

# 18" Woodworking Bandsaw



# Operator Safety: Required Reading

**IMPORTANT!** Safety is the single most important consideration in the operation of this equipment. **The following instructions must be followed at all times.**

There are certain applications for which this tool was designed. We strongly recommend that this tool not be modified and/or used for any other application other than that for which it was designed. If you have any questions about its application, do not use the tool until you have contacted us and we have advised you.

## General Safety Warnings

**KNOW YOUR POWER TOOL.** Read the owner's manual carefully. Learn the tool's applications, work capabilities, and its specific potential hazards.

### **⚠ DANGER**



#### **ALWAYS GROUND ALL TOOLS.**

If your tool is equipped with a three-pronged plug, you must plug it into a three-hole electric receptacle. If you use an adapter to accommodate a two-pronged receptacle, you must attach the adapter plug to a known ground. Never remove the third prong of the plug.

#### **ALWAYS AVOID DANGEROUS ENVIRONMENTS.**

Never use power tools in damp or wet locations. Keep your work area well lighted and clear of clutter.

### **⚠ DANGER**



#### **ALWAYS REMOVE THE ADJUSTING KEYS AND WRENCHES FROM TOOLS AFTER USE.**

Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.

**ALWAYS KEEP YOUR WORK AREA CLEAN.** Cluttered areas and benches invite accidents.

### **⚠ DANGER**



#### **ALWAYS KEEP VISITORS AWAY FROM RUNNING MACHINES.**

All visitors should be kept a safe distance from the work area.

#### **ALWAYS MAKE THE WORKSHOP CHILDPROOF.**

Childproof with padlocks, master switches, or by removing starter keys.

### **⚠ DANGER**



**NEVER OPERATE A TOOL WHILE UNDER THE INFLUENCE OF DRUGS, MEDICATION, OR ALCOHOL.**

### **⚠ DANGER**



#### **ALWAYS WEAR PROPER APPAREL.**

Never wear loose clothing or jewelry that might get caught in moving parts. Rubber-soled footwear is recommended for the best footing.

### **⚠ DANGER**



#### **ALWAYS USE SAFETY GLASSES AND WEAR HEARING PROTECTION.**

Also use a face or dust mask if the cutting operation is dusty.

### **⚠ DANGER**



#### **NEVER OVERREACH.**

Keep your proper footing and balance at all times.

### **⚠ DANGER**



#### **NEVER STAND ON TOOLS.**

Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.

**⚠ DANGER****ALWAYS DISCONNECT TOOLS.**

Disconnect tools before servicing and when changing accessories such as blades, bits, and cutters.

**ALWAYS AVOID ACCIDENTAL STARTING.**

Make sure switch is in “OFF” position before plugging in cord.

**NEVER LEAVE TOOLS RUNNING UNATTENDED.****⚠ DANGER****ALWAYS CHECK FOR DAMAGED PARTS.**

Before initial or continual use of the tool, a guard or other part that is damaged should be checked to assure that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other damaged parts should immediately be properly repaired or replaced.



## Special Safety Rules For Bandsaws

1. Always allow the Bandsaw blade to stop before removing scrap pieces from table.
2. Always keep hands and fingers away from the blade.
3. Never attempt to saw stock that does not have a flat surface, unless a suitable support is used.
4. Always hold material firmly and feed it into the blade at a moderate speed.
5. Always turn off the machine if the material is to be backed out of an uncompleted cut.
6. Adjust the upper guide about 1/8” above the material being cut.
7. Check for proper blade size and type for thickness and type of material being cut.
8. Make sure that the blade tension and blade tracking are properly adjusted.
9. Make “relief” cuts before cutting long curves.
10. Release blade tension when the saw will not be used for a long period of time.

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## SPECIFICATIONS

Throat width	18-3/8" (467 mm)
Max. cutting depth	12" (305 mm)
Blade length	142" (3607 mm)
Blade width	1/4" – 1-1/4"(6-32 mm)
Table size	21"x 19" (534 mm x 483 mm)
Table tilt	Left-10° Right-45°
Blade speeds	1510 ft/min or 3220 ft/min
Motor	2 HP
Amps	12.5
Volts	220
Net weight	396 lbs



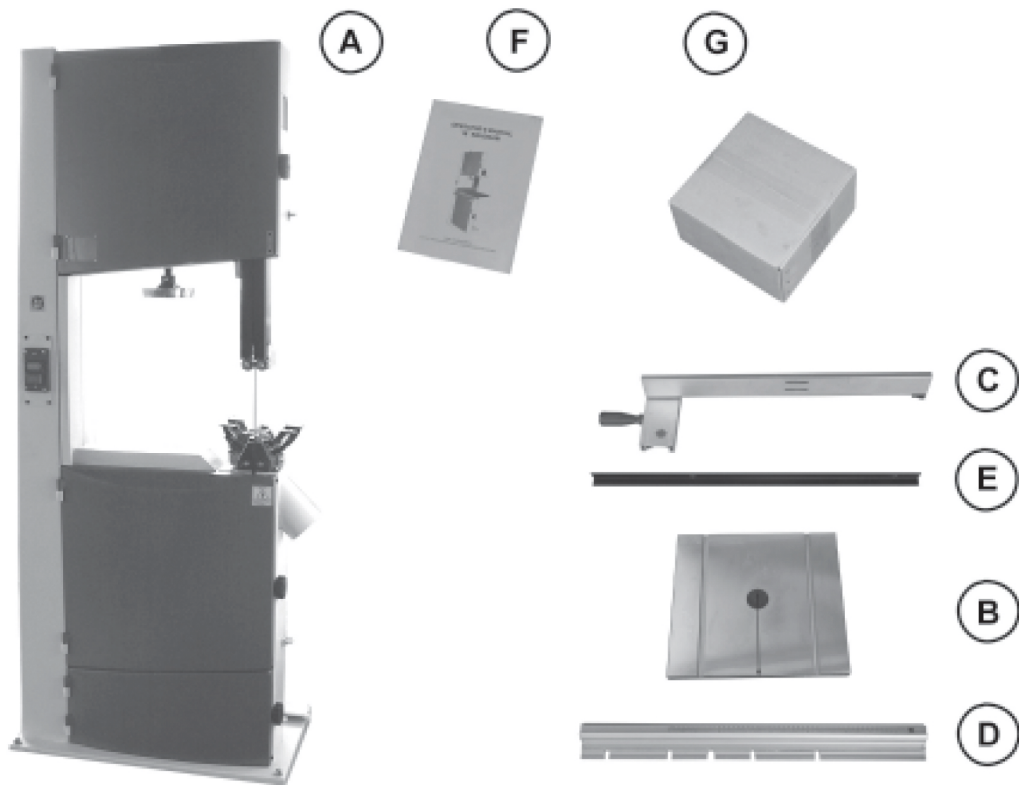
# Unpacking and Checking Contents

## 1. Unpacking and Checking Contents

- a. Separate all “loose parts” from packaging materials and check each item with “Table of Loose Parts” to make sure all items are accounted for, before discarding any packaging material.
- b. Thread hoist ring into threading hole on top of Bandsaw frame. This allows the user to connect a properly secured hoist mechanism to lift the Bandsaw
- c. With the help of another person or by installing hoist ring, unbolt the Bandsaw from the packing pallet. Properly lift the Bandsaw off the packing pallet and place on level floor.
- d. Remove protective oil that is applied to the table. Use any ordinary house hold type grease and spot remover.
- e. Apply a coat of paste wax to the table to prevent rust. Wipe all parts thoroughly with a clean dry cloth.

