

High-quality, Sharp And Durable  
Band Saw Blades



UNIVERSAL  
ENTERPRISES

German Technology in **india** now

### ↑ BENEFITS

An excellent general purpose bi-metal band saw blade made with high quality steel combined with Special breaking Steel which is an all.

### ↑ FEATURES

Engineered for sewing small to medium profile and solid material, High cutting efficiency and beam strength, Cost effective applications.

### ↑ APPLICATIONS

Carbon Steel, alloy Steel, aluminum, Mild steel, cast iron, aluminum casting, etc.



WIDTH x THICKNESS		TPI										
MM	INCHES	2/3	3	3/4	4	4/6	5/8	6	6/10	8/12	10/14	14/18
19x0.9	3/4x0.035		•		•	•	•		•	•	•	•
27x0.9	1x0.035	•		•	•	•	•	•	•	•	•	
34x1.1	1-1/4x0.042	•		•	•		•	•	•	•		
41x1.3	1-1/2x0.050	•		•		•	•					



**↑ BENEFITS**

An excellent general purpose bi-metal band saw blade made with high quality M42 steel combined with Special breaking Steel which is an all.

**↑ FEATURES**

Special tooth design to reduce chipping and enhance blade life higher blade life fast cutting and deep penetration.

**↑ APPLICATIONS**

Carbon Steel, alloy Steel, aluminum, Mild steel, cast iron, aluminum casting, etc.



— S T R U C U T —

WIDTH x THICKNESS		TPI						
MM	INCHES	2/3	3/4	4/6	5/8	6/10	8/12	10/14
19x0.9	3/4x0.035			•	•	•	•	•
27x0.9	1x0.035	•	•	•	•	•	•	•
34x1.1	1-1/4x0.042	•	•		•	•	•	
41x1.3	1-1/2x0.050	•	•	•	•			



# STRUCUT PLUS

ENGINEERED TO CUT STRUCTURALS, TUBING & BUNDLES

## ↑ BENEFITS

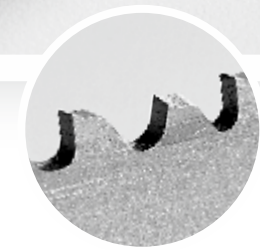
Long blade life and extreme durability  
customized tooth profile that resists  
tooth strip page even at high feed rates.

## ↑ FEATURES

Special tooth design to reduce chipping  
and enhance blade life higher blade life  
fast cutting and deep penetration.

## ↑ APPLICATIONS

Mild steel, carbon steel, tool Steel,  
stainless steel, and other metals with  
hardness up to 40 HRC.



WIDTH x THICKNESS		TPI					
MM	INCHES	2/3	3/4	4/6	5/7	8/11	12/16
19x0.9	3/4x.035				•	•	•
27x0.9	1x.035		•	•	•	•	•
34x1.1	1-1/4x.042	•	•	•	•		
41x1.3	1-1/2x.050	•	•	•	•		
54x1.6	2x.063	•	•	•			
67x1.6	2-5/8x.063	•	•				

— S T R U C U T —  
— P L U S —







— S U P R E M E —

**↑ BENEFITS**

The Blade designed to meet different application on various type of cutting material.

**↑ FEATURES**

Special powder metallurgy high speed Steel cutting edge. Variable pitch with positive rake angle. Highly consistent heat treatment process and optimized surface treatment.

**↑ APPLICATIONS**

Mild Steel, Carbon Steel, Tool Steel, Stainless Steel, and other metals with hardness up to 40 HRC.

WIDTH x THICKNESS		TPI					
MM	INCHES	1.0/1.5	1.4/2.0	2/3	3/4	4/6	5/8
27x0.9	1x0.035			•	•	•	•
34x1.1	1-1/4x0.042			•	•	•	•
41x1.3	1-1/4x0.050			•	•	•	•
54x1.6	2x0.063	•	•	•	•	•	
67x1.6	2-5/8x0.063	•	•	•	•		



### ↑ BENEFITS

Designed for high getting performance on difficult to cut material.

### ↑ FEATURES

Made from powder metallurgy high speed steel with higher hardness on cutting edge.

### ↑ APPLICATIONS

Suitable for large selection for solid and bars of die Steel, alloy Steel, bearing Steel, aluminum alloy, tool steel and stainless steel etc.



