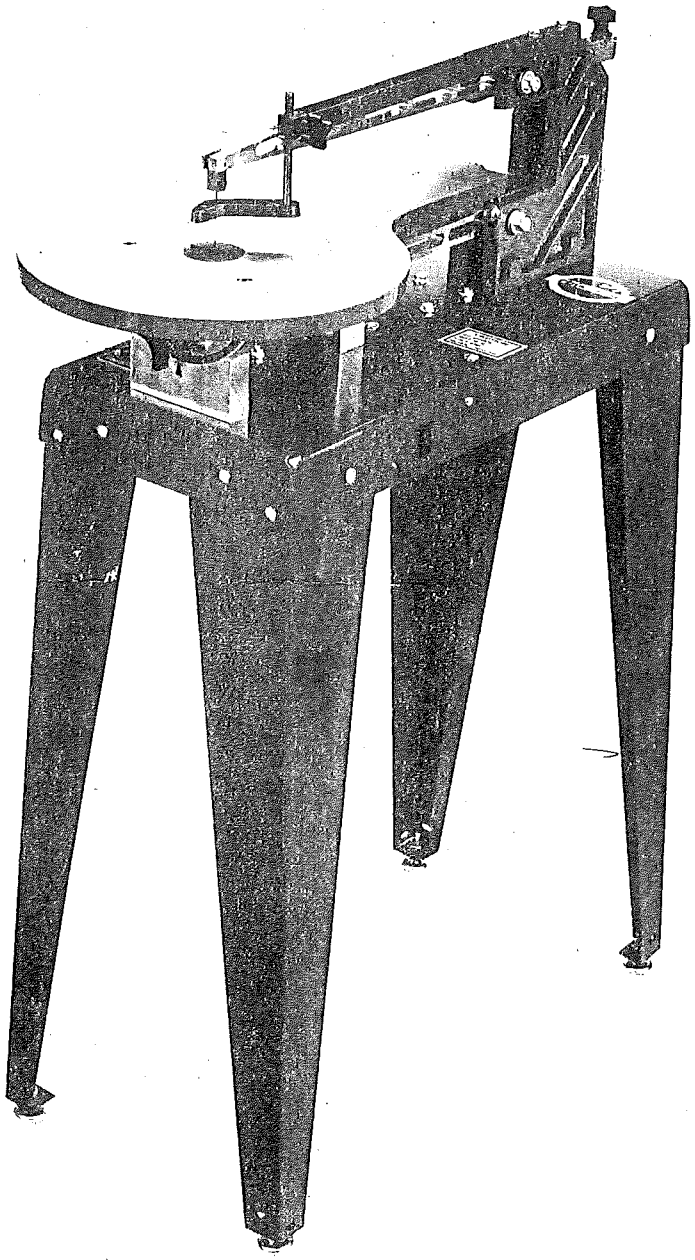
rbi

MODEL 220 HAWK SCROLL SAW

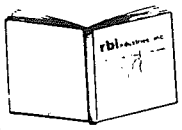
OPERATORS MANUAL

Serial #2046

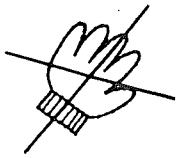


READ THOROUGHLY BEFORE OPERATING

MANUAL #HA 12-85



ALL ON SAFETY



SAFETY

TRAINING:

1. Read the operators manual carefully. Be thoroughly familiar with the operation of the equipment.
2. Know where the controls are and how to operate them.
3. Wear safety goggles, ear protection and mask in dusty operations.
4. Never allow children to operate equipment. Never allow adults to operate the equipment without proper instruction.
5. Keep work area clear of other persons.
6. Maintain a clean uncluttered work area.

