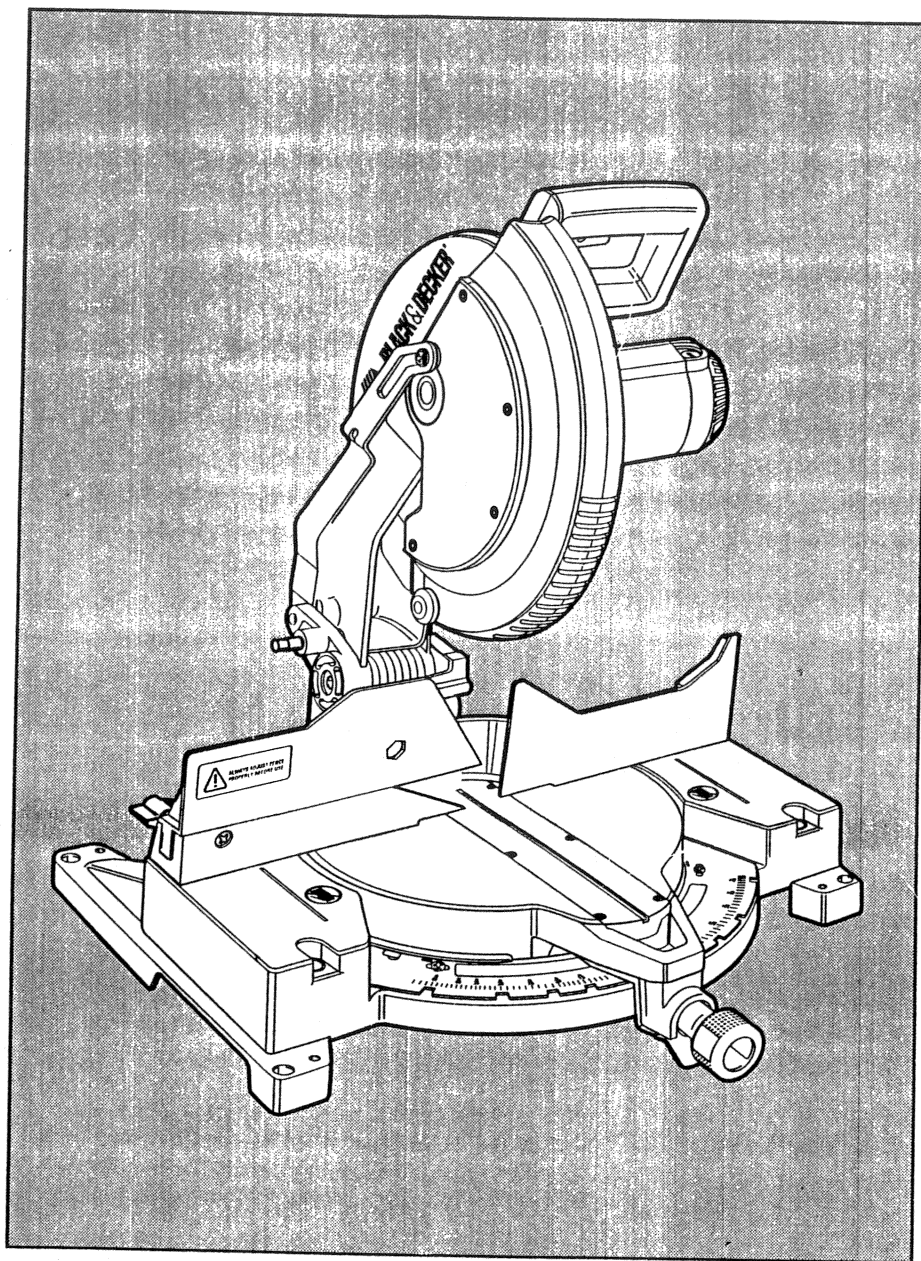


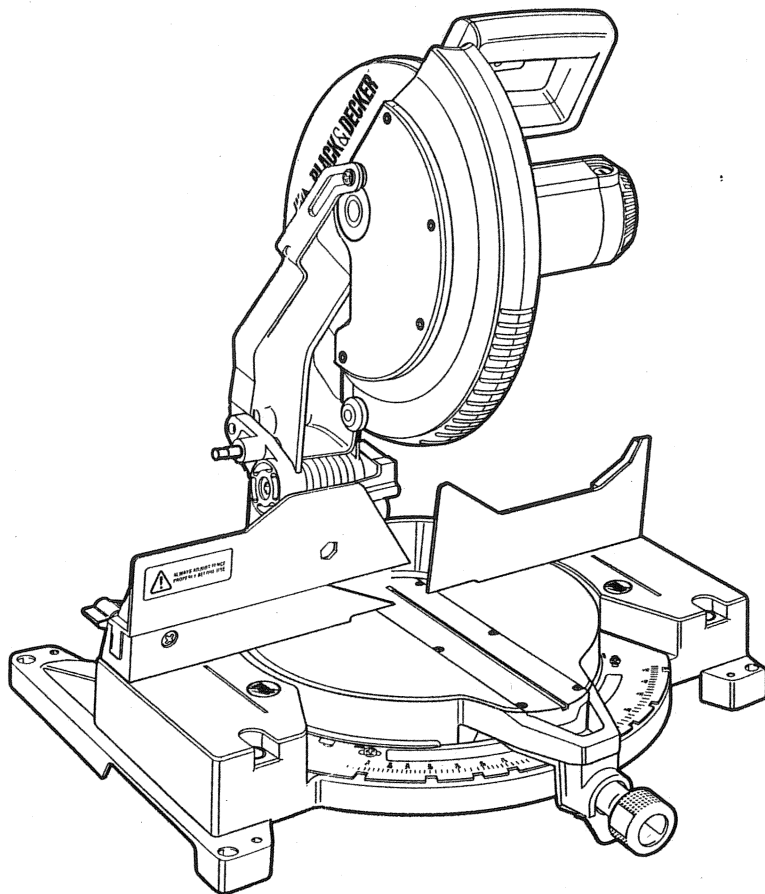


BLACK & DECKER®



Instruction Manual

3680 12" Compound Miter Saw



Thank You for Selecting a Black & Decker

If you already own a Black & Decker power tool you know the pleasure of working with a real pro. Your new miter saw has the power and rugged dependability you've come to count on from Black & Decker and it's sure to become a part of your shop that you'll turn to again and again.

Designed to cut wood, wood by products, plastic and non ferrous metal, your saw cuts straight miters, straight bevels and compound miters for the exacting tasks of cutting crown and baseboard molding.

We want you be confident with your miter saw and the more you know about it the happier you'll be. Please take the time to thoroughly read this informative instruction manual to become familiar with your saw. Keep the manual handy with your saw as a reference guide to assist you when making any of the special types of cuts described. Pay particular attention to the safety rules we've provided for your protection.

Don't forget to send in your owner's registration card.

Thanks for buying a Black & Decker!



BLACK&DECKER®

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Important Safety Instructions

WARNING: When using electric tools, basic safety precautions should always be followed to reduce risk of fire, electric shock, and personal injury, including the following:

READ ALL INSTRUCTIONS

1. **READ ALL INSTRUCTIONS**
2. **KEEP GUARD IN PLACE** and in working order.
3. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from spindle before turning tool on.
4. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
5. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
6. **KEEP CHILDREN AWAY.** All visitors should be kept at a safe distance from work area.
7. **MAKE WORKSHOP KID PROOF** with padlocks, master switches, or by removing starter keys.
8. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.
9. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
10. **WEAR PROPER APPAREL.** No loose clothing, gloves, neckties, rings, bracelets, or other jewelry to get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
11. **ALWAYS WEAR SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses have only impact resistant lenses, they are **NOT** safety glasses.
12. **SECURE WORK.** Use clamps or vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
13. **DON'T OVERREACH.** Keep proper footing and balance at all times.
14. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. **DISCONNECT TOOLS** before servicing; when changing accessories such as blades, bits, cutters, etc.
16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in **OFF** position before plugging in.
17. **USE RECOMMENDED ACCESSORIES.** Consult the instruction manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
18. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. **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 should be properly repaired or replaced. Do not use tool if switch does not turn it on and off.
20. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
21. **DO NOT OPERATE ELECTRIC TOOLS NEAR FLAMMABLE LIQUIDS OR IN GASEOUS OR EXPLOSIVE ATMOSPHERES.** Motors in these tools may spark and ignite fumes.

SAVE THESE INSTRUCTIONS FOR FUTURE USE.