— X P E R T —

WIDTH x THICKNESS		TPI					
MM	INCHES	0.75/1.25	1.0/1.5	1.4/2.0	2/3	3/4	4/6
27x0.9	1x0.035				•	•	•
34x1.1	1-1/4x0.042				•	•	•
41x1.3	1-1/4x0.050			•	•	•	•
54x1.6	2x0.063	•	•	•	•	•	
67x1.6	2-5/8x0.063	•	•	•	•	•	
80x1.6	3x0.063	•					



HIGH PERFORMANCE SAWING OF LARGE,  
DIFFICULT TO CUT METALS

**TOUGH CUT**

**↑ BENEFITS**

Specially designed high-low profile for easier penetration of material and reduced cutting forces.

**↑ FEATURES**

Powder metallurgy high speed steel edge. Premium breaking material for optimum fatigue life. Tooth height difference and special set design for smooth cutting.

**↑ APPLICATIONS**

Medium to large size solid materials, higher feed rate for difficult to cut materials.



—TOUGH CUT—

WIDTH x THICKNESS		TPI				
MM	INCHES	0.75/1.25	1.0/1.5	1.4/2.0	2/3	3/4
27x0.9	1x0.0035					•
34x1.1	1-1/4x0.042				•	•
41x1.3	1-1/4x0.050		•	•	•	
54x1.6	2x0.063	•	•	•	•	
67x1.6	2-5/8x0.063	•	•	•		
80x1.6	3x0.063	•	•			





# ALCASTOR

FOR CUTTING ALUMINUM WITHOUT PINCHING

## ↑ BENEFITS

Material with residual stress and a tendency to become pinched.

## ↑ FEATURES

For cutting aluminum without pinching.  
Solid material and structurals

## ↑ APPLICATIONS

Pure aluminum and Aluminum alloys.



WIDTH x THICKNESS		TPI		
MM	INCHES	3	4	6
13x0.65	1/2x0.035	H	H	H
19x0.9	3/4x0.035	H	H	H
27x0.9	1x0.035	H	H	H

—ALCASTOR—





# KOLCHEN BI-METAL BANDSAW BLADE SELECTION CHART

## SELECTION CHART

PRODUCT SERIES	ALUMINUM & ALUMINUM ALLOYS	BRONZE COPPER BRASS	MILD STEELS CARBON STEELS	STRUCTRAL STEELS	LOW ALLOY STEELS	BEARING STEELS	DIE STEELS	STAINLESS STEELS	TOOL STEELS	TI & TI ALLOYS	INCONEL NIKEL BASED ALLOYS
GENCUT	Best Suitable	Best Suitable	Best Suitable	Best Suitable	Best Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
STRUCUT	Best Suitable	Suitable	Best Suitable	Best Suitable	Best Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
STRUCUT PLUS	Best Suitable	Suitable	Best Suitable	Best Suitable	Best Suitable	Best Suitable	Suitable	Suitable	Suitable	Not Suitable	Not Suitable
SUPREME	Best Suitable	Suitable	Best Suitable	Best Suitable	Best Suitable	Best Suitable	Suitable	Suitable	Suitable	Not Suitable	Not Suitable
XPERT	Suitable	Suitable	Suitable	Best Suitable	Best Suitable	Best Suitable	Best Suitable	Best Suitable	Best Suitable	Suitable	Suitable
TOUHCUT	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Best Suitable	Best Suitable	Best Suitable	Best Suitable	Best Suitable
ALCASTOR	Best Suitable	Best Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable



BEST SUITABLE

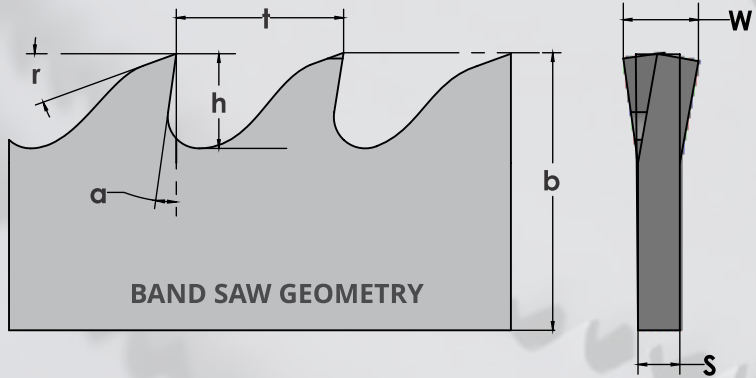


SUITABLE



NOT SUITABLE

# BAND SAW BI-METAL GEOMETRY



- b = WIDTH OF BLADE
- S = THICKNESS OF SAW BLADE
- h = GULLET DEPTH
- t = TOOTH PITCH
- a = RAKE ANGLE
- r = CLEARANCE ANGLE
- w = WIDTH OF SET



