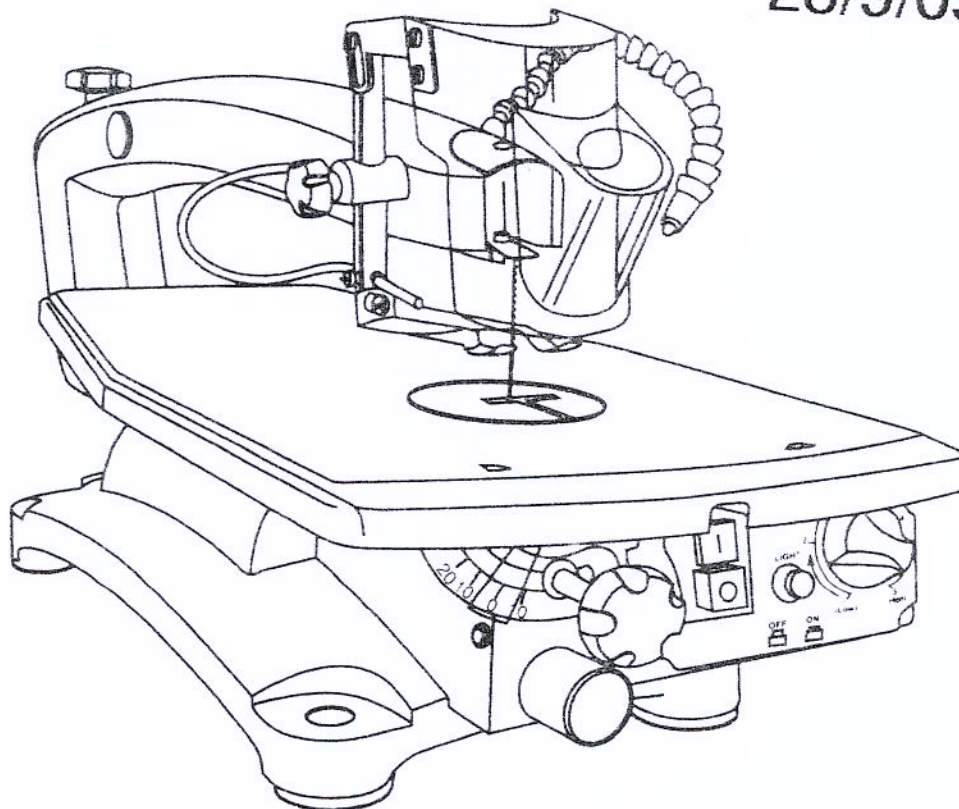


W352 B-18V SCROLL SAW

OWNER'S OPERATING MANUAL 457mm VARIABLE SPEED SCROLL SAW MODEL SS18A

23/9/05



CAUTION: Carefully read through this entire owner's manual before using your Scroll Saw.

Pay close attention to the Warnings, and Cautions.

If you use your Scroll Saw properly and only for what it is intended, you will enjoy years of safe, reliable service.

Thank You again for buying our tools.

SAVE THIS MANUAL FOR FUTURE REFERENCE.

FEATURES

KNOW YOUR SCROLL SAW

Before attempting to use your saw, familiarize yourself with all the operating features and safety requirements of your scroll saw. See Figure 1.

This versatile, variable speed scroll saw is great for making toys, puzzles, games artwork, and jewelry. It is a handy do-it-yourself tool. It cuts wood, wood composition products, plastic, and other fibrous material up to 2 in. (52 mm) thick. It also cuts nonferrous metals (aluminum, brass, copper).

1. Blade Tension Knob

Loosen or tighten the blade tension by turning the blade tension knob.

2. Drop Foot Lock Knob

Allows you to raise or lower the drop foot and lock it in place.

3. Sawdust Blower

Keeps the line of the cut on the workpiece clean for more accurate scroll cuts. For best results, always direct air flow at the blade and the workpiece.

4. Drop Foot

This foot should always be lowered until it just rests on top of the workpiece to prevent the workpiece from lifting, yet not so much that the workpiece drags.

5. Bevel Scale

The bevel scale and indicator show you the degree the saw table is tilted.

6. Sawdust Exhaust

This feature will allow you to attach any 1-1/4 in. (32mm) vacuum hose for easy sawdust collection.

7. LED (light)

Illuminates the work piece and blade for more accurate cutting.

8. Combined Blade Guard

Have the function of magnifying glass.

9. Saw Blade

10. Saw Table with Throat Plate

Your scroll saw has an aluminum saw table with tilt control for maximum accuracy. The throat plate, inserted in the saw table, allows for blade clearance.

11. Blade Length Gauge

Used for attaching the blade adaptors at the proper length for operation.

12. Variable Speed Knob

Turn the knob to adjust the speed from the high speed of approximately 1450 SPM (strokes per minute) to the low speed of approximately 600 SPM.

13. On/Off Switch for Light

14. Power On/Off Switch

15. Table Lock Knob

Allows you to tilt the table and lock it at the desired angle up to 45°.