TABLE OF LOOSE PARTS

Item	Part Name	Qty
A	Bandsaw Assembly	1
B	Table w/insert	1
C	Rip fence Assembly	1
D	Front guide rail	1
E	Rear guide rail	1
F	Owner's manual	1
G	Box of loose parts	1



# Loose Parts

List of loose parts in the box marked “G”



Hex head bolt M8x25 1pc



Hex nut M8-1.25 1pc



Hex head bolt M8x16 4pcs



Washer 8mm 4pcs



Spring washer 4pcs



Hex head bolt M6x12 2pcs



Washer 6mm 2pcs



Wing screw M8 4pcs



Washer 8mm 4pcs



Wing nut 1pc



Sleeve 1pc



Hex head screw 1pc



Resaw bar 1pc



Sleeve 1pc



Lever 1pc



Handwheel 1pc



Handwheel 1pc



Hoist Ring 1pc



L wrench 3mm 1pc



L wrench 4mm 1pc

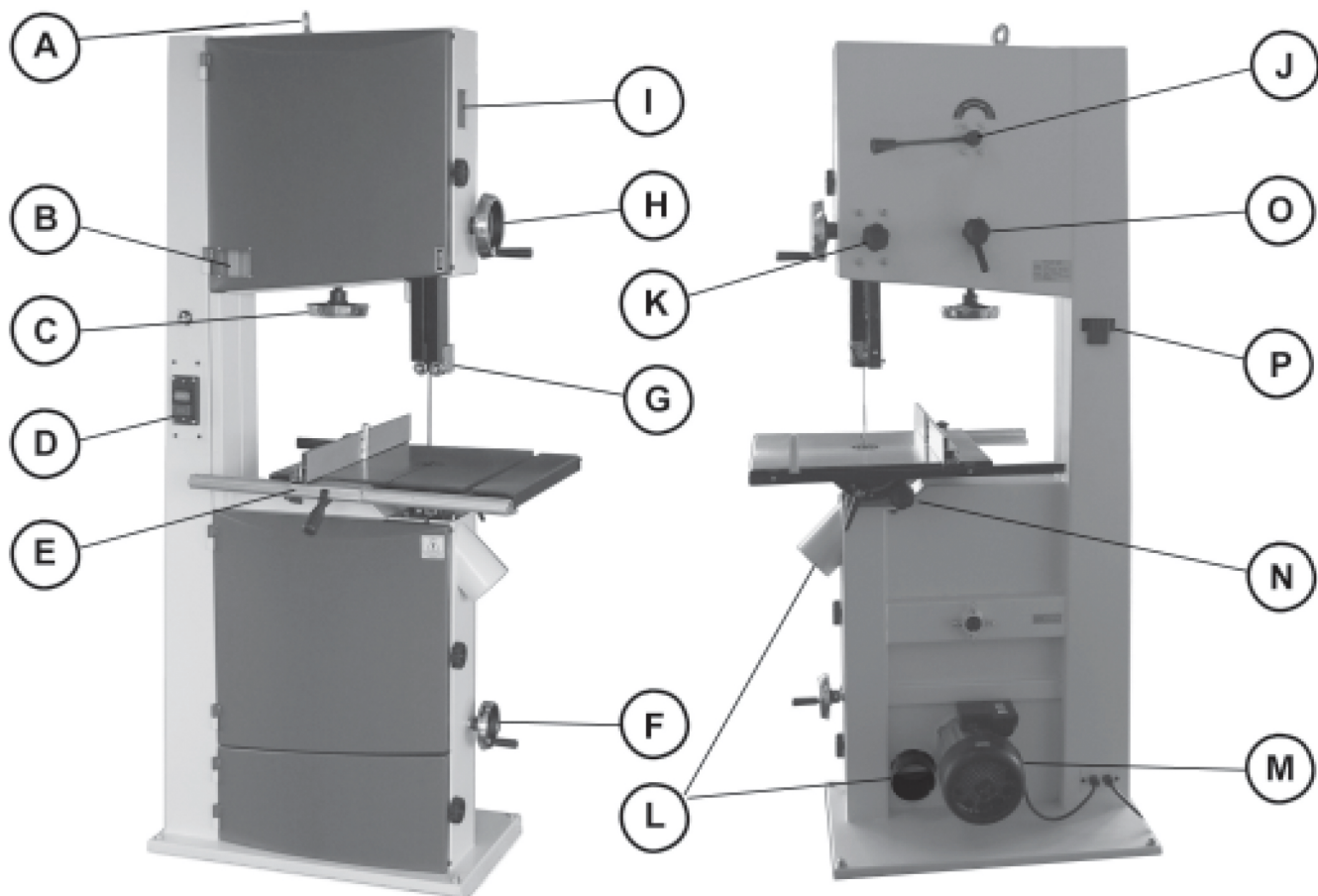


L wrench 5mm 1pc



L wrench 6mm 1pc

# Getting To Know Your Bandsaw



- A. Hoist Ring
- B. Tension Indicator Window
- C. Blade Tension Hand-wheel
- D. Switch
- E. Rip Fence
- F. Speed Hand-wheel
- G. Blade Guide
- H. Guide Post Hand-Wheel

- I. Blade Tracking Window
- J. Quick Release Lever
- K. Guide Post Lock Knob
- L. 4" Dust Ports
- M. Motor
- N. Table Tilting Knob
- O. Blade Tracking Knob
- P. Tool holder

# Assembly

The machine is supplied partly assembled. Prior to use, the following items have to be assembled: working table, rip fence and hand-wheels.

**WARNING!** To ensure sufficient upright stability and safety of this Bandsaw, you need to bolt the Bandsaw to the floor with M10 screws.(Fig 1)(not supplied)

## Assemble Working Table

Installing 90°stop: Thread screw (m8x20) and nut (M8-1.25) to the bottom of the table. (Fig. 4A)

With the help of another person, lift the working table onto the trunnion.

Mount the working table to the trunnion using the supplied (4) hex bolts, (4) lock washers and (4) washers (A--Fig.2).

Installing Table Leveling Screw: Insert hex socket screw and washer through top of table. Place bushing and wing nut from under the table and tighten. (B-Fig. 2)

## Assemble Rip Fence

Install the rear fence rail to the table with (2) M6-1.0 x 20 hex bolts and (2) flat washers M6 (Fig. 3).

Install the front fence rail to the table with (4) thumbscrews and (4) flat washers M8 (Fig. 3).

Make sure the end cap is locked into the rear fence rail. Then set the fence on the front and rear rails.

## Assemble Hand-Wheels

Attach the large crank handle (Fig. 4) to the rack and pinion on the upper part of the bandsaw using the 5mm “L” wrench provided.

Attach the small crank handle (Fig. 4) to the belt and speed control rod on the lower right side of the bandsaw using the 5mm “L” wrench provided.

Place the (4) “L” wrenches (3mm, 4mm, 5mm and 6mm) in the tool holder on the rear column support.

