

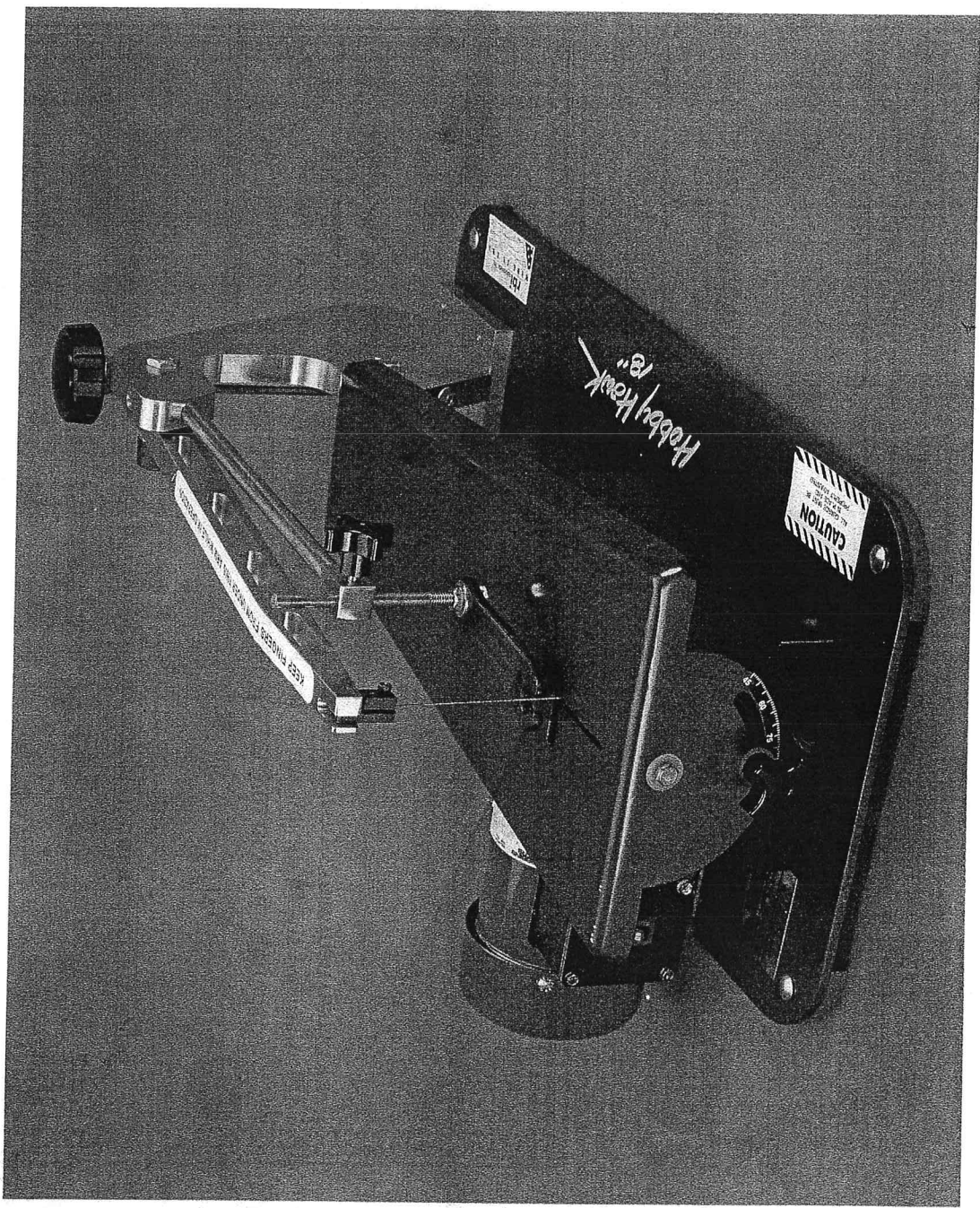


rbi



Hobby Hawk

MODEL 1800 OPERATORS MANUAL



PLEASE READ THE MANUAL BEFORE
OPERATING EQUIPMENT



CODE #890

MANUAL #OM-1800

WARRANTY

We guarantee each rbi Hobby Hawk Scroll Saw to be free from defects in material and workmanship for 1 year from date of delivery to original owner. This warranty does not cover damage sustained in transit or from misuse of this piece of equipment.

This warranty does not obligate us to bear the cost of labor or transportation charges in connection with the repair or replacement of defective parts, nor shall it apply to any machine upon which repairs or alterations have been made unless authorized by us.

We make no warranty in respect to components not of our manufacture, such being subject to the warranties of their respective manufacturer.

We shall in no event be liable for consequential damages or contingent liabilities arising out of the use of any machine, or out of the failure of any machine to operate properly. No express, implied or statutory warranty other than herein set forth is made or authorized to be made by us.

THE ENCLOSED WARRANTY REGISTRATION CARD MUST BE RETURNED TO VALIDATE YOUR WARRANTY.

