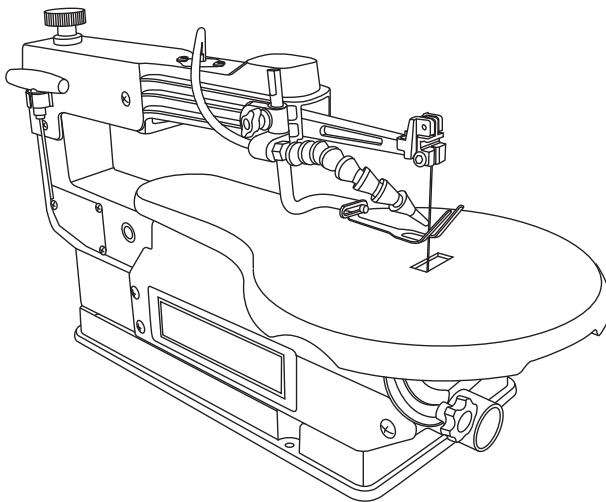


Operator's Manual



16 in. VARIABLE SPEED SCROLL SAW Model No. 137.216020



C US

CAUTION:

Before using this Scroll Saw, read this manual and follow all its Safety Rules and Operating Instructions

- Safety Instructions
- Installation
- Operation
- Maintenance
- Parts List

**Customer Help Line
For Technical Support
1-800-843-1682**

**Sears Parts &
Repair Center
1-800-488-1222**

Sears, Roebuck and Co., Hoffman Estates, IL 60179 USA

Visit our Craftsman website: www.sears.com/craftsman

Part No. 137216020001

Printed in China

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WARRANTY

CRAFTSMAN ONE YEAR FULL WARRANTY

If this Craftsman tool fails due to a defect in material or workmanship within one year from the date of purchase, call 1-800-4-MY-HOME[®] to arrange for free repair (or replacement if repair proves impossible).

This warranty applies for only 90 days from the date of purchase if this product is ever used for commercial or rental purposes.

This warranty does not include expendable parts, such as lamps, batteries, bits or blades.

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

Sears, Roebuck and Co., Hoffman Estates, IL 60179

WARNING

Some dust created by using power tools contains chemicals known to the state of California to cause cancer and 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 dust masks that are specially designed to filter out microscopic particles.

PRODUCT SPECIFICATIONS

MOTOR

Power Source	1.6 A, 120 V AC, 60 Hz
Speed Control.....	Electric

TABLE

Tilt.....	45° Left
-----------	----------

SAWDUST BLOWER.....	Yes
---------------------	-----

BLADE

Speed.....	400~1600 SPM
Type.....	Pin-end or Plain-end
Length.....	5 in.
Depth of Throat.....	16 in.
Blade Stroke.....	3/4 in.
Depth of 45° Cut.....	1 in.
Depth of 90° Cut.....	2 in.

WARNING

To avoid electrical hazards, fire hazards or damage to the tool, use proper circuit protection.

This tool is wired at the factory for 110-120 Volt operation. It must be connected to a 110-120 Volt / 15 Ampere time delay fuse or circuit breaker. To avoid shock or fire, replace power cord immediately if it is worn, cut or damaged in any way.

Before using your tool, it is critical that you read and understand these safety rules. Failure to follow these rules could result in serious injury to you or damage to the tool.

SYMBOLS

WARNING ICONS

Your power tool and its Operator's Manual may contain "WARNING ICONS" (a picture symbol intended to alert you to, and/or instruct you how to avoid, a potentially hazardous condition). Understanding and heeding these symbols will help you operate your tool better and safer. Shown below are some of the symbols you may see.



SAFETY ALERT: Precautions that involve your safety.



PROHIBITION



WEAR EYE PROTECTION: Always wear safety goggles or safety glasses with side shields.



READ AND UNDERSTAND OPERATOR'S MANUAL: To reduce the risk of injury, user and all bystanders must read and understand operator's manual before using this product.



KEEP HANDS AWAY FROM BLADE: Failure to keep your hands away from the blade will result in serious personal injury.



SUPPORT AND CLAMP WORK



DANGER: indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING: indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION: indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



CAUTION: used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.


POWER TOOL SAFETY

GENERAL SAFETY INSTRUCTIONS BEFORE USING THIS POWER TOOL

Safety is a combination of common sense, staying alert and knowing how to use your power tool.

WARNING

To avoid mistakes that could cause serious injury, do not plug the tool in until you have read and understood the following.

-  **1. READ** and become familiar with the entire Operator's Manual. **LEARN** the tool's application, limitations and possible hazards.
- 2. KEEP GUARDS IN PLACE** and in working order.
- 3. REMOVE ADJUSTING KEYS AND WRENCHES.** Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning ON.
- 4. KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- 5. DO NOT USE IN DANGEROUS ENVIRONMENTS.** Do not use power tools in damp locations, or expose them to rain or snow. Keep work area well lit.
- 6. KEEP CHILDREN AWAY.** All visitors and bystanders should be kept a safe distance from work area.
- 7. MAKE WORKSHOP CHILD PROOF** with padlocks, master switches or by removing starter keys.
- 8. DO NOT FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.
- 9. USE THE RIGHT TOOL.** Do not force the tool or an attachment to do a job for which it was not designed.
- 10. USE PROPER EXTENSION CORDS.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will result in a drop in line voltage and in loss of power which will cause the tool to overheat. The table on page 11 shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

11. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

12. **ALWAYS WEAR EYE**



PROTECTION. Any power tool can throw foreign objects into the eyes and could cause permanent eye damage. **ALWAYS** wear Safety Goggles (not glasses) that comply with ANSI Safety standard Z87.1. Everyday eyeglasses have only impact-resistant lenses. They **ARE NOT** safety glasses. Safety Goggles are available at Sears. **NOTE:** Glasses or goggles not in compliance with ANSI Z87.1 could seriously injure you when they break.

13. **WEAR A FACE MASK OR DUST MASK.** Sawing operation produces dust.

14. **SECURE WORK.** Use clamps or a vise to hold work when practical. It is safer than using your hand and it frees both hands to operate the tool.




15. **DISCONNECT TOOLS FROM POWER SOURCE** before servicing, and when changing accessories such as blades, bits and cutters.

16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in the OFF position before plugging the tool in.

17. **USE RECOMMENDED ACCESSORIES.** Consult this Operator's Manual for recommended accessories. The use of improper accessories may cause risk of injury to yourself or others.

18. **NEVER STAND ON THE TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.

19. **CHECK FOR 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.

20. **NEVER LEAVE THE TOOL RUNNING UNATTENDED. TURN THE POWER “OFF”.** Do not walk away from a running tool until the blade comes to a complete stop and the tool is unplugged from the power source.
21. **DO NOT OVERREACH.** Keep proper footing and balance at all times.
22. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
23. **WARNING:** Dust generated from certain materials can be hazardous to your health. Always operate saw in well-ventilated area and provide for proper dust removal.
24.  **DANGER** People with electronic devices, such as pacemakers, should consult their physician(s) before using this product. Operation of electrical equipment in close proximity to a heart pacemaker could cause interference or failure of the pacemaker.