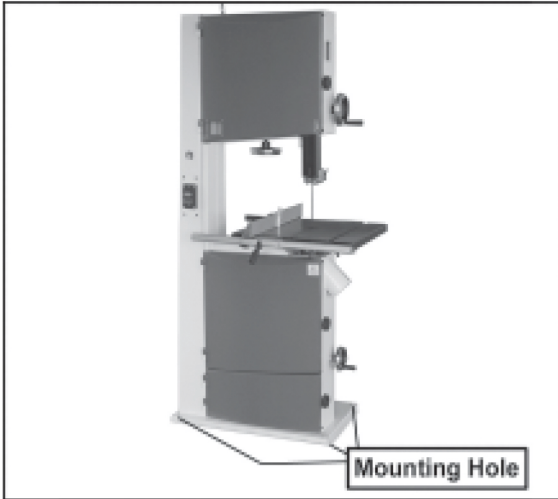


Figure 1

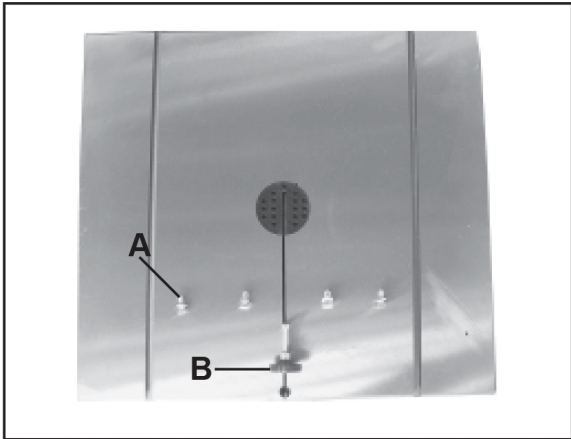


Figure 2

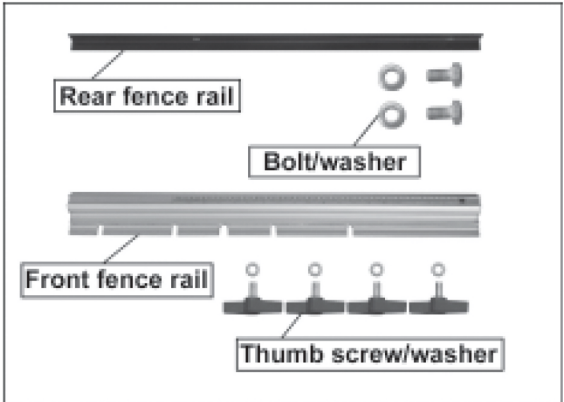


Figure 3

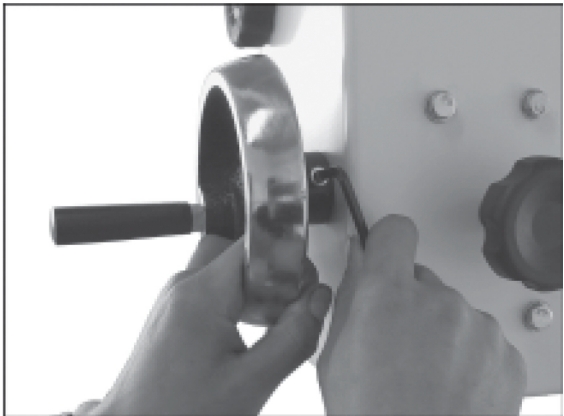


Figure 4



# Adjustment

## Setting the Table Square to Saw Blade

The table may be set at 90° to the saw blade sides by adjusting the table stop screw under the table. The table stop screw rests on the top of the quick release adjustment stop. By first loosening the locking nut (A--Fig. 5) and then adjusting the screw (B--Fig. 5), the table can be set correctly. Retighten the locking nut (A--Fig. 5) making sure that the setting is maintained.

The table may also be set at 90° to the back of the saw blade by adjusting the trunnion micro adjustment screws. First, slightly loosen parts 97 and 98 (refer to parts explosion pg. 16 in this manual). Using the 3mm "L" wrench, turn the rear trunnion micro adjusting screws. (Clockwise will raise these screws; counterclockwise will lower these screws). Check table for 90° and tighten parts 97 and 98.

## Tilting the Table

Loosen the lock handle (A--Fig. 6) on the table trunnion. Turn the table tilting knob (B--Fig. 6) to adjust the table to the desired angle. Use the angle indicator scale on the trunnion bracket to find the desired angle. Retighten the lock handle to secure the table.

## Tracking the Saw Blade

**WARNING!** Unplug the Bandsaw. First, make sure the upper and lower blade guides are adjusted away from the blade and the tension scale is set to correspond to the width of the blade you are using.

Then loosen the lock lever (Fig. 7) by turning it counter clockwise and turn the blade tracking knob (Fig. 7) clockwise/counterclockwise while turning the upper wheel by hand at least three rotations until the blade tracks centered on the wheel. Finally tighten the lock lever and close the doors.

## Adjusting the Blade Tension

To loosen the tension of the blade, turn the blade tension handwheel (Fig. 8) counter clockwise. To tighten the tension of the blade, turn the blade tension handwheel clockwise.

Tension the blade until the tension readings correspond to the width of blade you are using by viewing through the tension indicator window (Fig. 8).

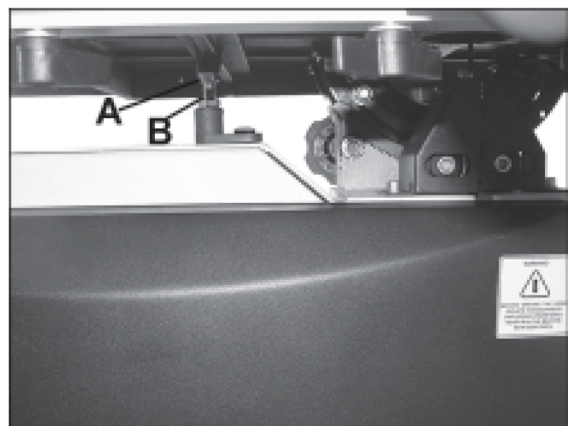


Figure 5

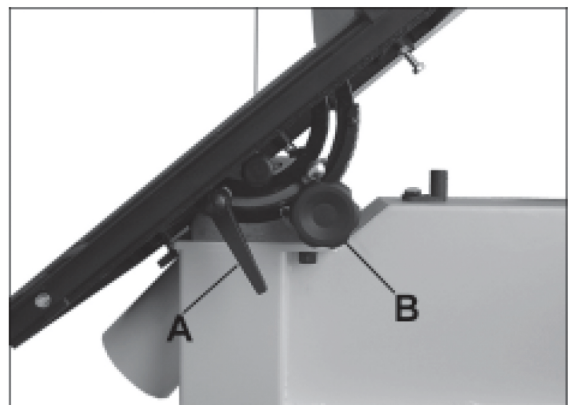


Figure 6

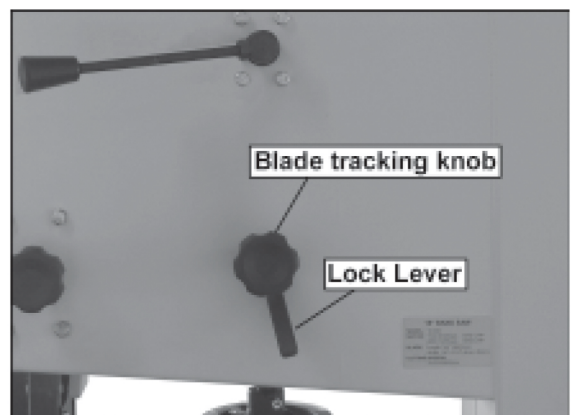


Figure 7

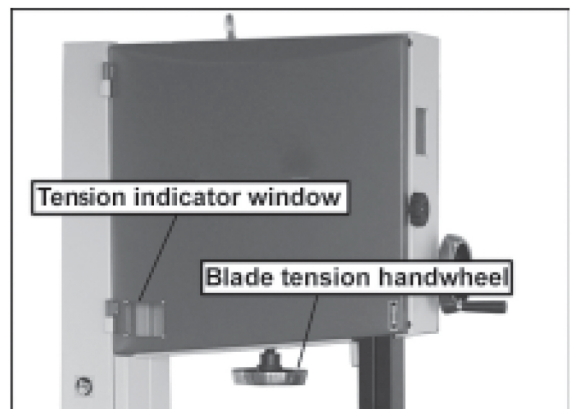


Figure 8

## Adjusting the Blade Guides

**Upper Guides:** To adjust the upper blade guides, first position the roller guides relative to the blade by loosening the locking hex screw (A--Fig. 9) and moving the guide carrier until the roller guides are approx. 1/16" behind the gullets of the blade. Next set the roller guides to within 1/32" of the blade by releasing the screw (B--Fig. 9) on each side of the blade. Do not set the guides too close, as this will adversely affect the life of the blade. Finally, adjust the thrust bearing to be just clear of the back of the blade by unlocking the hex nut (C--Fig. 9). When the correct adjustment is reached, lock the thrust bearing in position with the hex nut (A--Fig. 9).

**Lower Guides:** To adjust the lower blade guides, first loosen the hex nut (A--Fig. 10) then move the guide carrier casting to allow the front to be approx. 1/16" behind the gullets of the Bandsaw blade and tighten the hex nut (A--Fig. 10). Next set the roller guides to within 1/32" of the blade by releasing the screw (B--Fig. 10) on each side of the blade. Adjust the thrust bearing to be just clear of the back of the blade by unlocking the hex nut (C--Fig. 10), and turning adjusting knob (D--Fig. 10). Finally, tighten hex nut (C--Fig. 10).

