Arntz

Band Saw Blades

Fact Book

Edition 2014

Welcome!

More than 220 years of experience in the tool production is quite a long time. The world of sawing metals has changed since then.

This refers to most bandsawing operations and to the high expectation on quality that ARNTZ saw blades meet today. That's why the world at ARNTZ spins around the technique of sawing metals – faster than ever!

We have a world wide sales team to assist you with your performance, needs and wishes, as our customer.

Of course, you will also find us on the Internet. We improve our customer service – continuously. As important as the technical perfection of ARNTZ products are the customers who use our products. Therefore, we are at your disposal at any time for technical assistance.

A skilled team of specialists will help you, worldwide. Professional answers will support you to select the right band for your application.

And: Additional tips will help to optimize the life of your tool. We solve your sawing problems!

That is what I stand for with my team.

Jan Wilhelm Arntz

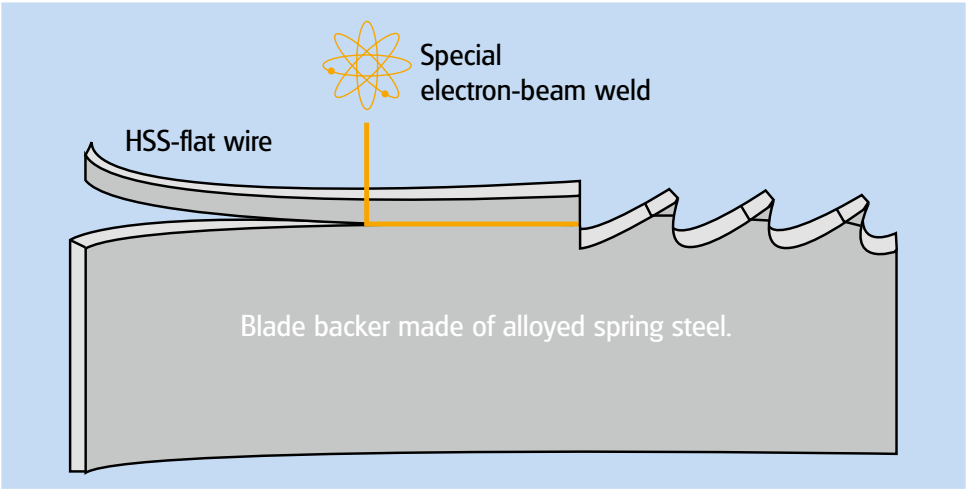
Now is the right time to make the cut!

Bi-Metal

Why so successful?

M42
material no. 1.3247
hardness approx.
67-69 HRC

M51
material no. 1.3207
hardness approx.
69 HRC,
with high tungsten-
and cobalt content



Flexible:
The blade backer of our Bi-Metal Band Saw Blade consists of a special alloyed spring steel. Highly flexible at a hardness of about 50 HRC. The ideal basis for long fatique life and excellent cutting performance.

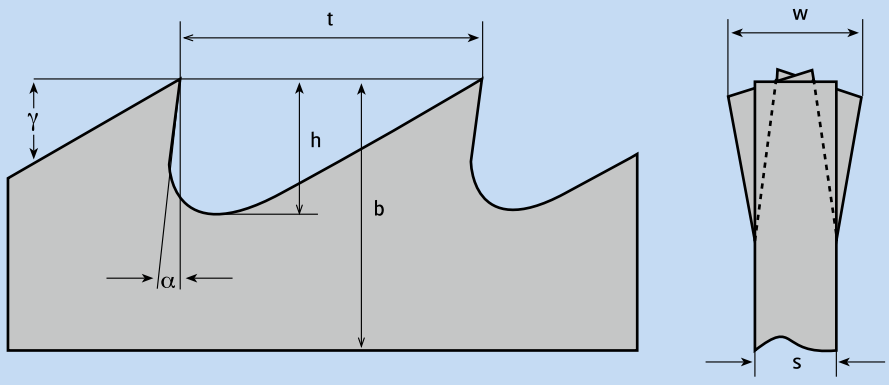
Hard and wear resistant:
Tooth tips made of hardened HSS-Steel in M42 or M51 quality obtained due to well-balanced hardening and fixed structure resulting in high wear resistance.

Perfectly joint:
Both materials are undetachably welded together by special electron or laser beam.

All advantages:
The high quality Bi-Metal band combines the flexibility of the spring steel backing with the enormous wear resistance of high speed steel. Each tooth tip of the finished band is of hardened HSS-steel, extremely durable for best performance.

Band Saw geometry

Terminology?

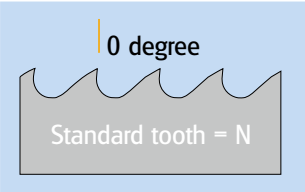


b = width of blade
s = thickness of saw blade
h = gullet depth
t = tooth pitch
α = rake angle
γ = clearance angle
w = width of set

Tooth forms

Where performs the right tooth?

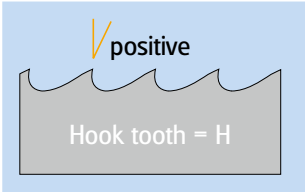
Only correct choice of tooth forms allows efficient cutting with low vibration. Four basic types are available:



Designed for:
- short chipping materials
- light wall thickness

Data:
- rake angle 0°
- 4 to 18 tpi

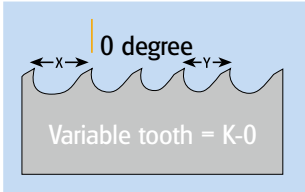
Article groups:
100, 110, 420



Designed for:
- long chipping materials
- large cross sections

Data:
- positive rake angle
- 2 to 6 tpi

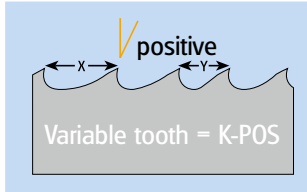
Article groups:
100, 110, 421, 426



Designed for:
- low vibration cutting
- structurals

Data:
- rake angle 0°
- variable tooth pitch of 3/4 to 10/14 tpi

Article groups:
430 (K-0)



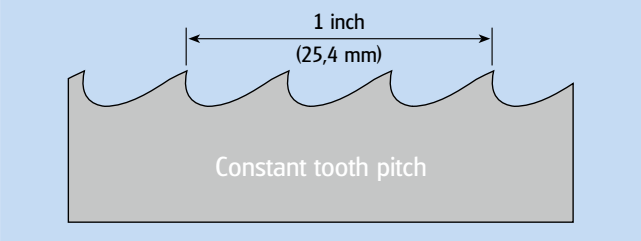
Designed for:
- low vibration cutting
- solid materials

Data:
- positive rake angle
- variable tooth pitch of 0,75/1,25 to 4/6 tpi

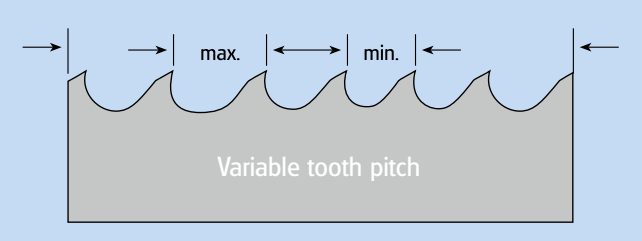
Article groups:
433, 445 (K-V)
431, 436, 437 (K-POS)
434, 438, 531, 537, 544 (K-PLUS)

Tooth pitch

Constant or variable?