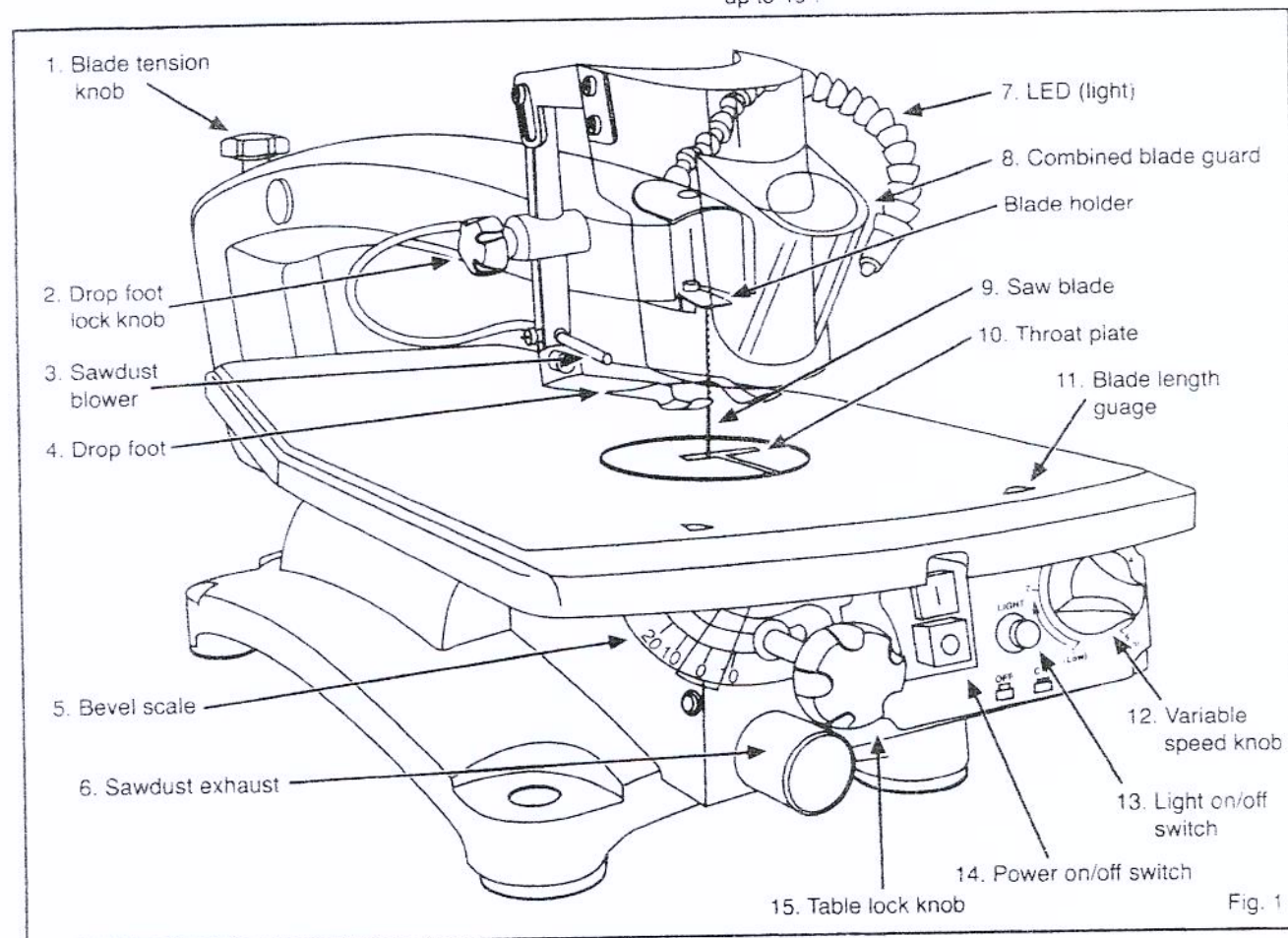
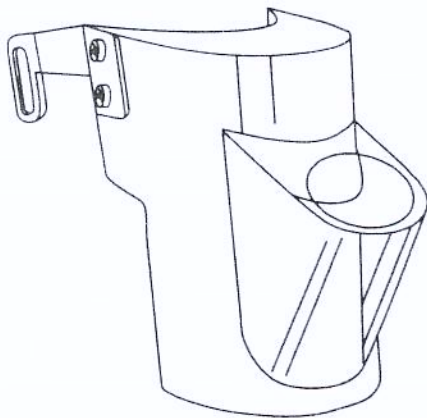
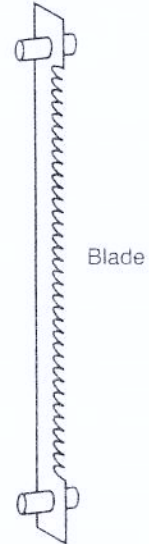
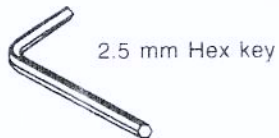


Fig. 1

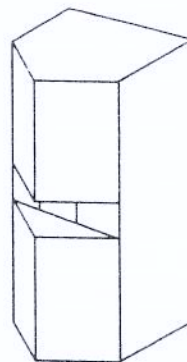
LOOSE PARTS

Check all loose parts from the box with the list below. Assemble according to the instructions on the following pages.

- 2.5 mm Hex Key
- 4 mm Hex Key
- Blade(s) (4 pcs)
- Combined blade guard
- Pinless blade adaptor (2 pcs)



Combined blade guard



Pinless blade adaptor

ASSEMBLY

MOUNTING SCROLL SAW TO WORKBENCH

WARNING:

To avoid serious personal injury from unexpected tool movement, always securely mount scroll saw to a workbench.

If the scroll saw is to be used in a permanent application, we recommend that you secure it in a permanent location such as a workbench. When mounting the saw to a workbench, holes should be drilled through the supporting surface of the workbench.

- Each hole in the base of the saw should be bolted securely using machine bolts, washers, and nuts (not included). Bolts should be of sufficient length to accommodate the saw base, washers, nuts and the thickness of the workbench.
- Place scroll saw on workbench. Using the saw base as a pattern, locate and mark the holes where the scroll saw is to be mounted.
- Drill four holes through the workbench.
- Place scroll saw on workbench aligning holes in the saw base with the holes drilled in the workbench.
- Insert all four bolts (not included) and tighten securely with washers and nuts (not included).

Note: All bolts should be inserted from the top. Install the washers and nuts from the underside of the bench.

Supporting surface where scroll saw is mounted should be examined carefully after mounting to insure that no movement during use can result. If any tipping or walking is noted, secure workbench or supporting surface before beginning cutting operations.

Reducing Noise and Vibration:

You may wish to place a foam pad or piece of carpet between the saw base and the workbench to help reduce noise and vibration.