OPERATION SAFETY:

1. Never make any adjustments while the machine is running.
2. Keep hands and feet away from rotating parts.
3. Disconnect electrical power supply before doing any adjustments on the machine.
4. Remove all working tools and equipment before starting machine.
5. Wear proper clothing. Avoid loose fitted clothing, long sleeves, long hair, gloves, neck ties, jewelry, watches, rings, etc.
6. Do Not operate an electrial device in a damp or wet area to avoid electrical shock.
7. Maintain all safety guards.
8. Do not operate machine while under the influence of medication, alcohol or drugs.
9. Never leave machine running unattended.
10. Don't overload machine. Follow operators instruction for safe operation.
11. Keep equipment in proper working order. Follow recommended maintenance procedures in the operators manual.

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.

HAWK 220

SPECIFICATIONS:

Length 33″	Max. Cutting Depth 2″
Width 16″	Stroke 1 1/16″
Height 45.5″	Strokes / Min. 1300 - 700
Weight 98 lbs.	Motor 1/8 H.P. TEFC
Throat Depth 20″	Drive Belt

SET-UP INSTRUCTIONS

NOTE: Damages or shorted parts are to be reported to the transportation carrier. **MANUFACTURER IS NOT RESPONSIBLE FOR SHIPPING DAMAGE.**

SAW CARTON:

Box 1

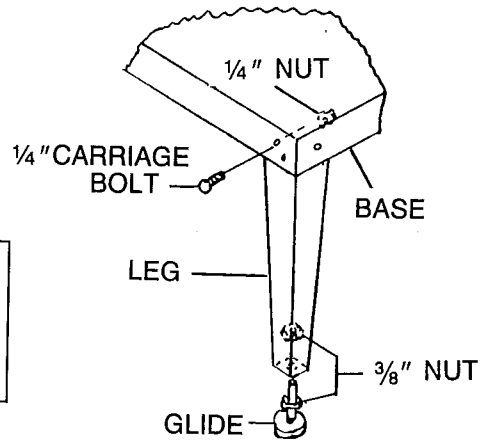
1. Saw
2. Operators manual
3. Extra blades (6)
4. Glides (leg bottom)
5. Attaching Hardware

Box 2

1. Legs

NOTE: *Optional* Adjustable 6″ Leg Extension available. Part #6LE (See parts breakdown).

Remove your saw from the shipping carton: Check for damage (See note Above) The four legs come in a separate carton. Install one leg to each corner of the base using 1/4″ carriage bolts and nuts. Install one 3/8″ nut on each of the four glides. Insert the glides up through the hole in the bottom of the leg and install the second 3/8″ nut to secure. With the legs secure to the base, set the saw upright and adjust the nuts on the glides so each glide supports the saw. Secure. (See figure)



BLADE SELECTION

ALL BLADES HAVE SKIP TEETH FOR GREATER CHIP CLEARANCE. ALL BLADES ARE 5″ LONG

R.B.I. NO.	MATERIAL CUT / USAGE	WIDTH	THICK-NESS	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″	27
2	For tight radius work in thin materials 3/32″ to 1/8″ wood veneer, wood, bone, fiber, ivory, plastic. Good finish, fast cutting tight radius.	.029″	.012″	20
5	For close radius cutting in materials 1/8″ or thicker. Great for sawing hard/soft wood, bone, horn, plastics. Good general purpose cutting with a medium finish.	.037″	.015″	16
7 9	Popular sizes for cutting hard and soft woods 3/15″ up to 2″. Also cut plastic, paper, felt, bone. Medium finish may require some sanding.	.043″ .053″	.016″ .018″	14 12
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

SLOWER, FINER, SMOOTHER FINISH WITH A SMALLER TURN RADIUS

FASTER, COARSER, ROUGHER FINISH AND LARGER TURN RADIUS

METAL CUTTING (FINIS) BLADES

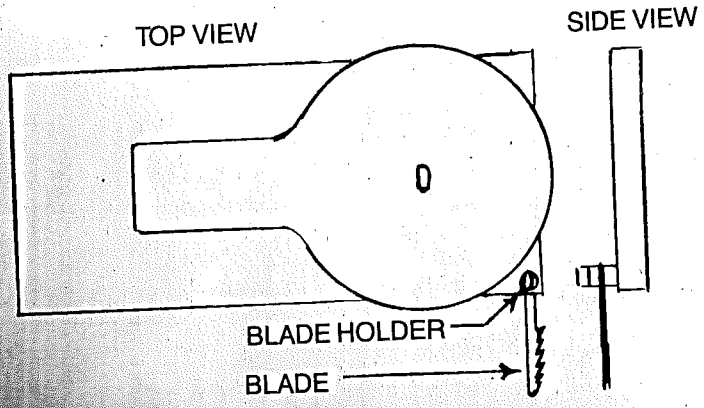
[CAUTION: Must be run on slow speed]