STANDARD RAKER SET



STANDARD GROUP SET

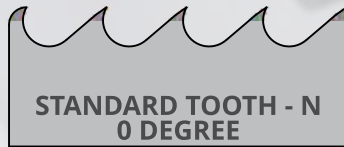


VARIABLE GROUP SET



WAVY SET

0 DEGREE



POSSITIVE



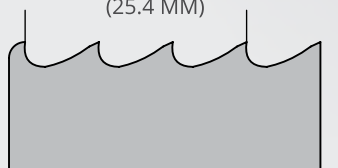
0 DEGREE



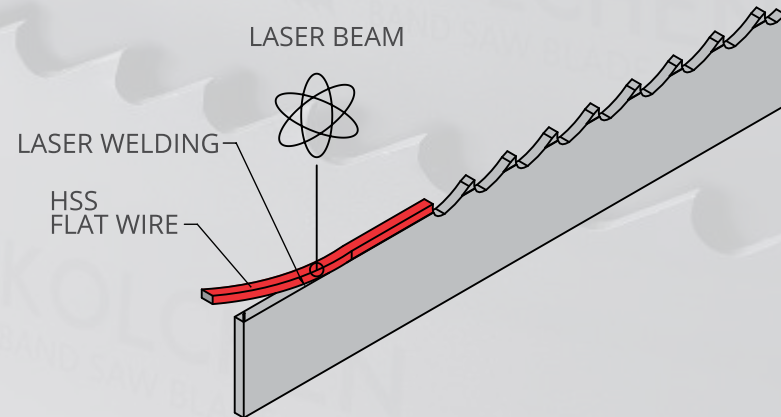
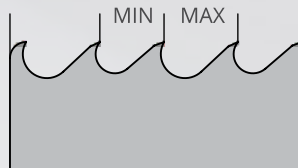
POSSITIVE



1 INCH  
(25.4 MM)



MIN MAX

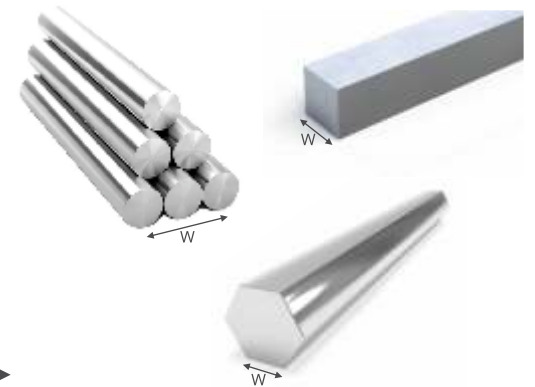
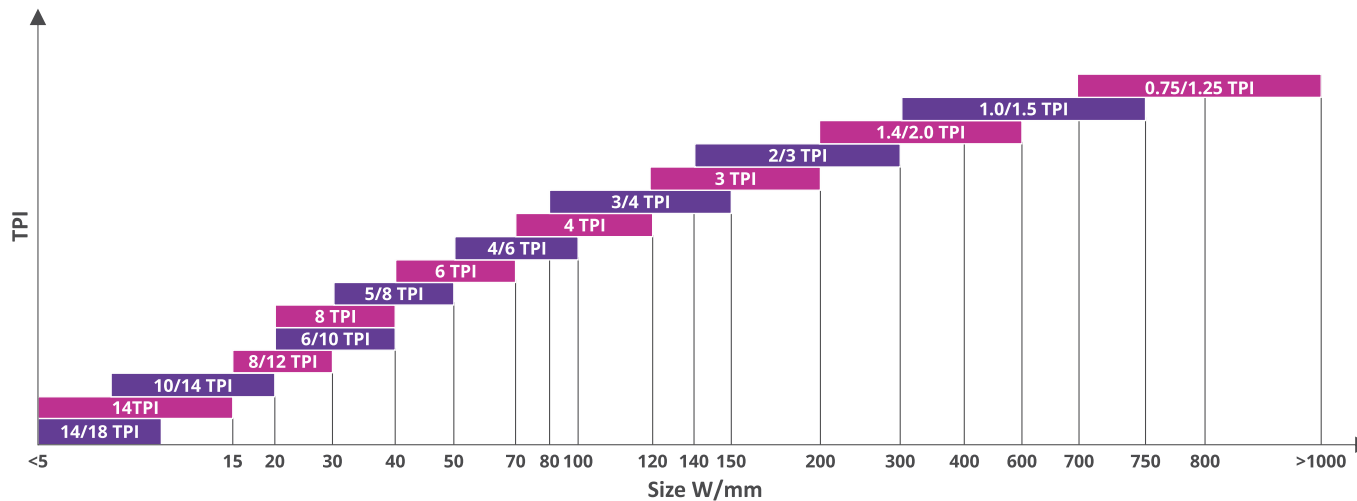
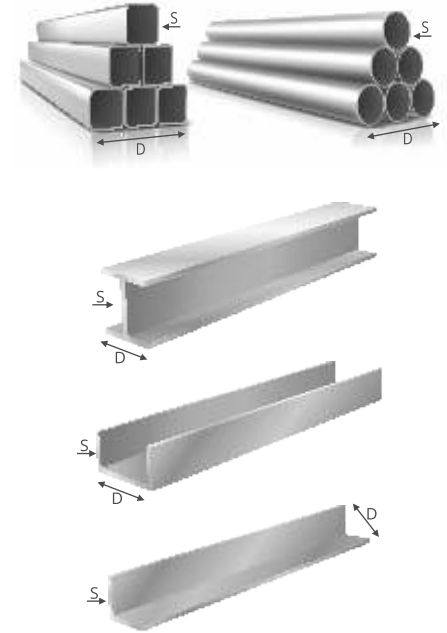