Make sure doors are closed, turn the bandsaw on and inspect that the upper, lower and thrust bearings are not turning. All bearings should not turn unless pressure from workpiece is applied to the blade. If bearings are turning under no pressure, repeat steps to adjust the blade guides.

## Adjusting the Rip Fence Guide Scale

Slide the rip fence against the blade along the rail and loosen the indicator screw (A--Fig. 11). Then move the scale (B--Fig. 11) sideways and align the zero on the scale with the line on the magnifying window (C--Fig. 11). Retighten the indicator screw when the adjustment is correct.

## Adjusting the Cutting Height

Loosen the guidepost lock knob (Fig. 12) and turn the guidepost handwheel (Fig. 12) to raise or lower the guide post/upper blade guide assembly to the desired height. Then tighten the guidepost lock knob. Note: The bottom edge of the guide bearings should be approximately 1/4" above the top surface of the work piece.

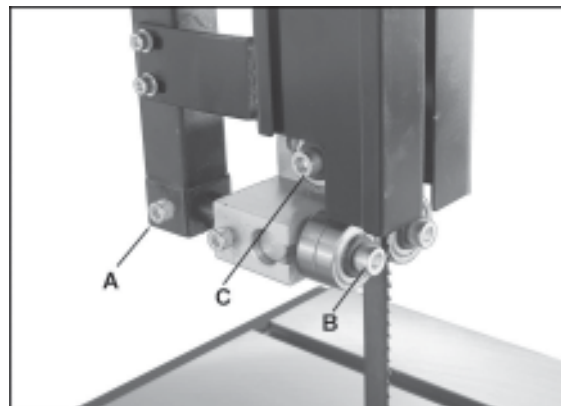


Figure 9

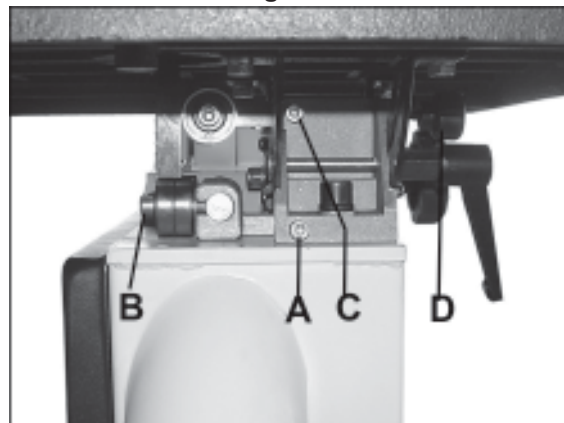


Figure 10

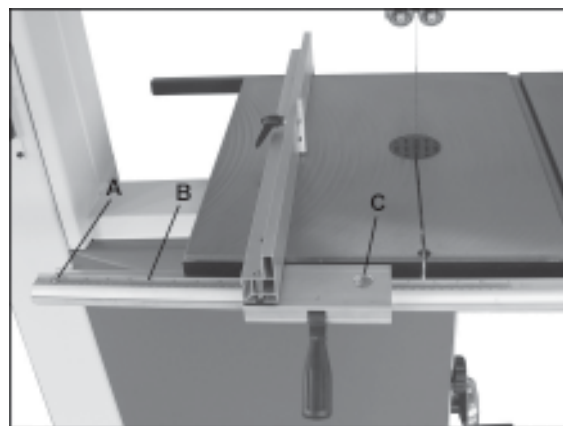


Figure 11

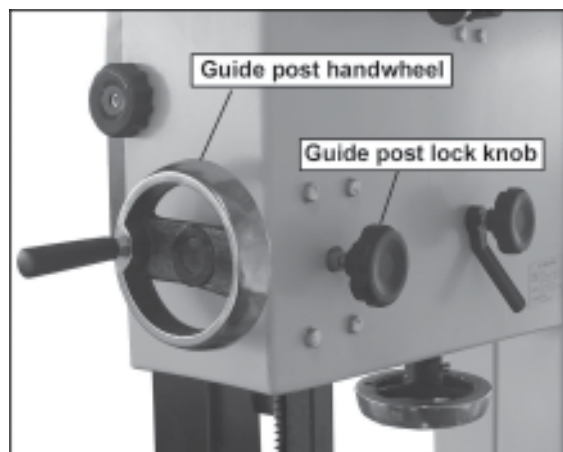


Figure 12

## Changing the Blade Speed / Belt Tension

**WARNING!** Before changing the speed, always make sure the machine has been unplugged from the electrical supply

This Bandsaw has two blade speeds, low speed (1510 ft/min) and high speed (3220 ft/min).

The lower wheel (A--Fig. 13) has two integral "V" form pulleys, and the motor shaft has a twin multi-vee form pulley (B--Fig. 13). The "V" belt (C--Fig. 13) passes around the wheel pulley and the motor pulley. The belt tension is released and applied by using the handwheel (D--Fig. 13).

For the high speed (3220 ft/min), the belt should be fitted to the rear pulley on both the motor and the wheel as shown in Fig. 13.

For the low speed (1510 ft/min), the belt should be fitted to the front pulley on both the motor and wheel as shown in Fig. 13.

To properly adjust belt tension, turn hand-wheel (D--Fig. 13) until there is 1/2" deflection in the "V" belt.

## Replacing the Bandsaw Blade

**WARNING!** Unplug the machine from the electrical supply. This ensures that the Bandsaw will not accidentally turn on if the ON/OFF switch is bumped.

- Open the top and bottom wheel doors by turning the door locking knobs.
- Remove the rip fence rail from the front of the table by loosening the 4 thumbscrews (Fig. 3 on page 8).
- Release the blade tension by rotating the quick release lever (Fig. 14) clockwise.
- Remove the saw blade by feeding it through the slot in the table, upper and lower blade guides and the slot in the spine of the machine, being careful not to cut yourself. Wear gloves for protection.
- When fitting the new blade ensure the blade teeth are pointing downwards and towards you at the position where the blade passes through the table.
- Re-tension the new blade by rotating the quick release lever (Fig. 14) counterclockwise and check the blade tracking. The blade should run in the center of the wheel. Refer to "Tracking the Saw Blade" on page 6 for more details.
- Reset the blade guides as described in the section "Adjusting the Blade Guides" on page 10.
- Reset the blade tension as described in the section "Adjusting the Blade Tension" on page 9.
- Replace the rip fence guide, and retighten the 4 thumb-screws (Fig. 3 on page 8).
- Close and lock both the wheel doors before reconnecting the power supply.

