove the throat plate. See *Figures 16 and 17*.
- Make sure the bevel locking lever is securely pushed to the left. Raise the blade arbor to its full height by turning the blade adjusting handle clockwise.
- Using the smaller hex wrench, insert the flat open end into the flats on the arbor shaft as shown. Insert the larger hex wrench over the hex nut, and, holding both wrenches firmly, pull the larger wrench forward to the front of the machine to loosen and push to tighten. Make sure the blade nut is securely tightened. Do not overtighten.

**Note:** Arbor shaft has left hand threads.

- Check all clearances for free blade rotation.
- See **To Set the Scale to the Blade** in the *Operation* Section. In cutting operations, the scale will be set to the side of the blade where the cut will be measured and made.

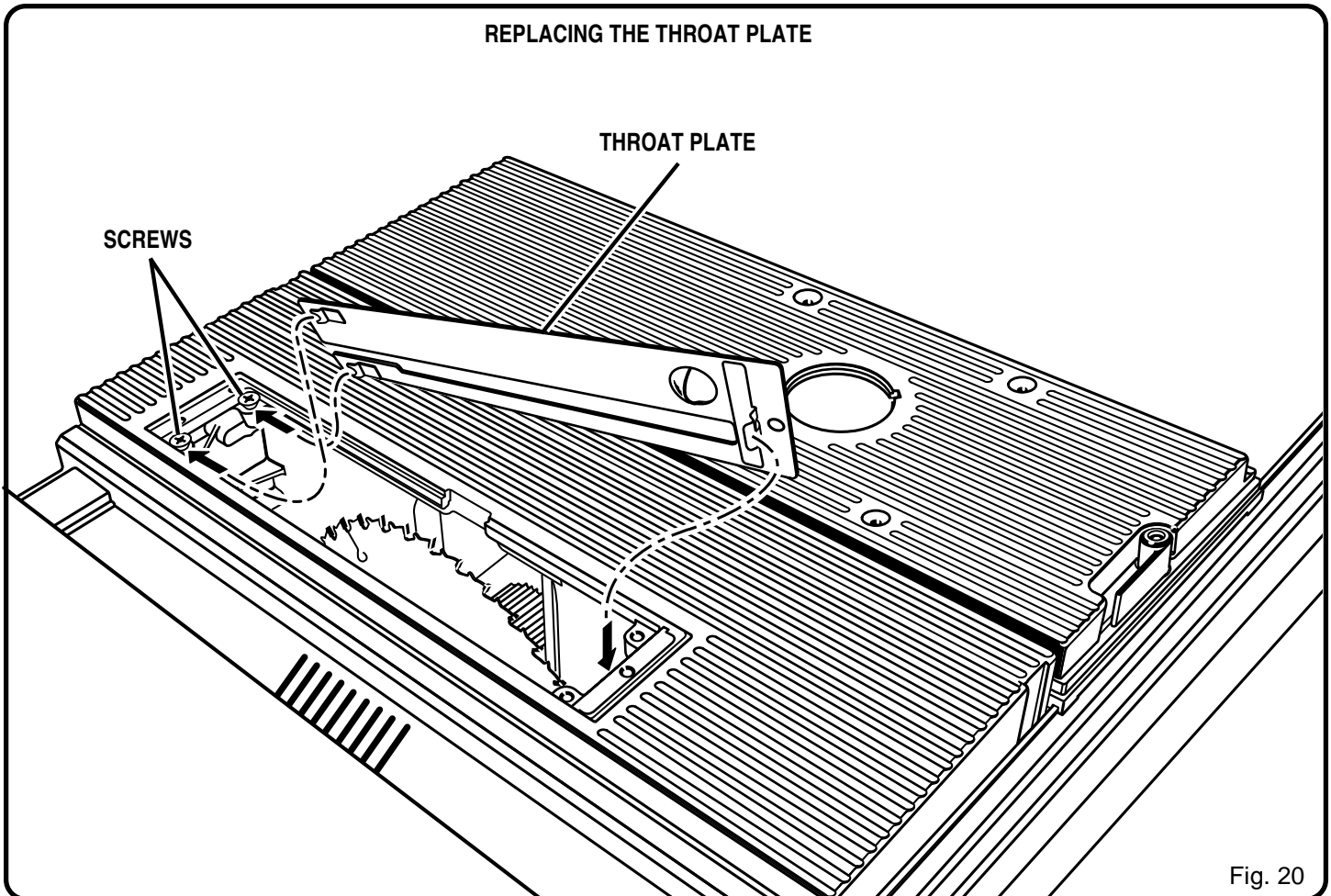
### TO INSTALL BLADE GUARD ASSEMBLY

- Move the bevel locking lever to the right for angle mode. Slowly turn the blade adjustment handle to put the blade at 30°. The handle will "pop out" slightly as it engages the clutch.
- Holding the blade adjusting handle with one hand, use the other hand to push the bevel locking lever firmly to the left to lock the bevel angle.
- Raise the blade by turning the blade adjustment handle clockwise.
- Using the small hex wrench, install the blade guard assembly by loosening the two attachment hex nuts enough to slide the riving knife down between the shims. See *Figure 19*. Partially retighten the two attachment nuts. Check the blade and riving knife alignment. Make sure riving knife clears blade by 1/8 in. See *Figure 29*.
- Correctly align the blade and riving knife as shown, repeating above step as needed. Tighten attachment nuts securely. If riving knife is not positioned correctly with blade up, it could contact saw table when blade is lowered and restrict blade elevation.



# ASSEMBLY

- Blade alignment with the riving knife can be adjusted for different blade widths. Refer to **Settings and Adjustments** in the *Operations* Section. Before continuing, read **To Check, Replace or Adjust the Riving Knife and Blade Guard Assembly** on page 25 to make sure of proper riving knife alignment.
- Check the blade guard assembly for clearances and free movement. Reinstall the throat plate into the opening, lower the blade and secure the attachment screw. Tighten the screw securely.



# OPERATION

## BASIC OPERATION OF THE TABLE SAW

A table saw can be used for straight-line cutting operations such as cross cutting, ripping, mitering, beveling, and compound cutting. It can make dado or molding cuts with optional accessories.

The 3-prong plug must be plugged into a matching outlet that is properly installed and grounded according to all local codes and ordinances. Improper connection of the equipment can result in electric shock. Check with an electrician or service personnel if you are unsure about proper grounding. Do not modify the plug; if it will not fit the outlet, have the correct outlet installed by a qualified electrician. Refer to the *Electrical* page of this manual.

**Note:** This table saw is designed to cut wood and wood composition products only.

## CAUSES OF KICKBACK

Kickback can occur when the blade stalls or binds, kicking the workpiece back toward you with great force and speed. If your hands are near the sawblade, they may be jerked loose from the workpiece and may contact the blade. Obviously, kickback can cause serious injury, and it is well worth using precautions to avoid the risks.

Kickback can be caused by any action that pinches the blade in the wood, such as the following:

- Making a cut with incorrect blade depth
- Sawing into knots or nails in the workpiece
- Twisting the wood while making a cut
- Failing to support work
- Forcing a cut
- Cutting warped or wet lumber
- Using the wrong blade for the type of cut
- Not following correct operating procedures
- Misusing the saw
- Failing to use the anti-kickback pawls
- Cutting with a dull, gummed-up, or improperly set blade

## AVOIDING KICKBACK

- Always use the correct blade depth setting. The top of the blade teeth should clear the workpiece by 1/8 in. to 1/4 in.
- Inspect the work for knots or nails before beginning a cut. Knock out any loose knots with a hammer. Never saw into a loose knot or nail.
- Always use the rip fence when rip cutting and the miter gage when cross cutting. This helps prevent twisting the wood in the cut.
- Always use clean, sharp, and properly-set blades. Never make cuts with dull blades.
- To avoid pinching the blade, support the work properly before beginning a cut.
- When making a cut, use steady, even pressure. Never force cuts.
- Do not cut wet or warped lumber.
- Always hold your workpiece firmly with both hands or with pushsticks. Keep your body in a balanced position to be ready to resist kickback should it occur. Never stand directly in line with the blade.

- Use the right type of blade for the cut being made.
- Use the blade guard assembly for all through cuts.

## CUTTING AIDS

See Figure 21.

Pushsticks are devices used for safely pushing a workpiece through the blade instead of using your hands. They can be made in various sizes and shapes from scrap wood to use in a specific project. The stick must be narrower than the workpiece, with a 90° notch in one end and shaping for a grip on the other end.

A pushblock has a handle fastened by recessed screws from the underside. Use it on non-through cuts.



### CAUTION:

Be sure the screw is recessed to avoid damaging the saw or workpiece.

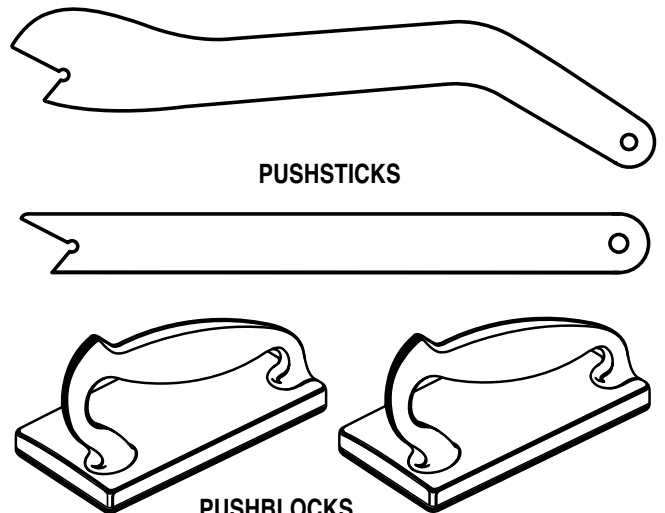


Fig. 21



### WARNING:

Never stand directly in line with the blade or allow hands to come closer than 3 inches to the blade. Do not reach over or across the blade. Failure to heed this warning can result in serious personal injury.

## CUTTING TIPS

Dado and rabbet cuts are non-through cuts which can be either rip cuts or cross cuts. Carefully read and understand all sections of this owner's manual before attempting any operation.



### WARNING:

All blades and dado sets must be rated for at least 5,500 RPM to prevent possible injury.

# OPERATION

- The kerf (the cut made by the blade in the wood) will be wider than the blade to avoid overheating or binding. Make allowance for the kerf when measuring wood.
- Make sure the kerf is made on the waste side of the measuring line.
- Cut the wood with the finish side up.
- Knock out any loose knots with a hammer before making the cut.
- Always provide proper support for the wood as it comes out of the saw.

## TYPES OF CUTS

See Figure 22.

There are six basic cuts: 1) the cross cut, 2) the rip cut, 3) the miter cut, 4) the bevel cross cut, 5) the bevel rip cut, and 6) the compound (bevel) miter cut. All other cuts are combinations of these basic six. Operating procedures for making each kind of cut are given later in this section.

### **WARNING:**

Always make sure the blade guard and anti-kickback pawls are in place and working properly when making these cuts to avoid possible injury.

Cross cuts are straight 90° cuts made across the grain of the workpiece. The wood is fed into the cut at a 90° angle to the blade, and the blade is vertical.

Rip cuts are made with the grain of the wood. To avoid kickback while making a rip cut, make sure one side of the wood rides firmly against the rip fence.

Miter cuts are made with the wood at any angle to the blade other than 90°. The blade is vertical. Miter cuts tend to “creep” away from the miter fence during cutting. This can be controlled by holding the workpiece securely against the miter fence.

### **WARNING:**

Always use a pushstick with small pieces of wood, and also to finish the cut when ripping a long narrow piece of wood, to prevent your hands from getting close to the blade.

Bevel cuts are made with an angled blade. Bevel cross cuts are across the wood grain, and bevel rip cuts are with the grain. The rip fence must always be on the left side of the blade for bevel rip cuts.

Compound (or bevel) miter cuts are made with an angled blade on wood that is angled to the blade. Be thoroughly familiar with making cross cuts, rip cuts, bevel cuts, and miter cuts before trying a compound miter cut.

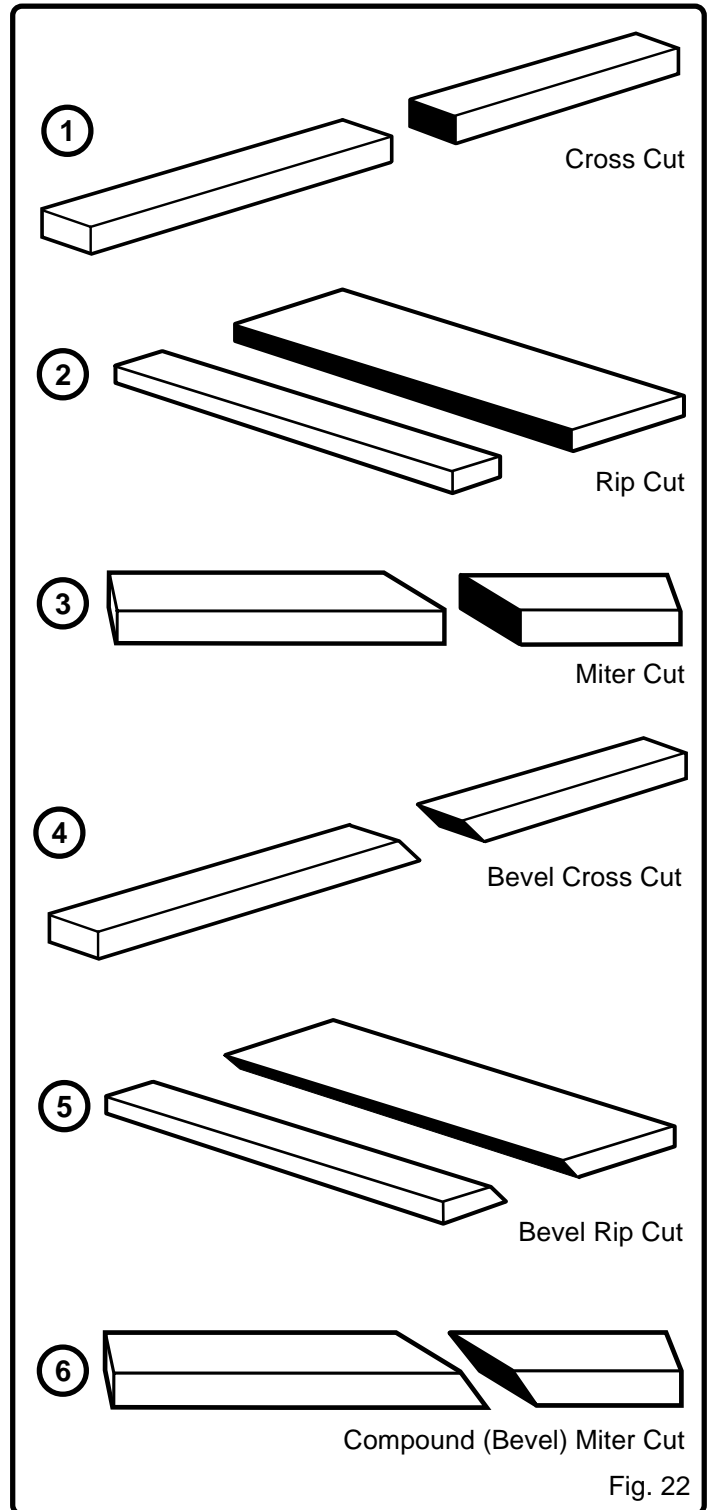


Fig. 22

### **WARNING:**

All blades and cutting accessories must be rated for at least 5,500 rpm to prevent possible injury.

# OPERATION

## FEATHERBOARD

A featherboard is a device used to help control the workpiece by guiding it securely against the table or fence. Featherboards are especially useful when ripping small workpieces and for completing non-through cuts. The end is angled, with a number of short kerfs to give a friction hold on the workpiece. Lock it in place on the table with a C-clamp. Test that it could resist kickback.

### WARNING:

Place the featherboard against the uncut portion of the workpiece, to avoid kickback that could cause serious personal injury.

## HOW TO MAKE A FEATHERBOARD

See Figure 24.

The featherboard is an excellent project for your BT3100. Select a solid piece of lumber approximately 3/4 in. thick, 3-5/8 in. wide and 18 inches long. Mark the center of the width on one end of the stock. Miter one-half of the width to 30° and miter the other half of the same end to 45°. See page 28 for information on miter cuts. Mark the board from the point at 6 in., 8 in., 10 in. and 12 in. Drill a 3/8 in. hole at the 8 in., 10 in., and 12 in. marks as indicated in figure 24. Prepare the saw for ripping as discussed on page 28. Set the rip fence to allow approximately a 1/4 in. "finger" to be cut in the stock. Feed the stock only to the mark previously made at 6 inches. Turn the saw **OFF** and allow the blade to completely stop rotating before removing the stock. Reset the rip fence and cut spaced ribs into the workpiece to allow approximately 1/4 in. fingers and 1/8 in. spaces between the fingers.

