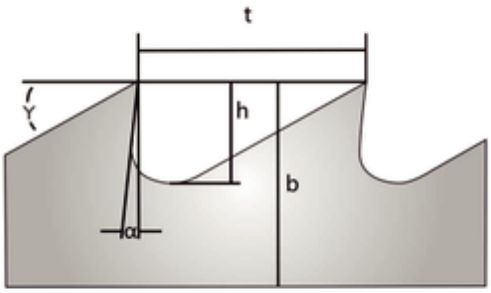
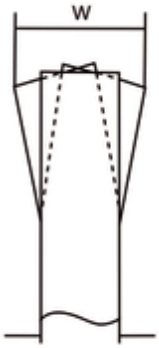
Bandsaw Blade Terminology

Basic Phrases





B=Band Width

S=Band Thickness

H=Tooth Height

T=Tooth Pitch (TPI)

A=Rake Angle

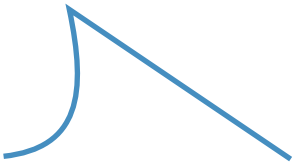
Y=Relief Angle

W=Set Width

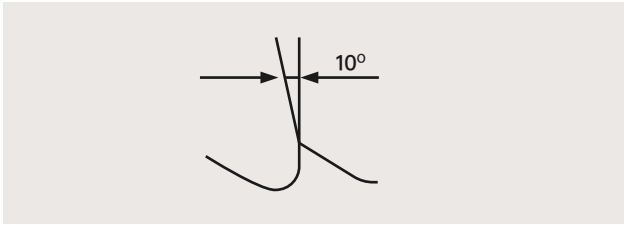
Tooth Style

There are three types of tooth that is in the production plan.

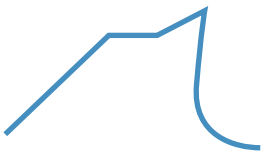
Regular Tooth



Regular tooth blades are most commonly used for all general purpose metal sawing. The face of the tooth is straight (0° , 7°& 10° rake angle).

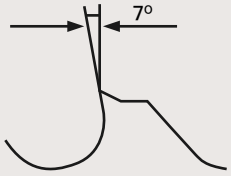


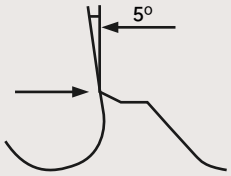
Profile Tooth



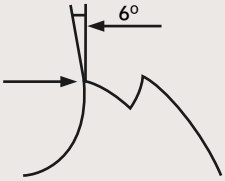
Reinforced back reduces the risk of broken teeth. It is designed for steel construction and industrial profile cuts. It has good strength with powerful cutting ability, which increase productivity.

This tooth is only available in 3/4 and 4/6TPI at this stage with 7°&5° degree.





Double Tooth



Designed for cutting steel bar. It has unique tooth angle and strength with powerful cutting performance in cutting reinforcing steel bars.

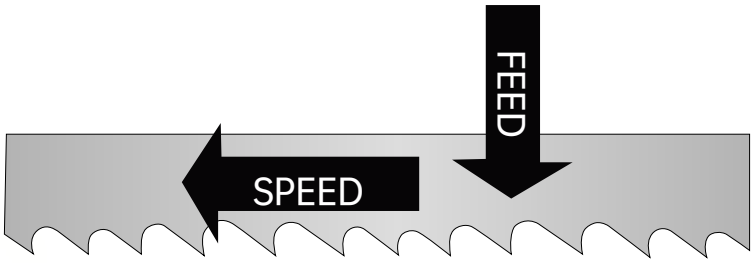
Band Speed

Band speed refers to the rate at which the blade cuts across the face of the material being worked. A faster band speed achieves a higher, more desirable shear plane angle and hence more efficient cutting. This is usually stated as FPM (feet per minute) or MPM (meters per minute).

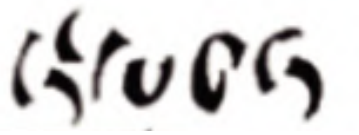
HOW DO YOU KNOW IF YOU ARE USING THE RIGHT BAND SPEED?