Additional Safety Rules For Miter Saws

1. **CAUTION: FAILURE TO HEED THESE WARNINGS MAY RESULT IN PERSONAL INJURY AND SERIOUS DAMAGE TO THE SAW.**
 2. **DO**-Protect electric supply line with at least a 15 ampere time-delay fuse or a circuit breaker.
 3. **DO**-Make certain the blade rotates in the correct direction and that the teeth at the bottom of the blade are pointing to the rear of the miter saw.
 4. **DO**-Be sure all clamp handles are tight before starting any operation.
 5. **DO**-Be sure all blade and clamp washers are clean and recessed sides of collars are against blade. Tighten arbor screw securely.
 6. **DO**- Keep saw blade sharp and properly set.
 7. **DO**-Keep motor air slots free of chips and dirt.
 8. **DO**-Use blade guards at all times.
 9. **DO**-Keep hands out of path of saw blade.
 10. **DO**-Shut off power, disconnect cord from power source and wait for saw blade to stop before servicing or adjusting tool.
 11. **DO**-Support long work with an outboard tool rest.
 12. **DON'T**-Attempt to operate on anything but designated voltage.
 13. **DON'T**-Operate unless all clamp handles are tight.
 14. **DON'T**- Use blades larger or smaller than those which are recommended.
 15. **DON'T**- Wedge anything against fan to hold motor shaft.
 16. **DON'T**-Force cutting action. (Stalling or partial stalling of motor can cause major damage. Allow motor to reach full speed before cutting.)
 17. **DON'T**- Cut ferrous metals (Those with any iron or steel content) or any masonry.
 18. **DON'T**-Use abrasive wheels. The excessive heat and abrasive particles generated by them will damage the saw.
 19. **DON'T**-Allow anyone to stand behind saw.
 20. **DON'T**-Apply lubricants to the blade when it's running.
 21. **DON'T**-Place either hand in the blade area when the saw is connected to the power source.
 22. **DON'T**-Use blades rated less than 4800 R.P.M.
 23. **DON'T**-Attempt to cut small pieces (6").
 24. **DON'T**-Operate saw without guards in place.
 25. **DON'T**-Perform any operation freehand.
 26. **DON'T**-Reach around or behind saw blade.
 27. **DON'T**-Place hands closer than 6 inches from the saw blade.
 28. **DO NOT** - Reach underneath the saw unless it is turned off and unplugged. The saw blade is exposed on the underside of the saw.
 29. **DO NOT** - Move either hand from saw or workpiece or raise arm until blade has stopped.
 30. **DO NOT** - Use without Kerf Plate or when kerf slot is wider than 3/8".
- CAUTION:** Do not connect unit to electrical power source until complete instructions are read and understood.

For your convenience and safety, the following warning labels are on your miter saw.

ON MOTOR HOUSING:

WARNING: FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING SAW.

WHEN SERVICING, USE ONLY IDENTICAL REPLACEMENT PARTS.

ALWAYS WEAR EYE PROTECTION.

ON MOVING FENCE:

ALWAYS ADJUST FENCE PROPERLY BEFORE USE.



ALWAYS ADJUST FENCE
PROPERLY BEFORE USE

ON GUARD:

DANGER – KEEP AWAY FROM BLADE.

DANGER

KEEP AWAY
FROM BLADE



ON TABLE: (2 PLACES)



ALWAYS TIGHTEN ADJUSTMENT KNOBS BEFORE USE. KEEP HANDS 6" FROM PATH OF SAW BLADE. NEVER PERFORM ANY OPERATION FREEHAND. NEVER CROSS ARMS IN FRONT OF BLADE. THINK! YOU CAN PREVENT ACCIDENTS.

DO NOT OPERATE SAW WITHOUT GUARDS IN PLACE. NEVER REACH IN BACK OF SAW BLADE. ALWAYS WEAR EYE PROTECTION. SHUT OFF POWER AND WAIT FOR BLADE TO STOP BEFORE SERVICING, ADJUSTING TOOL, OR MOVING HANDS.

Electrical Connection

Be sure your power supply agrees with the nameplate marking. 120 volts, AC/DC means that your saw will operate on alternating or direct current. A voltage decrease of 10 percent or more will cause a loss of power and overheating. All Black & Decker tools are factory tested. If this tool does not operate, check the power supply.

Grounding Instructions

1. All grounded, cord-connected tools:

In the event of a malfunction or break-down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electrical 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.

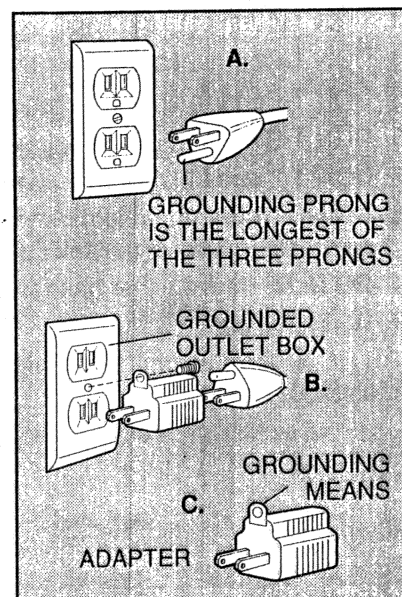
Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. Repair or replace damaged or worn cord immediately.

2. Grounded, cord-connected tools intended for use on a supply circuit having a nominal rating less than 150 volts:

This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch A. The tool has a grounding plug that looks like the plug illustrated in Sketch A. A temporary adapter which

looks like the adapter illustrated in Sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in Sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.



Extension Cords

When using the tool at a considerable distance from the power source, an extension cord of adequate size must be used for safety, and to prevent loss of power and overheating. Use the table below to determine the minimum wire size required.

Before using cords, inspect them for loose or exposed wires and damaged insulation. Make any needed repairs or replacement before using your power tool.

**CHART FOR MINIMUM WIRE SIZE (AWG)
OF EXTENSION CORDS**

	TOTAL EXTENSION CORD LENGTH - FEET			
	25	50	75	100
120 volt tools	16 ga.	14 ga.	12 ga.	10 ga.
	minimum wire size			

NOTE: The lower the wire size number, the heavier the wire, and the farther it will carry current without a significant voltage drop.

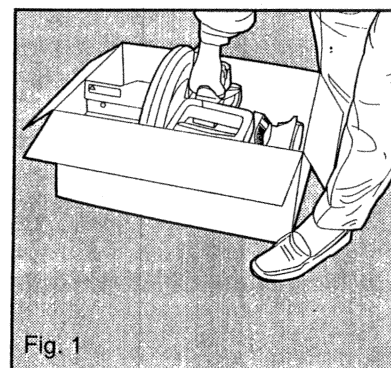


Fig. 1

Unpacking Your Saw

Check the contents of your miter saw carton to make sure that you have received all parts. In addition to this instruction manual, the carton should contain:

1. One No. 3680 miter saw.
2. One 32 tooth 12" dia. Saw Blade
3. One blade wrench in wrench pocket shown in Fig. 2

Familiarization

Your miter saw is fully assembled (except for the blade) in the carton. Open the box and lift the saw out by the convenient carrying handle, as shown in Fig. 1.

Place the saw on a smooth, flat surface such as a workbench or strong table.

Examine Figures 2 & 3 to become familiar with the saw and its various parts. The following section on adjustments will refer to these terms and you must know what and where the parts are.

Press down lightly on the operating handle and pull out the Lock Down Pin, as shown in Figure 4. Gently release the downward pressure and allow the arm to rise to its full height. Use the lock down pin when carrying the saw from one place to another. Always use the carrying handle to transport the saw or the hand indentations shown in Fig. 3.

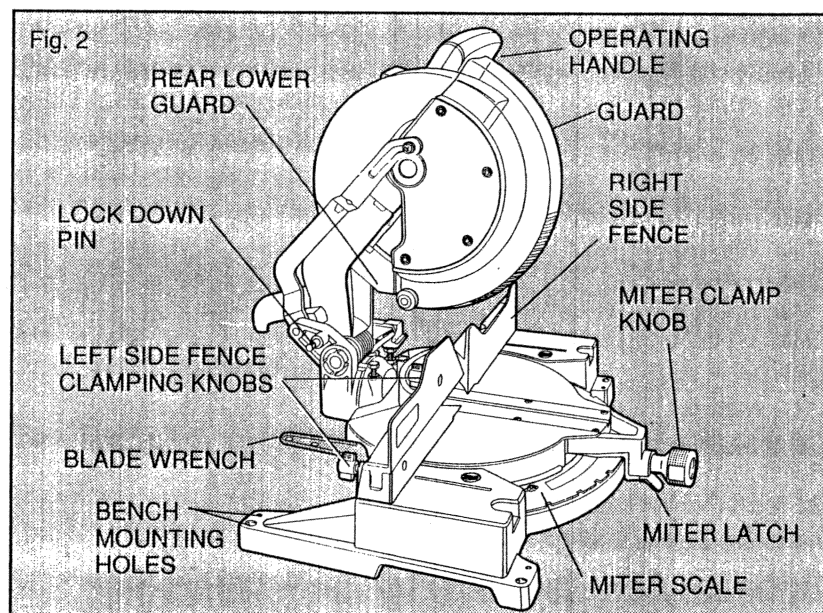


Fig. 2

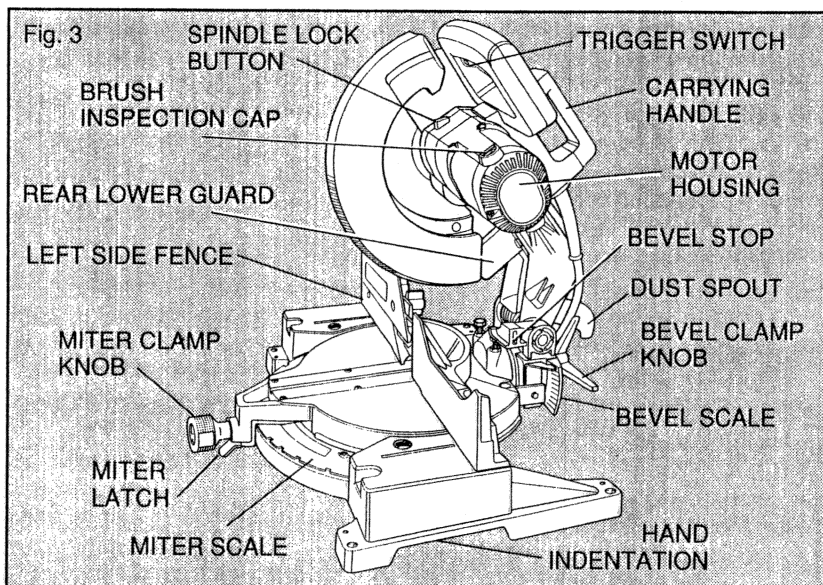
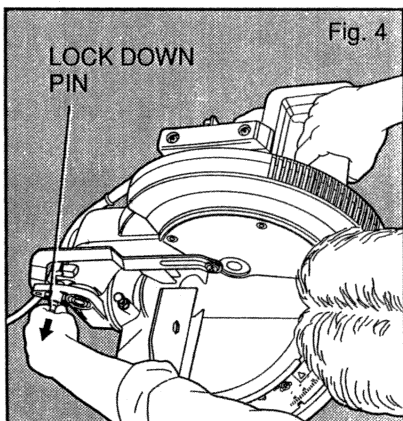