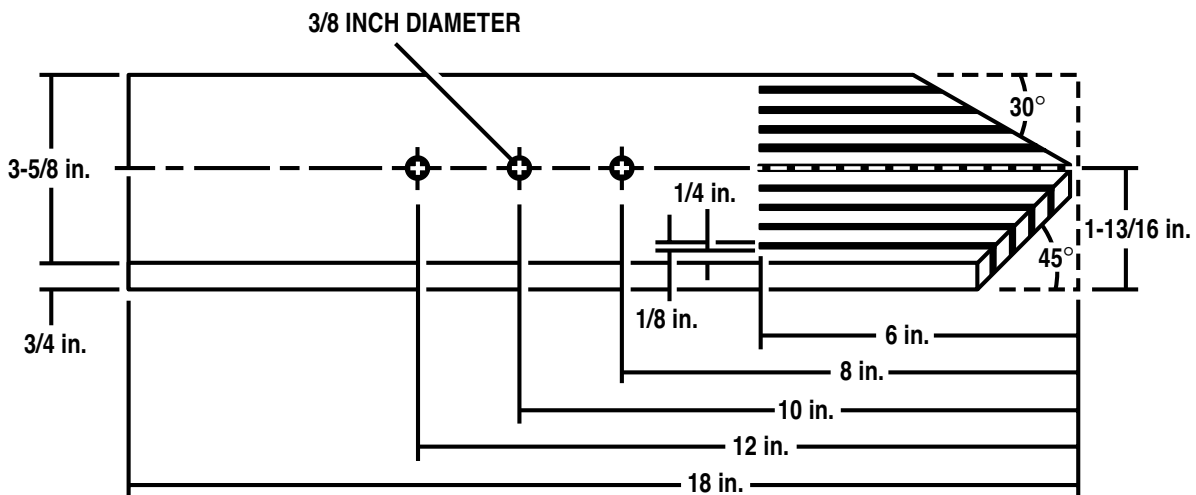
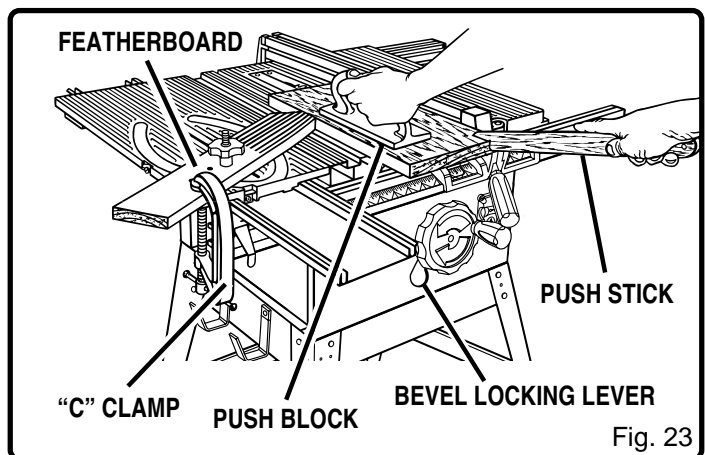
## HOW TO MOUNT A FEATHERBOARD

Remove the adjusting clamp knob, bolt and washer from the Miter Fence Holder. Place the bolt through one of the holes

in the featherboard. Positioning the featherboard will depend on the placement of the bolt and the position of the sliding miter table on the rails. Place the washer on the bolt and attach the adjusting clamp knob, loosely. Position the featherboard with the hex head of the bolt in the miter table slot but do not tighten. Completely lower the saw blade. Position the rip fence to the desired adjustment for the cut to be performed and lock. Place the workpiece against the fence and over the saw blade area. Adjust the featherboard to apply resistance to the workpiece just forward of the blade. Securely tighten the adjusting clamp knob to secure the featherboard in place. Attach a C-clamp to further secure the featherboard to the edge of the Sliding Miter Table.

### WARNING:

DO NOT locate the featherboard to the rear of the workpiece. Kickback can result from the featherboard pinching the workpiece and binding the blade in the saw kerf if positioned improperly. Failure to heed this warning can result in serious personal injury.



# OPERATION

## SETTINGS AND ADJUSTMENTS

### TO REMOVE THE BLADE

See Figures 25 - 27.

Use the two wrenches supplied with the saw in this procedure to replace the blade.

#### **WARNING:**

Unplug your saw and make sure the blade guard assembly is installed and working properly to avoid serious personal injury.

- Raise the blade guard.
- Remove the screw from the throat plate then remove the throat plate.
- Push the bevel locking lever to the left for elevation mode.
- Raise the blade to its full height by turning the blade adjusting handle clockwise.
- Place the open end of the small hex wrench into the slot beside the blade. The wrench will fit over two flats on the arbor (blade shaft). See Figure 26.
- Fit the large hex wrench onto the arbor nut. Turn clockwise and remove the nut, taking care not to drag your knuckles across the blade.

**Note:** The arbor nut has left-hand threads.

- Remove the outer blade washer from the arbor and then remove the blade. Make sure that inner blade washer and both spacers are tight against arbor shoulder.
- Replace with a new blade. Make sure the blade teeth are pointing forward, toward incoming work.
- Put the outer blade washer and arbor nut back on, aligning with the flats on the arbor. Tighten the nut with a counterclockwise turn.

**Note:** Use care not to cross thread arbor nut. Do not overtighten.

- Rotate the blade by hand to make sure it is turning freely.
- Check the riving knife and adjust if needed (See next procedure).
- Lower the blade, insert the throat plate, then securely tighten the throat plate screw.

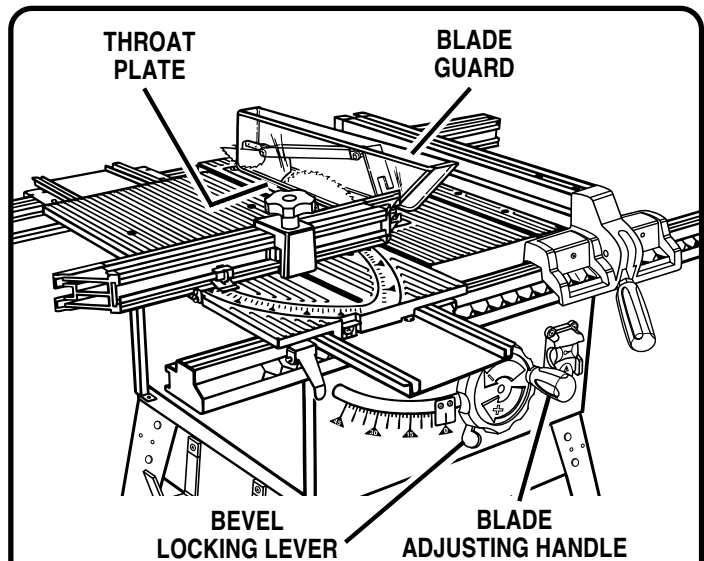


Fig. 25

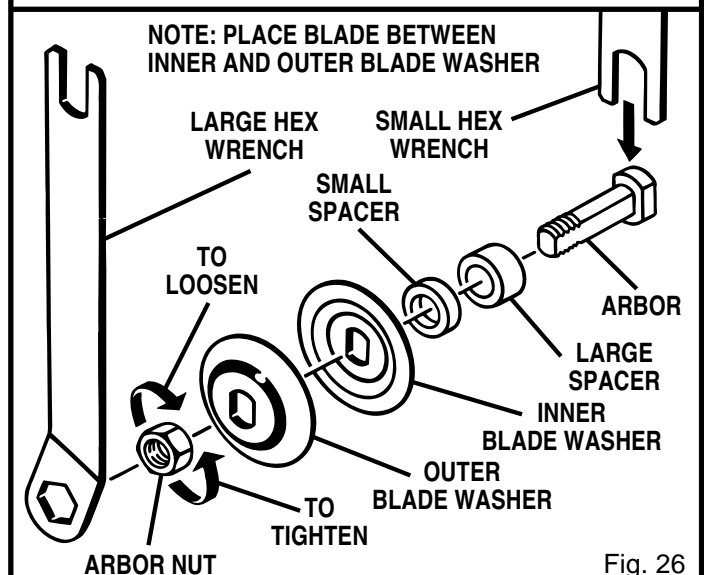
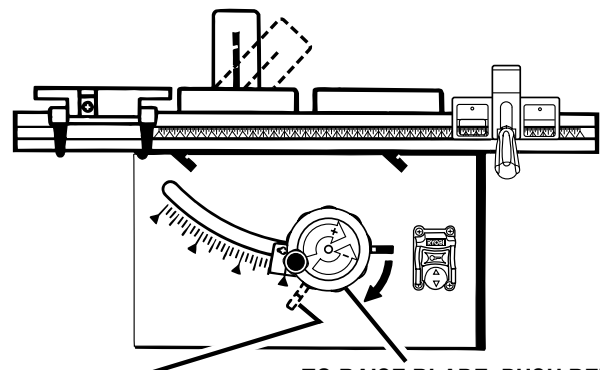


Fig. 26

TO ANGLE BLADE, PUSH BEVEL LOCKING LEVER RIGHT.

TO LOWER BLADE, PUSH BEVEL LOCKING LEVER LEFT AND ROTATE BLADE ADJUSTING HANDLE COUNTERCLOCKWISE



TO LOCK BLADE ANGLE, PUSH BEVEL LOCKING LEVER LEFT.

TO RAISE BLADE, PUSH BEVEL LOCKING LEVER LEFT AND ROTATE BLADE ADJUSTING HANDLE CLOCKWISE.

Fig. 27



# OPERATION

## TO CHECK, REPLACE OR ADJUST THE RIVING KNIFE AND BLADE GUARD ASSEMBLY

The riving knife is mounted between several shims that can be relocated as needed to center the knife behind the blade. It is held in place by two bolts and hex nuts at its base. The bolts are set in slots that permit front-to-back adjustment.

### WARNING:

Failure to turn the table saw off, remove the switch key, and unplug the saw before servicing or working on it could result in accidental starting causing possible serious injury.

- Lower the blade.
- Remove the throat plate.
- Raise the saw blade by pushing the bevel locking lever to the left and rotating the blade adjustment handle clockwise.
- With blade guard up, make sure the riving knife is placed at least 1/8 in. from the outer points of the blade. See *Figure 29*. Then make sure it is centered within the width of the blade. See *Figure 30*. If either placement is wrong, adjust with the following steps.
- Put the saw in angle mode by moving the bevel locking lever to the right. Slowly turn the blade adjusting handle until the bevel indicator is at a 30° angle. Lock the angle by holding the blade adjusting handle with one hand and returning the bevel locking lever to the left with the other.
- With the box end of the small hex key, remove the two nuts at the base of the riving knife. Remove the riving knife/guard assembly.
- Rearrange the riving knife between the shims to achieve the correct centering.

### WARNING:

Properly align riving knife. Improperly aligned riving knife can cause blade to bind which will increase risk of kickback.

- Adjust the riving knife on the bolts front-to-back as needed to place the riving knife approximately 1/8 in. from the blade's outer points. Put the nuts back on and tighten.
- Bring the blade back to the desired angle and height. Lower the blade, insert the throat plate, then securely tighten the throat plate screw.

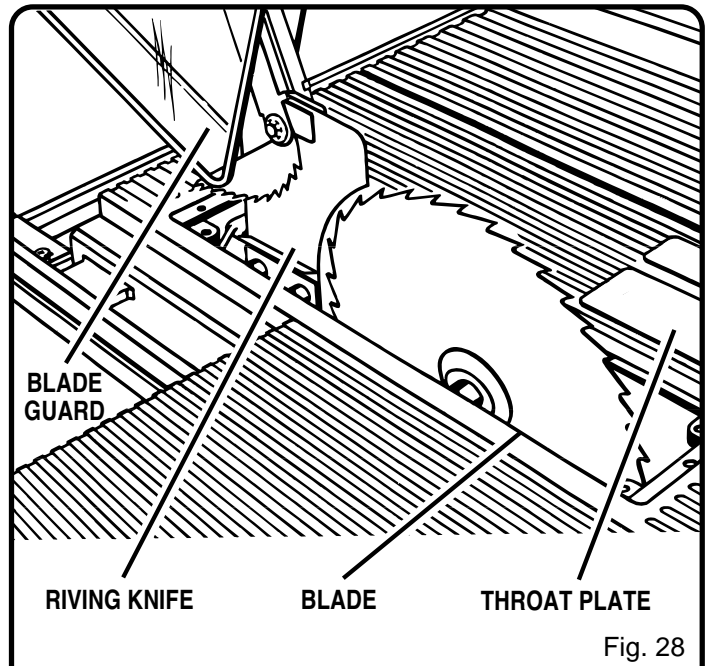


Fig. 28

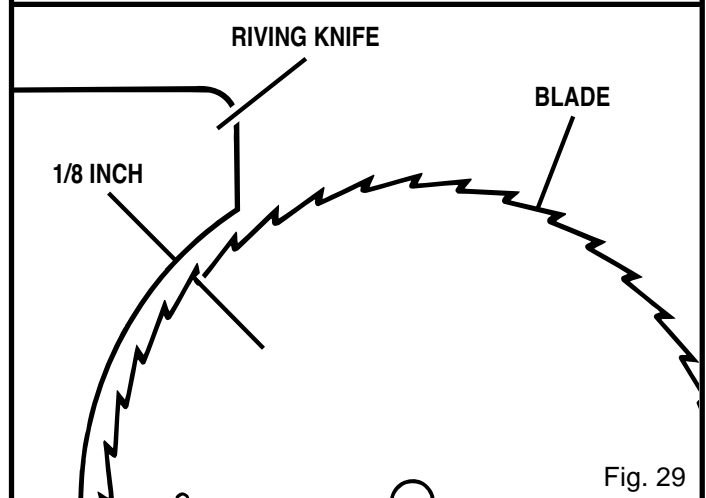


Fig. 29

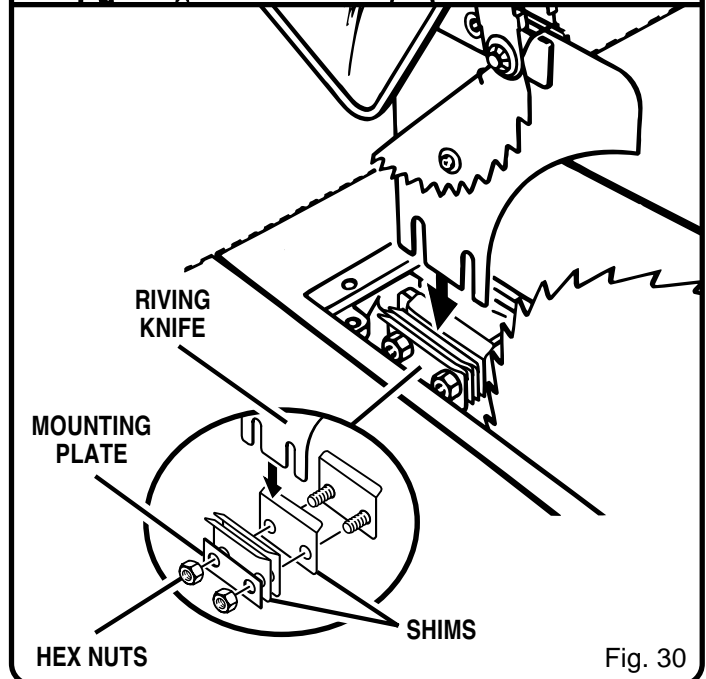


Fig. 30

# OPERATION

## TO ADJUST THE BLADE DEPTH

The blade depth should be set so that the outer points of the blade are higher than the workpiece by approximately 1/8 in. to 1/4 in. but the lowest points (gullets) are below the top surface. See Figure 31.

### WARNING:

Unplug the saw and make sure the blade guard assembly is installed and working properly to avoid serious personal injury.

- Push the bevel locking lever to the left for elevation mode.
- Raise the blade by turning the blade adjusting handle clockwise or lower it by turning the handle counter-clockwise.

## TO ADJUST THE BLADE ANGLE

See Figure 32.

### WARNING:

Unplug the saw and make sure the blade guard assembly is installed and working properly to avoid serious personal injury.

- Unlock the bevel locking lever.
- Push the bevel locking lever to the right for angle mode.
- Angle the blade by turning the blade adjusting handle until the bevel indicator shows the correct angle.
- Return the bevel locking lever securely to the left to lock the angle, while holding the blade adjusting handle in place.

## TO SET THE SCALE TO THE BLADE

The scale is usable from 0-24 in. to the right side of the blade and 0-21 in. on the left side of the blade. The operator can select any desired dimension within those ranges. Use the following steps to set the scale to the blade and scale indicator. Begin with the blade at a zero angle (straight up). See Figure 33.

- Loosen the rip fence by raising the locking handle.
- Using a framing square, set the rip fence 2 in. from the blade tip edge.
- Loosen both front and rear rails by lifting the front and rear rail clamps. See Figure 32.
- Adjust the front rail until the 2 in. mark is placed at the scale indicator. Align the rear rail to the front rail.
- Tighten the rails and check the dimension and the rip fence in both directions.

### WARNING:

Blades coast after turn off. Possible serious injury can occur if hands come in contact with blade.