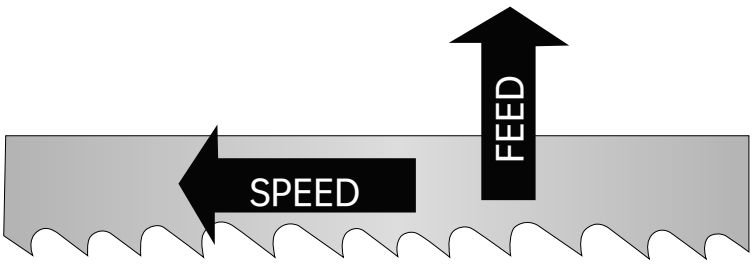
Telltale Chips

- Chips are the best indicator ofcorrect feed force.
- Monitor chipformation and adjust accordingly.

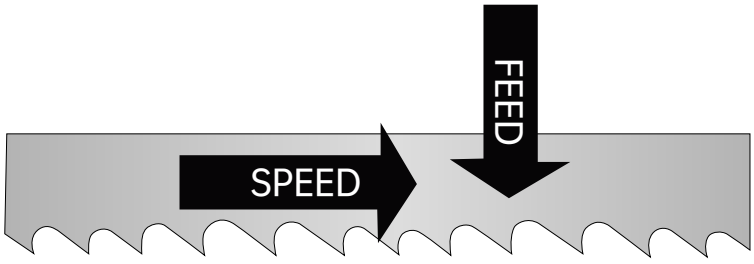


Thin or powdered chips-increase feed.





Burned heavy chips- reduce feed/speed.



Curled silvery and warm chips-optimum feed.

How To Select Your Bi-Metal Bandsaw Blades?

Bi-metal blades combines HSS materials in the tooth and highly resistant steel in the body of the blade, in order to offer durable blades and high performance of cutting rates.

The Following information needs to be specified when a bandsaw blade is ordered:

For Example

Product Name	Length X Width X Thickness	TPI
SMSEN Arbets	3505mm X 27mm X 0.90mm	3/4
	11′ X 1″ X 0.35″	

These Steps Are A Guide To Selecting The Appropriate Product For Each Appplication:

STEP 1:	ANALYZE THE SAWING APPLICATION
MACHINE	For most situations, knowing the blade dimensions (length x width x thickness) is all that is necessary.
MATERIAL	Find out the following characteristics of the material to be cut. • Grade • Hardness (if heat treated or hardened) • Shape • Size • Is the material to be stacked (bundled) or cut one at a time?
OTHER CSTOMER NEEDS	The specifics of the application should be considered. • Production or utility/general purpose sawing operation? • What is more important, fast cutting or tool life? • Is material finish important?

STEP 2:	DETERMINE WHICH PRODUCT TO USE
• Use the chart on the booklet to decide which product is fitted to your needs.	
• For further assistance, contact SIMSEN support at internationalsales@simsenhz.com	

STEP 3:	DETEMINE THE PROPER NUMBER OF TEETH PER INCH (TPI)
• Go to the detailed product page to find the specifications of TPI the product has. If having difficulty choosing between two pitches, the finer of the two will generally give better performance.	
• When compromise is necessary, choose the correct TPI first.	

STEP 4:	ORDER SIMSEN BI-METAL BANDSAW BLADES
	for better performance and longer life on any blade.

SINOTOOLS

M42 Bi-metal Bandsaw Blades

Advantages:

- Our most cost-effective blades are suitable for cutting most types of steel, especially up to 60HRC hardness.
- It combine high-speed steel M42 teeth with X32 backing materials.
- Ideal for factories with strict cost controls