TO VALIDATE WARRANTY: CUSTOMERS MUST MAIL IN WARRANTY CARD UPON RECEIPT OF MACHINE.

Note: Before calling the factory for assistance, please consult your operators manual. If you still have questions after consulting your operators manual our customer service department will be glad to assist you, their phone number is (800) 544-1257.

rbiindustries, inc.

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Order Line 1-800-535-8665

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SPECIFICATIONS

Machine Size	Assembled
	Length 27 in.
	Width 14-3/4 in.
	Height 11-1/4 in.
	Weight 43 lbs.
Throat Depth	. . . . . 18 in.
Max. Cutting Depth	. . . . . 2 in.
Stroke	. . . . . 3/4 in.
Strokes Per. Minute	. . . . . 1735
Blades	. . . . . Standard Scroll/Fret Saw, 5" long, with plain ends
Motor	. . . . . Horsepower 1/8 HP
	. . . . . Voltage 110 V
	. . . . . Phase Single
	. . . . . Speed 1735 RPM
Drive	. . . . . Direct

SAFETY

TRAINING:

1. Read the operators manual carefully. Be thoroughly familiar with the operation of the equipment. Know where the controls are and how to operate them.
2. Never allow unsupervised children to operate equipment. Never allow anyone to operate equipment without proper instruction.
3. Keep work area clear of other persons.
4. Maintain a clean uncluttered work area.
5. Wear safety goggles, ear protection, and a dust mask.
6. Good lighting is important. It minimizes eye fatigue, and promotes safe accurate cutting.

OPERATION SAFETY:

1. Never make any adjustments while the machine is running. Disconnect the electrical power supply before making any adjustments on the machine.
2. Remove all tools and wood scraps before starting the machine.
3. Wear proper clothing. Avoid loose fitted clothing, neck ties, long sleeves, long hair, gloves, jewelry, watches, rings, etc.
4. To avoid electrical shock, do not operate any electrical equipment in a damp or wet area.
5. Do not operate machine while under the influence of medication, alcohol or drugs.
6. Maintain all safety guards.
7. Never leave the machine running unattended.
8. Don't overload the machine. Follow operators instructions for safe operation.
9. Keep equipment in proper working order. Follow recommended maintenance procedures in the operators manual.
10. Don't use lumber with loose knots or splintered surfaces.

STRAIGHT-LINE CUTTING

Due to the manufacturing process used to produce them, the set on most scroll saw blades is all on one side (see fig. 1). This type of set causes the blade to cut a few degrees to one side. To saw a straight line the work piece should be angled approximately 2 to 4 degrees to compensate for this. This may be accomplished freehand or with a guide board. This same technique should be used for straight-line ripping. When ripping make sure the saw blade is following the layout line and not the wood grain.

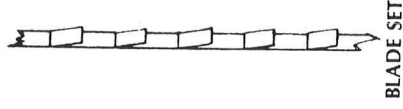


Fig. 1

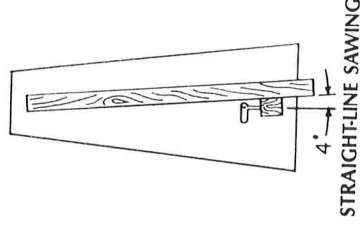


Fig. 2

TURNS AND CORNERS

Scroll saws are capable of producing 360 degree turns while cutting. When you want to cut a point, simply turn the work piece the desired amount while maintaining downward pressure on it. The normal procedure with a band saw is to cut past the point and then restart, this is not necessary with a scroll saw. When cutting curves slowly follow the pattern line, while turning the workpiece so the blade is following the line. When sawing an extremely tight corner or radius it may be necessary to install a smaller blade to prevent blade breakage.

BEVEL SAWING

Sawing with the table tilted is bevel sawing, this makes angled sides on the project. This sawing technique may be used to create inlays, decorative letters, or to rough out animals or other objects to be carved. To bevel saw on the Hawk, loosen the table tilt knob and tilt the table to the desired angle.

STACK CUTTING

Stack cutting may be used to save time, and to produce identical pieces by cutting two or more pieces simultaneously. To do this simply stack the work pieces on top of each other and draw the pattern on the top piece. The pieces may be held together with double sided tape or nails may be driven into the scrap areas. Cut the stack using the pattern on the top piece and when finished disassemble the stack. It is important for the table to be perfectly square with the blade before sawing, if the table is not square, the pieces will not be the same size. The stack must not exceed 2" in height.

INTERIOR CUTOUTS

Sawing interior cutouts is cutting an opening on the inside of the work piece without cutting through the piece. Sawing inside openings is impossible with a band saw but a common practice on scroll saws.

Step 1: Drill a small hole (large enough for the blade to go through) near the pattern line for each inside opening.