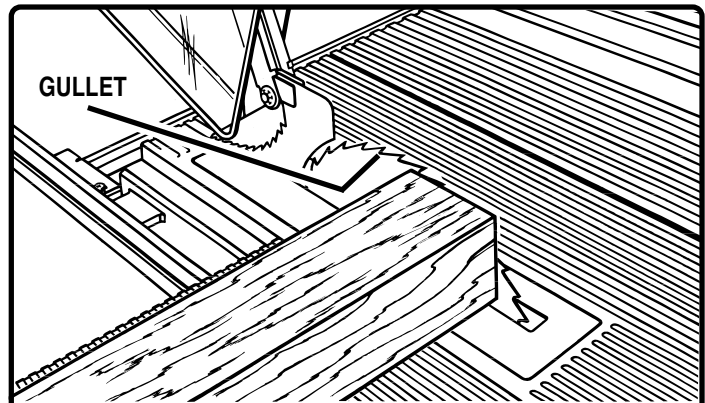


Fig. 31

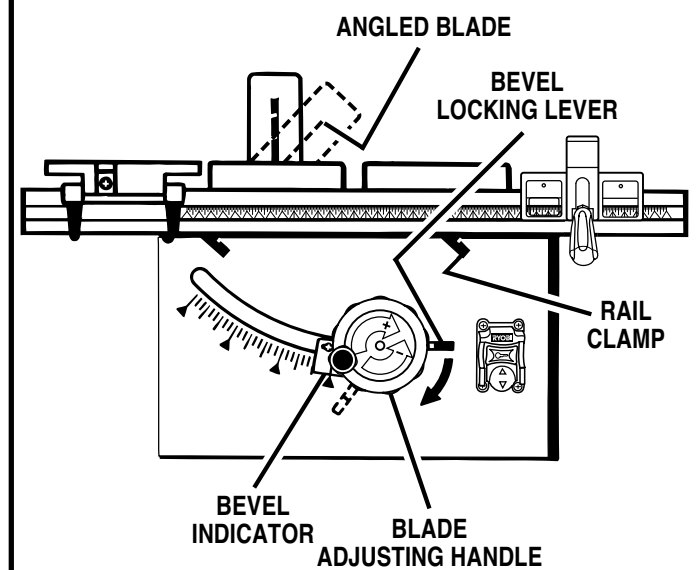


Fig. 32

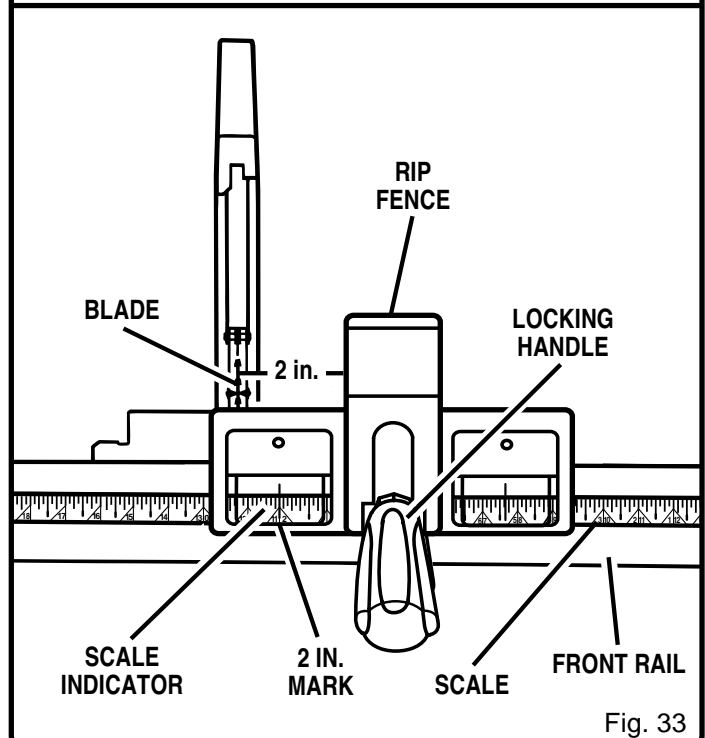


Fig. 33

# OPERATION

## TO LOCK MITER TABLE

See Figure 34.

The miter table slides to let the operator slide the workpiece across the saw. A miter slide lock is mounted on the front of the miter table to lock it in place. The miter slide lock is placed in a slot on the base to align the miter table with the front edge of the saw table. The sliding miter table should be locked for any cut in which the operator prefers a fixed table.

- To lock the miter table with the base projecting to the front, place miter slide lock in the back slot on the base.
- To lock the miter table with the base projecting to the back, place miter slide lock in the front slot on the base.

### **WARNING:**

Never stand directly in line with the blade or allow hands to come closer than 3 inches to the blade. Do not reach over or across the blade. Failure to heed this warning can result in serious personal injury.

## MAKING CUTS

The blade provided with your saw is a high-quality combination blade suitable for ripping and crosscut operations.

### **WARNING:**

All blades must be rated for at least 5,500 RPM to prevent possible injury.

## TO MAKE A STRAIGHT CROSS CUT

See Figure 35.

### **WARNING:**

Never use rip fence as cutoff gauge when crosscutting.

### **WARNING:**

Make sure the blade guard assembly is installed and working properly to avoid serious personal injury.

It is recommended you make test cuts on scrap wood.

- Remove the rip fence by lifting the locking handle.
- Set the blade to the correct depth for the workpiece.
- Set the miter fence to 90° with the quick-stop or the miter scale.
- Make sure the miter fence won't touch the blade while feeding the wood. Make a trial pass of the miter table. The miter fence should not contact the blade. Loosen the adjusting clamp to move the fence if needed.
- Place a support (the same height as saw table) behind the saw for the cut work.

MITER  
SLIDE LOCK

SLOTS FOR LOCKING  
MITER TABLE

Fig. 34

ADJUSTING  
CLAMP

MITER  
FENCE

QUICK  
STOP

MITER  
TABLE BASE

Fig. 35

SWITCH  
BUTTON  
IN ON  
POSITION




SWITCH  
BUTTON  
IN OFF  
POSITION

SWITCH  
KEY

SWITCH IN LOCKED POSITION

Fig. 36

# OPERATION

- Make sure the wood is clear of the blade before turning on the saw. *See Figure 35.*
- To turn saw on (  ), lift switch cover and press switch button. Then lower switch cover.
- To turn saw off (  ), press the switch button down.  
**Note:** To prevent unauthorized use, remove the switch key as shown in figure 36.
- Let the blade build up to full speed before moving the workpiece into the blade.
- Hold the workpiece firmly with both hands on the miter gauge and feed the workpiece into the blade.
- When the cut is made, turn the saw off (  ). Wait for the blade to come to a complete stop before removing the workpiece.

## TO MAKE A MITER CUT

*See Figure 37.*

It is recommended you make test cuts on scrap wood.



### WARNING:

Make sure the blade guard assembly is installed and working properly to avoid serious personal injury.

- Remove the rip fence by lifting the locking handle.
- Loosen the adjusting clamp to set the desired angle of the miter fence. Place the miter indicator on the miter fence to the desired angle on the miter table. Retighten the clamp.
- Place a support (the same height as saw table) behind the saw for the cut work.
- Make sure the miter fence will not contact the blade while feeding the wood. Make a trial pass of the miter table. The miter fence should not contact the blade. Loosen the adjusting clamp to move it away from the blade if needed.
- Make sure the wood is clear of the blade before turning on the saw.
- Let the blade build up to full speed before moving the workpiece into the blade.
- Hold the work firmly against the miter fence with both hands, keeping well clear of the blade, and push the miter table to feed the work into the blade.

## TO MAKE A STRAIGHT RIP CUT

*See Figure 38.*

It is recommended you make a test cut on scrap wood.



### WARNING:

Make sure the blade guard assembly is installed and working properly to avoid serious personal injury.

- Remove the miter fence. Position accessory table and sliding miter table to provide the support necessary for the cut being performed. Securely lock the rip fence with the locking handle.
- Don't leave one side of saw unsupported.
- Position the rip fence the desired distance from the blade for the cut and securely lock the handle. Adjust the scale to zero at the cutting edge of the blade.

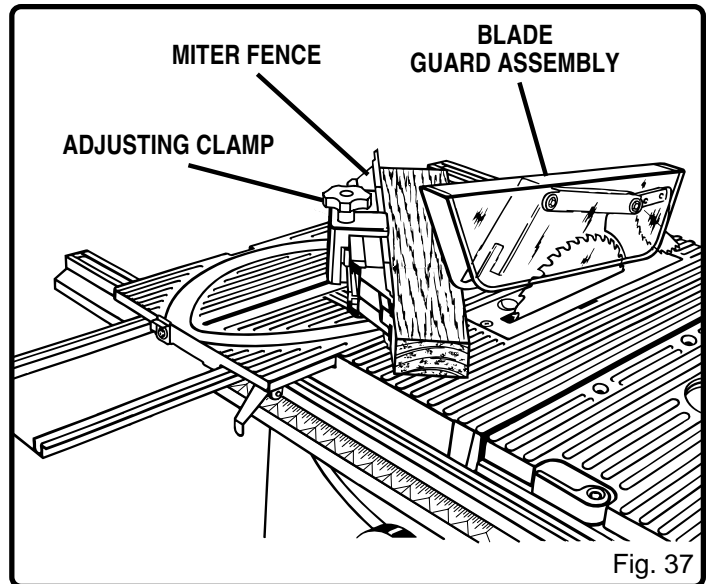



Fig. 37

- Place a support (the same height as saw table) behind the saw for the cut work.
- Make sure the wood is clear of the blade before turning on the saw.
- Use a push block or push stick to move the wood through the cut past the blade. **Never push a small piece of wood into the blade with your hand, always use a push stick.** The use of push blocks, push sticks, and featherboards are necessary when making non-through cuts.
- Stand to the side of the wood as it contacts the blade to reduce the chance of injury should kickback occur. **Never stand directly in the line of cut.**
- Make sure the wood is clear of the blade before turning on the saw.
- Let the blade build up to full speed before feeding the workpiece into the blade.
- When the cut is made, turn the saw off (  ). Wait for the blade to come to a complete stop before removing the workpiece.

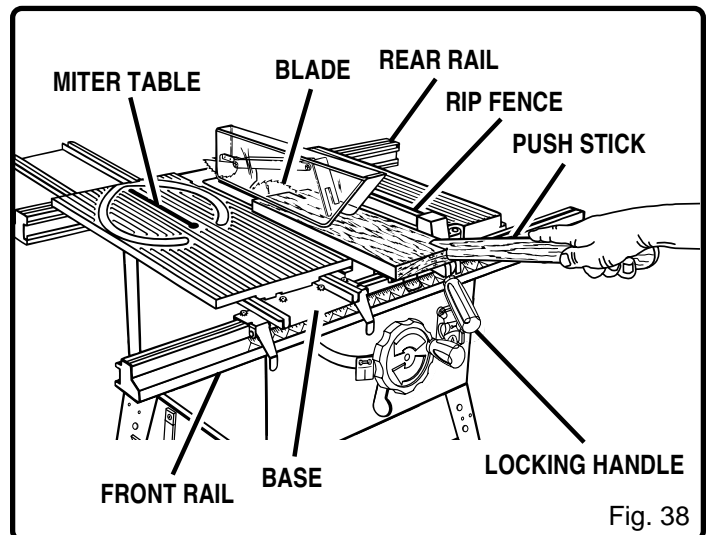


Fig. 38

# OPERATION


## TO MAKE A BEVEL CROSS CUT

See Figure 39.

It is recommended that you place the piece to be saved on the left side of the blade and that you make a test cut on scrap wood.

### WARNING:

Make sure the blade guard assembly is installed and working properly to avoid serious personal injury.

- Remove the rip fence by lifting the locking handle.
- Move the bevel locking lever to the right for Angle mode. Turn the blade adjustment handle until the bevel indicator is at the desired angle. Push the bevel locking lever securely to the left to lock the angle.
- Set the blade to the correct depth for the workpiece.
- Loosen the adjusting clamp on the miter fence. Set the miter fence to 90° with either the quick-stop or the miter scale.
- Make sure the miter fence will not contact the blade as the wood feeds into the blade. Make a trial pass of the miter table. The end of the miter fence should not contact the blade. Loosen the adjusting clamp to move it away from the blade if needed.
- Place a support (the same height as saw table) behind the saw for the cut work.
- Make sure the wood is clear of the blade before turning on the saw.
- Let the blade build up to full speed before moving the miter table to feed the workpiece into the blade.
- Hold the work with both hands and push the miter table to feed the work into the blade.
- When the cut is made, turn the saw off (). Wait for the blade to come to a complete stop before removing the workpiece.

## TO MAKE A BEVEL RIP CUT

See Figure 40.

It is recommended you make test cuts on scrap wood.

### WARNING:

The rip fence must be on the left side of the blade to avoid trapping the wood and causing kickback. Placement of the rip fence to the right of the blade will result in kickback and the risk of serious personal injury.

### WARNING:

Make sure the blade guard assembly is installed and working properly to reduce the risk of serious personal injury.

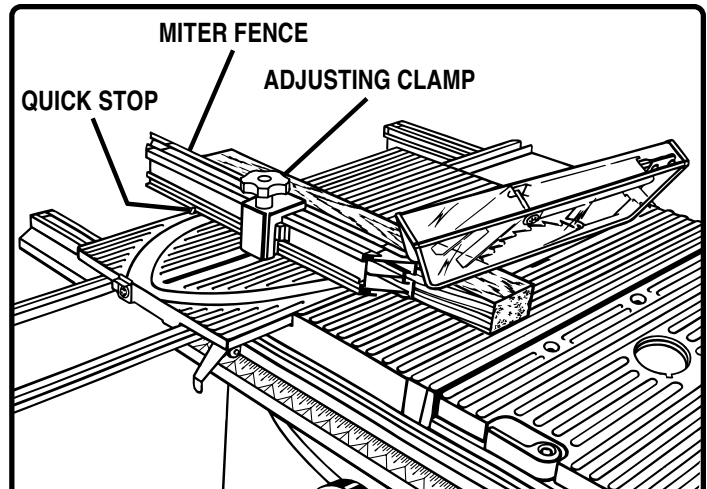


Fig. 39

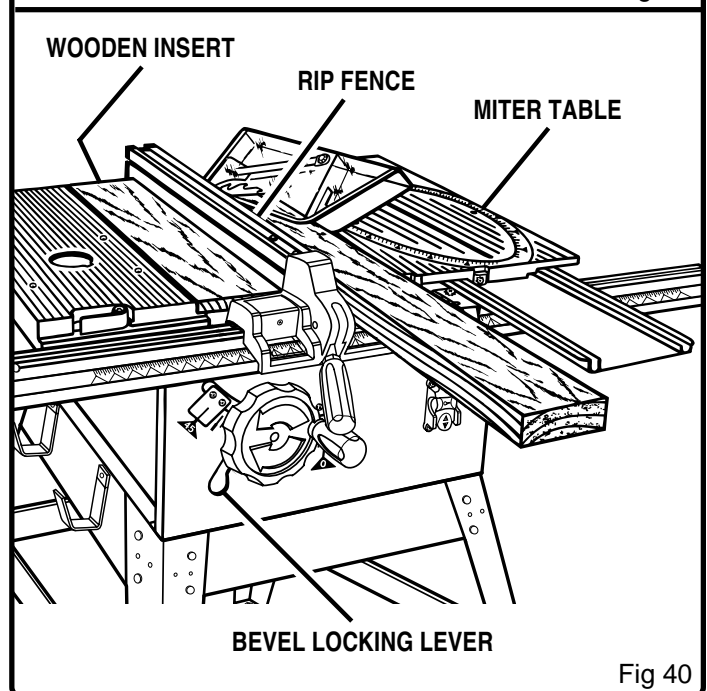



Fig 40

- Remove miter fence, sliding miter table, and accessory table.
- Position the rip fence the desired distance from the left side of the blade and lock down the handle.
- Adjust the bevel angle to the desired setting.
- Set the blade to the correct depth.
- If ripping a piece larger than 36 in. long, place a support the same height as the table surface behind the saw for the cut work.
- Turn the power switch to the on () position.
- Position the workpiece flat on the table with the edge flush against the rip fence. Let the blade build up to full speed before feeding the workpiece into the blade.
- Using a push stick and/or push blocks, slowly feed the workpiece toward the blade. Stand slightly to the side of the wood as it contacts the blade to reduce the chance of injury should kickback occur.

# OPERATION

- Once the blade has made contact with the workpiece, use the hand closest to the rip fence to guide it. Make sure the edge of the workpiece remains in solid contact with both the rip fence and the surface of the table. If ripping a narrow piece, use a push stick to move the piece through the cut and past the blade.
- When the cut is made, turn the saw off (⏻). Wait for the blade to come to a complete stop before removing the workpiece.
- After the blade has stopped completely, remove the cutoff stock.
- Grasp the workpiece from the lead end (the end fed into the blade first) and carefully remove it from the table.

## TO MAKE A COMPOUND MITER CUT

This cut is made with both the miter fence and the blade angled. Set the miter fence and the blade angle with the procedures given earlier.

The miter fence must be on the left side of the blade. It is highly recommended that you test the cut with a piece of scrap wood. Become thoroughly familiar with bevel cross cuts and miter cuts before attempting to perform a compound miter cut.