Applications: Wooden pallet

 Tubes & Profiles

 Carbon Steel

 Mild Steel

 Wooden Pallet

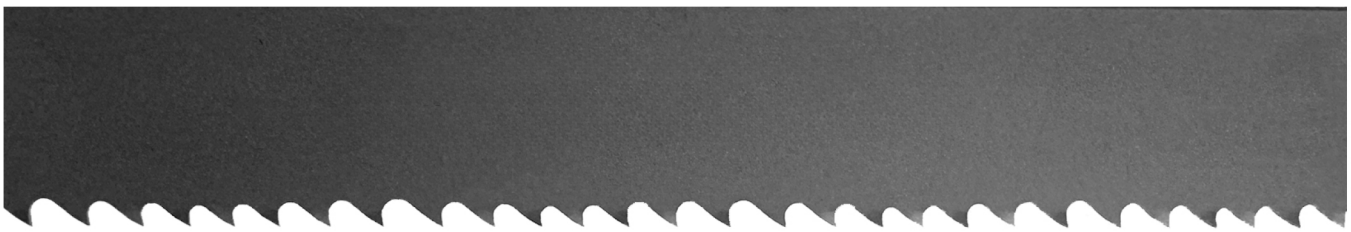
 Cast Iron

 Hard Wood

Specifications: Simsen Product List for Regular&Bi-cleaance angle tooth

mm (width*thickness)	inches (width*thickness)	TPI									meters in coil	MOQ
		1.4/2	2/3	3/4	4/5	4/6	5/8	6/10	8/12	10/14		
13 x 0.65	1/2 x 0.025		T	T		T	T	T	T	T	100m	100m
20 x 0.90	3/4 x 0.035		T	T; PT	DPT	T; PT	T	T	T	T	100m	100m
27 x 0.90	1 x 0.035		T	T; PT	DPT	T; PT	T	T	T	T	100m	100m
34 x 1.10	1-1/4 x 0.042		T	T; PT	DPT	T; PT	T	T	T	T	100m	100m
41 x 1.30	1-1/2 x 0.050	T	T	T; PT		T; PT	T	T	T	T	80m	80m

- T means Regular tooth
- PT means Profile tooth
- DPT means Double profile tooth



Advantages:

- Our most valuable blades
- Suitable for wide range of steel types
- High wear resistance
- Great cutting performance
- Long life

Applications:

 Cast Iron

 Tubes & Profiles

 Steel-Around 45HRC

 Mild Steel

 Stainless Steel

 Carbon Steel

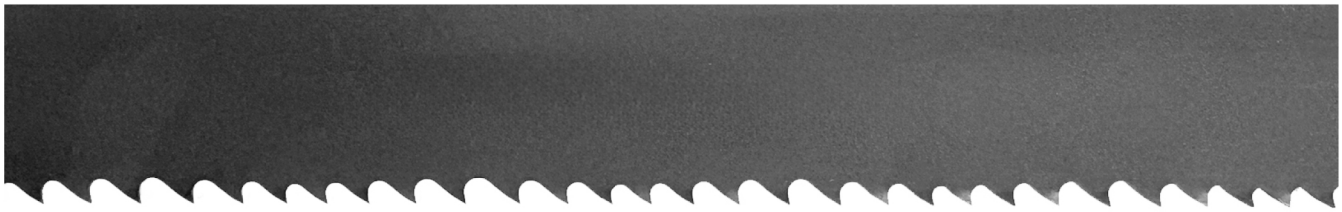
 Alloys

Specifications: Simsen Product List for Regular&Bi-cleaance angle tooth

mm (width*thickness)	inches (width*thickness)	TPI											meters in coil	MOQ
		0.75/1.25	1.0/1.5	1.4/2	2/3	3/4	4/5	4/6	5/8	6/10	8/12	10/14		
13 x 0.65	1/2 x 0.025				T	T		T	T	T	T	T	100m	100m
20 x 0.90	3/4 x 0.035				T	T;PT	DPT	T;PT	T	T	T	T	100m	100m
27 x 0.90	1 x 0.035				T	T;PT	DPT	T;PT	T	T	T	T	100m	100m
34 x 1.10	1-1/4 x 0.042			T	T	T;PT	DPT	T;PT	T	T	T	T	100m	100m
41 x 1.30	1-1/2 x 0.050			T	T	T;PT		T;PT	T	T	T	T	80m	80m
54 x 1.60	2 x 0.063	T	T	T	T	T;PT		T;PT	T	T	T	T	100m	100m
67 x 1.60	2-5/8 x 0.063	T	T	T	T	T;PT		T;PT	T	T	T	T	100m	100m

- T means Regular tooth
- PT means Profile tooth
- DPT means Double profile tooth

M51 Bi-metal Bandsaw Blades



Advantages:

- Our premium blades
- Produced from RM80/B318 and M51 HSS PM
- Suitable for hard steel cutting, especially in cutting stainless steel, alloy steel and so on
- Higher cutting rate
- Excellent cutting performance
- Longer and reliable life

Applications:

 Aluminium

 Alloys

 Cast Iron

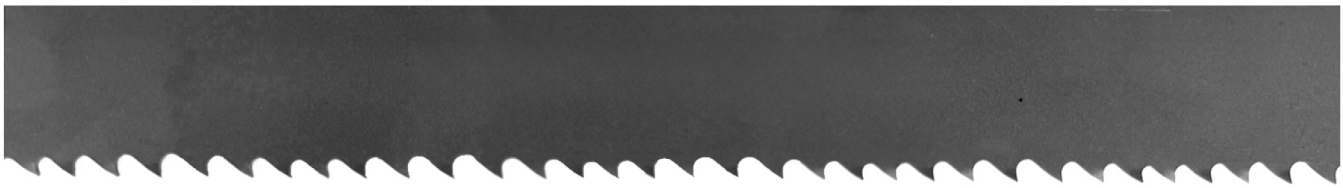
 Tool Steel

 Steel-Above 50 HRC

Specifications: Simsen Product List for Regular&Bi-cleaance angle tooth

mm (width*thickness)	inches (width*thickness)	TPI										meters in coil	MOQ
		0.75/1.25	1.0/1.5	1.4/2	2/3	3/4	4/6	5/8	6/10	8/12	10/14		
27 x 0.90	1 x 0.035				T	T;PT	T;PT	T	T	T	T	100m	100m
34 x 1.10	1-1/4 x 0.042			T	T	T;PT	T;PT	T	T	T	T	100m	100m
41 x 1.30	1-1/2 x 0.050			T	T	T;PT	T;PT	T	T	T	T	80m	80m
54 x 1.60	2 x 0.063	T	T	T	T	T;PT	T;PT	T	T	T	T	100m	100m
67 x 1.60	2-5/8 x 0.063	T	T	T	T	T;PT	T;PT	T	T	T	T	100m	100m
80 x 1.60	3 x 0.063	T	T	T	T	T	T	T				100m	100m

- T means Regular tooth
- PT means Profile tooth



Advantages:

- •Produced from X32 and M51 HSS
- •Suitable for cutting hard materials
- •Ideal for those who want to balance the costs and performance
- •Long life
- •High wear resistance
- •Great performance

Applications:

 Aluminium

 Tubes & Profiles

 Carbon Steel

 Carbon Steel Alloys

 Cast Iron

 Copper Alloys

 Stainless Steel

 Tool Steel

Specifications: Simsen Product List for Regular&Bi-cleaance angle tooth

mm (width*thickness)	inches (width*thickness)	TPI										meters in coil	MOQ
		0.75/1.25	1.0/1.5	1.4/2	2/3	3/4	4/6	5/8	6/10	8/12	10/14		
27 x 0.90	1 x 0.035				T	T;PT	T;PT	T	T	T	T	100m	100m
34 x 1.10	1-1/4 x 0.042			T	T	T;PT	T;PT	T	T	T	T	100m	100m
41 x 1.30	1-1/2 x 0.050			T	T	T;PT	T;PT	T	T	T	T	80m	80m
54 x 1.60	2 x 0.063	T	T	T	T	T;PT	T;PT	T	T	T	T	100m	100m
67 x 1.60	2-5/8 x 0.063	T	T	T	T	T;PT	T;PT	T	T	T	T	100m	100m

- T means Regular tooth
- PT means Profile tooth

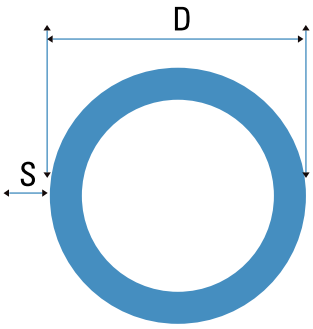
Tooth Selection Chart

FOR ROUND SOLID BAR										
Diameter in mm	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 50	50 – 75	75 – 100	100 – 150	150 – 250	250 – 300	300 – 500	500 – 700	700 – 800	800 – 900	900 – 1000	1000 – 1100	1100 – 1200
TEETH PER INCH/25 MM	10/14	8/12	6/10	5/8	4/6	3/4	2/3	1.4/2	1.25	0.75/1.25								

FOR SQUARE / RECTANGLE SOLID																			
Width in mm	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 50	50 – 75	75 – 100	100 – 150	150 – 200	200 – 250	250 – 300	300 – 400	400 – 500	500 – 700	700 – 800	800 – 900	900 – 1000	1000 – 1100	1100 – 1200
TEETH PER INCH/25 MM	10/14	8/12	6/10	5/8	4/6	3/4	2/3	1.4/2	1.25	0.75/1.25										