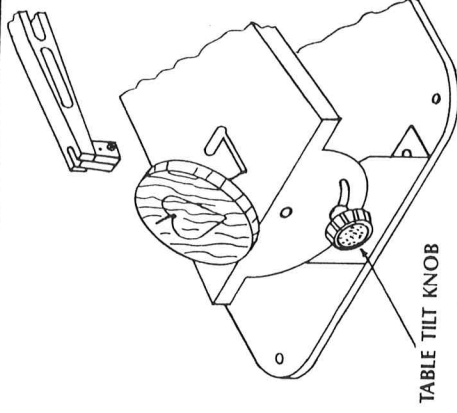


Fig. 3

Step 2: Release the blade tension, and remove the top of the blade from the top blade holder (See Blade Changing).

Step 3: Tilt the blade forward, to front of the slot in table.

Step 4: Lower the workpiece over the top end of the blade, so the blade will come through one of the drilled holes.

Step 5: Replace the blade in the top blade holder and retension.

Step 6: After the cut is finished, release the blade tension again, remove the top end of the blade from the top blade holder and remove the workpiece.

COMPOUND SAWING

Compound sawing involves sawing from two or more sides of the same workpiece (See fig. 4).

Step 1: Simply lay out the patterns on two adjoining surfaces. These patterns may be identical or different.

Step 2: After the patterns are laid out, choose which surface to saw first. The side that will give the least amount of loose scrap pieces should be cut first.

Step 3: Return the scrap pieces to their original locations and tape them in place.

Step 4: Cut out the other surface.

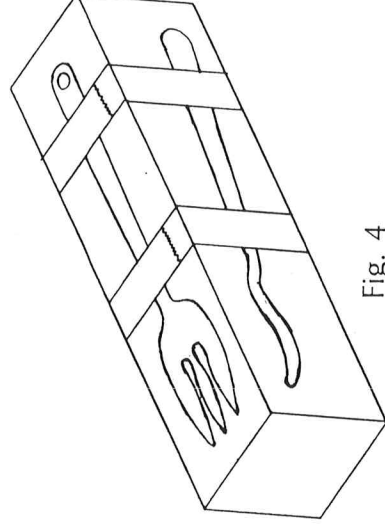


Fig. 4

INLAYING

Step 1: Select two pieces of hardwood that contrast in color (walnut and oak work well). The two pieces must be exactly the same thickness (1/4" is suggested, but any thickness up to 1" will work).

Step 2: Draw the selected design on one of the two pieces.

Step 3: Fasten the two pieces together with the pattern on the top face (use double sided tape or nails in a scrap area). If you use nails be sure they do not penetrate through the bottom of the project as this will scratch the saw table.

Step 4: Drill a very small hole (with a #60 drill bit) in a corner of the pattern.

Step 5: Release the blade tension, and remove the top of the blade from the top blade holder (See Blade Changing). A #2 blade is suggested.

Step 6: Tilt the blade forward, to the front of the narrow slot in the table (see fig. 3).

Step 7: Lower the workpiece over the top end of the blade, so the blade will come through the drilled hole. Be sure the pattern is facing up.

Step 8: Replace the blade in the top blade holder and tension.

Step 9: Tilt the table approximately 3-1/2 degrees. For thicker material tilt the table less, for coarser blades tilt the table more. It would be wise to make a trial on scrap pieces of the same thickness as your project. If the inlay goes through too far, increase the angle on the table.

Step 10: Holding down firmly on your project, begin the cut. Cutting around the pattern clockwise will cause the bottom piece to become the inlay material, and cutting around the project counter-clockwise will cause the top piece to become the inlay material. Saw around the pattern to the starting point and remove the blade. Always saw in the same direction from start to finish.

Step 11: Separate the pieces and press the inlay into the outer piece, tap the inlay to set firmly in place.

Step 12: Complete the project by cutting the outside shape, sand and finish.

BLADE CHANGING

Step 1: Release the blade tension by turning the tension adjustment knob (the big knob) counter clockwise, until there is no longer tension on the blade (see fig. 6).