If a foam pad or piece of carpet is used, do not overtighten the mounting bolts. Leave some cushion between the padding and the saw base to help absorb the noise and vibration. The size of the padding material should be approximately 30 in. x 15 in. x 1/2 in. (780mm x 390mm x 13mm).

CLAMPING SCROLL SAW TO WORKBENCH

See Figure 2.

If the scroll saw is to be used in a portable application, it is recommended that you fasten it permanently to a mounting board that can easily be clamped to a workbench or other supporting surface. The mounting board should be of sufficient size to avoid tipping of saw while in use. Any good grade plywood or chipboard with a 3/4 in. (19mm) thickness is recommended.

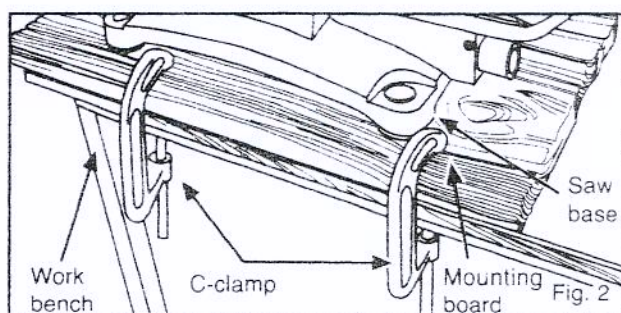
- Mount saw to board using holes in saw base as a template for hole pattern. Locate and mark the holes where scroll saw is to be mounted.

- Follow last three steps in previous section called **Mounting Scroll Saw to Workbench**.

If lag bolts are being used, make sure they are long enough to go through holes in the saw base and the material the saw is being mounted to.

If machine bolts are being used, make sure they are long enough to go through holes in the saw base, the material the saw is being mounted to, and the washers and nuts.

Note: It may be necessary to countersink washers and nuts on the bottom side of mounting board.

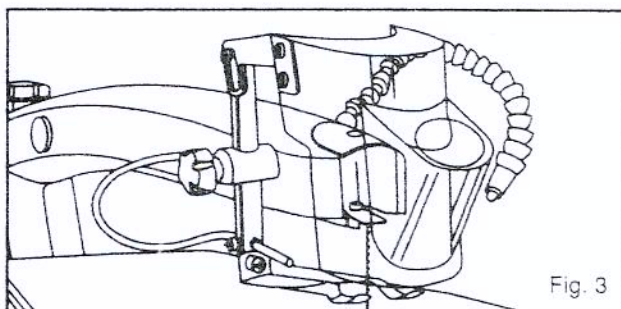


MOUNTING THE BLADE GUARD ON THE DROP FOOT ROD

WARNING:

To prevent serious personal injury, pls mounting the blade guard before using your saw.

- Take out the blade guard from polyfoam box.
- Use 4 mm Hex key to loose and remove the M5 screw on the drop foot rod.
- Use the M5 screw through the gain of the blade guard and fix it to the drop foot rod.
- Reasonably tight up and adjust the M5 screw to make sure the blade guard vertical with the table



ADJUSTMENTS

WARNING:

To prevent accidental starting that could cause possible serious personal injury, turn off the saw and unplug the saw from the power source before making any adjustments.

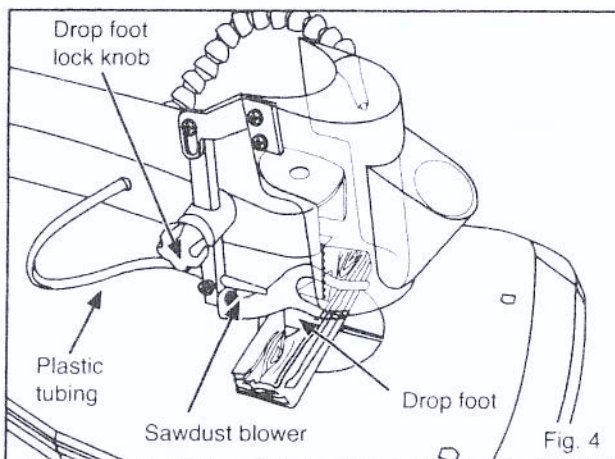
DROP FOOT

See Figure 4.

To prevent workpiece from lifting, the drop foot should be adjusted so it just rests on the top of the workpiece. The drop foot should not be adjusted so that the workpiece drags. Always retighten the drop foot lock knob after each adjustment has been made.

- Loosen the drop foot lock knob.
- Lower or raise the drop foot to the desired position.
- Retighten the drop foot lock knob.

The tall, front part of the drop foot acts as a blade guard to prevent accidental contact with the blade.



SAWDUST BLOWER

See Figure 4.

WARNING:

Failure to turn the saw off and unplug the saw from the power source could result in accidental starting causing possible serious injury.

The sawdust blower is designed and preset to direct air to the most effective point on the cutting line. Be sure drop foot is properly adjusted to secure workpiece and direct air to the cutting surface.

- Plastic tubing should be connected to the bellows tube before starting the saw.

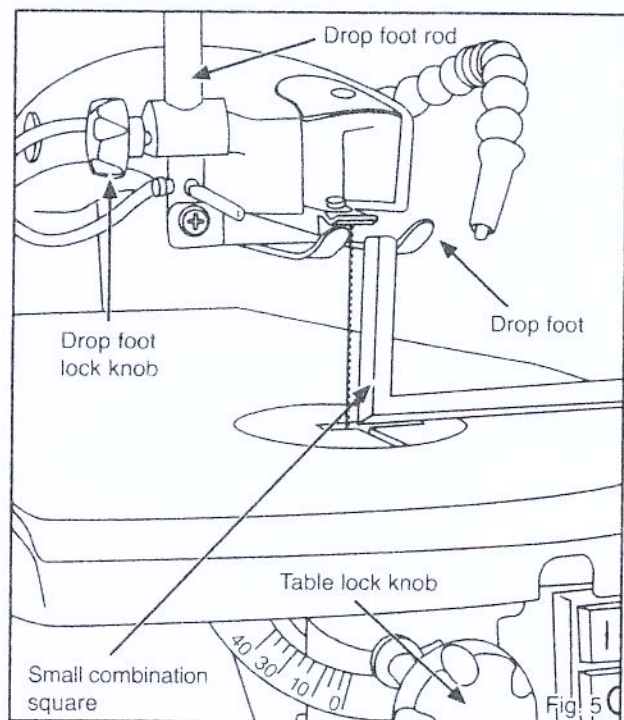
SQUARING THE SAW TABLE TO THE BLADE

See Figure 5.

