



**MODEL W1870**  
**18" VS SCROLL SAW**  
**w/LED & ROTARY TOOL**



**OWNER'S MANUAL**  
*(FOR MODELS MANUFACTURED SINCE 03/19)*

Phone: (360) 734-3482 • Online Technical Support: [techsupport@woodstockint.com](mailto:techsupport@woodstockint.com)

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**THE WRITTEN APPROVAL OF WOODSTOCK INTERNATIONAL, INC.**

#W1870AL Printed in China



## **WARNING!**

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.



## **WARNING!**

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

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- 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.

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# INTRODUCTION

## Woodstock Technical Support

This machine has been specially designed to provide many years of trouble-free service. Close attention to detail, ruggedly built parts and a rigid quality control program assure safe and reliable operation.

Woodstock International, Inc. is committed to customer satisfaction. Our intent with this manual is to include the basic information for safety, setup, operation, maintenance, and service of this product.

We stand behind our machines! In the event that questions arise about your machine, please contact Woodstock International Technical Support at (360) 734-3482 Ext. 2 or send e-mail to: [techsupport@woodstockint.com](mailto:techsupport@woodstockint.com). Our knowledgeable staff will help you troubleshoot problems and process warranty claims.

If you need the latest edition of this manual, you can download it from <http://www.woodstockint.com/manuals>.

If you have comments about this manual, please contact us at:

**Woodstock International, Inc.**  
**Attn: Technical Documentation Manager**  
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**Bellingham, WA 98227**  
**Email: [manuals@woodstockint.com](mailto:manuals@woodstockint.com)**



# MACHINE SPECIFICATIONS



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## MODEL W1870 18 " VS SCROLL SAW W/LED & ROTARY TOOL

### Product Dimensions

Weight ..... 38 lbs.  
 Width (side-to-side) x Depth (front-to-back) x Height ..... 14 x 27-1/2 x 21 in.  
 Foot Print (Length x Width) ..... 16-1/2 x 9 in.

### Shipping Dimensions

Type ..... Cardboard  
 Content ..... Machine  
 Weight ..... 43 lbs.  
 Length/Width/Height ..... 31 x 15 x 16 in.

### Electrical

Power Requirement ..... 120V, Single-Phase, 60 Hz  
 Full-Load Current Rating ..... 1.2A  
 Minimum Circuit Size ..... 15A  
 Cord Length ..... 6 ft.  
 Cord Gauge ..... 18 AWG  
 Included Plug Type ..... 5-15  
 Switch ..... Toggle Switch w/Removable Key

### Motors

#### Main

Horsepower ..... 1/6 HP  
 Phase ..... Single-Phase  
 Amps ..... 1.2A  
 Speed ..... 550 - 1650 RPM  
 Type ..... Universal  
 Power Transfer (Blade) ..... Direct Drive  
 Power Transfer (Rotary Tool) ..... Belt  
 Bearings ..... Shielded & Permanently Lubricated

### Main Specifications

#### Capacities

Depth of Throat ..... 18 in.  
 Maximum Cutting Depth ..... 18-1/8 in.  
 Maximum Cutting Height at 90 Degrees ..... 2 in.  
 Maximum Cutting Height at 45 Degrees ..... 5/8 in.  
 Table Size ..... 10-1/4 x 19-3/16 in.  
 Table Tilt ..... Left 45, Right 15 deg.

#### Blade Information

Blade Type ..... Pin  
 Blade Size ..... 6-1/4 in.  
 Stroke Per Minute ..... 550 - 1600 SPM  
 Stroke Length ..... 3/4 in.



**Rotary Tool Information**

Speed Range ..... 1650 - 4800 RPM  
 Maximum Collet Chuck Capacity..... 1/8 in.  
 Flex-Shaft Length ..... 3-1/2 ft.

**Construction**

Table ..... Precision-Ground Cast Iron  
 Frame ..... Cast Aluminum  
 Lamp ..... LED  
 Blade Guard ..... Plastic  
 Paint Type/Finish..... Powder Coated

**Other Related Information**

Number of Dust Ports..... 1  
 Dust Port Size ..... 1-1/4 in.

**Other**

Country of Origin ..... China  
 Warranty ..... 2 Years  
 Approximate Assembly & Setup Time ..... 15 Minutes  
 Serial Number Location..... Machine ID Label  
 ISO 9001 Factory.....No  
 Certified by a Nationally Recognized Testing Laboratory (NRTL) .....No

**Features**

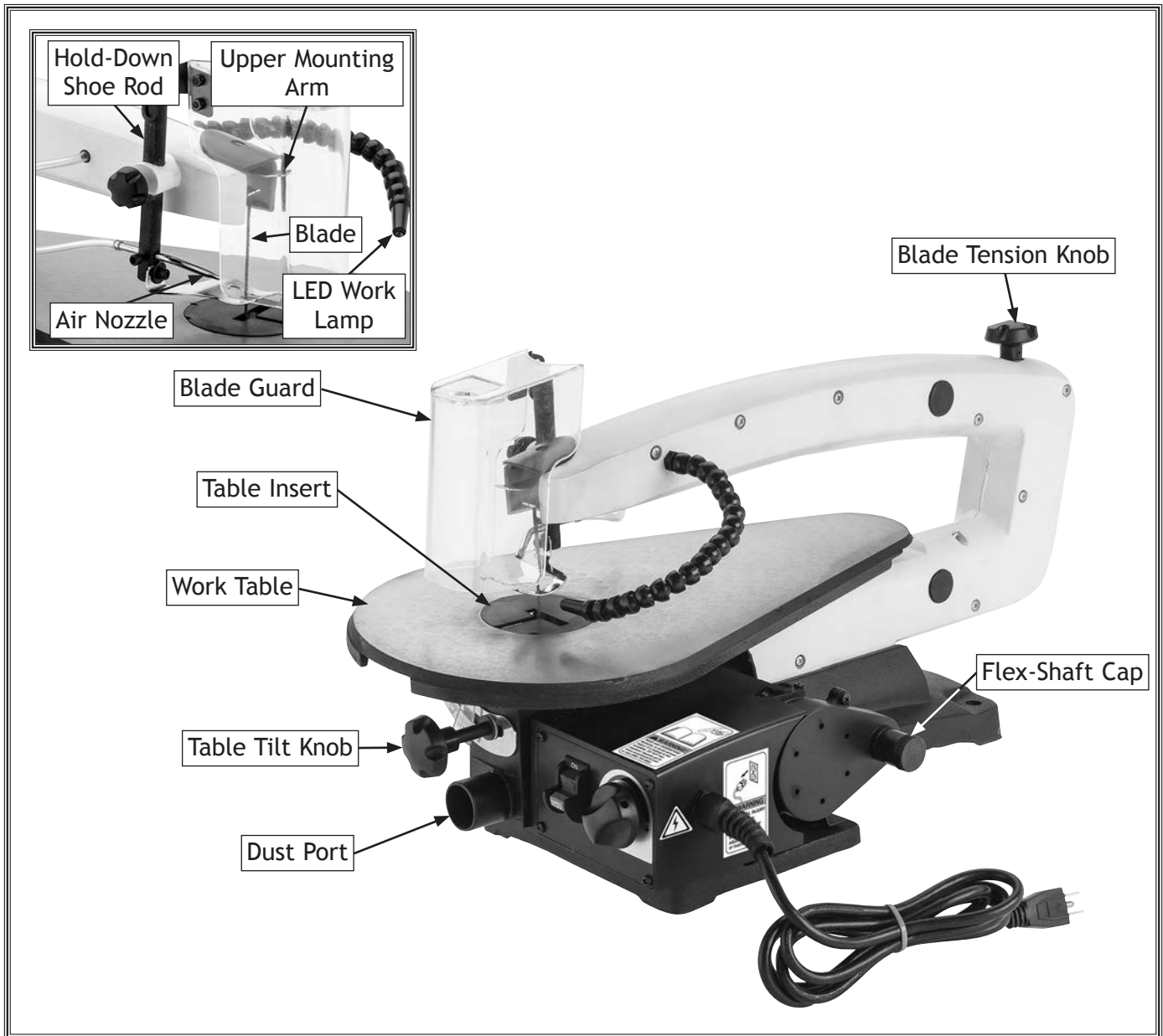
- Flex-Shaft Rotary Tool Attachment
- Precision-Ground Cast-Iron Table
- LED Work Light
- Chip Blower
- Variable-Speed Control

**Accessories**


- Rotary Tool with Tool Kit
- Pinless Blade Adapters
- Single Pinless Blade

# Identification

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.



**⚠ WARNING**



To reduce your risk of serious injury or damage to the machine, read this entire manual **BEFORE** using machine.

## Controls & Components

Refer to **Figures 1-3** and the following descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and stay safe when operating this machine.

**Variable-Speed Dial:** Adjusts blade speed from 530-1560 RPM.

**On/Off Switch:** Starts and stops motor. Remove switch disabling key to disable switch.

**Hold-Down Shoe:** Helps hold down workpiece as blade moves up and down, and adjusts to thickness of workpiece.

**Hold-Down Shoe Height Knob:** Locks hold-down shoe rod in position.

**Rotary Tool:** A tool for sanding, drilling, routing, and grinding.

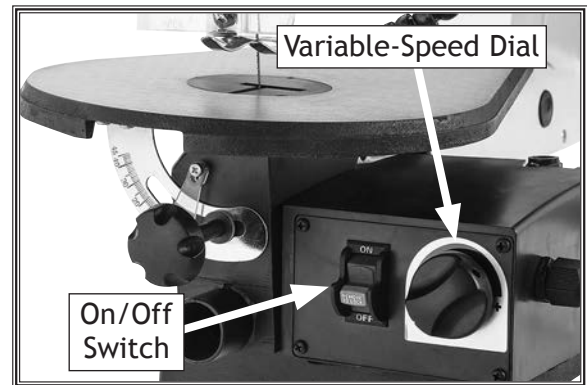
**Flex-Shaft:** A flexible shaft that connects the rotary tool to the scroll saw.

**Blade Tension Knob:** Turn clockwise to increase blade tension. Turn counterclockwise to decrease blade tension.

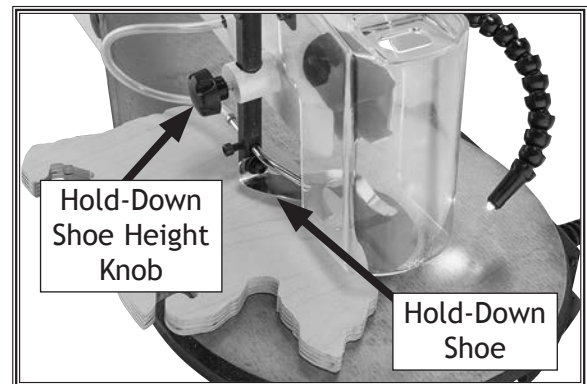
### ! WARNING



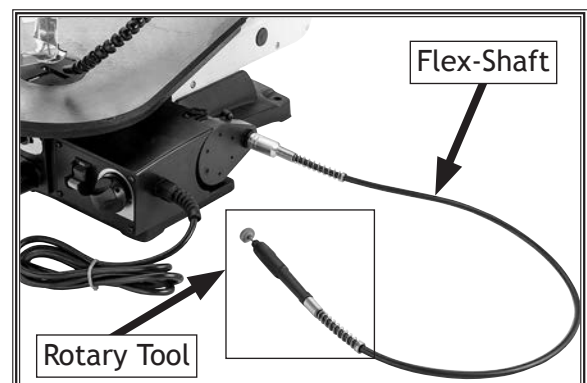
To reduce your risk of serious injury or damage to the machine, read this entire manual **BEFORE** using machine.



**Figure 1.** Power and speed controls.



**Figure 2.** Hold-down shoe and height knob.



**Figure 3.** Flex-shaft and rotary tool.



# SAFETY

## For Your Own Safety, Read Manual Before Operating Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures—this responsibility is ultimately up to the operator!



Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

### NOTICE

This symbol is used to alert the user to useful information about proper operation of the equipment or a situation that may cause damage to the machinery.

## Standard Machinery Safety Instructions

**OWNER'S MANUAL.** Read and understand this owner's manual **BEFORE** using machine.

**TRAINED OPERATORS ONLY.** Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make workshop kid proof!

**DANGEROUS ENVIRONMENTS.** Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

**MENTAL ALERTNESS REQUIRED.** Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

**ELECTRICAL EQUIPMENT INJURY RISKS.** You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow an electrician or qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

**DISCONNECT POWER FIRST.** Always disconnect machine from power supply **BEFORE** making adjustments, changing tooling, or servicing machine. This eliminates the risk of injury from unintended startup or contact with live electrical components.

**EYE PROTECTION.** Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are not approved safety glasses.

**WEARING PROPER APPAREL.** Do not wear clothing, apparel, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips, which could cause loss of workpiece control.

**HAZARDOUS DUST.** Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material, and always wear a NIOSH-approved respirator to reduce your risk.

**HEARING PROTECTION.** Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

**REMOVE ADJUSTING TOOLS.** Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

**INTENDED USAGE.** Only use machine for its intended purpose—never make modifications without prior approval from Woodstock International. Modifying machine or using it differently than intended will void the warranty and may result in malfunction or mechanical failure that leads to serious personal injury or death!

**AWKWARD POSITIONS.** Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

**CHILDREN & BYSTANDERS.** Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

**GUARDS & COVERS.** Guards and covers reduce accidental contact with moving parts or flying debris—make sure they are properly installed, undamaged, and working correctly.

**FORCING MACHINERY.** Do not force machine. It will do the job safer and better at the rate for which it was designed.

**NEVER STAND ON MACHINE.** Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

**STABLE MACHINE.** Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

**USE RECOMMENDED ACCESSORIES.** Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase risk of serious injury.

**UNATTENDED OPERATION.** To reduce the risk of accidental injury, turn machine **OFF** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

**MAINTAIN WITH CARE.** Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

**CHECK DAMAGED PARTS.** Regularly inspect machine for any condition that may affect safe operation. Immediately repair or replace damaged or mis-adjusted parts before operating machine.