SCROLL SAW SAFETY

1. **READ AND UNDERSTAND** all safety instructions and operating procedures throughout the manual.
2. **DO NOT OPERATE** the Scroll Saw until it is completely assembled and installed according to the instructions.
3. **SHOULD** any part of Scroll Saw be missing, damaged, or fail in any way, or any electrical component fail to perform properly, shut off the switch and remove the plug from the power supply outlet. Replace missing, damaged, or failed parts before resuming operation.
4. **IF YOU ARE NOT** thoroughly familiar with the operation of a Scroll Saw, obtain advice from your supervisor, instructor or other qualified person.
5. **SERIOUS INJURY** could occur if the tool tips over or you accidentally hit the cutting tool. Do not store anything above or near the tool.
6. **AVOID INJURY** from unexpected saw movement. Place the saw on a firm level surface where the saw does not rock and bolt or clamp the saw to its support.
7. **YOUR SCROLL SAW MUST BE SECURELY FASTENED** to a stand or workbench. If there is any tendency for the stand or workbench to move during operation, the stand or workbench **MUST** be fastened to the floor.
8. **THIS SCROLL SAW** is intended for indoor use only.
9. **TENSION BLADE PROPERLY** before starting the saw. Recheck and adjust tension as needed.
10. **BLADE TEETH MUST POINT** downward toward the table.
11. **TABLE MUST BE CLEARED** of all debris before operating saw. Do not perform lay out, set up or assemble work on the table when the saw is in operation.
12. **TO PREVENT INJURIES**, avoid awkward hand or finger positions, where a sudden slip could cause a hand to move into the blade when operating the saw.
13. **HOLD WORKPIECE FIRMLY** against the table top.
14. **NEVER CUT MATERIAL** that is too small to be held safely.
15. **DO NOT USE** dull or bent blades.

16. **TURN THE SAW OFF AND UNPLUG THE CORD** if the blade binds in the saw kerf while being backed out of the workpiece, usually caused by sawdust clogging the kerf. If this happens, turn off the scroll saw and unplug the power cord. Wedge open the kerf and back the blade out of the workpiece.
17. **DO NOT** feed the material too fast while cutting. Only feed the workpiece at the rate the saw will cut.
18. **TURN THE POWER OFF**, remove the switch key and make sure the scroll saw comes to a complete stop before installing or removing an accessory, and before leaving the work area.
19. **DO NOT START** the saw with workpiece pressing against the blade. Slowly feed the workpiece into the moving blade.
20. **WHEN CUTTING** a large workpiece, **MAKE SURE** the material is supported at table height.
21. **EXERCISE CAUTION** when cutting workpieces that are round or irregularly shaped. Round items will roll and irregularly shaped workpieces can pinch the blade.
22. **ALWAYS** release blade tension before loosening the blade holder screw.
23. **MAKE CERTAIN** table tilting lock is tightened before starting the machine.
24. **NEVER REACH** under the scroll saw table when motor is running.
25. **CHECK FOR DAMAGED PARTS** before each use. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting or any other conditions that may affect operation. Parts that are damaged should be properly repaired or replaced before using the tool.
26. **THINK SAFETY.**

ELECTRICAL REQUIREMENTS AND SAFETY

GROUNDING INSTRUCTIONS

IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, grounding provides a path of least resistance for electric currents and reduces the risk of electric shock. This tool is equipped with an electrical cord that has an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching receptacle 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 receptacle, have the proper receptacle installed by a qualified electrician.

IMPROPER CONNECTION of the equipment grounding conductor can result in risk of electric shock. The conductor with the green insulation (with or without yellow stripes) is the equipment grounding conductor. If repair or replacement of the electrical cord or plug is necessary, do not connect the equipment grounding conductor to a live terminal.

CHECK with a qualified electrician or service person if you do not completely understand the grounding instructions, or if you are not certain the tool is properly grounded.

USE only three-wire extension cords that have three-pronged grounding plugs with three-pole receptacles that accept the tool's plug. Repair or replace damaged or worn cords immediately.

GUIDELINES FOR EXTENSION CORDS

USE THE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. Use an extension cord heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power, overheating and burning out of the motor. The table on the right shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Make sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified technician before using it. Protect your extension cords from sharp objects, excessive heat and damp or wet areas.

Use a separate electrical circuit for your tool. This circuit must not be less than #18 wire with a 1.6 A time-lag fuse. **NOTE:** When using an extension cord on a circuit with a #18 wire, the extension cord must not exceed 25 feet in length. Before connecting the motor to the power line, make sure the switch is in the off position and the electric current is rated the same as the current stamped on the motor nameplate. Running at a lower voltage will damage

the motor. This tool is intended for use on a circuit that has a receptacle like the one illustrated in Fig. 1.

Fig. 1 shows a three-pronged electrical plug and receptacle that has a grounding conductor. If a properly grounded receptacle is not available, an adapter (sold separately) (Fig. 2) can be used to temporarily connect this plug to a two-contact grounded receptacle. The adapter (Fig. 2) has a rigid lug extending from it that **MUST** be connected to a permanent earth ground, such as a properly grounded receptacle box.

CAUTION

- In all cases, make certain the receptacle is properly grounded. If you are not sure, have a qualified electrician check the receptacle.
- This tool is for indoor use only. Do not expose to rain or use in damp locations.
- This tool must be grounded while in use to protect the operator from electric shock.
- Never remove the grounding prong from the power cord. If damaged, discontinue use of unit and contact customer service for a replacement cord.

Fig. 1

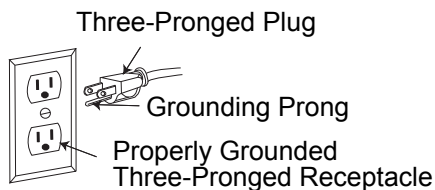
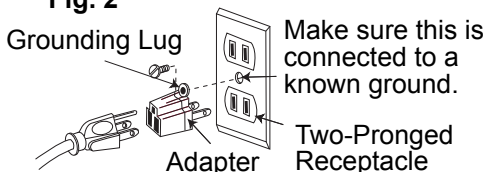


Fig. 2



MINIMUM GAUGE FOR EXTENSION CORDS (AWG)					
(When using 120 volts only)					
Ampere Rating		Total length of Cord			
More Than	Not More Than	25ft.	50ft.	100ft.	150ft.
0	6	18	16	16	14
6	10	18	16	14	12
10	12	16	16	14	12
12	16	14	12	Not Recommended	

ACCESSORIES AND ATTACHMENTS

AVAILABLE ACCESSORIES

WARNING

- To avoid injury, do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious injury.
- Use only accessories recommended for this scroll saw. Follow instructions that accompany accessories. Use of improper accessories may cause hazards.

Visit your Sears Hardware Department or see the Sears Power and Hand Tool Catalog for the following accessories:

ITEM

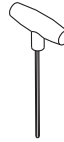
Pin-end saw blades
Plain-end saw blades

Sears may recommend other accessories not listed in this manual. See your nearest Sears store or Power and Hand Tool Catalog for other accessories.

Do not use any accessory unless you have completely read the instruction or Operator's Manual for that accessory.

TOOLS NEEDED FOR ASSEMBLY AND ADJUSTMENT

Supplied

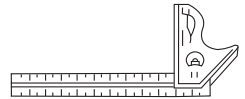


3 mm T-Wrench

Not Supplied



Adjustable Wrench



Combination Square



Phillips Screwdriver



5 mm Hex Wrench

CARTON CONTENTS

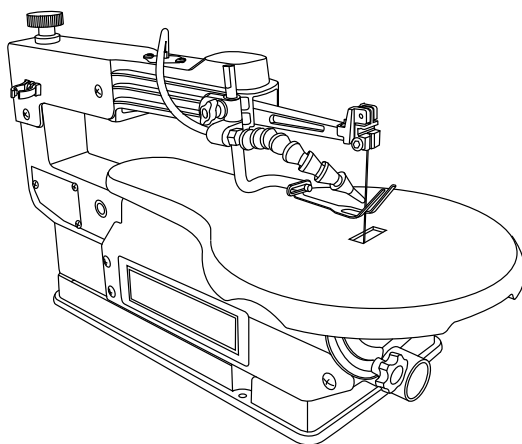
UNPACKING AND CHECKING CONTENTS

WARNING

- To avoid injury, if any part is missing or damaged, do not plug the scroll saw in until the missing or damaged part is replaced, and assembly is complete.
- To avoid fire and toxic reaction, never use gasoline, naphtha, acetone, lacquer, thinner or similar highly volatile solvents to clean the scroll saw.