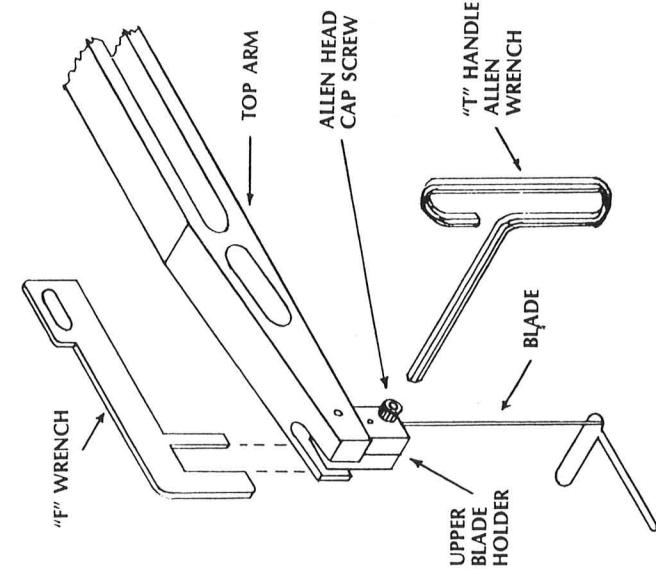


Fig. 5

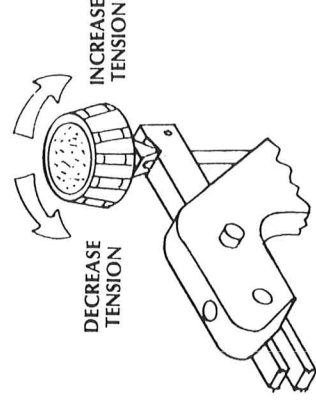


Fig. 6

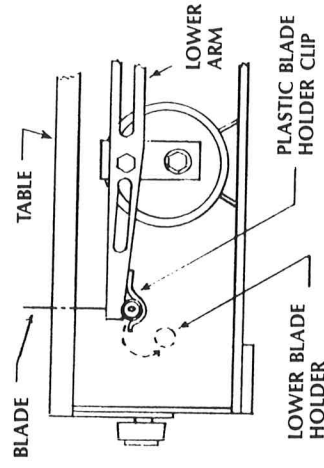


Fig. 7

Step 2: Remove the top end of the blade first. To do this place the 'F' wrench (HA-137) over the upper blade holder with the handle of the wrench along the upper arm. This is to hold the upper blade holder stationary while loosening the set screw. To release the blade from the upper blade holder, place the 'T' handle Allen wrench (ES-86) into the Allen head cap screw on the right side of the upper blade holder and loosen the screw. The upper saw arm will spring up a little. If the old blade is broken remove any remaining pieces (see fig. 5).

Step 3: Located in the “V” notch of the lower arm is a barrel shaped blade holder. Holding the blade holder by the ends (with your thumb and first finger) remove it and the blade together by sliding the blade holder forward, it will simply snap out of the plastic blade holder clip. This allows the blade to slide forward out of the slot in the arm. When the blade is free of the lower arm, slide the blade holder to the side or down in front of the plastic blade holder clip to remove it (see fig. 7).

Step 4: To remove the blade from the lower blade holder, place the blade holder on end in the oblong slot in the saw base. Using the “T” handle Allen wrench (or the “F” wrench), place the slot in the handle over the flats of the lower blade holder. Loosen the lower blade holder and remove the old blade, or any broken pieces (see fig. 8).

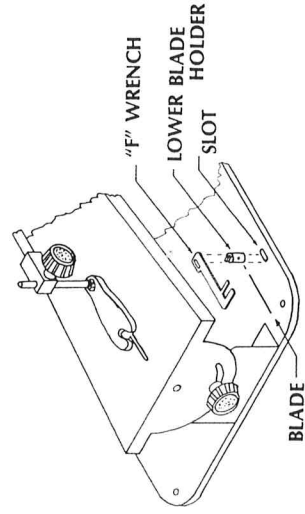


Fig. 8

Step 5: Insert the new blade (teeth pointing toward the blade holder) through the hole in the bronze bushing and between two halves of the barrel shaped blade holder. Be sure the bottom end of the blade is against the center set screw of the blade holder and doesn't slide down beside it, this assures the blade comes out perpendicular or straight (see fig. 9). Then retighten the blade holder with the “F” wrench or the “T” handle Allen Wrench. **WARNING: Be careful not to overtighten the blade holder. If you do it will weaken the blade and make it prone to breaking next to the blade holder.** If you have problems determining correct tightness for the lower blade holder, use the handle of the “T” handle Allen wrench to tighten the blade holder. When the wrench starts to flex the blade holder is tight. If you have trouble aligning the blade in the lower blade holder, you may want to purchase our optional blade alignment fixture (part # HA-85).

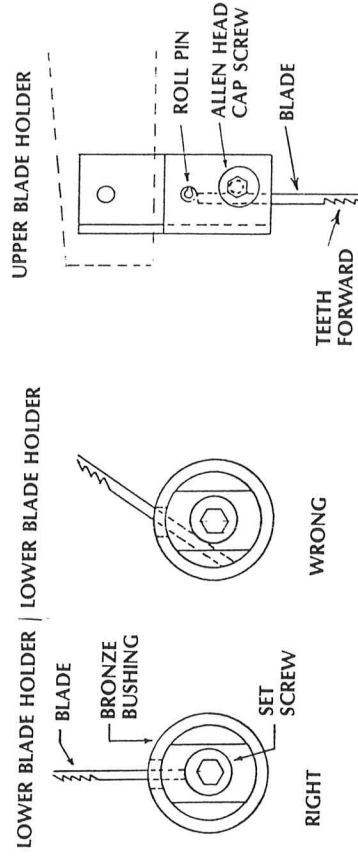


Fig. 9

Fig. 10

Note: You may wish to purchase several bottom blade holders and have different sized blades ready for different projects. This will greatly reduce your changeover time.