**MAINTAIN POWER CORDS.** When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside, resulting in a short. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

**EXPERIENCING DIFFICULTIES.** If at any time you experience difficulties performing the intended operation, stop using the machine! Contact Technical Support at (360) 734-3482.

## Additional Safety for Scroll Saws

Serious cuts or amputation can occur from contact with the moving saw blade during operation or if blade breakage occurs. To reduce this risk, anyone operating this machine **MUST** completely heed the hazards and warnings below.

**HAND PLACEMENT.** Never position fingers or hands in line with the blade. If the workpiece or your hands slip, serious personal injury could occur.

**INTENDED USE.** This machine is intended for cutting natural and man-made wood products, and laminate covered wood products. This machine is **NOT** designed to cut metal, glass, stone, tile, etc.

**BLADE CONDITION.** Do not operate with dull, cracked or badly worn blade. Dull blades require more effort to perform the cut and increase the risk of kickback. Inspect blades for cracks and missing teeth before each use.

**BLADE TENSION.** To avoid mishaps that could result in operator injury, make sure the blade teeth face down toward the table and the blade is properly tensioned before operating.

**BLADE SPEED.** Always allow the blade to come to full speed before starting the cut. Moving the workpiece against a blade that is not at full speed could cause the blade to break or grab the workpiece and draw the operator's hands into the blade.

**BLADE CONTROL.** To avoid serious personal injury, **DO NOT** attempt to stop or slow the blade with your hand or the workpiece. Allow the blade to stop on its own.

**FEED RATE.** To avoid the risk of the workpiece slipping and causing operator injury, always feed stock evenly and smoothly. **DO NOT** force or twist the blade while cutting, especially when sawing small curves.

**BLADE GUARD.** The blade guard protects the operator's hands and fingers from the moving blade. **ONLY** operate this scroll saw with the blade guard in the proper position. Keep the guard as close as possible to the workpiece without interfering with the intended operation.

**CUTTING TECHNIQUES.** Plan your operation so the blade always cuts to the outside of the workpiece. **DO NOT** back the workpiece away from the blade while the saw is running, which could cause kickback and personal injuries. If you need to back the workpiece out, turn the scroll saw **OFF** and wait for the blade to come to a complete stop. **DO NOT** twist or put excessive stress on the blade that could damage it. Instead, use relief cuts for curve cuts that may twist the blade.

**LEAVING WORK AREA.** Never leave a machine running unattended. Allow the scroll saw to come to a complete stop before you leave it unattended.

**SMALL WORKPIECE HANDLING.** If your hands slip while holding small workpieces with your fingers during a cut, amputation or laceration injuries could occur. Always support/feed the workpiece with push sticks, jig, vise, or some type of clamping fixture.

**CUT-OFF PIECES.** Never use your hands to move cut-offs away from the blade while the saw is running. If a cut-off becomes trapped between the blade and table insert, turn the saw **OFF** and allow the blade to completely stop before removing it.

# ELECTRICAL

## Circuit Requirements

This machine must be connected to the correct size and type of power supply circuit, or fire or electrical damage may occur. Read through this section to determine if an adequate power supply circuit is available. If a correct circuit is not available, a qualified electrician **MUST** install one before you can connect the machine to power.

A power supply circuit includes all electrical equipment between the breaker box or fuse panel in the building and the machine. The power supply circuit used for this machine must be sized to safely handle the full-load current drawn from the machine for an extended period of time. (If this machine is connected to a circuit protected by fuses, use a time delay fuse marked D.)

### Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating at 120V ..... 1.2 Amps

### Circuit Requirements for 120V


This machine is prewired to operate on a power supply circuit that has a verified ground and meets the following requirements:

- Circuit Type ..... 110V, 115V, 120V, 60 Hz, Single-Phase
- Circuit Size ..... 15 Amps
- Plug/Receptacle ..... NEMA 5-15

ELECTRICAL

**⚠ WARNING**  
 The machine must be properly set up before it is safe to operate. **DO NOT** connect this machine to the power source until instructed to do so later in this manual.

**⚠ WARNING**



Incorrectly wiring or grounding this machine can cause electrocution, fire, or machine damage. To reduce this risk, only an electrician or qualified service personnel should do any required electrical work on this machine.

**NOTICE**

The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult with an electrician to ensure that the circuit is properly sized for safe operation.

# Grounding Requirements

This machine **MUST** be grounded. In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current to travel—in order to reduce the risk of electric shock.

Improper connection of the equipment-grounding wire will increase the risk of electric shock. The wire with green insulation (with/without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

## For 120V Connection

This machine is equipped with a power cord with an equipment-grounding wire and NEMA 5-15 grounding plug (see figure). The plug must only be inserted into a matching receptacle that is properly installed and grounded in accordance with local codes and ordinances.

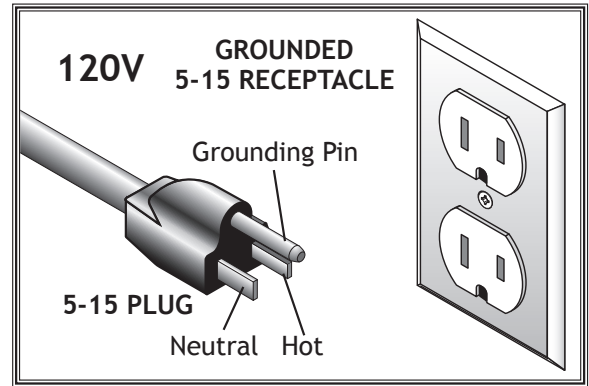
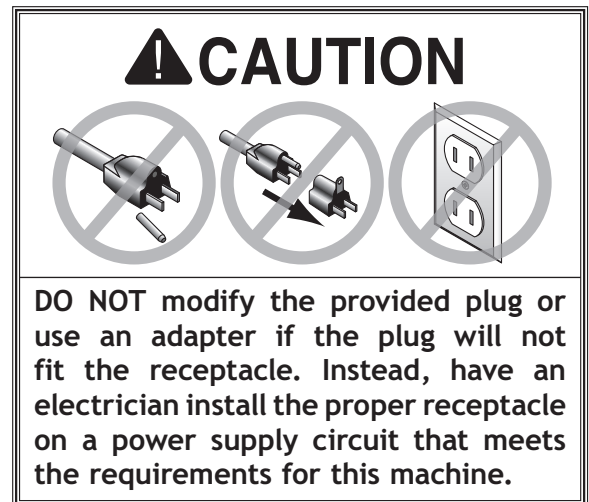


Figure 4. NEMA 5-15 plug & receptacle.



# Extension Cords

We do not recommend using an extension cord with this machine. Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases with longer extension cords and smaller gauge sizes (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle, and meet the following requirements:

- Minimum Gauge Size at 120V ..... 14 AWG
- Maximum Length (Shorter is Better) ..... 50 ft.

ELECTRICAL

# SETUP

## Unpacking

This machine has been carefully packaged for safe transportation. If you notice the machine has been damaged during shipping, please contact your authorized Shop Fox dealer immediately.

## Inventory

The following is a list of items shipped with your machine. Before beginning setup, lay these items out and inventory them.

**Note:** *If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.*

Box Inventory (Figure 5)	Qty
A. Blade Guard .....	1
B. Pin-End Blade 18 TPI .....	1
C. Blade Adapters .....	2
D. Hex Wrench 2.5mm .....	1
E. Hex Wrench 4mm .....	1

Flex-Shaft Rotary Tool (Figure 6)	
F. Flex-Shaft Rotary Tool .....	1
G. Flex-Shaft Rotary Tool Kit .....	1
H. Drill Bit 1/8" .....	1
I. Collet Locking Pin 3mm .....	1
J. Collet Chuck Wrench .....	1

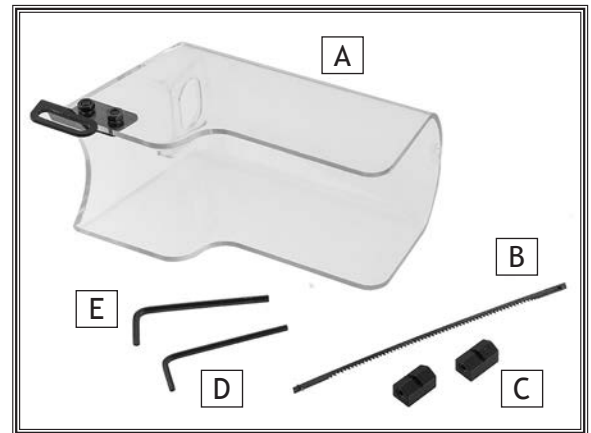
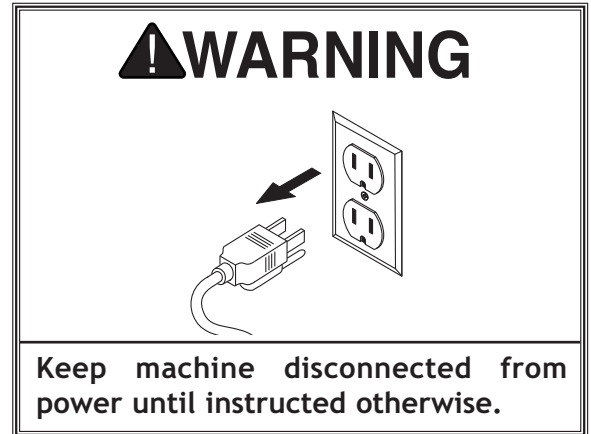


Figure 5. Box inventory items.

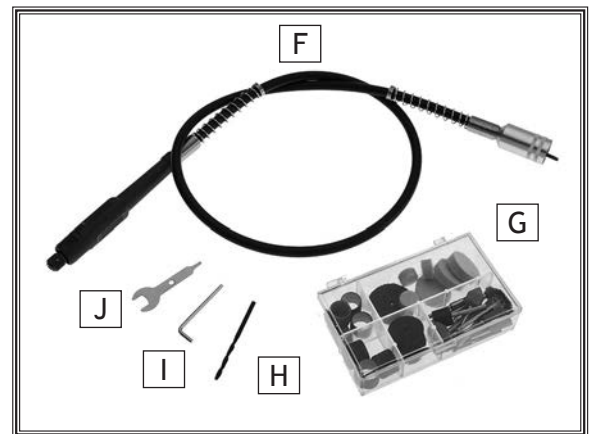


Figure 6. Flex-shaft inventory items.

SETUP



## Cleaning Machine

The unpainted surfaces of your machine are coated with a heavy-duty rust preventative that prevents corrosion during shipment and storage. This rust preventative works extremely well, but it will take a little time to clean.

Be patient and do a thorough job cleaning your machine. The time you spend doing this now will give you a better appreciation for the proper care of your machine's unpainted surfaces.

There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

### Before cleaning, gather the following:

- Disposable rags
- Cleaner/degreaser (WD•40 works well)
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

### Basic steps for removing rust preventative:

1. Put on safety glasses.
2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5-10 minutes.
3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.
4. Repeat Steps 2-3 as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.

## NOTICE

Avoid chlorine-based solvents, such as acetone or brake parts cleaner, that may damage painted surfaces.

## Machine Placement

### Workbench Load

Refer to the **Machine Specifications** for the weight and footprint specifications of your machine. Some workbenches may require additional reinforcement to support the weight of the machine and workpiece materials.

### Placement Location

Consider anticipated workpiece sizes and additional space needed for auxiliary stands, work tables, or other machinery when establishing a location for this machine in the shop. Below is the minimum amount of space needed for the machine.

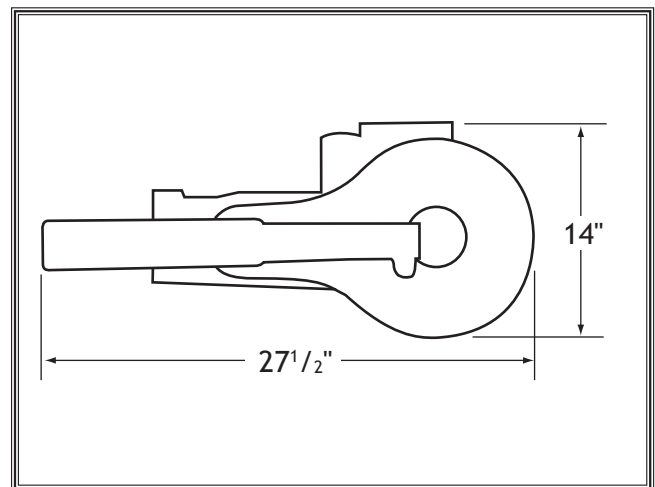


Figure 7. Minimum working clearances.

	<h3>CAUTION</h3>
	<p><b>INJURY HAZARD!</b> Untrained users can injure themselves with this machine. Restrict access to machine when you are away, especially if it is installed where children are present.</p>

SETUP

# Bench Mounting

Number of Mounting Holes..... 3  
 Diameter of Mounting Hardware Needed.....<sup>3</sup>/<sub>8</sub>"

The base of this machine has mounting holes that allow it to be fastened to a workbench or other mounting surface to prevent it from moving during operation and causing accidental injury or damage.

The strongest mounting option is a "Through Mount" (see example) where holes are drilled all the way through the workbench—and hex bolts, washers, and hex nuts are used to secure the machine in place.

Another option is a "Direct Mount" (see example) where the machine is secured directly to the workbench with lag screws and washers.