1. Remove the scroll saw from the carton by lifting the saw by the back of the upper frame.
2. Place the saw on a secure stationary work surface.
3. Separate all parts from the packing material. Check each one with the illustration below to make certain all items are accounted for before discarding any packing material.

CAUTION: Do not lift this saw by the arm that holds the blade, this may result in damage to the tool.



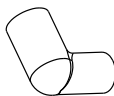
Scroll Saw



Pin-end saw blade



Plain-end
saw blades

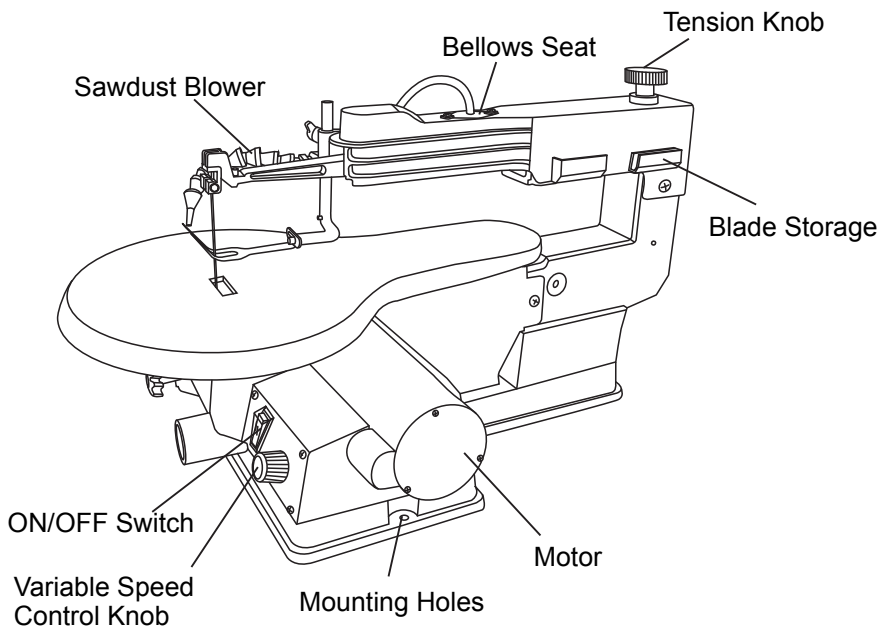
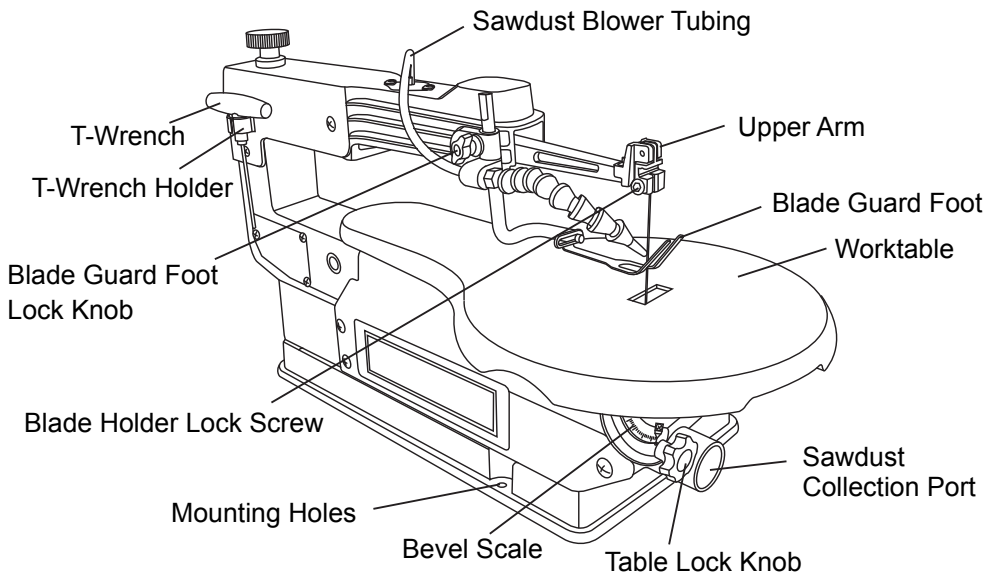


Dust port
adapter



3 mm T-wrench

KNOW YOUR SCROLL SAW



GLOSSARY OF TERMS

SCROLL SAW TERMS

BEVEL SCALE – Represents the degree of table angle from 0° to 45° when the table is tilted for bevel cutting.

BLADE GUARD FOOT – Guards the blade and keeps your workpiece from rising. Helps protect fingers from blade contact.

BLADE GUARD FOOT LOCK KNOB – Allows you to raise or lower the foot and lock it at the desired height.

BLADE HOLDERS – Retain and position the blades.

BLADE STORAGE – Provides convenient easy access to extra blades or wrenches.

QUICK RELEASE TENSION LEVER – Quickly loosens and retightens the blade to its original tension. The tension lever quickly sets and resets the blade tension when performing interior cutting operations or changing blades.

SAWDUST BLOWER – Keeps sawdust from covering the line of sight for more accurate cuts. The best results occur when the blower tube is directed toward the blade and workpiece.

SAWDUST COLLECTION PORT – Allows vacuum hose or attachments to

be used to remove the sawdust from under the table and base.

TABLE LOCK KNOB – Securely locks the table at the angle desired for bevel cutting.

VARIABLE SPEED CONTROL KNOB – Variable switch dial allows greater versatility when cutting a variety of materials. Adjust the speed to the desired setting, between 400 to 1600 strokes per minute (SPM), by turning the control knob clockwise or counterclockwise.

WOODWORKING TERMS

BLADE TOOTH SET – The total width the blade will cut based on the distance from the outside point of one bent tooth to the outside point of the next bent tooth establishing set of teeth.

DEFLECTION – Slight movement of blade in the horizontal direction while the blade is moving inline during cutting operation. This may be caused by the blade following the grain or the path of least resistance.

FEED – Rate of moving material to be cut into the blade.

KERF – The slot cut by the blade.

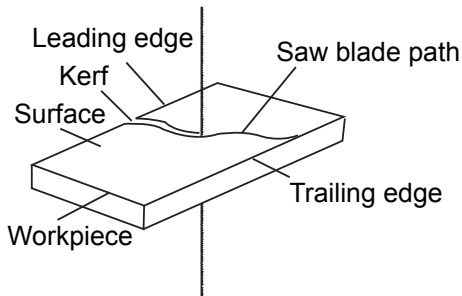
LEADING EDGE – The front edge of the workpiece that is guided into the blade.

SAW BLADE PATH – Area or line of sight of the workpiece moving in line toward the saw blade edge.

SURFACE – Top of workpiece being cut.

TRAILING EDGE – The end of the workpiece edge last cut by the saw blade.

WORKPIECE – Material on which the cutting operation is being performed.



ASSEMBLY AND ADJUSTMENTS

Estimated Assembly Time: 5-10 minutes

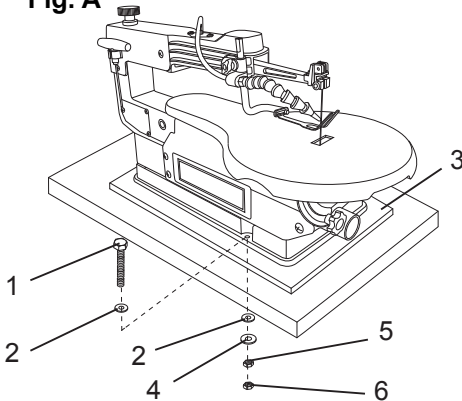
⚠ WARNING

To avoid injury, do not connect this scroll saw to the power source until it is completely assembled and adjusted and you have read and understood this instruction manual.