FOR STRUCTURALS																				
Wall Thickness in mm	1 – 2	2 – 3	3 – 4	4 – 5	5 – 6	6 – 7	7 – 8	8 – 9	9 – 10	10 – 11	11 – 12	12 – 13	13 – 14	14 – 15	15 – 20	20 – 25	25 – 30	30 – 40	40 – 50	
TEETH PER INCH/25 MM	10/14	8/12	6/10	5/6	4/6	3/4	2/3													

TOOTH SELECTION CHART FOR CUTTING OF PIPES / TUBES



D = Diameter
S = Wall Thickness

D(mm)	20	40	60	80	100	120	150	200	300	400	500	600	700
S(mm)	Tooth pitch (TPI)												
2	14	14	14	14	14	14	10-14	10-14	8-12	8-12	6-10	6-10	5-8
3	14	14	10-14	10-14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	5-8
4	14	14	10-14	10-14	8-12	8-12	8-12	8-12	5-8	5-8	4-6	4-6	4-6
5	14	10-14	10-14	10-14	8-12	8-12	8-12	6-10	5-8	5-8	4-6	4-6	3-4
6	14	10-14	10-14	8-12	8-12	8-12	8-12	5-8	5-8	4-6	4-6	4-6	3-4
8	14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	4-6	4-6	4-6	3-4	3-4
10		8-12	6-10	6-10	6-10	5-8	5-8	4-6	4-6	4-6	3-4	3-4	3-4
12		8-12	6-10	6-10	5-8	5-8	4-6	4-6	4-6	3-4	3-4	3-4	3-4
15		8-12	6-10	5-8	5-8	4-6	4-6	4-6	3-4	3-4	3-4	2-3	2-3
20			6-10	5-8	4-6	4-6	4-6	3-4	3-4	3-4	2-3	2-3	2-3
30				4-6	4-6	4-6	3-4	3-4	3-4	2-3	2-3	2-3	2-3
50						3-4	3-4	3-4	3-4	3-4	2-3	2-3	2-3
75								2-3	2-3	2-3	2-3	2-3	1.4-2
100									2-3	2-3	1.4-2	1.4-2	1.4-2
150									2-3	1.4-2	1.4-2	1.4-2	
200										1.4-2	1.4-2	1.4-2	

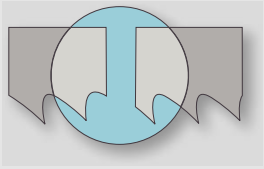
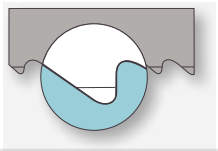
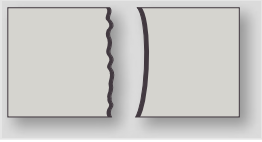
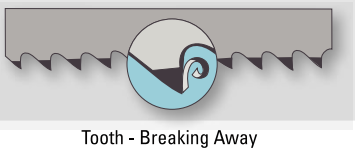
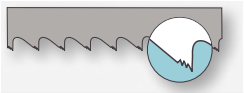
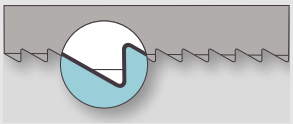
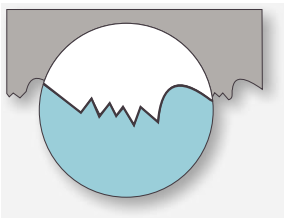
BLADE BREAK-IN EXTREMELY IMPORTANT

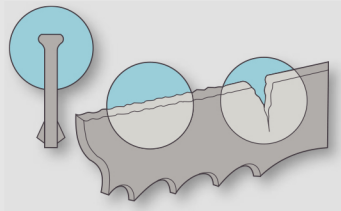
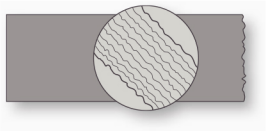
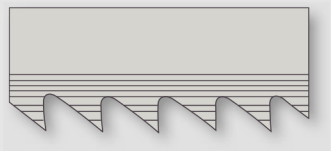
The extremely sharp tooth tip and edges of new blades must be broken-in before applying full feed pressure to the blade.
A good analogy is that of writing with a freshly sharpened wooden pencil.

RECOMENDED PROCEDURE

- Maintain proper blade speed for the material to be cut.
- Reduce blade feed pressure or feed rate by 50%for the first 300 to 500 square cm of material cut
- Gradually increase feed pressure or feed rate after break-in to full pressure or rate.