## TO MAKE A LARGE PANEL CUT

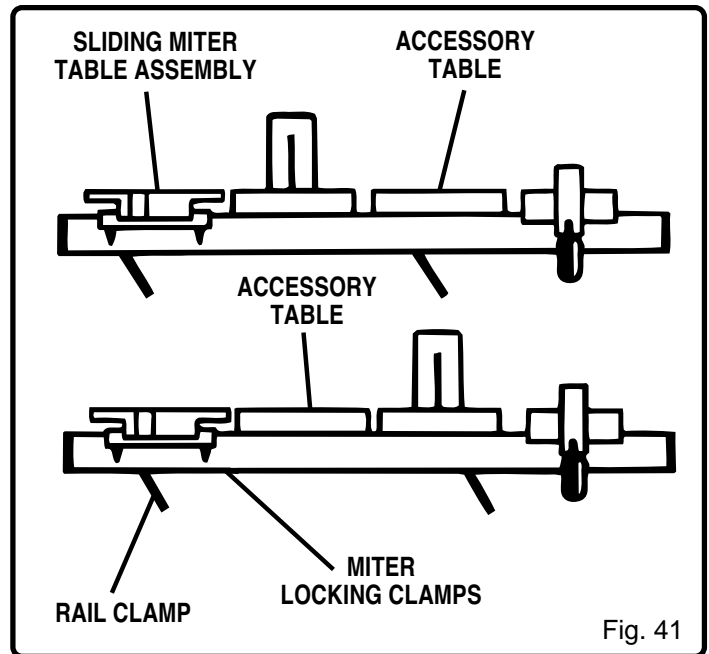
See Figure 41.

Make sure the saw is properly secured to a work surface so it will not tip over under the weight of a large panel.

### WARNING:

Make sure the blade guard assembly is installed and working properly to avoid serious personal injury.

- Raise the locking handle on the rip fence to allow the rails to move freely.
- Lift off the sliding miter table assembly by raising the miter locking clamps to release the grippers.
- Remove the accessory table by swinging out the lever and lifting the table up and out.
- Rotate the front rail clamps (under the front rail) to the left and slide the front rail to the side where the panel will rest. Lock the rail clamps after positioning the front rail.
- Rotate the rear rail clamps (under the rear rail) to the left and position the rear rail to support the panel. Align the rear rail with the front rail. Lock the rail clamps after positioning the rear rail.



- Place the accessory table onto the rails far enough from the blade to help support the panel and lock securely.
- Place the sliding miter table assembly onto the rails and lock securely. The miter table can be rotated 180° so the projecting base is at the back of the work surface so you won't run into it as you feed the panel into the blade. (Tables can be placed on either side of blade.)
- Position the rip fence the desired distance from the blade for the cut and securely lock the handle.
- Place a support behind the saw for the cut work.
- Make sure the panel is clear of the blade before turning on the saw.
- Let the blade build up to full speed before feeding the workpiece into the blade.

# OPERATION

## TO MAKE NON-THROUGH CUTS

Non-through cuts can be made with the grain (ripping) or across the grain (crosscut). The use of a non-through cut is essential to cutting grooves, rabbets, and dadoes. This is the only type cut that is made without the blade guard installed. Make sure the blade guard assembly is reinstalled upon completion of this type of cut. Read the appropriate section which describes the type of cut in addition to this section on non-through or dado cuts. For example, if your non-through cut is a straight cross cut, read and understand the section on straight cross cuts before proceeding.

### WARNING:

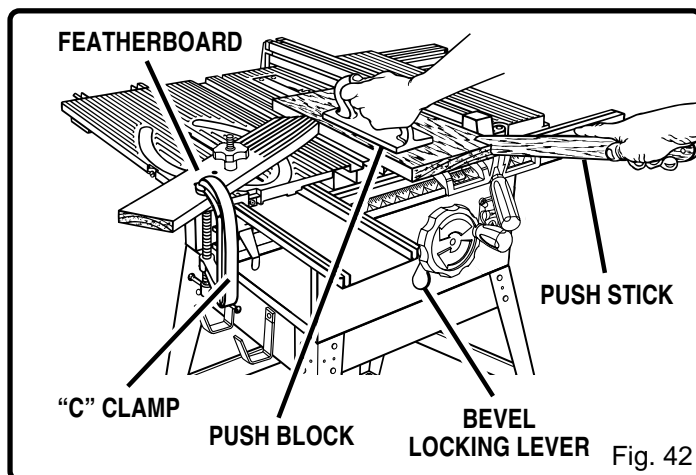
Unplug the saw to avoid possible injury.

- Remove the screw holding the throat plate in place. Remove the throat plate.
- Raise the saw blade.
- Put the saw in angle mode by pushing the bevel locking lever to the right. Turn the blade adjusting handle until the blade indicator shows a 30° angle. Push the bevel locking lever securely to the left to lock the angle.
- With the box end of the small hex wrench, loosen the two hex nuts at the base of the riving knife. **Do not remove hex nuts.** Remove the riving knife/guard assembly. Retighten the two hex nuts on the base. Insert the throat plate.
- Lower the blade and insert the throat plate, then securely tighten the throat plate screw.
- Bring the blade back to 90°.
- Raise the blade to the correct height by turning the blade adjusting handle counterclockwise.
- Feed the workpiece into the blade.

### WARNING:

Carefully check all setups and rotate the blade one full revolution to assure proper clearance before connecting saw to power source.

- Always use push blocks, push sticks, and featherboards when making non-through cuts to avoid the risk of serious injury. See Figure 42.




### WARNING:

Never feed wood with your hands when making any non-through cut such as rabbets or dadoes.

### WARNING:

When making a non-through cut, the cutter is covered by the workpiece during most of the cut. Be alert to the exposed cutter at the start and finish of every cut to avoid the risk of serious personal injury.

- When the cut is made, turn the saw off () . Wait for the blade to come to a complete stop before removing the workpiece.
- Lower the blade.
- Unplug your saw.
- Remove the screw holding the throat plate in place. Remove the throat plate.
- Raise the saw blade.
- Push the bevel locking lever to the right. Rotate the blade adjusting handle until the bevel indicator shows a 30° angle. Push the bevel locking lever securely to the left while holding the blade adjusting handle to lock the angle. Reinstall the blade guard assembly.
- Retighten the nuts at the base of the riving knife. Check riving knife alignment to the blade and adjust shims if necessary. See page 25.
- Move the bevel locking lever to the right and rotate the blade back to 90°. Push the lever to the left to lock the angle.
- Lower the blade, insert the throat plate, then securely tighten the throat plate screw.

# OPERATION

## TO MAKE DADO CUTS

A dado is a non-through cut and typically refers to a channel cut, both with the grain and across the grain. (The Ryobi part number for the 6 in. dado set is 4650306.)

- Unplug your saw.

### **WARNING:**

Unplug the saw to avoid possible injury.

- Remove the blade guard assembly. *See page 25.*
- Retighten the two hex nuts on base assembly.
- Remove the blade.
- Remove the appropriate spacers on the blade arbor to get the correct width for the dado blade.
- Reinstall the inner blade washer.
- Mount the dado blade, using the instructions with the dado set.
- Reinstall the outer blade washer and arbor nut.
- Make sure the arbor nut is fully engaged and the arbor extends at least one full thread past a securely tightened arbor nut.

- When mounting dado blades, make sure both the inner blade washer and outer blade washer are used.
- Replace the throat plate with optional Dado Throat Plate (4070331). When ordering parts, always give the model number. Call 1-800-525-2579 for assistance.

### **WARNING:**

Always put all spacers in proper location when changing back to saw blade. Failure to do so may result in possible injury and damage to the tool.

### **WARNING:**

Always use push blocks, push sticks, or featherboards when making dado cuts to avoid the risk of serious injury.

### **WARNING:**

All blades must be rated for at least 5,500 RPM to prevent possible injury or damage to the tool.



# MAINTENANCE

## GENERAL MAINTENANCE



### WARNING:

Always begin by disconnecting the power supply.

- Periodically check all clamps, nuts, bolts, screws, and belts for tightness and condition. Make sure the throat plate is in good condition and in position.
- Check the blade guard assembly.

- To maintain the table surfaces, fence, and rails, periodically apply paste wax to them and buff to provide smooth functioning. To prevent work from slipping during cutting operation, **DO NOT** wax the working face of the miter fence.
- Protect the blade by cleaning out sawdust from underneath the table and in the blade teeth. Use a resin solvent on the blade teeth.
- **Clean plastic parts only with a soft damp cloth. DO NOT** use any aerosol or petroleum solvents.

## LUBRICATION

This saw has been lubricated at the factory prior to shipment. Following extended use, you should inspect and lubricate the following areas to assure smooth operation.

### LOCKER BRACKET ASSEMBLY

See Figure 43.

- Add dry lube between both bevel gears, the backup washers and the locker bracket.
- Add dry lube between threaded hole in motor casting and threaded elevating shaft.

Recommended Lubricants:

Dry Silicone or Teflon Lubricant

### TILT / ELEVATING MECHANISM

See Figure 44.

- Add dry lube between the handle shaft and the bore of the clamping bolt.
- Add dry lube between the face of the clamping bolt and the face of the handle shaft.
- Add dry lube on the inner surfaces of the bevel locking lever which contacts the cam.

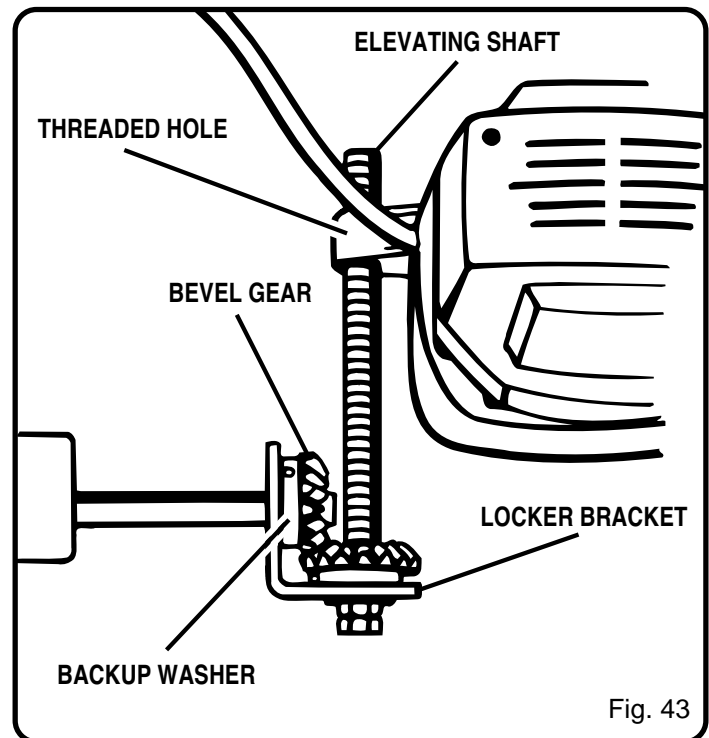


Fig. 43

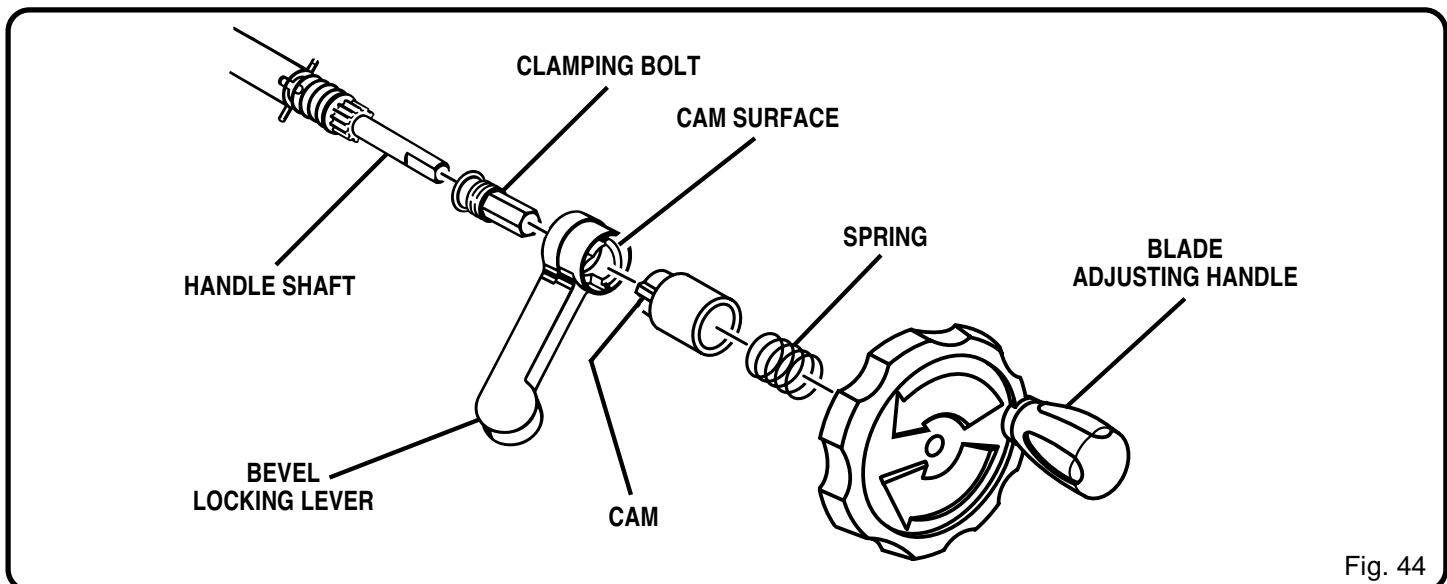


Fig. 44

# MAINTENANCE



## WARNING:

Before performing any adjustment, make sure the tool is unplugged from the power supply and the switch is in the off (⏏) position. Failure to heed this warning could result in serious personal injury.

## TO SET BLADE AT 0° OR 45°

See Figure 45.

The angle settings of your saw have been set at the factory and, unless damaged in shipping, should not require setting during assembly. After extensive use, it may need to be checked.

- Push the bevel locking lever to the right. Turn the blade adjusting handle to angle the blade. Use a combination square to check squareness between the blade and saw table.
- If the blade is not perfectly vertical (0°), loosen the lock nut on the 0° stop bolt inside the cabinet, position the blade, adjust the stop bolt, then retighten lock nut. See Figure 45, insert. If the bevel indicator is not at zero, adjust it with the two screws above the slot, beside the blade adjusting handle.
- Turn the blade adjusting handle until the bottom of the blade has moved completely to the left side of the slot. Lock the angle by pushing the bevel locking lever to the left.
- If the blade is not an exact 45°, loosen the lock nut on the 45° stop bolt inside the cabinet, position the blade, adjust the stop bolt, then retighten lock nut. See Figure 45, insert.

- Make a test cut.

## TO CHECK THE ALIGNMENT OF THE RIP FENCE TO THE BLADE

See Figure 46.



## WARNING:

Before performing any adjustment, make sure the tool is unplugged from the power supply and the switch is in the off (⏏) position. Failure to heed this warning could result in serious personal injury.

- Raise the locking handle to permit the rip fence to be moved.
- Place a framing square beside the blade and move the rip fence up to the square. Take the dimension on the rip scale.
- Move the fence back and turn the framing square 180° to check the other side.
- If the two dimensions are not the same, loosen the two screws on the fence and align it.
- Retighten the two screws.

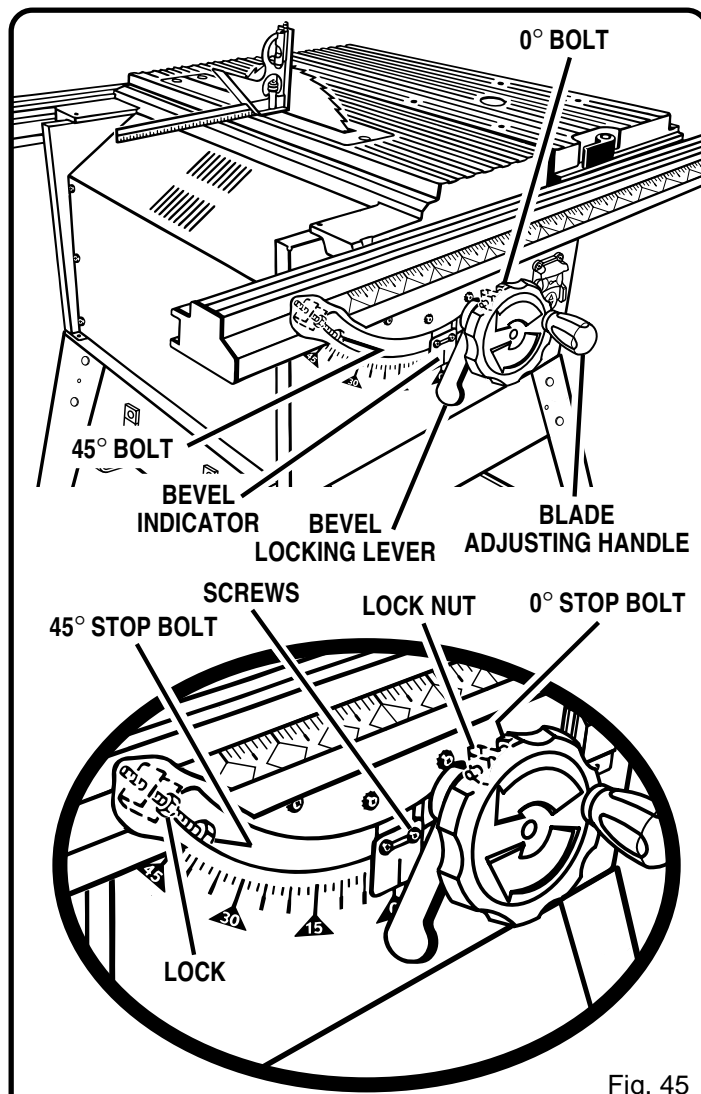


Fig. 45

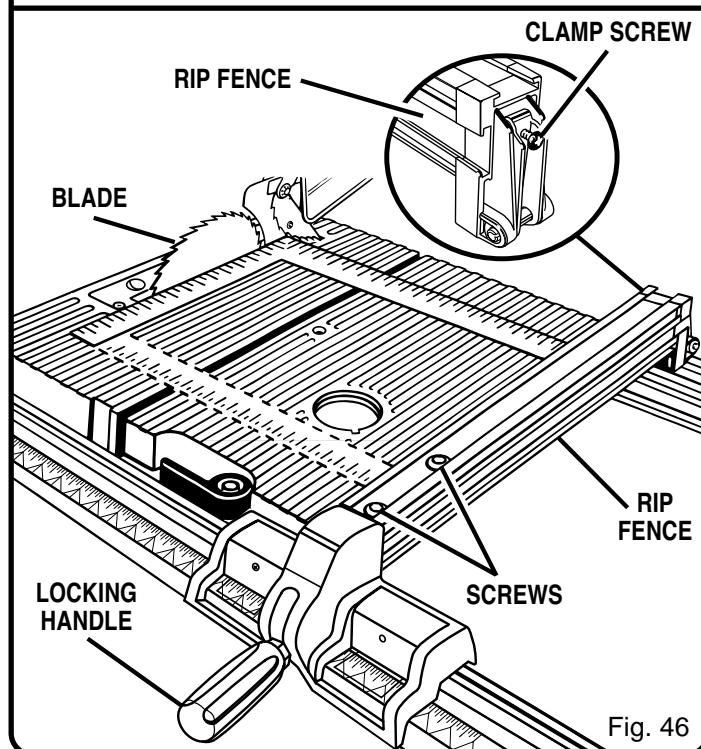


Fig. 46

# MAINTENANCE

- Make two or three test cuts on scrap wood. If the cuts are not true, repeat the process.