MOUNTING SCROLL SAW TO WORK SURFACE (FIG. A)

1. If mounting the scroll saw to a workbench, a solid wood bench is preferred over a plywood board to reduce noise and vibration.
2. The hardware to mount this saw is NOT supplied with the saw. The hardware as shown in Fig. A should be used:

Fig. A

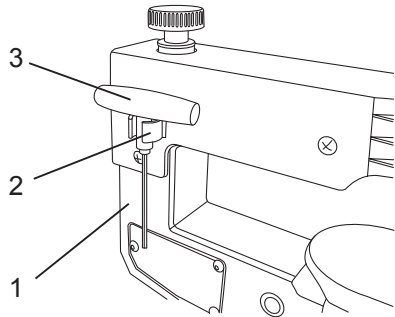


1. (3) Hex head bolts; length as required
2. (6) Flat washers
3. (1) Foam pad or carpet (optional)
4. (3) Lock washers
5. (3) Hex nuts
6. (3) Jam nuts

STORING THE T-WRENCH (FIG. B)

The left rear side of the body (1) has a U-Shaped clamp holder (2) designed to store the T-wrench (3). Position the shaft of the T-wrench handle into the U-shaped clamp holder as shown.

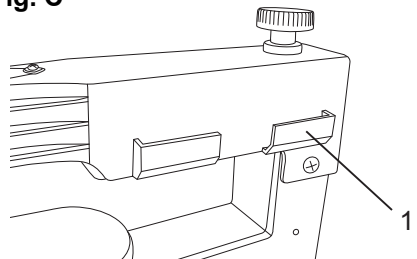
Fig. B



BLADE STORAGE (FIG. C)

The blade storage (1) is located on the right rear side of the scroll saw body. The blade storage can conveniently store extra Pin-end and Plain-end blades.

Fig. C



THE DUST BLOWER (FIG. D)

1. Locate the sawdust blower tubing (1).
2. Connect the PVC plastic end of the tube to the bellows seat (2).
3. For best results, the dust blower tube should be adjusted to direct air at both the blade and the workpiece.

Fig. D

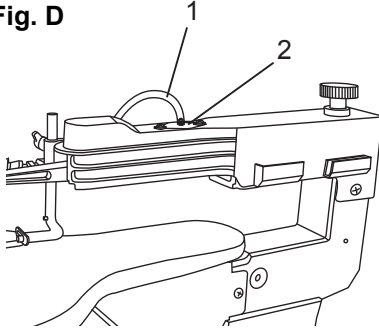
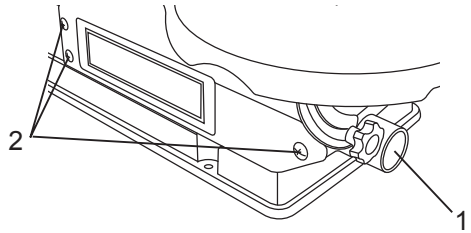


Fig. E



⚠ WARNING

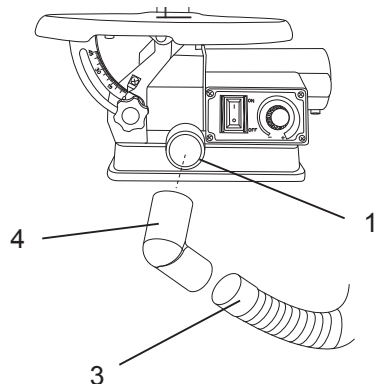
- To prevent fire hazard, clean and remove sawdust from under the saw frequently.
- To prevent sawdust build up inside the saw housing, attach a vacuum hose (3) to the sawdust collection port (1) at the front of the scroll saw. **DO NOT** operate the saw with the hose in place unless the vacuum is turned on.

NOTE: A 43-38 mm (1-11/16 in-1-1/2 in) dust port adapter (4) is provided for your convenience.

SAWDUST COLLECTION PORT (FIG. E, F)

This scroll saw will accept a hose or vacuum accessory (not provided) to be connected to the sawdust collection port (1) on the front of base. If excessive sawdust buildup occurs inside the base, use a wet/dry vacuum cleaner or manually remove sawdust by first unplugging the saw from the power source, then removing the three screws (2) on the left side of saw holding the plate cover. After cleaning all sawdust buildup, reattach the plate and screws before restarting the saw. This will keep your saw cutting efficiently.

Fig. F



BLADE REMOVAL AND INSTALLATION

PIN-END BLADE REMOVAL AND INSTALLATION

WARNING

To prevent personal injury, always turn the saw OFF and disconnect the plug from source before changing blades or making adjustments.

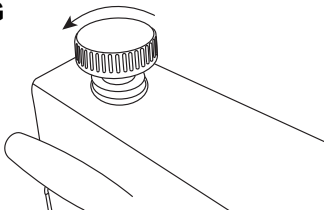
Pin-end type blades are thicker for stability and for faster assembly. These blades are used whenever faster cutting on a variety of materials and 3/4 in. thickness or greater are required. Use whenever less precision or thicker kerf cutting is acceptable.

NOTE: When installing pin-end blades, the set screws located on the upper and lower blade holders should not be over or under tightened. The slot must be slightly wider than the thickness of the blade. After the blade is installed, the blade tension mechanism will keep the pin-end in place.

PIN-END BLADE REMOVAL (FIG. G, H)

1. Loosen the tension on the blade by turning the tension knob counterclockwise. (Fig. G).

Fig. G

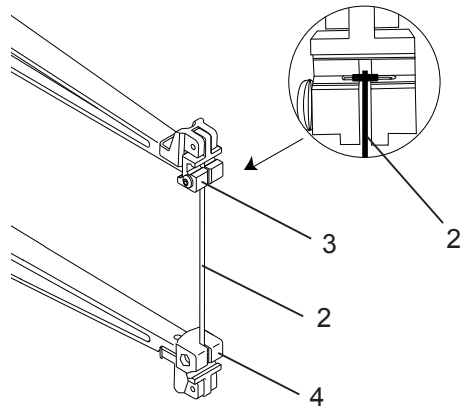


2. Remove the blade (2) from the upper (3) and lower (4) blade holder by pulling blade forward to release, and lift the blade through the access hole. (Fig. H)

NOTE:

- Apply slight downward pressure on the upper arm when removing the blade from the upper blade holder.
- If the tension is still too tight to remove blade, turn the tension lever (Fig. G) counterclockwise no more than one rotation. (Do not over-loosen.)

Fig. H



PIN-END BLADE INSTALLATION

(FIG. I, J, K)

NOTE: Do not tighten the set screw (1, 2) when using Pin-end blades. (Fig. J)

WARNING

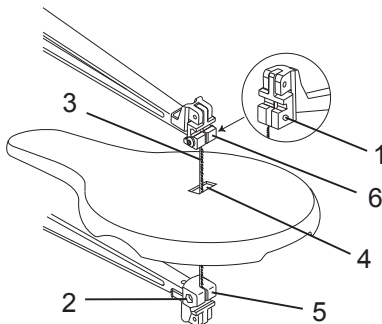
In order to avoid uncontrollable lifting of the workpiece, the teeth of the blade **MUST ALWAYS** point downward. (Fig. I)

Fig. I



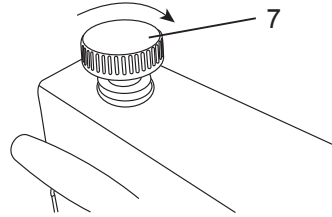
1. Install the blade (3) by inserting one end of it through the access hole (4) of throat plate in the table. Hook the lower blade pin in the pin recess in the lower blade holder (5) and then the upper blade pin in the upper blade holder (6). (Fig. J)
2. Check to see that the pins are properly located in the upper (6) and the lower (5) blade holders. (Fig. J)

Fig. J



3. Tighten the tension on the blade by turning the tension knob clockwise (Fig. K). If the tension is too tight, turn counterclockwise. If too loose, turn the knob clockwise.