Trouble Shooting

Blade Effect	Probable Cause	Solution
Blade Breakage  (straight break indicates fatigue)	Incorrect blade. Incorrect blade tension. Excessive feed. Incorrect cutting fluid. Pressure blocks too tight. Blade rubbing on wheel flange. Guide arms too far apart. Side guides too tight.	Check tooth selection. Adjust the blade tension, refer to operator's manual. Reduce feed pressure. Check coolant recommendations. Adjust the guides. Adjust wheel alignment. Adjust guide arms closer to material. Adjust guides.
Premature Wear of the Teeth 	Blade on machine backwards. Improper blade break-in procedure. Hard Material or heavy surface scale. Hard Material. Improper cutting fluid or mix ratio. Speed or feed too high.	Install blade correctly. Refer to recommended procedures. Check material hardness and surface conditions. Increase feed pressure. Follow coolant mixing procedures. Check cutting recommendations.
Cut Unspecified 	Guide arms too far apart. Blade worn out. Over or under feeding. Improper tooth pitch. Cutting fluid not applied properly. Guides worn or loose.	Adjust guide arms closer to material. Replace blade. Check cutting recommendations. Use proper tooth selection. Adjust coolant nozzles. Tighten or replace guides.
Cutting Deviation 	Over feeding. Low band tension. Tooth set damaged. Guide arms loose or space too wide.	Check cutting recommendations. Refer to operator's manual. Check material hardness, replace blade. Adjust guides and guide arms.
Chips Residues in the Teeth 	Worn or missing chip brush. Improper or lack of cutting fluid. Wrong coolant rate. Excessive feed or speed. Incorrect blade pitch.	Replace or adjust chip brush. Check coolant flow and fluid type. Check coolant type and ratio. Reduce speed or feed. Use proper tooth selection.
Tooth - Breaking Away 	Saw guides not properly adjusted. Incorrect feed or speed. Incorrect blade. Material moved in vise.	Align or adjust saw guides. Refer to cutting recommendations. Use proper blade type and pitch. Inspect and adjust vise.
Wear Only on One Side of the Teeth 	Material with impurities. Wheel with worn flange and band rising out of the track. Guide rubbing on set. Chipping teeth and embedding within the material.	Replace material. Align or replace wheel. Adjust and align guide. Replace blade and apply correct break-in.
Breaks of the Teeth 	Improper blade break-in procedure. Speed too slow. Feed pressure too high. Tooth jammed in cut. Poor cutting fluid application or ratio. Hard material or heavy scale. Wrong blade pitch. Work spinning or loose nested bundles. Cut beginning over the corner of the materia	Follow proper break-in procedure. Refer to cutting recommendations. Reduce feed pressure. Low speed and high cutting pressure. Adjust coolant flow and ratio. Check material or surface hardness. Use proper tooth selection. Tighten vise or use nesting clamps. Start the cut slowly.

Blade Effect	Probable Cause	Solution
Wear on the Back of the Blade 	Excessive back-up guide preload. Low blade tension. Blade worn out. Excessive feed rate or pressure. Damaged or worn pressure block. Guide arms spaced too far apart or too tight. Blade rubbing band wheel flanges. Incorrect guide alignment.	Adjust pressure block. Refer to operator's manual. Replace blade. Reduce feed rate or pressure. Replace pressure block. Adjust guides. Adjust wheel alignment. Align guides.
Wavy Cut  (cardboard surface, vibration and/or risks)	Dull or damaged blade. Incorrect feed or speed. Blade not supported properly. Low blade tension. Incorrect tooth pitch. Guide arms too far apart.	Install new blade. Refet to cutting recommendations. Adjust or tighten guide arms. Refer to operator's manual. Use proper tooth selection. Adjust guide arms closer to material.
Frayed Lines of Loss Hangs 	Saw side guides too tight. Blade riding too high in guide. Blade teeth riding on band wheel surface. Wrong blade width for machine. Chips being carried back into cut. Worn or damaged guides. Insufficient cooling flow.	Adjust guides properly. Adjust rollers or pressure blocks. Adjusting tracking or replace wheel. Refer to operator's manual. Replace or adjust chip brush. Replace guides. Adjust coolant flow.
Blade Twisted 	Blade binding in cut. Guides misaligned. Side guides are too tight. Work loose in vise. Feed too heavy. High blade tension. Worn wheels. Guides arms too far apart.	Adjust feed. Adjust and align guides. Adjust guides. Adjust vise. Reduce feed pressure. Refer to operator's manual. Machine or replace wheels. Adjust guide arms closer to material.