WARNING:

Failure to turn the saw off and unplug the saw from the power source could result in accidental starting causing possible serious injury.

- Loosen the drop foot lock knob and move drop foot rod all the way up. Retighten drop foot lock knob.
- Loosen the table lock knob to tilt the saw table until it is approximately perpendicular or at right angle to the blade.
- Place a small square on the saw table next to the blade.
- Loosen the screw holding the scale indicator. See Figure 6. Move indicator to the 0° mark and securely tighten screw. Remember, the bevel scale is a convenient guide but should not be relied upon for precision. Make practice cuts on scrap material to determine if your angle settings are correct.
- Adjust the drop foot to desired position and securely retighten the drop foot lock knob.



ADJUST THE COMBINED BLADE GRARD

- Need to use the blade guard when bevel cutting,
- Use 4 mm Hex key to loose the M5 screw on the drop foot rod,
- Pull up the blade guard along the gain and make sure it will not interfere with the cutting material,
- Tight up the M5 screw to fix it on the drop foot rod.

ADJUSTMENTS

SETTING THE TABLE FOR HORIZONTAL OR BEVEL CUTTING

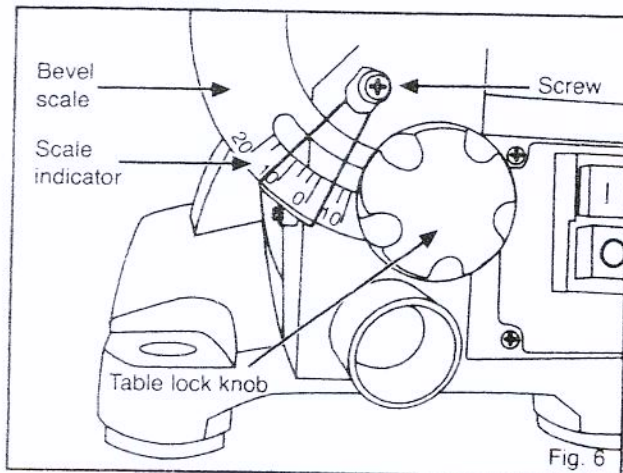
See Figure 6.

WARNING:

Failure to turn the saw off and unplug the saw from the power source could result in accidental starting causing possible serious injury.

A bevel scale is located under the saw table as a convenient guide for setting the approximate saw table angle for bevel cutting. When greater precision is required, make practice cuts on scrap material and adjust the saw table as necessary for your requirements.

Note: When cutting at angles, the drop foot should be tilted so it is parallel to the saw table and rests flat against the workpiece. To tilt the drop foot, loosen philips screw, tilt drop foot to the proper angle, then retighten screw.



ADJUSTING BLADE TENSION

See Figure 7.

- Turn off and unplug the saw from the power source.

WARNING:

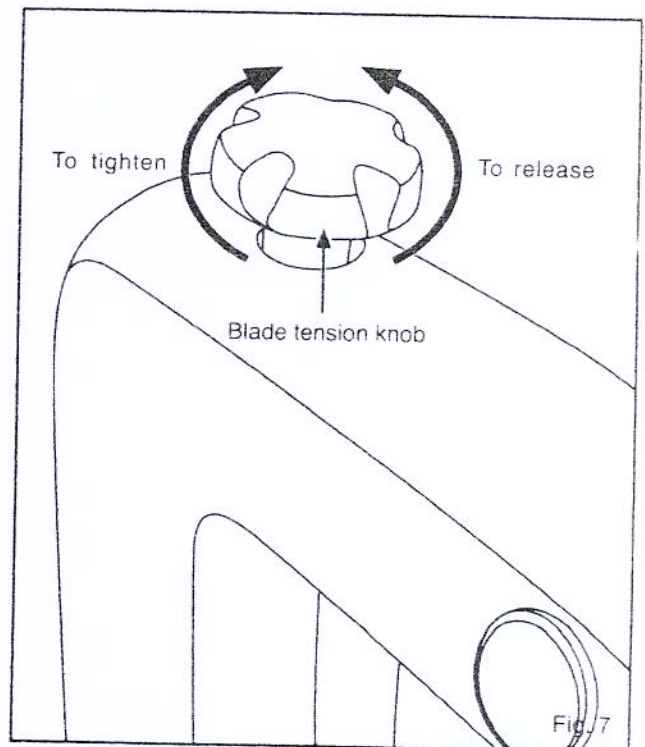
Failure to turn the saw off and unplug the saw from the power source could result in accidental starting causing possible serious injury.

- Turning the blade tension knob counter-clockwise decreases (or loosens) blade tension.
- Turning the blade tension knob clockwise increases (or tightens) blade tension.

Note: Adjustments to blade tension can be made at any time. Check tension by the sound the blade makes when plucked like a guitar string. This method of adding tension to the blade can be developed with practice and requires knowing your scroll saw.

- Pluck the back straight edge of blade while turning tension adjustment knob. Sound should be a musical note. Sound becomes less flat as tension increases. Sound decreases with too much tension.

Note: Be careful not to adjust blade too tight. Too much tension may cause the blade to break as soon as you start cutting. Too little tension may cause the blade to bend or break before the teeth wear out.



