

Bushton Manufacturing

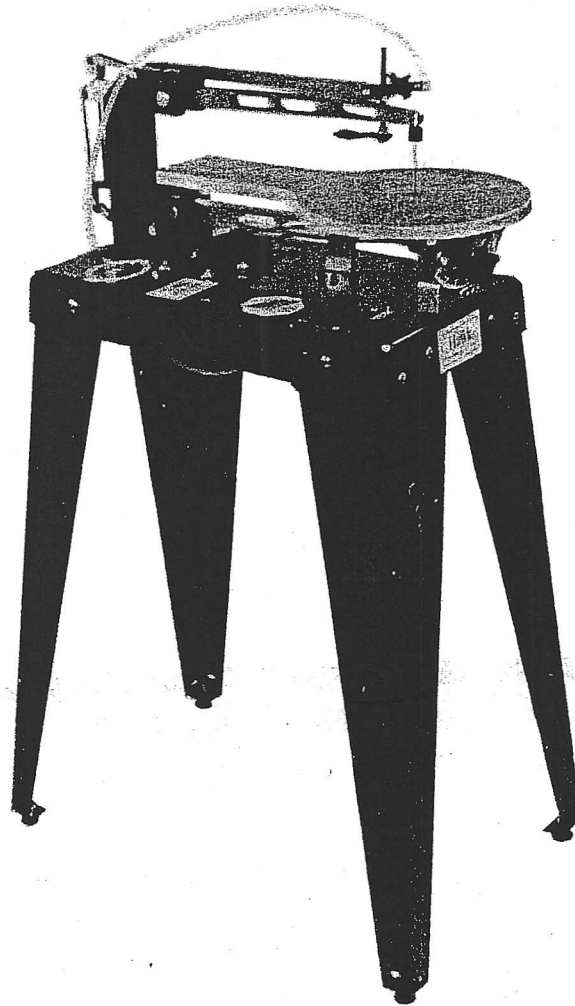
107 South Main P.O Box 127

Bushton, KS 67427

Phone: 620-562-3557 Fax: 620-562-3557

MODEL 216-3 HAWK SCROLL SAW

OPERATORS MANUAL



**READ THOROUGHLY BEFORE
OPERATING**



MANUAL #HA 0488

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WARRANTY

We guarantee each Hawk Scroll Saw to be free from defects in material and workmanship for 1 year from date of delivery to original user. 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 replacement or repair of defective parts, nor shall it apply to any saw upon which repairs or alterations have been made unless authorized by us.

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

We shall in no event be liable for consequential damages or contingent liabilities arising out of the failure of any saw to operate properly.

No express, implied or statutory warranty other than herein set forth is made or authorized to be made by us.

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

TO VALIDATE WARRANTY, CUSTOMERS Must mail in warranty card on receipt of machine.

MAINTENANCE

Arm Pivot:

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

Tensioning Rod:

Add 1 to 2 drops of oil (light machine oil) to the threads of the blade tensioning rod at the top arm every 16 hours.

Table:

Keep the table work surface waxed (paraffin wax) to prevent oxidation and allow easier movement of the wood on the table surface.

Cam Over Handle:

Apply wax (paraffin wax) to sliding surface of handle to allow easier use.

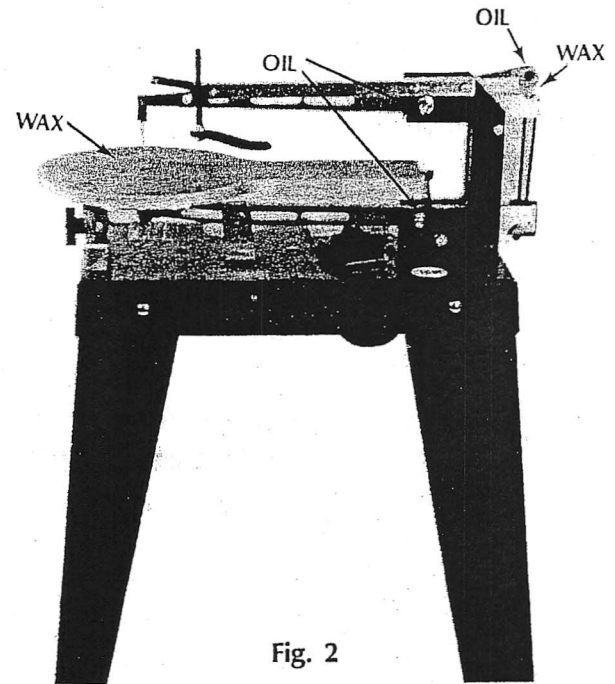


Fig. 2

SAWING TECHNIQUES

Starting:

It is best to begin the cut at a point or corner because it is difficult to smoothly blend in start and end points when starting on a side. When cutting out circular shapes, saw into the pattern line in a crosscutting (across the grain) direction. If the starting point must be on a curve, make it an outside curve. Burrs and knobs are easier to sand on an outside curve.

Sawing:

Feed the piece to be cut slowly into the saw blade while maintaining downward pressure on the piece. Do not force it into the blade — let the saw blade do the work. The speed at which you feed the wood into the blade depends on the type of wood you are cutting. Harder woods should be fed more slowly than softer varieties. Feeding too quickly into the blade may result in the blade burning the wood, bending or twisting of the blade while sawing, a rough edge on the cut, or the wood jumping on the table. Do not apply sideways pressure on the blade. The downward pressure on the wood may be applied by hand or the hold down foot.

Straight-line Cutting:

A small amount of set is formed on one side of most scroll saw blades due to the manufacturing process used to produce them. Because of this, most blades do not cut straight or parallel to the blade. The set causes them to cut a few degrees more to one side than the other. To saw a straight line, the work should be angled approximately 2 to 4 degrees to compensate for this. This may be accomplished freehand or with a guide board. The same technique should be used for straight-line ripping. Be sure that the saw blade is following the layout line and not the grain when ripping. (See Fig. 3)

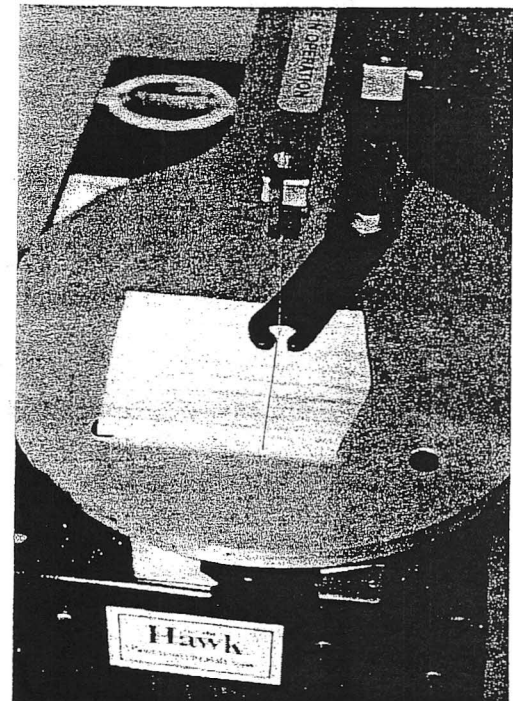


Fig. 3

Turns and Corners:

Scroll saws are capable of producing 360° turns while cutting. The kerf left after a turn is approximately 1/2 the width of the saw blade. When you want to cut a point, simply turn the piece the desired amount while maintaining downward pressure on it. It is not necessary to cut past the point and then restart, like the normal procedure for a band saw. When cutting curves, slowly follow the pattern line, turning the piece as you go so the teeth are following the line. It may be necessary to install a smaller blade when trying to saw an extremely tight corner or radius to prevent the wood from jumping on the table and to prevent blade breakage. (See Fig. 4)

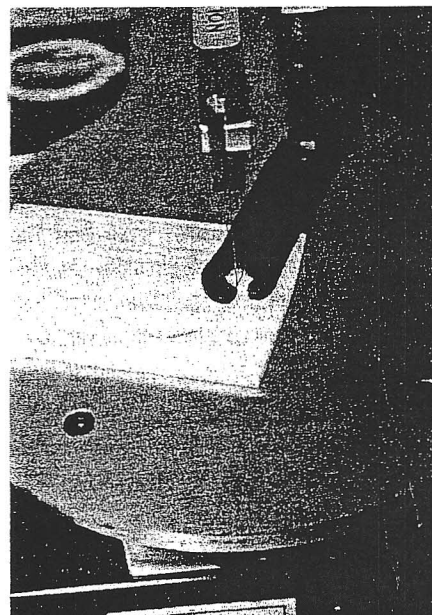


Fig. 4

Bevel Sawing:

Bevel sawing is sawing with the table tilted, creating angled sides on the project. This sawing technique may be used to create inlays, decorative letters, or to put shapes into animals or other objects to be carved. To bevel saw on the Hawk, loosen the table tilt assembly knob and tilt the table to the desired angle. (See Fig. 5)

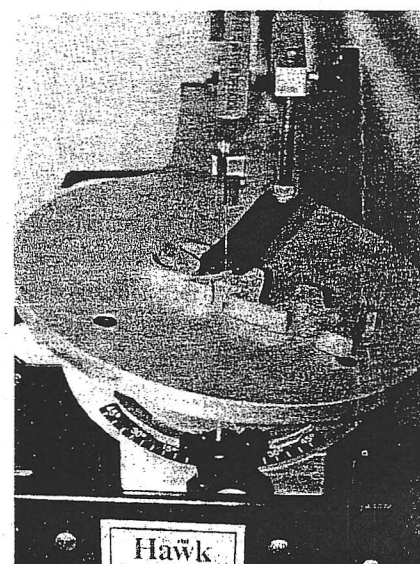


Fig. 5

Stack Cutting:

Stack cutting saves time by cutting two or more pieces simultaneously. 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 faced tape or nails may be driven into the scrap areas. Cut out the pattern on the top piece and disassemble the stack. Be sure that the saw table is perfectly square with the blade before sawing. (See Table Squaring Procedure) If it is not square, the pieces will not be uniform in size. The stack should not exceed 2" in height. (See Fig. 6)

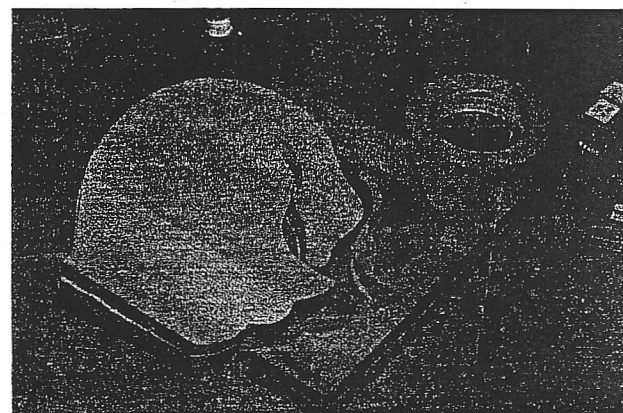


Fig. 6

Sawing Inside Openings:

Sawing inside openings is a common and frequently used process on scroll saws. It is cutting an opening on the inside of the work piece without cutting through the piece. To do this, drill a small hole that is large enough for the blade to pass through near the pattern line of the inside openings. Release blade tension by flipping the cam lock handle to the blade change position. Remove top of blade from the top blade holder (See Blade Changing). Insert the blade through the drilled hole in the work piece. Install the top of the saw blade back into the top blade holder. Retension the blade by flipping the cam lock handle to its original position. After the cut is finished, remove the blade from the opening.

NOTE: Disconnect electrical power supply before making any adjustments to the machine. (See Fig. 7)

Compound Sawing:

The compound sawing process involves cutting on two or more sides of the work piece. To do this, simply lay out a pattern on two adjoining surfaces. These patterns may be identical or different. After the patterns are laid out, choose which surface to saw first. It usually will not make any difference which surface you choose, but consider the sequence before choosing. The side that will give the least amount of scrap pieces after it is cut should be first. After the first side is cut, return the scrap pieces to their original locations so that you have a prismatic shape to cutout the second surface. It may be helpful to nail, tape, or glue these scraps back on the piece. (See Fig. 8)

Inlaying:

To create inlayed projects, select two pieces of hardwood that contrast in color (walnut and oak work well). The two must be exactly the same thickness. It is recommended to use 1/4" thick material, but any thickness up to 1 inch will work. Draw the selected design on one of the pieces. Nail the two pieces together with the pattern on the top face. Be sure the nails do not penetrate through the bottom of the project as this will scratch the saw table surface. Drill a very small pilot hole (#60 drill bit) in a corner of the pattern. Slide a #2 blade through the drilled hole and install it in the top blade holder (be sure the pattern is still facing up). Tension the blade and tilt the table approximately $3\ 1/2^\circ$ (tilt the table less for thicker material). Tilting to the left will cause the bottom cutout to be the insert. The tilt angle must be increased when using coarser blades. Holding down firmly on your project, begin the cut. Always saw in the same direction from start to finish. Saw around the pattern to the pilot hole and remove the blade. Separate the pieces and press the insert into the outer piece. Tap insert to set firmly. Complete the project by cutting the outside shape and sanding for finish with tung oil, varnish, or clear epoxy.