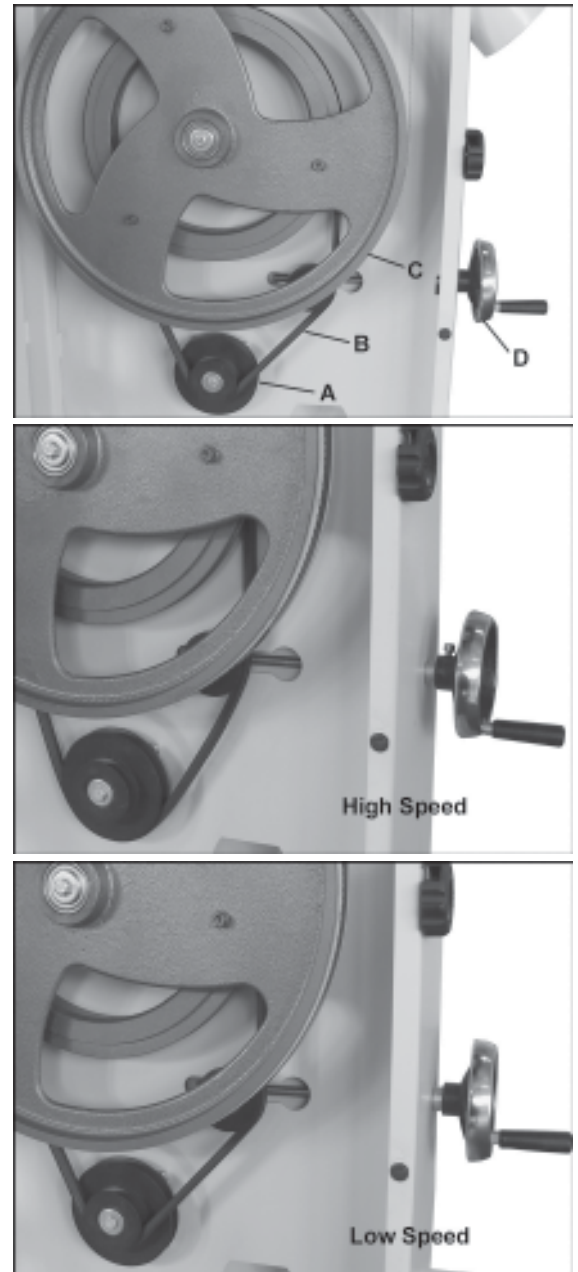


Figure 13



Figure 14



## Re-sawing

For re-sawing, attach the 3/8" x 3" post to the slot on the fence. Position the re-saw bar so that it is aligned with the front of the blade. The re-saw bar helps to correct any blade wandering during re-sawing operations.

## Operation

The blade cuts on a continuous down-stroke.

With both hands, firmly hold the workpiece down on the table, and feed it towards the blade slowly, keeping your hands away from the blade.

For best results the blade must be sharp. A dull blade will not cut correctly, especially when straight cutting, and causes excess pressure to be applied on the rear guide bearings.

Select the right blade for the job, depending on the thickness of the wood and the cut to be made. The thinner and harder the wood, the finer the teeth of the blade should be. Use a fine tooth blade for cutting sharp curves.

The machine is especially suited for cutting curves, but will also make straight cuts. When cutting, follow the design marked out by pushing and turning the workpiece evenly.

Do not attempt to turn workpiece without pushing it as this may cause the workpiece to get stuck, or the blade to bend.

For straight cuts, use the fence provided to feed the workpiece along the blade slowly and in a straight line.

## Maintenance

**CAUTION! BEFORE CLEANING OR CARRYING OUT MAINTENANCE WORK, DISCONNECT THE MACHINE FROM THE POWER SOURCE (WALL SOCKET). NEVER USE WATER OR OTHER LIQUIDS TO CLEAN THE MACHINE. USE A BRUSH. REGULAR MAINTENANCE OF THE MACHINE WILL PREVENT UNNECESSARY PROBLEMS.**

Keep the table clean to ensure accurate cutting.

Keep the outside of the machine clean to ensure accurate operation of all moving parts and prevent excessive wear.

Keep the ventilation slots of the motor clean to prevent it from overheating.

Keep the inside (near the saw blade, etc.) clean to prevent accumulation of dust.



# Troubleshooting

## WARNING!

**FOR YOUR OWN SAFETY, ALWAYS TURN OFF AND UNPLUG THE MACHINE BEFORE CARRYING OUT ANY TROUBLESHOOTING.**

TROUBLE	PROBABLE CAUSE	REMEDY
The machine does not work when switched on.	1. No power supply. 2. Defective switch.	Check the cable for breakage. .
The blade does not move with the motor running.	1. The quick release lever or blade tension handwheel has not been tightened. 2. The blade has come off one of the wheels. 3. The saw blade has broken. 4. The drive belt has snapped.	Switch off the motor, tighten the quick release lever or blade tension handwheel. Open the hinged door and check. Replace the blade. Replace the belt.
The blade does not cut in a straight line.	1. Fence for cutting not used. 2. Too fast feed rate.  3. The blade teeth are dull or damaged. 4. Blade guides not suitably adjusted.	Use a fence. Put light pressure on the workpiece & make sure the blade does not bend. Use a new blade.  Adjust the blade guides (see the section on page 10).
The blade does not cut, or cuts very slowly.	1. The teeth are dull, caused by cutting hard material or long use.  2. The blade was mounted in the wrong direction.	Replace the blade, use a 6T.P.I. blade for wood and soft materials. Use a 14T.P.I. blade for harder materials. A 14 T.P.I. blade always cuts slower due to the finer teeth and the slower cutting performance. Fit the blade correctly.
Sawdust builds up inside the machine.	1. This is normal	Clean the machine regularly. Open the hinged door and remove the sawdust with a vacuum cleaner.
Sawdust inside the motor housing.	1. Excessive dust build-up on the machine exterior components.	Clean the ventilating slots of the motor with a vacuum cleaner. From time to time remove the sawdust to prevent it from being sucked into the housing
The machine does not cut at 45° or 90° angles.	1. The table is not at right angles to the blade. 2. The blade is dull or too much pressure was put on the workpiece.	Adjust the table.  Replace the blade or put less pressure on the workpiece.
The blade cannot be properly positioned on the bandwheels.	1. The wheels are not in alignment. Defective bearing. 2. The blade tracking knob hasn't been properly adjusted. 3. Inferior blade.	Adjust the knob (see the section on page 9).  Replace the blade.

## Troubleshooting Cont.

### Adjusting the Upper Blade Guide Bearings Parallel to the Blade

(Refer to page 17 parts diagram) This step may not be necessary it is factory preset. If adjustment is needed follow the steps below

First slightly loosen part #162 (4 each) cap screw on rear of upper Bandsaw housing (see page 17 in parts diagram) This will allow you to adjust the micro adjustment screws on part #164 (Guide Bracket).

Next place a 3mm "L" wrench through one of the holes in part #169 (Guide Bracket Cover) Turning clockwise on the left two holes will adjust the left bearings to the right. Turning clockwise on the right two holes will adjust the right bearings to the left. Check bearings for parallel.

Lastly tighten parts #162 (4) on back of Bandsaws. Repeat steps if the bearings are still not parallel.

### Adjust Upper Bearings Which Will Not Track Close to the Blade

(Refer to page 17 parts diagram)

If the right or left upper bearings do not adjust to within 1/32" of the blade, the guide post (part #157) may need adjustment.

First slightly loosen parts #162 (4) on the back of the upper Bandsaw cabinet.

Next slide the upper guide post right or left until bearings are properly spaced on each side of blade. Tighten part #162 (4) on the back of the upper Bandsaw cabinet.

## Changing Bandsaw Tire

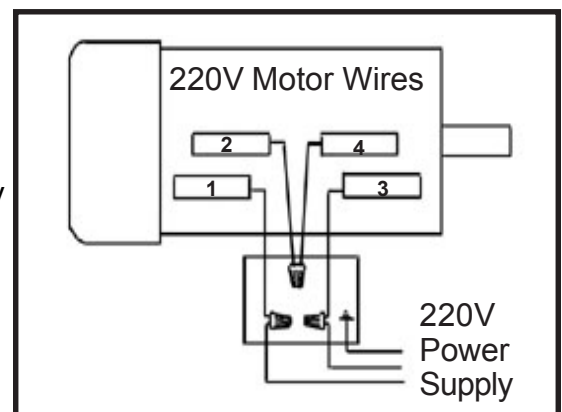
Use a putty knife to get underneath the tire and pull it up and away from the wheel. Work the putty knife all the way around the wheel to loosen the tire. Then, use the putty knife as leverage to flip the tire over and off of the wheel. Clean the inside of the groove, removing any dirt, debris or cement with lacquer thinner

Soak the replacement tire in warm water to make it more flexible. Let tire dry and lay on top of wheel. Start by setting the tire into the wheel groove at the top of the wheel. Using a putty knife, work the new tire around the wheel, making sure not to slice the tire. If rubber cement is to be used, make sure to distribute evenly. Having high spots between the wheel and the tire will cause a vibration and affect blade tracking.