Pitch	T.P.I.	Thick	Wide
#0	50	.011″	.024″
#1	46	.012″	.025″
#2	43	.013″	.029″
#3	41	.014″	.031″
#4	38	.015″	.034″
#5	33	.016″	.035″
#7	28	.019″	.048″

OPERATION

A. Blade installation in the blade holder

Place the blade holder in the oblong slot in the base (right side of the saw base near the front.) Slide the bottom of the blade (direction the teeth point) between the two halves of the holder to the center screw. (Run your finger across the teeth to determine the direction the teeth point.) Center and secure using a 5/16" open end wrench. (See Figure.)



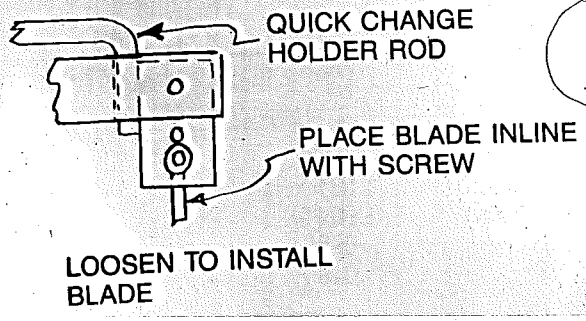
B. Blade installation in the saw

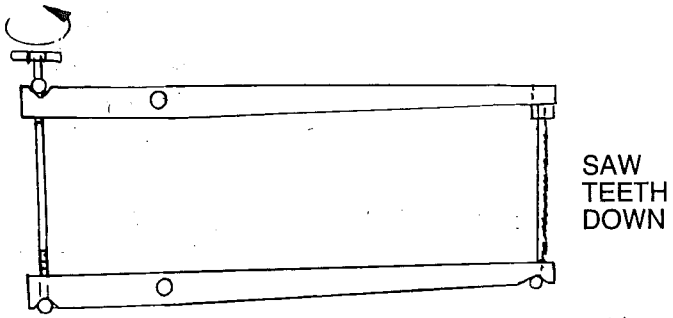
Place the quick change holder rod in the slot of the upper arm behind the quick change blade holder. Slide the blade up from the bottom thru the hole in the center of the table. Pull the blade up until the holder is at the bottom of the lower arm. Slide the blade and holder back in the lower arm slot until the holder rests in the "V" at the bottom of the lower arm between the arm and clip.

Pull the upper arm down until the upper arm blade holder assembly will slide over the blade (it may be necessary to loosen the adjusting knob at the rear of the saw to allow the upper arm to come down). Center the blade in the blade holder and slide upward to the screw. (See Figure.)

Using the Allen wrench supplied, left side in the rubber grommet, secure the blade at the top.

Remove the quick change blade holder rod. Center the tension adjusting rod angle and tighten until the blade has a ring like a guitar string when plucked. (See Figure.)



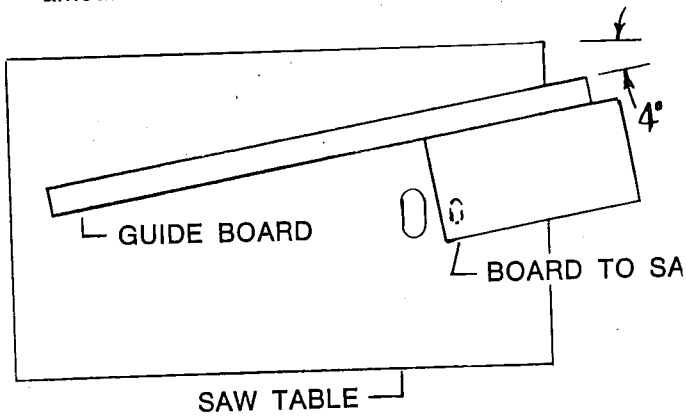


C. Sawing (Remember, let the saw blade do the work)

Feed the material to be cut slowly into the saw blade while maintaining downward pressure. (This may be done by hand or by adjusting the holddown foot on the material.) Note: Always keep hands away from the saw blade and out from under the moving arm.