Fig. K



PLAIN-END BLADE REMOVAL AND INSTALLATION

This scroll saw accepts 5-inch plain-end or pin-end blades to cut a wide variety of materials.

Plain-end type blades are recommended whenever fine, accurate and intricate work is being performed on 3/4 in. or thinner material. It will take slightly longer to assemble and tension the blade, but you will also be able to use finer blades for cutting a thinner kerf.

WARNING

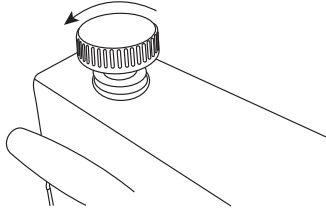
To avoid injury from accidental starting, always turn the switch OFF and remove power cord plug from power source before removing or replacing the blade.

PLAIN-END BLADE REMOVAL

(FIG. L, M, N)

1. Loosen the tension on the blade by turning the tension knob counterclockwise. (Fig. L)

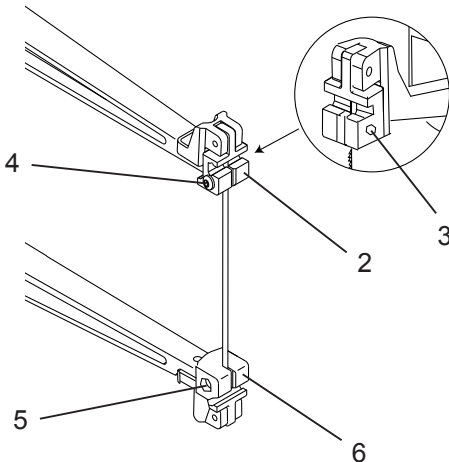
Fig. L



2. Loosen the upper blade holder (2) by turning the blade holder set screw (3) counterclockwise using the supplied T-wrench. (Fig. M)

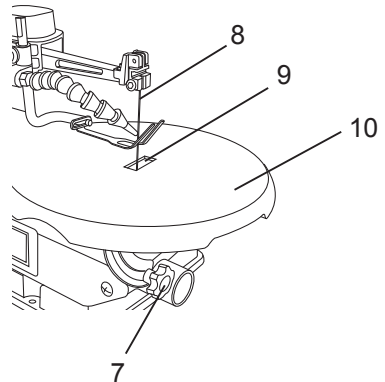
NOTE: The hex screw (4) on the left side is used for fine adjustments and is only adjusted if the blade is not perpendicular to the table. You need a 5 mm hex wrench for hex screw (4).

Fig. M



3. Tilt the table to 0° and tighten the table lock knob (7-Fig. N). Loosen the lower blade holder lock screw (5-Fig. M) under the table on the left side of the lower blade holder (6-Fig. M) with the supplied T-wrench by turning counterclockwise.
4. Remove the blade (8) from the upper and lower blade holders by pulling forward and lifting the blade through the access hole (9) in the table (10). (Fig. N)

Fig. N



PLAIN-END BLADE INSTALLATION (FIG. O, P)

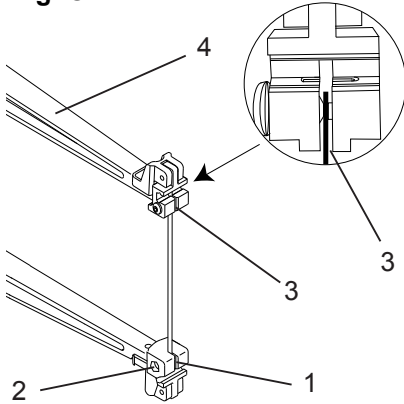
⚠ WARNING

In order to avoid uncontrollable lifting of the workpiece, the teeth of the blade **MUST ALWAYS** point downward.

1. Install the new blade through the access hole in the table with teeth pointing down.

2. Insert the new blade into the lower blade holder slot (1), and then tighten the lower blade holder set screw (2). (Fig. O)
3. Tilt the table to the 0° bevel setting and lock the table lock knob.

Fig. O

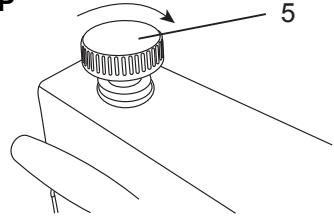


4. Insert the other end of the blade into the upper blade holder slot (3-Fig. O) and then tighten the tension knob (5-Fig. P).

NOTE: Apply slight downward pressure against the upper arm (4-Fig. O) when installing the blade into the upper blade holder.

5. Tighten the tension on the blade by turning the tension knob (5) clockwise. If the tension is too tight, turn counterclockwise. If too loose, turn the lever clockwise. Do not make too tight or blade will easily break in use. (Fig. P)

Fig. P



BEVEL STOP ADJUSTMENT

⚠ WARNING

To avoid injury from accidental starting, always turn the switch OFF and unplug the scroll saw before moving, replacing the blade or making adjustments.

90° (0°) Bevel Adjustment (Fig. Q, R)

1. Remove the blade guard foot (1) by using the supplied T-wrench to turn the hex screw (2) counterclockwise. (Fig. Q)
2. Loosen the table lock knob (3) and move the table (4) until it is approximately at a right angle to the blade (5).
3. Loosen the lock nut (6) and adjust the adjusting screw (7) under the table by turning counterclockwise.
4. Lower the adjusting screw by turning clockwise.
5. Use a combination square (8) to set the table exactly 90° (0°) to the blade. If there is space between the square and blade, adjust the table angle until the space is closed.
6. Lock the table lock knob (3) under the table to prevent movement. Raise the adjusting screw under the table until the tip of the screw touches the table.

7. Tighten the lock nut (6).
8. When the blade is exactly 90° (0°) to the table, loosen the bevel indicator screw (9) using a Phillips screwdriver.
9. Adjust the bevel indicator (10) to the "0" mark on the bevel scale and retighten the indicator screw (9).
10. Attach the blade guard foot (1) using the T-wrench, so the foot rests flat against the table and tighten. (Fig. Q)

NOTE: Avoid setting the edge of the table against the top of the motor, which could cause noise when the saw is running.

Fig. Q

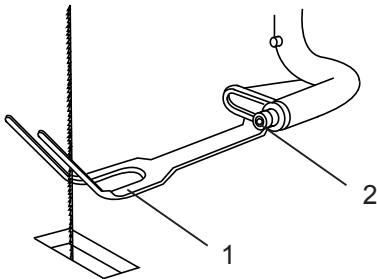
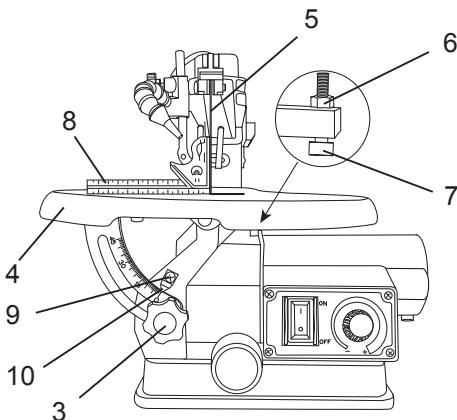


Fig. R



BLADE GUARD FOOT ADJUSTMENT (FIG. S)

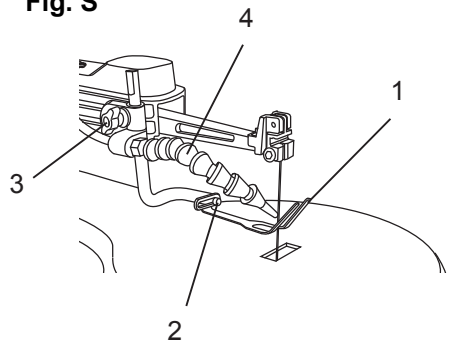
NOTE: User must keep constant downward pressure on workpiece when cutting. The blade guard foot is not designed to hold down the workpiece, but is rather to help prevent the workpiece from lifting up excessively.