The tooth distance is equally spaced. The number of teeth per inch (25,4 mm) denotes the tooth of the saw blade.



The tooth distances vary within a group of teeth. The smallest and the largest tooth pitch denotes the variable tooth of saw blade.

Tooth set

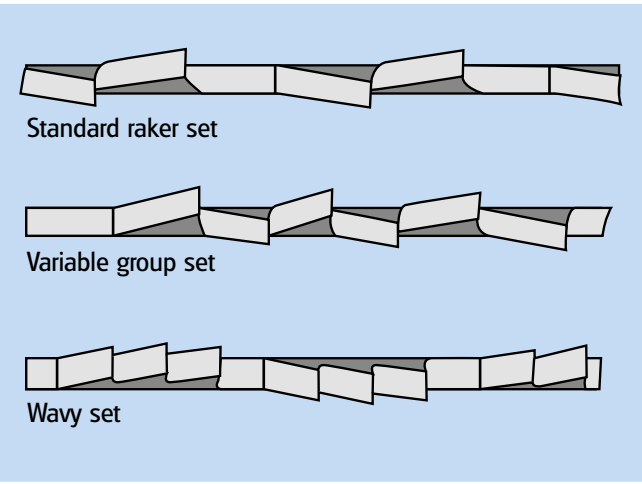
What groups and waves can cause.

Apart from tooth pitch and tooth form the exact set is essential for the performance of the sawblade. The correct clearance of back is achieved by the specific set for the cutting application. This is to avoid blade pinching, very important in problematic cutting jobs. Width and type of set are tuned to the cutting application:

Standard raker set
up to 10 tpi
tooth forms N, H

Variable group set
0,75/1,25 to 10/14 tpi
tooth form K

Wavy set
14 to 32 tpi
tooth form N



Correct tooth pitch – optimum performance.

The choice of the right tooth pitch can be decisive to achieve the optimum performance to cut the relevant cross section. Choose either Standard tooth with constant tooth pitch or Variable tooth with unevenly spaced teeth. It is advisable to use Variable tooth to cut problematic workpieces to reduce vibrations.

Recommendation to cut solid material

Constant tooth pitch		
Cross section	Teeth per inch	
mm	tpi	Tooth shape
200 - 400	2	H
120 - 200	3	H
80 - 120	4	H/N
40 - 80	6	H/N
20 - 40	10	N
10 - 20	14	N
to 10	18	N
N = Standard tooth H = Hook tooth		

Variable tooth pitch		
Cross section	Teeth per inch	
mm	tpi	Tooth shape
from 550	0,75/1,25	K
380 - 750	1/1,5	K
250 - 550	1,4/2	K
120 - 350	2/3	K
80 - 140	3/4	K
60 - 110	4/6	K
40 - 70	5/7 | 5/8	K
30 - 60	6/10	K
20 - 40	8/11 | 8/12	K
to 25	10/14	K
K = Variable tooth		

Recommendation to cut tubes and structurals

Thin wall structurals (0° rake angle)							
Wall thickness	Diam. of structural (D) in mm						
(S) in mm	20	40	60	80	100	120	150
2	14	14	14	14	14	14	10/14
3	14	14	14	14	10/14	10/14	8/11 | 8/12
4	14	14	10/14	10/14	8/11 | 8/12	8/11 | 8/12	6/10
5	14	10/14	10/14	8/11 | 8/12	8/11 | 8/12	6/10	6/10
6	14	10/14	8/11 | 8/12	8/11 | 8/12	6/10	6/10	5/7 | 5/8
8	14	8/11 | 8/12	6/10	6/10	5/7 | 5/8	5/7 | 5/8	5/7 | 5/8
10	-	6/10	6/10	5/7 | 5/8	5/7 | 5/8	5/7 | 5/8	-

The choice of the right tooth has special influence on the cutting result on tubes and structurals. Variable tooth has proven to be the most favourable tooth form. Tooth pitches selected are depending on wall thickness and outer dimensions of tubes or structurals. The recommendations shown here refer to single cuts. If two or more tubes or square pipes are cut at a time, double wall thickness to select tooth pitch.

Heavy wall structurals (positive rake angle)								
Wall thickness	Diam. of structural (D) in mm							
(S) in mm	80	100	120	150	200	300	500	750
10	-	-	-	4/6	4/6	4/6	3/4	2/3
15	4/6	4/6	4/6	4/6	4/6	3/4	2/3	2/3
20	4/6	4/6	4/6	4/6	3/4	3/4	2/3	2/3
30	4/6	4/6	4/6	3/4	3/4	2/3	2/3	2/3
50	-	-	3/4	3/4	2/3	2/3	2/3	1,4/2
80	-	-	-	-	2/3	2/3	1,4/2	1,4/2
100	-	-	-	-	-	2/3	1,4/2	1,4/2

ARNTZ Bi-Metal Band Saw Blades are supplied as endless welded loops to fit your Bandsawing Machine, or in coils:
6 - 13 mm in length of approx. 30,5 + 76 m | 20 - 34 mm in length of approx. 100 m | 41 mm in length of approx. 80 m
54 - 67 mm in length of approx. 90 m | 80 mm in length of approx. 50 m

Bi-Metal and Carbide Tipped Band Saw Blade

For each cutting operation the right choice.