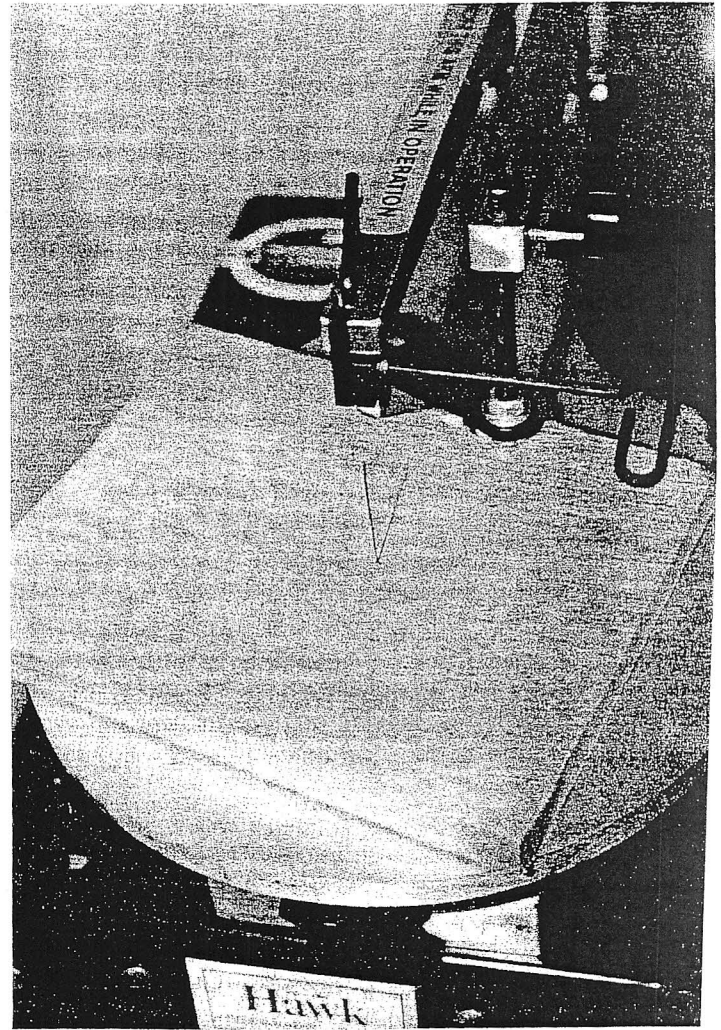


Fig. 7

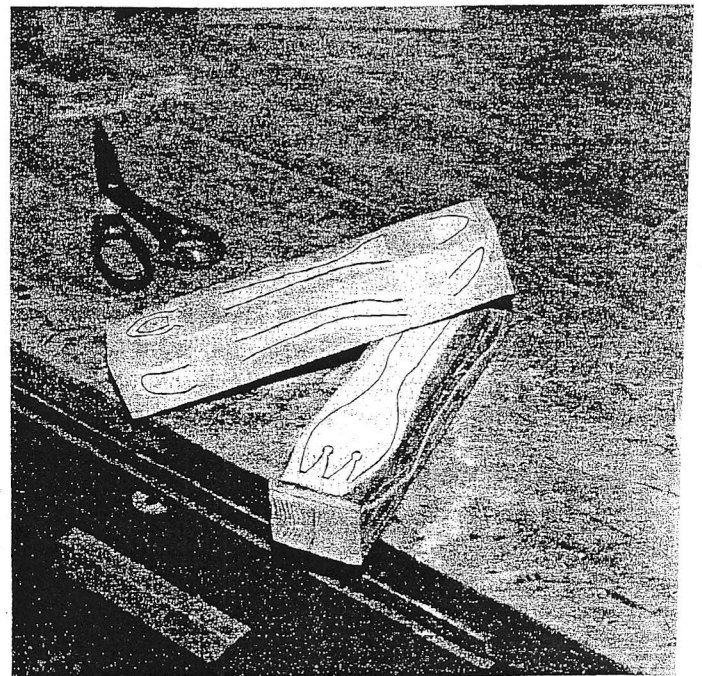


Fig. 8

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION	PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Excessive blade breakage	Improper blade size for wood thickness.	Select proper blade size. Increase blade size for thick wood. See Blade Selection Chart.	Rough cut on the bottom	Blade tension low	Increase blade tension. See Blade Installation in Saw Procedure.
	Cutting too tight a radius for blade size	Increase radius size or reduce blade size. Refer to Turns and Corners in sawing Section.		Poor quality wood	Use better quality wood.
	Improper blade installation.	Install blade properly. See Blade Installation		Feeding too fast	Slow feed rate. See Sawing section.
Blade burns the wood	Wrong blade size	Increase blade size. Refer to Blade Selection Chart.	Blade doesn't follow pattern line	Improper feeding. Feed at an angle right to left of approximately 4° straight into the blade	Practice. See Straight Line Sawing section.
	Cutting too small a radius	Increase radius or decrease blade size. Refer to Turns and Corners in Sawing section.		Operator error – Not following line	Practice.
	Improper feeding	Feed material at 4° right to left. Refer to Straight Line Sawing in Sawing section.		Blade dull	Replace blade. See Blade Changing Procedure.
	Pushing sideways on the blade	Feed straight so not to bend blade left or right. Refer to Sawing section.		Blade too small	Increase blade size See Blade Selection Chart.
	High resin content in wood	Saw against grain when possible, use new blade.		Improper blade tension	Increase tension. See Blade Installation Procedure.
	Feeding too fast	Reduce feed rate. Refer to Sawing section.		Forcing material into the blade.	Reduce feed speed. See Sawing section.
	Improper blade tension	Increase blade tension. Refer to Blade Installation			
Blades bend back excessively or twist while sawing	Improper blade tension	Increase blade tension. Refer to Blade Installation Procedures.	Wood jumps on the table	Improper hold down adjustment	Adjust the hold down to apply pressure to the board.
	Improper blade size	Increase blade size. See Blade Selection Chart.		Blade installed up-side down	Install blade properly with teeth pointing down. See Blade Changing Procedure.
	Feeding too fast	Slow feed rate. Refer to Sawing section.		Turning too tight of a radius	Increase radius size. See Turns and Corners in Sawing section.
Blade cutting too large a radius	Blade too large	Use smaller blade.	Saw does not start when switched on, slows or stalls while sawing	Not using hold down and not holding board down firmly	Hold board firmly on the table, especially when turning. Feed properly. See Sawing and Sawing Straight Line sections.
	Blade tension low	Increase blade tension. See Blade Installation Procedures.		Sawing too fast	Reduce feed speed
	Improper feeding	Turn board properly See Turns and Corners in Sawing section.		Pressing sideways on the blade	Feed properly. See Sawing section.
Board splintering on the bottom	Wrong blade size	Use smaller blade. See Blade Selection Chart.	Saw vibrates excessively and/or creates excessive noise during use	ES-73 belt loose or broken	Tension or replace belt (see procedure).
	Wood grain stringy or knotty	Use masking tape on the bottom at the saw line.		Loose set screws in HA-118 or HA-119 pulleys	Tighten the set screws (see procedure).
Rough cut on the bottom	Blade too large	Use smaller blade. See Blade Selection Chart.		Loose set screw in SH-05 crank	Tighten the set screw (see procedure).
				HA-71 shoulder bolts too tight	Loosen RZ-51 nuts slightly.
				Circuit breaker tripped	Check electrical circuit.
				HA-117 drive shaft or components are loose or misaligned	Adjust (see procedure).
				HA-71 shoulder bolts too tight	Loosen RZ-51 nuts slightly
				Loose fasteners	Check all fasteners and tighten as necessary.

PROCEDURE FOR BLADE CHANGING

STEP 1

Release blade tension by flipping the HA-74 Cam Lock handle over to blade changing procedure (Fig. 9). Place the short end of the L-shaped HA-65 Quick Change Hold Rod in the slot behind the FA-45 Top Blade Holder in the HA-01-X top arm with the long end pointing toward the rear of the saw. This rod helps maintain the FA-45 blade holder in a stationary position during blade changing. Place the ES-86 T-handle allen wrench in the ES-90 Allen Head Cap Screw on the right side of the FA-45 blade holder and loosen the screw. Remove any pieces of the old blade (Fig 10). The blade is now ready to be removed from the bottom blade holder.