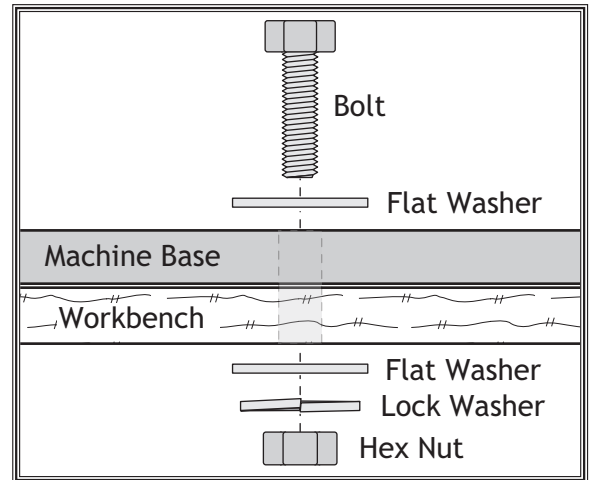


Figure 8. Typical "Through Mount" setup.

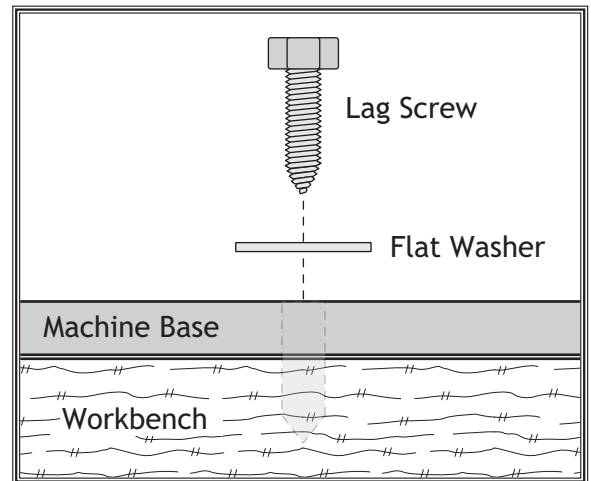


Figure 9. Typical "Direct Mount" setup.

SETUP

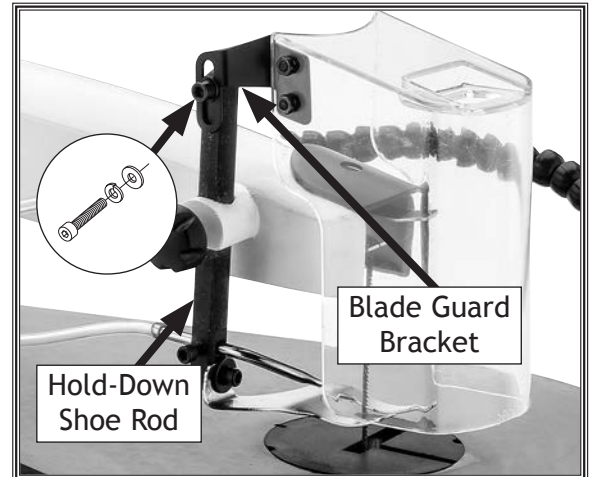


# Assembly

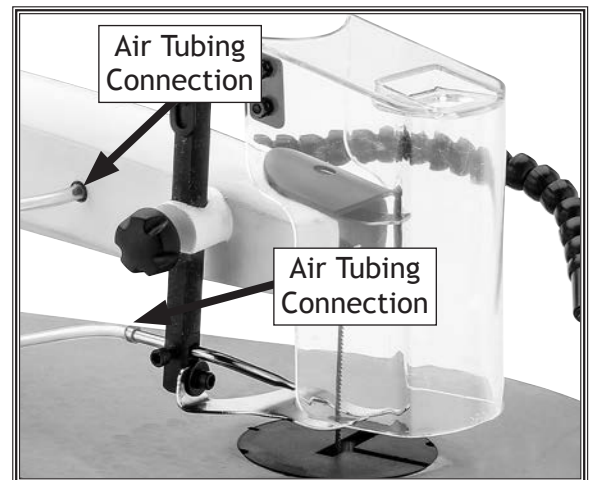
Before beginning the assembly process, refer to **Items Needed for Setup** and gather everything you need. Ensure all parts have been properly cleaned of any heavy-duty rust-preventative applied at the factory (if applicable). Be sure to complete all steps in the assembly procedure prior to performing the **Test Run** or connecting the machine to power.

To assemble machine, do these steps:

1. Remove pre-installed cap screw, lock washer, and flat washer from top of hold-down shoe rod shown in **Figure 10**.
2. Attach blade guard bracket to top of hold-down shoe rod with cap screw, lock washer, and flat washer (see **Figure 10**).
3. Pivot guard up and down to ensure it moves smoothly. If necessary, loosen mounting screw to allow movement.
4. Connect air tubing to backside of air nozzle, as shown in **Figure 11**.
5. Verify blade pins are seated in V-notch indents, as shown in **Figure 27** on **Page 25**.
6. Pinch blade and move it side to side with light pressure to verify it is tensioned enough that it will not come off during operation. If adjustments are necessary, refer to **Blade Tension** instructions on **Page 22**.



**Figure 10.** Blade guard installed.



**Figure 11.** Air tubing connections.

SETUP

7. Remove flex-shaft cap shown in Figure 12.



Figure 12. Flex-shaft cap location.

8. Insert inner spindle of flex-shaft into threaded shaft, then thread on flex-shaft, as shown in Figure 13.

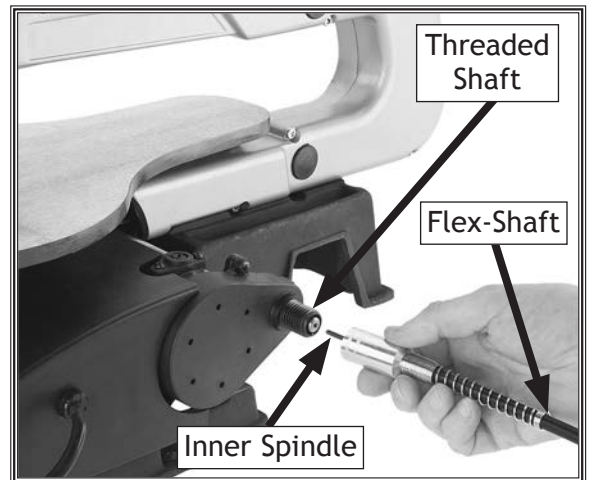


Figure 13. Installing flex-shaft.

9. Insert included drill bit or a tool bit (not included) into flex-shaft collet.

10. Insert collet locking pin into hole on collet and tighten bit with collet wrench by turning clockwise, as shown in Figure 14.

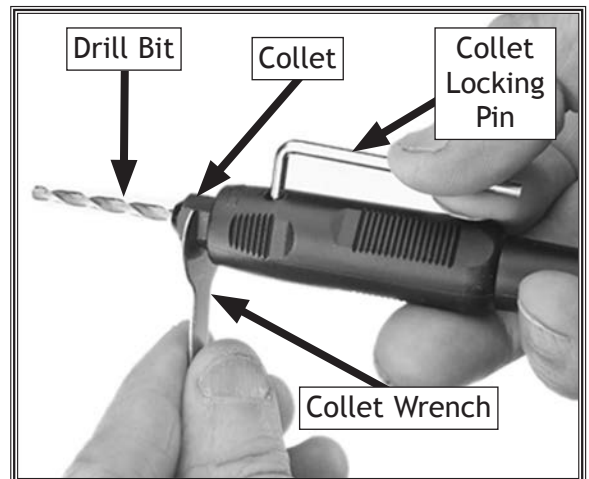


Figure 14. Securing drill bit in flex-shaft collet.

SETUP

# Dust Collection

Recommended CFM at Dust Port: ..... 150 CFM

Do not confuse this CFM recommendation with the rating of the dust collector. To determine the CFM at the dust port, you must consider these variables: (1) CFM rating of the dust collector, (2) hose type and length between the dust collector and the machine, (3) number of branches or wyes, and (4) amount of other open lines throughout the system. Explaining how to calculate these variables is beyond the scope of this manual. Consult an expert or purchase a good dust collection “how-to” book.

## CAUTION

This machine creates substantial amounts of dust during operation. Breathing airborne dust on a regular basis can result in permanent respiratory illness. Reduce your risk by wearing a respirator and capturing the dust with a dust collection system.

Item(s) Needed	Qty
Dust Collection System .....	1
Dust Hose 1 <sup>1</sup> / <sub>4</sub> " .....	1
Hose Clamp 1 <sup>1</sup> / <sub>4</sub> " .....	1

To connect a dust collection hose, do these steps:

1. Fit a 1<sup>1</sup>/<sub>4</sub>" dust hose over dust port, as shown in **Figure 15**, and secure in place with hose clamp.
2. Tug hose to make sure it does not come off.

**Note:** A tight fit is necessary for proper performance.



**Figure 15.** Dust port connected to dust collection system.

SETUP

# Test Run

Once assembly is complete, test run the machine to ensure it is properly connected to power and safety components are functioning properly.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem **BEFORE** operating the machine again. The **Troubleshooting** table in the **SERVICE** section of this manual can help.

The Test Run consists of verifying the following: 1) The motor powers up and runs correctly, and 2) removing switch disabling key from toggle switch functions properly.

To test run the machine, do these steps:

1. Clear all setup tools away from machine.
2. Make sure blade is properly installed and tensioned, and that blade guard is in the down position.
3. Rotate variable-speed dial counterclockwise all the way.
4. Connect machine to power supply.
5. Firmly hold flex-shaft rotary tool.
6. Turn machine **ON**, verify motor operation, and then turn machine **OFF**.

Motor should run smoothly, without unusual noises.

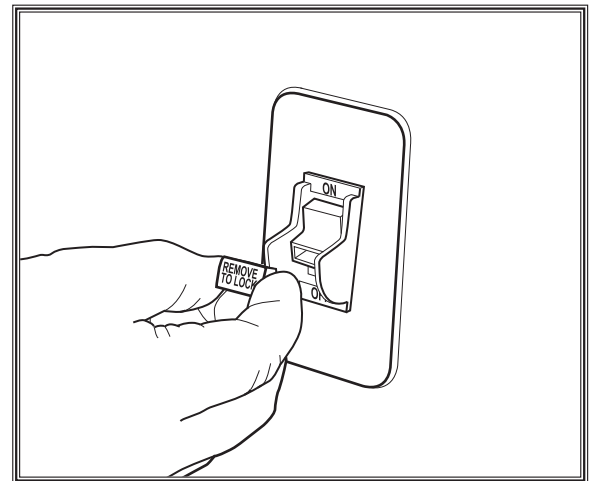
7. Remove switch disabling key, as shown in **Figure 16**.
8. Try to start machine with switch. Machine should not start.
  - If the machine *does not* start, the switch disabling feature is working as designed.
  - If the machine *does* start, immediately stop the machine. The switch disabling feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.
9. Remove flex-shaft rotary tool until you need to operate it, and re-install flex-shaft cap.

**⚠ WARNING**

Serious injury or death can result from using this machine **BEFORE** understanding its controls and related safety information. **DO NOT** operate, or allow others to operate, machine until the information is understood.

**⚠ WARNING**

**DO NOT** start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.



**Figure 16.** Removing switch disabling key from toggle switch.

SETUP

# OPERATIONS

## General

This machine will perform many types of operations that are beyond the scope of this manual. Many of these operations can be dangerous or deadly if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. If at any time you are experiencing difficulties performing any operation, stop using the machine!

The overview below provides the novice machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand. Due to its generic nature, this overview is **NOT** intended to be an instructional guide.

To complete a typical operation, the operator does the following:

1. Examines workpiece to make sure it is suitable for cutting.
2. Adjusts table tilt, if necessary, to correct angle of desired cut.
3. Loosens hold-down shoe height knob, adjusts blade guard height to just clear the workpiece (no more than 1/4"), then retightens hold-down shoe height knob.
4. Checks to make sure workpiece can safely pass all the way through blade without interference from other objects.
5. Puts on safety glasses and respirator.
6. Starts dust collector and turns machine **ON**.
7. Holds workpiece firmly and flat against table and then pushes workpiece into blade at a steady and controlled rate until cut is complete.
8. Rotates variable-speed dial to slowest speed, then turns machine **OFF**.

**! WARNING**

To reduce your risk of serious injury or damage to the machine, read this entire manual **BEFORE** using machine.

**! WARNING**

To reduce the risk of eye injury and long-term respiratory damage, always wear safety glasses and a respirator while operating this machine.

**NOTICE**

If you are an inexperienced operator, we strongly recommend that you read books or trade articles, or seek training from an experienced operator of this type of machinery before performing unfamiliar operations. Above all, safety must come first!

## Basic Functions of a Scroll Saw

A properly adjusted scroll saw performs many types of cuts with ease and accuracy. It is capable of performing these types of cuts:

### Straight Cuts

- Miters, angles and compound angles, ripping, and crosscutting

### Irregular Cuts

- Simple and complex curves, duplicate parts, circles, and beveled curves

### Basic Cutting Tips

Basic tips to follow when operating a scroll saw:

- Typically, a scroll saw blade stays sharp from 1/2 hour to 2 hours of use, depending on how blade is used and type of material being cut.
- Best cutting results will be achieved when cutting workpieces less than 1" thick. When cutting workpieces thicker than 1", move workpiece through the blade very slowly.
- Blades dull much faster when cutting plywood, hardwoods, and laminates.
- Exerting excessive side pressure on blade greatly increases chance of blade breakage.
- Plan cut before starting curves. Make relief cuts in waste areas near tight inside curves or leave tight inside curves for a second pass to minimize backing out. Cut sharp outside curves by cutting past curve and looping around to cut from different angle.
- When approaching tight radius, slow down feed rate, but don't stop. Give teeth time to make cut. Forcing workpiece through curve will cause blade to twist or break.
- If cut produces waste in curve's interior, turn power OFF and wait until all motion stops before removing waste.
- Scroll saw blades have a tendency to drift. This is compensated by adjusting the feed direction.