ADJUSTMENTS

BLADES

See Figure 8.

Your new scroll saw accepts 127 mm pin type blades. Your saw is also equipped with blade adaptors that allow you to use a variety of 127 mm plain end blades.

WARNING:

To prevent personal injury always disconnect the power cord from power source before changing blades or making adjustments.

REMOVING AND INSTALLING PIN TYPE BLADES

- Rotate the blade tension knob anti-clockwise to release blade tension.
- Remove table insert and remove blade from the inner upper and lower blade holders by pulling forward on blade and then lifting the blade through the access hole in the table. Slight downward pressure against the upper holder may be helpful when removing blade from upper holder.
- In order to cut, and avoid uncontrollable lifting of the workpiece, the teeth of the blade used on the scroll saw should always point downwards when installed.
- Install the blade while inserting one end of the blade through the access hole in the table and hook the blade pin in the pin recess in the lower blade holder. Slide the top blade pin into the pin recess of the inner upper blade holder. You may need to press down lightly on the upper blade holder to install the blade.
- Carefully tighten the blade by rotating the blade tension knob clockwise just until you feel the slack in the blade removed. Double check to see that the pins are properly located in the blade holder. Then turn the blade tension knob ONE full turn clockwise. This amount of blade pressure should do well for most cutting operations and blades.

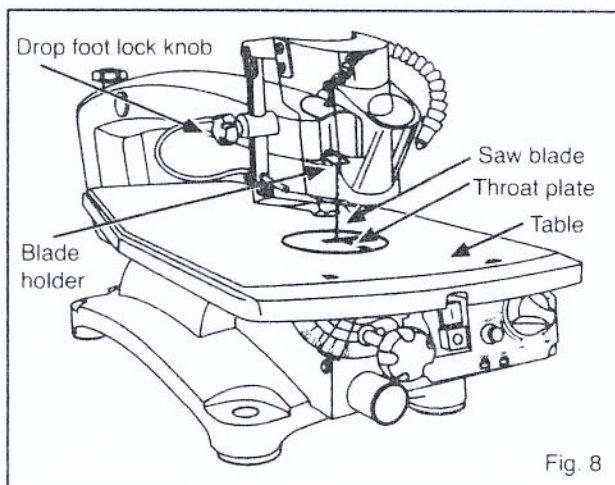


Fig. 8

REMOVING THE PLAIN-END BLADES

- Rotate blade tension knob anti-clockwise to release the blade tension.
- Remove throat plate by applying force from the bottom of the throat plate upward.
- Press down the upper blade holder and lift up the blade with blade adaptor to enable the removal of the blade with blade adaptor.
- Place the blade with blade adaptor onto the blade length gauge.
- Use hex key to loosen the screw in blade adaptor.
- Remove the blade from blade length gauge.

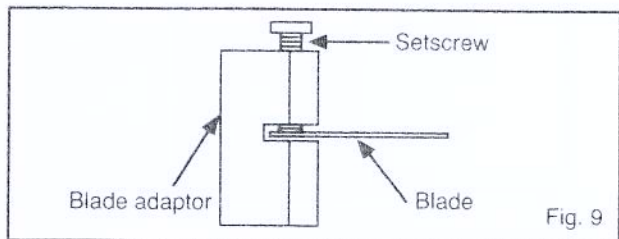


Fig. 9

INSTALLING THE PLAIN-END BLADES

- Loosen the screw in blade adaptor and put the new blade into blade adaptor. See figure 9.
- Put the blade and blade adaptor into blade length gauge and use hex key to tighten the screw in blade adaptor. See figure 10.
- Install the blade while inserting one end of the blade and adaptor through the access hole in the table, and hooking the blade adaptor onto the outer section of the lower blade holder. Slide top adaptor onto pin recess between adaptor guard and outer section of the upper blade holder. You may need to press down lightly on the upper blade holder to install the blade.
- In order to cut, and avoid uncontrollable lifting of the workpiece, the teeth of the blade used on the scroll saw should always point downwards when installed.
- Carefully tighten the blade by rotating the blade tension knob clockwise just until you feel the slack in the blade removed.
- Double check to see that the adaptors are properly positioned in the blade holder. Then turn the blade tension knob ONE full turn clockwise and then replace the table insert. This amount of pressure should do well for most cutting operations and blades.

Note: If the blade touches the drop foot on either side then the drop foot must be adjusted. See section on **ADJUSTING DROP FOOT**, Page 5.

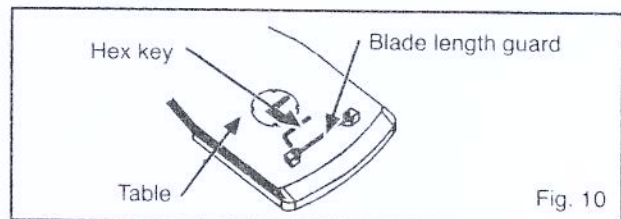


Fig. 10

OPERATION

CHOICE OF BLADE AND SPEED

The scroll saw accepts a wide variety of blade widths and thicknesses for cutting wood and other fibrous materials. Your saw uses 5 in. long blades of either the pin end or the plain end style. The blade width and thickness and the number of teeth per inch to use are determined by the type of material and the size of the radius being cut.

Note: As a general rule, always select narrow blades for intricate curve cutting and wide blades for straight and large curve cutting.

Teeth/Inch	Width	Thickness	Speed or Strokes Per Minute	Material Cut
10	.110 in. (2.8 mm)	.020 in. (0.5 mm)	1200-1450	25mm (1") and 52mm (2") hard / soft wood, plywood, etc.
15	.110 in. (2.8 mm)	.020 in. (0.5 mm)	850-1200	25-38mm (1-11/2") hard / soft wood, bone, paper, felt, plastic, etc.
18	.095 in. (2.4mm)	.010 in. (0.3 mm)	600-850	2-19mm (3/32-3/4) hard / soft wood, bone, horn, plastic, etc.