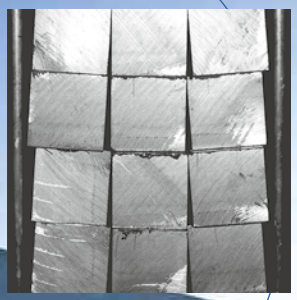
		art. gr.	420	421	430	431	433	434	445	426	436	437	438	531	537	544	620	630	650	651
		Product name	STAR	STAR-PLUS	SPRINT	SPRINT-PLUS	SPRINT-MEDIUM-VS	MAXIMA-SPRINT	PROFILER-SPRINT-VS	ALUCUT-PLUS	ALUCUT-SPRINT	TAIFUN-SPRINT	TAIFUN-MAXIMA	SPRINT-PLUS	TAIFUN-MAXIMA	BLIZZARD-SPRINT	BLACK-LINE	RED-LINE	SILVER-LINE	SILVER-LINE-N
Page of catalogue			8	9	10	11	12	13	14	15	15	16	17	18	19	20	22	23	24	25
Material dimension (mm)																				
- Structural steels	‹ 70																			
- Case-hardening steels	80 - 350																			
- Free machining steels	› 350																			
- Unalloyed tool steels	‹ 70																			
- Spring steels	80 - 350																			
- Roller bearing steel	› 350																			
- High speed steels	‹ 70																			
- Cold-work steels	80 - 350																			
	› 350																			
- Nitride steels	‹ 70																			
- Heat treatable steels	80 - 350																			
- Hot working steels	› 350																			
- Stainless steels	‹ 70																			
	80 - 350																			
	› 350																			
- High temperature steels	‹ 70																			
- Heat resistant steels	80 - 350																			
	› 350																			
- High tensile steels	‹ 70																			
- Titanium + titanium alloys	80 - 350																			
- Nickel alloys	› 350																			
- Surface hardened steel shafts	‹ 70																			
- Hardened steels up to HRC 62	80 - 350																			
- Hardchromed materials	› 350																			
- Steel castings	‹ 70																			
- Cast irons	80 - 350																			
	› 350																			
- Aluminium	‹ 70																			
- Copper	80 - 350																			
	› 350																			
- Brass	‹ 70																			
- Bronze	80 - 350																			
- Red brass	› 350																			
- Aluminium + alloys	‹ 70																			
- Aluminium alloys	80 - 350																			
with silicon	› 350																			

Qualification = very good = good

Article group 420

M42-Star

Multi purpose blade for small dimension solid steel.



Engineered for:

- Common steel qualities up to 1400 N/mm^2 tensile strength
- Non ferrous metals
- Cross sections up to approx. 100 mm (4")
- Contour cutting operations

Superior, because:

Tooth tips of HSS M42 / material no. 1.3247

The standard tooth with 0° resp. slightly positive rake angle combined with a standard raker or wavy set is distinguished to cut short chipping materials and smooth and burr-free cuts.

Dimension		Teeth per inch				
mm	inch	4	6	10	14	18
6 x 0,90	1/4 x 0,035			N	N	
10 x 0,90	3/8 x 0,035			N	N	
13 x 0,65	1/2 x 0,025			N	N	N
20 x 0,90	3/4 x 0,035	N	N		N-W	
27 x 0,90	1 x 0,035	N	N		N-W	
41 x 1,30	1 1/2 x 0,050	N				

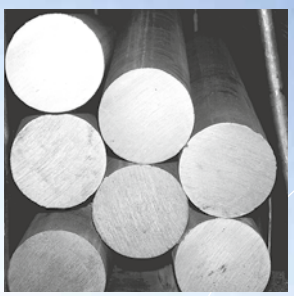
N = Standard tooth W = Wavy set

M42-Star-Plus

The band for larger solid bars.

Engineered for:

- Common steel qualities up to 1400 N/mm^2 tensile strength
- Non ferrous metals
- Cross sections up to approx. 100 mm (4")



Superior, because:

Tooth tips of HSS M42 / material no. 1.3247
The hook tooth with a positive rake angle combined with a raker set, for easy tooth penetration and chip formation on larger cross sections. Cuts long chipping and tough materials without a problem. The STAR-PLUS Bi-Metal band cuts smooth and accurate.

Dimension		Teeth per inch			
mm	inch	2	3	4	6
6 x 0,90	1/4 x 0,035				H
10 x 0,90	3/8 x 0,035			H	H
13 x 0,65	1/2 x 0,025			H	H
13 x 0,90	1/2 x 0,035		H	H	H
20 x 0,90	3/4 x 0,035		H	H	
27 x 0,90	1 x 0,035	H	H		

H = Hook tooth

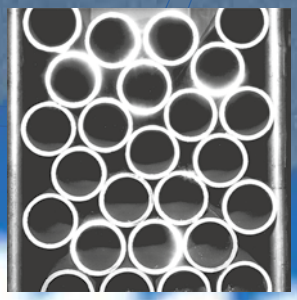
Article group 430

M42-Sprint

The Structural-Professional for light and medium wall thicknesses.

Engineered for:

- Common steel qualities up to 1400 N/mm²
- Non ferrous structurals
- Single and bundle cuts
- Tubes and structurals with light or medium walls
- Sheet metal on vertical band saw machines



Dimension		Variable tooth					
mm	inch	3/4	4/6	5/8	6/10	8/12	10/14
6 x 0,90	1/4 x 0,035						K
10 x 0,90	3/8 x 0,035						K
13 x 0,65	1/2 x 0,025			K	K	K	K
13 x 0,90	1/2 x 0,035				K	K	K
20 x 0,90	3/4 x 0,035		K	K	K	K	K
27 x 0,90	1 x 0,035	K	K	K	K	K	K
34 x 1,10	1 1/4 x 0,042	K	K	K	K	K	K
41 x 1,30	1 1/2 x 0,050	K	K	K	K		
54 x 1,60	2 x 0,063		K	K			

K = Variable tooth

Superior, because:

Tooth tips of HSS M42 / material no. 1.3247
The variable tooth with 0° rake angle with a special group set cuts even lightest sections with less vibrations. Short chipping materials are cut without a problem. The M42-SPRINT Bi-Metal band for long life and low cost cutting.

M42-Sprint-Plus

Strong in workpieces of medium to large dimensions.

Engineered for:

- Common steel qualities up to 1400 N/mm²
- Non ferrous metals
- Single and bundle cuts
- Solid material of medium to large dimensions
- Heavy wall tubes

Superior, because:

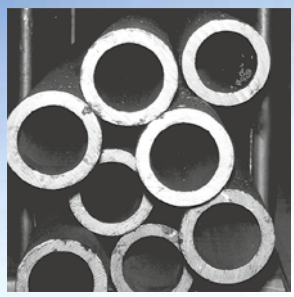
Tooth tips made of HSS M42 / material no. 1.3247
The variable tooth with a positive rake angle with a special group set cuts solid materials as well as heavy wall structurals and tubing at fast cutting rates, with a smooth surface.

Dimension		Variable tooth				
mm	inch	0,75/1,25	1,4/2	2/3	3/4	4/6
20 x 0,90	3/4 x 0,035					K
27 x 0,90	1 x 0,035			K	K	K
34 x 1,10	1 1/4 x 0,042		K	K	K	K
41 x 1,30	1 1/2 x 0,050		K	K	K	K
54 x 1,30	2 x 0,050		K	K	K	K
54 x 1,60	2 x 0,063		K	K	K	K
67 x 1,60	2 5/8 x 0,063	K	K	K		
80 x 1,60	3 x 0,063	K	K			

K = Variable tooth

M42-Sprint-Medium-VS

The multi purpose blade for various applications.