## Workpiece Inspection

Some workpieces are not safe to cut or may require modification before they can be made safe to cut. **Before cutting, get in the habit of inspecting all workpieces for the following:**

- **Material Type:** This machine is intended for cutting natural and man-made wood products, laminate covered wood products, and some plastics. Cutting drywall or cementitious backer board creates extremely fine dust and may reduce the life of the bearings. This machine is NOT designed to cut metal, glass, stone, tile, etc.; cutting these materials with a scroll saw may lead to injury.
- **Foreign Objects:** Nails, staples, dirt, rocks and other foreign objects are often embedded in wood. While cutting, these objects can become dislodged and hit the operator, cause kickback, or break the blade, which might then fly apart. Always visually inspect your workpiece for these items. If they can't be removed, DO NOT cut the workpiece.
- **Large/Loose Knots:** Loose knots can become dislodged during the cutting operation. Large knots can cause kickback and machine damage. Choose workpieces that do not have large/loose knots or plan ahead to avoid cutting through them.
- **Wet or "Green" Stock:** Cutting wood with a moisture content over 20% causes unnecessary wear on the blades, increases the risk of kickback, yields poor results.
- **Excessive Warping:** Workpieces with excessive cupping, bowing, or twisting are dangerous to cut because they are unstable and often unpredictable when being cut. DO NOT use workpieces with these characteristics!
- **Minor Warping:** Workpieces with slight cupping can be safely supported if the cupped side faces the table. On the contrary, a workpiece supported on the bowed side will rock during a cut and could cause kickback or severe injury.



# Hold-Down Shoe & Blade Guard

The hold-down shoe and blade guard are mounted on the same rod and are adjusted together. The hold-down shoe keeps the workpiece from raising up from the force of the moving blade. The blade guard helps prevent debris from flying at the operator and acts as a barrier between the blade and the operator's hands, thus reducing the risk of accidental contact.

Item(s) Needed	Qty
Hex Wrench 4mm .....	1

To adjust hold-down shoe and blade guard, do these steps:

1. DISCONNECT MACHINE FROM POWER!
2. Loosen hold-down shoe height knob and shoe screw shown in Figure 17.
3. Adjust shoe so it is no more than 1/16" above workpiece.

*Note: When tilting table for your cutting operation, adjust shoe so it remains parallel with table.*

4. Lower blade guard over shoe.
5. Re-tighten hold-down height knob and shoe screw, then verify workpiece moves smoothly under shoe.

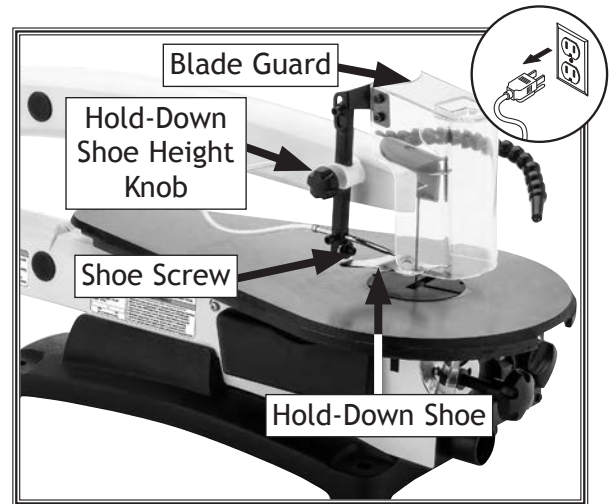


Figure 17. Hold-down shoe and blade guard assembly.



Figure 18. Example of making straight cut.

## Air Nozzle

The air nozzle blows air at the blade to keep wood debris away from the line of the cut. This makes it easier to follow your cutting lines with accuracy.

## Standard Scroll Cuts

For standard scroll cutting, follow the pattern line on the workpiece by pushing and turning the workpiece at the same time, which allows the kerf of the cut to make way for the turn.

DO NOT turn the workpiece without pushing it through the blade at the same time; otherwise, the blade could twist and break. See Figures 18-19 for examples of standard scroll cutting.

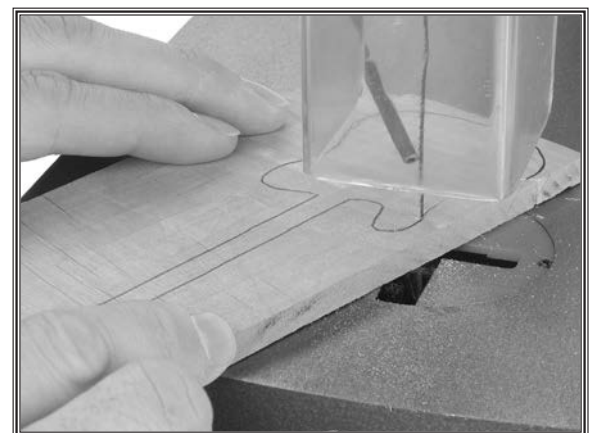


Figure 19. Example of making curved cut.

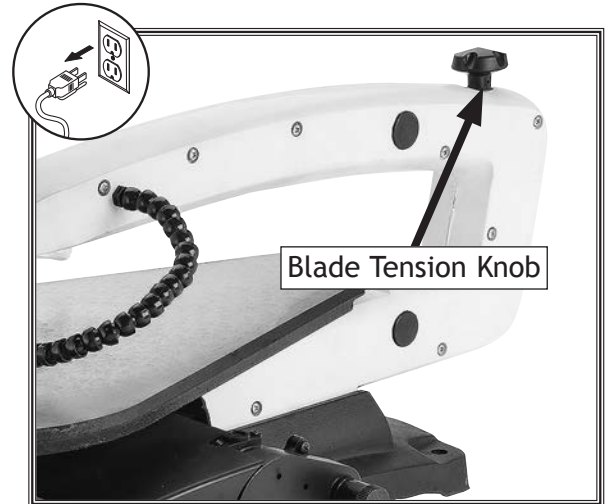
## Blade Tension

Adjust blade tension using the knob shown in **Figure 20**. Turn the blade tension knob clockwise to increase the blade tension and counterclockwise to decrease it.

If the blade is not tensioned enough, it will drift while cutting, making it difficult to follow your cutting lines. If the blade is tensioned too tightly, it can break or cause damage to the saw.

To check/adjust blade tension, do these steps:

1. DISCONNECT MACHINE FROM POWER!
2. Pivot blade guard up.
3. Pinch blade and move it side to side with light pressure to check tension. When properly tensioned, blade will deflect only slightly when moved, and ends will remain firmly in position.
4. Tighten/loosen blade as necessary and pivot blade guard down. Perform a test cut on a scrap piece of wood and repeat this entire procedure if further adjustments are necessary.



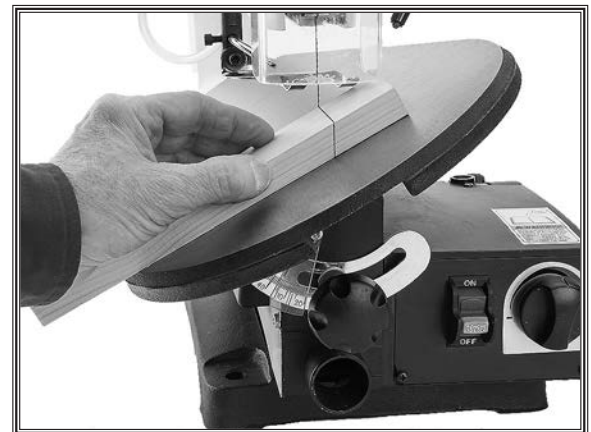
**Figure 20.** Location of blade tension knob.

## Bevel Cuts

Bevel cuts can be used for miters, cope joints, and making relief or recessed projects.

To make a bevel cut, do these steps:

1. Draw your pattern as described in the previous sections.
2. Adjust table to desired angle.
3. Turn machine **ON**, feed work piece slowly and evenly into blade, remembering not to force workpiece (see **Figure 21**).
4. Turn machine **OFF**, then wait until blade stops before removing waste near blade.



**Figure 21.** Example of making a bevel cut.



## Inside Cuts

Inside cuts can be easily made with your scroll saw by threading the blade through a hole drilled in the workpiece. The flex-shaft rotary tool on the W1870 can be used to assist with drilling.

To make an inside cut, do these steps:

1. Drill a 1/4" hole in the workpiece inside waste area of internal cut.
2. DISCONNECT MACHINE FROM POWER!
3. Remove blade from saw.
4. Insert blade through previously drilled hole in workpiece (see Figure 22).

**Note:** *If using a plain end blade, remove one blade adapter to allow the blade to be inserted through the workpiece, then re-install the adapter on the blade.*

5. Re-install blade.
6. Adjust hold-down shoe and guard, connect saw to power, then perform cut.
7. When finished, disconnect saw from power, remove blade from saw and workpiece, remove workpiece, then re-install blade on saw.

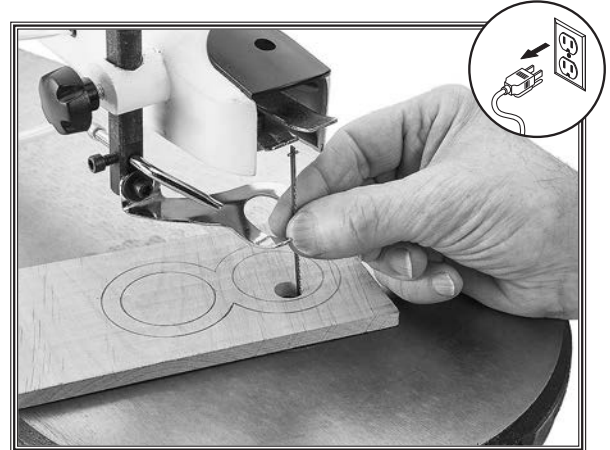


Figure 22. Example of installing blade for an inside cut.

## Blade Speed

The variable-speed dial shown in Figure 23 adjusts the blade speed between 550-1650 SPM (strokes per minute).

To reduce the risk of injury from unexpected fast speed at startup, always rotate the variable-speed dial to its slowest setting when starting/stopping the scroll saw.



Figure 23. Variable-speed dial.

## Blade Selection

Scroll saw blades are classified as either "pin-end" (mounting pins in the ends of the blade) or "plain end" (no pins). The blade included with your scroll saw is a "pin-end" blade. However, the W1870 can use "plain end" blades using the included adapters.

The typical format for blade identification is:

Teeth Per Inch	Width	Thickness	Strokes Per Minute	Workpiece Material
10 TPI	0.110"	0.020"	1200-1650	General purpose cutting. Hard and soft woods between $\frac{3}{16}$ "-2". Also good for plastics, paper, felt, and bone.
15 TPI	0.110"	0.020"	700-1200	Thin wood and plastic between $\frac{3}{32}$ "- $\frac{1}{2}$ ".
18 TPI	0.095"	0.010"	550-700	Tight radius cutting in thin hard and soft woods between $\frac{3}{32}$ "- $\frac{1}{8}$ ". Also good for thin pieces of bone, ivory, plastics and veneer.

Figure 24. Blade Identification.

**Note:** There may be other numbers or letters that have meaning for a particular type of blade. Always refer to the manufacturer's technical data for a complete explanation when choosing a scroll saw blade.

# Installing Pin-End Blades

The V-notches of the upper and lower blade holders are designed to hold pin-end blades (see Figure 25).

Item(s) Needed	Qty
Phillips Head Screwdriver .....	1

To install a pin-end blade, do these steps:

1. DISCONNECT MACHINE FROM POWER!
  2. Rotate blade tension knob counterclockwise to decrease blade tension.
  3. Position hold-down shoe at maximum height and swing blade guard up and out of way to give you working room.
  4. Remove table insert, then use Phillips head screwdriver to remove screws from lower arm guard shown in Figure 26.
  5. Push down on upper blade mounting arm shown in Figure 27, slide blade out of upper and lower mounting arms, then remove it.
  6. Slide saw blade through table hole so teeth face down and forward (See Figure 28).
  7. Position lower pin-ends underneath V-notch in lower blade holder, as shown in Figure 28.
- Note:** Wiggle the blade end back and forth with slight pressure to make sure the pins are seated in the indents of the mounting arm.
8. Push upper blade mounting arm down, then slide upper pin-ends onto V-notch of the blade holder, as shown in Figure 27.
  9. Replace table insert and arm guard.
  10. Tension blade.

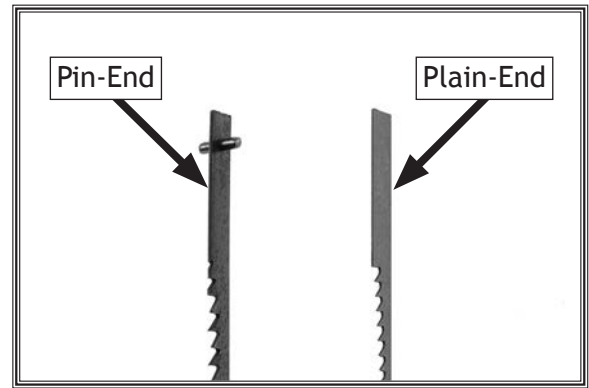


Figure 25. Pin-end and plain-end blade comparison.

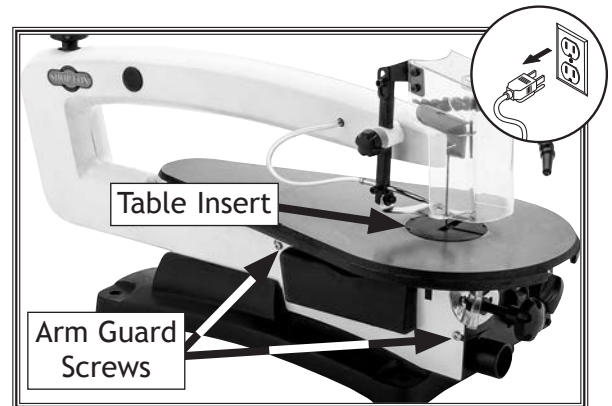


Figure 26. Table insert and arm guard.