## WARNING:

Before plugging the saw back in to make test cuts, make sure the switch is in the off (⏏) position and the blade guard is in place. Failure to do so may result in serious injury.

## TO ADJUST THE BEVEL LOCKING LEVER

See Figure 47.

The bevel locking lever may work loose and require adjusting. To adjust it, use the following steps.

- Push the lever full left to the locked position.
- Remove the screw on the blade adjusting handle. You will need a 3/16 in. hex key for this procedure.
- Remove the blade adjusting handle and cam. Pull out the cam.
- Remove the set screw on the bevel locking lever.
- Remove the bevel locking lever from hex nut.
- Relocate bevel locking lever on the hex nut.
- Replace set screw and tighten securely.
- Replace the cam so that the lobe is against the tab as shown in Figure 47. Make sure the cam is seated in the lever.
- Reassemble the handle to the shaft and cam. Check whether the lever is now in the desired position. Tighten screw securely.

## TO ALIGN THE MITER LOCKING CLAMPS

See Figure 48.



## WARNING:

Before performing any adjustment, make sure the tool is unplugged from the power supply and the switch is in the off (⏏) position. Failure to heed this warning could result in serious personal injury.

The miter locking clamps are preset at the factory but may require adjusting after extended use or if damage occurs in shipping. Adjust them with the following steps:

- Loosen the set screw behind each locking clamp.
- Loosen the screw on top of each locking clamp.
- Lift the locking clamp to the Up position.
- Push the clamp forward tight against the front rail to bring the clamp into alignment.
- When the clamps are correctly positioned, retighten the screws and the set screws.
- Push both front and rear miter locking clamps down to secure the sliding miter table.

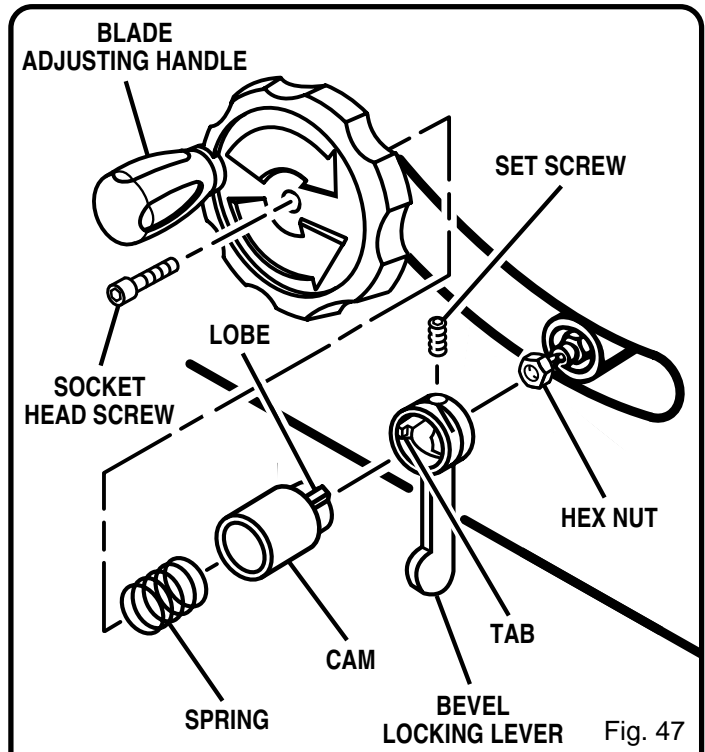


Fig. 47

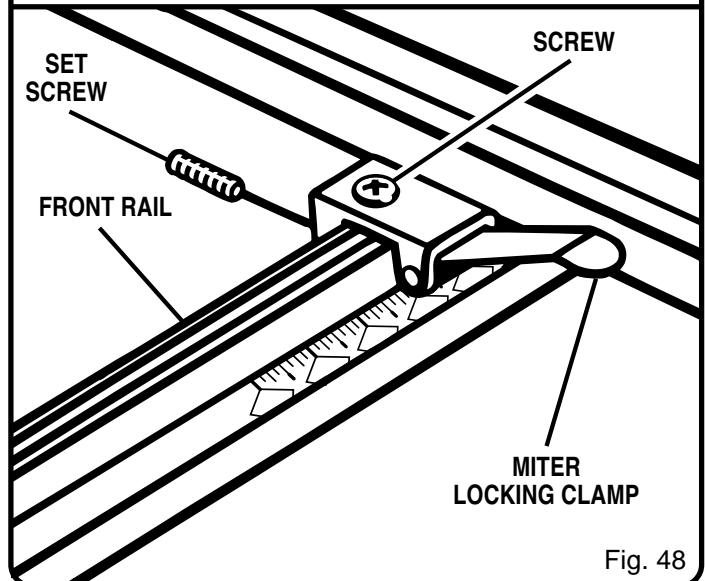


Fig. 48

# MAINTENANCE

## TO ADJUST THE FRONT AND REAR RAIL CLAMPS

See Figure 49.

The rail clamps are located below the rails and ensure tight attachment of the rail. Following extended use, the rail holder nut inside the rails may need adjusting.

- Remove the miter table and accessory table.
- Remove the front and rear rails by loosening the rail clamps and sliding the rails off.
- Rotate each rail clamp to the left until it hits or comes in contact with the bottom of the saw table.
- Tighten rail holder nut until it is snug.
- Loosen rail holder nut one-fourth (1/4) turn.
- Replace the rails and check the rail clamps.

## TO ADJUST THE ACCESSORY TABLE

See Figure 50.

After extended use, the accessory table may work loose causing the accessory table to be loose on the rails. Follow the steps below, when adjustments are required:

- Remove the hex nut on the lever using a 3/8 in. nut driver.
- Remove the backup plate and spring plate. Rotate the spring plate 180° and reinstall on the handle shaft.
- Reassemble all parts and tighten hex nut securely.

**Note:** The spring plate offers two ends for use before requiring replacement.

## TO ADJUST THE SLIDING MITER TABLE ASSEMBLY

The sliding miter table assembly has been preset at the factory to be parallel to the blade. However, misalignment during shipping or requirements for very precise and accurate cuts may require realignment. The square relationship between the blade and the miter fence as it travels the entire distance from the front to the rear of the miter table base during a cut is very important for making precise and accurate cuts.

To avoid unnecessary setups and adjustments, we suggest that you check these setups carefully with a framing square and make practice cuts in scrap wood before making finish cuts in good workpieces.

**Note:** Follow the general rule of measuring twice and cutting once.

Do not loosen any screws for the following adjustments until you have made checks and are sure adjustments are needed. Once screws have been loosened, these settings must be reset.

Two basic checks should be made to determine if adjustments are necessary:

- The miter base must be parallel to the blade as the table slides from the front to the rear of the miter table assembly.

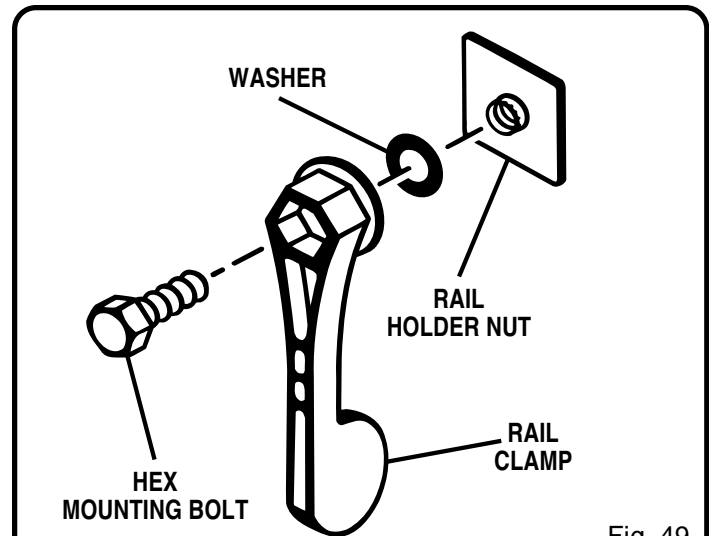


Fig. 49

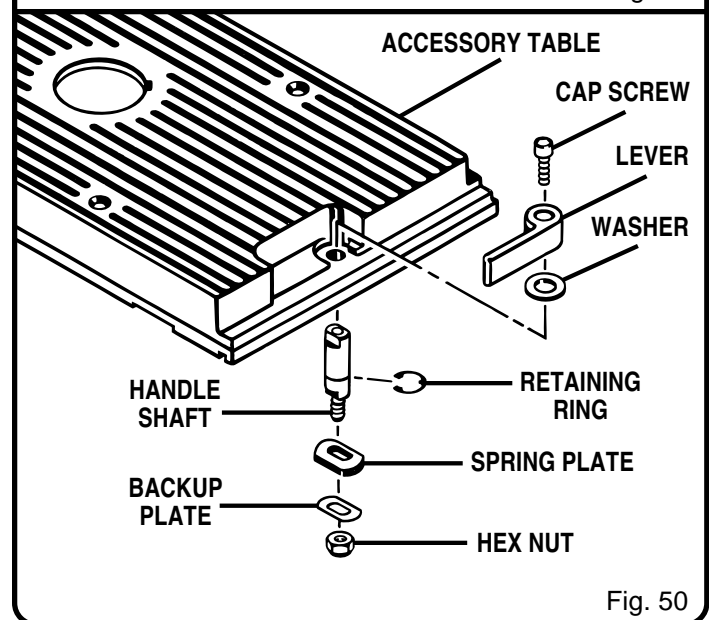


Fig. 50

- The miter fence must be square to the blade when set at exactly zero (0°) on the miter table scale. This is necessary in order to be able to use the scale on the miter table. The miter table has adjustment screws for squaring miter fence to blade and maintaining 0° scale settings when miter base adjustments are required.

**Note:** These checks and adjustments are being explained in step by step procedures, however, you should be aware that they depend upon each other.

# MAINTENANCE

## CHECKING SLIDING MITER TABLE ASSEMBLY

### To Check Miter Base Parallelism:



#### WARNING:

Begin by unplugging your saw. Failure to unplug saw could result in accidental starting causing possible serious injury.

- Set saw up as if you were preparing to make a cut. Tighten rail clamps, miter locking clamps, adjusting clamp, etc.
- Slide miter table (A) to the front of miter base (B) as far as it will go. Place a reference mark (C) near the end of the miter table as shown in figure 51.

**Note:** Front of miter base is on infeed side of saw.

- Place a reference mark on one of the blade teeth (D) and rotate the blade (E) so that the reference mark on the blade is at the front of the throat plate (F).
- Place a framing square (G) against the blade and align with reference mark on miter table. Measure the distance between the blade and the edge of miter table.

**Note:** Place framing square between carbide teeth and measure from blade. This step will insure framing square is square against blade from the front to back of blade.

- Remove framing square and slide miter table to the rear of miter base as far as it will go. See Figure 52.
- Rotate the blade so the reference mark on the blade is at the rear of the throat plate. Measuring from the same mark on the blade at the rear will eliminate the effect of blade wobble.
- Place framing square against the blade and align with the same reference mark on the miter table. Measure the distance between the blade and the edge of the miter table at the rear.
- Compare whether the front and rear measurements are the same. If they are the same, proceed with checking the miter fence alignment. If not, this indicates the miter base needs aligning. Miter base must then be adjusted before checking miter fence alignment. See **TO ADJUST THE MITER BASE** section that follows.

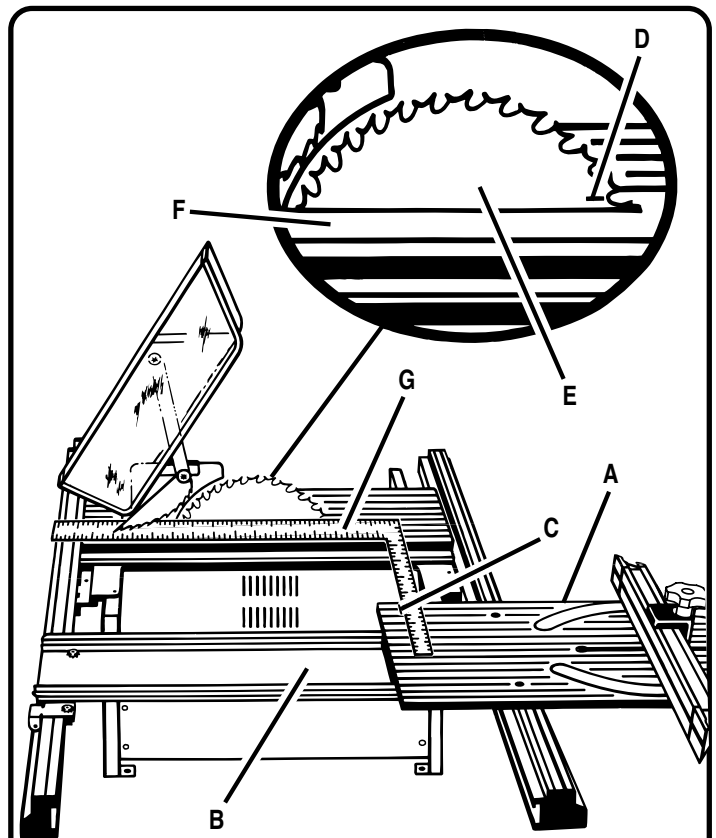


Fig. 51

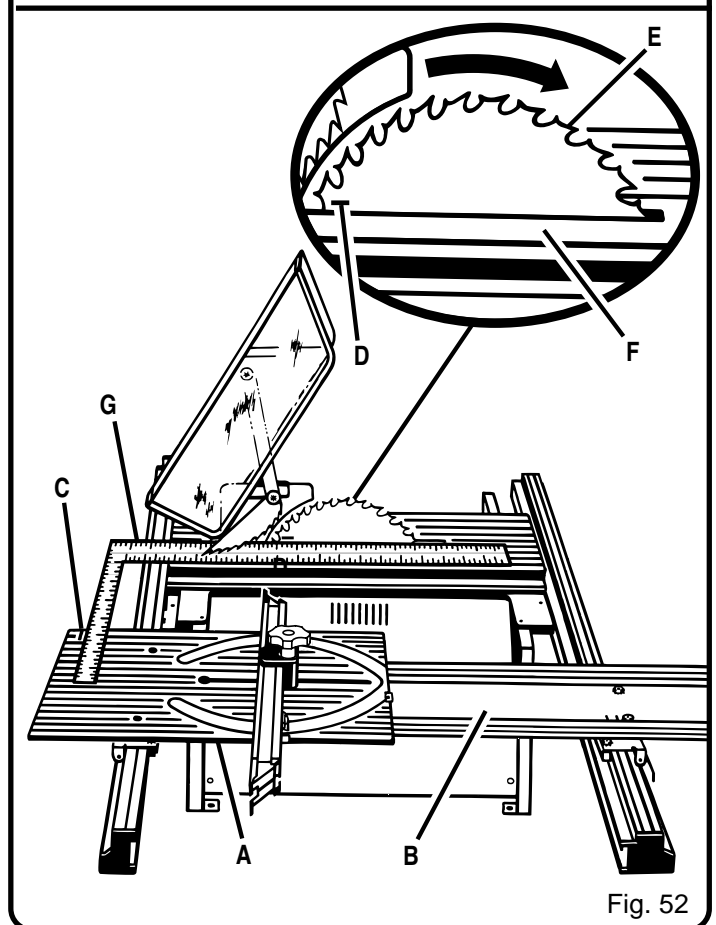


Fig. 52

# MAINTENANCE

## To Check Miter Fence Alignment

See Figure 53.