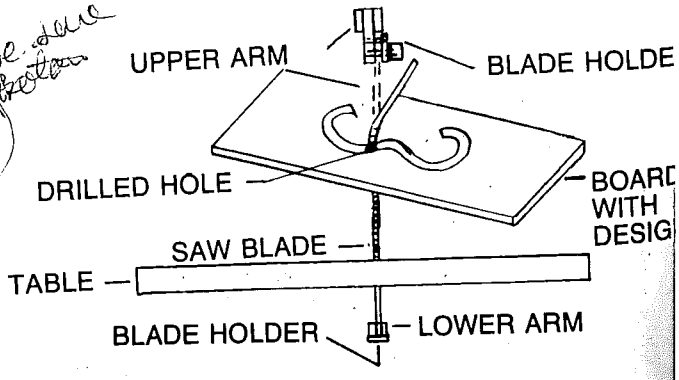
D. Using a guide board to saw a straght line

It is necessary to angle your guide board approx. 4° from right to left. This is necessary due to the manufacture of all scroll saw blades with a small amount of set on one side of the blade only.



E. Sawing inside cuts

To saw inside cuts, drill a hole in the board, in th area to be cut out, slightly larger than the blade yo are using. Remove the blade from saw top arm. Loos en the knob at the rear of the arms and capscre holding blade in holders. Insert the blade up throug the hole drilled in your board and back into the blac holder. (See blade installation for more details) Th allows quick and easy inside cuts to be made.