BLADE INFORMATION

- Scroll saw blades wear out and must be replaced frequently for best cutting results. Scroll saw blades generally stay sharp for 1/2 hour to 2 hours of cutting, depending on type of material and speed of operation.
- In cutting wood, best results are achieved when cutting wood less than one inch thick.
- When cutting wood thicker than one inch, the user must guide the workpiece very slowly into the blade and take extra care not to bend or twist the blade while cutting.
- When choosing a blade, carefully consider the following:
 - Very fine, narrow blades should be used to scroll cut in thin material 1/4 in. (6mm) thick or less.
 - Most blade packages state the size or thickness and type of material which that blade is intended to cut. The package should also state the radius or size of curve that can be cut with that blade size.
 - Wider blades cannot cut curves as tight or as small as thinner blades.
- Blades wear faster when:
 - Cutting plywood, hardwood, and other laminates.
 - Cutting material thicker than 3/4 in. (19mm).
 - Side pressure is applied to the blade.

USING VARIABLE SPEED

See Figure 11.

- By turning the variable speed knob, the saw's speed may be adjusted from a high speed of approximately 1600 SPM (Strokes Per Minute) to a low speed of approximately 600 SPM.
- To increase the strokes per minute, turn the variable speed knob clockwise or to the right.
- To decrease the strokes per minute, turn the variable speed knob counterclockwise or to the left.

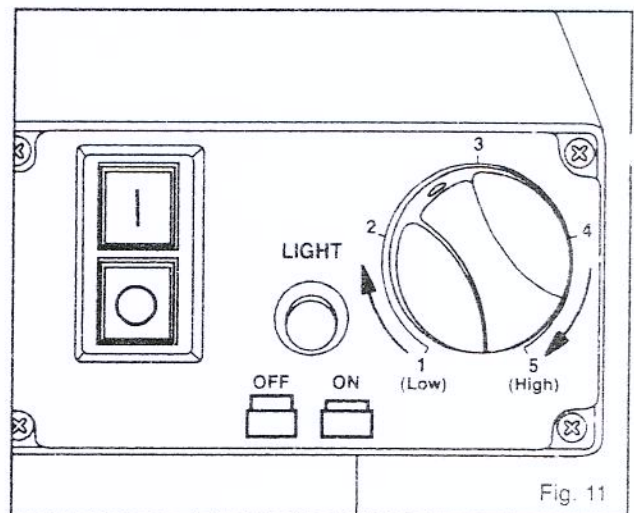


Fig. 11

OPERATION

BASIC OPERATION OF THE SCROLL SAW

Before starting a cut, watch the saw run. If you experience excessive vibration or unusual noise, stop immediately. Turn the saw off and unplug the saw. Do not restart until locating and correcting the problem.

Note: After the saw is turned **ON**, a hesitation before blade movement is normal.

CUTTING PROCEDURES

- 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 and adjust the saw.
- Plan the way you will hold the workpiece from start to finish.
- Keep your hands away from the blade. Do not hand hold pieces so small your fingers will go under the blade guard.
- Hold the workpiece firmly against the saw table.
- The blade teeth cut material only on the down stroke.
- Use gentle pressure and both hands when feeding the work into the blade. Do not force the work.
- Guide the workpiece into the blade slowly because the teeth of the blade are very small and can only remove material on the down stroke.
- Avoid awkward operations and hand positions where a sudden slip could cause serious injury from contact with the blade. Never place hands in blade path.
- To get accurate cuts, compensate for the blade's tendency to follow the wood grain as you are cutting wood.
- Use extra supports (tables, saw horses, blocks, etc.) when cutting large, small or awkward workpieces.
- Never use another person as a substitute for a table extension or as additional support for a workpiece that is longer or wider than the basic saw table.
- When cutting irregularly shaped workpieces, plan your work so it will not pinch the blade. Workpieces must not twist, rock or slip while being cut.

REMOVING JAMMED MATERIAL

When backing out the workpiece, the blade may bind in the kerf (cut). This is usually caused by sawdust clogging the kerf or when the blade comes out of the blade holders. If this happens:

- ■ Wait until the saw has come to a full and complete stop.
- Place the switch in the **OFF** position.
- Unplug the saw from the power source.
- Remove the saw's blade and the workpiece, see section on **Removing the Saw Blade**, page 7.
- Wedge the kerf open with a flat screwdriver or wooden wedge then remove the blade from the workpiece.



WARNING:

Before removing loose pieces from the table, turn saw off and wait for all moving parts to stop to avoid serious personal injury.

AVOIDING INJURY

- Make sure saw is level and does not rock. Saw should always be on a firm, level surface with plenty of room for handling and properly supporting the workpiece.
- Bolt saw to the support surface to prevent slipping, walking or sliding during operations like cutting long, heavy boards.
- Turn saw off and unplug cord from the power source before moving the saw.
- Do not remove jammed cutoff pieces until blade has come to a full and complete stop.
- Choose the right size and style blade for the material and type of cut you plan to do.
- Use only recommended accessories.
- With the exception of the workpiece and related support devices, clear everything off the saw table before turning the saw on.
- Properly support round materials such as dowel rods or tubing because they have a tendency to roll during a cut causing the blade to "bite". To avoid this, always use a "V" block or clamp workpiece to a miter gauge.
- Before removing loose pieces from the saw table, turn saw off and wait for all moving parts to stop.

OPERATION

WARNING:

To avoid possible serious injury from accidental starting, always turn the saw off and unplug the saw from power source before removing or replacing the blade.

SCROLL CUTTING

For general type scroll cutting, follow the pattern lines by pushing and turning the workpiece at the same time. Do not try to turn the workpiece while engaged in the blade without pushing it – the workpiece could bind or twist the blade.