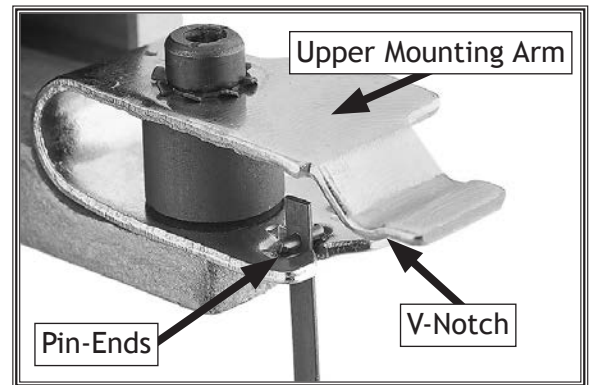


Figure 27. Upper blade mounting arm.

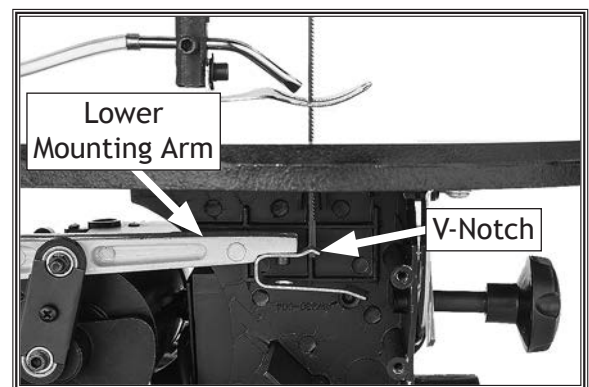


Figure 28. Lower blade mounting arm.

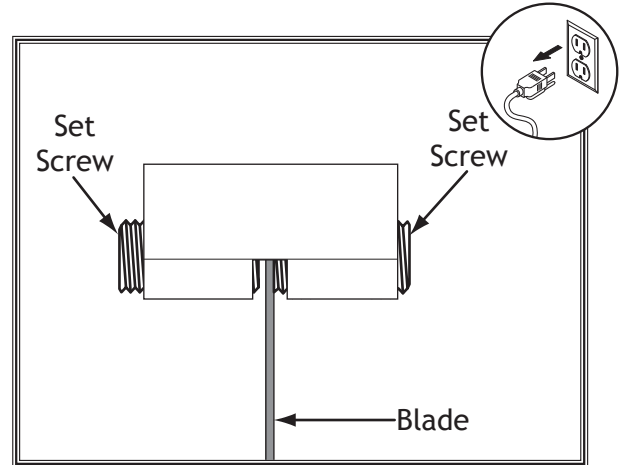
# Installing Plain-End Blades

The V-notches of the upper and lower blade holders are designed to hold pin-end blades. However, with the use of the blade adapters, plain-end blades (see **Figure 25** on **Page 25**) can be used with your scroll saw.

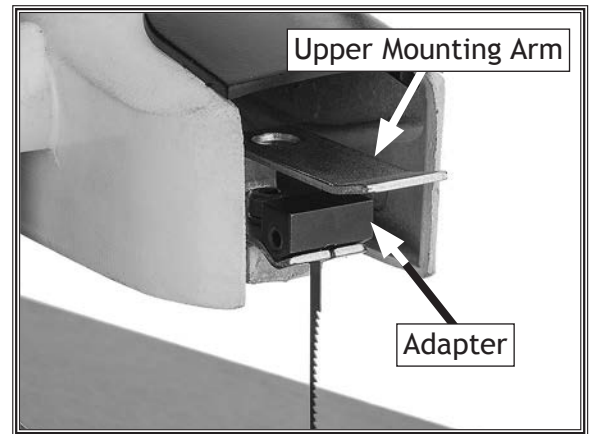
Item(s) Needed	Qty
Hex Wrench 2.5mm.....	1

To install a plain-end blade, do these steps:

1. DISCONNECT MACHINE FROM POWER!
2. Repeat Steps 1-5 on **Page 25**.
3. Loosen blade adapter set screws to allow saw blade ends to slide into adapters, as illustrated in **Figure 29**.
4. Thread one set screw in until it just makes contact with blade. Then tighten other set screw, as illustrated in **Figure 29**.
5. Place other blade adapter on opposite end. Tighten remaining adapter set screws to secure blade.
6. Slide one end of blade assembly through hold-down shoe, and place the adapter over the upper mounting arm (see **Figure 30**).
7. While holding the adapter, press it down and install the other adapter on the lower mounting arm (see **Figure 28** on **Page 25**).
8. Replace the table insert and arm guard, adjust the hold-down shoe, then tension the blade.



**Figure 29.** Plain-end blade inserted into blade adapter.

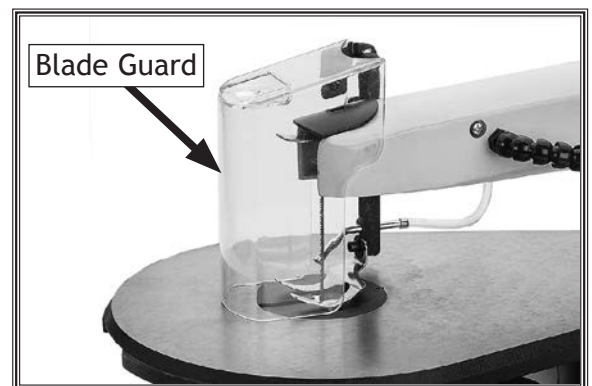


**Figure 30.** Adapter with plain-end blade installed on upper mounting arm.

## Flex-Shaft Tool

To operate flex-shaft rotary tool, do these steps:

1. Position guard so it covers hold-down shoe and touches table (See **Figure 31**).
2. Hold flex-shaft rotary tool, turn power **ON**, and select desired speed for operation using variable speed dial.
3. After completing work with flex-shaft rotary tool, remove it from machine and re-install flex-shaft cap.



**Figure 31.** Guard position.

# ACCESSORIES

## Scroll Saw Accessories

The following Scroll Saw accessories may be available through your local Woodstock International Inc. Dealer. If you do not have a dealer in your area, these products are also available through online dealers. Please call or e-mail Woodstock International Inc. Customer Service to get a current listing of dealers at: 1-800-840-8420 or at [sales@woodstockint.com](mailto:sales@woodstockint.com).

### D2056—Tool Table

Great for bench-top tools like scroll saws. Support cross braces on top provide incredible strength and capacity. Flared legs and adjustable rubber feet ensure stability and reduce machine vibration. Butcher block laminate table top measures 13" x 23" and is 30<sup>1</sup>/<sub>2</sub>" tall. Bottom measures 21" x 32". 700 lb. capacity.



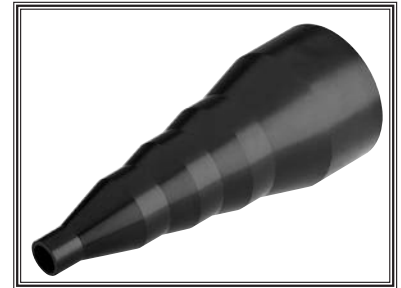
### D2675—Safety Glasses Metal Frame

A metal band across the top of these glasses are not only stylish, but it adds strength. This band is linked to the metal ear pieces through a tough hinge. These glasses have a wide field of view and side shields for added protection. Exceeds ANSI Z87.1 - 1989 standards for impact resistance.



### D4251—Universal Adapter

Reduce dust collection hose from 4" to 1" OD in 2<sup>3</sup>/<sub>4</sub>", 2<sup>3</sup>/<sub>8</sub>" and 1<sup>7</sup>/<sub>8</sub>" OD steps. Simply cut off what you don't need. Heavy wall thickness stands up to hose clamp pressure.



### W1844—Wall-Mount Dust Collector with Canister Filter

Equipped with a 1 HP motor that provides 537 CFM air suction through a 4" intake hole.



OPERATIONS

# MAINTENANCE

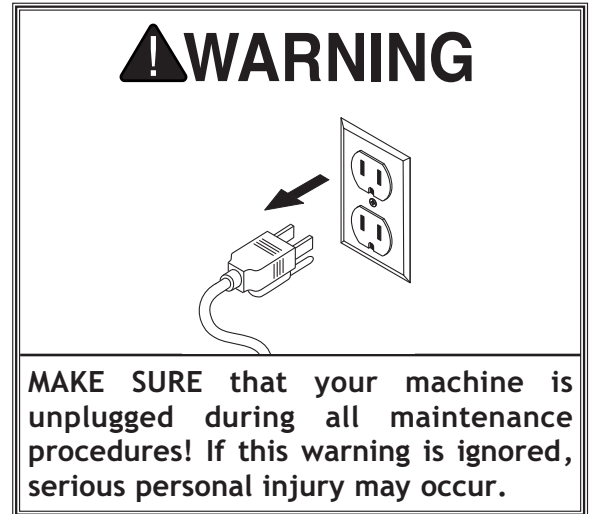
## General

For optimum performance from this machine, this maintenance schedule must be strictly followed.

### Ongoing

To maintain a low risk of injury and proper machine operation, if you ever observe any of the items below, shut down the machine immediately and fix the problem before continuing operations:

- Loose mounting bolts.
- Damaged saw blade.
- Worn or damaged wires.
- Any other unsafe condition.
- Oil bearings, see below.



## Cleaning & Protecting

Cleaning Model W1870 is relatively easy. Vacuum excess wood chips and sawdust, and wipe off remaining dust with a dry cloth. If any resin has built up, use a resin dissolving cleaner to remove it. Keep your table rust-free with regular applications of quality lubricants. If excessive sawdust accumulates around the motor, remove arm guard and remove sawdust with a vacuum.

## Lubrication

The upper and lower arms have two sleeve bearings each that require lubrication with SAE 30 oil after every 8 hours of machine use.

To lubricate sleeve bearings, do these steps:

1. DISCONNECT MACHINE FROM POWER!
2. Remove plastic caps to expose sleeve bearing ends (see Figure 32).
3. Lay saw flat on side, then apply generous amount of light machine oil to cups around bearing ends. Let oil seep into bearings for 1-2 hours.
4. Wipe off excess oil, turn saw over, and repeat Step 3 to remaining two bearings.
5. Replace plastic caps before beginning operation.

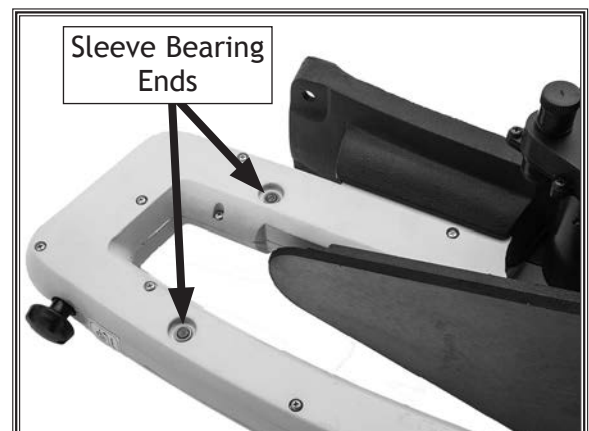


Figure 32. Plastic caps removed to expose sleeve bearing ends.



# SERVICE

## General

This section covers the most common service adjustments or procedures that may need to be made during the life of your machine.

If you require additional machine service not included in this section, please contact Woodstock International Technical Support at (360) 734-3482 or send e-mail to: [techsupport@woodstockint.com](mailto:techsupport@woodstockint.com).

## Calibrating Table Tilt

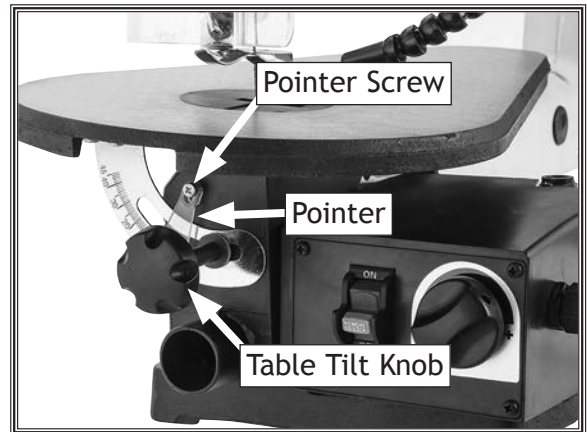
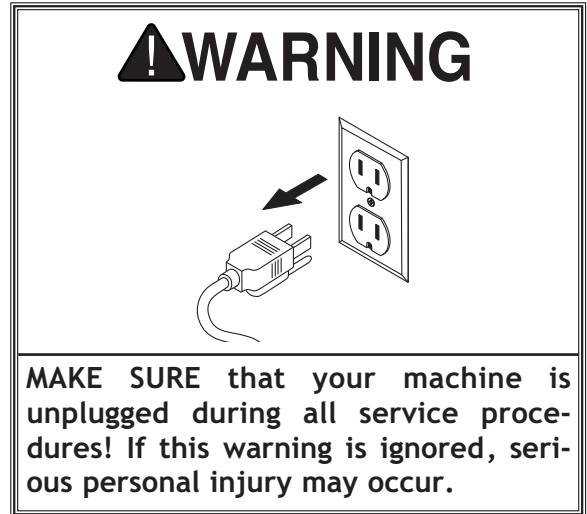
The table lock knob and tilt scale are used to tilt the table for horizontal angle cuts.