MAINTENANCE

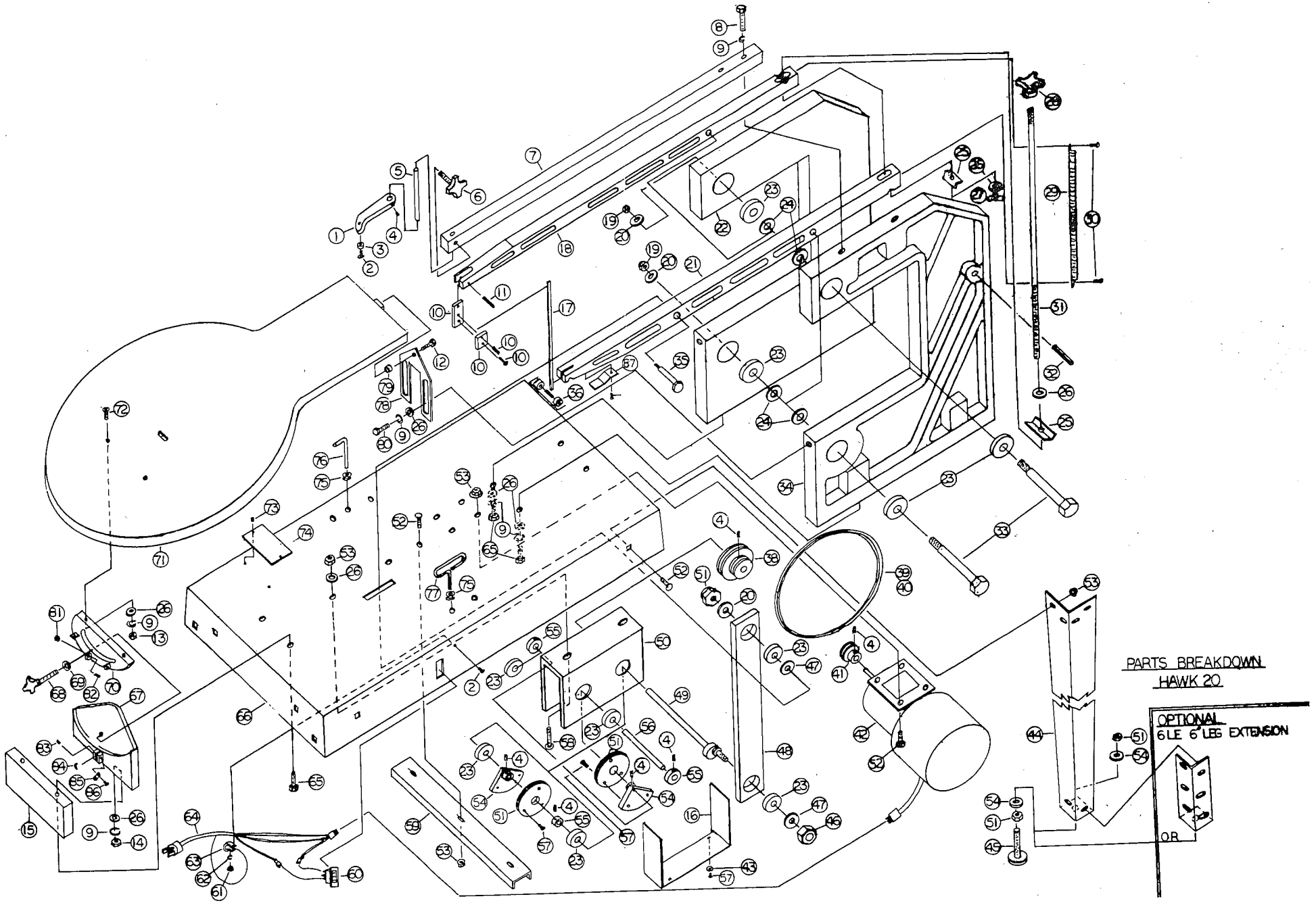
ARM PIVOT
Add 3 to 4 drops of oil (light machine oil) to each side of the parallel arm pivot point bushings both upper and lower arm.

TABLE
Keep the table work surface waxed to prevent rust and allow easier movement of the wood on the table surface.

TENSIONING ROD
Add 1 or 2 drops of oil (light machine oil) to the threads of the blade tensioning rod at the bottom arm.

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
EXCESSIVE BLADE BREAKAGE	IMPROPER BLADE SIZE TO WOOD THICKNESS	SELECT PROPER BLADE SIZE
	CUTTING TOO TIGHT OF A RADIUS FOR BLADE SIZE	INCREASE RADIUS SIZE OR REDUCE BLADE SIZE
BLADE BURNS THE WOOD	WRONG BLADE SIZE	INCREASE BLADE SIZE
	CUTTING TOO SMALL A RADIUS	INCREASE RADIUS OR DECREASE BLADE SIZE
	IMPROPER FEEDING	FEED MATERIAL AT 4° R. TO L.
	PUSHING SIDE WAYS ON THE BLADE FEED	STRAIGHT SO AS NOT TO BEND BLADE L. OR R.
	FEEDING TOO FAST	REDUCE FEED RATE
	IMPROPER BLADE TENSION	INCREASE BLADE TENSION
BLADES BEND BACK EXCESSIVELY OR TWISTS WHILE SAWING	IMPROPER BLADE TENSION	INCREASE BLADE TENSION
	IMPROPER BLADE SIZE	INCREASE BLADE SIZE
	FEEDING TOO FAST	SLOW FEED RATE
BLADE CUTTING TOO LARGE A RADIUS	BLADE TOO LARGE	USE SMALLER BLADE