WARNING:

To prevent serious personal injury, never leave the saw unattended until the blade has come to a complete stop.

INTERIOR SCROLL CUTTING

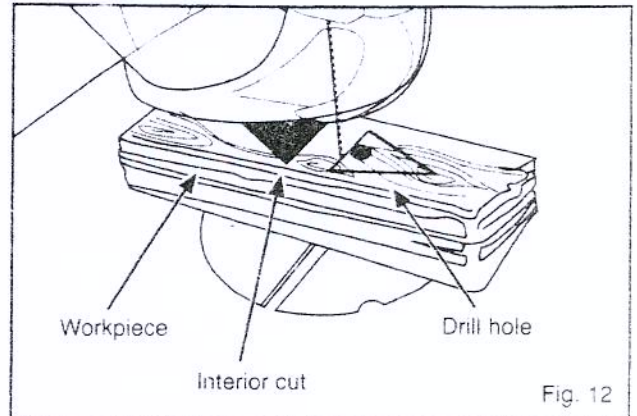
See Figure 12.

- One feature of a scroll saw is that it can be used to make scroll cuts on the interior of a workpiece without breaking or cutting through the edge or perimeter of the board.
- To make interior cuts in the workpiece, remove the scroll saw blade as explained in the section on **Installing the Saw Blades**.
- Drill a 1/4 in. (6 mm) hole in the workpiece.
- Place the workpiece on the saw table with the drilled hole over the access hole in the table.
- Install blade through the hole in the workpiece; adjust the drop foot and blade tension.
- When finished making the interior scroll cuts, simply remove the blade from the blade holders as described in the section on **Installing the Saw Blades** and remove the workpiece from the saw table.

STACK CUTTING

See Figure 13.

After becoming well acquainted with your saw through practice and experience, you may wish to try stack cutting. Stack cutting may be used when several identical shapes need to be cut. Several pieces of wood may be stacked on top and secured to each other before cutting. The wood pieces may be joined together by placing double sided tape between each piece or by wrapping masking tape around the stacked pieces of wood to each other so they will move on the table as a single piece of material.

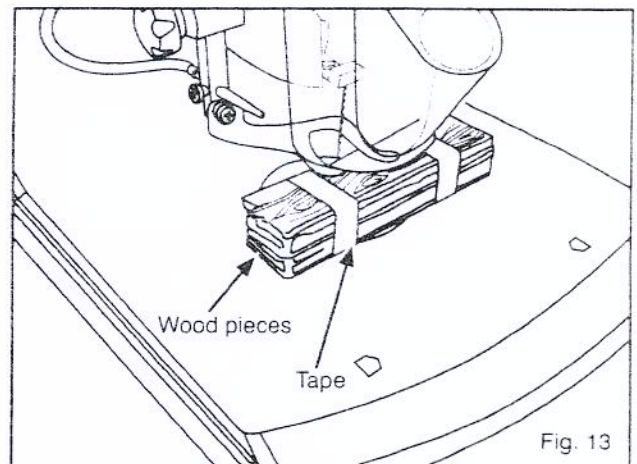


WARNING:

To avoid possible, serious personal injury, do not cut more than one loose piece of material at a time.

WARNING:

Do not allow familiarity with your saw to make you careless. Remember that a careless fraction of a second is sufficient to inflict severe injury.



MAINTENANCE

GENERAL MAINTENANCE

- Keep your scroll saw clean.
- After cleaning the table top initially, apply a thin coat of automobile type (paste) wax to the table top so the wood slides easily while cutting.
- Do not allow pitch to accumulate on the saw table. Clean with gum and pitch remover.

ARM BEARINGS

See Figure 14.

Lubricate the arm bearings after the first 10 hours of use. Oil after every 50 hours of use or whenever there is a squeak coming from the bearings.

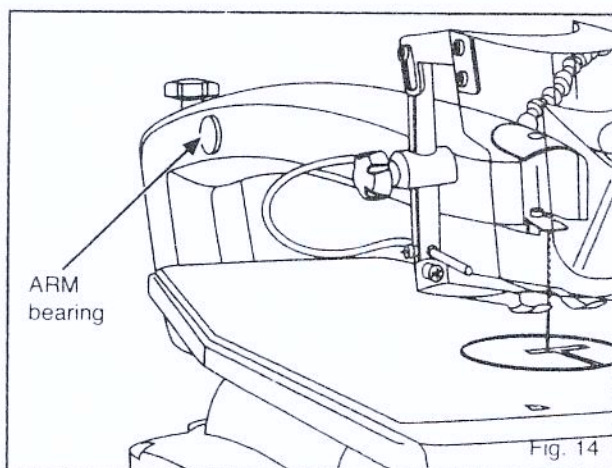
- Carefully place the saw on its side as shown in Figure 14. Remove the rubber cap from the upper and the lower arm of the saw.
- Squirt a few drops of SAE20 oil around the shaft end and arm bearings. Let oil soak in overnight, remaining in this position.

Note: Lubricate the bearings on the other side of the saw in this same manner.