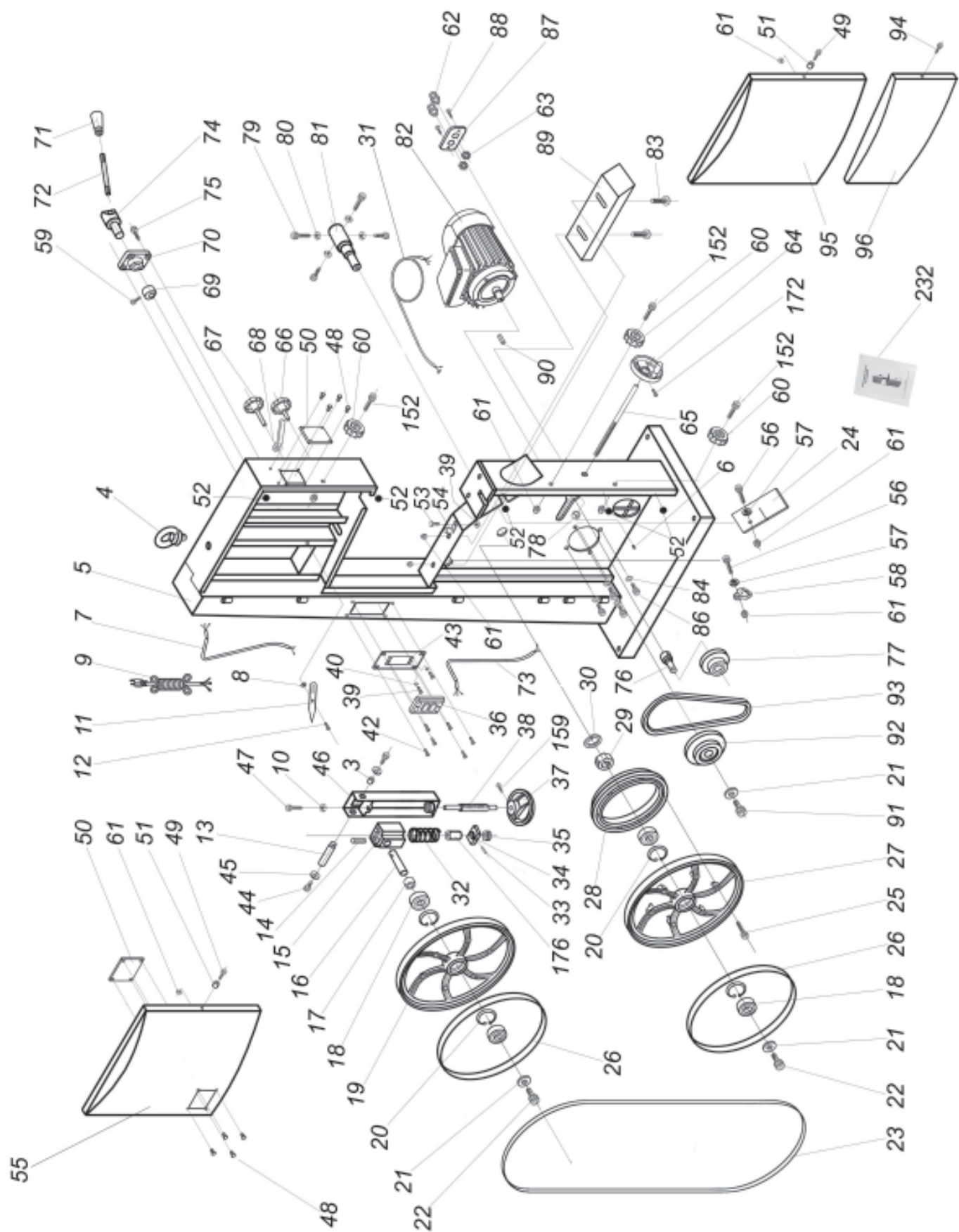
### Wiring Diagram

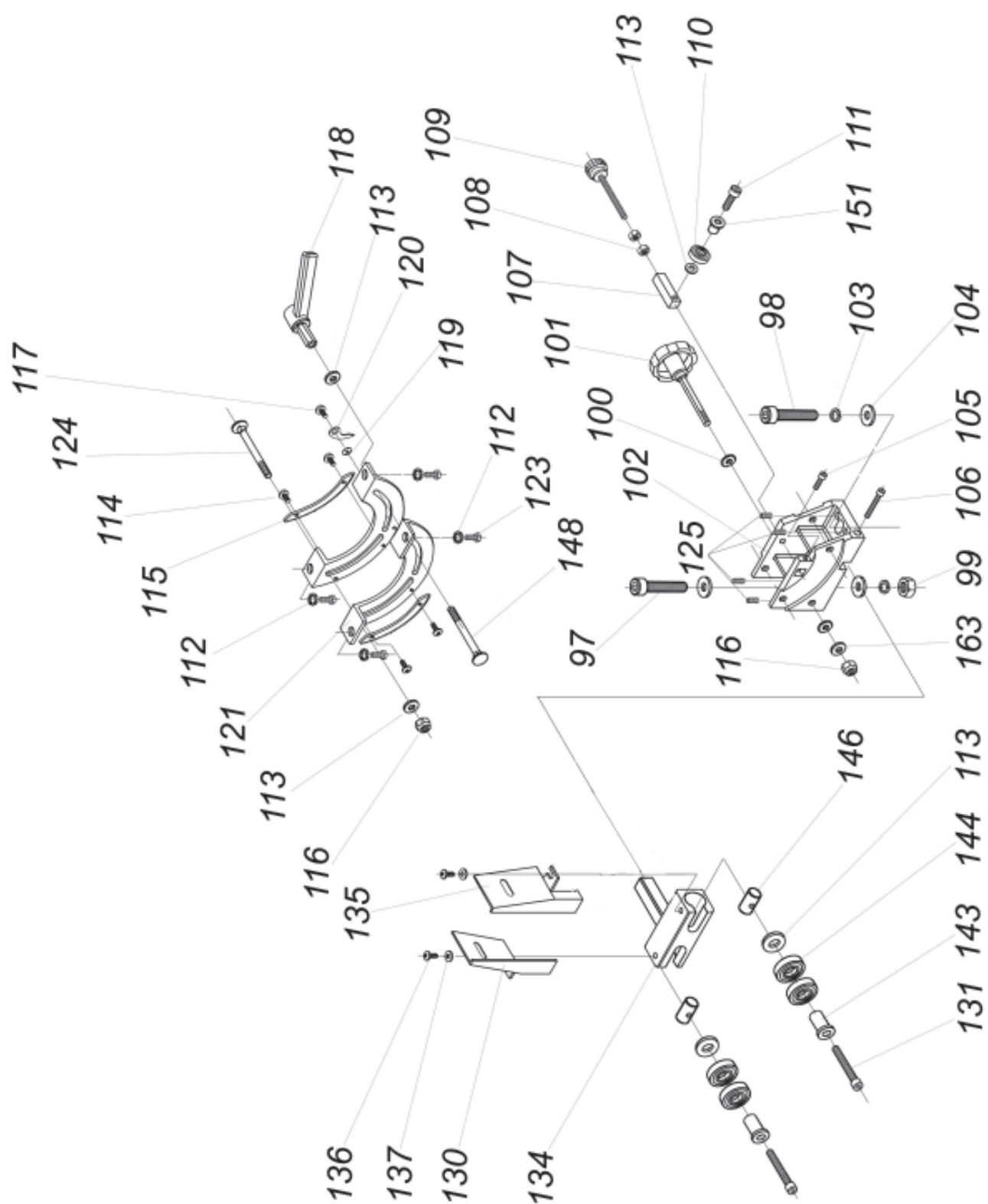
**WARNING!** This machine must be grounded.

Replacement of the power supply cable should only be done by a qualified electrician.