Engineered for:

- Small and medium scissor-arm machines
- Soft and medium hard steels up to approx. 1400 N/mm²
- Solid steel bars
- Light beams and profiles
- Single- and bundle cutting

Superior, because:

Tooth tips of HSS M42 / material no. 1.3247

The new designed special HL variable tooth with a slightly positive rake angle combined with a special group set controls the chipping on lighter general purpose machines, increases blade life and grants smoothest cut surfaces.

Dimension		Variable tooth				
mm	inch	2/3	3/4	4/6	5/7	8/11
27 x 0,90	1 x 0,035		K	K	K	K
34 x 1,10	1 1/4 x 0,042	K	K	K	K	
41 x 1,30	1 1/2 x 0,050	K	K	K		
54 x 1,30	2 x 0,050		K			
54 x 1,60	2 x 0,063	K	K	K		
67 x 1,60	2 5/8 x 0,063	K	K			

K = Reinforced variable tooth

M42-Maxima-Sprint

Outstanding on tough alloys and difficult materials.

Engineered for:

- Long chipping steels
- Stainless steels
- Titanium base alloys
- Special bronze
- Copper alloys
- Nickel base alloys
- Exotic, difficult to cut alloys
- Solid material of medium sections

Superior, because:

Tooth tips of HSS M42 / material no. 1.3247
The special designed variable tooth with an extremely positive rake angle cuts aggressively in tough materials. Reduced cutting forces and easy chip formation.

Dimension		Variable tooth		
mm	inch	1,4/2	2/3	3/4
34 x 1,10	1 1/4 x 0,042		K	K
41 x 1,30	1 1/2 x 0,050		K	K
54 x 1,30	2 x 0,050		K	
54 x 1,60	2 x 0,063	K	K	K

K = Variable tooth

Article group 445

M42-Profiler-Sprint-VS

Outstanding performance for heavy fabricators.

Engineered for:

- Medium to large H-beams
- Angles and similar shapes

Superior, because:

Tooth tips of HSS M42 / material no. 1.3247

The new designed special HL variable tooth with slightly positive rake angle and heavy group set shows excellent performance on H-beams and similar shapes. The PROFILER-SPRINT-VS avoids pinching in beams with inside tension, or in poorly supported profiles. For 90° and miter cutting.

Dimension		Variable tooth	
mm	inch	2/3	3/4
34 x 1,10	1 1/4 x 0,042		K
41 x 1,30	1 1/2 x 0,050	K	K
54 x 1,60	2 x 0,063	K	K
67 x 1,60	2 5/8 x 0,063	K	K

K = Reinforced variable tooth

Article group 426

M42-Alucut-Plus

Easy cuts in light metals.

Engineered for:

- Pure aluminium and aluminium alloys
- All dimensions

Superior, because:

Tooth tips made of HSS M42 / material no. 1.3247
The positive hook tooth with a standard raker set performs at all dimensions. Smooth cuts and tool life that convinces.

Dimension		Teeth per inch			
mm	inch	2	3	4	6
10 x 0,90	3/8 x 0,035			H	H
13 x 0,65	1/2 x 0,025			H	H
13 x 0,90	1/2 x 0,035		H	H	H
20 x 0,90	3/4 x 0,035		H		
27 x 0,90	1 x 0,035	H	H		

H = Hook tooth

Article group 436

M42-Alucut-Sprint

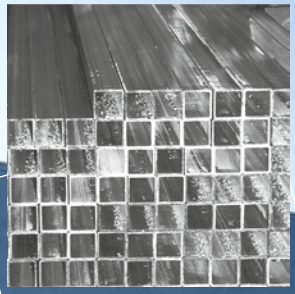
Pinch-free through aluminium.

Engineered for:

- Pure aluminium and aluminium alloys
- Materials that tend to pinching
- Larger sections and heavy wall structurals

Superior, because:

Tooth tips made of HSS M42 / material no. 1.3247
The variable teeth with positive rake angle and a variable group set avoids blade pinching and cuts larger workpieces with low vibration. ALUCUT-SPRINT for increased blade life, low cost per cut and good surface finish.



Dimension		Variable tooth	
mm	inch	2/3	3/4
27 x 0,90	1 x 0,035	K	K
34 x 1,10	1 1/4 x 0,042	K	K

K = Variable tooth

Article group 437

M42-Taifun-Sprint

Cuts excellent in special alloys and materials of difficult machinability.

Engineered for:

- Stainless steels
- Heat resistant steels
- Titanium alloys
- Nickel based alloys

Superior, because:

Precision **borazon-ground** tooth tips made of HSS M42 / material no. 1.3247

The variable tooth with ground multi chip geometry, positive rake angle and group set. Perfectly divided chips and excellent band guidance. Sharpest cutting edges grant reduced cutting forces and great cutting accuracy.

Dimension		Variable tooth			
mm	inch	0,75/1,25	1,4/2	2/3	3/4
27 x 0,90	1 x 0,035			K	K
34 x 1,10	1 1/4 x 0,042		K	K	K
41 x 1,30	1 1/2 x 0,050		K	K	K
54 x 1,30	2 x 0,050		K	K	K
54 x 1,60	2 x 0,063		K	K	K
67 x 1,60	2 5/8 x 0,063	K	K	K	
80 x 1,60	3 x 0,063	K	K		

K = Variable tooth

M42-Taifun-Maxima

Perfect cuts in tough materials and alloys.

Engineered for:

- Long chipping steels
- Stainless steels
- Titanium alloys
- Special Bronzes
- Copper alloys
- Nickel based alloys
- Exotic, difficult to cut alloys

Superior, because:

Precision **borazon-ground** tooth tips
made of HSS M 42 / material no. 1.3247
The variable teeth with extremely positive rake angle in connection with the ground tooth geometry and a variable group set generate a superior chip distribution. Champered raker teeth grant excellent band guidance with lowest vibration. Cleanest cutting edges and highest performance are the result.

Dimension		Variable tooth		
mm	inch	1,4/2	2/3	3/4
34 x 1,10	1 1/4 x 0,042		K	K
41 x 1,30	1 1/2 x 0,050		K	K
54 x 1,30	2 x 0,050		K	
54 x 1,60	2 x 0,063	K	K	K

K = Variable tooth

Article group 531

M51-Sprint-Plus

Extra wear resistant teeth for hard steels and alloys of medium dimensions.

Engineered for:

- Steels up to 1700 N/mm² tensile strength
- Austhenetic stainless steels
- Nickel-based alloys
- Titanium and special bronzes
- Solid material of medium dimensions
- Heavy wall tubing

Superior, because:

Tooth tips made of HSS M51 / material no. 1.3207
The extremely positive variable tooth with special strong tooth forms. High heat and wear resistance of HSS M51 tooth tips increases band life on all hard and problematic steels.