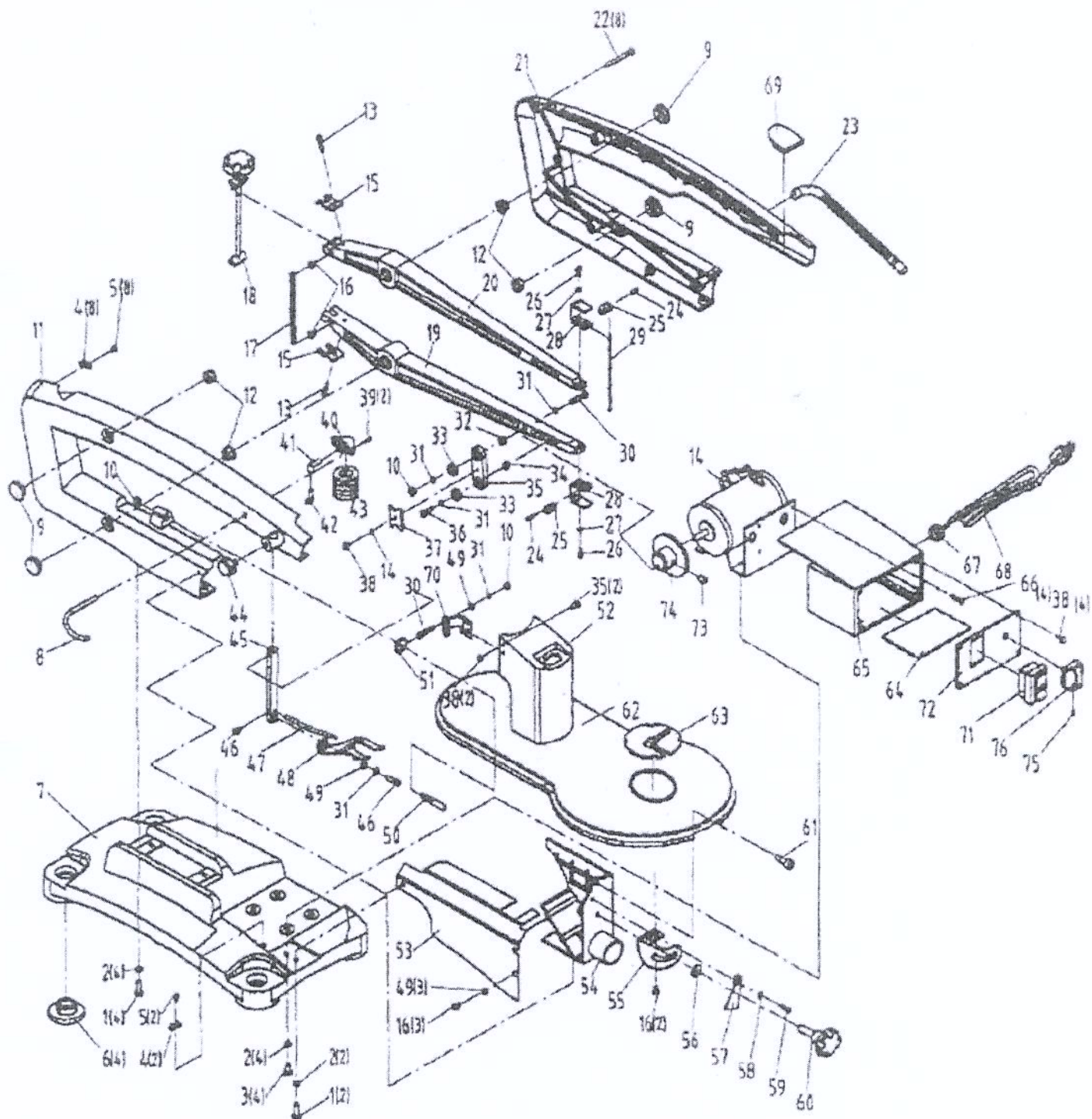


WARNING:

If the power cord is worn, cut, or damaged in any way, have it replaced immediately by a qualified service technician. Failure to do so could result in serious personal injury.



18" SCROLL SAW PARTS DIAGRAM



18" SCROLL SAW PART LIST

PART#	DESCRIPTION	UNIT Q'TY
1	HEX.SOC.Screw M6X20	6
2	Spring Washer 6	10
3	HEX.SOC.Screw M6X16	4
4	Wire Clamp	10
5	Cross Round Head Screw M4X6	10
6	Rubber Foot	4
7	Base	1
8	PVC Tube	1
9	Bush	4
10	I HEX. SOC. NUT M5	3
11	Stand(Left)	1
12	Oiliness Bearing	4
13	Inner HEX.SOC.Screw M4X20	2
14	MOTOR	1
15	Press Plate	2
16	Cross Round Head ScrewM5X8	7
17	Retaining Spring	5
18	Adjusting Bar Assy	1
19	Lower Arm Assy	1
20	Upper Arm Assy	1
21	Stand(Right)	1
22	Cross Round Head Screw M5X50	8
23	Light Assy	1
24	HEX.SOC.Screw M5X8	2
25	Holder	2
26	HEX.SOC.Screw M4X10	2
27	Star Washer	2
28	Blade Bracket	2
29	Blade	1
30	HEX.SOC.Screw M5X25	2
31	Spring Washer 5	5
32	Big Bush	1
33	Bearing	2
34	Small Bush	1
35	Cam Plate	1
36	HEX.SOC.Screw M5X16	1
37	Press Plate for Cam-plate	1
38	Screw ST4.2X9.5	5

39	Cross Round Head Screw M3X10	2
40	Gasbag Base	1
41	Syphon 2	1
42	Syphon 1	1
43	Gasbag	1
44	Lock handle(Impaction shank)	1
45	Impaction Shank	1
46	HEX.Screw M5X10	2
47	Blast Tube	1
48	Blade Procket Bracket	1
49	Flat Washer 5)	4
50	Table Axes	1
51	Spring Washer 8	1
52	Blade Chuck	1
53	Side Cover Board	1
54	Table Support	1
55	Divided Circle	1
56	Big Flat Washer 6	1
57	Pointer	1
58	Flat Washer	1
59	Cross Round Head Screw M4X12	5
60	Table Locking Handle	1
61	HEX.SOC.Screw M6X35	1
62	Work Table	1
63	Cover	1
64	Circuit Board	1
65	Switch Box	1
66	Cross Round Head Screw M4X20	4
67	Strain Relief	1
68	Wire&Plug	1
69	Cover Board	1
70	Cover Commeter	1
71	Switch	1
72	Switch Box Cover	1
73	HEX.SOC.Head Screw M8X12	1
74	Eccentricity Wheel	1
75	HEX.SOC.Head Screw M5X6	1
76	Adjusting handle	1