Fig. 3



Specifications

CAPACITY OF CUT

48 degree miter left and right

48 degree bevel left: 3 degree right

0 degree miter

Max. Height 3.9" Result Width 5.9"
Max. Width 7.9" Result Height 2.5"

45 degree miter

Max. Height 3.9" Result Width 4.1"
Max. Width 5.5" Result Height 2.5"

45 degree bevel

Max. Height 2.7" Result Width 5.9"
Max. Width 7.9" Result Height 1.7"

DRIVE

2000 Watts out 13 Amp Motor

Cut Helical Gears with Ball Bearings

32 Tooth Carbide Blade, 4000 RPM
Automatic Electric Brake

Optional Accessories

Recommended accessories for use with your tool are available at extra cost from your local service center. **CAUTION:** The use of any non-recommended accessory may be hazardous. A complete listing of service centers is included on the owner's registration card packed with your tool.

If you need assistance in locating any accessory, please contact
Black & Decker (U.S.) Inc.
Consumer Service Department
626 Hanover Pike
P.O. Box 618
Hampstead, MD 21074-0618
U.S.A.

EXTENSION, WORK SUPPORT: 36800

Used to support long overhanging workpieces, the work support is user assembled and stores conveniently under the saw table. Your saw table is designed to accept two work supports; one on each side.

ADJUSTABLE LENGTH STOP: 36801

Requires the use of one work support (see above). It is used to make repetitive cuts of the same length from 0 to 42".

CLAMP: 36802

Used for firmly clamping workpiece to the saw fence for precision cutting

DUST BAG: 36803

Equipped with a zipper for easy emptying, the dust bag will capture the majority of the sawdust produced.

Note: Deflector on Dust Spout channels debris to ground. Spout has a provision to attach a vacuum hose to collect sawdust. Lift Dust Spout to connect hose.

CROWN MOLDING FENCE: 36807

Used for precision cutting of crown molding. Positions crown molding consistently at the proper angle from cut to cut.

KIT BOX: 36806

Used to store and transport DW705 accessories.

SAW BLADES: ALWAYS USE 12" SAW BLADES WITH 1" ARBOR HOLES. SPEED RATING MUST BE AT LEAST 4800 RPM.

APPLICATION	BLADE DESCRIPT.	NO. OF TEETH	TYPE OF CUT
Fine Trim Molding	Precision Ground Carbide	60-100	Very Smooth Splinter Free
Trim, Framing, Pressure Treated Decking	Combination Multi-Purpose	32-60	Smooth Fast Cut
Aluminum	Non-Ferrous Metal Cutting Carbide	60-80	-----

Bench Mounting

Holes are provided in all four feet to facilitate bench mounting, as shown in Figure 2. (Two different sized holes are provided to accommodate different sizes of screws. Use either hole, it is not necessary to use both.) Always mount your saw firmly to prevent movement. To enhance the tool's portability, it can be mounted to a piece of 1/2" or thicker plywood which can then be clamped to your work support or moved to other job sites and reclamped. **NOTE:** If you elect to mount your saw to a piece of plywood, make sure that the mounting screws don't protrude from the bottom of the wood. The plywood must sit flush on the work support. When clamping the saw to any work surface, clamp only on the

clamping bosses where the mounting screw holes are located. Clamping at any other point will surely interfere with the proper operation of the saw.

CAUTION: To prevent binding and inaccuracy, be sure the mounting surface is not warped or otherwise uneven. If the saw rocks on the surface place a thin piece of material under one saw foot until the saw sits firmly on the mounting surface.

Installing the Blade

(UNPLUG THE MITER SAW)

DO NOT CUT FERROUS METAL (THAT WITH AN IRON OR STEEL CONTENT) OR MASONRY WITH THIS MITER SAW.

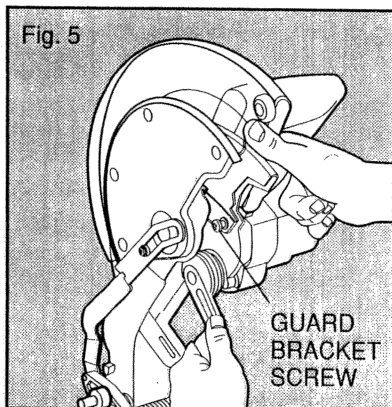
With the saw arm in the upper position, raise the Lower Guard as far as possible. Loosen (but do not remove) The Guard Bracket Screw, shown in Figure 5 until the Guard Bracket can be raised enough to permit access to the blade screw. Hold the Lower Guard up and depress the Spindle Lock Button with one hand and use the supplied blade wrench in the other hand to loosen (clockwise) the left hand threaded blade screw. NOTE: To use the Spindle Lock, depress the button as shown and rotate the blade by hand until you feel the lock engage. Continue to hold the lock button in to keep the spindle from turning.

Install the saw blade making sure that the teeth at the bottom edge of the blade are pointing toward the back of the saw (away from the operator). Replace the outer blade washer and tighten the blade screw (counterclockwise) while holding the Lower Guard up and the Spindle Lock engaged with your other hand.

NEVER DEPRESS THE SPINDLE LOCK BUTTON WHILE THE BLADE IS ROTATING.

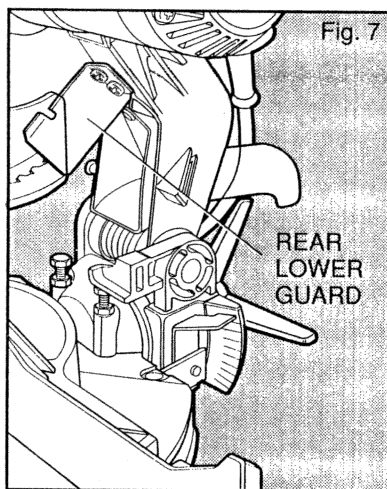
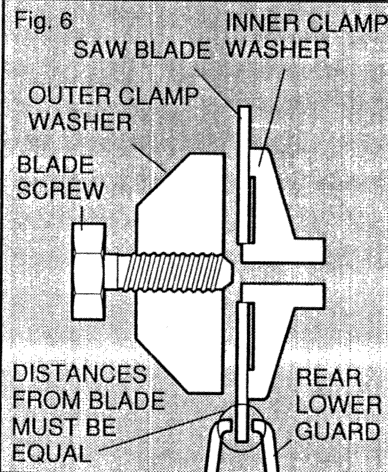
AFTER INSTALLING THE SAW BLADE, REPOSITION GUARD BRACKET MAKING SURE IT IS FULLY SEATED ON GUARD SCREW. FIRMLY TIGHTEN SCREW. FAILURE TO DO SO WILL CAUSE SERIOUS DAMAGE TO THE SAW.

Fig. 5



Rear Lower Guard Adjustment

Check the rear lower guard to ensure that it is located such that the saw blade is in the center and equidistant from each side, as shown in Figures 6 & 7. Adjust as necessary by loosening the two screws and moving the guard. Firmly tighten both screws. Never remove this guard.



Cutting the Kerf

In order to adjust and use your miter saw, you must cut a slot through the kerf plate to allow for blade clearance. To cut the kerf plate, set the saw at 0 degrees miter. Place a piece of scrap wood on the saw at least 1"x6"x12". Turn the saw on and allow the blade to reach full speed. Pull the saw arm down as far as it will go and CUT

SLOWLY THROUGH THE SCRAP WOOD AND THE PLASTIC KERF PLATE. Turn the saw off and allow the blade to stop before raising the saw arm.

Loosen and move the left side of the fence as far as it will go to the left. Now adjust the bevel angle to 45 degrees. Once again, turn on the saw and allow the blade to reach full speed. Pull the arm down and cut slowly through the wood and kerf plate again. (This procedure will widen the kerf plate cut so that the blade will pass through it at any angle from 0 to 45 degrees.)

Be sure to adjust the left side of the fence (see page 11 Fence Adjustment) so that it's as close to the saw blade as possible without interfering with arm up & down movement. Tighten the fence in position using both knobs.

Transporting the Saw

TURN OFF AND UNPLUG THE MITER SAW BEFORE ATTEMPTING TO MOVE IT OR MAKE ANY ADJUSTMENTS WHATSOEVER!

In order to conveniently carry the miter saw from place to place, a carrying handle has been included on the top of the saw arm, as shown in Figure 3. To transport the saw, lower the arm and depress the lock down pin shown in Figure 4.