The miter fence must be perpendicular to the blade when set at zero degrees.



### WARNING:

Begin by unplugging your saw. Failure to unplug saw could result in accidental starting causing possible serious injury.

- Set the miter fence (H) at 0° as shown in figure 53. Miter indicator (I) should be set precisely on 0° and secured in place with adjusting clamp (J).

**Note:** The quick-stop is not necessary for this checking procedure. However, you may want to check and adjust it to 0° at this time. See *Quick-Stop* section that follows.

- Place a framing square (G) firmly against the miter fence (H) with the other side against the blade (E).
- Check whether the miter fence and blade are square with each other. With the framing square against the miter fence there should be no gap from the front to the rear of the blade.
- If a gap exists, the miter fence may be out of square.
- Rotate the blade and recheck. If there is a consistent gap between the front and rear of the blade, the miter table needs aligning. Follow the adjustment procedures that follow.

## MAKING ADJUSTMENTS TO SLIDING MITER TABLE ASSEMBLY

### To Adjust the Miter Base

See Figure 54.

**REMEMBER:** Check all settings before loosening screws for the following procedures. Once screws have been loosened, these settings must be reset.

**Eight screws are visible on the miter base (B).**

- Four screws (K) are on the holder plates and secure these plates to the rails. It is not necessary to loosen or adjust these screws for this adjustment procedure.
- Another pair of screws (L) is in the base, at the rear. Loosen these two screws (L) and the rear miter locking clamps (M).
- The last pair of screws is located on the infeed side of the base. Loosen the left screw (N) **only**.
- The right screw (O) will be used as a pivot point.

**Note:** The front two miter locking clamps (P) and rail clamps should remain locked.

- Follow the steps in **TO CHECK MITER BASE PARALLELISM**, adjust the miter base so that it is parallel to the blade.
- Retighten the left front screw (N).
- Clamp the rear miter locking clamps (M).
- Retighten the two rear screws (L).

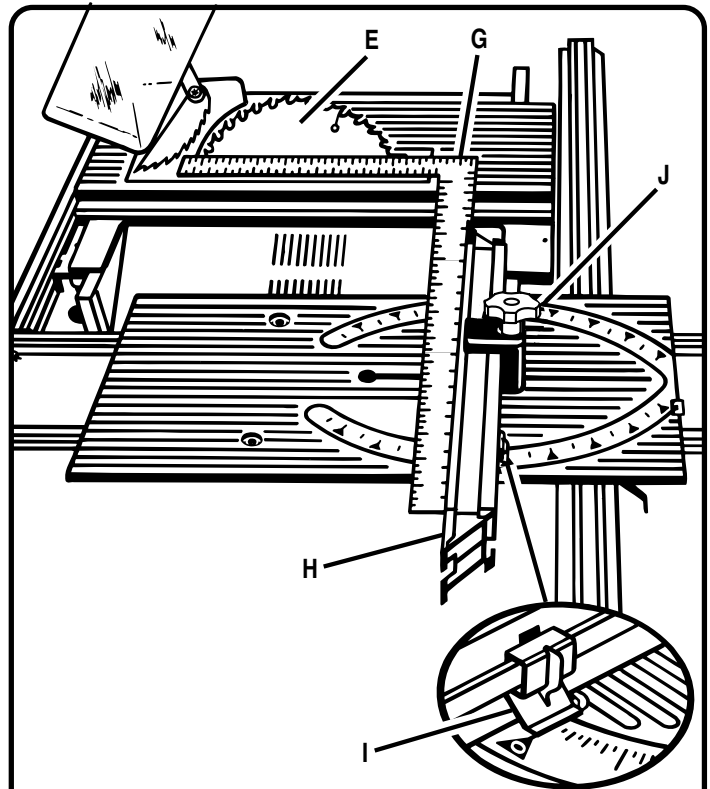


Fig. 53

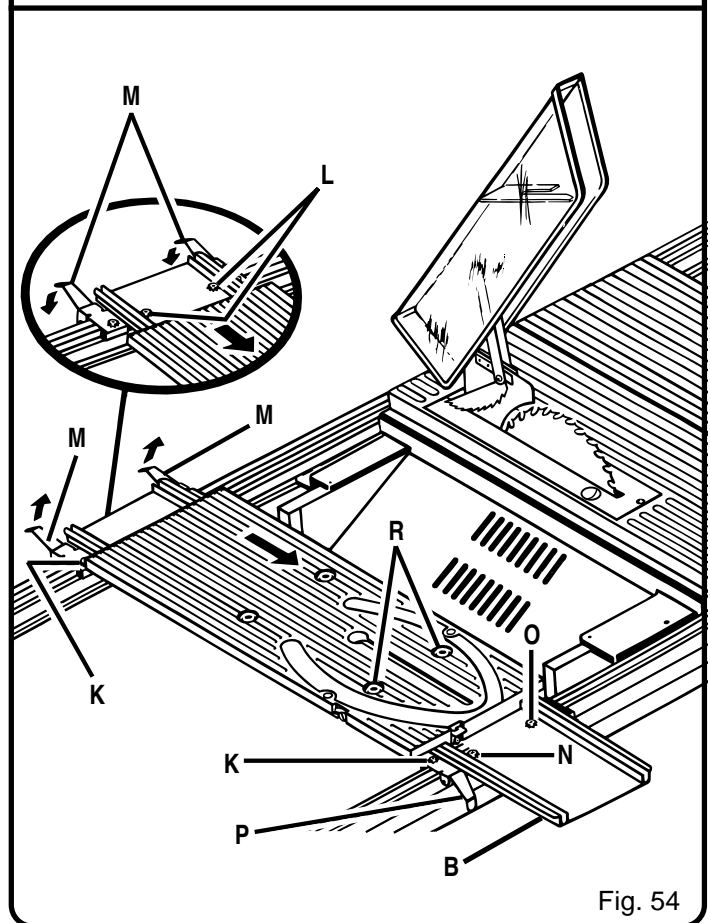


Fig. 54

# MAINTENANCE



## WARNING:

Begin by unplugging your saw. Failure to unplug saw could result in accidental starting causing possible serious injury.

### TO ADJUST THE MITER FENCE

- Set the miter fence (H) at 0° as shown in figure 53. Miter indicator (I) should be set precisely on 0° and secured in place with adjusting clamp (J).
- There are four slides located under the sliding miter table. These slides let the miter table move on the base. Three slides are mounted on eccentric screws that can be adjusted by loosening the hex nuts on top of the miter table. See Figure 55.
- Loosen the rear hex nuts (Q) on top of sliding miter table for this adjustment procedure.  
**Note:** The front screws (R) are only needed to remove excessive play in the slides due to wear from extended use. They are **not** needed for this procedure. The right front hex nut is a non-eccentric pivot and should never be loosened.
- Adjust the right rear eccentric screw from the lower side of the miter table so that maximum play exists between the slide and miter base.
- Push left rear of miter table snugly against miter base as shown by the arrow (S) in figure 56 and secure.
- Place a framing square firmly against the miter fence, with the other side against the blade.
- Adjust left rear screw from underneath miter table until miter fence and blade are square with each other.
- Tighten hex nut securely.
- Adjust right rear screw from underneath miter table to remove excessive play.
- Tighten hex nut securely.
- Recheck your setups carefully. Also make sure all screws, hex nuts, etc. have been tightened securely.
- If sliding miter table assembly is still not square with the blade, repeat the above procedures as needed.
- Make sure that slides remain square to miter base edge to prevent "cocking" which will result in excessive play in miter table.

### TO ADJUST QUICK-STOP

The quick-stop is preset at the factory to stop the miter fence at exactly 0°. However, when sliding miter table adjustments are made, these adjustments may cause the quick stop to need adjusting. Check quick-stop with miter scale set at 0°. If adjustments are needed, proceed with the following steps:

- Loosen the eccentric screw holding the quick-stop.
- Place the quick-stop against the miter fence with miter scale set at 0°. See Figure 57.
- Adjust eccentric screw until it holds quick-stop securely against miter fence.
- Retighten hex nut, securing eccentric screw and quick-stop.
- Check your work. If the quick-stop is not at 0°, repeat above steps.

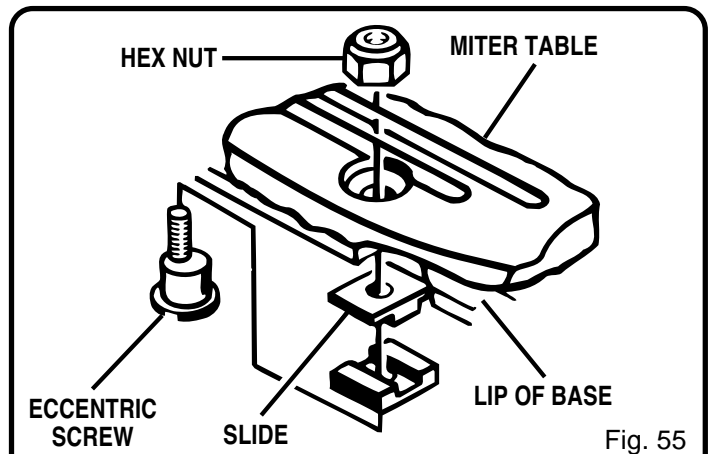


Fig. 55

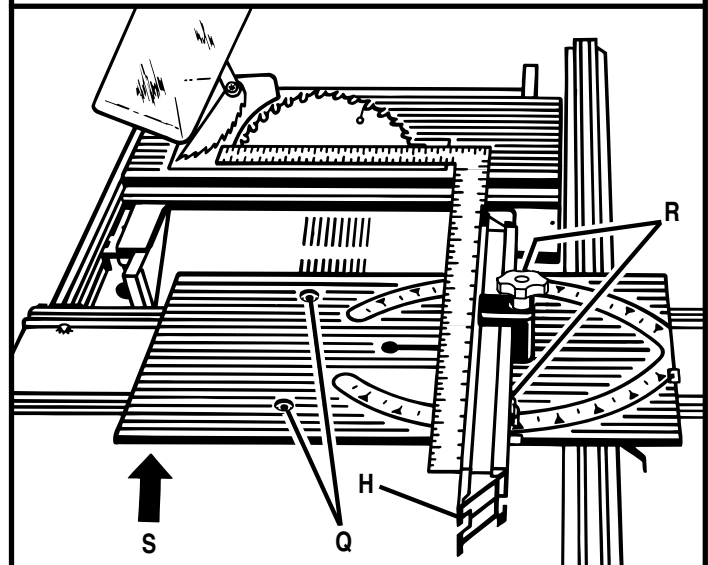


Fig. 56

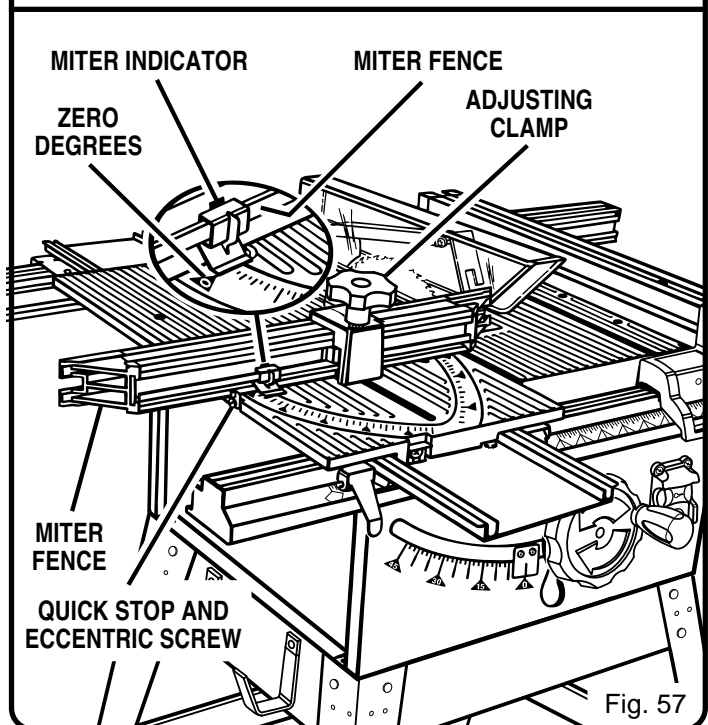


Fig. 57

# TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
Excess vibration.	Blade is out of balance.	Replace blade.
	Blade is damaged.	Replace blade.
	Saw is not mounted securely.	Tighten all hardware.
	Work surface is uneven.	Reposition on flat surface. Adjust legs of table saw stand.
	Blade is warped	Check Saw Blade Installation on page 20. Replace blade if necessary.
Rip fence does not move smoothly.	Rip fence not mounted correctly.	Remount the rip fence.
	Rails are dirty or sticky.	Clean and wax rails.
	Clamp screw is out of adjustment. See page 34.	Adjust clamp screw counterclockwise.
Rip fence does not lock at rear.	Clamp screw is out of adjustment. See page 34.	Adjust clamp screw clockwise.
Cutting binds or burns work.	Blade is dull.	Replace or sharpen blade
	Blade is heeling.	Align miter base.
	Work is fed too fast.	Slow the feed rate.
	Rip fence is misaligned.	Align the rip fence.
	Riving knife is misaligned.	Adjust the riving knife with shims provided.
	Wood is warped.	Replace the wood. Always cut with convex side to table surface.
Wood edges away from rip fence when ripping.	Rip fence is misaligned.	Check and adjust the rip fence.
	Blade not properly sharpened or set.	Sharpen or set blade.
Sliding miter table assembly does not move smoothly.	Miter base or slides improperly adjusted.	See page 36 for Adjustments to Sliding Miter Table Assembly .



# TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
Saw does not make accurate 90 or 45 degree cuts.	Positive stops inside cabinet need adjusting (Bevel Cuts).	Adjust positive stops.
	Miter gage is misaligned (Miter Cuts).	Adjust the miter gage.
Blade adjusting handle is hard to turn.	Gears or Screw Post inside cabinet are clogged with sawdust.	Clean the gears or screw post.
Saw does not start.	Motor cord or wall cord is not plugged in.	Plug in motor cord or wall cord.
	Circuit fuse is blown.	Replace circuit fuse.
	Circuit breaker is tripped.	Reset circuit breaker.
	Cord or switch is damaged.	Have the cord or switch replaced at a <b>RYOBI AUTHORIZED SERVICE CENTER</b> .
Blade makes poor cuts	Blade is dull or dirty.	Clean, sharpen or replace blade.
	Blade is wrong type for cut being made.	Replace with correct type.
	Blade is mounted backwards.	Remount blade.
Blade does not lower when turning blade adjusting handle.	Back side of riving knife has come in contact with saw table.	Realign and adjust the riving knife.
	Locking lever is not at full left position.	Move locking lever to left.
Motor labors in rip cut.	Blade not proper for rip cut.	Change blade; rip blade typically has fewer teeth such as Ryobi 4650324, 24 tooth, carbide rip blade.