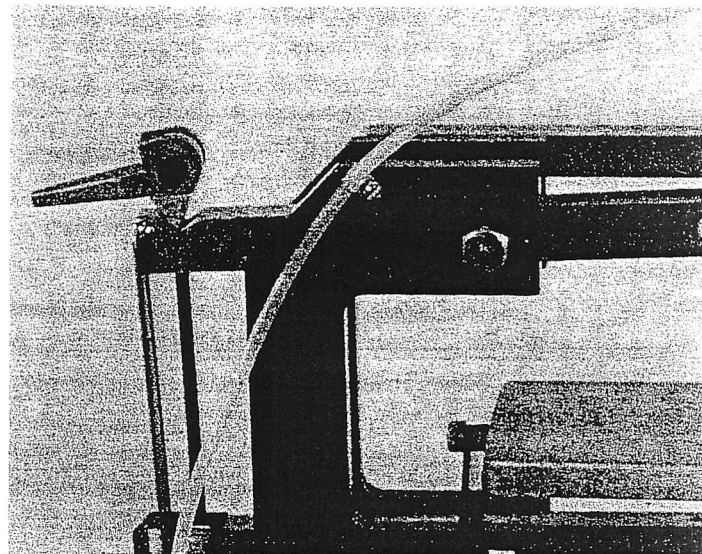


Fig. 9

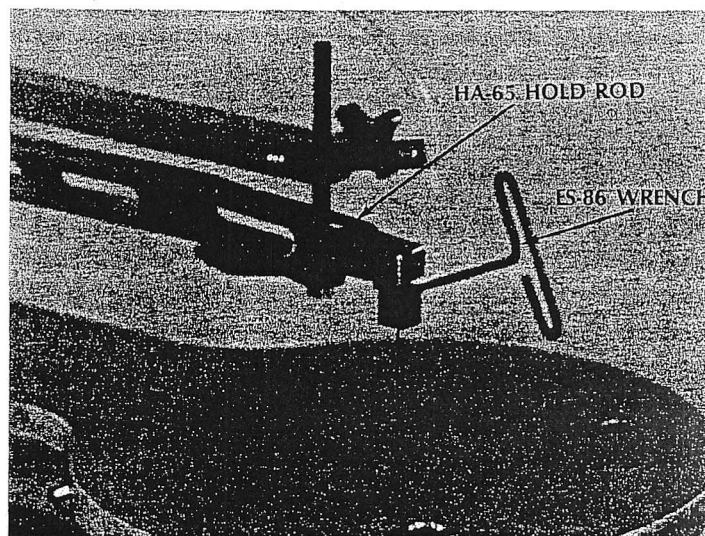


Fig. 10

STEP 2

Located in the V-notch of the HA-106-X Bottom Arm is the barrel shaped FA-46 Round Blade Holder with a HA-112 Round Blade Holder Bearing installed over it (Fig. 11). Slide the FA-46 blade holder forward to remove the blade from the notch in the arm. After the blade is free from the notch, move the FA-46 blade holder downward and to the right or left to remove it from the slot in the HA-04-Z Table. Place the blade holder on end in the oblong slot located in the left front corner of the HA-111 Saw Base (next to the rubber grommet). Place a 5/16" open end wrench on the flats of the blade holder and loosen it. Remove the old blade and any pieces of it that may remain in blade holder. Install a new blade through the HA-112 blade holder bearing into the FA-46 blade holder. The blade should be centered on the screw between the halves of the blade holder with the saw blade teeth pointing down (Fig. 11). Tighten the blade holder with the 5/16" wrench.

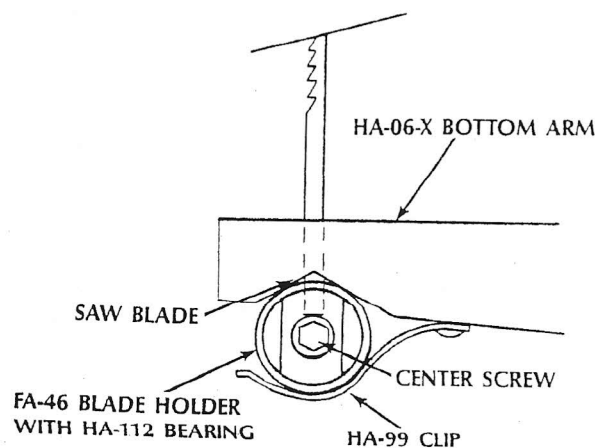


Fig. 11

STEP 3

The FA-46 blade holder with HA-112 blade holder bearing and saw blade installed is now ready to be repositioned in the V-notch of the HA-106-X bottom arm. While holding the FA-46 blade holder in one hand, feed the top of the blade through the table slot from underneath. Be sure the teeth are facing the front of the saw. Position the blade holder in front of the bottom arm so that the blade may slide through its notch. Slide the blade holder rearward into the V-notch. Pull upward on the blade to seat it in the V-notch. Place the ES-86 allen wrench in the ES-90 screw in the FA-45 top blade holder as described in STEP 1. Pull the HA-01-X top arm down with your right hand while holding the allen wrench. Lower the FA-45 top blade holder over the saw blade until the top of the blade is touching the center of the allen head cap screw and the back of the blade is touching the roll pin in the middle of the holder (Fig. 12). Tighten the ES-90 screw securely with the allen wrench. Remove the ES-86 allen wrench and HA-65 hold rod from the HA-01-X top arm and place them in the rubber grommets located in the HA-111 saw base.

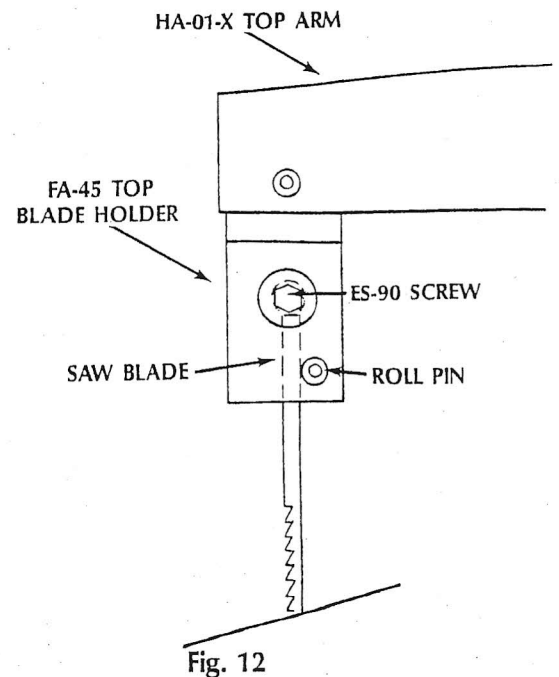


Fig. 12

STEP 4

Retension the blade by flipping the HA-74 Cam Lock handle to its original position. Check the blade tension by plucking the blade like a guitar string. A properly tensioned blade will produce a crisp ping sound. Another method of determining if the blade is tensioned correctly is to check the distance from the back edge of the saw blade to the back edge of the slot in the HA-04-Z table. Visually inspect this distance while the saw is at rest. With the saw at rest, push the saw blade rearward with a scrap piece of wood using slightly more force than necessary for sawing. A properly tensioned saw blade will not deflect more than approximately $\frac{1}{2}$ of the distance described above (Fig. 13). If saw blade tension is not correct, release the tension by flipping the Cam Lock handle to blade changing position as described in STEP 1 and turn it like a knob. Hold the SH-01 arm connector Rod while turning the Cam Lock handle to prevent it from turning also. Turning the Cam Lock clockwise will increase saw blade tension. If the blade does not produce a crisp ping when plucked or if it deflects more than $\frac{1}{2}$ of the distance described above, increase tension. Do not adjust the Cam Lock handle more than $\frac{1}{2}$ turn at a time. Flip the Cam Lock handle to its original position and recheck tension each time an adjustment is made. Tension adjustments may be necessary after a blade breaks or when changing sizes of blades. Small changes in blade size, for example, changing from a #5 to a #7 or a #7 to a #9, will probably require little if any adjustment. However, to change from a #5 to a #9, increase blade tension approximately $2\frac{1}{2}$ turns of the Cam Lock handle; to change from a #5 to a #2, decrease tension approximately 2 turns; and to change from a #2 to a #2/0, decrease tension by approximately $\frac{1}{2}$ turn.