BLADE BACKER MADE OF ALLOYED SPRING STEEL

# TOOTH PITCH SELECTION CHART FOR PIPES AND PROFILES AND SOLID MATERIALS

## SELECTION TABLE

THICKNESS S/mm	DIAMETER D / MM													
	15	20	40	60	80	100	120	150	200	300	400	500	600	>700
2	14/18	14/18	14/18	10/14	10/14	10/14	10/14	10/14	8/12	8/12	8/12	6/10	6/10	5/8
3	14/18	14/18	10/14	10/14	10/14	8/12	8/12	8/12	8/12	6/10	6/10	6/10	5/8	5/8
4	14/18	10/14	10/14	10/14	8/12	8/12	6/10	6/10	6/10	5/8	5/8	4/6	4/6	4/6
5	10/14	10/14	8/12	8/12	8/12	6/10	6/10	5/8	5/8	5/8	4/6	4/6	4/6	4/6
6	10/14	10/14	8/12	8/12	6/10	5/8	5/8	5/8	4/6	4/6	4/6	4/6	4/6	4/6
8		10/14	8/12	6/10	6/10	5/8	5/8	4/6	4/6	4/6	4/6	4/6	4/6	3/4
10			6/10	6/10	5/8	5/8	5/8	4/6	4/6	4/6	4/6	3/4	3/4	3/4
12			6/10	5/8	5/8	4/6	4/6	4/6	4/6	4/6	3/4	3/4	3/4	3/4
15			6/10	4/6	4/6	4/6	4/6	4/6	3/4	3/4	3/4	3/4	3/4	2/3
20				4/6	4/6	3/4	3/4	3/4	2/3	2/3	2/3	2/3	2/3	2/3
30					3/4	3/4	3/4	3/4	2/3	2/3	2/3	2/3	2/3	2/3
50							2/3	2/3	2/3	2/3	2/3	2/3	2/3	1.4/2.0
75									2/3	2/3	2/3	1.4/2.0	1.4/2.0	1.4/2.0
100											1.4/2.0	1.4/2.0	1.0/1.5	1.0/1.5
150											1.4/2.0	1.4/2.0	1.0/1.5	1.0/1.5
200												1.0/1.5	0.75/1.25	0.75/1.25
250													0.75/1.25	0.75/1.25
>300														0.75/1.25