Dimension		Variable tooth			
mm	inch	1,4/2	2/3	3/4	4/6
27 x 0,90	1 x 0,035		K	K	K
34 x 1,10	1 1/4 x 0,042		K	K	K
41 x 1,30	1 1/2 x 0,050		K	K	
54 x 1,60	2 x 0,063	K	K		
67 x 1,60	2 5/8 x 0,063	K	K		

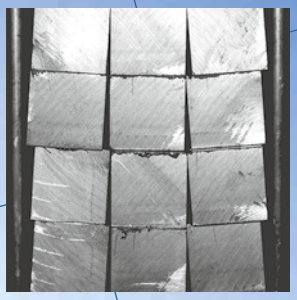
K = Variable tooth

M51-Taifun-Maxima

Extremely wear-resistant and ground teeth for hardest steels and alloys of medium dimensions.

Engineered for:

- Steels up to 1700 N/mm² tensile strength
- Austhenetic stainless steels
- Nickel-based alloys
- Titanium and special bronzes
- Solid material of medium dimensions



Superior, because:

Precision **borazon-ground** tooth tips made of HSS M51 / material no. 1.3207

The variable tooth with extremely positive rake angle in connection with the ground tooth geometry and a variable group set generate a superior chip distribution. Champered raker teeth grant excellent band guidance at lowest vibration. Tooth tip hardness of approx. HRC 69 increases the life time for better cost-effectiveness.

Dimension		Variable tooth				
mm	inch	0,75/1,25	1/1,5	1,4/2	2/3	3/4
34 x 1,10	1 1/4 x 0,042				K	K
41 x 1,30	1 1/2 x 0,050			K	K	K
54 x 1,60	2 x 0,063	K	K	K	K	
67 x 1,60	2 5/8 x 0,063	K	K	K		
80 x 1,60	3 x 0,063	K		K		

K = Variable tooth

Article group 544

Blizzard-Sprint

Strong in large cross sections and difficult to cut alloys.

Engineered for:

- Larger cross sections
- Steels with high tensile strength
- Long chipping steels
- Stainless steels
- Titanium alloys
- Nickel alloys
- Special bronzes

Dimension		Variable tooth			
mm	inch	0,75/1,25	1/1,5	1,4/2	2/3
41 x 1,30	1 1/2 x 0,050			K	K
54 x 1,60	2 x 0,063	K	K	K	K
67 x 1,60	2 5/8 x 0,063	K	K	K	K
80 x 1,60	3 x 0,063	K		K	

K = Variable tooth with special geometry

Superior, because:

The precisely produced teeth in combination with an optimum hardness of tooth tips of 68-69 HRC. Extreme positive rake angle together with variable group set lead to smooth and perfect cutting surface. Short cutting times and outstanding blade life are the benefits from BLIZZARD-SPRINT.

Carbide

Why so successful?

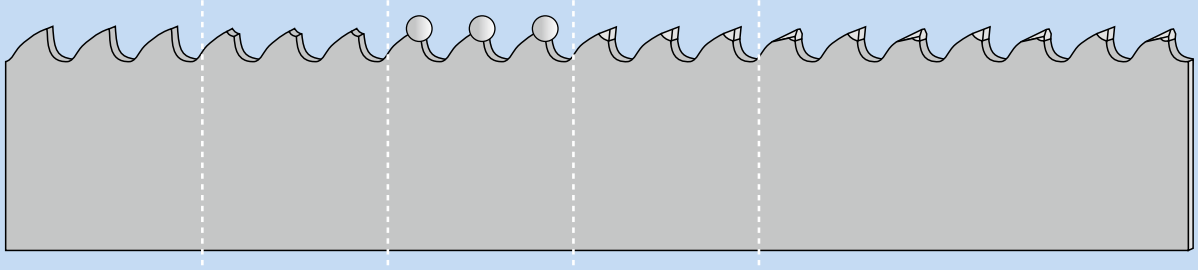
1. Step
high-quality blade backer

2. Step
tipseat for carbide teeth

3. Step
welding to the blade backer

4. Step
pregrinding

5.+6. Step
finishgrinding



Flexible:
The blade backer for Carbide Band Saw Blades is made of special alloyed spring steel.

Extremely durable:
The tooth tips consist of special high-grade carbide.

Perfectly joint:
Carbide tooth tips are welded to the backer in a special procedure.

Band Saw geometry

New in the ARNTZ production program: high performance Carbide Band Saw Blades.

The welded carbide tips are available in different tooth geometries. These geometries grant optimal formation of chips and best cutting results.

The different tooth geometries provide clean and smooth cuts at minimum vibration.

Correct operation:

To achieve optimum performance with Carbide Band Saw Blades, suitable band saw machines for Carbide Band Saw Blades have to be used.

Carbide Tipped Band Saw Blades are supplied as endless welded loops or in coils:
27 + 34 mm in coil length of approx. 100 m | 41, 54, 67 and 80 mm in coil length of approx. 50 m

Article group 620

TC-Black-Line

Carbide Tipped Band Saw Blades with triple chip tooth geometry

To cut solid steels.

Engineered for:

- Titanium
- Stainless steels
- Nickel alloys
- Heat resistance steels
- Exotic, difficult to cut alloys
- Solid materials in medium and large sections

Superior, because:

Carbide tips welded to the blades back by latest technologies. Carbide teeth precision ground in triple chip geometry for fastest cutting rates at minimum vibration.

Dimension		Variable tooth					
mm	inch	0,75/1,25	1/1,5	1,4/2	2/3	3	3/4
27 x 0,90	1 x 0,035				K	H	K
34 x 1,10	1 1/4 x 0,042				K		K
41 x 1,30	1 1/2 x 0,050			K	K		K
54 x 1,30	2 x 0,050			K	K		
54 x 1,60	2 x 0,063	K	K	K	K		
67 x 1,60	2 5/8 x 0,063	K	K	K			

K = Variable tooth H = Hook tooth

TC-Red-Line

Carbide Tipped Band Saw Blades with triple chip tooth geometry

To cut non ferrous metals.

Engineered for:

- Pure aluminium & alloys
- Aluminium bronze & ampco
- Copper & copper alloys
- Brass
- Sand contained aluminium and magnesium castings

Dimension		Variable tooth					
mm	inch	0,75/1,25	1/1,5	1,4/2	2/3	3	3/4
27 x 0,90	1 x 0,035				K	H	
34 x 1,10	1 1/4 x 0,042				K		K
41 x 1,30	1 1/2 x 0,050			K	K		K
54 x 1,30	2 x 0,050			K	K		
54 x 1,60	2 x 0,063	K	K	K	K		
67 x 1,60	2 5/8 x 0,063	K	K	K			

K = Variable tooth H = Hook tooth

Article group 650

VC-Silver-Line

Carbide Tipped Band Saw Blades with multi chip tooth geometry

To cut solid steels and non-ferrous alloys.