# RYOBI 10 in. (254 mm) TABLE SAW - MODEL NO. BT3100-1

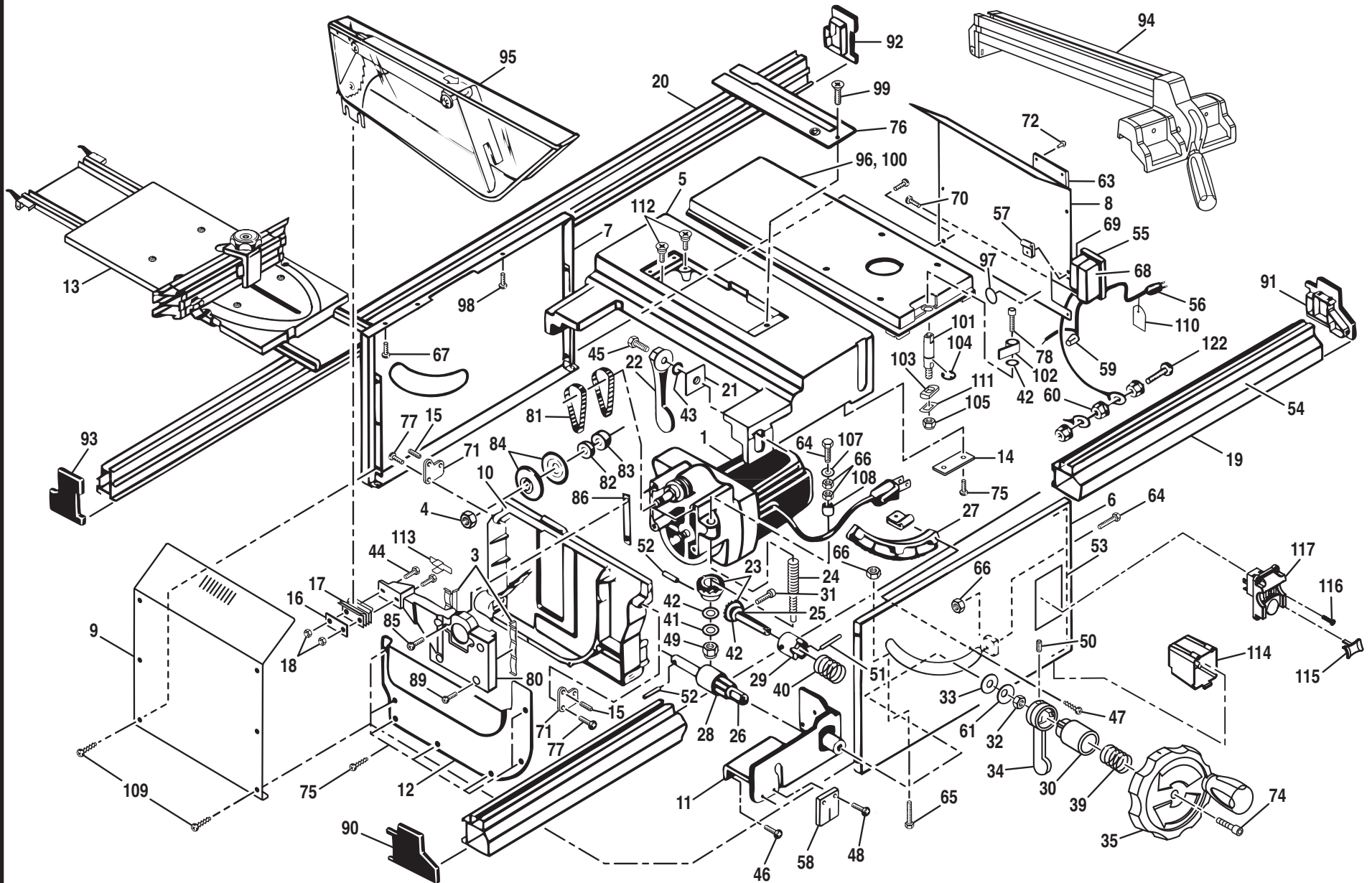
## FIGURE 58: 10 in. (254 mm) TABLE SAW

FOR MITER TABLE ASSEMBLY,  
REFER TO FIGURE 59

FOR BLADE GUARD ASSEMBLY,  
REFER TO FIGURE 62

FOR RIP FENCE ASSEMBLY,  
REFER TO FIGURE 60

FOR MOTOR ASSEMBLY,  
REFER TO FIGURE 61



# RYOBI 10 in. (254 mm) TABLE SAW - MODEL NO. BT3100-1

## PARTS LIST - FIGURE 58

The model number will be found on the data plate attached to the right side panel of the cabinet, next to the saw's on board receptacle. Always mention the model number in all correspondence regarding your **TABLE SAW** or when ordering repair parts.

### SEE BACK PAGE FOR ORDERING INSTRUCTIONS

Key No.	Description	Quan.	Key No.	Description	Quan.
1	Motor Assembly.....	1	48	Screw (8-32 x 3/8 in. Pan Hd.).....	4
3	Spring Shim.....	2	49	Nylon Hex Nut (3/8-16).....	1
4	Hex Nut (5/8-18).....	1	50	Set Screw (1/4-20 x 3/8 in.).....	1
5	Saw Table.....	1	51	Roll Pin.....	1
6	Front Cabinet Panel.....	1	52	Roll Pin.....	2
7	Rear Cabinet Panel.....	1	53	Name Plate.....	1
8	Right Cabinet Panel.....	1	54	Scale Label.....	1
9	Left Cabinet Panel.....	1	55	Outlet (15 Amp Single Pole).....	1
10	Locker Bracket.....	1	56	Cord.....	1
11	Clamper Bracket.....	1	57	Cable Clamp.....	1
12	Dust Cover.....	1	58	Bevel Indicator.....	1
13	Miter Table Assembly.....	1	59	Wire Nut.....	1
14	Clamp Plate.....	2	60	Lock Nut (8-32 Hex).....	3
15	Needle Roller (1/4 in. x 3/4 in.).....	2	61	Cone Disc Spring.....	1
16	Riving Clamp.....	1	63	Data Plate.....	1
17	Shim.....	5	64	Bolt (1/4-20 x 1 in. Hex).....	2
18	Hex Nut (5/16-18).....	2	65	Bolt (1/4-20 x 2 in. Hex).....	1
19	Front Rail.....	1	66	Hex Nut (1/4-20).....	4
20	Rear Rail.....	1	67	Screw (10-24 x 5/16 in. Pan Hd.).....	2
21	Rail Holder Nut (5/16).....	4	68	Plug Socket Box (A).....	1
22	Rail Clamp.....	4	69	Plug Socket Box (B).....	1
23	Bevel Gear.....	2	70	Screw (8-16 x 3/4 in. Pan Hd.).....	4
24	Shaft.....	1	71	Locker Support.....	2
25	Gear Shaft.....	1	72	Rivet.....	4
26	Handle Shaft.....	1	73	Set Screw (10-24 x 3/8 in.).....	4
27	Gear Rack.....	1	74	Cap Screw.....	1
28	Tilting Gear.....	1	75	Screw (10-24 x 1/2 in. Pan Hd.).....	11
29	Clutch.....	1	76	Throat Plate.....	1
30	Cam.....	1	77	Screw (10-24 x 5/8 in.).....	4
31	Screw (8-32 x 1-3/16 in. Fil. Hd.).....	1	78	Cap Screw.....	2
32	Hex Nut (3/4-16).....	1	79	Label.....	1
33	Washer.....	1	80	Guide Holder.....	1
34	Bevel Locking Lever.....	1	81	V Belt.....	2
35	Blade Adjusting Handle.....	1	82	1/4 in. Spacer.....	1
39	Spring.....	1	83	1/2 in. Spacer.....	1
40	Spring.....	1	84	Blade Washer.....	2
41	Washer.....	1	85	Screw (8-32 x 3/4 in. Pan Hd.).....	1
42	Washer.....	2	86	Shim.....	2
43	Washer.....	4	89	Screw (10-24 x 1 in. Pan Hd.).....	4
44	Hex Bolt (5/16-18 x 1-1/8 in.).....	2	90	End Plug F1 (front left).....	1
45	Hex Bolt (5/16-18 x 3/4 in.).....	4	91	End Plug F2 (front right).....	1
46	Screw (10-24 x 5/8 in. Pan Hd.).....	8	92	End Plug R1 (right rear).....	1
47	Screw (10-24 x 5/8 in. Pan Hd.).....	3	93	End Plug R2 (left rear).....	1

**RYOBI 10 in. (254 mm) TABLE SAW - MODEL NO. BT3100-1**  
**PARTS LIST - FIGURE 58 (CONT'D)**

<b>Key No.</b>	<b>Description</b>	<b>Quan.</b>	<b>Key No.</b>	<b>Description</b>	<b>Quan.</b>
94	Rip Fence Assembly .....	1	106	Washer .....	1
95	Blade Guard Assembly .....	1	107	Washer .....	1
96	*Accessory Table Assembly .....	1	108	Spacer .....	1
97	Grounding Label .....	1	109	Screws .....	12
98	Throat Plate .....	1	110	Hang Tag .....	1
99	Screw .....	1	111	Back-Up Plate .....	1
100	Accessory Table .....	1	112	Screw (10-24 x 3/4 in. Flat Hd.) .....	2
101	Handle Shaft .....	1	113	Bolt Holder .....	1
102	Handle .....	1	114	Rear Switch Cover .....	1
103	Spring Plate .....	1	115	Switch Key .....	1
104	Retaining Ring .....	1	116	Screw (8-16 x 3/8 in. Pan Hd.) .....	4
105	Hex Nut (1/4-20) .....	1	117	Switch .....	1

\* Item 96 includes parts 42, 78, 100 through 106, and 111.

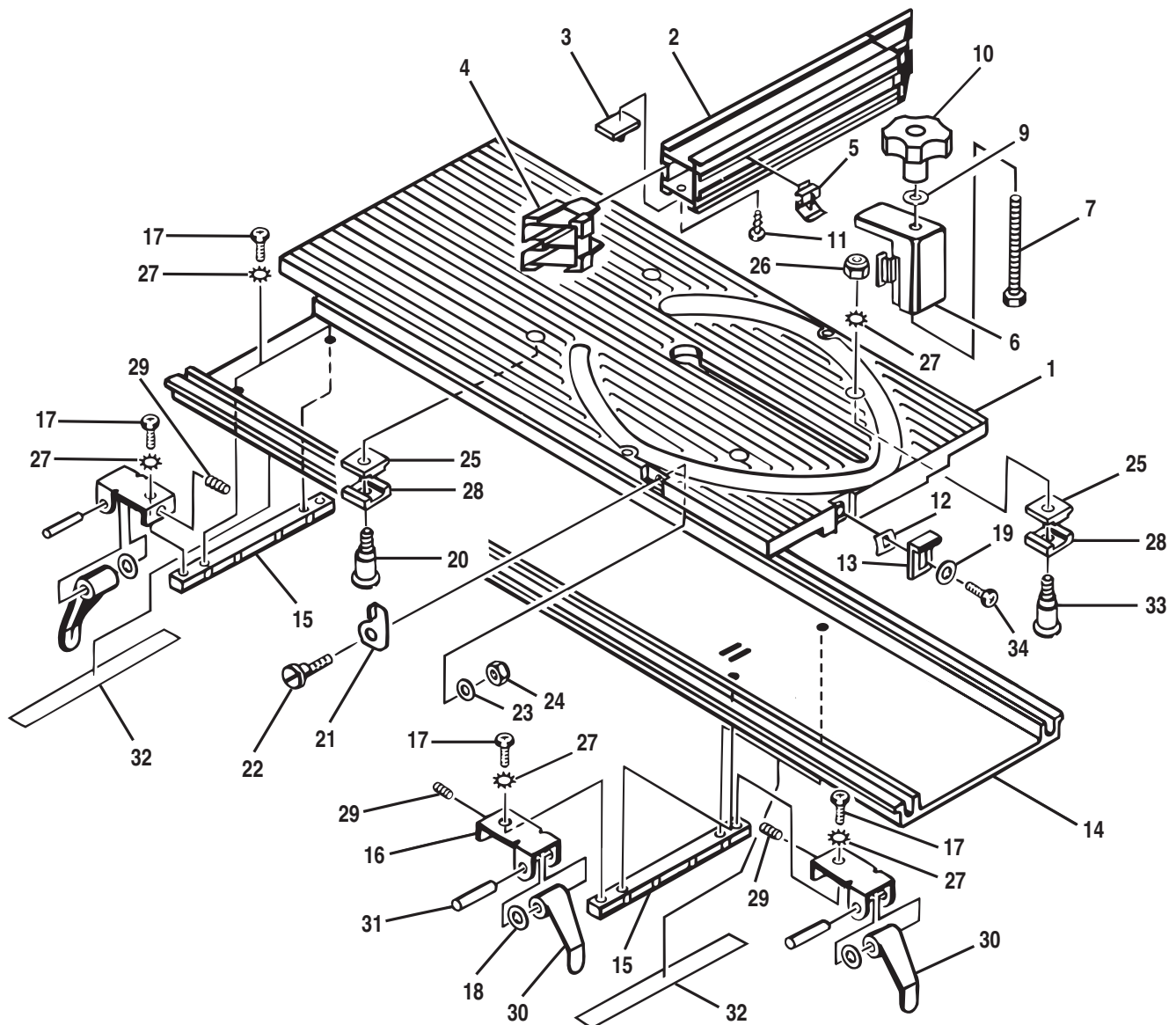


**WARNING:**

Improper electrical repair of the table saw can result in damage to the drive system possibly causing electrical shock or electrocution. Any repairs requiring disassembly of your tool require safety testing and should only be performed by a Ryobi Authorized Service Center.

# RYOBI 10 in. (254 mm) TABLE SAW - MODEL NO. BT3100-1

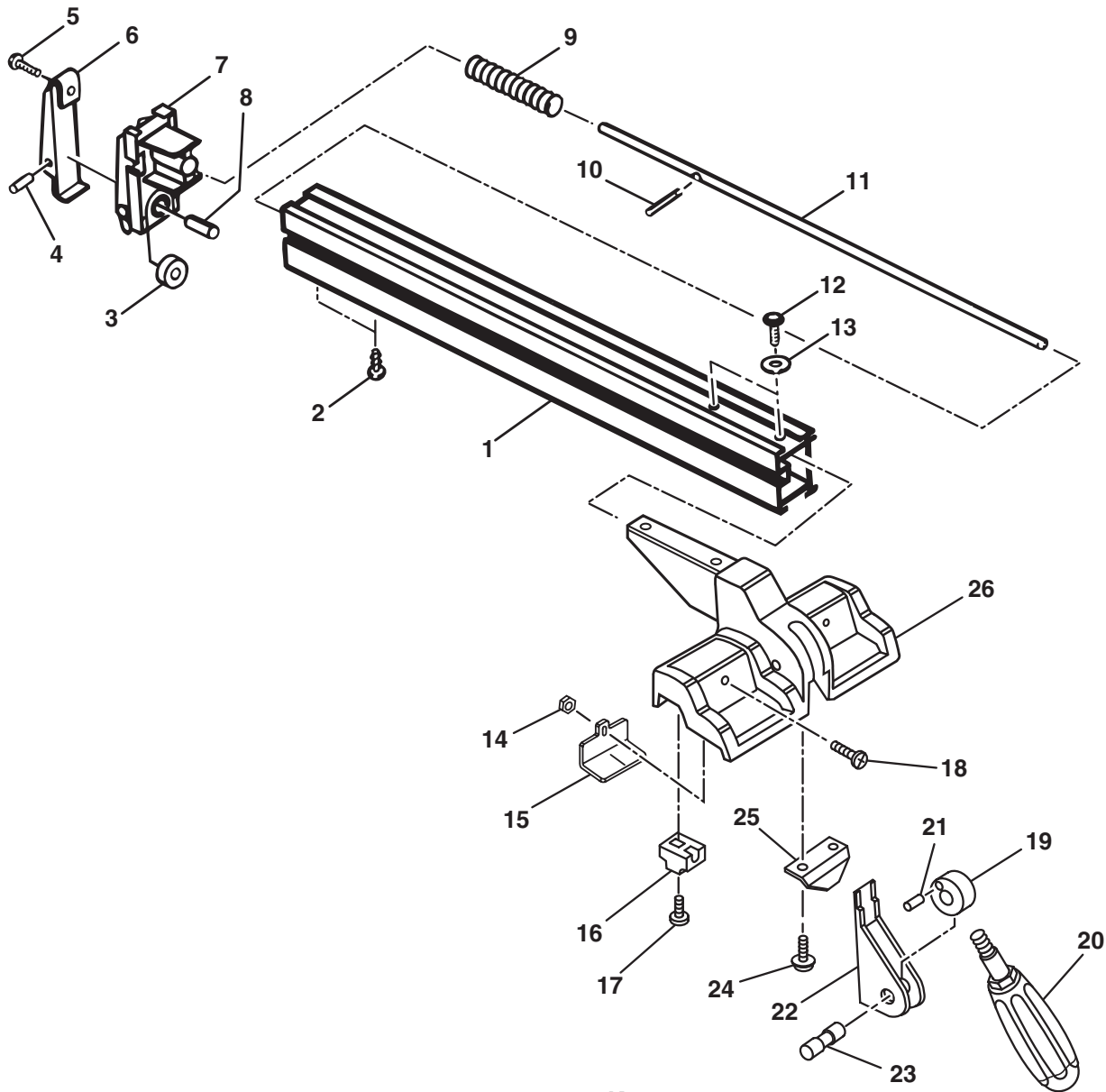
## FIGURE 59: SLIDING MITER TABLE ASSEMBLY



Key No.	Description	Quan.	Key No.	Description	Quan.
1	Miter Table Top .....	1	19	Washer .....	1
2	Miter Fence .....	1	20	Eccentric Screw (10-24) .....	3
3	Pivot .....	1	21	Quick Stop .....	1
4	Saw Gage .....	2	22	Eccentric Screw (8-32) .....	1
5	Miter Indicator .....	1	23	Washer .....	1
6	Miter Indicator Holder .....	1	24	Hex Nut (Elastic Stop) .....	1
7	Bolt (5/16-18 x 3-1/4 in. Hex Hd.) .....	1	25	Slide (A) .....	4
9	Washer .....	1	26	Hex Nut (Elastic Stop) .....	4
10	Adjusting Knob .....	1	27	Lock Washer .....	12
11	Screw (8-16 x 5/8 in. Pan Hd.) .....	2	28	Slide (B) .....	4
12	Spring Plate .....	1	29	Set Screw	
13	Miter Slide Lock .....	1		(10-24 x 1/4 in. Hex Socket) .....	4
14	Miter Base .....	1	30	Miter Locking Clamp .....	4
15	Guide Bar .....	2	31	Roll Pin .....	4
16	Holder Plate .....	4	32	Guide Plate .....	2
17	Screw (10-24 x 15/32 in. Pan Hd.) .....	8	33	Non-Eccentric Screw (10-24) .....	1
18	O-Ring .....	4	34	Screw (10-24 x 1/2 in. Pan Hd.) .....	1