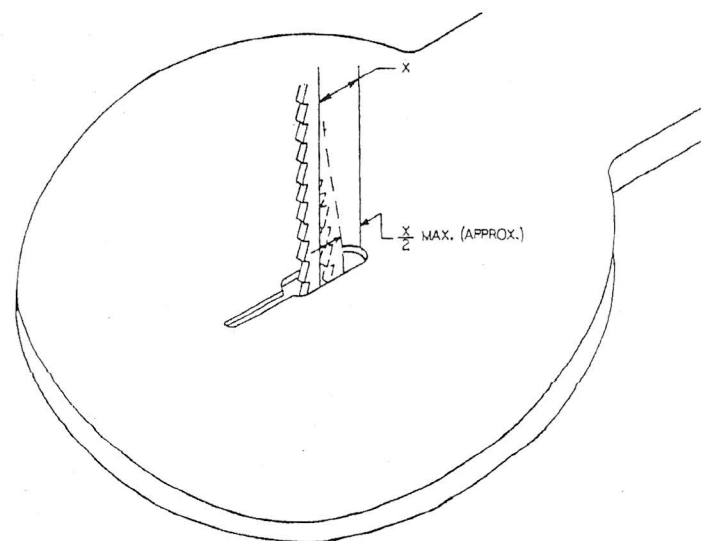


Fig. 13

ES-73 DRIVE BELT TENSIONING

A loose drive belt will adversely affect saw performance. Replace the belt when worn or deteriorated.

1. Disconnect from electrical power supply.
2. Loosen and remove the two 1/4" carriage bolts that fasten the HA-25 Bellows Bracket to the saw base. Raise the HA-24 Rubber Bellows off of the HA-111 Saw Base so that the 1/4" whiz nut beneath it may be reached (Fig. 14).
3. Loosen the four 1/4" whiz nuts on the motor mounting bolts so that the motor may be moved.
4. Apply rearward pressure to the motor and tighten the whiz nuts on the motor mounting bolts. Maintain this pressure on the motor as you tighten the nuts.
5. Check belt tension. Squeeze the sides of the belt together between the pulleys. The inside edges of the belt should be approximately 1/2" to 3/4" from each other when squeezed together. If they are not, loosen the whiz nuts on the motor mounting bolts and repeat step 7 with increased rearward pressure on the motor.
6. Reinstall bellows and mounting bracket to saw base. Be sure the bottom edge of the bellows creates an airtight seal with the HA-111 Saw Base. Air leaks between the bellows and the saw base will decrease blower effectiveness.

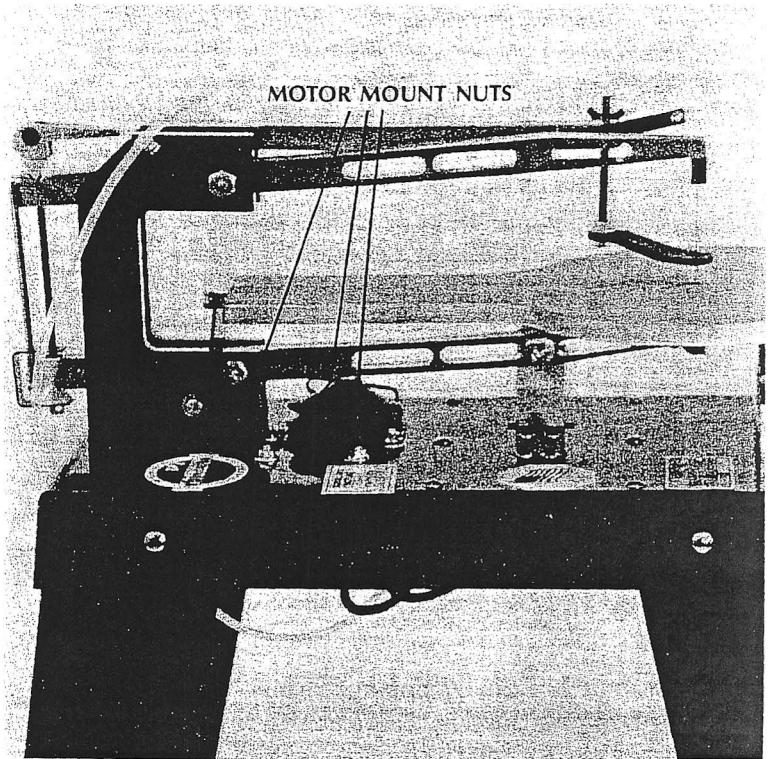


Fig. 14

BLADE SELECTION

All blades are 5" long – Order by R.B.I. Number (Blade Pitch)

RBI NO.	MATERIAL CUT/USAGE	WIDTH	THICKNESS	TPI
2/0	For extremely intricate sawing. Very thin cuts in 1/16" to 3/32" materials. Excellent for cutting wood veneer, plastics, hard rubber, pearl. Very good finish with fast cutting. Excellent for tight radius cuts.	.022"	.010"	28
2	For tight radius work in thin materials 3/32" or 1/8" wood veneer, wood, bone, fiber, ivory, plastic. Good finish, fast cutting tight radius.	.029"	.012"	20
5	For close radius cutting materials 1/8" or thicker. Great for sawing har/soft wood, bone, horn, plastics. Good general purpose cutting with a medium finish.	.038"	.016"	12½
7	Popular sizes for cutting hard and soft woods 3/16" up to 2". Also cut plastic, paper, felt, bone. Medium finish may require some sanding.	.045"	.017"	11½
9		.053"	.018"	11½
420-R	For smooth splinter-free finish on top and bottom sides. Excellent for hard/soft wood, plywood with thickness of 1/4" or more. Fast cutting.	.100"	.022"	9 with 3 reverse teeth

CHANGING SPEEDS

The Hawk 216-3 may be operated at three different stroke speeds. The same belt is used for all speeds. Before changing speeds, turn the saw off and disconnect it from the electrical power supply. NEVER ATTEMPT TO CHANGE SPEEDS WHILE THE SAW IS RUNNING. Use this procedure to replace worn or deteriorated ES-73 belts.