Engineered for:

- Solid bars in medium and large sections
- Stainless steels
- Special alloys
- Heatresistant steels
- Heat-treated steels
- Cold working steels
- Alloyed steels up to 1900 N/mm² tensile strength
- Aluminium-silicon alloys
- Copper-nickel alloys
- Titanium
- Ampco
- Zirconium

Superior, because:

Carbide tips welded to the blade back with latest technologies and precise ground tooth tips with multi chip geometry allow fastest cutting rates and vibration free operation with optimum tool life.

Dimension		Variable tooth				
mm	inch	0,75/1,25	1/1,5	1,4/2	2/3	3/4
27 x 0,90	1 x 0,035				K	K
34 x 1,10	1 1/4 x 0,042			K	K	K
41 x 1,30	1 1/2 x 0,050			K	K	K
54 x 1,30	2 x 0,050			K	K	
54 x 1,60	2 x 0,063	K	K	K	K	
67 x 1,60	2 5/8 x 0,063	K	K	K		
80 x 1,60	3 x 0,063	K		K	K	

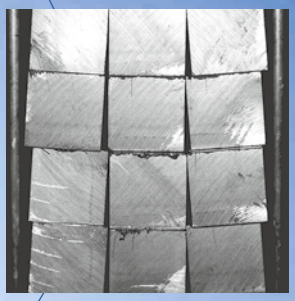
K = Variable tooth

Patent no. 102 53 711

VC-Silver-Line-N

Carbide Tipped Band Saw Blades with multi chip tooth geometry, negative rake

For cutting extremely hard steels.



Engineered for:

- Induction hardened piston rods
- Surface hardened steels
- Hardchromed materials
- Hardened steels up to HRC 62
- High manganese alloyed steels

Dimension		Variable tooth	
mm	inch	2/3	3/4
27 x 0,90	1 x 0,035	K	K
34 x 1,10	1 1/4 x 0,042	K	K
41 x 1,30	1 1/2 x 0,050	K	K
54 x 1,60	2 x 0,063	K	

K = Variable tooth

Patent no. 102 53 711

Article group 710, 711, 712

Dia-Navy-Line

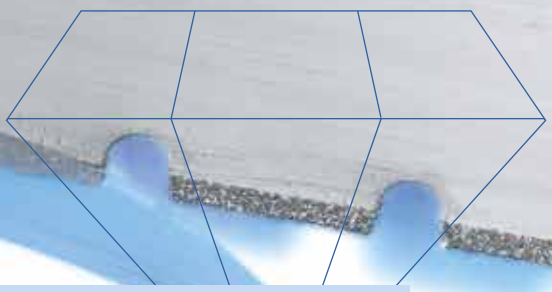
The diamond electroplated solution …

Engineered for:

- Silicon (solar- and electronic industry)
- Oxide ceramics
- Non oxide ceramics
- Silicon carbides
- Silicon nitrite
- Boron carbides

Superior, because:

Diamond coated Band Saw Blades with a diamond hardness of approx. 9000 HV.
Perfectly and absolute durable fixed to the special backer, diamonds are cutting nearly all difficult to cut materials. Smaller work pieces are being cut with continous edge, for larger dimensions use segmented edge.

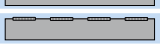
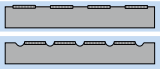


ARNTZ Dia-Navy-Line Band Saw Blades are available in the following diamond grit:

FEPA	US-Mesh
D 91	170 / 200
D 107	140 / 170
D 126	120 / 140
D 151	100 / 120
D 181	80 / 100
D 252	60 / 80

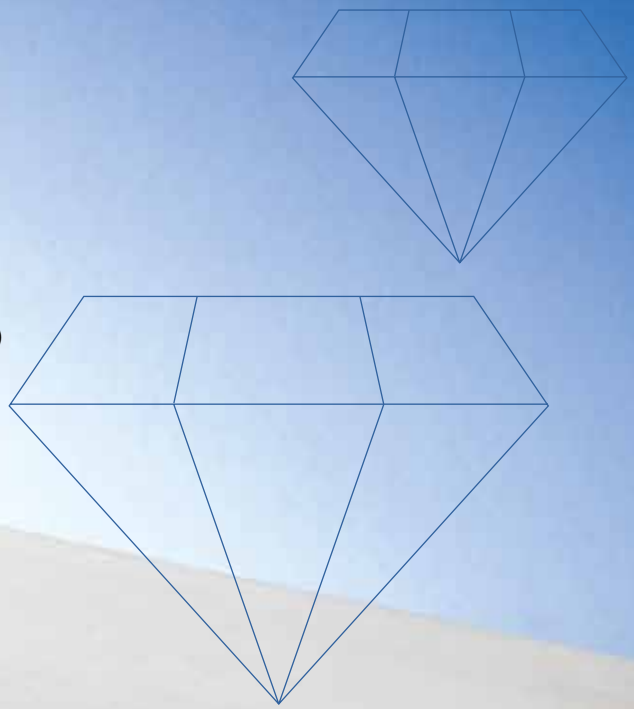
Dimension	
mm	inch
10 x 0,50	3/8 x 0,020
13 x 0,50	1/2 x 0,020
16 x 0,50	5/8 x 0,020
20 x 0,50	3/4 x 0,020
20 x 0,90	3/4 x 0,035
25 x 0,70	1 x 0,028
35 x 0,90	1 1/4 x 0,035
41 x 0,50	1 1/2 x 0,020
41 x 0,90	1 1/2 x 0,035
50 x 0,90	2 x 0,035

Diamond Band Saw Blades are supplied as endless welded loops to fit your Bandsawing Machine.
Recommended cutting speed (Vc) aproxx. = 500 - 3000 m/min

Available executions		
Article group 710	continous edge	
Article group 711	segmented edge	
Article group 712	gulleted edge	

Dia-Yellow-Line

... to cut various materials.



Engineered for:

- Glass / Quartz
- Granites / Marbles / Sandstones
- Graphites
- Construction materials (such as sandwich panels)
- Glass fibres
- Carbon fibres

Dimension	
mm	inch
10 x 0,50	3/8 x 0,020
13 x 0,50	1/2 x 0,020
16 x 0,50	5/8 x 0,020
20 x 0,50	3/4 x 0,020
20 x 0,90	3/4 x 0,035
25 x 0,70	1 x 0,028
35 x 0,90	1 1/4 x 0,035
41 x 0,50	1 1/2 x 0,020
41 x 0,90	1 1/2 x 0,035
50 x 0,90	2 x 0,035

Diamond Band Saw Blades are supplied as endless welded loops to fit your Bandsawing Machine.
Recommended cutting speed (Vc) aproxx. = 500 - 3000 m/min.