**Note:** *The table tilt scale is only an approximate scale and should not be used when precise angle measurements are required for the operation.*

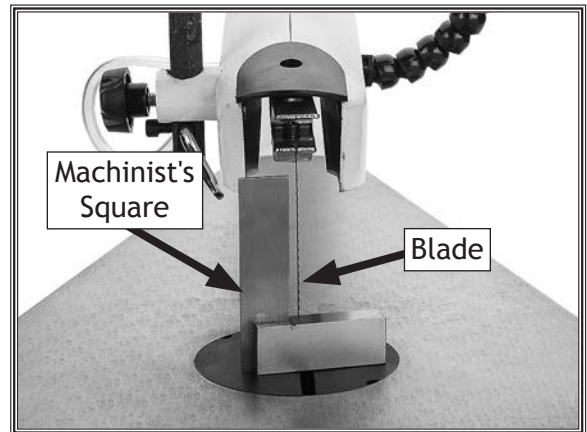
Item(s) Needed	Qty
Phillips Screwdriver #2 .....	1
Wrench 10mm .....	1
Machinist's Square 2" .....	1

To calibrate table tilt, do these steps:

1. DISCONNECT MACHINE FROM POWER!
2. Raise hold-down shoe to maximum height and lock it in place.
3. Loosen table tilt lock knob (see **Figure 33**).
4. Place machinist's square behind blade, as shown in **Figure 34**.
5. Adjust table to be square with blade, then tighten lock knob.
6. Loosen pointer screw, adjust tip to 0° mark on scale, then tighten screw to secure setting.



**Figure 33.** Components for calibrating table tilt.



**Figure 34.** Squaring table to blade.

SERVICE

# Replacing Fuse

The purpose of the fuse is to protect the motor and circuit board.

If the fuse blows, the light will turn ON but the motor will not start. You can verify if the fuse has blown or not by holding it up to the light and inspecting the element inside the glass (the element looks like a thin wire). If the fuse is blown the element will be broken in half.

<b>Item(s) Needed</b>	<b>Qty</b>
Fuse 5A 250V 0.18" Fast-Acting, Glass.....	1

To replace the fuse, do these steps:

1. DISCONNECT MACHINE FROM POWER!
2. Remove switch cover, slide circuit board partially out, remove fuse (see **Figure 35**), and install a new one.
3. Re-install circuit board and cover.

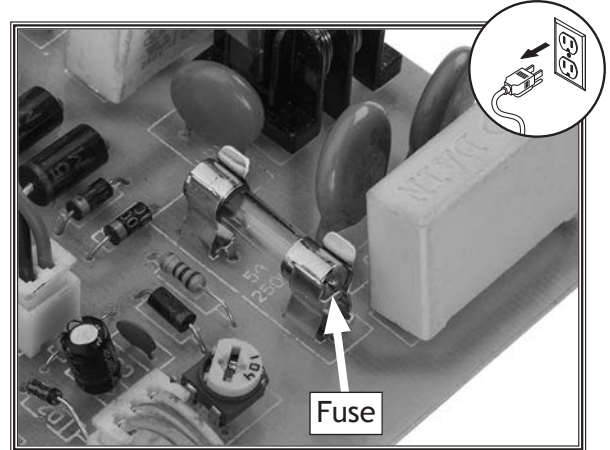


Figure 35. Fuse location on circuit board.

# Replacing Motor Brushes

The motor brushes wear with use. When they require replacement, the motor will stop operating correctly, fail to start, or cut in and out during operation. Always replace both brushes at the same time.

<b>Item(s) Needed</b>	<b>Qty</b>
Flat Head Screwdriver .....	1

To inspect/replace the motor brushes, do these steps:

1. DISCONNECT MACHINE FROM POWER!
2. Remove upper motor brush cap and motor brush, as shown in **Figure 36**, then install new brush and replace cap.
3. Turn machine on its side.
4. Remove lower brush cap and motor brush, accessing them through a hole in bottom of base (see **Figure 37**).
5. Replace brush assembly and secure with brush cap.

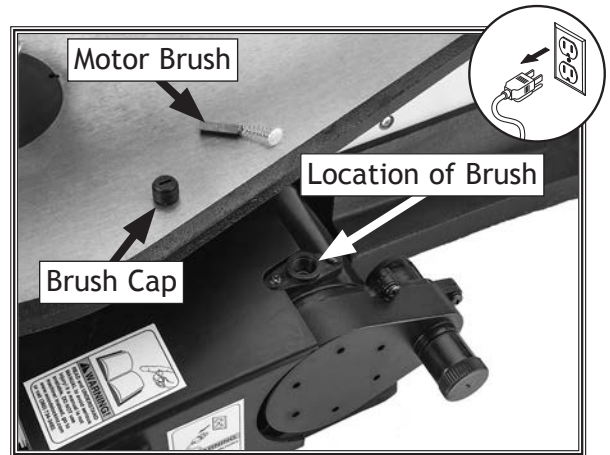


Figure 36. Upper motor brush location.

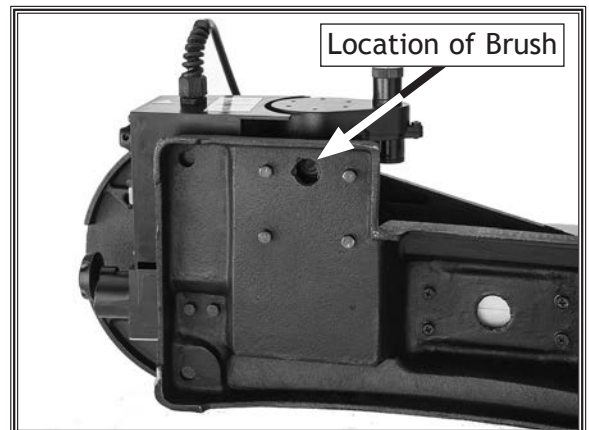


Figure 37. Lower motor brush location.

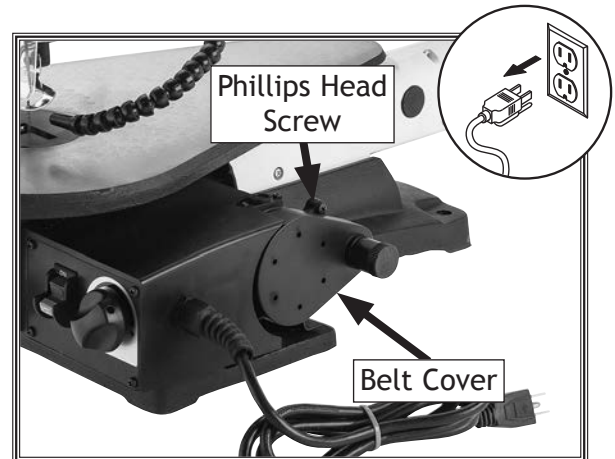


# Replacing Timing Belt

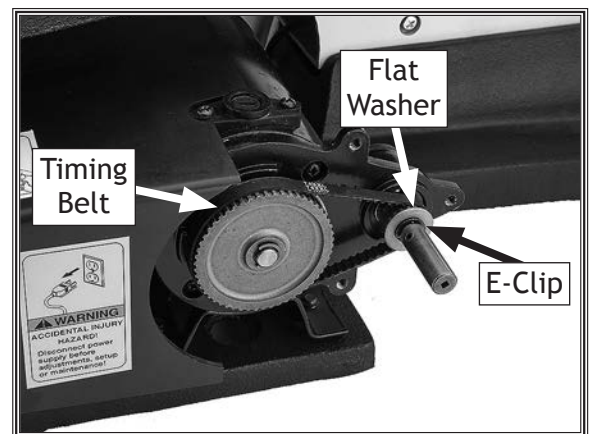
If you hear unusual sounds coming from the motor or notice that the flex-shaft rotary tool stops working, the timing belt may be broken. If this happens, it must be replaced before further operation to avoid damaging the motor pulley.

To replace timing belt, follow these steps:

1. DISCONNECT MACHINE FROM POWER!
2. Remove flex-shaft rotary tool, if installed.
3. Remove three screws that secure belt cover shown in **Figure 38**, then remove cover.
4. Remove E-clip and flat washer from drive shaft shown in **Figure 39**, remove timing belt from pulleys, then slide new timing belt onto pulleys.
5. Re-install belt cover with screws removed in **Step 3**, then re-install flex-shaft rotary tool.



**Figure 38.** Timing belt cover screw location.

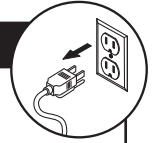


**Figure 39.** Timing belt and pulleys.

# Troubleshooting

The following troubleshooting tables cover common problems that may occur with this machine. If you need replacement parts or additional troubleshooting help, contact our Technical Support.

**Note:** Before contacting Tech Support, find the machine serial number and manufacture date, and if available, your original purchase receipt. This information is required to properly assist you.



PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Machine does not start, or power supply fuse/breaker trips immediately after startup.	<ol style="list-style-type: none"> <li>1. Variable-speed potentiometer at fault.</li> <li>2. Switch disabling key removed.</li> <li>3. Power supply circuit breaker tripped or fuse blown.</li> <li>4. Incorrect power supply voltage or circuit size.</li> <li>5. Circuit board at fault</li> <li>6. Motor at fault.</li> </ol>	<ol style="list-style-type: none"> <li>1. Test/repair if at fault.</li> <li>2. Install switch disabling key.</li> <li>3. Ensure circuit is sized correctly and free of shorts. Reset circuit breaker or replace fuse.</li> <li>4. Ensure correct power supply voltage and circuit size.</li> <li>5. Inspect/replace if at fault.</li> <li>6. Test/repair/replace.</li> </ol>
Machine stalls or is underpowered.	<ol style="list-style-type: none"> <li>1. Blown fuse.</li> <li>2. Incorrect workpiece material.</li> <li>3. Feed rate/cutting speed too fast.</li> <li>4. Machine undersized for task.</li> <li>5. Motor brushes at fault.</li> <li>6. Motor has overheated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace fuse/ensure no shorts.</li> <li>2. Inspect/replace if wrong material.</li> <li>3. Decrease feed rate/cutting speed.</li> <li>4. Use correct blade/reduce feed rate or depth of cut.</li> <li>5. Remove/replace brushes (refer to <b>Page 30</b>).</li> <li>6. Let motor cool; reduce workload.</li> </ol>
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> <li>1. Motor or component loose.</li> <li>2. Blade at fault.</li> <li>3. Incorrectly mounted to workbench.</li> <li>4. Motor mount loose/broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace damaged or missing bolts/nuts or tighten if loose.</li> <li>2. Replace warped/bent blade.</li> <li>3. Tighten mounting hardware (refer to <b>Page 14</b>).</li> <li>4. Tighten/replace.</li> </ol>
Blade will not stay on layout line.	<ol style="list-style-type: none"> <li>1. Blade not tensioned correctly.</li> <li>2. Too much pressure applied to workpiece.</li> <li>3. Blade holders not aligned correctly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Properly tension blade (refer to <b>Page 22</b>).</li> <li>2. Reduce feed rate and pressure on workpiece.</li> <li>3. Re-adjust blade holders so they are aligned in a straight line with saw.</li> </ol>
Excessive blade breakage.	<ol style="list-style-type: none"> <li>1. Blade not tensioned correctly.</li> <li>2. Not using relief cuts when cutting tight curves; twisting blade.</li> <li>3. Wrong blade for operation.</li> <li>4. Too much pressure on blade.</li> <li>5. Incorrect blade for cutting task.</li> </ol>	<ol style="list-style-type: none"> <li>1. Properly tension blade (refer to <b>Page 22</b>).</li> <li>2. Use more relief cuts for tight turns; reduce feed rate; do not twist blade—allow blade to do the work.</li> <li>3. Refer to the <b>Blade Selection Chart</b> on <b>Page 24</b> and use correct blade for operation.</li> <li>4. Reduce pressure on workpiece as it passes through blade.</li> <li>5. Select correct blade for task.</li> </ol>

# Electrical Safety Instructions

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Compare the manufacture date of your machine to the one stated in this manual, and study this section carefully.

If there are differences between your machine and what is shown in this section, call Technical Support at (360) 734-3482 for assistance BEFORE making any changes to the wiring on your machine. An updated wiring diagram may be available. **Note:** Please gather the serial number and manufacture date of your machine before calling. This information can be found on the main machine label.

## WARNING

**SHOCK HAZARD.** Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

**QUALIFIED ELECTRICIAN.** Due to the inherent hazards of electricity, only a qualified electrician should perform wiring tasks on this machine. If you are not a qualified electrician, get help from one before attempting any kind of wiring job.

**WIRE CONNECTIONS.** All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

**WIRE/COMPONENT DAMAGE.** Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components before completing the task.

**MODIFICATIONS.** Using aftermarket parts or modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire.

**MOTOR WIRING.** The motor wiring shown in these diagrams is current at the time of printing, but it may not match your machine. Always use the wiring diagram inside the motor junction box.

**CAPACITORS/INVERTERS.** Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

**CIRCUIT REQUIREMENTS.** You MUST follow the requirements at the beginning of this manual when connecting your machine to a power source.

**EXPERIENCING DIFFICULTIES.** If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (360) 734-3482.

### NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at [www.shopfox.biz](http://www.shopfox.biz).

### WIRING DIAGRAM COLOR KEY

BLACK	BLUE	YELLOW	LIGHT BLUE
WHITE	BROWN	YELLOW GREEN	BLUE WHITE
GREEN	GRAY	PURPLE	TURQUOISE
RED	ORANGE	PINK	

SERVICE

# Electrical Components

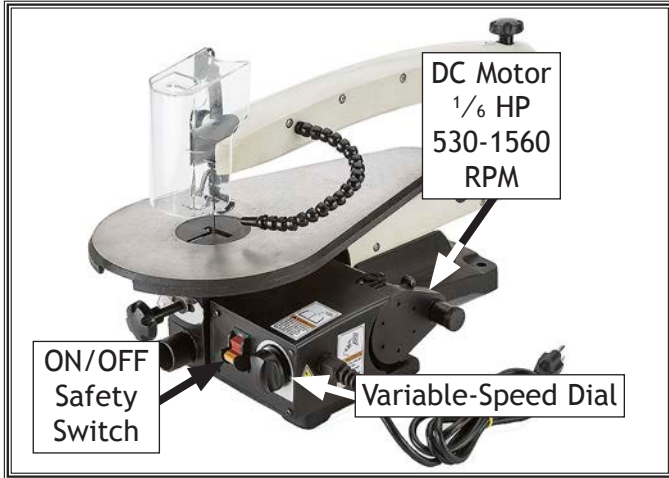


Figure 40. Location of electrical components.