	BLADE TENSION LOW	INCREASE BLADE TENSION
	IMPROPER FEEDING	TURN BOARD PROPERLY
BOARD SPLINTERING ON THE BOTTOM	WRONG BLADE SIZE	USE SMALLER BLADE
	WOOD GRAIN STRINGY OR KNOTTY	USE MASKING TAPE ON THE BOTTOM AT THE SAW LINE
ROUGH CUT ON THE SAWED EDGE	BLADE TOO LARGE	USE SMALLER BLADE
	BLADE TENSION LOW	INCREASE BLADE TENSION
	POOR QUALITY WOOD	USE BETTER QUALITY WOOD
	FEEDING TOO FAST	SLOW FEED RATE
BLADE DOESN'T FOLLOW PATTERN LINE	IMPROPER FEEDING (FEED AT AN ANGLE R. TO L. OF APPROX 4° STRAIGHT INTO THE BLADE	PRACTICE
	BLADE DULL	REPLACE BLADE
	BLADE TOO SMALL	INCREASE BLADE SIZE
	IMPROPER BLADE TENSION	INCREASE TENSION
	FORCING MATERIAL INTO THE BLADE	REDUCE FEED SPEED
WOOD JUMPS ON THE TABLE	IMPROPER HOLDDOWN ADJUSTMENT	ADJUST THE HOLDDOWN TO APPLY PRESSURE TO THE BOARD.
	BLADE INSTALLED UPSIDE DOWN	INSTALL BLADE PROPERLY TEETH POINTING DOWN
	TURNING TOO TIGHT OF A RADIUS	INCREASE RADIUS SIZE
	NOT USING HOLDDOWN AND NOT HOLDING BOARD DOWN FIRMLY	HOLD BOARD FIRMLY ON THE TABLE ESPECIALLY WHEN TURNING FEED PROPERLY (FEED AT AN ANGLE R. TO L. OF APPROX. 4° & STRAIGHT INTO THE BLADE.)
	SAWING TOO FAST	REDUCE FEED SPEED
	PRESSING SIDEWAYS ON THE BLADE	FEED AT 4° ANGLE R. TO L. AND STRAIGHT