Step 6: You are now ready to put the blade and holder back into the “V” notch of the bottom arm. Holding the blade holder by the ends (with your thumb and first finger) thread the blade up through the slot in the table top. Make sure the teeth are facing the front of the saw. Slide the blade holder over the front of the lower arm until the blade will slide back into the notch in the lower arm, and slide the blade holder back into the “V” notch of the lower arm.

Step 7: Replace the “F” wrench over the upper blade holder. Place the “T” handle Allen wrench into the Allen head cap screw in the upper blade holder and pull the upper arm down with the Allen wrench. Lower the blade holder over the top end of the blade until the top of the blade rests on the center of the roll pin and the back of the blade is touching the Allen head cap screw (see fig 10). Tighten the Allen head cap screw securely with the Allen wrench.

Step 8: Remove the “T” handle Allen wrench and the “F” wrench. Tension the blade by turning the tension adjustment knob clockwise. For more information see Blade Tensioning on the following page.

To adjust the blade tension, turn the blade tension knob (the big knob on the back of the upper arm). To increase the tension turn the knob clockwise, to decrease the tension turn the knob counter clockwise (see fig. 6).

Musical Method: To check the blade tension, pluck the blade like a guitar string. You should get a crisp ping sound ("C" note) from the blade if it is tensioned correctly.

Pointer Method: A unique, handy, factory preset pointer and scale is provided on the Hobby Hawk scroll saw. The top mark is loose, for blade changing. For a #2/0 to #2 blade tension so the pointer is on the middle mark, for a #5 to #7 blade halfway between the middle mark and the lower mark, and a #9 to #12 blade the lower mark.

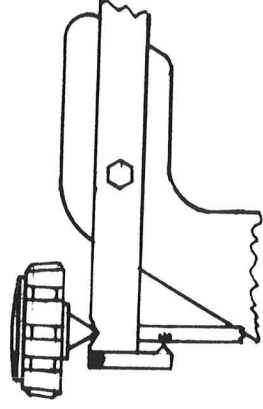


Fig. 11

MAINTENANCE

Arm Pivots: Add 3 to 4 drops of oil (light machine oil) to each side of the saw arm pivot point bushings, on the upper and lower saw arms every 16 hours.

Tension Rod: Remove the tension adjustment knob and add 1 to 2 drops of oil (light machine oil) to the threads of the blade tensioning rod every 16 hours. Oil the wedge (at the top of the tension rod) and the roll pin (at the bottom of the tension rod) with 1 to 2 drops of oil every 16 hours.

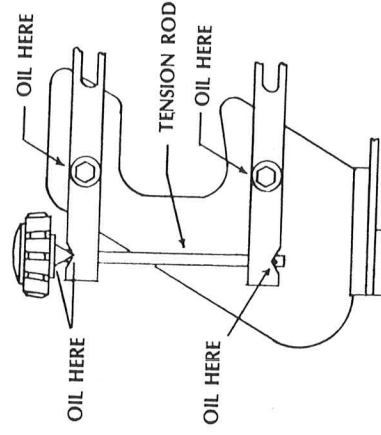


Fig. 12

Upper Blade Holder: Oil the roll pin the upper blade holder pivots on with 1 to 2 drops of oil every 16 hours.

ADJUSTING THE HOLD-DOWN FOOT

Step 1: Release the blade tension by turning the tension adjustment knob counter-clockwise (see fig. 6).

Step 2: Loosen the hold-down foot adjustment knob.

Step 3: Rotate the hold-down foot to the blade. Slide the blade through the cutout at end of the hold-down foot. Retension the blade, and center the foot on the blade (see fig. 13).

Step 4: Adjust the hold down-foot to the desired height. When adjusted properly the hold-down foot should hold the workpiece tight against the table while sawing.

Step 5: Retighten the hold-down foot adjustment knob.