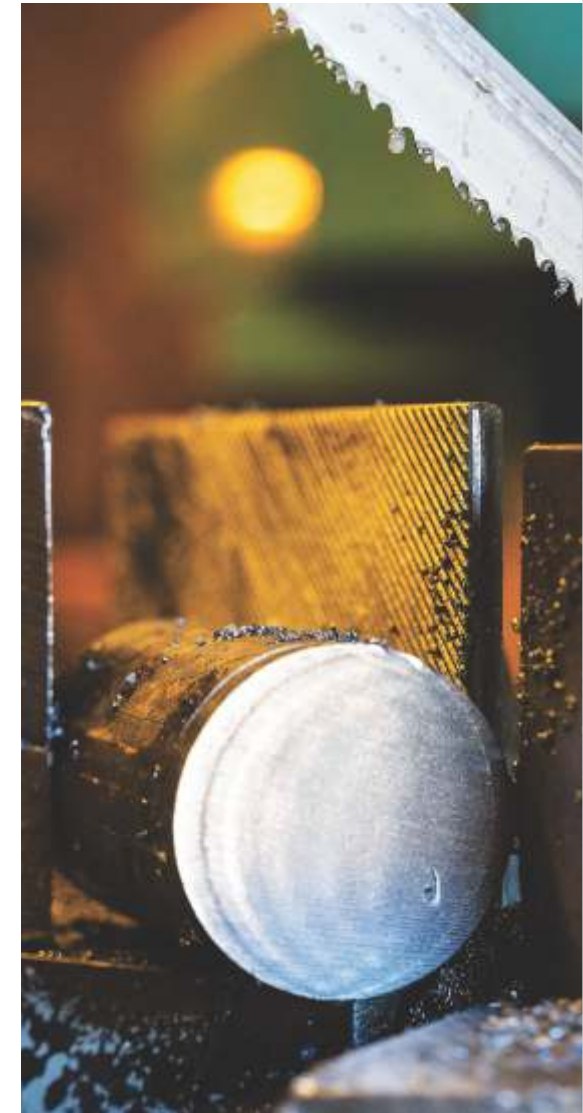




# SPEED CHART

FT PER MINUTE & METER PER MINUTE

MATERIALS	CHN GRADE	GERMAN DIN	JAPAN JIS	BI-METAL		CARBIDE TIPPED	
				BLADE SPEED		BLADE SPEED	
				FPM	MPM	FPM	MPM
ALUMINUM ALLOYS	2024, 5052, 6061, 7075	3.1355, 3.3525, 3.3211, 3.4365	2024, 5052, 6061, 7075	275-340	84-104	3500-8000*	1000-2600*
COPPER ALLOYS	CDA 220	2.023	C2200	210	64	210	64
	CDA 360	2.0375	C3610	295	89	295	90
	Cu Ni (30%)	2.0835	-	200	61	200	61
	Be Cu	-	-	160	49	160	49
BRONZE ALLOYS	AMPCO 18	-	-	180	55	180	55
	AMPCO 21	-	-	160	49	160	49
	AMPCO 25	-	-	110	34	110	34
	Leaded Tin Bronze	2.1177	-	290	88	290	88
	Al Bronze 865	2.0976	AIBCln 1	150	46	150	46
	Mn Bronze	2.0602	-	215	65	215	66
	932	-	-	280	85	280	85
	937	-	-	250	76	250	76
BRASS ALLOY	Carriage Brass, Red Brass	-	BC6	220	67	220	67
	Naval Brass	-	YCuZnSn	200	61	200	61
LEADED, FREE MACHINING LOW CARBON STEELS	1145	-	-	270	82	290	88
	1215	1.0736	SUM 25	325	99	325	99
	12L14	1.0718	SUM 24L	350	107	350	107
STRUCTURAL STEEL	A 36	1.0132	-	250	76	-	-
LOW CARBON STEEL	1008, 1018	1.0310, 1.0453	S9CK	270	82	250	76
	1030	1.1178	S 30 C	250	76	240	73
MEDIUM CARBON STEEL	1035	1.0501	S 35 C	240	73	230	70
	1045	1.0503, 1.1191	S 45 C	230	70	220	67
HIGH CARBON STEEL	1060	1.0601	S 58 C, S 60 C	200	61	200**	61**
	1080	1.1259	1080	195	59	195**	59**
	1095	1.0618	SUP 4	185	56	185**	56**
MN STEEL	1541	1.1167	SMn 438 (H)	200	61	-	-
	1524	1.0499	SEMn 1, SEMn 21	170	52	-	-
CR-MO STEELS	4140	1.7225	SEM 440 (H)	225	68	-	-
	41L50	-	-	235	71	-	-
	4150H	-	-	200	61	-	-
CR ALLOYS STEELS	6150	1.8195	SUP 10	190	58	-	-
	52100	1.3505	SUJ 2	160	49	-	-
	5160	1.7176	SUP 9 (A) 5	195	59	-	-