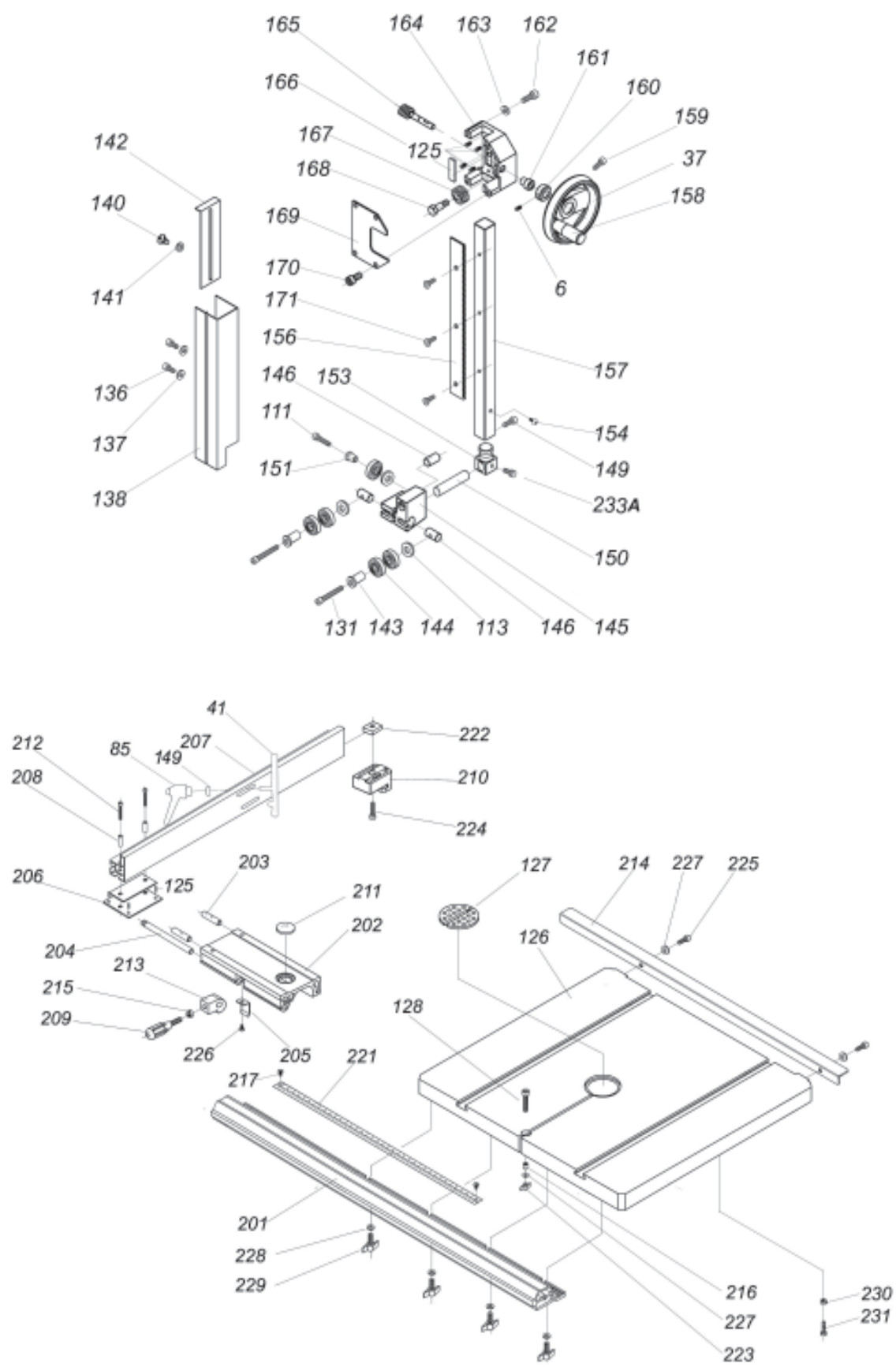


Parts Diagram





Parts Diagram Cont.



# Parts List

## Part No. Description

3	Tube
4	Ring
5	Frame
6	Set Screw M6-1.0x10
7	Switch Cord
8	Flat Washer M5
9	Power Cord
10	Hex Nut M6-1.0
11	Pointer
12	Step Screw
13	Upper Shaft
14	Roll Pin 5x36
15	Upper Wheel Shaft Hinge
16	Upper Wheel Shaft
17	Bushing
18	Bearing 6204
19	Upper Wheel
20	Int Retaining Ring M47
21	Flat Washer M8
22	Hex Bolt M8-1.25x30
23	Saw Blade
24	Board
25	Hex Bolt M6-1.0x30
26	Tire
27	Lower Wheel
28	Idle Pulley
29	Hex Nut M27x2
30	Lock Washer 27
31	Motor Cord
32	Spring
33	Roll Pin 3x16
34	Block
35	Bearing 51201
36	Switch
37	Big Handwheel
38	Adjusting Rod
39	Nut
40	Star Washer M5
41	Resaw Bar
42	Phlp HD SCR w/Flange M5x12
43	Switch Plate
44	Hex Bolt M8-1.25x16
45	Flat Washer M8
46	Upper Wheel Sliding Bracket
47	Hex Bolt M6-1.0x25
48	Rivet
49	Hex Bolt M6-1.0x20
50	Clear Window

## Part No. Description

51	Bushing
52	Rubber Door Grommets
53	Special Hex Screw
54	Quick Stop Support
55	Upper Wheel Cover
56	Hex Bolt M6-1.0x25
57	Flat Washer M6
58	Brush
59	Hex Bolt M6-1.0x25
60	Star Handle
61	Nylon Nut M6-1.0
62	Strain Relief
63	Strain Relief Nut
64	Small Handwheel
65	Threaded Rod
66	Knob Bolt M10-1.5x20
67	Knob Bolt M10-1.5x53
68	Threaded Handle M10-1.5
69	Cam
70	Pillow Block
71	Shaft End
72	Rod
74	Shaft
75	Cap Screw M8-1.25x20
76	Shaft-V Belt Pulley
77	V Belt Pulley
78	Circlip Ring
79	Set Screw M8-1.25x20
80	Hex Nut M8-1.25
81	Lower Wheel Shaft
82	Motor
83	Hex Bolt M6-1.0x25
84	Lock Washer M8
85	Lock Lever
86	Cap Screw M8-1.25x20
87	Strain Relief Plate
88	Phlp HD SCR w/Flange
89	Sliding Cover
90	Key 5x5x35
91	Hex Bolt M8-1.0x20LH
92	Motor Pulley
93	V-Belt
94	Hex Bolt M6-1.0x30
95	Lower Wheel Cover
96	Small Wheel Cover
97	Bolt M12-1.75x40
98	Hex Bolt M12x35
99	Hex Nut M12-1.75



100	Small Gear	156	Rack
101	Table Tilting Knob	157	Upper Guide Post
102	Trunnion Support Bracket	158	Big Crank Handle
103	Lock Washer 12	159	Hex Bolt M6-1.0x20
104	Flat Washer M10	160	Bushing
105	Hex Bolt M6-1.0x20	161	Bushing
106	Hex Bolt M6-1.0x50	162	Cap Screw M8-1.25x20
107	Pillow Block	163	Spring Washer 8
108	Hex Nut M6-1.0	164	Guide Bracket
109	Adjustment Bolt M6-1.0	165	Worm Cylinder
110	Bearing 6201	166	Fixed Plate
111	Cap Screw M8-1.25x25	167	Gear
112	Flat Washer M8	168	Fixed Bolt
113	Flat Washer M8	169	Guide Bracket Cover
114	Phlp HD SCR M5-0.8x6	170	Hex Bolt M8-1.25x16
115	Gear Plate	171	Phlp M4-0.7x8
116	Nylon Nut M8-1.25	176	Bushing
117	Phlp HD SCR M5-0.8x6	201	Front Fence Rail
118	Lock Handle	202	Adjustable Base
119	Flat Washer M5	203	Fixed Shaft
120	Pointer	204	Shaft
121	Trunnion Plate	205	Spring Piece
122	Small Crank Handle	206	Bracket
123	Hex Bolt M8-1.25x16	207	Support Tube
124	Carriage Bolt M8-1.25x80	208	Internal Sheath
125	Micro Adjusting Screws	209	Handle
126	Table	210	End Cap
127	Table Insert	211	Convex Window
128	Hex Socket Screw M6-1.0x50	212	Cap Screw M6-1.0x55
130	Left Cover	213	Lock Mechanism
131	Hex Bolt M8-1.25x45	214	Rear Fence Rail
134	Lower Blade Guide Support	215	Hex Nut M8-1.25
135	Right Cover	216	Bushing
136	Hex Bolt M5-0.8x10	217	Pan Head Screw
137	Flat Washer M5	220	Fixing Screw
138	Protective Cover	221	Scale
140	Step Screw	222	Hex Nut M6-1.0
141	Flat Washer	223	Wing Nut
142	Sliding Plate	224	Cap Screw M6-1.0x16
143	Retaining Ring S15	225	Hex Bolt M6-1.0x20
144	Bearing 6201	226	Pan Head Screw M4-0.7x5
145	Upper Blade Guide Support	227	Flat Washer M6
146	Guide Ring	228	Flat Washer M8
148	Carriage Bolt M8-1.25x85	229	Thumb Screw
149	Bushing	230	Nut M8
150	Adjusting Bar	231	Hex Bolt M8-1.25x25
151	Tube	232	Owner's Manual
152	Hex Bolt M6-1.0x25	233A	Hex Screw
153	Upper Guide Support Block	250	Warranty Card
154	Phlp HD SCR M5-0.8x10		