NOTE: The saw arm cannot be fully lowered if the tool has a blade installed unless the kerf plate has been cut. If you wish to transport the saw before cutting the kerf plate, remove the saw blade.

Adjustments

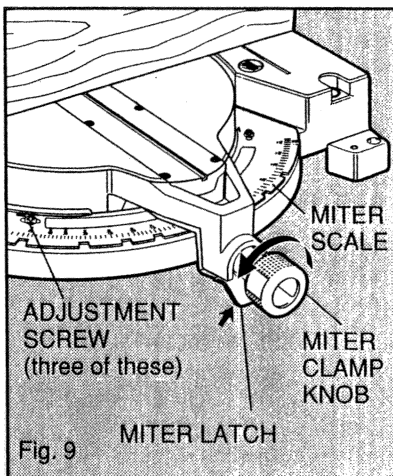
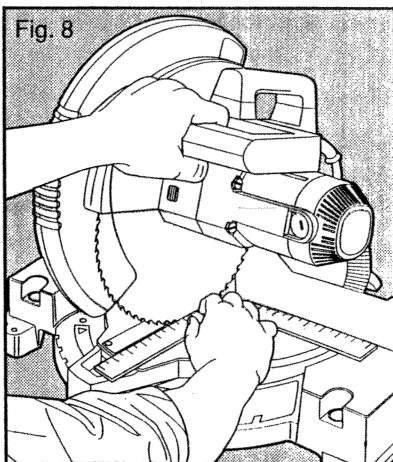
PERFORM ALL ADJUSTMENTS WITH THE MITER SAW UNPLUGGED

NOTE: Your miter saw is fully and accurately adjusted at the factory at the time of manufacture. If readjustment due to shipping and handling or any other reason is required, follow the steps below to adjust your saw.

Once made, these adjustments should remain accurate. Take a little time now to follow these directions carefully to attain the accuracy of which your saw is capable.

MITER SCALE ADJUSTMENT –

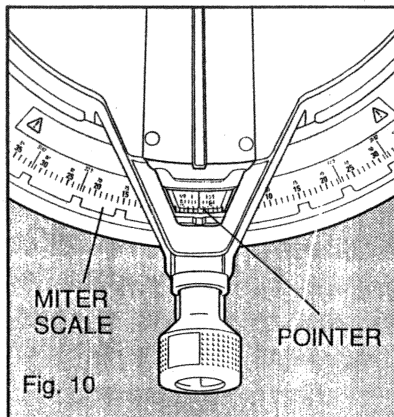
Place a square against the saw's fence and blade, as shown in Figure 8. (Do not touch the tips of the blade teeth with the square. To do so will cause an inaccurate measurement.) Loosen the miter clamp knob (see Fig. 9) and swing the miter arm until the miter latch locks it at the 0 miter position. Do not tighten the clamp knob. If the saw blade is not exactly perpendicular to the fence, loosen the three screws that hold the miter scale to the base (shown in Fig. 9) and move the scale/miter arm assembly left or right until the blade is perpendicular to the fence, as measured with the square. Retighten the three screws. Pay no attention to the reading of the miter pointer at this time.



MITER POINTER ADJUSTMENT –

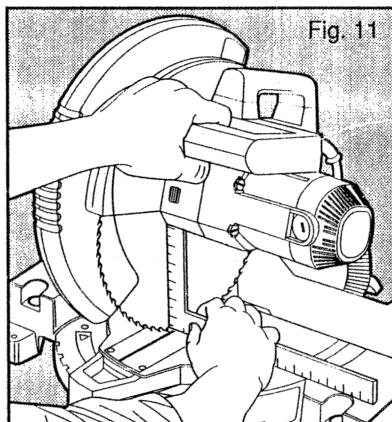
Loosen the Miter Clamp Knob and squeeze the Miter Latch to move the Miter Arm to the zero position, as shown in Figure 9. With the Miter

Clamp Knob loose allow the Miter Latch to snap into place as you rotate the Miter Arm past zero. Observe the pointer and miter scale through the viewing opening shown in Figure 10. If the pointer does not indicate exactly zero, gently pry it left or right using a flat bladed screwdriver.



BEVEL STOP ADJUSTMENT –

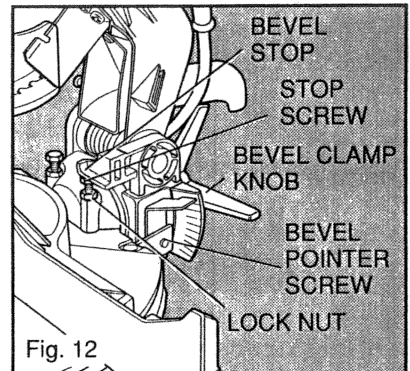
Lower the saw arm so that the blade just slightly goes through the kerf plate. Place a square against the table and the blade, as shown in Figure 11. NOTE: Do not touch the tip of any blade teeth with the square; to do so will cause an inaccurate measurement.



Loosen the Bevel Clamp Knob so that you can move the Bevel Arm. Move the Bevel Arm as necessary so that the blade is at zero degrees bevel to the table. If the Bevel Arm needs adjustment, loosen the lock nut on the right side Bevel Stop as shown in Figure 12, and adjust the Stop Screw as necessary. Hold the Stop Screw in place and tighten the lock nut.

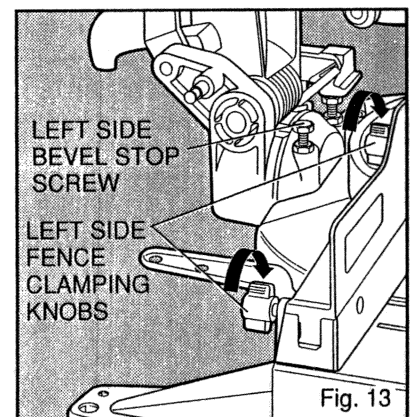
If the Bevel Pointer does not indicate zero, loosen the screw that

holds it in place and move the pointer as necessary. SUGGESTION: The Bevel Pointer is quite thick and for accuracy's sake, set the pointer so that its top edge aligns with zero. This way all readings will be on the top edge of the pointer.



Loosen the Left Side Fence Clamping Knobs, as shown in Figure 13 and slide the Left Side Fence as far as it will go to the left. Move the Bevel Arm to the left to the 45 degree setting.

If the Bevel Pointer does not indicate exactly 45 degrees, the Bevel Arm is out of adjustment. To adjust the arm, loosen the lock nut on the left side Bevel Stop Screw as shown in Figure 13. Adjust the stop screw up or down as necessary until the pointer indicates 45 degrees with the Bevel Arm resting against the left side Bevel Stop Screw. Hold the screw stationary while you firmly tighten the lock nut. DO NOT ADJUST THE BEVEL POINTER.



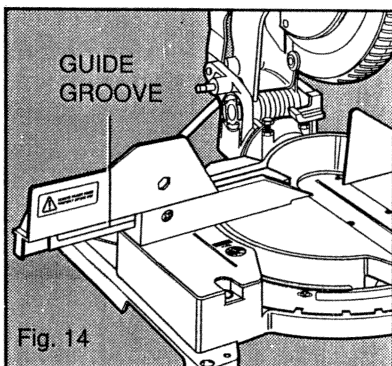
To achieve 3° right bevel or 48° left bevel, the stop screws must be adjusted to allow the bevel arm to move as necessary. Re-adjust the bevel stops when the cuts are finished.

FENCE ADJUSTMENT

Turn Off and Unplug the Miter Saw

In order that the saw can bevel to a full 48 degrees left, the left side of the fence can be adjusted to the left to provide clearance. To adjust the fence, loosen the two plastic knobs shown in Figure 13 and slide the fence to the left. Make a dry run with the saw turned off and check for clearance. Adjust the fence to be as close to the blade as practical to provide maximum workpiece support, without interfering with arm up & down movement. Tighten both knobs securely. When the bevel operations are complete, don't forget to relocate the fence to the right.

NOTE: The guide groove, shown in Figure 14, of the left side fence can become clogged with sawdust. If you notice that it is becoming clogged, use a stick or some low pressure air to clear the guide groove.



GUARD ACTUATION AND VISIBILITY

The blade guard on your saw has been designed to automatically raise when the arm is brought down and to lower over the blade when the arm is raised.

The guard can be raised by hand when installing or removing saw blades or for inspection of the saw. **NEVER RAISE THE BLADE GUARD MANUALLY UNLESS THE SAW IS TURNED OFF.**

NOTE: Certain special cuts will require that you manually raise the guard. (See page 14- Cutting Base Molding up to 3 7/8" High Vertically Against the Fence.)

The front section of the guard is louvered for visibility while cutting. Although the louvers dramatically reduce flying debris, they are openings in the guard and safety glasses should be worn at all times when viewing through the louvers.

AUTOMATIC ELECTRIC BRAKE

Your saw is equipped with an electric blade brake which stops the saw blade within 5 seconds of trigger release. This is automatic and requires no adjustment.

Occasionally, under certain conditions, the brake will not function properly and won't stop the saw in the 5 seconds as discussed above. If this condition occurs, turn the saw on and off four or five times. If the brake still does not stop the blade in about 5 seconds, the problem may be worn brushes. Replace the brushes as described below and try the saw again. If the problem still persists, have the tool serviced at a Black & Decker Service Center or company authorized service facility.