1. Disconnect from electrical power supply.
2. Examine the ES-73 Belt and the HA-118 and HA-119 Three Step Pulleys. Note the pulley steps (grooves) that the belt is currently in and determine which pulley is smaller in diameter at that step.
3. Roll the belt off by pushing or pulling the belt off of the smaller pulley while turning the HA-119 Drive Shaft pulley by hand.
4. After the belt is free from the pulleys, determine what speed you want to operate the saw at. The inside step is the fastest setting and the outside step is the slowest (fig. 15). NOTE: The saw operates at 1550 strokes per minute with the ES-73 belt installed in the inside (fast) pulley step, 750 strokes per minute in the middle pulley step and 375 strokes per minute in the outside (slow) pulley step.
5. Determine which pulley is largest at the desired step and place the belt in it. Roll the belt on by pushing or pulling the belt into the corresponding step on the smaller pulley while turning the HA-119 drive shaft pulley by hand. Keep fingers away from the smaller pulley as you roll the belt into the groove.

NOTE: Always install the ES-73 belt in corresponding steps (grooves) on the HA-118 and HA-119 pulleys.

If the ES-73 belt is too tight to be rolled off of the HA-118 and HA-119 three step pulleys, refer to the ES-73 DRIVE BELT TENSIONING procedure. Perform steps 1 through 3 to reduce tension on the belt and steps 4 through 6 to finish the procedure.

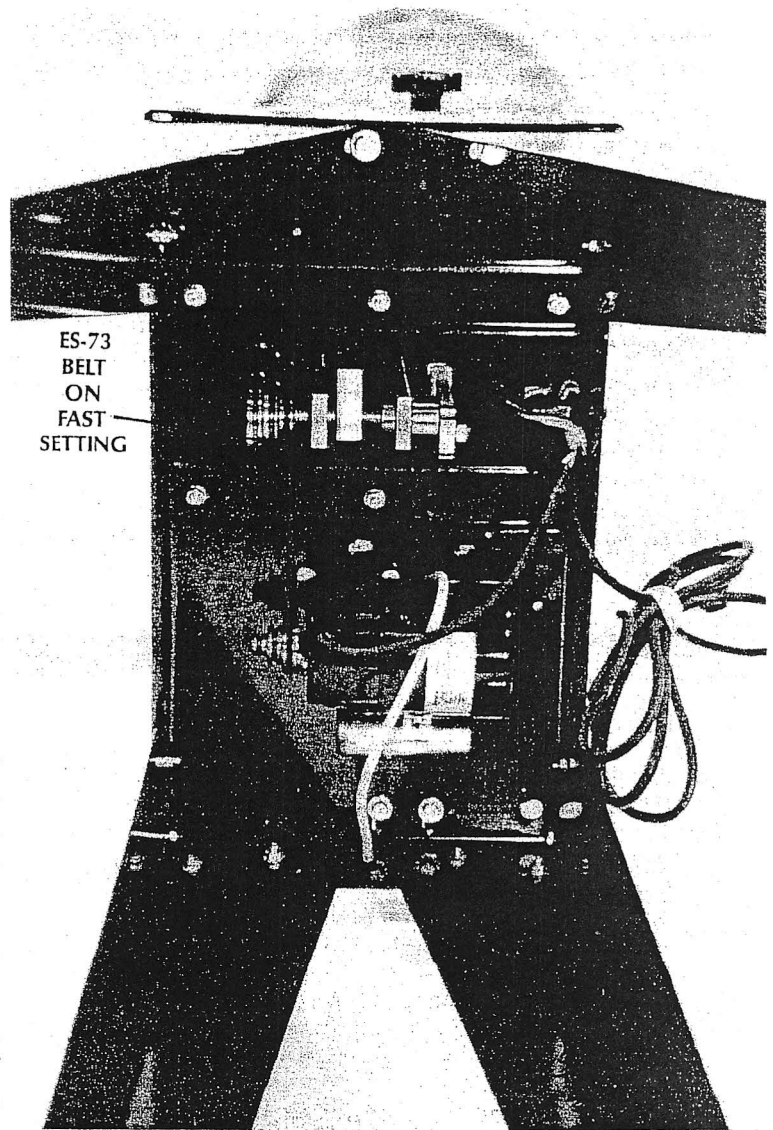


Fig. 15

METAL CUTTING BLADES			
RBI No.	WIDTH	THICKNESS	TPI
0	.022	.011	51
1	.024	.012	48
2	.028	.013	43
3	.030	.014	41
4	.031	.015	38
5	.033	.016	36
7	.041	.019	30

SH-01 ARM CONNECTOR ROD REPLACEMENT

If the SH-01 rod becomes bent or broken, it will be necessary to replace it. This procedure describes how to do this.

1. Disconnect from electrical power supply.
2. Remove the HA-74 Cam Lock handle from the SH-01 Arm Connector Rod by flipping it up to blade change position. Grip the rod and prevent it from turning while loosening the handle. To loosen it turn it counter-clockwise. If the rod has broken, remove any portions of the old rod left in the HA-77 Round Handle Pivot.
3. Remove the old SH-01 rod from the saw.
4. Install the new rod from the bottom. It should pass through the HA-97 Wedge Hold Bracket **round** hole, a HA-75 Saw Arm Pivot, the HA-06-X Bottom Arm, the HA-97 Bracket **slot**, the HA-01-X Top Arm, a HA-75 Saw Arm Pivot and into the HA-77 Round Handle Pivot (Fig. 16).
5. Mount the Cam Lock handle to the rod and adjust the tension to the desired setting.

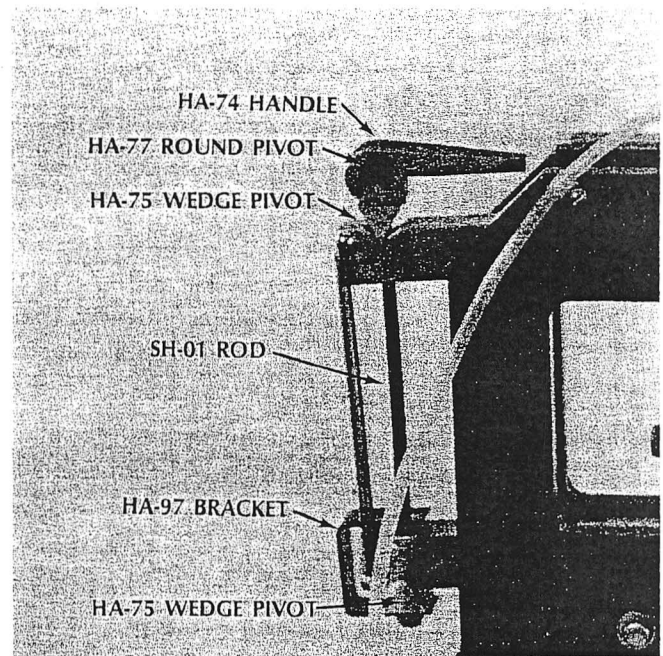


Fig 16

LEVELING THE TABLE

1. Disconnect from electrical power supply.
2. Place a small 90° square on the table with the back edge of the beam against the blade.
3. Inspect blade and square. The square should fit perfectly against the blade with no openings between

them. If there is an opening, loosen the table tilt knob (ES-42) and adjust the table tilt. (See Fig. 17)