ARNTZ Dia-Yellow-Line Band Saw Blades are available in the following diamond grit:

FEPA	US-Mesh
D 301	50 / 60
D 356	45 / 50
D 427	40 / 50
D 601	30 / 35
D 852	20 / 30

Available executions		
Article group 720	continous edge	
Article group 721	segmented edge	
Article group 722	gulleted edge	

Carbon Steel Band Saw Blades

Article group 100

CS-1

Flexible back in pin-point execution with hardened teeth.
Hook tooth (H) and Standard tooth (N)

Dimension		Tooth per inch									
mm	inch	3	4	4	6	6	8	10	14	18	24
6 x 0,65	1/4 x 0,025			H		H	N	N	N	N	N
10 x 0,65	3/8 x 0,025	H	N	H	N	H	N	N	N	N	N
13 x 0,65	1/2 x 0,025	H	N	H	N	H	N	N	N	N	N
16 x 0,80	5/8 x 0,032	H	N	H	N		N	N	N	N	
20 x 0,80	3/4 x 0,032	H	N	H	N	H	N	N	N	N	N
25 x 0,90	1 x 0,035	H	N		N		N	N	N		

N = Standard tooth 0° H = Hook tooth 10°

Article group 110

CS-2-Plus

Special hard back with hardened teeth.
Hook tooth (H) and Standard tooth (N)

Dimension		Tooth per inch									
mm	inch	3	4	4	6	6	8	10	14	18	24
6 x 0,65	1/4 x 0,025			H	N	H	N	N	N	N	N
8 x 0,65	5/16 x 0,025			H	N	H	N	N	N	N	N
10 x 0,65	3/8 x 0,025	H		H	N	H	N	N	N	N	N
13 x 0,65	1/2 x 0,025	H	N	H	N	H	N	N	N	N	N
16 x 0,80	5/8 x 0,032	H		H		H	N	N	N	N	N
20 x 0,80	3/4 x 0,032	H	N	H	N	H	N	N	N	N	N
25 x 0,90	1 x 0,035	H	N	H	N	H	N	N	N		

N = Standard tooth 0° H = Hook tooth 10°

You will find under **www.arntz.de** the right dimension of Band Saw Blade for your Band Saw machine. and professional and quick help for the correct choice of Band Saw Blade for your personal cutting operation.

Professional accessories

Tension measuring device

Wrong tension of band can be the reason for crooked cuts or can cause blade breakage. Therefore, the band tension should be checked at regular intervals. The ARNTZ tension meter shows direct readout of tension from 0-60.000 PSI or 0-4.500 kg/cm^2. Detailed instructions explain how to select and control the right band saw tension.

Refractometer

The correct concentration of cooling liquid is important for optimum life time of ARNTZ Band Saw Blades. To check directly during operation the right concentration of liquid it is recommended to use the ARNTZ-Refractometer.

Break-in procedures: For long blade life.

Like all HSS tools, ARNTZ Band Saw Blades should be adhered to a special break-in procedures for extended blade life, less blade changes and best payback of your tool cost.

Overload of the razor-sharp tooth tips should be avoided at the start of cutting operation. Aggressive cutting with a new blade will lead to premature tooth breakages. Correct break-in will control the gentle rounding of cutting edges.

Bi-Metal Band Saw Blades

Starting feed should be half of final feed rate at the recommended cutting speed for the first 300-500 cm^2 cut surface (see table on page 30). After that, feed rate should be gradually increased for maximum cutting rate. Should vibrations or noises occur at the beginning of the cutting operation, cutting speed should slightly be adjusted.

Carbide Tipped Band Saw Blades

For break-in procedure during the first 30 minutes we recommend following parameters:

Material diameter up to 600 mm	Cutting speed	=	30 m/min
	Feed	=	5 mm/min
Material diameter over 600 mm	Cutting speed	=	25 m/min
	Feed	=	3 mm/min

Only when the Band Saw Blades are cutting without any vibrations, cutting speed and feed can be increased step by step to the maximum. The Band Saw Blades are working perfectly when no vibrations will appear.

Technical recommendations

For Bi-Metal Band Saw Blades

Material groups	Material specification DIN	Material no.	Cutting speed V_c (m/min)	Cooling fluids	
			Bi-Metal	Cutting oil	Emulsion
Structural steels	St 37 – 2 St 50 – 2 St 60 – 2	1.0037 1.0050 1.0060	260-330 200-280 160-230		x x x
Case-hardening steels	C 10 14 NiCr 14 21 NiCrMo 2 16 MnCr 5	1.0301 1.5752 1.6523 1.7131	260-330 130-180 160-200 130-200	x x x x	
Free machining steels	9 S 20 45 S 20	1.0711 1.0727	260-390 260-390		x x
Heat treatable steels	C 45 40 Mn 4 36 NiCr 6 34 CrNiMo 6 42 CrMo 4	1.0503 1.1157 1.5710 1.6582 1.7225	200-230 200-230 200-230 160-215 160-215		x x x x x
Ball bearing steels	100 Cr 6 100 CrMn 6	1.3505 1.3520	115-160 115-160		x x
Spring steels	65 Si 7 50 CrV 4	1.5028 1.8159	150-200 150-200		x x
Unalloyed tool steels	C 125 W C 75 W	1.1663 1.1750	130-200 130-200		x x
Cold-work tool steels	125 Cr 1 X 210 Cr 12 X 155 CrVMo 12 1 X 42 Cr 13 X 165 CrV 12 100 CrMo 5 X 32 CrMoV 3 3 45 WCrV 7	1.2002 1.2080 1.2379 1.2083 1.2201 1.2303 1.2365 1.2542	130-160 100-130 100-130 115-150 100-150 100-160 150-200 130-160	x x dry x x x x x	x x x x x x x
Hot-work tool steels	56 NiCrMoV 7	1.2714	130-160	x	x
High speed steels	S 6-5-2-5 (E Mo5 Co5) S 2-10-1-8 (M 42) S 6-5-2 (DMo5)	1.3243 1.3247 1.3343	115-150 115-150 115-150		x x x
Valve steels	X 45 CrSi 9 3 X 45 CrNiW 18 9	1.4718 1.4873	100-150 100-130	x x	x x
High temperature steels	X 20 CrMoV 12 1 X 5 NiCrTi 26 15	1.4922 1.4980	35-100 35-100	x x	x x
Heat resistant steels	X 10 CrSi 6 X 10 CrAl 18 X 15 CrNiSi 25 20	1.4712 1.4742 1.4841	50-80 50-80 50-80	x x x	x x x
Stainless steels	X 5 CrNi 18 10 (V2A) X 6 CrNiMoTi 172 12 2 (V4A)	1.4301 1.4571	100-130 100-130	x x	x x
Steel castings	GS-38 GS-60	1.0420 1.0558	130-200 130-200		x x
Cast irons	GG-15 GG-30 GGG-50 GTW-40 GTS-65	0.6015 0.6030 0.7050 1.8040 1.8165	100-200 100-200 100-200 100-200 100-200	dry dry dry dry dry	
Copper	KE-Cu Elektrolyt-Copper	2.0050	330-1300 330-1300	x x	x x
Brass (copper-zinc alloys)	CuZn 10 CuZn 31 Si 1	2.0230 2.0490	330-1300 330-1300		x x
Aluminium bronze (copper-aluminium alloys)	CuAl 8 CuAl 10 Fe 3 Mn 2	2.0920 2.0936	115-160 115-160		x x
Bronze (copper-TIN alloys)	CuSn 6 CuSn 6 Zn 6	2.1020 2.1080	260-500 260-500		x x
Red brass (copper-cast alloys)	CuSn 10 Zn CuSn 5 ZnPb	2.1086 2.1096	160-330 160-330		x x
Nickel base alloys	NiCr 20 TiAl NiCr 22 FeMo	2.4631 2.4972	35-80 35-80	x x	x x
Aluminium and aluminium alloys	Al 99.5 AlMgSiPb G-AlSi 5 Mg	3.0255 3.0615 3.2341	260-2600 260-2600 260-2600		x x x
Titanium and titanium alloys	Ti Grade 1 TiAl 6 V 4	3.7025 3.7164	35-65 35-65	x x	x x
Thermoplastic plastics	PVC Teflon, Hostalen		330-1300 330-1300	dry dry	
Plastics with fibre inlays	Resitex Novotex		160-975 160-975	dry dry	