When cutting at angles, the table guard foot (1) should be adjusted so it is parallel to the table and rests flat above the workpiece.

1. To adjust, loosen the screw (2), tilt the foot so it is parallel to table and tighten the screw.
2. Loosen the blade guard foot lock knob (3) to raise or lower the foot until it rests slightly above the workpiece. Tighten blade guard foot lock knob.

NOTE: To remove the blade guard foot (1), loosen the hex screw (2) by using the supplied T-wrench to turn the screw counterclockwise.

Fig. S



SAWDUST BLOWER (FIG. S)

The sawdust blower (4) should be positioned to point to the blade and workpiece to blow sawdust out of the line-of-sight when cutting. It is not designed to blow all of the sawdust off the table, and will operate only when the unit is turned on.

BLADE SELECTION (FIG. T)

WARNING

To avoid injury from accidental starting, always turn the switch OFF and unplug the scroll saw before moving, replacing the blade or making adjustments.

This scroll saw accepts 5-inch length blades with a wide variety of blade thickness and widths. The type of material and intricacies of cutting operations (size of radius or curve) will determine the number of teeth per inch. As a general rule, always select the narrowest blades for intricate curve cutting and the widest blades for straight and large curve cutting operations.

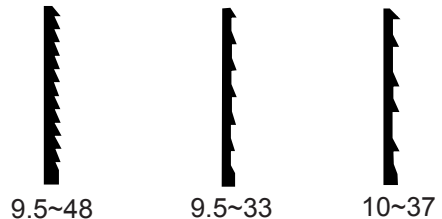
The following table represents suggestions for various materials. When purchasing blades, refer to the back of the package for the best use of blades and speeds on various materials.

Use this table as an example, but practice and your own personal preference will be the best selection method.






NOTE: When using blades, sometimes speeds must change to compensate for smaller curves, radii or smaller diameters. Thinner blades will have more possibilities for blade deflection when cutting angles which are not perpendicular to the table. Read BASIC SCROLL SAW OPERATION for more suggestions.

NOTE: The blade must be installed with the teeth pointing downward, as shown in Fig. T, to prevent the workpiece from being pulled upward by the saw blade action.

Fig. T



General Scroll Saw Blade Reference Guide

Tooth Type	TPI	Application
	← Speed → Faster Slower	
Standard 	9.5 ~ 48	General cutting
Skip 	9.5 ~ 33	Better chip removal. Smooth, splinterless finish
Double 	10 ~ 37	Efficient chip removal. Clean edges
Reverse 	9/5 ~ 28/21	Eliminates underside tearout. Smooth, splinterless finish
Spiral 	36 ~ 46	All direction cutting

1. Hard, thicker wood - Coarse TPI, slower speed.
2. Soft, thinner wood - Fine TPI, faster speed.
3. Plastic materials - Slower speed.
4. Please use the blades for the applications recommended by the blade suppliers.

OPERATION

VARIABLE SPEED CONTROL AND ON/OFF SWITCH

⚠ WARNING

- For your own safety, always push the switch “OFF” when the scroll saw is not in use. Also, in the case of power failure (all of your lights go out) push the knob “OFF”. Remove the plug from the power source outlet to avoid accidental starting.
- The variable speed control allows greater versatility to cut a variety of materials such as wood, plastics, non-ferrous metals, etc. Depending on the hardness and thickness of material, the speed should be reduced to allow the blade teeth to remove cut material from the kerf.

VARIABLE SPEED SWITCH (FIG. U)

1. Your saw is equipped with a variable speed control knob (1). The blade stroke rate may be adjusted by simply rotating the variable speed control knob (1).
2. Turn the control knob clockwise to increase up to 1,600 strokes per minute (SPM). Turn the control knob counterclockwise to reduce, down to 400 strokes per minute (SPM).

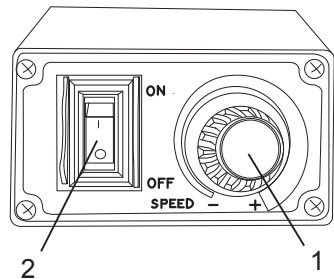
ON/OFF SWITCH (FIG. U)

1. To turn power ON or OFF, push the ON/OFF switch (2).

OVERLOAD BREAKER (FIG. U)

When the motor in overload during operation, the overload breaker will cause the motor to stop automatically to prevent damage to the motor. Push in the ON/OFF switch (2) to turn saw OFF, after that push the ON/OFF switch (2) to ON to start the saw. Other way to restart the saw: Disconnect the power supply firstly, keep switch in ON position, then connect the power supply, the motor will start automatically.

Fig. U



RECOMMENDATIONS FOR CUTTING

1. When feeding the workpiece into the blade do not force the leading edge of the workpiece into the blade because the blade will deflect, reducing the accuracy of cut and possibly breaking the blade. Allow the saw to cut material by guiding the workpiece into the blade as it cuts.
2. The blade teeth cut material ONLY on the down stroke.
3. You must guide the wood into the blade slowly because the teeth of the blade are very small and they

- can only remove wood when they are on the down stroke.
4. There is a learning curve for each person who wants to use this saw. During that period of time it is expected that some blades will break until you learn how to use the saw and receive the greatest benefit from the blades.
 5. Best results are achieved when cutting wood less than one inch thick.
 6. When cutting wood thicker than one inch, the user must guide the wood very slowly into the blade and take extra care not to bend or twist the blade while cutting in order to maximize blade life.
 7. Teeth on scroll saw blades wear out and must be replaced frequently for best cutting results. Scroll saw blades generally stay sharp for 1/2 to 2 hours of cutting, depending on material being cut.
 8. To get accurate cuts, be prepared to compensate for the blade's tendency to follow the wood grain as you are cutting.
 9. This scroll saw is intended to cut wood or wood products. Plastics and non-ferrous metals perform well on scroll saws that have very slow speed capability, and should be lubricated with machine oil or beeswax.
 10. When choosing a blade to use with your scroll saw, consider very fine, narrow blades to scroll cut in thin wood 1/4 in. thick or less. Use wider blades for thicker materials but this will reduce the ability to cut tight curves.

11. This saw uses 5 in. long pin or plain end type blades only.
12. Blades wear faster when cutting plywood or particle board which is very abrasive. Angle cutting in hardwoods reduces blade tooth set faster due to the blade deflection.

FREEHAND CUTTING (FIG. V)



To avoid injury from an accidental start, make sure the switch is in the OFF position and the plug is not connected to the power source outlet.

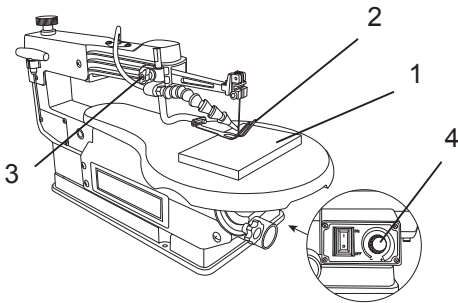
1. Lay out desired design, or secure design to the workpiece (1).
2. Raise the blade guard foot (2) by loosening the blade guard foot lock knob (3).
3. Position the workpiece against the blade and place the blade guard foot slightly above the top surface of the workpiece.
4. Secure the blade guard foot (2) by tightening the blade guard foot lock knob (3).
5. Remove the workpiece from the blade prior to turning the scroll saw ON. Set the variable speed control knob (4) to the desired speed by turning the control knob clockwise or counterclockwise.