Brushes

DISCONNECT PLUG FROM POWER SUPPLY

Inspect carbon brushes regularly by unplugging tool, removing the Brush Inspection Cap (Figure 3) and withdrawing the brush assembly. Keep brushes clean and sliding freely in their guides. Always replace a used brush in the same orientation in the holder as it was prior to its removal. Carbon brushes have varying symbols stamped into their sides, and if the brush is worn down to the line closest to the spring, they must be replaced. Use only identical Black & Decker brushes. Use of the correct grade of brush is essential for proper operation of electric brake. New brush assemblies are available at Black & Decker Service Centers. The tool should be allowed to "run in" (run at no load) for 10 minutes before use to seat new brushes. The electric brake may be erratic in operation until the brushes are properly seated (worn in).

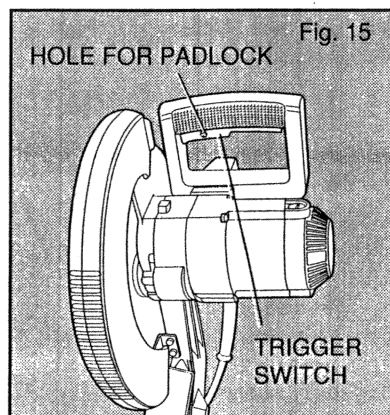
While "running in" **DO NOT TIE, TAPE, OR OTHERWISE LOCK THE TRIGGER SWITCH ON. HOLD BY HAND ONLY.**

Operation

Plug the saw into any 120 volt 60 Hz power source. Be sure the cord will not interfere with your work.

SWITCH

To turn the saw on, depress the trigger switch as shown in Figure 15. To turn the tool off, release the switch. There is no provision for locking the switch on, but a hole is provided in the trigger for insertion of a padlock to lock the saw off.



CUTTING WITH YOUR SAW

NOTE: Although this saw will cut wood and many non-ferrous materials, we will limit our discussion to the cutting of wood only. The same guidelines apply to the other materials. **DO NOT CUT FERROUS (IRON AND STEEL) MATERIALS OR MASONRY WITH THIS SAW.** Do not use any abrasive blades.

CROSSCUTS

A crosscut is made by cutting wood across the grain at any angle. A straight crosscut is made with the miter arm at the zero degree position. Set the miter arm at zero, hold the wood on the table and firmly against the fence. Turn on the saw by squeezing the trigger switch as shown in Figure 15.

When the saw comes up to speed (about 1 second) lower the arm smoothly and slowly to cut through the wood. Let the blade come to a full stop before raising arm.

Miter crosscuts are made with the miter arm at some angle other than zero. This angle is often 45 degrees for making corners, but can be set anywhere from zero to 48 degrees left or right. After selecting the desired miter angle, be sure to tighten the miter clamp knob. Make the cut as described above.

BEVEL CUTS

A bevel cut is a crosscut made with the saw blade at a bevel to the wood. In order to set the bevel, loosen the bevel clamp knob and move the saw to the left as desired. (It is necessary to move the left side of the fence to allow clearance as you did under "Bevel Stop Adjustment".) Once the desired bevel angle has been set, tighten the bevel clamp knob firmly.

Bevel angles can be set from 3 degrees right to 48 degrees left and can be cut with the miter arm set between zero and 48 degrees right or left.

QUALITY OF CUT

The smoothness of any cut depends on a number of variables. Things like material being cut, blade type, blade sharpness and rate of cut all contribute to the quality of the cut.

When smoothest cuts are desired for molding and other precision work, a sharp (60 tooth carbide) blade and a slower, even cutting rate will produce the desired results.

Ensure that material does not creep while cutting, clamp it securely in place. Always let the blade come to a full stop before raising arm.

If small fibers of wood still split out at the rear of the workpiece, stick a piece of masking tape on the wood where the cut will be made. Saw through the tape and carefully remove tape when finished.

For varied cutting applications, refer to the list of recommended saw blades for your saw and select the one that best fits your needs.

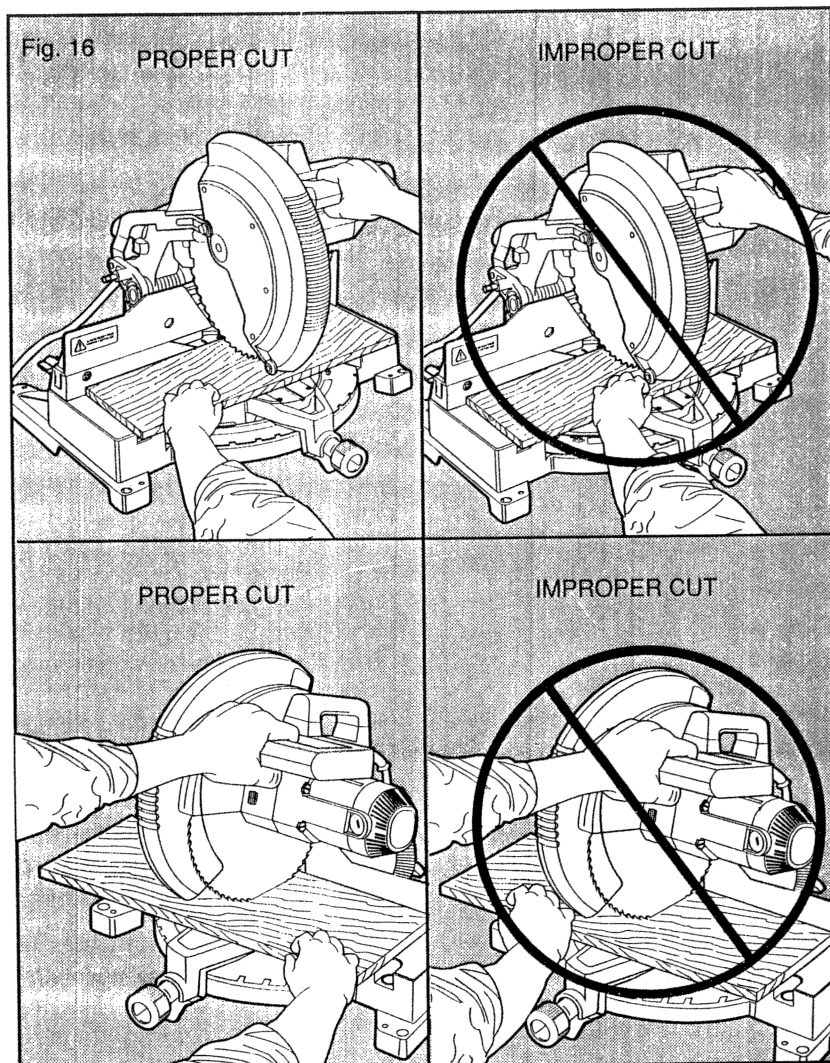
BODY AND HAND POSITION (SEE FIG. 16)

Proper positioning of your body and hands when operating the miter saw will make cutting easier, more accurate and safer. Never place hands near cutting area. Place hands no closer than 6" from the blade. Hold the workpiece tightly to the table and the fence when cutting. Keep hands in position until the trigger has been released and the blade has completely stopped. **ALWAYS MAKE DRY RUNS**

(UNPOWERED) BEFORE FINISH CUTS SO THAT YOU CAN CHECK THE PATH OF THE BLADE. DO NOT CROSS HANDS, AS SHOWN BELOW.

Keep both feet firmly on the floor and

maintain proper balance. As you move the miter arm left and right, follow it and stand slightly to the side of the saw blade. Sight through the guard louvers when following a pencil line.



CLAMPING THE WORKPIECE Turn Off and Unplug Saw

ALWAYS CLAMP WOOD TO THE SAW IF POSSIBLE AND ALWAYS CLAMP IF SIZE OF WORKPIECE REQUIRES YOUR HAND TO BE WITHIN 6" OF BLADE

For best results use the 36802 Clamp made for use with your saw. Available from your dealer at extra cost.

Clamp the workpiece to the fence whenever possible. You can clamp

to either side of the saw blade and remember to position your clamp against a solid, flat surface of the fence.

SUPPORT FOR LONG PIECES Turn Off and Unplug Saw

ALWAYS SUPPORT LONG PIECES

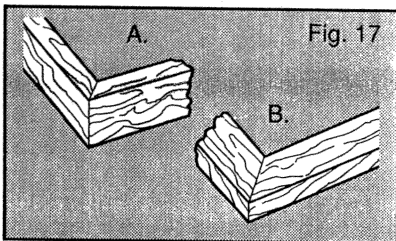
For best results, use the 36800 Extension Work Support to extend the table width of your saw. Available from your dealer at extra

cost. Support long workpieces using any convenient means such as sawhorses or similar devices to keep the ends from dropping.

CUTTING PICTURE FRAMES, SHADOW BOXES AND OTHER FOUR SIDED PROJECTS

To best understand how to make the items listed here, we suggest that you try a few simple projects using scrap wood until you develop a "FEEL" for your saw.

Your saw is the perfect tool for mitering corners like the one shown in Figure 17. Sketch A in Figure 17 shows a joint made by using the bevel adjustment to bevel the edges of the two boards at 45 degrees each to produce a 90 degree corner. For this joint the miter arm was locked in the zero position and the bevel adjustment was locked at 45 degrees. The wood was positioned with the broad flat side against the table and the narrow edge against the fence. The cut could also be made by mitering right and left with the broad surface against the fence.