For Carbide Band Saw Blades *for cutting steel*

Material group	Material specifications DIN	Material no.	Cutting speed	Recommended tooth pitch Material dimensions			
			V_c (m/min)	75 - 140 mm	100 - 350 mm	300 - 550 mm	≥ 540 mm
Structural steels	St 37/42 St 52/60	1.0037/1.0042 1.0050/1.0060	100-130 90-120	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Case-hardening steels	C10/C15 16 MnCr 5 20 CrMo 5 21 NiCrMo 2	1.0301/1.0401 1.7131 1.7264 1.6523	110-140 80-100 80-100 70-90	3/4 K 3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Nitrate steels	34 CrAlNi 7 34 CrAlMo 5	1.8550 1.8507	45-60 45-60	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Free machining steels	9 S 20	1.0711	100-160	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Heat treatable steels	C 35/45 42 CrMo 4 34 CrNiMo 6	1.0501/1.0503 1.7225 1.6582	90-120 70-90 70-90	3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Ball bearing steels	100 Cr 6 100 CrMo 7 3	1.3505 1.3536	70-90 65-85	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Spring steels	65 Si 7 50 CrV 4	1.5028 1.8159	65-85 65-85	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Unalloyed tool steels	C 125 W C 80 W 1	1.1663 1.1525	65-80 70-85	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Cold-work tool steels	125 Cr 1 X 210 Cr 12 X 155 CrVMO 12 1 90 MnCrV 8	1.2002 1.2080 1.2379 1.2842	65-80 40-50 40-50 45-55	3/4 K 3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Hot-work tool steels	40 CrMnMo 7 X 40 CrMoV 5 1 56 NiCrMoV 7 40 CrMnNiMo 8 6 4	1.2311 1.2344 1.2714 1.2738	70-90 60-80 50-70 35-50	3/4 K 3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
High speed steels	S 6-5-2 S 3-3-2 S 2-10-1-8 S 10-4-3-10 S 18-0-1	1.3343 1.3333 1.3247 1.3207 1.3355	50-60 55-65 45-60 45-60 45-60	3/4 K 3/4 K 3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Stainless steels	X 5 CrNi 18 10 X 6CrNiMoTi 17 122 X 20 Cr 13	1.4301 1.4571 1.4021	70-80 65-75 80-100	3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Valve steels	X 45 CrSi 9 3 X 45 CrNiW 18 9	1.4718 1.4873	50-60 40-50	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
High temperature steels	X 12 CrCoNi 21 20 X 20 CrMoWV 12 1	1.4971 1.4935	30-40 80-100	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Heat resistant steels	X 15 CrNiSi 25 20 X 12 NiCrSi 36 16	1.4841 1.4864	30-40 30-40	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Special alloys	NiCr 19 NbMo NiMo 30 NiCr 13 Mo 6 Ti 3 NiCo 20 Cr 20 MoTi X 8 CrNiAlTi 20 20	2.4668 2.4810 2.4662 2.4650 1.4847	20-30 22-35 20-30 22-35 22-35	3/4 K 3/4 K 3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Heat treated steels 1000 - 1200 N/mm² 1200 - 1400 N/mm² 1400 - 1600 N/mm²			 35-50 30-45 25-35	 3/4 K 3/4 K 3/4 K	 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	 1,4/2 K 1,4/2 K 1,4/2 K	 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Hardened steels 50 HRC 55 HRC 60 HRC			 15-20 10-15 8-12	 3/4 K 3/4 K 3/4 K	 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	 1,4/2 K 1,4/2 K 1,4/2 K	 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Steel castings	GS-38 GS-60	1.0420 1.0558	70-100 60-85	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Cast irons	GG-30 GGG-50	0.6030 0.7050	60-80 55-75	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K

For Carbide Band Saw Blades *for cutting non ferrous metals*

Material group	Material specifications DIN	Material no.	Cutting speed	Recommended tooth pitch Material dimensions			
			V_c (m/min)	75 - 140 mm	100 - 350 mm	300 - 550 mm	≥ 540 mm
Aluminium and aluminium alloys	Al 99,5 AlMg 1 AlMg 3 AlMg 4.5Mn AlMgSi 1	3.0255 3.3315 3.3535 3.3547 3.2315	up to 3000 m/min. up to 3000 m/min. up to 3000 m/min. up to 3000 m/min. up to 3000 m/min.	3/4 K 3/4 K 3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Copper	KE-Cu E-Cu	2.0050 2.0060	100-200 100-200	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Brass (copper-zinc alloys)	CuZn 39 Pb 3 VuZn 31 Si	2.0401 2.0230	150-250 150-250	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Bronze	CuSn 6	2.1020	90-130	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Red brass	CuSn 5 ZnPb CuSn 10 Zn	2.1096 2.1086	90-130 90-130	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K
Aluminium–bronze	CuAl 8 CuAl 8 Fe 38 CuAl 10 Ni 5 Fe 4	2.0920 2.0920.60 2.0966	60-80 52-65 50-70	3/4 K 3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K 0,75/1,25 K
Titanium and titanium alloys	Ti Grade 1 TiAl 6 V 4	3.7025 3.7164	80-100 60-90	3/4 K 3/4 K	3 tpi 2/3 K 3 tpi 2/3 K	1,4/2 K 1,4/2 K	0,75/1,25 K 0,75/1,25 K

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Specifications subject to change without notice.

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