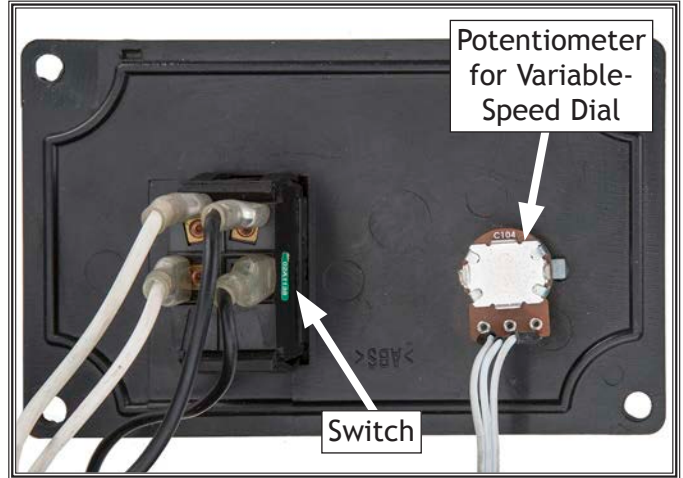


Figure 42. Back of switch plate.

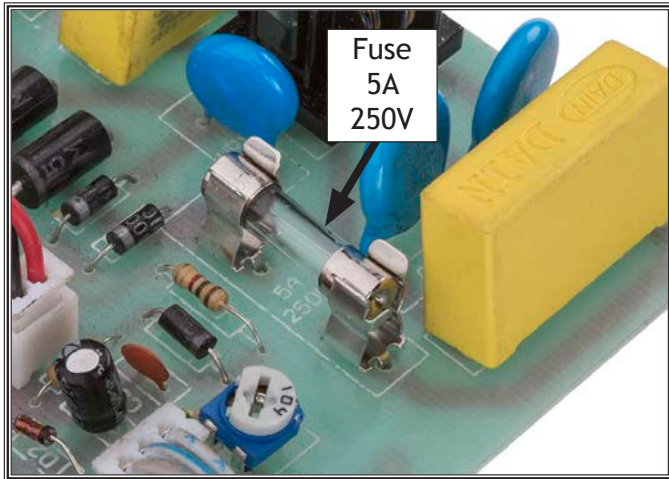


Figure 41. Fuse.

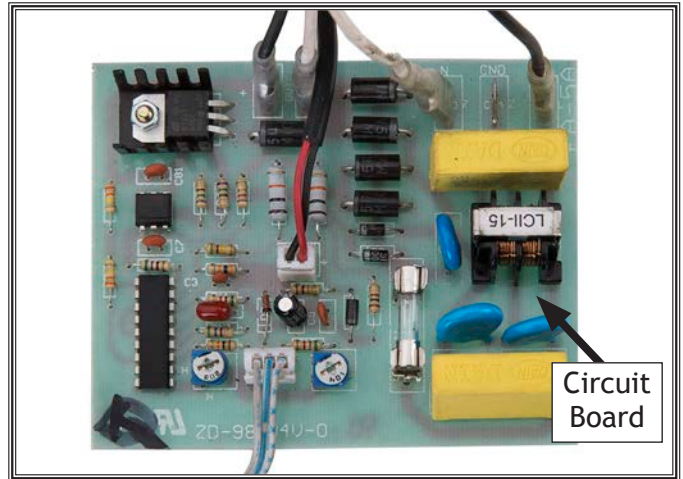


Figure 43. Electrical connections.

# Wiring Diagram

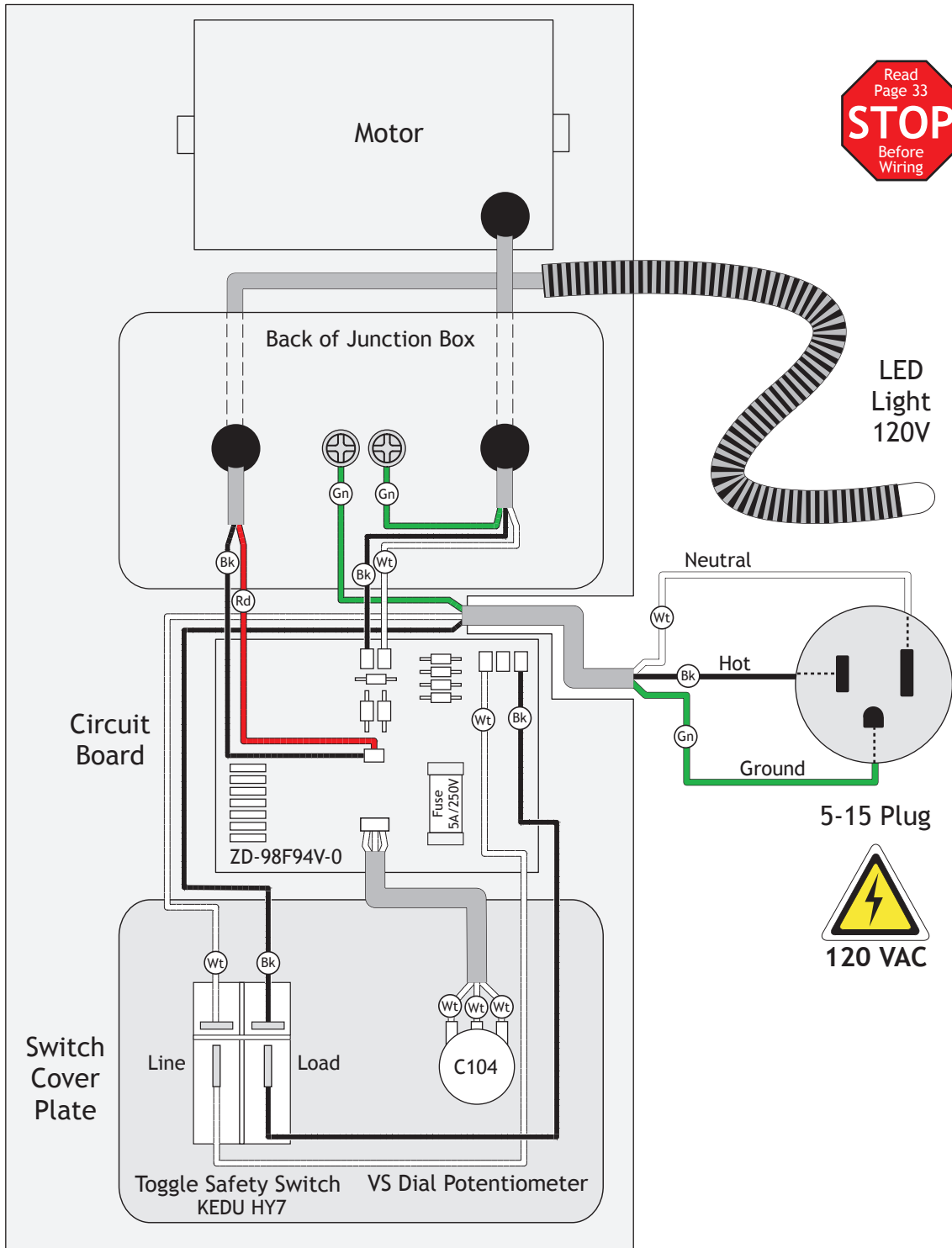


**WARNING!**  
SHOCK HAZARD!  
Disconnect power  
before working on  
wiring.



**NOTICE**

This motor wiring diagram is current at the time of printing; however, always use the diagram on the inside of the junction box cover when rewiring your motor!