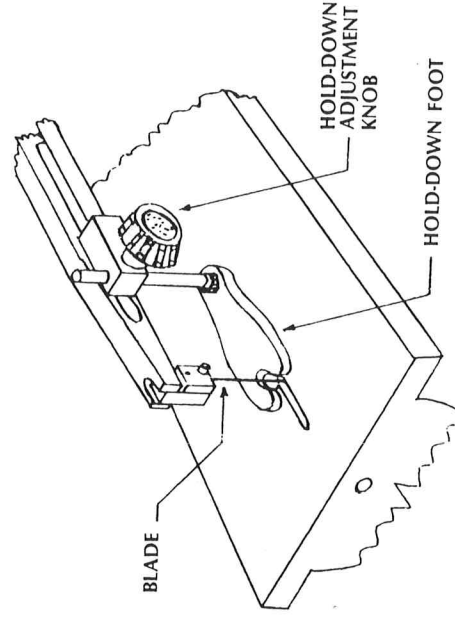


Fig. 13

TROUBLE SHOOTING GUIDE

PROBLEM

POSSIBLE CAUSE

POSSIBLE SOLUTION

Excessive blade breakage	Improper blade size for wood thickness Cutting too tight a radius for blade size Improper blade installation	Increase blade size for thicker wood. See Blade Selection. Increase radius, or reduce blade size. See Turns and Corners. Install blade properly, see Blade Installation.
Blade burns the wood	Wrong blade size Cutting too small a radius Improper feeding when cutting a straight line Pushing sideways on the blade. High resin content in wood. Feeding too fast Improper blade tension.	Increase blade size, see Blade Selection. Increase radius, or reduce blade size. See Turns and Corners in the Sawing Section. Refer to Straight Line Sawing. Turn the wood to follow the pattern line. Don't push sideways on the wood. Saw against grain as much as possible, use new blade, use other wood. Reduce feed rate. Increase blade tension, see Blade Tensioning.
Blade bends back excessively, or twists while sawing	Improper blade tension Improper blade size Feeding too fast	Increase blade tension, see Blade Tensioning. Increase blade size, see Blade Selection. Reduce feed rate.
Blade cutting too large a radius	Blade too large Blade tension low Improper feeding	Use smaller blade, see Blade Selection. Increase blade tension, See Blade Tensioning. See Turns and Corners.
Board splintering or rough on the bottom	Wrong blade size Wood grain stringy or knotty Blade tension low Feeding too fast	Use smaller blade, see Blade Selection. Use masking tape on the bottom side of project at the saw line, or use better quality wood. Increase blade tension, see Blade Tensioning. Slow feed rate.
Blade doesn't follow pattern line	Improper feeding on straight lines Operator error; not following the line Dull blade Blade too small Blade tension low Feeding too fast	Refer to Straight-Line Cutting. Practice. Replace blade. Increase blade size, see Blade Selection. Increase blade tension, see Blade Tensioning. Slow feed rate.
Wood jumps on the table	Inadequate hold-down foot pressure. Blade upside down Turning too tight a radius Sawing too fast Pressing sideways on the blade.	Adjust the hold-down foot to apply more pressure on the board. Install blade with teeth pointing down, see Blade Changing. Increase radius size, or use smaller blade. Reduce feed rate. Feed properly.

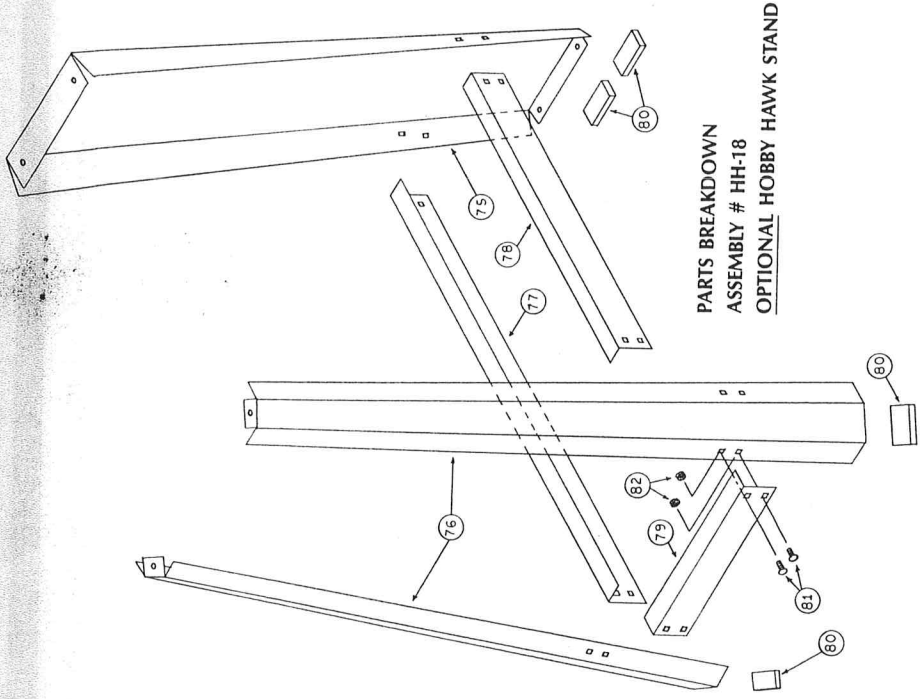
PARTS BREAKDOWN MODEL 1800 HOBBY HAWK SCROLL SAW

Ordering Parts: When ordering parts always give model no., part no. and description as shown in this parts list. Do not use key numbers when ordering parts, always use part no.