High-quality, Sharp And



Durable Band Saw Blades

<b>NI-Cr-Mo STEELS</b>	4340	1.6565	SNCM 439, SNCM 8	195	59	-	-
	8620	1.6523	SNCM 22H, SNCM 21	215	65	-	-
	8640	1.6546	SNCM 240	185	56	-	-
<b>LOW ALLOY TOOL STEEL</b>	L-6	1.2714	SKT 4	145	44	192	59
<b>COLDWORK TOOL STEEL</b>	D-2	1.2379	SKD 11	98	30	180	55
<b>HOT WORK TOOL STEEL</b>	H-13	1.2344	SKD 61	148	45	180	55
	H-25	-	-	98	30	131	40
<b>HIGH SPEED TOOL STEELS</b>	M-2, M-10	1.3343	SKH 9	115	35	98	30
	M-4, T-1	1.3348	SKH 54	98	30	98	30
	T-15	1.3202	SKH 10	66	20	66	20
<b>MOLD STEELS</b>	P-3, P-20	-	-	180	55	164	50
<b>SHOCK RESISTANT TOOL STEELS</b>	S-1,	1.2542	SKS 41	148	45	-	-
	S-5, S-7	1.2823	-	131	40	-	-
<b>STAINLESS STEEL</b>	304	1.4301	SUS 304	82	25	164	50
	316	1.4401	SUS 316	98	30	131	40
	410	1.4006	SUS 410	148	45	180	55
	440A, 440C	1.4109	SUS 440A, SUS 440C	82	25	148	45
<b>PRECIPITATION HARDENING S/S STEELS</b>	17-4 PH	1.4542, 1.4568	SUS 630, SUS 631	82	25	115	35
	15-5 PH	1.4545	-	82	25	98	30
<b>FREE MACHINING STAINLESS STEELS</b>	440F	-	-	164	50	197	60
	301	1.431	-	131	40	164	50
<b>NICKEL BASED ALLOYS</b>	Monel*K-500	2.4375	-	82	25	98	30
	Duranickel 301	-	-	66	20	82	25
	Inconel*600	2.4816, 2.4668	NCF-600	66	20	98	30
	RENA 41	2.4973	-	66	20	98	30
	Inconel*625	2.4831	-	82	25	115	35
	Hastalloy B	2.4800	Ni-Mo 28	66	20	82	25
<b>IRON BASED SUPER ALLOYS</b>	A286	1.498	SUH 660	82	25	82	25
	Incoloy*600	-	-	66	20	82	25
	Pyromat X-15	-	-	82	25	98	30
<b>TITANIUM ALLOYS</b>	-	3.7025	-	82	25	164	50
	Ti-6Al-4V	3.7615	-	66	20	164	50
<b>CAST IRONS</b>	A536 (60-40-18)	0.704	FCD 40	230	70	-	-
	A536 (120-90-02)	0.708	-	115	35	-	-
	A48 (L20)	0.601	FC 10	164	50	-	-
	A48 (L40)	0.6025	FC 25	82	25	-	-
	A48 (L60)	0.604	-	98	30	-	-