CAUTION: In order to avoid uncontrollable lifting of the workpiece and to reduce blade breakage, do not turn saw ON while the workpiece is against the blade.

- When turning the scroll saw ON, position the workpiece against scrap wood prior to touching the leading edge of the workpiece against the blade.
- Slowly feed the workpiece into the blade by guiding and pressing the workpiece down against the table.

CAUTION: Do not force the leading edge of the workpiece into the blade. The blade will deflect, reducing accuracy of cut, and may break.
- When the cut is complete, move the trailing edge of the workpiece beyond the blade guard foot. Turn the scroll saw OFF.

Fig. V



BEVEL CUTTING (FIG. W)

⚠ WARNING

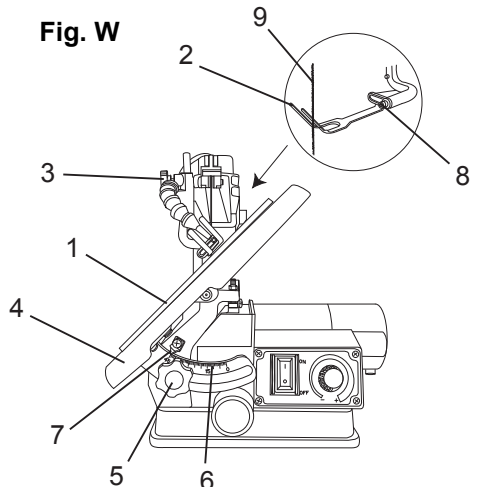
To avoid injury from an accidental starting, make sure the switch is in the OFF position and the plug is not connected to the power source outlet before moving, replacing the blade or making adjustments.

Left Bevel Cutting (Fig. W)

Bevel cuts up to 45 degrees to the left are possible on this unit.

- Lay out or secure design to workpiece (1).
- Move the blade guard foot (2) to the highest position by loosening the blade guard foot lock knob (3) and retighten.
- Tilt the table (4) to the desired angle by loosening the table lock knob (5) and move the table to the proper angle, using the degree scale (6) and the pointer (7).
- Tighten the table lock knob (5).
- Loosen the blade guard screw (8), and tilt the blade guard to the same angle as the table (4). Retighten the blade guard screw.
- Position the workpiece on the left and right side of the blade (9). Lower the blade guard foot slightly above the surface by loosening the blade guard foot lock knob (3).
- Follow items 4-8 under FREEHAND CUTTING OPERATION.

Fig. W



RIP OR STRAIGHT LINE CUTTING (FIG. X)

⚠ WARNING

To avoid injury from an accidental starting, make sure the switch is in the OFF position and the plug is not connected to the power source outlet before moving, replacing the blade or making adjustments.

Tools Needed (Not Included)

QUANTITY	DESCRIPTION
2	Small C-clamps
1	Ruler or measuring tape
1	12-inch straight scrap of wood (Thickness to match workpiece)

1. Raise the blade guard foot (1) by loosening the blade guard foot lock knob (2) on the right side of the upper arm. Measure from the tip of the blade (3) to the desired distance. Position the straight edge (4) parallel to the blade at that distance.
2. Clamp the straight edge (4) to the table (5).
3. Recheck your measurements, using the workpiece to be cut, and make sure the scrap wood is secure.
4. Position the workpiece against the blade and place the blade guard foot (1) slightly above the top surface of the workpiece.
5. Secure the blade guard foot in place by tightening the height adjustment knob.
6. Remove the workpiece from the blade prior to turning the scroll

saw ON. Set the desired speed by turning the control knob clockwise or counterclockwise.

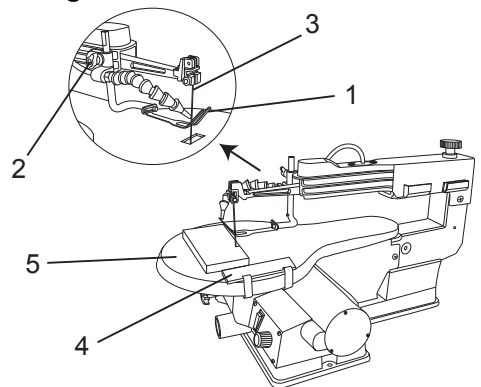
CAUTION: In order to avoid uncontrollable lifting of the workpiece and reduce blade breakage, do not turn saw ON while the workpiece is against the blade.

7. Position the workpiece against the straight edge (4) prior to touching the leading edge of the workpiece against the blade (3).
8. Slowly feed the workpiece into the blade, guiding the workpiece against the straight edge and press the workpiece down against the table while cutting.
9. When the cut is complete, move the trailing edge of the workpiece beyond the blade guard foot. Turn the scroll saw OFF.

CAUTION: Do not force the leading edge of the workpiece into the blade. The blade will deflect, reducing accuracy of cut and may break.

NOTE: When cutting a narrow workpiece use push sticks.

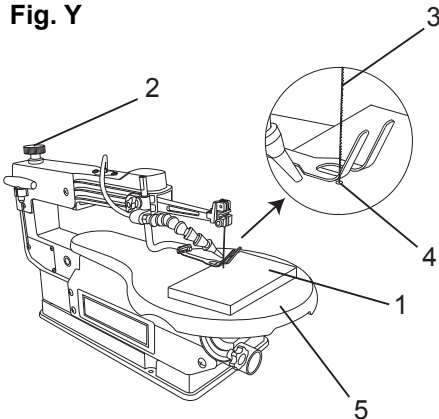
Fig. X



INTERIOR CUTTING (FIG. Y)

1. Lay out the design on the workpiece (1). Drill a 1/4 in. hole (4) in the workpiece .
2. Remove the blade by turning the tension knob (2) counterclockwise. Refer to BLADE REMOVAL AND INSTALLATION.
3. Place the workpiece on the saw table with the workpiece hole (4) over the access hole in the table (5).
4. Install the blade (3) through the hole in the workpiece and tighten the tension knob (2).
5. Follow the process, items 3-8, under FREEHAND CUTTING OPERATIONS.
6. When finished making the interior scroll cuts simply turn the scroll saw OFF, remove the blade from the blade holder and remove the workpiece from the table.

Fig. Y



MAINTENANCE

▲ WARNING

For your own safety, turn the switch OFF and remove the plug from the power source before maintaining your saw.

GENERAL

An occasional coat of paste wax on the work table will allow the wood being cut to glide smoothly across the work surface.

MOTOR

1. If the power cord is worn, cut or damaged in any way, have it replaced immediately by authorized electrician.
2. Do not attempt to oil the motor bearings or service the motor internal parts.

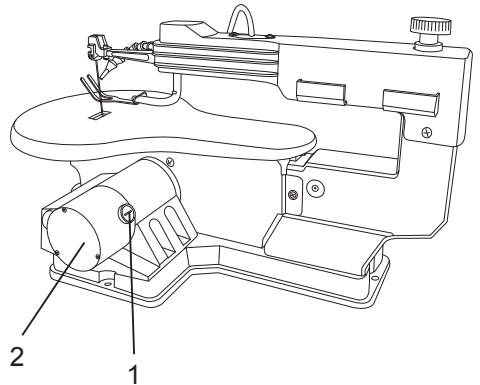
REPLACING CARBON BRUSHES (FIG. Z)

Replace both carbon brushes when either has less than 1/4 in. length of carbon remaining, or if the spring or wire is damaged or burned. To inspect or replace brushes, first unplug the saw. Then remove the black plastic cap (1) on the side of the motor (2). Carefully remove the spring-loaded cap. Then pull out the brush and replace. Replace for the other side. To reassemble reverse the procedure. The ears on the metal end of the assembly go in the same hole the carbon part fits

into. Tighten the cap snugly, but do not overtighten.

NOTE: When reinstalling the same brushes, put them back in the way they came out. This will avoid a break-in period that reduces motor performance and increases wear.