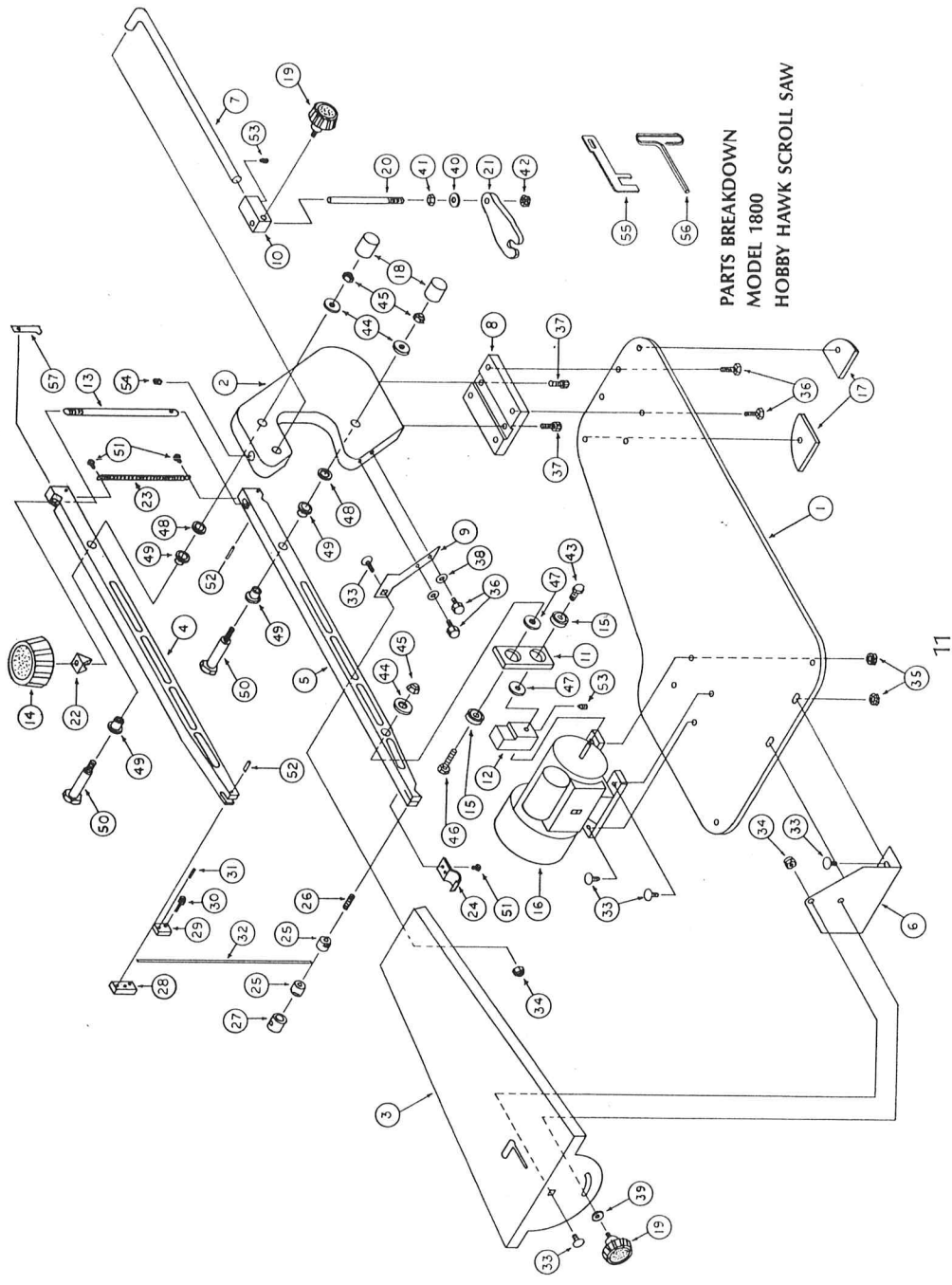
Key Part No.	Description	Qty.	Key Part No.	Description	Qty.
1	HH-01 Base	1	37	PS-17 1/4-20x3/4 Cap Screw	2
2	HH-02 Arm Support	1	38	RB-117 1/4 Flat Washer	2
3	HH-03 Table	1	39	HA-103 1/4 Flat Plastic Washer	1
4	HH-04 Upper Arm	1	40	RB-150 5/16 Flat Washer	1
5	HH-05 Lower Arm	1	41	RZ-81 5/16-18 Hex Nut	1
6	HH-06 Base Tilt	1	42	FA-47 5/16-18 Whiz Nut	1
7	HH-07 Hold-Down Arm	1	43	HH-19 3/8x3/8 Socket Shoulder Screw	1
8	HH-08 Arm Support Base	1	44	RZ-50 3/8 Flat Washer	3
9	HH-09 Rear Table Tilt	1	45	RZ-51 3/8-16 Neoprene Lock Nut	3
10	HH-10 Hold-Down Block	1	46	RZ-18 3/8-16x1 1/4 Hex Head Bolt	1
11	HH-11 Pitman Arm	1	47	HH-20 3/8 ID, 3/4 OD x 1/16 Washer	2
12	HH-12 Counter-weight	1	48	HA-14 1/2 ID, 3/4 OD x 18 GA Washer	2
13	HH-13 Tension Rod	1	49	R-369 1/2 ID Bronze Bushing	4
14	HH-14 5/16-18, Large Knob	1	50	HA-71 1/2x3/4 Shoulder Bolt	2
15	HH-15 3/8 ID, 7/8 OD Bearing	2	51	FA-35 10-32x1/4 Round Head Screw	3
16	HH-16 Motor	1	52	FA-22 1/8x3/4 Roll Pin	2
17	HH-17 Rubber Feet (Saw)	4	53	RZ-83 1/4-20x1/4 Set Screw (Cup Pt)	2
18	HH-21 Rubber Caps	2	54	RZ-185 5/16-18x5/16 Set Screw	1
19	ES-40 1/4-20x1/2 Knob	2	55	HA-137 "F" Wrench	1
20	SH-12 Hold-Down Foot Rod	1	56	ES-86 "T" Handle Allen Wrench	1
21	HA-104 Hold-Down Foot	1		Base (Electrical Box)	1
22	HA-75 Wedge Pivot	1		Top (Electrical Box)	1
23	FA-36 1/4x4 Extension Spring	1		Switch	1
24	HA-138B Blade Holder Clip	1		Power Cord	1
25	ES-22 Round Blade Holder (1 side)	1		Blade Tension Pointer	1
26	ES-68 1/4-20x3/4 Set Screw	1	57	HH-24	
FA-46	Assembly (2) ES-22, (1) ES-68				
27	HA-112 Lower Blade Holder Bearing	1			
28	FA-40 Top Blade Holder, Big side	1			
29	FA-41 Top Blade Holder, Small side	1			
30	ES-90 8-32x1/2 Cap Screw	1			
31	FA-43 1/8x1/2 Roll Pin	1			
FA-45	Assembly (1) FA-40, (1) FA-41, (1) ES-90, (1) FA-43				
32	Saw Blade	1			
33	RB-99 1/4-20x5/8 Carriage Bolt	8			
34	HA-78 1/4-20 Neoprene Lock Nut	2			
35	RB-223 1/4-20 Whiz Nut	6			
36	RBZ-206 1/4-20x3/4 Hex Head Bolt	6			