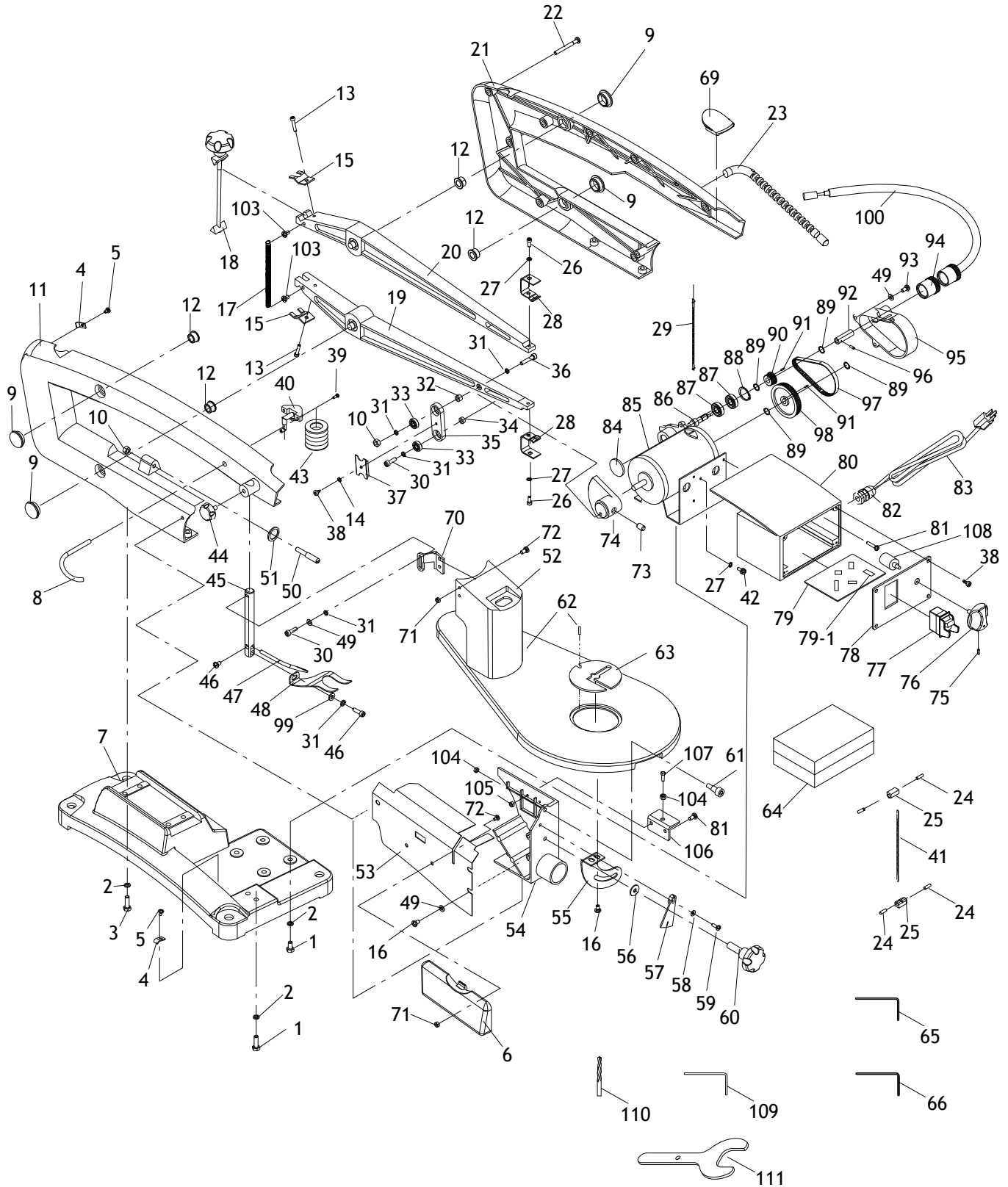


SERVICE



# PARTS

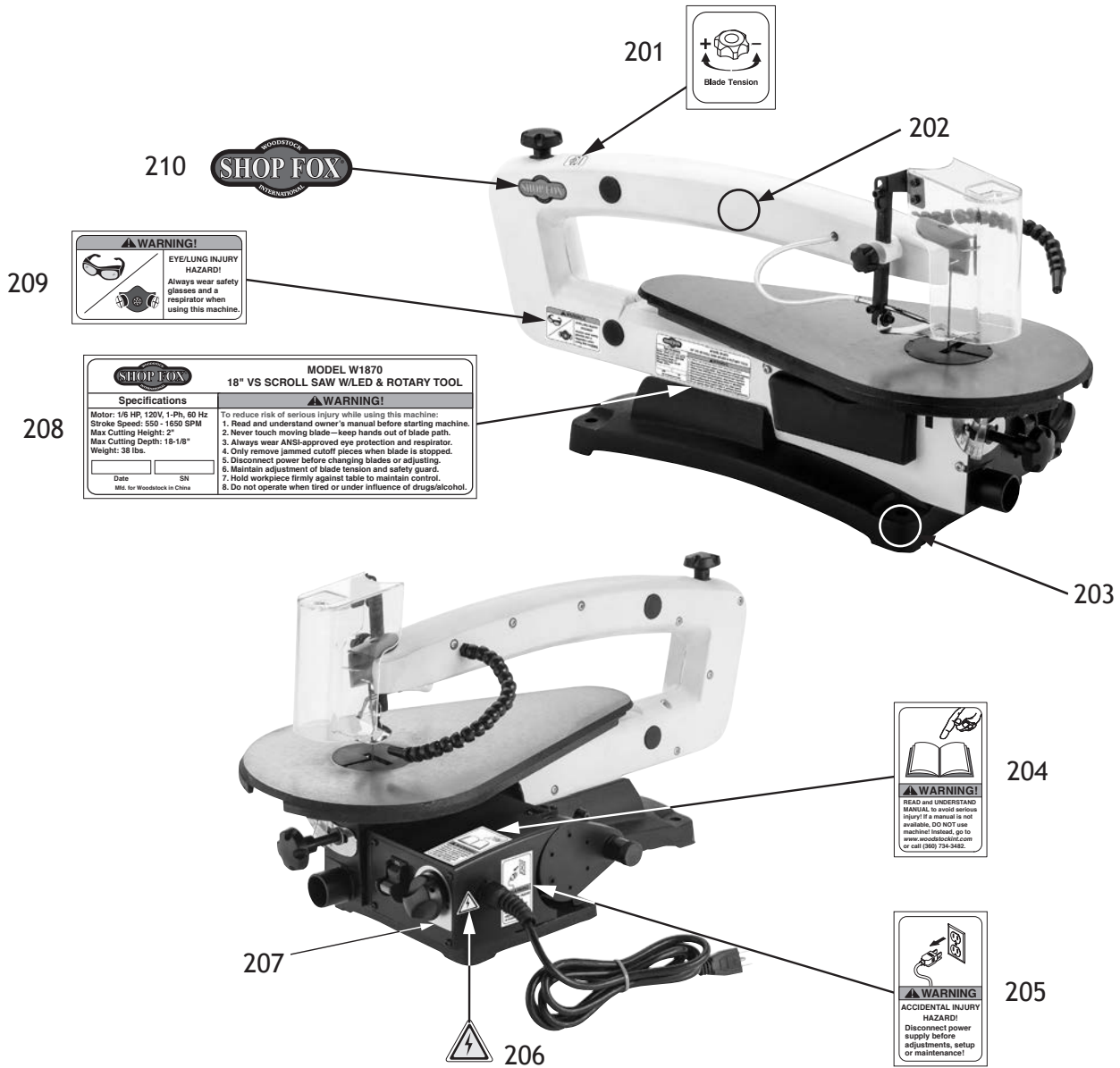
## Main



# Main Parts List

REF	PART #	DESCRIPTION	REF	PART #	DESCRIPTION
1	X1870001	HEX BOLT M6-1 X 20	55	X1870055	SCALE
2	X1870002	FLAT WASHER 6MM	56	X1870056	FENDER WASHER 6MM
3	X1870003	HEX BOLT M6-1 X 25	57	X1870057	POINTER
4	X1870004	CORD CLAMP PLATE	58	X1870058	FLAT WASHER 4MM
5	X1870005	PHLP HD SCR M4-.7 X 6	59	X1870059	PHLP HD SCR M4-.7 X 12
6	X1870006	STORAGE COMPARTMENT	60	X1870060	KNOB BOLT M6-1 X 13, D44, 5-LOBE
7	X1870007	BASE	61	X1870061	SHOULDER SCREW M6-1 X 11, 8 X 11
8	X1870008	AIR HOSE 6 X 216MM CLEAR	62	X1870062	TABLE W/ROLL PIN 3 X 8MM
9	X1870009	DUST CAP	63	X1870063	TABLE INSERT
10	X1870010	HEX NUT M5-.8	64	X1870064	ACCESSORY TOOL KIT
11	X1870011	LEFT ARM HOUSING	65	X1870065	HEX WRENCH 2.5MM
12	X1870012	OIL SLEEVE BEARING	66	X1870066	HEX WRENCH 4MM
13	X1870013	PHLP HD SCR M4-.7 X 10	69	X1870069	HOUSING COVER
14	X1870014	FLAT WASHER 4MM	70	X1870070	BLADE GUARD CONNECTION PLATE
15	X1870015	PRESSURE PLATE	71	X1870071	HEX NUT M4-.7
16	X1870016	PHLP HD SCR M5-.8 X 8	72	X1870072	PHLP HD SCR M4-.7 X 8
17	X1870017	ARM SPRING	73	X1870073	SET SCREW M8-1.25 X 12
18	X1870018	TENSION BOLT ASSEMBLY	74	X1870074	ECCENTRIC COUNTERWEIGHT
19	X1870019	LOWER ARM ASSEMBLY	75	X1870075	SET SCREW M5-.8 X 6
20	X1870020	UPPER ARM ASSEMBLY	76	X1870076	VARIABLE-SPEED DIAL
21	X1870021	RIGHT ARM HOUSING	77	X1870077	TOGGLE SWITCH KEDU HY7
22	X1870022	PHLP HD SCR M5-.8 X 50	78	X1870078	SWITCH COVER
23	X1870023	LAMP ASSEMBLY	79	X1870079	CIRCUIT BOARD
24	X1870024	SET SCREW M5-.8 X 8	79-1	X1870079-1	FUSE 5A 250V 0.18" FAST-ACTING, GLASS
25	X1870025	BLADE ADAPTER	80	X1870080	JUNCTION BOX
26	X1870026	CAP SCREW M4-.7 X 10	81	X1870081	PHLP HD SCR M4-.7 X 10
27	X1870027	EXT TOOTH WASHER 4MM	82	X1870082	STRAIN RELIEF TYPE-3 M16-1.5
28	X1870028	BLADE SUPPORT	83	X1870083	POWER CORD 18G 3W 72" 5-15P
29	X1870029	BLADE (PIN-END) 15T	84	X1870084	DUST COVER
30	X1870030	CAP SCREW M5-.8 X 16	85	X1870085	MOTOR 1/6HP 120VDC
31	X1870031	FLAT WASHER 5MM	86	X1870086	SHAFT
32	X1870032	UPPER SPACER 6 X 9.5MM	87	X1870087	BALL BEARING 608-2RS
33	X1870033	BALL BEARING 625ZZ	88	X1870088	EXT RETAINING RING 22MM
34	X1870034	LOWER SPACER 4 X 9.5MM	89	X1870089	E-CLIP 6MM
35	X1870035	ECCENTRIC CONNECTOR	90	X1870090	DRIVEN PULLEY
36	X1870036	CAP SCREW M5-.8 X 30	91	X1870091	KEY 3 X 3 X 8
37	X1870037	ECCENTRIC CONNECTOR PLATE	92	X1870092	COUPLING
38	X1870038	TAP SCREW 4.2 X 9.5	93	X1870093	PHLP HD SCR M5-.8 X 12
39	X1870039	PHLP HD SCR M3-.5 X 10	94	X1870094	SHAFT GUARD
40	X1870040	BELLOWS CONNECTOR PLATE	95	X1870095	PULLEY COVER
41	X1870041	BLADE (PLAIN-END) 18T	96	X1870096	ROLL PIN 3 X 8MM
42	X1870042	PHLP HD SCR M4-.7 X 8 W/WASHER	97	X1870097	TIMING BELT 74XXL 234.95 X 5MM
43	X1870043	BELLOWS	98	X1870098	DRIVING PULLEY
44	X1870044	KNOB BOLT M6-1 X 10, D27, 4-LOBE	99	X1870099	FENDER WASHER 5MM
45	X1870045	HOLD-DOWN SHOE ROD	100	X1870100	FLEXIBLE SHAFT
46	X1870046	CAP SCREW M5-.8 X 10	103	X1870103	PHLP HD SCR M4-.7 X 12
47	X1870047	AIR NOZZLE 5.2 X 73MM	104	X1870104	HEX NUT M6-1
48	X1870048	HOLD-DOWN SHOE	105	X1870105	LOCK NUT M4-.7
49	X1870049	FLAT WASHER 5MM	106	X1870106	SUPPORT BRACKET
50	X1870050	SHOULDER SCREW M5-.8 X 23, 8 X 25	107	X1870107	HEX BOLT M6-1 X 20
51	X1870051	FLAT WASHER 8MM	108	X1870108	POTENTIOMETER C104 50V
52	X1870052	BLADE GUARD	109	X1870109	COLLET LOCKING PIN 3MM
53	X1870053	SIDE COVER	110	X1870110	DRILL BIT 1/8
54	X1870054	FRONT HOUSING W/DUST PORT	111	X1870111	COLLET CHUCK WRENCH 9.5MM

# Labels & Cosmetics



REF	PART #	DESCRIPTION
201	X1870201	BLADE TENSION KNOB LABEL
202	X1870202	TOUCH-UP PAINT, SHOP FOX WHITE
203	X1870203	TOUCH-UP PAINT, SHOP FOX BLACK
204	X1870204	READ MANUAL LABEL
205	X1870205	DISCONNECT POWER LABEL

REF	PART #	DESCRIPTION
206	X1870206	ELECTRICITY LABEL
207	X1870207	VARIABLE-SPEED DIAL LABEL
208	X1870208	MACHINE ID LABEL
209	X1870209	RESPIRATOR/GLASSES LABEL
210	X1870210	SHOP FOX LOGO

## WARNING

Safety labels warn about machine hazards and how to prevent serious personal injury. The owner of this machine **MUST** maintain the original location and readability of all labels on this machine. If any label is removed or becomes unreadable, **REPLACE** that label before allowing machine to be operated again. Contact us at (360) 734-3482 or [www.woodstockint.com](http://www.woodstockint.com) to order new labels.





# Warranty Registration

Name \_\_\_\_\_  
 Street \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone # \_\_\_\_\_ Email \_\_\_\_\_ Invoice # \_\_\_\_\_  
 Model # \_\_\_\_\_ Serial # \_\_\_\_\_ Dealer Name \_\_\_\_\_ Purchase Date \_\_\_\_\_

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. Of course, all information is strictly confidential.

- How did you learn about us?
 

<input type="checkbox"/> Advertisement	<input type="checkbox"/> Friend	<input type="checkbox"/> Local Store
<input type="checkbox"/> Mail Order Catalog	<input type="checkbox"/> Website	<input type="checkbox"/> Other:
- How long have you been a woodworker/metalworker?
 

<input type="checkbox"/> 0-2 Years	<input type="checkbox"/> 2-8 Years	<input type="checkbox"/> 8-20 Years	<input type="checkbox"/> 20+ Years
------------------------------------	------------------------------------	-------------------------------------	------------------------------------
- How many of your machines or tools are Shop Fox?
 

<input type="checkbox"/> 0-2	<input type="checkbox"/> 3-5	<input type="checkbox"/> 6-9	<input type="checkbox"/> 10+
------------------------------	------------------------------	------------------------------	------------------------------
- Do you think your machine represents a good value?  Yes  No
- Would you recommend Shop Fox products to a friend?  Yes  No
- What is your age group?
 

<input type="checkbox"/> 20-29	<input type="checkbox"/> 30-39	<input type="checkbox"/> 40-49
<input type="checkbox"/> 50-59	<input type="checkbox"/> 60-69	<input type="checkbox"/> 70+
- What is your annual household income?
 

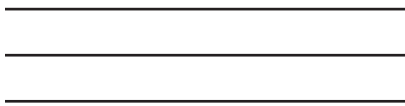
<input type="checkbox"/> \$20,000-\$29,000	<input type="checkbox"/> \$30,000-\$39,000	<input type="checkbox"/> \$40,000-\$49,000
<input type="checkbox"/> \$50,000-\$59,000	<input type="checkbox"/> \$60,000-\$69,000	<input type="checkbox"/> \$70,000+
- Which of the following magazines do you subscribe to?
 

<input type="checkbox"/> Cabinet Maker	<input type="checkbox"/> Popular Mechanics	<input type="checkbox"/> Today's Homeowner
<input type="checkbox"/> Family Handyman	<input type="checkbox"/> Popular Science	<input type="checkbox"/> Wood
<input type="checkbox"/> Hand Loader	<input type="checkbox"/> Popular Woodworking	<input type="checkbox"/> Wooden Boat
<input type="checkbox"/> Handy	<input type="checkbox"/> Practical Homeowner	<input type="checkbox"/> Woodshop News
<input type="checkbox"/> Home Shop Machinist	<input type="checkbox"/> Precision Shooter	<input type="checkbox"/> Woodsmith
<input type="checkbox"/> Journal of Light Cont.	<input type="checkbox"/> Projects in Metal	<input type="checkbox"/> Woodwork
<input type="checkbox"/> Live Steam	<input type="checkbox"/> RC Modeler	<input type="checkbox"/> Woodworker West
<input type="checkbox"/> Model Airplane News	<input type="checkbox"/> Rifle	<input type="checkbox"/> Woodworker's Journal
<input type="checkbox"/> Modeltec	<input type="checkbox"/> Shop Notes	<input type="checkbox"/> Other:
<input type="checkbox"/> Old House Journal	<input type="checkbox"/> Shotgun News	

9. Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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# WARRANTY

Woodstock International, Inc. warrants all Shop Fox machinery to be free of defects from workmanship and materials for a period of two years from the date of original purchase by the original owner. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, lack of maintenance, or reimbursement of third party expenses incurred.

Woodstock International, Inc. will repair, replace, or arrange for a dealer refund, at its expense and option, the Shop Fox machine or machine part proven to be defective for its designed and intended use, provided that the original owner returns the product prepaid to an authorized warranty or repair facility as designated by our Bellingham, Washington office with proof of their purchase of the product within two years, and provides Woodstock International, Inc. reasonable opportunity to verify the alleged defect through inspection. If it is determined there is no defect, or that the defect resulted from causes not within the scope of Woodstock International Inc.'s warranty, then the original owner must bear the cost of storing and returning the product.

This is Woodstock International, Inc.'s sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant that Shop Fox machinery complies with the provisions of any law, acts or electrical codes. We do not reimburse for third party repairs. In no event shall Woodstock International, Inc.'s liability under this limited warranty exceed the purchase price paid for the product, and any legal actions brought against Woodstock International, Inc. shall be tried in the State of Washington, County of Whatcom. We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages arising from the use of our products.

Every effort has been made to ensure that all Shop Fox machinery meets high quality and durability standards. We are committed to continuously improving the quality of our products, and reserve the right to change specifications at any time.



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