PARTS BREAKDOWN
HAWK 20
OPTIONAL
6 LE 6' LEG EXTENSION
OR

PARTS LIST FOR HAWK 220

		PART#	QUANT.
1.	Foot	ES-09	1
2.	Machine Screw	RB-106	2
3.	Foot Seat Pod	ES-10	1
4.	¼"-20 x ¼" Set Screw	RZ-83	7
5.	Shaft (Foot to arm)	ES-08	1
6.	Knob	ES-40	1
7.	Holddown arm	HA-66	1
8.	¼ x 1 Hex Hd Bolt	PS-80	2
9.	¼" L/W	RBZ-207	12
10.	Top Blade Holder Ass'y	FA-45	1
11.	Roll Pin ⅛ x ¾" Lg.	FA-42	1
12.	5/16 x 1¼" Hex Hd Bolt	RZ-181	1
13.	¼-28 Hex Nut	ES-49	2
14.	¼-20 Hex Nut	RBZ-208	2
15.	Spacer Block Base Tilt	HA-22	1
16.	Cover	ES-96	1
17.	Saw Blades (order by # or pitch)		
18.	Top Arm	HA-52	1
19.	⅜" L/N	FA-08	2
20.	5/16" F/W	RB-150	3
21.	Lower Arm	HA-53	1
22.	R.H. Arm Supt.	HA-50	1
23.	Bearing	PS-07	10
24.	Spacers	HA-67	4
25.	Connector Rod Pivot	HA-18	2
26.	¼" F/W	RB-177	14
27.	¼" Wing Nut	RB-176	1
28.	Knob	RB-507	1
29.	Spring	FA-36	1
30.	10-32 x ¼" Rd. Hd. Slotted Screw	FA-35	3
31.	Rod	CD-21	1
32.	Roll Pin ¼" x 1⅛"	RZ-59	1
33.	Shoulder Bolt	HA-71	2
34.	L.H. Arm Supt.	HA-51	1
35.	Shoulder Bolt	HA-13	1
36.	Saw Blade Holder	ES-65	1
38.	V-Pulley (Dual Polyflex)	ES-71	1
39.	Poly Flex Belt (FAST(5M425	ES-72	1
40.	Poly Flex Belt (Slow) 5M450	ES-73	1
41.	Sheave, Motor (Poly Flex)	ES-70	1
42.	Motor	ES-44-Z	1
43.	Rivit Burr	RB-112	2
44.	Leg	CD-07	4
45.	Glides (4) w/(8) Nuts	ES-57-S	4
46.	½" Jam Nut	HA-68	1
47.	Spacer	HA-14	2
48.	Pitman Arm	HA-69	1
49.	Pitman Shaft	ES-12-Z	1
50.	Housing Weldment	ES-95	1
51.	Gear	ES-92	2
52.	¼-20 x ⅝" Carriage Bolt	RB-99	19
53.	¼" Whiz Nut	RB-223	21
54.	Counter Wt.	ES-91	2
55.	Collar	ES-15	3
56.	Shaft	ES-97	1
57.	#10-32 x ½ Socket Hd. Cap Screw	ES-35	8
58.	¼-20 x 1¼ Crg. Bolt	RBZ-211	2
59.	Base Braces	HA-12	1
60.	Switch	HA-61	1
61.	10-32 Hex Nut	RB-107	1
62.	10-32 L/W	RB-519	1
63.	Cable Clamp	HA-63	1
64.	Cord Set	HA-60	1
65.	¼-20 x 1" Hex Hd Bolt	PS-52	6
66.	Base 2-Spd	HA-64	1
67.	Table Tilt Base Brkt.	HA-21	1
68.	Knob Table Tilt	ES-42	1
70.	Table Tilt Table Brkt	HA-20	1
71.	Table	ES-05	1
72.	¼" Socket Flat Head	RZ-182	2
73.	#7 Drive Screw	FA-12	2
74.	Serial Tab	HA-70	1
75.	Rubber Grommet	HA-16	2
76.	Quick Change Hold Rod	HA-65	1
77.	9/16" "T" Allen Wrench	ES-86	1
78.	Rear Table Support	CD-13	1
79.	Spacer Slide Nylon	RB-517	1
80.	¼"-20 x ¾" Hex Hd Bolt	RBZ-206	2
81.	Nut	HA-34	3
82.	Screw	HA-33	3
84.	Pointer	HA-29	1
85.	Stop	HA-31	1
86.	Screw	HA-32	1
87.	Clip	FA-02	1

ACCESSORIES

LIGHT

2LK **STANDARD LIGHT**

Heavy duty flexable arm, 16" long which uses a maximum 60 watt incadescent bulb with metal globe. Allows light to be put close to the work and maintain this position. Comes complete with everything to mount on your saw.

2MK **MAGNIFIER LIGHT**

Flexible arm light with built-in 2 to 1 magnification lens and scale to measure through the lens. Comes with bracket to attach to a work bench edge. Uses 60 Watt Incadescent bulb maximum.

2BK **BLOWER**

Kit comes complete with blower, tubing, and attaching hardware to mount on your saw. Maintains an area the size of a quarter, around the saw blade, free of dust so you can see lines to saw. Blower is a vibrating diagram type.

6LE **LEG EXTENSION KIT**

Bottom mounted Leg Extension which increases the height of your saw up to six inches, with 2" increment adjustments.

HOW AND WHERE TO ORDER REPLACEMENT PARTS AND ACCESSORIES

TO SPEED DELIVERY AND REDUCE ERROR OF REPLACEMENT PARTS, ALWAYS INCLUDE THE FOLLOWING INFORMATION:

1. Give the complete identification of the machine.

   A. Machine Name .....

   B. Model Number .....

   C. Serial Number .....

2. Give the identification of the part.

   A. Part Number .....

   B. Part Name .....

   C. If necessary, return the old part as a sample.

3. Give us an address to return the part to

   Ship to: .....
   Your Name (Please Print)

   Address .....
   Street P. O. Box Rural Route

   City .....

   State ..... Zip .....

   Country .....

4. Send your order to:

rbi industries, inc.

SALES OFFICE
40 West Park Rd.
Centerville, Ohio 45459
1-800-535-8665

PLANT
1801 Vine St.
Harrisonville, Missouri 64701
P.O. Box 369
816-884-3534