4. When the square fits perfectly against the blade, tighten the table tilt knob. (Fig. 18)

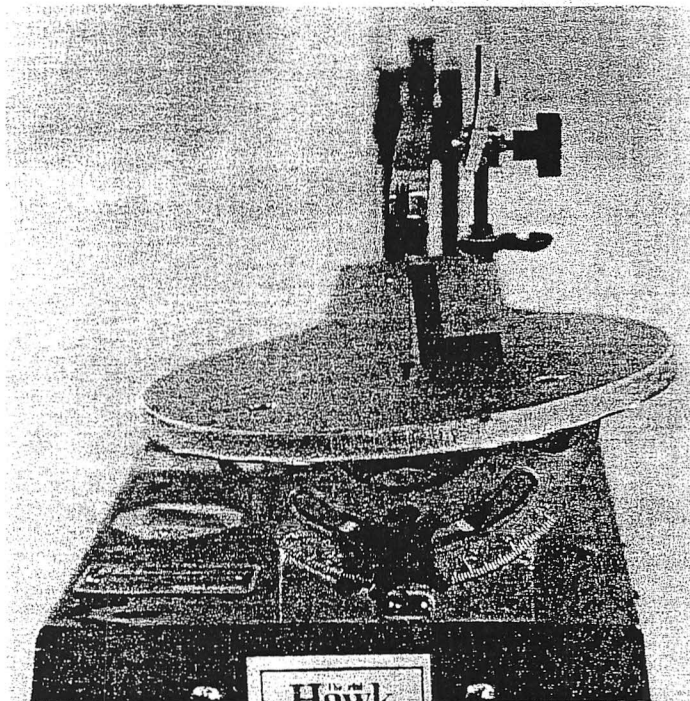


Fig. 17

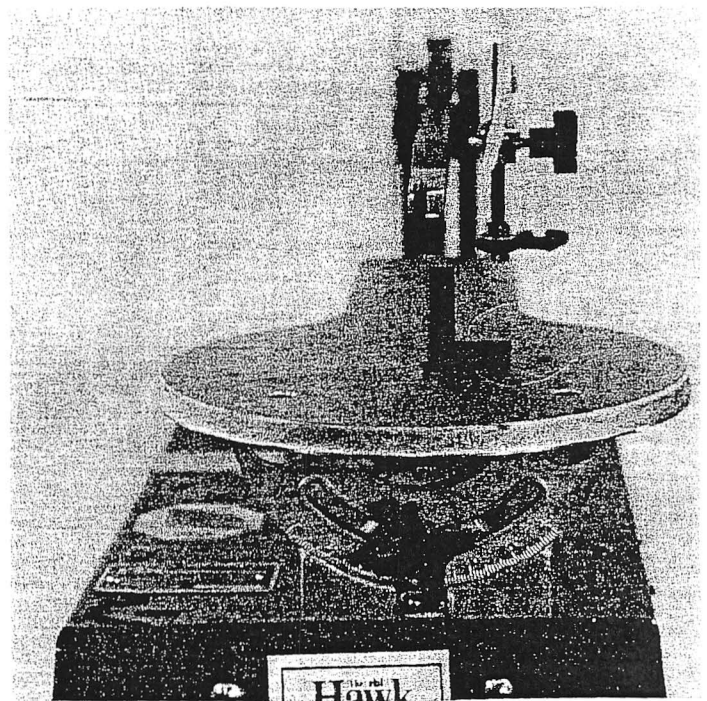


Fig. 18

HA-117 DRIVE SHAFT ADJUSTMENTS

Loose set screws and improperly positioned drive shaft components may cause excessive noise and/or vibration. The instructions below explain how to repair these problems.

1. Disconnect from electrical power supply.
2. Check the allen head cap screws that fasten the SH-08 Crank Carrier Brackets to the HA-111 Saw Base and tighten if necessary.
3. Check the set screws in the HA-119 Drive Shaft Pulley, SH-05 Set Collar, HA-116 Counter Weight and SH-04 Crank (Fig. 19).
4. If any components are loose, adjust their position on the drive shaft so that their set screws tighten on the

drive shaft flats. The HA-116 counter weight should be positioned so that it is opposite the SH-04 crank (when the threaded stud of the crank is at its lowest position, the weight should be at its highest). If the SH-05 set collar set screw loosens, the drive shaft may have moved to one side causing the SH-03-Z Pitman Arm to rub on the saw base or the blade to move from side to side during operation. If this has happened, position the shaft so that the pitman arm are properly aligned vertically.

5. When all components are in position, tighten the set screws. Applying thread locking material to the threads of the set screws will reduce the possibility of them working loose again.

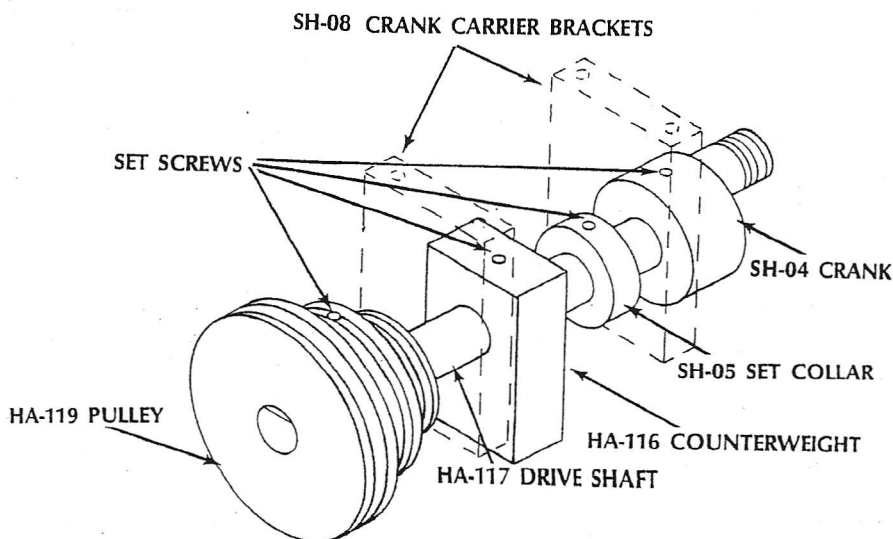
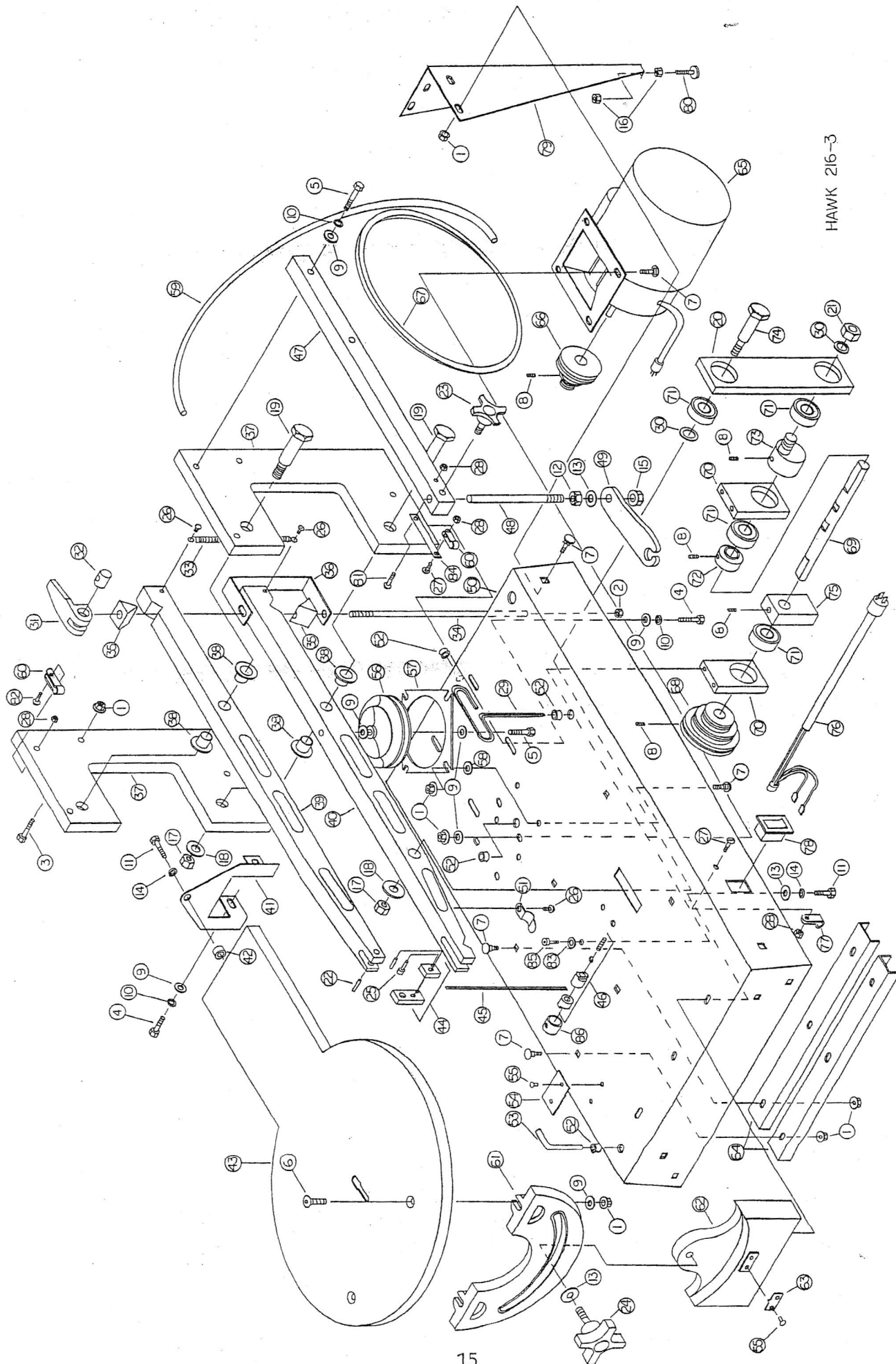