CUTTING TRIM MOLDING AND OTHER FRAMES

Sketch B in Figure 17 shows a joint made by setting the miter arm at 45 degrees to miter the two boards to form a 90 degree corner. To make this type of joint, set the bevel adjustment to zero and the miter arm to 45 degrees. Once again, position the wood with the broad flat side on the table and the narrow edge against the fence.

The two sketches in Figure 17 are for four side objects only.

As the number of sides changes, so do the miter and bevel angles. The chart in the next column gives the proper angles for a variety of shapes.

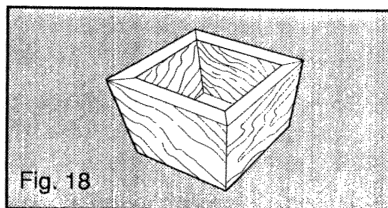
(The chart assumes that all sides are of equal length.) For a shape

that is not shown in the chart, use the following formula. 180 degrees divided by the number of sides equals the miter or bevel angle.

- EXAMPLES -	
NO. SIDES	MITER OR BEVEL ANGLE
4	45°
5	36°
6	30°
7	25.7°
8	22.5°
9	20°
10	18°

CUTTING COMPOUND MITERS

A compound miter is a cut made using a miter angle and a bevel angle at the same time. This is the type of cut used to make frames or boxes with slanting sides like the one shown in Figure 18.



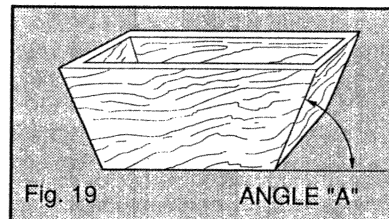
NOTE: If the cutting angle varies from cut to cut, check that the Bevel Clamp Knob and the Miter Lock Knob are securely tightened. These knobs must be tightened after making any changes in bevel or miter.

The chart shown on page 16 will assist you in selecting the proper bevel and miter settings for common compound miter cuts. To use the chart, select the desired angle "A" (Figure 19) of your project and locate that angle on the appropriate arc in the chart. From that point follow the chart straight down to find the correct bevel angle and straight across to find the correct miter angle.

Set your saw to the prescribed angles and make a few trial cuts. Practice fitting the cut pieces together until you develop a feel for this procedure and feel comfortable with it.

Example: To make a 4 sided box with 25° exterior angles (Angle A,

Figure 19), use the upper right arc. Find 25° on the arc scale. Follow the horizontal intersecting line to either side to get miter angle setting on saw (23°). Likewise, follow the vertical intersecting line to the top or bottom to get the bevel angle setting on the saw (40°). Always try cuts on a few scrap pieces of wood to verify settings on saw.

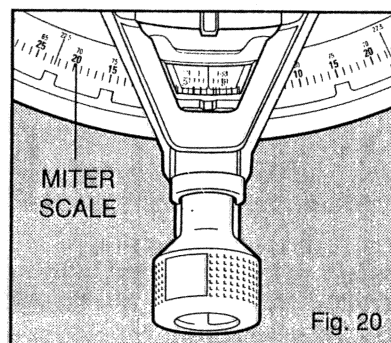


DUAL RANGE MITER SCALE

The miter scale has two ranges of numbers for convenience, as shown in Figure 20. One scale indicates 0 degrees when the blade is square to the fence. At this position the other scale reads 90 degrees.

The 0 degree scale (larger numbers closer to the front edge) is used when calculating angles. To calculate the proper miter angle, divide 180 degrees by the number of sides of the box or frame. Refer to the chart on this page for some examples.

The 90 degree scale (smaller numbers behind the zero degree scale) is used when a corner of your box or frame is measured with a protractor. For example: if you measure the corner of an 8 sided box, the protractor will read 135 degrees. To determine the proper miter setting, divide the measured angle by two. The proper miter setting in this example is 67-1/2 degrees. Set this angle on the 90 degree scale. This is most useful when a corner is at an odd angle.



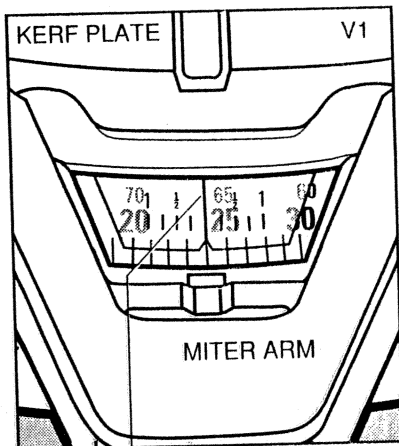
VERNIER SCALE

Your saw is equipped with a vernier scale for added precision. The vernier scale allows you to accurately set miter angles to the nearest 1/4 degree (15 minutes). To use the vernier scale follow the steps listed below.

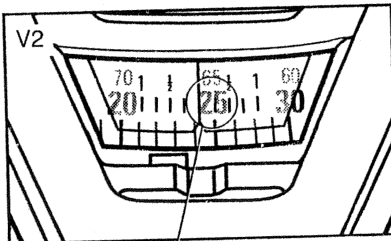
(As an example, let's assume that the angle you want to miter is 24 1/4 degree right).

1. Turn off miter saw.
2. Set the miter angle to the nearest whole degree desired by aligning the center mark in the vernier scale, shown in figure V1, with the whole degree number etched in the miter scale. Examine Figure V2 closely; the setting shown is 24 degrees right miter.
3. To set the additional 1/4 degree, squeeze the miter arm lock and carefully move the arm to the RIGHT until the 1/4 degree vernier mark aligns with the CLOSEST degree mark on the miter scale. In our example, the closest degree mark on the miter scale happens to be 25 degrees. Figure V2 shows a setting of 24-1/4 degrees right miter.

For settings that require partial degrees (1/4, 1/2, 3/4 degrees) align the desired vernier mark with the CLOSEST degree mark on the miter scale, as described below (The plastic vernier plate is inscribed with marks for 1/4, 1/2, 3/4 and 1 degrees. Only the 1/2 degree and the 1 degree are numerically labeled.)



CENTER MARK ON VERNIER SCALE ALIGNS WITH DESIRED WHOLE ANGLE ON MITER SCALE (24° RIGHT MITER)



1/4° VERNIER MARK ALIGNS WITH CLOSEST WHOLE DEGREE MARK ON MITER SCALE (24° 1/4° RIGHT MITER)

WHEN MITERING TO THE RIGHT

To increase the miter angle when mitering to the right, move the arm to align the appropriate vernier mark with the closest mark on the miter scale to the right. To decrease the miter angle when mitering to the right, move the arm to align the appropriate vernier mark with the closest mark on the miter scale to the left.

WHEN MITERING TO THE LEFT

To increase the miter angle when mitering to the left, move the arm to align the appropriate vernier mark with the closest mark on the miter scale to the left. To decrease the miter angle when mitering to the left, move the arm to align the appropriate vernier mark with the closest mark on the miter scale to the right.

CUTTING BASE MOLDING

ALWAYS MAKE A DRY RUN WITHOUT POWER BEFORE MAKING ANY CUTS.

Straight 90 degree cuts –

Position the wood against the fence and clamp it in place as shown in Figure 21. Turn on the saw, allow the blade to reach full speed and lower the arm smoothly through the cut.

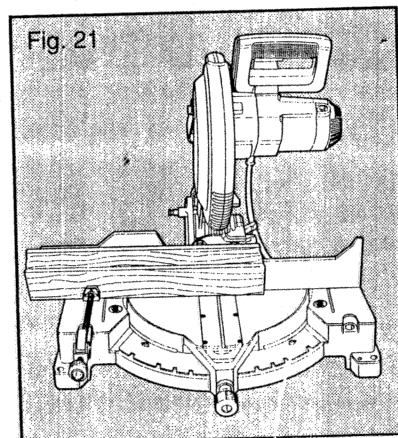


Fig. 21

CUTTING BASE MOLDING UP TO 3-7/8" HIGH VERTICALLY AGAINST THE FENCE

Position molding as shown in Figure 22

All cuts made with the back of the molding against the fence and bottom of the molding against the base

INSIDE CORNER:

Left side

1. Miter left 45°
2. Save left side of cut

Right side

1. Miter Right 45°
2. Save right side of cut

OUTSIDE CORNER:

Left side

1. Miter right at 45°
2. Save left side of cut

Right side

1. Miter left at 45°
2. Save right side of cut

Material up to 3.9" (3-7/8") can be cut as described above. For wider boards [up to 5.5" (5-1/2")] several minor concessions must be made.

When cutting a board between 3.9" (3-7/8") and 5.5" (5-1/2") in width the roller on the tip of the guard will hang up on the workpiece. If this occurs, simply place your right thumb on the upper side of the guard and roll the guard up just enough to clear the workpiece, as shown in Figure 25. Once you have cleared the workpiece, you can release the guard and it will continue to open as the cut progresses.

When mitering to the right side of a base molding wider than 3.9" (3-7/8") standing vertically against the fence as in Figure 22, the saw can only cut through the board up to 1 inch from the end of the board. Trying to cut more than an inch will cause the saw's gear case to interfere with the workpiece. If you want to cut basemolding between 3-7/8" and 5-1/2" wide vertically follow the directions below.