# How-To's for all Band Saw Blades

## Choosing the Correct Blade Width

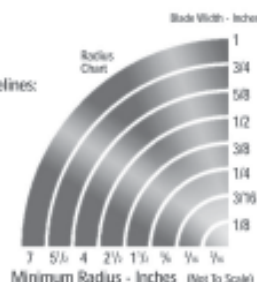
Blade width is measured from the tips of the teeth to the back edge of the blade as shown above. The instructions for the particular machine being used should be followed when selecting blade width.



If no such instructions are provided, blade width should be determined with the following guidelines:

**For Cut-Off Sawing**, the blade should be as wide as the machine will allow. The wider the band is, the straighter the cut will be. Faster feeding can be achieved.

**For Contour Sawing**, the blade should be as wide as the machine allows, but still narrow enough so that it can cut the desired shape (radius). Minimum dimensions for different cutting radii are shown on the chart at right.



## How To Choose The Correct Number Of Teeth Per Inch (TPI)

The number of teeth per inch (TPI) is important in obtaining the finish desired and the proper feed rate. A coarse tooth blade (2, 3 TPI) should be used for resawing wood and cutting thicker stock up to 8". A fine toothed blade (18 to 32 TPI) should be used for thinner metals and plastics under 1/4". For general cutting of 3/4" wood 4 TPI will provide a fast cut and 14 TPI will cut slow, but leave a smoother finish.

When Selecting TPI remember:

- More TPI give a smoother but slower cut
- Fewer TPI allow a faster cut with a slightly rougher finish
- At least three teeth must be in the workpiece—the chart to the right will help you decide.

TPI	Minimum Material Thickness
32	3/32"
24	1/8"
18	5/32"
14	1/4"
10	5/16"
8	3/8"
6	1/2"
4	3/4"
3	1"
2	1-1/2"

It is important to know the SFM for the various speed settings of your band saw, so that you can select the proper speed for cutting wood or other materials. Check the operator's manual of your band saw to determine the SFM or use the following procedure:

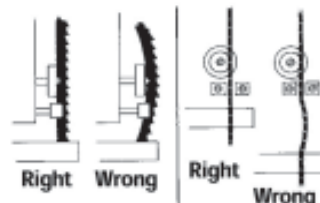
1. Determine the RPM: check the operator's manual or clock the revolutions per minute of the wheels with a tachometer or revolution counter.
2. Measure the diameter of the drive wheel in inches and multiply by .262 to obtain the wheel circumference. The RPM times circumference equals the surface speed of the blade.  

$$\text{RPM} \times \text{diameter in inches} \times .262 = \text{SFM}$$

**Note:** Spring Steel Wood Cutting Band Saw Blades should never be operated at surface speeds above 3000 SFM. Carbon Hard Edge Flexible Back Band Saw Blades may be run up to 8000 SFM.

## Installing your Band Saw Blade

1. Unplug the saw, then loosen the tension on the upper wheel. With all the blade guides backed off, slip the new blade around the wheels and then tension it.
2. When you have tensioned the blade enough to keep it on the wheels, track it by turning the upper wheel with one hand while adjusting the tilt of the wheel's axis with the other hand. The blade should ride in the middle of the rim. **Never track the blade with the motor running and the cover open.**
3. Next, adjust the blade guides; first the thrust bearings: upper and lower, then the left hand side guides.
4. Use a square to make sure you are not pushing the blade out of line and place a piece of white paper between the blade guide and the blade to allow for clearance.



## Diagnosing Problems

### 1. Premature and Excessive Tooth Wear

- Feed pressure too light, increase it.
- Lower band velocity.
- Improper tooth selection, use a finer pitch.
- Improper break-in with new band. Velocity and feeding should be reduced the first few cuts.
- Teeth are running the wrong direction.
- Be sure teeth are pointing in proper direction.
- Incorrect saw guide insert size for the band, allowing them to strike teeth



### 2. Blade Vibration

- Increase or decrease band velocity.
- Teeth too coarse for workpiece.
- Material not securely held.
- Increase tension of band.
- Increase feed pressure.



### 3. Gullets Loading

- Teeth too fine for workpiece - use a coarser pitch.
- Decrease band velocity.

### 4. Band Stalls in Work

- Feed pressure too great - decrease feed.
- Teeth too coarse, use finer tooth blade



### 5. Premature Blade Breakage

- Thickness of blade too heavy for diameter of wheels and speed of machine
- Increase or decrease velocity
- Check wheels for defects
- Teeth too coarse for workpiece—use a finer pitch
- Decrease blade tension—Decrease feeding force
- Brittle weld—Increase annealing period, decreasing heat gradually
- Check for proper adjustment of band guides, saw guide inserts, and back-up bearings.

### 6. Blade Making Belly-Shaped Cuts

- Increase tension.
- Adjust guides closer to workpiece.
- Teeth too fine—use a coarser pitch.
- Decrease feed force.
- Teeth dull.



### 7. Tooth Stripping

- Teeth too coarse for workpiece.
- Material not securely held.
- Too much feed pressure—reduce for good chip cut.
- Band velocity too low—Increase speed.



### 8. Band Develops a Negative Camber

- Band is riding on saw guide backup bearing too heavily. Adjust band for alignment on top and bottom wheels.
- Check band wheel alignment.



### 9. Blade Not Running True Against Saw Guide Backup Bearing

- If clicking noise against saw guide backup bearing, remove burr on band.
- Check band wheel alignment.
- Check saw guide backup bearing for wear, replace if necessary
- Weld not in proper alignment. Reweld blade straight and true.

### 10. Cutting Rate Too Slow

- Increase band velocity.
- Increase feed pressure.
- Use a coarser pitch.



### 11. Blade Leading In Cut

- Reduce feed pressure or rate.
- Check adjustments and wear of saw guides or rollers.
- Lack of band tension.
- Tooth set damage.



### 12. Premature Loss of Set

- Improper width selection - check chart for correct width for radius cutting.
- Reduce band velocity.

### 13. Band Develops Positive Camber

- Decrease force.
- Use a coarser pitch to increase tooth penetration.
- Adjust saw guides closer to work.



### 14. Band Develops Twist

- Wrong width for radius being cut—choose a narrower blade.
- Binding in cut—decrease feed pressure.
- Decrease band tension.
- Adjust saw guides further from workpiece.



### 15. Finished Cut Surface Too Rough

- Improper tooth selection—choose a finer pitch.
- Increase band velocity.
- Decrease feed rate.



### 16. Band Scoring (side wear or grooving)

- Check for wear on saw guide inserts.
- Too much pressure on saw guide inserts.
- Check alignment of saw guides—be sure they are square to front vise. Replace or clean guides.



### 17. Burring or Mushrooming of Blade Back Edge

- Increase tension and adjust guides.
- Check contact between blade and back edge rollers.
- Reduce feed pressure.
- Use coarser pitch blade.
- Use finishing stone.