# TROUBLE SHOOTING

## BAND SAW MACHINE PROBLEMS AND SOLUTION

● - MAJOR CAUSES

○ - SECONDARY CAUSES

CAUSES TYPE	TROUBLE DESCRIPTION	EARLY WEAR	EARLY TOOTH STRIP PAGE CHIPPING	EARLY BREAKAGE	CROOKED CUT	ROUGH CUT SURFACE	
							CHECK POINT
CUTTING PARAMETERS	Too high band saw blade speed.	●		○			
	Too low band saw blade speed.		○				
	Too high feed rate.	○	●	○	●	●	
	Too low feed rate.	○					
	Improper feed pressure.	●	●	●	●	○	
BAND SAW MACHINE	Guides too far apart.		●	○	●	○	
	Too high blade tension.			●			
	Too low blade tension.		●		●	●	
	Worm or damaged back-up guide or guide rollers.	●	●	●	●	○	
	Incorrect blade speed.		●	○	●	●	
	Incorrect installed brush.		●		○	●	
	Inconsistent saw frame feed.	●	●	●		●	
	Bandsaw blade rubbing against bandsaw machine wheel flange.			●			
	Poor malarial clamping.		●	○	●	○	
	Wrong traverse path of the band saw.	○			●		
	Slippage of the deriving belt on the driving wheel.		●			○	
	Vibration of the entire machine.	●	●	○		●	
	LUBRI CANT	Wrong cutting fluid.	●	○			○
		Inefficient cutting fluid supply.	●	○	●		○
		Improper concentration.	●				●
SECTION OF BAND SAW	Inappropriate blade type or blade pitch.	●	●			○	
	Insufficient break-in process.	●	●			○	
	Cut product jamming, too much edged burrs.	●	●			○	
	Corroded blade.	●		●			
	Too much wear of the blade.		○	●	●	○	
	Damaged teeth.	●	●				
	Bad butt weld.	○	●	●		○	
WORK MATERIAL	Unknown material.	●	○		○		
	Hard point inside the material or hard surface.	●	●		○		
	Too low rigidity of the material.	○	●			●	
	Irregular shape.		●	●	○	○	
	Finished parts interrupt the band saw operation.		●	●			



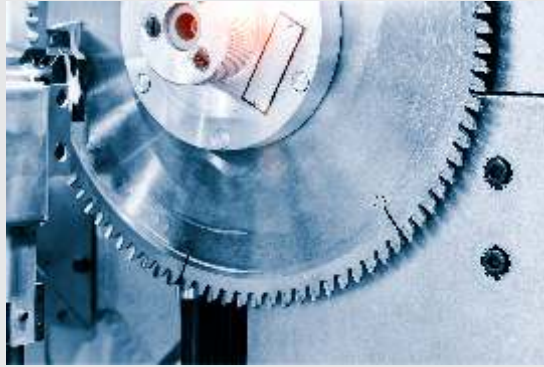
INSTABILITY IN BAND SAWING	LOUD CUTTING NOISE	BLADE STOP PAGE	TOO LOW EFFICIENCY	SOLUTIONS
○	●			Adjust the speed according to parameter chart.
○			●	Increase the band saw blade speed.
○	○	●		Lower down the feed rate.
			●	Increase the feed rate.
●	●	○	○	Adjust the field pressure.
●	●	○	●	Adjust the guides.
	○			Reduce the band saw blade tension.
○		●	●	Increase the band saw Blade tension.
○	●		●	Change the worn parts.
●	○	○	●	Check the main drive gears, bearing lifting mechanism of the frame.
●				Check the brush.
●	○	○	●	Check if there is air in the cylinder whether the oil is deteriorating and the cylinder is worn or not.
●	●			Check the alignment of the band saw Machine wheels.
○		○	●	Check the vise or repair it.
				Check the perpendicular traverse path the frame.
○		●	●	Check belt tension or check for worn driving wheel.
●	●		●	The machine maybe installed improperly or there is some vibration source from other parts.
	●		○	Change to correct cutting fluid.
	●		○	Check the fluid hoses, increase the value of the fluid, both on cutting selection and the insert selection.
	○			Adjust the concentration according to the brochure of the lubricant.
●	○		○	Select the pith and blade type according to the application.
				Perform sufficient break in process.
	○	○	○	Proper break-in procedure, proper cutting parameters, proper lubricant application.
	○			Stored too long, humidity is too high, Or the lubricant is corrosive.
	●	○	●	Change the blade.
○	○		○	Change the blade.
●	○		○	Re-weld or change the blade.
	○		○	Check the details of materials, Set the cutting parameter according to the chart.
	●		○	Adjust the parameters, usually need to lower down the speed or select a more protective teeth profile.
○	●		○	Proper tooth from the proper parameters, Proper clamping method.
●		○	○	Find the right clamping method.
		○		Clear the parts and chips in time.

www.kolchen.in

German Technology in **india** now

## UNIVERSAL ENTERPRISES

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# KOLCHEN

BAND SAW BLADE

WE ARE ON