CUTTING 3-7/8" – 5-1/2" BASE MOLDING VERTICALLY AGAINST THE FENCE

• Position molding as shown in Figure 22

• All cuts made with the back of the molding against the fence

INSIDE CORNER:

Left side

1. Position molding with bottom of molding against the base of the saw
2. Miter left 45°
3. Save left side of cut

Right side

1. Position molding with top of the molding resting on the base of the saw
2. Miter left 45°
3. Save left side of cut

OUTSIDE CORNER:

Left side

1. Position molding with bottom of molding against the base of the saw
2. Miter right 45°
3. Save left side of cut

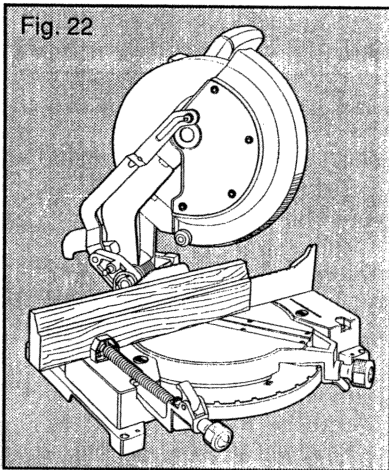
Note: If the cut must be made somewhere other than 1" from the end of the molding; cut off the molding at 90° approx. 1" longer than your final length then make the miter cut as described above.

Right side

1. Position molding with bottom of the molding against the base of the saw
2. Miter left 45°
3. Save the right side of cut

A third method of making the cut necessary for sketch A is to make a zero degree miter, 45 degree bevel cut. Your saw can cut a bevel 7 7/8" wide.

Fig. 22



CUTTING BASE MOLDING LAYING FLAT AND USING THE BEVEL FEATURE

- All cuts made with the saw set at 45° bevel and 0 miter

- All cuts made with back of molding laying flat on the saw as shown in figures 23 and 24

INSIDE CORNER:

Left side

1. Position molding with top of molding against the fence
2. Save left side of cut

Right side

1. Position molding with bottom of the molding against the fence
2. Save left side of cut

OUTSIDE CORNER:

Left side

1. Position molding with bottom of the molding against the fence
2. Save right side of cut

Right side

1. Position molding with top of molding against the fence
2. Save right side of cut

CUTTING CROWN MOLDING

Your Miter Saw is better suited to the task of cutting crown molding than any tool made. In order to fit properly, crown molding must be compound mitered with extreme accuracy.

The two flat surfaces on a given piece of crown molding are at angles that, when added together, equal exactly 90 degrees. Most, but not all, crown molding has a top rear angle (the section that fits flat against the ceiling) of 52 degrees and a bottom rear angle (the part that fits flat against the wall) of 38 degrees.

Your Miter Saw has special pre-set miter latch points at 31.62 degrees left and right for cutting crown molding at the proper angle. There is also a mark on the Bevel scale at 33.85 degrees.

The chart on the next page gives the proper settings for cutting crown molding. (The numbers for the miter and bevel settings are very precise and are not easy to accurately set on your saw.) Since most rooms do not have angles of precisely 90 degrees, you will have to fine tune your settings anyway.

**PRETESTING WITH SCRAP
MATERIAL IS EXTREMELY
IMPORTANT!**

Fig. 23

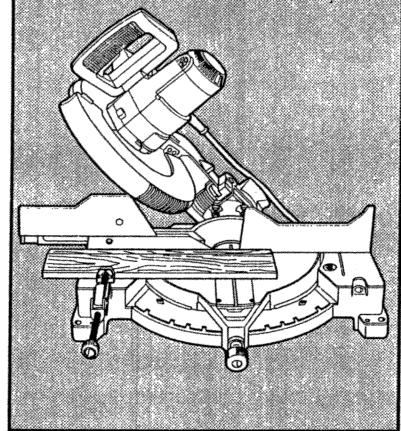


Fig. 24

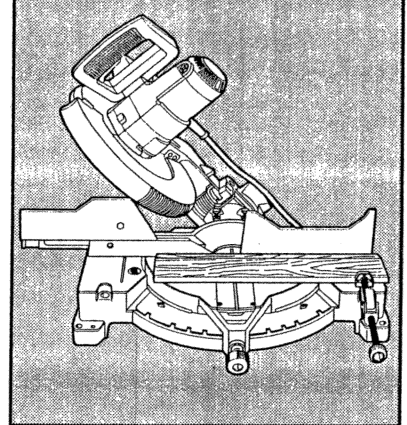


Fig. 25

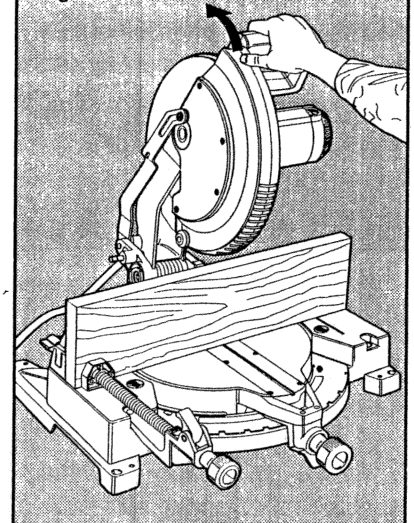
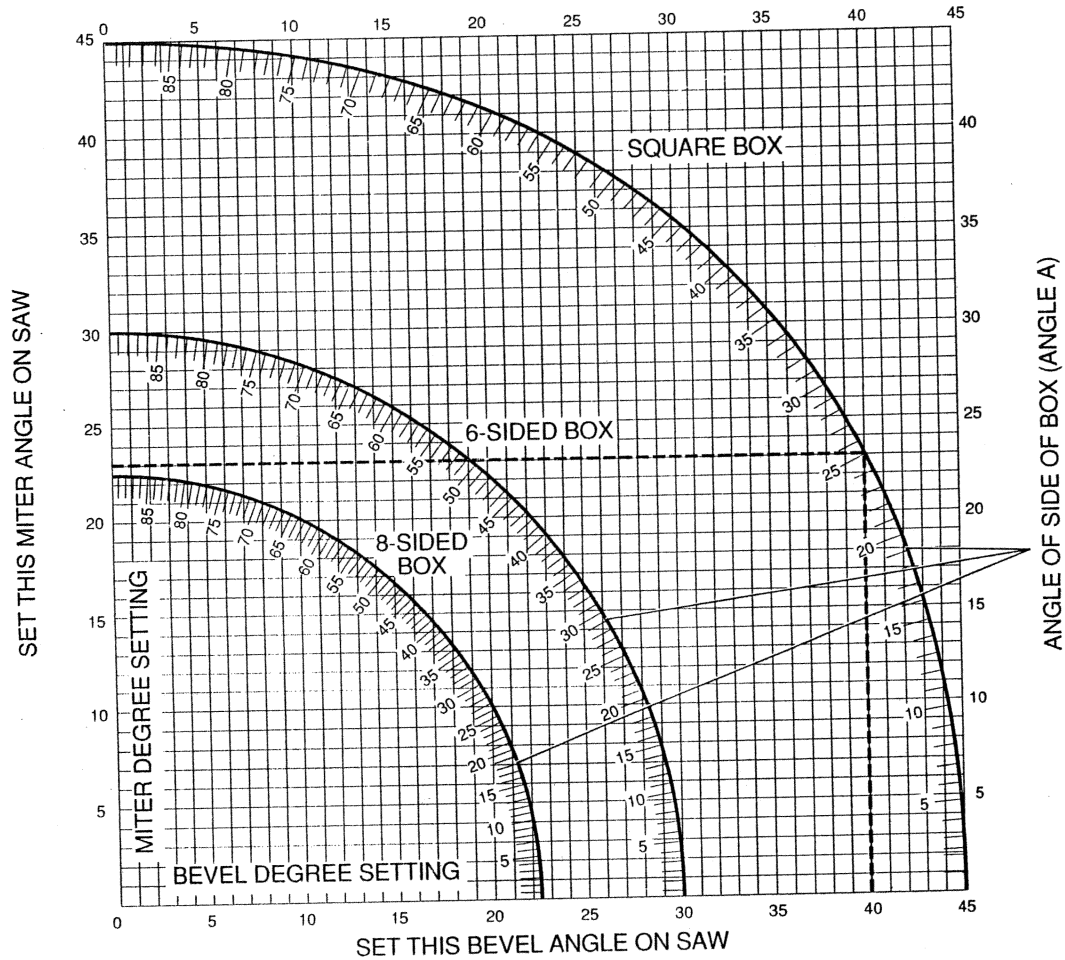


TABLE 1 COMPOUND MITER CUT



INSTRUCTIONS FOR CUTTING CROWN MOLDING LAYING FLAT AND USING THE COMPOUND FEATURES

1. Molding laying with broad back surface down flat on saw table (See Figure 26)
2. The settings below are for All Standard (U.S.) crown molding with 52° and 38° angles.

BEVEL SETTING	TYPE OF CUT	<p>When setting bevel and miter angles for all compound miters, remember that:</p> <p>The angles presented for crown moldings are very precise and difficult to set exactly. Since they can easily shift slightly and very few rooms have exactly square corners, all settings should be tested on scrap molding.</p> <p>PRETESTING WITH SCRAP MATERIAL IS EXTREMELY IMPORTANT!</p>
33.85°	<p>LEFT SIDE, INSIDE CORNER:</p> <ol style="list-style-type: none"> 1. Top of molding against fence 2. Miter table set right 31.62° 3. Save left end of cut 	
33.85°	<p>RIGHT SIDE, INSIDE CORNER:</p> <ol style="list-style-type: none"> 1. Bottom of molding against fence 2. Miter table set left 31.62° 3. Save left end of cut 	
33.85°	<p>LEFT SIDE, OUTSIDE CORNER:</p> <ol style="list-style-type: none"> 1. Bottom of molding against fence 2. Miter table set left 31.62° 3. Save right end of cut 	
33.85°	<p>RIGHT SIDE, OUTSIDE CORNER:</p> <ol style="list-style-type: none"> 1. Top of molding against fence 2. Miter table set right 31.62° 3. Save right end of cut 	

ALTERNATIVE METHOD FOR CUTTING CROWN MOLDING

Place the molding on the table at an angle between the fence and the saw table, as shown in Figure 27. Use of the Crown Molding Fence Accessory (36807) is highly recommended because of its degree of accuracy and convenience. The Crown Molding Fence Accessory is available at extra cost from your local Dealer.