Fig. Z



TROUBLESHOOTING GUIDE

WARNING

To avoid injury from accidental starting, always turn switch OFF and unplug the tool before moving, replacing the blade or making adjustments.

PROBLEM	PROBLEM CAUSE	REMEDY SUGGESTED
Breaking blades	<ol style="list-style-type: none"> 1. Wrong tension. 2. Overworking blades. 3. Wrong blade application. 4. Twisting blade in wood. 	<ol style="list-style-type: none"> 1. Adjust blade tension. See BLADE REMOVAL AND INSTALLATION section. 2. Reduce feed rate. See BLADE REMOVAL AND INSTALLATION section. 3. Use narrow blade. See BLADE SELECTION section. 4. Avoid side pressure on blade. See BLADE REMOVAL AND INSTALLATION section.
Motor will not run.	<ol style="list-style-type: none"> 1. Defective cord or plug. 2. Defective motor. 3. Blown overload breaker. 	<ol style="list-style-type: none"> 1. Replace defective parts before using saw again. See ELECTRICAL SPECIFICATIONS AND SAFETY section. 2. Call Service Center. Any attempt to repair this motor may create a HAZARD unless the repair is done by a qualified technician. 3. Restart the saw. See OVERLOAD BREAKER section.
Excessive vibration. NOTE: There will always be some vibration present when the saw is running because of motor operation.	<ol style="list-style-type: none"> 1. Improper mounting of saw. 2. Unsuitable mounting surface. 3. Loose table or table resting against motor. 4. Loose motor mounting. 	<ol style="list-style-type: none"> 1. See mounting instructions in this manual for proper mounting technique. 2. The heavier your workbench is, the less vibration will occur. A plywood workbench will not be as good a work surface as the same size solid lumber. 3. Tighten the table lock knob. 4. Tighten motor mounting screw.
Blade run out. Blade not in line with arm motion.	<ol style="list-style-type: none"> 1. Blade holders not aligned. 	<ol style="list-style-type: none"> 1. Loosen blade holder lock screw holding blade holder to arms. Adjust position of blade holders. Retighten blade holder lock screw. See BLADE REMOVAL AND INSTALLATION section.

NOTE

PARTS LIST

16 in. VARIABLE SPEED SCROLL SAW

MODEL NO. 137.216020



When servicing use only CRAFTSMAN replacement parts. Use of any other parts may create a HAZARD or cause product damage. Any attempt to repair or replace electrical parts on this Scroll Saw may create a HAZARD unless repair is done by a qualified service technician. Repair service is available at your nearest Sears Service Center.

PARTS LIST FOR SAW SCHEMATIC

I.D. NO	Description	Size	Qty	I.D. NO	Description	Size	Qty
2843	ECCENTRIC ASS'Y		1	0K71	CR. RE. TRUSS HD. SCREW	M5*0.8-8	5
2847	LINGAGE BAR		1	0K72	CR. RE. TRUSS HD. SCREW	M5*0.8-12	1
0AMH	COMPRESSION SPRING		1	0K7F	CR. RE. ROUND WASHER HD. SCREW	M5*0.8-8	3
0AMW	SET PLATE		2	0KA2	CR. RE. PAN HD. TAPPING SCREW	M4*16-8	4
0AMX	CLAMP BOLSTER		1	0KA4	CR. RE. PAN HD. TAPPING SCREW	M4*16-16	2
0ANC	BLADE		3	0KDH	CR. RE. PAN HD. SCREW	M5*0.8-8	2
0C0R	CLAMP BOLSTER		1	0KDU	CR. RE. PAN HD. SCREW	M6*1.0-12	1
0C10	BLADE		2	0KFE	CR. RE. PAN HD. SCREW	M5*0.8-6	1
0C1G	NEEDLE POINTER		1	0KKJ	CR. RE. PAN HD. ROUND NECK SCREW	M4*0.7-12	2
0EK3	CAUTION LABEL		1	0KMR	HEX. NUT	M5*0.8 T=4	1
0EKB	HEX. SOC. HD. CAP BOLT		2	0KNE	HEX. NUT	M6*1.0 T=5	1
0EQS	TABLE	#AW	1	0KQX	NUT	M6*1.0 T=6	3
0EQV	BRACKET-TILT		1	0KTA	STRAIN RELIEF		1
0EU7	PVC HOSE		1	0LNG	ON/OFF SPEED DIAL		1
0EUB	BLADE GUARD		1	0Z9T	SAFE COVER		1
0EUE	SUPPORT ROD		1	284A	BEARING SEAT ASS'Y		1
0FFN	EXTENSION SPRING		1	2B6Z	HOLD DOWN ROD		1
0FR0	SPACER		1	2CHZ	BOTTOM ARM ROCKER ASS'Y	#06	1
0FRK	BUSH		1	2CJQ	COLLAR-STOP		1
0FSK	BELLOW		1	2KWJ	UPPER ARM ROCKER ASS'Y	#06	1
0HFV	BOLT CLAMP		1	2L8R	T-WRENCH	3 mm	1
0HGA	BELLOWS SEAT		1	2MR7	SWITCH BOX		1
0HJM	AIR DUCT ASS'Y		1	2MR8	PLATE COVER		1
0J4C	FLAT WASHER	φ4*8-1	1	2MRA	DUST PORT ADAPTER		1
0J4D	FLAT WASHER	φ5*10-1	2	2MRL	MOTOR REAR COVER		1
0J4E	FLAT WASHER	φ6*13-1	3	2MRM	PLUNGER HOUSING		1
0J72	FLAT WASHER	1/4*5/8-1/16	4	2MRN	PLUNGER HOUSING		1
0J7F	FLAT WASHER	5/16*7/8-5/64	1	2MRP	CONTROLLER PLATE		1
0J91	SPRING WASHER	φ4	1	2NQ7	KNOB		1
0J9F	SPRING WASHER	φ5/32	2	2NQ8	HANDLE		1
0J9H	SPRING WASHER	φ1/4"	2	2NQ9	ROCKER ARM COVER		1
0JAF	EXTERNAL TOOTH LOCK WASHER	φ5	1	2NXM	MOTOR BRACKET		1
0JAZ	WAVE WASHER	WW-6	2	2NXP	MOTOR		1
0JDD	SPRING PIN		1	2NXS	SUPPORT	#06	1
0JU4	HEX. SOC. HD. CAP BOLT	M4*0.7-10	3	2P2P	ROCK SWITCH ASS'Y		1
0JUD	HEX. SOC. HD. CAP BOLT	M5*0.8-20	2	2QA3	HEX. HD. SCREW AND WASHER	M6*1.0-25	4
0JUK	HEX. SOC. HD. CAP BOLT	M6*1.0-16	1	2RCY	BASE	#AW	1
0JUN	HEX. SOC. HD. CAP BOLT	M6*1.0-30	1	2SLK	OWNER'S MANUAL ASS'Y		1
0JVH	HEX. SOC. HD. CAP BOLT	M6*1.0-35	1	2SUJ	CAUTION LABEL		1
0JZ3	HEX. SOC. SET SCREW	M6*1.0-6	1	2SUL	TRADE-MARK LABEL		2
0JZV	HEX. SOC. TRUSS HD. SCREW	M5*0.8-10	5	2SUN	WARNING LABEL		1
0K0W	HEX. HD. SCREW AND WASHER	M6*1.0-25	3	2SUP	CAUTION LABEL		1
0K10	HEX. HD. SCREW AND WASHER	M8*1.25-30	2	2T1D	BODY ASS'Y		1
0K30	HEX. SOC. TRUSS HEAD & WASHER	M6*1.0-16	3	2T1F	HOLDER BLADE ASS'Y		2
0K49	CR. RE. PAN HD. SCREW & WASHER	M5*0.8-10	2	2TK5	CABLE COVER		1

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