Fig 19

PARTS BREAKDOWN HAWK 216-3

Key #	Part #	Description	Qty.	Key #	Part #	Description	Qty.
1	RB-223	1/4"-20 Whiz Nut	27	44	FA-45	Top Blade Holder Assembly	1
2	HA-78	1/4"-20 Neoprene Lock Nut	1	45		Saw Blade	1
3	PS-52	1/4"-20 x 1" Hex Head Bolt	1	46	FA-46	Bottom Round Blade Holder Assembly	1
4	RBZ-206	1/4"-20 x 3/4" Hex Head Bolt	4	47	HA-106-Z	Holddown Arm	1
5	PS-80	1/4"-20 x 1 1/4" Hex Head Bolt	2	48	SH-12	Holddown Foot Rod	1
6	RZ-182	1/4"-20 x 3/4" Flat Head Screw	2	49	HA-104	Holddown Foot	1
7	RB-99	1/4"-20 x 5/8" Carriage Head Bolt	24	50	HA-111	Saw Base 216-3	1
8	RZ-83	1/4"-20 x 1/4" Set Screw	5	51	HA-99	Plastic Blade Holder Clip	1
9	RB-177	1/4" Flat Washer	12	52	HA-16	Rubber Grommet	4
10	RBZ-207	1/4" Lock Washer	8	53	HA-65	Quick Change Hold Rod	1
11	RZ-181	5/16"-18 x 1" Hex Head Bolt	3	54	HA-122	Serial Tag 216-3	1
12	RZ-81	5/16"-18 Hex Nut	1	55	FA-12	#7 U-Drive Screw	4
13	RB-150	5/16" Flat Washer	3	56	HA-24	Rubber Bellows	1
14	RZ-178	5/16" Lock Washer	3	57	HA-25	Bellows Holddown Bracket	1
15	FA-47	5/16"-18 Whiz Lock Nut	1	58	HA-103	Plastic Spacer	2
16	RZ-58	3/8"-16 Hex Nut	8	59	HA-80	Blower Tubing	1
17	RZ-51	3/8"-16 Neoprene Lock Nut	3	60	ES-81	Blower Tubing Clamp	2
18	RZ-50	3/8" Flat Washer	3	61	HA-20-P	Table Tilt	1
19	HA-71	1/2" x 1 3/4" Shoulder Bolt	2	62	HA-21-P	Base Tilt	1
20	HA-13	1/2" x 1 1/16" Shoulder Bolt	1	63	HA-101	Plastic Tilt Pointer	1
21	HA-68	1/2" Hex Nut	1	64	HA-12	Base Brace	2
22	FA-42	1/8" x 3/4" Roll Pin	1	65	ES-44-W	1/8 H.P. 1050 RPM Motor	1
23	ES-40	Threaded Knob, 1/4"-20 x 1/2" Stud	1	66	HA-118	Three Step Motor Pulley	1
24	ES-42	Threaded Knob, 5/16"-18 x 1" Stud	1	67	ES-73	Polyflex 5M-450 Belt	1
25	ES-90	8-32 x 1/2" Allen Head Screw	1	68	HA-119	Three Step Drive Shaft Pulley	1
26	FA-35	10-32 x 1/4" Round Head Screw	3	69	HA-117	Drive Shaft 216-3	1
27	RB-106	10-32 x 1/2" Round Head Screw	2	70	SH-08	Crank Carrier Bracket	2
28	RB-107	10-32 Hex Nut	4	71	PS-07	Bearing	4
29	ES-86	9/64" T Handle Allen Wrench	1	72	SH-05	Set Collar	1
30	HA-14	18 GA. Spacer	2	73	SH-04	Crank	1
31	HA-74	Cam Over Blade Tension Handle	1	74	SH-03-Z	Pitman Arm	1
32	HA-77	Round Handle Pivot	1	75	HA-116	Counter Weight 216-3	1
33	FA-36	Spring	1	76	HA-60	Electric Cord Set	1
34	SH-01	Arm Connector Rod	1	77	HA-76	Cable Clamp	1
35	HA-75	Saw Arm Pivot	2	78	HA-61	Power Switch	1
36	HA-97	Wedge Hold Bracket	1	79	CD-07-Z	Saw Leg	4
37	HA-115	Rear Arm Support 216-3	2	80	ES-57-S	Glide	4
38	R-369	1/2" I.D. Bronze Bearing	4	81	SA-19	10-32 x 1" Round Head Screw	1
39	HA-01-X	Top Arm	1	82	ES-84	10-32 x 3/4" Round Head Screw	1
40	HA-06-X	Bottom Arm	1	83	RB-112	Rivet Burr	4
41	HA-113	Rear Table Mount Bracket 216-3	1	84	ES-82	Tubing Bracket	1
42	RB-517	Nylon Spacer	1	85	HA-33	10-32 x 1/2" Socket Head Screw	4
43	HA-04-Z	Table	1	86	HA-112	Round Blade Holder Bearing	1



HAWK 216-3