The advantage to cutting crown molding using this method is that no bevel cut is required. Minute changes in the miter angle can be made without affecting the bevel angle. This way, when corners other than 90 degrees are encountered, the saw can be quickly and easily adjusted for them. Use the Crown Molding Fence Accessory to maintain the angle at which the molding will be on the wall. **INSTRUCTIONS FOR CUTTING CROWN MOLDING ANGLED BETWEEN THE FENCE AND BASE OF THE SAW FOR ALL CUTS:**

1. Angle the molding so the bottom of the molding (part which goes against the wall when installed) is against the fence and the top of the molding is resting on the base of the saw, as shown in figure 27.
2. The angled "flats" on the back of the molding must rest squarely on the fence and base of the saw.

INSIDE CORNER:

Left side

1. Miter right at 45°
2. Save the right side of cut

Right side

1. Miter left at 45°
2. Save left side of cut

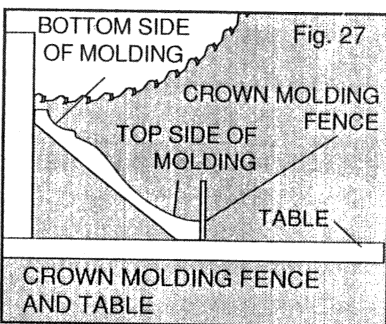
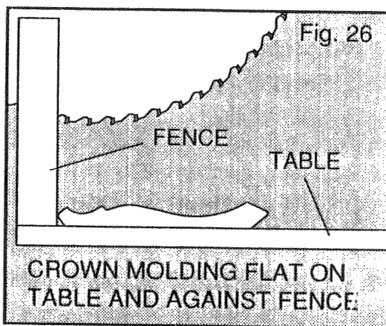
OUTSIDE CORNER:

Left side

1. Miter left at 45°
2. Save right side of cut

Right side

1. Miter right at 45°
2. Save left side of cut



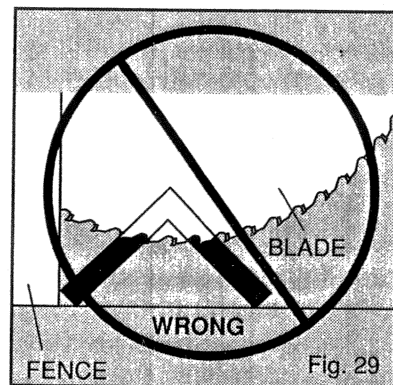
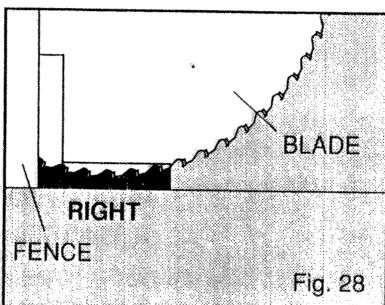
SPECIAL CUTS

NEVER MAKE ANY CUT WITHOUT FIRMLY CLAMPING THE MATERIAL.

Aluminum Cutting:

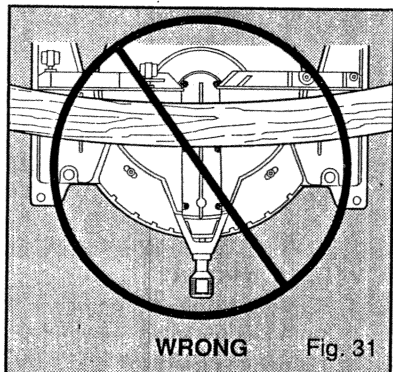
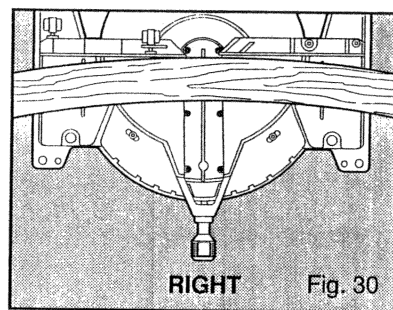
Aluminum extrusions such as those used when making aluminum screens and storm windows can easily be cut with your saw. Position the material so that you will be cutting the thinnest cross section, as shown in Figure 28. Figure 29 illustrates the wrong way to cut these extrusions. Use a wax lubricant when cutting aluminum such as Johnson's Stick Wax No. 140. Apply the stick wax directly to the saw blade before cutting. Never apply stick wax to a moving blade.

The wax, available at most hardware stores and industrial mill supply houses, provides proper lubrication and keeps chips from adhering to the blade.



Bowed Material:

When cutting bowed material always position it as shown in Figure 30 and never like that shown in Figure 31. Positioning the material incorrectly will cause it to pinch the blade near the completion of the cut.



Cutting Plastic Pipe

Plastic pipe can be easily cut with your saw. It should be cut just like wood and **CLAMPED OR HELD FIRMLY TO THE FENCE TO KEEP IT FROM ROLLING.**

Cutting Large Material

Occasionally you will encounter a piece of wood a little too large to fit beneath the blade guard. A little extra height can be gained by rolling the guard up out of the way, as shown in figure 25. Avoid doing this

as much as possible, but if need be, the saw will operate properly and make the bigger cut. NEVER TIE, TAPE, OR OTHERWISE HOLD THE GUARD OPEN WHEN OPERATING THIS SAW.

Maintenance

1. All bearings are sealed ball bearings. They are lubricated for life and need no further maintenance.
2. Periodically clean all dust and wood chips from around AND

UNDER the base and the rotary table. Even though slots are provided to allow debris to pass through, some dust will accumulate.

3. The brushes are designed to give you several years of use. If they ever need replacement follow the instructions on page 11 or return the tool to the nearest service center for repair. Service center locations are listed on the owner's registration card packed with your tool.

Trouble Shooting Guide

BE SURE TO FOLLOW SAFETY RULES AND INSTRUCTIONS

TROUBLE! SAW WILL NOT START WHAT'S WRONG?

1. Saw not plugged in
2. Fuse blown or circuit breaker tripped
3. Cord damaged
4. Brushes worn out

WHAT TO DO...

1. Plug in saw.
2. Replace fuse or reset circuit breaker
3. Have cord replaced by Authorized Service Center
4. Have brushes replaced by Authorized Service Center or replace them yourself as instructed on page 11.

TROUBLE! SAW MAKES UNSATISFACTORY CUTS WHAT'S WRONG?

1. Dull blade
2. Blade mounted backwards
3. Gum or pitch on blade
4. Incorrect blade for work being done

WHAT TO DO...

1. Replace blade. See page 9.
2. Turn blade around. See page 9.
3. Remove blade and clean with turpentine and coarse steel wool or household oven cleaner.
4. Change the blade. See page 9.

TROUBLE! BLADE DOES NOT COME UP TO SPEED WHAT'S WRONG?

1. Extension cord too light or too long
2. Low house current

WHAT TO DO...

1. Replace with adequate size cord. See page 7.
2. Contact your electric company

TROUBLE! MACHINE VIBRATES EXCESSIVELY WHAT'S WRONG?

1. Saw not mounted securely to stand or work bench
2. Stand or bench on uneven floor
3. Damaged saw blade

WHAT TO DO...

1. Tighten all mounting hardware. See page 8.
2. Reposition on flat level surface. See page 8.
3. Replace blade. See page 9.

TROUBLE! DOES NOT MAKE ACCURATE MITER CUTS WHAT'S WRONG?

1. Miter scale not adjusted correctly
2. Blade is not square to fence
3. Blade is not perpendicular to table
4. Workpiece moving

WHAT TO DO...

1. Check and adjust. See page 9, 10.
2. Check and adjust. See page 9, 10.
3. Check and adjust fence. See page 10.
4. Clamp workpiece to fence or glue 120 grit sandpaper to fence with rubber cement.

TROUBLE! MATERIAL PINCHES BLADE WHAT'S WRONG?

1. Cutting bowed material

WHAT TO DO...

1. Position bowed material as shown on page 17.

Notes

Important

To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustment, (except that described in this manual) should be performed by Black & Decker Service Centers or other qualified service organizations, always using Black & Decker replacement parts.

Industrial Use Warranty

Black & Decker warrants this product for one year from date of purchase. We will repair without charge any defects due to faulty material or workmanship. Please return the complete unit, transportation prepaid, to any Black & Decker Service Center or Authorized Service Station listed under "Tools Electric" in the yellow pages. This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others.

Like most Black & Decker products, your tool is listed by Underwriters Laboratories to ensure that it meets stringent safety requirements.

Every Black & Decker tool is of the highest quality. If you wish to contact us regarding this product, please call toll free between 8:00 a.m. and 5:00 p.m. EST, Monday through Friday. 1-800-762-6672

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