PARTS BREAKDOWN OPTIONAL HOBBY HAWK STAND

75	HH-25 Back Leg	1
76	HH-26 Front Legs	2
77	HH-27 Left Brace	1
78	HH-28 Right Brace	1
79	HH-29 Front Brace	1
80	HH-32 Rubber Feet (Stand)	4
81	RB-99 1/4-20x5/8 Carriage Bolt	12
82	RB-223 1/4-20 Whiz Nut	12



PARTS BREAKDOWN
 ASSEMBLY # HH-18
 OPTIONAL HOBBY HAWK STAND



PARTS BREAKDOWN
 MODEL 1800
 HOBBY HAWK SCROLL SAW

BLADE SELECTION

The Hobby Hawk will accept all 5" long standard scroll/fret saw blades with plain ends.

Experimenting is the best way to determine what size blade works best for you in different conditions, however a chart is provided as a guide. Medium size fret saw blades (universal numbers 5 to 9) are satisfactory for most projects, and a good choice to try first. If a medium blade doesn't leave a smooth enough cut to suit you, doesn't cut a small enough radius, or splinters the bottom of the cut too badly, try a finer blade (smaller universal number).

As a general rule use the coarsest blade that will give you a satisfactory cut. Coarser blades make it easier to cut a straight line, cut faster, and are less likely to break.

CHOICES, CHOICES: CUTTING THROUGH THE MAZE OF BLADES (standard, skip-tooth, plain-end blades listed)				
UNIVERSAL NUMBER	WIDTH (inch)	THICKNESS (inch)	TEETH PER INCH	APPLICATIONS
2/0	.015-.022	.010	28-30	Extremely intricate sawing in veneers, plastics, hard rubber, and pearl up to 3/32" thick
0	.024	.011	25	
1	.026	.011-.012	23-25	
2	.028-.029	.012-.013	20-23	Tight radius work in hardwoods to 1/2" thick, softwoods to 3/4", and plastics to 1/4"
3	.032	.013-.014	18-20	
4	.035	.014-.015	15-18	Tight radius work in hardwoods 3/4", softwoods to 1", and plastics to 1/2"
5	.038-.039	.015-.016	12½-16½	
6	.041-.043	.016-.017	12½-15	Hardwoods to 1", softwoods to 1 1/2", plastics to 1/2"
7	.045	.017-.018	11½-14	
8	.047-.049	.017-.018	11½-14	Hardwoods to 1 1/2", softwoods to 2", plastics to 3/4"
9	.053	.018-.019	11½-14	
10	.056-.057	.019-.020	11-12½	
11	.059-.063	.019-.020	9½-12½	
12	.052	.024	9½	

SCROLLER'S HOTLINE

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FOR ORDERS:

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