# RYOBI 10 in. (254 mm) TABLE SAW - MODEL NO. BT3100-1

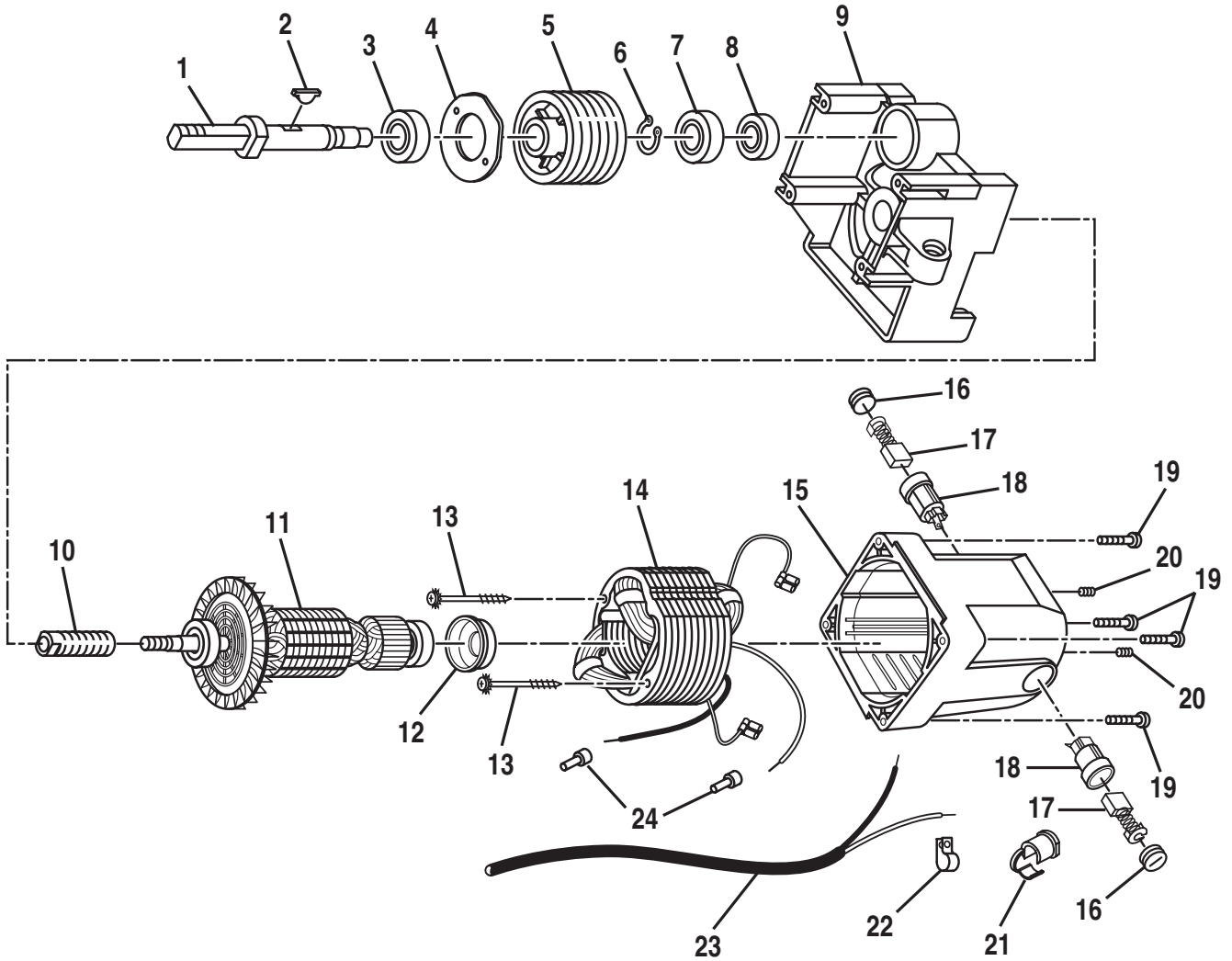
## FIGURE 60: RIP FENCE ASSEMBLY



Key No.	Description	Quan.	Key No.	Description	Quan.
1	Rip Fence .....	1	14	Hex Nut (8-32) .....	1
2	Screw (10-14 x 1/2 in. Pan Hd.) .....	2	15	Scale Indicator .....	1
3	Fence Roller.....	1	16	Slide .....	2
4	Roll Pin .....	1	17	Screw (8-32 x 1/2 in. Pan Hd.) .....	2
5	Screw (10-24 x 1 in. Pan Hd.) .....	1	18	Screw .....	1
6	Clamper - B .....	1	19	Eccentric Roller .....	1
7	Roller Holder .....	1	20	Locking Handle .....	1
8	Dowel Pin (1/4 in. x 3/4 in.) .....	1	21	Rubber Plug.....	1
9	Compression Spring .....	1	22	Clamper - A .....	1
10	Roll Pin .....	1	23	Pin .....	1
11	Rod .....	1	24	Screw and Washer .....	2
12	Screw (1/4-20 x 5/8 in. Button Hd.) .....	2	25	Plate .....	1
13	Washer .....	2	26	Front Block .....	1

# RYOBI 10 in. (254 mm) TABLE SAW - MODEL NO. BT3100-1

## FIGURE 61: MOTOR ASSEMBLY

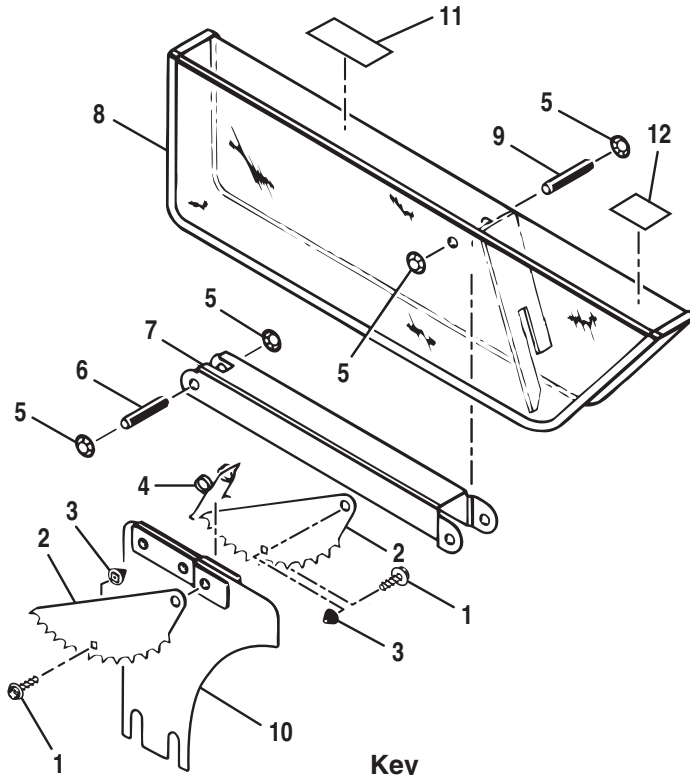


Key No.	Description	Quan.	Key No.	Description	Quan.
1	Arbor .....	1	13	Screw and Washer (Field Pan Hd.) .....	2
2	Woodruff Key (3/16 in.) .....	1	14	Field Assembly .....	1
3	Ball Bearing (6003) .....	1	15	Motor Housing .....	1
4	Bearing Plate .....	1	16	Brush Cover .....	2
5	Arbor Pulley .....	1	17	Brush Assembly .....	2
6	Retaining Ring .....	1	18	Brush Holder Assembly .....	2
7	Ball Bearing (6002) .....	1	19	Screw and Washer (Pan Hd.) .....	4
8	Ball Bearing (6200ZZ) .....	1	20	Set Screw (Hex) .....	2
9	Motor Bracket .....	1	21	Strain Relief Bushing .....	1
10	Motor Pulley .....	1	22	Cable Clamp .....	1
11	Armature Assembly .....	1	23	Power Cord .....	1
12	Bearing Bushing .....	1	24	Connector .....	2



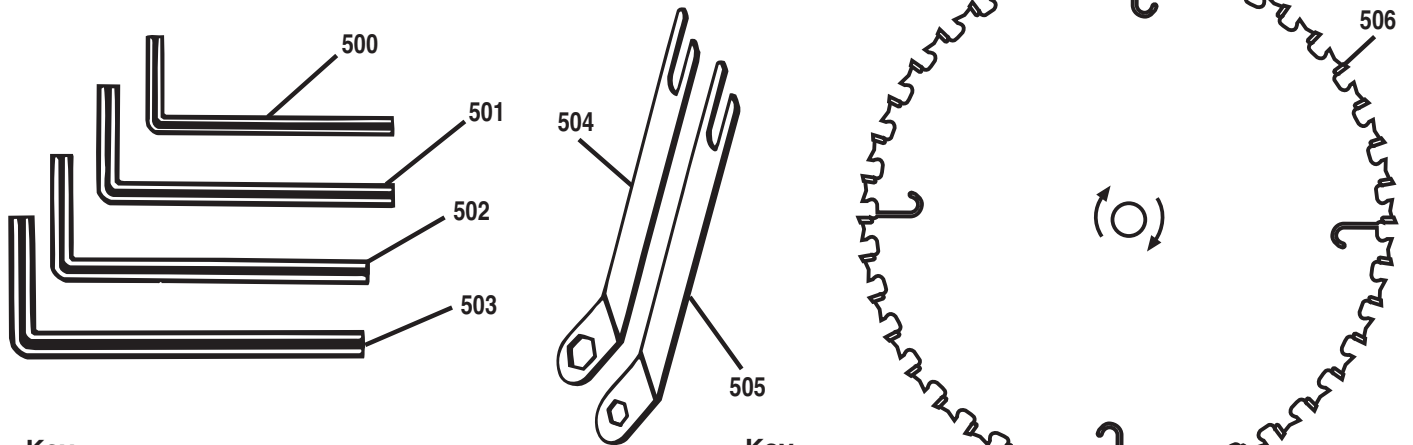
**RYOBI 10 in. (254 mm) TABLE SAW - MODEL NO. BT3100-1**

**FIGURE 62: BLADE GUARD ASSEMBLY**



Key No.	Description	Quan.	Key No.	Description	Quan.
1	Screw and Washer .....	2	7	Arm .....	1
2	Anti-Kickback Fingers .....	2	8	Cover .....	1
3	Spacer Cap .....	2	9	Dowel Pin .....	1
4	Torsion Spring .....	1	10	Riving Knife Assembly .....	1
5	Push Nut .....	4	11	Warning Label .....	1
6	Dowel Pin .....	1	12	Hand Warning Label .....	1

**FIGURE 63: REPLACEMENT PARTS**



Key No.	Description	Quan.	Key No.	Description	Quan.
500	3/32 in. Hex Key .....	1	504	Large Wrench .....	1
501	1/8 in. Hex Key .....	1	505	Small Wrench .....	1
502	5/32 in. Hex Key .....	1	506	Saw Blade .....	1
503	3/16 in. Hex Key .....	1			

## RYOBI 10 in. (254 mm) TABLE SAW – MODEL NO. BT3100-1

The model number will be found on the data plate attached to the right side panel of the cabinet, next to the saw's on board receptacle. Always mention the model number in all correspondence regarding your **TABLE SAW** or when ordering repair parts.

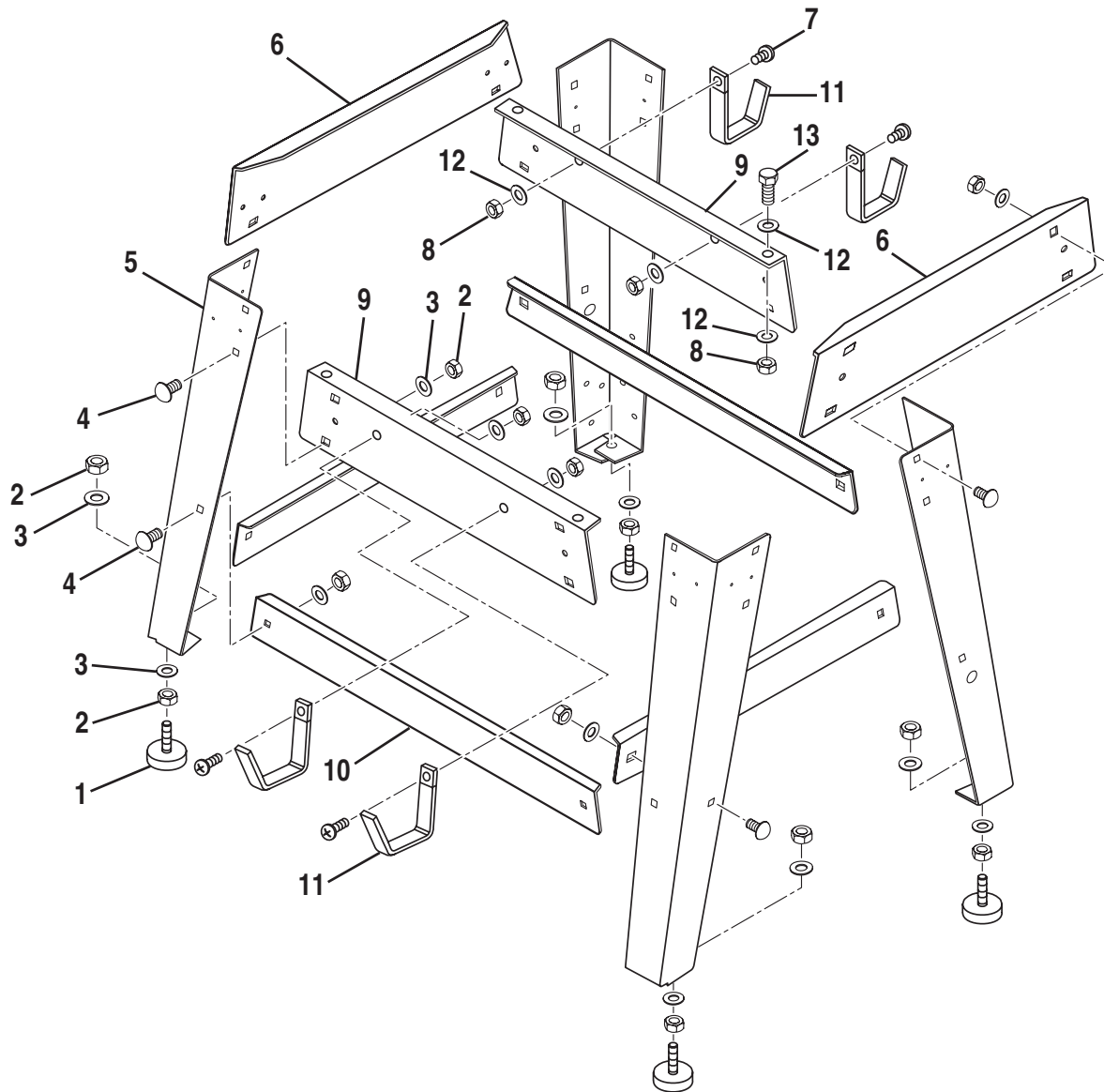


FIG. 64

## RYOBI 10 in. (254 mm) TABLE SAW – MODEL NO. BT3100-1

The model number will be found on the data plate attached to the right side panel of the cabinet, next to the saw's on board receptacle. Always mention the model number in all correspondence regarding your **TABLE SAW** or when ordering repair parts.

### PARTS LIST FOR FIGURE 64

KEY NO.	DESCRIPTION	QUAN.
1	Leveling Foot .....	4
2	Hex Nut .....	32
3	Washer .....	32
4	Carriage Bolt .....	24
5	Leg .....	4
6	Upper Brace .....	2
7	Screw .....	4
8	Hex Nut .....	8
9	Upper Side Brace .....	2
10	Lower Leg Brace .....	4
11	Storage Bracket .....	4
12	Washer .....	12
13	Bolt .....	4
	Stand Fastener Package .....	1
	Operator's Manual	



# OPERATOR'S MANUAL

## 10 in. (254 mm) Table Saw

### Model BT3100-1

#### EXTENSION CORD CAUTION

When using a power tool at a considerable distance from a power source, be sure to use an extension cord that has the capacity to handle the current the tool will draw. An undersized cord will cause a drop in line voltage, resulting in overheating and loss of power. Use the chart to determine the minimum wire size required in an extension cord. Only round jacketed cords should be used.

When working with a tool outdoors, use an extension cord that is designed for outside use. This is indicated by the letters "WA" on the cord's jacket.

Before using any extension cord, inspect it for loose or exposed wires and cut or worn insulation.

\*\*Ampere rating

(on tool data plate) 0-2.0 2.1-3.4 3.5-5.0 5.1-7.0 7.1-12.0 12.1-16.0

Cord Length	Wire Size (A.W.G.)					
25'	16	16	16	16	14	14
50'	16	16	16	14	14	12
100'	16	16	14	12	10	—

**CAUTION:** Keep the extension cord clear of the working area. Position the cord so that it will not get caught on workpiece, tools, or other obstructions while you are working with a power tool.

*\*\*Used on 12 gauge - 20 amp circuit.*

#### • SERVICE

Now that you have purchased your tool, should a need ever exist for repair parts or service, simply contact your nearest Ryobi Authorized Service Center. Be sure to provide all pertinent facts when you call or visit. Please call 1-800-525-2579 for your nearest Ryobi Authorized Service Center. You can also check our web site at [www.ryobitools.com](http://www.ryobitools.com) for a complete list of Authorized Service Centers.

#### • MODEL NO.

The model and serial numbers of your tool will be found on the data plate attached to the tool. Please record the serial number in the space provided below.

- MODEL NUMBER BT3100-1
- SERIAL NUMBER \_\_\_\_\_

#### RYOBI TECHNOLOGIES, INC.

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